

## APPENDICES

### Appendix 1 – Composition of the ERC Steering Committee

<b>Member</b>	<b>Position</b>
Hon. Gaston Browne	Prime Minister and Chairman
Dr. L. Errol Cort	Former Minister of Finance and Deputy Chairman
Hon. Asot Michael	Coordinator – Economic Recovery Committee
H.E. Daven Joseph	Development Commissioner
Mr. Vernon Jeffers	Antigua and Barbuda Hotels and Tourism Association
Mr. Michael Spencer	Antigua and Barbuda Bankers Association
Mrs. Sherrie-Ann Brazier	Antigua and Barbuda Employers Federation
Mr. Ralph Potter	Antigua and Barbuda Trades and Labour Union
Mr. Martin Cave	Antigua and Barbuda Chamber of Commerce
Rev. William Dorsett	Antigua and Barbuda Ecclesiastical Commission
Mr. Kevin Silston	Medical Benefits Scheme
Mr. David Massiah	Antigua and Barbuda Workers Union
Ms. Joan Peters	Antigua and Barbuda Public Service Association
Mr. Victor Michael	Antigua and Barbuda Food Distributors

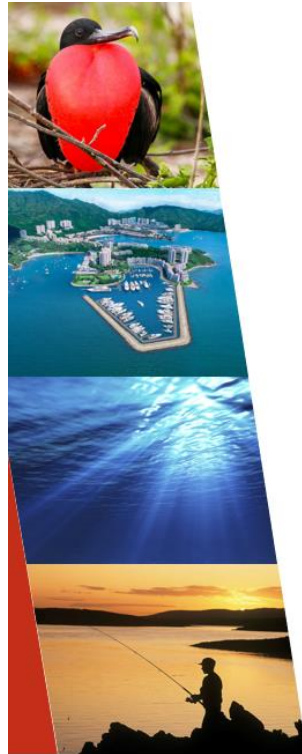
## Appendix 2 – Members of the Technical Drafting Sub-Committee

<b>Member</b>	<b>Position</b>
Mr. Konata Lee	Secretary to the Cabinet and Chairman
Mr. Astley Henry	Public Policy Adviser and Member
Ms. Simone Richards-Nicholas	Policy Specialist and Member

## Appendix 3 – Support Team for the Delivery of ERC Products

<b>Member</b>	<b>Position</b>
Mr. Kevin Stilston	Chief Executive Officer, Medical Benefits, and Economic Adviser for the Draft Report
Mr. Gavin Emmanuel	Policy Officer and Compiler of Minutes of the ERC Meetings
Ms. Charissa Simon	Web Developer and Developer of ERC Website
Mr. Stephen Mullings	Graphic Artist and Designer of ERC Logo and other graphics

## Appendix 4 – Willoughby Bay Development Proposal Presentation



### *Willoughby Bay Development Project Proposal*



*“Developing a sustainable  
future while highlighting our  
cultural heritage to create  
economic diversity”*

#### Willoughby Bay Development Committee

▶ Chairperson

▶ **Daven Joseph (Amb.) – Development Commissioner**

*Technical Committee Members*

- ▶ Frederick Southwell – Sub – Committee Chair – Chief Town and Country Planner - DCA
- ▶ Kevin Edwards – Planner - Development Planning and Design
- ▶ Shaun George – Chief Lands Officer – Lands Division
- ▶ Gregory Bailey – Director of Agriculture
- ▶ Darryl Spencer – General Manager – NSWA
- ▶ Akim Browne – Civil Engineer – DCA
- ▶ Soraya Looby – GIS Technician – DCA
- ▶ Andrew Nurse – Surveyor - Survey and Mapping Division
- ▶ Aldrin Willock – Assistant Lands Officer – Lands Division
- ▶ Arry Simon – Environmental Officer – DOE
- ▶ Owolabi Elabanjo – Extension Officer
- ▶ Joel Matthew – Extension Officer
- ▶ Hastin Barnes - Planning Officer - APUA
- ▶ Brian D'ornellas - Architect/Planner - Private
- ▶ Nigel Gore – Architect/Real Estate – Private

*Investment Forum*

- ▶ William Dorsett – Executive Chairman, Ecclesiastical Commission
- ▶ Mr. Jermaine Jarvis – Deputy Commissioner of Inland Revenue
- ▶ Henderson Fields – Executive Director – Antigua & Barbuda Investment Authority
- ▶ Junia Nibbs – Economic Development Coordinator
- ▶ Gaye Hechme – Island Living Investment Services
- ▶ Mr. Patrick Ryan – Brysons Group of Companies
- ▶ Mr. Paul Ryan – Antigua Motors Limited
- ▶ Lisa Farrara – Quin Farrara's Wines and Spirits
- ▶ Leslie Salmon – Food Brokerage Services
- ▶ Astley Henry – Policy Analyst
- ▶ Atiya Fabian – Secretary

**PROJECT SCOPE**

▶ **3074.17 ACRES**

▶ **BUILT OUT** **1335.90 ACRES**

▶ **RESIDENTIAL** **661.86 ACRES**

▶ **PLANNED AGRICULTURAL** **223.66 ACRES**

▶ **OFFICE, RETAIL, LIGHT INDUSTRIAL, TOURISM** **466.73 ACRES**

▶ **PARKING** **200.10 ACRES**

**TOTAL PLANNED POPULATION** **4,836 (approximate)**



# Willoughby Bay Development Plan

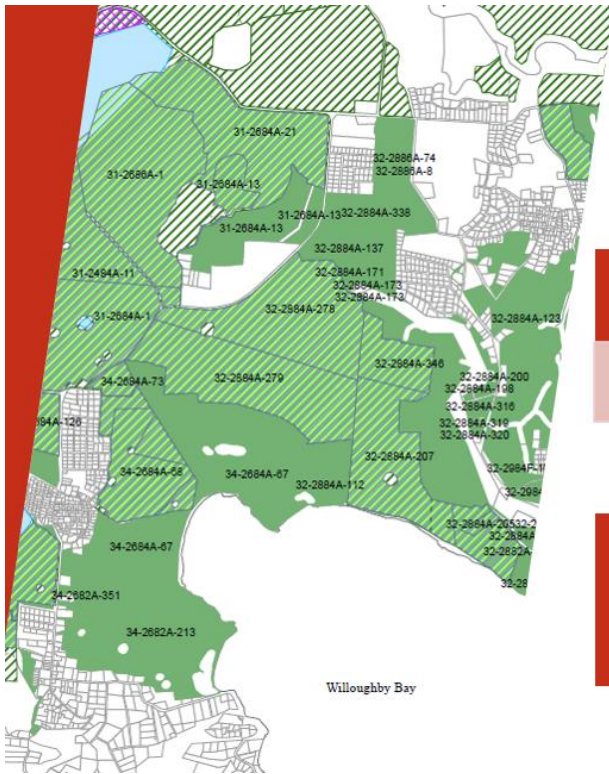
Scope: 1589.97 Acres

Area of Special Interest 89.79 Acres

Dam 392.26 Acres

Proposed Agro-industrial park

- Presently: 0 Acres
- Post Levee: 242.51 Acres



## Available lands within the scope

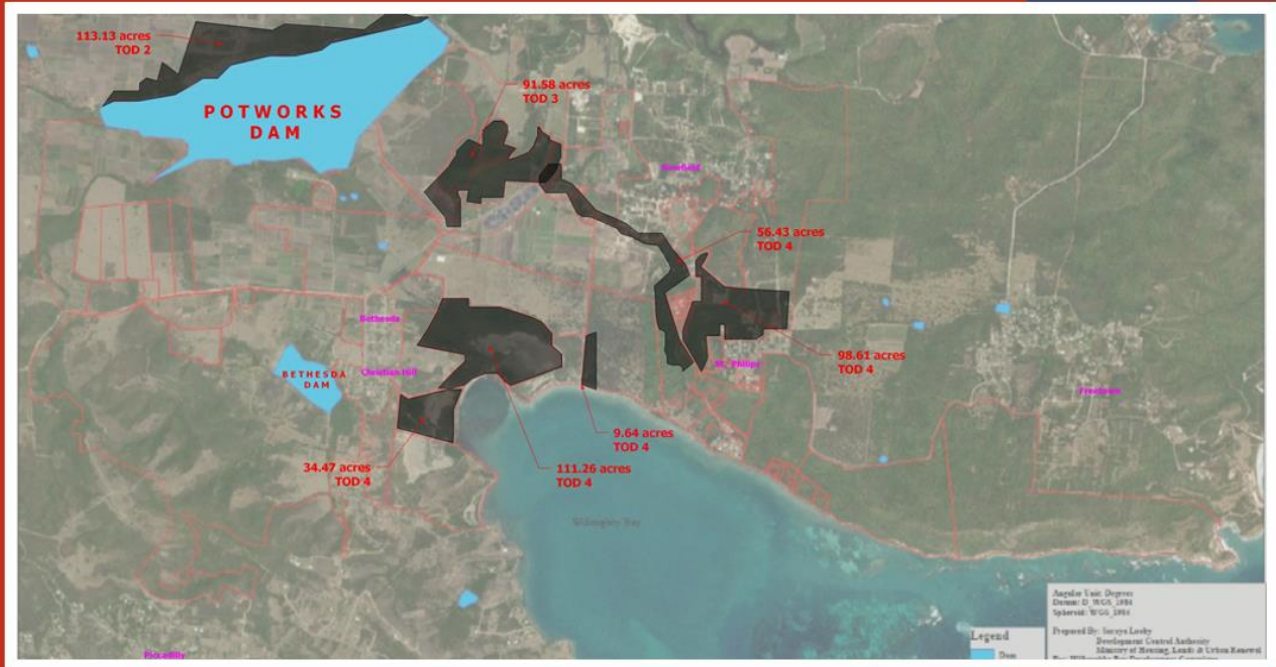
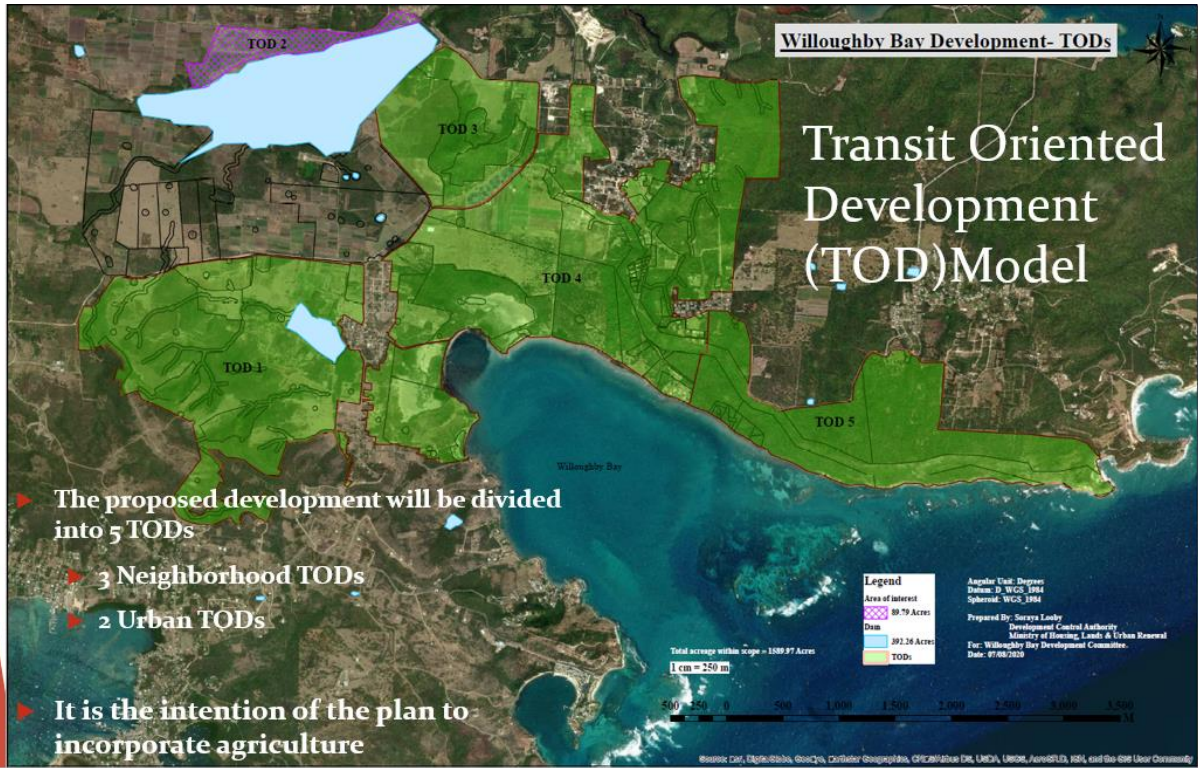
1589.97 Acres

Crown 978.77 Acres	Private 611.07 Acres
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Of which 918.61 Acres is under Agriculture.





All TODs must be mixed-use areas and contain a minimum amount of public, core commercial and residential uses. The following is a list of land use areas within the TOD and minimum site area requirements:

Use	Neighborhood TOD	Urban TOD
Public	10%	10%
Core	10%	30%
Housing	40%	20%

Note: All percentage ranges are based on site area, rather than building area.

Summary Statistics

LAND USES	(NEIGHBOURHOOD) T.O.D 1 %NET ACREAGE IN AREA 1
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TOTAL ACRES CONSIDERED 833.30

PUBLIC 10.00  
CORE 10.00  
HOUSING 40.00

TOTAL ACRES CONSIDERED 833.30

PUBLIC 83.33  
CORE 83.33  
HOUSING 333.32

TOTAL ACRES BUILT OUT 499.98

HOUSING DENSITIES

15 DU/AC 20.00  
5 DU/AC 30.00  
5 DU/AC 50.00

HOUSING DENSITIES ACRES & UNITS/PERSONS

15 1000  
5 500  
5 833

TOTAL UNITS 2332



PARKING REQUIREMENTS  
SPACE = 20.5' X 9'  
184.5

RESIDENTIAL  
OFFICE  
RETAIL  
LIGHT INDUSTRIAL

RESIDENTIAL  
OFFICE  
RETAIL  
LIGHT INDUSTRIAL  
PUBLIC

PARKING REQUIREMENTS

2 SPACES/UNIT  
3.3 SPACES/1000 S.F.  
5.0 SPACES/1000 S.F.  
2.5 SPACES/1000 S.F.

19.77  
6.56  
6.56  
6.56  
10.67

TOTAL ACRES PARKING 59.11

TOTAL ACRES BUILT 440.87



### Summary Statistics

LAND USES	(NEIGHBOURHOOD) T.O.D 3 % NET ACREAGE IN AREA 3
<b>TOTAL ACRES CONSIDERED</b>	<b>283.50</b>
PUBLIC CORE	10.00
HOUSING	70.50
<b>TOTAL ACRES CONSIDERED</b>	<b>91.58</b>
PUBLIC CORE	9.16
HOUSING	64.56
<b>TOTAL ACRES BUILT OUT</b>	<b>82.88</b>
<b>HOUSING DENSITIES</b>	
15 DU/AC	20.00
5 DU/AC	30.00
5 DU/AC	50.00
<b>HOUSING DENSITIES ACRES &amp; UNITS/PERSONS</b>	
15	194
5	97
5	161
<b>TOTAL UNITS</b>	<b>452</b>



PARKING REQUIREMENTS	PARKING REQUIREMENTS
SPACE = 20.5' X 9'	
184.5	
RESIDENTIAL	2 SPACES/UNIT
OFFICE	3.3 SPACES/1000 S.F.
RETAIL	5.0 SPACES/1000 S.F.
LIGHT INDUSTRIAL	2.5 SPACES/1000 S.F.
RESIDENTIAL	3.83
OFFICE	0.72
RETAIL	0.72
LIGHT INDUSTRIAL	0.72
PUBLIC	2.16

<b>TOTAL ACRES PARKING</b>	<b>8.15</b>
<b>TOTAL ACRES BUILT</b>	<b>74.73</b>

### Summary Statistics

LAND USES	(URBAN) T.O.D 1 % NET ACREAGE IN AREA 4
<b>TOTAL ACRES CONSIDERED</b>	<b>969.66</b>
PUBLIC CORE	10.00
HOUSING	20.00
<b>TOTAL ACRES CONSIDERED</b>	<b>310.41</b>
PUBLIC CORE	31.04
HOUSING	93.12
<b>TOTAL ACRES BUILT OUT</b>	<b>186.25</b>
<b>HOUSING DENSITIES</b>	
15 DU/AC	0.00
5 DU/AC	50.00
5 DU/AC	50.00
<b>HOUSING DENSITIES ACRES &amp; UNITS/PERSONS</b>	
15	0
5	161
5	155
<b>TOTAL UNITS</b>	<b>317</b>



PARKING REQUIREMENTS	PARKING REQUIREMENTS
SPACE = 20.5' X 9'	
184.5	
RESIDENTIAL	2 SPACES/UNIT
OFFICE	3.3 SPACES/1000 S.F.
RETAIL	5.0 SPACES/1000 S.F.
LIGHT INDUSTRIAL	2.5 SPACES/1000 S.F.
RESIDENTIAL	2.68
OFFICE	7.33
RETAIL	7.33
LIGHT INDUSTRIAL	7.33
PUBLIC	7.33

<b>TOTAL ACRES PARKING</b>	<b>32.00</b>
<b>TOTAL ACRES BUILT</b>	<b>154.25</b>

### Summary Statistics

LAND USES	(NEIGHBOURHOOD) T.O.D 5 % NET ACREAGE IN AREA 5
<b>TOTAL ACRES CONSIDERED</b>	<b>574.58</b>
PUBLIC CORE	10.00
HOUSING	40.00
<b>TOTAL ACRES CONSIDERED</b>	<b>574.58</b>
PUBLIC CORE	57.46
HOUSING	57.46
<b>TOTAL ACRES BUILT OUT</b>	<b>344.75</b>



HOUSING DENSITIES	
15 DU/AC	37.00
5 DU/AC	37.00
5 DU/AC	26.00

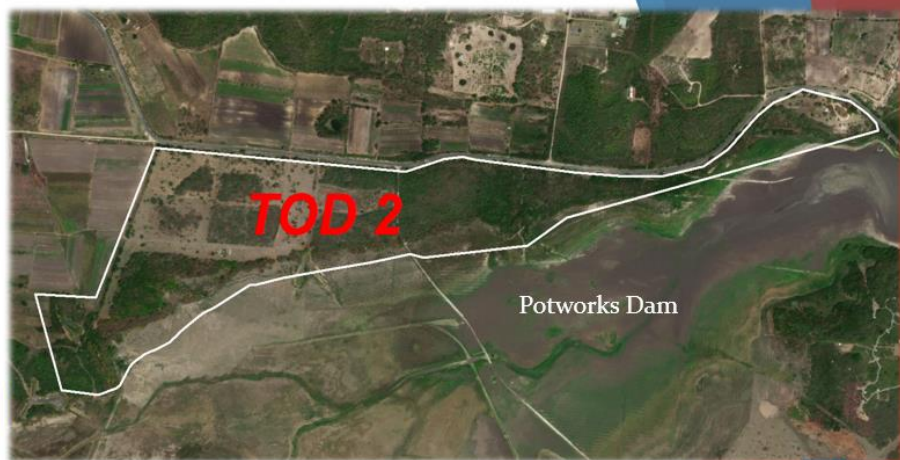
HOUSING DENSITIES ACRES & UNITS/PERSONS	
15	1276
5	425
5	299
<b>TOTAL UNITS</b>	<b>2000</b>

PARKING REQUIREMENTS	PARKING REQUIREMENTS
SPACE = 20.5' X 9'	
184.5	
RESIDENTIAL	2 SPACES/UNIT
OFFICE	3.3 SPACES/1000 S.F.
RETAIL	5.0 SPACES/1000 S.F.
LIGHT INDUSTRIAL	2.5 SPACES/1000 S.F.
RESIDENTIAL	16.94
OFFICE	4.52
RETAIL	4.52
LIGHT INDUSTRIAL	4.52
PUBLIC	13.57

<b>TOTAL ACRES PARKING</b>	<b>44.07</b>
<b>TOTAL ACRES BUILT</b>	<b>300.68</b>

### Summary Statistics

LAND USES	(URBAN) T.O.D 2 % NET ACREAGE IN AREA 2
<b>TOTAL ACRES CONSIDERED</b>	<b>363.13</b>
PUBLIC CORE	15.00
HOUSING	80.00
<b>TOTAL ACRES CONSIDERED</b>	<b>363.13</b>
PUBLIC CORE	54.47
HOUSING	290.50
<b>TOTAL ACRES BUILT OUT</b>	<b>344.97</b>



HOUSING DENSITIES	
15 DU/AC	0.00
5 DU/AC	0.00
5 DU/AC	0.00

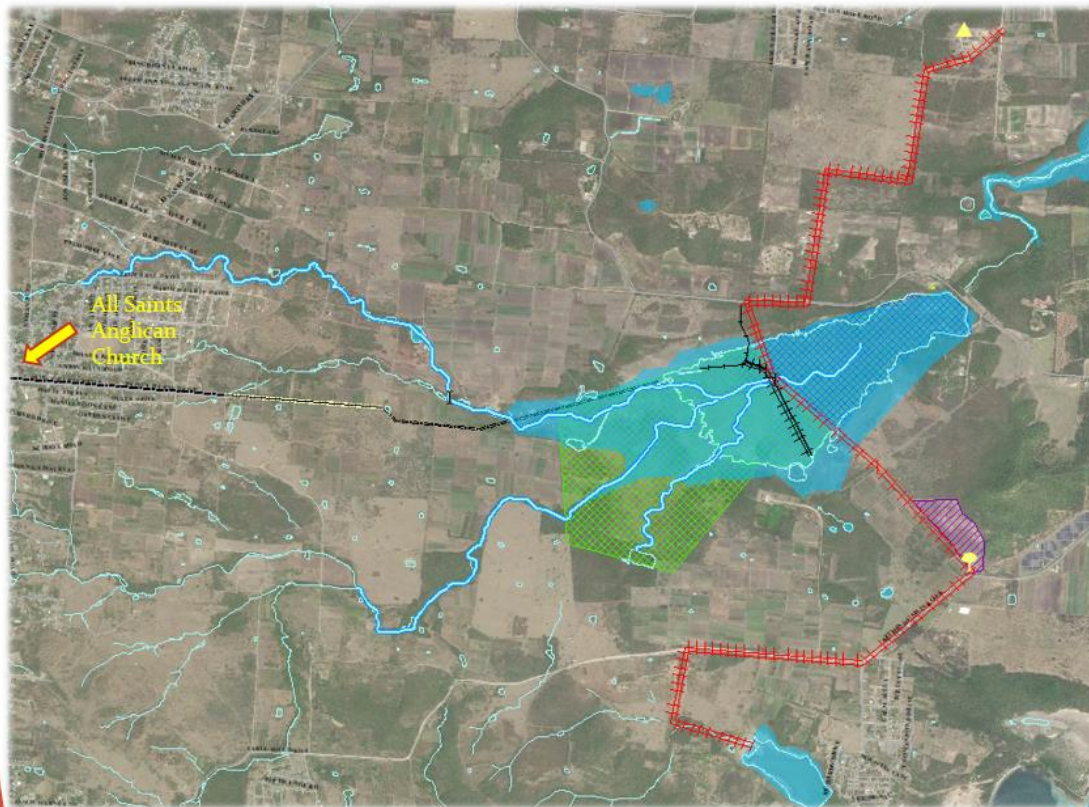
HOUSING DENSITIES ACRES & UNITS/PERSONS	
15	0
5	0
5	0
<b>TOTAL UNITS</b>	<b>0</b>


PARKING REQUIREMENTS	PARKING REQUIREMENTS
SPACE = 20.5' X 9'	
184.5	
RESIDENTIAL	2 SPACES/UNIT
OFFICE	4.5 SPACES/1000 S.F.
RETAIL	5.5 SPACES/1000 S.F.
LIGHT INDUSTRIAL	3.5 SPACES/1000 S.F.
RESIDENTIAL	0.00
OFFICE	2.54
RETAIL	2.54
LIGHT INDUSTRIAL	2.54
PUBLIC	12.86

<b>TOTAL ACRES PARKING</b>	<b>20.48</b>
<b>TOTAL ACRES BUILT</b>	<b>324.49</b>



# POTWORKS DAM DEVELOPMENT AREA

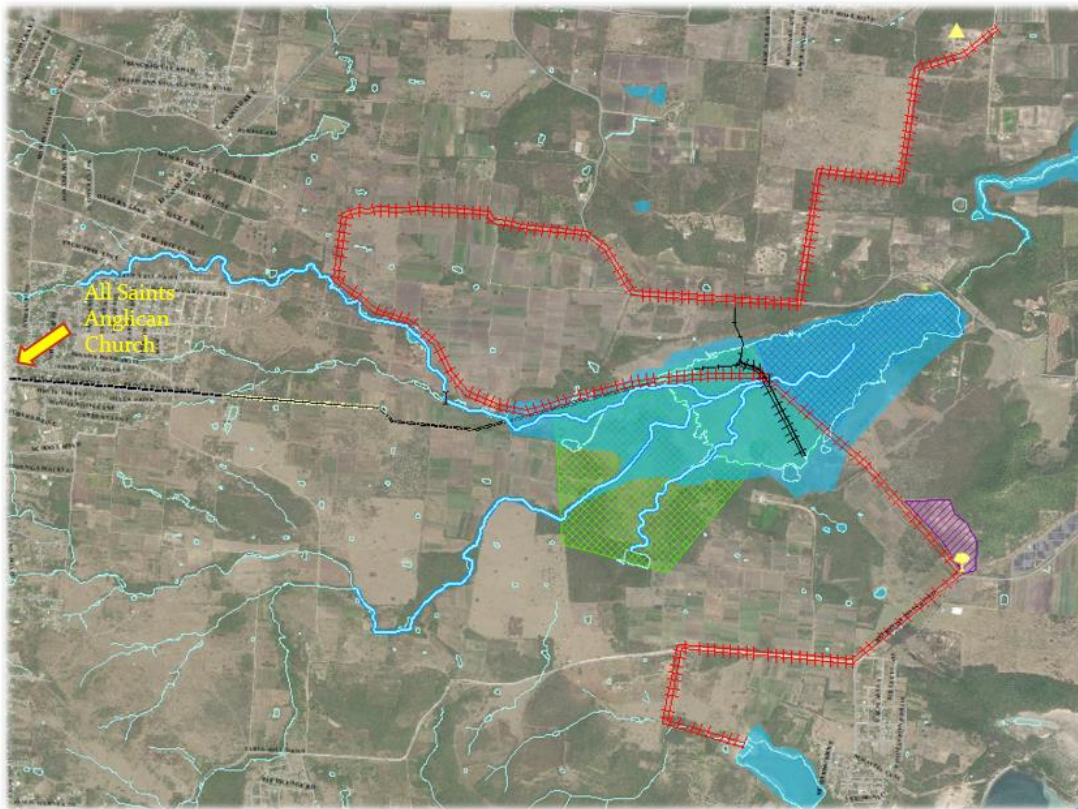


  
**Willoughby Bay**  
**Development-**  
**Potworks Dam**  
**Proposal**  
**(Option 1)**

- Legend**
-  Tamarind Tree
  -  Betty's Hope
  -  Existing Bridge
  -  Proposed Train Trackroute
  -  Fence Ext in Dam
  -  Old Loco Line
  -  Existing water channels in Dam
  -  Stream
  -  Quarry
  -  Existing Lookout
  -  Existing Dam
  -  Paved Road
  -  Unpaved Road
  -  To be developed
  -  Potworks Dam
  -  Agriculture Activity
  -  Agriculture Activity
  -  Roads
- Angular Unit: Degrees  
 Datum: D\_WGS\_1984  
 Spheroid: WGS\_1984

Prepared By: Soraya Looby  
 Development Control Authority  
 Ministry of Housing, Lands & Urban Renewal  
 For: Willoughby Bay Development Committee  
 Date: 21/09/2020





**Willoughby Bay**  
**Development-**  
**Potworks Dam**  
**Proposal**  
**(Option 2)**

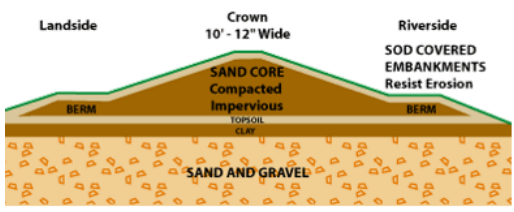
**Legend**

Tamarind Tree	Existing Dam
Betty's Hope	Road Type
Existing Bridges	Paved Road
Proposed Train Track route	Unpaved Road
Fence Ext in Dam	To be developed
Old Loco Line	Proposed Development
Existing water channels in Dam	Potworks Dam
Stream	Agriculture Activity
Quarry	Agriculture Activity
Existing Lookout	Roads

Angular Unit: Degrees  
 Datum: D\_WGS\_1984  
 Spheroid: WGS\_1984

Prepared By: Soraya Looby  
 Development Control Authority  
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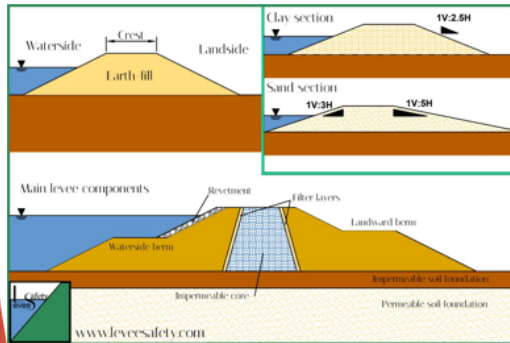
# LEVEES



## Principles of Levees

- Reduces flood risk but does not eliminate it.
- Protect assets that exist at the time, but the presence of a levee will usually encourage further development behind it.
- The levee management plan and local Flood Emergency Plan (FEP) need to be regularly reviewed to ensure that additional risk due to new development is considered.

# LEVEES



## Permanent Levees

- Requires minimal operational activity to provide protection during a flood.
- It is technically the most reliable protection system as it is always in place to offer flood protection up to its design standard.
- Commonly earthen embankments, but may take other forms, such as freestanding concrete walls or retaining wall systems also known as floodwalls.





# Regional Example

Mona Reservoir,  
Kingston Jamaica

\*700 million gallons



## EXAMPLES OF RAILWAY USAGE

FOR SCENIC HERITAGE RAIL TOURS

TRANSPORTATION OF GOODS TO  
THE PROPOSED FARMERS MARKET





**THANK YOU!**

**Contributing Agencies:**

- Development Control Authority
- Lands Division
- Development Planning and Design
- Survey and Mapping Division
- Forestry Division
- Agriculture Extension Department
- Livestock and Veterinary Department
- Department of the Environment
- Antigua Public Utilities Authority
- National Solid Waste Management Authority
- Private Sector Partners

# The Barbuda Master-Plan 2020-2025

## Draft Development Planning Proposals



# Table of Contents

1. Introduction (page 2)
2. Land Use Planning: Barbuda Strategic Land Use Plan (page 4)
3. Barbuda District Zoning (page 8)
4. Local Area Planning: Louis Hill (page 12)
5. Barbuda Seaport Area Master-plan (page 20)
6. Codrington Lagoon Waterfront Development (page 24)
7. Other Development Projects (page 26)
8. Conclusion (page 27)

## INTRODUCTION

In the effort to structure a **5-year sustainable development plan** for the island of Barbuda, this document aims to serve as **a guide** towards the creation of the general **development vision** for the island. This development vision will be further defined upon implementation of the **RRL Barbuda Redevelopment Master Plan initiative** (funded by CDB in collaboration with the Government of Antigua and Barbuda and the Barbuda Council).

## 1.0 LAND-USE PLANNING

### 1.1 Project Title: Barbuda Strategic Land Use Plan

### 1.2 Project Description:

The primary aim of this project is to devise a land use plan to outline the types of development activities that will be permitted within specific parts of the island. The project will adhere to the European Environmental Agency (EEA) definition of land use planning:

**Land Use Planning Defined:**

“The systematic assessment of land and water potential, alternative patterns of land use and other physical, social and economic conditions, for the purpose of selecting and adopting land-use options which are most beneficial to land users without degrading the resources or the environment, together with the selection of measures most likely to encourage such land uses.”

### 1.3 Project Justification:

The island of Barbuda is relatively “undeveloped” in comparison to many other Caribbean islands of similar size. Local residents nonetheless pride themselves in the fact that the island is untouched and un-spoilt by harmful development activities that often destroy **the paradise concept**. Barbuda is still a paradise island – and this ideal **can be maintained**.

The expressed development vision of the Barbuda Council is to allow for growth in area of eco-tourism and to encourage high-end, low density tourism-based development. Despite its land mass size of **62 square miles**, Barbuda’s **land carrying capacity** is deemed far less than that of islands even half its size (owing to wetlands, low-lying coastal zones, and the presence of sink-holes and caves in specific regions of the island).

The island is now inhabited by some 1100 people, most of whom live within Codrington Village and its environs. While only a tiny fraction of the island is currently used for settlement, large tracts of land that have been allotted for agricultural use.

Residential settlement, commercial activity, agriculture, limited sand mining, hunting and fishing characterize the present use of lands in Barbuda.

As plans are established to further develop the island in the areas of housing, hotel/resort development, light industry and other areas, it is apparent that a land use plan must be put in

place to serve as a guide for these development activities. Moreover, Barbuda has many environmentally sensitive areas which must be protected from harmful development activities.

The lack of a **clear guideline** for land development (i.e. a current land use plan that is **responsive to the Hurricane Irma experience**) may result in various projects being established to the detriment of the environment and or development activity that leads to a waste or inefficient allocation of government resources.

An **updated land use plan** (produced with input from the local community and experts in the fields of engineering, environment, planning, architecture, fisheries, forestry, agriculture, tourism, government, etc.) would therefore, serve as the basic determinant for the type of land use activities that will be allowed on the island of Barbuda.

## 1.4 Description of Objectives/Outputs:

1. Determine and document the development vision for the island.
  - a. How do citizens wish to see the island develop?
  - b. What population size would be suitable to sustain any future development?
2. Identify development needs in keeping with the development vision for the island.
  - a. What are the current needs (health care, national security, transportation infrastructure, housing, social, educational, agricultural, etc)?
  - b. What are some anticipated future needs?
3. Identify regions for declaration as protected areas.
  - a. What are the environmentally sensitive areas on the island that must be protected?
  - b. What areas should be zoned as national parks?
  - c. What benefits do these areas offer?
4. Produce a land use map that defines all land use zones.

### Description of Activities to Achieve Outputs:

OBJECTIVES	ACTIVITIES	ITEMS	BUDGET (US\$)
<p>1. Determine and document the general land use development vision for the island</p>	<p>1.1 Consult with all Barbudans in town hall meeting setting to solicit ideas for future land use development in Barbuda</p>		
	<p>1.2 Conduct smaller scale meetings with various stakeholder groups (i.e. farmers, entrepreneurs, etc) to solicit ideas for future land use development</p>		
	<p>1.3 Produce documentation outlining the shared vision for future land use development on Barbuda</p>	<p>Pamphlets, handouts, posters, web publishing</p>	
<p>2. Identify development needs in keeping with development vision for the island</p>	<p>2.1 Consult with all stakeholder groups to determine current and future needs pertaining to land use development</p>		
	<p>2.2 Analyze all coastal and inland areas to determine the potential for tourism, industrial, agricultural/ livestock, residential, and institutional development activities.</p>		
<p>3. Identify regions for declaration as protected areas</p>	<p>3.1 Conduct biodiversity and other environmentally relevant studies (eg. EIA studies) throughout areas immediately targeted for future development</p>	<p>Environmental Studies</p>	
	<p>3.2 Legal declaration of regions as protected areas</p>		

4. Produce land use map that defines all land use zones	4.1 Department of Environment		
	4.2 Conduct town hall meetings and public media (radio and television) presentations to inform and solicit input from the general public regarding study outcomes		
	4.3 Produce first draft of land use plan for review by general public		
	4.4 Produce final land use plan and detailed land use map	Maps, booklets, brochures, web publishing	
		<b>GRAND TOTAL</b>	



## 1.5 Project Sustainability:

All stakeholders will play a vital role in the activities associated with this project in order to ensure its sustainability. All departments of the Barbuda Council will be engaged in planning related activities for the island of Barbuda.

### **Stakeholder Involvement and Intended Beneficiaries:**

The stakeholder grouping for this project includes the following:

1. Fishermen (Antigua and Barbuda)
2. Crop Farmers
3. Livestock Farmers
4. Small Business Owners
5. The Barbuda Council (All departments)
6. Government of Antigua and Barbuda (All ministries)
7. Boat Operators/Guides
8. Barbuda Day Tour Operators
9. Taxi Operators (land and sea)
10. Lobster Exporters
11. Sand Mining Company
12. Hotels
13. Restaurants
14. Food Vendors
15. Handicraft Sellers
16. Antigua Tour Operators
17. Foreign Investors

## 2. BARBUDA DISTRICT ZONING

### 2.1 Project Description:

The Barbuda District Zoning Project aims to create major subdivisions of the island for strategic planning and government administrative purposes.

The proposed name for these subdivisions is the “**DISTRICT**”. Eight districts have been proposed based primarily on unique geographical and environmental features. The district boundaries can be clearly identified on most detailed maps of Barbuda as existing roads and foot paths (in many instances) serve as boundary demarcation elements for the districts.

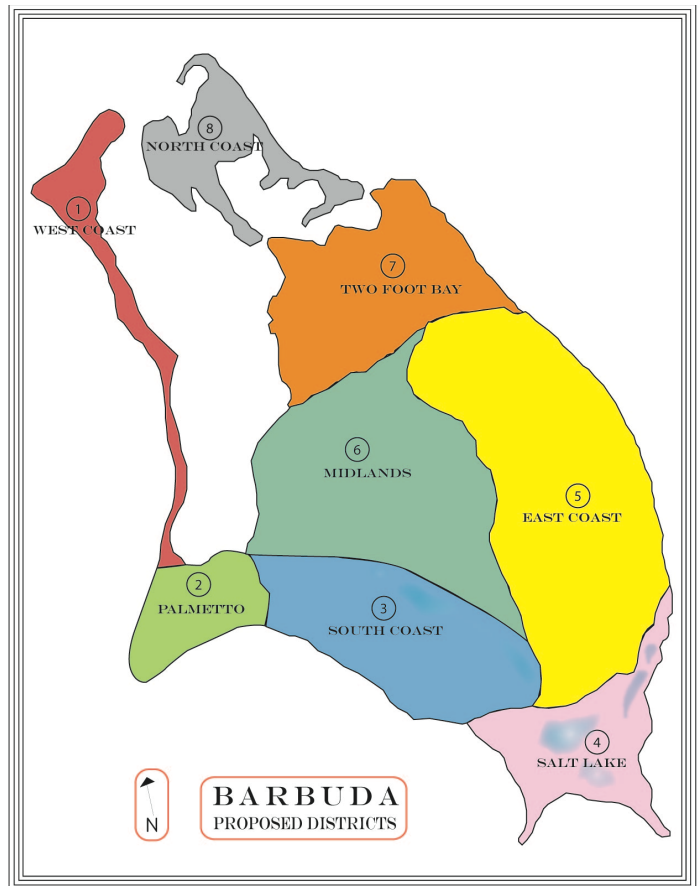


Fig. 2.1 Proposed District Map

#### The eight proposed districts are:

1. **West Coast District** (from Billy Point to the Canal)
2. **Palmetto District** (all of the Palmetto region including Sand Ground)
3. **South Coast District** (east of sand ground along River Road to River Beach and extending eastwards just beyond Fresh Water Pond)
4. **Salt Lake District** (from K-Club to Welch Point, including Coco Point and Spanish Point)
5. **East Coast District** (the entire stretch of the Highlands area)
6. **Midlands District** (bordered on the north by the Two Foot Bay Road, on the east by the path along the Highlands area, on the west by the Codrington Lagoon and south by the path stretching south of the Fresh Water Pond area extending to the south eastern tip of the Lagoon)
7. **Two Foot Bay District** (the area extending north of Two Foot Bay Road and terminating at Gun Shop Cliff)
8. **North Coast District** (the area encompassing Goat Island, Rabbit Island and Kid Island)

## 2.2 Project Justification:

Throughout the world, it is customary for countries/islands to be subdivided into smaller territories called *provinces, counties, or parishes*, etc. Antigua, for example, is subdivided into 6 parishes. However, Barbuda, to date, still exists as a single entity. As future planning and development efforts evolve to expand human settlement throughout the island, it is important that areas such as villages, and small towns be encompassed within a broader territorial region for purposes such as:

1. the registration and administration of lands
2. land valuation
3. the implementation of specific land zoning regulations/laws

### 2.2.1 Land Registration and Administration

**A District** can serve as the major **block** for registered lands within that region of the island and thereby enable the establishment of a **land classification system** to enhance the current land registration practice. For example, a parcel of land registered in Codrington Village can have a parcel identification starting with the number of the district (Midlands District # 6), followed by a code for Codrington (COD), then a sequential digit such as 125, 126, etc. The resulting parcel identification would be 6-COD-125. This system significantly simplifies the parcel identification process.

6-COD - 125

Block      Parcel Number

### 2.2.2 Land Valuation

The **distinct and unique features** within each district (eg. natural resources, historic sites, attractive coastal views, and other appealing features) can be used to generate tax based revenue via the implementation of a land valuation system for leased lands.

### 2.2.3 Zoning Regulations

Elected officials, government bodies, and non-profit organizations can **focus on specific Districts** regarding: *proposed development plans, environmental protection/preservation matters and other pertinent issues that may impact that district.*

### **2.2.3 a Zoning Defined**

Zoning is the control by a municipality of the:

1. use of land and buildings
2. height and bulk of buildings
3. density of the population
4. relation of a lot's building coverage to open space
5. size and location of yards and setbacks
6. provision of any ancillary facilities such as parking

### **2.2.3 b Proposed Zoning Types:**

#### **1. Residential Zoning**

- SFR 1 - Single Family: Residential
- SFR 2 - Single Family: Coastal Residential
- MFR 1 - Multi Family Residential
- MFR 2 - Multi Family Coastal Residential

#### **2. Commercial Zoning**

- C 1 - Neighborhood Commercial
- C 2 - General Commercial
- C3 - Coastline Commercial

#### **3. Industrial Zoning**

- I 1 - Research and Manufacturing
- I 2 - Light Industrial (warehousing, distribution centers, commercial nurseries)
- I 3 - Heavy Industrial (contractors' storage yards, warehouses, machine shops, electricity generation plants)
- I 4 - Marine Industrial

#### **4. Open Space and Recreational**

- EA - Exclusive Agricultural
- CRR - Community and Regional Recreational
- PC - Public and Civic Uses

## 2.3 Description of Objectives/Outputs

1. A map illustrating the proposed districts will be presented to the Barbuda Council/GOAB and the people of Barbuda for review and further input.
2. Any necessary changes will be made and re-presented for public review and approval.
3. Production, printing and promotion of the final DISTRICT MAP of BARBUDA.

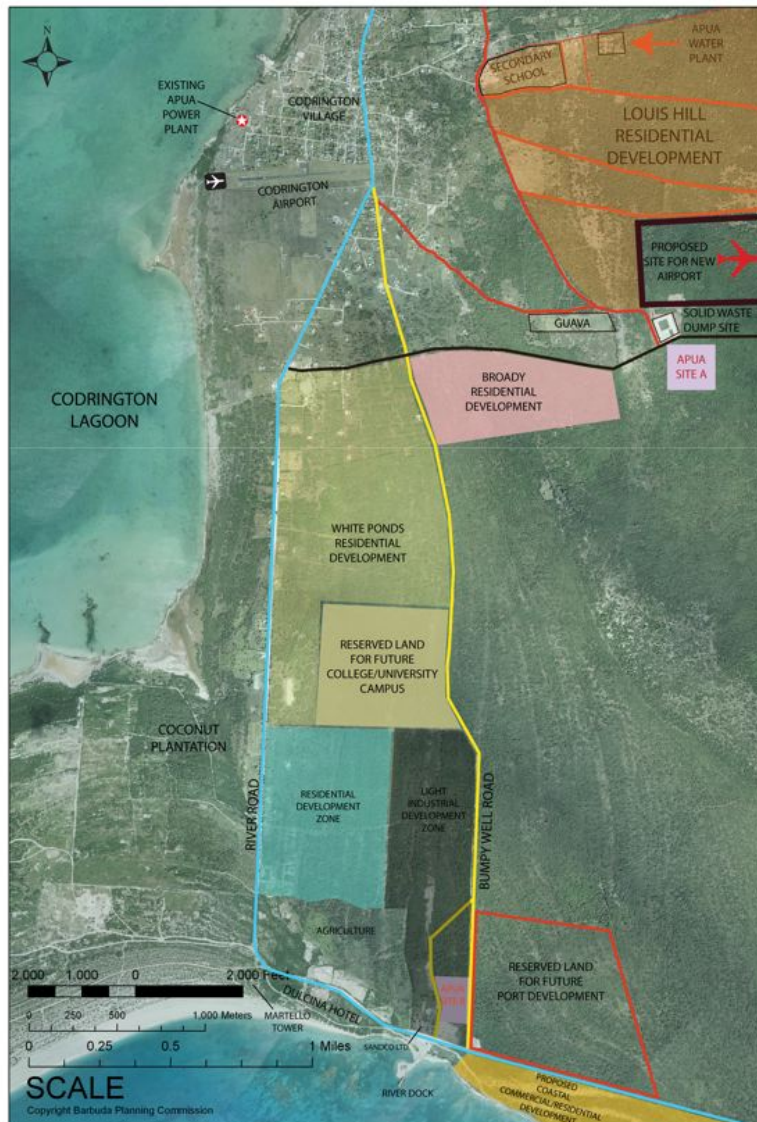


Fig. 2.2 Aerial Map with proposed zoning (2005)

### 3. Local Area Planning: Louis Hill

#### 3.1 Project Description

This project aims to produce an updated **Local Area Plan for Louis Hill** that is responsive to the current housing and other community development needs of the people of Barbuda.

Louis Hill was identified as the most suitable area for housing development by the Barbuda Council in 2007. The area was selected given its 15ft elevation above sea level, its relative resistance to flooding, its close proximity to existing settlement and access to utility services.

A preliminary plan was prepared to illustrate the development potential of a portion of the area. This plan included **twenty four (24) lots** which were officially demarcated and surveyed for housing development under a proposed housing development initiative between the Barbuda Council and the Antigua and Barbuda Development Bank. This initiative was not realized and there has been minimal development of the lands in the area since 2007.

#### Proposed Features for a 2020-2025 Local Area Plan for Louis Hill:

1. A **new neighborhood development plan** featuring homes and other structures that are resilient to natural disasters such as hurricanes, earthquakes and flooding.
2. A proposed **Covenant** for land owners which will adhere to the local building code and any zoning regulations governing:
  - i. Building height
  - ii. Building setback
  - iii. Building orientation
  - iv. Fencing height
  - v. Fencing materials
  - vi. Allowable uses for property development etc.

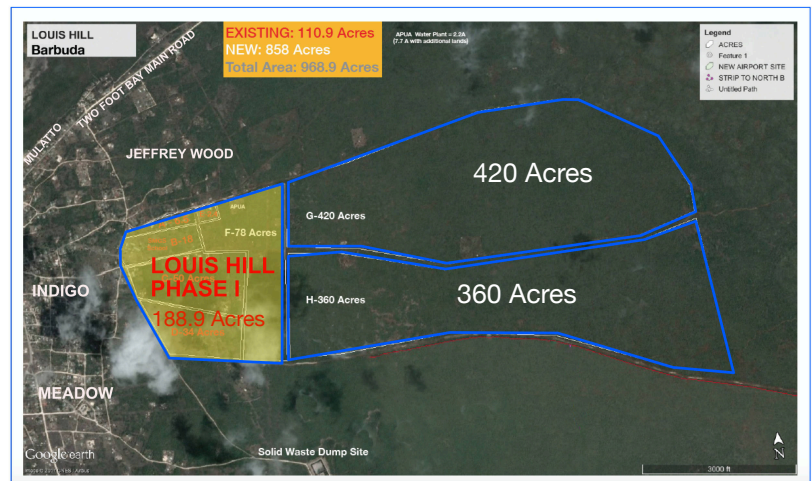


Fig. 3.1 Louis Hill - Barbuda



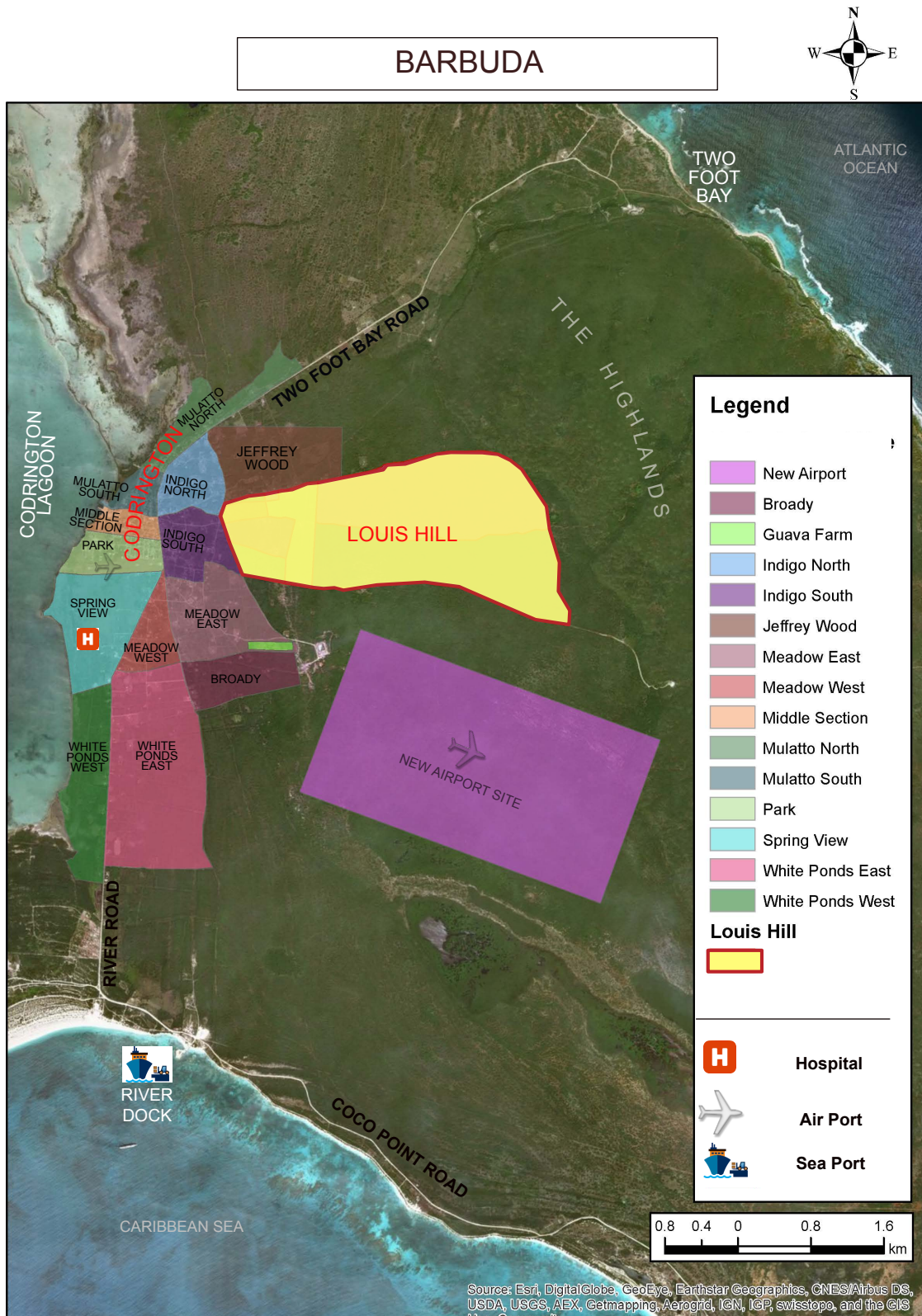
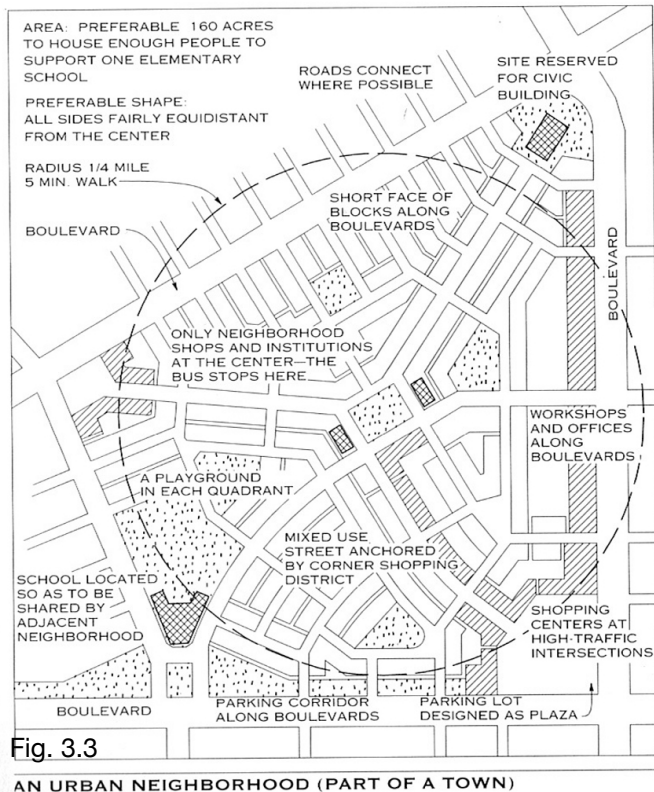


Fig. 3.2 Barbuda Settlement Map showing Louis Hill Location

3. Designed in accordance with principles of **Traditional Neighborhood Development** (TND):

Source: Elizabeth Plater- Zyberk (“Charter of the New Urbanism”):



**Traditional Neighborhood Development (TND) Principles:**

1. The neighborhood has a center and an edge
2. The neighborhood has a balanced mix of activities: shopping, work, schooling, recreation and all types of housing.
3. The ideal size of a neighborhood is a quarter-mile from center to edge.
4. Neighborhood streets are detailed to provide equally for the pedestrian, the bicycle, and the automobile.
5. The neighborhood gives priority to the creation of public space and to the appropriate location of civic buildings (eg. libraries, meeting halls, museums, etc.)

Fig. 3.3 Urban Neighborhood (TND)

**3.1 Project Rationale**

The widespread destruction caused by Hurricane Irma in September 2017 should inform future building and development practices within the nation of Antigua and Barbuda. The GOAB and the Barbuda Council have **the opportunity to provide a safe haven for residents of Barbuda** in the event that a future category 5 storm, tsunami or other peril were to impact the island. Moreover, the fact that **the hurricane breached western strip of land that borders the Codrington Lagoon remains open to the ocean** and therefore poses **a storm surge threat to Codrington Village** should not be taken lightly. This mandates the need for immediate strategic planning for areas such as Louis Hill which can satisfy the current and long term housing, commercial, recreational and other development needs of Barbuda residents.



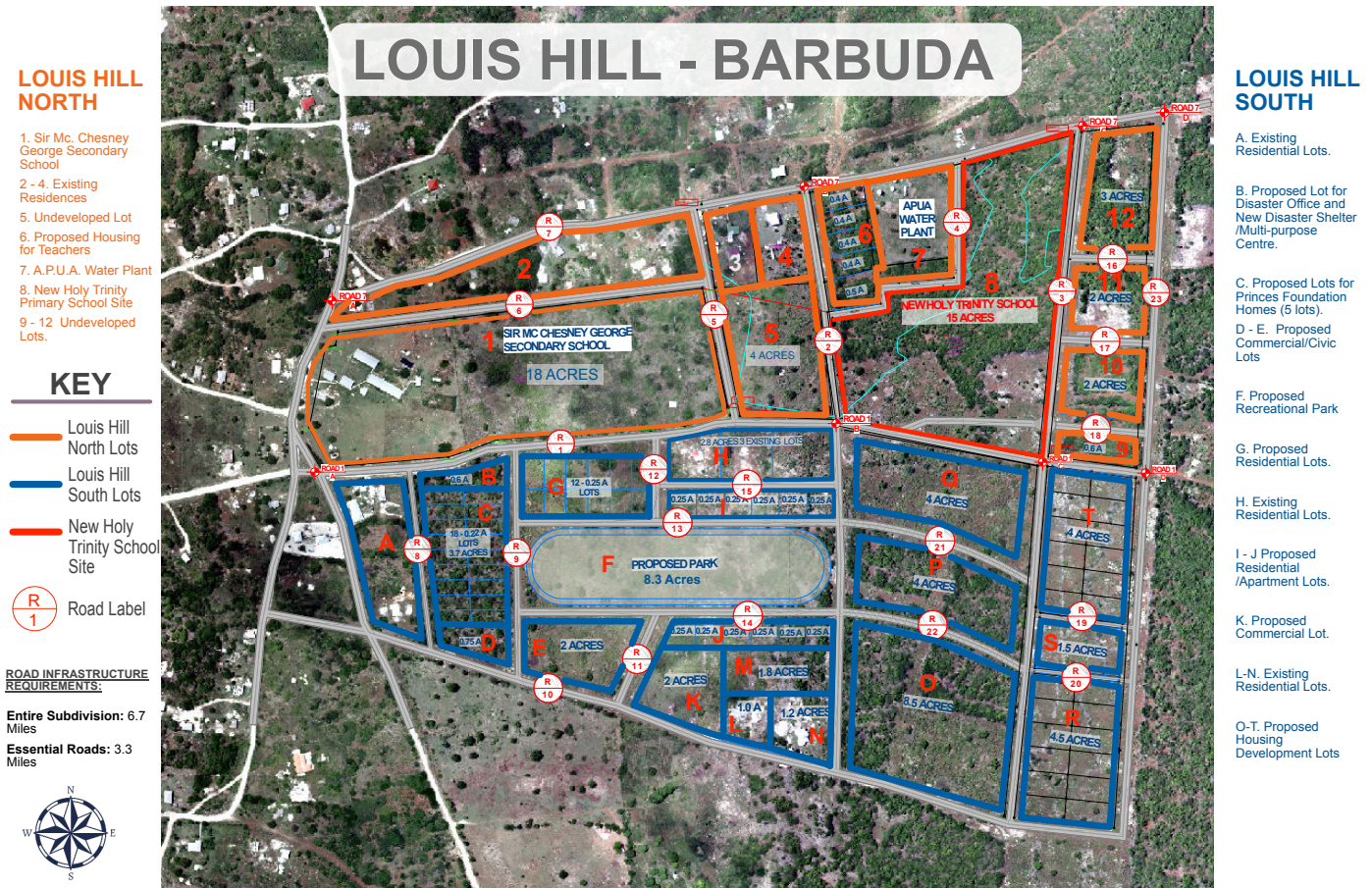


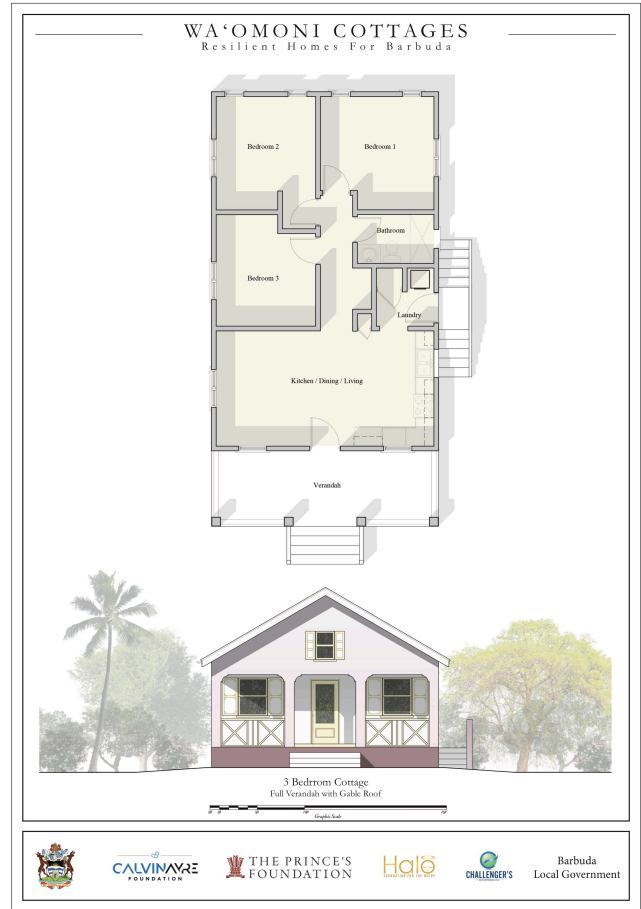
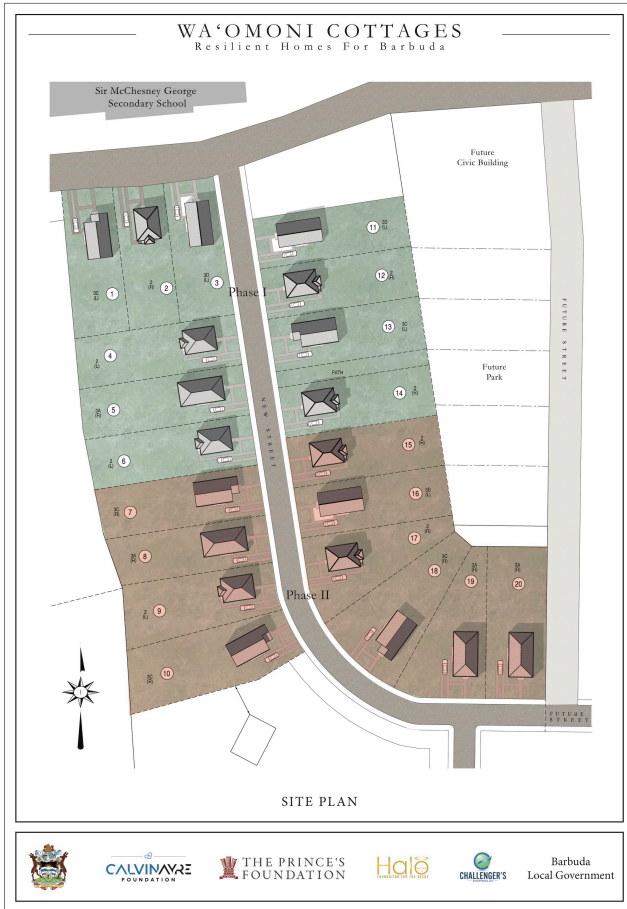
Fig. 3.5 Louis Hill Proposed Layout (Phase 1)

The proposed Louis Hill Local Area plan should feature hurricane resilient designs, underground electricity supply (where possible), the incorporation of renewable energy sources (solar energy), and other components such as provision for food security in the event of delayed food supply from foreign sources.

The Barbuda Council has allocated lands at Louis Hill to the **Prince's Foundation** to construct 10-20 homes (Fig. 3.4 blocks B,C,D) for residents who lost their homes during Hurricane Irma. Additionally, the Council has provided a 15 acre plot of land for construction of a **new primary school** in the area. This proposed school can function as **a hurricane shelter and accommodate a total of 600 persons** (approximately 1/3 of Barbuda's pre-Hurricane Irma population) during the passage of a storm.

Conceptual drawings have also been produced for a possible **Early Childhood Development Centre** for the area, which, if approved, would result in the creation of an **Educational Park/School District** (featuring a secondary, primary and early childhood education facilities in adjacent blocks along one main road). The creation of this school district will certainly become a driver for other development activities within the area. The GOAB and the Barbuda Council can then target resources towards this area to develop the road, drainage, sanitation, utilities and other infrastructure networks needed to sustain the proposed development.





The Barbuda Council has allocated lands at Louis Hill for the Prince's Foundation Wa'Omoni Cottages project aimed at constructing 10-20 homes for residents who lost their homes during Hurricane Irma. Fig. 3.2 illustrates the proposed layout, design and 3D rendered impressions of the project.

Fig. 3.2 Proposed Housing at Louis Hill - The Prince's Foundation

### Project Features:



SPACE	DESCRIPTION	AREA (SQ. FT.)
<b>BLOCK 1 (Administration)</b>	Level 1: Administration and Restrooms Level 2: 3 Classrooms and Restrooms	<b>6,168.32</b>
<b>BLOCK 2 (CLASSROOMS)</b>	Level 1: 4 Classrooms and Restrooms Level 2: 4 Classrooms and Restrooms	<b>7,627.04</b>
<b>BLOCK 3 (INFANT)</b>	INFANT: 2 Classrooms and Restrooms	<b>2,152.11</b>
<b>BLOCK 4 (CAFETERIA)</b>	CAFETERIA: Seating Capacity = 220 students	<b>5,793.45</b>
<b>BLOCK 5 (CLASSROOMS)</b>	CLASSROOM (4 Classrooms + Office)	<b>3,813.52</b>
<b>BLOCK 6 (SECURITY BOOTH)</b>	SECURITY BOOTH	<b>63.56</b>
		<b>25,618.00</b>
<b>RECREATION</b>	1 Basketball Court 1 Multipurpose Court (tennis, volleyball, netball)	

Fig. 3.3 Proposed Primary School at Louis Hill



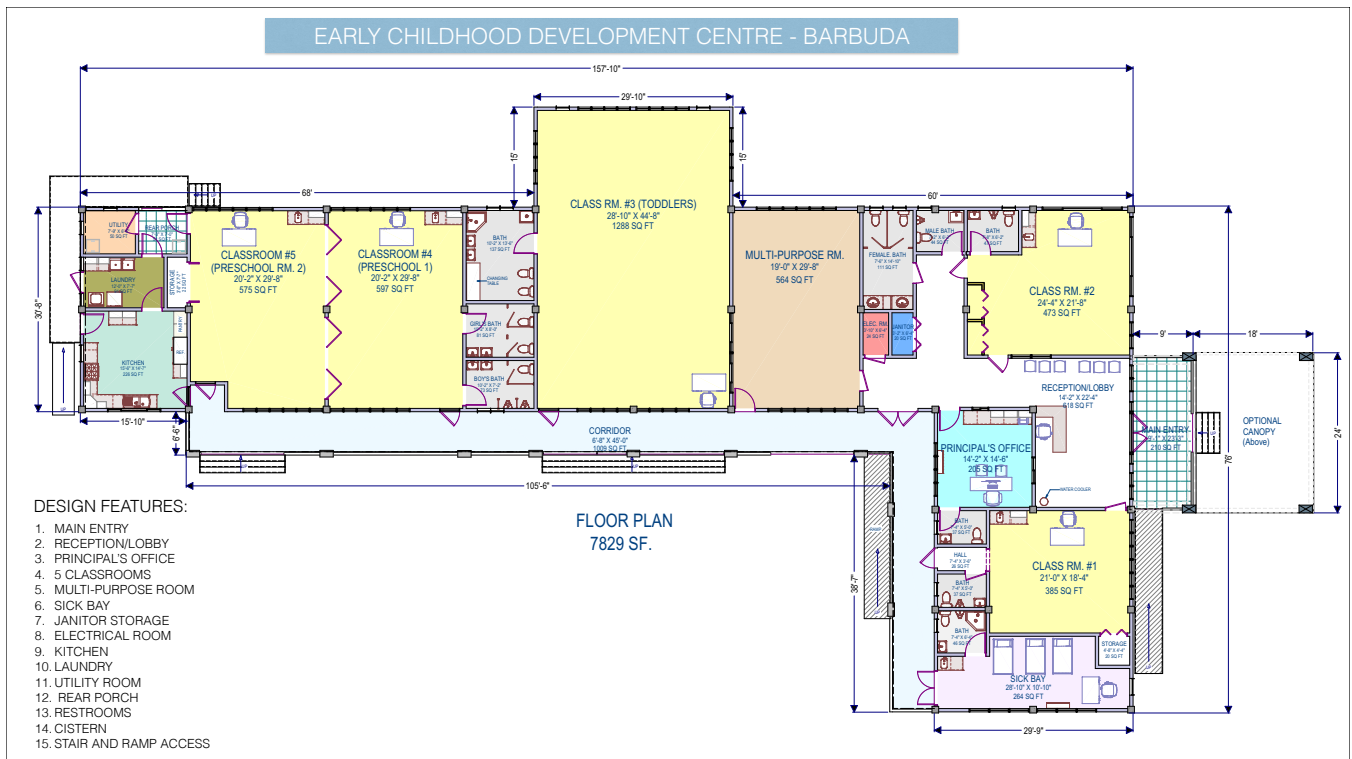


Fig. 3.4 Proposed Barbuda Early Childhood Educational Centre (floor plan and elevation views)





Fig. 3.5 Proposed Barbuda Early Childhood Educational Centre



## 4. BARBUDA SEA PORT AREA MASTER-PLAN

### 4.1 Introduction

The River Dock and its immediate environs is a critical land mass for the development of essential port and shipping operations in Barbuda. In 2004, plans were developed (by Nova Port of Canada) to build a **docking facility** extending **1100ft off shore** to gain a draught of 20 ft to allow small cruise vessels to dock at the port. According to this plan, small cargo boats, yachts and ferries would be able to dock on the leeward side of this proposed structure. Analysis of the sea floor showed presence of hard rock which would have to be blasted to gain the required draught (resulting in potential environmental harm) hence, extending the dock outwards proved more feasible at the time.

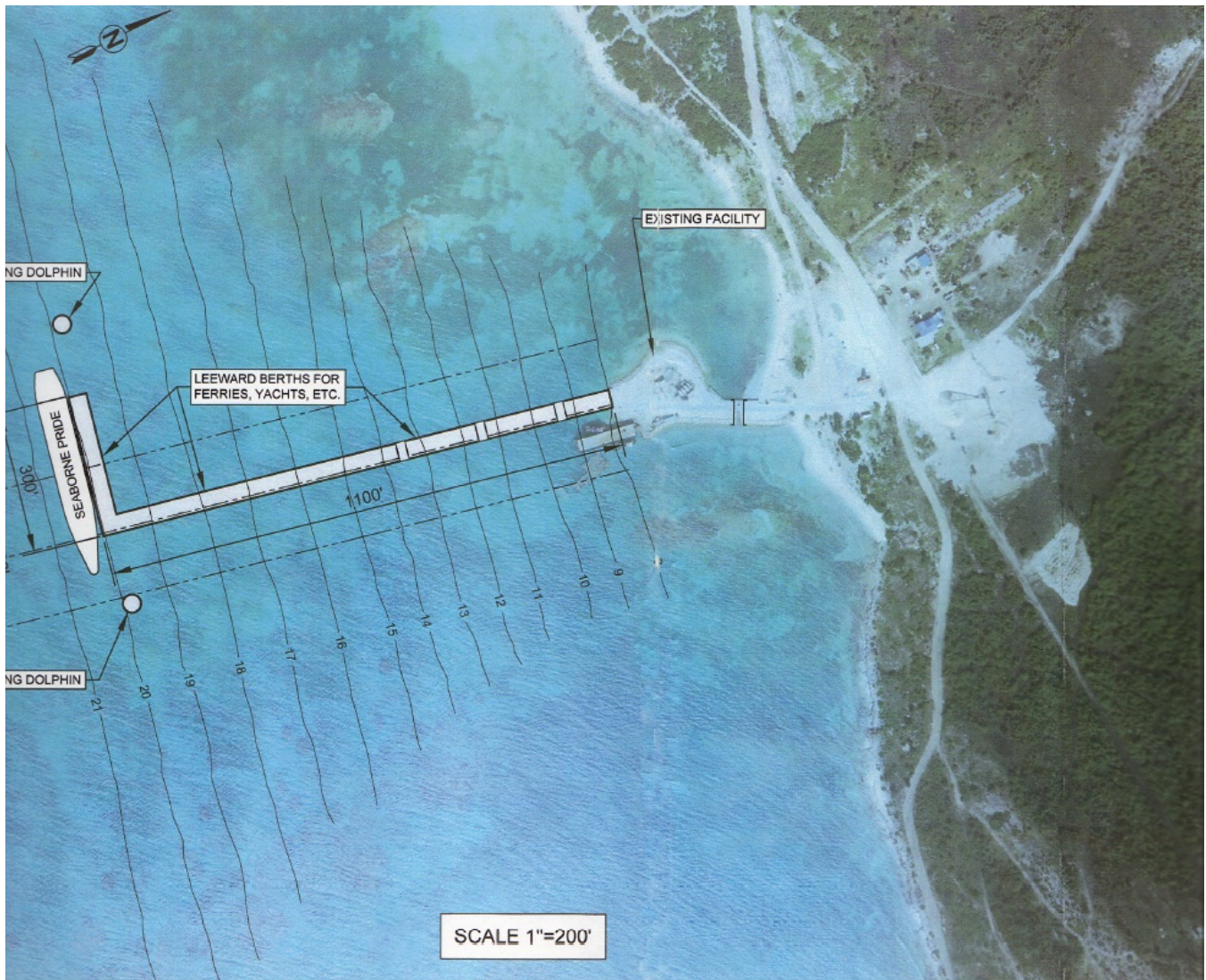


Fig. 4.1 Barbuda Seaport Expansion Plan (2006 by Nova Port)

Consideration was also given to numerous **land-based development concerns**, namely:

1. repairing the then cargo boat dock (considered a safety hazard).
2. building a dedicated **ferry docking area** (separate from the cargo dock area)
3. building a covered **waiting/reception area** for the ferry service
4. placement of **exterior lighting** around the dock
5. supplying **APUA electricity and water** to the dock
6. provision of a government owned and operated **back-up power generator**
7. provision of government **security and surveillance services**
8. **public bathroom** facilities, etc.
9. the establishment of a **port administration building**
10. the establishment of a **cargo storage facility**
11. the establishment of a **customs/immigration/police outpost**
12. the possibility of incorporating a **fuel pipe line** along the dock (to transfer fuel directly from the fuel tanker further inland to a fuel storage facility)

## 4.2 Proposed Land- based Development

Outlined below are conceptual land use planning ideas for lands surrounding the sea port.

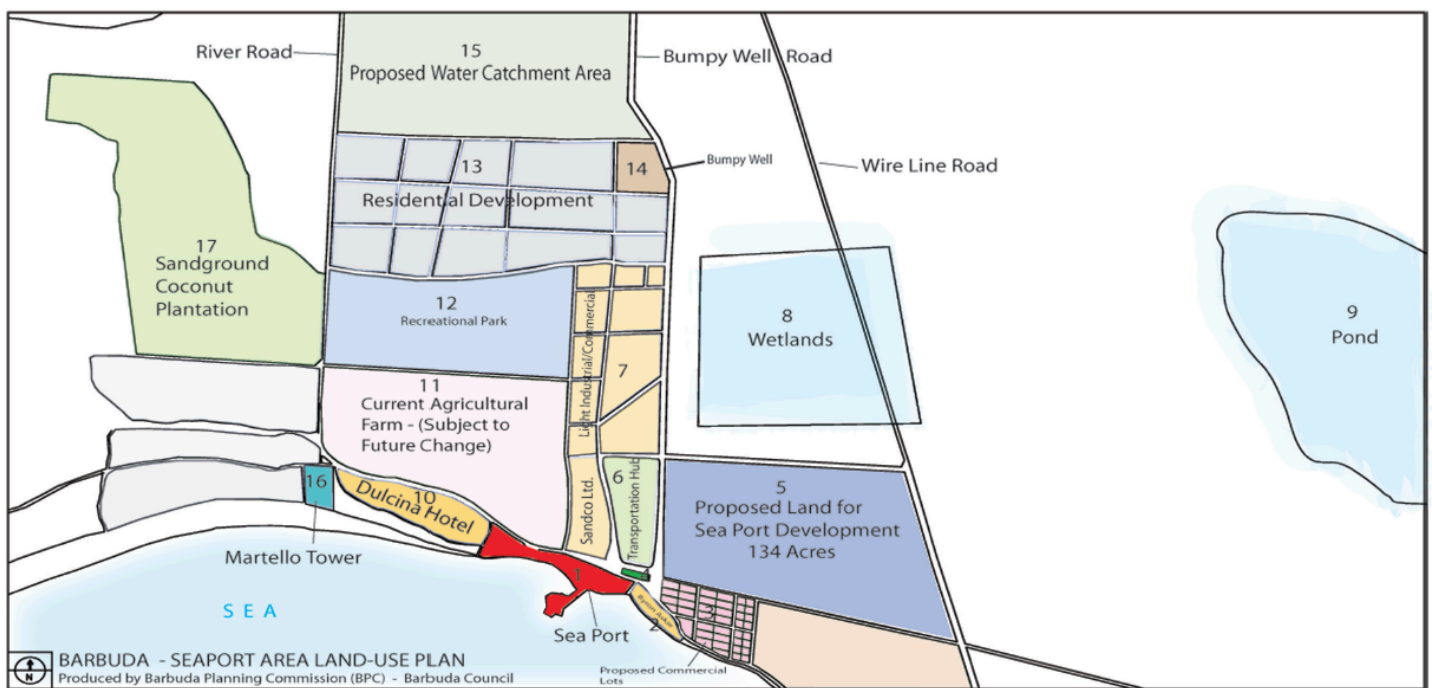


Fig.4.2 Seaport Area Land Use Plan A (proposed 2006)

1. RIVER DOCK
2. PRIVATE LAND
3. PROPOSED COMMERCIAL LOTS
  - a. 40 lots of varying sizes (0.23 and 0.46 acre most common)
  - b. For small commercial businesses such as restaurants, variety shops, cafes, rental housing/apartments/inns, etc.
4. TRANSPORTATION HUB/STATION
  - a. Strategically located to serve port employees, hotels employees, tour operators, etc.
  - b. Bus station and general taxi services
  - c. Car, motor cycle, bicycle rentals
  - d. Public restrooms
  - e. Public parking
5. PROPOSED LAND FOR SEA PORT DEVELOPMENT
  - a. 134 acres for port authority buildings, storage, fire station
  - b. Strategically located within close proximity to sea port for efficiency
  - c. Room for further expansion further east
  - d. Drainage must be engineered to adequately drain water from surrounding wetland area
6. TRANSPORTATION HUB/STATION
  - a. Strategically located to serve port employees, hotels employees, tour operators, etc.
  - b. Bus station and general taxi services
  - c. Car, motor cycle, bicycle rentals
  - d. Public restrooms
  - e. Public parking
7. LIGHT INDUSTRIAL/COMMERCIAL LOTS
  - a. Sandco Ltd. (mechanical workshop)
  - b. Storage facilities (block storage, dry and frozen food warehouse, etc.)
  - c. Light manufacturing (no toxic waste generation)
  - d. Electricity Generation Plant
8. WET LANDS
9. POND
10. DULCINA HOTEL PROPERTY
11. AGRICULTURAL LANDS
12. PROPOSED RECREATIONAL PARK
  - a. Venue for festive activities (eg. Barbuda Seafood Festival)
  - b. Picnics
  - c. Camping
  - d. Sporting activities
13. PROPOSED RESIDENTIAL DEVELOPMENT
14. BUMPY WELL (historic well structure)
  - a. Heritage Site/tourist attraction
15. PROPOSED WATER CATCHMENT AREA
16. MARTELLO TOWER
  - a. Historic Site
17. SAND GROUND COCONUT PLANTATION



## 5. Codrington Lagoon Waterfront Development

### 5.1 Project Description:

The Codrington Lagoon forms a unique part of Barbuda's marine ecosystem. Apart from being a habitat for many species of marine life, it is the home of the *Magnificent Frigate Bird Sanctuary* – a major tourist attraction. This project focuses on the potential creation of **a commercial and recreational shopping complex** along the lagoon waterfront which currently offers 5.95 acres of available land for development.



FIG. 5.1 A portion of the Codrington Lagoon Waterfront Area

The area in question features the Codrington wharf and the Fisheries Complex which, in addition to its original function, now serves as an administrative base for the Barbuda Council since the aftermath of Hurricane Irma.

## 5.2 Project Rationale:

Long-stay visitors to the island and locals have often expressed the need for a centralized commercial shopping/entertainment venue (similar to Heritage Quay/Redcliffe Quay in Antigua). The lagoon waterfront offers a convenient and pleasant environment for visitors and locals to enjoy recreational and shopping activities similar to those outlined above.

The development of this waterfront area would pave the way for many small business establishments and other spin-off/indirect employment opportunities for the local population. Given the current state of economic affairs within the island, diversification within the tourism sector would foster much needed economic growth.

## 5.3 Proposed Features

1. BOARDWALK
  1. Width 20ft
  2. Height above sea level – 3 - 4ft
  3. Docking space for small tour boats, kayaks, paddle boats etc.
  
2. OPEN SHELTER
  1. Sitting area with built-in benches
  2. Seating capacity – 50 persons
  
3. WATER SPORTS BUILDING
  1. Water sports administration outlet
  2. Water sports product sales/rentals (diving glasses, goggles, life jackets, sea shoes, snorkeling gear, etc.)
  
4. WHARF SHELTER & DOCK (existing structure)
  1. Enhancement of this shelter to include a sitting area
  2. Disembarkation point to Bird Sanctuary, Palm Beach, North Beach, etc.
  
5. SHOPPING COMPLEX
  1. Stalls for local vendors
  2. Food Court (restaurants, cafes, bars, etc.)
  3. Restroom facilities

## 6. BANDSTAND

1. Stage for entertainment purposes (steel band music, cultural dances, dramatic performances, etc.)
2. Venue for fund raising events (food fairs, cake sales, etc.)

## 7. OPEN AIR MARKET

1. 24 vendor stalls for sale of agricultural produce.
2. Optional uses: flea market, craft items, souvenirs, special fund raising activities etc.



Fig. 5.2 Barbuda Open Air Market Concept

## 6. OTHER DEVELOPMENT PROJECTS

PROJECT	DESCRIPTION	COST US\$
1. Sports/Recreation	<ul style="list-style-type: none"> <li>- Enhancement of existing sports building, tennis court, basketball court at Codrington Village sports complex</li> <li>- Spectator stands, change room and restroom facilities at Carnation Cricket Field</li> <li>- Spectator Stands at Horse Race Track</li> <li>- Development of sports and recreation center at Louis Hill</li> </ul>	
2. Community Library	<ul style="list-style-type: none"> <li>- 10,000 volumes</li> <li>- conference room</li> <li>- meeting rooms</li> <li>- children's reading room</li> <li>- adult reading room</li> <li>- fully computerized access to online resources</li> </ul>	
3. Museum and Archive	Restoration of "Government House"	
4. University Campus	<ul style="list-style-type: none"> <li>- branch of a foreign international university</li> <li>- student exchange programs</li> <li>- dormitories</li> <li>- recreational play fields</li> <li>- park</li> </ul>	
5. Government Complex	<ul style="list-style-type: none"> <li>- two story building complex</li> <li>- government department offices</li> </ul>	
6. Justice Complex	<ul style="list-style-type: none"> <li>- magistrate court</li> <li>- housing for police</li> <li>- holding cell</li> <li>- meeting space</li> </ul>	
7. Airport Project		
8. Two Foot Bay National Park	<ul style="list-style-type: none"> <li>- tours to caves, historic and archaeological sites</li> <li>- recreational activities</li> <li>- interpretation centre</li> </ul>	



PROJECT	DESCRIPTION	COST US\$
9. Codrington Lagoon Eco-Center	<ul style="list-style-type: none"> <li>- aquarium featuring marine life from Codrington Lagoon and neighboring waters</li> <li>- gift shop</li> <li>- resource information of flora and fauna found in Barbuda</li> <li>- visitor information</li> <li>- tour operations</li> <li>- lounge</li> <li>- research facility (for monitoring of lagoon ecosystem)</li> <li>- multimedia room (meetings, interpretation center)</li> <li>- restaurant</li> <li>- fishermen's cooperative facility</li> </ul>	
10. Disaster Shelter	<ul style="list-style-type: none"> <li>- dedicated disaster shelter to accommodate ___ persons</li> <li>- possible use as a multi-purpose facility</li> <li>- located close to proposed disaster office</li> <li>- back up power generator</li> <li>- location: safe and accessible environment away from coastline or flood prone lands</li> </ul>	
11. Disaster Office	<ul style="list-style-type: none"> <li>- new facility to replace the office destroyed by Hurricane Irma</li> <li>- located close to proposed disaster shelter building</li> <li>- back up power generator</li> <li>- location: safe and accessible environment away from coastline or flood prone lands</li> </ul>	

## 7. CONCLUSION

The information presented in this document represents current and future development plans for the island of Barbuda which may be incorporated into the **Barbuda Redevelopment Master-plan** project scheduled for implementation in late 2020 or early 2021.

