2

Strategic Policies

This section includes island-wide strategic policies that have been organized into the policy areas of: Promoting Sustainable Development, Protecting Core Assets, Greening the Economy, Advancing Mobility and Accessibility and Planning for National Infrastructure.

2.1

Promoting Sustainable Development

Barbados' population growth over the next 20 years is projected to be over 5,500 people, or 2% growth. After that, population is expected to decline. Yet, it is estimated that there are over 20,000 vacant residential lots in Barbados, and a rising level of vacancy in existing buildings, reaching 12% in 2012. In addition, approved applications for new subdivisions would create thousands more lots. There is an abundant supply of housing and land ready and approved to accommodate the steady state population growth forecast for Barbados over the next 20 years.

Planning for future population and settlement in Barbados will require an enhanced focus on sustainable and resilient development. An emphasis on optimizing existing settlement areas and efficient provision of infrastructure is needed to respond to key imperatives of the New Urban Agenda, including: climate change and resiliency, healthy communities, an aging community and the recognition of Barbados as a Small Island Developing State.

The policies in this section will guide development and investment decisions through the application of an island-wide growth management framework and a settlement structure that directs growth in a logical, efficient and compact manner. The framework respects the outward growth that has occurred over the past 20 years but supports a transformation shift towards reinvestment and a focus of growth on existing areas of urban settlement within the current urban core. This framework defines the community cores and refined urban boundary where growth and urban development are to be focused, stable suburban areas which call for infill and completion of existing communities, and a rural working landscape within and outside of the National Park where food and agriculture, environmental restoration, natural resources and supporting rural settlements are prioritized. The growth management framework protects Core Assets and responds to climate change while providing for increased resiliency, healthy communities, a prosperous and green economy, efficient infrastructure and transportation services, and local food security and sovereignty.

This chapter is comprised of three sections:

- Managing Steady State Growth
- Communities and Housing
- Social and Community Facilities

> Swan Street, Bridgetown

Policies

Managing Steady State Growth

1. The Government will plan for steady state growth for Barbados over the next 10 years.

   a) In the context of a continued low rate of growth and eventual population decline, and given the existing supply of vacant lots and vacant and derelict buildings, significant new land supply for residential development is not required and will not be designated.

   b) The protection of core assets and the efficient use of land and existing infrastructure will be a priority in planning and public investment decisions.

2. The Government will promote a sustainable development pattern that minimizes the footprint of urban development, increases resiliency, improves mobility and accessibility and optimizes existing and planned infrastructure.

3. The Growth Management Framework supports sustainable development by identifying five distinct areas across the island based on their characteristics and primary roles in managing sustainable and resilient growth. The distinguishing characteristics, the nature of sustainable development and the type of growth each will be planned to achieve are outlined in Figure 1: Growth Management Framework Components. Each of these components will be planned in the following manner:

   a) The **Community Cores** will continue to play a key role as the heart of communities with the highest levels of service, offering daily amenities, heritage assets and infrastructure. As a result, reinvestment will be the focus in historic cores and reurbanization and infill in emerging cores.

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

   c) **Stable Suburban Areas** will be the focus for infill or completion of existing neighbourhoods and approved development with an emphasis on introducing more locally based amenity and mobility options.

   d) The **Rural Working Landscape** will continue to function as a predominantly rural stable area dominated by food, agriculture, natural resources and pockets of rural settlements.

   e) The **Barbados National Park** will continue to be conserved for its distinct characteristic of eco-systems, agriculture and rural settlements that exist within the protected landscape.

Key Concepts

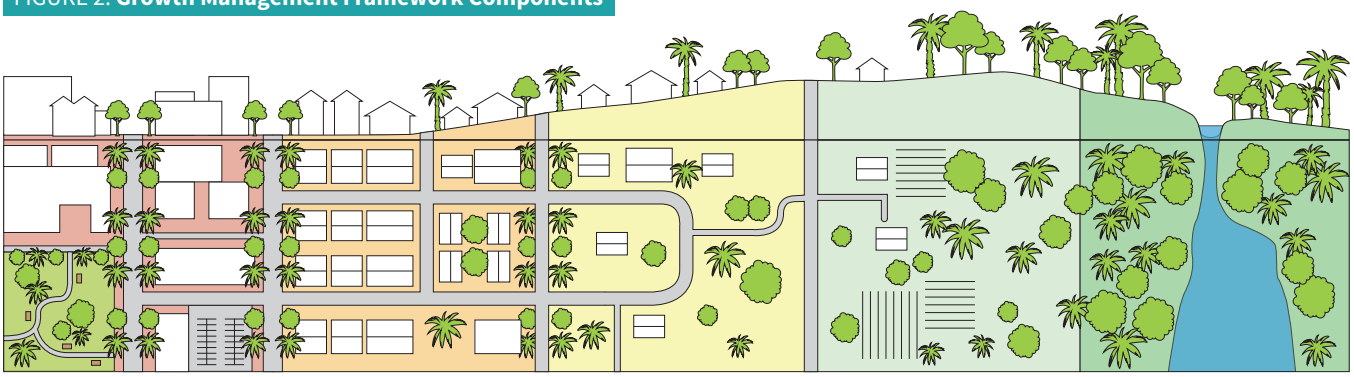
Sustainable Development: is about ensuring long term environmental, economic, and community health and wellbeing. Sustainable development is about finding more efficient ways to use land and scarce resources, clustering and connecting the places people live, work, shop and play, ensuring efficient use of infrastructure and protecting the core assets that are the heart of Barbados' capacity to support a prosperous population.

Steady state growth: a country with steady state growth has a stable population, one that will neither be increasing nor decreasing in the near future. Consequently, the Government will not need to plan for new land to accommodate additional residents; rather, it may need to account for regional migration or changes in the population's age composition and demographic.

Core assets: valued and irreplaceable places, elements and resources that are key to the long term prosperity of the island. In Barbados these include: fresh water, areas best suited to produce food and agriculture, natural heritage systems, cultural heritage, the National Park and the central places in our communities.

Community core: the commercial, residential and cultural heart and central places of Barbados, providing the densest concentration of people, buildings, and activities. Strengthening the cores strengthens the entire region, as the cores provide services far beyond their borders.

FIGURE 2. **Growth Management Framework Components**



	COMMUNITY CORE	URBAN CORRIDOR	STABLE SUBURBAN	RURAL WORKING LANDSCAPE	NATIONAL PARK
CHARACTERISTICS TODAY	• Greatest mix of uses • Finest grain of streets and blocks; high potential for walkability • Greatest density • Focal point of public transport routes • Focal point of government and community services • Focal point of retail and amenities • Significant employment uses • High potential for efficient delivery of infrastructure • Largest concentration of historic fabric	• Mix of uses • Mix of densities • Multiple public transport routes • Services, retail, employment distributed along corridors and in centres • High potential for efficient delivery of infrastructure	• Predominantly residential • Low density and auto-dependent • Limited public transport • Few amenities and services • Modest potential for efficient delivery of infrastructure	• Primarily agricultural • Resource extraction • Forestry • Cultural heritage landscapes • Rural settlements • Lowest potential for efficient delivery of infrastructure	• Forestry • Agricultural • Resource extraction • Cultural heritage landscapes • National Park Villages • Rural settlements • Lowest potential for efficient delivery of infrastructure
LOCATIONS	• Historic Cores– Bridgetown, Speightstown, Holetown, Oistins, Belleplaine • Planned Cores – Warrens, Wildey, Six Cross Roads	• West and south coasts from Checker Hall to Ragged Point. Extending inland with contiguous development along main routes.	• St. George Valley, National Park Villages, non-contiguous development across the island.	• Interior	• Scotland District
POLICY DIRECTION	• Reinvestment (historic cores) • Reurbanisation (planned cores) • Heritage conservaton	• Infill • Intensification • Reinvestment	• Infill • Minimal rounding out of existing settlement areas subject to criteria • No new communities	• Infill in rural settlements • Conservation and Restoration • Promoting Food and Agriculture	• Naturalization • Nature tourism • Reinvestment in National Park Villages

MAP 1:
Growth Management Framework

4. The Island Settlement Structure defines different types of structural elements across the island including centres, nodes and corridors to promote efficient, compact, and orderly development. Development will be planned and developed in accordance with Map 2: Island Settlement Structure.

5. A hierarchy of centres defines the Island Settlement Structure. Centres are activity nodes that service the local, regional or national population with a concentration of development and a mix of uses including services, institutions and amenities. Centres are the most accessible places on the island and have the greatest mix of land uses and density of development. In centres the quality of the architecture and urban design, public realm and walking environment is particularly important and contributes to their success and vitality as places. The Island Settlement Structure identifies the following centres:

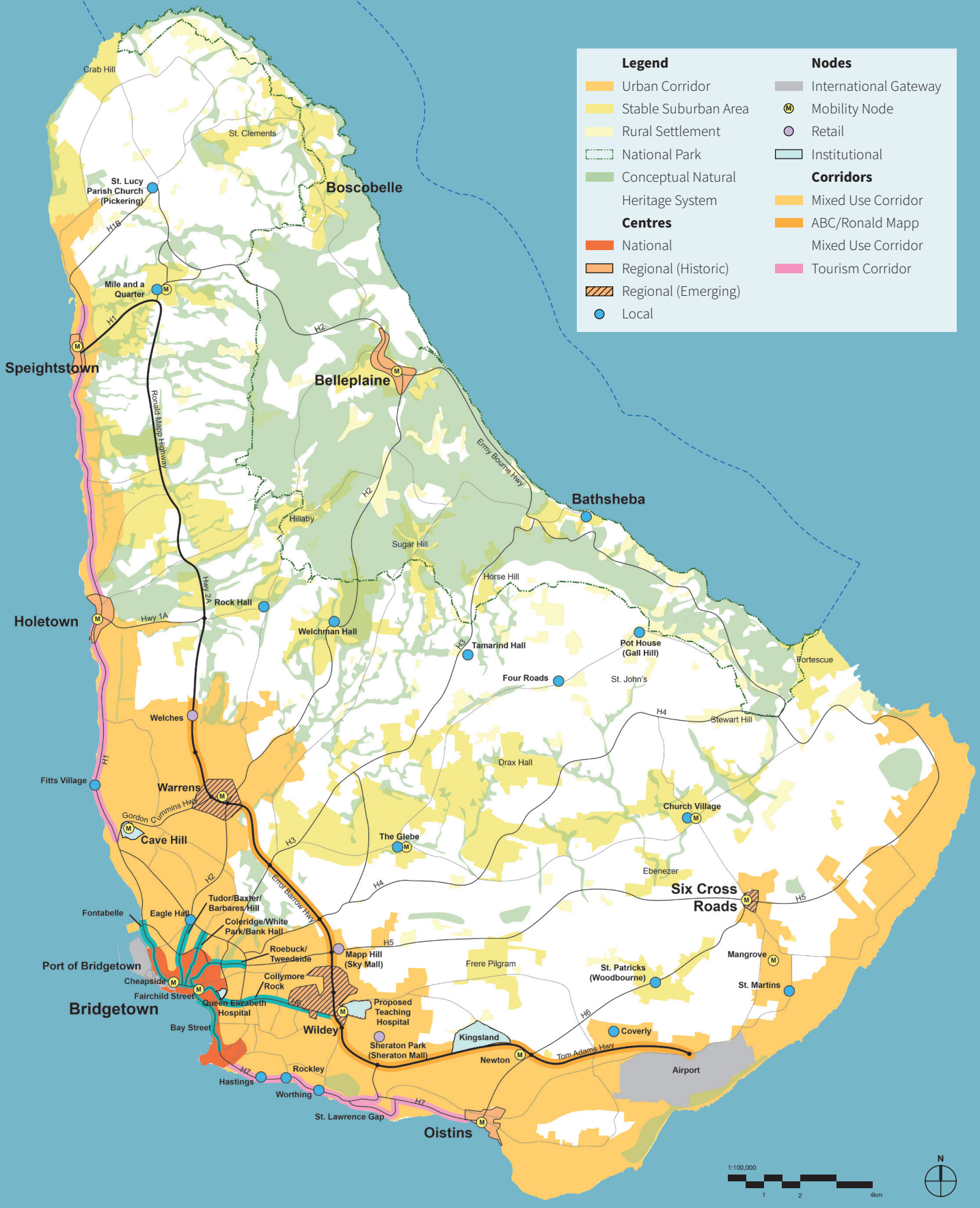
a) The **National Centre** is the most urban, diverse, dense, and commercially, institutionally and culturally rich centre in Barbados. The National Centre acts as a dense hub of activity and services for the Bridgetown community and the entire nation.

b) **Regional Centres** are historic or emerging communities that contain a mix of office, retail, light industrial, tourism and institutional uses at a scale sufficiently large to create a regional attraction. Seven Regional Centres have been designated:

- Speightstown historically has served the north population of the island and acts as a departure point to the National Park. It has a substantial cluster of cultural heritage assets and a traditional street and block pattern.
- Holetown is a historic community with a primarily tourism-focused core, with hotels and restaurants on the coastal side of Highway 1 and retail, commercial and residential development on the eastern side of the highway.
- Oistins has a historic core and is a centre that serves the southwest coastal communities and has an important commercial, fishing and tourism focus.
- Belleplaine is the centre of the National Park, serves a regional function for the residents of National Park village and rural settlements and tourists visiting the park.
- Six Cross Roads is an emerging Regional Centre that has developed into a centre for retail, employment and community facilities serving residents of St Phillip.
- Warrens is an emerging Regional Centre with an employment and retail focus. It has succeeded in attracting significant high density office, retail. institutional and industrial development and is a focal point for government offices.
- WIldey is an emerging Regional Centre with an employment, institutional and health and wellness focus. It is an important focal point for light industrial, commercial, institutional and recreational functions.

c) **Local Centres** are existing or potential future concentrations of shops, amenities and community facilities serving the daily needs of surrounding neighbourhoods and are typically focused at a major intersection. Eighteen Local Centres have been designated:

- Eagle Hall serves as a commercial and community service centre for surrounding residential neighbourhoods north of central Bridgetown.
- Three Local Centres on the south coast – Hastings, Rockley and Worthing – serve as commercial centres for the surrounding residential and tourist communities.
- Fitts Village on the west coast provides local serving retail in an area primarily focused on tourism.
- The Glebe provides a cluster of community services in St. George including a post office, library, police station, and polyclinic.
- St Martins provides retail and community services for the rapidly developing suburban area of St. Philip and is the location of a primary school.
- **Coverly** is a newly built neighbourhood along the ABC Highway in Christ Church. The neighbourhood centre includes a grocery store, retail, and some office space.
- **Church Village,** St. Phillip is an existing destination for the local community due to its cluster of churches and has the potential to include daily amenities and services.



MAP 2:
Island Settlement Structure

- **Tamarind Hall** includes a municipal complex with a cluster of community services in St. Joseph including a post office, library and police station.
- **Welchman Hall** serves the surrounding community in St. Thomas with community services including a post office.
- **Rock Hall,** St. Thomas has a rich history as Barbados' first free village. The area has a magistrates' court and a public kiosk vending area related to the freedom statue commemorating its history.
- **Four Roads,** St. John provides services such as a fire station and post office to the surrounding area.
- **Pot House (Gall Hill)** includes the St. John's Church and surrounding amenities.
- **St Patricks (Woodbourne)** serves a growing community in Christ Church with daily services and amenities.
- **Bathsheba** is a National Park Village with a strong tourism focus.
- **Mile and a Quarter** serves as a commercial centre for the growing community in St. Peter.
- **St Lucy Parish Church (Pickering)** has been identified as a future Local Centre as it will be the terminus of the Ronald Mapp Highway extension and is at the convergence of several roads that serve the north of the island.

6. Four types of nodes are focal points for different types of development:

a) **International Gateway Nodes** are the major entry points into Barbados. They are essential to the economic well-being of the country and require supportive infrastructure to ensure the efficient movement of people and goods to and from them. Two International Gateway Nodes have been designated:
   - Bridgetown Port; and
   - Grantley Adams International Airport.

b) **Mobility Nodes** include existing bus terminals and other existing or potential locations where there is potential to transfer between transportation modes. Mobility Nodes are the strategic transfer points where there is the opportunity to get people out of cars and into public transport, shared transportation and/or active transportation routes to key locations, reducing traffic congestion. Thirteen Mobility Nodes have been designated and are characterized as either:
   - **Transport Terminal;**
   - **Park and Ride**; or
   - **Bus Transfer Point.**

   Further policy direction on the design, role and function of each type of Mobility Node is provided in Section 2.4.

c) **Retail Nodes** are major shopping centres that attract significant amounts of activity and traffic. They play an important role as a commercial amenity but need to be planned to mitigate their impact on the surrounding road network. Three Retail Nodes have been designated:
   - Sheraton Park (Sheraton Mall)
   - Mapp Hill (Sky Mall); and
   - Welches (The Walk)

d) **Major Institutional Nodes** consist of important educational and health campuses that have significant employment and attract students and patients from across the island. Five Institutional Nodes have been designated:
   - The University of the West Indies Cave Hill Campus;
   - Queen Elizabeth Hospital;
   - The planned hospital at Kingsland;
   - The proposed medical school and clinic at Wildey.

7. Three types of linear, multimodal corridors have different roles and characteristics:

a) **Mixed Use Corridors** are intended to continue to develop and intensify as linear concentrations of commercial, residential, office, institutional and mixed use development fronting onto major roads or highways and serving local residents and commuters. Six Mixed Use Corridors have been designated:

- Collymore Rock;
- Roebuck/Tweedside;
- Coleridge/White Park/Bank Hall;
- Tudor/Baxter/Barbares Hill;
- Fontabelle; and
- Bay Street.

b) **Tourism Corridors** are tourism-focused linear corridors running along the coast with a concentration of hotels, residential, restaurants, commercial and mixed use development and opportunities to intensify. Three Tourism Corridors have been designated:

- St. Lawrence Gap;
- Highway 7 between the Garrison and Oistins; and
- Highway 1 between the Frank Worrell Roundabout/Proposed Four Seasons Site and Half Moon Fort.

c) **The ABC/Ronald Mapp Corridor** is the primary cross-island highway corridor with significant residential, commercial, office and industrial development at key junctures. It has the potential to move from a carrier of cars and trucks to a multi-modal mobility corridor with space dedicated to trails and high-occupancy vehicles, including public transport.

> Highway 7 South Coast Mixed Use Corridor, Christ Church

8. Growth will primarily be accommodated within the **Community Cores** and the **Urban Corridor** in a compact manner in order to protect core assets, protect and conserve natural heritage, preserve food and agricultural lands, ensure efficient use of existing and planned infrastructure and facilitate transportation choice.

a) The Government will prioritize infill development, the development of vacant lots, and the redevelopment or adaptive reuse of vacant and derelict properties over the alienation of food and agricultural land and greenfield development.

b) The Government will promote the efficient use of land and services through compact, contiguous and mixed use development.

c) Intensification and higher density development will be encouraged within the Urban Corridor, and in particular in Centres, Mixed Use Corridors and at Mobility Nodes.

d) Development will be planned to achieve the minimum density thresholds outlined below and in Section 3: Land Use and Built Form.

9. Within **Stable Suburban Areas** moderate growth will be accommodated through completion of existing Plans of Subdivision and infill development that:

a) Reduces vacant lots;

b) Is designed to encourage healthy and active lifestyles;

c) Provides for a range of housing to meet income, life stage and housing needs;

d) Includes common and community gathering spaces;

e) Encourages walkability and connectivity within and between neighbourhoods;

f) Includes a mix of use at local centres including retail, services and amenities to meet daily living needs; and

g) Allows for urban agriculture and community gardening.

10. **Rural settlements** will continue to serve an important role in providing small scale clusters of housing serving residents in the rural working landscape and the National Park. Rural settlements are not planned to expand.

a) Development through new Plans of Subdivision of more than two lots will not be permitted.

b) Infill and intensification on existing lots will be permitted.

c) Lots may be subdivided to create a maximum of one new lot to be used for residential or agricultural uses.

11. A change of land use or plan of subdivision to create more than 10 new residential lots will only be permitted if the following can be demonstrated to the satisfaction of the Chief Town Planner:

a) The development will not create fragmentation of Food and Agricultural lands;

b) The lands are contiguous to the existing Urban Corridor;

c) The lands are planned in a compact manner with a minimum density of 14 units per gross hectare.

d) The lands are planned for turnkey housing development including both subdivision of lots and erection of houses;

e) The lands can be efficiently and sustainably serviced in terms of potable water, sewage, drainage, waste collection and roads;

f) Transportation choices can be provided in an efficient manner; and

g) It can be demonstrated that there is need for the conversion to accommodate demand for the type of housing proposed.

> Rural area, St. George

12. The Government will promote the efficient use of existing and future infrastructure investments.

a) Infrastructure planning and land use planning will be carried out in an integrated manner, in accordance with the New Urban Agenda objective to coordinate transportation and land use.

b) The Government will explore options to incentivize development of vacant lots to ensure more efficient use of the land base and existing infrastructure investments.

c) The Government will, with the owners' consent, encourage short and long term utilization of vacant lots by the community for open space, community gardens or food production, where appropriate.

d) In order to prevent the inefficient use of infrastructure to service further vacant lots, priority will be given to applications for turnkey housing developments including both subdivision of lots and erection of houses over subdivision only developments.

13. The Government will promote design excellence in key areas by requiring development within Mixed Use areas to adhere to the built form controls outlined in Section 3.4.

14. For each Centre, the Government will create an Emergency Preparedness Strategy including the identification of emergency routes for evacuation and distribution of critical supplies and emergency shelters.

15. Complementing the national level strategic and land use policies are a set of **10 Community Plans** found in Part B of this plan. The Community Plans provide more detailed policy that is tailored to the specific context of each community, thereby providing an opportunity to enhance the distinct role and character of each. The Community Plans address the following topics:

a) Climate change resiliency, including adaptation and mitigation measures and disaster risk preparedness;

b) Physical, environmental and urban design related opportunities and constraints;

c) Detailed land uses and specific urban design strategies;

d) Cultural heritage assets, including listed buildings, cultural heritage landscapes, archaeological resources, and intangible heritage;

e) Schools and other community facilities;

> St. George Farmers Co-op and Over 40's Club, The Glebe, St. George

f) Opportunities to protect and restore components of the Natural Heritage System;

g) The existing parks and open space network and opportunities to enhance it or create linkages;

h) Opportunities to provide a range of housing options appropriate to the local context to meet the community's housing needs, including but not limited to the aging population;

i) Sites or blocks that have good potential for intensification or infill;

j) Opportunities for improving multimodal transportation choice within the community, including:

  i) Increasing walkability and active transportation networks within and beyond the community plan area;

  ii) Improvements to public transport;

  iii) Improvements to existing bus terminals;

  iv) Where a bus terminal does not already exist and a Mobility Node has been identified, identification of an appropriate location and design considerations for one of the types of Mobility Nodes;

  v) Strategies to address local transportation challenges; and

  vi) Parking management strategies appropriate to the community.

Communities and Housing

16. The Government will promote inclusive settlements that are safe, healthy, accessible, affordable, resilient and sustainable and foster prosperity and quality of life for all, in accordance with the objectives of the New Urban Agenda.

17. The Government will implement the policies of the Comprehensive Housing Plan being undertaken by the Ministry of Housing at the time of the draft PDP.

18. The Government will promote settlements that provide:

a) A variety of types of housing within communities;

b) Affordable housing options;

c) A mix of uses with amenities and services located within walking distance of residences;

d) Locations for public transport stops, transfer points or transport terminals;

e) Infrastructure for active transportation such as sidewalks, trails and shared use paths;

f) Accessibility for people with disabilities;

g) Appropriate amounts of open and landscaped space designed to meet the community's needs; and

h) Locations for community gardens and farmers' markets.

19. The Government will facilitate the provision of adequate shelter for all. This will include:

a) Maximizing opportunities to increase the supply of affordable housing within the context of the policies of this plan; and

b) Facilitating access to land which is constrained by tenure arrangements, using such tools as land adjudication and declaration of tenantries.

20. Development will be planned to incorporate a greater variety of housing types, tenures, forms, and sizes to reflect the needs of Barbados' changing demographics and smaller household sizes. This will include:

a) Encouraging the development of multi-family housing such as townhouses and apartment/ condominium buildings in appropriate locations, including in Centres and along Mixed Use and Tourism Corridors.

b) Prioritizing residential development applications for types of housing that are underrepresented in the island's housing mix today, such as seniors' housing.

21. The Government will promote the development of age-friendly, inclusive and accessible communities. This will include:

a) Encouraging seniors' housing to locate in Centres and Mixed Use Corridors close to amenities and services to meet daily needs.

b) Promoting the development of new housing which is fully accessible to people with disabilities.

c) Continuing to require that new developments and significant renovations in public spaces be accessible and encouraging the retrofitting of existing communities to improve accessibility.

d) Requiring the installation of lighting in public spaces.

22. The Government will seek to ensure that basic infrastructure services, including the provision of potable water, efficient waste management, sanitation, health and emergency services, are provided for all.

Key Concepts

Complete communities: Complete communities meet all the needs of residents' daily lives, including a range of housing types, diverse job opportunities, provision of goods and services, and community infrastructure like schools, healthcare, and recreational and open spaces. They are walkable, and provide easy access to public transportation. Complete communities are places where everyone, from children to seniors, can live a fulfilling life.

Healthy communities: A healthy community is one that provides its residents with physical, emotional, and social well-being. In the PDP, policies ensure that the development of Barbados actively encourages physical health (such as nutritious local food markets and cycling infrastructure), emotional health (such as green spaces and fulfilling employment opportunities), and social health (such as community gathering spaces and recreational facilities).

23. The Government will support the provision of affordable housing by the National Housing Corporation (NHC) in accordance with the following policies:

a) NHC developments will be considered on sites that meet the following criteria:

i) Located within lands that are serviced in terms of potable water, sewage, drainage and roads.

ii) Located in proximity to daily services and amenities; and

iii) Provide access to transportation choices including public transport.

b) NHC developments will incorporate a mix of housing types including higher density units.

c) NHC developments will be designed to create integrated developments that encourage a mix of market and non-market housing developments and connectivity between communities. In particular, developments will encourage active transportation and avoid backlotting of development.

d) NHC developments will be encouraged to incorporate redevelopment or reuse of vacant or derelict properties in the Urban Settlement Area.

24. An urban renewal plan will be implemented through the Urban Development Commission, Rural Development Corporation, and NHC. One of the principal objectives of the plan is to create new, improved and affordable housing in revitalized communities. This will be achieved by:

a) TCPDO working with Ministry of Housing and Lands and related agencies to identify areas for urban renewal and implement other strategies for the delivery of affordable housing, repair, etc;

b) Encouraging the sale of land on non-plantation tenantries in the urban areas to qualified tenants at a subsidized rate of $2.50 per sq. ft. for the first 5,000 square feet;

c) Promoting the re-use of vacant residential lots and vacant residences through the Derelict Housing Programme; and

d) Constructing, and promoting the construction of terraced, semi-detached and other forms of housing, which are designed to produce increased densities on existing vacant and under-utilized lands;

Concomitant to this programme is the Rural Tenantries Programme, which enables qualified tenants residing on non-plantation tenantries in the rural parishes to purchase land at the same subsidized rate.

> Apartment housing , Country Road, Bridgetown

25. The Government will continue to invest in the rehabilitation of Community Improvement Areas. Community Improvement Areas may include under-serviced or poorly maintained residential neighbourhoods, clusters of vacant and/or derelict buildings or other blighted areas. Community Improvement Areas include:

- Bridgetown:
  - Synagogue District
  - Nelson/Wellington St
  - Delamere Weymoyth
  - The Garden Land
  - Westbury
  - New Orleans/Cats Castle/Mahogany Land/ Chapman Street and Church Village
  - Bank Hall
- Speightstown
  - Battaleys/Fort Denmark
  - Mango Lane
  - Major Walk/Sand Street
- Holetown
  - Back of First Street Area
  - Trents/Porters Neighbourhood
- Oistins
  - Scarborough Neighbourhood
  - Ashby Neighbourhood
  - Keizer Hill Neighbourhood

26. Unauthorized occupation of land, such as informal settlement areas, will not be permitted.

> Housing, Warrens, St. Michael

Social and Community Facilities

27. Social and community facilities, identified on Map 3, will be planned to address climate change resiliency and disaster risk reduction.

a) Where possible, new social and community facilities will be developed outside of flood susceptible areas or other hazards.

b) New social and community facilities will be required to incorporate site plan and design measures for climate change resiliency.

c) New social and community facilities should be planned to function as emergency shelters for surrounding communities.

28. Wherever possible, community facilities will be sited in Regional or Local Centres.

29. The Government and respective Ministries must consult with the Chief Town Planner prior to selecting a site for a new community facility, in order to ensure that it is appropriately located, planned and designed with respect to population needs and requirements.

30. Where possible, social service and community facilities, public services and amenities should be grouped together, potentially sharing buildings, sites and parking.

31. New social service and community facilities will be required to be accessible to persons with disabilities and the elderly.

Education Facilities

32. It is not envisaged that new school buildings will be required over the plan period. However, should new schools be proven to be required, these should be located based on the following criteria:

a) On sites within the Urban Settlement Area. If a suitable site cannot be found, new schools may be permitted to locate on sites that are contiguous to the Urban Corridor and well served by transportation options;

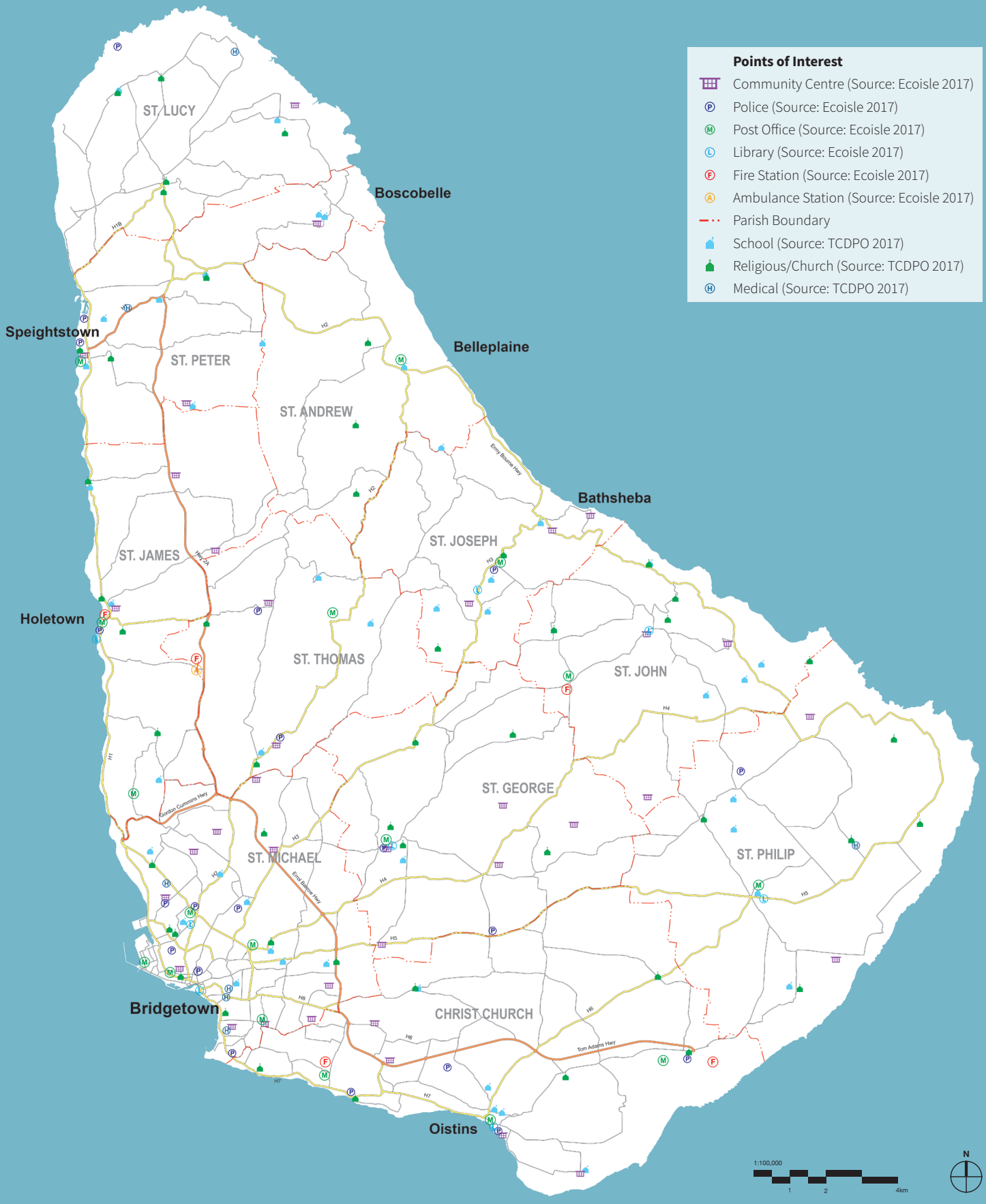
b) On sites that are outside of areas at risk to hazards; and

c) With consideration to concentrations of population.

33. The potential for integrating other community facilities on-site should be considered when allocating the budget for the refurbishment or renovation of existing schools.

34. The Government will continue to promote the amalgamation of primary schools in districts where the primary school age population is falling and existing facilities are underused.

35. New educational facilities will be required to incorporate design measures for ease of access and mobility for persons with disabilities.



MAP 3:
Social and Community Facilities

Health Facilities

36. Consideration should be given to the relocation of the Gordon Cummins Hospital, which is also intended for replacement, to a more accessible location.

37. Private health clinics and new polyclinics will be encouraged to locate in Regional or Local Centres in proximity to other central community facilities where they can serve the surrounding communities.

Sport Facilities

38. The Sir Garfield Sobers Complex is a multi-purpose facility for sporting disciplines and social events. Given the predominance of residential development in the surrounding areas and its proximity to the ABC Highway, future development of the Complex should, wherever possible, be multi-purpose in nature. Due consideration should be given to any adverse impacts of further development on the nearby residential communities, road network and traffic management.

39. Development applications in support of future expansion of the National Stadium, including the provision of increased seating and enhanced ancillary facilities, should adequately address concerns related to safety, traffic, lighting, noise, visual amenity and the surrounding Groundwater Protection Zone.

40. An Environmental and Social Impact Assessment will be required for any significant expansion of existing or the development of new sporting complexes to ensure that potential negative impacts such as noise, dust and traffic disruption are adequately mitigated.

Police and Fire Facilities

41. New police stations and other facilities such as Magistrates' Courts will be encouraged to locate in Regional and Local Centres.

42. A new fire station has been proposed. This should be located to maximize response times, reduce the burden on operational capacity of existing stations and protection of public health and safety. A proposed location is in the parish of St. Peter.

43. Where possible, the Government will encourage the development of Emergency Medical Response (Paramedics) Facilities, fully integrated with the Fire Department.

Post Office, Libraries, Community Centres

44. New post offices, libraries and community centres will be encouraged to locate in Regional and Local Centres and, where possible:

a) Incorporate adaptive reuse of public and heritage buildings.

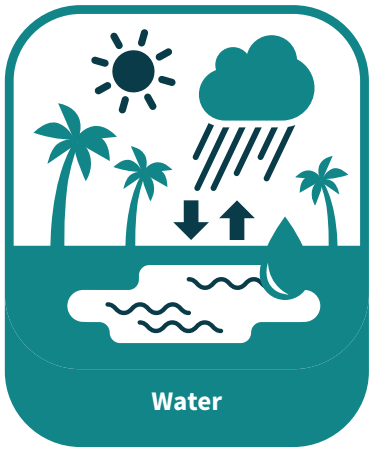
b) Co-locate in a single municipal complex.

45. The distribution of post offices, libraries and community centres should be based on population service areas, rather than on the parish system.

a) Priority should be placed on establishing a new library in the northern parishes or St. Thomas, where there is no functioning public library at the moment. Regional Centres Speightstown and Belleplaine and Local Centres Mile and a Quarter, St. Lucy Parish Church (Pickering), Rock Hall, and Welchman Hall are all potential sites

2.2
Protecting Core Assets

Barbados has a number of Core Assets that are integral to the long-term health and prosperity of the island. These include food and agricultural lands, the natural heritage system, water resources, the National Park, cultural heritage assets and community cores. Identifying and protecting these core assets is at the heart of the PDP's rationale for directing growth and new development in a more sustainable manner. For some assets, this is also a strategy to address scarcity, including food, water and land. The PDP identifies some areas that should be restricted for new development to conserve and protect sensitive core assets, and other areas where new development and investment should be focused to capitalize upon and enhance existing settlement, communities and infrastructure.



2.2.1

Food and Agriculture

Barbados is a food scarce country with high levels of net food import and minimal days of on-island critical supplies. The value of its food imports has reached nearly BBD$600 million annually (2014). At the same time, the amount of agricultural land has declined from 44% of the island in the 1980's to a total of 26.5% or just over 28,000 acres today, well below the Government's minimum agricultural land allocation requirement of 30,000 acres (Ministry of Agriculture, Fisheries, Food and Water Resouces Management). This situation is not only economically unsustainable, but it severely reduces the resiliency of the island whenthe impacts of climate change and severe weather events are considered. Achieving food security and sovereignty is recognized as one of Barbados' highest priorities.

In 2017, over 50% of food imports are comprised of products such as vegetables, fruits, root crops, meat and fish, all of which can be produced locally . Barbados could achieve significant reductions in the food import bill and consequent foreign exchange savings by substituting local products. Increasing value-added agricultural activities on the island would help to reduce imports of processed foods as well as support a competitive and economically viable agri-food sector and create jobs.

The local fishing industry is an important contributor to local food and food sovereignty, and an area of economic activity and employment dominated by vibrant small businesses and self-employed fisher-folk. Across the Island there are 30 fishery landing sites, including eight fish markets that serve an estimated 1000 fishing vessels, employing 6,200 persons. Annual fish landings range from 3000-6000 metric tonnes and contribute $13.2 million in ex vessel catch value and $46.2 million in value added products. Barbadian fisher-folk catch about half the local fish demand. Yet, the fisheries sector today is challenged with inadequate physical infrastructure, such as landings, vending facilities, handling and boat repairs. (CFO, Ministry of Agriculture, Food, Fisheries and Water Resources Management)

Fresh and nutritious food is also important for the prevention of chronic non-communicable diseases. Improving the health of Barbadians requires the provision of alternatives to the processed foods often found in grocery stores. Healthy local foods should be affordable and easily accessible in communities across the island.

This chapter is comprised of five sections:

- Overarching Policies
- Food and Agriculture Protection Layers
- Fisheries
- Development Adjacent to Food and Agricultural Land
- Value Added Opportunities

Overarching Policies

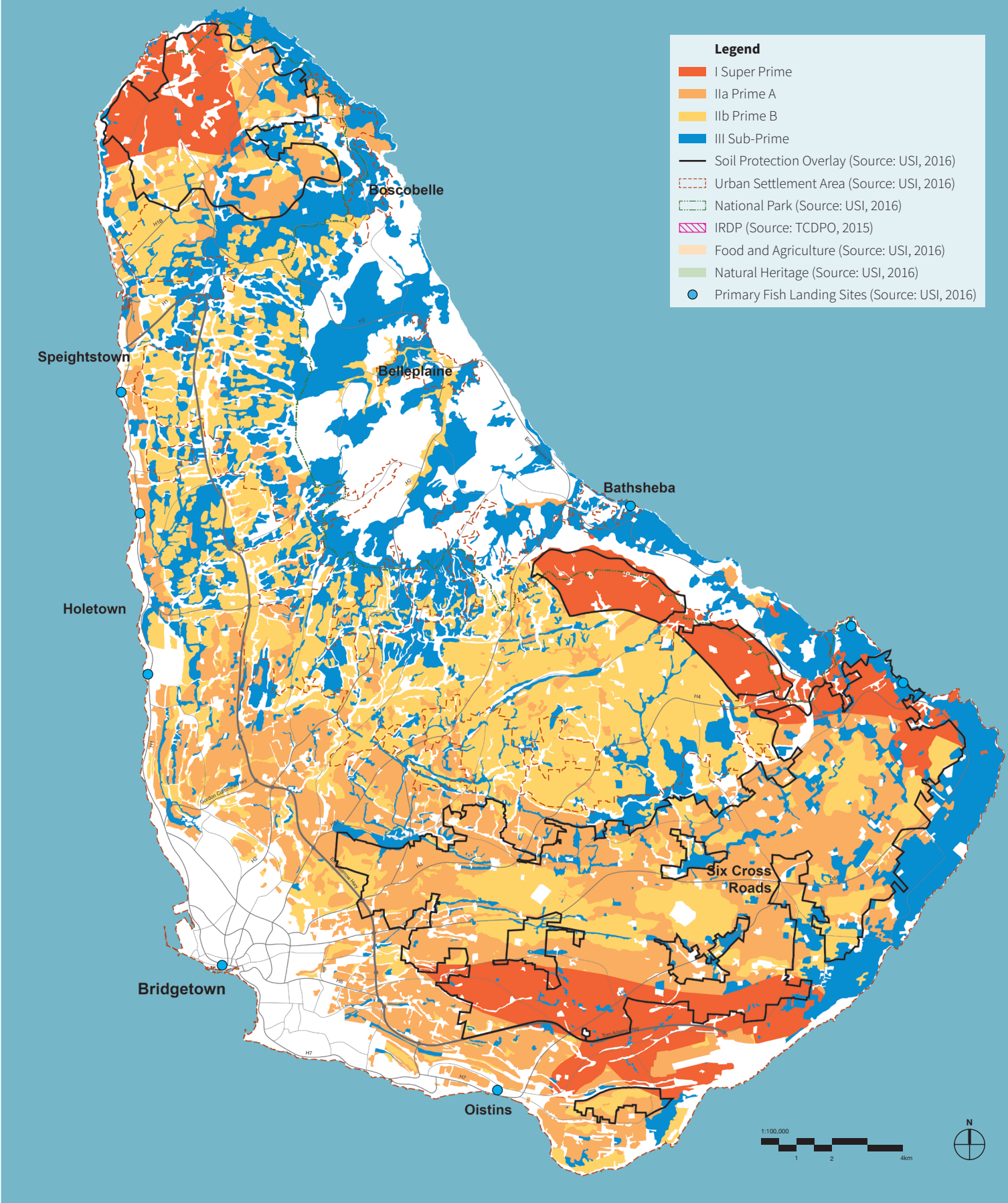
The policies in this section aim to support the food and agricultural sector in Barbados, with the ultimate goal of ensuring a healthy, resilient and food sovereign nation.

1. The Government will promote a viable food and agricultural sector, recognizing its important role in food security, climate change resilience, the national economy and healthy communities. This will include:

   a) Protecting the agricultural land base from alienation and fragmentation.
   b) Ensuring that agricultural practices are sustainable and designed to protect and preserve natural resources.
   c) Increasing food security and sovereignty through continued emphasis on crop diversification and by striving to substitute domestic food production for imported food products where possible.
   d) Promoting research into new agricultural practices and technologies that will increase diversification and improve efficiency, profitability and sustainability of the sector.

2. The Government will consider environmental sustainability and climate change resiliency as in the food and agricultural sector. The Government will promote:

   a) The use of agricultural management best practices, including biological pest control, to minimize the negative impacts of agricultural activity, notably the use of pesticides and herbicides.
   b) Farming practices that seek to reduce the volume of agricultural waste.
   c) The production of more resilient crops and varieties as a climate adaptation measure.
   d) Risk mitigation measures including water storage, rainwater harvesting, improved drainage, storm water management and efficient irrigation.



MAP 4:
Agricultural Land Classification

3. The Government will plan for the full spectrum of food production and other agricultural crops by:

a) Undertaking an Agricultural Census that provides a current inventory of agricultural activities.
b) Prioritizing and protecting the use of the highest classes of agricultural land for the growth of food crops.
c) Supporting livestock operations appropriate to the context and with appropriate separation distances to avoid land use conflicts.
d) Promoting organic farmers and the organic farming sector.
e) Supporting a sustainable fishing industry.
f) Supporting the use of gullies for growing food such as fruit.
g) Recognizing the historic and ongoing role of the sugar cane sector across the island and related rotation crops..
i) Supporting the growth of niche agricultural industries such as 'Sea Island" cotton.
j) Promoting urban and intensive agriculture within the Urban Corridor and Stable Suburban areas.
m) Creating strategies to address the challenges associated with praedial larceny.

Food and Agriculture Protection Layers

4. An adequate supply of viable agricultural land will be protected to ensure the food security of Barbados. There are four types of protections that work together to support food and agricultural production, as detailed on Map 5:

a) The **Food and Agriculture** land use designation;
b) The **Soil Protection Overlay;**
c) The **Integrated Rural Development Programme** (IRDP) policy areas; and
d) **Food Production Zones.**

5. Agricultural uses will be protected on lands within the **Food and Agriculture** land use designation, in accordance with Section 3.13. The intent of the Food and Agriculture land use designation is to:

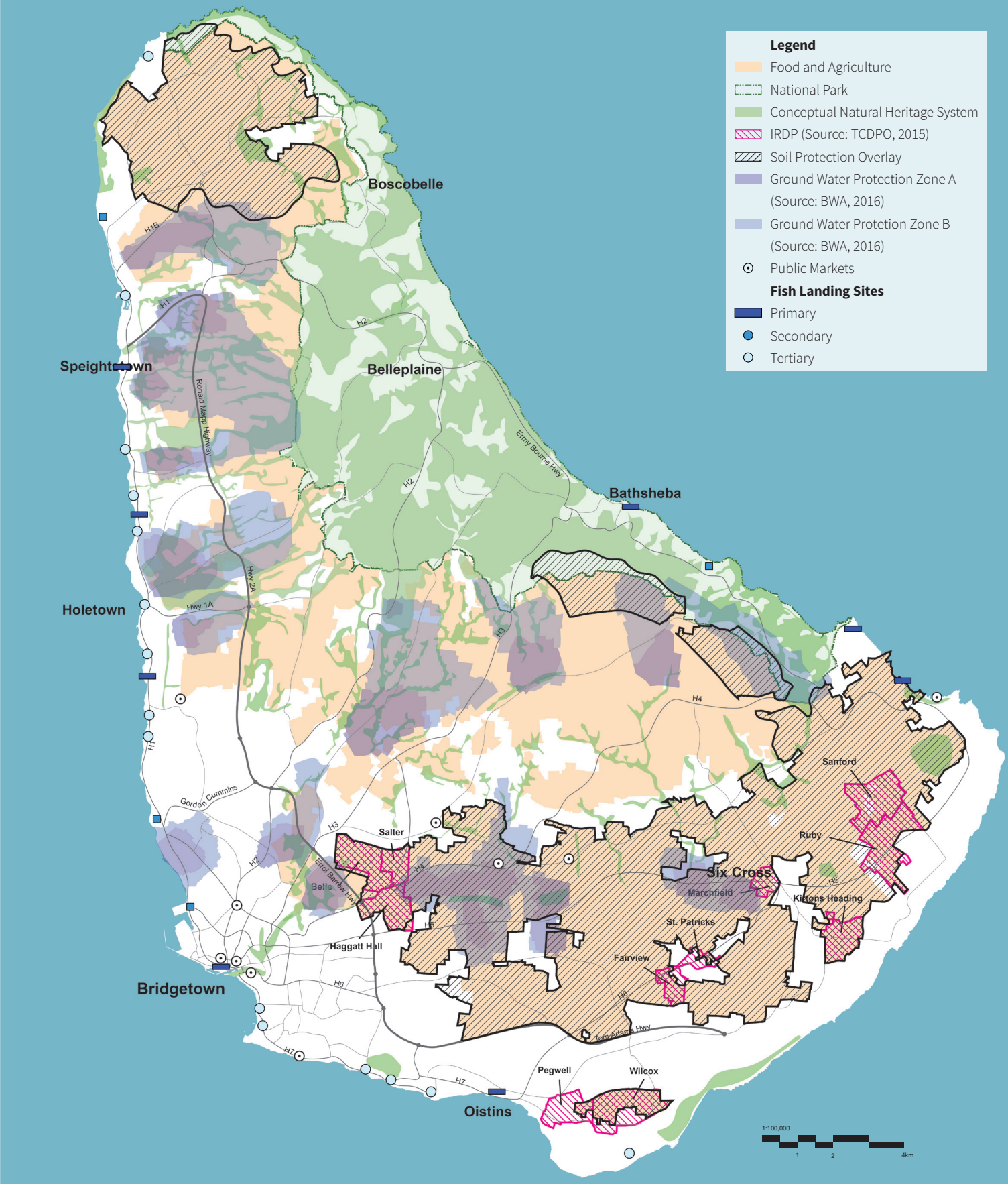
a) Accommodate food production and other agricultural uses with a priority on growing local food and food security.
b) Protect large, contiguous agricultural areas to enable efficient agricultural protection and support the food and agricultural sector.
c) Restrict the alienation of land to any other use unless the criteria set out in Section 3.13 are met.

6. Lands within the **Soil Protection Overlay** represent an irreplaceable resource and will be protected over the long term for food production and other agricultural uses. The Soil Protection Overlay has been identified based on the following criteria: the availability of the best agricultural land, suitability under projected climatic conditions, access to or potential for irrigation water and the provision of the support services necessary for the efficient production of food crops. Within the **Soil Protection Overlay**:

a) Alienation of land to non-agricultural uses will not be permitted.
b) The Government will encourage the return of idle lands to agricultural production including, but not limited to, exploring incentives for farmers and landowners to do so.

7. Agricultural uses will be protected in **IRDP** policy areas to make best use of the Government's investment in irrigation in these areas. Within IRDP policy areas:

a) There will be no change in the use of existing buildings located on the lots.
b) There will be no change of the use of land.
d) One dwelling house only will be permitted per lot.
f) There will be no increase in the capacity of any dwelling house beyond a two-family unit.
h) There will be no erection of structures on existing irrigation pipelines.
j) The return of idle lands to food and agricultural production will be encouraged.
l) IRDP lots that are not currently farmed will be considered as opportunities to implement the Land for the Landless program through lease arrangements to ensure the lands remain for agricultural over the long term.
n) Pilot projects related to urban agriculture and intensive agricultural practices will be considered.



MAP 5:
Food and Agriculture

8. The Government will support the implementation of the National Agricultural Policy with regard to Food Production Zones.

a) The purpose of **Food Production Zones** will be to:

i) Mobilize a group of modern farmers who are committed to agriculture and food production;

ii) Achieve a measure of food security by reserving lands for food production now and in the future; and

iii) Act as the nuclei of agricultural activity to stimulate agricultural production in the surrounding districts.

b) Food Production Zones will include the following elements:

i) A research and development component that defines the crops to grow, the most appropriate technologies and production systems;

ii) An agricultural extension component that provides the technical and market information necessary for high productivity;

iii) A public information system that educates the community on the project and on the benefits of the consumption of local foods;

iv) A marketing component that coordinates the marketing of the products of the Food Production Zone;

v) A financial component that directs farmers to sources of funding and provides business management, record keeping and financial education for farmers; and

vi) An organizational component that develops and strengthens farmers' organizations focused on the Food Production Zone.

c) The following criteria will be used to identify Food Production Zones:

i) Presence of irrigation facilities; and

ii) Presence of an established corps of commercial farmers.

d) Areas within the following candidate sites will be considered:

- St. John
  - Bath
  - Victoria
  - Colleton
  - Malvern
  - Todds, Pool, Henley
  - Clifton Hall, Lemon Arbor, Wakefield
  - Ashford
  - Society
  - Easy Hall Estates
  - Claybury
  - Bowmanston
- St. Lucy
  - Hope/Spring Hall/Friendship
  - Crab Hill
  - Barrows/Bourbon
  - Mount Gay
  - Pickerings
- St. George
  - Birghton
  - Boarded Hall, Stepney
  - Constant
  - Draxhall
  - Valley
  - Hanson
  - Buckley/Jordans
  - Buttals, Windsor
  - Cottage
  - Mount
  - Woodland
- Christ Church
  - Hopefield
  - Lowthers
  - Newton, Yorkshire, Searles
  - Kingsland Estates
  - Hannays, Lower Grey
  - Bannatyne
  - Adams Castle
  - Newton
- St. Philip
  - Foursquare
  - Edgecomb, Halton
  - Thickets
  - Woodbourne
  - Carrington, Chapel
  - Palmers
  - Vineyard, Pollard
  - River
- St. Thomas
  - Walkes Spring
  - Mt. Wilton
  - Dukes
  - Fisherpond
  - Strong Hope
  - Dunscombe
  - Hopewell
  - Vauclause

Fisheries

9. **The Government will support the fisheries sector as a vital component of the economy, and contributor to food security and sovereignty**

a) Land use and infrastructure decisions related to Fisheries will take guidance from the Fisheries Sector Management and Development Policy 2013 and the Strategic Actions Plan.

b) Fish landing sites, boat hauling, launching and boat repair facilities identified in Map 5 will be maintained, upgraded and served with adequate infrastructure.

c) The Government will continue to encourage the use of renewable energy sources for on-board power within the fishing fleet.

d) Ecosystem-based management of the island's marine and coastal resources will support a sustainable fisheries sector by seeking to ensure the health of fish stocks and their habitat and biodiversity of the marine environment.

e) The Government will promote value-added activities in the fisheries sector by providing infrastructure for post-harvest activities such as processing and creating high value products such as necklaces and handbags from fish skin.

Development Adjacent to Food and Agricultural Land

10. Agricultural Impact Statements will be required for new major development proposed on or adjacent to lands designated for agricultural use.

a) A change of use or subdivision of agricultural land for a site greater than two acres or more than 5 residential lots will require an Agricultural Impact Assessment to determine impacts on or incompatibilities with agricultural use.

b) Agricultural Impact Statements will be prepared in accordance with Section 5.

11. New development adjacent to Food and Agricultural land will only be permitted if it can be demonstrated that surrounding agricultural operations have the ability to carry on normal farm practices and development will not adversely impact farming practices.

12. New development adjacent to Food and Agricultural land will provide sufficient buffers to mitigate land use conflicts with farming operations to the extent feasible. This would depend on the size and nature of the proposed use, the existing agricultural uses, and on any buffering factors between them. For example, gulleys, roadways and other prominent features would be helpful in defining and screening a non-agricultural use from surrounding farms.

Value Added Opportunities

13. The Government will promote value-added activities in the food and agriculture sector. This will include:

a) Encouraging food processing and distribution facility and related opportunities.

b) Promoting diversification related to production and processing of food and other agricultural products.

c) Supporting organic agriculture.

14. The Government will support infrastructure for the food and agricultural sector to improve conditions and provide opportunities for distribution and value-added activities. This will include:

a) Maintaining and improving transportation access and infrastructure to agricultural lands;

b) Providing drainage and irrigation infrastructure;

c) Planning for cooperative infrastructure such as distribution centres, abattoirs, and canning/ processing facilities;

d) Directing agricultural infrastructure to locate in proximity to agricultural lands;

e) Identifying locations for farmers' markets in centres and rural settlements.

15. The Government will continue to promote the development of local food markets, farmers' markets, community gardens and kitchen gardens as a way to encourage healthy food options and develop the local food economy.

16. Opportunities for urban and intensive agriculture will be encouraged within the Urban Corridor, Stable Suburban and Rural Settement areas. These will include:

a) Intensive agriculture;
b) Community gardens, including as a temporary use on vacant lots, with the express permission of the land owner;
c) Kitchen gardens; and
d) Rooftop gardens.

17. Renewable energy infrastructure will be permitted on agricultural lands under the following conditions.

a) Photovoltaic panels on agricultural buildings will be permitted and encouraged.
b) Solar Photovoltaic farms (large-scale operations) will not be permitted within the Soil Protection Overlay Zone.
c) Ground-mounted photovoltaics will be permitted on grazing land.
d) Proposals for wind turbines on Food and Agricultural lands generating energy of more than 2 MW will require an Environmental Impact Assessment and an Agricultural Impact Assessment, which may be conducted concurrently or as an integrated process.

> Cheapside Market, Bridgetown

2.2.2

Natural Heritage System

The Barbados Natural Heritage System is a core asset and adopts an ecosystem approach to the protection, conservation and restoration of the components of the environment. The recognition of a national Natural Heritage System enables the protection and enhancement of the quality of the natural environment through soil and groundwater conservation, protection of land and marine biodiversity, and the prevention of air, land and water pollution. This can be accomplished by adopting a 'ridge-to-reef' approach: tackling natural ecosystem protection at the scale of watersheds and karst units. Together, these systems link the highest points of the ridge down through gullies and aquifers into the coastal zones including the ocean and reefs.

Adopting a Natural Heritage System approach also provides a strong foundation to advance public awareness and appreciation of the essential linkages between the environment, quality of life and sustainable development. As a core asset identified within the PDP, the Natural Heritage System should seek to protect, maintain and enhance natural heritage in urban and rural environments and seek to minimize adverse impacts arising from new development. It should also be considered to provide an essential foundation for employment through the appropriate use of renewable resources to support sustainable jobs and livelihoods.

The Natural Heritage System chapter is comprised of five sections:

- Overarching Policies
- Climate Change and Risk Reduction
- Components of the Natural Heritage System
- Coastal Zone Management
- Natural Hazards

Overarching Policies

1. The Barbados Natural Heritage System (NHS) outlined in Map 6 will be regarded as one of Barbados' most irreplaceable and significant core assets.
2. The NHS will be conserved, restored and managed to capitalize on its valued ecological functions and to provide an improved quality of life for current and future generations of Barbadians.
3. Water is a core and scarce asset in Barbados, one that is an intrinsic part of the NHS. Restorative efforts such as increasing vegetated cover enhance the potential for infiltration, reducing soil erosion and other hazards.
4. Development and land use across the island and in particular within or adjacent to the NHS will take into account the risks of climate change impacts and disaster risk reduction.
5. A 'ridge-to-reef' approach will be adopted in implementing the Natural Heritage System, recognizing that the NHS extends from the top of the ridge through the gullies, aquifers and catchment areas down towards the coastal zone and the ocean's tidal zones, reefs, shelves, and seagrass beds. It will be further recognized that impacts to one component can resonate through the entire NHS.
6. The National Park will be recognized for its important role as an anchor to the NHS. The successful conservation and restoration practices of the Soil Conservation Unit provide precedent for implementation of the NHS in other areas of Barbados.
7. Stewardship and partnership opportunities will be developed between government, communities, ENGOs (e.g., Future Centre Trust), institutions (e.g., UWI, Bellairs Research Institute), specific entities (Barbados Hiking Association, Barbados Sea Turtle Project), and the private sector to advance natural heritage conservation and management efforts across the island.

Climate Change and Disaster Risk Reduction

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

- Provisioning:
  - i) Water conservation (reuse, infiltration and storage);
  - ii) Food security and sovereignty; and
  - iii) Habitat and biodiversity.
- Protection:
  - i) Flood risk reduction;
  - ii) Land stabilization/landslide risk reduction; and
  - iii) Storm surge mitigation.
- Regulation:
  - i) Coastal water quality (quality and quantity of surface water run-off); and
  - ii) Temperature moderation.

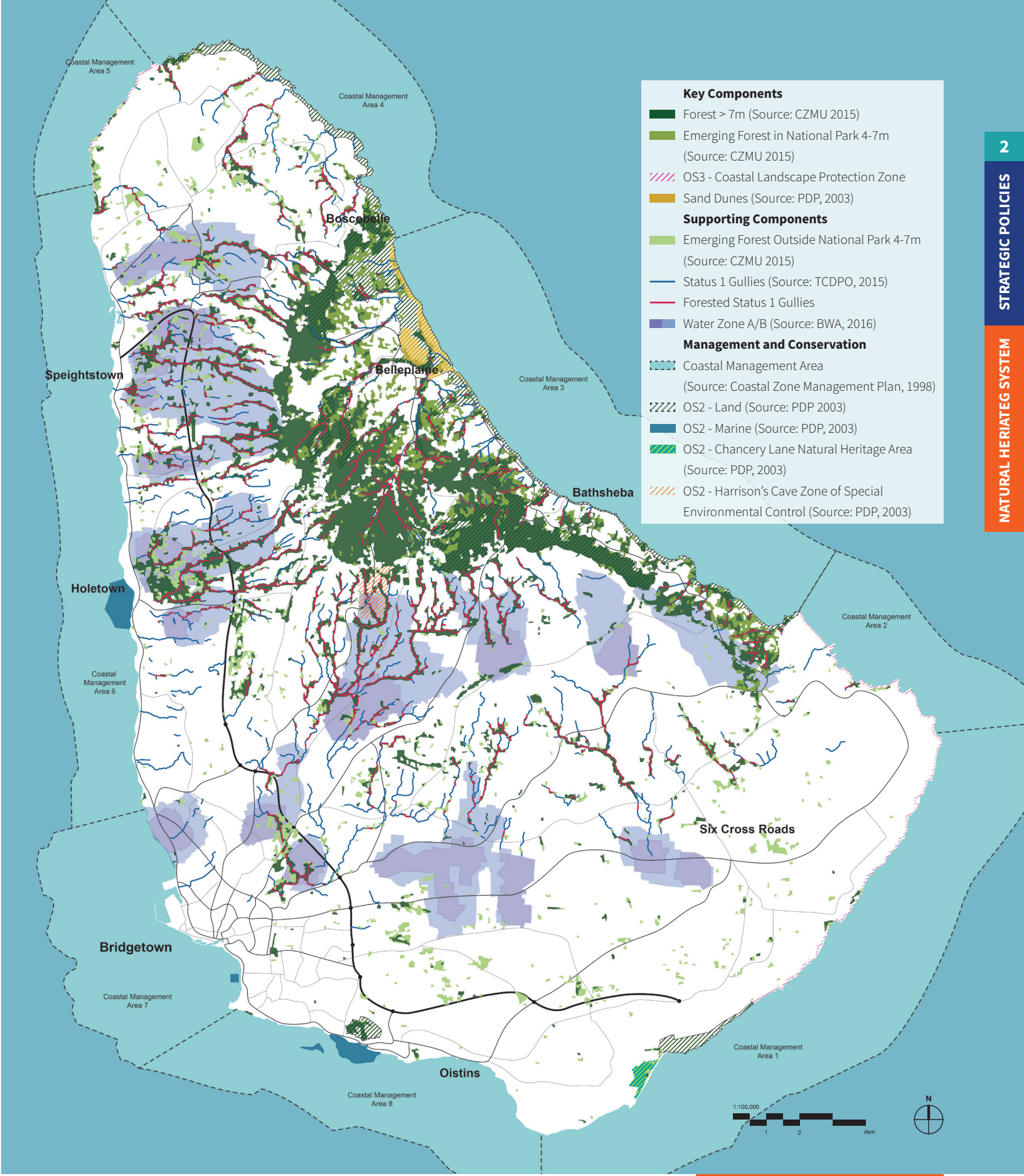
> Geologic formation, Scotland District

Components of the Natural Heritage System

9. The Barbados Natural Heritage System (NHS) is comprised of key components and supporting components. Key components are the more significant and sensitive natural features with important associated functions, and they are the subject of policies oriented towards their conservation and restoration. Supporting components are existing and potential features with associated functions that require a secondary level of conservation.

a) Key components of the Natural Heritage System (NHS) are:
   - i) Forested and naturally vegetated gullies;
   - ii) Forests (existing vegetation over 7m);
   - iii) Emerging forests (existing vegetation 4-7m) in the National Park;
   - iv) Coastal and inland wetlands (addressed through policies in Section 4: OS3 Natural Heritage Conservation Areas);
   - v) Coral reefs;
   - vi) Key habitat areas;
   - vii) Species at risk;
   - viii) vSea cliffs and sea rocks (addressed through policies in OS2 Natural Heritage Conservation Area within the National Park and OS3 Coastal Landscape Protection Zone outside the National Park).
   - ix) Rivers; and
   - x) Sand dunes and natural beaches

b) Supporting components of the Natural Heritage System (NHS) are:
   - i) Other gullies;
   - ii) Regenerating forests (4-7 m) outside the National Park; and
   - iii) Groundwater protection zones (water recharge and protection areas).



MAP 6:
Natural Heritage Systems

> Sand dunes, a key component of the Natural Heritage System, , Long Beach, Christ Church

10. Barbados' groundwater resources are also recognized as part of the Natural Heritage System and for having a strong interdependency with many of the core and supporting components. Policies for the protection of groundwater resources can be found in Section 2.2.3.

11. Natural Heritage Conservation Areas have been established and are intended to protect one or more NHS components from potentially incompatible development. The locations of Natural Heritage Conservation Areas are shown on Map 15: Barbados System of National Parks and Open Spaces and Map 6: Natural Heritage System.

a) Development in Natural Heritage Conservation Areas will be subject to the policies of Section 4.3 Open Space OS-2.

b) New Natural Heritage Conservation Areas may be established for the protection of significant ecosystems, such as remnant forests, wetlands, dunes, and marine features.

Delineation of the Natural Heritage System

12. The approximate limits of the NHS and the key components and supporting components that can mapped are shown on Map 6: Natural Heritage System.

13. Some components of the NHS have not been fully mapped and/or are dependent upon additional information. The following policy direction applies to the latter components:

a) Key habitat areas are those wildlife habitats where species concentrate at a vulnerable point in their annual or life cycle and areas which are important to migratory or non-migratory species. Examples include sea turtle nesting beaches, migratory shorebird stopover habitat, and habitat areas that are important for the survival of species at risk.

b) Species at risk include those that are:

i) At risk of local extirpation and extinction;

ii) Limited in numbers and/or distribution nationally and/or in the Caribbean Basin; or

iii) Under significant pressure from human and/or natural threats.

c) A provisional list of those species is maintained and periodically updated by the Natural Heritage Department. The occurrences and habitat areas for these species may not be fully identified and/or mapped.

d) The TCDPO, Natural Heritage Department and Ministry of Environment and Drainage Division will collaborate to further develop data and mapping regarding occurrences of species at risk and key habitats. This sensitive nature of this information will be considered in terms of accessibility and use.

14. Key components and supporting components of the NHS will be precisely delineated on a site-by-site basis supported by appropriate technical studies such as an Environment and Social Impact Assessment, geotechnical study and/or hydrological evaluations.

15. Refinements, additions and deletions can be made to the limits of the NHS and its key components and supporting components without an amendment to this Plan.

Development Within and Adjacent to the Natural Heritage System

16. New development will generally be prohibited within key components of the NHS.

17. Applications for a change in land use or major development inside or within 50 metres of the boundary of the key components are required to submit appropriate technical studies such as Environment and Social Impact Assessments, marine and terrestrial ecological surveys, geotechnical studies and/or hydrological evaluations. These studies will fully consider any potential impacts to key components and identify mitigation and enhancement measures to demonstrate no negative impact on the NHS.

18. With respect to unmapped components of the NHS (e.g., key habitats), guidance will be provided by the TCDPO in consultation with the Natural Heritage Department and the Ministry of Environment and Drainage regarding known or expected occurrences and habitats. Decisions on development, conservation and management in all components of the NHS are to be informed by the latest technical data and analysis available.

19. New development may be permitted within supporting components of the NHS. Development applications will be required to include appropriate technical studies to the satisfaction of the Chief Town Planner such as Environment and Social Impact Assessments, geotechnical and/or hydrological evaluations to demonstrate that important environmental and ecological functions will be maintained or enhanced.

20. Where, after consideration of options and alternatives and completion of detailed studies, the policy of no net negative impact cannot be implemented at the site of a development proposal, then as a condition of approval TCDPO may approve compensation measures taken by the applicant at other locations, which may include support from project proponents for conservation, watershed, and natural resources management. Any compensation must achieve an overall benefit to the natural features and associated functions that are predicted to be affected. The TCPDO or the Natural Heritage Department will provide guidelines for the determination of acceptable types of compensatory mitigation.

> Housing, Chancery Lane Swamp, Christ Church

Restoration Within and Adjacent to the Natural Heritage System

The restoration of natural features and functions contributes to a healthy environment, upon which the citizens of the Island depend. While this process can happen naturally and passively through the abandonment of other land uses, these restoration policies encourage and direct active restoration to those areas where benefits will be greatest. Given the importance of a sustainable potable water supply, and the reduction of runoff to nearshore waters, restoration that enhances natural vegetation cover over ground water protection zones and in surface water catchments with limited natural cover will reduce runoff, provide improved infiltration and improve water quality.

21. The restoration of marine, terrestrial and freshwater areas of importance and potential importance should be considered and encouraged through the development process, in the ongoing management of natural areas and resources, and to support Integrated Water Resources Management. Priority should be given to:

a) Developing restoration plans for open land areas within Groundwater Protection Zones where ecological restoration will improve infiltration and water quality enhancement over the Protection Zones;

b) The restoration and enhancement of wetlands and coastal protection areas (e.g., dune systems);

c) The reforestation of open gullies which contribute to flood alleviation;

d) The conservation of potable water resources; and

e) The restoration and rehabilitation of marine ecosystems including coral reefs and seagrass beds.

22. The overall forest cover and regenerating forest cover in key and supporting components of the NHS should be maintained, managed and where possible increased to promote ecosystem health and the long-term viability of surface water and biodiversity conservation.

> http://www.palmbeach.bb/

23. The Government will continue to implement important projects linked to flood control and ecological restoration (e.g., Constitution River rehabilitation).

24. Restoration should consider opportunities to engage a variety of stakeholders to leverage partnerships and optimize outcomes. The Government will work with landowners to create demonstration restoration projects for private sector initiatives such as the rehabilitation of Walkers Reserve.

25. The Government will encourage the preservation of trees and the enhancement of tree cover in urban settlement areas, the rural working landscape and the National Park through the following measures:

a) The creation of Barbados National Forest Candidate Sites and protection of Existing Forests, Regenerating Forests and Forest linkages in the National Park, according to the policies of Section 4

b) Requirements for street tree planting in all new residential subdivisions, according to the policies of Section 3.3;

c) Requirements for tree preservation and replacement plans as part of the supporting documentation for all development in the Integrated Coastal Zone Management areas;

d) Enforcement of the Tree Preservation Act;

e) Requirements for tree preservation in Cultural Heritage Conservation Areas in accordance with Section 2.2.5.

26. The Government will integrate restoration and rehabilitation of seriously degraded marine and coastal habitats with approaches for reducing chronic groundwater nutrient loading from land-based domestic and agricultural sources and as required, chemical pollution. The PDP supports a range of strategies to reduce these loadings including:

a) Increasing forest and ground cover through policies of the Natural Heritage System to increase infiltration and rainfall retention in the watershed and to reduce run-off;

b) Improving agricultural practices to control nutrient application, reduce run off and retain soil;

c) Increasing collection and treatment of sewage and wastewater through means that include new collection systems and treatment plants, and upgrade or extension of existing plants;

d) Repairing and extending marine outfalls.

- Projects to promote reef recolonization using, for example, laboratory-based coral nursery facilities will be supported, working alongside nutrient reduction strategies and in consideration of locations where reef rehabilitation will have beneficial impacts for shoreline stabilisation.

> Stormwater Retention Pond, Church Village Green, Bridgetown

> Reinforced shoreline and boardwalk, Holetown, St. James

Coastal Zone Management

The coastal zone of Barbados provides the natural resources and environmental attributes which underpin the nation's vital tourism industry. At the same time, the coastal zone contains a substantial portion of the island's population along with the infrastructure and facilities necessary to support it: major infrastructure including ports and harbours, road networks and power-generating facilities and community facilities such as hospitals and health clinics, schools, police and fire stations and emergency shelters.

The Coastal Zone Management Act 1998 provides the legislative framework to manage the assets of this critical area and authorizes the Director of the Coastal Zone Management Unit to prepare a Coastal Zone Management Plan and to define a Coastal Zone Management Area.

The landward boundary of the Coastal Zone Management Area follows the main coastal road or the limit of the 100-year storm surge flood area, whichever is further inland. The seaward boundary lies along the 100-metre depth contour except on the Caribbean coast, where the boundary lies beyond the bank reefs at the 200-metre depth contour. Landscape characteristics are considered in assessing development applications, recognizing that natural processes influencing the coastal area extend beyond the Plan's boundaries.

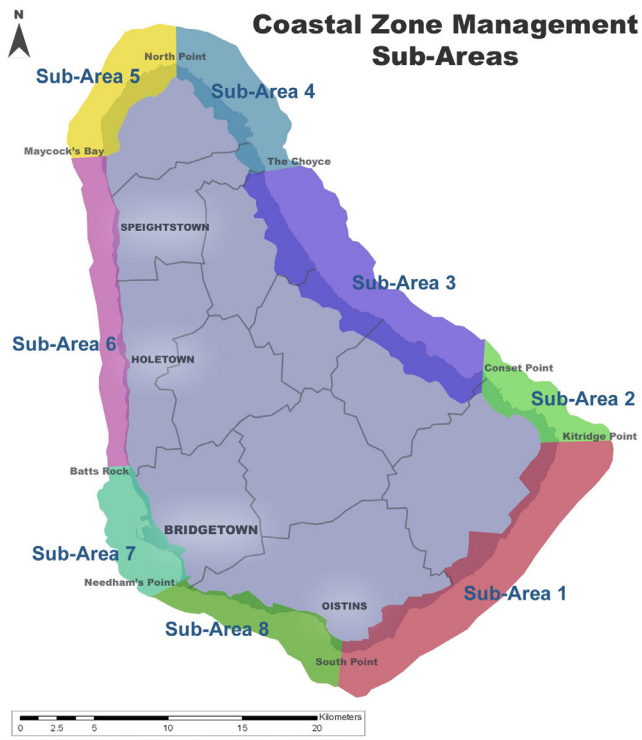


FIGURE 3. **Coastal Zone Management Sub-Areas (Source:CZMU**

In 1998, the Government of Barbados updated the 1995 Integrated Management Plan for the West and South Coasts of Barbados. The 1998 revision consists of a Policy Framework and Plans for the entire island in two volumes, the Atlantic Coast and the Caribbean Coast. Over-arching management principles include:

a) Working with natural processes rather than against them;
b) Having regard to dynamic interactions between marine and terrestrial environments;
c) Controlling development to take account of biodiversity, natural sediment processes and habitat linkages; and
d) Making allowance for floods, storm surges and hurricanes in planning decisions

27. All decisions on development, conservation and management in the coastal zone are to be informed by the latest technical data and analysis available to the Coastal Zone Management Unit including, but not limited to:

a) Environmental, geotechnical, climatic, and oceanographic knowledge;
b) Hazard and risk assessment and maps related to, among other factors, long term sea-level rise, storm surge, flooding from marine and terrestrial events, shoreline including cliff stability, and tsunami impacts.

28. Coastal management and development control decisions will explicitly involve consideration of policies and management guidance under the 'ridge-to-reef' concept, and specifically, the principles and practice of Integrated Watershed Management Planning and the Natural Heritage System identified in this Plan.

29. The Coastal Zone Management Plan will implement the PDP policies for Open Spaces that occur within the CZM Plan area, including OS2: Natural Heritage Conservation Areas, OS3: Coastal Landscape Protection Zone, and OS4: Public Parks and Open Spaces.

30. Applications for major development or change of land use within 30 metres of the coast will be subject to an Environmental and Social Impact Assessment and other supporting or technical studies subject to the satisfaction of the Chief Town Planner or designate. In considering such applications, the Town and Country Planning Office (TCPO) will act on advice provided by the CZMU, and Ministry of Public Works and may impose conditions of approval such as maintenance requirements. For this policy, "coast" is defined as meaning high water mark or inundation values established by CZMU on a reach by reach basis and as defined by the Coastal Zone Management Act, whichever is greater. In preparing these Assessments and studies, the applicant will have regard for the Integrated Coastal Zone Management Plan principles which outline the need to establish establish sufficient setback to allow for safety, to preserve the character of the coastal landscape and retain views to the sea. These studies will also analyse any impact of development to coastal and marine environments and habitat and take into consideration susceptibility to climate change and natural disasters and identify mitigation measures that result in no net negative impact.

31. Development setbacks in coastal areas will:

a) Be assessed utilising the latest available technical information and analysis available to the Coastal Zone Management Unit.

b) Be appropriate for each location and take in to account the following:

i) Statutory conservation or management designations and associated requirements;

ii) Understanding of historical and future projections for coastal and shoreline change;

iii) Habitat characteristics including, amongst others, proximity to turtle nesting areas or sites of importance to migratory bird species and critical habitats in the marine environment; and

iv) Susceptibility to climate change and natural disasters, for example sea level rise, storm surge and storm wave run-up projections, coastal and terrestrial flooding.

32. No new development will be permitted on the seaward side of the Ermy Bourne Highway.

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

a) Where repair of older structures or new coastal structures are required, these will be subject to an ESIA.

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

34. Where essential buildings and structures are approved within an area at risk from coastal hazards they should be designed with appropriate protection design strategies. Areas at risk are those for which mapping may be available at the Coastal Zone Management Unit and the Drainage Department, which may include, among others, risks associated with storm surge and storm wave inundation, sea level rise, flooding through run-off from terrestrial rainfall events, and tsunami.

35. To ensure that tourism in Barbados remains internationally competitive, tourism development and related infrastructure and facilities in coastal areas will be subject to a full ESIA to inform design and construction to the highest international environmental and conservation standards. Among others, considerations for use of beach areas will include assessment of 'carrying capacity'.

36. To enhance Barbados' reputation for quality beaches, a program of beach accreditation will be pursued. A global standard which may be explored is the Blue Flag Program (www.blueflag.org). When compliant, this standard provides assurance and guidance to residents and visitors on areas including water quality, environmental education, management, and safety.

37. Turtle nesting sites will be managed through the statutory and policy mechanisms provided in the Coastal Zone Management Act and Coastal Management Plan. These include restrictions on beaches in in relation to sand mining, setbacks, vehicular beach access, enclosures and fences, plus replanting and protection of littoral vegetation.

a) During the development control process, the Coastal Zone Management Unit will flag any application that proposes lighting for upper beach areas and will recommend appropriate adjustment in lighting arrangements to take into account the sensitivity of nesting and hatching turtles to lighting and the disorienting impacts this has on juvenile turtles.

b) A public education programme will be undertaken to ensure that coastal developments, and in particular hotels, have turtle protection protocols in place.

> Channelized gully outfall prone to flooding

Natural Hazards

Disaster risk reduction (DRR) and climate change adaptation (CCA) share the common foci of reducing national and community vulnerability and contributing to resilient and sustainable development in the face of climate variability and climate change.

Across Barbados, the spatial distribution of natural hazard risks is determined by the interaction of local and regional hydro-meteorological, oceanographic and tectonic phenomena with the island's varying geological, topographic, bathometric, and biological features. The resulting interactions give rise to location-specific expressions of natural hazard risk that threaten human health and wellbeing, built infrastructure, sector-specific economic activities, and natural heritage assets.

Climate change impacts can affect the frequency, intensity, duration, timing, spatial distribution and extent of the severe weather events to which the island is exposed, increasing the associated risks. Climate change considerations, therefore, need to be taken into account in all governmental and private sector planning processes to ensure that adaptation and resilience building become a mandatory feature of all socio-economic, sectoral, and environmental development planning processes. In this way, DRR and CCA will be mainstreamed in development and programming, and disaster risk management will complete its transformation from short-term relief and response interventions to becoming a central element in the development process.

38. The risk to human life and property of natural hazard areas will be reduced through hazard vulnerability and impact assessments, climate impact assessment modelling, mapping, development control and mitigation measures.

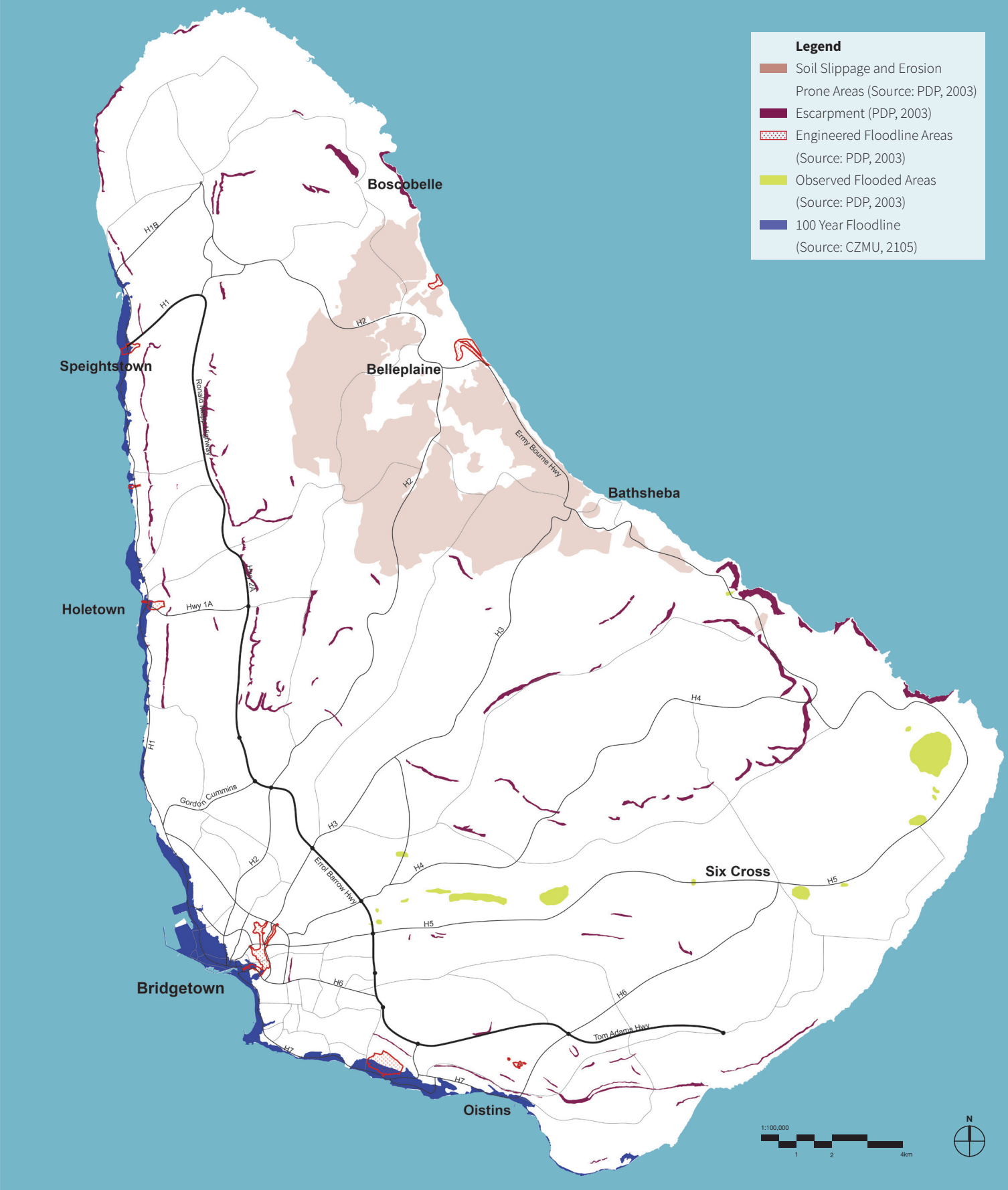
39. Specific Natural Hazard Areas, outlined on Map 6: Natural Heritage System and Map 7: Natural Hazards, include:

a) Soil slippage and Erosion Prone areas;
b) Gullies and Escarpments; and
c) Flood susceptible areas including rivers, streams, floodplains and coastal areas.

40. The designation and delineation of Natural Hazard Areas will be reviewed periodically based on new data that becomes available from vulnerability and impact assessment studies and from climate change models and projections.

41. As updated mapping and data related to natural hazards and projected climate change threats becomes available, the PDP will be amended to include this information and related policies. This may include:

a) Additional areas delineated by the Ministry responsible for Drainage as vulnerable to periodic flooding based on the findings of initiatives such as the Stormwater Management Plan Update and other ongoing drainage studies. Provisions should recognize that the applicable Observed Flooded Area policies will also apply to these mapped areas.
b) Coastal Zone Management Unit's Coastal Risk Assessment and Management Programme's (CRMP) natural hazard vulnerability and risk maps, slope and cliff stability and other initiatives.
c) Additional information that may come from Vulnerability Assessments, Environment and Social Impact Assessment studies and climate change models and projections.



MAP 7:
Natural Hazards

42. The Government will implement development controls within Natural Hazard Areas and create Emergency Preparedness Strategies related to Natural Hazard Areas in order to increase the resiliency of island communities.

a) New development will be encouraged within the Urban Settlement Area and outside of the Natural Hazard Areas.

b) New institutional, community facilities and national infrastructure projects, where possible, be located outside of Natural Hazard Areas.

c) All development adjacent to Natural Hazard Areas will incorporate site plan and design measures to address climate change resiliency.

43. The Government will utilise Information Management as a key tool to minimize natural hazard and climate change risk by:

a) Promoting data and information compilation for natural hazard and climate change risks at the national and community scale in support of comprehensive analysis and adaptive planning.

b) Promoting public review and discussion among residents, private sector and public sector stakeholders on revision and enforcement of land-use zones, building codes, and setbacks to manage natural hazard risks in a changing climate.

c) Providing businesses and developers with information and tools they need to make decisions and investments that support climate resilience at a national and community scale.

d) Considering new forms of public-private partnerships nationally for tackling the more complex challenges of DRM and Climate change adaptation.

e) Establishing clarity on the roles and responsibilities of Constituency Councils in DRM with reference to those of the DEm (Department of Emergency Management).

f) Stimulating markets for adaptation through financial and risk reduction incentives.

g) Engaging the community in the review and adoption of Green Economy approaches to promote a more balanced economic model that improves human wellbeing, social equity, and economic resilience, enhances ecosystem health and ecosystem service provision, while significantly reducing natural hazard and climate risk.

Erosion Prone Areas

44. Erosion Prone Areas, including areas that are prone to soil slippage, are delineated on Map 7: Natural Hazards. In addition, there are areas designated in the Coastal Zone Management Unit Plan (shoreline change studies, etc) as erosion prone.

45. Development on sites which are susceptible to erosion or soil slippage, as identified on Map 7: Natural Hazards, will not be permitted.

46. All development applications involving the construction of permanent structures adjacent to Erosion Prone Areas will be reviewed by the Soil Conservation Unit, Ministry of Agriculture and Rural Development and the Ministry responsible for Drainage.

> Much of the Scotland District consists of unstable slobes

> Coastal erosion, Sand Street, Speightstown

Gullies and Escarpments

47. The boundaries of the gullies and escarpments shown on Map 6: Natural Heritage System and Map 7: Natural Hazards, respectively, are approximate.

48. The Integrated Gully Ecosystem Management Plan sets out comprehensive management guidelines for gully ecosystems. This plan provides a basis for the review of development applications adjacent to and/or within gullies. In addition to the policies of this Plan, the policy guidelines of the Integrated Gully Ecosystem Management Plan will apply to areas designated as such on Map 6.

49. All development applications within 30 metres of gullies and escarpments will require drainage plans as supporting documentation. Drainage plans will assess and mitigate potential flooding of upstream and downstream lands and erosion risks in these areas.

All development applications on or within 50 metres of gullies may be required to prepare geotechnical and/or biophysical studies, to the satisfaction of the TCDPO in consultation with the Natural Heritage Department and the Ministry of Environment and Drainage and other concerned agencies. Those studies will identify the location of the stable top of bank and any overlapping and/or related components of the NHS. The studies will address the management objectives of the Integrated Gully Ecosystem Management Plan, including:

- Minimizing the extent of habitat modification and loss;
- Conserving representative biodiversity, rare and sensitive species and habitats;
- Encouraging sustainable land use practices on gully lands and lands adjacent to gullies;
- Implementing structural and non-structural measures towards flood mitigiation and stormwater attenuation;
- Preventing illegal dumping of waste in gullies and cleaning up the wastes currently present;
- Promoting low-impact or passive recreational uses such as hiking and walking, and the use of gullies for educational purposes and scientific research;
- Incorporating gullies into formal and non-formal education processes.

50. All development applications within 100 metres of the base of escarpments willwill be required to prepare a geotechnical and/or biophysical studies to the satisfaction of the concerned agencies, to determine the stability of the escarpment face in the vicinity the proposed development site.

51. All new development will be set back a minimum of 10 metres from the stable top of the bank of the gullies and base of escarpments shown on Map 6: Natural Heritage System and May 7: Natural Hazards, respectively. Additional setback may be required by the Chief Town Planner in consultation with the Ministry of the Environment and the Ministry responsible for Drainage, particularly in areas which are experiencing significant erosion or in areas with existing landscape or vegetation features which, in the opinion of the concerned agencies, would benefit from additional setbacks.

52. All new development will be designed in a manner that it will not increase the risk of flooding upstream and downstream.

53. When residential development occurs along or proximate to an escarpment, attention will be given to preserving important views and lateral public access.

> The Whim gully, St. Peter

Flood Susceptible Areas

54. Three categories of Flood Susceptible Areas are shown on Map 7: Natural Hazards:

a) Engineered Floodline Areas. The boundaries of Engineered Floodline Areas have been determined through detailed engineering analysis and represent the boundaries of a 20-year flood event and 50 year flood event for engineered works..

b) Observed Flooded Areas, which are lands that have been observed by the Drainage Unit to be periodically flooded. Generally, this flooding has been caused by improper stormwater management techniques associated with previous development; and

c) 100 year Floodline Area. The 100 year Floodline areas have been identified through the Feasibility Studies on Coastal Conservation project in 1995 and are subject to further refinements based on current work being undertaken by CZMU

55. The implications of anticipated Sea Level Rise will create a long term flood risk and hazard. The extent of the Sea Level Rise will be mapped through the CZMU and adaptation and resiliency strategies prepared to address the flood risk

56. All development applicants within Flood Susceptible Areas will prepare, to the satisfaction of the Ministry responsible for Drainage, a hydrologic design study as part of the supporting documentation for development proposals. The purpose of this study will be to assess the suitability of the development proposal to withstand projected flooding events on the site and to propose flood proofing measures.

57. Within Engineered Floodline Areas, new development will not be permitted unless it can be shown that the flood can be contained with proposed flood proofing measures.

58. Within Observed Flooded Areas, new development will not be permitted unless the stormwater management deficiencies within the area have been corrected to the satisfaction of the Ministry responsible for Drainage, Environmental Protection Department and Ministry of Health.

59. In 100 year Floodline Areas, any new development or redevelopment will be designed with appropriate flood protection measures such as minimum freeboard elevation and limiting of habitable space to building elements above flood levels.

a) Development applications within the 100 year Floodline Area will be reviewed by TCPDO based on the level of risk and to determine whether an ESIA will be required. As part of an ESIA, the applicant may be required to prepare and submit Vulnerability Assessments that explicitly identify the potential risks and mitigation measures acceptable to the Chief Town Planner.

b) The ESIA process will take into consideration the impact of climate change and climate variability on the proposed development, and the development's influence on ecosystem process and services.

60. The Department of Emergency Management, with assistance from relevant government agencies, will prepare Emergency Preparedness strategies for Flood Susceptible Areas, which should include but not be limited to the identification of planned safe evacuation routes, provisions for alternate shipping and air access for supplies, and locations for emergency shelters.

61. Best practices will be applied for the construction and management of facilities that are allowed in coastal areas prone to hazards, for example the use of a building code. The nature of the facility or structure will be taken in to consideration in decision-making including, but not limited to:

a) Whether the application is for critical infrastructure to be built in the public interest;

b) Climate change impacts;

c) Whether the facility may require the storage of hazardous materials that could be a pollution risk; and

d) Whether ancillary structures and access are required.

2.2.3
Water

Barbados is ranked as the 15th most water scarce country in the world. The critical nature of Barbados' water scarcity is an important planning issue that must be addressed through a comprehensive systems approach, coupled with protection and conservation measures to ensure the long term supply of fresh water for the population of Barbados. These measures include the application of integrated watershed management planning (IWMP) principles, an island-wide Groundwater Protection Zone system, and stormwater management approaches based on low-impact development.

Figure 4 demonstrates the water cycle in Barbados. All fresh water is supplied from groundwater derived from rainfall entering the islands' limestone cap. Close to the coast, the limestone cap forms lenses of freshwater perched above salt water. Rain falling on non-limestone areas runs off quickly to the sea and into the marine environment. In Barbados, the land and marine systems are intrinsically linked and the health of one directly affects the other.

An examination of Barbados' groundwater systems reveals that while aquifer recharge rates are high, the rapid flow of groundwater make them highly vulnerable to pollution. The geological formation of unconsolidated limestone aquifers limits the attenuation of pollution in the water. Elevated levels of nitrates in groundwater are related to domestic sewage discharge to groundwater in urban areas and use of agricultural fertilizers. The transmission of these nitrates to coastal water has contributed to significant degradation of coral reef cover, now at 10% of historical levels.

In addition, climate change projections indicate that average annual rainfall will decrease, while potentially more intense tropical weather systems will be associated with heavier rainfall events and flash flooding. As such, the use of a stormwater management approach based on the principles of low-impact development will be necessary for reducing the impact of polluted runoff on Barbados' water resources.

Finally, the Barbados Water Authority provides for both potable water and sewerage services. Although policies related to water services are detailed in the National Infrastructure section of this Plan, they must be understood as an important part of the system involved with this irreplaceable, scarce resource in Barbados.

This chapter is comprised of three sections:

- Overarching Policies
- Groundwater Protection
- Stormwater Management

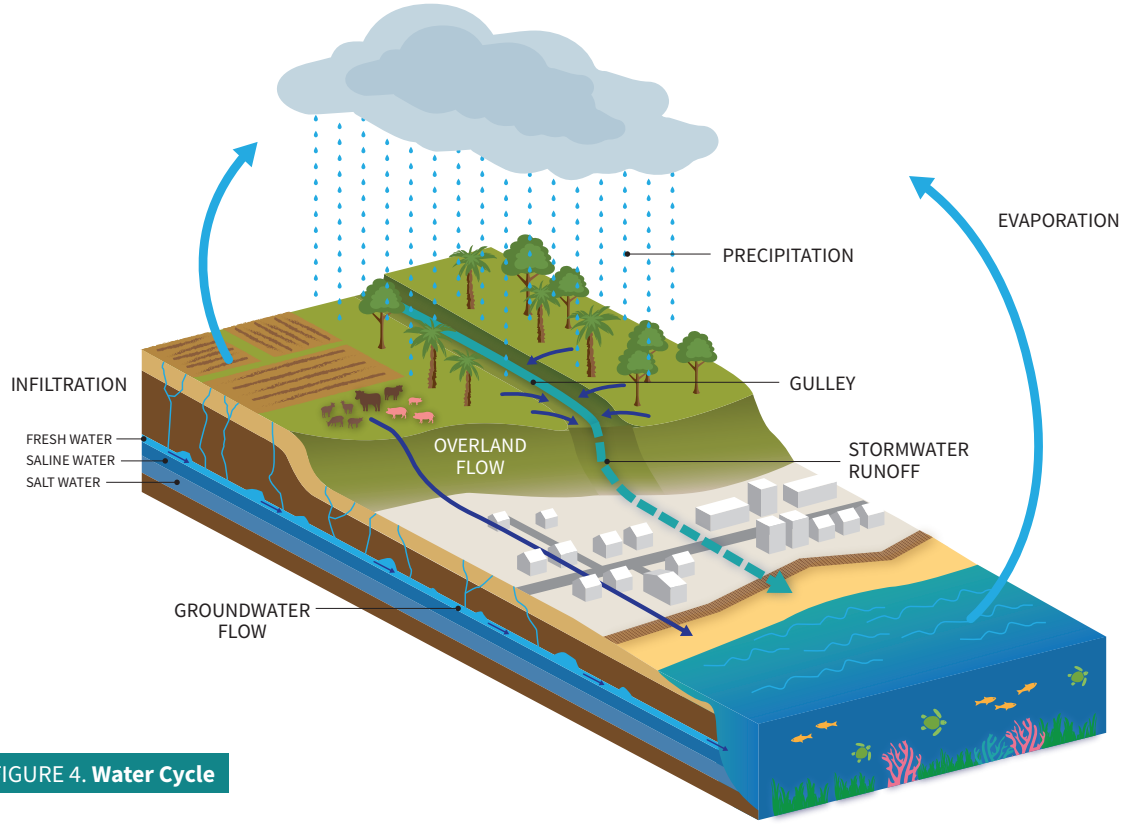
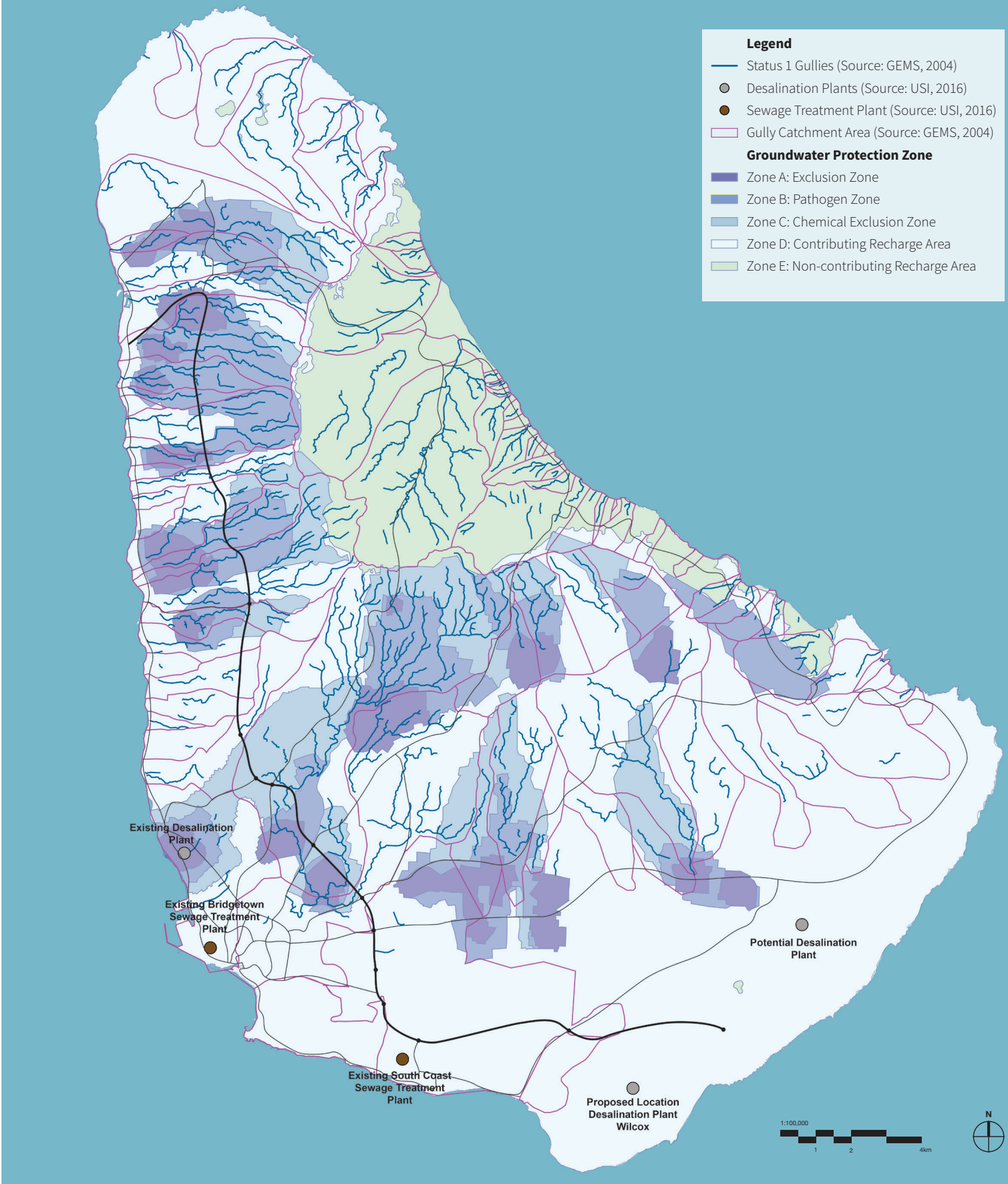


FIGURE 4. **Water Cycle**

Overarching Policies

1. Water scarcity is regarded as a critical issue for Barbados. Accordingly, water resources will be recognized as one of Barbados' most significant and irreplaceable core assets.
2. Water resources will be protected and conserved as a means of mitigating the effects of climate change and related risk of natural disasters.
3. To manage the impacts of human activities on Barbados' water resources, an integrated watershed management planning approach will be used to:
   a) Support adaptation to climate change.
   b) Protect groundwater recharge areas from pollution through application of Water Protection Zone policies.
   c) Enhance water re-charge and retention through increased forest cover of appropriate species, conservation and low impact development land use practices.
   d) Increase re-charge in built-up areas and from stormwater run-off.
   e) Provide effective systems for collection and management of wastewater.
   f) Encourage and guide the placement of surface water retention and infiltration areas and measures and enhanced stormwater management.
   g) Recognize and protect the gully catchment areas outlined on Map 8: Water Resources. Restoring gully catchment areas through reforestation, enhancing terrestrial and aquatic habitat, and improving drainage and stormwater management systems will contribute to the overall ecological health of the island.
   h) Encourage efficient and sustainable irrigation systems to support food and agricultural lands, where feasible, including but not limited to rainwater harvesting and low impact development approaches.
4. The integrated watershed management planning approach will have regard for:
   a) The context of both the surface water catchment basins and groundwater aquifers within Barbados and treating these in a synchronized manner.
   b) The operational activities of the Barbados Water Authority in:
      i) Promoting water conservation.
      ii) Water loss reduction and efficiency improvements for water production and distribution infrastructure.
      iii) The approach and policies for the Natural Heritage System in the maintenance of healthy environmental systems and associated services.
5. In accordance with the Marine Protection Act any development is proposed to generate over 13,000 litres of waste water per day, the development will be subject to a review based on the proposed type of wastewater treatment process and an Environmental and Social Impact Assessment.
6. For landfill, solid waste disposal, and land-raising, geological conditions and the behaviour of surface water and ground water will be assessed both for the site under consideration and the surrounding area. The suitability of locations subject to flooding, with consequent issues relating to the management of potential risk posed to water quality from waste contamination, will be taken into consideration.



MAP 8:
Water Resources

Groundwater Protection

A system of Groundwater Protection Zones has been in existence across Barbados since 1963. Based on a review of the existing zoning and associated policies, limitations were identified in the ability of these policies to provide sufficient aquifer protection, with a need for a stronger policy and management approach along the lines of an Integrated Water Resources Management (IWRM) model.

In 2017 the Groundwater Protection Act will be updated to reflect a refined approach to defining Groundwater Protection Areas and delineation of new zones of protection. This new zoning approach divides the island into five areas, Zone A to Zone E. The policies related to each zone determine the level of infrastructure services and waste disposal methods required and provide a framework for development control. The locations of the revised Zone A to Zone E Groundwater Protection Zones are shown on Map 8: Water Resources.

The Groundwater Protection Zones are defined by the time of travel capture zones to existing BWA wells. Zones A, B, and C represent 0-90, 91-300, and 301-750 days' travel time from the well, respectively. Other zones speak to rest of the island where BWA doesn't have wells, but there may be private wells.

7. The Groundwater Protection Zones outlined on Map 8: Water Resources protect water as a core asset and irreplaceable resource in Barbados. The Zones are an integral part of the larger water system, including but not limited to the gullies and other key components of the Natural Heritage System, overland flow and water services.

8. On lands that are newly identified in the 2016 Groundwater Protection Zones, existing land uses will be grandfathered. Any development, site alteration, building expansion, or change in land use on these lands will trigger the need for compliance with the Zone provisions. Mitigation of existing non-conforming land uses to be in keeping with the Groundwater Protection Zone provisions will be strongly encouraged.

9. Policies for Zone A Pathogen Exclusion Groundwater Protection Areas (0 to 90-day time of travel) are as follows:

a) The purpose of this zone is to provide the Barbados Water Authority with a buffer zone immediately surrounding the well where they would have complete control in preventing any potential contamination.

b) Zone A includes areas within the aquifer that are 0 to 90 days' travel time distance from a BWA well.

c) All land uses are prohibited in Zone A, with the exception of any land uses associated with the treatment and distribution of water.

10. Policies for Zone B Pathogen Management Groundwater Protection Areas (91 to 300-day time of travel) are as follows:

a) The purpose of this zone is the management and regulation of pathogenic or chemical sources that can pose a threat to the public water supply.
b) Zone B includes areas within the aquifer that are 91 to 300 days' travel time distance from a BWA well.
c) Land uses that are considered pathogenic contaminants will only be allowed under prescribed conditions aimed at providing enhanced protection.
d) All regulations that apply to any subsequent Groundwater Protection Zone (including Zones C-E) also apply to Zone B.
e) Restricted land uses and activities include:
    i) Sewage lagoons or any surface storage of chemicals
    ii) Sewage treatment via suck wells
    iii) Land application of manure based fertilizer
    iv) Storage or disposal of manure
    v) Activities that generate animal waste, manure, or other pathogenic contaminants
    vi) Waste disposal from meat or meat products facilities
    vii) Waste disposal from sugar factories, rum plants, or other manufacturing / industrial facilities
    viii) Zoos, animal sanctuaries and other facilities for the intensive housing of animals
    ix) Landfill

11. Policies for Zone C Chemical Management Groundwater Protection Areas (301 to 730-day time of travel) are as follows:

a) The purpose of this zone is the management and regulation of chemicals that can pose a threat to the public water supply.
b) Zone C includes areas within the aquifer that are 301 to 730 days' travel time distance from a BWA well.
c) Restricted land uses and activities include:
    i) Storage and handling of fuel and fuel products
    ii) Storage and handling of dry cleaning products
    iii) Chemical manufacturing and storage
    iv) Recycling of scrap metals, automobiles, appliances and machinery
    v) Use of chemical based fertilizers on land
    vi) Use of Agro Chemicals on land
    vii) Storage of significant volumes of fertilizers or other agricultural chemicals
    viii) Storage of significant volumes of household, industrial or other domestic chemicals
    ix) Use of pesticides or other household chemicals on land
    x) Cemeteries or Crematoria
    xi) Landfills
    xii) Sewage treatment via suck wells

12. Policies for Zone D Recharge Contributing Groundwater Protection Areas are as follows:

a) Zone D consists of the groundwater aquifer recharge contributing area.
b) Wastewater disposal within Zone D will be regulated in a manner similar to the remainder of the limestone areas of the island.
c) Additional "sensitive areas" may be designated within this zone where water resources will be treated according to special conditions.
d) Restricted land uses and activities include:
    i) Sewage treatment via suck wells
    ii) Location of potential threat activities in the vicinity of "sensitive areas"

13. Policies for Zone E Non-Recharge Contributing Groundwater Protection Areas are as follows:

a) This zone refers to areas outside of a protection zone and outside of the groundwater recharge area. This zone comprises areas where impermeable rock occurs at the surface, and is generally confined to the Scotland District and Panhandle.
b) Wastewater disposal in this zone should be regulated in a manner similar to other general practices for Barbados.
c) Additional "sensitive areas" may be designated within this zone where water resources will be treated according to special conditions.
d) Restricted land uses and activities include: potential threat activities in the vicinity of "sensitive areas".

14. For lands that are no longer required to comply with the restrictions of former Groundwater Protection Areas 1-5, the priority for any change in land use will be food and agriculture, natural restoration/reforestation or the provision of affordable housing, providing these uses are in compliance with the new Zone provisions.

Stormwater Management

In a water scarce nation, stormwater must be understood as a resource. Stormwater management is particularly important in Barbados' developed and built-up areas due to the presence of paved surfaces which prevent the natural filtration of rainwater into the ground. As water rushes across paved surfaces, it can collect pollutants that end up in Barbados' water and marine systems. During particularly heavy rainfall events, poor stormwater management can result in incidents of flooding, lack of accessibility to communities and the contamination of natural water basins. Due to the effects of climate change, it is projected that Barbados will experience increases in intense heavy rainfall events that could lead to flash flooding. The use of innovative stormwater management practices can be used to effectively manage the flow of water through Barbados' sewer and overland flow, particularly after heavy rainfalls.

15. A comprehensive understanding of drainage and stormwater management and its implications on the land development process will be advanced by:

a) Promoting innovative practices with respect to drainage and stormwater management to reduce the effects of flooding and water contamination.

b) Taking into consideration the cumulative effect of impacts of new development on Barbados' drainage system.

c) Integrating updated data and mapping from the Ministry responsible for drainage by updating relevant PDP mapping and policies to conform with these directions through a Technical Update to the PDP.

16. Development applications in support of any commercial or industrial development over1,860 square metres in floor area, or any residential subdivision over 10 lots will include a comprehensive Master Stormwater Drainage Plan to address the provision of stormwater management and drainage that is prepared to the satisfaction of the Chief Town Planner and the Ministry responsible for drainage.

17. Development proposals which are smaller than the standards set out above will be subject to the stormwater drainage policies of the Ministry responsible for drainage.

> Outfall of Holetown Lagoon

18. The catchment area boundaries for the Master Stormwater Drainage Plan will be determined by the Chief Town Planner, in consultation with the Ministry responsible for drainage. The size of the study area will depend on the scale of the proposal and the extent of potential environmental impacts.

19. Master Stormwater Drainage Plans and stormwater management systems will address the following issues:

a) Maintenance of on-site ground water infiltration at predevelopment levels, with options to enhance infiltration explored in design;

b) Maintenance and enhancement of overall pre-development groundwater flow patterns;

c) The provision of stormwater treatment facilities including ponds, grassed or vegetated swales, or other stormwater treatment facilities;

d) Impact of storm drainage on adjacent lands, watercourses including gullies, wetlands and rivers; and

e) Mechanisms for reducing soil run-off.

20. Stormwater management systems for developments should incorporate water conservation and low impact development (LID) best practices to reduce the level of flooding or pollution to watercourses and major drainage channels.

a) To the extent possible, stormwater management systems will be designed to maximize natural infiltration and aquifer recharge, and to minimize the use of drainage techniques, such as stream channelization, which reduce natural infiltration and may cause downstream erosion.

b) Low Impact Development (LID) practices will be promoted that seek to manage a large fraction of the stormwater generated on-site and reduce the speed and volume of stormwater surface discharges by: reducing impervious cover, utilizing vegetation to absorb run-off, diverting remaining surface water flow into natural and restored areas for filtering, recharge and re-use.

c) For all new development involving a Plan of Subdivision creating more than 20 lots, the Chief Town Planner will require one tree per lot, to be planted and a 5 year maintenance agreement put in place prior to the issuance of the Building certificate.

d) Stormwater treatment facilities will consider water quality, and be designed to maintain environmental and ecological integrity, and to provide net benefit to the natural environment, if feasible. Where feasible, they will also be designed as community amenities, suitable for passive, non-contact recreational activities.

21. Surface water retention through systems such as sand dams, subsurface dams and check-dams should be subject to an ESIA and comply with established best practices and environmental guidelines.

> Stormwater channel, Trevor Way, Bridgetown

> Constitution River rehabilitation, Bridgetown

2.2.4
National Park

The Barbados National Park is the foundation of the island-wide System of Parks and Open Spaces. It is the anchor of the Natural Heritage System and includes the most interconnected ecosystems on the island including forests, river systems, geologic formations and habitat. The National Park is also a critical part of the cultural heritage of the island and continues as a protected working landscape.

Development and management of the National Park is detailed in the The National Park Development Plan/ Guidelines for the Management and Operation of the Barbados National Park and other Natural Heritage Conservation Areas (1999) (The National Park Plan). When undertaking activities within the boundaries of the National Park, the policies therein should be applied along with the policies outlined below and in Section 4 of this plan. Detailed interpretations of the National Park Plan can be obtained through discussions with the Government of Barbados Natural Heritage Department.

The National Park Boundary shown on various maps in this Physical Development Plan incorporates both a land and an adjacent offshore marine component. This boundary was identified based on:

- The National Park boundary shown in the Physical Development Plan Amended 1986;
- Extensive field surveys and literature review;
- Review of aerial photographs, development applications, land ownership patterns and GIS mapping information;
- Consultation with the Coastal Zone Management Unit;
- Consultation with stakeholders and local residents; and
- A reconfirmation of the integrity of the boundary by review in 2016 through field observation and digital data review.

The Marine Boundary was established in concert with the Coastal Zone Management Unit and may be revised from time to time. The extent of this feature at the time of this plan is located on several maps including Map 1: Growth Management Framework.

The land boundary closely matches the public roads and visible landscape features. A description of the boundary is included in Appendix X to this Plan.

> Codrington College, St. John

Overarching Policies

1. The use and management of the land and marine resources in the National Park will be of a sustainable nature and supportive of the social and economic development of local communities.
2. An ecosystem approach that encompasses the terrestrial and marine environment will be required in decision making in the National Park.
3. The biodiversity of the area including terrestrial and marine ecosystems, habitats and species will be protected. Specifically:
    a) Key and supporting components of the Natural Heritage System will be protected in accordance with the policies of Section 2.2.2: Natural Heritage System.
    b) The quality and integrity of the ecosystems including air, water, land, plant and animal components will be protected and improved.
    c) The linkages and relationships among ecosystem components, including humans will be developed, and these components will be considered beyond their immediate environs in the broader National Park area and the island as a whole.
    d) Viability of both native and desirable non-native species will be promoted.
    e) Restoration of ecosystems will be encouraged where integrity has been affected.
    f) Ecosystems will be managed to encourage resiliency and a balance between humans and nature.
    g) Landforms, geomorphological features and reef systems will be protected.
    h) Water resources will be protected.
    i) The Park's most important natural features will be protected within the 'Natural Heritage Conservation Area' designation in order to secure their protection.
4. The distinctive character and appearance of each of the Park's five terrestrial landscape zones will be promoted and protected:
    a) The St Lucy Coastal Cliffs;
    b) The Savannahs;
    c) Chalky Mount;
    d) The Scotland Basin; and
    e) Hackleton's Cliff.
5. The qualities of wilderness and solitude and the traditional patterns of resource use and management will be preserved from encroachment.
6. Sites, features and buildings of architectural, historical and archaeological significance will be enhanced and protected in accordance with the policies of Section 2.2.5: Cultural Heritage.
7. The settlement pattern of National Park Villages and rural settlements will be preserved and new development will respect this pattern.
8. Opportunities for sustainable local economic development will be created and supported through:
    a) Rural tourism;
    b) Craft industries;
    c) Environmentally sensitive farming and fishing activities;
    d) Conservation projects including reforestation and the creation and development of National Forest Sites;
    e) Amenity and community upgrading projects; and
    f) Touring and guiding opportunities.
9. Opportunities for passive recreation and to promote an understanding and enjoyment of the special qualities of the Park will be promoted.
    a) Recreation and tourism which respects the Park's special environmental qualities and, where possible, provides social and economic benefits for local communities will be promoted.
    b) Information about the Park will be prepared and made available in order to improve understanding and awareness of recreational opportunities, increase awareness of its special qualities, and engender support for the continued protection of the area.

> Walkers Restoration, St. Peter

10. Residential development will complement and support the landscape, seascape and environmental qualities that led to National Park designation, while recognizing the long standing communities within the National Park.

a) Future residential development will be focused in the National Park Villages of Belleplaine, Bathsheba and Boscobelle so as to conserve the rural character of the landscape, while enhancing the amenity and economic health of these villages.

b) Belleplaine will be advanced as the centre of the National Park.

c) The Government will take steps to improve housing conditions in the National Park by upgrading roads, water and electricity services and existing housing, and by relocating residents from lands threatened by erosion or land slippage.

d) Development outside of the National Park Villages will be limited to ensure the preservation of the characteristics of the National Park

11. Mineral extraction will be limited to those resources for which there are no alternative sources of supply and the use of the resource is in the national interest.

a) Restoration of mineral extraction sites will be required at the earliest possible date and to the highest possible standards.

> Agriculture in the National Park, Belleplaine, St. Peter

2.2.5

Cultural Heritage

Cultural heritage plays a key role in shaping Barbados' national identity. The island's wealth of heritage assets range from buildings and conservation areas to terrestrial and marine archaeological resources to intangible heritage and cultural practices. Since the adoption of the 2003 Physical Development Plan, Historic Bridgetown and its Garrison have achieved international recognition as a UNESCO World Heritage Site. Other highlights include the heritage area in Speightstown, the Morgan Lewis Sugar Mill, Barbados National Park and the Barbados Landship. These special places and cultural traditions point to Barbados' central role in the Atlantic economic system of the early colonial period and shed new light on British colonialism and the rise of plantation societies.

The Cultural Heritage policies are comprised of 7 sections:

- Overarching Policies
- Cultural Heritage Assets
- Development Adjacent to a Cultural Heritage Asset
- UNESCO World Heritage Site
- Development in or Adjacent to UNESCO World Heritage Site
- Cultural Heritage Conservation Areas
- Archaeological Resources

Overarching Policies

1. Cultural Heritage is recognized as an irreplaceable core asset consisting of buildings, conservation areas, terrestrial and marine archaeological resources, and intangible heritage assets that attracts residents and tourists.
2. Cultural heritage assets play an important role as part of Barbados' Green Economy and its sustainable tourism industry.
3. The Government will develop protocols to coordinate actions to be taken by the Chief Town Planner or designate in situations where cultural heritage assets are threatened or damaged by the impacts of climate change or natural disaster.
4. A climate change risk analysis will be conducted to characterize the multi-hazard vulnerabilities (levels of exposure and susceptibility) and attributes of natural hazard/climate change risks (intensity, duration, frequency timing/seasonality, spatial extent) for individual cultural heritage assets and attributes.
5. Location and asset specific climate change adaptation measures will be developed to respond to potential natural hazard and climate change impacts.
6. The Government will develop a Heritage Impact Assessment process appropriate to Barbados' context and cultural heritage.

Key Concepts

Cultural Heritage: is the legacy of physical artefacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations. Cultural heritage assets may include archaeological assets or areas, built heritage, cultural heritage landscapes, underwater and intangible heritage.

Intangible Heritage: includes the practices, expressions and knowledge – along with the objects or spaces associated , with them – that are a part of Barbadian culture. Intangible cultural heritage is often associated with arts, traditional craftsmanship or social rituals or events. Examples include traditional fishing and boatbuilding practices, and the Landship.

Cultural Heritage Assets

7. The Barbados Register of Historic Places will list and describe all cultural heritage assets that are formally recognized for their cultural heritage value and include statements of significance that explain their heritage values and character-defining elements. Heritage assets include:

a) buildings and structures;
b) historic urban parks;
c) cultural landscapes;
d) districts or clusters of buildings;
e) industrial sites;
f) cultural spaces and areas;

8. The Government will prepare, update, and maintain a Barbados Register of Historic Places in accordance with the Town and Country Planning Act. The Barbados Register will include both designated properties identified through a public consultation process, as well as non-designated properties with potential for future designation. Properties included on the Barbados Register of Historic Places (Barbados Register) will be announced and published through the Official Gazette, and as approved by the Chief Town Planner or designate.

9. The Barbados Register will include statements of significance explaining the heritage value and character defining elements of listed cultural heritage assets including: architectural, design or physical values; social, community, historical, natural, archaeological, scientific, or technological values; associated values based on context, setting, or views; or landscape values. The contribution of Barbados' diverse history and cultures will be considered in determining the cultural heritage value of an asset.

10. The Town and Country Development Planning Office will update and maintain a comprehensive island-wide inventory of Barbados' cultural heritage assets on land and underwater.

11. A comprehensive set of standards and guidelines for the conservation of historic places will be developed to support the conservation decision-making process for the identification, conservation, and management of all cultural heritage assets. Standards and guidelines will apply to those listed in the Barbados Register, as well as unidentified and potential heritage properties. All cultural heritage assets shall be protected, conserved, and maintained consistent with these standards and guidelines.

12. The Barbados Register will be made easily accessible to the public in order to increase public awareness and engagement on the conservation and preservation of cultural heritage assets. Members of the public will be encouraged to submit proposals for new designations of cultural heritage assets.

13. Incentives, including specific fiscal measures, advisory services and grants, will be provided to encourage non-governmental initiatives for the protection and conservation of cultural heritage assets.

14. Significant deterrents for unauthorized interventions and demolitions will be created, including fines of up to BBD$50,000 and other deterrents; enforcement capacity will be strengthened to ensure that deterrents are effective.

15. Designated cultural heritage assets will be protected against deterioration by neglect through the enforcement of heritage property standards by-laws.

16. Identified cultural heritage assets may be further protected, maintained, and enhanced through the preparation of specific capital projects and through Town and Country Planning legislation.

17. An ongoing programme of identification and designation of cultural heritage assets will be enhanced, in conjunction with the Barbados National Trust, the Barbados Museum and Historical Society, and the University of the West Indies.

MAP 9:
Cultural Heritage Assets

MAP 10:
Cultural Heritage Assets: Bridgetown

Development Adjacent to a Cultural Heritage Asset

18. Any proposed development (including public works), alteration, extension, or change of use on, or adjacent to, a cultural heritage asset listed in the Barbados Register will protect the integrity of the cultural heritage asset, including its cultural heritage value and defining characteristics.

19. Any proposed development (including public works), alteration, extension, or change of use on, or adjacent to, a cultural heritage asset will require express written planning permission by the Chief Town Planner or his/her designate, and will be circulated to the Barbados National Trust, the Barbados Museum and Historical Society, and any additional nominated body for comments.

20. A Heritage Impact Assessment will be required for any development, alteration, extension or change of use on, or adjacent to, a cultural heritage asset, including those listed on the Barbados Registry and potential archaeological areas, in order to assess potential impacts and determine appropriate mitigation strategies. Details of the scope and process for the Heritage Impact Assessment are outlined in Section 5.

21. Prior to undertaking an approved alteration to a property on the Barbados Register, the property will be recorded and documented by the owner, to the satisfaction of the Chief Town Planner.

22. Demolition or partial demolition of a cultural heritage asset will not be acceptable unless it can be shown to the Chief Town Planner or designate that the building is structurally unsound and beyond economic repair, that viable alternative uses cannot be found, or that there would be substantial benefits (including public safety) to the larger community. In addition, an appropriate and detailed redevelopment plan shall be submitted.

23. In order to retain their appearance, permanent advertisements, or signs of any type within the curtilage of cultural heritage assets will need the express written permission of the Chief Town Planner.

UNESCO World Heritage Site

Historic Bridgetown and its Garrison became Barbados' first World Heritage Site in 2011. The World Heritage Management Plan for Historic Bridgetown and its Garrison sets out a complete programme to protect, rehabilitate, interpret, monitor, and celebrate this internationally recognized site. The Management Plan contains a set of policies and processes that will serve as a model for potential future designations being considered across Barbados.

The World Heritage designation presents an unprecedented opportunity to build national pride among Barbadians and foster sustainable economic growth through heritage tourism. To unlock the potential of this international recognition and to advance a new vision for promoting the island, Barbados will work towards implementing the 2011 World Heritage Management Plan by addressing issues such as knowledge about the site, consolidation of the management area, protection measures, coordinated management, public awareness and adequate funding.

24. The Physical Development Plan recognizes the UNESCO World Heritage Site designation for Historic Bridgetown and its Garrison, as identified on Map 9: Cultural Heritage Assets and Map 10: Cultural Heritage Assets – Greater Bridgetown. The significance of the UNESCO World Heritage Site is formally acknowledged by the Physical Development Plan as a World Heritage Cultural Conservation District based on its Statement of Outstanding Universal Value as inscribed at the 35th session of the World Heritage Committee in 2011.

> Harrison College, Bridgetown

> Barbados Museum, Garrison, St. Michael

25. The Barbados World Heritage Committee (WHC) is responsible for the overall management and protection of the Outstanding Universal Value of Historic Bridgetown and its Garrison. The WHC will take on the role of:

- Overseeing adherence to the World Heritage Convention;
- Advising on policies' and programmes for the conservation and management of heritage sites;
- Monitoring and evaluating all matters relating to the protection and management of cultural and natural heritage sites in Barbados; and
- Providing representation for Barbados at the bi-annual UNESCO World Heritage General Assembly and the annual World Heritage Committee meeting.

26. The Management Plan for Historic Bridgetown and its Garrison 2011 (Management Plan) is a core resource tool with the overarching goal of facilitating a participatory and comprehensive system of management to protect and preserve the Outstanding Universal Value of the Property and its buffer zone. Strategically, the objectives of the Management Plan are to:

a) Protect, preserve and enhance the cultural heritage within the Property.
b) Enhance physical and intellectual access to the Site.
c) Harness, manage and develop the recreational assets and tourism potential of the Site to contribute to the diversification of the economy.
d) Raise awareness, understanding and appreciation of the Outstanding Universal Value of the Property and encourage local participation in its preservation.
e) Interpret the Outstanding Universal Value of the Site through a series of cultural programmes and activities.
f) Establish guidelines for and manage the social and economic activities within the Property.
g) Develop a set of appropriate risk responses and ensure the availability of efficient emergency services for the protection of the Property.
h) Ensure that future development does not have a negative impact on the Outstanding Universal Value of the Property.

27. The Physical Development Plan policies and interpretation and implementation of these policies will be consistent with the goals and objectives of the Historic Bridgetown and its Garrison Management Plan, and will contribute towards implementation of the Actions Plans for the Management of Bridgetown and its Garrison.

28. In keeping with the Management Plan and under the guidance of the WHC, Action Plans will be undertaken including:

a) Action Plan for Protecting, Preserving and Enhancing Heritage
b) Action Plan for Education, Capacity Building and Research
c) Action Plan for Traffic Management
d) Action Plan for Tourism Management
e) Action Plan for Public Awareness
f) Action Plan for Cultural and Heritage Interpretation
g) Action Plan for Risk Management

29. Any decisions regarding the development or alteration of any property located within the boundaries of the UNESCO World Heritage Site as identified on Maps 9 and 10 will be consistent with the policies of this section as well as the objectives and directions of the Historic Bridgetown and its Garrison Management Plan.

30. A defined buffer zone extends beyond the boundaries of the Historic Bridgetown and its Garrison World Heritage Site. The intent of the buffer zone is to provide an area of protection from any potential negative impacts of any development proposed outside of and in proximity to the World Heritage Site boundaries.

31. Any proposed development or alteration of land within the buffer zone must demonstrate that appropriate measures will be taken to mitigate potential negative impacts on lands located within the designated World Heritage Site.

32. The Physical Development Plan recognizes the potential for future additional UNESCO inscriptions for locations in Barbados, and will be amended in order to reflect appropriate policies to implement any associated heritage management plans. Map 10 will be updated in order to reflect the site boundaries and buffer zones of any future UNESCO World Heritage Sites.

a) Local communities will be involved in the development of nomination files as a means to build awareness and engagement.

Development In or Adjacent to UNESCO World Heritage Site

Cities inscribed on the World Heritage List need to evolve and be the focus for investment in order to respond to community needs and to remain resilient. Good development can in fact enhance a designated site. It is important to acknowledge that "one size does not fit all". Each World Heritage Site is unique and arguably different locations within one World Heritage Site can be -- and often are -- different. Good process that takes the specific context into account is the key to successful insertion of new developments in or near World Heritage Sites. World Heritage guidelines encourage ecologically and culturally sustainable uses that may contribute to the quality of life of communities but require countries to avoid negative impacts on the Outstanding Universal Value of World Heritage Sites.

33. Any proposed development (including public works), alteration, extension, or change of use on, or adjacent to the UNESCO World Heritage Site will protect its Outstanding Universal Value.

34. An in-depth understanding of the context within which a new development will be situated concerns the site itself and the surrounding area, and includes historical significance, archaeological resources, heritage buildings, streetscapes, visual perspectives and any other pertinent tangible or intangible values.

35. Any proposed development (including public works), alteration, extension, or change of use on, or adjacent to the UNESCO World Heritage Site will require express written planning permission by the Chief Town Planner or his/her designate, and will be circulated to the Barbados National Trust, the Barbados Museum and Historical Society, and any additional nominated body for comments.

36. A robust understanding of context requires local knowledge to elaborate on the Statement of Outstanding Universal Value.

37. Decisions on development proposals shall be based on principles that support the conservation of heritage value and character-defining elements when creating any new additions and that make new work physically and visually compatible with, subordinate to and distinguishable from the World Heritage Site. New work may be acceptable when it respects and does not distort or obscure the cultural significance of the place, or detract from its interpretation and appreciation. New work should respect the World Heritage Site elements through consideration of its siting, mass, form, scale, character, colour, texture and material.

38. Knowledge of the context and conservation principles should inform the design of new projects from the outset. Dialogue between project proponents and planning officials is an iterative process that begins at the initial stages of project development.

39. A Heritage Impact Assessment will be required for any development, alteration, extension or change of use on, or adjacent to the UNESCO World Heritage Site in order to assess potential impacts and determine appropriate mitigation strategies.

40. Demolition or partial demolition within the World Heritage Site will not be acceptable unless it can be shown to the Chief Town Planner or designate that the property is structurally unsound and beyond economic repair, that viable alternative uses cannot be found, or that there would be substantial benefits (including public safety) to the larger community. In addition, an appropriate and detailed redevelopment plan shall be submitted.

41. In order to retain its appearance, permanent advertisements, or signs of any type within the World Heritage Site will need the express written permission of the Chief Town Planner.

42. Landmark projects of significant scale are best dealt with through a peer review, using a design review panel of experts. A made-in-Barbados professional evaluation of major aspects would allow for a broader range of input from knowledgeable sources to encourage excellence in architecture, urban planning and landscape design.

Cultural Heritage Conservation Areas

Cultural Heritage Conservation Areas represent a contemporary approach to achieving heritage conservation goals while integrating heritage as part of the life of the community. They consist of the buildings, landscapes, cultural spaces, archaeological resources, important views, and other contributing features that define the unique character of the community.

43. Barbados' designated Cultural Heritage Conservation Areas are identified on Map 9: Cultural Heritage Assets and Map 10: Cultural Heritage Assets – Greater Bridgetown and include:

a) WCHCA: Historic Bridgetown and its Garrison
b) CHCA 1: Strathclyde
c) CHCA 2: Belleville
d) CHCA 3: Hastings Pavilion / Ocean View
e) CHCA 4: Speightstown
f) CHCA 5: Rock Hall

44. Statements of significance will be prepared for each of the Cultural Heritage Conservation Areas to explain their heritage values and character-defining elements. These statements of significance will be made available for public access.

45. The Town and Country Development Planning Office will implement targeted community programmes to encourage engagement and public awareness of Cultural Heritage Conservation Areas, and to encourage the involvement of local communities in the development of future Cultural Heritage Conservation areas.

46. Within Cultural Heritage Conservation Areas, natural heritage risk zones will be identified along with strategies to mitigate any risks to heritage assets.

47. Cultural Heritage Conservation Areas will be designated in accordance with the Town and Country Planning Act as a means of conserving their heritage values, including architectural, design or physical values; social, community, historical, natural, archaeological, scientific, or technological values; associated values based on context, setting, or views; or landscape values. The contribution of Barbados' diverse history and cultures will be considered in determining the cultural and/or natural heritage value of an area.

48. Any proposed development, alteration, extension, or change of use within Cultural Heritage Conservation Areas will require express written planning permission by the Chief Town Planner or designate, and will be circulated to the Barbados National Trust, the Barbados Museum and Historical Society, and any additional nominated body for comments.

49. The felling or lopping of all trees over 0.5 metres in diameter in Cultural Heritage Conservation Areas will require the express written permission by the Chief Town Planner or designate.

50. Development in Cultural Heritage Conservation Areas will only be permitted where:

a) It enhances or preserves the character or appearance of the area or its setting;

b) For demolition or partial demolition, it can be shown to the Chief Planner that the building is beyond economic repair, that viable alternative uses cannot be found, or that there would be substantial benefits to the larger community. In addition, an appropriate and detailed redevelopment plan shall be submitted;

c) Redevelopment is undertaken within an agreed timescale to ensure that vacant land and buildings do not detract from the special character and quality of the area;

d) The new development will need to respect the special character and quality of the area through size, design and materials, in compliance with the Barbados standards and guidelines for the conservation of historic places.

> Queen Street, within the Speightstown Cultural Heritage Conservation Area

51. All new development should normally conform to the relevant planning policies referred to elsewhere in this document, but variations in these standards would be considered in order to maintain the specific values and characteristics of the Cultural Heritage Conservation Areas.

52. In order to retain the appearance of Cultural Heritage Conservation Areas, permanent advertisements or signs of any type will not normally be allowed except with the express permission by the Chief Town Planner.

53. Development by the Government, its agencies and statutory undertakers, including wirescapes, sub-stations, road signs, street furniture, drainage activities, streetscaping, road repairs and widening that affect the appearance of the Cultural Heritage Conservation Areas, will require the express approval by the Chief Town Planner. Generally, all publicly funded works will be designed in a comprehensive and complementary manner, in compliance with the Barbados standards and guidelines for the conservation of historic places, to enhance their special heritage character.

54. In order to retain the historic, architectural or landscape character of specific areas for development and redevelopment within Cultural Heritage Conservation Areas, the requirements of Section 2.16, regarding road reserves and access may be relaxed on agreement of the Chief Town Planner.

> Cemetery, Nidhe Israel Synagogue

Archaeological Resources

Archaeological resources and research include both terrestrial and underwater resources. Archaeological research in Barbados began in the early twentieth century. It helps shed light on the Amerindian peoples who settled the island thousands of years ago and on the lives of colonists and enslaved workers. Archaeological heritage also supports cultural tourism initiatives. To improve the protection, management and awareness of archaeological resources, Barbados could enact legislation, strengthen policies, improve professional capacity and undertake public awareness initiatives.

55. The Government will update inventories for terrestrial and underwater resources, taking care to keep exact locations confidential to prevent looting and other inappropriate activities.

56. Statements of significance for recognized archaeological sites will be prepared to explain their heritage values and character-defining elements and make these publicly available, when appropriate.

57. All development applications development applications for a change of use, building expansion over 50 square metres or plan of subdivision over 10 lots must carry out a scoped Heritage Impact Assessment to assess any potential presence of archaeological resources as part of the supporting documentation for their proposal. The assessment involves a brief background history and a shovel test survey of the property to determine whether there are archaeological resources on the site. Where potential presence of archaeological resources are identified a full Heritage Impact Assessment will be undertaken, unless determined otherwise by the Chief Town Planner, and for which documentation will include:

a) Details on the background history of the property;
b) Details on the presence and importance of the archaeological remains;
c) Details as to how the development will affect the archaeological remains;
d) Appropriate remedial and mitigation actions required to maintain the integrity of the archaeological resources, such as:
   - Site designs which avoid the archaeological remains;
   - Burial of the archaeological remains by covering the features with a geotextile layer and mounding prior to development.
   - Excavation, recovery, and conservation of the archaeological remains prior to development;
   - Archaeological surveys and mitigation are at the cost of the project proponent;
e) Oversight and/or review of the Heritage Impact Assessment will be carried out by a professional archaeologist in the TCPDO in consultation with an advisory board made up of representatives from the Barbados Museum and Historical Society, UWI (Cave Hill) and Barbados National Trust;

58. The Chief Town Planner, on advice from the advisory board may require, prior to approval:

a) Additional documentation of the archaeological resources present on the site; and/or;
b) Redesign or enhancement of the development proposal including the proposed mitigation measures.

59. A detailed record of archaeological observations during construction may also be required as a condition of approval.

2.2.6

Community Cores

Community Cores are recognizable, established centres throughout the existing urban fabric. In some places, such as Speightstown, Holetown or Oistins, these are the historic core of these communities. Community cores are the focus of shops, services and transport for an area and typically have a historic function. Newer Community Cores are also developing in fast growing areas of the island and may have a more auto-oriented function drawing from a wider regional area. The intention of recognizing distinct Community Cores throughout the island is to ensure that these places continue to function as a focus for shops, services, public spaces, amenities, social and community gathering. The following policies apply to Community Cores.

Overarching Policies

1. The distinct role and identity of each Community Core within the wider community will be strengthened by directing intensification and mixed-use development to these places.
2. Community Cores are intended to function as centres with a higher level of service for their surrounding areas. As such, the Government will continue to provide a range of services in Community Cores.
3. A range of housing types, including seniors and affordable housing, are appropriate for Community Cores to build on existing community assets and services
4. Community Cores may be appropriate locations for multi-family, multi-storey buildings. Built Form Controls are found in Section 3 for Centres and mMixed Uses Corridors in the Settlement Area.
5. An enhanced mobility system will be focused in the Community Cores that will be the locations for transit terminals and park and ride facilities, as per Section 2.6.
6. Walkability and accessibility will be encouraged in the Community Cores to ensure Community Cores function as local service centres for residents of all ages and abilities.
7. An open space strategy for community cores will link together high quality parks, open spaces and a strong relationship to the waterfront, where applicable. Where possible, the open space strategy will address the Natural Heritage System and functions within the community.
8. Cultural heritage assets within community cores will be identified and enhanced as key to community character and incorporated into place making strategies.
9. Vacant and abandoned buildings will be considered prime locations for reinvestment and revitalization, in particular cultural heritage resources within Community Cores that may be in disrepair.
10. Design strategies will ensure adaptability of community cores to the impacts of climate change, in particular sea level rise and storm surge.
11. Employment and commercial uses will be encouraged in Community Cores which are scaled appropriately to the community.

Key Concepts

Community Core: the commercial, residential and cultural heart and central places of Barbados, providing the densest concentration of people, buildings, and activities. Strengthening the cores strengthens the entire region, as the cores provide services far beyond their borders.

2.3
Greening the Economy

Transitioning to a Green Economy is seen as pivotal in reducing the vulnerability of the nation to economic and natural shocks as it charts a more sustainable development path for the benefit of current and future generations of Barbados. In this regard, developing land use policies that promote and sustain a Green Economy is an underlying direction that guides the scope and focus of PDP policies.

Importantly therefore, public and private investments aimed at reducing pollution and carbon emissions, enhancing the opportunity to deliver a more coordinated approach to the generation of renewable energy, while preventing any reduction in the integrity or resilience of the island's natural and cultural capital, particularly the status of any important ecosystems and their associated biodiversity, will be essential not only to sustain, but also to promote enhanced economic prosperity and social well-being in Barbados.

The Green Economy Scoping Study (GESS) for Barbados (UWI, 2012; Moore et al, 2014) established a framework for promoting the way forward through an integrated and more sustainable approach to development that would assist Barbados in achieving the potential net benefits accruing from the adoption of green strategies to enhance resource efficiency and economic growth. Barbados is the first Caribbean nation to have undertaken this initiative.

Key Concepts

Green Economy: In essence, the Green Economy is an organizing principle towards future prosperity for the nation. It should be seen as a targeted development path with the underlying concept of sustainability acting as a key driver to encourage employment and enhance income generation

> Berinda Cox Fish Market, Oistins

Overarching Policies

1. The Government will support the island's transition to a green economy. This will include:

a) Greening all sectors of the economy, in particular implementing opportunities identified in the Barbados Green Economy Scoping Study for greening the agriculture, fisheries, building/housing, transport and tourism industries.

b) Protecting the island's core assets including water, food and agricultural lands, the natural heritage system, cultural heritage assets, the National Park and community cores, in accordance with Section 2.2.

c) Promoting the efficient use of land through a resilient and sustainable development pattern, in accordance with Section 2.1.

d) Developing the National Park based on best practices in the integration of economic growth within the context of sound environmental management and good stewardship, in accordance with Section 2.2.4

e) Encouraging a more sustainable approach to waste management with increased recycling and reuse, consideration of waste to energy conversion and increased diversion from land filling.

f) Advancing mobility and accessibility by developing a transportation network that prioritises alternatives to the private automobile including public transport and active transportation, in accordance with Section 2.4.

g) Prioritizing energy efficiency and alternative energy sources.

h) Requiring sustainable resource extraction practices including controls on location, scale, and methods of extraction and rehabilitation of former mined sites for recreational purposes and environmental restoration.

i) The Government will prioritize putting in place the relevant mechanisms and legislation in support of the Green Economy including the Environmental Management Act.

2. The Government will support the diversification and greening of sectors within the island's economic base. This will include:

a) Promoting and expanding green economy-related employment, in particular employment in the sustainable tourism and agriculture sectors.

b) Encouraging offices and knowledge-based industries in Employment Areas in addition to traditional light industrial uses.

c) Promoting innovative and sustainable development, infrastructure and building practices. These may include the greater use of green building materials and less resource intensive technologies, the introduction of higher environmental building standards, improved efficiencies in energy and water consumption, waste reduction, planning and development of sustainable, complete communities and the promotion of resilient and compact communities.

d) Achieving a shift towards increased mobility and accessibility through multiple modes of transportation tied together as part of an integrated island-wide network.

3. The food and agriculture sector is recognized as a key component of the island economy. Primary importance will be given to maintaining a sustainable food and agricultural land base, increasing food security and sovereignty and supporting a viable agricultural sector in accordance with Section 2.2.1.

4. The commercial role of Central Bridgetown and the Community Cores of other communities are key to their success of these cores as complete communities and will therefore be enhanced and revitalized.

5. The redevelopment of commercial facilities in declining Community Cores will be encouraged by such measures as:

   a) Increasing flexibility in permitted uses;

   b) Encouraging the conversion and adaptive reuse of existing buildings;

   c) Creating a comprehensive parking and traffic strategy;

   d) Improving the amenity and quality of public realm.

   e) Major shopping facilities in suburban and peripheral areas will be permitted, provided that they do not negatively impact the planned function of Central Bridgetown or the Regional Centres. Retail market impact studies will be required for major shopping centre proposals outside of Central Bridgetown and the Regional Centres.

6. The return to productivity of vacant, derelict and underperforming lands and buildings within Employment Areas will be encouraged by such measures as:

   a) Increasing flexibility in permitted uses;

   b) Encouraging the conversion and adaptive reuse of existing buildings;

   c) Improving the level of amenity and public realm.

7. New major institutional campuses such as medical schools will be considered on sites that meet the Easily accessible by public transportation;

   a) Appropriately scaled for the ultimate capacity of the institution; and

   b) Compatible adjacent land uses;

Sustainable Tourism

Tourism has been Barbados' primary foreign exchange earner and most powerful economic driver since the 1970s when the nation shifted from a land based production economy towards a service based economy. The value of the tourism industry in Barbados reflects the long established and self-reinforcing relationship between the appeal of the island's sub-tropical location and climate, the range and quality of its natural assets, and its ability to attract inward investment for the development of a range of quality tourism facilities and services. Not only is it essential to maximize the contribution of tourism to the Barbadian economy, tourism must also act as the catalyst for the economic stimulation of other sectors.

Traditionally the tourism industry in Barbados has been focused around sun, sea and sand. However, in today's context of the competitive global tourism marketplace and climate change, relying on these is no longer enough. Coastal hotel developments will be the first to suffer from the effects of sea level rise and extreme weather events. There is a need to build resiliency into the tourism sector in Barbados, both by broadening and re-orienting the tourism offer and by incorporating sustainable practices and climate change adaptation and mitigation strategies into the management of tourism assets and attractions.

8. New beach-oriented hotel and tourism development will be directed primarily to existing *Tourism Corridors* and areas designated for tourism along the south and west coasts.

9. The Government will encourage the conversion of plantation houses for tourism and accommodation uses.

10. New beach-oriented hotel and tourism development will be directed primarily to existing Tourism Corridors and areas designated for tourism along the south and west coasts.

11. A broader range of tourism accommodation and development will be encouraged that expands the tourism offerings and island experience to include eco-lodges, camping, retirement villages and inland tourism locations where services exist.

12. The Government will encourage the conversion of plantation houses for tourism and accommodation uses.

13. The Government will support the development of the tourism industry in accordance with the principle of sustainable tourism.

a) All tourism-related land use decisions will support the primary goal of Barbados' Tourism Master Plan 2014-2023, "to grow the Barbados visitor economy sustainably and responsibly in consideration of the people, the economy and the natural environment."

b) The Government will promote its sustainable tourism objectives by:

- Determining the optimal mix of types of establishments to be encouraged; continuously upgrading the accommodation product and encouraging investment in tourism product;
- Directing new beach-related tourism development proposals into Tourism Corridors as delineated on Map 2 Settlement Structure and other areas designated for Tourism uses;
- Supporting expansion, improvement and redevelopment of tourist accommodation facilities in proximity to prime attractions including good swimming beaches, cultural heritage assets, including cultural heritage landscapes, and Community Cores
- Directing new tourism development proposals to areas currently served, or proposed to be served, by piped sewer and water systems;
- Promoting the preservation and enhancement of heritage buildings and districts to provide a richer cultural experience for visitors;
- Encouraging the conservation, sound management and enhancement of the built environment in order to create an attractive environment for visitors;
- Promoting the preservation of unique natural and open spaces, identified in the National System of Parks and Open Spaces System, to ensure that the remaining natural areas of the island are preserved and add to a unique visitor experience.

14. Environmental sustainability and climate change resiliency will be primary considerations in the development of tourism attractions and hotel accommodations.

a) Energy efficiency and the incorporation of renewable energy will be encouraged in tourism developments and operators

b) Water conservation practices will be required in tourism developments, particularly the hotel sector.

c) Disaster risk management and climate change adaptation measures will be required in the design and operation of coastal hotel developments and in International Gateway Nodes such as the Port of Bridgetown and Grantley Adams International Airport.

15. A broader range of tourism accommodations and attractions will be encouraged across the island, particularly those that provide an "authentic" Barbados tourism experience. This includes:

a) The collective offering of the National Attractions (OS 5) shown on Map 15: Barbados System of Parks and Open Spaces.

b) Attractions that involve interacting with the island's natural or cultural heritage;

c) Attractions that demonstrate sustainability and/or innovation;

d) Alternative accommodations such as bed and breakfasts, inns in historic houses and camping grounds.

e) Tourism products that serve both the domestic and international tourism markets.

16. The Historic Bridgetown and its Garrison UNESCO World Heritage Site will be promoted as a key sustainable tourism asset and the cornerstone of a cultural heritage tourism strategy.

17. The National Park will be promoted as a key sustainable tourism asset. Strategies for sustainable tourism in the National Park will include:

a) Facilitating opportunities for nature tourism activities and facilities such as camping, hiking, eco-lodges, and food trails.

b) Identifying Belleplaine as the centre of the National Park and encouraging the development of infrastructure to support this role such as signage, an education centre, and trailheads.

c) Promoting unique sustainable attractions in the National Park including the Walkers Sand Mine Regeneration Project.

d) Improving the wayfinding to and within the National Park through enhanced signage and scenic national park routes.

2.4

Advancing Mobility and Accessibility

The provision of efficient transport service and infrastructure is fundamental to the promotion of inclusive, healthy communities and sustainable development within Barbados. Access to employment opportunities and education, health and other services, and obtaining benefits from those services, hinges on the availability of safe, affordable, comfortable, reliable and efficient transport systems.

Recently there has been a major shift in transportation thinking, from a focus on the ease of movement for cars, to a focus on the ease of movement for people and goods. This concept, referred to as mobility, encompasses a full range of modes including walking, cycling, transit, water transport, motorized vehicle and air travel. The concept of accessibility refers to ease of travel between activities, or the overall difficulty in getting from an origin to a destination. Transportation planning today involves considering how a combination of modes can be used to improve accessibility for people and goods. Finally, there has been growing evidence of the key role mobility, accessibility and land use can play in addressing the challenges faced by increasing rates of non-communicable diseases such as obesity and diabetes. Advancing mobility and increasing accessibility will be key to an inclusive, prosperous and healthy nation in Barbados.

The Advancing Mobility and Accessibility policies are structured in seven sections:

- Overarching Policies
- Multi-modal Network
- Mobility Nodes
- Active Transportation
- Public Transport
- International Gateways
- Parking Management
- Water Transport

Overarching Policies

1. Barbados will shift towards increasing mobility and accessibility by planning for multiple modes of transportation tied together as part of an integrated island-wide network. Barbados will plan for a multi-modal transportation network as outlined in Map 11 that:

a) Offers a choice of multiple transportation modes, including active transportation (walking, cycling), public transport (bus, water transport), and the automobile (private or shared).

b) Meets a variety of people's needs and connects them with major destinations for employment, institutional, commercial, and cultural uses.

c) Will be coordinated as part of an integrated island-wide network across Barbados that will remain resilient under changing natural hazard and climate conditions.

d) Plans for Mobility Hubs of varying scales and intensity across the island that will allow people to connect and facilitate ease of transfer and interchange between different modes of transportation.

e) Places greater emphasis in the development and redevelopment of communities on public transportation, active transportation, and pedestrian connectivity, recognizing that constructing new roads alone will not solve transportation challenges.

f) Ensures that transportation strategies will be appropriate in the context of the locations that they are planned for, achieving a balance between the effective and efficient movement of people and goods while ensuring public safety.

g) Explores potential strategies and policies to promote and incen tivize transit usage and active transportation, and to dis-incentivize private automobile usage.

> Public Transport, Conga Road, Six Cross Roads, St. Philip

2. The Governments will promote access for all to safe, age and gender-responsive, affordable, accessible, and sustainable urban mobility and land and sea transport systems, in accordance with the objectives of the New Urban Agenda ratified during Habitat III.

a) Barbados' transportation network will be designed to:

i) enable people to engage in meaningful participation in social and economic activities across the island;

ii) increase the level of public safety, health and longevity by reducing transportation related fatalities, injuries and accidents; and

iii) increase safe transportation choices, availability and reliability for all citizens, residents and visitors to Barbados

b) The Physical Development Plan will integrate transport and mobility plans with land use planning decisions to promote a wide range of transport and mobility options, leading to a reduction of travel and transport needs, enhancing connectivity between urban, suburban, and rural areas, including through use of waterways.

3. The Government will recognize the link between transportation and climate change, in particular the significant amount of greenhouse gases contributed by private automobile usage

a) Transportation alternatives to the automobile, such as public transport and active transportation modes, will be promoted as a means of reducing Barbados' greenhouse gas levels.

b) The use of electric vehicles will be incentivized as an alternative to gasoline based transportation.

4. The Government will identify and plan for risk adaptation and resiliency measures related to Barbados's transportation network.

a) A network of alternate routes set in-land will be planned in order to ensure resiliency if roads in risk-prone areas, particularly near coastal zones, become inaccessible or fall into disrepair, requiring the redirection of traffic.

b) Research, data, and projections regarding climate change impacts and natural hazard phenomena will be integrated into decisions regarding Barbados' transportation network to develop a more robust perspective.

c) Iterative risk management approaches that are supported by appropriate modelling and adaptation tools will be developed to respond to projected climate and hazard impacts. Performance measures will be used to inform the prioritization and decision making on appropriate adaptation approaches and interventions.

5. Barbados' transportation network will be planned to accommodate the full spectrum of transportation choices based on a multi-modal approach and is supported by transportation nodes and corridors.

MAP 11:
Mobility and Accessibility

Multi-Modal Network

6. Barbados' multi-modal transportation network, as shown conceptually on Map 11, will consist of the following core components:

a) **ABC/Ronald Mapp Multi-use Corridor**
   i) Barbados' primary highway corridor, which will be planned over the long term to accommodate multi-modal movement including cars, goods, transit and active transportation, where appropriate and mobility strategies such as High Occupancy Vehicle (HOV) lanes between high volume segments.
   ii) Ronald Mapp Corridor extension– planned extension of the Corridor to connect to St Lucy parish church.

b) **Urban Connectors:** As the primary routes from the ABC/Ronald Mapp Corridor, high traffic volumes and congested segments at peak characterize these routes. Mobility strategies such as peak hour reverse traffic flows and other traffic management approaches should be explored to increase the efficiency of these corridors.

c) **Mobility Nodes:** Including Transport Terminals, Park N Ride Transfer points and Bus Transfer Points

d) **Improved Roads/Routes:** Improvements to existing roads that better connect existing communities, key destinations and commuter routes, including the introduction of Park and Ride transfer points and Bus Transfer Points.

e) **Scenic National Park Route:** Improvements to existing key routes to, from and within the National Park including signage and routing, and improving intuitive and scenic routes.

f) **Water Transport / Ferry:** Water based transportation for movement of people.

g) **Multi-Use Trails:** Consisting of "rail to trail" routes and opportunities for cycling networks.

h) **International Gateways:** Including the Grantley Adams International Airport and the Bridgetown Port.

7. Land use planning and transportation planning decisions will be integrated and coordinated in order to increase mobility and accessibility, and to encourage use of active transportation and public transport modes.

a) The Government, through the Ministry of Public Works, will update and complete a National Transport Plan so that national land use in the PDP and transportation policies are aligned and in support of the Ministry of Public Work's Strategic Plan 2016-2020.

b) Residential and non-residential development located near transportation corridors and Mobility Nodes will be planned to accommodate higher densities where it fits with the character of the surrounding use. This will consist of a built-form, scale, and type that will foster a modal shift towards public transport and active transportation modes.

c) The provision of transportation infrastructure will be consistent with the vision, direction, and policies of the Physical Development Plan and the Ministry of Transportation and Works Strategic Plan, 2016-2020 and shall be planned to integrate land use and transportation to support the National Centre and Regional Centres, employment areas, major institutions such as universities or government services, health care facilities, and retail nodes.

d) The multi-modal transportation network will be planned to ensure the efficient, convenient, and safe movement of both people and goods. The location of goods transport routes across Barbados will be periodically reviewed and refined to ensure effective movement.

e) Accessible and barrier-free design options will be incorporated into all modes of public transportation infrastructure throughout Barbados.

Mobility Nodes

Mobility Nodes consist of multiple modes of transportation infrastructure situated at central or key strategic locations in communities across Barbados. They may include a combination of public transport services including both public and private operators, active transportation infrastructure with pedestrian and cycling connectivity, and park and ride facilities.

8. Mobility Nodes will be planned and developed throughout Barbados at central or strategic locations, and will be designed to offer convenience and reliability to increase the overall appeal of public transport services and active transportation modes.

a) Mobility Nodes are located throughout Barbados as identified on Map 11: Mobility & Accessibility.

b) Mobility Nodes will be designed with a high quality public realm that features attractive landscaping and prioritizes pedestrian connectivity, convenience, and comfort. Mobility Nodes will be designed to emphasize a comfortable pedestrian experience, appropriate to the scale of the node, including pedestrian pathways and bridges and safe street crossings.

c) Mobility Nodes will be developed as mixed use areas, and permit a variety of compatible retail vendors and services on site or in the surrounding area in order to serve the needs of travellers and strengthen their connection to the surrounding community.

d) Additional future Mobility Nodes may be located at central or strategic locations within the National and Regional Centres, Community Cores, major institutional uses such as universities, government buildings or health care facilities, and proximate to major commercial, employment, or tourism and cultural areas.

9. Mobility Nodes will link together multiple modes of transportation including public and private transport services, active transportation and related infrastructure for the purposes of reducing congestion and encouraging shared transportation solutions. Mobility Nodes will be planned and designed to successfully achieve a range of functions appropriate to their location and scale as follows as outlined in Figure 5.

a) Transport Terminals: bus terminals with shelters and planned with pedestrian priority areas, cycling infrastructure and retail/related amenities

b) Park and Ride Facilities: allow travellers to transfer from the automobile to public transport modes, or meet with other travellers as part of a car pool.

c) Bus Transfer Point: location of several bus stops/ convergence of transport service designed to ensure safe, weather protected areas for passengers.

10. A range of one or more of the following transportation modes and supporting infrastructure will be integrated with Mobility Nodes:

i) public transport services, including public and private operators;

ii) active transportation infrastructure such as bicycle facilities/parking or pedestrian priority improvements;

iii) park-and-ride or passenger drop off facilities that allow travellers to conveniently and safely transfer from private automobile to an alternative transportation mode.

11. A Park and Ride facility will be explored at the Glebe Mobility Node as a pilot project to determine the feasibility of developing other examples across the island.

	TRANSPORT TERMINAL	BUS TRANSFER POINT	PARK AND RIDE
Mobility related Infrastructure	• Bus terminal building or shelter for multiple busses to layover. • Potential for integration of public transport, buses, mini bus, jitney, taxis • Cycling infrastructure (parking) • Pick-up-drop off areas • May include public parking or park-and-ride lot • Often adjacent to formal or informal vending areas	• Several bus stops and multiple transit routes • Potential shared stops for Public transport buses, mini bus, and jitney, taxi? • Cycling infrastructure • Bus shelters • May include roadside vending	• Parking lot or facility to allow transfer to other modes (carpooling, car sharing, public or private bus, private coach, taxi)
Policy Direction	• Enhance Multi-modal options: integrate public and private operators, increase bike parking, improve walking environment. • Plan for connections to water transportation. • Formalize related vending areas, and other amenities, services	• Improved waiting areas (larger shelters, or shade structures, seating, lighting) • Improved pedestrian connections in vicinity. • Can be integrated with mixed use developments or sites	• Create a safe and comfortable pedestrian environment including lighting and seating/shelter areas for pickup and transfer areas.
Locations	• Fairchild Street • Cheapside/Princess Alice • Speightstown • Warrens • Oistins	• Holetown • Cave Hill • Belleplaine • Mangrove • Six Cross Roads	• Mile and a Quarter • The Glebe (Pilot) • Wildey • Newton • Church Village

FIGURE 5. **Mobility Node Types**

Active Transportation

Rates of diabetes, obesity, and hypertension have been found to be on the rise in Barbados. Research has established a strong link between the health of residents based on the transportation choices they make and the physical design and layout of the communities they live in. Active transportation and the creation of walkable, pedestrian oriented communities has been shown to be one means of helping to effectively address the effects of these non-communicable diseases.

12. Active transportation networks will be a key consideration in transportation and land use planning decisions, and will form a core localized component of the multi-modal transportation network illustrated on Map 11.

13. Active transport routes will be developed in those coastal communities served only by coastal roads, to provide safe, efficient, and rapid, mass-evacuation routes from vulnerable low-lying, near-shore communities to safer, high-ground staging-areas, in the event of imminent natural hazard threats (tsunami) and ingress/egress routes for disaster risk response and recovery.

14. The physical design and layout of communities will be planned to support and promote active transportation, in particular to provide safe, comfortable, and reliable travel options for pedestrians and cyclists.

a) Where possible, communities will be planned with an interconnected street network that facilitates movement by active transportation modes within, between and to and from neighbourhoods and communities.

b) Neighbourhood streets will be designed to prioritize pedestrian safety, recognize use of street for informal recreation and minimize through traffic.

c) Active transportation routes should be planned along mixed use corridors, such that people are able to move and access a variety of local services, community amenities, retail shops, and other commercial uses by walking or cycling.

d) **Pedestrian Priority Linkages** will be identified through the Community Plans, and will be designed as areas with highly walkable and safe environments, including but not limited to Mobility Nodes, markets parks and public spaces and major institutions. In particular, along Pedestrian Priority Linkages continuous sidewalks, street lighting, tree canopy and shade, benches and safe crossings should be integrated into street design, development and infrastructure plans

> Pedestrian crossing, Six Cross Roads, St. Philip

Public Transport

A properly organized public transport sector can have tremendous impacts towards reducing peak-hour traffic congestion and improving accessibility for many areas of the island, and can increase the proportion of people who choose public transport to meet their travel needs. An effective public transport service must be accessible and affordable to all members of society representing good value for money, offer a safe and comfortable experience for passengers, be environmentally sound and contribute towards reducing greenhouse gas emissions, and be responsive to patterns of movement and changing travel needs.

15. Barbados' public transport system will be developed as an efficient, effective and sustainable transportation network across the island that will promote greater levels of public transport usage by residents.

a) Plan for new public transport facilities with routes to connect residents with key destinations such as Bridgetown and the Regional Centres, employment areas, major institutions such as university campuses or health centres, and with the Grantley Adams International Airport.

b) Transport routes will be periodically reviewed and updated based on changes in the population, commuting patterns, or key destinations.

c) Barbados' transport network will consist of both public transit services operated by the Government of Barbados, as well as transit services operated by private transport agencies. Both public and private operators will be recognized as part of an integrated transport network.

d) Wherever possible, separate lanes for buses, particularly in the vicinity of major road junctions on routes into Central Bridgetown or between Warrens and Widley, should be provided.

e) Where possible, Transport Terminals, Park and Ride and Bus Transfer Points should be located within Centres and Mixed Use Corridors, or Nodes designated on Map 2: Island Settlement Structure.

f) Consideration must be given to the provision of bus shelters and seats at bus stops.

> Caption

g) Transport Terminals at Cheapside and Fairchild facilities in Bridgetown require significant improvement.

h) The co-location of Public Transport Buses and Mini-bus facilities in Bridgetown should be explored in one central location.

16. Some communities may experience low public transport accessibility due to sparseness of population or difficulty of terrain. These areas may be supplemented through private transit operators that collect travellers in order to move them towards nearby public transport facilities that connect to the broader island-wide public transport system.

International Gateways

By definition, Small Island Developing States (SIDS) do not share national borders and are therefore limited to air and sea transport options available for the movement of imports and exports. Barbados' international air- and sea-ports are critical to the success and survival of a number of industries and sectors as critical components of industry distribution and value chains. The developmental significance of Barbados air- and sea-port operations is demonstrated by the high levels and dependency of imports through these gateways. A less frequent but equally important function performed by SIDS international ports is to serve as the gateway for international emergency response and recovery support in the event of a national disaster. As strategic transport points for disaster response, recovery and restoration, Barbados international gateways are central national security elements, and a critical component of the full transportation network.

17. Strengthen connectivity within, to and from each of Barbados' international gateways, including the Grantley Adams International Airport (GAIA) and the Bridgetown Port. Promote these high-traffic generating ports as opportunities to develop into multi-modal transportation hubs that are part of a connected, resilient efficient sustainable transportation network across Barbados.

18. An effective network of roadways, highways, transport and access points into and out of international gateway areas will be achieved by:

a) Planning for the efficient movement of people into and out of these ports by improving the interface between international gateways and connecting transportation (roads, transit, pedestrian) infrastructure

b) Connect international gateways with Barbados' broader multi-modal transportation network, ensuring integration with fast, efficient, and reliable public transport service and providing active transportation infrastructure.

c) Provide designated areas for fast and efficient passenger drop-off and pickup. This shall include dedicated taxi stand parking areas located near international arrival and departure points.

19. Implement resiliency measures for Barbados' international gateways. Consider port and airport resiliency and access to supply chains, recognizing that the emergency response point of GAIA is located outside of the 100 year floodline.

a) Explore and plan for redundancy and alternates to the ABC Highway that connect with the GAIA.

b) Develop formal mechanisms for the sustained collaborative engagement of supply chain logistic infrastructure providers to plan and design connected logistics hubs that are resilient to evolving, location specific, natural hazard and climate impacts.

c) Appropriately plan and design connected logistics hubs, resilient to the impacts of climate change.

d) Anticipate and plan for future airport landing or airport facilities to provide redundancy and allow for emergency preparedness.

Parking Management

A parking management program is any plan by which parking space is provided, controlled, regulated, or restricted in any manner. The absence of adequate parking management results in increased traffic congestion with motorists searching out parking spaces, and with inconsiderate parkers. Important gains in road capacity may be achieved through improved parking management, loading and unloading control and enforcement. Uncontrolled parking, loading and unloading of commercial vehicles reduces the capacity of roads to accommodate moving traffic.

20. In all Centres, a Parking Management Strategy should be prepared to minimize the amount of land occupied by parking and to ensure adequate levels of parking are provided through the day and week to appropriately support development.

21. The provision of short-term public parking spaces should be prioritized and limit the availability of long-term public parking spaces, particularly in the National Centre and the Regional Centre areas.

a) Implement limits on street parking time as a means of discouraging long-term use.

b) Residents living in proximity to a public parking space may be granted street parking permits allowing priority access to parking spaces and exemptions from regulations limiting duration of parking stay.

22. In Community Cores, Mixed Use Corridors and Nodes, the amount of required parking spaces for land uses may be reduced through the demonstration of a lesser standard through the development process and/or implementation of a shared parking approach.

a) Adjacent properties with different peak parking demands will be permitted to share automobile parking resources thereby reducing excess parking spaces.

b) To implement shared parking measures, land owners must demonstrate that land uses have excess parking that could be shared with other surrounding businesses to serve their parking needs.

c) Properties taking a shared parking approach will execute an agreement to share parking resources outlining conditions for how parking related costs will be shared.

23. In general, major development and major improvements, will provide adequate on-site visitor and employee parking, as determined through the parking requirements set out by TCPDO and through a Traffic Impact Assessment.

24. The Chief Town Planner may designate cash-in-lieu of parking districts in locations where it is not physically feasible to provide on-site parking for all individual developments. Examples of such areas include the National Centre and Regional Centres.

a) Cash-in-lieu contributions will be used by the Government exclusively for the purpose of providing communal public parking facilities within the districts. The objective of the cash-in-lieu initiative is to provide a pool of central funds that would contribute to the cost of providing central parking facilities to reduce congestion in the area.

b) Within cash-in-lieu parking districts, developers may enter into agreements where-by a one off payment is made to the Government for the provision of central parking facilities in exchange for reduced on-site parking. The sum paid represents the amount of money it would cost to provide and operate each parking space that is exempted.

> Public parking lot, Speightstown

> The Oistins Jetty may be considered for water transport

c) Cash-in-lieu for parking provisions will be incorporated into the conditions of approval for developments, according to a standard fee schedule developed by the Town and Country Development Planning Office.

d) Alternatively, with the consent of the Town and Country Development Planning Office, developers may provide off- site parking spaces on adjacent land for the sole use employees and visitors. Such parking spaces will be provided at the sole expense of the developer.

e) The above measures will require the Government of Barbados to create the requisite implementation protocols and mechanisms.

25. All parking areas shall provide one disabled parking space for every 25 or fewer regular spaces, up to a maximum of 10 disabled spaces.

26. Designated taxi stands will be located to ensure they are in proximity to passengers while not impeding the flow of surrounding traffic routes.

a) Taxicab parking stalls will be located along sections of specified streets to be determined at the local Community Plan level.

Water Transport

27. Plan and protect for the potential of developing future water-based transportation opportunities, such as a ferry, in communities across the island including Speightstown, Holetown, Bridgetown and Oistins. The Constitution River is recognized as a potential water transport corridor, for both commuting and tourism purposes.

a) Water-based transportation will primarily serve for the movement of people instead of goods, and will be developed to connect to key coastal destinations across Barbados.

b) Strategic locations will be identified at the Community Plan level for the development of docks, piers, and other necessary infrastructure to facilitate future waste-based transportation options.

c) The interface between water based transport and land based transportation will be designed to ensure ease of transfer and transition between both modes.

2.5
Planning for National Infrastructure

National infrastructure includes the full range of transportation, communication, water, sewer, renewable energy and waste management facilities that are essential to the health, safety, economic success and environmental health of Barbados. This section sets out policies to guide the future design, development, upgrading and location of these facilities and is structured with nine sections:

- Overarching Policies
- Renewable Energy and Energy Conservation
- Air Transportation
- Port of Bridgetown
- Water and Waste Water
- Solid Waste Management
- Road Network
- Active Transportation and Walkability
- Information Technology, Communications and Transmission Facilities

> Constitution River, Bridgetown

Overarching Policies

1. All National Infrastructure will be planned, built and maintained in a manner that optimizes integration with land use/development and efficiency in service provision.
2. Adaptive planning approaches shall be adopted in all aspects of national infrastructure planning for the consideration of climate variability and climate change impacts.
3. The Government shall create Emergency Preparedness Strategies related to National Infrastructure including the identification of critical areas of risk of national infrastructure failure and built-in redundancies to increase resiliency against severe weather events.

Renewable Energy and Energy Conservation

Renewable energy and energy conservation are of critical importance to the sustainability of Barbados and are recognized as effective means of addressing climate change and reducing national levels of greenhouse gas emissions. In addition to their climatic impact, Barbados' heavy reliance on the import of fossil fuels contributes to the nation's vulnerability to the external global energy market. Renewable energy and energy conservation are also essential to Barbados' national commitment to developing a green economy, recognizing the potential for creating new jobs, increasing productivity, and realising positive health benefits.

The Government of Barbados' National Sustainable Energy Policy has established a target for Renewable Energy Sources to constitute 29% of all energy by 2029. Additionally, Barbados has joined numerous other nations in ratifying the United Nations' Paris Agreement, which is a multilateral environment obligation requiring participants to take determined action to combat the effects of climate change.

Barbados has made significant progress in the adoption of small-scale renewable energy technologies since the 1970s. Solar water heaters have been widely adopted, and there are now approximately 40,000 of them in Barbados, with more than 30,000 domestic installations. The policies of this Physical Development Plan establish a framework to build upon this success and continue Barbados' transition to the use of renewable energy.

4. The Government will promote the use of renewable energy, a reduction in the use of fossil fuels and overall energy conservation as part of Barbados' transition to a green economy.
    a) The Government will encourage research and development of renewable technologies including solar, wind and geothermal.
    b) Both large scale dedicated renewable energy generation projects and small-scale renewable energy infrastructure integrated with other land uses will be encouraged.
    c) The Government will undertake a National Wind Energy Strategy to define and protect renewable energy zones that can best optimize wind and solar energy generation, minimize land use conflicts and identify appropriate triggers and required studies for ESIAs.
    d) The Government will seek to foster an understanding of the benefits of renewable energy through an education, consultation and engagement program related to renewable energy development.
5. Existing, approved and potential renewable energy sites, identified on Figure 6, will be subject to the following provisions:`
    a) Existing and approved renewable energy sites and facilities will be protected from sensitive and incompatible land uses and developments.
    b) Areas of potential renewable energy sites shall be considered as optimal for new wind energy facilities. More detailed study of the feasibility of these areas and protection measures for their utilization as wind energy generation will be considered in the National Wind Energy Strategy identified in policy 1C.
6. The following Renewable Energy systems are permitted as of right:
    - Roof-mounted photovoltaic system with an air gap of 16 inches or less;
    - Ground mounted photovoltaics up to 5 kW and;
    - Small scale wind generating devices of nameplate rating capacity of less than 2 MW as an accessory structure in the Agricultural and Rural Areas

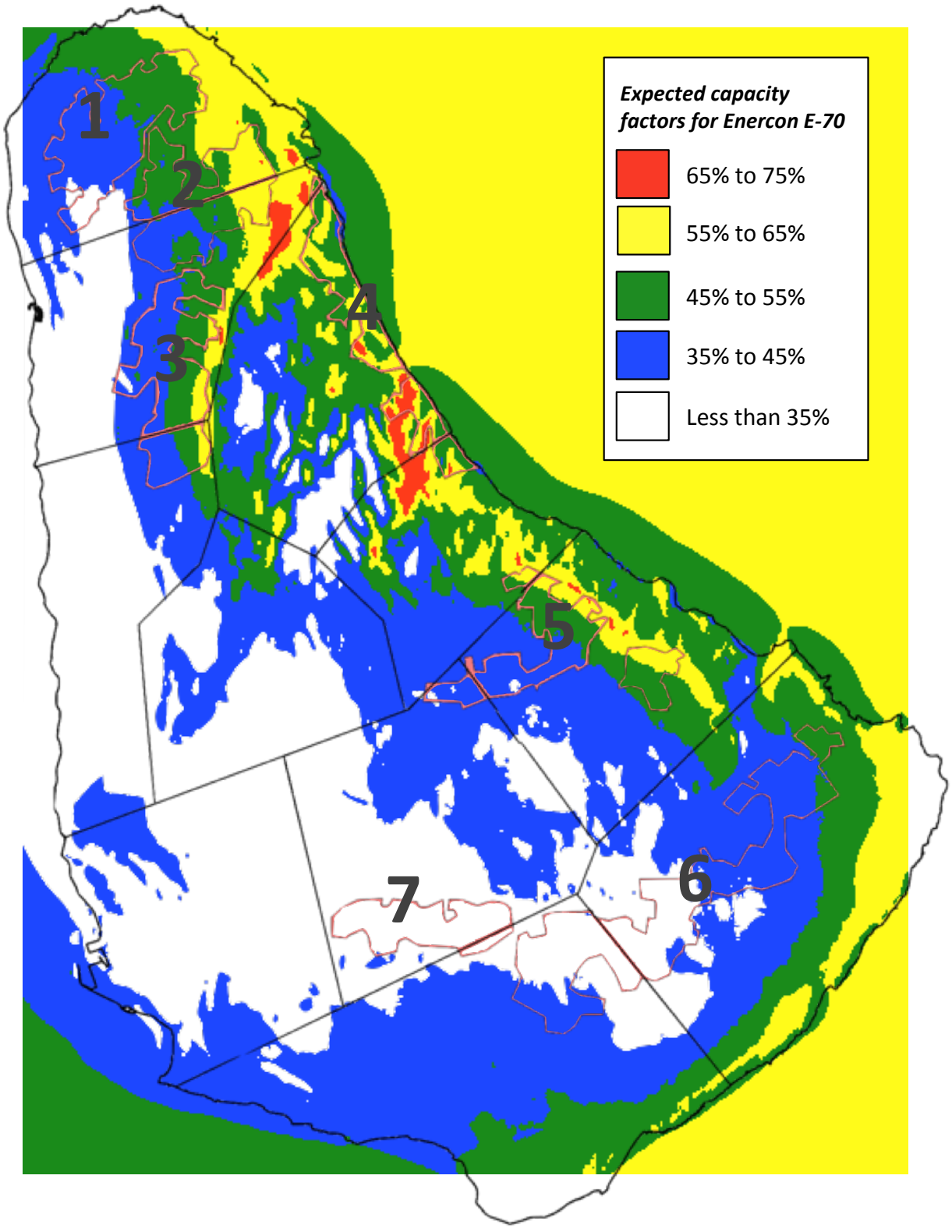


FIGURE 6. **Wind Resources Assessment for Barbados. Seven wind zones overlaid onto capacity factor results. (Source: BREA, 2017)**

7. Proposals for Renewable Energy development projects over 2 MW will be subject to an Environmental Impact Assessment in accordance with Section 6. In determining the appropriateness of Renewable Energy development projects, consideration will be given to, but not limited to: scale and size of Renewable Energy development, bedrock geology, proximity to other conflicting land uses, noise, shadow flicker, impacts on historic/heritage/landscape values including cultural landscapes, core components of the Natural Heritage System, biodiversity (birds, bats, etc), bird migratory routes, telecommunication and electronic infrastructure, electromagnetic interference, safety and air traffic control - interference, airport operations, buffer zones or set back distances from adjoining land uses and shadowing.

8. The Government will encourage Renewable Energy facilities to be combined with another compatible land use such that dual land uses are permitted on a single property, subject to the following criteria:

a) The Renewable Energy use is considered a secondary use on a property that is already designated for a primary use.

b) All land use regulations as prescribed by this Physical Development Plan that apply to the primary use as well as for the renewable energy project must be satisfied. Where potential land use conflicts arise, the policies and permissions of the primary use shall prevail.

c) In the case of agricultural land, the policies of Section 2.2.1 with regard to Renewable Energy are met.

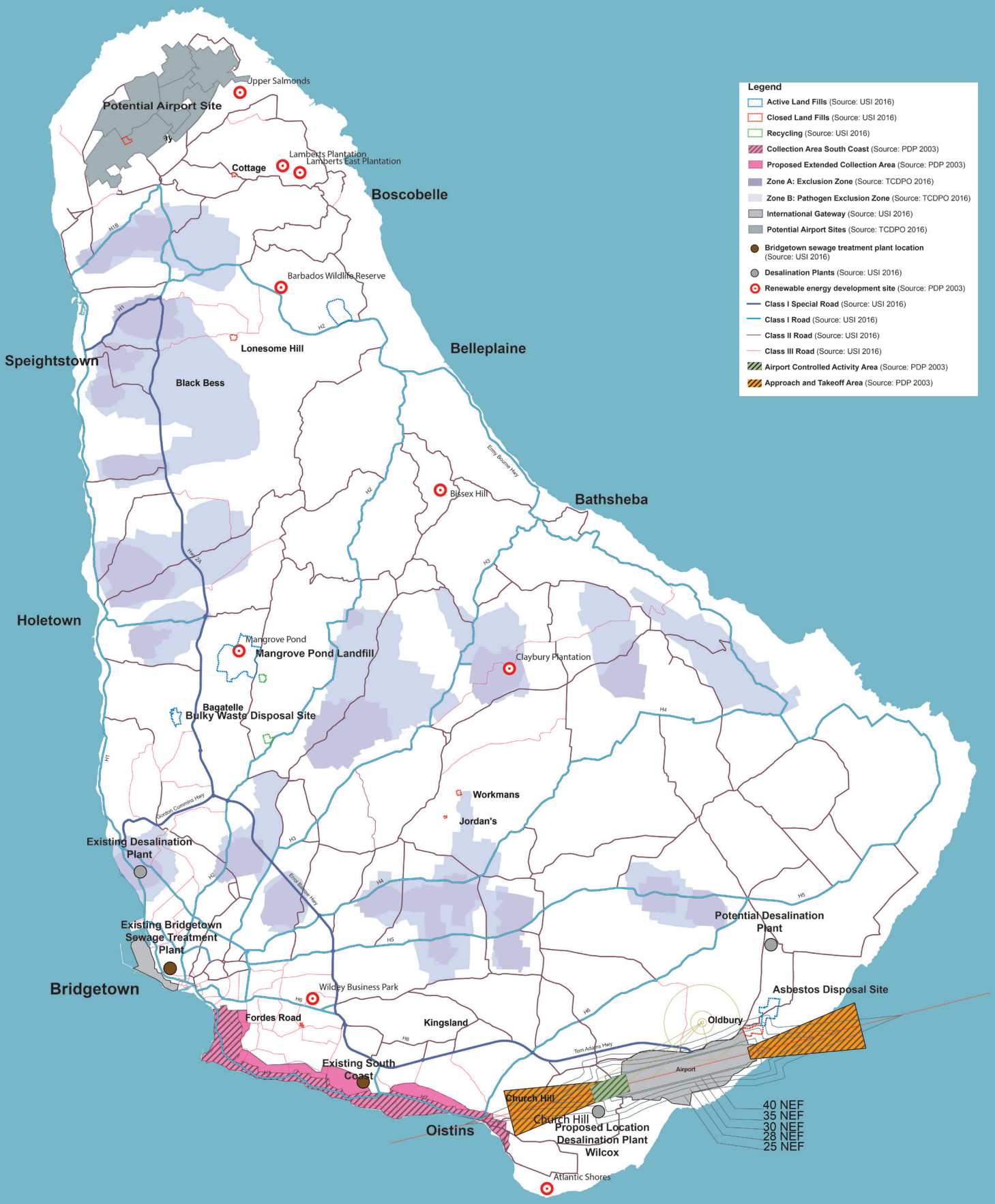
9. The Government will encourage the use of alternative fuels and electric vehicle technology in the transportation sector to reduce greenhouse gas emissions.

a) Electric Vehicle charging stations are encouraged in parking lots on public and private land across the island.

10. The Government will encourage energy conservation practices throughout all sectors of the economy.

a) Energy conservation within the hotel sector is identified as having particular potential and will be a focus of conservation efforts.

b) Pilot projects for renewable energy in government and institutional buildings will be explored to demonstrate the potential to implement energy conservation and integration of renewable energy in development.



MAP 12:
National Infrastructure

Air Transportation

11. Grantley Adams International Airport (GAIA) is designated as an International Gateway in the Island Settlement Structure and will be protected as a nationally significant site that is a major economic asset, transportation node and important place of employment and economy.

12. Lands surrounding GAIA will be planned for complementary and compatible uses, in particular commercial and industrial uses that benefit from being located in proximity to an International Gateway.

13. In order to address the issues of noise, safety, and the potential effects of long-term exposure to radar emissions associated with development in proximity to GAIA, the following policies apply within the referenced zones identified on Map 12: National Infrastructure:

a) There shall be no subdivision of land where vacant lots will be created within the Approach and Take-off Zones (NEF 25 to 28 and NEF 28 to 30), NEF 30 to 35 and NEF 35 to NEF 40.

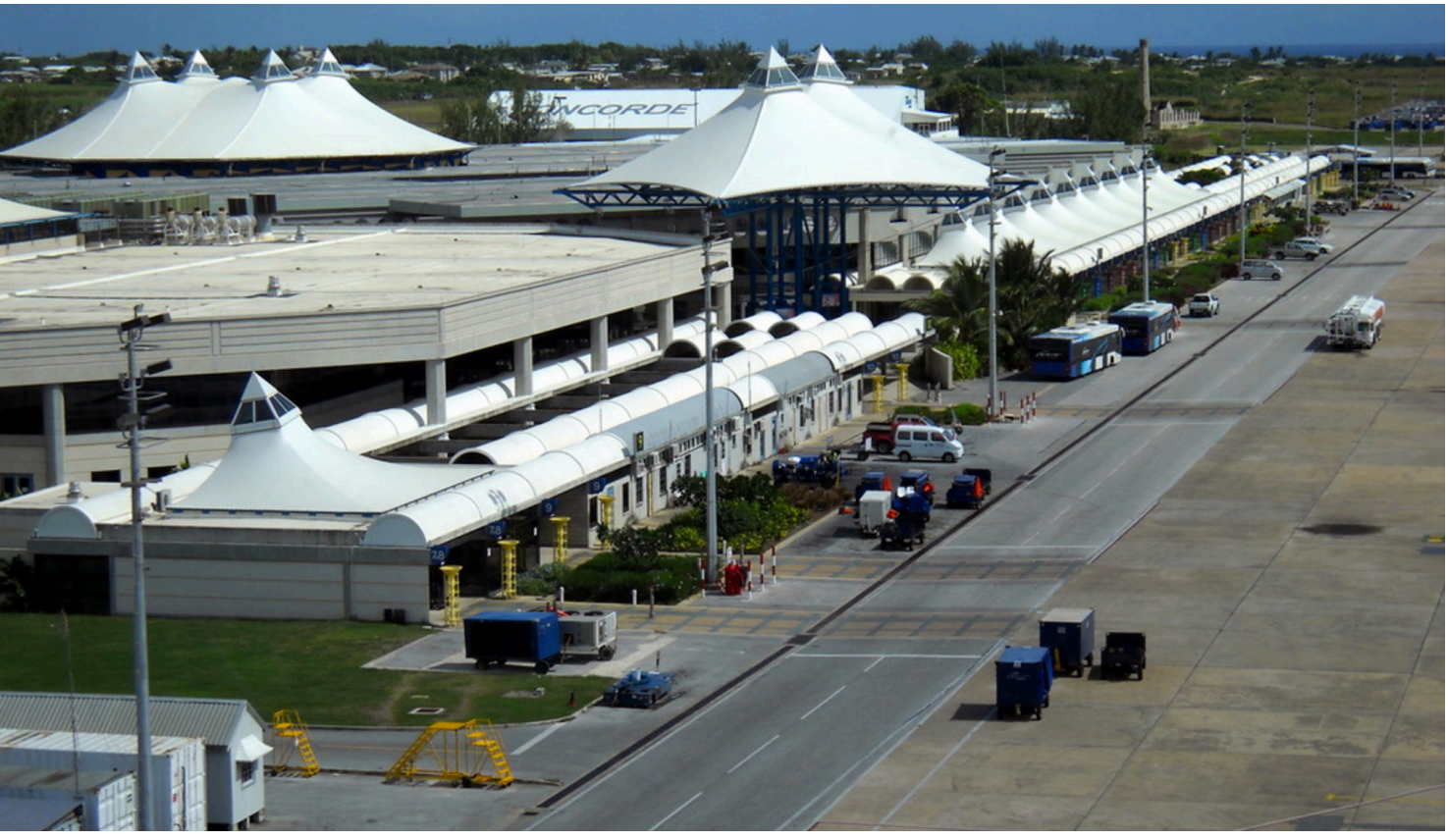
b) One single family house only per lot or parcel of land will be permitted in the Approach and Take-off Zones (NEF 25 to 28 and NEF 28 to 30), NEF 30 to NEF 35, and NEF 35 to NEF 40.

c) There shall be no new development within the NEF 40 or greater except that which is associated with the GAIA.

d) There shall be no development (building) within a 300 metre radius of the Radar Facility.

e) The height of any structure which falls within the 300 metre and 1000 metre radius of the Radar Facility will be restricted. The maximum allowable elevation will be determined on an individual basis and based on Barbados Datum. Roof covering and any material used to erect means of enclosure shall be non-metallic

f) There shall be no development in the radar line of sight cones except that which is associated with the GAIA.



> Grantley Adams International Airport

14. The Government will promote resilience and disaster risk preparedness in the air transport sector.

a) GAIA will be recognized as an essential piece of infrastructure for climate change resiliency and disaster risk preparedness as one of the International Gateways through which food and other imports enter Barbados.

b) The Government will explore and plan for future air landing or airport facilities to allow for emergency preparedness or for long term air transportation needs of Barbados.

i) A future potential airport site development zone is identified on Schedule 12 for this long term purpose.

ii) All land use and development within this zone shall not preclude this area for future airport use.

iii) Until such time as the feasibility, design and construction of any future airport facility has been determined, all existing and planned uses located within this Zone, that are in keeping with this Plan, and that do not preclude future airport development will be permitted. More specifically, Food and Agriculture uses are permitted.

iv) Future airport development would be subject to an Environmental and Social Impact Assessment.

15. The Bridgetown Helipad will continue to function as a tourism-focused facility located in proximity to the Bridgetown Port at the mouth of the Careenage. To ensure that it remains compatible with the objectives of planning policy for the development of Central Bridgetown, the following policies apply:

a) The Helipad function is permitted at grade or integrated onto the roof of a development, subject to air safety standards.

b) In order to minimize noise disturbances, all proposed hotels, housing or community uses within 200 meters of the boundary of the heliport site will undertake, to the satisfaction of the Chief Town Planner, a noise impact study to assess the potential noise disturbance and appropriate mitigation methods.

c) There shall be no development of a hangar and maintenance facility.

d) There shall be no garaging and maintenance of helicopters at this site.

> Solar powered BWA pumping facility, St. Peter

Bridgetown Port

16. The Bridgetown Port is designated as an International Gateway in the Island Settlement Structure and will be protected as a nationally significant site that is a major economic asset, mobility hub and important place of employment.

17. Lands surrounding the Bridgetown Port will be planned for complementary and compatible uses, in particular commercial and industrial uses that benefit from being located in proximity to an International Gateway.

18. To maximize the economic benefit of the Bridgetown Port, the Government will:

a) Assign a high priority to ensuring that the facilities can accommodate current and projected demands for freight handling and berthing of cruise ships;

b) Assign a high priority to improvements to transportation links between the Bridgetown Port and Central Bridgetown, as well as proposed water transport between the Bridgetown Port, Speightstown and other communities on the west and south coast for cruise ship passengers;

c) Assign a high priority to improving road infrastructure serving the Bridgetown Port to ensure efficient access for truck traffic;

d) Continue to explore opportunities for expansion of the port and improvements to the efficiency of port operations.

e) Plan and protect for Port improvements on existing facilities and the potential for upgrades to the facility as envisioned in the Port of Barbados Master Plan.

f) Promote the implementation of sustainable infrastructure measures such as energy conservation, utilization of renewable energy and waste management and reduction strategies.

g) Plan for the future or potential of separation of passenger and freight shipping docking facilities.

19. The Bridgetown Port will be recognized as an essential piece of infrastructure for climate change resiliency and disaster risk management as one of the International Gateways through which food and other imports enter Barbados.

Water & Waste Water

20. In the context of Barbados' water scarcity, the distribution of water and treatment of sewage are recognized as key activities within the overall water resource cycle described in Section 2.2.3, Figure 4.

21. To promote water conservation and the reduction of water leakage, the following measures will be introduced:

a) Ongoing rehabilitation of the existing distribution system where the system is in need of improvement;
b) Metering of all water abstraction points, including irrigation and other wells used by industry.

22. The Government will plan for water desalination as part of a water resource resiliency strategy.

a) Lands surrounding desalination plants will be included within Groundwater Protection Zone A and subject to the policies of that zone, including restriction on uses that can impact desalination plants such as but not limited to hydrocarbons.
b) Potential areas for abstraction will be identified in conjunction with the BWA, Ministry of Works and Public Transport.
c) An Environmental and Social Impact Assessment will be required for all desalination projects.
d) Where options exist for considering alternative locations for desalination plants, these should be subject to a Strategic Environmental Assessment.

23. Every new and redeveloped dwelling (whether individual or in an apartment block) should have a separate metered connection to the potable water supply.

24. The Government will support the use of renewable energy sources to reduce the high level of energy consumption within the water and wastewater sector.

25. All new developments within sewered areas will be connected to the sewerage system.

26. The Government will provide appropriate sewage infrastructure to meet future demand for water and wastewater.

27. All new hotel development and industries are required to treat their own wastewater with a system/process that meets the Environmental Protection Department's standards for sewage effluent. The effluent criteria shall be included as part of the permission and will be used as the basis for monitoring of compliance. The owner/operator shall monitor the effluent and shall regularly report the results and performance of the plant, noting any problems and proposed remediation, as specified by the Environmental Protection Department. In the case of any significant malfunctions, the owner/operator shall be required to immediately notify the Environmental Protection Department.

a) The Chief Town Planner will not issue planning permission for such development unless the Environmental Protection Department has issued a permission stating the effluent criteria to be achieved by the treatment plant. The permission will specify a program for monitoring for compliance with the effluent criteria. The permission will require the owner/operator of the permitted development to undertake monitoring and reporting.

28. Development will result in no net increase of storm water run off from the site. Measures such as water conservation, permeable surface materials, landscaping, shallow wells and suckwells may be integrated into the site design to achieve this result.

Solid Waste Management

29. The Government will promote conservation and waste reduction programs and practices with respect to solid waste management. As a Small Island Developing State, waste reduction is recognized as a key objective for Barbados.

30. The Government will consider a full range of potential solid waste management strategies.

a) Central garbage collection facilities may be considered in new development.

b) Local waste and education centres will be encouraged in partnership with institutions and local communities in Centres.

c) Potential waste-to-energy plant sites may be identified. Appropriate buffers from surrounding land uses will be put in place and infrastructure requirements to service such a facility identified.

31. To ensure the sustainability of waste management operations and compatibility with surrounding uses, the following policies will apply for any development of residential, community and other sensitive uses within 200 metres or all other uses within 100 metres of an operating waste disposal site, landfill site or transfer site; and to all development within 50 metres of a dosed waste disposal site:

a) The applicant will undertake a planning investigation to show to the Chief Town Planner that no significant and undue adverse impacts from the waste disposal site will affect the proposed development. If negative impacts are present, the applicant will be required to demonstrate that appropriate mitigation measures can be undertaken to reduce the impacts to acceptable levels.

b) Where the Chief Town Planner, in consultation with relevant regulatory agencies, considers it appropriate, the threshold distances referenced in provision 3 (a) above can be reduced.

32. All landfills, waste disposal and transfer sites will be required to undertake baseline, operating and post operating environmental monitoring programmes and closure plans.

33. Proposals to develop new waste disposal facilities will be subject to the following policies:

a) For all new landfills, disposal sites, and transfer sites (including hazardous material storage and disposal) to be operated by the Government and its agencies or by the private sector, an Environmental Impact Assessment will be required.

b) In general, landfill sites will not be acceptable close to residential uses, and all community and social uses. Specific separation distances would be dependent on the particular site and development characteristics, on any specific mitigation methods proposed for the landfill or waste disposal site, and any specific matters referred to in the Environmental Impact Assessment;

c) New landfills will not be permitted in the National Park, in Natural Heritage Conservation Areas, or in Cultural Heritage Conservation Districts.

d) A proposal for a new or expanded landfill, waste disposal or transfer site will only be permitted if the following conditions are met:

i) the adverse environmental, social or economic impacts of the proposal can be avoided or mitigated; and

ii) a detailed end-use plan is prepared, documenting the proposed uses for the site after the landfill operation has ceased, as well as appropriate strategies for closing, rehabilitating and restoring the site have been prepared to the satisfaction of the Chief Town Planner, in consultation with the Environmental Protection Department.

34. Landfill sites will be restored after closure in accordance with international best practice and in keeping with the Barbadian landscape.

a) Once restored, former landfill sites may be suitable for some restrictive development after a geotechnical survey has been undertaken.

b) Closed landfill sites that have not been decommissioned according to an approved end use plan will be fenced off from the public for a minimum of ten years. During this period, landscaping of the site for amenity purposes will be permitted but no development of any type, including parks, open space and recreation, will be allowed. After 10 years, a reassessment of the site may be appropriate after a geotechnical survey has been undertaken to determine the stability and safety of the site.

35. No storage, disposal or transfer of hazardous material will be permitted in Zones A and B Ground Water Protection Areas. This applies to both solid and liquid hazardous materials. Notwithstanding this policy, transfer of hazardous material will be permitted along sections of the ABC Highway and the Ronald Mapp Highway which pass through Zones A and B Ground Water Protection Areas.

36. All requirements and restrictions described above are applicable to the use of disused quarries for the disposal, transfer and storage of all waste and hazardous waste.

Road Network

Barbados has a dense road network system (1,600 km of roads in an island which is 430km^2) with 5 classes of roads, from highways to secondary roads (Ministry Public of Transport and Works, Draft Strategic Plan 2016). The highway network consists of seven major highways that radiate from Bridgetown as well as the ABC highway, Spring Garden highway, Ronald Mapp highway, Ermie Bourne highway and Charles Duncan O'Neal Highway which do not radiate from the city but are also critical transportation assets. The road network is a fundamental component of the overall transportation network and optimizing the utilization of the road reserve for mobility and infrastructure provision in an efficient and resilient manner is critical.

37. All roads in Barbados are classified in accordance with the following hierarchy, shown conceptually on Map 12: National Infrastructure:

a) Class I Special: Primary Distributors – National Highways

b) Class I Secondary Distributors – All other national highways and routes linking all principle communities and uses.

c) Class II District Distributors – Local routes providing local links to the national highways or the national routes.

d) Class III Local Distributors – All other through routes and main access routes.

e) Class IV Access Roads – All other roads used mainly for providing frontage for the development of land.

38. The Road Reserve and Building Line standards for all new development and redevelopment schemes should be as follows:

	Road Reserve:	Building Line:
Class I Special	6.40 metres	15.24 metres
Class I	6.40 metres	9.75 metres
Class II	5.18 metres	9.75 metres
Class III	5.18 metres	9.75 metres
Class IV	3.96 metres	5.79 metres

39. Existing development will not normally be affected by the above road reserves.

40. All new roads and subdivisions must be classified and designed in accordance with the standards of policy XX above and be designed to consider multi-modal function, safety and resiliency.

41. In planning for transportation corridors, to ensure the sustainability and resiliency of infrastructure systems (water, wastewater, electricity, etc), the Government, where possible, will protect for dedicated underground utility corridors within the road reserve.

42. Fencing of 1.5 metre height or less will be excluded from any building line regulations.

Active Transportation and Walkability

As described in Section 2.4, improving walkability is essential to creating healthy communities across the island and will be a priority. The lack of sidewalks presents a growing threat to the health and safety of Barbadians as congestion increases and the population ages. The following policies will apply to the provision of sidewalks and other pedestrian facilities**:**

43. It is the long term aim that all Class I Special, Class I and Class II Roads will have sidewalks on both sides of the road. Sidewalk will be 1.5 or 2.0 meters wide, depending on site characteristics.

44. In respect of Class III and Class IV roads, separate sidewalks will be provided on one side of the road only and will normally be 1.5 meters wide. Sidewalks should be created as development and redevelopment occurs.

45. Sidewalks will be provided in Priority Pedestrian Linkage areas and for a minimum of 100 meters on both sides of the road from the entrance of all Public Schools or seniors housing developments adjoining Class I Special, Class I, Class II and Class III roads.

46. To improve accessibility for people with disabilities, all new and rebuilt sidewalks should make provisions for wheelchair access at intersections and designated crossings.

47. In order to retain historic, architectural or townscape character, the Building LIne requirements of Section 2 may be relaxed on agreement with the Town and Country Development Planning Office for development and redevelopment within Cultural Heritage Conservation Areas and selected other urban areas.

48. Cycling infrastructure in the form of bicycle lanes or shared use paths will be provided in all new major development on Class 1 Special and Class 1 roads.

49. All vehicular access and egress points from new development or redevelopment should be designed to minimise the possibility of road accidents and conflicts between pedestrians, cyclists and automobiles.

50. Development or redevelopment will be designed to meet the following regulations with respect to access points:

a) Shared access points to Class I Special, Class I, Class II and Class III roads for commercial industrial and institutional properties through the use of service roads or rear lanes will be encouraged where feasible;

b) Access points will be located to minimise disruptions to vehicular and pedestrian traffic patterns;

c) Access points will be restricted to areas with good sight lines in order to maximise visibility and safety.

51. Street vending, while an important source of income for farmers and other self-employed workers, can constitute a traffic hazard when located along major roads and highways. Consequently, street vending along Class I Special, Class I and Class II roads will only be allowed through special permits issued by the Government. Among other things, these permits will specify the locations where street vending is allowed.

52. All new public roads and public road improvement schemes that exceed one or more of the following thresholds will require and Environmental and Social Impact Assessment:

a) New roads over 200 metres long;

b) New or improved roads or junctions taking through eminent domain at least 10 habitable dwellings or 10 other buildings in active use;

c) Improved roads or junctions that widen existing rights-of-way into privately owned land by at least 3 metres for a length of at least 100 metres;

d) New or improved roads within Cultural Heritage Conservation Areas.

Information Technology, Communications and Transmission Facilities

It is the long term aim of the Physical Development Plan to reduce the visual intrusion of existing and proposed communication and transmission facilities. This will involve careful control over all new facilities and a programme, where feasible, of reducing the environmental impact of existing facilities. In Cultural Heritage Conservation Areas and Natural Heritage Conservation Areas, both inside and outside the National Park, it will be necessary to consider the visual impact of the facilities on the cultural heritage assets and natural environment.

53. Within Cultural Heritage Conservation Areas, all existing electricity power lines (of any size) and all existing communication lines should be included in a long-term programme of undergrounding.

54. The Government will facilitate the provision of information and communications technology infrastructure and smart city infrastructure to support the growth of the Barbadian economy.