

LONG BAY, BEEF ISLAND BEACH MANAGEMENT PLAN



Ministry of Natural Resources and Labour

GOVERNMENT OF THE VIRGIN ISLANDS

December 22, 2022

Compiled by Angela Burnett Penn, Environmental Officer

TABLE OF CONTENTS

LIST OF TABLES	IV
LIST OF FIGURES	VI
LIST OF ACRONYMS	IX
EXECUTIVE SUMMARY	1
1.0 - INTRODUCTION	4
1.1 PURPOSE OF THE PLAN	4
1.2 POLICY BASIS	4
2.0 - EXISTING CONDITIONS	6
2.1 GENERAL CHARACTERISTICS OF THE BEACH	6
2.1.1 NATURAL RESOURCES, ECOLOGICAL HABITATS AND BIODIVERSITY	7
2.1.2 SWIMMER SAFETY	14
2.2. LAND OWNERSHIP AND USE	16
2.3 PUBLIC ACCESS	17
2.4 TRADITIONAL USES, BENEFITS AND VALUES	18
2.5 IMPACT OF HURRICANE IRMA, 2017	19
2.6 CURRENT BEACH USES AND FACILITIES	21
2.6.1 BEACH USES	21
2.6.2. PUBLIC FACILITIES	26
3.0 - PLANNING PROCESS, PLAN COMPONENTS AND GEOGRAPHIC SCOPE	27
3.1 DESCRIPTION OF THE PLANNING PROCESS	27
3.2 DESCRIPTION OF THE PLAN COMPONENTS	30
3.3 GEOGRAPHIC SCOPE OF THE PLAN	30
4.0 - CURRENT THREATS AND ISSUES	32
4.1. CURRENT THREATS BASED ON BEACH POLICY	32
4.2 CURRENT ISSUES BASED ON PUBLIC SURVEY	33
OVERALL BEACH USE AND ENJOYMENT	33
FEATURES WITH WHICH USERS ARE MAINLY “TOTALLY UNSATISFIED” OR “UNSATISFIED”	34
FEATURES WHICH USERS ARE MAINLY “NEUTRAL” ABOUT	34
FEATURES WITH WHICH USERS ARE MAINLY “COMPLETELY SATISFIED” OR “SATISFIED”	35

5.0 - CARRYING CAPACITY	36
5.1 METHOD TO DETERMINE CARRYING CAPACITY	36
5.2 RECOMMENDED CARRYING CAPACITIES	37
6.0 - THE PLAN	43
6.1 VISION	43
6.2 SPATIAL PLAN	45
6.2.1 BEACH AMENITIES AND FACILITIES	45
6.2.2 OVERVIEW OF THE SPATIAL PLAN	48
6.2.3 RATIONALE FOR ARRANGEMENT OF AMENITIES AND ACTIVITIES	52
6.2.4 SPATIAL PLAN DATA SHEET	53
6.3 FACILITIES PLAN	58
6.3.1 BEACH DUNE PROTECTION BARRIER	58
6.3.2 PICNIC AREA	59
6.3.3 BIRDWATCHING HIKING TRAIL	61
6.3.4 LOOKOUT DECK	63
6.3.5 VENDING ZONE, INCLUDING OUTDOOR EATING AREA	64
6.3.6 ADMINISTRATIVE UNIT	72
6.3.7 BEACH CHAIR ZONE	73
6.3.8 PARKING FACILITIES	75
6.3.9 WATER AND POWER FACILITIES	78
6.3.10 SIGNAGE	78
6.3.11 WASTE MANAGEMENT FACILITIES	79
6.3.12 PUBLIC RESTROOM FACILITY	81
6.3.13 MAIN ACCESS ROAD	82
6.4 ENVIRONMENTAL RESTORATION AND PROTECTION PLAN	83
6.4.1 LEGAL FRAMEWORK	83
6.4.2 VEGETATION LINE – FOREDUNE (SEAGRAPE TREE LINE)	85
6.4.3 BEACH DUNE SYSTEM	89
6.4.4 TURTLE NESTING HABITAT	91
6.4.5 COASTAL WATER QUALITY	93
6.4.6 SAND QUALITY	94
6.4.7 AIR QUALITY	95
6.4.8 BIODIVERSITY	96
6.4.10 MANGROVES	97
6.4.11 SALT PONDS	98
6.5 GENERAL MANAGEMENT MEASURES AND RULES	100
6.5.1 GENERAL MANAGEMENT MEASURES TO REALIZE VISION	100
6.5.2 GENERAL MANAGEMENT MEASURES TO ADDRESS CURRENT ISSUES/THREATS AT LONG BAY	104
6.5.3 RULES	112
6.6 IMPLEMENTATION PLAN	116
6.6.1 BEACH MANAGEMENT AUTHORITY	116
6.6.2 MANAGEMENT MECHANISMS	119
6.6.3 ENFORCEMENT MECHANISMS	122
6.6.4 MONITORING MECHANISMS	124
6.6.5 FINANCING	126
6.6.6 IMPLEMENTATION PARTNERS	126

6.6.7 SUMMARY OF IMPLEMENTATION TIMELINE AND BUDGET	127
6.6.8 IMPLEMENTATION OF ENVIRONMENTAL RESTORATION AND PROTECTION PLAN	128
6.6.9 IMPLEMENTATION OF FACILITIES PLAN	130
6.6.10 FACILITIES MAINTENANCE PLAN	135
6.6 UPDATING THE PLAN	137
<u>REFERENCES</u>	<u>138</u>
<u>APPENDICES</u>	<u>140</u>
APPENDIX I - PLANT SPECIES FOUND WITHIN THE VEGETATION LINE AND SAND DUNE SYSTEM	140
APPENDIX II - FULL RESULTS OF DETAILED VEGETATION SURVEY CONDUCTED JUNE 27, 2022	148
APPENDIX III – ADVERTISEMENT OF THE PROPOSED DECLARATION OF LONG BAY, BEEF ISLAND AS A PROTECTED AREA	153
APPENDIX IV - PHOTOGRAPHS OF EXISTING CONDITIONS BASED ON FIELD SURVEY OF JUNE 30, 2022	154
APPENDIX V – LONG BAY PUBLIC SURVEY – SURVEY TOOL AND RESULTS	166
APPENDIX VI – CRUISE SHIP PASSENGER ARRIVAL DATA – TORTOLA, 2023	194
APPENDIX VII – APPLICATION FOR LONG-TERM COMMERCIAL USE OF BEACHES	201
APPENDIX VIII – CRITERIA FOR EVALUATION OF APPLICATIONS FOR LONG-TERM COMMERCIAL USE	210
APPENDIX IX – APPLICATION FOR TEMPORARY COMMERCIAL USE OF BEACHES	222
APPENDIX X – APPLICATION FOR NON-COMMERCIAL USE OF BEACHES	230
APPENDIX XI – SITE PLAN, RENDERINGS AND ARCHITECTURAL DRAWINGS TO SUPPORT FACILITIES PLAN	235

List of Tables

Table 2-1. Product Offerings of the Seven (7) Vendors Operating at Long Bay, Beef Island -----	22
Table 4-1. Current Threats to Long Bay, Beef Island -----	32
Table 4-2. Beach Features with which Users are Mainly “Totally Unsatisfied” or “Unsatisfied” -----	34
Table 4-3. Beach Features which Users are Mainly “Neutral” about-----	34
Table 4-4. Beach Features with which Users are Mainly “Completely Satisfied” or “Satisfied” -----	35
Table 5-1. Determination of Recommended Carrying Capacities-----	37
Table 5-2. Implications of Recommended Carrying Capacities and Proposed Strategies to Implement and Enforce Carrying Capacities-----	41
Table 6-1. Beach Amenities and Facilities included in the Beach Management Plan-----	45
Table 6-2. Rationale for Spatial Plan-----	52
Table 6-3. Beach Dune Protection Barrier - Spatial Data -----	53
Table 6-4. Picnic Area - Spatial Data -----	54
Table 6-5. Birdwatching Hiking Trail - Spatial Data-----	54
Table 6-6. Lookout Deck - Spatial Data -----	54
Table 6-7. Vending Zone, including Outdoor Eating Area - Spatial Data -----	54
Table 6-8. Administrative Unit - Spatial Data -----	55
Table 6-9. Beach Chair Zone - Spatial Data -----	55
Table 6-10. Passive Water Sports Zone - Spatial Data -----	55
Table 6-11. Parking Facilities - Spatial Data -----	55
Table 6-12. Restrooms - Spatial Data -----	56
Table 6-13. Main Access Road - Spatial Data -----	56
Table 6-14. Water and Power Facilities - Spatial Data -----	56
Table 6-15. Solid Waste Management Facilities - Spatial Data -----	57
Table 6-16. Sewage/Greywater Treatment Facility - Spatial Data -----	57
Table 6-17. Specifications for Beach Dune Protection Barrier -----	58
Table 6-18. Specifications for Internal Layout of the Picnic Area -----	59
Table 6-19. Specifications for Picnic Tables within the Picnic Area -----	59
Table 6-20. Specifications for Walkways within the Picnic Area -----	60
Table 6-21. Specifications for Birdwatching Hiking Trail-----	61
Table 6-22. Specifications for Lookout Deck -----	63
Table 6-23. Specifications for the Internal Layout of the Vending Zone -----	64
Table 6-24. Specifications for Vending/Commercial Units-----	67
Table 6-25. Specifications for Tables and Chairs for the Outdoor Eating Area -----	71
Table 6-26. Specifications for Administrative Unit -----	72
Table 6-27. Specifications for Beach Chair Zone -----	73
Table 6-28. Specifications for Parking Facilities -----	75
Table 6-29. Specifications for Water and Power Facilities-----	78
Table 6-30. Specifications for Signage -----	78
Table 6-31. Specifications for Waste Management Facilities -----	79
Table 6-32. Specifications for Sewage and Wastewater Management Facilities-----	81
Table 6-33. Specifications for Public Restroom Facility -----	81
Table 6-34. Specifications for Public Access Road -----	82
Table 6-35. Standards for Vegetation Line Restoration -----	85
Table 6-36. Requirements/Specifications for Vegetation Line Restoration -----	88
Table 6-37. Standards for Eastern Sand Dune System -----	89
Table 6-38. Standards for Western Sand Dune System -----	90
Table 6-39. Requirements/Specifications for Beach Sand Dune System Replanting -----	91
Table 6-40. Standards for Turtle Nesting Habitat -----	91
Table 6-41. Water Quality Standards to be Maintained for Long Bay, Beef Island -----	93

<i>Table 6-42. Sand Quality Standards to be Maintained for Long Bay, Beef Island</i>	94
<i>Table 6-43. Air Quality Standards to be Maintained for Long Bay, Beef Island</i>	95
<i>Table 6-44. Biodiversity Standards to be Maintained for Long Bay, Beef Island</i>	96
<i>Table 6-45. Waste Management Standards to be Maintained for Long Bay, Beef Island</i>	97
<i>Table 6-46. Mangrove Standards to be Maintained for Long Bay, Beef Island</i>	97
<i>Table 6-47. Salt Pond Standards to be Maintained for Long Bay, Beef Island</i>	99
<i>Table 6-48. General Management Measures to Realize the Vision for Long Bay, Beef Island</i>	100
<i>Table 6-49. General Management Measures to Address Current Issues/Threats at Long Bay</i>	104
<i>Table 6-50. Minimum Operational Equipment Required for the Beach Management Authority Staff to Maintain Long Bay</i>	117
<i>Table 6-51. Other Resources Required to Support Beach Maintenance Operations</i>	118
<i>Table 6-52. Types of Long-term Commercial Use Approvals Granted</i>	120
<i>Table 6-53. Types of Temporary Commercial Use Approvals Granted</i>	121
<i>Table 6-54. Standard Water Quality Parameters to be Monitored at Long Bay, Beef Island</i>	124
<i>Table 6-55. Minimum Salt Pond Water Quality Parameters to be Monitored</i>	124
<i>Table 6-56. Proposed Partners for Implementation of the Beach Management Plan</i>	126
<i>Table 6-57. Summary of Ideal Implementation Timeline for Beach Management Plan</i>	127
<i>Table 6-58. Broken-down Implementation Budget for Beach Management Plan</i>	127
<i>Table 6-59. Strategy, Responsible Parties, Timelines and Cost for Implementing the Environmental Restoration and Protection Plan</i>	128
<i>Table 6-60. Strategy, Responsible Parties, Timelines and Cost for Implementing the Facilities Plan</i>	130
<i>Table 6-61. Facilities Maintenance Plan</i>	135
<i>Table A2-1. Species Identified in Beach Vegetation Survey of Long Bay, Beef Island conducted June 27, 2022</i>	150
<i>Table A5-1. Satisfaction of Respondents Participating in the General Population Survey with Features Surveyed</i>	179
<i>Table A5-2. Changes Desired by Respondents Participating in the General Population Survey</i>	182

List of Figures

Figure 2-1a. Location of Long Bay on Beef Island -----	6
Figure 2-1b. Long Bay, Beef Island significant features -----	7
Figure 2-2. Natural resources and ecological habitats present at Long Bay, Beef Island -----	8
Figure 2-3. Sargassum at the eastern end of Long Bay, Beef Island in June 2017 -----	9
Photo credit: Mark Street, BVI Lifeguard Service -----	9
Figure 2-4. Example of wooden barrier built around some remaining seagrape trees -----	11
Figure 2-5. Loss of the seagrape tree line and beach dune vegetation between 2002 and 2022 -----	12
Figure 2-6. Historic density of the seagrape tree line at Long Bay, Beef Island (September 2, 2017) -----	13
Figure 2-7. (A) Eastern beach dune at Long Bay cleared before Hurricane Irma - Credit: Island Resources Foundation; (B) Regrowth on the beach dune primarily by invasive Neem trees -----	13
Figure 2-8. Example of swimmer safety signage and rescue equipment at the Eastern Entrance of Long Bay, Beef Island -----	15
Figure 2-9. Land parcels bordering and surrounding Long Bay beach, Beef Island -----	17
Figure 2-10. Accesses to Long Bay from the public road (Beef Island Road) and entrances to the beach -----	18
Figure 2-11. Environmental, social, recreational, cultural and spiritual values of Long Bay, Beef Island -----	18
Figure 2-12. Fish weigh-in and typical seashore view during Fisherman's Day celebrations -----	19
Figure 2-13. Damage to the seagrape tree line at Long Bay, Beef Island from Hurricane Irma -----	20
Figure 2-14. Cruise ship passengers at Long Bay, Beef Island in December 2017 -----	20
Figure 2-15. (A) View of the beach from the seashore in 2019; (B) View of the beach from the seashore in 2022 -----	21
Figure 2-16. Existing bar/restaurant operations at Long Bay, Beef Island -----	23
Figure 2-17. Existing souvenir operations at Long Bay, Beef Island -----	23
Figure 2-18. Unoccupied beach chairs left out at Long Bay, Beef Island on June 30, 2022 -----	24
Figure 2-19. Water sport activities emerging at Long Bay, Beef Island post Hurricane Irma -----	24
Figure 2-20. Unauthorized party with at least three (3) vehicle loudspeaker systems -----	25
Figure 2-21. Example of makeshift barbeque pits/outdoor kitchens along the eastern dune system -----	25
Figure 2-22. Public restroom facility near the central entrance at Long Bay, Beef Island -----	26
Figure 2-23. Outdoor shower facility and example of the semi-enclosed huts for public use at Long Bay, Beef Island -----	26
Figure 3-1. Summary of Beach Management Plan stages and opportunities for public consultation -----	27
Figure 3-2. Advertisements related to public consultation at the Conceptual Plan stage -----	29
Figure 3-3. Advertisements related to public consultation at the Draft Detailed Plan stage -----	29
Figure 3-4. Beach Management Plan components -----	30
Figure 3-5. Boundaries of the Long Bay, Beef Island Beach Management Plan -----	31
Figure 4-1. Effect of recent development and activity at Long Bay on the beach use and enjoyment of respondents participating in the General Population Survey -----	33
Figure 6-1. Views about development at Long Bay held by respondents participating in the General Population Survey -----	43
Figure 6-2. Long Bay, Beef Island Spatial Plan - Overview Map -----	49
Figure 6-3. Long Bay, Beef Island Spatial Plan - Overview Rendering -----	49
Figure 6-4. Long Bay, Beef Island Spatial Plan – Central to Eastern Beach Entrances -----	50
Figure 6-5. Long Bay, Beef Island Spatial Plan rendering – Central to Eastern Entrances -----	50
Figure 6-6. Long Bay, Beef Island Spatial Plan – Simplified Vending Zone Site Plan -----	51
Figure 6-7. Long Bay, Beef Island Spatial Plan – Vending Zone Site Plan Rendering -----	51
Figure 6-8. Long Bay, Beef Island Spatial Plan Overview Referenced to Spatial Plan Data Sheet -----	53
Figure 6-9. Example of wooden posts being used as a protective barrier for the beach dune at Maegan's Bay, St. Thomas, United States Virgin Islands -----	58
Figure 6-10. Renderings of Picnic Area -----	59
Figure 6-11. Illustration of standard picnic table and dimensions -----	60
Figure 6-12. Illustration of proposed walking surface supported by tree log steps as necessary -----	62

Figure 6-13. Illustration of birdwatching trail rest bench options -----	62
Figure 6-14. Lookout Deck plan view (left) and front perspective (right) -----	63
Figure 6-15. Rendering of Lookout Deck -----	63
Figure 6-16. Partial view from Lookout Deck -----	63
Figure 6-17. Rendering of Vending Zone entrance showing vending units, boardwalk and part of the Outdoor Eating Area -----	64
Figure 6-18. Rendering of Vending Zone - Front view of a medium vending unit in foreground -----	65
Figure 6-19. Rendering of Vending Zone - Front view of a small vending unit (left) and a medium vending unit (right), highlighting the wheelchair access -----	65
Figure 6-20. Rendering of Vending Zone – Back view -----	65
Figure 6-21. Rendering of Outdoor Eating Area – Perspective view from seagrape tree line -----	66
Figure 6-22. Rendering of Vending Zone, including Outdoor Eating Area – Perspective overhead view -----	66
Figure 6-23. Rendering of Vending Zone, including Outdoor Eating Area – Front overhead view -----	66
Figure 6-24. Small Vending Unit floor plan -----	67
Figure 6-25. Small Vending Unit rendering -----	68
Figure 6-26. Medium Unit – Basic floor plan sample -----	69
Figure 6-27. Medium Unit rendering -----	69
Figure 6-28. Medium Unit – Detailed floor plan sample -----	70
Figure 6-29. Illustration and dimensions of sample circular picnic tables -----	71
Figure 6-30. Rendering of Administrative Unit viewed at a distance from the west with Vending Zone in the background -----	72
Figure 6-31. Administrative Unit -----	73
Figure 6-32. Administrative Unit rendering -----	73
floor plan -----	73
Figure 6-33a. Recommended internal layout of Beach Chair Zone to maintain social distancing/user comfort and safety -----	74
Figure 6-33b. Sample full Beach Chair Zone layout following recommended spacing, using pairs of chairs with shared umbrella -----	74
Figure 6-34. Rendering of Beach Chair Zone -----	74
Figure 6-35. Sample design concept for beach chair storage pergolas -----	75
Figure 6-36. Central Parking Lot rendering -----	76
Figure 6-37. Eastern Parking Lot rendering -----	76
Figure 6-38. Taxi Parking Lot rendering -----	77
Figure 6-39b. Eastern Parking Lot layout -----	77
Figure 6-39a. Central Parking Lot layout -----	77
Figure 6-39c. Taxi Parking Lot layout -----	77
Figure 6-40. Illustrations of sample bins and screening -----	80
Figure 6-41. Existing public restroom facility -----	82
Figure 6-42. Boundaries of the proposed National Park/Marine Park at Long Bay, Beef Island -----	84
Figure 6-43. Seagrape saplings and seedlings planted at Long Bay in June and November 2022 -----	86
Figure 6-44. Seagrape seedlings planted at the H. Laverty Stoutt Community College nursery in November 2022 and seagrape seeds harvested at Long Bay, Beef Island on December 6, 2022 for planting at the nursery -----	87
Figure 6-45. Summary of expected cruise ship passenger arrivals to Tortola for 2023 -----	103
Figure A1-1. Location of Vegetation Zones A, B and C -----	140
Figure A1-2. Photographs of species identified in Zone A -----	142
Figure A1-3. Photographs of some species identified in Zone B -----	146
Figure A1-4. Photographs of some species identified in Zone C -----	147
Figure A2-1. Map of 50-m segments used to conduct the Vegetation Survey -----	149
Figure A4-1. Accesses and Entrances at Long Bay, Beef Island -----	154
Figure A4-2. Commercial Activity (Beach Bar and Restaurant Operations) at Long Bay, Beef Island -----	157
Figure A4-3. Commercial Activity (Beach Chair Rental) at Long Bay, Beef Island -----	158
Figure A4-4. Commercial Activity (Other Vendors) at Long Bay, Beef Island -----	159
Figure A4-5. Commercial Activity (Water Sports Operations) at Long Bay, Beef Island -----	159
Figure A4-6. Restrooms and related facilities at Long Bay, Beef Island -----	160
Figure A4-7. General environment at Long Bay, Beef Island -----	162

<i>Figure A4-8. Safety signage and rescue equipment at Long Bay, Beef Island -----</i>	<i>162</i>
<i>Figure A4-9. Littering, junking and waste management at Long Bay, Beef Island-----</i>	<i>165</i>
<i>Figure A5-1. Age distribution of respondents participating in the General Population Survey -----</i>	<i>172</i>
<i>Figure A5-2. Gender of respondents participating in the General Population Survey -----</i>	<i>172</i>
<i>Figure A5-3. Status of respondents participating in the General Population Survey -----</i>	<i>173</i>
<i>Figure A5-4. Address of respondents participating in the General Population Survey -----</i>	<i>173</i>
<i>Figure A5-5. Importance of Long Bay to respondents participating in the General Population Survey -----</i>	<i>174</i>
<i>Figure A5-6. Frequency with which respondents participating in the General Population Survey have traditionally used Long Bay -----</i>	<i>175</i>
<i>Figure A5-7. Views about development at Long Bay held by respondents participating in the General Population Survey -----</i>	<i>176</i>
<i>Figure A5-8. Effect of recent development and activity at Long Bay on the beach use and enjoyment of respondents participating in the General Population Survey -----</i>	<i>177</i>
<i>Figure A5-9. Satisfaction of respondents participating in the General Population Survey with the overall environment -----</i>	<i>178</i>
<i>Figure A5-10. Changes desired in the overall environment by respondents participating in the General Population Survey -----</i>	<i>181</i>
<i>Figure A5-11. Satisfaction of respondents participating in the General Population Survey with amenities and facilities -----</i>	<i>184</i>
<i>Figure A5-12. Changes desired in amenities and facilities by respondents participating in the General Population Survey -----</i>	<i>186</i>
<i>Figure A5-13. Satisfaction of respondents participating in the General Population Survey with recreational activities-----</i>	<i>188</i>
<i>Figure A5-14. Changes desired in recreational activities by respondents participating in the General Population Survey -----</i>	<i>189</i>
<i>Figure A5-15. Satisfaction of respondents participating in the General Population Survey with commercial activities-----</i>	<i>191</i>
<i>Figure A5-16. Changes desired in commercial activities by respondents participating in the General Population Survey -----</i>	<i>192</i>
<i>Figure A5-17. Views about development at Long Bay held by student respondents -----</i>	<i>193</i>

List of Acronyms

BVIAA	BVI Airports Authority
BVIEC	BVI Electricity Corporation
DWM	Department of Waste Management
GIS	Government Information Services
HLSCC	H. Lavity Stoutt Community College
MNRL	Ministry of Natural Resources and Labour
NPTVI	National Parks Trust of The Virgin Islands
NGOs	Non-Government Organizations
PWD	Public Works Department
RVIPF	Royal Virgin Islands Police Force
TCP	Town and Country Planning Department
TRC	Technical Review Committee
WSD	Water and Sewerage Department

EXECUTIVE SUMMARY

Need for the Long Bay, Beef Island Beach Management Plan

Long Bay, Beef Island is an environmentally significant area – it represents one of the few remaining whole beach systems in The Virgin Islands with an intact salt pond and well-developed beach dune system. It also serves as an important turtle nesting beach and bird habitat. Long Bay is the third most visited beach in the Territory and the most popular beach for use by residents of Tortola. It is of high significance to users. It is distinguished as the only beach connected to Tortola that is safe for swimming year-round and has always been an important part of cultural and social life.

In recent years, the environment and nature of activities at Long Bay have changed dramatically. Since the passage of Hurricane Irma in 2017, the beach has emerged as a prominent tourist destination for cruise ship passengers. Additionally, opening up of the beach dune system through destruction of vegetation has facilitated a new range and density of activities on the beach by residents. As a result of these recent changes, the beach now experiences 11 of the 17 potential threats to beaches identified in The Virgin Islands Beach Policy, 2020. In the absence of immediate management measures, the beach is at risk of experiencing a further three (3) threats and irreversible impacts.

Development of a Beach Management Plan was prioritized by the Ministry of Natural Resources and Labour to urgently address these threats and restore and maintain user satisfaction. The Virgin Islands Beach Policy, 2020 provides the policy basis for the development of the Long Bay, Beef Island Beach Management Plan.

Beach Management Plan Overview

The purpose of the Long Bay, Beef Island Beach Management Plan is to create the enabling environment to realize the vision for the beach derived through the planning process: “a beach we can all be proud of where protection of the natural environment is prioritized and where local recreational, spiritual, cultural, economic and tourist needs are carefully balanced.”

The Beach Management Plan for Long Bay was developed in keeping with the guiding principles enshrined in the Beach Policy and consists of five (5) complementary components:

- Spatial Plan – The Plan establishes a Public Picnic Zone, Vending Zone, Passive Water Sports Zone and Beach Chair Zone.
- Facilities Plan – The Plan will create parking facilities, vending/commercial units furnished with water and electricity, an outdoor eating area attached to the Vending Zone, public picnic amenities, enhanced restroom facilities, an Administrative Unit to support beach management and a hiking trail and lookout deck offering panoramic views of the beach and its environs.

- Environmental Restoration and Protection Plan - The Plan prioritizes active restoration of the seagrape tree line, restoration of the eastern beach dune and protection of turtle nesting activity and other biodiversity.
- General Management Measures and Rules - Measures seek to address the main concerns expressed in the Public Survey, including noise pollution and excessive littering. The management measures also seek to ensure that a sustainable carrying capacity for the beach is maintained as required by the Beach Policy 2020.
- Implementation Plan - The Ministry of Natural Resources and Labour will immediately serve as the management authority for the beach. Long Bay, Beef Island is a proposed National Park/Marine Park. The process to declare the area as a National Park/Marine Park was triggered before the Beach Management Plan process was initiated and is advanced. The National Parks Trust of The Virgin Islands would become the management authority for the beach once the declaration is completed.

Plan Development Process and Public Consultation

The Plan was developed following standard planning practice, including data collection and interpretation; definition of issues and threats; determination of goals, objectives and priorities; exploration of management options; and Plan preparation with opportunity for public consultation at key Plan development stages, including the Conceptual Plan and Draft Detailed Plan.

At the Conceptual Plan stage, public consultation included a virtual public meeting held March 29, 2022, an in-person public meeting held on March 31, 2022 at the Willard Wheatley Primary School that was also live-streamed on social media, and a Public Survey. The Public Survey targeted residents and focused on identifying the desired vision for the beach and current levels of satisfaction/dissatisfaction and desires in relation to specific beach features. The Survey was administered via an online survey tool (Survey Monkey) and was also made available in hard copy through various channels. A total of 300 responses were received from the general public and 202 responses from primary school students. The Draft Detailed Plan took into consideration feedback received on the Conceptual Plan.

At the Draft Detailed Plan stage, public consultation included a virtual public meeting held October 11, 2022 and an in-person public meeting held October 13, 2022 at the East End Methodist Church Hall that was also live-streamed on social media. In addition, the meeting recording, Draft Detailed Plan and Public Survey results were published on the website of the Ministry of Natural Resources and Labour for review immediately following the public meetings. Written public comments on the Draft Detailed Plan were invited by November 15, 2022, however, none were received.

Modifications to the Plan based on Public Feedback

The following modifications were made to the Plan based on comments received during the first and second rounds of public consultation:

- 1) The Passive Water Sports Zone was extended along the entire beach (setback beyond the typical swim area) and the launch area shifted from the western end to the eastern end of the beach.

- 2) An Outdoor Eating Area was added fronting the Vending Zone, as opposed to continuation of the Public Picnic Zone across the Vending Zone, to avoid potential user conflicts.
- 3) The final finish material for vending unit roofs was revised to thatch, for implementation as budget allows.
- 4) The floor plan of the medium vending/commercial units was adjusted to allow for maximum kitchen space
- 5) The proposed opening times for commercial operations was extended from 9 a.m. to 6 p.m. to 6 a.m. to 7 p.m.
- 6) The approach to managing beach chair rentals on weekends was revised to include an option for rentals at a reduced scale for further consultation.

Further consultations with specific stakeholders, such as tour bus operators, and public surveys are intended during the implementation period to make a final determination on operational matters for which the Plan presents management options, including taxi tour operation and beach chair rentals on weekends.

Plan Implementation

The Plan defines application and approval mechanisms for beach use, enforcement mechanisms and monitoring mechanisms to give effect to the General Management Measures and Rules of the Plan. Implementation of the Environmental Restoration and Protection Plan and Facilities Plan will be managed by the Ministry of Natural Resources and Labour in partnership with other agencies. Financing for implementation of the Plan as well as maintenance of the beach is proposed from the Environmental Protection and Tourism Improvement Fund established under Section 4 of the Environmental Protection and Tourism Improvement Fund Act, 2017.

The ideal implementation timeline for the Beach Management Plan is one year, from January 1, 2023 to December 31, 2023. The total implementation cost is calculated at \$995,497.29, not including operational and maintenance costs which are estimated separately. Notwithstanding the ideal implementation timeline of one year, a multi-year phasing of the Plan will likely be required due to current budgetary constraints. As such, priorities for funding in the first year of implementation are defined in the Implementation Plan.

Updating the Plan

A comprehensive review and update of the Long Bay, Beef Island Beach Management Plan shall be undertaken at least every five (5) years from the date of approval of the Plan. Notwithstanding the comprehensive review and update process, any section of the Beach Management Plan may be updated before by the beach management authority as needed to respond to arising issues, emergency situations, new circumstances or changes to The Virgin Islands Beach Policy.

1.0 - INTRODUCTION

Long Bay, Beef Island is an environmentally significant area – it represents one of the few remaining whole beach systems in The Virgin Islands with an intact salt pond and well-developed beach dune system. It also serves as an important turtle nesting beach and bird habitat. Long Bay beach is the third most visited beach in the Territory and the most popular beach for use by residents of Tortola. It is of high significance to users. It is distinguished as the only beach connected to Tortola that is safe for swimming year-round and has always been an important and special part of the cultural and social life of the people of the surrounding villages and the Territory more broadly.

1.1 Purpose of the Plan

In recent years, the environment and nature of activities at Long Bay have changed dramatically. Since the passage of Hurricane Irma in 2017 and impact to Cane Garden Bay, Long Bay beach has emerged as a prominent tourist destination for cruise ship passengers in particular. Additionally, opening up of the beach dune system through clearing and destruction of vegetation has facilitated a new range and density of activities on the beach by residents. As a result of these recent changes, the beach now experiences 11 of the 17 potential threats to beaches identified in The Virgin Islands Beach Policy, 2020. In the absence of immediate management measures, the beach is at risk of experiencing a further three (3) threats and irreversible impacts.

As such, development of a Beach Management Plan was prioritized by the Ministry of Natural Resources and Labour (the Ministry) to urgently address these threats and restore and maintain user satisfaction. The planning process first sought to determine a vision for the beach in the current context; the purpose of the Plan is to create the enabling environment to realize that vision.

1.2 Policy Basis

The Virgin Islands Beach Policy, 2020 provides the policy basis for the development of the Long Bay, Beef Island Beach Management Plan. Specifically, as part of the decision support tools comprising the Territory's beach management framework, the Policy calls for the development of "beach management plans at the level of individual beach classes or individual beaches." Furthermore, for the subset of beaches where commercial activities and special events will take place, the Policy requires establishment of carrying capacities and occupancy levels.

The Beach Management Plan for Long Bay was developed in keeping with the following guiding principles enshrined in the Beach Policy:

- **Public trust:** Beaches hold a special place in the natural patrimony of the Territory and management decisions should be rational.
- **Sound scientific understanding:** Decisions shall be based on sound scientific understanding of the connectivity between the beach habitat and associated ecosystems, such as ponds and mangroves.
- **Environmental integrity:** Ensure sustainable development to maintain the integrity of the beach.
- **Climate adaptation and resilience:** Protect and rehabilitate beaches and support habitats to enhance natural resilience, including protection by declaration as national parks or environmental protection areas, where relevant.
- **Health and safety:** Facilitate high standards for the health and safety of beach goers.
- **High quality beach experience:** Ensure exceptional quality of experience for residents and visitors through the identification of acceptable limits of change within a beach community via regulation and enforcement.
- **Public access:** Beaches are public spaces that should have free access from any part of the waters to the shores and reasonable access across lands to shores and beaches.
- **Crown land:** All shores and beaches are vested in the Crown.

2.0 - EXISTING CONDITIONS

2.1 General Characteristics of the Beach

Long Bay is a crescent-shaped, white coralline sand beach located on the north shore of Beef Island, The Virgin Islands between Little Mountain and the Terrance B. Lettsome International Airport. The centre of the beach is oriented north-northeast and the beach is sheltered from high wave energy by Guana Island, Little Camanoe and Great Camanoe.

Long Bay, Beef Island is classified as a barrier, embayed, sandy beach. The main beach stretches 2,420 feet (738 meters) from its western end at the foot of Little Mountain to the eastern public entrance close to the Airport runway. The beach continues another 1,740 feet (530 meters) eastward, wrapping around a salt pond until it terminates at the Airport runway. The shoreline in this segment of the beach transitions to more of a beach rock¹ and coral rubble composition with a mixture of sand, coral and shells. This segment of the beach is not typically used for swimming given the reef and rocky substrate which extends up to the shoreline.

Figures 2-1a and 2-1b show the location of Long Bay, Beef Island and significant features of the bay. Details about the natural resources and ecological habitats, biodiversity, including threatened and endangered species, and beach swimmer safety is presented in this section.



Figure 2-1a. Location of Long Bay on Beef Island

¹ Beach rock is a cemented accumulation of sand, pebbles, and cobbles formed at or below sea level.
Source: Island Resources Foundation (2015). *An Environmental Profile of the Island of Tortola, British Virgin Islands*. http://www.irf.org/wp-content/uploads/2015/10/TortolaEnvironmentalProfile_201510.pdf

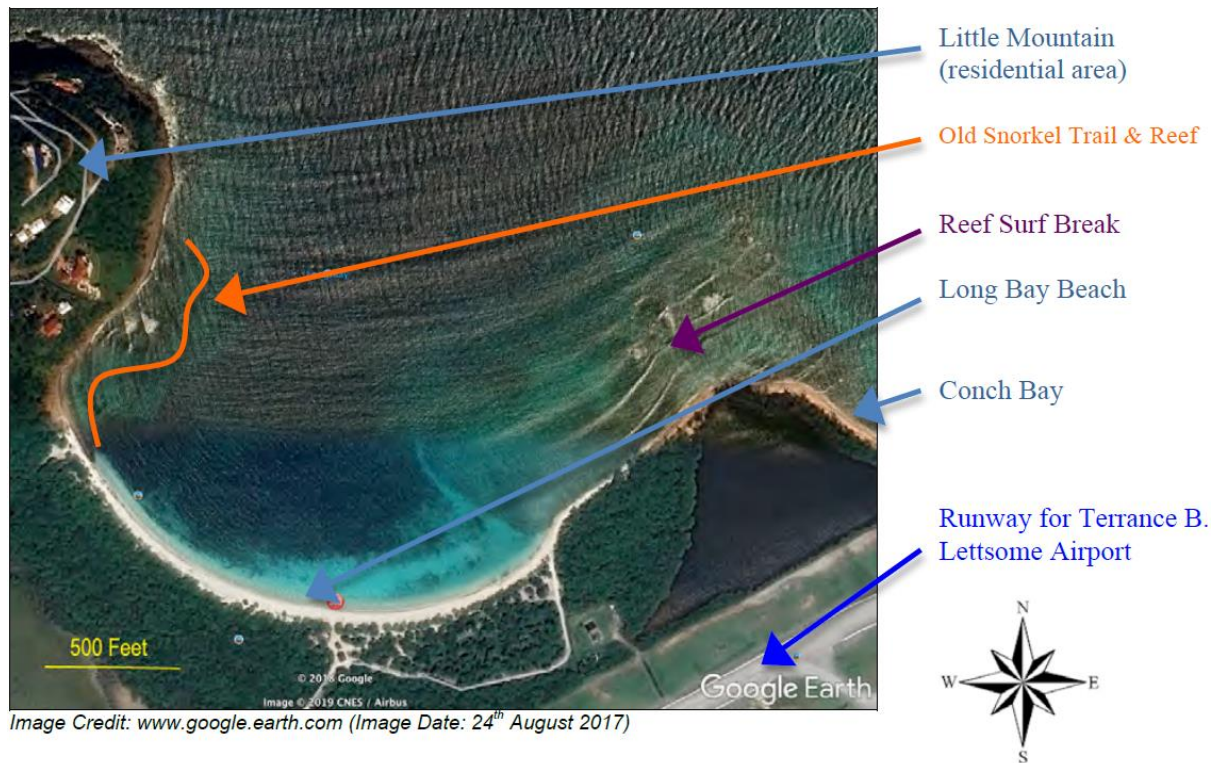


Figure 2-1b. Long Bay, Beef Island significant features
Source: BVI Lifeguard Service, 2019

2.1.1 Natural Resources, Ecological Habitats and Biodiversity

Long Bay, Beef Island is home to critical natural resources and ecological habitats as described below and depicted in Figure 2-2. Importantly, Long Bay is one of the Territory's few remaining examples of a whole network of interconnected marine and coastal ecosystems, including coral reefs, seagrass meadows, sandy shoreline, sand dunes, mangrove forests and salt ponds. The area is also a habitat for threatened and globally endangered species as well as important plant species.



*Figure 2-2. Natural resources and ecological habitats present at Long Bay, Beef Island
The aerial image (top) was taken in 2017 before Hurricane Irma. The drone image (bottom) was taken in 2018 post Hurricane Irma.*

PRISTINE COASTAL WATERS

Long Bay has coastal waters with very low turbidity and nutrient loads, resulting in crystal clear waters. The beach's pristine water quality is core to its natural beauty and benefits. Historic measurements of water quality parameters at Long Bay, to be maintained by implementation of the Beach Management Plan, are set out in the section of the Plan on environmental restoration and protection.

Coastal water quality is threatened by land-based litter and pollution and, on a temporary basis, by mass sargassum landings.



Figure 2-3. *Sargassum* at the eastern end of Long Bay, Beef Island in June 2017
Photo credit: Mark Street, BVI Lifeguard Service

SEAGRASS MEADOWS

Long Bay has extensive, healthy seagrass meadows that extend across the majority of the bay. On the western end of the bay, the seagrass meadows approach the shoreline and gradually retreat as one moves along the beach in an easterly direction. From about 100m before the central entrance of the beach until the eastern entrance, the seagrass meadows start approximately 100-175 ft offshore. This is beyond the depth that users typically swim and recreate in, making the eastern segment of the beach the prime, preferred swimming area for most users. The primary species of seagrass present are turtle grass (*Thalassia testudinum*) and manatee grass (*Syringodium filiforme*).

Seagrass meadows play a number of ecologically important roles as summarised in the Information Sheet on Ramsar Wetlands (RIS) for the proposed Long Bay, Beef Island Ramsar Site (National Parks Trust of The Virgin Islands, 2012). They reduce wave energy, allowing sediments to settle out of the water column. Seagrass meadows also remove nutrients from the water, which is very important for water quality in shallow areas such as Long Bay. Their horizontal stems and roots trap sediments and stabilize the seabed. Many types of algae and invertebrates are dependent on seagrass and live on their blades. It is also a food source for many animals, including endangered sea turtles. Additionally, seagrass meadows provide an important habitat, shelter and nursery for conch, juvenile fish and stingrays, among other marine life. Furthermore, seagrass meadows provide an important carbon sequestration function.

CORAL REEFS

Long Bay has two fringing reefs, one on its western end and the other on its eastern end. The western reef in particular had quite a healthy mix of hard corals, soft corals and sea fans with a high presence of *Montastrea sp.* Historically, there was a popular snorkelling trail along the western reef, maintained by the former Conservation and Fisheries Department. Recent data on the condition of the reefs is not available; however, it is assumed that the health of the reefs has declined due to a combination of bleaching events, coral diseases that have affected the Territory and mass sargassum landings that temporarily affect nearshore water quality.

SANDY SEASHORE

The white, medium to coarse grain sand of the seashore is another natural resource core to the beauty, attraction and recreational value of Long Bay. Additionally, the sand serves as a nesting ground for globally endangered turtle species, including the leatherback turtle (*Dermochelys coriacea*), locally known as the trunk turtle, and the hawksbill turtle (*Eretmochelys imbricata*). The sand has a higher marine versus terrestrial content. The width and slope of the sandy area (beach berm) varies seasonally with cycles of accretion and erosion.

The sandy seashore is threatened by sand mining, especially given recent building material shortages. Mass landings of sargassum also limit use of the seashore and, without careful removal, can result in damage to the seashore, including removal of substantial quantities of sand. Littering, including of glass bottles, in the sand poses a major safety hazard and has a high negative aesthetic impact.

VEGETATION LINE – FOREDUNE (SEAGRAPE TREE LINE)

The vegetation line of the foredune is the first line of established trees from the seashore. It occurs in an area of the sand dune known as the foredune which is illustrated in Figure A1-1 of Appendix I. Long Bay historically had a dense seagrape tree line that stretched the entire length of the eastern side of the beach (from the central to eastern entrance) and most of the western side (from the central to western entrance) along the foredune; this served as the vegetation line. In addition to seagrape trees, other species occurred to a lesser extent (see Appendix I). The seagrape trees typically occurred in clusters of 2-3 trees spaced about 16 feet (4.9 meters) apart.

The seagrape trees served many important functions within the beach system, including being the frontline defence against beach erosion both by wave and wind action. Seagrape tree roots actively bind the sand together and their complex network of broad leaves act as a sand trap. Additionally, the seagrape trees serve as an important source of shade for beach goers and are critical for regulating the temperature of turtle nests which are often in close proximity on either side of or within the seagrape tree line.

Following the passage of Hurricane Irma and the change of use patterns at the beach, the majority of seagrape trees have been destroyed. Many trees were uprooted during Hurricane Irma and some trees were subsequently cut. Wooden barriers have been built around some remaining trees (Figure 2-4).



Figure 2-4. Example of wooden barrier built around some remaining seagrape trees

A detailed Vegetation Survey of the beach conducted on June 27, 2022 as a part of the beach planning process revealed that only 22 instances of seagrape trees remain along the entire length of the beach, with 7 of those being clusters of 2-3 trees each, for a total of approximately 33 seagrape trees. This count excludes the 6 seagrape seedlings that were planted on June 5, 2022. Additionally, there is only a short 25-meter segment of the beach, just west of the central entrance, where the historic seagrape tree density still remains. Based on this representative historic density, the current population of seagrape trees is approximately 8 times less than the historic density.

Figure 2-5 shows the dramatic loss of the seagrape tree line and beach dune vegetation based on aerial photographs taken in 2002 and 2020.

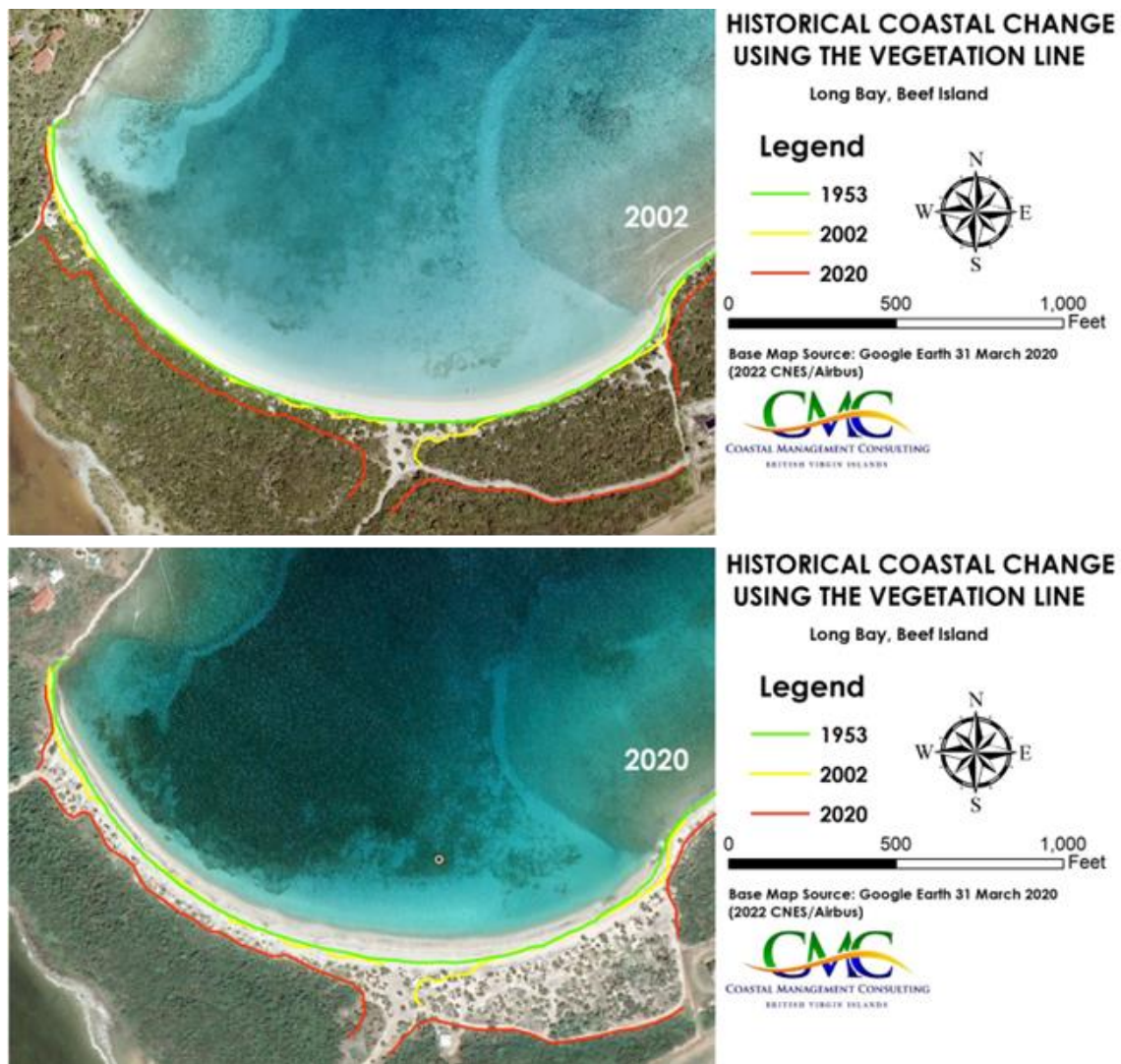


Figure 2-5. Loss of the seagrape tree line and beach dune vegetation between 2002 and 2022
Credit: Dr. Shannon Gore, Coastal Management Consulting

The photograph collection in Figure 2-6, taken immediately before Hurricane Irma in September 2017, gives an indication of the historic density of the seagrape tree line.



Figure 2-6. Historic density of the seagrape tree line at Long Bay, Beef Island (September 2, 2017)

SAND DUNE

Long Bay has a well-developed sand dune system (also referred to as “beach dunes” or simply “dunes”). Dunes are mounds of wind-blown sand held together and stabilized by their vegetation cover. Sand dunes act as an important sand reserve for the beach and also serve as a nesting ground for hawksbill turtles. The western portion of the sand dune system at Long Bay remains largely intact, covered in dense vegetation. The eastern dune system, however, has experienced significant human disturbance. The dune vegetation was substantially cleared around 2015, before Hurricane Irma. A photo of the result of that clearing is included in *An Environmental Profile of the Island of Tortola, British Virgin Islands* (Island Resources Foundation, 2015) and is duplicated in Figure 2-7a. The remaining sand dune vegetation was impacted by Hurricane Irma in September 2017. As a result of both impacts, there is now only approximately 20-25% (a fifth to a quarter) vegetation cover remaining (see Figure 2-5). Furthermore, the remaining vegetation cover is primarily Neem trees, an aggressive invasive species (Figure 2.7b) that has replaced many native species. There is also a high level of littering and soiling of the sand from parties and barbequing.



Figure 2-7. (A) Eastern beach dune at Long Bay cleared before Hurricane Irma - Credit: Island Resources Foundation; (B) Regrowth on the beach dune primarily by invasive Neem trees

SALT PONDS

There are two salt ponds in close proximity to Long Bay beach. The main pond is approximately 17.5 acres and is located behind the western dune system, adjacent to the main public road (Beef Island Road) and west of the central access road to the beach. The secondary, smaller pond is 9.1 acres and is located behind the eastern tail of the beach, abutting the Airport runway. Both ponds are inundated between 6 to 12 months of the year and are hypersaline with a mean salinity of 65 ppt (main pond) and 84 ppt (secondary pond).

The salt ponds play an important nutrient and sediment filtration role, helping to protect the pristine water of the beach. The ponds also help to stabilize the shoreline and provide an important habitat for a range resident and migratory birds, including flamingos. Visiting bird watchers and wildlife photographers are attracted to the salt ponds.

MANGROVES

Mangroves exist around the fringes of the salt ponds and also form a linear forest along the eastern side of the central access road to the beach. Like the salt ponds, mangroves play an important filtration role and provide important bird habitat. The following species of mangroves are present: White mangrove (*Laguncularia racemose*), Black mangrove (*Avicennia germinans*), Red mangrove (*Rhizophora mangle*) and Buttonwood (*Conocarpus erectus*).

BIODIVERSITY

The natural resources and habitats described above support a range of biodiversity, including some threatened and globally endangered species. A list of plant species found within the vegetation line and dune system is provided in Appendix I. The full results of the detailed Vegetation Survey of Long Bay conducted on June 27, 2022, including species present per 50m-segment along the beach are also presented in Appendix II. Given the dense vegetation cover, the survey of the western sand dune was limited to species visible from the front edge of the dune. As such, there may be species present that were not captured by the Vegetation Survey.

The salt ponds provide habitat for common species of waterbirds, such as black-necked stilt (*Himantopus mexicanus*), white-cheeked pintail (*Anas bahamensis*), green heron (*Butorides virescens*), greater flamingo (*Phoenicopterus ruber*) and least sandpiper (*Calidris minutilla*). Some of the wading birds observed at these ponds are reported very infrequently in The Virgin Islands, such as northern shoveler (*Anas clypeata*), ring-necked duck (*Aythya collaris*), ruddy duck (*Oxyura jamaicensis*), and pied-billed grebe (*Podilymbus podiceps*). (National Parks Trust, 2012).

As previously mentioned, Long Bay beach is a nesting ground for the leatherback turtle (*Dermochelys coriacea*), locally known as the trunk turtle, and the hawksbill turtle (*Eretmochelys imbricata*). Both are globally endangered species.

2.1.2 Swimmer Safety

Overall, Long Bay is a safe beach for swimming year-round with low risks. There is only one known/recorded drowning at Long Bay, Beef Island which was that of a male cruise ship

passenger on January 7, 2017. An updated Beach Rescue Risk Assessment Report for Long Bay, Beef Island was prepared by the Lifeguard Services on March 13, 2019 with a comprehensive assessment of swimmer safety at Long Bay.

Given the mild and relatively safe conditions at Long Bay, there has historically not been a lifeguard stationed on the beach. Swimmer safety signage is, however, posted at the beach at the central and eastern entrances along with rescue equipment (Figure 2-8). Notwithstanding this, the Lifeguard Services has recommended seasonal lifeguard coverage at Long Bay, Beef Island for 6 months annually from November to April. Based on the Lifeguard Services' (2019) 2020 Budget Request for Key Hazardous Beaches on the North Shore, the minimal initial cost of constructing the required facilities (lifeguard tower) and procuring the necessary equipment to start the lifeguard service at Long Bay, Beef Island is \$118,450. The estimated annual recurring cost of the lifeguarding service, including salaries for two (2) seasonal Lifeguards and one (1) fulltime/year-round Lifeguard Trainee, was projected at \$82,972.76 for the year 2022.



Figure 2-8. Example of swimmer safety signage and rescue equipment at the Eastern Entrance of Long Bay, Beef Island

WAVE ACTION AND DEPTH

Due to its orientation and sheltering, Long Bay is typically calm year-round, even during the winter months when the north shore beaches of Tortola experience large swells, locally known as “ground seas.” While mainly sheltered, swell directly from just west of north (250°) does on occasion make it into the bay, creating a shorebreak along the beach and a right-hand wave

on the eastern end of the bay (BVI Lifeguard Service, 2018). Additionally, the seabed at Long Bay normally has a very gradual slope, with no sudden drop-off into deep waters. This provides for a fairly wide zone that is shallow enough for wading and allows users to control their depth to a safe position based on their swimming capabilities. This makes Long Bay distinct as the only beach connected to Tortola that is safe for swimming year-round.

MARINE LIFE

Long Bay is home to stingrays, particularly on the western segment where seagrass beds are denser and closer to shore. These, however, are not aggressive and there have not been any reports of injury to swimmers. Long Bay also experiences occasional short-term influxes of jelly fish. These are typically the moon jellyfish (*Aurelia aurita*) which has a mild sting. Signage (flags) and beach safety advisories are used to warn swimmers of jelly fish influxes.

BOATING TRAFFIC

Historically, boating traffic at Long Bay was limited to power boats and digynies that would anchor at the beach during special events once or twice a year, including Fisherman's Day.

Boating traffic remains low but has increased to include more frequent use by power boats and digynies as well as occasional temporary anchoring of yachts with fleets of up to 5 or 6 at a time observed.

2.2. Land Ownership and Use

The seashore up to the highwater mark is Crown property. The beach at Long Bay is bound by four (4) parcels of land within Blocks 3640B and 3740B of the Beef Island Group with ownership by the Crown, the BVI Airports Authority and private entities as follows:

- Parcel 40, Block 3640B (51.69 acres) – Crown
- Parcel 6, Block 3740B (12.09 acres) – Crown
- Parcel 2, Block 3740B (10 acres) – BVI Airports Authority
- Parcel 48, Block 3640B (51.64 acres) – Private

The majority of the land immediately bordering the beach, in particular that part used primarily for public recreation - from the western entrance to the eastern entrance – falls within Parcel 40 which is owned by the Crown.

Parcel 40 was acquired by the Crown from a private owner on the basis of a 2004 Cabinet decision (Cabinet Minute No. 414/2004) and a subsequent Agreement for Sale and Purchase dated May 9, 2005 for the amount of \$5,595,478.98. The purchase was concluded in 2008 when the final payment was made. The Cabinet decision underpinning the purchase expressly stated as the intent that “the land be preserved as wetland to be managed by the National Parks Trust.” Following the Cabinet decision, the process to declare Long Bay a National Park/Marine Park under section 15(b) of the National Parks Act, No.4 of 2006 was initiated. The legally required advertisement of the proposed declaration was published for public comment in late 2018. A copy of the advertisement is contained at Appendix III.

The land parcels bordering the beach and the surrounding parcels are shown in Figure 2-9 below. The Beach Management Plan boundaries extend beyond the parcels immediately bordering the beach as shown in Figure 3-5. Section 3.3 includes additional information about land ownership within the Plan boundaries.



Figure 2-9. Land parcels bordering and surrounding Long Bay beach, Beef Island

2.3 Public Access

Section 61 of the Physical Planning Act, 2004 requires that “there shall be at least one public landward access to every beach in the Territory.”

From the main public road (Beef Island Road), there are two motorable accesses to Long Bay within close proximity of each other:

- a) The main, central access to the beach is an unpaved road that borders the eastern side of the main salt pond and leads to the central and eastern entrances to the beach. The road mainly passes over Parcel 40, Block 3640B which is Crown land, however, the start of this access road falls within Parcel 19, Block 3640B, a private parcel.
- b) A secondary access is a private, concrete road through Little Mountain estate which leads to the western entrance to the beach. At times in the past, a chain has been used to restrict public access to the beach via this road; however, in recent years the access has remained open at all times.

The two points of access from Beef Island Road and three entrances to the beach are highlighted in Figure 2-10 below.

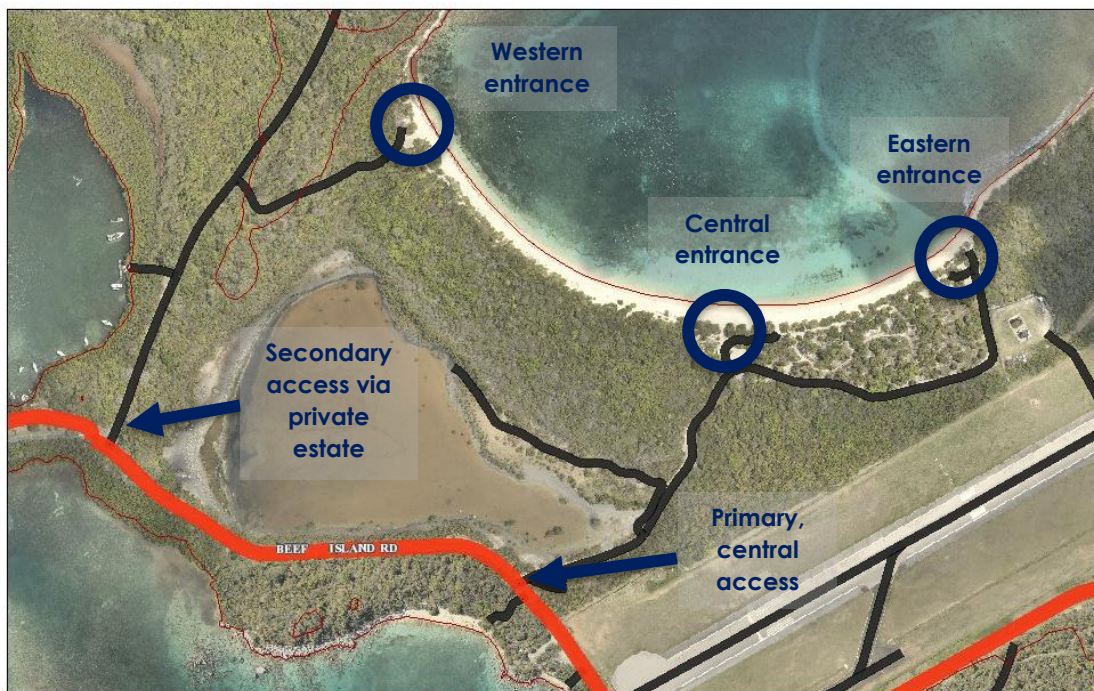


Figure 2-10. Accesses to Long Bay from the public road (Beef Island Road) and entrances to the beach

2.4 Traditional Uses, Benefits and Values

Long Bay has significant environmental, social, recreational, cultural and spiritual value as represented in Figure 2-11 below.

Environmental	Social & Recreational	Cultural	Spiritual
•Pristine water quality •Dense seagrass beds •Coral reefs •White, sandy seashore •Healthy sand dunes •Mangroves •Salt ponds •Marine life habitat •Sea turtle nesting site •Bird habitat	•Family picnics •Family reunions •Birthday parties •Office fun days •Swimming •Water sports (windsurfing and kayaking) •Physical therapy	•Emancipation celebrations •Fisherman's Day celebrations •Other public holiday celebrations	•Personal spiritual renewal and well-being •Relaxation •Meditation •Outdoor church services and gatherings •Baptisms

Figure 2-11. Environmental, social, recreational, cultural and spiritual values of Long Bay, Beef Island

Historically, up to 2017 and the impact of Hurricane Irma, Long Bay was strictly a recreational beach with no permanent commercial activity. The beach was primarily used and enjoyed by residents, especially persons from East End, Long Look and surrounding communities on the eastern end of Tortola, with limited and short-term use by tourists. For the majority of its history, tourists who visited the beach were typically overnight guests who arrived independently in small numbers versus in large numbers by organized tours.

The beach has traditionally offered a quiet, safe environment and has been critical to the quality of life of residents, offering an invaluable and sacred place for relaxation, spiritual renewal and family-friendly recreation. The beach was entirely undeveloped until the 2017/2018 tourism season when commercial activity began under pitched tents. Eventually bars/restaurants established more elaborate temporary structures and in 2020 a public restroom facility was constructed by the Ministry of Natural Resources and Labour. The undeveloped environment allowed for a fully immersive nature experience. Studies have shown that natural spaces for outdoor recreation and relaxation are critical for mental health and well-being. Such spaces are becoming rare in The Virgin Islands, especially on the population centre, Tortola.

Additionally, Long Bay has always been significant in the cultural and social life of Tortola and the wider Territory. The beach serves as the venue for celebration of public holidays, including activities during the annual Emancipation Festival. The beach was also the venue of the annual Fisherman's Day celebration which was held on Territory Day (July 1) for 28 years until 2017. The beach continues to serve as a popular choice for family picnics, birthday parties, office fundays, occasional nature-based church services, other religious gatherings and baptisms. A highlight of Fisherman's Day – the fishing tournament weigh-in – is pictured in Figure 2-12 together with a view of the seashore on Fisherman's Day 2007.

Swimming has traditionally has been the dominant water-based activity at the beach. Long Bay was used on occasion by a handful of windsurfers and kayakers; however, other water sports were not present. Long Bay was never utilized as an anchorage. Historically, boating traffic at Long Bay was limited to power boats and digynies that would anchor at the beach during special events once or twice a year, especially during Fisherman's Day organized by the former Conservation and Fisheries Department.



*Figure 2-12. Fish weigh-in and typical seashore view during Fisherman's Day celebrations
Photo credit: Wilbert Chambers, Conservation and Fisheries Department*

2.5 Impact of Hurricane Irma, 2017

Hurricane Irma was a strong category 5 hurricane with maximum sustained winds of 185mph that directly hit The Virgin Islands on September 6, 2017. At the time, Hurricane Irma was the strongest hurricane at time of landfall in the history of the Atlantic Hurricane season and had a catastrophic impact. Hurricane Irma had a significant impact on the environment at Long Bay, in particular the seagrass tree line which was denude and to a large extent uprooted.

The strong winds also had a significant impact on the remaining trees of the already heavily disturbed eastern sand dune. Figure 2-13 show the extensive damage to the seagrape tree line as a result of Hurricane Irma. The beach also suffered significant sand erosion.



Figure 2-13. Damage to the seagrape tree line at Long Bay, Beef Island from Hurricane Irma Photos taken October 2017 (Left: view from centre looking west; Right: view of eastern end). Photo credit: Mark Street, BVI Lifeguard Service

In addition to the environmental impact to Long Bay, the severe impact of the hurricane on Cane Garden Bay, the leading cruise ship passenger destination on Tortola, set the stage for a profound shift in the socio-economic dynamics at Long Bay. Long Bay was quickly identified as an alternative to Cane Garden Bay that could be brought online fairly quickly to allow for some economic gain from the pending 2017/2018 tourism season. The annual tourism season typically starts in November, just over 2 months after Hurricane Irma made landfall. The Territory re-opened to cruise ship arrivals following Hurricane Irma on December 6, 2017. The photographs at Figure 2-14 taken in December 2017 show the rapid transformation of Long Bay into a major cruise ship passenger destination.

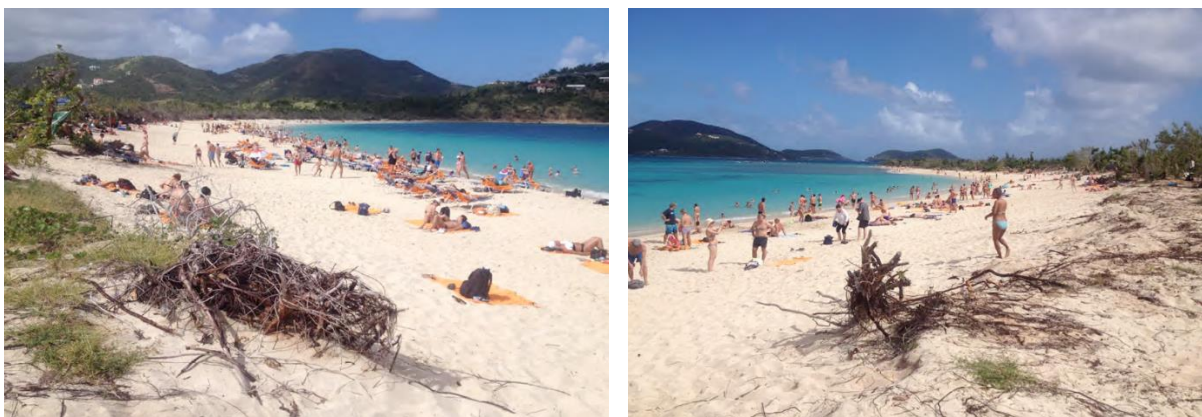


Figure 2-14. Cruise ship passengers at Long Bay, Beef Island in December 2017 Photo credit: Mark Street, BVI Lifeguard Service

2.6 Current Beach Uses and Facilities

2.6.1 Beach Uses

The nature of the use of the beach has changed significantly since Hurricane Irma in September 2017. In particular, the economic potential of the beach is being explored and the range of social and recreational uses has expanded. Views of the beach from the seashore in 2019 and 2022 reflecting these changes are shown in Figure 2-15. More photographs of current uses and conditions are included in Appendix IV.

New activities at the beach are described below. The driving factors for the changes in use have been:

- Impact to Cane Garden Bay from Hurricane Irma which caused a temporary diversion of cruise ship passenger traffic to Long Bay, Beef Island which has persisted; Long Bay has now evolved into its own attraction
- Clearing of the eastern sand dune system, opening it up to heavy vehicular traffic which has facilitated new uses and behaviours, including playing of loud music from vehicle sound systems
- Changes in social and economic circumstances following Hurricane Irma and the COVID-19 lockdowns which created a greater demand for outdoor spaces for relaxation and recreation



Figure 2-15. (A) View of the beach from the seashore in 2019; (B) View of the beach from the seashore in 2022

HEAVY VISITATION BY CRUISE SHIP PASSENGERS

Long Bay, Beef Island is now visited by up to approximately 650 cruise ship passengers on cruise ship days. Approximately 500 of these are through two organized cruise ship tour operators. Traffic from independent taxi operators ranges between 80-150 guests per day.

PERMANENT COMMERCIAL ACTIVITY

Permanent commercial activity evolved around cruise ship passenger arrivals post Hurricane Irma. Temporary permission to operate commercially on the beach for one (1) year was given to two vendors by the Ministry of Natural Resources and Labour. One condition for permission required that no permanent structures be built. This permission has since expired and no other vendor permissions have been granted by the Ministry. Notwithstanding this, there are now a total of seven (7) long-term vendors operating on the beach as detailed in Table 2-1. Images of associated facilities are presented in Figures 2-16 to 2-19.

Table 2-1. Product Offerings of the Seven (7) Vendors Operating at Long Bay, Beef Island

Vendor	Bar/Restaurant	Beach Chair Rental	Water Sports	Souvenir/Beach Products
#1	X	X		
#2	X	X		
#3	X	X	X	
#4		X		X
#5				X
#6				X
#7			X	

Two of the three beach bars/restaurants are housed under open-sided tents with wooden cabinet and countertop structures and outdoor eating areas with a combined total of 22 picnic tables. The third bar/restaurant has a fully enclosed shipping container structure with a wooden deck. All bars/restaurants rent beach chairs as a part of their operation and one also appears to have an associated watercraft rental operation.

All souvenir vendors operate under open tents or pergolas. One vendor rents beach chairs as a part of their operations. There is one strict water sports operator with no attached facilities.



Figure 2-16. Existing bar/restaurant operations at Long Bay, Beef Island



Figure 2-17. Existing souvenir operations at Long Bay, Beef Island

COMMERCIAL BEACH CHAIR OPERATION

Four (4) of the seven (7) commercial operators include beach chair rental as a part of their business model, including all bars/restaurants and one souvenir vendor. During a field survey on June 30, 2022 (a non-cruise ship day), a total of 403 beach chairs were observed on the beach, 241 of which were set out. Of these, the majority (254) appear to belong to a single vendor. A total of 95 beach chair umbrellas were counted as well as 60 cupholder tables for beach chairs. There have been no permits issued by the Ministry of Natural Resources and Labour for commercial rental of beach chairs at Long Bay. The beach chairs are often left out for extended periods when not in use (see Figure 2-18). This is contrary to The Virgin Islands Beach Policy 2020 which requires that all beach chairs are immediately removed unless they are in use.



Figure 2-18. Unoccupied beach chairs left out at Long Bay, Beef Island on June 30, 2022

COMMERCIAL WATER SPORTS

An anchored water trampoline was introduced in 2018/2019 affiliated with a bar/restaurant operation without permission for use of the seabed. The water trampoline has since been removed. There is now one independent water sports operator renting kayaks. In addition, there is a watercraft operation in close proximity to and seemingly affiliated with one bar/restaurant operator. Kitesurfing classes are also offered at Long Bay at times.



Figure 2-19. Water sport activities emerging at Long Bay, Beef Island post Hurricane Irma

PARTIES WITH LOUDSPEAKERS OR INDIVIDUALS PLAYING LOUDSPEAKERS CLOSE TO THE SEASHORE

Historically, before the opening up of the eastern sand dune to vehicular traffic, large parties and use of loudspeakers was fairly infrequent and persons for the most part observed the rule of requesting permission to use the beach for such activities. In recent years, however, large, loud parties or individuals operating loudspeakers from their vehicle within the dune in close proximity to the shoreline have become routine, occurring almost every Saturday and Sunday and lasting for most of the beach day. For the most part, persons have parties and operate loudspeakers without the requisite permission from the Ministry of Natural Resources and Labour. A recent example of this in December 2022 is shown at Figure 2-20. This activity is now spreading to the edge of the western sand dune near the western entrance.

Excessive noise levels have now stymied some of the traditional uses of the beach and opportunities for quiet enjoyment of the beach for relaxation, spiritual renewal and family-friendly recreation is now limited.



Figure 2-20. Unauthorized party with at least three (3) vehicle loudspeaker systems

HEAVY BARBEQUING/OUTDOOR COOKING ACTIVITY WITHIN THE EASTERN SAND DUNE

There are at least 4-5 permanent makeshift barbeque pits/outdoor kitchens along the eastern dune system close to the seashore. An example of these is shown in Figure 2-21. This activity poses a fire risk, soils the sand and encourages littering of the sand.



Figure 2-21. Example of makeshift barbeque pits/outdoor kitchens along the eastern dune system

MORE REGULAR ANCHORING BY YACHTS

Anchoring of yachts is now observed up to a few times per month in some instances. Groups of up to 5-6 yachts have been observed at once.

2.6.2. Public Facilities

Existing public facilities include a restroom constructed by the Ministry of Natural Resources and Labour in 2020 (Figure 2-22). The restroom facility contains 4 female toilets and 4 male toilets, including one handicap accessible toilet each. There are 3 female sinks and 3 male sinks for hand washing. There is an informal outdoor shower facility with 3 stand pipes supported by an elevated water tank in close proximity to the restroom (Figure 2-23a). Additionally, there are a handful of semi-enclosed shade huts with benches for public use scattered within the sand dune (see Figure 2-23b). More photos of existing conditions are included in Appendix IV.



Figure 2-22. Public restroom facility near the central entrance at Long Bay, Beef Island



Figure 2-23. Outdoor shower facility and example of the semi-enclosed huts for public use at Long Bay, Beef Island

3.0 - PLANNING PROCESS, PLAN COMPONENTS AND GEOGRAPHIC SCOPE

3.1 Description of the Planning Process

The Long Bay, Beef Island Beach Management Plan development process was led by the Ministry of Natural Resources and Labour (MRNL) as the Ministry responsible for all beaches outside of declared National Parks within the Territory. The Technical Review Committee (TRC) chaired by the MNRL and comprising membership from 11 other Government agencies and statutory bodies relevant to beach management was invited to participate in all aspects of the Plan development process. Additional relevant input from Government officials not represented on the TRC, such as the Public Estate Manager, Deputy Governor's Office, and expertise from private environmental management professionals, such as Dr. Shannon Gore, was solicited.

The Plan was developed following standard planning practice, including data collection and interpretation; definition of issues and threats; determination of goals, objectives and priorities; exploration of management options; and Plan preparation with opportunity for public consultation at key Plan development stages, including the Conceptual Plan and Draft Detailed Plan as summarized in Figure 3-1 below.

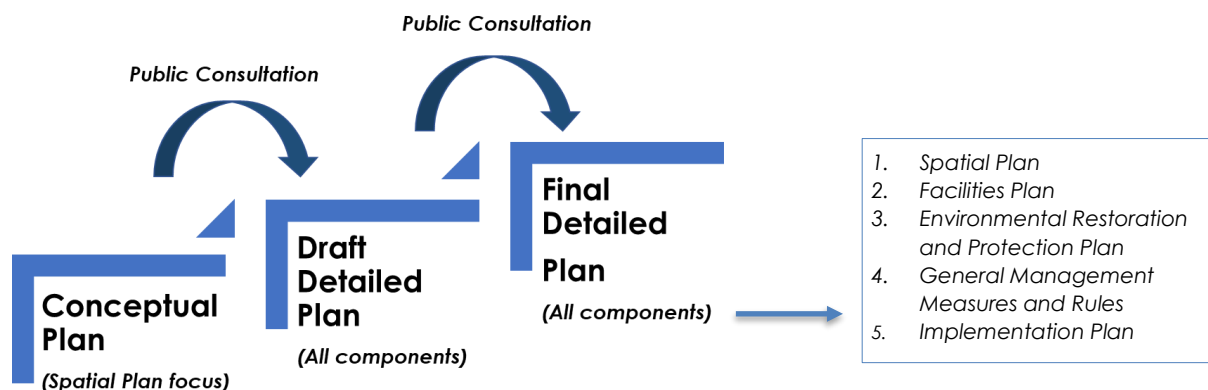


Figure 3-1. Summary of Beach Management Plan stages and opportunities for public consultation

The Conceptual Plan focused on the proposed Spatial Plan for the beach which broadly defines zones for different uses. The Draft Detailed Plan included all Plan elements, including the Spatial Plan, Facilities Plan, Environmental Restoration and Protection Plan, General Management Measures and Rules, and Implementation Plan.

At the Conceptual Plan stage, public consultation included a virtual public meeting held March 29, 2022, an in-person public meeting held March 31, 2022 at the Willard Wheatley Primary

School that was also live-streamed on social media, and a Public Survey (see Figure 3-2 for advertisements of these). Some written comments following the public meetings were also received. A video introducing and explaining the Conceptual Plan was released to the public and promoted via social media in advance of the public meetings.

The Public Survey targeted residents and focused on identifying the desired vision for the beach and current satisfaction and desires overall and in relation to specific beach features. The Survey was administered via an online survey tool (Survey Monkey) and was also made available in hard copy through various channels. A total of 300 responses were received from the general public, representing a 90% confidence level and 5.6% margin of error based on the target population. In addition, 202 responses were received from students. Full details about the Survey, including the demographic profile of respondents, full results and the Survey tool are presented at Appendix V.

At the Draft Detailed Plan stage, public consultation included a virtual public meeting held October 11, 2022 and an in-person public meeting held October 13, 2022 at the East End Methodist Church Hall that was also live-streamed on social media. In addition, the meeting recording, Draft Detailed Plan and Public Survey results were published on the website of the Ministry of Natural Resources and Labour (<https://bvi.gov.vg/environment>) for review immediately following the public meetings. Written public comments on the Draft Detailed Plan were invited by November 15, 2022, however, none were received. See advertisements related to public consultation at the Draft Detailed Plan stage at Figure 3-3.

The following modifications were made to the Plan based on comments received during the first and second rounds of public consultation:

- The Passive Water Sports Zone was extended along the entire beach (setback beyond the typical swim area) and the launch area shifted from the western end to the eastern end of the beach.
- An Outdoor Eating Area was added fronting the Vending Zone, as opposed to continuation of the Public Picnic Zone across the Vending Zone, to avoid potential user conflicts.
- The final finish material for vending unit roofs was revised to thatch, for implementation as budget allows.
- The floor plan of the medium vending/commercial units was adjusted to allow for maximum kitchen space
- The proposed opening times for commercial operations was extended from 9 a.m. to 6 p.m. to 6 a.m. to 7 p.m.
- The approach to managing beach chair rentals on weekends was revised to include an option for rentals at a reduced scale for further consultation.

Further consultations with specific stakeholders, such as tour bus operators, and public surveys are intended during the implementation period to make a final determination on operational matters for which the Plan presents management options, including taxi tour operation and beach chair rentals on weekends.



Figure 3-2. Advertisements related to public consultation at the Conceptual Plan stage



Figure 3-3. Advertisements related to public consultation at the Draft Detailed Plan stage

3.2 Description of the Plan Components

The Long Bay, Beef Island Beach Management Plan consists of five (5) complementary components as depicted and defined in Figure 3-4 below.

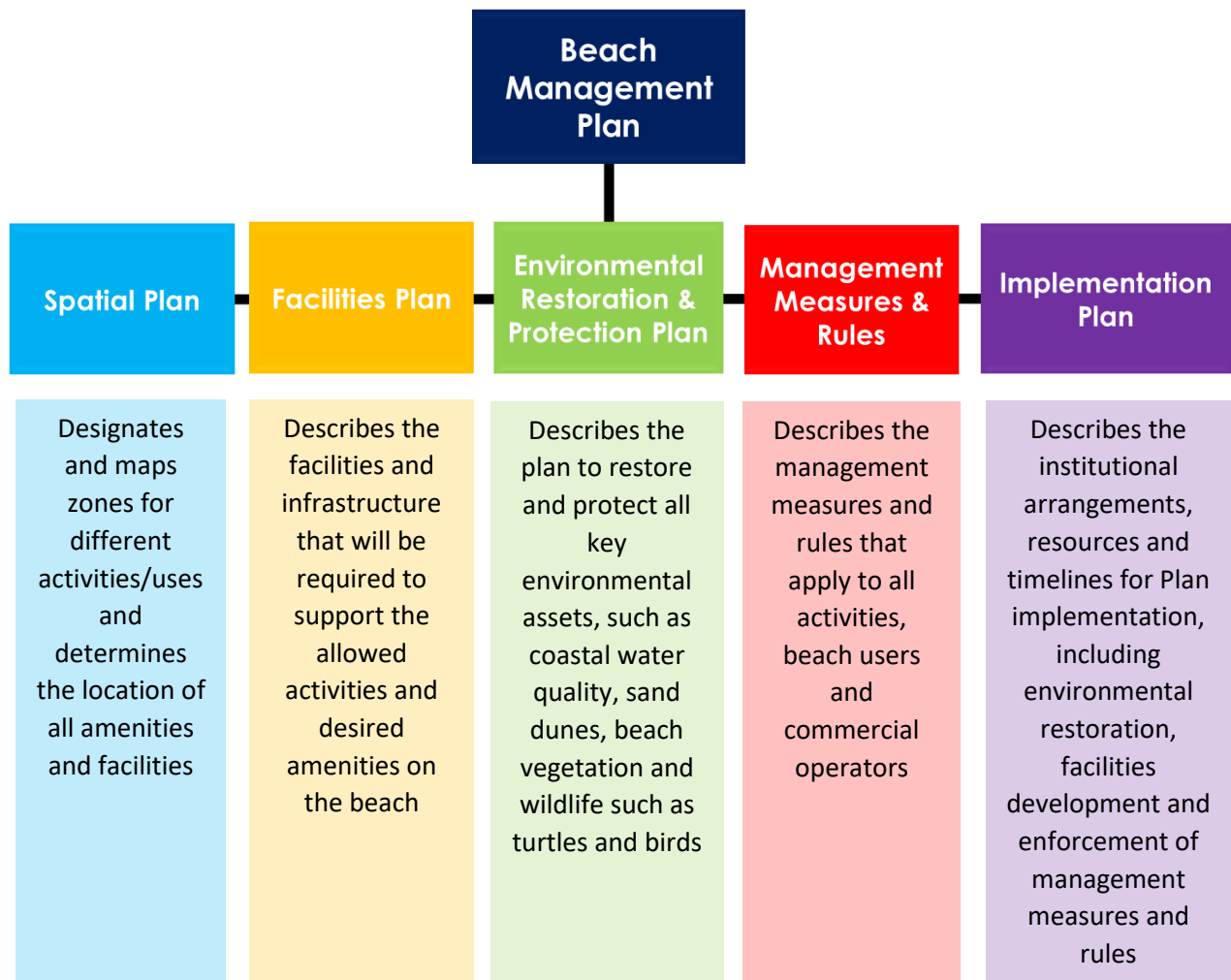


Figure 3-4. Beach Management Plan components

3.3 Geographic Scope of the Plan

As defined in The Virgin Islands Beach Policy, 2020, a beach is

“the zone where the accumulation of unconsolidated material (muds, sands, stones, gravels, shingles, coral fragments or boulders) extends seaward to the 20m bathymetric depth (unless depth of closure exceeds 20m) and landward to the place where there is a marked change in material, physiographic form, or to the line of permanent vegetation (usually the effective limit of storm waves), whichever is furthest landward.”

The geographic scope of the Long Bay, Beef Island Beach Management Plan includes the beach itself as well as the land and marine area around it which influence the function and health of the beach, including the surrounding wetland areas and coral reefs.

As such, the physical boundaries of the Plan area are the Beef Island Road to the south, the Little Mountain Private Estate Road to the west and the Terrance B. Lettsome International Airport runway strip to the east. On the seaward side, to the north, the Plan area extends to the boundary of the proposed National Park/Marine Park. The Plan boundaries are not defined by land parcel lines, but rather along ecosystem lines. Figure 3-5 shows the boundaries of the Plan area and the land parcels contained within it, including:

- Parcel 40, Block 3640B – Crown (entire parcel - 51.69 acres)
- Parcel 6, Block 3740B – Crown (entire parcel - 12.09 acres)
- Parcel 2, Block 3740B – BVI Airports Authority (entire parcel - 10.00 acres)
- Parcel 29, Block 3640B – BVI Airports Authority (entire parcel - 0.93 acres)
- Parcel 18, Block 3640B – Private (entire parcel - 0.66 acres)
- Parcel 19, Block 3640B – Private (entire parcel - 3.14 acres)
- Parcel 46, Block 3640B – Private (portion of parcel falling within the beach area – approximately 0.54 acres)
- Parcel 25, Block 3640B - Private (portion of parcel falling within the beach area – approximately 0.02 acres)

The total Plan area is 134.9 acres (0.546 square kilometres). This includes approximately 79.5 acres (0.322 square kilometres) of terrestrial (land) area and 55.4 acres (0.224 square kilometres) of marine (sea) area.



Figure 3-5. Boundaries of the Long Bay, Beef Island Beach Management Plan

4.0 - CURRENT THREATS AND ISSUES

4.1. Current Threats based on Beach Policy

The Virgin Islands Beach Policy 2020 identifies 17 threats to beaches in the Territory. Current threats to Long Bay, Beef Island from among those identified in the Policy have been determined based on field observations by the Ministry of Natural Resources and Labour as well as results from the Public Survey conducted during the beach management planning process.

As summarized in Table 4-1, eleven (11) of the 17 potential threats identified in the Policy presently affect Long Bay, Beef Island and the beach is at risk to another 3 threats in the absence of immediate management measures.

Table 4-1. Current Threats to Long Bay, Beef Island

Threat		Existing	At Risk
1.	Poor water quality from stormwater runoff and other discharges within adjacent watersheds and from various types of vessels, which may contain pollutants or untreated wastewater		X
2.	Deteriorating coral reef structures	X	
3.	Loss of associated habitats such as salt ponds and mangroves, which are instrumental to the ecological integrity of beaches		
4.	Degraded wildlife habitat (turtle and shorebird nesting) at heavily frequented or developed beaches; including light pollution	X	
5.	Litter, including washed ashore marine debris and litter produced during and after use by large groups attached to cruise ships or associated with special events	X	
6.	Clearing of beach vegetation	X	
7.	Persistent, mass Sargassum landings		X
8.	Sand mining, which while mainly outlawed still takes place to some extent	X	
9.	Compacting of sand dunes by vehicular traffic	X	
10.	Sea level rise combined with minimal building setbacks which reduces the ability of the beach to adapt by migrating in land	X	
11.	Lighting of bon fires and beach barbeques which "soil" the sand	X	
12.	Overcrowding and other related visitor use impacts, which may affect ecological and physical integrity		X
13.	Unregulated activities within the beach zone, such as use of heavy equipment, ill-placed temporary and permanent vending and beach bar facilities and their accessories (beach chairs, umbrellas, tables, etc.), which may impair the free seasonal movement of sand, thereby contributing to erosion	X	
14.	Multiple and conflicting uses of some beaches that reduce beach visitor experience	X	
15.	Noise pollution from loud music not authorized for special events	X	

16.	Lack of consistently applied use and safety guidelines for the continued and balanced enjoyment by various user groups		
17.	Fragmented and unclear authority of key focal agencies responsible for overall management		

4.2 Current Issues based on Public Survey

Key findings of the General Population Survey used to determine current issues are presented in this section. Full details about the Survey, including the demographic profile of respondents, full Survey results and the Survey tool are presented at Appendix V.

Overall Beach Use and Enjoyment

The Survey findings show that the recent development and activity at Long Bay have had more of a negative than positive effect on beach use and enjoyment (Figure 4-1). Overall, 51% of the respondents enjoy the beach less now compared to before versus only 18% who enjoy the beach more now. Also, overall, 48% of respondents use the beach less often now compared to before versus only 12% who use the beach more often now. This suggests that active management of the beach is required to restore the user experience and prevent further degradation of the beach.

The Survey also found that users are mainly:

- “totally unsatisfied” or “unsatisfied” with 12 of the 38 beach features surveyed (Table 4-2)
- “neutral” about 15 of the 38 beach features surveyed (Table 4-3);
- “completely satisfied” or “satisfied” with 11 of the 38 beach features surveyed (Table 4-4).

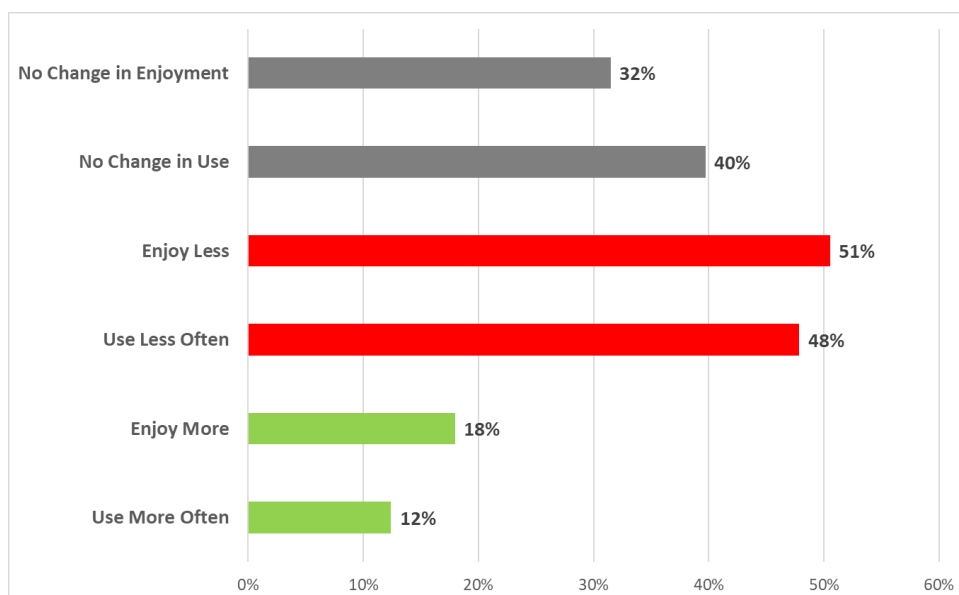


Figure 4-1. Effect of recent development and activity at Long Bay on the beach use and enjoyment of respondents participating in the General Population Survey

Features with which users are mainly “totally unsatisfied” or “unsatisfied”

Features with which users are mainly “totally unsatisfied” or “unsatisfied” represent current issues that management measures should focus on improving. A feature falls on this list if “totally unsatisfied” and “unsatisfied” were together the most common response selected for the feature.

Table 4-2. Beach Features with which Users are Mainly “Totally Unsatisfied” or “Unsatisfied”

Features mainly “totally unsatisfied” or “unsatisfied” with	Desired Change
<i>Overall Environment</i>	
Overall beach cleanliness (53% of respondents)	“more of” (80% of respondents)
Shade trees/vegetation (49%)	“more of” (78%)
Noise level (47%)	“less of” or “none” (57%)
<i>Amenities and Facilities</i>	
Lifeguard presence/station (62%)	“more of” (75%)
Waste facilities (61%)	“more of” (78%)
Access for disabled people (48%)	“more of” (65%)
Picnic tables (48%)	“more of” (57%)
Public shade umbrellas/gazebos (46%)	“more of” (50%)
Restroom facilities (44%)	“more of” (59%)
Main access road (38%)	“more of” (48%)
<i>Recreational Activities</i>	
Loud music (52%)	“less of” or “none” (68%)
<i>Commercial Activities</i>	
Beach chairs (44%)	“less of” or “none” (41%)

Features which users are mainly “neutral” about

Features which users are mainly “neutral” about should be monitored and carefully managed to ensure they do not become points of dissatisfaction. A feature falls on this list if “neutral” was the most common response selected for the feature.

Table 4-3. Beach Features which Users are Mainly “Neutral” about

Features “neutral” about	Desired Change
<i>Overall Environment</i>	
Reef health/quality (43% of respondents)	“more of” (57% of respondents)
<i>Amenities and Facilities</i>	

Birdwatching facilities (48%)	"more of" (55%)
Sporting facilities (46%)	"same level" (38%)
Entertainment facilities (42%)	"less of" or "none" (47%)
Beach use signage (37%)	"more of" (55%)
<i>Recreational Activities</i>	
Private water sports (53%)	"same level" (40%)
Picnics (49%)	"same level" (61%)
Barbeques/cookouts (49%)	"same level" (51%)
Parties (48%)	"less of" or "none" (47%)
Sports (47%)	"same level" (50%)
Boating (47%)	"less of" or "none" (43%)
<i>Commercial Activities</i>	
Other commercial activity (54%)	"less of" or "none" (52%)
Water sports (50%)	"same level" (35%)
Souvenir vending (42%)	"less of" or "none" (52%)
Bars/restaurants (38%)	"less of" or "none" (48%)

Features with which users are mainly “completely satisfied” or “satisfied”

Features with which users are mainly “completely satisfied” or “satisfied” represent features that management measures should focus on maintaining / preserving and enhancing where necessary. A feature falls on this list if “completely satisfied” or “satisfied” was the most common response selected for the feature.

Table 4-4. Beach Features with which Users are Mainly “Completely Satisfied” or “Satisfied”

Features mainly “completely satisfied” or “satisfied” with	Desired Change
<i>Overall Environment</i>	
Water area appearance (77% of respondents)	"same level" (52% of respondents)
Sand quality (74%)	"same level" (57%)
Seawater quality (68%)	"same level" (58%)
Beach width (Distance from tree line to sea) (61%)	"same level" (52%)
Family-friendly environment (53%)	"more of" (54%)
Relaxing environment (47%)	"more of" (56%)
Safe environment (45%)	"more of" (53%)
Beach appearance (Area from tree line to sea) (40%)	"more of" (59%)
<i>Amenities and Facilities</i>	
Parking facilities (42%)	"more of" (53%)
<i>Recreational Activities</i>	
Swimming and snorkelling (60%)	"same level" (49%)
Exercising (54%)	"same level" (50%)

5.0 - CARRYING CAPACITY

The carrying capacity of Long Bay, Beef Island refers to the level of human activity that the beach can support/sustain without undergoing environmental degradation/deterioration or without the user experience (both residential and tourist) being negatively affected.

In keeping with The Virgin Islands Beach Policy 2020, the carrying capacity for Long Bay, Beef Island has been assessed as a basis for developing the detailed Beach Management Plan.

5.1 Method to Determine Carrying Capacity

A literature review was conducted to determine the most appropriate method to determine the carrying capacity for Long Bay. Among other reports, the review included two carrying capacity assessments for The Virgin Islands conducted for The Baths, Virgin Gorda and Cane Garden Bay, Tortola.

Accepted methodology for determining carrying capacity, including consideration of a combination of physical site constraints, facility constraints and social limits was applied to determine the carrying capacity for Long Bay, Beef Island.

Dimensions of the site and requirements and limits to ensure protection of the environment were used as a basis for determining physical site constraints. Facility constraints considered the capacity of parking and restroom facilities which themselves were limited by physical site constraints and other factors. Social preferences were derived from research-based international standards combined with the results of the local Public Survey of the general population which provided insight into acceptable limits on commercial activities.

These factors were assessed within the wider management context, including the established historic/traditional use of the beach and the Plan vision, and the following key background factors:

- Long Bay is the only beach connected to Tortola that is safe for swimming year-round. As such, it is the most popular beach for local recreational use and has traditionally been undeveloped with no permanent commercial activity.
- Persistent commercial activity is a very recent phenomenon (roughly 5 years old) and was initiated as a temporary recovery intervention in response to Hurricane Irma, 2017.
- There are no current/up-to-date permissions in place for commercial activity; any temporary permissions granted have expired. Permissions granted required that no permanent structures be constructed.
- The land surrounding the beach and including the beach is Crown land. The land was purchased by the Crown on the basis that it would be protected under the management of the National Parks Trust of The Virgin Islands.

5.2 Recommended Carrying Capacities

The methodology broadly outlined above was applied to determine the recommended carrying capacity for the following:

- Tourist use (maximum number of tourists at a time)
- Beach chair rental (maximum number of beach chairs permitted for rent)
- Vending/commercial units
- Picnic tables
- Parking
- Restrooms

The physical constraints, facility constraints, social limits and rationale to determine the carrying capacity for each factor are summarized in Table 5-1 below.

The implications of the carrying capacities and proposed strategies to implement and enforce carrying capacities are summarized in Table 5-2 below.

Table 5-1. Determination of Recommended Carrying Capacities

Factor	Physical/Facility Constraints		Social Limits/Standards		Carrying Capacity	Rationale
Tourists – weekdays	Effective beach sand area (central to eastern entrance)	4480 m ² (48,222 ft ²)	World Tourism Organization (WTO) standard	(10 m ² /tourist) (10.4 ft x10.4 ft / tourist)	450 tourists at a time	To maintain the destination's brand, at minimum, the WTO standard should be respected. To maintain a competitive edge, a higher standard should ultimately be targeted.
Tourists – weekends	Effective beach sand area (central to eastern entrance)	4480 m ² (48,222 ft ²)	High Standard Public Beach international standard	(20 m ² / tourist) (14.7 ft x14.7 ft / tourist)	225 tourists at a time	In keeping with the Vision for the beach and the "share the beach" principle, a higher standard is to be maintained on weekends when the beach is most heavily used by residents.

Factor	Physical/Facility Constraints		Social Limits/Standards		Carrying Capacity	Rationale
Beach Chairs	Length and width of effective beach sand area (central to eastern entrance)	805 ft long x ~50 ft wide	Desired change compared to current status based on Public Survey results <i>(There are currently 403 chairs observed operating at the beach. Field surveys documented up to 240 chairs left set out at a time after use).</i>	44% of Survey respondents were “totally unsatisfied” or “unsatisfied” with beach chairs. 41% desired to see “less of” or “none” in relation to beach chairs. These were the most common responses.	Cap of 400 chairs , limited to the boundaries of the Beach Chair Zone <i>(If a mixed single/ double-chair layout is used, less than 400 chairs may fit within the Beach Chair Zone)</i>	The cap is established based on the existing number of chairs observed operating on the beach, on the basis that on weekends chairs would not be rented or rented at restricted levels in keeping with the Vision for the beach and the “share the beach” principle.
Vending/ Commercial Units	Maximum Vending Zone length in area which achieves an acceptable, sustainable coastal setback and minimizes impact to the sand dune and dune vegetation	236 ft	Desired change compared to current status based on Public Survey results <i>(There are currently 7 permanent commercial operators at the beach and 6 require a vending unit. The Ministry has applications to vend from at least another 16 persons).</i>	Survey respondents were mainly “neutral” about bars/ restaurants (38%), souvenir vending (42%), and other commercial activity (54%), however also mainly desired to see “less of” or “none” of these	6 units <i>(Based on physical site constraints and minimum design criteria)</i>	Six (6) units can fit within the 236 ft-long Vending Zone identified based on the design criteria, which requires units at least 16 ft wide plus deck space for bars/restaurants and 10 ft wide plus deck space for other vendors with spacing between units. The visual and environmental impact of units will be significantly reduced by setting units back from the vegetation line and using a design and colours that blend into the natural environment.

Factor	Physical/Facility Constraints		Social Limits/Standards		Carrying Capacity	Rationale
Picnic Tables	Picnic Zone length – central to eastern entrance of beach, excluding Vending Zone frontage	500 ft	Social distancing between picnic tables	20 ft	25 picnic tables (central to eastern entrance) 2 picnic tables (western end)	Closer spacing of tables will likely result in user conflicts/ interference Placement of picnic tables in front of Vending Zone may result in user conflicts Picnic Zone should be limited to linear zone behind the seagrape tree line to minimize impact to the sand dune
Parking – Public (lots at central and eastern entrances)	Footprint of area already cleared or that can be cleared near to the central and eastern entrances with minimal impact to vegetation, sand dunes and the wider environs	Central entrance lot - 380 ft (outer edge), 280 ft (inner edge) x 60 ft Eastern entrance lot - 85 ft x 18 ft	Standard size for parking space	8ft 6 in wide x 18 ft long	84 parking spaces (Central lot – 74 spaces; Eastern lot– 10 spaces)	Public parking lots should minimize new vegetation clearing. No parking on sand dune.
Parking – Taxi	Footprint of area already cleared or that can be cleared near to the central entrance with minimal impact to the environs	82 ft x 74 ft	Standard size for taxi parking space	10 ft wide x 25 ft long	14 parking spaces	The number of spaces provided is sufficient to serve the recommended tourist carrying capacity (requiring up to 19 buses at a time), considering that many buses offload and return for tourists versus waiting on site.

Factor	Physical/Facility Constraints		Social Limits/Standards		Carrying Capacity	Rationale
Restrooms	Capacity of existing sewage treatment system Ecological footprint as well as the costs required for expansion	The existing sewage treatment system has a 1,000-gallon capacity final effluent tank that must be pumped out 2-4 times per month.	Desired change compared to current status based on Public Survey results (There are currently 8 restroom stalls, including 2 handicap stalls.)	59% of Survey respondents desire more restrooms	10 restroom stalls (8 public stalls - existing; 2 Admin Unit stalls - proposed)	Environmental footprint, construction costs and maintenance costs make further expansion of restroom facilities impractical at this time. Management measures (e.g. spreading out arrivals) can be used to achieve desire for increased capacity

Table 5-2. Implications of Recommended Carrying Capacities and Proposed Strategies to Implement and Enforce Carrying Capacities

Factor	Carrying Capacity	Implications	Implementation/Enforcement Strategy
Tourists - weekdays	450 tourists at a time	Tour buses at a time (24-seat capacity): 18.5 buses Tour buses per day (24-seat capacity): 37 buses Total tourists per day: 900 tourists	Continue system of two distinct cycles of tourists per day (morning cycle and afternoon cycle) with a limit of 450 tourists per cycle Consult further with organized and independent tour operators and BVI Ports Authority to determine best implementation approach. Options may include: - Quotas per registered operator (per week, month or season etc.) - Pre-booking system - First-come system
Tourists - weekends	225 tourists at a time	This option only applies in the event that the decision is made to allow tour buses to operate during the weekend based on further public consultation.	Consult with organized and independent tour operators and BVI Ports Authority to determine best implementation approach.
Beach Chairs	Cap of 400 chairs, limited to the boundaries of the Beach Chair Zone	Maximum Beach Chair Zone length: 592 ft (~75% of the effective beach sand length) Maximum Beach Chair Zone width – 31 ft (~60% of the effective beach sand width) Maximum beach chair rows: 3 <u>Ideal internal layout</u> Blocks of 30 pairs of chairs: 6 full blocks and 1 partial block	Cap number of beach chair vendors Establish quota for number of chairs permitted per vendor with approval for commercial use of the beach. Correlate commercial license fee with number of chairs. Control importation of beach chairs – letter from the Ministry of Natural Resources and Labour documenting approval for use at a particular beach required for Port clearance
Vending/ Commercial Units	6 vending/ commercial units	The number of vendors allowed to operate at a time will range between 6 and 9, depending on the leasing arrangements. There is the option for small vending units to be shared by two vendors in cases where operators require limited space and operations are complementary.	Ministry of Natural Resources and Labour to construct 6 fit-for-purpose vending units for lease
Picnic Tables	25 picnic tables	Total seating capacity of the picnic zone: 200 people (based on 8 seats per table)	Ministry of Natural Resources and Labour to outfit the picnic zone with 25 picnic tables

Factor	Carrying Capacity	Implications	Implementation/Enforcement Strategy
Parking – Public	84 parking spaces	Total private vehicles parked at the beach at a time: 84 vehicles	Ministry of Natural Resources and Labour to create clearly demarcated parking lots. The parking lot capacity should accommodate the case of typical beach usage. The public will be encouraged to car pool to the beach, especially on event days. The taxi parking lot and roadside can be used for spill over parking when necessary.
Parking - Taxi	14 parking spaces	Total taxis parked at the beach at a time: 14 buses	Ministry of Natural Resources and Labour to create clearly demarcated taxi parking lot The parking lot capacity is sufficient to serve the recommended carrying capacity. During weekdays, the public parking lot can be used as spillover parking, if necessary.
Restrooms	10 restroom stalls (8 public stalls - existing; 2 Admin Unit stalls - proposed)	Existing public restroom facilities can service approximately 90 tourists per half hour, including 45 female tourists and 45 male tourists. Assuming half of tourists will want to use the restroom within half an hour of arrival, this allows for up to 180 tourists arriving at the same time.	Work with tour bus operators and the dispatch at the Tortola Pier Park to stagger arrivals in the morning and afternoon cycles by at least half hour intervals with up to 7 tour buses arriving at a time within the overall limit. The carrying capacity could be achieved with arrivals within a 1.5-hour window. Tourists can be gently encouraged to use the restrooms on their ship or at the Tortola Pier Park before arriving at the beach.

6.0 - THE PLAN

6.1 VISION

The Vision for Long Bay, Beef Island is:

“a beach we can all be proud of where protection of the natural environment is prioritized and where local recreational, spiritual, cultural, economic and tourist needs are carefully balanced.”

The Plan Vision is based on the traditional use and values of the beach outlined in the Existing Conditions section of the Plan, the Public Survey results, the overall environmental significance of the wider beach system and the policy intention (protection of the environment) that resulted in the Crown acquisition of most land forming the beach system. Protection of the environment is also prioritized as it is recognized that all other values and benefits are derived from and depend on the environment.

As shown in Figure 6-1, the Public Survey of the general population revealed that:

- There is very limited appetite by residents (5% of respondents) for Long Bay, Beef Island becoming “commercially developed as a major tourist destination.”
- A slight majority (52% of respondents) feel that “some commercial development should be allowed” in the context that such development is “limited and carefully planned to preserve the environment, maintain a natural aesthetic and balance tourist and residential use of the beach.”
- A large segment of the public (42% of respondents combined) feels that either “development should be limited to basic public amenities and facilities with no commercial activity allowed, except vending during public events” or “the beach should be preserved in a natural, undeveloped state.”

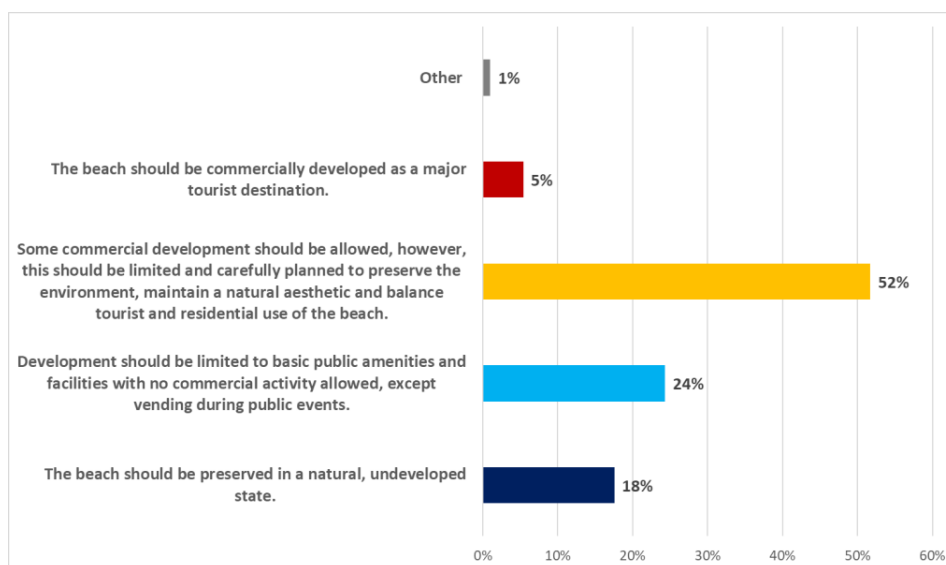


Figure 6-1. Views about development at Long Bay held by respondents participating in the General Population Survey

In keeping with the Plan Vision and views about development at Long Bay, all elements on the Plan focus on ensuring the following objectives are achieved in respect of the beach's identity and character:

Identity: Long Bay remains a beach primarily for recreational use and enjoyment by *all* residents while accommodating tourism and commercial activity at a sustainable level

- Traditional uses of the beach are supported, including protecting Long Bay as a swimming beach
- The activities of one user group do not negatively impact or displace other users
- Commercial activity and tourist use of the beach do not negatively impact or displace residential use and enjoyment
- Tourist use is limited to sustainable densities and activities that do not conflict with traditional uses

Character: The natural aesthetic of Long Bay is maintained

- The environment is restored and preserved
- Development is aesthetically pleasing, blends into the natural environment and does not dominate the beach landscape or compromise the environment

6.2 SPATIAL PLAN

The Spatial Plan layer shows the physical arrangement of all amenities and facilities that will be provided as well as all activities that will be allowed and how they fit together within the natural environment. The Spatial Plan includes the detailed site plan for the Vending Zone. The Spatial Plan layer consists of an introductory narrative explaining the proposed amenities and facilities and rationale for their arrangement and a series of annotated maps and 3-dimensional renderings supported by the Spatial Plan Data Sheet.

6.2.1 Beach Amenities and Facilities

The Beach Management Plan will support development and continued maintenance of the amenities described in Table 6-1 towards achieving the Vision for the beach, including the desired identity and character.

Table 6-1. Beach Amenities and Facilities included in the Beach Management Plan

Sand Dune Protective Barrier <i>Barrier to prevent vehicles from accessing the sand dune</i>	<i>Features:</i> Aesthetic barrier that blends into the natural landscape, that will result in minimal environmental impact, and that cannot be easily breached but that can be removed over time as the beach dune vegetation recovers. <i>Placement:</i> At the central and eastern entrances and along the access road that connects these entrances
Picnic Area <i>Relaxing seating and picnic area for use by all beach goers</i>	<i>Features:</i> Picnic tables and benches; shade trees and umbrellas; two purpose-built barbeque pits; garbage receptacles; signage with beach rules <i>Placement:</i> Linear zone on the eastern half of the beach, excluding the Vending Zone frontage, immediately behind the seagrape tree line (to be restored)
Birdwatching Hiking Trail <i>Easy trail to support exercise, nature walks, bird watching, environmental education and related recreational activities</i>	<i>Features:</i> Maintained trail; wayfinding signage; interpretive signage; rest benches <i>Placement:</i> From the main access road, meandering along the salt pond edge to the high point of the adjacent hillside
Lookout Deck <i>Elevated lookout platform to support</i>	<i>Features:</i> Panoramic view; safety rails; perimeter bench <i>Placement:</i> At the end of the Birdwatching Hiking Trail at the highest point of the hillside overlooking the salt pond to offer a

<i>sightseeing of the beach and surrounding cays</i>	panoramic view of the pond, beach and the northern and southern cays.
Vending Zone <i>Hub for commercial activities to enhance the beach user experience. Allowed commercial uses in the Vending Zone include food service, souvenir vending and water gear rental</i>	<i>Features:</i> Six (6) vending/commercial units with deck and ocean view; boardwalk along the frontage of vending units with handicap access to units; boardwalk along the back of units with layby to facilitate provisioning of units; shaded Outdoor Eating Area; easy connection to the public restroom facility and seashore for patrons; dedicated restrooms for staff <i>Placement:</i> Offset from the central access to the beach to minimize social impact and set back an acceptable, sustainable distance from the seagrape tree line to reduce impact to the beach dune and protect units from storm surge
Administrative Unit <i>Supports the general management of the beach and visitor experience</i>	<i>Features:</i> The Unit will provide storage for beach maintenance equipment and supplies and serve as a base for beach management staff. It can be evolved into a welcome/information centre as necessary. The Unit will also include a male and female restroom to serve management and the staff of the Vending Zone. <i>Placement:</i> Adjacent to the Vending Zone and opposite the public restroom facility
Beach Chair Zone <i>Designated area where beach chair rental is allowed</i>	<i>Features:</i> Up to three (3) rows of beach chairs with adequate social distancing within and between rows (see Figure 6-33a). The Zone will be supported by five (5) pergola-style units for storing beach chairs. <i>Placement:</i> Offset from the central access to the beach. The zone starts 50m (164ft) east of the central access and runs eastward 592 ft.
Passive Water Sports Zone <i>Designated area where approved passive water sports are allowed to operate. Facilities to support water sports rentals and launch.</i>	<i>Features:</i> The Water Sports Zone will be marked by three bouys at the eastern end, centre and western end of the beach. The existing shade huts will be converted into basic sheds to facilitate water sport rentals. <i>Placement:</i> The Water Sports Zone will stretch the entire length of the beach outside of the typical area utilized for swimming – approximately 200 ft from the shoreline outward. The water sports rental sheds and launch area will be on the eastern end of the beach, beyond the eastern entrance.
Parking Facilities <i>Clearly demarcated parking lots for use</i>	<i>Features:</i> Clearly marked entrance, exist and parking spots; natural surfacing; screening by trees; signage with beach rules <i>Placement:</i> Public parking lots close to central and eastern entrances. Taxi parking lot near the central entrance opposite the

<i>by the public and taxis/tour operators</i>	Vending Zone. The western access road to the beach is privately owned - parking is limited and can continue in the existing fashion as long as the access remains open.
Restroom Facilities <i>Public restroom facility as well as a dedicated restroom for Vending Zone and beach management authority staff within the Administrative Unit</i>	<i>Features:</i> The public restroom facility has a capacity of 8 stalls (4 male and 4 female). The Administrative Unit restroom facility has a capacity of 2 stalls (one male and one female). <i>Placement:</i> The public restroom facility is located opposite the Vending Zone behind the access road to the eastern end of the beach and the Administrative Unit is located adjacent to the Vending Zone in front of the access road to the eastern end of the beach.
Main Access Road <i>Main public access road to the beach providing access to the central and eastern entrances</i>	<i>Features:</i> The road is to be graded more regularly to create a smoother surface and ease access. Grading will be done in such a manner as to prevent impact to the salt pond and beach dune. The access road will not be paved as doing so would increase stormwater runoff and impact the environment, including the neighboring salt pond and mangrove forest. <i>Placement:</i> Existing footprint as indicated on the Spatial Plan
Water and Power Facilities <i>Water and power supply to support commercial activity</i>	<i>Features:</i> Water and electrical connections already exist to support the public restroom facility. These connections will be extended to the Vending Zone such that independently metered water and electrical connections are included with the vending unit shells for lease. Connections will also be extended to the Administrative Unit. <i>Placement:</i> Within each vending unit and within the Administrative Unit
Waste Management Facilities <i>Facilities to support proper waste disposal by beach goers and vendors</i>	<i>Features:</i> 30-42-gallon public waste receptacles, including recycling bins, throughout the Picnic Zone; dedicated, covered and screened commercial bin for the Vending Zone; covered and screened service bin to facilitate consolidation and collection of all beach waste. <i>Placement:</i> Within the Picnic Zone, at the rear of the Vending Zone, at the rear of the public restroom facility

Proposed amenities for future consideration, depending on availability of management capacity to support implementation, include a lifeguard tower to ensure swimmer safety and a gazebo to facilitate approved events/gatherings.

6.2.2 Overview of the Spatial Plan

The Spatial Plan is built around two key features that are paramount to the protection of the beach environment: a) full restoration of the seagrape tree line in its historic footprint, and b) barriers along the interior access road to prevent vehicular access to the eastern sand dune.

A modest hub for sustainable tourism activity is located close to but offset from the central entrance to the beach (approximately 200 feet/60 meters east of the centre). The tourism hub includes a Vending Zone comprised of six (6) vending/commercial units spaced 15 feet apart along an arc. Vending units are set back between approximately 75 - 100 feet (23 – 30 meters) from the seagrape tree line, maintaining an ocean view while protecting the beach from erosion and the units from storm surge. The Vending Zone also includes a boardwalk lining the front of the vending units and an Outdoor Eating Area between the vending units and the seagrape tree line. The tourism hub also includes a Beach Chair Zone, an Administrative Unit to support management of the beach, public restrooms, signage, screened waste facilities for vending units and a taxi parking lot. A Water Sports Zone extends the entire length of the beach offset approximately 200 feet (60 meters) from the shoreline, beyond the typical swim area.

A linear public Picnic Area with a capacity of 25 picnic tables is located along the eastern portion of the beach from the central entrance to the eastern entrance, with the exception of the area overlapping the Outdoor Eating Area of the Vending Zone to avoid user conflicts. The Picnic Area is located immediately behind the seagrape tree line, falling within the shade of the trees. A natural footpath runs the length of the Picnic Zone for easy circulation from one end to the next.

Parking facilities are provided at the central and eastern entrances of the beach, close enough to allow easy access, but set back enough to minimize impact to the beach dune and to prevent noise pollution from vehicle sound systems. Drop-off turnaround points are also provided at each entrance to facilitate access for persons with mobility challenges and off-loading of supplies for social gatherings.

A Birdwatching Hiking Trail extends from the central entrance of the beach, along the edge of the main salt pond to a lookout deck at the peak of the hillside overlooking the salt pond and providing a panoramic view of the wider beach system and the surrounding cays. A link to the western end of the beach from the lookout deck is also included in the trail system.

An overview of the Spatial Plan is presented in Figures 6-2 to 6-8. The Detailed Site Plan is presented at Appendix XI.



Figure 6-2. Long Bay, Beef Island Spatial Plan - Overview Map



Figure 6-3. Long Bay, Beef Island Spatial Plan - Overview Rendering
Credit: Public Works Department (PWD)



Figure 6-4. Long Bay, Beef Island Spatial Plan – Central to Eastern Beach Entrances



Figure 6-5. Long Bay, Beef Island Spatial Plan rendering – Central to Eastern Entrances
Credit: PWD.

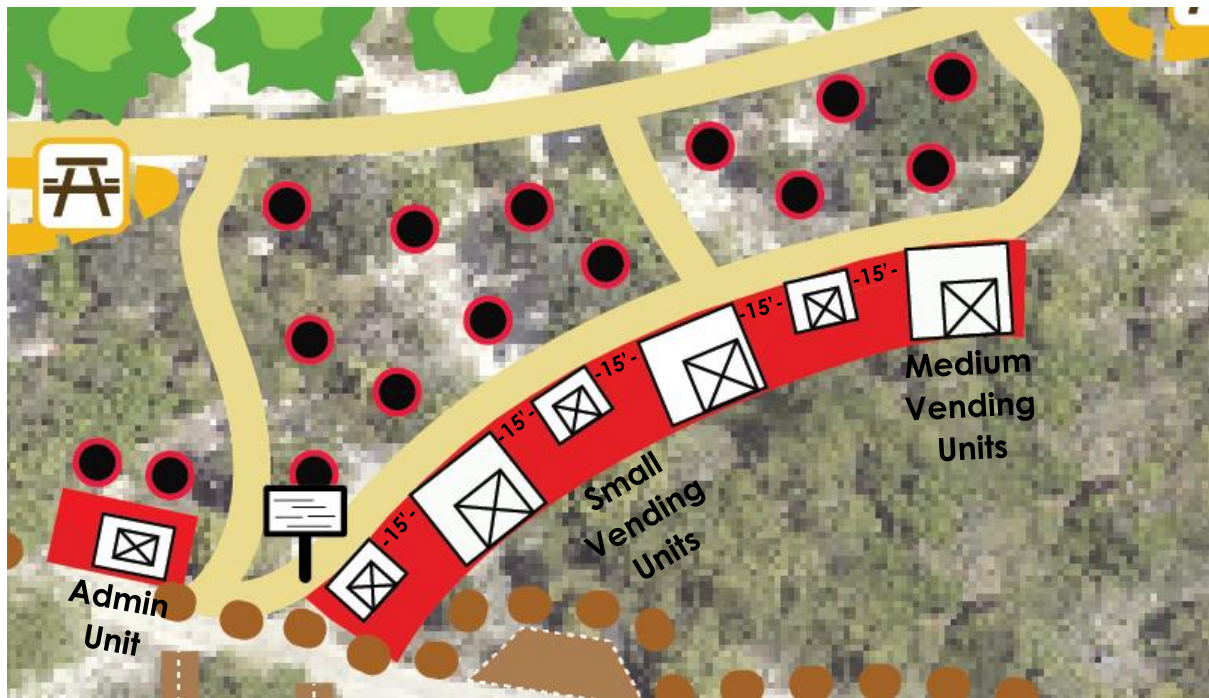


Figure 6-6. Long Bay, Beef Island Spatial Plan – Simplified Vending Zone Site Plan
(See Appendix XI for Detailed Site Plan.)



Figure 6-7. Long Bay, Beef Island Spatial Plan – Vending Zone Site Plan Rendering
Credit: PWD.

6.2.3 Rationale for Arrangement of Amenities and Activities

The Spatial Plan directly supports the Vision for the beach and the desired identity and character as defined above. As such, the Spatial Plan is guided by a set of core spatial planning principles derived from the Vision and desired identity and character as summarized in Table 6-2.

Table 6-2. Rationale for Spatial Plan

<i>Elements of Vision, Identity, Character</i>	<i>Related Core Spatial Planning Principles</i>
Protection of the natural environment is prioritized The natural aesthetic of Long Bay is maintained: - The environment is restored and preserved - Development is aesthetically pleasing, blends into the natural environment and does not dominate the beach landscape or compromise the environment	1. Facilities and activities must not impact the vegetation line and must minimize impact to the beach dune, including the dune vegetation, which are critical for the long-term protection of the beach environment 2. All facilities should be set back behind the vegetation line within the secondary/hind dune so that the beach is best protected from erosion and retains its natural aesthetic from the seaside 3. The main public entrances to the beach should remain free of development
Local recreational, spiritual, cultural, economic and tourist needs are carefully balanced Long Bay remains a beach primarily for recreational use and enjoyment by all residents while accommodating tourism and commercial activity at a sustainable level: - Traditional uses of the beach are supported, including protecting Long Bay as a swimming beach - The activities of one user group do not negatively impact or displace other users - Commercial activities and tourist use of the	1. Tourism facilities should be consolidated in a hub to reduce user conflicts and to avoid the overall character of the beach becoming one of a major tourist destination 2. The tourism hub should be off set from the central and eastern entrances of the beach which are the most popular use areas by residents 3. The footprint and scale of commercial facilities should be modest 4. Approved water sports must take place beyond the typical swim area to avoid conflicts with or restrictions to swimmers 5. Amenities to accommodate social activities should be adequately scaled, spaced and located to avoid user conflicts 6. The spatial plan should not facilitate noise pollution and other undesirable behavior that impacts the user experience

beach do not negatively impact or displace residential use and enjoyment - Tourist use is limited to sustainable densities and activities that do not conflict with traditional uses	
---	--

6.2.4 Spatial Plan Data Sheet

The Spatial Plan Data Sheet provides the approximate dimensions and capacity of all amenities and facilities included in the Beach Management Plan in Tables 6-3 to 6-16.



Figure 6-8. Long Bay, Beef Island Spatial Plan Overview Referenced to Spatial Plan Data Sheet

BEACH DUNE PROTECTION BARRIER

Table 6-3. Beach Dune Protection Barrier - Spatial Data

Map reference number	1
Length	1,205 ft

PICNIC AREA

Table 6-4. Picnic Area - Spatial Data

	Eastern Area (central to eastern entrances)	Western Area
Map reference number	2	3
Total footprint (size)	6,240 ft ²	800 ft ²
Dimensions	312 ft x 20 ft	40 ft x 20 ft
Picnic table capacity	25	2
Purpose-built barbeque pits (Map reference 2a)	2	0

BIRDWATCHING HIKING TRAIL

Table 6-5. Birdwatching Hiking Trail - Spatial Data

Map reference number	4
Length	Total trail network length: 2,250 ft Central entrance to Lookout Deck trail: 1,850 ft Central entrance to western entrance trail: 1,735 ft Lookout Deck to western entrance trail: 920 ft
Width	Central entrance to Lookout Deck: 4 – 6 ft Lookout Deck to western entrance: 4 ft
Capacity	60 persons per hour (Assuming at least 25 ft social distancing; 20 minutes at lookout deck)

LOOKOUT DECK

Table 6-6. Lookout Deck - Spatial Data

Map reference number	5
Total footprint (size)	144 ft ²
Dimensions	12 ft x 12 ft
Capacity	20 persons at a time

VENDING ZONE

Table 6-7. Vending Zone, including Outdoor Eating Area - Spatial Data

	Vending Zone	Outdoor Eating Area
Map reference number	6	7
Total footprint (size)	7,080 ft ²	14,440 ft ²
Dimensions	236 ft X 30 ft	~ 240 ft x 50 -100 ft (Irregularly shaped)
Capacity (No. of vending/ commercial units)	6 units (3 medium units, 3 small units)	
Capacity (No. of vendors)	6 - 9 (See note on carrying capacity)	
Table capacity (Outdoor Eating Area)		20 tables (40-foot spacing) or 52 tables (20-foot spacing)

Note: Seating can be accommodated on the deck of each medium unit.

ADMINISTRATIVE UNIT

Table 6-8. Administrative Unit - Spatial Data

Map reference number	8
Total footprint (size)	301 ft ²
Dimensions	15.5 ft x 10 ft (<i>exclusive of deck</i>) 23.5 ft X 18 ft (<i>inclusive of deck</i>)
Capacity (No. of staff)	2
Capacity (Restrooms)	2

BEACH CHAIR ZONE

Table 6-9. Beach Chair Zone - Spatial Data

Map reference number	9
Total footprint (size)	~18,352 ft ²
Dimensions	592 ft x 31 ft
Capacity	Up to 400 chairs (<i>The capacity depends on the specific layout of chairs. A maximum of 400 chairs is calculated based on a full double-chair layout. If a mixed double/single-chair layout is used, less chairs can be accommodated within the designated zone at a time.</i>) 5 pergola-style beach chair storage units

PASSIVE WATER SPORTS ZONE

Table 6-10. Passive Water Sports Zone - Spatial Data

	Water sports operation	Launch area	Support Facilities
Map reference number	10a	10b	10c
Total footprint (size)	~357,600 ft ²	Varies with seasonal beach width	Max: 100 ft ² (2 units)
Dimensions	~ 1788 ft x 200 ft	15-foot wide access to water	Max: 10 ft x 5 ft each
Setback	200 feet from shoreline	30 feet east of eastern entrance	At least 50 feet from vegetation line

PARKING FACILITIES

Table 6-11. Parking Facilities - Spatial Data

	Central Parking Lot	Eastern Parking Lot	Taxi Parking Lot
Map reference number	11a	11b	11c
Total footprint (size)	20,100 ft ²	1,530 ft ²	3,500 ft ²
Dimensions	380 ft (outer edge), 280 ft (inner edge) x 60 ft	85 ft x 18 ft	70 ft x 50 ft; 82 ft x 74 ft (<i>including 12-ft circulator road</i>)
Capacity (parking spaces)	74	10	14

RESTROOMS

Table 6-12. Restrooms - Spatial Data

	Public Restrooms	Administrative Unit Restrooms
Map reference number	12	8
Total footprint (size)	TBC	55 ft ²
Dimensions	TBC	10 ft x 5.5 ft
Capacity (Standard stalls)	6 stalls (3 male, 3 female)	2 stalls (1 male, 1 female)
Capacity (Handicap accessible stalls)	2 stalls (1 male, 1 female)	0 stalls
Capacity (sinks)	6 sinks (3 male, 3 female)	2 sinks (1 male, 1 female)

MAIN ACCESS ROAD

Table 6-13. Main Access Road - Spatial Data

Map reference number	13
Service area	Central entrance to beach (<i>central public parking lot, taxi parking lot</i>) Eastern entrance to beach (<i>eastern public parking lot</i>)
Dimensions (Public road to taxi parking lot)	Existing footprint to be maintained (based on 2017 aerial images) (<i>No further widening to avoid environmental impact</i>) Length: ~1,285 ft Width: 21 – 29 ft
Dimensions (Taxi parking lot to eastern public parking lot)	Existing footprint to be maintained (based on 2017 aerial images) (<i>No further widening to avoid environmental impact</i>) Length: ~872 ft Width: 11 – 20 ft

WATER AND POWER FACILITIES

Table 6-14. Water and Power Facilities - Spatial Data

Map reference number (main connection)	12
Service area	Vending Zone, Administrative Unit, Public Restrooms (<i>A water reticulation plan and electricity distribution plan are to be developed.</i>)

WASTE MANAGEMENT FACILITIES

Solid Waste Management

Table 6-15. Solid Waste Management Facilities - Spatial Data

	<i>Main Service Bin</i>	<i>Vending Zone Bin</i>	<i>Picnic Area</i>	<i>Outdoor Eating Area</i>	<i>Barbeque Pits Bin</i>
Map reference number	14a	14b	Distributed within Area	Distributed within Area	14c
Capacity per bin	2-yard	2-yard	30-42-gallon	30-42-gallon	2-yard
Number of bins	1	1	12	6	1

Sewage/Greywater Treatment Facility

Table 6-16. Sewage/Greywater Treatment Facility - Spatial Data

Map reference number	12
Capacity of final effluent storage tank	1,000 gallons

6.3 FACILITIES PLAN

The Facilities Plan establishes the design and building criteria for all amenities and facilities included in the Beach Management Plan. The Facilities Plan is comprised of a series of design specification tables (Tables 6-17 to 6-34) and illustrations (Figures 6-9 to 6-41). Architectural drawings to support the Facilities Plan are included in Appendix XI.

6.3.1 Beach Dune Protection Barrier

Table 6-17. Specifications for Beach Dune Protection Barrier

Material	Wood (ideally used electricity poles)
Number of posts	300
Spacing	4 ft
Height (above ground)	2 ft
Depth (below ground)	3 ft
Colour	Dark brown
Method of fixing	Buried, packed and filled



Figure 6-9. Example of wooden posts being used as a protective barrier for the beach dune at Maegan's Bay, St. Thomas, United States Virgin Islands

6.3.2 Picnic Area

INTERNAL LAYOUT

Table 6-18. Specifications for Internal Layout of the Picnic Area

Minimum space between picnic tables	20 ft
--	-------



*Figure 6-10. Renderings of Picnic Area
Credit: Public Works Department (PWD)*

PICNIC TABLES

Table 6-19. Specifications for Picnic Tables within the Picnic Area

Design	Standard picnic table - rectangular table with attached benches on each side
Dimensions	72 in x 58.75 in (6 ft x 4 ft, 10.75 in)
Seating capacity	4 - 6 persons
Construction materials	Treated wood (suitable for beach environment) or Polywood
Permitted colours	Earthtone colours that are aesthetically sensitive by blending into the natural landscape/environment. (Natural wood, brown or green are recommended to blend into the sand or seagrape tree line).
Method of fixing	None (on surface)

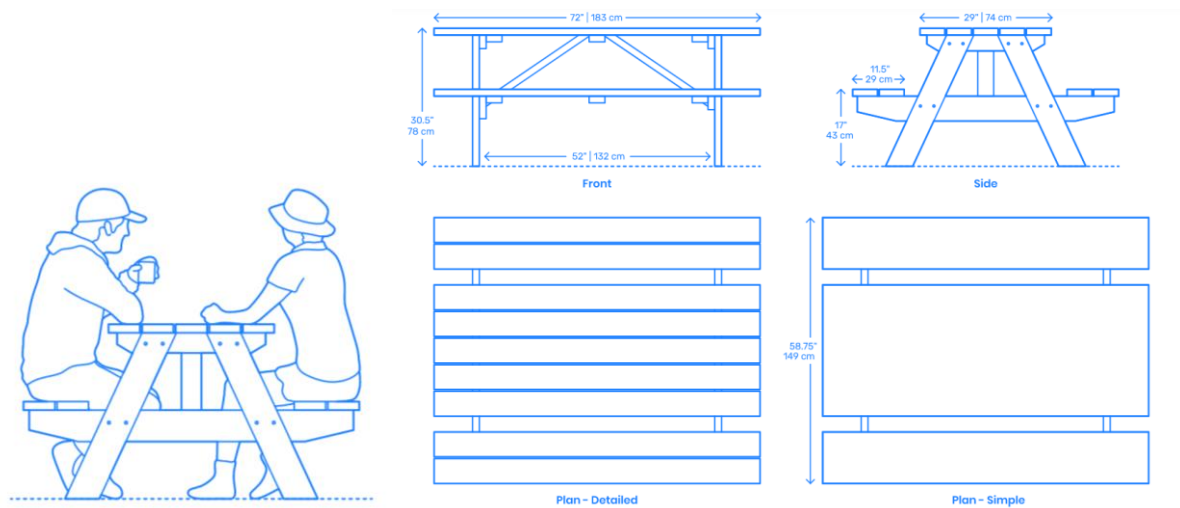


Figure 6-11. Illustration of standard picnic table and dimensions
Credit: www.dimensions.com

WALKWAYS

Table 6-20. Specifications for Walkways within the Picnic Area

Path design	Organic path, following curved lines
Width	4 – 6 ft
Walking surface	Natural - sand
Definition of edges	Vegetation and furnishings – Seagrape tree line and picnic benches on seaward side and beach dune vegetation on landward side

6.3.3 Birdwatching Hiking Trail

Table 6-21. Specifications for Birdwatching Hiking Trail

Walking surface	Natural surface with tree log steps where necessary (Figure 6-12)
Hand railings (where necessary)	<i>Material:</i> Tree logs, wood or rope <i>Colours:</i> Natural wood, brown or cream (rope)
Definition of edges	Vegetation and hand railings, where necessary
Benches at rest points along salt pond edge	<i>Design:</i> Standard park bench, with or without back (Figure 6-13) <i>Length:</i> 46.1 in to 63.78 in (3 ft, 10.1 in to 5 ft, 3.78 in) <i>Seating capacity:</i> 2 – 3 persons per bench <i>Construction materials:</i> Treated wood (suitable for beach environment) or Polywood <i>Permitted colours:</i> Earthtone colours that are aesthetically sensitive by blending into the natural landscape/environment. Natural wood, brown or green are recommended to blend into the salt pond edge). <i>Method of fixing:</i> None (on surface)
Signage	<i>Post material:</i> Treated wood (suitable for beach environment) or Polywood <i>Display material:</i> Treated wood (suitable for beach environment) or Polywood <i>Display dimensions:</i> Max 3 ft x 2 ft <i>Colours:</i> Earthtone colours that are aesthetically sensitive by blending into the natural landscape/environment. Text colour should contrast well with background colour for easy reading. Recommended: white text on green or brown background. <i>Fonts:</i> Clear, easy-to-read fonts must be used in a size legible to the average reader



Figure 6-12. Illustration of proposed walking surface supported by tree log steps as necessary
Credit: Elachee Nature Science Center

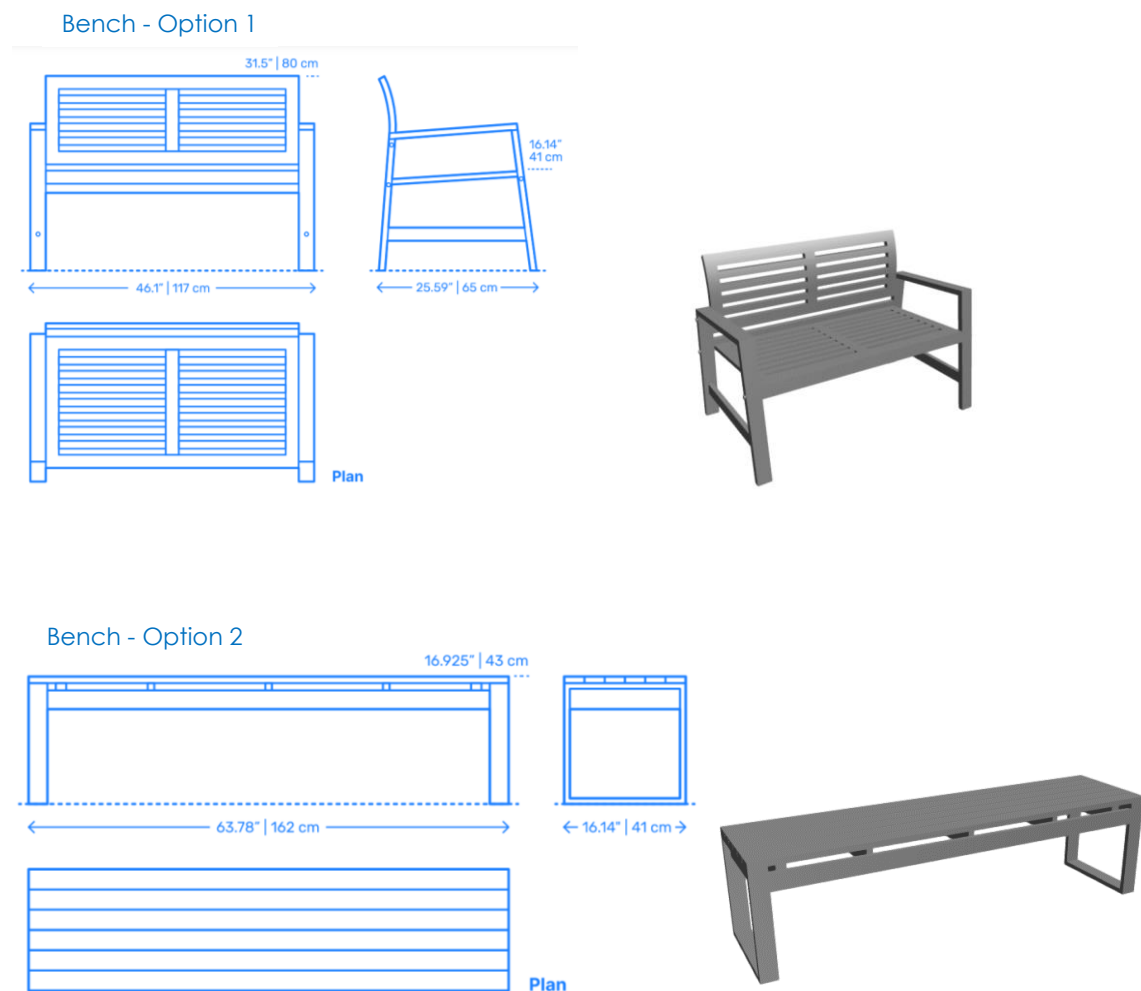
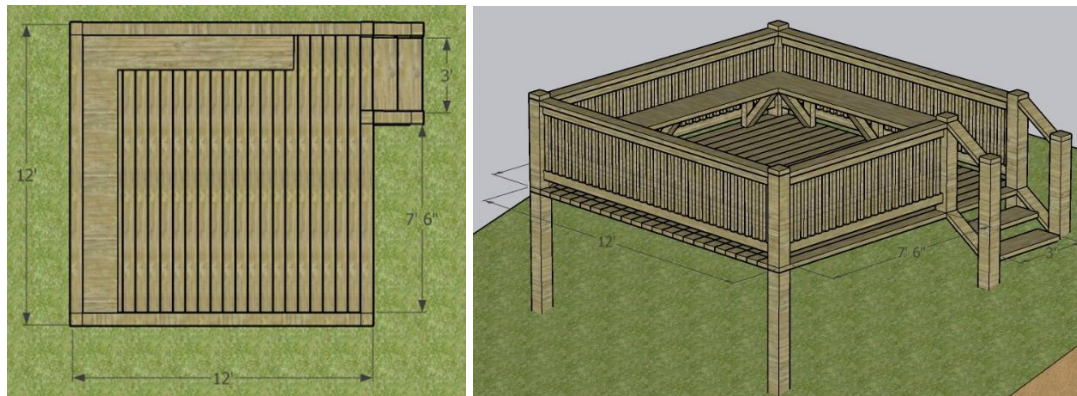


Figure 6-13. Illustration of birdwatching trail rest bench options
Credit: www.dimensions.com

6.3.4 Lookout Deck

Table 6-22. Specifications for Lookout Deck

Design	Open deck with full perimeter railings and built-in wooden bench along the back perimeter and side of the deck opposite the entrance.
Construction materials	Treated hardwood



*Figure 6-14. Lookout Deck plan view (left) and front perspective (right)
Built-in benches are provided along the back and side of the deck opposite the entrance.*



*Figure 6-15. Rendering of Lookout Deck
Credit: PWD*



*Figure 6-16. Partial view from Lookout Deck
Credit: PWD*

6.3.5 Vending Zone, including Outdoor Eating Area

INTERNAL LAYOUT

Table 6-23. Specifications for the Internal Layout of the Vending Zone

Distance between vending/ commercial units	15 ft (See Figure 6-6 under the Spatial Plan for the Vending Unit Site Plan)
Spacing between tables in Outdoor Eating Area	Minimum of 20-ft clearance in all directions is recommended for optimal social distancing and comfort.
Additional development guidelines	The Vending Zone shall be developed starting with the units set back furthest from the vegetation line. A total of 36 tables in the Outdoor Eating Area is proposed initially. Tables should be spread across the Outdoor Eating Area from the first to last vending unit. An open/cafeteria-style seating policy will obtain.



Figure 6-17. Rendering of Vending Zone entrance showing vending units, boardwalk and part of the Outdoor Eating Area

Credit: PWD



Figure 6-18. Rendering of Vending Zone - Front view of a medium vending unit in foreground
Credit: PWD



Figure 6-19. Rendering of Vending Zone - Front view of a small vending unit (left) and a medium vending unit (right), highlighting the wheelchair access
Credit: PWD



Figure 6-20. Rendering of Vending Zone – Back view
A layby is provided to facilitate servicing of vending units. Credit: PWD



Figure 6-21. Rendering of Outdoor Eating Area – Perspective view from seagrape tree line
Credit: PWD



Figure 6-22. Rendering of Vending Zone, including Outdoor Eating Area – Perspective overhead view
Credit: PWD



Figure 6-23. Rendering of Vending Zone, including Outdoor Eating Area – Front overhead view
Credit: PWD

VENDING/COMMERCIAL UNITS

Table 6-24. Specifications for Vending/Commercial Units

	Small Units	Medium Units
Unit dimensions	10 ft x 10 ft (exclusive of deck)	16 ft x 16 ft (exclusive of deck)
Deck dimensions	4 ft (front and both sides)	10 ft (front and one side), 4 ft one side
Access	Handicap access provided	Handicap access provided

Architectural design	<i>Architectural style:</i> Traditional Caribbean <i>Small units:</i> open-side concept <i>Medium units:</i> open-side front, enclosed back <i>Roof type:</i> Hip roof
Evaluation of base	8 inches
Max height	1 storey (up to 10 feet)
Construction materials	<i>Foundation/footing:</i> Hardwood <i>Walls:</i> Treated wood siding (clapboard) <i>Windows:</i> Traditional wooden shutters ² and metal louvered shutters <i>Roofing:</i> Galvalume (with thatch covering added as budget allows)
Permitted colours	Earthtone colours that are aesthetically sensitive by blending into the natural landscape/environment. Units should be uniform in a standard set of colours. Recommended exterior wall colours: Natural wood, tan, beige or white to blend into the sand and vegetation with accent colours from earthtone family.

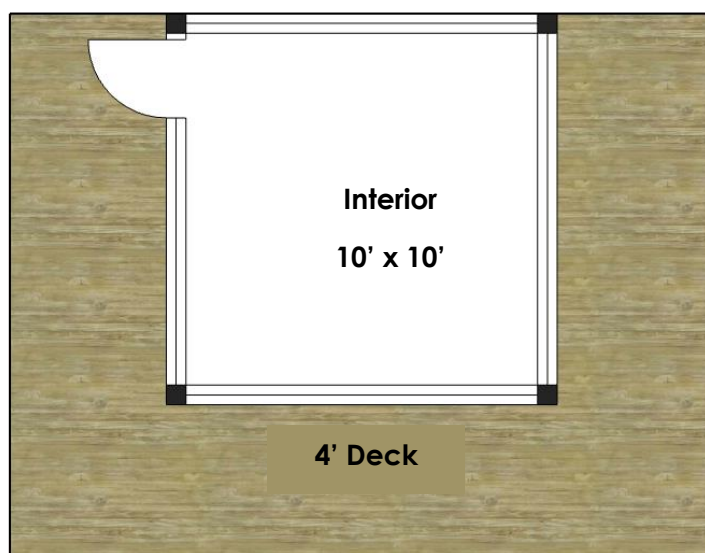


Figure 6-24. Small Vending Unit floor plan

² No glass windows allowed to prevent risk of shattered glass littering sand in a hurricane or other event



Figure 6-25. Small Vending Unit rendering
Credit: PWD

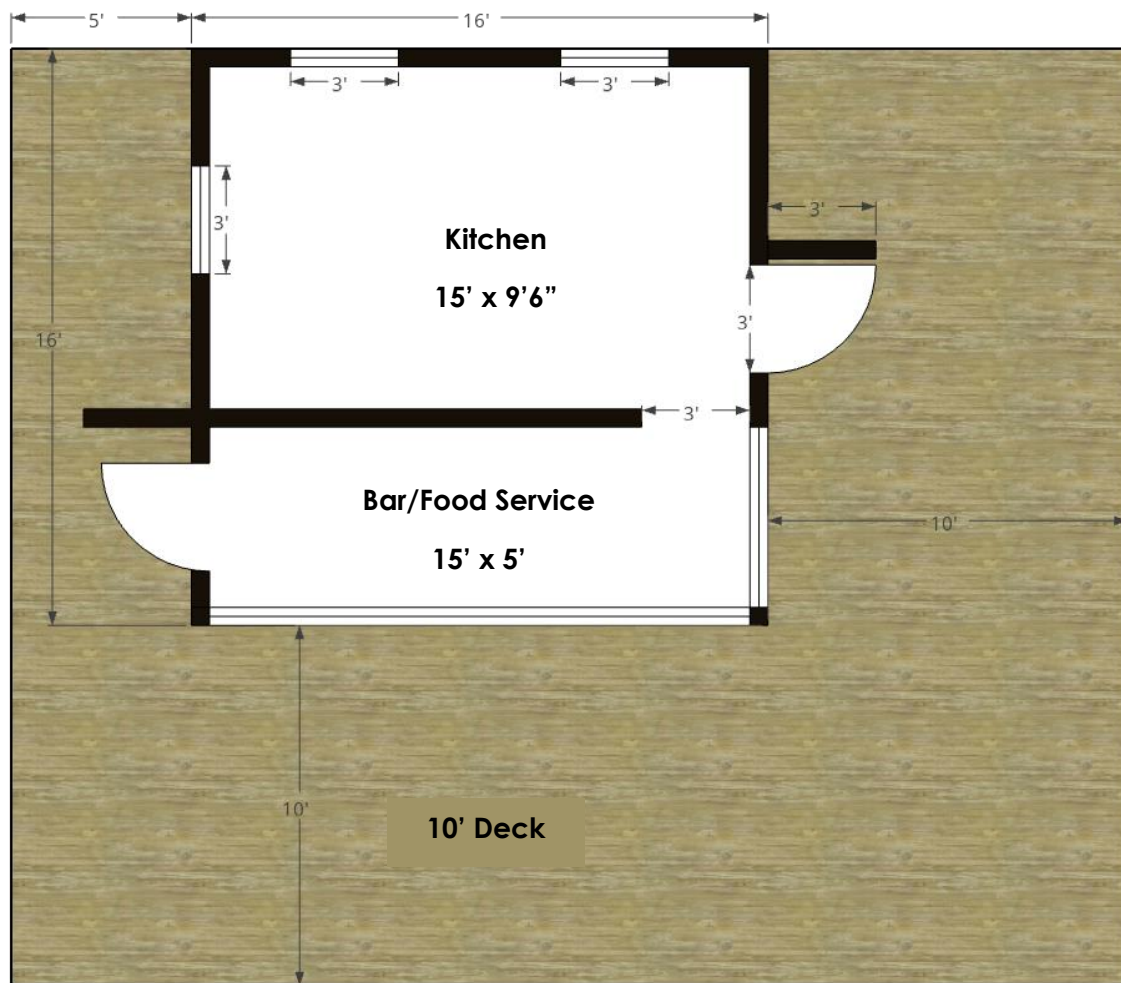


Figure 6-26. Medium Unit – Basic floor plan sample
 Note: Internal layout is to be determined by lease.



Figure 6-27. Medium Unit rendering
 Credit: PWD

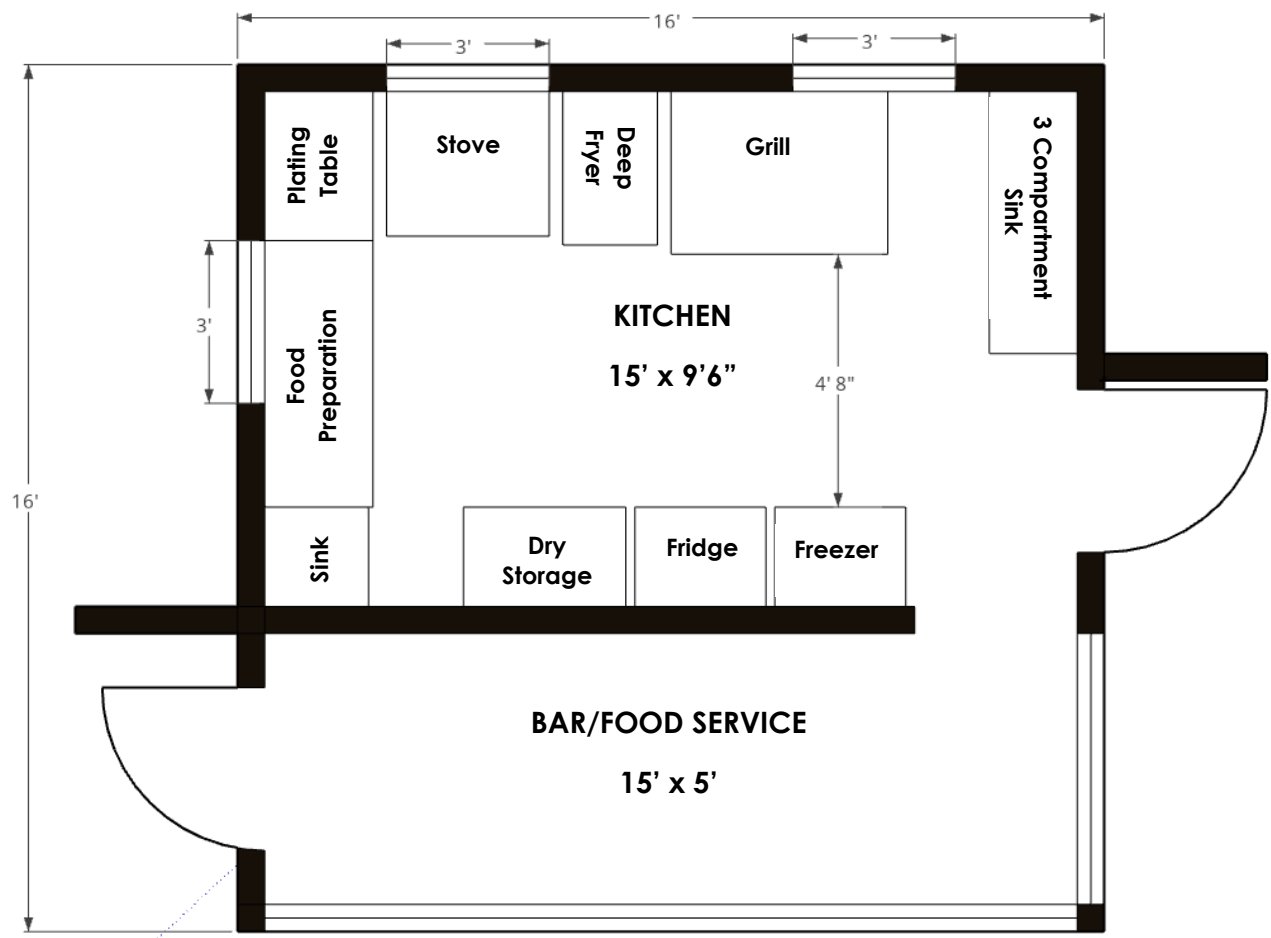


Figure 6-28. Medium Unit – Detailed floor plan sample

Note: Units will be rented as a shell and outfitted on the interior as desired by the lessee.

TABLES AND CHAIRS (OUTDOOR EATING AREA)

Table 6-25. Specifications for Tables and Chairs for the Outdoor Eating Area

Design	Circular picnic table with attached bench (with or without backrest). Figure 6-29.
Dimensions:	Height: 32.3 in Diameter: 97 in (8ft)
Seating capacity	8 persons
Construction materials	Treated wood (suitable for beach environment) or Polywood
Permitted colours	Earthtone colours that are aesthetically sensitive by blending into the natural landscape/environment. (Natural wood, brown or green are recommended to blend into the sand dune/dune vegetation).
Method of fixing	None (on surface)



Figure 6-29. Illustration and dimensions of sample circular picnic tables
Credit: www.therange.co.uk

6.3.6 Administrative Unit

Table 6-26. Specifications for Administrative Unit

Unit dimensions	15.5 ft x 10 ft (<i>exclusive of deck</i>)
Deck	4 ft
Access	Handicap access provided
Architectural design	<i>Architectural style:</i> Traditional Caribbean <i>Roof type:</i> Hip roof
Evaluation of base	8 inches
Max height	1 storey (up to 10 feet)
Construction materials	<i>Foundation/footing:</i> Hardwood <i>Walls:</i> Treated wood siding (clapboard) <i>Windows:</i> Traditional wooden shutters and wooden louvers ³ <i>Roofing:</i> Galvalume (with thatch covering added as budget allows)
Permitted colours	Earthtone colours that are aesthetically sensitive by blending into the natural landscape/environment. Recommended wall colours: Natural wood, tan, beige or white to blend into the sand and vegetation with accent colours from earthtone family.



Figure 6-30. Rendering of Administrative Unit viewed at a distance from the west with Vending Zone in the background

Credit: PWD

³ No glass windows allowed to prevent risk of shattered glass littering sand in a hurricane or other event

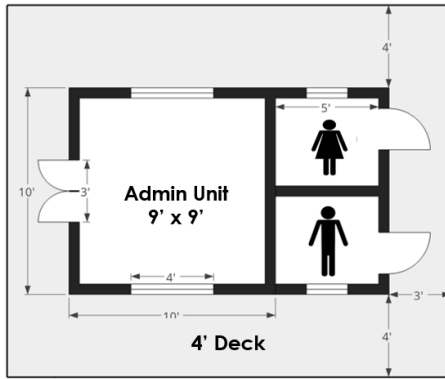


Figure 6-31. Administrative Unit floor plan

Figure 6-32. Administrative Unit rendering
Credit: PWD

6.3.7 Beach Chair Zone

Table 6-27. Specifications for Beach Chair Zone

Total footprint (size)	~18,352 ft ²
Zone dimensions	592 ft x 31 ft (~75% of eastern beach length and 60% of the beach width)
Zone capacity	Up to 400 chairs maximum (400 chairs is based on a full double chair configuration; less chairs can be accommodated within the zone if a mixed double/single-chair layout is used.)
Internal layout (See Figure 6-33)	Rows allowed: 3 Chairs per row in block: 20 chairs (in 10 pairs) Chairs per block: 60 chairs (in 30 pairs over 3 rows) Minimum space between pairs of chairs: 3 ft Minimum space between blocks of chairs: 10 ft Minimum space between rows of chairs: 6 ft (This is to maintain social distancing/user comfort and safety.)
Beach chair dimensions	Single chair: 2.33 ft x 6.25 ft Pair of chairs (with umbrella between): 4.9 ft x 6.25 ft
Storage facilities	Five (5) pergola-style storage units similar to those illustrated in Figure 6-35 to be located behind the seagrape tree line, distributed as shown in the Spatial Plan (Figure 6-4)

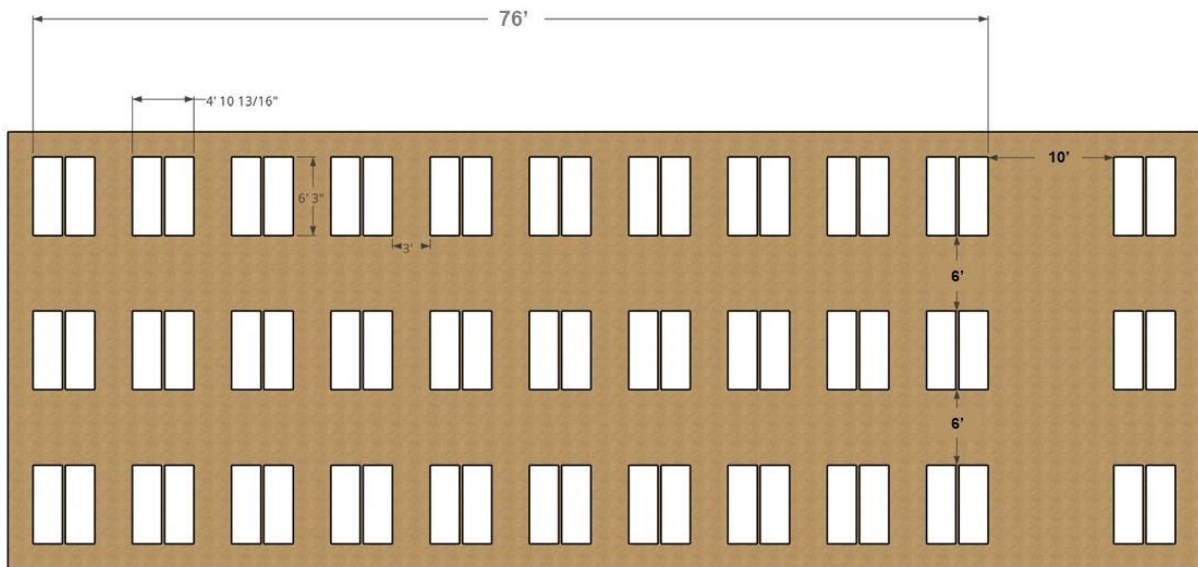


Figure 6-33a. Recommended internal layout of Beach Chair Zone to maintain social distancing/user comfort and safety

Chairs are set out in blocks comprised of 3 rows of chairs spaced 6 feet apart. Each row contains up to 10 pairs of chairs spaced 3 feet apart. A 10-foot space is left between each block of chairs.

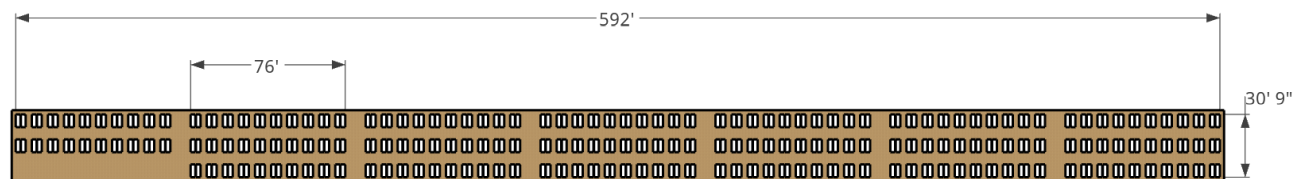


Figure 6-33b. Sample full Beach Chair Zone layout following recommended spacing, using pairs of chairs with shared umbrella

This layout can accommodate the existing observed 400 chairs within the defined Beach Chair Zone with chairs grouped into 6 blocks of 30 pairs (60 chairs) and a partial 7th block.



Figure 6-34. Rendering of Beach Chair Zone
Credit: PWD



Figure 6-35. Sample design concept for beach chair storage pergolas

6.3.8 Parking Facilities

Table 6-28. Specifications for Parking Facilities

	Central Parking Lot	Eastern Parking Lot	Taxi Parking Lot
Layout/design	90° perpendicular with aisle (double bay)	90° perpendicular without aisle (single bay)	90° perpendicular without aisle and with circulator road (double bay)
Parking space size	8 ft 6 in x 18 ft	8 ft 6 in x 18 ft	10 ft x 25 ft
Aisle width	24 ft	N/A	N/A
Circulator Road	N/A	N/A	12 ft
Vegetation screening buffer	6 ft	6 ft	6 ft



Figure 6-36. Central Parking Lot rendering
Credit: PWD



Figure 6-37. Eastern Parking Lot rendering
Credit: PWD



Figure 6-38. Taxi Parking Lot rendering
Credit: PWD

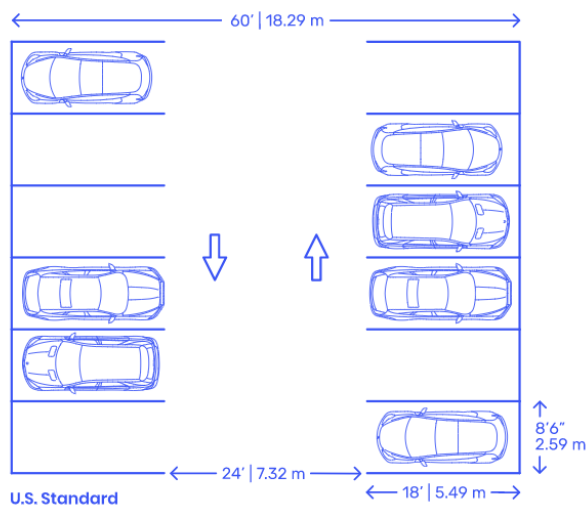


Figure 6-39a. Central Parking Lot layout
Credit: www.dimensions.com

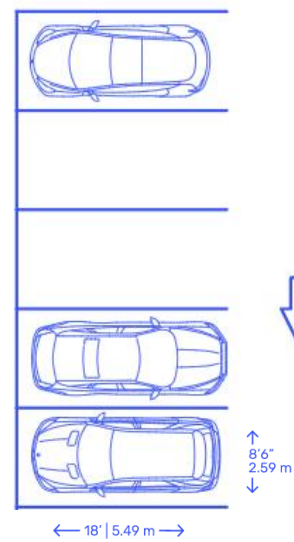


Figure 6-39b. Eastern Parking Lot layout
Credit: www.dimensions.com

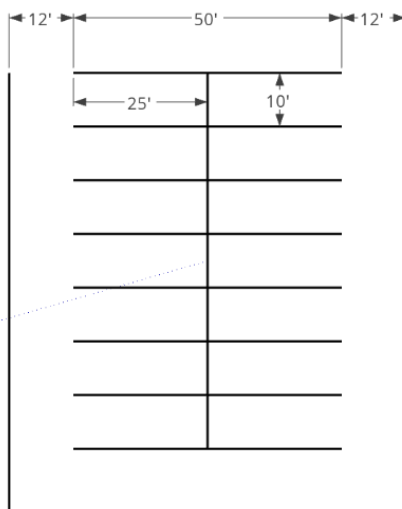


Figure 6-39c. Taxi Parking Lot layout

6.3.9 Water and Power Facilities

Table 6-29. Specifications for Water and Power Facilities

	Water	Power
Supply	Source: Public potable water supply from the Water and Sewage Department The supply line runs from the public road to the public restroom.	Source: Public grid (BVI Electricity Cooperation) The current electricity supply is from an underground cable from the main road to the public restroom. The voltage supplied to the restroom is 120-240 V and the voltage supplied to the sewage treatment plant is 480 V. To prevent air and noise pollution, once vending units are constructed, independent back-up generators are not allowed, except for emergency purposes. Centralized solar power production at the public restroom facility is proposed in the medium term provided that budget and management capacity can support the investment, maintenance and security of the system.
Water reticulation / Electricity distribution plan	Connections are to established to each vending unit and the Administration Unit from the main connection. A detailed water reticulation plan and electricity distribution plan are to be developed.	
Metering system	Independent water and electricity meters are to be established for each vending unit and the Administrative Unit.	

6.3.10 Signage

Table 6-30. Specifications for Signage

Maximum size	Commercial signs: 9 ft² Beach management authority signs: 9 ft²
Permitted materials	Wood or Polywood
Content and Design	<i>Commercial signs</i> - No obscene or vulgar language or graphics are allowed. - Content is limited to information identifying the business, products, prices and promotions. <i>Beach management authority signs</i> - Safety and informational signs must bear the logo and name of the beach management authority.

	- Safety and informational signs must be uniform in their appearance (colour scheme and graphic design). - Earthtone colours that are aesthetically sensitive by blending into the natural landscape/environment should be used. - The text colour should contrast well with the background colour for easy reading. Recommended: white text on green or brown background. Text should also be in clear, easy-to-read fonts in a size legible to the average reader.
Placement	- Vending signs must be affixed to the front façade of vending units. - Signs are not permitted in walkways or in areas that obstruct circulation on the beach or views of the beach scenery. - Safety and information signs must be placed in central, visible locations at all three beach entrances and must be erected at eye level.

6.3.11 Waste Management Facilities

SOLID WASTE MANAGEMENT

Table 6-31. Specifications for Waste Management Facilities

	Main Service Bin	Vending Zone Bin	Picnic Area	Outdoor Eating Area	Barbeque Pits Bin
Types of waste receptables	General waste bin; Recycling 2-bin system (plastic, aluminium)	General waste bin; Recycling 3-bin system (plastic, aluminium, glass)	General waste/ Recycling (plastic, aluminium) 3-bin system	General waste/ Recycling (plastic, aluminium) 3-bin system	General waste bin; Recycling 2-bin system (plastic, aluminium)
Bin capacity	2-yard	2-yard	30-42-gallon	30-42-gallon	2-yard
No. of receptables	General waste bin (1), Recycling bin system (1)	General waste bin (1), Recycling bin system (1)	12	6	General waste bin (1), Recycling bin system (1)
Additional required features	Screening, covering	Screening, covering	Covering, wide disposal slots	Covering, wide disposal slots	Screening

A**B****C****D**

Figure 6-40. Illustrations of sample bins and screening
 (A) Sample of general concept for general waste/recycling (plastic, aluminium) 3-bin system for Picnic Area and Outdoor Eating Area; Credit: recyclingbin.com. (B) Sample design for covered 2-ton bins for Main Service Bin and Vending Zone Bin (C) Sample bin for Barbeque Pits; Credit: VI Plastics. (D) Rendering of screened Main Service Bin: Credit PWD.

SEWAGE AND WASTEWATER MANAGEMENT

Table 6-32. Specifications for Sewage and Wastewater Management Facilities

Type of treatment system	Aerated sewage treatment plant (no leach field)
Treatment capacity (volume)	6,500 gallons (intake tank)
Effluent storage capacity (volume)	1,000 gallons (final effluent tank)
Operational details	The sewage treatment facility does not include a leach field. No final effluent from the treatment process is released into the environment. The final effluent tank (1,000-gallon capacity) is pumped out 2-4 times per month and the effluent properly disposed of offsite. Automatic grease interceptors are to be installed within each vending unit that contains a kitchen. Additionally, a main grease interceptor will be installed on the greywater line from the vending units to the sewage treatment plant as a backup system in the event that interceptors within the vending units malfunction or fail. The Beach Management Plan does not include facilities for the collection or treatment of hazardous materials. Hazardous materials are not allowed on the beach. Waste oil of all sorts is to be disposed of offsite.
Spare capacity	There is sufficient spare treatment and storage capacity to add the wastewater from the restrooms of the Administrative Unit and the kitchens/sinks of the vending units to the existing sewage treatment system. The number of times the final effluent tank is emptied per month may have to be increased during peak usage months.

6.3.12 Public Restroom Facility

Table 6-33. Specifications for Public Restroom Facility

	Existing	Proposed Upgrades
Additional Amenities	None	Face mirrors; automatic faucets; baby changing station; 4 screened outdoor showers



Figure 6-41. Existing public restroom facility
The entrance into the male stalls is shown. The entrance to the female stalls is on the opposite side.

6.3.13 Main Access Road

Table 6-34. Specifications for Public Access Road

Edge of road	Vegetation
Surface	Natural (The road will be graded as needed to maintain a smooth surface. Grading will be done in such a manner as to prevent impact to the salt pond and beach dune. The access road will not be paved as doing so would increase stormwater runoff and impact the environment, including the neighbouring salt pond and mangrove forest).

6.4 ENVIRONMENTAL RESTORATION AND PROTECTION PLAN

This layer of the Plan seeks to ensure that the beach environment is protected as a matter of priority.

This section describes the legal framework proposed for environmental protection of the beach and wider environment.

In addition, for each environmental asset, this section indicates the:

- Restoration/protection goal
- Standards to be achieved/maintained
- Restoration actions
- Environmental management measures

The wider, general management measures and user rules to ensure environmental standards are achieved/maintained are included under the General Management Measures and Rules layer of the Plan.

6.4.1 Legal Framework

The Virgin Islands National Parks Act, 2006 and its 2008 Regulations are proposed as the primary legal mechanisms to protect and manage the Long Bay, Beef Island environment, including the beach, nearshore marine area and surrounding wetland areas. This is in keeping with the 2004 Cabinet decision to purchase the lands comprising and surrounding Long Bay beach for preservation as wetland, managed by the National Parks Trust of The Virgin Islands. The Virgin Islands National Parks Act, 2006 and its Regulations would offer a higher and more comprehensive level of protection than can be provided through the otherwise dated, limited and fragmented environmental legislation of the Territory. Declaration of the area as a National Park/Marine Park would also directly align with the Vision for the beach expressed in this Plan.

The process to declare Long Bay a National Park/Marine Park under section 15(b) of the National Parks Act, No.4 of 2006 was triggered by at least 2014. A National Park/Marine Park is defined under the National Parks Act, 2006 as:

a natural area of land or sea containing a representative sample of major natural regions, features, or scenery, or where wildlife, habitats, or surface features are of special significance and are not materially altered by current human occupation or exploitation, to be maintained in perpetuity with the following conservation and management objectives;

- a) To protect natural and scenic areas of national and international significance for spiritual, scientific, educational, recreational, or tourism purposes;

- b) To protect, in as natural a state as possible, representative samples of major physiographic regions, biotic communities, genetic resources, and species for ecological stability and diversity;
- c) To manage visitor use for inspirational, scientific, educational, recreational, or cultural purposes at a level which will maintain the area in a natural or near natural state;
- d) To eliminate and thereafter prevent exploitation or occupation harmful to the purposes for which the areas was declared; and
- e) To take into account the needs of indigenous people, including subsistence resource use, in so far as that use does not adversely affect the conservation objectives of the area.

The boundaries of the proposed National Park/Marine Park are highlighted in yellow outline and blue shading in Figure 6-42 below.

In order for The Virgin Islands National Parks Act, 2006 and its 2008 Regulations to apply, the formal process to declare the area a National Park/Marine Park must be completed.

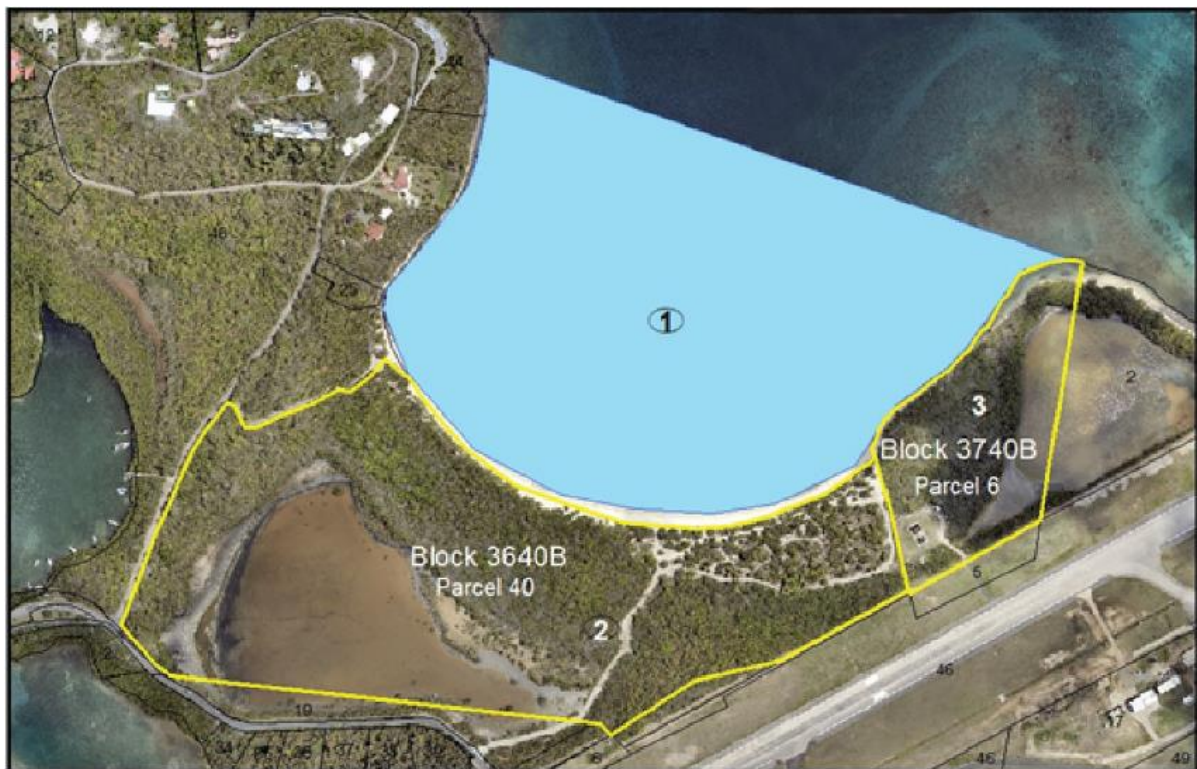


Figure 6-42. Boundaries of the proposed National Park/Marine Park at Long Bay, Beef Island

In addition to The Virgin Islands National Parks Act, 2006 and its 2008 Regulations, relevant laws among the legislation listed under the Implementation Plan will be applied to help protect the environment.

6.4.2 Vegetation Line – Foredune (Seagrape Tree line)

RESTORATION / PROTECTION GOAL

The goal is to restore the foredune vegetation line on the western end of the beach to 100% on the eastern end of the beach to 90% of their historic extent and character based on the 2002 aerial imagery baseline (Figure 2-5). This goal is in keeping with best scientific practice which recognizes the significance of an intact vegetation line to the overall beach health as well as historic cultural practices that set back farms and development from the beach vegetation line. The relaxed restoration target on the eastern end of the beach factors the footprint of anticipated human uses, including the Picnic Zone, and the desire to preserve view channels to the sea from the Vending Zone and Outdoor Eating Area.

STANDARDS

Table 6-35. Standards for Vegetation Line Restoration

Vegetation line width	5 – 10 meters (canopy width)
Species composition	The vegetation line should maintain its historic species composition, including primarily seagrape trees (<i>Coccoloba uvifera</i>) and other native Zone B and Zone A species (see Appendix I). Non-native species, including coconut palms/trees (<i>Cocos nucifera</i>), should not be planted. The WIDECAS Manual of Best Practices for Safeguarding Sea Turtle Nesting Beaches (Choi and Eckert, 2009) notes: Our experience confirms that palms provide insufficient cover for nesting, and their roots act as a hardened structure which solidifies habitat and may accelerate erosion (especially wind erosion) of the beach. Other non-native plants may create too much shade on the sand, which can alter nest temperature and affect the development (and sex ratio) of sea turtle embryos, or they may out-compete or displace important native species. (p. 37) <u>Invasive species</u> Invasive species will be actively eradicated, including: - Cabbage plant - <i>Calotropis procera</i> - Neem - <i>Azadirachta indica</i> - Pink-eye Susie/Yellow Susie - <i>Turnera ulmifolia</i> - <i>Scaevola taccada</i> <u>Poisonous plants</u> Any mature samples of the manchineel tree will be clearly labelled with appropriate warning signs. Young plants will be removed.
Density (seagrape trees)	5 clusters (2-3 trees each) per 25-m segment – that is, 10 -15 trees per 25-m segment

RESTORATION ACTIONS

- Actively replant and restore the vegetation line with historic, native species. This will include a partnership between the Ministry of Natural Resources and Labour and the H. Lavity Stoutt Community College (HLSCC) and other partners to cultivate and replant the seagrape tree line. This will also involve removal of all wooden barriers constructed around seagrape tree roots or built along the foredune.

Work to restore the seagrape line started symbolically on June 5, 2022 in celebration of World Environment Day when six (6) 3-gallon sized saplings were planted on the western side of the beach in partnership with Minnie's Plants and Landscaping (see Figure 6-43a). Subsequently, on November 9, 2022, the Ministry's Beach Wardens planted 16 seagrape seedlings from surviving parent plants at the beach in the same vicinity (see Figure 6-43b). The Ministry has also established a partnership with the H. Lavity Stoutt Community College to expand their mangrove nursery to include seagrape trees. The first batch of seagrape seeds were planted at the nursery in November 2022 with seeds from Brandywine Bay (see Figure 6-44a). Seagrape seeds were harvested from Long Bay, Beef Island for planting at the nursery on December 6, 2022 (see Figure 6-44b).

- Actively remove all samples of invasive species, including:
 - Cabbage plant - *Calotropis procera*⁴
 - Neem - *Azadirachta indica*
 - Pink-eye Susie/Yellow Susie - *Turnera ulmifolia*
 - *Scaevola taccada*
- Remove all commercial structures currently constructed on the beach and re-establish commercial operations within the Vending Zone and other support facilities provided.



Figure 6-43. Seagrape saplings and seedlings planted at Long Bay in June and November 2022

⁴ This species actively competes with seagrape trees.

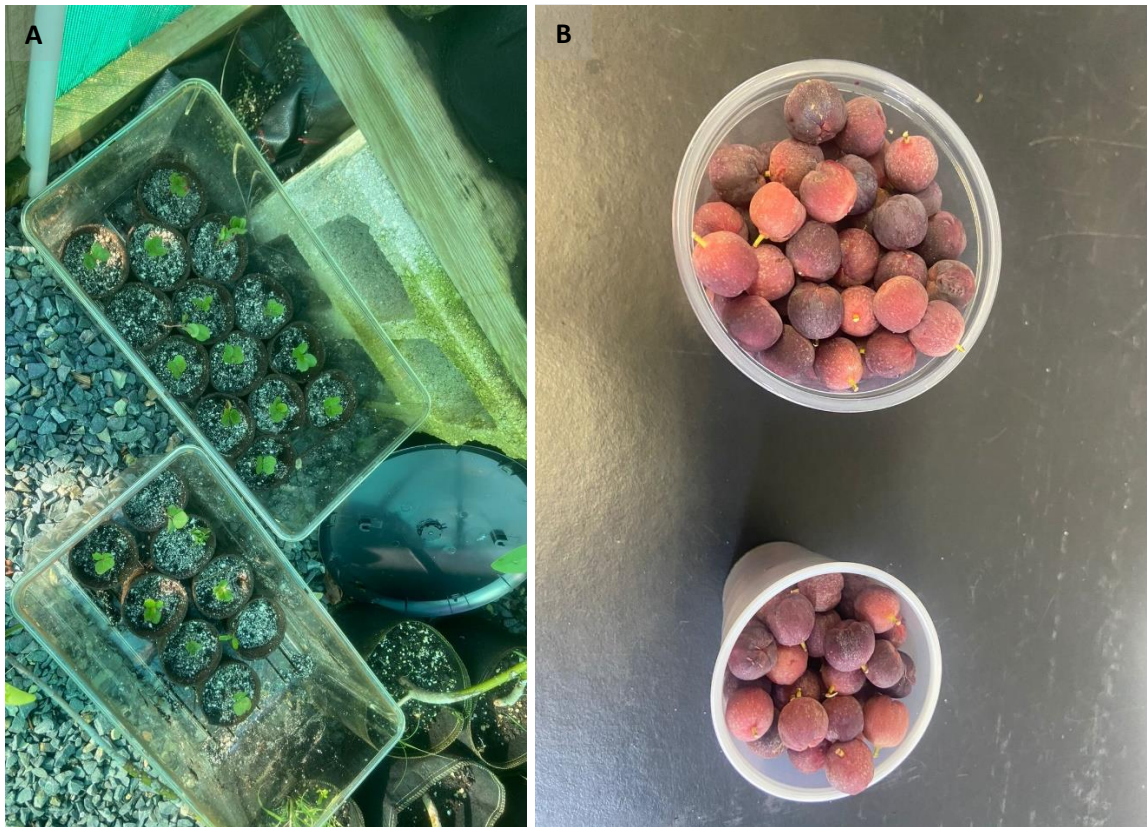


Figure 6-44. Seagrape seedlings planted at the H. Lavity Stoutt Community College nursey in November 2022 and seagrape seeds harvested at Long Bay, Beef Island on December 6, 2022 for planting at the nursery

Requirements/Specifications for Restoration Actions

The species in Table 6-36 have been identified as priority for restoration of the vegetation line. These species have been selected based on their historic presence, ecological value, growth potential and shading value. All species will require a degree of maintenance after planting, including watering, which will be the responsibility of the Beach Wardens. The Beach Wardens will be equipped with a small utility vehicle capable of manoeuvring in loose sand, a portable water tank and an extended inflatable house to support this function. Additionally, protective barriers may be required around some species depending on where they are planted to protect them from trampling or other forms of damage. Long Bay does not presently have an issue with feral goats or sheep and, as such, predation is not likely to be a threat to restoration efforts.

Table 6-36. Requirements/Specifications for Vegetation Line Restoration

Species	No. of samples required	Source	Recovery Period Required	Monitoring Cycle
<i>Zone A</i>				
Beach morning glory (<i>Ipomoea pes-caprae</i>)	50	Propagation from existing samples	1 year	Once a month
<i>Zone B</i>				
Seagrape trees - adult (<i>Coccoloba uvifera</i>)	140 (Phase I – 70; Phase II – 70)	Procurement from private nurseries	2 – 3 years	Once a month
Seagrape trees - juvenile (<i>Coccoloba uvifera</i>)	140	Growth at HLSCC mangrove nursery	5 – 7 years	Once a month
Barbasco (<i>Jacquinia arborea</i>)	100	Procurement from private nurseries	10 – 15 years	Once a month
Lignum vitae (<i>Guaiacum officinale</i>)	50	Procurement from National Parks Trust nursery and private nurseries as necessary	10 – 15 years	Once a month
Loblolly (<i>Pisonia subcordata</i>)	30	Procurement from private nurseries	5 – 7 years	Once a month
Marble tree (<i>Cassine xylocarpa</i>)	45	Procurement from private nurseries	10 – 15 years	Once a month

ENVIRONMENTAL MANAGEMENT MEASURES

- Vegetation destroyed by natural means, including natural disasters, shall be allowed to recover naturally or be actively restored as advised by the beach management authority.
- Pruning of trees, if required, will be carried out by the designated beach management authority.
- Only vegetation native to the beach system is to be used in any landscaping.
- Any invasive species identified are to be actively eradicated with efforts coordinated by the beach management authority.
- Development is only permissible in zones designated by the Beach Management Plan and is to be carried out by the beach management authority. Any development is to be conducted in keeping with required building standards and best practices to minimize impact to the sand dune.

- Furnishings are only allowed in the Picnic Area, Outdoor Eating Area and designated rest points along the Bird Watching Hiking Trail.

6.4.3 Beach Dune System

RESTORATION / PROTECTION GOAL

Eastern Dune System

The goal is to restore the dune vegetation coverage to at least 75% of its historic extent and character using the 2002 aerial imagery baseline. The relaxed restoration target factors the footprint of the anticipated human uses, including the Vending Zone and Outdoor Eating Area. The dune is to be fully restored with the exception of those footprints which will be partially restored. A related restoration goal is recovery of the dune system from extensive sand compaction from vehicular traffic and full cleaning from littering.

Western Dune System

The goal is to preserve and protect the natural extent and character of the western dune system, including its vegetation cover using the 2002 aerial imagery baseline. Only a narrow hiking trail will be cut to facilitate access for bird watching along the salt pond and access to the proposed Lookout Deck. While the western dune is mainly intact, restoration to 100% of the historic baseline is needed in some areas.

STANDARDS

Eastern Sand Dune System

Table 6-37. Standards for Eastern Sand Dune System

Width	Historic width (using the 2002 baseline) to be restored and maintained – that is, from the vegetation line to the existing main access road to the eastern section of the beach and the area behind the access road, except for the taxi parking area
Species composition	Historic composition to be maintained (see Zone B and C species list in Appendix I)
Density	Historic density (using the 2002 baseline) to be restored and maintained with the exception of the Vending Zone and Outdoor Eating area which would have less cover
Access pathways	Access pathways should be limited to those defined in the Spatial Plan. Surface: sand Definition of edges: vegetation

Western Sand Dune System

Table 6-38. Standards for Western Sand Dune System

Width	Historic width (using the 2002 baseline) to be maintained
Species composition	Historic composition to be maintained (see Zone B and C species list in Appendix I)
Density (canopies)	Historic density (using the 2002 baseline) to be maintained
Access pathways	Access pathways should be limited to those defined in the Spatial Plan Surface: sand Definition of edges: vegetation

RESTORATION ACTIONS

- Actively replant and restore the beach dune system with historic, native species.
- Actively remove all samples of invasive species, including:
 - Cabbage plant - *Calotropis procera*
 - Neem - *Azadirachta indica*
 - Pink-eye Susie/Yellow Susie - *Turnera ulmifolia*
 - *Scaevola taccada*
- Install a protective barrier of closely spaced wooden posts around the perimeter of the eastern sand dune system adjacent to the access road to prevent access by vehicles. Install barriers to prevent vehicular access to the western dune system.
- Organize a comprehensive clean-up of the sand dune following installation of the barriers, including removal of all makeshift structures.

Requirements/Specifications for Restoration Actions

The specifications for the wooden Beach Dune Protection Barrier are included in the Facilities Plan above.

The species in Table 6-39 have been identified as priority for restoration of the beach dune. These species have been selected based on their historic presence, ecological value, growth potential and shading value and are a subset of those prioritized for the vegetation line. All species will require a degree of maintenance after planting, including watering, which will be the responsibility of the Beach Wardens.

Table 6-39. Requirements/Specifications for Beach Sand Dune System Replanting

Species	No. of samples required	Source	Recovery Period Required	Monitoring Cycle
<i>Zone C</i>				
Lignum vitae (<i>Guaiaecum officinale</i>)	100	Procurement from National Parks Trust nursery and private nurseries as necessary	10 – 15 years	Once a month
Loblolly (<i>Pisonia subcordata</i>)	170	Procurement from private nurseries	5 – 7 years	Once a month
Marble tree (<i>Cassine xylocarpa</i>)	105	Procurement from private nurseries	10 – 15 years	Once a month

ENVIRONMENTAL MANAGEMENT MEASURES

The management measures indicated for the vegetation line apply.

6.4.4 Turtle Nesting Habitat

RESTORATION / PROTECTION GOAL

The goal is to restore nesting sea turtle populations by restoring and preserving turtle nesting habitat, including the beach dune system, vegetation line and beach berm.

STANDARDS

Table 6-40. Standards for Turtle Nesting Habitat

Beach dune	To remain largely intact, as detailed above, and free of obstructions or threats that would interfere with turtle nesting or hatching activity
Vegetation line	To remain largely intact, as detailed above
Beach berm	To remain free of obstructions or threats that would interfere with turtle nesting or hatching activity during the turtle nesting season
Light	No light pollution that would interfere with turtle nesting and hatching (see detailed lighting requirements below)

RESTORATION ACTIONS

- Actively replant and restore the vegetation line.
- Actively replant and restore the sand dune system.
- Install a protective barrier of closely spaced wooden posts around the perimeter of the eastern sand dune system adjacent to the access road to prevent access by vehicles.

ENVIRONMENTAL MANAGEMENT MEASURES

- The following best operational and maintenance practices will be observed, particularly during turtle nesting season (March – November):
 - If beach furniture cannot be removed from the wider beach environment entirely, it must be stacked and arranged so that the shortest side faces the water.
 - Beach cleaning should be done by non-mechanized raking and litter removal.
 - Cleaning should only take place at or below the high tide line, and only during the day.
 - Cleaning equipment should not penetrate more than 2 inches into the sand.
 - Collected debris and trash should be disposed of properly, away from the beach.
 - The use of plastic lids and straws and of polystyrene containers should be eliminated.
 - Signage should be erected to indicate it is a turtle nesting beach.
 - Non-native plants, especially coconut trees (*Cocos nucifera*), should not be planted on or near nesting beaches.
 - The number of beach access areas should be limited to minimize trampling of the dune.
- Lighting requirements
 - No permanent fixed lighting sources fronting the vegetation line or lighting that shines directly onto the nesting beach or out into the ocean are allowed.
 - Curfews will be used to manage lighting - all lights must be off after sundown, especially during nesting season (March – November).
 - Fixed lighting requires permission for use after hours. Use of artificial light requires specific and defined purposes, and only in the required location and for the specified duration of human use.
 - Short wavelength violet/blue lights are not allowed and includes metal halides, fluorescent lights, halogens, mercury vapour and most LEDs. Only LEDs that are filtered to block blue light can be used. Sea turtles are less disturbed by long wavelengths of light, such as yellow, amber, and red light. The wavelength of light should be 560 nm or greater.
 - Avoid high intensity light of any colour. Hatchlings can see all wavelengths of light and will be attracted to long wavelength amber and red light as well as the highly visible white and blue light, especially if there is a large difference between the light intensity and the ambient dark beach environment.

6.4.5 Coastal Water Quality

RESTORATION / PROTECTION GOAL

The goal is to maintain coastal water quality at the 2012-2017 baseline.

STANDARDS

Table 6-41. Water Quality Standards to be Maintained for Long Bay, Beef Island

Water quality should meet the following standards or better:	
pH	6.5-8.5
Temperature	21 - 31 degrees Celsius
Salinity	34 - 40 ppt
Dissolved oxygen	> 4mg/l
Conductivity	52-60 microsiemens/cm
Total dissolved solids	33 - 39 g/l
Nitrates	<2 mg/l
Phosphates	<= 1 mg/l
Turbidity	< 3.5NTU
Total coliform	35% of samples - less than 200cfu/100ml 53% of samples - between 200 cfu and 2,500 cfu/100 ml
Fecal Coliform	<20 cfu/100ml
E.coli	<10 cfu/100 ml
Enterococci	<25 cfu/100ml ⁵
TBT	None
Organopollutants	None

ENVIRONMENTAL MANAGEMENT MEASURES

- Use of sunscreens that are determined to be harmful to the marine environment will be discouraged through signage and education campaigns until legislation may be enacted to ban use of such substances or the area is declared a protected area, allowing for tighter controls.
- All black and greywater is to be directed to and treated at the existing on-site wastewater treatment facility.
- The wastewater treatment system is to be regularly maintained to prevent failure. The effluent from the treatment facility will continue to be pumped out on a regular basis and disposed of offsite versus within the beach environment.

⁵ No 2012-2017 baseline is available. Standard is based on 2021 measurements.

- Any compromise or failure of the wastewater treatment facility that may result in impact to the beach will trigger temporary closure of commercial operations until the system is fixed.
- All Fats, Oils and Grease (FOG) must be separated from the wastewater stream (using automatic grease interceptors/traps installed within each vending unit) and properly disposed of offsite. Additionally, a main grease interceptor will be installed on the greywater line from the vending units to the sewage treatment plant as a backup system in the event that interceptors within the vending units malfunction or fail.
- Hazardous materials are not allowed on the beach.
- Eco-friendly cleaning products will be encouraged in all beach operations to reduce pollution and enhance function of the wastewater treatment system.
- Fertilizers and pesticides are only to be used in limited circumstances considered necessary for the greater benefit of the beach environment and should be applied only by the beach management authority or a party authorized by the same with necessary precautions to reduce any environmental impacts.

6.4.6 Sand Quality

RESTORATION / PROTECTION GOAL

The goal is to maintain sand quality as close as possible to its natural baseline.

STANDARDS

Table 6-42. Sand Quality Standards to be Maintained for Long Bay, Beef Island

Colour	Natural/historic colour to be maintained based on baseline samples retained at MNRL
Grain size	Natural/historic grain size to be maintained (0.33mm-0.67mm - medium to coarse grain size) ⁶
Composition	Natural composition to be maintained, including shells, shell fragments, coral fragments, leaf litter and healthy quantities of sargassum (86% carbonate) ⁷
Stability	Beach berm to remain stable within historical limits and annual erosion/accretion cycles
Movement	Sand to be allowed to move freely to allow longshore drift and dune building
Cleanliness	Sand to be free of all litter and pollutants, including microplastics
Safety	Sand to be free of glass and other introduced sharp objects

⁶ S. Gore (2012). Beach geomorphology and management in the British Virgin Islands. University of Ulster, Coleraine, N. Ireland

⁷ S. Gore (2012). Beach geomorphology and management in the British Virgin Islands. University of Ulster, Coleraine, N. Ireland

RESTORATION ACTIONS

- Thorough clean-up of the beach berm and beach dune in preparation for enforcement of the Beach Management Plan
- Installation of a protective barrier of closely spaced wooden posts around the perimeter of the eastern sand dune system adjacent to the access road to prevent access by vehicles that compact the sand

ENVIRONMENTAL MANAGEMENT MEASURES

- Grooming of the beach with machinery is not allowed. Grooming should be done by hand with methods and tools that create minimal disturbance to the sand.
- All beach grooming must be carried out by the beach management authority or a party approved by the authority.
- Sargassum management and harvesting will be done in accordance with best environmental practice and in keeping with the sargassum management protocols being developed for the Territory. In particular, the following must be observed:
 - Healthy, normal levels of sargassum should be left on the beach to naturally decompose. Sargassum at normal levels helps to build the beach.
 - Removal of sargassum should be done with hand tools and use of any heavy equipment avoided. The Plan proposes acquisition of a small utility vehicle fit for manoeuvring in the sand with a small dump bed to assist with removal of sargassum in the event of mass sargassum landings.
 - Removed sargassum is to be buried in a shallow pit within an identified area of the hind dune to help build the sand dune.

6.4.7 Air Quality

RESTORATION / PROTECTION GOAL

The goal is to maintain air quality at its historic baseline.

STANDARDS

Table 6-43. Air Quality Standards to be Maintained for Long Bay, Beef Island

Overall quality	Air quality should be pristine, free from particulate matter, smoke, strong food odours and obnoxious odours. Air quality should meet or exceed international standards for clean air.
------------------------	--

ENVIRONMENTAL MANAGEMENT MEASURES

- All burning on the beach, such as bonfires, will be controlled as detailed in the General Management Measures and Rules layer of the Plan.
- Public barbequing/outdoor cooking will be confined to the public barbeque pits provided.
- Outdoor barbequing by vendors must be done in the designated deck space oriented in a manner as to not affect the Outdoor Eating Area or the Picnic Area.
- Smoking on the beach is not allowed in keeping with the Tobacco Products Control Act, 2006.

6.4.8 Biodiversity

RESTORATION / PROTECTION GOAL

The goal is to protect and maintain all biodiversity and their habitats at historic levels.

STANDARDS

Table 6-44. Biodiversity Standards to be Maintained for Long Bay, Beef Island

Population levels	Historic population levels of all beach biodiversity are to be maintained through habitat protection. ⁸
--------------------------	--

ENVIRONMENTAL MANAGEMENT MEASURES

- Natural beach habitats, including marine habitats, coastal waters, sand dunes, mangroves areas and salt ponds are to be protected through enforcement of all restrictions/prohibitions and restoration actions in relation to the environment included in this Plan.
- Only vegetation native to the beach system is to be used in any landscaping, including screening of parking lots.
- Any invasive species identified are to be actively eradicated and immediately replaced with native vegetation with efforts coordinated by the beach management authority.

⁸ Historic turtle nesting data, bird count data and any other available data, especially data before 2015 when habitat alteration began, is to be applied.

6.4.9 Waste Management

RESTORATION / PROTECTION GOAL

The goal is for all waste (solid and liquid) to be managed in a responsible and sustainable manner to maintain a clean, healthy and safe beach environment.

STANDARDS

Table 6-45. Waste Management Standards to be Maintained for Long Bay, Beef Island

Litter	No litter
Pollution	No pollution
Product standards	- Use of eco-friendly, biodegradable products by vendors - No service of drinks in glass bottles as these pose a safety risk at the beach - No use of plastic straws or lids and no use of Styrofoam containers or cups as these pose a risk to biodiversity
Recycling	Recycling of plastic and aluminium in public bins, and additionally of glass in bins for vendors

ENVIRONMENTAL MANAGEMENT MEASURES

The rules under the General Management Measures and Rules section apply.

6.4.10 Mangroves

RESTORATION / PROTECTION GOAL

The goal is to preserve and protect the natural extent and character of mangrove areas within the wider beach system using the 2002 aerial imagery baseline.

STANDARDS

Table 6-46. Mangrove Standards to be Maintained for Long Bay, Beef Island

Width	Historic width (using the 2002 baseline) to be maintained
Species composition	Historic composition as per Lianna Jarecki's 2003 Doctor of Philosophy (PhD) thesis (Salt ponds of the British Virgin Islands: Investigations in an unexplored ecosystem) to be maintained: <i>Species list:</i> - Buttonwood - <i>Conocarpus erectus</i> - White mangrove - <i>Laguncularia racemosa</i>

	- Black mangrove - <i>Avicennia germinans</i> - Red mangrove - <i>Rhizophora mangle</i>
Density	Historic density as per Lianna Jarecki's 2003 Doctor of Philosophy (PhD) thesis (Salt ponds of the British Virgin Islands: Investigations in an unexplored ecosystem) to be maintained <i>Pond at central beach entrance (Main Pond)</i> - Buttonwood: 2,341 trees/hectare - White mangrove: 463 trees/hectare - Black mangrove: 3,561 trees/hectare - Red mangrove: 16 trees/hectare <i>Pond adjacent to Airport runway (Secondary Pond)</i> - Buttonwood: 831 trees/hectare - White mangrove: 4,462 trees/hectare - Black mangrove: 3,077 trees/hectare - Red mangrove: 1,005 trees/hectare

RESTORATION ACTIONS

- The Ministry of Natural Resources and Labour will partner with the H. Lavity Stoutt Community College (HLSCC) and other partners to replant mangroves within the greater Long Bay area where there has been lost due to hurricane wind damage or other impacts.

ENVIRONMENTAL MANAGEMENT MEASURES

- Mangroves destroyed by natural means, including natural disasters, shall be allowed to recover naturally or be actively restored as advised by the beach management authority.
- Pruning of mangroves, if required, will be carried out by the designated beach management authority.
- Any invasive species identified within the mangrove system are to be actively eradicated with efforts coordinated by the beach management authority.
- Furnishings (rest benches) along the salt pond should not be placed in areas where they would infringe on mangroves.

6.4.11 Salt Ponds

RESTORATION / PROTECTION GOAL

The goal is to preserve and protect the natural extent and character of the salt ponds using the 2002 aerial imagery baseline.

STANDARDS

Table 6-47. Salt Pond Standards to be Maintained for Long Bay, Beef Island

Footprint (area)	Existing footprint (using the 2002 baseline) of both salt ponds to be maintained
Water chemistry	Existing average water chemistry as per Lianna Jarecki's 2003 Doctor of Philosophy (PhD) thesis (Salt ponds of the British Virgin Islands: Investigations in an unexplored ecosystem) to be maintained: <i>Pond at central beach entrance (Main Pond)</i> - Salinity: 40 – 130 ppt - Nitrates: 0.8 – 1.7 mg/L - Temperature: 17-19 °C - pH: 8 - 9 - Phosphates: 0.01 – 0.06 mg/L - Turbidity: 5 - 20 FAU (1 FAU = 1 NTU = 1 FNU) - Dissolved Oxygen: 3.2 – 8.2 mg/L <i>Pond adjacent to Airport runway (Secondary Pond)</i> - Salinity – 45 – 110 ppt
Soil chemistry	Existing chemistry to be maintained ⁹
Biodiversity	Existing species composition and population level to be maintained ¹⁰

ENVIRONMENTAL MANAGEMENT MEASURES

1. The ecological connection between the salt ponds and the ocean is to be maintained to at least its current extent.
2. Temporary or permanent encroachment on the boundaries of the salt ponds is not allowed.
3. Construction of the Birdwatching Hiking Trail around the salt pond defined in the Facilities Plan must follow best practices to minimize any environmental impact.

⁹ Baseline survey to be conducted.

¹⁰ Baseline survey to be conducted and historic bird count data to be applied.

6.5 GENERAL MANAGEMENT MEASURES AND RULES

6.5.1 General Management Measures to Realize Vision

General management measures to realize the vision for Long Bay, Beef Island are summarized in Table 6-48 below.

Table 6-48. General Management Measures to Realize the Vision for Long Bay, Beef Island

<i>Vision</i>	<i>Management Measures</i>
Preserve the environment	• Restore and preserve the seagrape tree line along the entire beach length • Set back commercial development within the secondary/hind dune (area identified for Vending Zone) • Slightly elevate vending units to allow movement of sand • Construct vending units in wood with a limited footprint • Paint vending units in earthtones that are aesthetically sensitive by blending into the natural landscape / environment. Colours are to be approved by the beach management authority. • Ensure all beach fixtures and furnishings allowed are in earthtones that are aesthetically sensitive by blending into the natural landscape/environment. Colours are to be approved by the beach management authority. • Use wooden posts as access barriers where required. • Use wood to construct all footpaths requiring a finished surface. • Finalize the process to declare the area a National Park/Marine Park.
Maintain a natural aesthetic	
Balance tourist and residential use	• Implement a “share the beach policy” based on the days of the week and times of day that the beach is most demanded by locals versus tourists. <i>Monday – Friday</i> 7 a.m. – 5 p.m. - Beach open to taxi tour buses (organized tour operators and independent taxi drivers) <i>Weekends</i> Restrict taxi tour buses on weekends to guard against large tourist numbers when the beach is in highest demand for

	residential use. Further consultation will be conducted to select among the following options: Option 1 - Beach closed to taxi tour buses on Saturdays and Sundays Option 2 - Beach open to taxi tour buses on Saturdays - Beach closed to taxi tour buses on Sundays Option 3 Beach open to taxi tour buses on Saturdays and Sundays until 1 p.m. If an option to allow taxi tour buses to operate on Saturdays or Sundays is agreed, then the “High Standard Public Beach” international standard identified in the Carrying Capacity section will be applied to ensure tourist use does not displace residential use.
Allow some commercial development that is limited and carefully planned to achieve the elements above	• Limit vending activity to the Vending Zone and Water Sports Zone – the Vending Zone is near to but off the centre of the beach and set back from the vegetation line. • Limit beach chair rental to the defined Beach Chair Zone as shown in the Spatial Plan. • In keeping with the “share the beach” principle, restrict beach chair rentals on weekends when the public mainly utilizes the beach. Further consultation will be conducted to select among the following options: Option 1 - No beach chair rentals on weekends Option 2 - Limited* beach chair rentals on Saturdays - No beach chair rentals on Sundays Option 3 - Limited* beach chair rentals on weekends until 1 p.m. *Options to be explored for caps on weekend rentals, ranging up to a maximum of 50 chairs at a time. • Prevent peddlers operating at the beach. Only licensed vendors approved by the beach management authority under lease/license agreement are allowed to operate.

	• Establish the opening hours for commercial activities from 6a.m. to 7p.m. Monday to Saturday. • Preserve the central, eastern and western entrance points of the beach in a natural state. • Maintain the historic, natural appearance / aesthetic of the beach from the seaside. • No anchoring, except when permitted for special events/holidays.
--	---

An analysis of cruise ship passenger arrivals was conducted to assess the potential economic impact of these management measures, in particular the option of closing the beach to taxi tour buses and prohibiting rental of beach chairs on weekends.

The analysis reveals that the economic impact would be marginal and would not adversely affect the profitability and sustainability of commercial operators. In particular, the analysis shows that only 8.2% of cruise ship passengers arriving in the Territory throughout the course of 2023, for instance, will arrive on a Saturday, and only 6.5% on a Sunday. There is a seasonality effect with some months have more weekend arrivals than others. There are no weekend arrivals for the months June to October; all weekend arrivals are concentrated in the peak season months of November to May. Of these, November, January and March will experience the highest weekend arrivals, accounting for 74% of the total. On average in 2023, 10% of monthly cruise ship passengers will arrive on weekends. Similar trends were observed for the balance of 2022 (August – December) at the time of the analysis and for 2024 based on available data.

The results of the analysis are summarized in Figure 6-45 below. The detailed data is provided at Appendix VI.

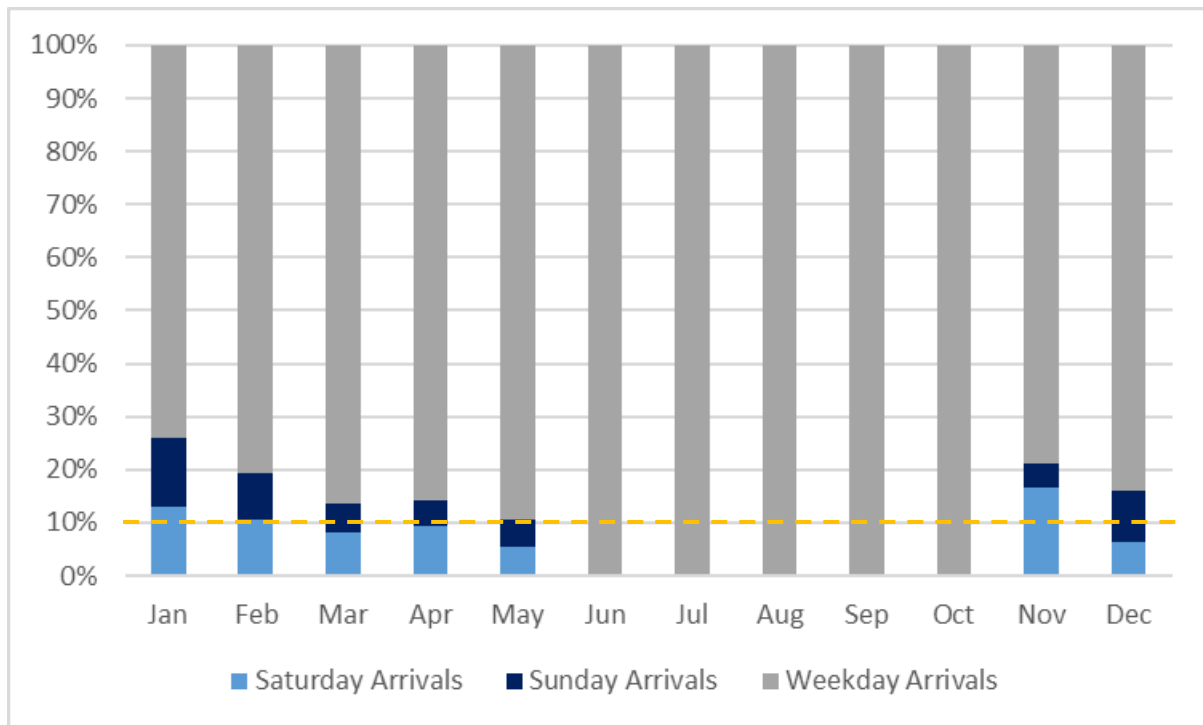


Figure 6-45. Summary of expected cruise ship passenger arrivals to Tortola for 2023
 On average, 10% of passengers per month arrive on weekends (yellow dashed line). Data obtained from the BVI Port Authority website: <https://bviports.org/cruise-schedule>.

6.5.2 General Management Measures to Address Current Issues/Threats at Long Bay

General management measures to address current issues/threats at Long Bay are summarized in Table 6-49 below.

Table 6-49. General Management Measures to Address Current Issues/Threats at Long Bay

Current Issue	Desired Direction	Management Measures
Overall Environment		
Parking on beach dune	None	• Create barrier of wooden posts to prevent vehicular access to the beach dune – all parking is to occur in designated parking lots.
Development within the vegetation line	None	• Set back the commercial zone from the vegetation line.
Overall beach cleanliness (53% of Survey respondents were “totally unsatisfied” or “unsatisfied”; 80% desire “more of”)	More of	• Prevent vehicular access to the beach dune to reduce the volume of food and beverage containers on the beach. • Prevent makeshift barbeque pits and replace with two purpose-built barbeque pits managed by the beach management authority. • Install no littering signs in the Picnic Zone and other appropriate areas. • Install 30-42-gallon public waste receptacles, including recycling bins, throughout the Picnic Zone and Outdoor Eating Area to be cleared daily by Beach Wardens. • Continue the Beach Wardens programme to ensure daily cleaning of the beach. • Train and empower Beach Wardens to enforce the Litter (Abatement) (Amendment) Act, 2009. • Enforce rule that bars/restaurants operating on the beach cannot serve drinks in glass bottles or Styrofoam cups and cannot serve drinks with plastic straws or lids.

		Erect signage advising of the rule that glass bottles should not be used on the beach for safety reasons.
Shade trees/vegetation <i>(49% of Survey respondents were “totally unsatisfied” or “unsatisfied”; 78% desire “more of”)</i>	More of	Implement beach dune revegetation programme, including reestablishment of the seagrape tree line along the entire beach, planting of additional shade trees in the Picnic Zone and full restoration of trees within the beach dune behind the Picnic Zone.
Noise level <i>(47% of Survey respondents were “totally unsatisfied” or “unsatisfied”; 57% desire “less of” or “none”)</i>	Less of or none	- Reserve 50% of Saturdays and Sundays in any given month as “no event days” when non-commercial or commercial uses of the beach requiring permission from the beach management authority are not allowed¹¹. - Preserve significant religious holidays (e.g., Good Friday, Easter Sunday, Christmas Day) as days when commercial entertainment uses of the beach are not allowed. - Allow a maximum of two (2) events requiring permission from the beach management authority at a time – these must be spread between the eastern end, western end and centre of the beach. Ensure noise limits are adhered to by event organizers. - Erect signage reminding the public of the requirements of the Noise Control and Abatement Act, 1996¹² and provide noise limit guidelines (with tips on how to ensure compliance) for amplifying music in keeping with the “test of reasonableness” using the objective test of ordinary standards and ordinary sensitivities¹³:

¹¹ According to The Virgin Islands Beach Policy, non-commercial use of the beach would not ordinarily require prior permission except in the following cases: Groups larger than 50 persons; Loud speakers will be operated; and Open fires will be used. All commercial uses require permission.

¹² The Noise Control and Abatement Act, 1996 permits use of a loudspeaker if it “is so operated as not to give reasonable cause for annoyance to persons in the area in which the loudspeaker is being operated.”

¹³ *Guidance for ordinary standards and ordinary sensitivities*: The United States Environmental Protection Agency (EPA) identifies $L_{eq(24)} \leq 55\text{dB}$ (long-term equivalent A-weighted sound energy averaged over a 24-hour period) as the noise limit to avoid “outdoor activity interference and annoyance.” The Del Mar, California Municipal Code limits the operation of any radio, phonograph, television set, or any other sound production or reproduction device at any public beach to 65 decibels at any point ten feet or more from the noise source between 7:00 a.m. to 7:00 p.m. and 55 decibels between 7:01 p.m. to 6:59 a.m. The City of Los Angeles Municipal Code limits noise between 9 a.m. and sunset on the boardwalk which runs parallel to the beach to 75 dBA, when measured at a minimum distance of 25 feet from the source of the noise. The UK Health and Safety Executive strongly recommends that the A-weighted equivalent continuous sound level over the duration of an event (Event LAeq) in any part of the audience area should not exceed 107 dB. The North Myrtle Beach Municipal Code states that “the use of sound equipment to broadcast obscene, profane

		Noise Limit Guidelines: - No permission required: <i>Maximum of 65 A-weighted decibels (dBA)</i> between 7:00 a.m. to 7:00 p.m. and <i>55 A-weighted decibels (dBA)</i> between 7:01 p.m. to 6:59 a.m. at any point 10 feet or more from the noise source - Permission received for non-commercial use: <i>Maximum of 75 A-weighted decibels (dBA)</i> at any point 25 feet or more from the noise source - Permission received for a commercial entertainment or public entertainment event: the A-weighted equivalent continuous sound level over the duration of the event (Event LAeq) in any part of the audience area should not exceed <i>107 dBA</i> - Music with obscene, vulgar, or profane lyrics (including use of commonly recognized swear words and sexually explicit references): <i>30 A-weighted decibels</i> at any point 10 feet or more from the noise source. • Prevent use of generators or alternative external power sources for operating loudspeakers without permission by the beach management authority. • Limit music played by vendors in the commercial zone to <i>55 A-weighted decibels</i> to avoid conflict between vendors. • Prevent vehicular access to the beach dune to eliminate use of vehicular sound systems to amplify music on the beach – all parking is to occur in designated parking lots. • Prevent playing of amplified music from vehicles while parked in parking lots. • Prevent joyriding or racing of motorcycles or ATVs within the beach area - motorcycles and ATVs should be parked in the provided parking lots.
Beach appearance (Area from tree line to sea)	More of	• Restore the seagrape tree line to retain the natural beauty of the beach from the seaside.

or vulgar language from any commercial property, private property, public right-of-way or city property in excess of 30 dB(A) from 7:01 a.m. to 10:59 p.m. and 50 dB(A) from 11:00 p.m. to 7:00 a.m. as measured from the boundary with the adjacent neighboring commercial property, private property, public right-of-way or city property is prohibited.”

(59% of Survey respondents desire an improvement)		• Implement physical limits on the zone occupied by beach chairs and enforce the Beach Policy which requires that chairs are only put out on demand and removed immediately after use. • Require that beach chairs and umbrellas are in earthtone colours that are aesthetically sensitive by blending into the natural landscape/environment. Colours for new or replacement chairs are to be approved by the beach management authority. • Increase the capacity of Beach Wardens to manage mass sargassum landings.
Reef health/quality (57% of Survey respondents desire an improvement)	More of	• Conduct a reef survey to determine the condition of the reef and develop a plan for management/rehabilitation of the reef.
Amenities and Facilities		
Lifeguard presence/station (62% of Survey respondents were “totally unsatisfied” or “unsatisfied”; 75% of Survey respondents desire “more of”)	More of	• Recommend expansion of the lifeguard programme to include a lifeguard stationed at Long Bay. • Include a provisional sum for construction of a lifeguard tower and procurement of lifeguard equipment in the costing for implementation of the Beach Management Plan.
Waste facilities (61% of Survey respondents were “totally unsatisfied” or “unsatisfied”; 78% desire “more of”)	More of	• Remove the open-air garbage receptables at the central access to the beach and relocate to a screened area adjacent to the restroom sewage treatment facility to serve as service bins to consolidate garbage and recyclables from public bins. Ensure that service bins are covered. • Install 30-42-gallon public waste receptables, including recycling bins, throughout the Picnic Zone to be cleared daily by Beach Wardens – waste to be consolidated in larger service bins near the public restroom. • Install 30-42-gallon public waste receptables, including recycling bins, throughout the Outdoor Eating Area to be cleared daily by bar/restaurant operators – waste to be consolidated in dedicated vendor bins at rear of the Vending Zone.

		• Provide dedicated, screened and covered garbage and recycling bins for vendors at the rear of the Vending Zone. • Provide a general waste and recycling bins in the barbeque pits area • Ensure the service bins, dedicated vendor bins and bins for the barbeque pits are emptied by the Solid Waste Department at least every other day.
Access for disabled people (48% of Survey respondents were “totally unsatisfied” or “unsatisfied”; 65% desire “more of”)	More of	• Include drop-off zones close to the seashore to reduce walk distance to the beach. • Consider aids/devices to assist disabled access to the sea. • Ensure vending units are wheelchair accessible.
Restroom facilities (44% of Survey respondents were “totally unsatisfied” or “unsatisfied”; 59% desire “more of”)	More of	• Reduce peak demand for restrooms by working with tour/taxi operators to better spread-out tourist arrivals to the beach. • Implement the “share the beach” management policy for balancing local and tourist use of the beach. • Implement carrying capacity limits on number of tourists. • Make enhancements to the public restroom in the near term, including addition of face mirrors, automatic faucets, baby changing station and four (4) screened outdoor showers • Add restroom facility dedicated for staff.
Picnic tables (48% of Survey respondents were “totally unsatisfied” or “unsatisfied”; 57% desire “more of”)	More of	• Install public picnic tables along the inner perimeter of the seagrape tree line, from the central entrance to the beach to the eastern entrance, within the Picnic Zone. Install two picnic tables at the western end of the beach.
Birdwatching facilities (55% of Survey respondents desire “more of”)	More of	• Construct a hiking trail along the perimeter of the salt pond leading up to the proposed Lookout Deck with bird observation points and interpretive signage along the trail.
Beach use signage (55% of Survey respondents desire “more of”)	More of	• Install beach use signage at each entrance to the beach (central, eastern and western), including beach rules and safety information. • Install “no littering” signs and “noise limit” signs within the Picnic Zone in addition to including relevant rules on signs at entrances.

		• Label important plant species within the Picnic Zone. • Regulate the size, placement and content of signs within the Vending Zone, including preventing use of obscene, vulgar or profane language or imagery. • Erect signage along the Birdwatching Hiking Trail.
Parking facilities (53% of Survey respondents desire an improvement)	More of	• Provide public parking lots at the central and eastern entrances to the beach: - Central entrance – 74 spaces - Eastern entrance – 10 spaces • Continue to permit limited parking at the western entrance of the beach (approximately 6 spaces). • Provide a separate parking lot for taxi tour buses (14 spaces). • Utilize the Taxi Parking Lot for vendor staff parking during times that tours are not allowed. • Utilize a portion of the Central Parking Lot for vendor staff parking when tours are allowed. • Utilize roadside parking for overflow parking when required. • Prevent parking on the beach dune with a barrier system.
Public shade umbrellas/gazebos (46% of Survey respondents were “totally unsatisfied” or “unsatisfied”; 50% of Survey respondents desire “more of”)	More of	• Incorporate shade umbrellas in public picnic tables. • Incorporate shade umbrellas in the Outdoor Eating Area attached to the Vending Zone. • Replace existing shade huts with fit-for-purpose picnic tables with shading. • Plant additional shade trees in the Picnic Zone.
Entertainment facilities (47% of Survey respondents desire “less of” or “none”)	Less of or none	• Designate an easy-to-access area at the central entrance of the beach to accommodate approved public entertainment events. The area will be sized to accommodate a stage, as may be required, that is to be set up and removed by event organizers.
Sporting facilities (38% of Survey respondents desire the “same level”)	Same level	• Require permission from the beach management authority for construction/erection/installation of any temporary or permanent sporting facility
Recreational Activities		
Loud music (52% of Survey respondents were “totally unsatisfied” or “unsatisfied”;	Less of or none	• Reserve 50% of Saturdays and Sundays in any given month as “no event days” when non-commercial or commercial uses of the beach requiring permission from the beach management authority are not allowed.

68% desire “less of” or “none”)		• Preserve traditional religious holidays (e.g., Good Friday, Easter Sunday, Christmas Day) as days when commercial entertainment uses of the beach are not allowed. • Allow a maximum of two (2) events requiring permission from the beach management authority at a time – these must be spread between the eastern end, western end and centre of the beach. Ensure noise limits are adhered to by event organizers. • Erect signage reminding the public of the requirements of the Noise Control and Abatement Act, 1996 and provide noise limit guidelines (with tips on how to ensure compliance) for amplifying music in keeping with the “test of reasonableness” using the objective test of ordinary standards and ordinary sensitivities. Noise Limit Guidelines: - No permission required: <i>Maximum of 65 A-weighted decibels (dBA)</i> between 7:00 a.m. to 7:00 p.m. and <i>55 A-weighted decibels (dBA)</i> between 7:01 p.m. to 6:59 a.m. at any point 10 feet or more from the noise source - Permission received for non-commercial use: <i>Maximum of 75 A-weighted decibels (dBA)</i> at any point 25 feet or more from the noise source - Permission received for a commercial entertainment or public entertainment event: the A-weighted equivalent continuous sound level over the duration of the event (Event LAeq) in any part of the audience area should not exceed <i>107 dBA</i> - Music with obscene, vulgar, or profane lyrics (including use of commonly recognized swear words and sexually explicit references): <i>30 A-weighted decibels</i> at any point 10 feet or more from the noise source. • Prevent use of generators or alternative external power sources for operating loudspeakers without permission by the beach management authority. • Limit music played by vendors in the commercial zones to <i>55 A-weighted decibels</i> to avoid conflict between vendors.
--	--	---

		• Prevent vehicular access to the beach dune to eliminate use of vehicular sound systems to amplify music on the beach – all parking is to occur in designated parking lots. • Prevent playing of amplified music from vehicles while parked in parking lots. • Prevent joyriding or racing of motorcycles or ATVs within the beach area - motorcycles and ATVs should be parked in the provided parking lots.
Parties (47% of Survey respondents desire “less of” or “none”)	Less of or none	• Allow a maximum of two parties requiring permission at the beach at a time – these must be spread between the eastern end, western end and centre of the beach • Reserve 50% of Saturdays and Sundays in any given month as “no event days” when parties requiring permission from the beach management authority are not allowed. • Preserve traditional religious holidays (e.g., Good Friday, Easter Sunday, Christmas Day) as days when commercial entertainment uses of the beach are not allowed. • Ensure noise limits are adhered to by party organizers.
Boating (43% of Survey respondents desire “less of” or “none”)		• No anchoring of vessels and no operation of power-craft, except during special events as authorized by the beach management authority - anchoring zones are to be established and the power-craft speed limit enforced in such cases as defined at Section 4(6) of the Power-craft Act (Cap 261).¹⁴
Commercial Activities		
Beach chairs (44% of Survey respondents were “totally unsatisfied” or “unsatisfied”; 41% desire “less of” or “none”)	Less of or none	• Limit the zone occupied by beach chairs to that mapped in the Spatial Plan and enforce the Beach Policy which requires that chairs are only put out on demand and removed immediately after use. • Require that beach chairs and umbrellas are in earthtone colours that are aesthetically sensitive by blending into the natural landscape/ environment. Colours for new and replacement chairs are to be approved by the beach management authority.
Souvenir vending (52% of Survey	Less of or none	• Cap the number of souvenir vendors operating at a time at three (3) vendors.

¹⁴ Section 4(6) of the Power-craft Act (Cap 261) states: “Any person who operates a power-craft at more than five knots within one hundred yards of low water mark shall be guilty of an offence.”

<i>respondents desire “less of” or “none”</i>)		• Make souvenir vendors less intrusive to the beach environment by locating them within the proposed Vending Zone.
Other commercial activity (52% of Survey respondents desire “less of” or “none”)	Less of or none	• Limit commercial activities to existing types of activities: food service, souvenirs and water sports. • Limit commercial activities to the purpose-built units within the Vending Zone and Water Sports Zone. • Prevent peddlers operating at the beach. Only licensed vendors approved by the beach management authority under lease/license agreements are allowed to operate.
Bars/restaurants (48% of Survey respondents desire “less of” or “none”)	Less of or none	• Cap the maximum number of bars/restaurants at three (3). • Make bars/restaurants less intrusive to the beach environment by locating them within the proposed Vending Zone.
Water sports (35% of Survey respondents desire the “same level”)	Same level	• Only allow passive water sports. No motorized water sports are allowed. No wind-based water sports that may pose a risk to swimmers (e.g., kiteboarding) are allowed.

6.5.3 Rules

Beach rules apply to all beach users, including commercial and non-commercial users approved to operate on/use the beach. The rules extend to the entire area covered by the Beach Management Plan, including the salt ponds and Birdwatching Hiking Trail.

PROHIBITED ACTIVITIES

Land or Beach Dune Alteration

1. Development of any kind - all development on the beach will be undertaken by the beach management authority or must be undertaken with the written permission of the beach management authority together with permission by the Town and Country Planning Department/Planning Authority, if relevant
2. Cutting, pruning, removing, otherwise destroying or harvesting any vegetation, including mangroves
3. Earthmoving, including temporary or permanent shifting of mounds of sand or encroachment on the boundaries of the salt ponds
4. Digging and taking away of any deposit of sand, stone, gravel or shingle from the foreshore without a permit granted by the Minister for Natural Resources and Labour (Beach Protection Ordinance, 1985)

Motor Vehicles

5. Driving vehicles, motorcycles, ATVs or any motorized form of transportation, except along public access roads or within parking lots
6. Parking vehicles, motorcycles, ATVs or any motorized form of transportation outside of designated parking lots and designated overspill parking areas during public events
7. Parking overnight
8. Abandoning vehicles (Abandoned vehicles will be removed or disposed of in keeping with the Derelict Vehicles (Disposal) Act, 2000.)

Vessels and Water Sports

9. Landing of vessels on the beach (except watercraft approved for passive water sports and licensed to operate on the beach or except when authorized during special events)
10. Motorized water sports
11. High-speed wind sports that pose a safety risk to swimmers, such as kiteboarding

Waste/Pollution

12. Littering
13. Serving beverages in glass bottles
14. Use of Styrofoam containers
15. Use of plastic straws and lids
16. Discharge or disposal of wastewater of any kind, including brine, into the environment
17. Discharge or disposal of any other pollutant (foreign substance) or waste of any kind, including oil, into the environment
18. Cleaning of equipment, produce or other objects in the ocean or other elements of the environment
19. Use or disposal of chemical cleaning agents in the environment
20. Generation or disposal of hazardous waste
21. Application of pesticides or fertilizers

Air Quality

22. Smoking on the beach (Virgin Islands Tobacco Products Control Act, 2006)
23. Idling of vehicles in the parking lot

Biodiversity

24. Introduction of non-native or invasive species, including plants, into the beach environment
25. Disturbing, harming, killing, hunting or harvesting stingrays, turtles, birds and other biodiversity or their eggs. In particular, the following are illegal:
 - a. Interfering with any turtle nest or turtle that is nesting or hatching (Fisheries Regulations, 2003)
 - b. Attempting to or wilfully killing, injuring or taking any wild bird; or taking, damaging or destroying the nest of any wild bird while in use (Wild Birds Protection Ordinance, 1982)
26. Feeding of wildlife or feral animals, including cats
27. Addition of lighting to the Vending Zone, Outdoor Eating Area or any other area without written permission from the beach management authority.

Recreational and Commercial Activities

28. Operating a loudspeaker in contravention of the Noise Control and Abatement Act, 1996
29. Use of barbeque grills except for the purpose-built barbeque grills provided, unless permission is granted for a special event
30. Loitering in or around restrooms
31. Dogs on the beach outside the hours of 6:00 a.m to 8:00 a.m and 5:00 p.m to 7:00 p.m. (Dogs (Prevention of Injury to Persons, Livestock and Poultry) Act, 2001)
32. Dogs on the Birdwatching Hiking Trail at any time
33. Horseback riding
34. Soliciting or peddling
35. Leaving beach chairs or other equipment on the seashore (sandy area of the beach) when not in use. Beach chairs must be put out on demand and removed and stored in the designated areas immediately after use.
36. Operation of commercial activities outside of the approved opening times
37. Leaving lights on at vending units after sundown

ACTIVITIES REQUIRING PERMISSION

Undertaking the activities listed below requires written permission from the beach management authority. Requests should be submitted in writing by hand or email. The Ministry of Natural Resources and Labour currently serves as the beach management authority and can be contacted at 1-284-468-2147 or nrl@gov.vg.

1. Use of the beach for any commercial purpose or a non-commercial purpose involving groups larger than 50 persons or use of loudspeakers or open fires
2. Anchoring
(Anchoring will only be allowed during specially permitted events in designated zones.)
3. Use of power-craft
(Operation of power-craft will only be allowed during specially permitted events in designated zones. Permission requests will be considered with input from The Virgin Islands Shipping Registry and other relevant agencies on the Technical Review Committee.)
4. Erection of tents or any other temporary structure or display/backdrop boards
(These will only be allowed in support of approved events. Permitted structures or displays/backdrops must be erected in the area approved and immediately removed following the permission period.)
5. Creation of any temporary or permanent facility to facilitate sports
(Permitted facilities must be installed in the area approved and according to any other stipulations indicated in the approval.)
6. Operation of generators on the beach to facilitate events
7. Fixing of any device or structure to the seabed

8. Lighting of open fires, including bonfires
(Permitted bonfires must be burnt in a controlled container, such as a cauldron, that prevents interaction of the fire with the sand and does not pose a fire risk).
9. Traversing the salt ponds
10. Conduct of research
11. Sargassum removal or other forms of beach grooming
(Sargassum removal and other forms of beach grooming, such as removal of invasive grasses, will ordinarily be handled by the beach management authority. Persons wishing to remove sargassum or engage in other forms of beach grooming must be authorized or engaged by the beach management authority. Suitable methodologies to be used to ensure compliance with the sargassum management plan for the Territory will be provided by the beach management authority.)

REQUIRED ACTIONS

1. Application to the beach management authority is required for persons wishing to use the beach for any commercial purpose or non-commercial purpose where required by The Virgin Islands Beach Policy.
2. All beach chairs and umbrellas not in use must be immediately removed from the seashore (sandy area of the beach) and stored in the approved locations/facilities.
3. All waste must be disposed of in the bins provided.
4. All bars/restaurants and other food vendors utilizing oil in their operations must maintain a functioning grease trap on sinks. Oil should be collected in separate containers for proper disposal offsite.
5. Dogs must be leashed with proper identification tags. All dog waste must be immediately removed from the beach and properly disposed of offsite.

6.6 IMPLEMENTATION PLAN

The Implementation Plan defines the institutional arrangements, including the beach management authority, and management mechanisms to ensure enforcement of management measures and rules included in the Beach Management Plan. Additionally, the Implementation Plan presents the strategy for implementation of the Facilities Plan and the Environmental Restoration and Protection Plan, including timelines, estimated costs, source of funds, procurement strategy and responsible parties and partners. Finally, this section presents a basic Facilities Maintenance Plan.

6.6.1 Beach Management Authority

The beach management authority is the agency or group of agencies responsible for management of the beach. Management of Long Bay, Beef Island will continue to be the responsibility of the Ministry of Natural Resources and Labour until the process to declare the beach and surrounding areas a National Park/Marine Park is completed. As such, the Ministry of Natural Resources and Labour will serve as the beach management authority at first instance. The Ministry will be supported by its inter-agency Technical Review Committee which is responsible, among of things, for providing technical and policy advice on the sustainable use and development of the seabed, Crown land adjacent to the coast and beaches. The beach management authority function would be transferred to the National Parks Trust of The Virgin Islands once the declaration of Long Bay as a National Park/Marine Park is completed. It is recommended that the transfer be concluded no later than March 2024. This timeline would allow sufficient time for implementation of the Facilities Plan, important aspects of the Environmental Restoration and Protection Plan and efforts to enforce rules in order to significantly improve the existing situation.

Transfer to the National Parks Trust of The Virgin Islands would be in keeping with the intent for which the land bordering and surrounding the beach was acquired by the Crown. In particular, Cabinet approved the purchase of the land on the basis that “the land be preserved as wetland to be managed by the National Parks Trust.” Additionally, transfer to the National Parks Trust would provide the most effective management mechanism and would provide comprehensive legal powers to give effect to all management measures and rules under the Beach Management Plan and ensure carrying capacities are not exceeded.

In the interim, the Ministry of Natural Resources and Labour will depend on provisions in the following legislation to help enforce the management measures and rules of the Beach Management Plan.

- Beach Protection Ordinance, 1985
- Noise Control and Abatement Act, 1996
- Virgin Islands Physical Planning Act,
- Fisheries Regulations, 2003
- Wild Birds Protection Ordinance 1982
- Dogs (Prevention of Injury to Persons, Livestock and Poultry) Act, 2001

- Power-craft Act, 1972
- Derelict Vehicles Disposal Act, 2000
- Litter (Abatement) (Amendment) Act, 2009
- Tobacco Products Control Act, 2006
- Government Salt Ponds Ordinance, 1904

OPERATIONAL STAFFING REQUIREMENTS

In the immediate future, while the beach remains under the management of the Ministry of Natural Resources and Labour, the Ministry will depend on its Beach Wardens for maintenance of the beach. Beach Wardens are full-time employees of the Ministry that work Mondays to Fridays. A team of four (4) Beach Wardens is currently assigned to Long Bay, Beef Island.

The current role of the Beach Wardens is limited to cleaning the beach, including removal of any natural debris such as sargassum, control of weeds and litter collection. It is proposed that the role of the Beach Wardens be expanded to include an enforcement function in conjunction with the Royal Virgin Islands Police Force as detailed under the Management Mechanisms section and also to support beach restoration efforts such as seagrape tree replanting and watering.

Other operational functions such as cleaning of the restrooms, servicing of the sewage treatment facility and maintenance of the vending units and other facilities will be contracted to private parties through the Ministry of Natural Resources and Labour. Enforcement of leases and licenses will be handled through the Ministry's Lands Unit and its Seabed Unit.

The BVI Tourist Board will have the opportunity to have an ambassador present at the beach on cruise ship days to provide information to tourists and to help address any complaints, including by reporting issues to the Ministry.

OPERATIONAL EQUIPMENT REQUIREMENTS

The minimum operational equipment required for the beach management authority staff to maintain the beach is presented in Table 6-50 below. This list was developed with input from the current Beach Wardens under the Ministry of Natural Resources and Labour.

Table 6-50. Minimum Operational Equipment Required for the Beach Management Authority Staff to Maintain Long Bay

Equipment	Function	Existing Quantity	Additional Proposed	Total Est. Cost (Proposed)
Trash Picker Grabber	Litter collection	8	0	N/A
Landscape Rake (Metal)	Litter collection, sargassum management	4	2	██████
Stone Rake (Metal)	Sargassum management	0	2	██████

Garden Fork	Sargassum management	0	5	
Shovel (square)	Sargassum management	0	1	
Wheelbarrow	Sargassum management, weed removal	2 (1 damaged)	1	
Garden Hoe	Weed removal etc.	0	5	
Weed Eater	Weed removal, parking lot maintenance	0	2	
Garden Secateurs, Lopping Shears and Hedge Shears Set	Removal of invasive species, pruning, maintenance of parking lot screening hedges	0	2	
Chainsaw	Removal of invasive species, clearing of trees for creation of parking lots, pruning of trees where necessary	1 (poor condition)	1	
Small 4x4 Utility Vehicle with dump bed	Watering of replanted trees, sargassum management (mass landings)	0	1	
Portable Water Tank (275 gallons)	Watering of replanted trees	0	1	
Collapsible Garden Hose 200ft	Watering of replanted trees	0	1	
TOTAL				

OTHER RESOURCE REQUIREMENTS

Other resources are required to support beach maintenance operations as summarized in Table 6-51 below.

Table 6-51. Other Resources Required to Support Beach Maintenance Operations

Resource	Function	Quantity	Total Est. Cost
Fuel	Fuelling of Small 4x4 Utility Vehicle	50 gallons/year	
Mechanic services	Maintenance of Small 4x4 Utility Vehicle	2 times/year	

6.6.2 Management Mechanisms

The following management mechanisms will be continued or put in place to ensure effective management of the beach.

APPLICATION AND APPROVAL MECHANISMS

The activities requiring permission from the beach management authority are indicated under the General Management Measures and Rules layer of the Beach Management Plan. The process for applying for permission for Commercial and Non-Commercial Use of the beach is detailed below. Requests for permission for any other use/activity falling outside of these categories must be done via a letter addressed to the Permanent Secretary, Ministry of Natural Resources and Labour.

Commercial Use

Under The Virgin Islands Beach Policy 2020, Commercial Use of the beach is defined as “use of the beach for business activity.” Commercial Use of the beach may be long-term (not event-driven) or temporary (event-driven).

Long-term Commercial Use

Allowed and Prohibited Long-term Commercial Uses

Persons can apply for approval to engage in the following allowed types of long-term commercial use at Long Bay, Beef Island:

- Beach bar/restaurant
- Other food preparation and service
- Passive (non-motorized) water sports rental/operation
- Beach chair rental
- Beach-based equipment sale/rental
- Sale of local souvenirs/craft
- Nature-based tours or experiences

The long-term commercial uses listed below are prohibited at Long Bay, Beef Island. This list is not exhaustive and may be expanded, including based on novel applications received:

- Motorized water sports rental/operation
- Spas, massage parlours and related services
- Hair braiding and related services
- Camping
- Horseback riding

All permitted long-term commercial uses/activities must take place in the Vending Zone, Passive Water Sports Zone, Beach Chair Zone or other defined zone within the demarcated boundaries or facilities provided for lease.

Application Process and Approval

Applicants must submit the form included at Appendix VII to the Ministry of Natural Resources and Labour together with the required application fee. Applications will be evaluated by the Ministry and the multi-agency Technical Review Committee (TRC) chaired by the Ministry. A decision will be made to approve or deny the application.

The types of approvals granted for Long-term Commercial Use are summarized in Table 6-52. No person can operate commercially on the beach without the requisite approval.

Table 6-52. Types of Long-term Commercial Use Approvals Granted

Approval Type	Validity Period	Use
Licence	Up to 1 year at a time with option for renewal	- Beach chair rental - Passive water sports rental/operation - Nature-based tours or experiences
Lease agreement	Up to 5 years at a time with option for renewal	- Rental of vending units or other facilities to support beach bar/restaurant and other long-term vending/rental activity

In order to prevent monopolization of commercial activities, an individual or company may not hold a licence or lease for more than two types of allowed long-term commercial uses.

Evaluation Criteria

The criteria for evaluation of applications for Long-term Commercial Use are provided in Appendix VIII.

Rules Applying to Approved Applicants

- All approved applicants must sign a lease for rental of a vending unit or other support structures with the beach management authority or have a valid licence to carry out the approved activity before starting operations.
- Licence and lease holders must comply with all beach management measures and rules. Failure to comply is a basis for termination of licences or leases in keeping with the terms of the licence or lease.
- Licence and lease holders must comply with all other Territorial laws, policies or other requirements to operate, such as but not limited to holding a valid Trade Licence, Food Handler's Certificate and Liquor Licence Certificate.

Temporary Commercial Use

Persons can apply for approval to engage in the following types of Temporary Commercial Use:

- Commercial entertainment events, other events for profit or promotional events deemed compatible with the beach vision, identity and character

- Public events that involve the sale of goods and/or services
- Temporary vending to support approved beach events, including commercial, public or fundraising events
- Paid nature-based tours or experiences to support approved beach events

Application Process and Approval

Applicants must submit the form included at Appendix IX to the Ministry of Natural Resources and Labour together with the required application fee. Applications will be assessed by the Ministry and, where necessary, the multi-agency Technical Review Committee chaired by the Ministry. A decision will be made to approve or deny the application.

The types of approvals granted for Temporary Commercial Use are summarized in Table 6-53. No person can use the beach for Temporary Commercial Use without the requisite approval.

Table 6-53. Types of Temporary Commercial Use Approvals Granted

Approval Type	Validity Period	Use
Beach Permit for Temporary Commercial Use	Up to 2 days at a time (Up to 1 week in special circumstances)	- Commercial entertainment events, other events for profit or promotional events - Public events that involve the sale of goods and/or services - Temporary vending to support approved beach events - Paid nature-based tours or experiences to support approved beach events

Rules Applying to Approved Applicants

- Permit holders must comply with all beach management measures and rules and any additional stipulations included in the Permit. Failure to comply forms a basis for termination of an event or operation or refusal of future applications.

Non-Commercial Use

Under The Virgin Islands Beach Policy 2020, Non-Commercial Use of the beach is defined as “use of the beach by large groups that does not involve the sale of goods and/or services. Non-commercial activities could include picnics/beach barbecues, camping, sporting activities and entertainment.”

In keeping with the Beach Policy, non-commercial use of the beach would not ordinarily require prior permission from the Ministry of Natural Resources and Labour, except in the following cases:

- Groups larger than 50 persons
- Loud speakers will be operated
- Open fires will be used

Application Process and Approval

Applicants must submit the form included at Appendix X to the Ministry of Natural Resources and Labour together with the required application fee. Applications will be assessed by the Ministry, and where necessary, by the multi-agency Technical Review Committee chaired by the Ministry. A decision will be made to approve or deny the application.

Approval is in the form of a Beach Permit for Non-Commercial Use that is valid for up to 2 days at a time. Permits may be valid for up to 1 week in special circumstances.

Rules Applying to Approved Applicants

Approved users must comply with all beach management measures and rules and any additional stipulations included in the Beach Permit. Failure to comply forms a basis for termination of an event or activity or refusal of future applications.

6.6.3 Enforcement Mechanisms

A combination of public education; signage; interventions by Beach Wardens and the Royal Virgin Islands Police Force, including enforcement of applicable laws; and enforcement of permit, lease and license provisions will be used to ensure that the management measures and rules of the beach are adhered to as best as possible until declaration as a National Park is completed.

PUBLIC EDUCATION

The Ministry of Natural Resources and Labour will increase and enhance its ongoing public awareness initiatives to ensure that the public is aware of The Virgin Islands Beach Policy, management measures and rules applying to all beaches and specific rules applying to Long Bay, Beef Island. A specific public awareness campaign utilizing all forms of media will be implemented to support the various phases of implementation of the Plan.

Public education is intended to reduce the instances of breakage of the rules and to encourage a self-policing culture among beach users.

SIGNAGE

Signage with the rules of the beach will be erected at the three main entrances to the beach to:

- ensure that all beach users are aware of the beach rules
- facilitate public policing and enforcement of rules by providing an authoritative source of information
- provide contact information for the Police and the Ministry of Natural Resources and Labour for intervention to enforce rules where necessary

COMPLAINT MECHANISMS

Complaints may be about beach facilities, user conflicts, the actions of commercial operators or permitted beach users or complaints about the overall beach experience. Based on the nature and urgency of the matter, complaints may be directed to Beach Wardens, the Police or the Ministry of Natural Resources and Labour using the mechanisms below:

- Beach Wardens will be present to receive and address complaints during their standard working hours and will be identifiable by uniform (The job profiles of Beach Wardens would need to be updated to reflect this.);
- The contact numbers for the Royal Virgin Islands Police Force and the Ministry of Natural Resources and Labour will be posted on all beach signs indicating the rules of the beach;
- A secure complaints box with forms and pens will be fixed to the Administrative Unit. Additionally, an email address and link to an online form will be provided to submit complaints electronically.

INTERVENTIONS BY BEACH WARDENS AND THE POLICE

It is proposed that the role of the Beach Wardens be expanded and elevated to include an enforcement function in conjunction with the Royal Virgin Islands Police Force. The job profiles of Beach Wardens would need to be updated to reflect this.

During their established working hours, Beach Wardens would serve as the initial point of contact for enforcement of beach rules. As such, Beach Wardens would patrol the beach and alert users of any activity observed that breaks the rules of the beach or laws of the Territory.

The objective of the Beach Warden intervention would be to educate beach users of the rules, have users immediately desist from any prohibited activities, and have users correct any infractions (e.g. remove litter or temporary structures placed without permission). If Beach Wardens are met with resistance, they can escalate the matter to the Royal Virgin Islands Police Force. Beach Wardens would also be encouraged to photo document any infractions that are unresolved or repeat offences to facilitate escalation to the Police or the Ministry of Natural Resources and Labour.

To support their roles, Beach Wardens and the Police would be trained in the rules applying to the beach, including applicable laws, by the Ministry's Environment and Climate Change Unit. Training in basic enforcement and conflict resolution techniques will also be arranged for Beach Wardens. Additionally, Beach Wardens would be appointed as Litter Wardens under the Litter (Abatement) (Amendment) Act, 2009. For identification as officials of the Ministry, Beach Wardens will wear a T-shirt with the Ministry's logo and their position as wardens.

ENFORCEMENT OF PERMIT, LICENSE AND LEASE PROVISIONS

The requirement to comply with all beach rules and adhere to management measures will be built into all permits, licences and lease agreements. As such, all permits, licences and leases will include provisions for penalties and/or termination in the event that beach rules are broken or management measures are not respected. The Ministry's Land Unit and its Seabed Unit

will be responsible for enforcing these provisions based on complaints received from the public, information on infractions provided by Beach Wardens or the Police or facts obtained via internal monitoring measures.

6.6.4 Monitoring Mechanisms

The monitoring mechanisms summarized below will be implemented.

ENVIRONMENTAL MONITORING

Coastal Water Quality

Coastal water quality monitoring will be conducted at least once per quarter by the Ministry's Environment and Climate Change Unit. The standard parameters included in Table 6-54 will be tested from at least 3 sampling points along the beach distributed as follows: eastern end, western end and the centre.

Table 6-54. Standard Water Quality Parameters to be Monitored at Long Bay, Beef Island

pH	Conductivity	Fecal Coliform
Temperature	Phosphates	E.coli
Salinity	Nitrates	Enterococci
Turbidity	Dissolved oxygen	
Total dissolved solids	Total coliform	

In the event of elevated bacteria results, the Water Quality Response Plan in The Virgin Islands Beach Policy will be followed. In the event of other elevated parameters, the Environment and Climate Change Unit will assess the cause of the problem and propose appropriate management interventions.

Salt Pond Water Quality

Salt pond water quality monitoring will be conducted once per quarter by the Ministry's Environment and Climate Change Unit. At minimum, the standard parameters listed in Table 6-55 will be tested.

Table 6-55. Minimum Salt Pond Water Quality Parameters to be Monitored

pH	Turbidity	Phosphates
Temperature	Dissolved oxygen	Nitrates
Salinity		

Dune Vegetation

The seagrape trees and other sand dune vegetation replanted as a part of the Environmental Restoration and Protection Plan will be monitored by the Environment and Climate Change

Unit once a month to determine rate of growth, health and survival. As a part of this, presence of invasive species will also be monitored.

Biodiversity

Continuation of the Annual Christmas Bird Count led by the National Parks Trust of The Virgin Islands will be encouraged. Additionally, the turtle monitoring programme implemented by the former Conservation and Fisheries Department will be continued within the Ministry's capacities.

FACILITIES MONITORING

Vending/Commercial Units, Ancillary Facilities and Public Furnishings

A random spot check of the exterior of vending units, ancillary facilities (e.g., beach chair storage pergolas, water sport sheds, gas tank shed and garbage bin screens) and public furnishings (e.g. picnic tables, benches and garbage bins) will be done once a month by the Ministry's Environment and Climate Change Unit. Spot checks will complement the responsibility of lease and license holders to immediately report any damage to rented facilities.

Restrooms

The contracted cleaning service will be required to immediately report any damage or disrepair to the Ministry of Natural Resources and Labour. Additionally, a random spot check of the restroom facility will be done once a month by the Ministry's Environment and Climate Change Unit.

Birdwatching Hiking Trail

The Birdwatching Hiking Trail will be hiked by the Ministry's Environment and Climate Change Unit at least once per quarter to determine any maintenance needs, including pruning of vegetation and reinforcement of the hiking trail.

MONITORING ADHERENCE TO RULES

Adherence to rules will be monitored on a routine basis by the Beach Wardens. Random spot checks, including of commercial operators, will also be conducted by the Ministry. Additionally, the complaints mechanisms highlighted above provide structure avenues for anyone to securely and if desired, anonymously, report the breakage of beach rules.

6.6.5 Financing

Financing for implementation of the Beach Management Plan and maintenance of the beach is proposed from the Environmental Protection and Tourism Improvement Fund established under Section 4 of the Environmental Protection and Tourism Improvement Fund Act, 2017.

This is justified as the Beach Management Plan implementation directly aligns with two of the three intended applications of the Fund, including:

- a) activities related to:
 - (i) environmental protection and improvement;
 - (ii) climate change, and other matters affecting the environment; and
- b) the maintenance and development of tourist sites and other tourism related activities throughout the Territory.

6.6.6 Implementation Partners

Partnership with the entities summarized in Table 6-56 will be sought to support implementation of the Plan.

Table 6-56. Proposed Partners for Implementation of the Beach Management Plan

Partner	Roles
National Parks Trust of The Virgin Islands (NPTVI)	- Technical assistance/guidance with sand dune vegetation restoration - Technical assistance/guidance with Birdwatching Hiking Trail establishment - Source for procurement of certain tree species to be replanted within the sand dune
Public Works Department (PWD)	- Construction of Beach Dune Protection Barrier - Construction of parking lots - Construction supervision (all works)
H. Lavity Stoutt Community College (HLSCC)	- Co-establishment of a seagrape tree nursery
Department of Waste Management (DWM)	- Collection of general waste
Green VI	- Collection of recyclables
BVI Airports Authority (BVIAA)	- Temporary storage of Beach Warden equipment, in particular the small utility vehicle, until a secure facility can be constructed onsite
Royal Virgin Islands Police Force (RVIPF)	- Enforcement of beach rules
Town and Country Planning Department (TCP)	- Enforcement of rules related to development that falls within the scope of the Physical Planning Act

6.6.7 Summary of Implementation Timeline and Budget

The ideal implementation timeline for the Beach Management Plan is one year, from January 1, 2023 to December 31, 2023, as summarized in Table 6-57. The total implementation cost is calculated at \$995,497.29, as broken down in Table 6-58. This does not include operational and maintenance costs. Notwithstanding the ideal implementation timeline of one year, a multi-year phasing of the Plan will likely be required due to budgetary constraints. As such, priority line items for funding in the first year of implementation are also indicated in Table 6-58.

Table 6-57. Summary of Ideal Implementation Timeline for Beach Management Plan

Plan Component	Timeline
Environmental Restoration and Protection (Phase I)	Start: Jan 15, 2023 End: May 31, 2023
Environmental Restoration and Protection (Phases II & III)	Start: Aug 15, 2023 End: Dec 15, 2023
Facilities Development	Start: Jan 15, 2023 End: Oct 31, 2023
Facilities Maintenance	Start: Nov 1, 2023
Enforcement	Start: Jun 1, 2023

Table 6-58. Broken-down Implementation Budget for Beach Management Plan

CIVIL WORKS	Total Cost	Year 1 Priorities
Preliminaries		
10' x 10' Vending Unit (3)		
16' x 16' Vending Unit (3)		
11'-9" x 17'-9" Administrative Building (1)		
Boardwalk and decks around gazebos (3,800 SF)		
12'-5" x 12'-5" Look Out Deck (1)		I
Beach chair storage sheds		I
Beach Dune Protection Barrier		
Parking lots		
Restrooms - outdoor showers		
Small lift station (sewage management)		
Construction of Lifeguard tower ¹⁵		I
Subtotal		
NON-CIVIL WORKS		
Environmental Restoration – Seagrass tree replanting		

¹⁵ The inclusion of infrastructural and equipment costs for Lifeguard services is to support the recommendation for such services and facilitate budgeting for near-term implementation. Immediate implementation is not envisaged due to current budgetary and programmatic constraints.

Environmental Restoration – Vegetation line and beach dune system replanting		1
Environmental Restoration – Maintenance equipment		
Furnishings for Picnic Zone, Outdoor Eating Area and Birdwatching Hiking Trail		
Signage		
Environmental cleanup		
Initial procurement of Lifeguard equipment, including truck (see footnote)		1
Subtotal		
Grand Total		

6.6.8 Implementation of Environmental Restoration and Protection Plan

The strategy, responsible parties, timelines and cost for implementing the Environmental Restoration and Protection Plan are summarized in Table 6-59.

Table 6-59. Strategy, Responsible Parties, Timelines and Cost for Implementing the Environmental Restoration and Protection Plan

Activity	Implementation Strategy	Responsible parties	Timeline	Cost
Beach Dune Protection Barrier installation	Donation/procurement of used electricity poles from the BVI Electricity Corporation (BVIEC) Planting of poles by contractor and PWD with supervision by the MNRL	<i>Lead:</i> MNRL <i>Partners:</i> BVIEC, PWD, contractor	<i>Procurement:</i> Jan 15 – Feb 15, 2023 <i>Implementation:</i> Feb 15 - 28, 2023	
Seagrass replanting	<u>Phase I</u> Procurement and planting of mature seagrass trees from centre to eastern end Establishment of seagrass tree nursery at HLSCC <u>Phase II</u>	<i>Lead:</i> MNRL <i>Partners:</i> HLSCC, non-governmental organizations (NGOs), private nurseries	<i>Procurement (Phase I):</i> Jan 15 – Mar 15, 2023 <i>Implementation (Phase I):</i> Mar 15 – Apr 30, 2023	

	Procurement and planting of mature seagrape trees from centre to western end <u>Phase III</u> Community planting of juvenile seagrape trees from nursery from western to eastern end <i>Watering and maintenance by Beach Wardens</i>		<i>Procurement (Phase II):</i> Aug 15 – Oct 15, 2023 <i>Implementation (Phase II-III):</i> Nov 1 – Dec 15, 2023	
Vegetation line and beach dune system replanting	<u>Phase I</u> Procurement and planting of trees for the Outdoor Eating Area and Picnic Zone <u>Phase II</u> Procurement and planting of initial trees in the balance of the sand dune. Start of eradication of invasive species in the sand dune. <i>Watering and maintenance by Beach Wardens</i>	<i>Lead:</i> MNRL <i>Partners:</i> Private nurseries, NPTVI, NGOs	<i>Procurement (Phase I):</i> Jan 15 – Mar 15, 2023 <i>Implementation (Phase I):</i> Mar 15 – May 31, 2023 <i>Procurement (Phase II):</i> Aug 15 – Oct 15, 2023 <i>Implementation (Phase II):</i> Nov 1 – Dec 15, 2023	
Maintenance of replanted vegetation	Procurement of maintenance equipment, including a small 4x4 utility vehicle, water tank and long hose for watering over expansive area	<i>Lead:</i> MNRL	<i>Procurement:</i> Jan 15 – Feb 15, 2023	
Landside clean up	Major community clean-up following installation of Beach Dune Protection System	<i>Lead:</i> MNRL <i>Partners:</i> DWM, NGOs, churches	Mar 25-26, 2023	
Underwater clean up	Major community clean-up following installation of Beach Dune Protection System	<i>Lead:</i> MNRL <i>Partners:</i> DWM, NGOs, churches, dive operators	Mar 25-26, 2023	

6.6.9 Implementation of Facilities Plan

Implementation Modality

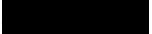
All facilities and ancillary structures will be developed and owned by the Government of The Virgin Islands. Ownership would be transferred to the National Parks Trust of The Virgin Islands upon completion of the process to declare the area a National Park/Marine Park.

Vending/commercial units and other facilities to support commercial operations will be leased to approved commercial operators under a formal lease agreement. The lease would extend to the structure only and not the land. Vending units are to be leased as shells with electrical and plumbing connections; the interiors of vending units are to be outfitted by tenants.

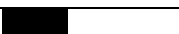
Furnishings for the Outdoor Eating Area, Picnic Zone and Birdwatching Hiking Trail will be procured by the Government of The Virgin Islands. Donation of furnishings by private companies and non-government organizations are also welcome. All furnishings would become the property of the Government and be maintained by the Government until transfer to the National Parks Trust of The Virgin Islands.

The strategy, responsible parties, timelines and cost for implementing the Facilities Plan are summarized in Table 6-60.

Table 6-60. Strategy, Responsible Parties, Timelines and Cost for Implementing the Facilities Plan

Facility/ Amenity	Implementation Strategy	Responsible Parties	Timeline	Cost
Picnic Area and Outdoor Eating Area				
Picnic Tables (Picnic Area)	Local construction by contracted supplier (preferred) Delivery and placement by PWD with guidance by the Environment and Climate Change Unit, MRNL <u>Phase I</u> Picnic Area <u>Phase II</u> Outdoor Eating Area	Lead: Contracted supplier Partners: MNRL, PWD	Procurement (Phase I): Jan 15 – Mar 15, 2023	
Picnic Tables (Outdoor Eating Area)				
			Implementation (Phase I): Mar 15 – Mar 31, 2023	   
			Procurement (Phase II): Aug 15 – Oct 15, 2023 Implementation (Phase II): Oct 15 – Oct 31, 2023	

Facility/ Amenity	Implementation Strategy	Responsible Parties	Timeline	Cost
Birdwatching Hiking Trail and Lookout Deck				
Hiking Trail	Clearing of trail by Beach Wardens with assistance from hiking groups and NGOs with guidance from the Environment and Climate Change Unit	<i>Lead:</i> MNRL <i>Partners:</i> Hiking groups; NGOs; Department of Agriculture (mulching of cut trees)	<i>Implementation:</i> Apr 1 – May 31, 2023 <i>(If funds are available to construct the Lookout Deck in 2023)</i>	In kind
Lookout Deck	Construction by local contractor via competitive bid with supervision by PWD	<i>Lead:</i> Contractor <i>Partners:</i> PWD (supervision)	<i>Procurement:</i> Jan 15 – Mar 15, 2023 <i>Implementation:</i> Apr 1 – May 31, 2023 <i>(access from top via private road)</i>	
Rest Benches	Local construction by contracted supplier (preferred) Installation by PWD with guidance from the Environment and Climate Change Unit, MNRL	<i>Lead:</i> Contracted supplier <i>Partners:</i> MNRL; PWD	<i>Procurement:</i> Jan 15 – Mar 15, 2023 <i>Implementation:</i> June 2023 <i>(If funds are available to construct the Lookout Deck in 2023)</i>	
Signage	Content development and design by MNRL, NPTVI and Government Information Services (GIS) Production by contracted supplier	<i>Lead:</i> Contracted supplier <i>Partners:</i> MNRL; NPTVI, GIS; PWD	<i>Procurement:</i> Jan 15 – Mar 15, 2023 <i>Implementation:</i> June 2023 <i>(If funds are available to construct the Lookout Deck in 2023)</i>	

Facility/ Amenity	Implementation Strategy	Responsible Parties	Timeline	Cost
	Installation by PWD with guidance from MNRL			
Vending Zone, including Administrative Unit				
Vending/ Commercial Units	Construction by local contractor via competitive bid with supervision by PWD and MNRL	<i>Lead:</i> Contractor <i>Partners:</i> PWD; MNRL	Procurement: Jan 15 – May 15, 2023 Implementation: Jun 1 – Oct 31, 2023	
Boardwalk and decks for Vending/ Commercial Units	Construction by local contractor via competitive bid with supervision by PWD and MNRL	<i>Lead:</i> Contractor <i>Partners:</i> PWD; MNRL	Procurement: Jan 15 – May 15, 2023 Implementation: Oct 1 – Oct 31, 2023	
Administrative Unit	Construction by local contractor via competitive bid with supervision by PWD and MNRL	<i>Lead:</i> Contractor <i>Partners:</i> PWD; MNRL	Procurement: Jan 15 – May 15, 2023 Implementation: Jun 1 – Oct 31, 2023	
Beach Chair Zone				
Storage Pergolas	Construction by local contractor via competitive bid with supervision by PWD and MNRL	<i>Lead:</i> Contractor <i>Partners:</i> PWD; MNRL	Procurement Jan 15 – May 15, 2023 Implementation: Jun 1 – Jul 31, 2023	
Signage	Installation of signage by PWD with guidance from MNRL defining the Beach Chair Zone (e.g., “No Beach Chairs beyond this point). Sign content and design by MNRL and GIS	<i>Lead:</i> Contracted supplier <i>Partners:</i> MNRL; GIS; PWD	Procurement Apr 1 – Jun 15, 2023 Implementation: Oct 15 – Oct 31, 2023	

Facility/ Amenity	Implementation Strategy	Responsible Parties	Timeline	Cost
Parking Lots				
Clearing and Surfacing	Clearing of vegetation by MNRL Beach Wardens; surfacing and installation of parking lot markings by PWD with supervision by MNRL.	<i>Lead:</i> MNRL <i>Partners:</i> PWD	<i>Implementation:</i> Jan 15 – Feb 28, 2023	██████
Screening	Procurement of trees from local nursery via competitive bid; Community tree planting in partnership with NPTVI, NGOs, schools and churches; <i>Watering and maintenance by Beach Wardens</i>	<i>Lead:</i> MNRL <i>Partners:</i> Private nurseries, NPTVI, NGOs, schools, churches	<i>Procurement:</i> Jan 15 – Feb 15, 2023 <i>Implementation:</i> Feb 25, 2023	██████
Water and Power Facilities				
Water	Water distribution plan and extension of water connections to vending units by the Water and Sewerage Department (WSD)	<i>Partners:</i> WSD	Aug 1 – Sep 30, 2023	██████████ ███ ██████████ ██████████ ███
Power	Extension of power to vending units by BVI Electricity Corporation	<i>Partners:</i> BVIEC	Aug 1 – Sep 30, 2023	
Signage				
Safety and Information	Content development and design by MNRL, Virgin Islands Fire and Rescue Service (VIFRS) lifeguard team, and GIS Production by contracted supplier Installation by PWD with guidance from MNRL	<i>Lead:</i> Contracted supplier <i>Partners:</i> MNRL; VIFRS; GIS; PWD	<i>Procurement</i> Apr 1 – Jun 15, 2023 <i>Implementation:</i> Oct 15 – Oct 31, 2023	██████

Facility/ Amenity	Implementation Strategy	Responsible Parties	Timeline	Cost
Commercial	To be installed by approved commercial operators in keeping with beach rules	Lead: Approved commercial operators	Start of lease (Nov 1, 2023)	
Waste Management Facilities				
Solid Waste Management	Procurement of bins and construction of screening by competitive bid	Lead: Contracted supplier	Procurement: Jan 15 – Mar 15, 2023	
	Installation by PWD with guidance from MNRL and servicing by Beach Wardens and Department of Waste Management (DWM)	Partners: MNRL; PWD; DWM	Implementation: Mar 15 – Apr 15, 2023	
Wastewater Management	Continuation of existing contract to pump out the public restroom facility sewage treatment system storage tank	Lead: Contracted supplier	Ongoing	
	Installation of a small pump station, if necessary, to manage wastewater from the Administrative Unit and Vending Zone		By Oct 31, 2023	
Upgraded Public Restroom Facility				
Outdoor Showers	Construction by local contractor via competitive bid with supervision by PWD and MNRL	Lead: Contractor Partners: PWD; MNRL	Procurement: Jan 15 – May 15, 2023 Implementation: Jun 1 – Jul 31, 2023	
Access Road				
Enhanced Access Road	Grading by PWD twice per year or as needed, as determined by MNRL	Lead: MNRL Partners: PWD	Ongoing	In Kind

6.6.10 Facilities Maintenance Plan

The beach management authority would be responsible for the structural maintenance of all facilities for commercial use as well as the full maintenance of all facilities for public use. The Facilities Maintenance Plan is presented in Table 6-61.

It is recommended that all facilities be insured to protect against hurricanes, storm surge, flood, fire and other natural disasters.

Table 6-61. Facilities Maintenance Plan

Facility/ Amenity	Action	Cycle	Responsible Parties	Est. Monthly Cost	Est. Annual Cost¹⁶
Picnic Area					
Picnic Tables	Painting	Annually	MNRL (Community service project)		■
Walkways	Cleaning/ clearing	Daily	Beach Wardens		In kind
Birdwatching Hiking Trail and Lookout Area					
Hiking Trail	Cleaning/ clearing; step repairs	Quarterly	Beach Wardens with help from community volunteers		In kind
Rest benches	Painting	Annually	MNRL (Community service project)		■
Signage	Repairs	As needed	MNRL		■
Vending Zone, including Administrative Unit					
Vending/ Commercial Units	Minor structural repairs	As needed	MNRL (via contract)		■
Admin Unit	Minor structural repairs	As needed	MNRL (via contract)		
Insurance	Annual premium	Annually	MNRL		■
Beach Chair Zone					
Pergola storage	Minor structural repairs				■
Parking Facilities					
Surface	Grading	As needed	PWD		In kind
Screening (hedge)	Watering, pruning	Weekly	Beach Wardens		In kind
Water and Power Facilities					
Water	Repairs to broken lines	As needed	Contracted plumber		■

¹⁶ Cost to beach management authority

<i>Facility/ Amenity</i>	<i>Action</i>	<i>Cycle</i>	<i>Responsible Parties</i>	<i>Est. Monthly Cost</i>	<i>Est. Annual Cost¹⁶</i>
Water	Utility bill	Monthly	MNRL	████	████
Power	Repairs to lines	As needed	BVIEC		-
Power	Utility bill	Monthly	MNRL	████	████
Signage					
Safety and Information	Repairs to signage	As needed	MNRL		████
Commercial	N/A				-
Waste Management Facilities					
Solid Waste Management	Removal of waste;	Daily	Beach Wardens; DWM; Green VI		In kind
	Garbage bag replacement	As needed	Beach Wardens		████
	Painting of bins	As needed	MNRL		████
Wastewater Management	Maintenance of sewage treatment plant, including pump out of storage tank	Monthly	Contracted supplier	████	████
Restroom Facilities					
Daily operations	Cleaning	Daily	Contracted supplier	████	████
Structural maintenance	Plumbing, electrical, structural repairs	As needed	MNRL (via contract)		████
Access Road					
Surface	Grading	Twice per year or as needed	PWD		In kind
TOTAL					████

6.6 UPDATING THE PLAN

A comprehensive review and update of the Long Bay, Beef Island Beach Management Plan shall be undertaken at least every five (5) years from the date of approval of the Plan. The process to update the Plan shall start with a review of the success of achievement of the Plan's vision and Plan implementation challenges to date. The update process shall also include a review of current issues, impacts, latest environmental best practice and the vision for the beach in the context of the system of beaches. The update process shall include appropriate opportunities for stakeholder and public consultations.

Notwithstanding the comprehensive review and update process, any section of the Beach Management Plan may be updated before by the beach management authority as needed to respond to arising issues, emergency situations, new circumstances or changes to The Virgin Islands Beach Policy. In updating the Beach Management Plan, the beach management authority will be guided by the principles of The Virgin Islands Beach Policy and evolving best practice to ensure sustainable management of the natural resources of the Territory.

References

- BVI Lifeguard Service. (2018). *Beach Rescue Risk Assessment Report: The North Shore - Consolidated 2018*. Road Town: Government of The Virgin Islands.
- BVI Lifeguard Service. (2019). *Beach Rescue Risk Assessment Report: Long Bay (Beef Island)*. Road Town: Government of The Virgin Islands.
- BVI Ports Authority. (2022). *BVI Ports Vessel Schedule - Cruise Schedule*. Retrieved from BVI Ports Authority: <https://bviports.org/cruise-schedule>
- Choi, G., & Eckert, K. (2009). *Manual of Best Practices for Safeguarding Sea Turtle Nesting Beaches. Technical Report No. 9*. Ballwin, Missouri: Wider Caribbean Sea Turtle Conservation Network (WIDECAST).
- City of DEL MAR, CA. (2022). *City of DEL MAR, CA, Ordinance No. 989, Ch 9.20 - Noise Regulations, §9.20.090 - Public Nuisance Noise (2022)*.
- Conservation and Fisheries Department. (2013). *Phase 2 - Cane Garden Bay Priority Areas for Management: Zoning, Carrying Capacity, Beach Vendors*. Road Town: Government of The Virgin Islands.
- Devilbiss, A. (2021, October 5). Ordinance to limit music with 'obscene' lyrics passes in North Myrtle Beach. North Myrtle Beach, S.C.: ABC 15 News. Retrieved from <https://wpde.com/news/local/ordinance-to-limit-music-with-obscene-lyrics-passes-in-north-myrtle-beach>
- Government of The Virgin Islands. (1972). Power-craft Act, Cap 261, § 4(6) (1972) .
- Government of The Virgin Islands. (1982). Wild Birds Protection Ordinance, CAP 96. (1982).
- Government of The Virgin Islands. (1985). Beach Protection Ordinance, Cap 233. §2 (1985).
- Government of The Virgin Islands. (1996). Virgin Islands Noise Control and Abatement Act, No. 1 of 1996.
- Government of The Virgin Islands. (2000). Virgin Islands Derelict Vehicles (Disposal) Act, No. 6 of 2000, §7 (2000).
- Government of The Virgin Islands. (2001). Dogs (Prevention of Injury to Persons, Livestock and Poultry) Act, No. 14 of 2001.
- Government of The Virgin Islands. (2003). Virgin Islands Fisheries Regulation, S.I. 2003 No. 20, §22 (2003).
- Government of The Virgin Islands. (2006). Virgin Islands National Parks Act, No. 4 of 2006.
- Government of The Virgin Islands. (2006). Virgin Islands Tobacco Products Control Act, No. 18 of 2006. §7 (2006).
- Government of The Virgin Islands. (2017). Virgin Islands Environmental Protection and Tourism Improvement Fund Act, No. 7 of 2017, §4 (2017).

- Health and Safety Executive. (2022). *Noise*. Retrieved from Health and Safety Executive: <https://www.hse.gov.uk/event-safety/noise.htm#:~:text=Noise%20limits&text=However%2C%20HSE%20strongly%20recommends%20that,should%20not%20exceed%20140%20dB>.
- Island Resources Foundation. (2015). *An Environmental Profile of the Island of Tortola, British Virgin Islands: Volume 4 of the British Virgin Islands Environmental Profile Series*. Road Town: Island Resources Foundation.
- Jarecki, L. (2003). *Salt ponds of the British Virgin Islands: Investigations in an unexplored ecosystem*. Canterbury: Durrell Institute of Conservation and Ecology, University of Kent at Canterbury.
- Los Angeles, CA. (2012). *CITY OF LOS ANGELES, CA, ORDINANCE No. 77,000, Ch. IV, Article 2, § 42.15 - Vending and Excessive Noise on Beaches Prohibited (2012)*.
- Ministry of Natural Resources, Immigration and Labour. (2020). *Virgin Islands Beach Policy*. Road Town: Government of The Virgin Islands.
- National Parks Trust of The Virgin Islands. (2012). *Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version - Long Bay, Beef Island Ramsar Site*. Road Town: National Parks Trust of The Virgin Islands.
- National Parks Trust of The Virgin Islands. (2016). *The Greater Baths National Park Carrying Capacity Assessment 2016*. Road Town: National Parks Trust of The Virgin Islands.
- Ocean Rescue Unit, Virgin Islands Fire & Rescue Service. (2019). *The North Shore - Key Hazardous Beaches: Ocean Rescue Unit (2019) 2020 Budget Request*. Road Town: Government of The Virgin Islands.
- The U.S. Environmental Protection Agency - Office of Noise Abatement and Control. (1974). *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. The U.S. Environmental Protection Agency - Office of Noise Abatement and Control.

Appendices

Appendix I - Plant Species Found Within the Vegetation Line and Sand Dune System

On June 27, 2022, the Ministry of Natural Resources and Labour conducted a Vegetation Survey of Long Bay, Beef Island with the guidance of Mr. Keith Grant of the National Parks Trust of The Virgin Islands and Dr. Shannon Gore. The Survey was focused on vegetation in the proximity of the shoreline and included vegetation in front of and varying distances behind the historic seagrape tree line. All species identified during the Survey are listed here and photographs of sample specimens also provided where available. Detailed, segment-by-segment results of the Survey are presented in Appendix II.

Species are categorized in three zones based on their spatial occurrence as described and depicted below.

- ZONE A: Incipient Dune - seaward of the historic seagrape tree line
- ZONE B: Foredune – historic seagrape tree line and up to 50 feet landward of it
- ZONE C: Hind Dune - landward of Zone B up to transition in sediment from primarily sand to primarily soil

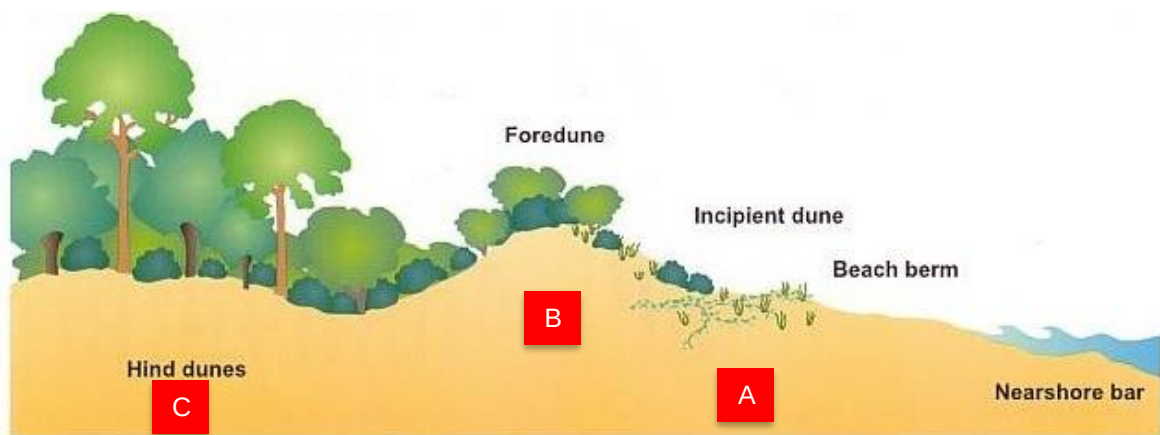


Figure A1-1. Location of Vegetation Zones A, B and C
Adopted from <http://www.mrstevennewman.com/>

ZONE A Species

1. Beach morning glory - *Ipomoea pes-caprae*
2. Buzzy grass
3. *Crossopetalum rhacoma*
4. *Fimbristylis cymosa*
5. Grass (species unknown)
6. Pink-eye Susie/Yellow Susie - *Turnera ulmifolia***

7. *Scaevola taccada***¹⁷
8. Sea purslane - *Sesuvium portulacastrum*

** Invasive species

(Invasive species should be eradicated as a part of environmental restoration efforts).

Photographs of Species Identified in Zone A



Beach morning glory (Long Bay sample)



Buzzy grass (Long Bay sample)



Crossopetalum rhacoma (Long Bay sample)



Frimbristylis cymose

(Photo credit: Forest Starr & Kim Starr)

https://upload.wikimedia.org/wikipedia/commons/0/01/Starr_041028-0211_Fimbristylis_cymosa.jpg



Grass (species unknown) (Long Bay sample)



Pink-eye Susie/Yellow Susie**
(Long Bay sample)

¹⁷ There is a native cousin of *Scaevola taccada* which looks identical except that it bears a black berry as opposed to a white berry.



*Scaevola taccada*** (Long Bay sample)



Sea purslane (Long Bay sample)

Figure A1-2. Photographs of species identified in Zone A

ZONE B Species

1. Acacia - *Acacia tortuosa**
2. Barbasco - *Jacquinia arborea*
3. Beach morning glory - *Ipomoea pes-caprae*
4. Black mampoo - *Guapira fragrans*
5. Black manjack - *Cordia rickseckeria*
6. Black torch - *Erithalis fruticosa*
7. Black willow, linguam - *Capparis cynophallophora*
8. Cabbage plant (adult) - *Calotropis procera***
9. Cabbage plant (juvenile) - *Calotropis procera***
10. Cedar - *Tabebuia heterophylla*
11. Coconut tree (juvenile) - *Cocos nucifera*¹⁸
12. Croton/moron*
13. *Exostema caribaeum*
14. *Fimbristylis cymosa*
15. Fish Poison - *Piscidia C.*
16. Lignum vitae - *Guaiaacum officinale*
17. Limber caper - *Capparis flexuosa*
18. Loblolly/Water mampoo - *Pisonia subcordata*
19. Manchineel - *Hippomane mancinella*
20. Marble tree - *Cassine xylocarpa*
21. Neem - *Azadirachta indica***
22. Nicker Nut - *Caesalpinia bonducella*
23. Noni - *Morinda citrifolia**¹⁹
24. Pigeon berry - *Bourreria succentla*
25. Pink-eye Susie/Yellow Susie - *Turnera ulmifolia* **
26. Poison cherry
27. *Rauvofia viridis*
28. *Scaevola taccada***
29. Seagrape (adult) - *Coccoloba uvifera*

¹⁸ Coconut trees (*Cocos nucifera*) are not native to The Virgin Islands and were historically not common at Long Bay; only a few samples existed. This species should not be planted as part of environmental restoration efforts.

¹⁹ Noni (*Morinda citrifolia*) is not native to The Virgin Islands and should not be planted as part of environmental restoration efforts.

- 30. Seagrape (juvenile) - *Coccoloba uvifera*
- 31. Sea purslane - *Sesuvium portulacastrum*
- 32. *Sideroxylon obovatum*
- 33. Soap bush (maubie) - *Colubrina arborescens*

** Invasive species

* Species found in unexpected zone

(These categories of species should be eliminated as a part of environmental restoration efforts).

Photographs of Some Species Identified in Zone B.

Note: Photographs of species already included in Zone A are not repeated in the photograph set for Zone B.



Acacia* (Long Bay sample)



Barbasco (Long Bay sample)



Black manjack (Long Bay sample)



Black torch (Long Bay sample)



Black willow, linguam (Long Bay sample)



Cabbage plant** (adult) (Long Bay sample)



Cabbage plant** (juvenile) (Long Bay sample)



Cedar (Long Bay sample)



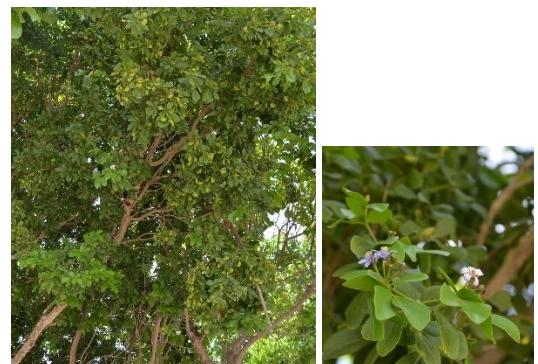
Coconut tree (juvenile) (Long Bay sample)



Croton/moron* (Long Bay sample)



Exostema caribaeum (Long Bay sample)



Lignum vitae (Long Bay sample)



Limber caper

(Photo credit: Jason Hollinger)

https://upload.wikimedia.org/wikipedia/commons/7/74/Limber_Caper_%281056623816%29.jpg



Loblolly/Water mampo (Long Bay sample)



Manchineel
(Photo credit: Jason Hollinger)

<https://flickr.com/photos/7147684@N03/12663657315>



Marble tree (Long Bay sample)



Neem (Long Bay sample)**



Nicker Nut
(Photo credit: Dsasanka)

https://upload.wikimedia.org/wikipedia/commons/b/ba/Gila1%28Caesalpinia_Bonducella%29.jpg



Noni*
(Photo credit: Filo gèn')

https://upload.wikimedia.org/wikipedia/commons/c/cc/Morinda_citrifolia%2C_fruits.jpg



Pigeon berry (Long Bay sample)



Rauvolfia viridis
(Photo credit: Pancrat)

https://upload.wikimedia.org/wikipedia/commons/7/7f/Rauvolfia_viridis_fl_Guad.jpg



Seagrape (adult and juvenile)
(Long Bay samples)



Sideroxylon obovatum (Long Bay sample)



Soap bush (maubie) (Long Bay sample)

Figure A1-3. Photographs of some species identified in Zone B

ZONE C Species

1. Acacia - *Acacia tortuosa*
2. Beach morning glory - *Ipomoea pes-caprae*
3. Black willow, linguam - *Capparis cynophallophora*
4. Cabbage plant - *Calotropis procera***
5. Cedar - *Tabebuia heterophylla*
6. *Exostema caribaeum*
7. Lignum vitae - *Guaiaecum officinale*
8. Limber caper - *Capparis flexuosa*
9. Loblolly/Water mampoo - *Pisonia subcordata*
10. Marble tree - *Cassine xylocarpa*
11. Neem - *Azadirachta indica***
12. Pigeon berry - *Bouyeria succentla*
13. Seagrape - *Coccoloba uvifera*
14. Wild tamarind - *Leucaena leucocephala***

** Invasive species

(Invasive species should be eradicated as a part of environmental restoration efforts).

Photographs of Some Species Identified in Zone C.

Note: Photographs of species already included in Zone A or B are not repeated in the photograph set for Zone C.



Wild tamarind (Long Bay sample)**

Figure A1-4. Photographs of some species identified in Zone C

Appendix II - Full Results of Detailed Vegetation Survey Conducted June 27, 2022

VEGETATION SURVEY OF LONG BAY BEACH, BEEF ISLAND

Data collected Monday June 27, 2022

The Vegetation Survey was conducted using 50-m segments along the beach, from the eastern end to the western end of the beach. A total of 14 segments were established, with Segment #1 being at the eastern entrance of the beach and Segment #14 being at the extreme western end of the beach where the beach transitions from a sandy beach to a rock rubble beach. A map of the segments is presented at Figure A2-1.

From Segments 1 to 6, all species in Zones A and B (with the exception of a couple unknown species) were identified. A count of the number of samples of each species was made, except in the case of runners or vines in Zone A where abundance was recorded based on extent of ground cover instead. Within these segments, the species in Zone C that were visible from the start of the Zone were identified and an estimate of their relative abundance made using the following abundance scale:

- Sparse (<5 specimens)
- Medium (5-10 specimens)
- Dense (>10 specimens)

In Segment 7 and Segments 11 to 14, the species in Zones A and B were also identified and an indication of abundance of each species made (count of samples or extent of ground cover). As Zone C was undisturbed by human activity and not easily accessible/penetrable in these segments, the species in Zone C were not captured.

From Segments 8 to 10, the species in Zone A were also identified and an indication of abundance of each species made (count of samples or extent of ground cover). Within these segments, Zones B and C were undisturbed and, therefore, not easily accessible/penetrable. As such, only those Zone B-species visible from the start of Zone B were captured in the Survey and counted. Zone C species were not captured in these segments. The Survey data is present in Table A2-1 below.



Figure A2-1. Map of 50-m segments used to conduct the Vegetation Survey

Table A2-1. Species Identified in Beach Vegetation Survey of Long Bay, Beef Island conducted June 27, 2022

Key

- ** Invasive species
* Species that do not belong in Zone / Species found in unexpected Zone

Beach Segment (East to West)	Segment Notes	ZONE A (Infront Tree line) <i>Species; Count</i>		ZONE B (Tree line inland approx. 50ft) <i>Species; Count</i>		ZONE C (Behind Zone B) <i>Species; Count</i>	
		<i>Species</i>	<i>Count</i>	<i>Species</i>	<i>Count</i>	<i>Species</i>	<i>Abundance</i>
#1 (0 – 50 m)	Segment starts at big acacia tree along tree line immediately east of eastern entrance to beach (close to Airport). Zone B extends approx. 52 ft inland from tree line. All Zones (A-C) have experienced significant human disturbance.	None	N/A	Acacia - <i>Acacia tortuosa</i> *	1	Loblolly/Water mampoo - <i>Pisonia subcordata</i>	Medium (5-10 specimens)
				Barbasco - <i>Jacquinia arborea</i>	1	Neem - <i>Azadirachta indica</i> **	Dense (>10 specimens)
				Cedar	8	Pigeon berry - <i>Bouffieria succentla</i>	Sparse (<5 specimens)
				Croton (moron)*	21	Wild tamarind - <i>Leucaena leucocephala</i> **	Sparse (<5 specimens)
				Loblolly/Water mampoo - <i>Pisonia subcordata</i>	4		
				Pink-eye Susie/Yellow Susie - <i>Turnera ulmifolia</i> **	1		
				Poison cherry	1		
				<i>Scaevola taccada</i> **	1		
				Seagrape (adult) - <i>Coccoloba uvifera</i>	1		
				Seagrape (juvenile) - <i>Coccoloba uvifera</i>	1		

#2 (51 – 100 m)	Zone B extends approx. 50 ft inland from tree line. All Zones (A-C) have experienced significant human disturbance.	Beach morning glory - <i>Ipomoea pes-caprae</i>	1 small patch (<5 m ²)	Black willow, linguam - <i>Capparis cynophallophora</i>	1	Cabbage plant - <i>Calotropis procera</i> **	Sparse (<5 specimens)
				Cabbage plant (adult) - <i>Calotropis procera</i> **	5	Loblolly/Water mampoo - <i>Pisonia subcordata</i>	Medium (5-10 specimens)
				Cabbage plant (juvenile) - <i>Calotropis procera</i> **	62	Neem - <i>Azadirachta indica</i> **	Dense (>10 specimens)
				Cedar	3		
				Coconut tree (juvenile) - <i>Cocos nucifera</i>	1		
				Croton (moron)*	1		
				Fish Poison - <i>Piscidia C.</i>	3		
				Limber caper - <i>Capparis flexuosa</i>	1		
				Loblolly/Water mampoo - <i>Pisonia subcordata</i>	10		
				Marble tree - <i>Cassine xylocarpa</i>	4		
				<i>Sideroxylon obovatum</i>	2		
#3 (101 – 150 m)	Zone B extends approx. 50 ft inland from tree line. All Zones	Beach morning glory - <i>Ipomoea pes-caprae</i>	1 medium patch (5-10 m ²)	Barbasco - <i>Jacquinia arborea</i>	3	Cedar	Sparse (<5 specimens)

	(A-C) have experienced significant human disturbance.	Beach morning glory - <i>Ipomoea pes-caprae</i>	1 large patch (>10 m ²)	Black torch - <i>Erithalis fruticosa</i>	4	Loblolly/Water mampoo - <i>Pisonia subcordata</i>	Sparse (<5 specimens)
				Cabbage plant (adult) - <i>Calotropis procera</i> **	9	Neem - <i>Azadirachta indica</i> **	Dense (>10 specimens)
				Cabbage plant (juvenile) - <i>Calotropis procera</i> **	58	Pigeon berry - <i>Bourreria succentla</i>	Sparse (<5 specimens)
				Cedar	5	Seagrape - <i>Coccoloba uvifera</i>	Sparse (<5 specimens)
				Coconut tree (juvenile) - <i>Cocos nucifera</i>	3	Wild tamarind - <i>Leucaena leucocephala</i> **	Medium (5 -10 specimens)
				Loblolly/Water mampoo - <i>Pisonia subcordata</i>	5		
				Marble tree - <i>Cassine xylocarpa</i>	12		
				Neem - <i>Azadirachta indica</i> **	5		
#4 (151 – 200 m)	Zone B extends approx. 50 ft inland from tree line. All Zones (A-C) have experienced significant human disturbance.	Beach morning glory - <i>Ipomoea pes-caprae</i>	2 medium patches (5-10 m ²)	Barbasco - <i>Jacquinia arborea</i>	3	Beach morning glory - <i>Ipomoea pes-caprae</i>	Medium (5-10 specimens)
				Black torch - <i>Erithalis fruticosa</i>	2	Cedar	Sparse (<5 specimens)
				Black willow, linguam - <i>Capparis cynophallophora</i>	2	Loblolly/Water mampoo - <i>Pisonia subcordata</i>	Sparse (<5 specimens)

				Cabbage plant (adult) - <i>Calotropis procera</i> **	2	Neem - <i>Azadirachta indica</i> **	Dense (>10 specimens)
				Cabbage plant (juvenile) - <i>Calotropis procera</i> **	15		
				Cedar	2		
				Coconut tree (juvenile) - <i>Cocos nucifera</i>	5		
				Loblolly/Water mampoo - <i>Pisonia subcordata</i>	2		
				Black manjack - <i>Cordia rickseckeria</i>	1		
				Marble tree - <i>Cassine xylocarpa</i>	7		
				Neem - <i>Azadirachta indica</i> **	1		
				<i>Sideroxylon obovatum</i>	1		
#5 (201 – 250 m)	Zone B extends approx. 50 ft inland from tree line. All Zones (A-C) have experienced significant human disturbance. Heavy beach chair presence.	None	N/A - covered with beach chairs	Barbasco - <i>Jacquinia arborea</i>	6	Beach morning glory - <i>Ipomoea pes-caprae</i>	Medium (5-10 specimens)
				Cabbage plant (adult) - <i>Calotropis procera</i> **	1	Marble tree - <i>Cassine xylocarpa</i>	Sparse (<5 specimens)
				Cabbage plant (juvenile) - <i>Calotropis procera</i> **	6	Neem - <i>Azadirachta indica</i> **	Dense (>10 specimens)
				Cedar	2	Pigeon berry - <i>Bourreria succentla</i>	Sparse (<5 specimens)

				Coconut tree (juvenile) - <i>Cocos nucifera</i>	3		
				Lignum vitae - <i>Guaiaecum officinale</i>	1		
				Loblolly/Water mampoo - <i>Pisonia subcordata</i>	20		
				Marble tree - <i>Cassine xylocarpa</i>	2		
				Neem - <i>Azadirachta indica</i> **	1		
				Seagrape (adult) - <i>Coccoloba uvifera</i>	2		
				<i>Sideroxylon obovatum</i>	1		
				Soap bush (maubie) - <i>Colubrina arborescens</i>	1		
#6 (251 – 300 m)	Segment ends 50 ft before central access to beach. Zone B extends approx. 50 ft inland from tree line. All Zones (A-C) have experienced significant human	None	N/A - covered with beach chairs	Bay marigold - <i>Borreria arborescens</i>	2	Acacia - <i>Acacia tortuosa</i>	Sparse (<5 specimens)
				Black willow, linguam - <i>Capparis cynophallophora</i>	1	Black willow, linguam - <i>Capparis cynophallophora</i>	Sparse (<5 specimens)
				Cabbage plant (adult) - <i>Calotropis procera</i> **	1	<i>Exostema caribaeum</i>	Sparse (<5 specimens)
				Cabbage plant (juvenile) - <i>Calotropis procera</i> **	5	Lignum vitae - <i>Guaiaecum officinale</i>	Sparse (<5 specimens)

	disturbance. Heavy beach chair presence.			Cedar	2	Loblolly/Water mampoo - <i>Pisonia subcordata</i>	Dense (>10 specimens)
				<i>Fimbristylis cymosa</i>	25 clusters	Neem - <i>Azadirachta indica</i> **	Sparse (<5 specimens)
				Lignum vitae - <i>Guaiacum officinale</i>	1		
				Loblolly/Water mampoo - <i>Pisonia subcordata</i>	8		
				Seagrape (adult) - <i>Coccoloba uvifera</i>	4		
				Seagrape (juvenile) - <i>Coccoloba uvifera</i>	1		
				<i>Rauvofia viridis</i>	1		
				<i>Sideroxylon obovatum</i>	1		
#7 (301 – 350 m)	First segment overlapping and west of central access to beach. Zone B extends approx. 25 ft inland from tree line. Zones A and B have experienced significant human disturbance. Beach chairs are present. Zone C remains mainly intact and	Sea purslane - <i>Sesuvium portulacastrum</i>	1 small patch (<5 m²)	Acacia - <i>Acacia tortuosa</i> *	4	No data	No data
				Barbasco - <i>Jacquinia arborea</i>	7		
				Black torch - <i>Erithalis fruticosa</i>	6		
				Black willow, linguam - <i>Capparis cynophallophora</i>	1		
				Cedar	1		
				Coconut tree (juvenile) - <i>Cocos nucifera</i>	3		

	not easily penetrable. Zone C species are not captured.			Lignum vitae - <i>Guaiacum officinale</i>	2		
				Limber caper - <i>Capparis flexuosa</i>	4		
				Loblolly/Water mampoo - <i>Pisonia subcordata</i>	3		
				Marble tree - <i>Cassine xylocarpa</i>	9		
				Nicker nut - <i>Caesalpinia bonducella</i>	3		
				Seagrape (adult) - <i>Coccoloba uvifera</i>	5 clusters (Occurring over a 25 m stretch with 2-3 seagrape trees per cluster and approx. 5 m between clusters)		
#8 (351 – 400 m)	First <u>full</u> segment west of central access.	Beach morning glory - <i>Ipomoea pes-caprae</i>	2% ground cover	Barbasco - <i>Jacquinia arborea</i>	3	No data	No data
	Zone A - There was fairly continuous coverage with varying degrees of ground cover -	Sea purslane - <i>Sesuvium portulacastrum</i>	8% ground cover	Black torch - <i>Erithalis fruticosa</i>	6		
		Grass (species unknown)		Limber caper - <i>Capparis flexuosa</i>	4		

	data captured as percentage of ground cover versus number of specimens or size of patches. Zones B and C are undisturbed by human activity. Zone B is not easily penetrable. Count in Zone B reflects trees visible from the front of the Zone. Zone C remains intact and is not easily penetrable. Zone C species are not captured.		10% ground cover	Marble tree - <i>Cassine xylocarpa</i>	8		
				Nicker nut - <i>Caesalpinia bonducella</i>	4		
				<i>Exostema caribaeum</i>	2		
#9 (401 – 450 m)	Zone A - There was fairly continuous coverage with varying degrees of ground cover - data captured as percentage of ground cover	Buzzy grass	20% ground cover	Acacia - <i>Acacia tortuosa</i> *	1	No data	No data
				Barbasco - <i>Jacquinia arborea</i>	2		
				Black torch - <i>Erithalis fruticosa</i>	7		
				Lignum vitae - <i>Guaiacum officinale</i>	4		

	versus number of specimens or size of patches. Zones B and C are undisturbed by human activity. Zone B is not easily penetrable. Count in Zone B reflects trees visible from the front of the Zone. Zone B includes the 6 juvenile seagrape trees planted for World Environment Day on June 5, 2022. Zone C remains intact and is not easily penetrable. Zone C species are not captured.			Limber caper - <i>Capparis flexuosa</i> Marble tree - <i>Cassine xylocarpa</i> Croton (moron)* Nicker nut - <i>Caesalpinia bonducella</i> Seagrape (juvenile) - <i>Coccoloba uvifera</i>	2 5 1 2 6 (The 6 seagrape trees planted in this segment extend over a 6-meter length.)		
#10 (451 – 500 m)	Zone A - There was fairly continuous coverage with varying degrees of ground cover - data captured as	Buzzy grass	20% ground cover	Acacia - <i>Acacia tortuosa</i> *	1	No data	No data
				Barbasco - <i>Jacquinia arborea</i>	4		
				Black torch - <i>Erithalis fruticosa</i>	4		

	percentage of ground cover versus number of specimens or size of patches. Zones B and C are undisturbed by human activity. Zone B is not easily penetrable. Count in Zone B reflects trees visible from the front of the Zone. Zone C remains intact and not easily penetrable. Zone C species are not captured.			Lignum vitae - <i>Guaiacum officinale</i> Marble tree - <i>Cassine xylocarpa</i> Nicker nut - <i>Caesalpinia bonducella</i> Seagrape (adult) - <i>Coccoloba uvifera</i>	6 6 4 1		
#11 (501 – 550 m)	Zones A and B have experienced human disturbance. A full count of Zone B was conducted. Zone C remains mainly intact and not easily	Buzzy grass	15% ground cover	Barbasco - <i>Jacquinia arborea</i>	12	No data	No data
				Black torch - <i>Erithalis fruticosa</i>	2		
				Black willow, linguam - <i>Capparis cynophallophora</i>	1		
				Lignum vitae - <i>Guaiacum officinale</i>	11		

	penetrable. Zone C species are not captured.			Limber caper - <i>Capparis flexuosa</i>	3		
				Marble tree - <i>Cassine xylocarpa</i>	6		
				Croton (moron)*	12		
				Nicker nut - <i>Caesalpinia bonducella</i>	10		
				Noni - <i>Morinda citrifolia</i> *	1		
				Pigeon berry - <i>Bourreria succentla</i>	1		
				<i>Scaevola taccada</i> **	1		
				Seagrape (adult) - <i>Coccoloba uvifera</i>	1		
#12 (551 – 600 m)	Zones A and B have experienced human disturbance. A full count of Zone B was conducted. Zone C remains mainly intact and not easily penetrable. Zone C species are not captured.	Beach morning glory - <i>Ipomoea pes-caprae</i>	15% ground cover	Barbasco - <i>Jacquinia arborea</i>	12	No data	No data
		Buzzy grass	5% ground cover	Black Mampoo - <i>Guapira fragrans</i>	2		
				Cabbage plant (adult) - <i>Calotropis procera</i> **	3		
				Lignum vitae - <i>Guaiacum officinale</i>	7		
				Limber caper - <i>Capparis flexuosa</i>	3		
				Loblolly/Water mampoo - <i>Pisonia subcordata</i>	1		

				Manchineel - <i>Hippomane mancinella</i>	1		
				Marble tree - <i>Cassine xylocarpa</i>	8		
				Pigeon berry - <i>Bourreria succentla</i>	1		
				Seagrape (adult) - <i>Coccoloba uvifera</i>	3		
#13 (601 – 650 m)	Segment overlaps western entrance to beach. Zones A and B have experienced human disturbance. A full count of Zone B was conducted. Zone C remains mainly intact and not easily penetrable. Zone C species are not captured.	Beach morning glory - <i>Ipomoea pes-caprae</i>	15% ground cover	Barbasco - <i>Jacquinia arborea</i>	5	No data	No data
		Buzzy grass	5% ground cover	Black mampoo - <i>Guapira fragrans</i>	2		
				Cabbage plant (adult) - <i>Calotropis procera**</i>	2		
				Cabbage plant (juvenile) - <i>Calotropis procera**</i>	180		
				Fish poison - <i>Piscidia C.</i>	1		
				Lignum vitae - <i>Guaiacum officinale</i>	4		
				Limber caper - <i>Capparis flexuosa</i>	3		
				Loblolly/Water mampoo - <i>Pisonia subcordata</i>	2		
				Marble tree - <i>Cassine xylocarpa</i>	5		

				Seagrape (adult) - <i>Coccoloba uvifera</i>	2 clusters (Cluster 1 = 2 trees; Cluster 2 = 3 trees; Total = 5 trees)		
#14 (651 – 700 m)	Final segment measuring 52 m long. A full count of Zone B was conducted. Zone C remains mainly intact and not easily penetrable. Zone C species are not captured.	None	N/A	Barbasco - <i>Jacquinia arborea</i>	1	No data	No data
				Beach morning glory - <i>Ipomoea pes-caprae</i>	1 large patch (>10m ²)		
				Cabbage plant (adult) - <i>Calotropis procera</i> **	2		
				Cabbage plant (juvenile) - <i>Calotropis procera</i> **	8		
				Coconut tree (juvenile) - <i>Cocos nucifera</i>	3		
				Fish poison - <i>Piscidia C.</i>	2		
				Lignum vitae - <i>Guaiaecum officinale</i>	4		
				Loblolly/Water mampoo - <i>Pisonia subcordata</i>	1		
				Marble tree - <i>Cassine xylocarpa</i>	6		
				Seagrape (adult) - <i>Coccoloba uvifera</i>	1		

Appendix III – Advertisement of the Proposed Declaration of Long Bay, Beef Island as a Protected Area



GOVERNMENT OF THE
VIRGIN ISLANDS

PROPOSED LONG BAY PROTECTED AREA

NOTICE is hereby given that the Minister for Natural Resources and Labour in consultation with the National Parks Trust under Section 17(1) (a) of the National Parks Act, 2006 (No. 4 of 2006) hereby notifies the public of his intention to vary Schedule 2 by the addition of an area as a park or other protected area. The area in consideration is described as:

1. Long Bay Beef Island Protected Area

A physical copy of the proposal may be inspected at the following locations:

- Ministry of Natural Resources and Labour, Central Administration Building, Road Town, Tortola
- Government Administration Building, The Valley, Virgin Gorda
- Government Administration Building, The Settlement, Anegada
- Government Administration Building, Great Harbour, Jost Van Dyke

Interested persons may make written submissions about the proposal. Written submissions may be accepted at the Ministry of Natural Resources and Labour, Central Administration Building, electronically at nrl@gov.vg or by mail at the Ministry of Natural Resources and Labour, Central Administration Building, Road Town, Tortola VG1110. The deadline for submission is 25 January, 2019.



Information is provided in the Schedule to assist the public in understanding the reasons for and purposes of the **proposed amendment**, including the **proposed title**, classification pursuant to section 15 of the National Parks Trust Act, 2006 the legal description and how the proposed new area fits within the protected area system.

The Long Bay Protected Area shall be classified as a National Park/Marine Park under section 15(b) of the National Parks Act, No.4 of 2006.

Description of the Classification

A National/Marine Park is a natural area of land and/or sea containing a representative sample of major natural regions, features, or scenery, or where wildlife, habitats, or surface features are of special significance and are not materially altered by current human occupation or exploitation, to be maintained in perpetuity with the following conservation and management objectives:

- To protect natural and scenic areas of national and international significance for spiritual, scientific, educational, recreational, or tourism purposes;
- To protect, in as natural a state as possible, representative samples of major physiographic regions, biotic communities, genetic resources, and species for ecological stability and diversity;
- To manage visitor use for inspirational, scientific, educational, recreational, or cultural purposes at a level which will maintain the area in a natural or near natural state;
- To eliminate and thereafter prevent exploitation or occupation harmful to the purposes for which the areas was declared; and
- To take into account the needs of

indigenous people, including subsistence resource use, in so far as that use does not adversely affect the conservation objectives of the area.

Size: acres

Goals and Objectives for the Proposed Protected Area

1. Conservation

To preserve the natural and historical heritage of the Virgin Islands, as represented by its biodiversity, scenic landscapes and seascapes, historic buildings, shipwrecks, and gardens by:

- Preserving major representative stocks or areas of biological resources, including populations of indigenous and endangered flora and fauna, and natural communities
- Protecting natural areas that are important for the production of important species of flora and fauna

2. Economic Development

To expand and diversify the role of the natural resource base in the economy of the Virgin Islands, by:

- Improving and sustaining the livelihoods of residents by protecting and increasing their earning capacity
- Protecting the supply and quality of the natural resources that support economic activities.

- Promoting resource harvesting and land management practices that maintain the integrity of the natural resource base
- Conducting research into improved methods of resource utilization
- Ensuring that the protected areas system contributes to the sustainability of the other economic sectors to the greatest extent possible without degrading the resources protected by the system.

3. Education and Community Engagement

To improve understanding of the life supporting processes and other benefits provided by natural ecosystems, by:

- Preserving natural ecosystems and providing opportunities for ecological and other scientific research
- Providing opportunities for environmental education
- Providing opportunities for research on the socioeconomic impact of protected areas on local communities
- Providing for the participation of interested groups and individuals in protected area planning and management
- Demonstrating that protected areas generate improved livelihoods and other social benefits for local communities

ZONES BY CLASSIFICATION

Zone No.	Name, Block/Parcel Number	Classification	Classification of Zone
1	Long Bay Marine Park	National Parks Act, 2006 s. 15(b)	Marine Park
2	Long Bay Protected Area, . Block 3640B, Pcl 40	National Parks Act, 2006 s. 15(b)	National Park
3	Long Bay Protected Area, . Block 3740B, Pcl 6	National Parks Act, 2006 s. 15(b)	National Park

Available online at: https://bvi.gov.vg/sites/default/files/resources/long_bay_protected_area_ad.pdf

Appendix IV - Photographs of Existing Conditions based on Field Survey of June 30, 2022

Accesses and Entrances



Central Access Road (looking landward)



Central Entrance (looking landward)



Central Entrance (looking seaward)



Access Road to Eastern Entrance



Eastern Entrance

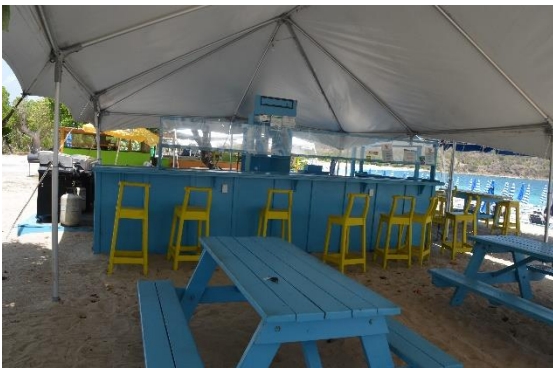


Western Entrance

Figure A4-1. Accesses and Entrances at Long Bay, Beef Island

Commercial Activity – Beach Bar and Restaurant Operations

Moose Bar on the Beach



Right Mix Bar



Island Boy Beach Bar



Figure A4-2. Commercial Activity (Beach Bar and Restaurant Operations) at Long Bay, Beef Island

Commercial Activity - Beach Chair Rental



Figure A4-3. Commercial Activity (Beach Chair Rental) at Long Bay, Beef Island

Commercial Activity - Other Vendors



Figure A4-4. Commercial Activity (Other Vendors) at Long Bay, Beef Island

Commercial Activity – Water Sports Operations



Figure A4-5. Commercial Activity (Water Sports Operations) at Long Bay, Beef Island

Restrooms and Related Facilities



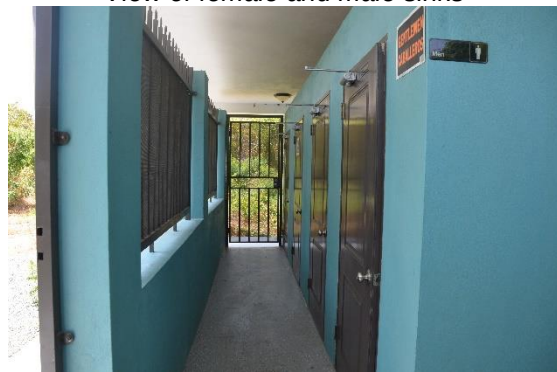
View of male entrance and front (exterior)



View of female and male sinks



View of female stalls



View of male stalls



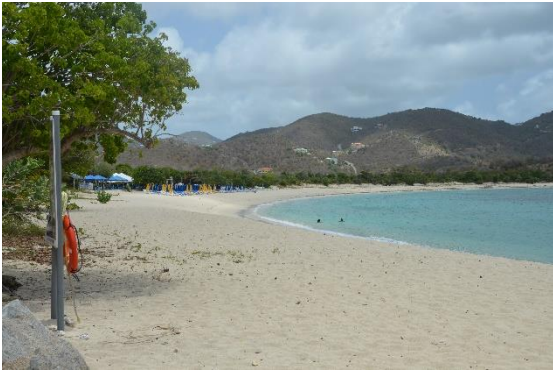
View of water meter



View of shower stalls

Figure A4-6. Restrooms and related facilities at Long Bay, Beef Island

General Environment



View of beach from Eastern Entrance



View of western end of beach



Foredune - central segment of beach



Foredune near Eastern Entrance



Shade hut close to Eastern Entrance



Shade hut close to Western Entrance



Hind dune in eastern segment of the beach



Hind dune in eastern segment of the beach



Cleared area for parking along central access road (right-hand side on entering)



Cleared area along central access road (left-hand side on entering)

Figure A4-7. General environment at Long Bay, Beef Island

Safety Signage and Rescue Equipment



Safety signage and rescue equipment at Central Entrance



Safety signage and rescue equipment at Eastern Entrance

Figure A4-8. Safety signage and rescue equipment at Long Bay, Beef Island

Littering, Junking and Waste Management

Littering



Junking





Waste Management



Main bin at Central Entrance



Main bin at Eastern Entrance



Supplementary bins at Central Entrance



Sieve for sifting litter out of sand



Waste management for beach bar/restaurant



Liquid waste management for beach bar/restaurant

Figure A4-9. Littering, junking and waste management at Long Bay, Beef Island

Appendix V – Long Bay Public Survey – Survey Tool and Results

LONG BAY, BEEF ISLAND

BEACH MANAGEMENT PLAN PUBLIC SURVEY

The Ministry of Natural Resources and Labour and Immigration is conducting a survey to determine the public's satisfaction and vision in relation to Long Bay, Beef Island. Your responses will be anonymous and used to help inform a beach management plan for Long Bay.

CURRENT SATISFACTION AND VISION

- Please indicate your current level of satisfaction with each beach attribute below and what you would like to see changed compared to what exists now.

ATTRIBUTE	SATISFACTION	DESIRE
	Completely Satisfied (5) Satisfied (4) Neutral (3) Unsatisfied (2) Totally Unsatisfied (1)	More of (M) Same level (S) Less of (L) None (N)
Example	3	S
<i>Overall Environment</i>		
Overall beach cleanliness		
Beach appearance (Area from tree line to sea)		N/A
Beach width (Distance from tree line to sea)		
Sand quality		N/A
Water area appearance		
Seawater quality		
Reef health/quality		
Shade trees/vegetation		
Noise level		
Safe environment		
Relaxing environment		
Family-friendly environment		
<i>Amenities and Facilities</i>		
Beach use signage		
Public shade umbrellas/gazebos		
Picnic tables		
Entertainment facilities		
Sporting facilities		
Birdwatching facilities		
Restroom facilities		
Parking facilities		
Access for disabled people		
Main access road		N/A
Waste facilities		
Lifeguard presence/station		
<i>Recreational Activities</i>		

Loud Music		
Parties		
Barbeques/Cookouts		
Picnics		
Swimming and snorkelling		
Boating		
Sports (e.g. beach volleyball)		
Private water sports		
Exercising		
<i>Commercial Activities</i>		
Bars/restaurants		
Souvenir vending		
Beach chairs		
Water sports		
Other commercial _____		

Comments _____

2. How do you feel about development at Long Bay, Beef Island?

Check the box that best describes what you would like to see.

☐	The beach should be preserved in a natural, undeveloped state.
☐	Development should be limited to basic public amenities and facilities with no commercial activity allowed, except vending during public events.
☐	Some commercial development should be allowed, however, this should be limited and carefully planned to preserve the environment, maintain a natural aesthetic and balance tourist and residential use of the beach.
☐	The beach should be commercially developed as a major tourist destination.
☐	Other _____

3. How has the recent development and activity at Long Bay affected your use and enjoyment of the beach? Check the box that applies for each.

Use	☐ Use more often	☐ Use less often	☐ No change
Enjoyment	☐ Enjoy more	☐ Enjoy less	☐ No change

Please provide more details. _____

4. Please share any ideas or concerns about Long Bay, Beef Island that you would like to see considered in a plan for the beach.

ABOUT YOU

Age	Under 12 years	13 – 20 years	21 – 30 years
	31 – 40 years	41 – 65 years	Over 65 years

Gender	Male
	Female

Status	Virgin Islander	Belonger	Resident	Tourist
---------------	-----------------	----------	----------	---------

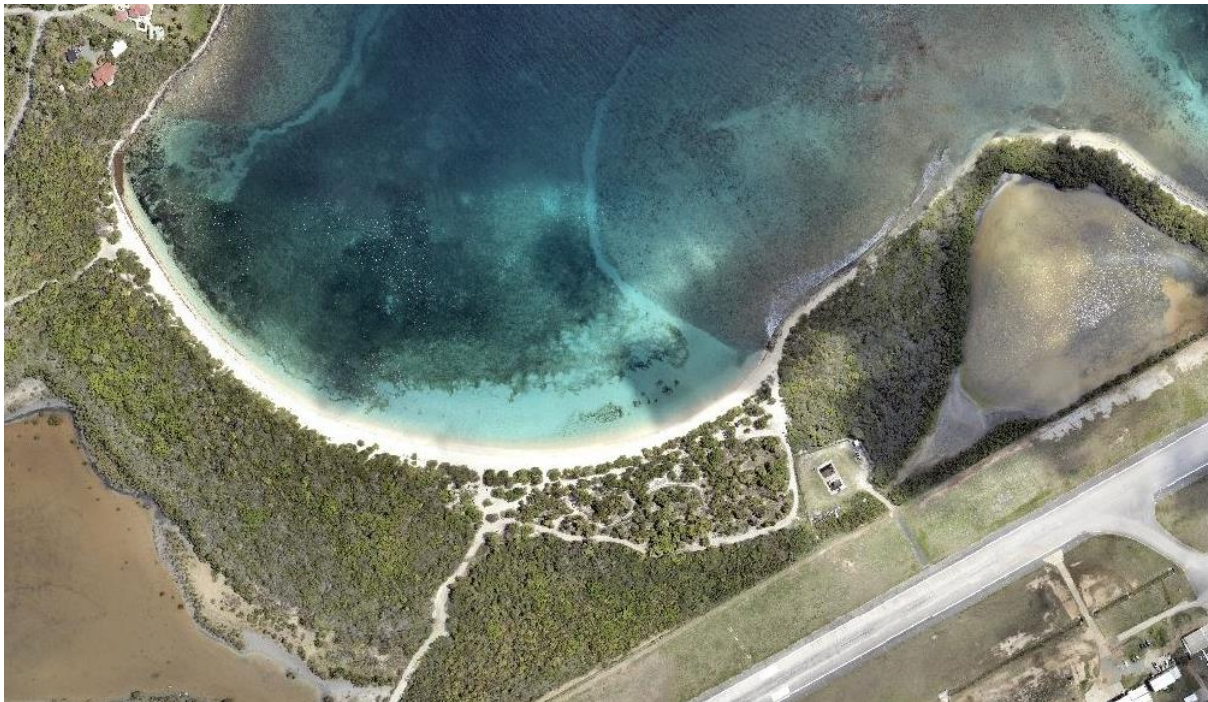
Address	Resident		Tourist	
		8 th District		USA
		7 th District		UK
		Other District _____		Other _____

How important is Long Bay Beach to you?	Very important
	Important
	Neutral (neither important or unimportant)
	Not very important
	Not important at all

How frequently have you traditionally used Long Bay Beach?	Resident		Tourist	
		More than once per week		Every trip to BVI
		At least once per week		Most trips to BVI
		At least once a month		Some trips to BVI
		A few times a year		Never
		At least once a year		
		Less than once a year		
		Never		

LONG BAY, BEEF ISLAND BEACH MANAGEMENT PLAN

PUBLIC SURVEY RESULTS



Ministry of Natural Resources and Labour

September 29, 2022

OVERVIEW

The Public Survey to inform the Long Bay, Beef Island Beach Management Plan was conducted from March 18 to April 30, 2022. The Survey targeted the general resident population as well as students attending schools on Tortola to capture the youth perspective. The General Population Survey was administered via the online survey tool, Survey Monkey, as well as via print copies.

The online version of the General Population Survey was advertised via the following means:

- Public meetings to present the Conceptual Beach Management Plan held March 29 and 31, 2022
- Government of The Virgin Islands Website (homepage) - <https://bvi.gov.vg/>
- Government of The Virgin Islands Facebook page - <https://www.facebook.com/BVIGovernment>
- Flyer circulated via WhatsApp
- SMS text message to all FLOW customers on April 14, 2022 and April 30, 2022
- Outreach to teachers and parents of students at primary and secondary schools participating in the Student Survey.

Print copies of the General Population Survey were available through the following means:

- Public meetings to present the Conceptual Beach Management Plan held March 29 and 31, 2022
- Reception of the Ministry of Natural Resources and Labour
- Schools participating in the Student Survey (upon request)

All primary and secondary schools on Tortola were invited to participate in the Student Survey effort. Schools were asked to have students complete the Survey and also to share the Survey with parents via the online link and print copies as requested. Seven (7) schools participated, including:

1. Willard Wheatley Primary School
2. Francis Lettsome Primary School
3. Joyce Samuels Primary School
4. Alexandrina Maduro Primary School
5. Ebenezer Thomas Primary School
6. Althea Scatliffe Primary School
7. Cedar International School

A total of 300 persons participated in the General Population Survey. Based on the size of the target population (residents of Tortola), a sample size of 300 provides a 95% confidence level in the Survey results with a 5.6% margin of error. In addition, a total of 202 students participated in the Student Survey. The results of the General Population and Student Survey are reported separately.

GENERAL POPULATION RESULTS

Profile of Respondents

Age Distribution of Respondents

A total of 300 persons participated in the General Population Survey. Of those, the majority (54%) were middle aged, being 41-65 years old. Persons in their 30s followed, accounting for 27% of respondents with persons in their 20s accounting for 11% of respondents. Together, persons between the ages of 21 and 65 accounted for 92% of respondents. The elderly (over 65 years) and adolescents (13-20 years) were least represented, accounting for 5% and 3% of responses accordingly. See Figure A5-1.

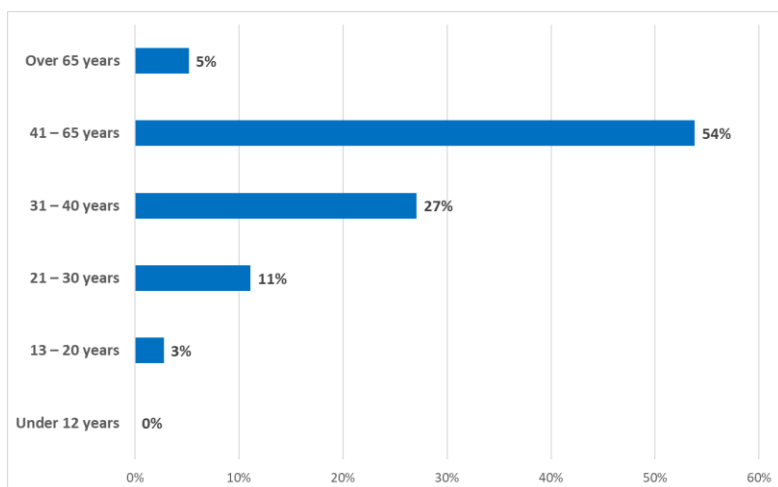


Figure A5-1. Age distribution of respondents participating in the General Population Survey

Gender of Respondents

Of the 300 Survey respondents, the majority, 72%, were female while 28% were male. See Figure A5-2.

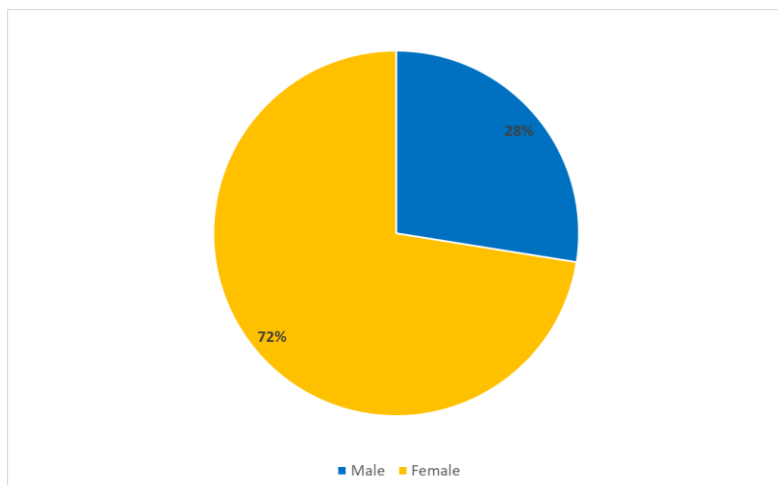


Figure A5-2. Gender of respondents participating in the General Population Survey

Status of Respondents

Virgin Islanders made up the majority of the 300 Survey respondents at 55% of the total. The participation of Residents and Belongers was similar, representing 23% and 22% of respondents respectively. No tourists participated in the Survey. See Figure A5-3.

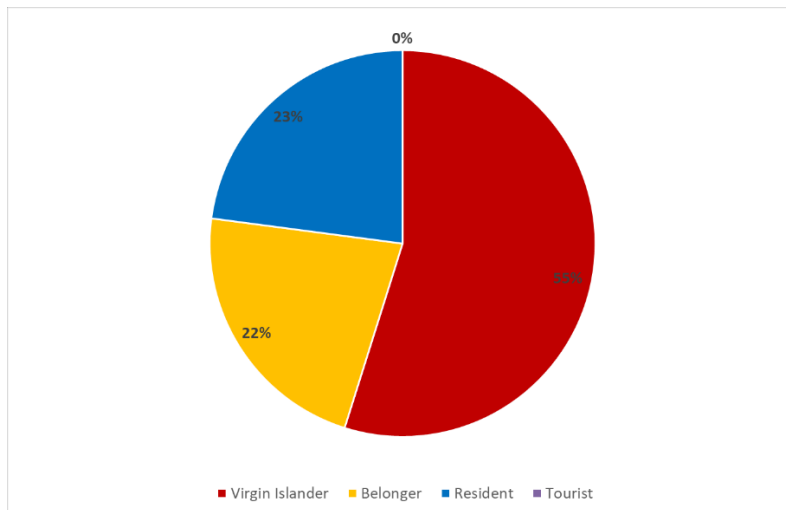


Figure A5-3. Status of respondents participating in the General Population Survey

Address of Respondents

Level of participation in the Survey reflected proximity of residence to the beach with participation increasing with closer proximity. Of the 300 respondents, 8th District residents participated most in the Survey (32% of respondents), followed by 7th District residents (17% of respondents), and 5th and 6th District residents (10% and 9% of respondents respectively). Participation of 1st, 2nd and 3rd District residents was even at 8% of respondents. On Tortola, participation of 4th District residents was the least at 6% of respondents. Residents of the 9th District made up 1% of Survey respondents. See Figure A5-4.

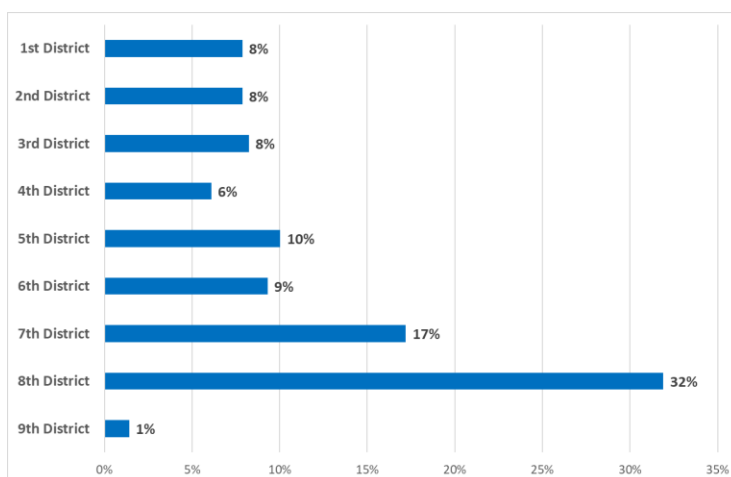


Figure A5-4. Address of respondents participating in the General Population Survey

Importance of Long Bay to Respondents

Of the 300 Survey respondents, the majority, 66%, indicated that Long Bay is “very important” to them. Another 26% of respondents indicated that Long Bay is “important”. Together, persons indicating Long Bay as either “very important” or “important” accounted for 92% of respondents. Of the balance, 7% of respondents were neutral, indicating that Long Bay was “neither important or unimportant” to them. Only 1% of respondents indicated that Long Bay was “not very important.” No respondents described Long Bay as “not important at all.” See Figure A5-5.

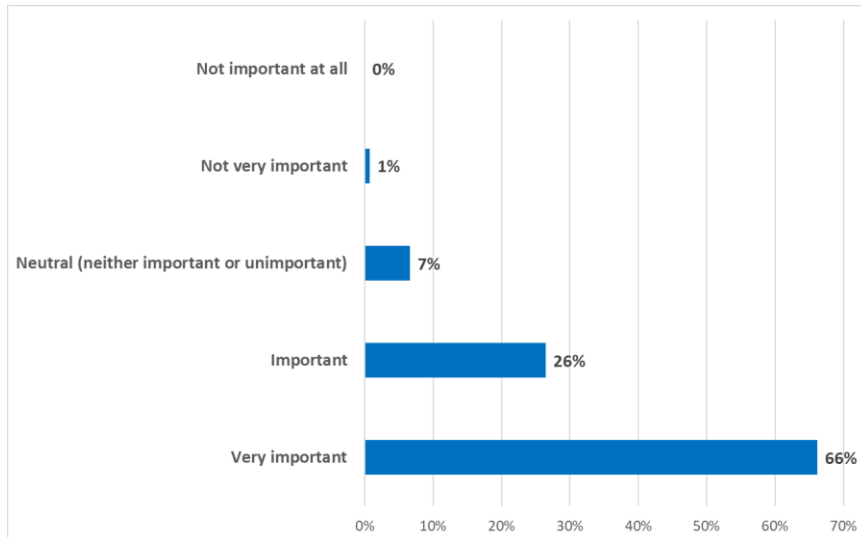


Figure A5-5. Importance of Long Bay to respondents participating in the General Population Survey

Frequency with which Respondents have Traditionally Used Long Bay

Of the 300 Survey respondents, the majority (90%) traditionally used Long Bay “a few times a year” or more frequently. Persons traditionally using the beach “a few times a year” comprised the largest category, accounting for 32% of respondents. This was followed closely by persons who used the beach “at least once a month”, accounting for 30% of respondents. Together, persons traditionally using the beach “at least once per week” or “more than once per week” accounted for 28% of respondents. Only 6% of respondents traditionally used the beach as infrequently as “at least once a year” and 3% of respondents traditionally used the beach “less than once a year.” Only one person participated in the Survey who had never used the beach. See Figure A5-6.

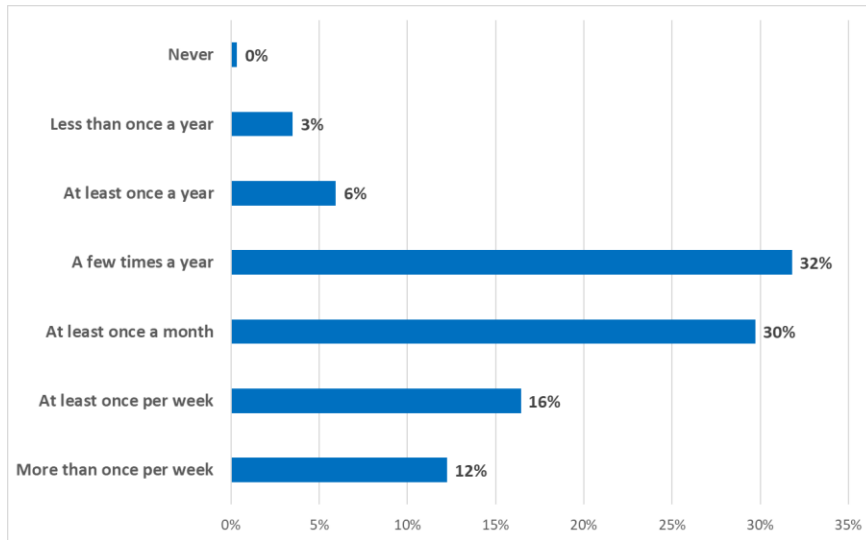


Figure A5-6. Frequency with which respondents participating in the General Population Survey have traditionally used Long Bay

Vision for Long Bay

Views about Development at Long Bay

Of the 300 Survey respondents, the majority (52%) felt that some commercial development should be allowed at Long Bay in the limited, careful and balanced manner described. Together, 42% of respondents felt that either development should be limited to basic public amenities and facilities with no permanent commercial activity allowed (24%) or the beach should be preserved in a natural, undeveloped state (18%). Only 5% of respondents felt that the beach should be commercially developed as a major tourist destination. See Figure A5-7.

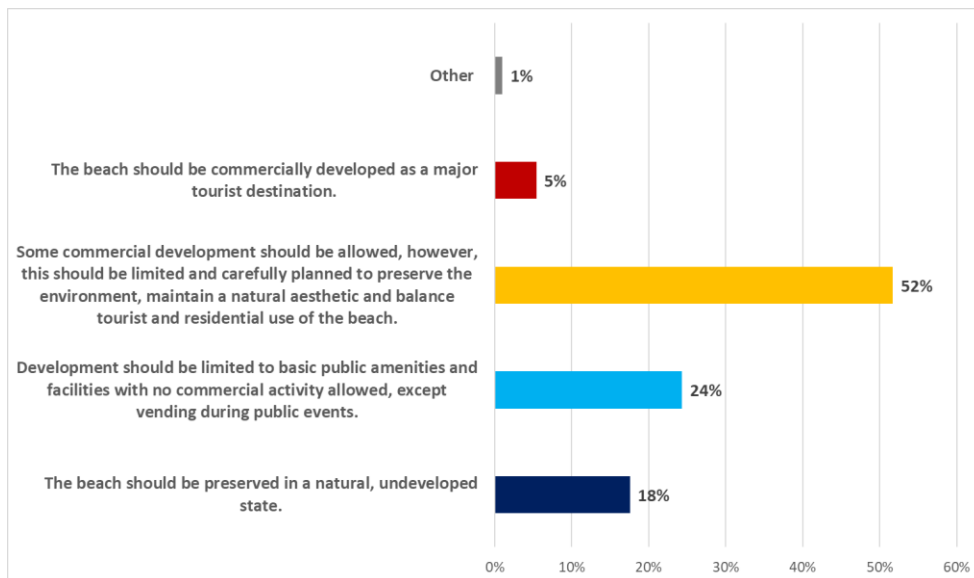


Figure A5-7. Views about development at Long Bay held by respondents participating in the General Population Survey

Current Satisfaction and Desires

Effect of Recent Development and Activity at Long Bay on Beach Use and Enjoyment

As a result of the recent development and activity at Long Bay, of the 300 Survey respondents, 51% enjoy the beach less and 48% use the beach less often. On the other hand, only 18% of respondents enjoy the beach more and 12% use the beach more often. There was no change in enjoyment of the beach for 32% of respondents and no change in frequency of beach use for 40% of respondents. See Figure A5-8.

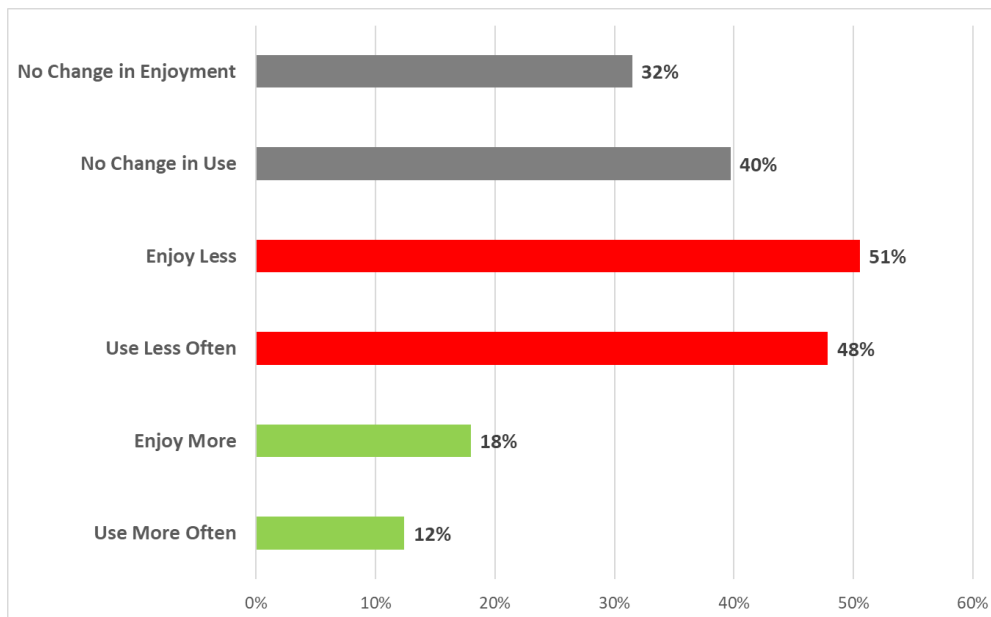


Figure A5-8. Effect of recent development and activity at Long Bay on the beach use and enjoyment of respondents participating in the General Population Survey

Satisfaction with the Overall Environment

Respondents were mainly “**completely satisfied**” or “**satisfied**” with 8 of the 12 features of the overall environment surveyed as summarized below. See Figure A5-9 and Table A5-1 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Water area appearance (77%)	Relaxing environment (47%)
Sand quality (74%)	Safe environment (45%)
Seawater quality (68%)	Beach appearance (Area from tree line to sea) (40%)
Beach width (Distance from tree line to sea) (61%)	
Family-friendly environment (53%)	

Respondents were mainly dissatisfied (“**totally unsatisfied**” or “**unsatisfied**”) with 3 of the 12 features of the overall environment surveyed as listed below. See Figure A5-9 and Table A5-1 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Overall beach cleanliness (53%)	Shade trees/vegetation (49%)
	Noise level (47%)

Respondents were mainly “neutral” on 1 of the 12 features of the overall environment surveyed as summarized below. See Figure A5-9 and Table A5-1 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
N/A	Reef health/quality (43%)

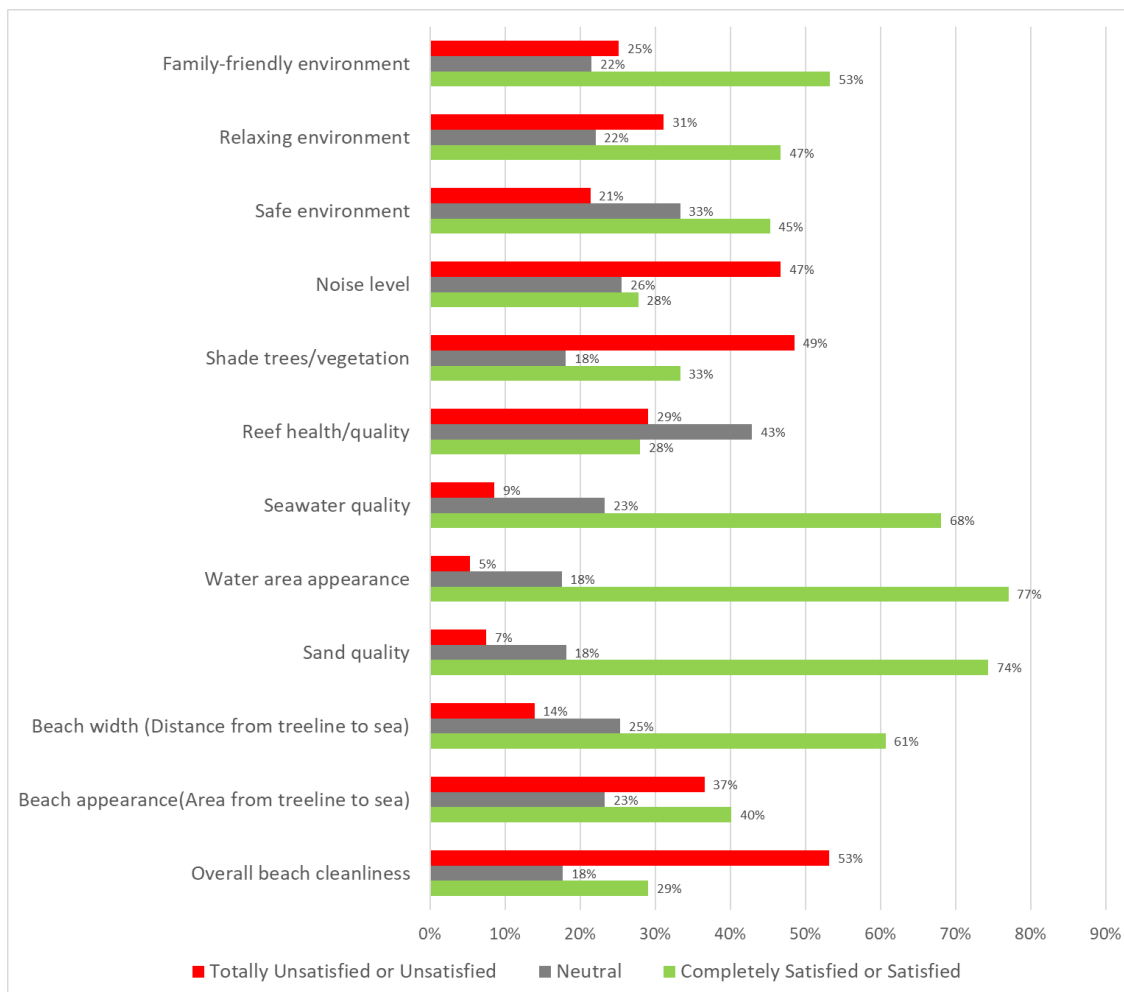


Figure A5-9. Satisfaction of respondents participating in the General Population Survey with the overall environment

Table A5-1. Satisfaction of Respondents Participating in the General Population Survey with Features Surveyed

Features	Completely Satisfied		Satisfied		Neutral		Unsatisfied		Totally Unsatisfied		Total Respondents
Overall Environment											
Overall beach cleanliness	4%	12	25%	70	18%	50	39%	110	14%	40	282
Beach appearance(Area from treeline to sea)	8%	21	33%	91	23%	65	31%	86	6%	16	279
Beach width (Distance from treeline to sea)	18%	50	43%	120	25%	71	13%	35	1%	4	280
Sand quality	27%	75	48%	134	18%	51	6%	18	1%	3	281
Water area appearance	22%	62	55%	153	18%	49	4%	12	1%	3	279
Seawater quality	21%	59	47%	131	23%	65	7%	20	1%	4	279
Reef health/quality	5%	14	23%	63	43%	118	23%	63	6%	17	275
Shade trees/vegetation	6%	16	28%	76	18%	50	43%	118	6%	16	276
Noise level	6%	16	22%	60	26%	70	26%	70	21%	58	274
Safe environment	12%	33	33%	92	33%	92	17%	48	4%	11	276
Relaxing environment	12%	33	35%	96	22%	61	23%	63	8%	23	276
Family-friendly environment	13%	35	41%	111	22%	59	19%	53	6%	16	274
Amenities and Facilities											
Beach use signage	6%	15	25%	67	37%	100	31%	82	1%	4	268
Public shade umbrellas/gazebos	4%	11	21%	58	29%	78	39%	104	7%	19	270
Picnic tables	2%	6	16%	43	34%	91	43%	116	5%	14	270
Entertainment facilities	5%	13	18%	49	42%	112	24%	65	11%	30	269
Sporting facilities	5%	14	15%	41	46%	122	29%	77	5%	14	268
Birdwatching facilities	3%	8	9%	24	48%	126	34%	89	6%	15	262
Restroom facilities	6%	16	26%	71	24%	64	38%	101	6%	16	268
Parking facilities	5%	13	37%	99	24%	65	30%	79	4%	11	267
Access for disabled people	2%	4	13%	35	38%	100	33%	89	14%	38	266
Main access road	8%	21	27%	73	27%	72	26%	71	12%	31	268
Waste facilities	4%	11	12%	32	23%	61	44%	118	17%	44	266
Lifeguard presence/station	3%	7	6%	17	29%	78	42%	113	19%	52	267
Recreational Activities											
Loud Music	4%	10	11%	29	33%	90	24%	64	28%	76	269
Parties	5%	14	17%	45	48%	125	17%	43	12%	32	259
Barbeques/Cookouts	8%	22	23%	59	49%	127	13%	35	7%	18	261
Picnics	7%	18	32%	83	49%	129	10%	26	2%	5	261
Swimming and snorkelling	12%	32	48%	126	28%	73	11%	28	1%	3	262
Boating	8%	21	22%	59	47%	125	20%	52	3%	8	265
Sports (e.g. beach volleyball)	8%	21	28%	75	47%	125	14%	37	2%	6	264
Private water sports	8%	20	19%	49	53%	139	15%	40	5%	12	260
Exercising	12%	32	42%	110	37%	97	7%	19	2%	4	262
Commercial Activities											
Bars/restaurants	8%	21	18%	47	38%	98	23%	60	13%	35	261
Souvenir vending	7%	17	13%	34	42%	108	25%	66	13%	35	260
Beach chairs	5%	14	19%	50	32%	83	28%	74	15%	40	261
Water sports	7%	17	17%	45	50%	130	21%	54	5%	12	258
Other commercial activity	5%	11	13%	28	54%	122	16%	35	13%	28	224

Desired Changes to the Overall Environment

Respondents mainly desire “**more of**” 7 of the 12 features of the overall environment surveyed as summarized below. See Figure A5-10 and Table A5-2 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Overall beach cleanliness (80%)	N/A
Shade trees/vegetation (78%)	
Beach appearance (Area from tree line to sea) (59%)	
Reef health/quality (57%)	
Relaxing environment (56%)	
Family-friendly environment (54%)	
Safe environment (53%)	

Respondents mainly desire “**less of**” or “**none**” of 1 of the 12 features of the overall environment surveyed as summarized below. See Figure A5-10 and Table A5-2 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Noise level (57%)	N/A

Respondents mainly desire the “**same level**” of 4 of the 12 features of the overall environment surveyed as summarized below. See Figure A5-10 and Table A5-2 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Seawater quality (58%)	N/A
Sand quality (57%)	
Water area appearance (52%)	
Beach width (Distance from tree line to sea) (52%)	



Figure A5-10. Changes desired in the overall environment by respondents participating in the General Population Survey

Table A5-2. Changes Desired by Respondents Participating in the General Population Survey

Features	More of		Same level		Less of		None		Not applicable		Total Repondents
Overall Environment											
Overall beach cleanliness	80%	145	14%	25	2%	4	2%	3	2%	4	181
Beach appearance(Area from treeline to sea)	59%	91	29%	44	5%	7	5%	7	3%	4	153
Beach width (Distance from treeline to sea)	28%	44	52%	82	4%	6	13%	20	4%	7	159
Sand quality	24%	34	57%	81	4%	5	9%	13	6%	8	141
Water area appearance	29%	41	52%	72	2%	3	9%	13	7%	10	139
Seawater quality	24%	33	58%	78	1%	2	6%	8	10%	14	135
Reef health/quality	57%	75	23%	31	1%	1	6%	8	13%	17	132
Shade trees/vegetation	78%	124	16%	26	2%	3	2%	3	3%	4	160
Noise level	12%	18	28%	43	49%	75	8%	13	3%	5	154
Safe environment	53%	75	36%	51	4%	5	5%	7	3%	4	142
Relaxing environment	56%	78	34%	48	6%	8	3%	4	1%	2	140
Family-friendly environment	54%	78	38%	55	4%	6	3%	4	1%	1	144
Amenities and Facilities											
Beach use signage	55%	79	33%	47	1%	2	5%	7	6%	8	143
Public shade umbrellas/gazebos	50%	78	21%	33	21%	32	6%	10	1%	2	155
Picnic tables	57%	85	18%	27	15%	22	5%	8	4%	6	148
Entertainment facilities	22%	33	27%	40	28%	42	18%	27	4%	6	148
Sporting facilities	30%	42	38%	54	13%	18	13%	19	6%	9	142
Birdwatching facilities	55%	73	29%	38	2%	2	8%	10	8%	10	133
Restroom facilities	59%	85	32%	46	3%	4	4%	6	2%	3	144
Parking facilities	53%	76	31%	45	7%	10	4%	6	4%	6	143
Access for disabled people	65%	91	25%	35	1%	2	6%	9	1%	2	139
Main access road	48%	57	39%	47	6%	7	2%	2	6%	7	120
Waste facilities	78%	112	15%	21	1%	2	2%	3	3%	5	143
Lifeguard presence/station	75%	107	16%	23	1%	1	4%	6	4%	6	143
Recreational Activities											
Loud Music	5%	7	25%	37	53%	80	15%	23	3%	4	151
Parties	4%	5	41%	56	33%	44	15%	20	7%	10	135
Barbeques/Cookouts	12%	16	51%	69	18%	24	10%	13	9%	12	134
Picnics	15%	20	61%	81	10%	13	8%	11	6%	8	133
Swimming and snorkelling	41%	54	49%	65	0%	0	3%	4	8%	10	133
Boating	10%	14	40%	55	33%	46	10%	14	7%	9	138
Sports (e.g. beach volleyball)	31%	43	50%	70	5%	7	7%	10	6%	9	139
Private water sports	23%	31	40%	54	16%	22	13%	18	8%	11	136
Exercising	37%	49	50%	65	1%	1	5%	7	7%	9	131
Commercial Activities											
Bars/restaurants	17%	24	31%	45	33%	47	15%	22	3%	5	143
Souvenir vending	19%	29	25%	38	31%	47	21%	32	4%	6	152
Beach chairs	36%	51	22%	31	28%	40	13%	18	2%	3	143
Water sports	32%	44	35%	48	15%	21	11%	15	8%	11	139
Other commercial activity	12%	15	27%	33	26%	32	26%	32	8%	10	122

Satisfaction with Amenities and Facilities

Respondents were mainly “**completely satisfied**” or “**satisfied**” with 1 of the 12 amenities and facilities surveyed as summarized below. See Figure A5-11 and Table A5-1 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
N/A	Parking facilities (42%)

Respondents were mainly dissatisfied (“**totally unsatisfied**” or “**unsatisfied**”) with 7 of the 12 amenities and facilities surveyed as summarized below. See Figure A5-11 and Table A5-1 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Lifeguard presence/station (62%)	Access for disabled people (48%)
Waste facilities (61%)	Picnic tables (48%)
	Public shade umbrellas/gazebos (46%)
	Restroom facilities (44%)
	Main access road (38%)

Respondents were mainly “**neutral**” on 4 of the 12 amenities and facilities surveyed as summarized below. See Figure A5-11 and Table A5-1 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
N/A	Birdwatching facilities (48%)
	Sporting facilities (46%)
	Entertainment facilities (42%)
	Beach use signage (37%)

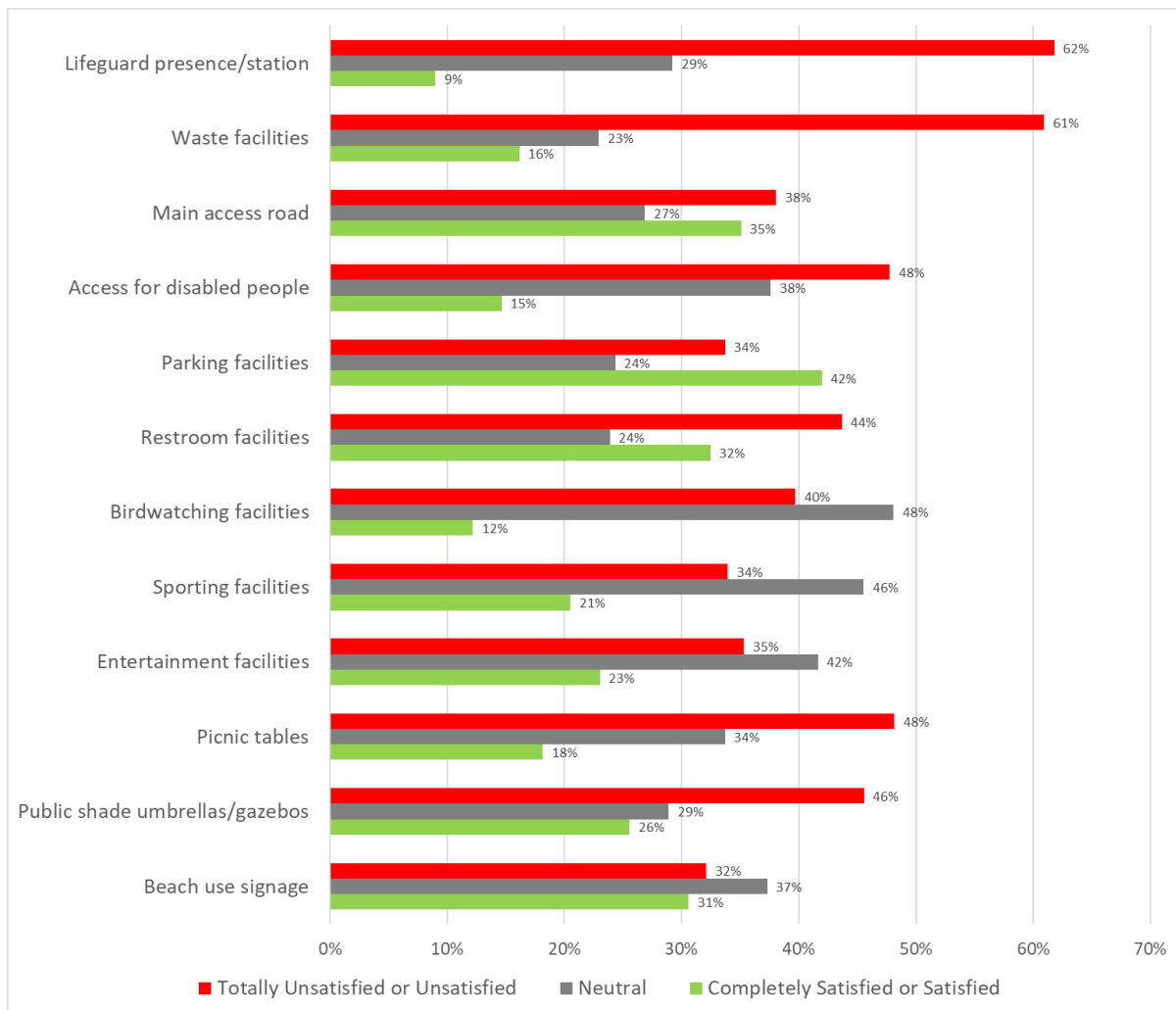


Figure A5-11. Satisfaction of respondents participating in the General Population Survey with amenities and facilities

Desired Changes to Amenities and Facilities

Respondents mainly desire “**more of**” 10 of the 12 amenities and facilities surveyed as summarized below. See Figure A5-12 and Table A5-2 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Waste facilities (78%)	Main access road (48%)
Lifeguard presence/station (75%)	
Access for disabled people (65%)	
Restroom facilities (59%)	
Picnic tables (57%)	
Birdwatching facilities (55%)	
Beach use signage (55%)	
Parking facilities (53%)	
Public shade umbrellas/gazebos (50%)	

Respondents mainly desire “**less of**” or “**none**” of 1 of the 12 amenities and facilities surveyed as summarized below. See Figure A5-12 and Table A5-2 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
N/A	Entertainment facilities (47%)

Respondents mainly desire the “**same level**” of 1 of the 12 amenities and facilities surveyed as summarized below. See Figure A5-12 and Table A5-2 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
N/A	Sporting facilities (38%)

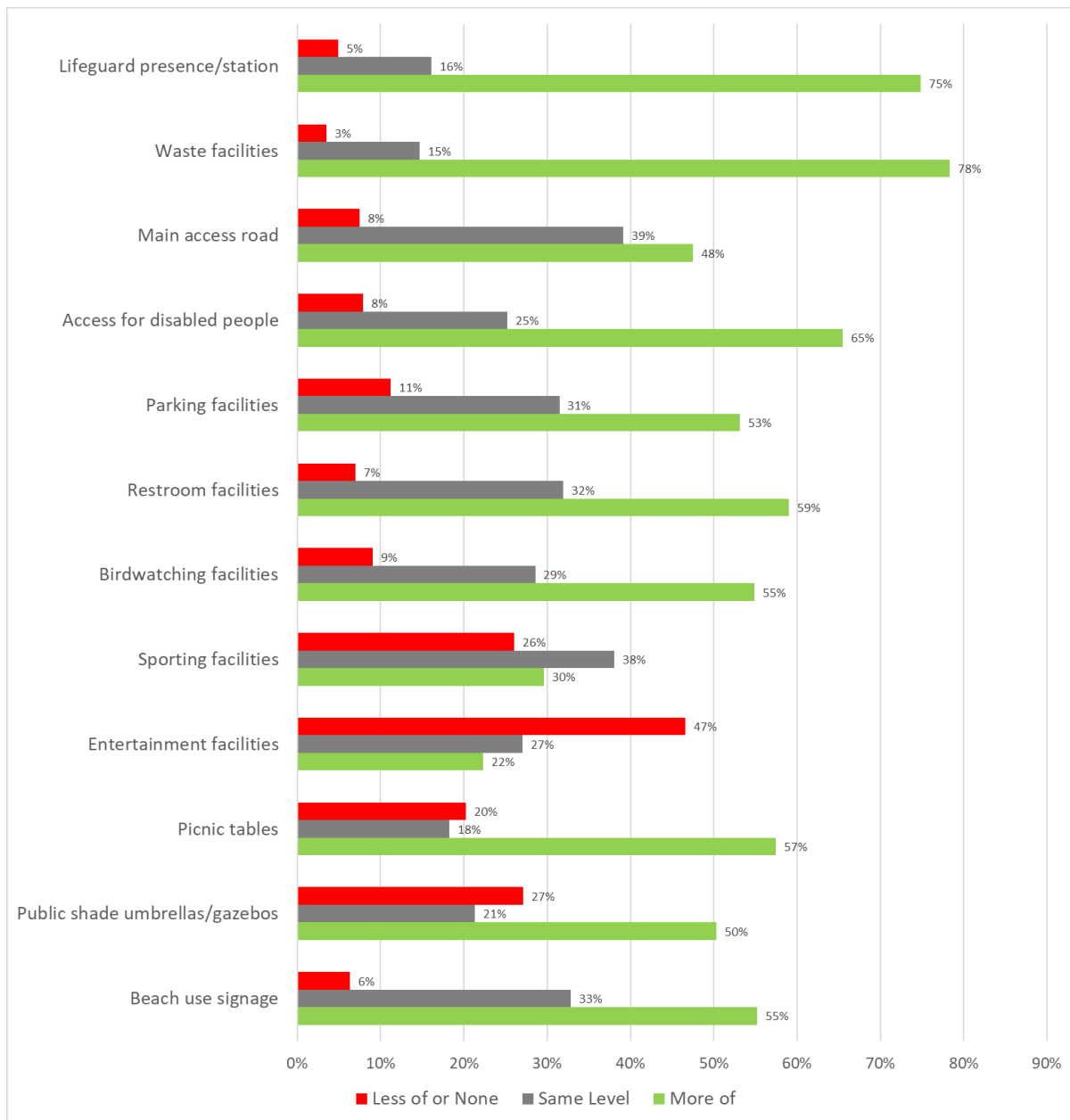


Figure A5-12. Changes desired in amenities and facilities by respondents participating in the General Population Survey

Satisfaction with Recreational Activities

Respondents were mainly “**completely satisfied**” or “**satisfied**” with 2 of the 9 recreational activities surveyed as summarized below. See Figure A5-13 and Table A5-1 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Swimming and snorkelling (60%)	N/A
Exercising (54%)	

Respondents were mainly dissatisfied (“**totally unsatisfied**” or “**unsatisfied**”) with 1 of the 9 recreational activities surveyed as summarized below. See Figure A5-13 and Table A5-1 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Loud music (52%)	N/A

Respondents were mainly “**neutral**” on 6 of the 9 recreational activities surveyed as summarized below. See Figure A5-13 and Table A5-1 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Private water sports (53%)	Picnics (49%)
	Barbeques/cookouts (49%)
	Parties (48%)
	Sports (47%)
	Boating (47%)

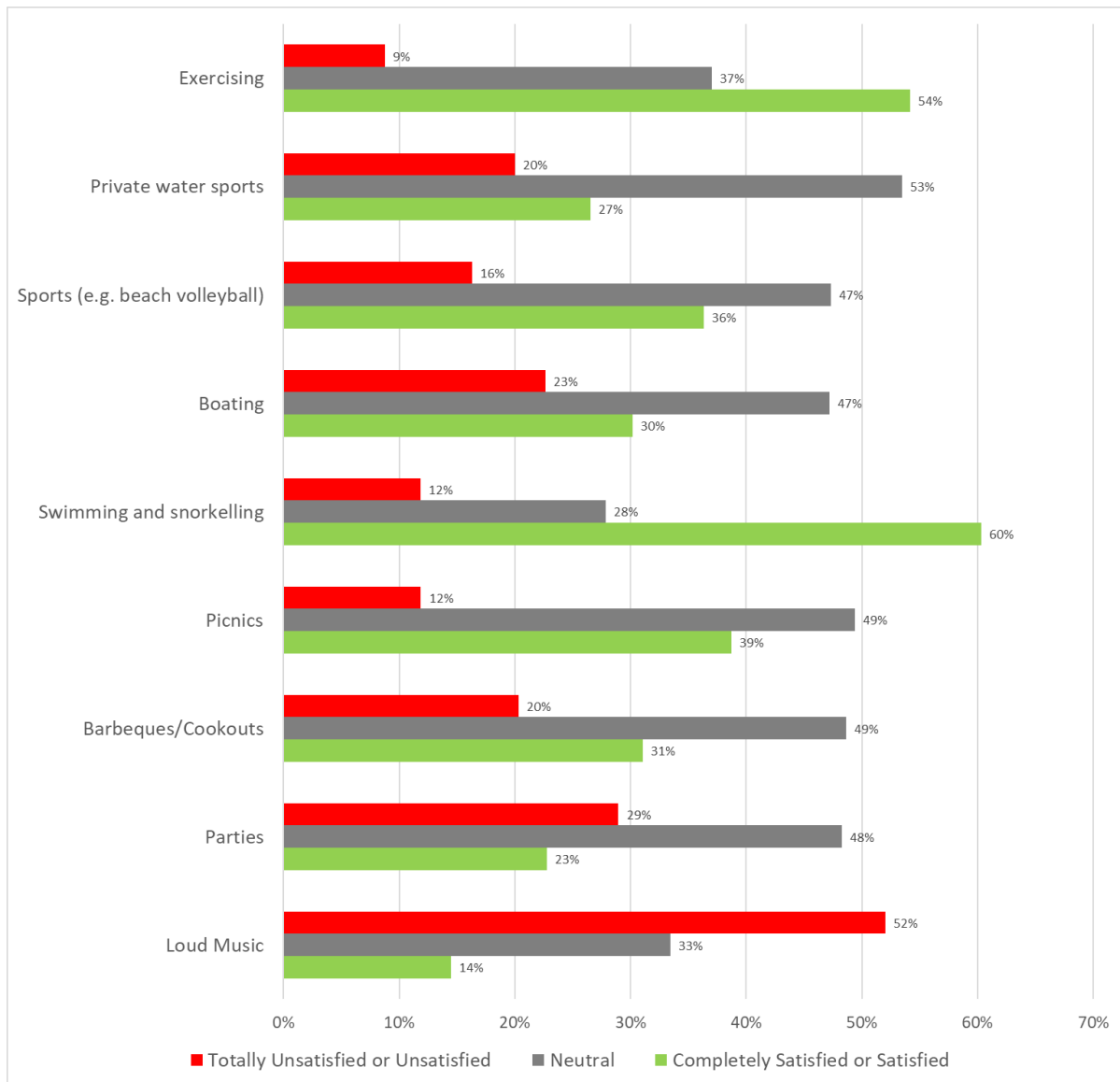


Figure A5-13. Satisfaction of respondents participating in the General Population Survey with recreational activities

Desired Changes in Recreational Activities

There were no recreational activities that respondents mainly desired **“more of.”**

Respondents mainly desire **“less of”** or **“none”** of 3 of the 9 recreational activities surveyed as summarized below. See Figure A5-14 and Table A5-2 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Loud music (68%)	Parties (47%)
	Boating (43%)

Respondents mainly desire the **“same level”** of 6 of the 9 recreational activities surveyed as summarized below. See Figure A5-14 and Table A5-2 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Picnics (61%)	Swimming and snorkelling (49%)
Barbeques/Cookouts (51%)	Private water sports (40%)
Exercising (50%)	
Sports (50%)	

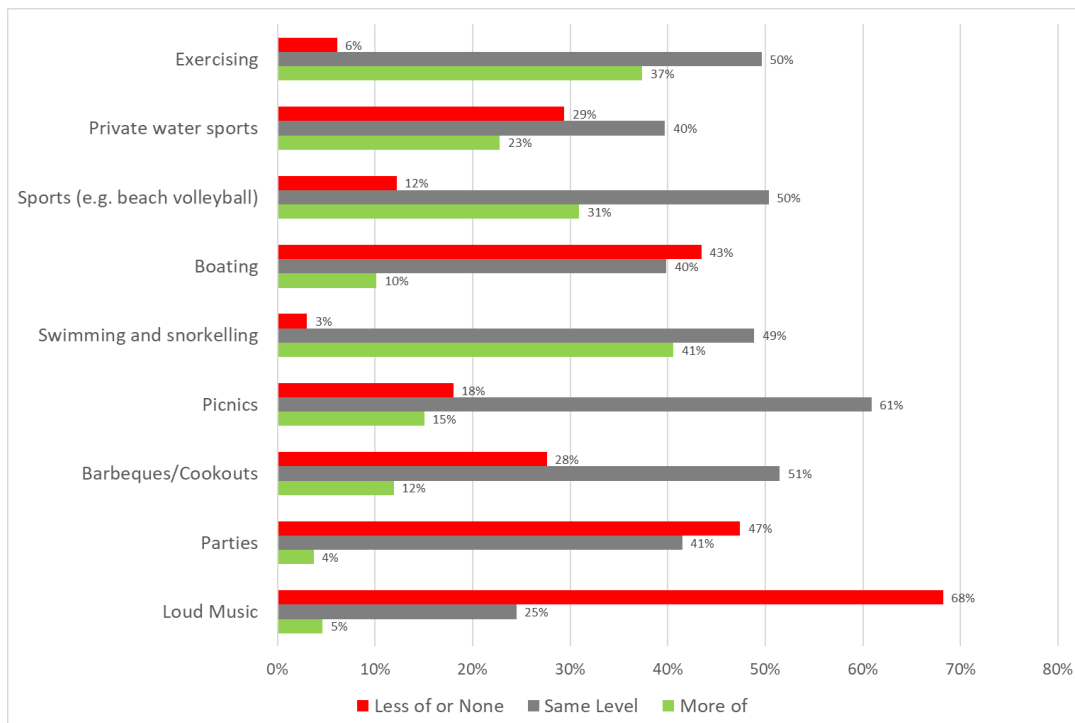


Figure A5-14. Changes desired in recreational activities by respondents participating in the General Population Survey

Satisfaction with Commercial Activities

There are no commercial activities with which respondents are mainly “**completely satisfied**” or “**satisfied**.”

Respondents were mainly dissatisfied (“**totally unsatisfied**” or “**unsatisfied**”) with 1 of the 5 commercial activities surveyed as summarized below. See Figure A5-15 and Table A5-1 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
N/A	Beach chairs (44%)

Respondents were mainly “**neutral**” on 4 of the 5 commercial activities surveyed as summarized below. See Figure A5-15 and Table A5-1 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Other commercial activity (54%)	Souvenir vending (42%)
Water sports (50%)	Bars/restaurants (38%)

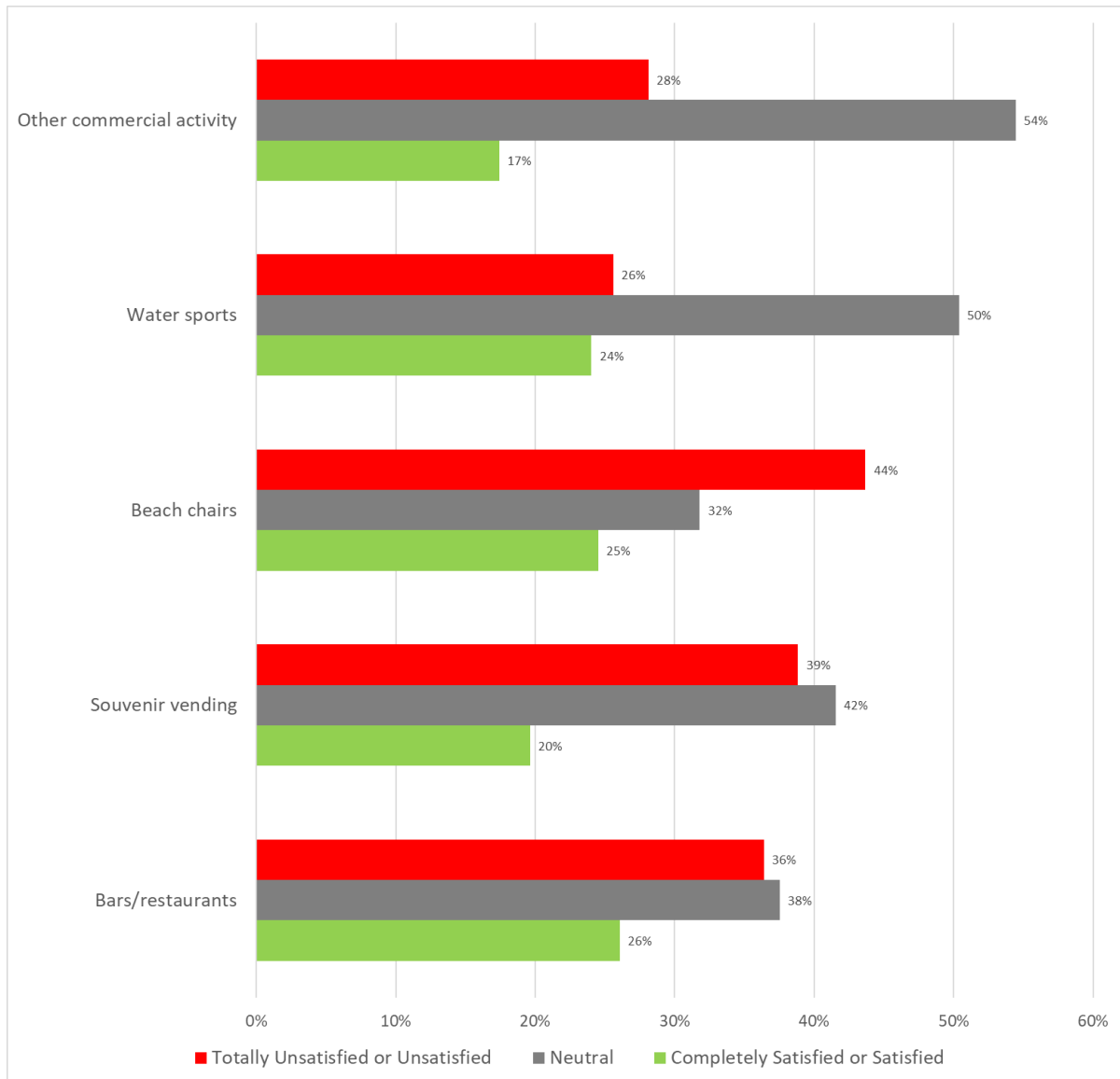


Figure A5-15. Satisfaction of respondents participating in the General Population Survey with commercial activities

Desired Changes in Commercial Activities

There are no commercial activities that respondents mainly desire “more of.”

Respondents mainly desire “less of” or “none” of 4 of the 5 commercial activities surveyed as summarized below. See Figure A5-16 and Table A5-2 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
Souvenir vending (52%)	Bars/restaurants (48%)
Other commercial activity (52%)	Beach chairs (41%)

Respondents mainly desire the “same level” of 1 of the 5 commercial activities surveyed as summarized below. See Figure A5-16 and Table A5-2 for detailed results.

Instances reflecting the majority of respondents (50% or more)	Instances of the most frequent/common response, but not reflecting the majority of respondents (less than 50%)
N/A	Water sports (35%)

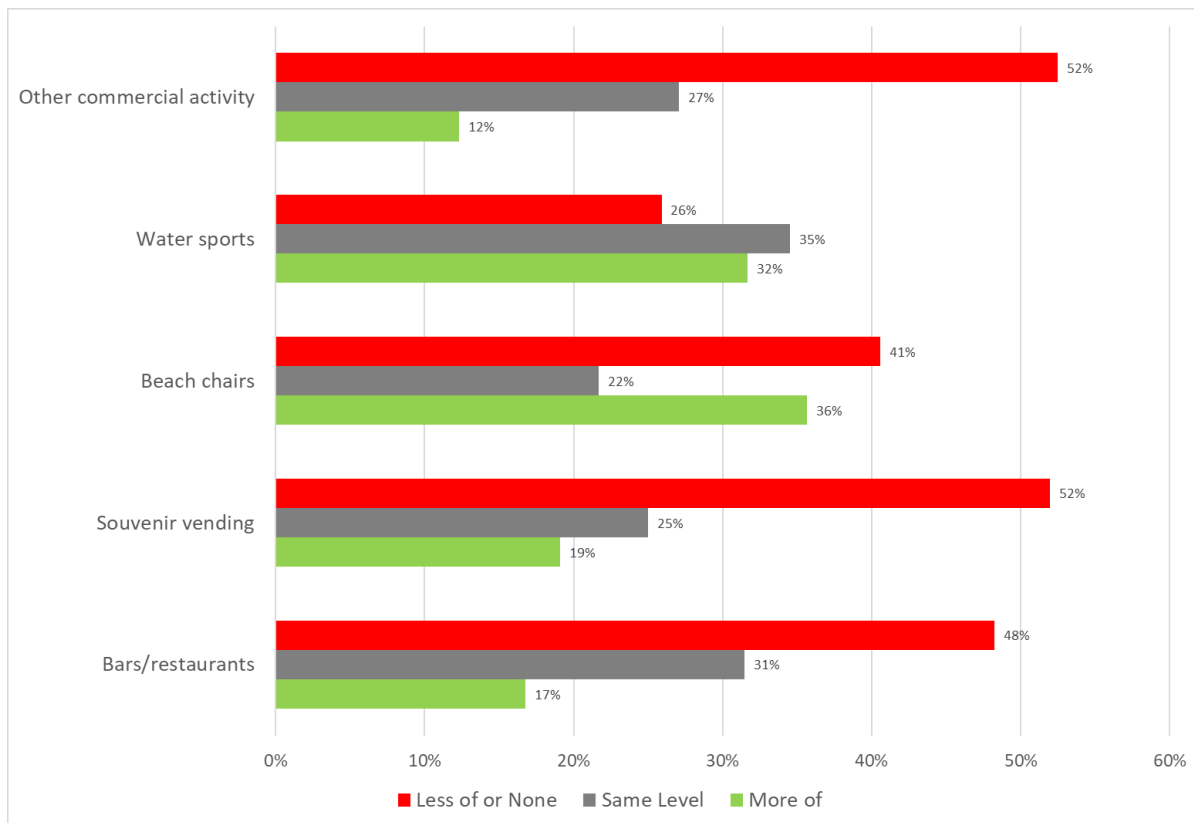


Figure A5-16. Changes desired in commercial activities by respondents participating in the General Population Survey

STUDENT RESULTS

A total of 202 students participated in the Student Survey. The majority of students (61%) were under 12 years old. As all students were in primary school, it can be assumed that the maximum age of the typical student surveyed was 13 years.

Of the 202 Survey respondents, the majority (53%) felt that some commercial development should be allowed at Long Bay in the limited, careful and balanced manner described. This is directly in line with result of the General Population Survey where 52% of respondents fell in that category. The percentage of students who felt that the beach should be commercially developed as a major tourist destination was higher than in the general population, at 25%. Together, 19% of students felt that either development should be limited to basic public amenities and facilities with no permanent commercial activity allowed (10%) or the beach should be preserved in a natural, undeveloped state (9%). The results are presented in Figure A5-17.

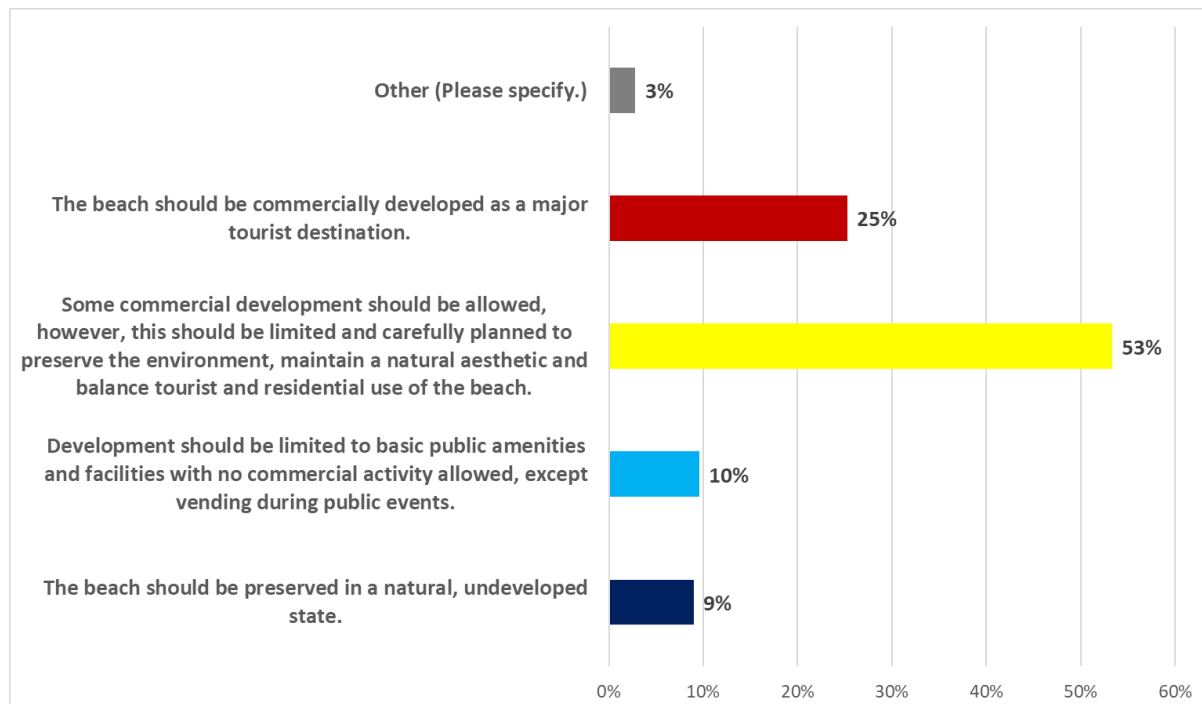


Figure A5-17. Views about development at Long Bay held by student respondents

Appendix VI – Cruise Ship Passenger Arrival Data – Tortola, 2023

Day	Arrival Date	Arrival Time	Departure Date	Ship	Guests
Sunday	Sunday, 1 January 2023	7:00 AM	6:00:00 PM	MEIN SCHIFF 3	2506
Sunday	Sunday, 1 January 2023	10:00 AM	6:00:00 PM	RIVIERA	1252
Sunday	Sunday, 1 January 2023	12:30 PM	10:00:00 PM	AIDABELLA	2500
	Monday, 2 January 2023	7:00 AM	5:00:00 PM	ENCHANTED PRINCESS	3660
	Monday, 2 January 2023	11:30 AM	7:00:00 PM	MSC SEASIDE	5429
	Monday, 2 January 2023	12:00 PM	6:00:00 PM	GRANDEUR OF THE SEAS	2440
	Tuesday, 3 January 2023	8:00 AM	4:00:00 PM	SEVEN SEAS MARINER	730
	Wednesday, 4 January 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 4 January 2023	7:00 AM	3:00:00 PM	CELEBRITY APEX	3200
	Thursday, 5 January 2023	7:00 AM	5:00:00 PM	AIDALUNA	2500
	Friday, 6 January 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
Saturday	Saturday, 7 January 2023	7:00 AM	2:00:00 PM	COSTA PACIFICA	3780
Saturday	Saturday, 7 January 2023	7:00 AM	3:00:00 PM	NORWEGIAN SKY	2480
Sunday	Sunday, 8 January 2023	8:00 AM	6:00:00 PM	COSTA FASCINOSA	3800
	Tuesday, 10 January 2023	6:00 AM	1:00:00 PM	NORWEGIAN SKY	2480
	Tuesday, 10 January 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Wednesday, 11 January 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 11 January 2023	8:30 AM	7:00:00 PM	MEIN SCHIFF 2	2894
	Thursday, 12 January 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
Saturday	Saturday, 14 January 2023	8:00 AM	2:00:00 PM	AZAMARA ONWORD	0
Saturday	Saturday, 14 January 2023	8:00 AM	6:00:00 PM	MARELLA DISCOVERY	2074
	Monday, 16 January 2023	7:00 AM	3:00:00 PM	NORWEGIAN SKY	2480
	Monday, 16 January 2023	11:30 AM	7:00:00 PM	MSC SEASIDE	5429
	Tuesday, 17 January 2023	9:00 AM	6:00:00 PM	CELEBRITY APEX	3200
	Wednesday, 18 January 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Thursday, 19 January 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Thursday, 19 January 2023	7:00 AM	5:00:00 PM	AIDALUNA	2500
	Friday, 20 January 2023	7:00 AM	6:00:00 PM	VOYAGER OF THE SEAS	3838
	Friday, 20 January 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
Saturday	Saturday, 21 January 2023	7:00 AM	2:00:00 PM	COSTA PACIFICA	3780
Sunday	Sunday, 22 January 2023	9:00 AM	6:00:00 PM	SILVER DAWN	0
	Monday, 23 January 2023	7:00 AM	4:00:00 PM	CARNIVAL DREAM	3646
	Monday, 23 January 2023	9:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
	Tuesday, 24 January 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Tuesday, 24 January 2023	8:00 AM	2:00:00 PM	AZAMARA ONWORD	0
	Wednesday, 25 January 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 25 January 2023	8:30 AM	7:00:00 PM	MEIN SCHIFF 2	2894

	Thursday, 26 January 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Friday, 27 January 2023	8:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
	Friday, 27 January 2023	9:00 AM	6:00:00 PM	BRAEMAR	987
Saturday	Saturday, 28 January 2023	7:00 AM	3:00:00 PM	NORWEGIAN SKY	2480
Saturday	Saturday, 28 January 2023	8:00 AM	6:00:00 PM	MARELLA DISCOVERY	2074
Sunday	Sunday, 29 January 2023	8:00 AM	6:00:00 PM	COSTA FASCINOSA	3800
Sunday	Sunday, 1 January 2023	6:00 AM	1:00:00 PM	NORWEGIAN SKY	2480
	Tuesday, 31 January 2023	9:00 AM	6:00:00 PM	CELEBRITY APEX	3200
	Wednesday, 1 February 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 1 February 2023	7:30 AM	6:00:00 PM	VIKING SEA	944
	Thursday, 2 February 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Thursday, 2 February 2023	7:00 AM	5:00:00 PM	AIDALUNA	2500
	Thursday, 2 February 2023	7:30 AM	8:00:00 PM	AIDADIVA	2500
	Friday, 3 February 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
	Friday, 3 February 2023	11:00 AM	6:00:00 PM	AMBIENCE	2043
Saturday	Saturday, 4 February 2023	7:00 AM	2:00:00 PM	COSTA PACIFICA	3780
Sunday	Sunday, 5 February 2023	7:00 AM	6:00:00 PM	MEIN SCHIFF 3	2506
	Monday, 6 February 2023	7:00 AM	3:00:00 PM	NORWEGIAN SKY	2480
	Tuesday, 7 February 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Wednesday, 8 February 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 8 February 2023	8:30 AM	7:00:00 PM	MEIN SCHIFF 2	2894
	Thursday, 9 February 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Friday, 10 February 2023	7:00 AM	8:00:00 AM	SEADREAM I	113
	Friday, 10 February 2023	8:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
Saturday	Saturday, 11 February 2023	7:30 AM	6:00:00 PM	VIKING SEA	944
Saturday	Saturday, 11 February 2023	8:00 AM	6:00:00 PM	MARELLA DISCOVERY	2074
Sunday	Sunday, 12 February 2023	8:00 AM	5:00:00 PM	CELEBRITY MILLENNIUM	2450
	Monday, 13 February 2023	12:30 PM	10:00:00 PM	AIDABELLA	2500
	Tuesday, 14 February 2023	8:00 AM	6:00:00 PM	NORWEGIAN PEARL	3130
	Tuesday, 14 February 2023	9:00 AM	6:00:00 PM	CELEBRITY APEX	3200
	Wednesday, 15 February 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Thursday, 16 February 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Thursday, 16 February 2023	7:00 AM	5:00:00 PM	AIDALUNA	2500
	Thursday, 16 February 2023	10:00 AM	6:00:00 PM	SIRENA	824
	Friday, 17 February 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
Saturday	Saturday, 18 February 2023	7:00 AM	2:00:00 PM	COSTA PACIFICA	3780
Sunday	Sunday, 19 February 2023	8:00 AM	6:00:00 PM	COSTA FASCINOSA	3800
	Monday, 20 February 2023	7:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
	Tuesday, 21 February 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Wednesday, 22 February 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 22 February 2023	8:30 AM	7:00:00 PM	MEIN SCHIFF 2	2894
	Thursday, 23 February 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Thursday, 23 February 2023	11:00 AM	8:00:00 PM	SIRENA	824

	Friday, 24 February 2023	7:00 AM	1:00:00 PM	NORWEGIAN GEM	3130
	Friday, 24 February 2023	8:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
	Tuesday, 28 February 2023	9:00 AM	6:00:00 PM	AURORA	1950
	Wednesday, 1 March 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 1 March 2023	9:00 AM	6:00:00 PM	CELEBRITY APEX	3200
	Thursday, 2 March 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Thursday, 2 March 2023	7:00 AM	5:00:00 PM	AIDALUNA	2500
	Friday, 3 March 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
Saturday	Saturday, 4 March 2023	7:00 AM	2:00:00 PM	COSTA PACIFICA	3780
Saturday	Saturday, 4 March 2023	8:00 AM	6:00:00 PM	MARELLA DISCOVERY	2074
	Monday, 6 March 2023	7:00 AM	1:00:00 PM	NORWEGIAN GEM	3130
	Monday, 6 March 2023	8:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
	Tuesday, 7 March 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Wednesday, 8 March 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 8 March 2023	8:30 AM	7:00:00 PM	MEIN SCHIFF 2	2894
	Thursday, 9 March 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Thursday, 9 March 2023	8:00 AM	4:00:00 PM	NIEUW AMSTERDAM	2735
	Friday, 10 March 2023	8:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
Sunday	Sunday, 12 March 2023	8:00 AM	6:00:00 PM	COSTA FASCINOSA	3800
Sunday	Sunday, 12 March 2023	9:00 AM	5:00:00 PM	CELEBRITY MILLENNIUM	2450
	Monday, 13 March 2023	12:00 PM	8:00:00 PM	AIDALUNA	2500
	Tuesday, 14 March 2023	8:00 AM	11:59:00 PM	EVIRMA	298
	Tuesday, 14 March 2023	9:00 AM	6:00:00 PM	CELEBRITY APEX	3200
	Wednesday, 15 March 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Thursday, 16 March 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Friday, 17 March 2023	7:00 AM	1:00:00 PM	NORWEGIAN GEM	3130
	Friday, 17 March 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
Saturday	Saturday, 18 March 2023	7:00 AM	2:00:00 PM	COSTA PACIFICA	3780
	Monday, 20 March 2023	12:00 PM	8:00:00 PM	AIDADIVA	2500
	Monday, 20 March 2023	2:00 PM	8:00:00 PM	COSTA PACIFICA	3780
	Tuesday, 21 March 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Tuesday, 21 March 2023	8:00 AM	6:00:00 PM	NORWEGIAN PEARL	3130
	Wednesday, 22 March 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 22 March 2023	8:00 AM	5:00:00 PM	SPIRIT OF DISCOVERY	999
	Wednesday, 22 March 2023	8:30 AM	7:00:00 PM	MEIN SCHIFF 2	2894
	Thursday, 23 March 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Tuesday, 28 March 2023	7:00 AM	1:00:00 PM	NORWEGIAN GEM	3130
	Tuesday, 28 March 2023	12:00 PM	8:00:00 PM	AIDAVITA	1582
	Wednesday, 29 March 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 29 March 2023	9:00 AM	6:00:00 PM	CELEBRITY APEX	3200
	Thursday, 30 March 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Friday, 31 March 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
Saturday	Saturday, 1 April 2023	8:00 AM	6:00:00 PM	MARELLA DISCOVERY	2074

Saturday	Saturday, 1 April 2023	8:00 AM	9:00:00 PM	EVIRIMA	298
	Tuesday, 4 April 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Wednesday, 5 April 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 5 April 2023	8:03 AM	7:00:00 PM	MEIN SCHIFF 2	2894
	Thursday, 6 April 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
Sunday	Sunday, 9 April 2023	8:00 AM	5:00:00 PM	CELEBRITY MILLENNIUM	2450
	Tuesday, 11 April 2023	9:00 AM	6:00:00 PM	CELEBRITY APEX	3200
	Wednesday, 12 April 2023	7:00 AM	1:00:00 PM	NORWEGIAN GEM	3130
	Wednesday, 12 April 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Thursday, 13 April 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Friday, 14 April 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
	Tuesday, 18 April 2023	8:00 AM	11:59:00 PM	NORWEGIAN PEARL	3130
	Thursday, 20 April 2023	6:00 AM	2:00:00 PM	NORWEGIAN ESCAPE	4266
Saturday	Saturday, 22 April 2023	7:00 AM	3:00:00 PM	NORWEGIAN SKY	2480
	Tuesday, 25 April 2023	7:15 AM	6:00:00 PM	DISNEY DREAM	
	Thursday, 27 April 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Monday, 1 May 2023	7:00 AM	3:00:00 PM	NORWEGIAN SKY	2480
	Tuesday, 2 May 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Tuesday, 2 May 2023	9:00 AM	6:00:00 PM	BOREALIS	1825
	Thursday, 4 May 2023	6:00 AM	2:00:00 PM	NORWEGIAN ESCAPE	4266
	Thursday, 11 May 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
Saturday	Saturday, 13 May 2023	7:00 AM	3:00:00 PM	NORWEGIAN SKY	2480
Sunday	Sunday, 14 May 2023	7:00 AM	1:00:00 PM	NORWEGIAN SKY	2480
	Monday, 15 May 2023	8:00 AM	6:00:00 PM	MSC MAGNIFICA	3605
	Tuesday, 16 May 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Wednesday, 17 May 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 18 May 2023	7:00 AM	3:00:00 PM	CELEBRITY EQUINOX	2852
	Monday, 22 May 2023	7:00 AM	3:00:00 PM	NORWEGIAN SKY	2480
	Thursday, 25 May 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Tuesday, 30 May 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Thursday, 1 June 2023	6:00 AM	2:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 7 June 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 8 June 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Tuesday, 13 June 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Thursday, 15 June 2023	7:00 AM	3:00:00 PM	CELEBRITY EQUINOX	2852
	Wednesday, 21 June 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 22 June 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Tuesday, 27 June 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Thursday, 29 June 2023	6:00 AM	2:00:00 PM	NORWEGIAN ESCAPE	4266

	Wednesday, 5 July 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 6 July 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Tuesday, 11 July 2023	7:15 AM	6:00:00 PM	DISNEY MAGIC	2834
	Thursday, 13 July 2023	7:00 AM	3:00:00 PM	CELEBRITY EQUINOX	2852
	Wednesday, 19 July 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 20 July 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Thursday, 27 July 2023	6:00 AM	2:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 2 August 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 3 August 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Tuesday, 8 August 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Thursday, 10 August 2023	7:00 AM	3:00:00 PM	CELEBRITY EQUINOX	2852
	Wednesday, 16 August 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 17 August 2023	7:00 AM	1:00:00 PM	NORWEGIAN ESCAPE	4266
	Tuesday, 22 August 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Wednesday, 30 August 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 31 August 2023	7:00 AM	1:00:00 PM	NORWEGIAN SKY	2480
	Tuesday, 5 September 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Thursday, 7 September 2023	7:00 AM	3:00:00 PM	CELEBRITY EQUINOX	2852
	Wednesday, 13 September 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 14 September 2023	7:00 AM	1:00:00 PM	NORWEGIAN SKY	2480
	Wednesday, 27 September 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 28 September 2023	7:00 AM	1:00:00 PM	NORWEGIAN SKY	2480
	Tuesday, 3 October 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Thursday, 5 October 2023	7:00 AM	3:00:00 PM	CELEBRITY EQUINOX	2852
	Wednesday, 11 October 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 12 October 2023	7:00 AM	1:00:00 PM	NORWEGIAN SKY	2480
	Tuesday, 17 October 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Wednesday, 25 October 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Thursday, 26 October 2023	7:00 AM	1:00:00 PM	NORWEGIAN SKY	2480
	Friday, 27 October 2023	8:00 AM	5:00:00 PM	REGAL PRINCESS	4250
	Monday, 30 October 2023	8:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
	Tuesday, 31 October 2023	7:00 AM	3:00:00 PM	ADVENTURE OF THE SEAS	3840
	Tuesday, 31 October 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Thursday, 2 November 2023	7:00 AM	3:00:00 PM	CELEBRITY EQUINOX	2852

	Thursday, 9 November 2023	6:30 AM	5:00:00 PM	AIDADIVA	2500
	Thursday, 9 November 2023	6:30 AM	6:00:00 PM	AIDALUNA	2500
	Thursday, 9 November 2023	6:45 AM	5:00:00 PM	DISNEY DREAM	4000
Saturday	Saturday, 11 November 2023	7:00 AM	6:00:00 PM	MSC SEASHORE	5877
Sunday	Sunday, 12 November 2023	7:00 AM	6:00:00 PM	MEIN SCHIFF 3	2506
	Monday, 13 November 2023	8:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
	Tuesday, 14 November 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Tuesday, 14 November 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
	Wednesday, 15 November 2023	7:30 AM	7:00:00 PM	MEIN SCHIFF 4	2506
	Wednesday, 15 November 2023	8:00 AM	1:00:00 PM	NORWEGIAN GETAWAY	4028
Saturday	Saturday, 18 November 2023	7:30 AM	6:00:00 PM	VIKING SEA	944
Saturday	Saturday, 18 November 2023	9:00 AM	6:00:00 PM	NORWEGIAN EPIC	5186
Sunday	Sunday, 19 November 2023	8:00 AM	5:00:00 PM	SPIRIT OF DISCOVERY	999
	Monday, 20 November 2023	8:00 AM	6:00:00 PM	MARELLA DISCOVERY	2074
	Wednesday, 22 November 2023	8:00 AM	5:00:00 PM	SEVEN SEAS MARINER	730
	Wednesday, 22 November 2023	9:30 AM	9:00:00 PM	AIDADIVA	2500
	Thursday, 23 November 2023	6:30 AM	6:00:00 PM	AIDALUNA	2500
	Thursday, 23 November 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Monday, 27 November 2023	8:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
	Tuesday, 28 November 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Tuesday, 28 November 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
	Wednesday, 29 November 2023	6:00 AM	2:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 29 November 2023	7:30 AM	7:00:00 PM	MEIN SCHIFF 4	2506
	Thursday, 30 November 2023	7:00 AM	3:00:00 PM	CELEBRITY REFLECTION	3046
	Thursday, 30 November 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
Saturday	Saturday, 2 December 2023	7:00 AM	3:00:00 PM	NORWEGIAN SKY	2480
Sunday	Sunday, 3 December 2023	8:00 AM	6:00:00 PM	MARELLA DISCOVERY	2074
	Monday, 4 December 2023	9:00 AM	6:00:00 PM	QUEEN MARY 2	3090
	Monday, 4 December 2023	11:30 AM	7:00:00 PM	MSC SEASIDE	5429
	Wednesday, 6 December 2023	6:00 AM	1:00:00 PM	NORWEGIAN PRIMA	3300
	Thursday, 7 December 2023	6:30 AM	6:00:00 PM	AIDALUNA	2500
	Thursday, 7 December 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
Saturday	Saturday, 9 December 2023	8:00 AM	5:00:00 PM	SEVEN SEAS MARINER	730
	Monday, 11 December 2023	7:00 AM	3:00:00 PM	NORWEGIAN SKY	2480
	Monday, 11 December 2023	8:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
	Tuesday, 12 December 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Tuesday, 12 December 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
	Tuesday, 12 December 2023	12:00 PM	8:00:00 PM	NORWEGIAN PEARL	3130

	Wednesday, 13 December 2023	6:00 AM	2:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 13 December 2023	7:30 AM	7:00:00 PM	MEIN SCHIFF 4	2506
	Thursday, 14 December 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Friday, 15 December 2023	8:00 AM	5:00:00 PM	ZAANDAM	1838
Saturday	Saturday, 16 December 2023	8:00 AM	5:00:00 PM	NORWEGIAN JOY	3804
	Monday, 18 December 2023	8:00 AM	6:00:00 PM	MARELLA DISCOVERY	2074
	Monday, 18 December 2023	11:30 AM	7:00:00 PM	MSC SEASIDE	5429
	Tuesday, 19 December 2023	7:30 AM	3:00:00 PM	AZAMARA ONWORD	0
	Tuesday, 19 December 2023	9:00 AM	5:00:00 PM	SIRENA	824
	Wednesday, 20 December 2023	8:00 AM	6:00:00 PM	CELEBRITY BEYOND (PRE-LAUNCH)	0
	Wednesday, 20 December 2023	9:30 AM	9:00:00 PM	AIDADIVA	2500
	Thursday, 21 December 2023	6:30 AM	6:00:00 PM	AIDALUNA	2500
	Thursday, 21 December 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Thursday, 21 December 2023	7:30 AM	6:00:00 PM	VIKING SEA	944
	Friday, 22 December 2023	7:30 AM	6:00:00 PM	VIKING SEA	944
Saturday	Saturday, 23 December 2023	8:00 AM	5:00:00 PM	NCL LEONARDO 2	0
Sunday	Sunday, 24 December 2023	8:00 AM	6:00:00 PM	CARIBBEAN PRINCESS	3622
Sunday	Sunday, 24 December 2023	8:00 AM	6:00:00 PM	BRAEMAR	987
	Monday, 25 December 2023	7:00 AM	4:00:00 PM	ENCHANTED PRINCESS	3660
	Monday, 25 December 2023	8:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
	Tuesday, 26 December 2023	7:00 AM	4:00:00 PM	INSIGNIA	702
	Tuesday, 26 December 2023	7:15 AM	6:00:00 PM	DISNEY FANTASY	4000
	Tuesday, 26 December 2023	8:00 AM	6:00:00 PM	MARELLA EXPLORER	2681
	Wednesday, 27 December 2023	6:00 AM	2:00:00 PM	NORWEGIAN ESCAPE	4266
	Wednesday, 27 December 2023	7:30 AM	7:00:00 PM	MEIN SCHIFF 4	2506
	Wednesday, 27 December 2023	12:00 PM	8:00:00 PM	AIDAMAR	2686
	Thursday, 28 December 2023	7:00 AM	3:00:00 PM	NORWEGIAN ENCORE	3998
	Friday, 29 December 2023	7:00 AM	1:00:00 PM	NORWEGIAN GETAWAY	4028
Sunday	Sunday, 31 December 2023	7:30 AM	6:00:00 PM	VIKING SEA	944
Sunday	Sunday, 31 December 2023	8:00 AM	6:00:00 PM	FINCANTIERI SESTRI 6304	2800
Sunday	Sunday, 31 December 2023	8:00 AM	6:00:00 PM	ARVIA (NEWBUILD)	0
TOTAL 2023 ARRIVALS					774,890

Appendix VII – Application for Long-term Commercial Use of Beaches

NEW APPLICATION FOR LONG-TERM COMMERCIAL USE OF BEACHES

NOTE TO APPLICANTS

Under The Virgin Islands Beach Policy 2020, Commercial Use of the beach is defined as “use of the beach for business activity.” Long-term Commercial Use is not event-driven and is beyond the “Temporary Commercial Use” period which is typically two days but can be up to one week.

All persons wishing to engage in Long-term Commercial Use of beaches are required to complete this application form as the first step for approval to operate at the beach. A successful application will result in the Ministry of Natural Resources and Labour (the Ministry) issuing of a Conditional Commercial Beach Use Permit. After receipt of a Conditional Commercial Beach Use Permit, the applicant must then acquire and submit to the Ministry all other permissions, permits or licences required to operate before final approval of a Long-term Commercial Beach Use Licence or Long-term Commercial Beach Use Lease is granted and operations can begin. The additional permissions/permits/licences required will be indicated in the Conditional Commercial Beach Use Permit and in all cases will include a valid Trade License for the specific beach.

Completing the Application

This application form is available as a fillable PDF which is the preferred method for completion. This application may also be completed by hand in blue or black ink, ensuring that handwriting is legible. All information requested must be provided for the application to be considered complete. The application form should be accompanied by valid photo identification. A covering letter is optional.

Submitting the Application

This application may be submitted to the Ministry electronically via email at nrl@gov.vg or in hard copy to the Ministry's office. Applicants with questions can call the Ministry at 1-284-468-2147.

Consideration of the Application

Applications will be evaluated by the Ministry and the multi-agency Technical Review Committee (TRC) chaired by the Ministry using standard criteria to assess public safety, environmental impact, aesthetic impact, social impact, economic benefit and capacity/operational considerations. This application form is designed to capture the information required for evaluation of all criteria. All required information must be provided before applications are considered. Applicants will be advised of incomplete applications or of cases where additional information beyond that required on the standard application form may be required based on the nature of the application.

Applicants can expect a confirmation of receipt of their application which will indicate an anticipated processing time. Applications are typically processed within six (6) weeks of receipt.

1. APPLICANTS' DETAILS

The person signing this form is considered the Primary Applicant. The Primary Applicant should be an owner of the business, authorized to act on behalf of the business. The full name, contact details and legal status of all owners must be provided.

a. Primary Applicant			
<i>Full Name (First, Last)</i>	<i>Legal Status (Virgin Islander, Belonger, Non-Belonger)</i>	<i>Phone</i>	<i>Email</i>
b. Secondary Applicants			
<i>Full Name</i>	<i>Legal Status</i>	<i>Phone</i>	<i>Email</i>

c. Other requirements

Valid photo identification (ID) of the Primary and Secondary Applicants must be submitted. Accepted forms of ID include a valid passport page, driver's licence, Belonger card or NHI card for The Virgin Islands.

2. REQUESTED USE

a. Beach name		
b. Beach location (community, island)		
c. Proposed location of operation on the beach Include sufficient details using cardinal directions (east, west etc.), distances and other references to existing landmarks to allow the proposed location to be pinpointed.		
d. Type of use Select from the list of uses below, marking your selection with an 'X' in the box left of the option. (Please note that allowed uses vary per beach based on the specific Beach Management Plan for the beach or interim policies determined by the Ministry of Natural Resources and Labour.)		
☐	Beach bar/restaurant	☐ Nature-based tours or experiences
☐	Limited food service, not requiring cooking (e.g., snack bar, salad bar, smoothie bar, ice cream parlour)	☐ Camping ground
☐	Water sports rental/operation	☐ Horseback riding
☐	Beach chair rental	☐ Hair braiding
☐	Beach-based equipment sale/rental	☐ Spa
☐	Sale of souvenirs/craft	☐ Paid classes (e.g., swimming, watercraft, exercise)
☐	Other (specify):	

3. BUSINESS – BASIC DETAILS

This section captures basic details of the business under consideration.

This section captures basic details of the business under consideration.

a. Business name:					
b. Business legal status: (If incorporated, provide the country and date of incorporation)		Not incorporated (<i>Doing Business As - DBA</i>)		Incorporated	
		Date of incorporation:			
		Country of incorporation:			
c. Existing trade license Does this business have an existing trade license for operation at other locations? <i>If yes, indicate the existing location(s).</i>		Yes		No	
d. Start date of operation What is the proposed start date of operation at the beach? (<i>Day, Month, Year</i>) <i>If this business has already been operating at the beach prior to the passage of The Virgin Islands Beach Policy in 2020, indicate the start date of operation.</i>		Exiting Location(s)			
e. Products, services, experiences offered List and briefly describe all products, services or experiences that would be offered by your business at the beach. Indicate offerings that would be unique to your business at the proposed location with an 'X' under the last column.					
<i>Products/Services/Experiences</i>		<i>Description</i>			<i>Unique to business?</i>
f. Rental of Beach Equipment If your business would include rental of any beach equipment (e.g., beach chairs, watercraft, water toys etc.), provide a list of all proposed equipment with a description and quantity of each.					
<i>Equipment</i>		<i>Description</i> (Include details of make, materials, colours, size etc.)			<i>Quantity for Rent</i>
g. Other requirements Sample images of all proposed rental equipment should be provided as an attachment to this application form.					

4. BUSINESS – OPERATIONAL DETAILS

This section captures essential details about the operations of the business.

a. Operational Plan Briefly describe your operational plan. How will products, services or experiences be provided? Water sport operators and other businesses that may involve health or safety risks are required to include a statement on how safety of customers and the public would be ensured.																										
b. Operating Months Indicate proposed months of operation. If year-round, indicate "All year".																										
c. Operating Times <table border="1"> <thead> <tr> <th>Day</th> <th>Opening Time</th> <th>Closing Time</th> </tr> </thead> <tbody> <tr><td>Monday</td><td></td><td></td></tr> <tr><td>Tuesday</td><td></td><td></td></tr> <tr><td>Wednesday</td><td></td><td></td></tr> <tr><td>Thursday</td><td></td><td></td></tr> <tr><td>Friday</td><td></td><td></td></tr> <tr><td>Saturday</td><td></td><td></td></tr> <tr><td>Sunday</td><td></td><td></td></tr> </tbody> </table>			Day	Opening Time	Closing Time	Monday			Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday		
Day	Opening Time	Closing Time																								
Monday																										
Tuesday																										
Wednesday																										
Thursday																										
Friday																										
Saturday																										
Sunday																										
d. Expected Employees Insert numbers in the boxes provided. <table border="1"> <thead> <tr> <th colspan="2">Total Employees:</th> </tr> <tr> <th>Full-time</th> <th>Part-time</th> </tr> </thead> <tbody> <tr> <td>Virgin Islanders / Belongers</td> <td>Existing residents with work permits</td> </tr> <tr> <td></td> <td>Seasonal Workers recruited outside of the Territory</td> </tr> </tbody> </table>			Total Employees:		Full-time	Part-time	Virgin Islanders / Belongers	Existing residents with work permits		Seasonal Workers recruited outside of the Territory																
Total Employees:																										
Full-time	Part-time																									
Virgin Islanders / Belongers	Existing residents with work permits																									
	Seasonal Workers recruited outside of the Territory																									
e. Target service capacity How many customers do you aim to serve on a daily basis?																										
f. Target audience Who is the primary target customer of the business? (<i>Residents, cruise ship passengers, yachting sector tourists, overnight tourists</i>)																										
g. Special events Will hosting of special events be part of the business model? If so, indicate the nature and expected frequency of such events.																										
h. Provisioning What is the plan for provisioning the business with required goods and other inputs? Indicate expected delivery schedule and type of delivery vehicle.																										
i. Required Infrastructure/Facilities Indicate all infrastructure/facilities that would be required to support the proposed business operation by placing an 'X' in the box left of the item. Provide a brief description for each item indicated/selected.																										

	Infrastructure/Facilities	Description																								
	Enclosed vending unit (Required if goods or equipment, except beach chairs and watercraft, will be left onsite)																									
	Open-air vending stall/display table (If all goods and equipment will be removed from the beach each day)																									
	Mobile vending cart (To be removed from the beach each day)																									
	Vending van or other support vehicle required to remain onsite during operations																									
	Erection of other structures																									
	Outdoor cooking/barbequing area																									
	Vehicle loading/off-loading area																									
	Beach chair storage area (Required for all beach chair rentals)																									
	Watercraft storage area (Required for all water sports rentals/operators)																									
	Other outdoor storage facility																									
	Onsite signage and advertisements																									
	Electricity supply																									
	Water supply																									
	Restrooms																									
	Other																									
j.	Outdoor Furnishings, Fixtures and Equipment Provide a full list of all outdoor furnishings, fixtures and equipment that would be required for the proposed business operation with a description and quantity of each.																									
	<table border="1"> <thead> <tr> <th>Item</th> <th>Description (Include details of make, materials, colours etc.)</th> <th>Quantity</th> </tr> </thead> <tbody> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </tbody> </table>	Item	Description (Include details of make, materials, colours etc.)	Quantity																						
Item	Description (Include details of make, materials, colours etc.)	Quantity																								
k.	Emergency and Disaster Management Plan Summarize your proposed Plan for dealing with emergencies, including incidents involving staff or customers. Summarize the Plan for preventing/minimizing hazard impacts, including from fire, flooding, earthquake and hurricanes. Among other things, the Plan should include internal procedures that would be activated, a list of safety equipment that would be kept on-hand at all times and training/information that would be provided to staff.																									

--

5. ECONOMIC BENEFIT

This section is meant to determine the potential economic benefit of the operation.

a. Contribution to beach experience Briefly describe how the operation would contribute to a high-quality beach experience in line with the Territory's established or desired tourism product or local community needs.
b. Contribution to local, cultural, authentic tourism product Briefly describe how the operation would contribute to a local, cultural, authentic tourism product.
c. Impact on neighbouring businesses What impact would the operation have on neighbouring business operations? (Impact may include any potential noise, smoke, odour, soot, vibration, waste, dust nuisance or danger. Impact may also include positive effects.)

6. ENVIRONMENTAL IMPACT

This section is meant to determine potential environmental impact.

a. Activities with potential environmental impact Place an 'X' in the box left of all activities that apply to your proposed business operation.	
Launching watercraft from the seashore (e.g., kayaks, boats)	Feeding animals, including marine life

	Operation of power-craft (<i>e.g., jet skis, dinghies</i>)		Bonfires
	Cleaning of watercraft or power-craft onsite		Fuelling of equipment onsite
	Anchoring watercraft, power-craft or other equipment to the seabed		Cutting/trimming of vegetation to accommodate business
	Regular movement of equipment/furnishings over the sand		Food preparation involving use of cooking oil
	Manicuring the sand (<i>e.g., moulding, raking, sifting, weeding the sand</i>)		Outdoor cooking (<i>grilling, barbequing etc.</i>)
	Storage of equipment outdoors		Generation of air pollution, including smoke or strong odours
	Cleaning of equipment/furnishings outdoors		Discharge of waste into the environment (<i>vegetation, soil, sand, sea, ponds or ghuts</i>)
	Use of outdoor lighting		Use of fertilizers/pesticides
	Fishing		Promotion or sale of sunscreen
	Snorkelling tours		Use of balloons
	Hiking tours		Sale of products packaged in glass, plastic or Styrofoam
	Other (<i>specify</i>):		
b. Environmental Management Plan For each activity selected above, provide sufficient details of the activity and indicate how business operations will be managed to avoid or minimize negative environmental impact, including to the sea, sand, air, beach vegetation, turtle nesting activity, plant/animal life and surrounding ponds and ghuts.			
c. Waste Management Plan Summarize the Plan for management of waste generated by the business. <i>(Disposal of solid, liquid or hazardous waste, including oil, in the beach environment is not allowed.)</i>			

7. SOCIAL IMPACT

This section is meant to determine potential social impact.

a. Activities with potential social impact Place an 'X' in the box left of all activities that apply to your proposed business operation.			
☐	Activities that may affect swimmer safety	☐	Service of alcohol
☐	Use of loudspeakers for music etc.	☐	Sale of tobacco products
☐	Generation of other loud noise	☐	Gambling/betting
☐	Hosting of entertainment events	☐	Offering of other adult-only products, services, experiences or entertainment
☐	Activities with health or safety risks	☐	Other (<i>specify</i>):
b. Social Responsibility Plan For each activity selected above, indicate how operations will be managed to avoid or minimize negative social impacts, including impacts to a family-friendly beach environment or to surrounding communities.			

Primary Applicant's Signature

Date

Appendix VIII – Criteria for Evaluation of Applications for Long-term Commercial Use

DRAFT CRITERIA FOR EVALUATION OF APPLICATIONS FOR LONG-TERM COMMERCIAL USE TO SUPPORT THE VIRGIN ISLANDS BEACH POLICY 2020

Purpose of Criteria

These criteria are to be applied by the Ministry of Natural Resources and Labour and its Technical Review Committee to assess applications for Long-term Commercial Use on all beaches in The Virgin Islands. The criteria are intended to serve as an objective, transparent and fair basis for selection of the best and most suitable applicants to be permitted to operate on beaches. Applicants will be required to submit an application form with sufficient details to allow assessment against all criteria.

Objective of Criteria

The criteria seek to ensure that commercial activity on beaches is sustainable and results in maximum long-term public benefit by permitting operations that minimize environmental, aesthetic and social impact while maximizing economic benefit within the principles of The Virgin Islands Beach Policy and capacity limits and other boundaries embedded in beach management plans developed for specific beaches.

Assessment Process

The assessment process will include the following steps:

- STEP 1: Pre-Screening Assessment
- STEP 2: Detailed Assessment
- STEP 3: Final Selection

The Pre-Screening Assessment will be undertaken by the Ministry of Natural Resources and Labour and the Detailed Assessment and Final Selection undertaken by the Technical Review Committee.

Pre-Screening Assessment

In order to be considered for approval, applicants must pass all criteria in the Pre-Screening Assessment. Applicants that fail the Pre-Screening Assessment would not move forward to Detailed Assessment.

Detailed Assessment

Applications will be assessed using criteria under five (5) categories, including Environmental Impact, Aesthetic Impact, Social Impact, Economic Benefit, and Capacity and Operations Assessment.

Criteria within each category will be scored on a continuum from +5 to -5, where positive scores reflect positive impact and negative scores reflect negative impact OR using a yes/no rubric in cases where presence of any level of impact (assessment of “yes”) would be unacceptable.

In order to pass the Detailed Assessment, applicants must achieve a passing score in **each** assessment category and cannot be disqualified on any individual assessment criterion. The passing score for each assessment category is defined. Disqualification on an individual criterion reflects an unacceptable level of impact or unacceptable circumstances. An application would be disqualified on an individual criterion if a score of less than ‘-1’, representing ‘limited negative impact’ is achieved or an assessment of “yes” is determined for impacts measured with a yes/no rubric. This system is designed to meet the objective of permitting the **best** applicants with operations that minimize environmental, aesthetic and social impact while maximizing economic benefit and respecting the carrying capacity of beaches.

Final Selection

The Additional Considerations defined will be applied in making a final selection among passing applicants. Following application of the Additional Considerations, the passing applicants with the highest scores will be selected for permitting until the defined capacity limits for each beach have been met.

ASSESSMENT

Pre-Screening Assessment

Assessment Criteria	Guiding Questions/Principles	Scoring Rubric	Result
Allowed commercial use	<i>Guidance:</i> The following commercial activities are prohibited: <i>[List to be included based on the Beach Management Plan per beach]</i> <i>Note:</i> An application falling within the allowed commercial uses does not guarantee approval of the application. Also, novel activities/operations may be proposed that are not included in the prohibited list but which may be deemed as a disallowed activity/operation following assessment.	Pass/Fail	
Applicant's Status	<i>Guidance:</i> Given the limited number of licences that will be issued per beach, commercial opportunities at beaches will be preserved for Virgin Islanders and Belongers.	Pass/Fail	

Detailed Assessment

Assessment Criteria	Guiding Questions/Principles	Scoring Rubric	Score	Evidence/ Justification
CATEGORY 1: ENVIRONMENTAL IMPACT (MAX SCORE: 20 points) (PASSING SCORE: -4 or greater)				
Impact to coastal water quality	Would the proposed operation negatively impact the water quality of the beach over the short or long term?	Yes No		
Impact to air quality	Would the proposed operation negatively impact the air quality of the beach over the short or long term?	Yes No		
Impact to sand quality	Would the proposed operation result in degradation of the sand quality?	Yes No		
Impact to sand dune and vegetation line	Would the proposed operation result in negative impact to the sand dune, including its vegetation, or the vegetation line?	Yes No		
Impact to turtle nesting	How would the proposed operation impact turtle nesting at the beach?	+5 – Major positive impact +3 – Moderate positive impact +1 – Limited positive impact 0 – Neutral -1 – Limited negative impact -3 – Moderate negative impact -5 – Major negative impact		

Assessment Criteria	Guiding Questions/Principles	Scoring Rubric	Score	Evidence/ Justification
Impact to other biodiversity	How would the proposed operation impact biodiversity at the beach?	+5 – Major positive impact +3 – Moderate positive impact +1 – Limited positive impact 0 – Neutral -1 – Limited negative impact -3 – Moderate negative impact -5 – Major negative impact		
Waste generation and management	What impact would the proposed operation have on waste generation and management at the beach (considering implementation of the operation's proposed Waste Management Plan)?	+5 – Major positive impact +3 – Moderate positive impact +1 – Limited positive impact 0 – Neutral -1 – Limited negative impact -3 – Moderate negative impact -5 – Major negative impact		
Strong odours	Would the proposed operation result in strong odours likely to be considered a nuisance to beach users?	Yes No		
Release of toxic substances	Would the proposed operation result in the release of toxic substances?	Yes No		
Hazard impact	Would the proposed operation create a hazard at the beach, including during natural disasters?	Yes No		
Overall environmental integrity	How would the proposed operation impact the overall	+5 – Major positive impact		

Assessment Criteria	Guiding Questions/Principles	Scoring Rubric	Score	Evidence/ Justification
	environmental integrity of the beach over the short or long term? <i>Guidance:</i> In assessing this criterion, consideration should be given to known threats to beaches, including the threats outlined at Table 1 of The Virgin Islands Beach Policy 2020.	+3 – Moderate positive impact +1 – Limited positive impact 0 – Neutral -1 – Limited negative impact -3 – Moderate negative impact -5 – Major negative impact		
SUBTOTAL				

Assessment Criteria	Guiding Questions/Principles	Scoring Rubric	Score	Evidence/ Justification
CATEGORY 2: AESTHETIC IMPACT (MAX SCORE: 5 points) (PASSING SCORE: -1 or greater)				
Visual impact	How would the proposed operation contribute to or detract from the natural, scenic environment of the beach? <i>Guidance:</i> Operations must be aesthetically sensitive to the natural environment using colours, materials, textures, scale and placement that blend with the natural environment.	+5 – Major positive impact +3 – Moderate positive impact +1 – Limited positive impact 0 – Neutral -1 – Limited negative impact -3 – Moderate negative impact -5 – Major negative impact		

Advertisement/Signage	Does the proposed operation require erection and display of advertisements/signage not in keeping with the beach rules or the Planning Act? <i>Guidance:</i> Advertisement/signage must be aesthetically sensitive to the natural environment using colours, materials, textures, scale and placement that blend with the natural environment.	Yes No		
SUBTOTAL				

Assessment Criteria	Guiding Questions/Principles	Scoring Rubric	Score	Evidence/Justification
CATEGORY 3: SOCIAL IMPACT (MAX SCORE: 10 points) (PASSING SCORE: -2 or greater)				
Public health and safety	Would the proposed operation pose a risk to public health and safety?	Yes No		
Swimmer's safety	Would the proposed operation pose a risk to swimmer's health and safety?	Yes No		
Illegal, illicit or criminal activity	Would the proposed operation directly result in or likely encourage illegal, illicit or criminal activity at the beach?	Yes No		

Nuisance	Would the proposed operation create a nuisance of any sort at the beach?	Yes No		
Contribution to noise pollution	How would the proposed operation impact ambient noise levels at the beach?	+5 – Major positive impact +3 – Moderate positive impact +1 – Limited positive impact 0 – Neutral -1 – Limited negative impact -3 – Moderate negative impact -5 – Major negative impact		
Maintenance of family-friendly environment	Would the proposed operation contribute to or detract from maintenance of a family-friendly environment? <i>Guidance:</i> Products, services, entertainment, graphics etc. cannot be obscene or suited only for adult audiences.	+5 – Major positive impact +3 – Moderate positive impact +1 – Limited positive impact 0 – Neutral -1 – Limited negative impact -3 – Moderate negative impact -5 – Major negative impact		
SUBTOTAL				

Assessment Criteria	Guiding Questions/Principles	Scoring Rubric	Score	Evidence/ Justification
CATEGORY 4: ECONOMIC BENEFIT (MAX SCORE: 20 points) (PASSING SCORE: 3 or greater)				
Contribution to high quality beach experience	Would the proposed operation contribute to or detract from a high-quality beach experience in line with the Territory's established or desired tourism	+5 – Major positive impact +3 – Moderate positive impact +1 – Limited positive impact 0 – Neutral		

	product or local community needs?	-1 – Limited negative impact -3 – Moderate negative impact -5 – Major negative impact		
Contribution to local, cultural, authentic tourism product	Would the proposed operation contribute to or detract from a local, cultural, authentic tourism product?	+5 – Major positive impact +3 – Moderate positive impact +1 – Limited positive impact 0 – Neutral -1 – Limited negative impact -3 – Moderate negative impact -5 – Major negative impact		
Impact to other commercial operators	What impact would the proposed operation have on other commercial operators? <i>Guidance:</i> Impact may include any potential noise, smoke, smell, soot, vibration, waste, dust nuisance or danger. Impact may also include positive effects.	+5 – Major positive impact +3 – Moderate positive impact +1 – Limited positive impact 0 – Neutral -1 – Limited negative impact -3 – Moderate negative impact -5 – Major negative impact		
Employment generation	Based on the number of expected employees, what impact would the proposed operation have on employment generation for the local community? <i>Guidance:</i> +5 = 5 or more employees +3 = At least 3 employees	+5 – Major positive impact +3 – Moderate positive impact +1 – Limited positive impact 0 – Neutral -1 – Limited negative impact -3 – Moderate negative impact -5 – Major negative impact		

	+1 = At least 1 employee 0 = No employees (staffed by owner) The assessment may also consider the quality and accessibility of jobs offered.			
SUBTOTAL				

Assessment Criteria	Guiding Questions/Principles	Scoring Rubric	Score	Evidence/Justification
CATEGORY 5: CAPACITY AND OPERATIONAL ASSESSMENT				
Proposed hours and days of operation	Do the proposed hours and days of operation violate the commercial operating times of the beach?	Yes No		
Respect for carrying capacity/capacity limits	Does the proposed operation exceed the carrying capacity/capacity limits established for the beach? <i>Guidance:</i> Would the increase in the proposed product offerings (e.g., beach chairs, beach bars, water sports), patrons or vehicles generated as a result of the proposed operation exceed the carrying capacity/capacity limits established for the beach? AND	Yes No		

	Does the scale of the proposed operation fit within the maximum vendor unit or commercial lot size established for the beach?			
Presence of supporting infrastructure/facilities, including for loading/off loading	Does the proposed operation require supporting infrastructure or facilities (including loading/off loading facilities) that are not existing or not included in the immediate planned infrastructure/facilities for the beach?	Yes No		
Adherence to other requirements	Does the applicant have or can likely obtain the necessary other permissions required to operate the proposed business (e.g., trade licence, food handler's certificate, sea safety certifications etc.)	Yes No		

GRAND TOTAL (Max: 55 points)	
-------------------------------------	--

Final Selection

ADDITIONAL CONSIDERATIONS		
Pre-existing operations (1 st Consideration)	<i>Guidance:</i> Operations existing prior to the approval of The Virgin Islands Beach Policy, 2020 will be given preferred consideration provided that such operations are in keeping with the Beach Policy, the beach management plan for the beach and pass the selection criteria. To be considered, existing operations must also demonstrate compliance or willingness to comply with established or proposed beach rules and regulations.	Yes (Compliant pre-existing operation) No (Non-pre-existing or non-compliant pre-existing operation)
Applicant's Status (2 nd Consideration)	<i>Guidance:</i> Passing applications submitted by Virgin Islanders will be preferred to applications submitted by persons with Belonger status.	Yes (Virgin Islander) No (Belonger Status)
Primary source of income (3 rd Consideration)	<i>Guidance:</i> In order to maximize economic benefit, preference will be given to applicants for whom the proposed operation would be the primary source of income.	Yes (Primary source) No (Not primary source)
Date of application (4 th Consideration)	<i>Guidance:</i> Where applications are otherwise substantially equal, including based on the additional considerations above, preference will be given to applicants who applied first.	Rank based on date of application.

Appendix IX – Application for Temporary Commercial Use of Beaches

APPLICATION FOR TEMPORARY COMMERCIAL USE OF BEACHES

NOTE TO APPLICANTS

Under The Virgin Islands Beach Policy 2020, Commercial Use of the beach is defined as “use of the beach for business activity.” Temporary Commercial Use is event-driven and is typically for up to two (2) days. In special circumstances, Temporary Commercial Use may be considered for up to one (1) week. All persons wishing to engage in Temporary Commercial Use of beaches are required to complete this application form as the first step for approval to operate at the beach.

The following should apply for approval for Temporary Commercial Use of beaches:

- ✓ Organizers/hosts of commercial entertainment events, other events for profit or promotional events at any beach;
- ✓ Organizers/hosts of public events that involve the sale of goods and/or services at beaches;
- ✓ Commercial operators, such as food vendors, other retailers, water sport operators, etc., supporting approved beach events, including commercial events, public events or fundraising events; and
- ✓ Providers of paid nature-based tours or experiences to support approved beach events

A successful application will result in the Ministry of Natural Resources and Labour (the Ministry) issuing of a Conditional Commercial Beach Use Permit. The applicant must then acquire and submit to the Ministry all other permissions, permits or licences, including a valid Trade Licence, before final approval of a Temporary Commercial Beach Use Permit is granted and operations can begin. Applicants granted permission must operate within the approved time(s) of the event.

Completing the Application

This application form is available as a fillable PDF which is the preferred method for completion. This application may also be completed by hand in blue or black ink, ensuring that handwriting is legible. All information requested must be provided for the application to be considered complete. The application form should be accompanied by valid photo identification.

Submitting the Application

This application may be submitted to the Ministry electronically via email at nrl@gov.vg or in hard copy to the Ministry’s office. Applicants with questions can call the Ministry at 1-284-468-2147.

Consideration of the Application

Applications will be evaluated by the Ministry using standard criteria to assess public safety, environmental impact, aesthetic impact, social impact, economic benefit and capacity/operational considerations. This application form is designed to capture the information required for evaluation of all criteria. All required information must be provided before applications are considered. Applicants will be advised of incomplete applications and of cases where additional information is needed beyond that required on the standard application form based on the nature of the application. Applicants can expect a confirmation of receipt of their application. Applications are typically processed within ten (10) business days of receipt.

8. APPLICANTS' DETAILS

The person signing this form is considered the Primary Applicant. The Primary Applicant should be an authorized representative of the event organizer/host or an owner of the applying business, authorized to act on behalf of the business. The full name, contact details and legal status of all event organizer representatives or business owners must be provided.

d. Primary Applicant			
<i>Full Name (First, Last)</i>	<i>Legal Status (Virgin Islander, Belonger, Non-Belonger)</i>	<i>Phone</i>	<i>Email</i>
e. Secondary Applicants			
<i>Full Name</i>	<i>Legal Status</i>	<i>Phone</i>	<i>Email</i>

f. Other requirements

Valid photo identification (ID) of all applicants must be submitted. Accepted IDs include a valid passport page, driver's licence, Belonger card or NHI card for The Virgin Islands.

9. REQUESTED USE

a. Type of permission requested <i>(Mark selection with an 'X' in the box left of the option.)</i>			
☐	Organize/host event	☐	Operate business at event
☐		☐	Both
b. Beach event name			
c. Beach name			
d. Beach location (community, island)			
e. Proposed location on the beach Include sufficient details using cardinal directions (east, west etc.), distances and other references to existing landmarks to allow the proposed location of the event (if the organizer) or the business operation (if the business owner) to be pinpointed.			

10. EVENT DETAILS

Only event organizers/hosts are required to complete this section.

a. Event organizer/host <i>(If a business/organization, include the business/organization name)</i>				
b. Business/organization legal status: <i>(If incorporated/registered, provide the country and date of incorporation/registration)</i>	<i>Businesses</i>		<i>Organizations</i>	
	☐	Not incorporated (Doing Business As - DBA)	☐	Not registered
	☐	Incorporated	☐	Registered
	Date		Date	
	Country		Country	
c. Existing Trade Licence <i>(for businesses only)</i> Does the business have a valid Trade Licence to operate at a location in the Territory? (Yes/No) If no, a Temporary Trade Licence is required. If yes, provide a copy of the existing Trade Licence.				

d. Event Time		Date(s): Daily start and end times:	
e. Expected/target number of attendees per day			
f. Event type <i>(Select all that apply.)</i>			
☐	Party	☐	Sporting event
☐	Music festival	☐	Boating event
☐	Other	☐	Art/Fashion/Cultural event
☐		☐	Culinary event
g. Event description Briefly describe all activities, including forms of entertainment and supporting commercial activity (e.g., food and drink sale) that would be part of the event.			
h. Event Operational and Emergency/Disaster Plan Briefly describe how the event would be managed to ensure public safety and enjoyment, including arrangements for parking/shuttling, provision of restroom facilities and, where applicable, security arrangements and facilities for support vendors/businesses. Summarize the Plan for dealing with emergencies and preventing/minimizing hazard impact, especially from fire and flooding.			
i. Support vendors/business operators			
Are independent vendors/businesses welcome to operate at the event? <i>(Yes/No)</i> <i>(Such vendors/business operators must also apply to the Ministry for permission.)</i>			
j. Support vendor/business operator details			
Please indicate the type and number of vendors/businesses that are desired to operate within the event space. This information is to facilitate consideration of such applications by the Ministry. Where preferred support vendors/business operators have been identified, please indicate the name of the vendors/business operators in the space provided.			
<i>Vendor/Business Operator type</i>		<i>Number desired</i>	<i>Preferred Vendors/Operators</i>
k. Support facilities Indicate and describe all support facilities that would be required for the event, including to accommodate support vendors/business operators, whether they would be provided by the event organizer or vendors/business operators. Place an 'X' in the box left of the item and indicate the expected number of each.			
☐	<i>Support Facility</i>	<i>Description (E.g., make, size)</i>	<i>Number</i>
☐	Sound system / loudspeakers		
☐	Stage		
☐	Tent booths with tables		
☐	Open-air stalls/display tables		
☐	Mobile vending carts		

	Vending vans or other support vehicles required to remain onsite		
	Other structures or furnishings		
	Outdoor storage facility		
	Outdoor cooking/barbequing area		
	Onsite signage and advertisements		
	Generator		
	Water supply		
	Restrooms		
	Other		

11. EVENT BENEFITS

Only organizers/hosts are required to complete this section.

d. Contribution to beach experience, tourism product and surrounding communities

Briefly describe: a) How the event would contribute to a high-quality beach experience in line with the Territory's established or desired tourism product or local community needs; b) How the event would contribute to a local, cultural, authentic tourism product; and c) What benefits the event would have to neighbouring communities or specific segments of the population.

12. BUSINESS OPERATIONAL DETAILS

Only persons applying to operate businesses are required to complete this section.

a. Business name:			
b. Business legal status: <i>(If incorporated, provide the country and date of incorporation)</i>	☐ Not incorporated (<i>Doing Business As - DBA</i>)		☐ Incorporated
	Date of incorporation:		
	Country of incorporation:		
c. Existing Trade Licence Does this business have a valid Trade Licence to operate at a location in the Territory? (Yes/No) <i>If no, a Temporary Trade Licence is required. If yes, provide a copy of the existing Trade Licence.</i>			
d. Products, services, experiences offered at event			
Select from the list below, marking your selection with an 'X' in the box left of the option. <i>(Please note that allowed beach uses vary per beach based on the specific Beach Management Plan for the beach or interim policies determined by the Ministry of Natural Resources and Labour.)</i>			
☐	Sale of food requiring cooking onsite	☐	Nature-based tours and experiences
☐	Sale of food <u>not</u> requiring cooking onsite	☐	Temporary camping ground
☐	Water sports rental/operation	☐	Horseback riding
☐	Beach chair rental	☐	Hair braiding
☐	Beach-based equipment sale/rental	☐	Spa treatments
☐	Sale of souvenirs/craft	☐	Paid classes <i>(e.g. swimming, watercraft, exercise)</i>
☐	Other:		

e. Description of products, services, experiences offered Provide a brief description of the selected items above. If you intend to rent any beach equipment (e.g., beach chairs, watercraft, water toys etc.), provide a list of all proposed equipment with a description and quantity of each.				
f. Operational Plan Briefly describe how products, services or experiences would be provided. Water sport operators and other businesses that may involve health or safety risks are required to include a statement on how safety of customers and the public would be ensured.				
g. Expected number of staff onsite at a time				
h. Support facilities Indicate all support facilities that would be required by placing an 'X' in the box left of the item. Provide a description and number for each. Indicate the provider as " <i>Event Organizer</i> " or " <i>Self</i> ".				
	<i>Support Facility</i>	<i>Description (E.g., make, size)</i>	<i>Number</i>	<i>Provider</i>
	Sound system / loudspeakers			
	Stage			
	Tent booths with tables			
	Open-air stalls/display tables			
	Mobile vending carts			
	Vending vans or other support vehicles required to remain onsite			
	Other structures or furnishings			
	Outdoor storage facility			
	Outdoor cooking/barbequing area			
	Onsite signage and advertisements			
	Generator			
	Water supply			
	Restrooms			
	Other			
i. Emergency and Disaster Management Plan Summarize your Plan for dealing with emergencies, including incidents involving staff or customers. Summarize the Plan for preventing/minimizing hazard impact, especially from fire and flooding.				

13. ENVIRONMENTAL IMPACT

All applicants are required to complete this section.

d. Activities with potential environmental impact

Place an 'X' in the box left of all activities that apply to your proposed event/business operation.

☐	Launching watercraft from the seashore (e.g., kayaks, boats)	☐	Feeding animals, including marine life
☐	Operation of power-craft (e.g., jet skis, dinghies)	☐	Bonfires
☐	Cleaning of watercraft or power-craft onsite	☐	Fuelling of equipment onsite
☐	Anchoring watercraft, power-craft or other equipment to the seabed	☐	Cutting/trimming of vegetation to accommodate event/businesses
☐	Regular movement of equipment/furnishings over the sand	☐	Food preparation, involving use of cooking oil
☐	Manicuring the sand (e.g., moulding, raking, sifting, weeding the sand)	☐	Outdoor cooking (grilling, barbequing etc.)
☐	Storage of equipment outdoors	☐	Generation of air pollution, including smoke or strong odours
☐	Cleaning of equipment/furnishings outdoors	☐	Discharge of waste into the environment (vegetation, soil, sand, sea, ponds or ghuts)
☐	Use of outdoor lighting	☐	Use of fertilizers/pesticides
☐	Fishing	☐	Promotion or sale of sunscreen
☐	Snorkelling tours	☐	Use of balloons
☐	Hiking tours	☐	Sale of products packaged in glass, plastic or Styrofoam
☐	Other (specify):		

e. Environmental Management Plan

For each activity selected above, indicate how the event/business operations will be managed to avoid or minimize negative environmental impact, including impact to the sea, sand, air, beach vegetation, turtle nesting activity, plant/animal life and surrounding ponds and ghuts.

--

f. Waste Management Plan

Summarize the Plan for management of waste generated by the event or business.

(Disposal of solid, liquid or hazardous waste, including oil, in the beach environment is not allowed.)

--

14. SOCIAL IMPACT

All applicants are required to complete this section.

All applicants are required to complete this section.

c. Activities with potential social impact
Place an 'X' in the box for all activities that apply to your proposed event or business operation.

Place an 'X' in the box for all activities that apply to your proposed event or business operation.

	Activities that may affect swimmer safety		Service of alcohol
	Loud music		Sale of tobacco products
	Generation of other loud noise		Gambling/betting
	High volume of cars onsite		Offering of other adult-only products, services, experiences or entertainment
	Activities with health or safety risks		Other (<i>specify</i>):

d. Social Responsibility Plan
For each activity selected above, indicate how operations will be managed to avoid or minimize negative social impacts, including impacts to a family-friendly beach environment or to surrounding communities.

For each activity selected above, indicate how operations will be managed to avoid or minimize negative social impacts, including impacts to a family-friendly beach environment or to surrounding communities.

Primary Applicant's Signature

Date

Appendix X – Application for Non-Commercial Use of Beaches

APPLICATION FOR NON-COMMERCIAL USE OF BEACHES

NOTE TO APPLICANTS

Non-Commercial use is defined as use of the beach that does not involve the sale of goods and/or services. Non-Commercial use is typically granted for up to two (2) days and, in special circumstances, may be considered for up to one (1) week. Persons using the beach for non-commercial purposes must apply to the Ministry of Natural Resources and Labour (the Ministry) for permission if one or more of the following criteria are met:

- ✓ The use will likely involve groups larger than 50 persons
- ✓ Loud speakers will be operated (*a loud speaker is any device that amplifies music or other sound*)
- ✓ Open fires will be burnt
- ✓ Overnight use by groups is involved

Organizers/hosts of an event at a beach, including public events and fundraising events, that would involve the sale of goods and/or services should submit an application for Temporary Commercial Use of Beaches.

A successful application will result in the Ministry issuing of a Conditional Non-Commercial Beach Use Permit. The applicant must then acquire and submit to the Ministry all other permissions, permits or licences that may be required (such as a Noise Certificate), before final approval of a Non-Commercial Beach Use Permit is granted and use can begin. The Ministry will facilitate applicants in other required permissions as far as possible. Applicants granted permission must operate within the approved time(s).

Completing the Application

This application form is available as a fillable PDF which is the preferred method for completion. This application may also be completed by hand in blue or black ink, ensuring that handwriting is legible. All information requested must be provided for the application to be considered complete. The application form should be accompanied by valid photo identification.

Submitting the Application

This application may be submitted to the Ministry electronically via email at nrl@gov.vg or in hard copy to the Ministry's office. Applicants with questions can call the Ministry at 1-284-468-2147.

Consideration of the Application

Applications will be evaluated by the Ministry using standard criteria to assess public safety, environmental impact and social impact. This application form is designed to capture the information required for evaluation of all criteria. All required information must be provided before applications are considered. Applicants will be advised of incomplete applications and of cases where additional information is needed beyond that required on the standard application form based on the nature of the application. Applicants can expect a confirmation of receipt of their application. Applications are typically processed within ten (10) business days of receipt.

1. APPLICANTS' DETAILS

The person signing this form is considered the Primary Applicant. The Primary Applicant should be the event organizer/host. If this application is being submitted on behalf of an organization/business, it must be signed by an officer authorized to represent the organization/business and the organization/business name must be indicated.

g. Primary Applicant			
<i>Full Name (First, Last)</i>	<i>Organization/Business Name</i>	<i>Phone</i>	<i>Email</i>

h. Other requirements

For individual applicants, valid photo identification (ID) must be submitted with this application form. Accepted IDs include a valid passport page, driver's licence, Belonger card or NHI card for The Virgin Islands.

2. REQUESTED USE

f. Beach name			
g. Beach location (community, island)			
h. Permission requested (Select all that apply with an 'X' in the box left of the option.)			
☐ Gathering of 50 or more persons	☐ Use of loudspeakers	☐ Burning of open fires	☐ Overnight use by groups
i. Proposed location on the beach Include sufficient details using cardinal directions (east, west etc.), distances and other references to existing landmarks to allow the proposed location of the event to be pinpointed.			

3. EVENT DETAILS

l. Event Time	Date(s): Daily start and end times:	
m. Expected number of attendees per day		
n. Event type (Select all that apply.)		
☐ Party	☐ Cultural event	☐ Church/religious gathering
☐ Staff fun day / retreat	☐ Art/Culinary/Fashion event	☐ Camping
☐ Family reunion	☐ Sporting event	☐ Other (specify):
o. Event description Briefly describe all activities, including forms of entertainment and water sports that would be part of the event.		

h. Support facilities																					
Indicate all support facilities required for the event by placing an 'X' in the box left of the item. <i>(Please note that the Ministry is not responsible for providing facilities. All temporary structures desired must be specified, approved and removed immediately at the end of the event.)</i>																					
	<table border="1"> <thead> <tr> <th>Support Facility</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Sound system/loudspeakers</td> <td></td> </tr> <tr> <td>Tents/shade structures</td> <td></td> </tr> <tr> <td>Picnic tables</td> <td></td> </tr> <tr> <td>Outdoor cooking/barbequing area</td> <td></td> </tr> <tr> <td>Support vehicle required to remain onsite during event</td> <td></td> </tr> <tr> <td>Other temporary structures or furnishings</td> <td></td> </tr> <tr> <td>Outdoor storage facility</td> <td></td> </tr> <tr> <td>Portable restrooms</td> <td></td> </tr> <tr> <td>Other</td> <td></td> </tr> </tbody> </table>	Support Facility	Number	Sound system/loudspeakers		Tents/shade structures		Picnic tables		Outdoor cooking/barbequing area		Support vehicle required to remain onsite during event		Other temporary structures or furnishings		Outdoor storage facility		Portable restrooms		Other	
Support Facility	Number																				
Sound system/loudspeakers																					
Tents/shade structures																					
Picnic tables																					
Outdoor cooking/barbequing area																					
Support vehicle required to remain onsite during event																					
Other temporary structures or furnishings																					
Outdoor storage facility																					
Portable restrooms																					
Other																					
i. Support facilities description																					
Provide a brief description of <u>all</u> support facilities indicated/selected above.																					

4. ENVIRONMENTAL IMPACT

This section is meant to determine potential environmental impact of the requested use.

g. Activities with potential environmental impact																											
Place an 'X' in the box left of all activities that apply to your proposed use.																											
	<table border="1"> <tbody> <tr> <td>Launching watercraft from the seashore (e.g., kayaks, boats)</td> <td>Feeding animals, including marine life</td> </tr> <tr> <td>Operation of power-craft (e.g., jet skis, dinghies)</td> <td>Bonfires</td> </tr> <tr> <td>Cleaning of watercraft or power-craft onsite</td> <td>Fuelling of equipment onsite</td> </tr> <tr> <td>Anchoring watercraft, power-craft or other equipment to the seabed</td> <td>Cutting/trimming of vegetation to accommodate use</td> </tr> <tr> <td>Regular movement of equipment/furnishings over the sand</td> <td>Food preparation, involving use of cooking oil</td> </tr> <tr> <td>Manicuring the sand (e.g., moulding, raking, sifting, weeding the sand)</td> <td>Outdoor cooking (grilling, barbequing etc.)</td> </tr> <tr> <td>Storage of equipment outdoors</td> <td>Generation of air pollution, including smoke or strong odours</td> </tr> <tr> <td>Cleaning of equipment/furnishings outdoors</td> <td>Discharge of waste into the environment (vegetation, soil, sand, sea, ponds or ghuts)</td> </tr> <tr> <td>Use of outdoor lighting</td> <td>Use of fertilizers/pesticides</td> </tr> <tr> <td>Fishing</td> <td>Promotion or use of sunscreen</td> </tr> <tr> <td>Snorkelling tours</td> <td>Use of balloons</td> </tr> <tr> <td>Hiking tours</td> <td>Use of products packaged in glass, plastic or Styrofoam</td> </tr> <tr> <td colspan="2">Other (specify):</td> </tr> </tbody> </table>	Launching watercraft from the seashore (e.g., kayaks, boats)	Feeding animals, including marine life	Operation of power-craft (e.g., jet skis, dinghies)	Bonfires	Cleaning of watercraft or power-craft onsite	Fuelling of equipment onsite	Anchoring watercraft, power-craft or other equipment to the seabed	Cutting/trimming of vegetation to accommodate use	Regular movement of equipment/furnishings over the sand	Food preparation, involving use of cooking oil	Manicuring the sand (e.g., moulding, raking, sifting, weeding the sand)	Outdoor cooking (grilling, barbequing etc.)	Storage of equipment outdoors	Generation of air pollution, including smoke or strong odours	Cleaning of equipment/furnishings outdoors	Discharge of waste into the environment (vegetation, soil, sand, sea, ponds or ghuts)	Use of outdoor lighting	Use of fertilizers/pesticides	Fishing	Promotion or use of sunscreen	Snorkelling tours	Use of balloons	Hiking tours	Use of products packaged in glass, plastic or Styrofoam	Other (specify):	
Launching watercraft from the seashore (e.g., kayaks, boats)	Feeding animals, including marine life																										
Operation of power-craft (e.g., jet skis, dinghies)	Bonfires																										
Cleaning of watercraft or power-craft onsite	Fuelling of equipment onsite																										
Anchoring watercraft, power-craft or other equipment to the seabed	Cutting/trimming of vegetation to accommodate use																										
Regular movement of equipment/furnishings over the sand	Food preparation, involving use of cooking oil																										
Manicuring the sand (e.g., moulding, raking, sifting, weeding the sand)	Outdoor cooking (grilling, barbequing etc.)																										
Storage of equipment outdoors	Generation of air pollution, including smoke or strong odours																										
Cleaning of equipment/furnishings outdoors	Discharge of waste into the environment (vegetation, soil, sand, sea, ponds or ghuts)																										
Use of outdoor lighting	Use of fertilizers/pesticides																										
Fishing	Promotion or use of sunscreen																										
Snorkelling tours	Use of balloons																										
Hiking tours	Use of products packaged in glass, plastic or Styrofoam																										
Other (specify):																											

h.	Environmental Management Plan For each activity selected above, indicate how the event will be managed to avoid or minimize negative environmental impact, including impact to the sea, sand, air, beach vegetation, turtle nesting activity, plant/animal life and surrounding ponds and ghuts.
i.	Waste Management Plan Summarize the Plan for management of waste generated by the proposed use. <i>(Disposal of solid, liquid or hazardous waste, including oil, in the beach environment is not allowed.)</i>

5. SOCIAL IMPACT
This section is meant to determine potential social impact.

e.	Activities with potential social impact Place an 'X' in the box for all activities that apply to your proposed use.		
	Activities that may affect swimmer safety		Activities with health or safety risks
	Loud music		Provision of alcohol
	Generation of other loud noise		Gambling/betting
	High volume of cars onsite		Offering of other adult-only products, services, experiences or entertainment
f.	Social Responsibility Plan For each activity selected above, indicate how operations will be managed to avoid or minimize negative social impacts, including impacts to a family-friendly beach environment or to surrounding communities.		

 Primary Applicant's Signature

 Date

Appendix XI – Site Plan, Renderings and Architectural Drawings to Support Facilities Plan