

Pūpūkea Beach Park

Master Plan

Final



Prepared for:
City and County of Honolulu
Department of Design and Construction
Department of Parks and Recreation

Prepared by:
Townscape, Inc.

January 2015

Cover photo credit: University of Hawai'i School of Ocean and Earth Science and Technology
<http://www.soest.hawaii.edu/coasts/data/>

Executive Summary

Pūpūkea Beach Park is one of the jewels of the North Shore’s network of shoreline parks that provide a recreational haven for O’ahu’s residents and visitors. The Park offers scenic views, multiple recreational opportunities, support facilities, and biological resources that are appreciated by hundreds of thousands of users every year. Over time, this heavy use has impacted the natural resources and Park facilities. There is now an opportunity to address some of the use issues that have been identified as negatively impacting the user experience and/or the natural resources of Pūpūkea Beach Park.

The first step in ensuring that Pūpūkea Beach Park remains able to serve its many users is to develop a Master Plan that describes current Park conditions, identifies issues to be addressed, articulates a Park vision, and identifies near-term repair and maintenance actions and capital improvements for which the City Departments of Design and Construction (DDC) and Parks and Recreation (DPR) can request funding. This Master Plan will guide the City in requesting funds from the City Council for capital improvements for the Park.

Site Analysis

Pūpūkea Beach Park is a linear shoreline park on the North Shore of O’ahu. It is surrounded by the Pūpūkea Marine Life Conservation District, Kamehameha Highway, the Sunset Beach Fire Station, and residential and commercial land uses. The Park has more than 4,000 feet of shoreline, most of which is rocky, raised coral reef, with basalt outcrops.¹ A narrow grassy area extends along the length of the Beach Park, between its two main use areas: Shark’s Cove on the northern end and Kalua-Māua, also called Three Tables, on the southern end.

The ahupua’a of Pūpūkea and the adjoining ahupua’a of Waimea were of great importance in pre-contact Hawai’i as a place for the kahuna (priests). Its coastal food and water resources were well known and several stories exist about nearshore activities and visits by the goddess Pele. Today, the ocean resources are still appreciated by thousands of residents and visitors every year. Such heavy use requires a balance between providing opportunities for recreation with protecting the public from potential natural hazards such as storms, high waves, strong currents, erosion, and tsunamis. High Park usage also results in the degradation of natural resources and built park facilities.

Access to the Park is primarily through vehicular travel, although bicycle, pedestrian, and bus transportation are also commonly used. Within the park, the bicycle and pedestrian paths are not continuous, causing pedestrians and bicyclists to either travel along the highway or to create their own paths in the grass.

¹ Ocean Safety Division, City and County of Honolulu. O’ahu 32-33 Three Tables-Shark’s Cove.

January 2015

Vision and Goals

Interviews with community and agency stakeholders and by consulting a Community Advisory Group helped to identify community values regarding Pūpūkea Beach Park. Through this process, the following vision and goals were developed:

Pūpūkea Beach Park is a family-friendly park that provides for a wide range of recreational activities for residents and visitors of all ages. Picnic areas overlooking the water encourage use by families, while play courts offer more active use by older children and adults. Ocean enthusiasts engage in resource protection as much as resource enjoyment, allowing the nearshore ecosystem of the Marine Life Conservation District to thrive.

Residents and visitors alike are easily able to arrive at the Park via multiple modes of transportation, easing the burden on Kamehameha Highway and the need for additional Park space to be converted to parking. Once at the Park, users may safely get from one end of the Park to the other and access facilities and the shoreline.

Park users are knowledgeable about the precious scenic resources and coral reef ecosystem that make this area special and are as equally knowledgeable on how to protect and care for those resources, while still enjoying the Park in a safe manner. Rules and policies that minimize user conflicts are widely known and are enforced not only by government enforcement agencies, but Park users themselves.

Pūpūkea Beach Park continues to be a popular Park for residents and non-residents alike, offering a haven for those seeking to enjoy outdoor recreation in a safe and natural setting.

Goals

- Goal 1: Balance of Uses
- Goal 2: Compatibility of Uses
- Goal 3: Recreational Park Use
- Goal 4: Education
- Goal 5: Maintenance
- Goal 6: Safety
- Goal 7: Balance with Commercial Vendors

Proposed Master Plan

Proposed Master Plan actions are organized by use area: Active Recreation Area, Passive Recreation Areas, Ocean Recreation Areas, Caution Areas, Parking Areas, and Park-Wide Improvements.

Active Recreation Area

- Replace existing play courts

Passive Recreation

- Renovate comfort stations
- Create picnic areas

Ocean Recreation Areas

- Viewing platform at Shark's Cove

Caution Areas

- No specific improvements, other than park-wide improvements

Parking Areas

- Resurface parking lots and mark stalls
- Create designated drop-off/pick-up areas for commercial SCUBA operators
- Create designated stalls for emergency and/or enforcement officer parking
- Eliminate illegal parking at Comfort Station #1
- Expand the Central Parking Lot

Park-Wide Improvements

- Improve landscaping/erosion control
- Improve and connect multi-use paths
- Coordinate and improve signs
- Create safe, controlled access

Implementation

Phasing of the Master Plan is recommended to allow the City to request reasonable amounts of funding in the annual budget. The three recommended phases shown below would allow for reasonable budget requests, as well as for the Park to remain at least partially open at all times. Implementation of the Master Plan will require a Special Management Area Major Permit and an Environmental Assessment.

Phase	Construction Cost	Design Cost	Total Cost
1 Shark's Cove Recreation Area	\$1.8 million	\$270,000	\$2.1 million
2 Kalua-Māua Recreation Area	\$1.5 million	\$225,000	\$1.7 million
3 Parking Improvements	\$1.5 million	\$225,000	\$1.7 million
TOTAL	\$4.8 million	\$720,000	\$5.5 million

Long-term maintenance of parks is a challenge, given the City's limited budget. Proposed improvements should incorporate features that minimize future maintenance requirements during design. Additionally, formal partnerships with local community organizations, some of which already have ties to Pūpūkea Beach Park, are encouraged to support maintenance and management efforts.

Table of Contents

Executive Summary	i
Table of Contents	v
Appendices	vi
List of Figures	vii
List of Tables	vii
Acronyms	viii
Acknowledgements	ix
1 Introduction	1
1.1 Purpose of the Master Plan	1
1.2 Planning Process	1
1.3 Honolulu Park System	2
1.4 Pūpūkea Beach Park	2
2 Site Analysis	5
2.1 Physical Description	5
2.2 Terrestrial Features	7
2.3 Marine Resources	8
2.4 Archaeological and Cultural Resources	9
2.5 Natural Hazards	10
2.6 Existing Facilities	13
2.7 Access and Circulation	15
2.8 Runoff and Drainage	18
2.9 Safety and Security	19
2.10 Operations and Maintenance	19
2.11 Volunteer Groups	20
2.12 Resource Use	21
2.13 Land Use	22
3 Vision and Goals	25
3.1 Vision	25
3.2 Goals	26
3.3 Pūpūkea Beach Park Theme: Ocean Recreation and Appreciation	26

Table of Contents (continued)

4	Pūpūkea Beach Park Master Plan	27
4.1	Active Park Area (~ 0.5 acres)	27
4.2	Passive Recreation Areas (~3 acres).....	27
4.3	Ocean Recreation Areas (~2.5 acres).....	28
4.4	Caution Areas (~3 acres)	28
4.5	Parking Areas (~1 acre)	28
4.6	Landscape Improvements (~3 acres).....	33
4.7	Multi-Use Paths	33
4.8	Viewing Platform	34
4.9	Sign Replacement	34
5	Implementation	35
5.1	Phasing and Cost Estimates	35
5.2	Land Use Permits and Approvals Required	39
5.3	Long-Term Maintenance	39
5.4	Unresolved Issues	40
6	References and Sources	41

Appendices

A	Complete List of Proposed Projects
B	Design Guidance
C	Cost Estimates
D	Implementation Phasing

List of Figures

Figure 1 Pūpūkea Beach Park Location 3
Figure 2 Site Analysis Map 6
Figure 3 Access and Circulation 16
Figure 4 Pūpūkea Beach Park Master Plan 29
Figure 5 Pūpūkea Beach Park Master Plan Phasing Plan 37

List of Tables

Table 1 Hazard Intensity Rankings for Waimea Bay Coastline 11
Table 2 Existing Facilities 14
Table 3 Annual Visitor Counts 22
Table 4 Parking Area Concerns and Proposed Actions 31
Table 5 Recommended Parking Improvements 32
Table 6 Master Plan Phases and Cost Estimates 35

January 2015

Acronyms

CAG	Community Advisory Group
CIP	Capital Improvement Program
DAR	Division of Aquatic Resources, DLNR, State of Hawai'i
DDC	Department of Design and Construction, City and County of Honolulu
DLNR	Department of Land and Natural Resources, State of Hawai'i
DOBOR	Division of Boating and Ocean Recreation, DLNR, State of Hawai'i
DOCARE	Division of Conservation and Resource Enforcement, DLNR, State of Hawai'i
DOE	Department of Education, State of Hawai'i
DOH	Department of Health, State of Hawai'i
DPP	Department of Planning and Permitting, City and County of Honolulu
DPR	Department of Parks and Recreation, City and County of Honolulu
DTS	Department of Transportation Services
EO	Executive Order
HAR	Hawai'i Administrative Rules
LF	Linear Foot
MLCD	Marine Life Conservation District
MPW	Mālama Pūpūkea-Waimea
NOAA	National Oceanic and Atmospheric Administration
OSD	Ocean Safety Division, Emergency Services Department, City and County of Honolulu
SCP	North Shore Sustainable Communities Plan
SF	Square Foot
SMA	Special Management Area
TBD	To Be Determined
TMK	Tax Map Key
UH	University of Hawai'i
USGS	United States Geological Survey

January 2015

Acknowledgements

City and County of Honolulu

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State of Hawai'i

Department of Transportation

January 2015

Acknowledgements (continued)

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1 Introduction

Pūpūkea Beach Park is one of the jewels of the North Shore’s network of shoreline parks that provide a recreational haven for O’ahu’s residents and visitors. The Park offers scenic views, multiple recreational opportunities, support facilities, and biological resources that are appreciated by hundreds of thousands of users every year. While visited by many tourists, Pūpūkea Beach Park’s location near residential communities and commercial activities results in heavy use by local residents as well. This mix of use has created a heightened sense of kuleana where residents feel that, “this is a precious local resource and it must be maintained as such.”

However, over time, heavy use has impacted the natural resources and Park facilities. There is now an opportunity to address some of the issues that have been identified as negatively impacting the user experience and/or the natural resources of Pūpūkea Beach Park.

1.1 Purpose of the Master Plan

The first step in ensuring that Pūpūkea Beach Park remains able to serve its many users is to develop a Master Plan that describes current Park conditions, identifies issues to be addressed, articulates a Park vision, and identifies near-term repair and maintenance actions and capital improvements for which the City Departments of Design and Construction (DDC) and Parks and Recreation (DPR) can request funding. This Master Plan will guide the City in requesting funds from the City Council for capital improvements for the Park.

1.2 Planning Process

The master plan used existing data to develop a baseline understanding of Park conditions and usage. Issues were identified through this analysis, as well as through consultations with various area residents, Park users, and government agencies with jurisdiction over the Park. A Community Advisory Committee (CAG) was created to provide continuing input on issues, goals, potential solutions, and the overall Park concept throughout the planning process. Site visits complemented the research and consultations by providing “on-the-ground” verification of details.

Operations and maintenance considerations were discussed with staff from the City Department of Parks and Recreation and Division of Ocean Safety, as well as with the CAG. Design considerations were reviewed with the City Department of Design and Construction and Department of Parks and Recreation for compliance with City standards.

The Master Plan identifies needed capital projects and recommendations for management and other programs for consideration by the City. The Draft Master Plan was published in 2012 and was made available for public review and feedback. Comments received on the Draft Master Plan were incorporated where practicable, and the Final Master Plan will be submitted to the City for implementation.

1.3 Honolulu Park System

Parks serve many purposes, including providing places to rest, relax, play, appreciate the outdoors, and interact with nature. Generally speaking, parks are seen as a way to enhance our quality of life. The Department of Parks and Recreation is responsible for operating, maintaining, and managing the park system for the City and County of Honolulu. The Department of Design and Construction complements DPR by facilitating park planning and design.

The City provides both “community-based” parks (“community” and “neighborhood” parks) that serve the recreational needs of specific geographic areas and “island-wide” parks that offer a site-specific recreational resource that serves a unique purpose for the general population and attract users from beyond a particular neighborhood or district.² Beach parks, such as Pūpūkea Beach Park, are considered island-wide parks by the City.

1.4 Pūpūkea Beach Park

Pūpūkea Beach Park is a linear shoreline park in the ahupua‘a of Pūpūkea on the North Shore of O‘ahu. It extends from Kalua-Māua to the south up to and including Shark’s Cove to the north and is bounded on the mauka (inland) side by Kamehameha Highway and the Sunset Beach Fire Station. This Master Plan addresses the upland portion of Tax Map Key parcel 5-9-004:019 (See Figure 2). The parcel is owned by the State of Hawai‘i, but control and management was conveyed to the City in 1956 by Executive Order (EO) 1760.³ In 2009, EOs 4275 and 4276 withdrew approximately 6.5 acres of coral and rock shelf that was previously used as a quarry, known as the “Tide Pools,” from EO 1760 and placed it under the control and management of the State of Hawai‘i Department of Land and Natural Resources (DLNR) Division of Aquatic Resources (DAR) as a part of the Pūpūkea Marine Life Conservation District. These 6.5 acres are not directly included in this Master Plan.

² City and County of Honolulu DDC and DPR. December 2004. p. 13

³ Territory of Hawaii, October 1956, Executive Order No. 1760 Setting Aside Land for Public Purposes: Pupukeya Beach Park, Pupukeya, Koolauloa, Oahu, T.H.

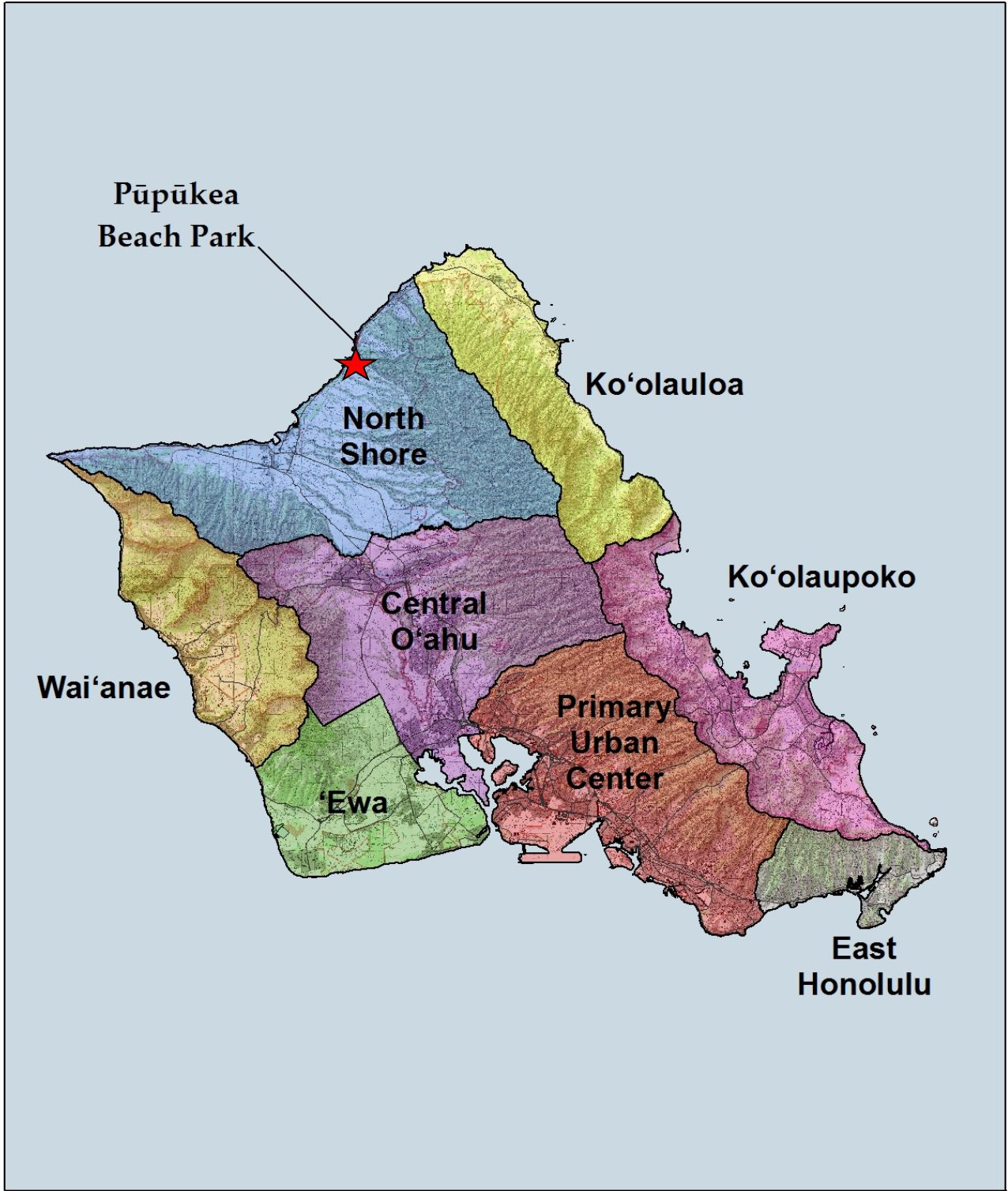
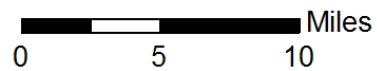


Figure 1 Pūpūkea Beach Park Location

Pūpūkea Beach Park
Final Master Plan



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2 Site Analysis

Pūpūkea Beach Park is a linear park on the coast of O‘ahu’s North Shore, north of Waimea Bay. It is bounded on the mauka side by Kamehameha Highway, and surrounded by residential and commercial land uses. Sunset Beach Fire Station is located approximately halfway along the linear park, adjacent to the highway and surrounded by the Park (Figure 2).

2.1 Physical Description

The Park has more than 4,000 feet of shoreline, most of which is rocky, raised coral reef, with basalt outcrops.⁴ There are two main use areas: Shark’s Cove on the northern end and Kalua-Māua, also called Three Tables, on the southern end.

Shark’s Cove is a deep, 150-foot wide cove that cuts into the raised reef that extends about 600 feet to the north. The reef forms a 6-foot high rampart on the southern side of the cove that extends 300-feet to the west. An intertidal rock platform, called the “Tidepools” area by local residents, links the rampart to the shore, where there is a 150-foot long high tide beach amongst the rock and reef.⁵ The cove, rock platform, and beach are separated from an upper flat, grassy area by a steep dirt hillside.

The grassy flat extends south along the makai side of the fire station where it transitions to rock and the 300-foot long sandy beach at the southern end of the Park known as Kalua-Māua.⁶ Kalua-Māua is also called “Three Tables,” because of the small reefs about 150 feet offshore that are exposed during high tide. The Park’s southern boundary is a 150-foot long basalt point that shelters the residential properties that lie inland.



The intertidal rock platform (“Tidepools” area) to the south of Shark’s Cove buffers the sand beach and landscaped areas from the waves.

⁴ Ocean Safety Division, City and County of Honolulu. O‘ahu 32-33 Three Tables-Shark’s Cove.

⁵ Ocean Safety Division, City and County of Honolulu. O‘ahu 32-33 Three Tables-Shark’s Cove.

⁶ Ocean Safety Division, City and County of Honolulu. O‘ahu 32-33 Three Tables-Shark’s Cove.



2.2 Terrestrial Features

The Park has only a narrow, 100-foot wide strip of grass and trees along most of its length. A few areas around the two comfort stations and at the northern end of the Park are wider. Landscaping consists mainly of coconut palms (*Cocos nucifera*), kou trees (*Cordia subcordata*), milo (*Thespesia populnea*), false kamani (*Terminalia catappa*), and beach naupaka (*Scaevola frutescens*). Forty-foot ironwood trees (*Casuarina equisetifolia*) also line the makai edge of some of the landscaped area, particularly on the southern half of the Park.

Near Shark’s Cove, heavy foot traffic has created bare areas and exposed tree roots, causing many visitors to trip. Additionally, views of the ocean are obscured by tall trees, grass, and weeds along portions of Kamehameha Highway.

The key planning implications include:

- Landscaping should incorporate plants native to the area;
- Landscaping should control erosion and allow for views of the ocean and shoreline.



Park users have worn their own paths through the Park, creating bare soil and exposing tree roots.



Ironwood trees line the makai edge of the landscaped area and block views of the ocean from Kamehameha Highway.



Naupaka and coconut palms separate the grass and sandy beach adjacent to the “Tidepools” area near Shark’ Cove.

2.3 Marine Resources

The waters off of Pūpūkea Beach Park are defined as “Class A” waters by the State Department of Health, intended “for recreational purposes and aesthetic enjoyment.”⁷ Additionally, they are part of the federal **Hawaiian Islands Humpback Whale National Marine Sanctuary** and the State **Pūpūkea-Waimea Marine Life Conservation District (MLCD)**. Various studies done on the marine resources off of Pūpūkea Beach Park found submarine caves, various species of corals, including a rare species (*Montipora studeri*), and many species of fish such as kala lolo (*Naso unicornis*), omilu (*Caranx melampygus*), and pu’u olai (*Canthigaster coronata*). Turtles and monk seals have also been observed at the Park. In a 2005 study, fish weight was four times higher in the MLCD when compared with areas open to fishing.⁸ It has also been found that species richness is greater within the MLCD than in areas outside and adjacent to it and that protection of fish within an MLCD has a “spill-over effect” that benefits adjacent areas.

The key planning implications include:

- Nearshore waters should be protected from surface runoff and point source pollution.
- Signage to educate visitors and protect marine resources.
- Educational opportunities should be provided to Park users on the marine resources and how to protect them.



*Monk seals (Monachus schauislandi) have been known to sunbathe at the Park.
Photo credit: Mālama Pūpūkea-Waimea*



*Palani (acanthurus dussumieri) are herbivores and may be found in the shallow areas of the MCLD.
Photo credit: Mālama Pūpūkea-Waimea*

⁷ Hawaii Administrative Rules §11-54-3 (c) (2)

⁸ Friedlander, Alan M., E. Brown, M. E. Monaco, and A. Clark. 2005. pp. 45-56.

2.4 Archaeological and Cultural Resources

Pūpūkea Beach Park lies within the ahupua‘a (land division) of Pūpūkea in the moku (district) of Ko‘olauloa, just north of its boundary with the moku of Waialua. Pūpūkea and Waimea were lands given to kahuna (priests). As an indication of the importance of this area, Pu‘u o Mahuka heiau (place of worship), the largest heiau on O‘ahu, is located on the ridge mauka of Kalua-Māua. It was said to have been constructed by menehune and was a place where chiefesses gave birth.⁹



Pu‘u o Mahuka heiau, the “hill of escape,” covers almost two acres on the ridge between Waimea and Pūpūkea.

Photo credit: Hawaii State Parks website

<http://www.hawaiistateparks.org/parks/oahu/ind>

The general Pūpūkea area was historically utilized for its coastal resources and the food and water it provided. Kamae‘e Ko‘a, a fishing shrine mauka of Kalua-Māua, and stories of the diversity of fish caught along the coast indicates the productivity of the nearshore waters. Another story recounts how a great woman fisher, Kaluamāua turned into one of the stones that is found “swimming” in the water and that these stones indicate where there is fresh water in the ocean.¹⁰ The area may also have been used for salt collection.¹¹

On the rocky shelf called Kulalua that extends seaward just north of Shark’s Cove sits several large stones called Pele’s followers. Stories tell of how Pele turned her followers into stone to make them immortal. Variations of the story suggest that Pele turned this group of people to stone because they were nosily watching her. The stones are about 10 feet high, with the largest reaching 15 feet high. Each has their own name, a few of which suggest characteristics of the place:¹²

- Holoholoua: the rain
- Holoholomakani: the wind
- Keaukoolau: a strong going-out current
- Mailihahe: the sound of laughter and whistling which is heard in the mountains and resembles the voice of a man.



The stones called “Pele’s Followers” mark the northern boundary of the MLCDC and of the Park.

⁹ Pukui, M. K., S. H. Elbert, and E. T. Mookini. 1974. p. 204

¹⁰ Sterling, Elspeth P. and C. C. Summers. 1978. p. 145.

¹¹ Mālama Pūpūkea-Waimea. “History and Culture.”

¹² Sterling, Elspeth P. and C. C. Summers. 1978. p. 145.

2.5 Natural Hazards

Various university and agency studies identify Pūpūkea Beach Park as having high coastal hazard ratings due to the potential for tsunami, high waves, strong currents, stream flooding, storms, erosion, sea level, and volcanic/seismic conditions. The most obvious and oft-cited hazards include coastal and path erosion, high waves, and rip currents.



Signage warning visitors of dangerous surf and currents are not always heeded.



Erosion due to foot traffic between Shark's Cove and the parking lot.



Signs warn of dangerous surf and other conditions. Safety tape is often erected for additional warning to beach goers.



The 2002 Atlas of Natural Hazards in the Hawaiian Coastal Zone assigned the Waimea Bay coastline, which includes Pūpūkea Beach Park, as having a “moderately high” overall hazard assessment due to conditions that rank as “high” to “moderately high” in hazard intensity.

Table 1 Hazard Intensity Rankings for Waimea Bay Coastline¹³

Hazard	Rank*	Description/Hazard Intensity Rank Definition
Geology	N/A	Primary Features Rocky: low-lying rocky shoreline (beachrock, boulder beach basalt, or limestone), may include a perched beach above high-tide line on a rocky platform Beach: sandy beach, may include minor amounts of beachrock Secondary Feature Fringing Reef: fringing reef adjacent to shoreline
Coastal Slope	N/A	Moderate slope, greater than 20% and less than 45%
Tsunami	4	History of tsunami flooding, historical damage, gentle slope (<45%)
Stream Flooding	4	Historically high flood damage on gentle slope, high watershed rainfall (>7.9 inches per month) and no mitigation efforts or improvements since last damaging flood
High Waves	4	Seasonal high waves >12 feet, characterized by rapid onset
Storms	2	Minor historical overwash (<10 feet), and/or high winds (~40 mph gusts)
Erosion	3	Long-term erosion rate <1 foot per year or highly dynamic erosion/accretion cycles with significant lateral shifts in the shoreline
Sea Level	2	Gentle or moderate slope where rise >0.4 inches per year or steep slope where rise >0.08 inches per year
Volcanic/Seismic	2	No volcanic activity in historical times; Uniform Building Code seismic zone factor <2 recommended, minor historic seismic damage
Overall Hazard Assessment**	5	Moderate to high

* Hazard Intensity Rankings: (1) Low, (2) Moderately Low, (3) Moderately High, (4) High

** Overall Hazard Assessment Rankings: (1) Very Low, (2) Low, (3) Moderate to Low, (4) Moderate, (5) Moderate to High, (6) High, (7) Very High

¹³ Fletcher, Charles H., at. el. 2002. p. 3-5, 61

The City Ocean Safety Division (OSD) of the Emergency Services Department also assessed the potential hazards at Pūpūkea Beach Park and assigned Kalua-Māua a hazard rating range of 5-8 out of 10 due to large waves and currents that can be dangerous for inattentive and inexperienced beachgoers. A rip current at Kalua-Māua, created when waves break over the reef, can pull swimmers offshore.¹⁴



High waves can sweep beachgoers into the surf.

Photo credit: Colette Coty, Mālama Pūpūkea-Waimea

Similarly, Shark’s Cove received a hazard rating of 6-10 for waves that break over the tidepool area, sometimes reaching overhead heights. When this happens, water flowing over the rocks creates a hazard by increasing water depth over the rocks and generating a strong rip current in the cove as the water rushes out.¹⁵

OSD’s ratings express a wide variation in the potential hazards at Pūpūkea Beach Park because “normal caution” conditions are generally present for much of the summer months, but the “highest caution” conditions exist during the winter. There are also times when the hazards may swing from minimal to extreme within one 24-hour period, making this area of particular concern.¹⁶

Additional hazards that were identified through interviews and discussions with Park users include sharp rocks and reefs that are hidden from view under the water, shallow water blackouts experienced by divers, underwater caves that could trap inexperienced divers, slippery conditions when the ground is wet, steep dirt pathways down to Shark’s Cove, and tripping over exposed tree roots, rocks, and dirt exposed from erosion. The entire Park is also within the Tsunami Evacuation Zone.

The key planning implications include:

- Awareness of natural hazards at the Park should be improved through educational and informational signage.
- Hazardous conditions on land should be alleviated, if possible
- Safer beach pathways should be designated.

¹⁴ Personal communication with James Howe, Operations Chief, Ocean Safety and Lifeguard Services Division, City and County of Honolulu. February 1 and 28, 2012.

¹⁵ Ibid

¹⁶ Ibid

2.6 Existing Facilities

Pūpūkea Beach Park provides multiple facilities to support recreational activities. Most of the facilities were constructed/ installed many years ago and have undergone heavy use, as the Park is a key outdoor gathering place for residents and youth. Thus they are in disrepair and in need of renovation or replacement.

The existing play courts are unusable due to vandalism and deteriorated pavement. DPR considered replacing the existing hard-surface play courts with a competition-size sand volleyball court but the CAG recommended renovating the hard-surface courts instead due to concerns about maintenance.

Years ago, there was a children’s swing and jungle gym near Comfort Station #1, but they were removed after they fell into disrepair. Additionally, the Pūpūkea Recreation Center was located between Comfort Station #1 and the Central Parking Lot. It was heavily used by community groups, but was removed in 2009 when the Sunset Beach Recreation Center was constructed north of Pūpūkea Beach Park.

A summary of various Park facilities and their general condition is provided in Table 2.

Issues Identified

- Maintenance should be increased to reflect the high user volume.
- Existing facilities at the Park should be renovated and/or upgraded to improve user experience and safety.
- Additional facilities should be added to accommodate high and increasing usage.



The combination basketball/volleyball court is unusable.



Portions of the rock wall are being undermined by erosion.

Table 2 Existing Facilities

Facility	Description
Bike Racks	There are three bike racks, one at each end of the Park and an additional one at the Comfort Station #2 at Shark's Cove.
Combination Basketball / Volleyball Court	The hard surface court is fenced in and is unusable due to lack of basketball rims and highly deteriorated asphalt pavement. It was not clear if the timed lighting for night play was operational. The CAG recommended renovating the existing courts. The existing retaining wall appears to be structurally sound, but care should be given to remove any plants that begin to grow in and on the wall, causing deterioration of the moss rock veneer.
Comfort Stations	There are two comfort stations: #1 mid-way between the fire station and Kalua-Māua, and #2 overlooking the tidepools near Shark's Cove. Many comments were made regarding the need for upgraded fixtures, brighter interiors, and increased maintenance due to heavy use of the comfort stations, particularly by the end of the day. Water also pools on the floor and does not drain. An additional concern is any leaching of wash water and wastewater into the near shore environment.
Picnic Table	There is one weathered picnic table at Kalua-Māua. Other tables have deteriorated over time and were not replaced. Additional picnic tables were requested by Park users.
Rock Wall	There are two rock walls separating the parking areas from the grassy areas of the Park: one at Shark's Cove and one at Kalua-Māua. Both are in need of repair in places where rocks have come loose and erosion is undermining the wall.
Showers	There is one set of four shower heads near the Shark's Cove comfort station. A second shower at Comfort Station #1 was removed because of polluted runoff concerns. The need for a shower near Kalua-Māua was mentioned repeatedly in interviews. A foot wash was also mentioned as an additional desired amenity.
Signs	Other than one small Beach Park sign, there is no signage identifying the Park. Other signs have been erected throughout the Park by various entities with jurisdiction in the area, including NOAA, DPR, OSD, and DAR. These signs are not coordinated and are in various stages of weathering, which may be a reason why many visitors do not pay attention to them. MPW is working in partnership with the City, State, and NOAA to improve existing and future signage. Two "reef etiquette" signs have recently been erected through this partnership, but all stakeholders should work to improve signage as well.
Trash Cans	Trash cans are provided at various points throughout the Park, particularly along the parking area, the pedestrian/bike path, and at the comfort stations. Park users asked for upgraded trash cans to contain the volume of waste that is generated and prevent it from escaping and blowing into the ocean.
Water Fountains	There are three water fountains: one at each Comfort Station and one at the play court, which is non-functioning. Park users said that additional water fountains would be appreciated.
Board of Water Supply (BWS) pump station	The pump station is located at the northern end of the property and is fenced in for security.

2.7 Access and Circulation

Visitors access the Park by walking, bicycling, driving, drop-offs, and by taking the bus. Circulation within the Park is limited to a one-way driving pattern within the Shark’s Cove parking area and to a linear pathway on the Kalua-Māua side of the Park.

Pedestrian Access

There is no sidewalk along Kamehameha Highway, but people are often seen walking along the side of the road and crossing the highway outside of the crosswalk. Once at the Park, a shared bike path/pedestrian walkway runs parallel to Kamehameha Highway between Kalua-Māua and the Central Parking Lot. There is no similar path on the Shark’s Cove side of the Park, but constant wear has created a dirt path in the grassy area on the makai side of the wall lining the parking area. There are no designated paths from the parking lots or comfort stations to the water. Park users use multiple informal paths to access the water, most of which are slippery and eroded.

Volunteers with the community group Mālama Pūpūkea-Waimea estimate that hundreds of visitors stop by Shark’s Cove at Pūpūkea Beach Park to snorkel, swim, and take in the spectacular view. In order to get the best view, sightseers often walk up to the edge of the steep slope that leads down to Shark’s Cove and/or find ways to climb down to a spot where they can better see the water and the Hale’iwa/Mokulē’ia coastline. This has led to trampling of the grass at the top of the slope, as well as erosion of the slope itself where people have worn paths.



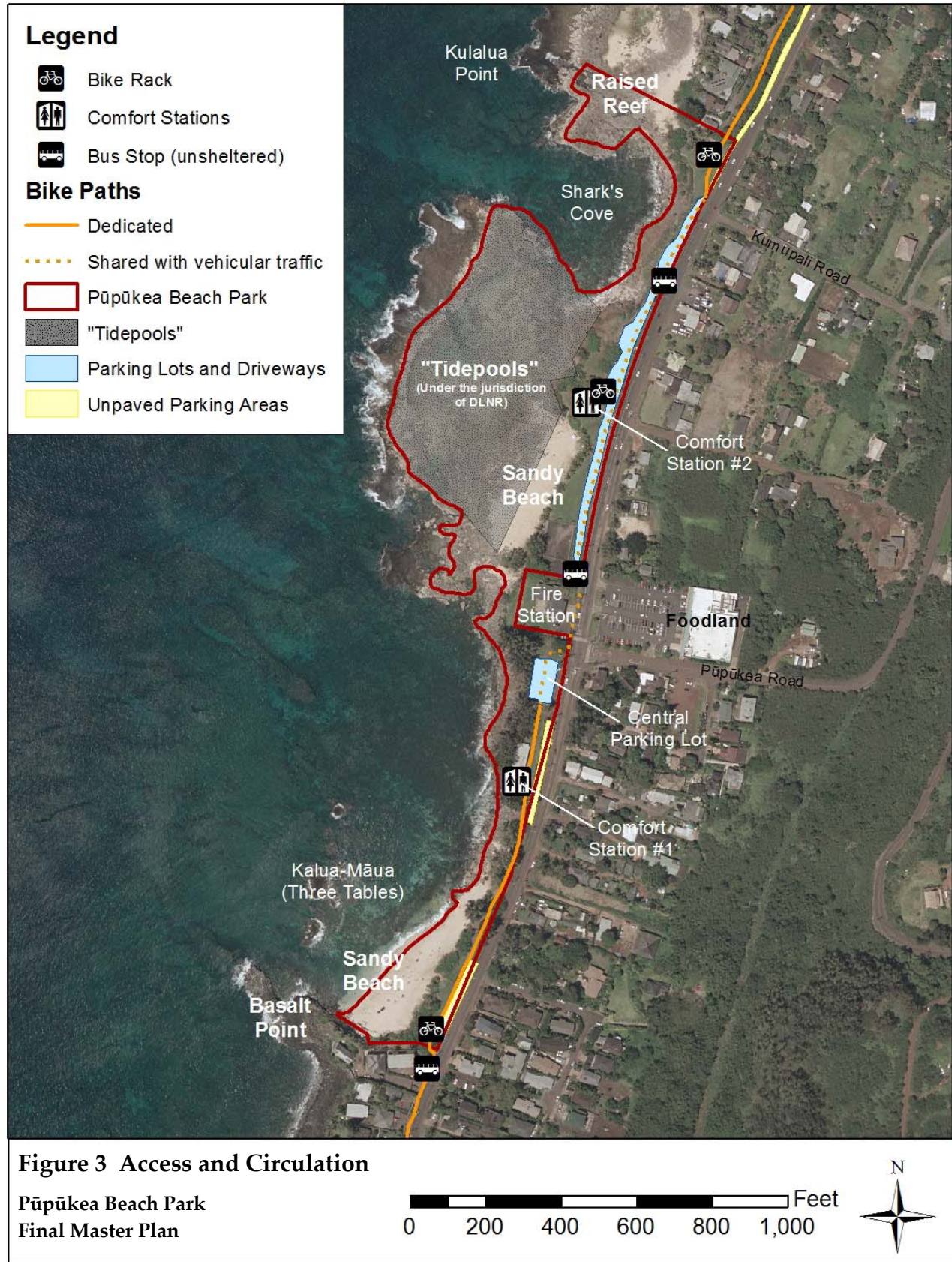
Visitors to the Park try to get a better view of Shark’s Cove and the Hale’iwa/Mokulē’ia shoreline by getting close to the edge of the slope.



A combined pedestrian/bicycle path runs parallel to Kamehameha Highway on the Hale’iwa side of the Park.

Bicycle Path

A bike path along the makai side of Kamehameha Highway enters the northern end of the Park by the BWS pump station. The path then joins with the Shark’s Cove driveway until it exits the Park near the play courts. The path then disappears along the mauka side of the fire station. Bicyclists use the driveway into the Central Parking Lot to access the designated bike/pedestrian path that leads to Kalua-Māua. There are three bike racks in the Park. One each at the BWS pump station, Comfort Station #2, and near the Hale’iwa-end of the Park.



Vehicular Access

Vehicles are legally allowed only within the designated parking areas within the Park. There is one parking lot on either side of the fire station. The Shark's Cove driveway is one-way Hale'iwa-bound with unmarked parking bays. There are no designated parking stalls, but based on visual assessments, an estimated 55 vehicles can fit into this parking area. Parking is allowed only along the makai side of the driveway so emergency vehicles can navigate the driveway, if necessary. The Central Parking Lot on the Hale'iwa side of the fire station is double-loaded, with 28 parking stalls clearly marked, and has only one ingress/egress point.



The parking lot on the Shark's Cove side of the Park has no marked stalls.

Cars also park along an unpaved shoulder located directly off of Kamehameha Highway. This is not a designated parking area, as it is within the State Department of Transportation's (DOT) jurisdiction and is beyond the control of the City DPR. Cars often park mauka of Kalua-Māua and must reverse directly into traffic to exit. Vehicles also park in an unpaved area between the highway and the pedestrian/bike path mauka of Comfort Station #1 on the Hale'iwa side of the fire station. These two parking areas have been observed to hold a total of about 30 vehicles.



The parking near Kalua-Māua requires drivers to reverse onto the highway to leave.

Cars used to park along the makai side of Kamehameha Highway just north of the Park (near Kulalua Point), but the State Department of Transportation created a "No Parking" zone there to alleviate sightline problems for vehicles exiting side streets.

Approximately 113 vehicles are accommodated by both the designated and undesignated parking areas (not including the parking along Kamehameha Highway to the north of the Park) and on busy days, all of the parking is taken by mid-morning. In the summer months when waves are small, the entire Park is used intensively by snorklers, scuba divers, picnickers, families, bicyclists, and pedestrians. During these high-demand periods, there is not enough parking to accommodate all users and vehicles are often found parked illegally along Kamehameha Highway fronting almost the entire length of the Park. Commercial vehicles also reportedly take up parking spaces that should be available for general public Park users.

Park visitors may be dropped off at the Park in the parking lots on either side of the fire station. There are no designated “drop-off” areas, but there is space for vehicles to stop during quick drop-offs/pick-ups and not impede traffic flow.

Bus Access

Visitors accessing the Park by bus are dropped off and picked up at one of three bus stops along the makai side of Kamehameha Highway near Shark’s Cove, at the play courts, and at Kalua-Māua.

The key planning implications include:

- Bicycle/pedestrian traffic should be separated from motorized vehicle traffic.
- Paths should direct Park users to safer access points.
- Parking areas should be designed to provide safe ingress to and egress from the Park.
- Parking should be primarily for recreational Park users, enforcement personnel, and first responders.

2.8 Runoff and Drainage

Three storm drains empty into the nearshore waters off of Pūpūkea Beach Park. Hakuola Gulch drains a small area of Pūpūkea Gardens subdivision into Shark’s Cove. A backflow preventer valve was installed to prevent sand from moving upstream into the pipe. A storm drain near the fire station drains the parking lot of the Foodland complex on the mauka side of Kamehameha Highway. Another storm drain on the Waimea side of the fire station accommodates local runoff. Park users have observed household items in the drainage canal, presumably washed down from the mauka residential area.



This storm drain runs beneath the fire station and drains the Foodland parking lot.

On-site, ponding and puddling is common when it rains, particularly in the parking lots and along the pedestrian/bicycle path. Rainfall and runoff may also carry nonpoint source pollution into the nearshore waters.

The key planning implications include:

- Identify sources and problems associated with nonpoint source pollution.
- Design landscaping and pathways to accommodate on-site drainage.



Vehicle break-ins are common enough that frequent Park users erected a home-made sign warning others of the threat.

2.9 Safety and Security

In addition to the natural hazards mentioned previously, safety and security issues generally include vandalism and various break-ins. The fire station has experienced vandalism of its exterior wall and the basketball rims at the play courts were stolen, preventing use. Vehicle break-ins are also common. In January 2012 alone, six vehicle break-ins were reported at the Park and along Kamehameha Highway fronting the Park.¹⁷

The key planning implications include:

- Design of Park upgrades should incorporate features that deter vandalism and break-ins, if possible.

2.10 Operations and Maintenance

Park maintenance generally includes daily washing of the comfort stations, restocking of paper goods, and trash removal. Periodic landscape maintenance also occurs. Heavy use of the Park has impacted facilities and natural areas, but maintenance efforts have not been increased due to funding limitations. Reallocation of priorities, increased efficiencies, and/or partnerships with other government agencies and private and community entities may be ways to improve maintenance.



Comfort stations require maintenance to keep up with heavy use.

Jurisdiction over management and enforcement of Park rules overlap among several government agencies. The Honolulu Police Department enforces general City rules and laws within the Park. OSD patrols the shoreline by land and uses water craft launched from Waimea Bay to provide rescue services offshore and warn Park users of coastal hazards. The Fire Department warns Park users of hazardous conditions and complements OSD patrols with observations. DLNR's Division of Conservation and Resource Enforcement (DOCARE)

¹⁷ Crime Mapping, January 1 to 31, 2012. Retrieved 2-9-12. [NOTE: The Honolulu Police Department participates in a reporting program that maps certain crimes on-line.]

enforces fishing rules within the MLCD and Division of Boating and Ocean Recreation (DOBOR) rules relating to the operation of motorized vessels offshore. While these agencies all cooperate in maintaining a safe and healthy Park and biological ecosystem, the boundaries between these overlapping jurisdictions are not always clear and enforcement budgets are small, creating lag time for responses and often requiring staff to rely on volunteers to report infractions.



Volunteers with Mālama Pūpūkea-Waimea hold regular outreach activities, including staffing an informational booth every Saturday

The key planning implications include:

- Maintenance should be increased to keep up with the high level of use.
- Park upgrades and future program changes should incorporate ways to easily identify legal vs. illegal activities and to assist in enforcement of rules.
- Education, monitoring, and enforcement of Park and MLCD rules should be increased to protect resources and maintain a positive user experience.

2.11 Volunteer Groups

Mālama Pūpūkea-Waimea (MPW) is a 501(c)(3) non-profit organization that serves as a liaison between the community and the MLCD. Volunteers staff an outreach booth that operates under monthly City permits at one of three locations within the MLCD every Saturday and record observations on human use and fish surveys. MPW also conducts regular educational outreach through presentations on culture, history, and ecology of the area to promote responsible ocean behavior to visitors, interested parties, and students at local schools.¹⁸ MPW partnerships with City, State, Federal, and non-profit entities help to improve signage and the overall management and conservation of this area.

Pūpūkea Seniors and Friends of Shark's Cove also participate in the City's Adopt-A Park program. While recently inactive, MPW is working on reviving this partnership.

The key planning implications include:

- Volunteer participation in maintenance and protection of the Park should be supported.

¹⁸ Hawaii Coral Reef Strategy. "Pūpūkea-Waimea Marine Life Conservation District" <<http://www.hawaiicoralreefstrategy.com/index.php/makai-watch-on-going>>, (retrieved 1-4-12)

2.12 Resource Use

Pūpūkea Beach Park is used for a variety of activities, both onshore and offshore. Onshore, visitors engage in sightseeing, sun bathing, picnicking, educational activities, walking, bicycling, and even weddings. Portions of the Park offer unobstructed views of the ocean, thus making it a common stop for drivers who want to take pictures and use the public restrooms. Park users mentioned that additional picnic areas would make the Park more family-friendly.

Beachgoers similarly utilize the waters off of the Park for a variety of activities, including swimming, snorkeling, scuba diving, kayaking, stand up paddling, surfing, and boating. Diving off of the outer reef is popular during the summer months when there is less wave action.¹⁹ Underwater formations such as “The Blue Room,” a coral cave with a skylight, provide divers with spectacular but potentially dangerous attractions to investigate. Water activities near Shark’s Cove are popular, despite the jagged rocks and reef that dominate the area.

Use of the Park changes with the seasons. As mentioned above, ocean activities such as snorkeling and diving are popular during the summer months when waves are small. In the winter when the surf is rough, there are few ocean users, but the Park serves as a support facility and parking area for those flocking to the North Shore to see the large waves at nearby parks such as Waimea Bay.

The natural resources and the accessible location make Pūpūkea Beach Park a popular stop for both tourists and local residents. Consequently, commercial vendors have set up shop along much of the mauka side of Kamehameha Highway. Within the Park, sightseeing tours, dive/snorkel groups, dive lessons, food trucks, and a t-shirt vendor have been observed. Commercial SCUBA and snorkeling tours utilizing Shark’s Cove are required to obtain one of six available commercial activity permits that restrict the number of individuals in a group to ten, limit the commercial activity to specific times and seasons, and require that customers be shuttled to the Park, unless County approval is obtained,²⁰ but DLNR does not appear to have enforced this regulation. Commercial activities are allowed in the Park by permit only, although this is difficult to enforce due to limited staff.



During the busy summer months, the beach at Kalua-Māua is crowded with sunbathers, swimmers, divers, and other recreational users.

¹⁹ Sea Engineering (2010) City Beach Parks Erosion Study, City and County of Honolulu, p. 87.

²⁰ Hawaii Administrative Rules §13-256-63 Shark’s Cove, Three Tables, and Waimea Bay ocean waters.

There are currently no official visitor counts for Pūpūkea Beach Park, but the City’s figures at nearby Waimea Bay and Sunset Beach have shown consistently high numbers (Table 3). Located between these two beaches, it is can reasonably be assumed that Pūpūkea Beach Park has annual visitor counts in the hundreds of thousands as well.

Table 3 Annual Visitor Counts

	2005	2007	2008	2009	2010
Waimea	511,643	601,396	585,824	530,833	523,982
Sunset	383,469	363,058	371,293	276,186	265,781

DBEDT, State of Hawaii Data Book, 2006-2010

Because of its popularity, local residents have expressed concern for overuse of the Park and nearshore resources. The City recognizes that demand for shoreline parks may exceed their capacity at times. For parks, capacity is often limited by the availability of parking, although the perception of “crowdedness” may impact user experience and discourage use. The MLCD offers some protection from harvesting of marine materials and organisms, but there is no control of entry into Pūpūkea Beach Park like at Hanauma Bay where parking can be restricted and there is mandatory education before entry. Because Pūpūkea Beach Park is linear, entry occurs along the entire length of the Park making these types of protections less feasible.

The key planning implications include:

- Monitoring of Park use and impacts to the nearshore resources should be conducted to ensure that the heavy use does not degrade the quality of the marine environment.
- The current levels of use seem to be hovering at the balance point between satisfying demand for shoreline recreation and becoming overused and thus impacting user experience and natural resources. Access to the Park (i.e., parking availability) should be maintained as is.
- Improvements to facilities and maintenance are needed to provide safe and enjoyable user experience and protect natural resources.

2.13 Land Use

The Park is designated as State Land Use Urban, which identifies it as land for people, structures, and services. City zoning designates the land as P-2, General Preservation, to provide lands within the built environment for outdoor use and enjoyment by the public.

The North Shore Sustainable Communities Plan (SCP) identifies this vision for the North Shore:

“The North Shore in the year 2035 retains the unique qualities that have long defined its attractiveness to residents and visitors alike. Scenic open spaces are protected and maintained, coastal resources are enhanced, and the region’s Native Hawaiian heritage, cultural diversity, and plantation past have been carried forward in the revitalization of its communities.”

The SCP calls for protecting and expanding recreational parks and access to them, integrating pedestrian and bike facilities, making recreational resources and activities compatible with the surrounding environment, and connecting expenditures for recreational resources with actual usage of the facilities. Regarding Pūpūkea Beach Park’s ocean resources, the SCP seeks to maintain the long-term availability of resources and overall environmental quality, rural character, scenic views, and open space, even if it means limiting uses within beach parks and nearshore ocean areas. Specific scenic views at Pūpūkea Beach Park that were identified as needing protection were the coral formation and lateral views along the coast.

Parks should provide adequate parking and support facilities. In recognition of the fact that beach parks contribute to the North Shore economy, commercial activities that are related to the enhancement of a given park should be allowed, but should follow rules to minimize conflicts with recreational users and mitigate impacts on the resource and surrounding communities.

The quality of both visitor and resident recreational experiences should remain high. To assist in this, the SCP recommended that expenditures on management and maintenance be based on actual site usage, rather than on resident population or land values. Additionally, public-private partnerships are encouraged to address maintenance issues.

The key planning implications include:

- Integrate pedestrian and bicycle facilities.
- Maintain the rural feel of the North Shore.
- Balance Park use with resource protection.
- Preserve and enhance coastal views.
- Allow permitted commercial activities that enhance the Park and MLCD.
- Maintain facilities and resources to enhance user experience.



Pūpūkea Beach Park provides a venue for outdoor use and enjoyment.

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3 Vision and Goals

Parks can provide a variety of services for the community. The vision and goals developed for Pūpūkea Beach Park will help shape the Master Plan, with proposed projects aligning with the community's vision and goals for the Park. Based on input from community members, agencies, and the Community Advisory Group, the following vision and goals were developed to guide the planning for Pūpūkea Beach Park.

3.1 Vision

Pūpūkea Beach Park is a family-friendly park that provides for a wide range of recreational activities for residents and visitors of all ages. Picnic areas overlooking the water encourage use by families, while play courts and a safe bike path offer more active use by older children and adults. Ocean enthusiasts engage in resource protection as much as resource enjoyment, allowing the nearshore ecosystem of the Marine Life Conservation District to thrive.

Residents and visitors alike are easily able to arrive at the Park via multiple modes of transportation, easing the burden on Kamehameha Highway and the need for additional Park space to be converted to parking. Once at the Park, users may safely get from one end of the Park to the other and access facilities and the shoreline.

Park users are knowledgeable about the precious scenic resources and coral reef ecosystem that make this area special and are as equally knowledgeable on how to protect and care for those resources, while still enjoying the Park in a safe manner. Rules and policies that minimize user conflicts are widely known and are enforced not only by government enforcement agencies, but Park users themselves.

Pūpūkea Beach Park continues to be a popular Park for residents and non-residents alike, offering a haven for those seeking to enjoy outdoor recreation in a safe and natural setting.

3.2 Goals

Goal 1: Balance of Uses

To maintain and support opportunities for a wide-range of recreational activities while protecting the environmental quality, rural character, scenic views, and open space of Pūpūkea Beach Park.

Goal 2: Compatibility of Uses

Ensure compatibility of multiple uses within the Park and of Park use with surrounding land uses, including the State Marine Life Conservation District and federal Hawaiian Islands Humpback Whale National Marine Sanctuary.

Goal 3: Recreational Park Use

The number of Park users is reasonable to meet both conservation requirements and to provide a safe and enjoyable recreational experience.

Goal 4: Education

Meaningful educational, cultural, and interpretive opportunities are provided on Park information and history, conservation, rules, regulations, and safety.

Goal 5: Maintenance

Maintenance and custodial services are provided in a cost-effective manner to ensure the health, safety, and enjoyment of Park users and to preserve the natural qualities of the Park.

Goal 6: Safety

There is a reasonable understanding of the risks and hazards present at the Park and rules and regulations are made available in an effective manner to ensure the safety of all Park users.

Goal 7: Balance with Commercial Vendors

Commercial vendors and service contracts are consistent with conservation objectives and are compatible with recreational Park uses.

3.3 Pūpūkea Beach Park Theme: Ocean Recreation and Appreciation

The North Shore of O‘ahu is defined by two major components: agriculture and the ocean. Agriculture was not as prominent in the Pūpūkea area as in the Anahulu to Waialua region, and today, Pūpūkea is more known for its mauka access, heiau, beaches and ocean recreation. Pūpūkea Beach Park provides an important venue for residents and visitors to access the water and enjoy the ocean and coastal scenery from shore. This Park Master Plan is based on this theme of ocean recreation and appreciation.

4 Pūpūkea Beach Park Master Plan

The Pūpūkea Beach Park Master Plan seeks to (1) maintain the character of the existing Park, which complements the North Shore's sense of place, (2) protect and enhance the natural resources that draw visitors and residents, and (3) improve safety and user experience for all. Enhancements such as multi-use paths, opening up the view plane, renovating existing comfort stations, and adding picnic tables are intended address the vision and goals for the Park and reflect the planning goals for the Park and the theme of ocean recreation and appreciation.

Project concepts are described below and are grouped by land uses that were developed from a combination of existing uses, community and agency input, and natural characteristics of the land. They include: Active Park Areas, Passive Recreation Areas, Ocean Recreation Areas, Caution Areas, and Parking Areas. There are also several Park-wide projects that are recommended in multiple areas.

4.1 Active Park Area (~ 0.5 acres)

The existing volleyball/basketball court located adjacent to the Sunset Beach Fire Station will be renovated to bring it up to current design and safety standards. The existing foundation and retaining wall appears to be structurally sound but will need to be assessed during the design phase. Lighting will be replaced to allow for night-time use and the chain-link fence will be repaired to prevent errant balls from escaping the court and creating hazards on the nearby roadway.

4.2 Passive Recreation Areas (~3 acres)

The mauka portions of the Park will be improved to enhance passive use, including areas to view the coastline and ocean; to learn about the ocean and Pūpūkea area; and to engage in family-friendly activities such as picnicking, walking, and biking in close proximity to the ocean, thus enhancing Park users' relationship with the sea.

4.2.1 Comfort Stations

The two existing comfort stations will be renovated to provide adequate ventilation and natural light to the interior. Design of the comfort stations will be as unobtrusive to the rest of the Beach Park as possible, and will incorporate concepts that will make them as easy to maintain as possible. For example, the floor inside the comfort stations will allow for faster and more complete drainage when hosed down during cleaning, thus reducing standing water and maintenance concerns. Lights outside the doorways will help to deter vandalism and illicit activity. Gates that may be locked when the Park is closed or when the comfort stations are in need of maintenance may be considered, although it may be difficult to fund staff time to open and close the gates daily. A shower will be added at Comfort Station #1 for those enjoying the water at the Kalua-Māua side of the Park.

4.2.2 Picnic Areas

The North Shore community asked that the Park be kept family-friendly and that improvements also be made for users who enjoy being near the ocean, but do not necessarily want to go into the water. Four grassy areas in the mauka portions of the Park (Kalua-Māua, Comfort Station #1, play courts, and Comfort Station #2) will be converted to picnic grounds with picnic tables and trees for shade. The picnic grounds near the comfort stations will also accommodate charcoal disposal areas to protect trees and sand quality.

4.3 Ocean Recreation Areas (~2.5 acres)

The ocean recreation areas include those parts of the Beach Park that are safe enough to allow for ocean-based recreation, although it should be noted that caution should always be exercised when in or near the ocean. The area off of Kalua-Māua is designated by DOBOR as a Zone B recreation area, where manually propelled vessels may embark or disembark. Shark's Cove is designated as Zone C, where no vessels are allowed to embark or disembark, but commercial activities are allowed by permit.

No major support facilities are proposed in the ocean recreation areas because they are directly adjacent to and include the shoreline, but proposed Park-wide improvements, such as sign replacement, would service these areas.

4.4 Caution Areas (~3 acres)

Portions of the Park require caution by users due primarily to natural hazards such as high waves, rip currents, and steep, slippery slopes. A viewing platform is proposed mauka of Shark's Cove and the "Tidepools" area to provide safe viewing of the coastline and to provide emergency and maintenance access to the water.

Other caution areas will be maintained in their natural state to the extent possible and visitors will be encouraged to utilize other areas of the Park. For this reason, only long-term erosion control or landscaping improvements are proposed for these portions of the Park.

4.5 Parking Areas (~1 acre)

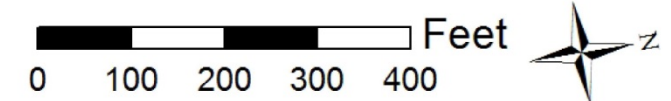
Existing parking will be evaluated to accommodate current standards for safety and ingress and egress onto the highway. The overall strategy for addressing parking needs considered the following criteria: maintain the same number of parking stalls, which allow for use of the Park while guarding against overuse of resources; minimize encroachment into Park space where possible; redesign parking areas to comply with existing standards; provide designated stalls for emergency and enforcement personnel; separate pedestrian and bike paths from parking and driveway areas; and allow for multiple modes of travel to and from the Park.

Various concerns have been raised regarding parking areas. Table 4 identifies those concerns and the actions proposed to address them.



Figure 4 Pūpūkea Beach Park Master Plan

Pūpūkea Beach Park
Final Master Plan



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Table 4 Parking Area Concerns and Proposed Actions

Area	Concerns	Action(s) Proposed to Address Concerns
<p>Kalua-Māua: dirt area between Kamehameha Highway shoulder and multi-use path</p>	<ul style="list-style-type: none"> • Not a designated parking area. • Cars must back up into traffic to get onto the highway, causing traffic jams and potentially dangerous situations. • Kalua-Māua is a DOBOR-designated area for launching non-motorized water craft. Park users need an area to access the water with their equipment. 	<ul style="list-style-type: none"> • No change.
<p>Comfort Station #1: dirt area between Kamehameha Highway and the multi-use path</p>	<ul style="list-style-type: none"> • Not a designated parking area. • Cars must back up into traffic to get onto the highway, causing traffic jams and potentially dangerous situations. 	<ul style="list-style-type: none"> • Eliminate illegal parking and dangerous conditions getting off and onto the highway by adding physical barriers, possibly boulders.
<p>Central Parking Lot: parking lot on the south side of the Fire Station</p>	<ul style="list-style-type: none"> • No turnaround area. 	<ul style="list-style-type: none"> • Expand parking lot to make up for some of the illegal parking that will be eliminated. • Add dedicated parking for emergency and enforcement vehicles. • An additional ingress/egress to the Highway is not feasible and the area is too narrow to accommodate two lanes.
<p>Shark's Cove Parking Lot: One-way linear roadway extending from the grassy area near Kulalua Point to the play courts. The roadway provides for parallel parking on the makai side and pullouts for perpendicular parking.</p>	<ul style="list-style-type: none"> • There is no multi-use path, causing pedestrians and bicyclists to walk/ride through the driveway/parking lot or on the road. • During busy days, cars park on the mauka side of the driveway, inhibiting access for emergency vehicles. • Poor drainage and potholes cause ponding and puddling. • Commercial tour operators sometimes park their vehicles, thus taking stalls away from recreational Park users. • There is no designated parking for first responders or enforcement personnel. 	<ul style="list-style-type: none"> • Separate pedestrian/bicycle travel from vehicular travel by creating a multi-use path through the Park where space allows. • Mark parking stalls to clearly identify where parking is allowed. • Re-surface the driveway and parking bays to eliminate potholes and improve drainage. • Create a designated drop-off area for commercial tour operators. • Create designated parking for first responders and enforcement personnel.

The Park can currently accommodate about 113 vehicles, including the undesignated parking adjacent to Kamehameha Highway. Other than in the Central Parking Lot, there are no marked parking stalls so a visual observation was used to estimate the number of vehicles that are currently accommodated on-site.

A significant number of parking stalls will be eliminated along Kamehameha Highway to reduce conflicts with pedestrians and vehicles on Kamehameha Highway and in the driveway at Shark’s Cove. It should be noted that the shoulder of Kamehameha Highway is under the jurisdiction of the State DOT and beyond the control of the City DPR. While DPR may coordinate its plans with the State, all decisions regarding enforcement and improvements to the Highway and its right-of-way is up to the DOT. Therefore, all proposed changes will occur only on land under jurisdiction of the City.

If the safety concerns listed in Table 4 are addressed, approximately 51 parking stalls will be lost. Therefore, while the community is resistant to converting Park space to parking, this plan recommends the addition of some parking to offset the significant decrease in available parking that would occur while eliminating illegal/unsafe parking and the conflicts between vehicles and pedestrians/ bicyclists. Under the current proposed parking changes, the number of vehicles that could be accommodated on-site would slightly increase from existing conditions. Table 5 summarizes all of the proposed parking changes.

Table 5 Recommended Parking Improvements

Parking Area	Existing Parking Stalls		Proposed Parking Stalls		Change in Parking Stalls	
	Public ¹	Restricted ²	Public ¹	Restricted ²	Public ¹	Restricted ²
Unpaved Area near Kalua-Māua	20	0	20	0	-1	+1
Comfort Station #1	10	0	0	0	-10	0
Central Parking Lot	28	0	54	2	+28	0
Shark’s Cove Parking Lot	55	0	40	2 Emergency/ Enforcement	-15	+5
				2 Commercial Drop-Off		
				1 Public Loading/ Unloading		
TOTAL	113	0	114	7	+1	+7

1 NOTE: With the exception of the Central Parking Lot, there are currently no designated parking stalls. Therefore, the amount of parking available is estimated based on observations of vehicles parked. Proposed designated parking stalls for drop-off and emergency vehicles are not included in this count.

2 Restricted parking = emergency and enforcement officer parking or loading/unloading zone.

4.6 Landscape Improvements (~3 acres)

A new landscaping plan will incorporate the themes of native plants, minimal water and maintenance needs, strategic plantings to direct Park users to safe or desirable locations, and unobstructed views of the ocean throughout the Park. Existing landscaping will be kept in place where it fits in with these themes, but some plants and trees will need to be removed or replaced. The landscaping plan should be done in cooperation with the community and select plants that balance species that are native to the North Shore, have lower maintenance requirements, are tolerant of coastal conditions, and protect against erosion.

Large non-native trees, such as the ironwoods near Comfort Station #2 will be thinned out and eventually replaced with other, more desirable tree species when they become too unhealthy to remain. Picnic areas will be enhanced with grass and trees to provide shade and areas should be designated for community-sponsored native plant and other types of gardens. Where needed, plantings will be used to control erosion.

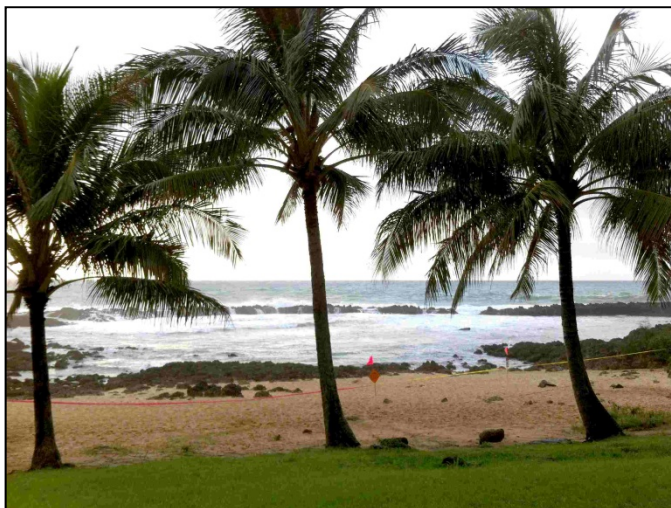
4.7 Multi-Use Paths

Park users have long asked for a continuation of the existing bike path that currently has a gap between the Central Parking Lot and Kulalua Point, which forces users to either walk or bike along Kamehameha Highway or within the existing Beach Park driveway and parking lot. An internal pathway system will provide safe pedestrian and bicycle circulation along the length of most of the Park and will be physically separated from driveways and parking to eliminate conflicts with vehicles.

The main pathway will maintain the existing path that runs from Kalua-Māua through the Park to the Central Parking Lot. A new path will then continue from the parking lot makai of the fire station and parking lot (old play court), and through the Shark's Cove passive recreation area.

At Shark's Cove, the pathway will end at the northern end of the parking lot because there is currently insufficient space to create a separate path between the driveway and steep slope down to the cove. While this leaves the pathway incomplete in this area, the new path adds over 1,000 linear feet and connects the north end of the Park with the south. It should be noted that a long-term goal for the Park is to reinforce the bank at Shark's Cove and create enough space to allow for the eventual creation of a multi-use path that connects the northern end of Shark's Cove with the southern end.

An additional pedestrian pathway will extend from the main multi-use path down to the sandy area between the fire station and Comfort Station #1. These pathways will not only make it safer to travel from one end of the Park to another, it will create a scenic route where bicyclists and pedestrians may take in views of the coast. Designated paths will also reduce erosion from foot traffic and reduce potential safety concerns from exposed tree roots, loose rocks and gravel, or slippery slopes.



A pedestrian pathway will lead beach-goers to the sandy area makai of Comfort Station #2.

4.8 Viewing Platform

A designated viewing platform is proposed along the slope down to Shark’s Cove to provide an area for visitors to take in the scenery without eroding the hillside. Landscaping will direct users to the pathway with stairs and railings down to the platform. Signage at the top of the pathway will inform users of safety concerns, the historical and cultural background of the area, natural ecosystem highlights; and rules and guidelines for the Park, MLCD, and Humpback Whale National Marine Sanctuary.

The viewing platform will be located past the tree line and will be enclosed by a railing to allow for safe use. Additional steps or a pathway down to Shark’s Cove and to the adjacent “Tidepool” area will be provided for emergency and maintenance activities. A gate at the viewing platform will restrict access to authorized personnel. Signage at the viewing platform could also provide additional information about the MLCD, Humpback Whale NMS, and other facts of interest. All signs should be coordinated under the overall Signage Master Plan (see description below).

4.9 Sign Replacement

A Signage Master Plan will be completed to coordinate the various signs throughout the Park used for interpretation, education, regulation, and awareness. The Signage Master Plan will consult the various agency and organizational stakeholders to identify specific messages that need to be conveyed to the public and develop guidelines for designing signs that are effective, attractive, and easily understood by the public. Any organizations or entities that donate signs to the City should enter into an agreement for their repair, maintenance, and replacement. Sign placement will also be addressed and take into consideration the multi-use pathway system to identify where the majority of Park users will be likely to see the signs. These coordinated improvements will result in effective signage that minimally intrudes upon the natural beauty of the Park.

5 Implementation

Pūpūkea Beach Park Master Plan needs to be phased to allow for proper budgeting and implementation management. Phasing of improvements considers the desirability and ease of implementing individual projects, as well as the benefits of combining several projects to take advantage of construction efficiencies. This section describes the recommended phasing for implementing the Master Plan.

5.1 Phasing and Cost Estimates

Phasing was based on several factors including the importance of each project to meeting Park goals, synergies among projects, and the potential for cost savings and minimization in disruption of Park use, and overall costs and potential for funding. The Pūpūkea Beach Park Master Plan recommends three phases for implementation (Table 6 and Figure 5).

Table 6 Master Plan Phases and Cost Estimates

Phase	Construction Cost	Design Cost	Total Cost
1 Shark's Cove Recreation Area	\$1.8 M	\$270,000	\$2.1 M
2 Kalua-Māua Recreation Area	\$1.5 M	\$225,000	\$1.7 M
3 Parking Improvements	\$1.5 M	\$225,000	\$1.7 M
TOTAL	\$4.8 M	\$720,000	\$5.5 M

Phase I improves the passive recreation areas surrounding Shark's Cove, including the grassy area near the BWS pump station leading to Kulalua Point. Comfort Station #2 is renovated first, as there is already partial funding for redesign. Picnic tables and a charcoal disposal area will encourage family-friendly use of the Park for picnics and gatherings. New multi-use paths will provide safe routes through this area and will guide Park users to the comfort station, parking lot, and down to the shoreline. A path and stairway will also lead to a viewing platform above Shark's Cove so visitors may safely take in the view of the Cove and coastline. An additional pathway will allow emergency and maintenance personnel to access the water.

January 2015

New landscaping will replace bare soil with grass and vegetation to control erosion. Trees will be pruned and or replaced with species that are native to the area, provide shade, minimize maintenance requirements, and do not obstruct views of the ocean. New signage is attractive and provides useful information that protects Park users and the unique resources in the nearshore environment, and builds a deeper understanding and respect for Pūpūkea and the North Shore. The dilapidated play courts are renovated and brought up to current design and safety standards.

Phase II implements improvements to the Kalua-Māua recreation area: comfort station renovation, picnic tables, and a charcoal disposal area will provide for passive enjoyment of the Beach Park. The existing multi-use path will be extended makai of the Central Parking Lot and fire station and connect with the multi-use path that was constructed in the Shark's Cove recreation area in Phase I, thus providing a dedicated pathway for bicyclists and pedestrians to get from one end of the Park to the other. Landscaping will again utilize native and/or area-appropriate plants with minimal maintenance requirements to manage erosion, open up viewplanes, and provide shade for Park users. Additionally, landscaping and other physical barriers will be used to prevent vehicles from parking on the Kamehameha Highway shoulder mauka of Comfort Station #2. New signage consolidates existing signs and locates them to where visitors are most likely to see them.

Phase III focuses on eliminating illegal parking and adding parking where feasible to offset the loss of parking stalls. The driveway and parking bays near Shark's Cove will be repaved to eliminate potholes and improve drainage so that ponding no longer occurs. Legal parking will be identified by marked stalls to make it clearer where parking is and is not allowed. Designated loading/unloading zones for commercial operators and Park users will be located near Comfort Station #2, along with dedicated parking stalls for emergency or enforcement vehicles.

The Central Parking Lot will be re-paved and expanded to offset some of the illegal parking that will be lost mauka of Comfort Station #1. The illegal parking on the dirt shoulder of Kamehameha Highway will be eliminated using physical barriers. Two stalls in the Central Parking Lot will be dedicated to emergency and enforcement personnel. When vacant, these stalls can be used by vehicles turning around at the parking lot's dead-end.

Phasing may be modified to accommodate funding availability.

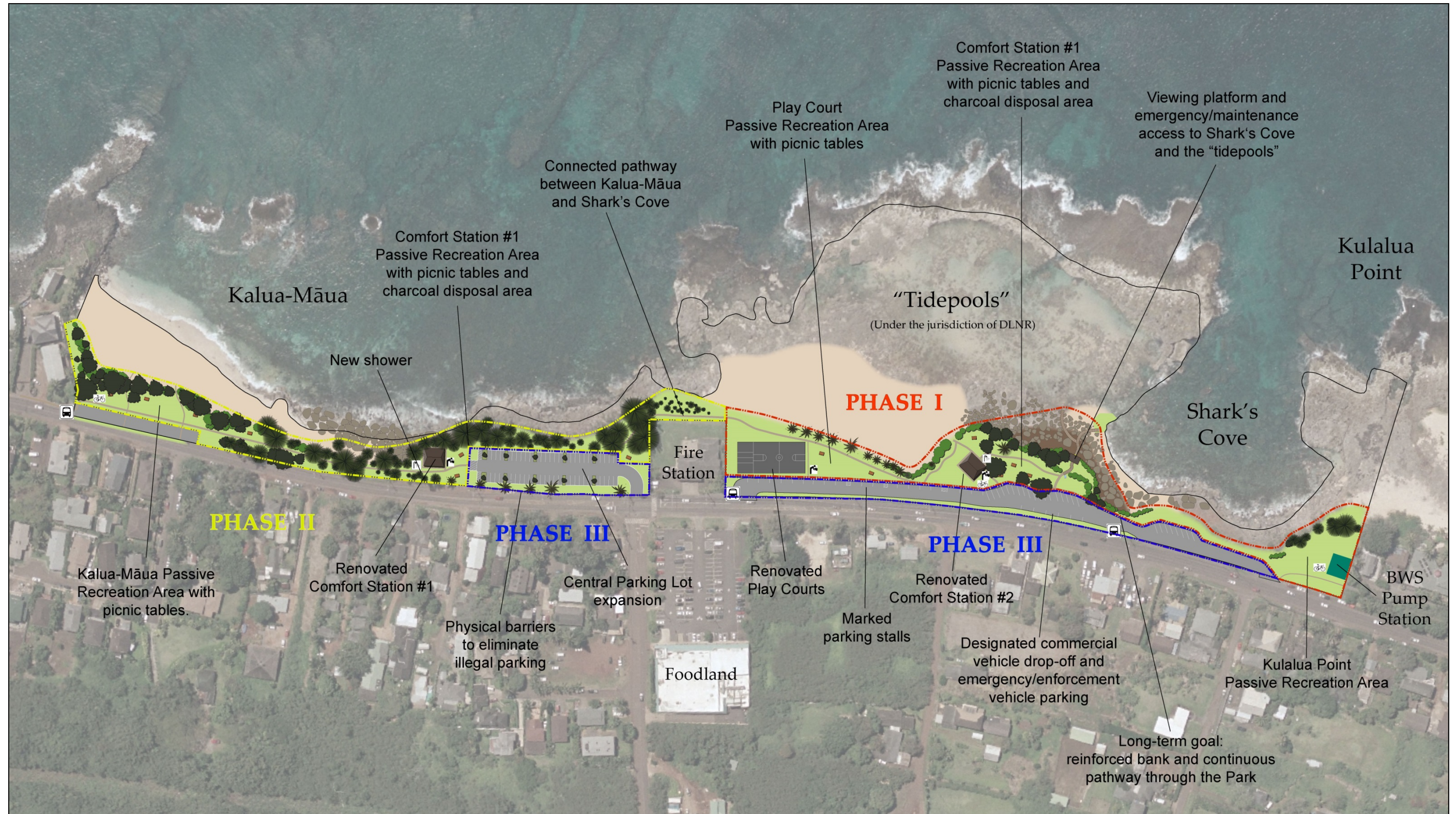
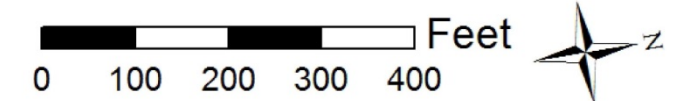


Figure 5 Pūpūkea Beach Park Master Plan Phasing Plan

Pūpūkea Beach Park
Final Master Plan



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5.2 Land Use Permits and Approvals Required

The Master Plan will require both a Special Management Area (SMA) Permit (major) and an Environmental Assessment (EA). The entire Beach Park is located within the SMA and because construction costs exceed \$500,000, an SMA major permit is required. The City Department of Planning and Permitting has already determined that the replacement of the play courts will not require an SMA permit because it is considered a renovation of an existing use. An EA is triggered by the use of County lands and funds, and also by the SMA major permit.

The Viewing Platform and pathway at Shark's Cove will further require a State Conservation District Use Permit and a Shoreline Setback Variance.

Additional building and construction permits will be needed.

5.3 Long-Term Maintenance

The Pūpūkea Beach Park Master Plan recommends capital improvement projects for funding through the City budget. Design of Park improvements will consider maintenance needs and try to minimize maintenance requirements. Still, ongoing management and maintenance will be required to keep the Park in a usable and safe condition especially considering that Park use is very heavy throughout the year. Two recommendations were made during the preparation of the master plan as to how to supplement current maintenance budgets: and Adopt-a-Park program and parking fees.

The City DPR's Hoa Pāka Park Partner Program could be used to engage community groups in regular maintenance activities, as well as possible fundraising events.

Another recommendation for raising maintenance funds was to institute parking fees. Parking fees could be considered as a potential revenue generator to fund maintenance activities. However, before implementation of any program, secondary impacts should be considered. For example, there is the potential for drivers to park in the residential neighborhoods adjacent to the Park or at the commercial parking lots mauka of the highway, thus creating parking problems elsewhere. These potential maintenance supplements are further described in Appendix A.

5.4 Unresolved Issues

There were several issues raised by the community that are not able to be addressed by this Master Plan at this time.

5.4.1 Pathway

- **Issue:** The community advocated for a continuous pathway through the entire length of Pūpūkea Beach Park.

The slope directly mauka of Shark's Cove does not provide enough space for a pathway that is completely separated from the existing driveway. A long-term goal for the Park will be to reinforce that slope to protect against erosion and in the process, extend the area and provide enough space for continuation of the pathway from the grassy area at Comfort Station #2 to the existing pathway at Kulalua Point.

This action was not included in this Master Plan because it requires a substantial capital improvement expense that will need to be budgeted separately.

- **Issue:** There were many comments to provide a pathway from the parking lot to Shark's Cove to minimize erosion and slippery conditions on paths worn by foot traffic.

The City cannot provide a pathway for the general public to access Shark's Cove since it would in essence be advocating the use of an area with known hazards. Instead, a viewing platform is being proposed to provide the public with the opportunity to take in the views of the coast and the Cove. A pathway from that platform down to the Cove and "Tidepools" area would provide access for emergency and maintenance personnel to minimize erosion and slippery conditions.

5.4.2 Landscaping

- **Issue:** As one of the areas with no development between Kamehameha Highway and the ocean, the community asked to cut back the tall grass that currently block those views. Additionally, the existing ironwood trees block much of the views and are not native trees.

The tall grass will be cut back during regular maintenance and will also be addressed in the landscaping plan. Under the advisement of the City's Division of Urban Forestry, the tall ironwood trees will be maintained for the time being, as they are well-established and have been part of the park for quite some time. During general landscaping improvements, the ironwood trees in the Park will be evaluated by an arborist and when trees are in poor health, replacement trees will be selected based on their suitability to the site.

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