

WAIMANALO BAY BEACH PARK MASTER PLAN FINAL ENVIRONMENTAL ASSESSMENT

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Summary

The Master Plan is compliant with land use controls of the City, State and Federal government and not expected to have a significant impact on the natural or social environment. The primary mitigation measure proposed is to avoid construction in sensitive areas, including: areas of known archaeological resources; intact sand dunes; large trees; and the floodplain. In the areas where earth movement is proposed, Archaeological Inventory Survey priority action and archaeological monitoring alongside best management practices during construction are recommended. The Master Plan anticipates the possibility of lighting one sports field. Proposed mitigation includes shielding light fixtures and incorporating automatic timers for shutoff. To mitigate against the impacts to water resources, the Master Plan proposes the use of pervious materials for parking areas, landscaped bio swales and use of treated, recycled water from the Waimanalo Waste Water Treatment Plant for landscape irrigation. Traffic mitigation measures include widening the on-site access drive to allow for a left turn lane out of the Park.

1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared in compliance with Chapter 343, Hawai'i Revised Statutes (HRS) for the proposed Master Plan for Waimanalo Bay Beach Park.

1.1 PROJECT SUMMARY

Project Name: Waimanalo Bay Beach Park Master Plan

Location: Waimanalo Bay Beach Park, Waimanalo Ahupua`a, Waimanalo, Hawai`i

Applicant: City and County of Honolulu, Department of Design and Construction

Landowner: City and County of Honolulu

Tax Map Key: TMK: 4-1-015: 015

Project Area: Approximately 75 acres

Existing Uses: County beach park

Proposed Uses: Recreational uses including camping, picnicking, sports fields, trails and associated comfort stations, parking and supporting infrastructure

Land Use State Land Use: Urban

Designations: *Koʻyolaupoko Sustainable Community Plan*: Park County Zoning: P-2

Special Management Area: Within the Special Management Area

Need for Compliance with Chapter 343, Hawai'i Revised Statutes

Assessment: Use of County lands and funds

Permits/Approvals Compliance with Chapter 343, Hawai'i Revised Statutes;

Required: Compliance with Ch. 6E, Hawai'i Revised Statutes; Special Management Area Use Permit

Approving Agency: City and County of Honolulu, Department of Design and Construction

Determination: Finding of No Significant Impact (FONSI)

1.2 LOCATION

Waimānalo Bay Beach Park is located on windward O'ahu in the ahupua'a of Waimānalo.

The site tax map key is TMK: 4-1-015: 015. The Park is situated on Waimānalo Bay, immediately south of the Bellows Air Force Reserve and north of the Waimānalo Bay Beach Lots, a residential subdivision. The Park is bound to the west by Kalaniana'ōle Highway. Across the highway is land owned by the State, and leased for use as a polo grounds. Also across the highway, south of the polo grounds is the Waimānalo Waste Water Treatment Plant. Figure 1 is a Regional Location Map.

1.3 LAND OWNERSHIP

The City and County of Honolulu is the fee owner of the parcel. A tax map highlighting the project area is provided in Figure 2.

1.4 IDENTIFICATION OF APPLICANT

The applicant is the City and County of Honolulu, Department of Design and Construction.

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1.5 IDENTIFICATION OF ENVIRONMENTAL CONSULTANT

The City and County of Honolulu Department of Design and Construction's consultant for the project is PBR HAWAII.

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1.6 IDENTIFICATION OF APPROVING AGENCY

The approving agency is City and County of Honolulu, Department of Design and Construction.

Contact: Lori M.K. Kahikina, P.E., Director

Telephone: (808) 768-8480 Fax: (808) 768-4567

1.7 COMPLIANCE WITH STATE OF HAWAII AND CITY AND COUNTY OF HONOLULU ENVIRONMENTAL LAWS

This document has been prepared in accordance with the provisions of the State of Hawai'i's Environmental Impact Statement Law, Chapter 343, HRS and Hawai'i Administrative Rules (HAR) Title 11, Department of Health, Chapter 200, Environmental Impact Rules. Section 343-5 HRS establishes nine (9) "triggers," which require the environmental review process. Implementation of the Waimānalo Bay Beach Park Master Plan will involve the use of County land and funds, thus it is subject to the provisions of Chapter 343, HRS.

1.8 IDENTIFICATION OF AGENCIES AND COMMUNITY GROUPS CONSULTED

Throughout the planning process for this Master Plan, the City and County of Honolulu consulted with the community, state and federal agencies as well as other County departments. The group membership was initially comprised of known active community members, elected officials, non-profit organizations and sports interests. As knowledge of the Master Plan activities spread through the community, additional individuals expressed interest in participating as advisory group members. Membership was not limited and the group operated on an informal basis, engaging in discussion and encouraging contributions from anyone who expressed interest. Three Community Advisory Group meetings were held. The first two meetings were designed to understand the community's desires for the Park and to review concept park plans. After the first two Advisory Group meetings, one open community meeting was held to further refine the Master Plan and ensure that the ideas developed in the Community Advisory Group meetings were favorable to the greater community. The third and final Advisory Group meeting was in preparation for the issuance of the Environmental Assessment to ensure that issues raised by the community were adequately addressed as best as possible by the Master Plan that is included in this document.

Appendix A includes a record of CAG meetings as well as the community meeting record. Elements of the proposed Master Plan required specific coordination with agency representatives, including the United States Air Force and the City and County Department of Environmental Services. Records of those interactions can be found in Appendix B and C. In addition, other agencies were consulted as a matter of course for this Environmental Assessment. Those correspondences are identified in Section 8.0 of this report and documented in Appendix D. Comments received during the 30-day comment period following publication of the Draft Environmental Assessment can be found in Appendix E. Comment responses are also found in Appendix E.

1.9 STUDIES CONTRIBUTING TO THIS ENVIRONMENTAL ASSESSMENT

The information contained in this report has been gathered from agency and community consultations, document and historical research, site visits, feasibility studies, and generally available information regarding the characteristics of the site and surrounding area. References can be found in Section 9.0 of this report.

2.0 PROJECT DESCRIPTION

This section provides background information, identifies the project's goals and objectives, describes the proposed improvements, describes construction activities and provides approximate costs.

2.1 BACKGROUND INFORMATION

2.1.1 Park Ownership and Development

Waimanalo Bay Beach Park was formerly owned and managed by the State of Hawai'i, Department of Land and Natural Resources, Division of State Parks and known as Waimanalo State Recreation Area. Prior to the land being in the state's hands, it was part of the adjacent

Air Force facility, known at the time as "Bellows Field". In 1972, after the land was transferred from the military to the State, a general plan was developed. The 1972 plan encompassed both the subject 75 acre site as well as lands that are still under management by the Air Force. An Environmental Assessment (EA) followed the general plan in 1977. The 1977 EA concerned the development of the first increment of Waimanalo Bay State Recreation Area, the 75 acres that is the current Park area. In 1978, the Park improvements were developed utilizing federal money from the Land and Water Conservation Fund (LWCF). The State's improvements include many of the features that are present in the park today including: perimeter fencing, picnicking and camping facilities, comfort stations, landscaping, and a caretaker's house. In 1992 the Park was transferred to the City and County of Honolulu and renamed, Waimanalo Bay Beach Park. Day to day operations and management of the Park are the responsibility of City and County's Department of Parks and Recreation (DPR).

2.1.2 Project Need

The Waimanalo Bay Beach Park and surrounding area includes a wealth of resources including views and access to Waimanalo Bay, picturesque stands of ironwood trees, large open spaces, known archaeological sites as well as an active and engaged community. These resources lay the foundation to improve and expand the aging facilities at Waimanalo Bay Beach Park.

In the years since the Park was transferred from the State to the County, no major improvements have been made. Essential maintenance has been performed; however, time and the coastal environment have taken a toll on the Park's facilities. At the outset of the master planning process, the three comfort stations were in various states of disrepair, with leaking roofs, broken showers and graffiti. In 2011, the roof was replaced on comfort station #3 (the center of the three beach-side comfort stations). Design for rehabilitation of comfort station #2 (the beach-side comfort station nearest Aloiloi Street) is presently underway. The caretaker's residence has also suffered from the elements and despite repairs to maintain it as a habitable space, it is deteriorating. In the absence of a base yard, maintenance equipment is often parked near the caretaker's residence on a highly visible slab of pavement located between the caretaker's residence and one of the visitor parking areas. The Park's picnic tables are broken and serve little function. Hot coals are dumped in the Park's hot coal disposal areas, but are also often found at the base of the Park's large ironwood trees. The southeast corner of the Park is essentially unused for recreation. It has become overgrown.

2.2 PROJECT OBJECTIVES

The project objectives are as follows:

- Improve existing park services including repair of comfort stations and supporting infrastructure
- Add park services including camping, picnicking and sports fields
- To minimize operational and maintenance costs, utilize Low Impact Development (LID) and green building techniques for new improvements

- Maintain the security and rural character of the Park

2.3 EXISTING PARK ELEMENTS

Waimanalo Bay Beach Park includes camping facilities, picnic areas and beach access. Each of the ten camping sites is equipped with a picnic table and tent space. A central sink is also available for camper dish washing. Picnic areas include tables and hot coal disposal pits. Supporting facilities include an access road, two parking areas that accommodate 182 vehicles, three comfort stations, showers, drinking fountains and pathways. See Figure 3 & Figure 4.

2.4 SURROUNDING USES

The Park is bound to the northeast by Waimanalo Bay. The southeast boundary of the Park is adjacent to Aloiloi Street and the Waimanalo Bay Beach Lots subdivision. A McDonald's restaurant is located at the intersection of Aloiloi Street and Kalaniana'ole Highway. Kalaniana'ole Highway, a State Department of Transportation facility, bounds the southwest side of the Park. Across Kalaniana'ole is a polo field and associated facilities. South of the polo grounds, but not visible from the Highway or the Park is the Waimanalo Waste Water Treatment Plant. The tract of land located between the Waste Water Treatment Plant and the highway is known as, "Pine Tree Triangle". It is owned by the State of Hawaii Department of Hawaiian Home Lands (DHHL). The Park is bound to the northwest by Bellows Air Force Station, which is operated by the US government. See Figure 4, Existing Park Elements and Surrounding Land Uses.

2.5 DESCRIPTION OF THE PROPOSED MASTER PLAN IMPROVEMENTS

The Master Plan improvements subject to this Environmental Assessment are depicted on the previous page, Figure 5, Master Plan and include: Park Entry – The Park edge and entry are planned to be evocative of rural Waimanalo, including a bike path along Kalaniana'ole Highway and a pasture fence similar to that of the polo grounds across the road. The Park entry road will be widened to add an outbound left turn lane to better facilitate egress from the Park.

Sports and Fitness Areas - Near the entry of the Park is a softball/little league-sized diamond (north side of the entry road) and a full-size baseball field (south side of the entry road). Two additional fields that could be used for soccer, rugby or football are included in this area. A children's play structure is also proposed in this area. The remnants of the forested area (nearest Aloiloi Street) are planned to be thinned to accentuate the existing stands of mature trees that are obscured by haole koa. The forest will remain more dense where the dunes are more intact. A walking/jogging/fitness trail is proposed to be added in the forest area. A pedestrian/bicycle connection to Aloiloi Street is also suggested to allow the Park's neighbors to easily walk to sporting events and access the play structure and fitness trail. A security gate is planned for the access.

Group Camping/Gathering Areas – Two large group camping/gathering areas are proposed. Both are designed to be multi-functional areas that could serve group picnicking as well as overnight camping. The group camping area at the center of the Park would be defined by a low wall (with breaks for access) and include a large multi-purpose pavilion with cooking areas. The second group camping area is less defined and no new structures are proposed.

Family Camping Area - The existing camping area is proposed to be expanded from ten family sites to 22 sites. City and County standard camp site size is 30-feet by 30-feet. Camping permits sanction up to two tents and ten individuals per campsite. 30-foot square camp sites are represented in clusters on the plan. Specific layout will be dependent on the location of trees and upon Archaeological Inventory Survey work. A naturalistic children's

play area is also proposed in close proximity to the family camping area.

Beach Recreation Area – The area that parallels the beach will continue to offer beach park activities and picnicking facilities. Open spaces in this area allow for volleyball and horseshoes.

Comfort Stations – In order to minimize ground disturbance in a park that contains known burials, the three beach comfort stations are proposed to be rehabilitated at their present location. As previously noted, design work for the rehabilitation of Comfort Station #2.

The Master Plan improvements are expected to be completed in phases as outlined in Table 2,

Proposed Phasing Plan. By phasing the Park's development, the cost can be distributed over time allowing funding sources to be sought. Funding sources may include funds for park maintenance (i.e. for rehabilitation of comfort stations) or Capitol Improvement Project (CIP) funds. Outside sources of funds in the form of grants and loans could be sought for the proposed park elements that support low-impact infrastructure or water quality and conservation (i.e. pervious parking lot surfaces or the irrigation water main from the Waste Water Treatment Plant). Timing of construction will be dependent on availability of resources. Cost estimate

information provided in the Civil Engineering Report (Appendix H), Electrical Engineering PER (Appendix I) as well as estimated costs for new structures, landscaping, trails and ball fields has been compiled into an Order of Magnitude Construction Cost Table (Appendix J).

If the City and County elected to construct all of the recreational elements, structures, landscaping, lighting plus the on and off-site infrastructure to support the Park improvements, the sum total in 2012 dollars would be approximately \$32M. Notable large expenditure items include:

- New landscaping at \$5-\$15 per square foot depending on location in the park (\$6.8M-\$9.9M)
- New structures including three rehabilitated comfort stations; two new comfort stations; a maintenance building and a large group pavilion (\$4.8M)
- New water and wastewater systems to serve new comfort stations (\$2.5M)
- New sports fields (\$1M)
- Irrigation for ball fields and group camping area (\$2.4M)
- Off-site irrigation line from Waimanalo WWTP to Park (\$855,000-\$1.8M)
- Lighting (field lighting, \$730,000+ road and parking lot lighting \$3.3M)
- New roadways and parking areas (\$1.5M)

The balance of the estimated cost is derived from the estimated costs for walkways, exercise stations, bike paths, bike racks, security fencing, signage, picnic tables, garbage/recycling, charcoal disposal pits, demolition of old concrete, clearing/grubbing/grading, erosion control, traffic control and photovoltaic security lighting at the beach comfort stations.

3.0 LAND USE CONFORMANCE

The processing of certain permits and approvals are prerequisites to the implementation of the Waimanalo Bay Beach Park Master Plan. Relevant State of Hawai'i and City and County of Honolulu land use plans, policies, and ordinances are described below.

3.1 STATE OF HAWAII

3.1.1 State Environmental Review Law (Chapter 343, Hawai'i Revised Statutes)

The State Environmental Review Law (Chapter 343, Hawai'i Revised Statutes (HRS)) requires an environmental assessment for any action that proposes the use of County lands and funds or when an action is proposed within a historic site. This environmental assessment has been prepared in compliance with Chapter 343, HRS as the proposed Park Master Plan requires the use of County land and funds.

3.1.2 State Land Use Law (Chapter 205, Hawai'i Revised Statutes)

The State Land Use Law (Chapter 205, HRS), establishes the State Land Use Commission and authorizes this body to designate all lands in the State into one of four districts: Urban, Rural, Agricultural, or Conservation.

The proposed site improvements are located within the State Urban District (Figure 6, State Land Use Districts). The proposed improvements are compliant with Urban District Uses.

CITY AND COUNTY OF HONOLULU

3.2.1 The O'ahu General Plan

The O'ahu General Plan is a statement of long-range social, economic, environmental and design objectives for the general welfare and prosperity of the people of O'ahu. The General Plan is also a statement of broad policies which facilitate the attainment of the objectives of the Plan. The General Plan is currently in the process of being updated, however, during this process the adopted plan remains in effect. Applicable General Plan objectives and policies relating to culture and recreation include:

Objective: *To protect O'ahu's cultural, historic, architectural and archaeological resources (GP Culture and Recreation, Objective B).*

Policy: *Encourage the restoration and preservation of early Hawaiian structures, artifact and landmarks (GP Culture and Recreation, Objective B, Policy 1).*

Policy: *Identify, and to the extent possible, preserve and restore buildings, sites and areas of social, cultural, historic, architectural and archaeological significance (GP Culture and Recreation, Objective B, Policy 2).*

As discussed throughout this report, the Park is located adjacent to a historic site known as Bellows Field Archaeological Complex. Over the course of the last 40 years several archaeological surveys have been conducted and located archaeological features in the Park

(discussed in greater length in Section 5.1). To protect archaeological resources, areas of known features are proposed to be avoided. Additionally, the three existing comfort stations are proposed to be rehabilitated at their present location so as to avoid earth disturbing activities as much as possible. To further avoid any

impacts to archaeological resources, **Archaeological Inventory** Surveys will be performed prior to ground disturbance.

Objective: *To provide a wide range of recreational facilities and services that are readily available to all residents of O`ahu (GP Culture and Recreation, Objective D).*

Policy: *Provide convenient access to all beaches and inland recreation areas (GP Culture and Recreation, Objective D, Policy 6).*

Policy: Provide for recreation programs which serve a broad spectrum of the population.

Policy: Encourage ocean and water-oriented recreation activities that do not adversely impact on the natural environment (GP Culture and Recreation, Objective D, Policy 7).

Policy: Provide for safe and secure use of public parks, beaches and recreation facilities (GP Culture and Recreation, Objective D, Policy 12).

Policy: Encourage the safe use of O`ahu's ocean environments (GP Culture and Recreation, Objective D, Policy 13).

Waimanalo Bay Beach Park is a beach park that is intended to serve the Waimanalo community as well as the population of greater O`ahu. The Master Plan elements expand recreational opportunities within the Park with the addition of group camping, trails and sports fields near the highway. The Park Master Plan continues to promote convenient access to Waimanalo beach, but does not seek to encourage new ocean activities that are unsafe or have an adverse impact on the natural environment. Park security measures such as perimeter fencing and night closure are proposed to be maintained.

The Master Plan is consistent with the policies and guidelines pertaining to public facilities and infrastructure in that the plan promotes wise use of resources and minimizes use of public infrastructure whenever possible. Most notably, the plan calls for use of treated, recycled water from the Waimanalo Wastewater Treatment Plant (WWTP) for irrigation of sports fields and landscaping. This serves two purposes. First, it provides a location for the WWTP to dispose of excess water in a safe and beneficial way. Second, it allows sports fields to be landscaped with non-potable water, reducing demand on O`ahu's drinking water system. Further minimizing impacts to O`ahu's water resources, pervious parking lot surfacing is proposed along with Low-Impact Development (LID) techniques for infiltration of storm water. The Master Plan also promotes waste reduction by calling for use of "green" building materials, which may include recycled materials for new Park facilities. Additionally, the Master Plan calls for recycling bins alongside garbage receptacles. The Master Plan also anticipates City plans for alternative transportation into the future. The draft O`ahu Bike Plan identifies the need for a shoulder bikeway along Kalaniana`ole Highway. The shoulder bikeway is projected as a "Tier 2" project (not among the highest priorities), thus the frontage bike path proposed is not considered to be redundant, but rather an enhancement to the greater bike system that is anticipated in the future. Finally, new electrical lines planned for parking lot security lighting will be underground, rather than overhead lines to protect views of the Park's natural resources.

3.2.3 Public Infrastructure Map

Article 8, Revised Ordinances of Honolulu establishes the provisions for Public Infrastructure Maps (PIM). These maps reflect "major public infrastructure" projects that impact the growth policies nor needed public facility policies for each of the development plan areas of the County. Section 4-8.3 ROH lists the types of public infrastructure to be shown on the PIM and Section 4-8.2 ROH establishes the procedure for the adoption and revision of PIM. Section 4-8.4 identifies the criteria for when a public improvement project is considered "major public infrastructure" and necessitates either the adoption or revision of the PIM. Pre-Consultation comments from the Department of Planning and Permitting (DPP) indicate that the Draft EA should discuss the need for a Public Infrastructure Map amendment. Table 4 of the Draft EA identifies the requirement for a PIM Amendment. Comments to the Draft EA indicates that the EA document should include discussion of the PIM and that if the proposal involves significant modification or expansion of the facility as cited in Ordinance 7-37, relating to Public Infrastructure Maps, than a map amendment is required. Subsequent to the Draft EA comments, the DPP in a letter dated May 21, 2012 to the Honolulu City Council Chair indicated that the Department has determined that the PIM for Ko`olaupoko does not need to be revised for the project. This letter was in response to the introduced Council Resolution 12-121, RESOLUTION ADOPTING A REVISION TO THE PUBLIC INFRASTRUCTURE MAP FOR THE KOOLAUPOKO SUSTAINABLE COMMUNITIES PLAN AREA, WAIMANALO, OAHU, HAWAII.

The DPP letter notes that the Ko`olaupoko PIM does not currently include a symbol for the Park. The DPP letter states that, “the proposed construction of multi-purpose fields, a walking/jogging trail and fitness course, increased parking stall, additional camp sites, and a maintenance area would not meet the applicability criteria of the PIMs. These are considered relatively minor improvements to an existing beach park that do not change the function of the park.”

DPP comments to the Draft EA and the subsequent letter dated May 21, 2012 are included with this report as Appendix E.

3.2.4 County Land Use Ordinance

Chapter 21 of the Revised Ordinances of Honolulu is the Land Use Ordinance (LUO). The LUO regulates land use to encourage orderly development in accordance with the General Plan and Sustainable Communities Plans and to protect public health, safety and welfare. The document establishes zoning, permitted uses and development standards within the zoning districts. It also regulates development in special districts such as the Flood Hazard District.

Waimanalo Bay Beach Park is zoned P-2 (General Preservation District). The LUO defines public parks as, “public uses and structures” because they are owned and managed by the government to fulfill a public service. . Public uses and structures are permitted in all zoning districts. The LUO sets forth general development standards as well as specific design standards relating to height for the P-2 district. The development standards enumerated in Section 21-3.40-1 for the P-2 zoning district are as follow:

Height. The maximum height may be increased from 15 to 25 feet if height setbacks are provided.

Height Setbacks. Any portion of a structure exceeding 15 feet shall be set back from every side and rear buildable area boundary line one foot for each two feet of additional height about 15 feet.

No structures over 25 feet in height are anticipated with the Master Plan elements. Baseball field backstops are typically 16 feet in height, thus, the height setback standard of the P-2 district will apply. As designed, the Master Plan calls for the backstops to be set back from property lines, well exceeding the height setback requirement.

Article 4 of the LUO provides general development standards. Applicable development standards include those relating to landscaping and screening, including parking lot landscaping requirements and requirements for irrigation and outdoor lighting. Article 6 of the LUO.

The elements of the Master Plan have been designed to conform to the LUO standards pertaining to landscaping, screening, parking and signage. However, should it be necessary, a zoning waiver may be applied for to address any deviations from the P-2 District standards.

Article 9 of the LUO pertains to Special District Regulations. Section 21-9.10 pertains specifically to flood hazard districts. Portions of the Park are located within Coastal Flood Zones (VE), Areas of Special Flood Hazard (AE) and Areas of .2% flood (XS). See Figure 14, which identifies the areas of flood hazard and also identifies the base flood elevation as 8-feet. While no new structures are proposed within the flood districts, any comfort station rehabilitation below the base flood elevation of 8-feet must be compliant with the development standards of the district. This includes ensuring that structures are designed to, be anchored to resist flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads, including effects from buoyancy caused by a regulatory flood. Construction materials and equipment must be resistant to flood damage caused by the regulatory flood elevation, construction methods should minimize flood damage and utilities should be located and constructed to minimize or eliminate damage in the event of a regulatory flood. This includes ensuring that for replacement of potable water systems and facilities that are proposed for replacement are designed to minimize or eliminate infiltration of flood waters into the systems. Similarly, replacement or new sanitary sewer and waste disposal systems must be designed, located and constructed so as to minimize impairment to them or contamination from them during and subsequent flooding by regulatory flood (LUO Sec. 21-9.10-4(c)).

3.2.5 Special Management Area

Chapter 25 of the ROH pertains to the Special Management Area. The Special Management Area (SMA) for the City and County of Honolulu was established pursuant to HRS Chapter 205A (Coastal Zone Management). Its purpose is to, “preserve, protect and where possible, to restore the natural resources of the coastal zone...”. The site is within the SMA. Upon acceptance of a Final Environmental Assessment, a Special Management Area Assessment Use Permit will be requested for the Master Plan. See Figure 11.

3.2.6 County Shoreline Setback

Chapter 23 of the ROH pertains to shoreline setbacks as set forth by HRS Chapter 205A. The City and County of Honolulu regulates development along the shoreline to protect sandy beaches, the public's access along the shoreline and to reduce hazards from coastal floods. The shoreline setback, "General Rule" (Sec. 23-1.4) establishes the shoreline setback 40 feet inland from the certified shoreline. Additionally, the County prohibits certain activities within the shoreline area, such as mining of sand or construction of structures. No structures or earth disturbing activities are proposed within the shoreline area or the shoreline setback.

3.3 FEDERAL

3.3.1 Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) of 1990, as amended, sets forth guidelines for accessibility to buildings and facilities for individuals with physical disabilities. Any new or reconstructed comfort stations will be constructed to be ADA compliant. Parking areas are designed to include requisite number of accessible spaces.

3.3.2 National Register of Historic Places

A review of available records show that at one time, the Waimanalo Bay Beach Park was included as a property within the "Bellows Field Archaeological Complex", a site on the National Register of Historic Places (known as Site # 80-15-0511 or Site # 50-80-511). It is generally accepted that the property was arbitrarily included within the National Register site and has been subsequently removed. A review of archaeological literature supports the conclusion that the Park is not on the National Register. In 1994, Tuggle describes that, "*as best as can be determined, only one site at Bellows is listed on the National Register of Historic Places (NRHP). Site 50-80-511, which was listed on the National Register in 1974 includes the original Bellows Dune Site (Bishop Museum site number 018) which is a small area of habitation and burials that was thought to contain one of the earliest settlements in Hawai'i (Pearson et al. 1971). Because of the importance of Site 018, the boundaries of Site 511 were broadly drawn in order to incorporate any potential occupations of equal importance*" In 2009, Dye describes Site 50-80-15-511 as having boundaries that were drawn when the distribution of archaeological remains at Bellows were poorly known. Dye states "*over the years, as information on historic sites has accumulated, it became apparent that the boundaries of site 50-80-15-511 bore little relation to the distribution of archaeological remains. Consequently, site boundaries were redefined and the significance of the sites were evaluated without reference to site 50-80-15-511. For these reasons, site 50-80-15-511 is no longer included in the inventory of archaeological sites recognized as historic properties.*"

The Environmental Assessment process has included coordination with the State Historic Preservation Office (SHPO) to help ensure compliance with the requirements of the State of Hawai'i Revised Statutes pertaining to Historic Preservation. Regardless of the Park's status with relation to the National Register, there are known archaeological resources within the Park. The Master Plan improvements have been designed to be located away from archaeologically sensitive areas and Archaeological Inventory Survey work is recommended at the time of detailed design. A review of archaeological literature and the site's archaeological resources is included as Appendix F and is discussed in Section 5.0 of this report. Additionally, there are remnants of the former military use of the site, such as concrete slabs and building foundation remains. If they are over 50 years of age, they also will be treated as historic features. It is recommended that these features be mapped, photographed and recorded.

4.0 DESCRIPTION OF THE AFFECTED NATURAL ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

This section describes the existing conditions of the physical or natural environment, potential impacts of the proposed Master Plan for Waimanalo Bay Beach Park on the environment, and mitigation measures to minimize any impacts.

4.1 CLIMATE

Existing Conditions

Mild temperatures, persistent northeast trade winds, and plentiful rainfall characterize climatic conditions in Waimanalo. Moisture delivered by the trade winds is forced upwards when it blows against the Ko'olau Mountain ranges. The moisture cools and falls as precipitation. Monthly average temperatures in Waimanalo range from 71 degrees to 79 degrees Fahrenheit. Rainfall averages 40-60 inches.

Potential Impacts and Mitigation

The proposed park improvements are not expected to have an impact on climatic conditions and no mitigation measures are planned.

4.2 GEOLOGY, TOPOGRAPHY & SOILS

4.2.1 Geology

Existing Conditions

The island of O`ahu was formed by two volcanoes, Wai`anae and Ko`olau. Ko`olau consists of the eruptive products of the shield and rejuvenated stages; no post-shield-stage lavas are known (Juvik & Juvik). The lavas of Ko`olau are thought to be over 100,000 years old. A rift zone extends from the former Ko`olau crater, toward Makapuu Point at the south end of Waimanalo.

Potential Impacts and Mitigation

The Park Master Plan will have no effect on geologic conditions. The Master Plan does not place any new uses in geologically sensitive areas. No mitigation is proposed.

4.2.2 Soils

Natural Resource Conservation Service

The majority of the Park consists of Jaucas Sand, with a band of Mokule`ia loam that follows the site frontage along Kalaniana`ole Highway (Figure 12). `Ewa silty clay loam, 0-2% slopes and Hale`iwa silty clay 2-6% slopes may also be found in the most northwest portion of the site (nearest Tinker Road). The majority soil, Jaucas Sand is described as consisting of very deep, excessively drained, very rapidly permeable soils on beaches and along the sea coast. The Mokule`ia loam that can be found near Kalaniana`ole Highway is described as consisting of well drained soils that formed in recent alluvium deposited over coral sand. The loam can be found on coastal plains.

Land Study Bureau Detailed Land Classification

The University of Hawai`i Land Study Bureau (LSB) document titled Detailed Land Classification, Island of O`ahu, classifies non-urban land by a five-class productivity rating system, using the letters A, B, C, D and E, where "A" represents the highest class of productivity and "E" the lowest. The Park is in an area that is unclassified (Figure 13).

Agricultural Lands of Importance to the State of Hawai`i

The State of Hawai`i Department of Agriculture`s Agricultural Lands of Importance to the State of Hawai`i (ALISH) system rates agricultural land as "Prime," "Unique" or "Other." The remaining land is not classified. The site is not classified (Figure 13).

Potential Impacts and Mitigation

The sandy soils at the site are expected to be advantageous for drainage, particularly at the proposed sports fields. During construction and landscaping of Master Plan elements, top soil and vegetation will be disturbed on a localized basis. Contractors will use best management practices (BMPs) to minimize erosion during construction and planting. Long term, landscaping and field turf grass will mitigate the potential of soil erosion from wind and storm.

4.3 NATURAL HAZARDS

Existing Conditions

Natural hazards impacting the Hawaiian Islands include flooding, tsunami inundation, hurricanes, volcanic eruptions, earthquakes and landslides. Areas of flood hazard are documented by Flood Insurance Rate Map (FIRM) Panel 15003C0385G prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program. Adjacent to the shoreline, the Park is within the 100 year floodplain. Kalaniana`ole is also located in the 100 year floodplain – this area of flood hazard extends into the project boundary along the Highway. The 500-year floodplain extends further into the site, encompassing the portion of the Park that is relatively unused and overgrown (Figure 14). Waimanalo Bay Beach Park is located within the tsunami evacuation zone (Figure 15). Since 1980, two hurricanes have had significant effect on O`ahu; Hurricane `Iwa in 1982 and Hurricane `Iniki in 1992. These hurricanes had a devastating effect on Kaua`i and brought the most damage to the Wai`anae coast on O`ahu.

Volcanic hazard is considered minimal due to the extinct status of the Ko`olau volcano. Kona winds may bring volcanic gasses from Hawai`i Island, on an intermittent basis. In Hawai`i, most earthquakes are linked to volcanic activity, unlike other areas where a shift in tectonic plates is the cause of an earthquake. Each year, thousands of earthquakes occur in Hawai`i, the vast majority of which are so small they are detectable only

with highly sensitive instruments. The threat of an earthquake to the site area is no greater than any other location on O`ahu.

Potential Impacts and Mitigation

While it is difficult to predict natural disasters, it is reasonable to assume that future incidents are likely. However, the threat of such hazard is no greater for the proposed project site than any other location on O`ahu. The coastal location of the Park makes it vulnerable to high winds and potential storm surge and tsunami in particular. However, maintaining open spaces at coastal locations provide a valuable function for flood storage during high rain events. To help better protect the public, a new emergency egress is planned for the Park via Tinker Road. The egress will be locked except for emergencies, when the Park must be vacated or if the Park`s main access is blocked. Correspondence with the Air Force regarding use of Tinker Road is included as Appendix C.

Article 9 of the Honolulu Land Use Ordinance pertains to Special District Regulations. Section 21-9.10 pertains specifically to flood hazard districts. Portions of the Park are located within Coastal Flood Zones (VE), Areas of Special Flood Hazard (AE) and Areas of .2%flood (XS). See Figure 14, which identifies the areas of flood hazard and also identifies the base flood elevation as 8-feet. While no new structures are proposed within the flood districts, any comfort station rehabilitation below the base flood elevation of 8-feet must be compliant with the development standards of the district. This includes ensuring that structures are designed to, be anchored to resist flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads, including effects from buoyancy caused by a regulatory flood. **Construction materials and equipment must be resistant to flood damage caused by the regulatory flood elevation, construction methods should minimize flood damage and utilities** should be located and constructed to minimize or eliminate damage in the event of a regulatory flood. This includes ensuring that for replacement of potable water systems and facilities that are proposed for replacement are designed to minimize or eliminate infiltration of flood waters into the systems. Similarly, replacement or new sanitary sewer and waste disposal systems must be designed, located and constructed so as to minimize impairment to them or contamination from them during and subsequent flooding by regulatory flood (LUO Sec. 21-9.10-4(c)). Adherence to these standards will be required for rehabilitation of any of the comfort stations or their supporting infrastructure located at a ground contour of 8-feet or below. With this master plan, replacement of waterlines is not expected, as the civil engineer estimates that the pipe has many years of life remaining. However, these requirements are anticipated to apply to wastewater lines and the comfort station structures.

4.4 BEACH, COASTAL EROSION & SEA LEVEL RISE

Existing Conditions

Wind, wave and currents are components of the system that shapes beaches. Sand must also be available in order to sustain beaches. Reduction of sand supply can be caused by shoreline hardening and can also be affected by reef health, storms and rising sea level. The University of Hawai`i School of Oceanography and Earth Science Technology (SOEST) has developed shoreline change maps for the island of O`ahu. The maps document the historical shorelines dating back to 1911. These maps are used to calculate the erosion rates of beaches on O`ahu. The beach adjacent to Waimanalo Bay Beach Park is accreting (becoming wider), by rates of .3 to .8 feet a year (see Figure 16, Coastal Change Map). In April, 2010, the report, "City Beach Parks Erosion Study, Island of Oahu, Hawaii" was prepared for the City and County of Honolulu. This study gives each park an Erosion Hazard Priority Rating (EHPR) of Low, Medium, High or Critical based on: vulnerability of structures or facilities; shoreline erosion; park frequency of use and; environmental impacts of erosion. Waimanalo Bay Beach Park was given a rating of "Low". This conclusion was based on the evidence that the beach is accreting, that the sandy beach is over 100 feet wide and that the comfort stations are over 100 feet landward of the vegetation line. The Hawai`i State Multi-Hazard Mitigation Plan, 2007 addresses sea level rise, explaining that in the future it may be a serious hazard. The plan discusses coastal retreat (beach loss) and documents a recommended Erosion Zone. For beaches that accrete, like that adjacent to Waimanalo Bay Beach Park, an erosion zone of 35 feet for structures with a 50-year life span and 49 feet for structures with a 70-year life span.

Potential Impacts and Mitigation

No shoreline hardening or shoreline structures are proposed. Because the beach adjacent to Waimanalo Bay Beach Park measures over 100 feet in width and is accreting, no mitigation measures are proposed for rehabilitation of the three beach-side comfort stations at their present locations.

4.5 WETLANDS & SURFACE WATER BODIES

Existing Conditions

The site is not thought to contain any freshwater wetlands and contains no streams. A review of the National Wetlands Inventory (NWI) maps, prepared by the US Fish and Wildlife Service, show a band of estuarine and marine wetlands, classified as M2USP, along the site's coastal frontage. This wetland classification is the intertidal area of marine open ocean and high energy coast lines with unconsolidated shore (beaches).

Potential Impacts and Mitigation

The Master Plan does not include any structures or changes to the beach or dune area. Thus, no impacts to wetland resources are expected and no mitigation measures are proposed.

4.6 WATER QUALITY

Existing Conditions

The Hawai'i Department of Health classifies the marine waters at Waimanalo Bay Beach Park as Class A waters. According to the 2006 State of Hawai'i Water Quality Monitoring and Assessment Report, published by the Department of Health, the marine waters at the site attain minimum standards for the bacteria enterococci. It is unknown whether or not the waters meet minimum standards for other parameters such as Nitrogen, Phosphorous or turbidity. Nearby marine waters at the mouth of Waimanalo Stream (at Bellows Field) do not meet minimum standards for the bacteria enterococci. It is assumed that the non-attainment of marine waters at Bellows are due to inputs to Waimanalo Stream, which is listed on the 2004 303(d) list for nutrients, turbidity and suspended solids.

Potential Impacts and Mitigation

Construction activities can cause erosion and sedimentation into waterways. To prevent this from occurring on site, best management practices for erosion and sediment control will be employed during earth moving activities. Post construction, disturbed soils will be landscaped. Long term, the addition of impervious surfaces could result in increases in volume of storm water and/or reduced water quality running off the site. The primary mitigation measure to address storm water quality and quantity will be to propose pervious paving materials for all new parking areas. Landscaping of parking areas are recommended to be capable of accepting storm water that sheet flows from the surface in heavy rain events (i.e. bio-swales vs. raised curbs).

4.7 FLORA

Existing Conditions The coastal dunes are primarily vegetated by ironwood trees (*Casuarina*) and naupaka (*Scaevola*). Hala (*Pandanus*), beach heliotrope (*Tournefortia argentea*), `aki `aki (*Sporobolus virginicus*) pohuehue (*ipomoea pes-caprae*) and romerillo (*Bidens alba*) was also observed in this area. The ironwood trees in the coastal dunes have aged and suffered from human-induced damage, including burned trunks from charcoal disposal and fires. In 2008, several ironwoods were removed from the Park as they were determined by an arborist's inspection to be dangerous to the public's safety. The actively used areas central to the Park have been landscaped with grass which is kept mowed. The remaining forest areas are thickly vegetated with a combination of trees, shrubs and grasses. The forest area is dominated by haole koa (*Leucaena leucocephala*), a shrubby, non-native tree. However, the forest also includes some stands of mature ironwood trees. Other plants observed within the forest include, Christmas berry (*Schinus terebinthifolius*), papaya (*Carica papaya* L.), sea grape (*Coccoloba uvifera*), asystasia (*Asystasia gangetica*), castor bean (*Ricinus communis*), false kamani (*Terminalia catappal*), hau (*Talipariti tiliaceus*) and non-native grasses.

Potential Impacts and Mitigation

None of the flora observed in the Park are listed as threatened or endangered by the US Fish and Wildlife Service. No changes to the vegetation in the coastal dune are proposed with the Master Plan, thus no mitigation measures are proposed. It is recommended that the City and County continue to monitor the health of the coastal ironwoods so as to protect the public's welfare from diseased or dying trees that can lose their limbs. It is also recommended that a reforestation plan be developed for the Park as the coastal ironwood trees age and die.

The Master Plan does not propose reforesting the dunes with ironwood as the trees are considered by the State of Hawai'i to be an invasive plant. Native coastal plants and trees are recommended as an alternative. Selective clearing is proposed for the forested area of the Park to provide new opportunities for recreation and to highlight stands of mature trees that are obscured by haole koa. Existing stands of mature trees will be maintained in the jogging/walking path areas and vegetation will not be cleared along Aloiloi Street. These

remaining forested areas are expected to provide bird habitat, shade for Park users as well as a vegetated buffer between the Park and residential uses at Waimanalo Beach Lots.

4.8 FAUNA

Existing Conditions

Faunal communities in the project area are alien dominated. Avian species commonly encountered are all introduced species common to lowland areas across Hawai'i. These include common myna (*Acridotheres tristis*), red-crested cardinal (*Paroaria coronata*), and house sparrow (*Passer domesticus*). It is expected that detrimental animal species such as feral cats and rats are present at times at Waimanalo Bay Beach Park where there is greater opportunity for these species to forage in trash or debris left behind by visitors.

According to the US Fish and Wildlife Service's comments found in Appendix D and E, the federally endangered Hawaiian coot (*Fulica alai*), Hawaiian duck (*Anas wyvilliana*), Hawaiian moorhen (*Gallinula chloropus sandvicensis*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian hoary bat (*Lasiurus cinereus semotus*), endangered hawksbill turtle (*Eretmochelys imbricata*) and threatened green turtle (*Chelonia mydas*) have all been observed near the Park. Additionally the federally threatened Newell's shearwater (*Puffinus auricularis newelli*) and the Migratory Bird Treaty Act-protected wedge-tailed shearwater (*P. pacificus*), are known to fly through the area. Comments to the Draft Environmental Assessment from the National Marine Fisheries Service and State of Hawai'i Department of Land and Natural Resources, Division of Aquatic Resources (Appendix E) also note that the Hawaiian monk seal (*Monachus schauinslandi*) may be found in the vicinity of the project.

Potential Impacts and Mitigation Measures

Threats to protected species can come from removal of habitat, lighting and attraction of feral predators and pets such as dogs, cats, rats and mongoose. Hawaiian hoary bats roost in woody vegetation and leave their young unattended in "nursery" trees and shrubs when they forage. There is a risk that young bats could inadvertently be harmed or killed if trees or shrubs suitable for bat roosting are cleared during the bat breeding season of April to August. Sea turtles are susceptible to artificial lighting that can disorient them away from the ocean. Turtle nests and hatchlings are susceptible to human disturbance and predation by mammals such as mongoose, cats, dogs and pigs. Lighting can also adversely impact listed and migratory seabird species. Seabirds fly at night and are attracted to artificially-lighted areas which can result in disorientation and subsequent fallout due to exhaustion or collision with objects such as utility lines, guy wires and towers that protrude above the vegetation layer. Once grounded, the birds are vulnerable to predators or can be struck by vehicles along roadways. An increase in the use of night-time lighting for ball fields or parking lot lights, particularly during the peak fallout months between September 15th and December 15th could result in additional seabird fallout. Domestic pets, such as dogs running freely through the Park can cause harm to both turtle nests and downed seabirds. These faunal resources are also susceptible to predation by feral cats, rats and mongoose. No wetlands exist in the Park, thus no open water habitat will be lost to the Hawaiian waterbird population. To ensure that nearshore water quality is maintained, best management practices for erosion and sediment control will be employed during earth moving activities. Post construction, disturbed soils will be landscaped. Long term, low-impact development techniques are proposed for surface parking areas. Additional comments from the Division of Aquatic Resources, suggest that the indirect effects of the project on nearshore resources from increases in the number of people fishing (including spearfishing, pole and line, throw and laynet), snorkeling, kayaking and other activities that could affect marine biological resources such as fish, corals or threatened/endangered species from removal, trampling or disturbance. We acknowledge that greater use of the beach and nearshore waters may result from an increasing the number of campsites and group gathering areas within the Park and have updated the Final WAIMANALO BAY BEACH PARK MASTER PLAN FINAL ENVIRONMENTAL ASSESSMENT - 4-15 - Environmental Assessment to acknowledge this likelihood. It is not anticipated that the additional beach use by campers will have a discernable effect on ocean resources above the impacts by the existing level of use. However, as the Park currently has no interpretive/educational devices pertaining to best practices for ocean recreation, current and future park users would benefit from greater on-site education. Additional educational signage is proposed for the Park's interpretive devices. In order to minimize threats to federally protected species, the following measures, as recommended by the US Fish and Wildlife Service will be implemented with the Master Plan improvements: • To avoid impacts to young Hawaiian hoary bats, tree and shrub clearing of woody plants over 15 feet tall will

not occur during the bat breeding and pupping season of June 1st through September 15th . . . • To maintain dark beaches that allow turtle nesting, no structures or beach-oriented lighting is proposed. • To protect seabirds, outdoor lighting, if installed at the softball/little league diamond will be of a type that is shielded so the bulb can only be seen from below and use the lowest wattage bulbs possible. • To discourage attraction and foraging of feral predators such as cats, rats and mongoose, trash and recycling bins are recommended to be of animal-proof design. • To educate the public about how individuals can contribute to the protection of ocean resources including marine resources such as corals, critically endangered monk seals, threatened and endangered seabirds and turtles, interpretive kiosks or signage are proposed: o To educate Park-goers regarding the seabird fallout issue and to inform the public that downed birds can be taken to Sea Life Park for rehabilitation. o To discourage the free movement of pets in the Beach Park and to discourage feeding of feral animals in or near beach habitats. o To educate beach users that activities including kayaking, snorkeling and fishing can have a negative effect on marine resources, and that those effects can be avoided or minimized through best practices for ocean recreation. o To inform beach goers and fishermen/women of monk seal vulnerabilities, including those from monofilament fishing nets and discourage interaction with monk seals. Specific language pertaining to monk seal vulnerability and beach user best practices will be sought from the State of Hawaii Department of Aquatic Resources and the National Marine Fisheries Service.

5.0 ASSESSMENT OF EXISTING HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing conditions of the human environment, potential impacts of the proposed constructed wetlands and mitigation measures proposed to minimize any impacts.

5.1 ARCHAEOLOGICAL, CULTURAL AND HISTORIC RESOURCES

Existing Conditions

Waimanalo Bay Beach Park is in the ahupua`a of Waimanalo, District of Ko`olaupoko.

Significant Place Names

Waimanalo: “potable water” (Pukui et al.)

Ko`olaupoko: “short Ko`olau” (Pukui et al.)

Ko`olau: “windward” (Pukui et al.)

Manana: An off-shore island and state seabird sanctuary, visible to the south from Waimanalo Bay Beach Park, also known as “Rabbit Island”, for the colony of rabbits deposited on the island by John Cummins. Translated as, “to stretch out or protrude”. (Handy et al., Ulukau)

`alo`ilo`i: Street name adjacent to project site. A damselfish (*Dascyllus albisella*) (Ulukau)

Kalaniana`ole: Highway adjacent to project site named for Prince Jonah Kuhio Kalaniana`ole (1871-1922), delegate to congress and father of the Hawaiian Homes Commission Act. Translated as, “the royal chief without measure” (Pukui et al.)

History

Pre-Contact

As re-told in *Native Planters of Old Hawai`i*, Pele had thought to take up residence at Makapu`u (southeast of the project site), but opted for Maui. Her sister, Hi`iaka, in pursuit of Lohi`au, also passes Makapu`u Point and calls it, “He wahine a ke Akua Pololi” (Wife to the god of Starvation) (Handy, et al).

North of the rocky Makapu`u point, wet taro was thought to have been extensively cultivated in the Waimanalo ahupua`a as evidenced by remnant terraces running to the back of the valley. Native varieties of banana were also planted in small protected gulches in Waimanalo because they did not withstand wind as well as introduced varieties. The agricultural terraces throughout the valley were fed by the area’s well known springs. In the book, *Native Planters in Old Hawaii*, Mary Kawena Pukui translated the following from the Hawaiian language newspaper, *Hoku o Hawaii*, March 11, 1930:

There are two peculiar springs at Waimanalo...The one called Kupunakane [Grandfather] is away up in the mountains. The spring called Kupunawahine [Grandmother] is a spring way down on the level land. The strange, strange thing about these ponds was that on calm, sunny days they begin to cry out to each other. Their voices are soft and sounded very much like a woman mourning her husband. On days that were overcast

with clouds in the sky, then the water of the mountain spring changed. The water of the mountain spring became warm and when you drank the water in the lowland spring it was cool, according to their legend.

Another spring was known to be across Kalanianaʻole Highway from Bellows Air Force Reserve. This area was heavily populated and known as Mahaʻilua. Further east, across from Waimanalo Beach Park, Charles Alona recounted for Native Planters in Old Hawaii that there was a small village, populated with people from Molokaʻi, giving the village its name, Puʻu o Molokai. Continuing east, at what is now Kaiʻona Beach Park, Both Clark and Handy et. al. tell the story of a turtle pond that was kept well stocked with honu for an aliʻi with great fondness for their meat (Handy et al.).

Historic Period:

A description of the decline of traditional agriculture in the year 1847, Pukuʻi translates the following from Kuʻokoʻa, October 26, 1906:

At that time it seemed that the valley was filled with breadfruit, mountain apples, kukui and coconut trees. There were taro patches, with banks covered with ti and wauke plants. Grass houses occupied the dry lands, a hundred of them here, and sweet potatoes and sugar cane were much grown. It was a great help toward their livelihood.... The whole ahupuaʻa of Waimanalo was leased to white men except the native kuleanas and because the cattle wandered over them, they were compelled to build fences for protection. The taro patches that were neatly built in the time when chiefs ruled over the people and the land, were broken up. The sugar cane, ti and wauke plants were destroyed. The big trees that grew in those days, died because the roots could not get moisture. The valley became a place for animals.

Captain Thomas Cummins is known for his early establishment of western-style agriculture in Waimanalo. In 1840, he began grazing beef, dairy cows and sheep. With the rise of sugar in the late 1800ʻs, Cummins initiated the Waimanalo Sugar Cane Company. Vast areas of the lowland ahupuaʻa were put into cultivation of sugar cane for the plantation. A 1916 survey of Waimanalo documents the extensive cane plantation as well as some rice cultivation associated with Kahawai Stream. The same map documents the location of the Waimanalo Sugar Company as mill located mauka (mountain) of the project site (see Figure 18, Hawaiʻi Territory Survey 1916).

Military:

The Waimanalo Military Reservation was established by Executive Order in 1917. In 1933, the reservation was renamed Bellows Field for 2nd Lieutenant F.B. Bellows who perished in an airplane accident. Two Americans were killed at Bellows when it was attacked by the Japanese on December 7, 1941. The following day, a two-person Japanese submarine was disabled when it encountered reef in Waimanalo Bay. One crew member survived and was captured as a prisoner of war. The second crew member did not survive and his body washed ashore. During World War II, the facility was expanded and was used for training US Air Force personnel for combat. Since 1964 areas of Bellows between Waimanalo Stream and Inaʻole Stream have been open to the public for camping (by permit) and beach activities on weekends and national holidays. The site of Waimanalo Bay Beach Park was utilized by the military for warehousing and recreational purposes including beach front cabins and an officers club (see Appendix F, Figure 3). At that time, the beach was known as Bagley Beach, for Vice-Admiral David W. Bagley, commandant of the 14th Naval District during World War II.

Recreation:

In the 1950ʻs the military discontinued using the project area for recreational purposes and by the 1960ʻs, the site became notorious for suspect activities. It is thought that during this time, the project area became known as “Sherwood Forest”. The nickname continues to be commonly used by Oʻahu residents. In 1966, the 76 acres that comprise the project site were transferred from the military to the State of Hawaiʻi. Renamed, “Waimanalo State Recreation Area”, the state land was managed by the Department of Land and Natural Resources, Division of State Parks. State Parks implemented outdoor recreational uses for the public including camping and picnic areas. In 1992, the Park was transferred to the City and County of Honolulu and the Department of Parks and Recreation became the Parkʻs manager.

State and National Register of Historic Places

In 1974, the Bellows Field Archaeological Area (BFAA) was determined eligible for inclusion and formally listed in the National Register of Historic Places. The boundaries of the BFAA included archaeological sites numbered 512 and 513, located in the remains of the Bellows Sand Dune in the Park property as well as an archaeological site documented by the Bishop Museum as Site 018, located within Bellows Air Force Station to the north. Site 018 is a very early habitation and burial site. It is accepted that the Bellows Field

Archaeological Area was intended to primarily protect Site 018 and that the boundary of Bellows Field Archaeological Area was arbitrarily drawn when the extent of the archaeological resources were not known. It is also accepted that that the Park property is not on the National Register. This is supported by Tuggle's research in 1994 as well as by Dye in 2009.

Dye states, "over the years, as information on historic sites has accumulated, it became apparent that the boundaries of site 50-80-15-511 bore little relation to the distribution of archaeological remains. Consequently, site boundaries were redefined and the significance of the sites were evaluated without reference to site 50-80-15-511. For these reasons, site 50-80-15-511 is no longer included in the inventory of archaeological sites recognized as historic properties. The Environmental Assessment process has included coordination with the State Historic Preservation Office (SHPO) to help ensure compliance with the requirements of the State of Hawai'i. Regardless of the Park's status with relation to the National Register, there are known archaeological resources within the Park discussed on the following pages.

Other Waimanalo properties on the State and National Register of Historic Places include:

Table 5 Waimanalo National Register Sites

Site Name	Site Number	Pohakunui Heiau	80-15-0382
Koa (Rabbit Island)	80-15-0489		
Waimanalo Taro Terraces	80-15-0515		
Pueo Heiau	80-15-1031		
Pahonu Turtle Pond	80-15-1037		
US Coast Guard Makapuu	80-15-1355		
Hawaiian Trail and Mountain Club	80-15-9072		
Alfred Hocking Beach House	80-15-9012		

Source: Hawai'i State Historic Preservation Division

Archaeology

A number of archaeological surveys have been conducted on what is now known as Waimanalo Bay Beach Park. An archaeological literature review was conducted to compile this work, review the results of the research and make recommendations concerning future archaeological research as the Master Plan is implemented. The archaeological literature review is included as Appendix F. A summary of previous archaeological research and correspondence is provided in the following table. The findings of the archaeological literature review was strong evidence of Site 512, as it was re-identified on more than one study. Site 513 was not re-identified on studies subsequent to the initial 1971 research study. Evidence of two additional burials were discovered in 1978 and two small fire pits were found in 1979. These features were left in place. The report also verifies that 60 sets of human remains were re-interred within the Park. **Extensive testing has taken place elsewhere within the Park and have returned culturally sterile. The report concludes that extensive areas of the site area have been impacted by construction activities and archaeological testing throughout the years leaving very little, if any, of the original surface intact** (see Appendix F, Figure 13). **As part of on-going wastewater improvements at the Park, an archeological inventory survey found two isolated human bones in a previously disturbed context.** They are found to be under the jurisdiction of the State Historic Preservation Department.

Potential Impacts and Mitigation Measures

The Master Plan was designed to avoid any impacts to archaeological resources, including the site's known archaeological features. Previous archaeological studies and correspondence provide evidence that **the most sensitive area of the Park is the most intact portion of the Bellows Sand Dune complex.** Thus, impacts to resources in this area will be avoided by ensuring that no earth moving takes place for Master Plan improvements. In an effort to ascertain any impacts that the Park may have on cultural uses within the Park, the Community Advisory Group was made aware of the location of known burials within the Park and the potential for additional discovery in the future. A request to the community for input with regard to cultural practices was also voiced at a Waimanalo Neighborhood Board presentation in September, 2011. Additionally letters requesting input relative to cultural practices were mailed to the Waimanalo Hawaiian Civic Club and Waimanalo Hawaiian Homes Association; and email requests for information were also submitted to

individuals knowledgeable of Park activities and cultural practices in Waimanalo generally, for input to the project. These contacts did not illicit any specific additional information regarding current cultural practices within the Park. **Because there is a possibility of burials along the previously disturbed portion of the dune complex, the three comfort stations nearest the beach are proposed to be reconstructed in place.** Elsewhere in the Park, great depths of earth are not expected to be graded, however Archaeological Inventory Assessment (AIS) is recommended prior to completion of detailed park design for areas proposed for ground disturbance. **The most extensive areas of earthmoving will be required to create level sports fields near Kalanianaʻole Highway. These areas have been tested by archaeologists and extensively bulldozed by the military in the late 1970's, however, there is the possibility of discovering sub-surface intact cultural deposits. Additionally, there are remnants of the former military use of the site, such as concrete slabs and building foundation remains.** If they are over 50 years of age, they also will be treated as historic features. It is recommended that these features be mapped, photographed and recorded.

5.2 NOISE

Existing Conditions

The predominant sources of noise in the vicinity of the site stem from automobile traffic on Kalanianaʻole Highway. Other sources of noise are from natural sources, such as wind, rain and ocean waves.

Potential Impacts and Mitigation Measures

Development of sports fields will invariably bring an increase in noise from the likes of spectators and referee whistles. In order to mitigate noise disturbance to the Park's most sensitive adjacent use (single family residences at Waimanalo Beach Lots), the sports fields have been located closest to Kalanianaʻole Highway. Remnant forest is proposed to be left in place as a buffer between these uses. The placement of the sports fields near Kalanianaʻole is also intended to minimize noise impacts on other uses within the Park such as picnicking, camping and nature viewing that benefit from peace and quiet.

5.3 AIR QUALITY

Existing Conditions

Regional and local climate, together with the amount and type of activity generally determine the air quality of a given location. At the project site, trade winds predominate. Due to relatively undeveloped nature of the Park and surrounding properties, air quality is excellent. There are no point sources of airborne emission within proximity of the project site. Pollutants that exist may be attributable to automobile traffic accessing the Park. Emissions from such sources are intermittent and are quickly dispersed by prevailing winds.

Potential Impacts and Mitigation Measures

Long term, the additional park uses will not contribute to air pollution. The Park will include an improved bicycle trail along the Kalanianaʻole frontage as well as walking paths internal to it. These enhanced features will offer better opportunities for multi-modal access to and within the Park. Emissions derived from operation of construction equipment and other vehicles involved in construction activities may temporarily affect the ambient air quality in the immediate vicinity. However, these effects will be minimized through proper maintenance of construction equipment and vehicles. In addition, there may be a temporary adverse impact on air quality attributable to dust generated during project construction, particular earthmoving activity. The Department of Design and Construction will work with their contractors to ensure that best management practices to control fugitive dust are employed. This may include the use of construction fencing or watering the site while soil is exposed. After construction, the Park will be revegetated with grass or landscaping.

5.4 VISUAL RESOURCES

Existing Conditions

Waimanalo Bay Beach Park contains treasured scenic resources that are centered on the beach and bay. Some of these resources are documented in the Koʻolaupoko Sustainable Community Plan (Figure 7). The sandy beach adjacent to the Park is over 100 feet wide. Views from the Park toward the bay include a stretch of sand that reaches northward toward Lanikai where Wailea Point reaches out to the Mokulua Islands. Southward, miles of beach give way to the pali face where the islets of Manana (Rabbit Island) and Mokuohope can be seen. Within the Park, the ironwood trees in the coastal dune area are valued by the community for their shade,

shelter from wind and scenic quality. **Other areas of the Park have become overgrown with non-native invasive plants and their scenic qualities have become diminished.** From Kalanianaʻōle, the Park appears as a thick tangle of Haole koa trees, which have grown right up to the aging perimeter chain link fence.

Potential Impacts and Mitigation Measures

The objective of the proposed Master Plan is to preserve the Park's existing scenic resources and enhance those scenic resources that have lost their integrity. Master Plan improvements have been proposed to be sited so as to retain mature trees and maintain view planes. The Kalanianaʻōle frontage is proposed to be improved with a meandering bike path that is separated from the Highway by a landscape strip. A pasture fence that is similar in design to the polo grounds fence across the Highway is proposed to be installed in the planter strip (outside Highway right-of-way). The purpose of this measure is to make bicycle riding along or to the Park more enjoyable and safe. However, it will also serve to enhance the Park visually from the Highway. The aging perimeter security fencing is also proposed to be replaced. Sports fields will be turf grass and associated parking areas will be landscaped with high canopy shade trees. The central portion of the Park has been laid out to preserve stands of large trees. The thick understory of non-native shrubs is proposed to be thinned so as to allow visual access to the Park's larger trees. Similarly, non-native trees and understory will be removed to allow for a walking/jogging path through the remnant forest and dunes adjacent to Aloiloi Street. New camping sites near the beach will be designed within the existing stand of ironwood trees, and no trees are planned for removal to accommodate camp sites. However, as an ongoing safety consideration outside the scope of this Master Plan, the City and County continues to monitor the health of the aging trees and will need to consider selectively removing any trees that pose a safety hazard to the public. No adverse impacts to scenic resources are expected; thus, no mitigation measures are proposed.

5.5 SOCIO-ECONOMIC CHARACTERISTICS

Existing Conditions

Waimanalo Bay Beach Park is located in the ahupuaʻa of Waimanalo, District of Koʻolaupoko, Island of Oʻahu. Waimanalo is characterized by its rural, agricultural environment, family-oriented neighborhoods and small businesses oriented to Kalanianaʻōle Highway. The Waimanalo community is comprised of a greater percentage of Native Hawaiian or "other Pacific Islander" population than Oʻahu as a whole. Approximately 2,000 acres in Waimanalo are under the ownership of the Department of Hawaiian Home Lands (DHHL). According to the DHHL 2009 Annual Report, there are 800 residential leases in Waimanalo. Approximately 50 additional residential leases are expected as a new DHHL subdivision on Kakaina Street is developed. In addition to lands owned and leased for residential uses, DHHL also owns Waimanalo Beach Park, Kaupo Beach Park and an 8.65-acre parcel of land known as "Pine Tree Triangle" across Kalanianaʻōle Highway from the Park.

The Census Bureau tabulates data for unincorporated localities, called Census Designated Places (CDP). Waimanalo Bay Beach Park is located adjacent to two CDPs. The Waimanalo Beach CDP extends from Makapuʻu to Aloiloi Street, encompassing residential subdivisions on both sides of Kalanianaʻōle. The Waimanalo CDP encompasses lands primarily between Kalanianaʻōle and Hihimanu Street as well as subdivisions between Kakaina and Kumuhau Streets. Census 2010 reported the total population of the Waimānalo CDP to be 5,451 persons and the total population of the Waimanalo Beach CDP to be 4,481 persons.

Potential Impacts and Mitigation Measures

The Waimanalo Bay Beach Park Master Plan is not expected to affect the demographics of the Waimanalo Beach CDP, the Waimanalo CDP or the island of Oʻahu as a whole. The construction itself will stimulate purchase of materials (generating excise tax revenues) and employment for labor (generating income tax revenues). No mitigation measures are proposed.

5.6 INFRASTRUCTURE

5.6.1 Roadways and Traffic

Existing Conditions

Waimanalo Bay Beach Park is located with frontage on Kalanianaʻole Highway (State Route 72), a State of Hawaiʻi, Department of Transportation (DOT) owned and maintained facility. Kalanianaʻole Highway is a three lane highway with a posted speed limit of 35 miles per hour in the vicinity of the Park. The highway right-of-way measures 50-feet in width. Highway improvements include a north-bound lane, south-bound lane and a center lane. The center lane is striped to allow left-turn movements into the Park from the south-bound lane and to allow left turn movements out of the Park. The highway shoulders are unpaved and grass, except at bus stops, where paved pull-outs are provided. Beyond the grass shoulders, there is an asphalt sidewalk in each direction. Overhead powerlines are sited in the highway corridor adjacent to the northbound lane.

In addition to automobile traffic, Kalanianaʻole is a bus route. The Bus routes #57, #77 and #89 Express pass by the site frontage. A north-bound bus stop is located immediately north of the Park access point. South-bound bus stops are located on the mauka side of the highway, north and south of the Park entrance.

A Traffic Impact Analysis Report (TIAR) was prepared by the City and County of Honolulu, Department of Design and Construction (DDC) in 2011 (Appendix G). The report documents current traffic conditions and estimate the impacts of the proposed Master Plan elements on traffic patterns. The purpose of the TIAR is to evaluate how well the capacity of the existing system can support demand now and upon development of the Park Master Plan elements. Based upon examination of 24-hour tube counts supplied by the Hawaiʻi Department of Transportation (HDOT), traffic is most heavy along Kalanianaʻole Highway from 3:30 PM to 7:30 PM on weekdays. Thus, the TIAR focuses on this time period for levels of service, delay, queuing and other measures of traffic congestion. Based on two days of weekday continuous traffic counts performed in 2007, the most heavy peak hour traffic on the highway is from 4:15 PM to 5:15 PM. This coincides with a time of day when participants using the proposed ball fields are expected to be arriving at the Park, thus the TIAR specifically analyses this time of day.

Potential Impacts and Mitigation Measures

The TIAR methodology included using the Institute of Transportation Engineers (ITE) Trip Generation Manual to estimate the number of trips that would be generated and assumptions about which direction the trips would take. It is estimated that a beach park of 75 acres would generate 2,236 trips daily (a trip in to the Park is considered one trip, so a person that drives to and from the Park generates two trips). During the PM peak hour, 98 trips are estimated (49 entering, 49 leaving). A peak hour factor was further added to the model to account for an intensification of trips for the ball field use.

The TIAR analyzed whether a traffic signal would be warranted for the Park access. This analysis was performed as outlined in the Manual of Uniform Traffic Control Devices, which sets forth eight indicators to see if volumes of traffic meet the “warrant” for a signal. None of the warrants are met currently, meaning that a traffic signal is not appropriate for the intersection. Projected to the year 2031, none of the warrants are expected to be fully met. However, the TIAR recommends that the City monitor the intersection as traffic may grow at a faster rate than the model. At a minimum, the TIAR should be updated upon construction of all proposed improvements, or at the end of the 20-year planning horizon (2031). Another measure of capacity is Level of Service (LOS). The TIAR found that Kalanianaʻole Highway northbound and southbound will maintain a satisfactory Level of Service through a 20-year planning horizon. The TIAR found that the most congested roadway segment will be the Park’s access road. **Thus, the TIAR includes a recommendation to delineate a separate left turn and right turn lanes to facilitate vehicular movements out of the Park.** Finally, the TIAR suggests that traffic traveling northbound on Kalanianaʻole and turning right into the Park should be monitored for congestion. A right-turn “pocket” may ease congestion if it arises.

Construction of driveway improvements may require closure of the sidewalk immediately adjacent. If the sidewalk or any other transportation facilities will be affected by construction of the driveway, the following notation should be included on construction plans: *“The contractor will notify the Department of Transportation Services, Public Transit Division at 768-8396 and Oahu Transit Services, Inc. (bus operations: 848-4578 or 848-6016 and paratransit operations: 454-5041 or 454-5020) of the scope of work, location, proposed closure of any street, traffic lane, sidewalk or bus stop and duration of project at least two weeks prior to construction.”*

In addition to on-site improvements to the driveway, an emergency route is also planned for the Park. The purpose of the exit route is to allow a secondary way for vehicles to exit the Park should an emergency necessitate evacuation of users or should an accident at the driveway/Highway intersection that restricts access occur. The emergency exit route is proposed to be gravel and under all circumstances except emergencies be

gated and locked at Tinker Road. Preliminary agreement for this access has been provided by the Air Force, however, an agreement to formalize limited emergency access to Tinker Road must be secured. Comments to the Draft Environmental Assessment from the City and County of Honolulu requested consideration of potential impacts to Aloiloi Street and surrounding City streets from the new pedestrian/bicycle access on Aloiloi Street. It is expected that this access will primarily serve the neighboring residents and will not create a situation where additional vehicles will park on Aloiloi Street or surrounding roadways. The Master Plan is designed such that the most convenient access and parking to new recreational facilities is via the Park access road and internal parking lots. The number of parking spaces was calculated to accommodate 15 vehicles per team, assuming that three fields would be active at any one time, plus approximately 50 additional parking spaces were allotted to allow for game overlap, acknowledging that families often picnic together postgame.

Security fencing is deliberately included around the Park's perimeter to discourage sports field users from parking along Kalaniana'ole Highway and walking in to the field area as is the practice at Waimanalo Beach Park. The perimeter fencing should serve the same purpose along Aloiloi Street as the internal parking lots are more convenient to the fields than on-street parking and walking to the gate. The vegetated buffer of mature trees along Aloiloi Street should also serve as a visual barrier between the uses, minimizing the sense that the fields can be easily accessed from neighborhood roads. Finally, a locking gate has been deliberately identified for this access. The primary purpose of the locking gate is night time security, but should a neighborhood parking issue arise, the gate could be locked during daytime hours. However, this is a last resort option as the purpose of the access on Aloiloi Street is to facilitate park access for neighborhood residents by foot or bicycle.

5.6.2 Water

Existing Conditions

In Waimanalo, as with all of Ko'olaupoko, the source of water is precipitation along the Ko'olau mountains. Rainfall is impounded in dike complexes within the mountain geology and conveyed into the valley via springs and seeps which feed streams. The Waimanalo Aquifer System Area, part of the Windward Aquifer Sector Area as defined by the Commission on Water Resource Management (CWRM). The Waimanalo Aquifer System Area has an estimated sustainable yield of 10 million gallons per day (mgd). The neighboring Ko'olaupoko Aquifer System Area has a sustainable yield of 30 mgd. To satisfy agricultural demand in Waimanalo, irrigation water is conveyed from water tunnels, springs and streams in Maunawili (Ko'olaupoko Aquifer System Area) and Waimanalo Valley via the Waimanalo Ditch.

A Civil Engineering Report was prepared to document existing infrastructure and address infrastructure need for the proposed Master Plan elements. The existing water system is detailed in the Civil Engineering Report (Appendix H) and summarized below. A map showing existing utilities is provided as Exhibit 1 to the Civil Engineering Report. **The Park's water system consists of various sized polyvinyl chloride (PVC) pipe metered off a service line at Aloiloi Street.** The oldest water lines in the system are 34-35 years old. A second water line owned by the Federal government crosses the Park from Aloiloi Street to Bellows Air Force Station. The second line serves a single fire hydrant within the Park. Based on park hours and uses and number of fixtures, the Civil Engineering Report estimates existing water demand to be 57 gallons per minute, which equates to approximately 2.5million gallons per month. Actual meter readings found that the average monthly usage is approximately 342,000 gallons per month, and a maximum monthly usages of 722,000 gallons in August, 2010. The Park currently has one fire hydrant, located near the caretaker's residence. It is inadequate to serve existing Park facilities.

Currently, no irrigation system is in use at the Park.

Proposed Improvements

The Civil Engineering Report considered the age, location and performance history of the existing water system and determined that the existing system does not require wholesale replacement. Specifically, the water laterals that service the beach comfort stations #1, #2 and #3 as well as the Caretakers residence are not proposed to be replaced. Additionally the six-inch waterline near the beach which services comfort stations #2 and #3 and several of the drinking fountains is also recommended to remain in

place. However, the location of some of the existing water lines relative to large trees and proposed Park elements are recommended to be replaced and abandoned (see Exhibit 2 of the Civil Engineering Report).

New Park elements are proposed to be served by a system of six-inch PVC pipe. The waterline is proposed to be placed within paved areas wherever practical. For pipe lengths that are located outside the paved areas, the pipes should be located away from stands of dense trees and proposed sports fields. Electronic markers should be installed with the proposed waterlines to help locate the waterlines in the future.

The Park's single fire hydrant is inadequate to serve existing and proposed facilities, thus eight additional hydrants are proposed within the Park.

An irrigation system is proposed for the sports fields areas and large group camping areas of the Park. The Master Plan anticipates utilizing “reuse” water from the Waimanalo Wastewater Treatment Plant (WWTP) to satisfy this demand. As of July, 2010, a study to address improvements required to bring the WWTP to full R-1 compliance was being scoped. R-1 water is defined by the State of Hawai'i Department of Health to have a “significant reduction in viral and bacterial pathogens” that is, “at all times oxidized, then filtered, and then exposed after the filtration process. Through correspondence with the City, the capacity of the WWTP is 1.1 million gallons per day. **Based on the assumption that approximately 31.5 acres of the park will require irrigation, utilizing 5,000 gallons per acre per day, approximately 157,000 gallons per day will be required.**

Utilizing R-1 water from the WWTP will require installation of infrastructure to pipe the water from the plant to the Park. Because the WWTP does not have direct access to Kalaniana'ole Highway, there are two potential routes that a water conveyance line could take. The most efficient route would be across a driveway area on State-owned land (leased by the Polo Association). An easement for utility purposes is required before a waterline can be installed at this location. **The easement will need to be negotiated with the DLNR, which owns the polo grounds property and DHHL which owns the lots known as “Pine Tree Triangle”.** This route would require approximately 1,900 linear feet of waterline. Alternatively, the other potential route, for which no additional easements would be required is along Hihimanu Street to Kalaniana'ole Highway to the Park, an estimated length of 4,000 feet. Construction Cost Estimates provided in Appendix H and J allow for the alternative routes.

Potential Impacts and Mitigation Measures

According to pre-consultation comments from the Board of Water Supply (BWS), the existing water system is presently adequate to accommodate the domestic water requirements of the proposed plan. The BWS reserves the right to confirm availability of water when building permits are submitted for approval. The Board of Water Supply also recommends investigation into the availability of non-potable water for irrigation requirements at the Park.

On-site water systems will also be subject to the BWS Cross-Connection Control and Backflow Prevention requirements prior to issuance of building permits. The BWS also recommends coordinating on-site fire protection requirements with the Fire Prevention Bureau. During the 30-day comment period following publication of the Draft Environmental Assessment, the Board of Water Supply confirmed that all of the comments made at the time of pre-consultation remain applicable.

The Civil Engineering Report documents proposed water demands, and makes the assumption that three of the comfort stations will be in use during daytime park hours and three of the proposed comfort stations will operate 24 hours for the five days per week that camping is permitted. Showers were assumed to be continuously in use during park hours. Demand was also analyzed based on size of comfort station, allowing the option of developing either “small” or “medium” type comfort stations near the ball fields. Water demand varied between each options from 90 gallons per minute to 94 gallons per minute (approximately 4 million gallons per month). Based on the earlier discussion where the civil engineer's existing demand estimate is much greater than actual meter readings (estimated 2.5 million gallons per month vs. average actual 322,000 gallons per month), the demand estimate is considered conservative, but allows consideration of the adequacy of the water facilities should the Park and its proposed improvements be used to their capacity. Based on the estimated demand, proposed facilities are anticipated to be adequate to serve the Park Master Plan elements. To minimize the amount of potable water used for non consumption purposes, irrigation water is proposed to be R-1 “re-use” water from the Waimanalo Waste Water Treatment Plant.

5.6.3 Wastewater

Existing Conditions

The Waimanalo Bay Beach Park is serviced by three comfort stations, located at intervals along the dunes. The existing wastewater system consists of a combination of force mains and gravity sewers. The beach-side comfort stations (#1, #2, #3) were once serviced by a 2-inch force main that discharged to a sewer manhole. In 1990, this system was replaced with pump stations at comfort stations #1 and #2 that pumped to a central pump station. Comfort station #3 and the caretaker's house gravity fed the central pump station and the combined wastewater was all pumped to a sewer manhole where it then gravity flowed to the city wastewater system at Kalaniana'ole Highway. Currently, the forced main system is not working and wastewater is collected for disposal by pumper truck. Repairs to this system are currently in design and are not part of this master planning process. The existing comfort stations include shower facilities. All shower water is allowed to infiltrate on site.

Proposed Improvements

The Master Plan proposed sewer system is shown in Exhibit 2 of the Civil Engineering Report, (Appendix H). New wastewater mains serving the group camping/gathering area, maintenance yard and sports fields are proposed to gravity flow from these facilities to a series of manholes and eventually to the public system in Kalaniana'ole Highway. The gravity flow portion of the existing system is located where multi-purpose fields are proposed. Existing manholes along the current alignment pose safety concerns for field users. Thus, the Master Plan includes relocating portions of the system and existing mains and manholes are proposed to be abandoned in place. The proposed sewer lines are proposed to be relocated away from the fields and realigned with the internal roadway system whenever practical. In addition to the existing number of showers at beach comfort stations, additional showers are proposed at the large group camping/gathering area and at the maintenance area for staff use. As with the beach comfort stations, shower water is proposed to infiltrate on site at these facilities.

Potential Impacts and Mitigation Measures

Proposed wastewater demands have been estimated in the Civil Engineering Report and proposed facilities are anticipated to be adequate to serve the proposed recreational elements. Wastewater calculations in the Civil Engineering Report also factor in proximity to ocean and assume that the gravity system is below groundwater, thus infiltration has also been factored into the proposed sewer demand calculations. Recognizing the potential of park users to introduce pollutants to shower water runoff, alternatives for water disposal were considered. Shower water may not be discharged directly to the ocean, and connecting shower drains to the wastewater system raises a serious maintenance difficulty in keeping the system sand-free. Thus, it is deemed most desirable to filter shower water through a mechanical device or utilize vegetation to clean water prior to its infiltration into the Park's sandy soil.

5.6.4 Drainage

Existing Conditions

There are no improved storm drain facilities within the Park. Water is allowed to sheet flow off of impervious surfaces, such as the parking lots and infiltrate into the surrounding landscape. Similarly, precipitation that falls onto Kalaniana'ole highway sheet flows into the grass beside the roadway. During especially heavy rain events, standing water has been observed on the highway and ponding on the Park's frontage. The majority soil within the Park, Jaucas Sand is described as consisting of very deep, excessively drained, very rapidly permeable soils on beaches and along the sea coast. The Mokule'ia loam that can be found near Kalaniana'ole Highway is described as consisting of well drained soils that formed in recent alluvium deposited over coral sand.

Potential Impacts and Mitigation Measures

The addition of impervious surfaces can result in an increase in storm water that collects on a property. At the guidance of the community through the Master Plan Advisory Group, the Master Plan minimizes impervious surfaces wherever possible. To that end, no "hard court"(i.e. basketball and tennis) sport elements were added to the site. **Additionally, parking areas are planned to be constructed of pervious surfaces such as pervious asphalt or pavers. Due to the nature of the Park's soils, the runoff generated from roofs of pavilions can be infiltrated on site. Additional features such as cisterns could be added to the caretaker's**

home to further capture rainfall for re-use in the immediate landscape. Along the Kalanianaʻole frontage, development will be limited so that the Park can continue to serve its valuable open space function in storing and infiltrating storm water during heavy rain and localized flooding events.

5.6.5 Electrical and Communication Systems

Existing Conditions

A preliminary engineering report was prepared by Ronald N.S. Ho & Associates, Inc. electrical engineers to describe the existing facilities and recommended facilities to serve proposed Park elements. See Appendix I. In Waimanalo, electrical service is provided by Hawaiian Electric Company (HECO); telephone service is provided by Hawaiian Telcom (HTCO) and cable/internet provided by Oceanic Time Warner Cable (OTWC). The existing off-site facilities that serve the Park include HECO's Waimanalo Beach Substation, located at Hihimanu Street and HTCO's Waimanalo central office located near the intersection of Kalanianaʻole Highway and Aloiloi Street.

Existing service near the Park consists of aerial cables attached to a joint overhead pole line running along the north (park-side) of Kalanianaʻole Highway. However, electrical service is provided to the Park's comfort station and caretaker's house from an underground feeder off Aloiloi Street. While the Park includes a pay phone, a check with HTCO indicates that there are no telephone lines serving the Park.

Proposed Improvements

The proposed electric and communications systems will be developed in accordance with the specifications and standards of HECO, HTCO and OTWC. The electrical engineer's preliminary engineering report identifies that the proposed Park elements will include an increase in electrical power demand to 250 kilo Volt-Amperes (kVA). Demand is projected to be as little as 100 kVA, if overhead lighting is not pursued for the softball/little league field. The onsite electric and communications systems to support the Park Master Plan include concrete encased PVC conduits, installed within a common trench and located, when feasible, in the grass shoulder of the Park access road. Manholes and hand holes would be placed periodically to serve as pulling points for utility servicing. Near the proposed Park maintenance yard and at another central location transformer pads would be placed for HECO transformers. The latter would be provided for the Park access road, restroom and parking lot lighting systems. A stainless steel metering and electrical equipment cabinet would be provided for the utility meter socket, panelboard and lighting controls. Metering and service equipment for the maintenance yard would be placed on one of the buildings in the maintenance yard. In providing the new electric service to the Park, the existing secondary electric service of Aloiloi Street would be terminated and the electric service to the comfort stations consolidated on to the same meter feeding the Park access road and parking lot lighting.

Throughout the planning process, the City and community members have discussed whether the sports fields should be lighted for night play. Because baseball field lighting is provided in Waimanalo at the District Park and at Waimanalo Beach Park, and to minimize effects of lighting on residential properties, field lighting is only proposed at the softball/little league field. **The lighting for the field should be designed in conformance with City and County Department of Parks and Recreation design standards and should utilize 1000 watt metal halide sports lighting fixtures and poles that are acceptable to the Department of Design and Construction.** Because of the Park's access to near year round trade winds and sun exposure, consideration for use of alternative energy systems for the more remote Park facilities, such as the beachside comfort stations should be considered. **Specifically, wind turbines and photovoltaics should be considered** for the interior building lighting and night security lighting for these facilities. Installation of inverters and batteries would probably need to be installed to ensure that lighting is available throughout the night and a photovoltaic system to serve these facilities is estimated to be approximately \$6,000. However, decentralized alternative energy facilities may be preferable over re-routing electrical service to the maintenance yard via overhead or underground lines. Use of photovoltaics would minimize need for additional ground disturbance for boring/trenching or poles and would also ensure continuity of security lighting at these facilities in the event of an outage on the grid.

Potential Impacts and Mitigation Measures

The additional lighting required to service the new park elements are not expected to create significant demand on the electric system and no off-site system improvements are expected. Demand on the system would be further reduced should the city pursue alternative electrical systems for the beach-side comfort stations. Impacts of sports field lighting can be minimized by utilizing sports lighting fixtures that are cast downward.

5.6.6 Solid Waste Disposal

Existing Conditions

Garbage receptacles are located throughout the developed portions of the Park. Hot coal bins are also located near the camping and picnicking areas. A bottle and can recycling receptacle is located near the Aloiloi Street entrance. Community members have expressed a concern with the frequency of garbage and hot coal pickup, indicating that the facilities can become overwhelmed.

Potential Impacts and Mitigation Measures

With additional development, garbage and recycling receptacles are proposed. Receptacles are recommended to have animal proof lids to discourage foraging by birds, rats and feral cats.

5.7 PUBLIC SERVICES

5.7.1 Police Protection

Existing Conditions

Waimanalo is located within the Honolulu Police Department's District 4, Kane'ohe Patrol District. The nearest police sub-station to the project site is in Kailua. In addition to the patrol district, the HPD has investigative units focused on criminal, narcotics, traffic and scientific investigation. The HPD also has a number of community policing initiatives including neighborhood security watches, citizen patrols as well as programs oriented toward children and elderly. The HPD has a graffiti hotline available as well as a new initiative called Project C.L.E.A.N. (Community Lokahi to Enrich our Aina Now), which brings community organizations together to paint out graffiti, remove trash and bulky items.

Potential Impacts and Mitigation Measures

The improvements made with the proposed Master Plan are not anticipated to adversely affect crime or police operations. Pre-consultation comments received from the Honolulu Police Department (Appendix D) raise no concerns. Representatives of the Honolulu Police

Department, as well as the Police Activities League (PAL) have participated in the Community Advisory Group meetings for the Master Plan, providing guidance in matters of security and emergency response.

5.7.2 Fire Protection

Existing Conditions

The Honolulu Fire Department is divided into three platoons that are further divided into battalions which are in turn divided into companies. Fire Company 27 is located in Waimanalo, approximately .5 miles from the project site. The station includes ambulance service. Currently, there is one vehicular access in and out of the Park. The Park is serviced with one fire hydrant.

Potential Impacts and Mitigation Measures

The Park improvements proposed with the Master Plan include new structures such as comfort stations and a group camping pavilion. The new uses will likely encourage more park use for camping and picnic gatherings as well as post-game picnic gatherings. Thus, an increase in risk of fire can be expected. The Honolulu Fire Department made the following requirements in order to mitigate the risk to health and property damage due to emergencies:

- Provide a fire apparatus access road for every facility, building or portion of a building constructed when any exterior wall is more than 150 feet from an access road. A fire department access road shall extend to within 50 feet of at least one exterior door that can be opened from the outside and that provides access to the interior of the building.
- Provide a water supply approved by the county capable of supplying the required fire flow for fire protection to all premises upon which facilities or buildings are constructed.

- Provide civil drawings to the department for review and approval. To mitigate against the risk of fire, apparatus accesses will need to be approved by the Fire Department prior to construction. In addition, eight hydrants are planned to ensure an adequate system to fight fires. Their configuration will be subject to review prior to construction. Water supply is expected to be sufficient to fight fires within the Park. In addition to the requirements of the Fire Department, comments from members of the Community Advisory Group suggested that more hot coal bins might facilitate proper disposal of coals used for barbeques. Additional hot coal disposal bins are proposed with the Master Plan improvements. Finally, the mitigation measures proposed include a new emergency ingress/egress via Tinker Road. A preliminary affirmation of this plan has been neighborhood security watches, citizen patrols as well as programs oriented toward children and elderly. The HPD has a graffiti hotline available as well as a new initiative called Project C.L.E.A.N. (Community Lokahi to Enrich our Aina Now), which brings community organizations together to paint out graffiti, remove trash and bulky items.

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Department, as well as the Police Activities League (PAL) have participated in the Community Advisory Group meetings for the Master Plan, providing guidance in matters of security and emergency response.

- Provide a fire apparatus access road for every facility, building or portion of a building constructed when any exterior wall is more than 150 feet from an access road. A fire department access road shall extend to within 50 feet of at least one exterior door that can be opened from the outside and that provides access to the interior of the building.

- Provide a water supply approved by the county capable of supplying the required fire flow for fire protection to all premises upon which facilities or buildings are reconstructed.

- Provide civil drawings to the department for review and approval.

To mitigate against the risk of fire, apparatus accesses will need to be approved by the Fire Department prior to construction. In addition, eight hydrants are planned to ensure an adequate system to fight fires. Their configuration will be subject to review prior to construction. Water supply is expected to be sufficient to fight fires within the Park. In addition to the requirements of the Fire Department, comments from members of the Community Advisory Group suggested that more hot coal bins might facilitate proper disposal of coals used for barbeques. Additional hot coal disposal bins are proposed with the Master Plan improvements. Finally, the mitigation measures proposed include a new emergency ingress/egress via Tinker Road. A preliminary affirmation of this plan has been secured with the Air Force, provided that the access is gated and locked, except in event of an emergency.

5.7.3 Education

Existing Conditions

Public school education is under the direct supervision of the Hawai'i State Department of Education. Waimanalo is located within the Kailua-Kalaheo Complex. The Waimanalo community is served by two public elementary schools, Pope Elementary and Waimanalo Elementary and Intermediate. High school students from Waimanalo are within the service area of Kailua High School. The official enrollment count for the 2010-2011 school year was 229 students at Pope Elementary; 490 students at Waimanalo Elementary and Intermediate; and 866 students at Kailua High School.

Potential Impacts and Mitigation Measures

The proposed Master Plan improvements are not expected to draw more students into Waimanalo Schools. No mitigation measures are proposed.

5.7.4 Health Care Services

Existing Conditions

The community of Waimanalo is served by the Waimanalo Health Center (41-1347 Kalaniana'ole Highway), a community-based non-profit that provides primary health services.

Emergency Room and hospital facilities are provided by Castle Medical Center (640 `Ulukahiki Street) in Kailua, approximately four miles from the project site.

Potential Impacts and Mitigation Measures

The addition of sports fields, walking and fitness trails among the Master Plan improvements are intended to contribute opportunities for healthy recreation for the public. With increased park use, there is the possibility of an increase in the need for occasional medical services for recreation-related injury. However, a significant increase in demand for medical services is not expected with the proposed Park Master Plan improvements; therefore, no mitigation is proposed.

5.7.5 Recreational Facilities

Existing Conditions

Waimanalo Bay Beach Park is one of five County owned/operated parks in Waimanalo, which also include Waimanalo Beach Park, Waimanalo District Park, Kaupo Beach Park and Makapu`u Beach Park (see Figure 19, Recreational Facilities). Additionally, Bellows Field

Beach Park, while owned by the military is accessible to the public on weekends and holidays. Elsewhere in Ko`olaupoko, there are scattered neighborhood parks, beach parks and opportunities for outdoor recreation at nature preserves and State Parks.

Each park in Waimanalo has its own character. Bellows Field Park is known for its informally arranged drive-up campsites. The District Park is oriented toward organized sports and activities, complete with ball fields, gym and meeting rooms. The soils at the District Park do not drain well, and rainwater tends to puddle on the fields. Waimanalo Beach Park is also an active park, with lighted baseball fields, camping, as well as beach activities and a canoe hale. Waimanalo Beach Park's camping area is located adjacent to the Highway and not secured at night, thus it is often utilized by transient campers rather than recreational campers. Southward, Kaiona and Kaupo Beach Parks are located along the narrow strip of land between Kalaniana`ole Highway and the Bay. Kaiona Beach Park provides an open picnic area and easy access to parking and is often used for family picnicking. Kaupo Beach Park is a rocky strip of land, primarily used for ocean access by fishermen and surfers. Makapu`u Beach Park is known for its consistent waves and is popular among island bodysurfers.

Potential Impacts and Mitigation Measures

The Master Plan for Waimanalo Bay Beach Park aims to increase recreational activities within the Park while maintaining its unique character of rural and forested attributes. The expansion of activities is expected to relieve demand on surrounding parks for sports fields, picnicking and recreational camping. Preserving stands of large trees, avoiding disturbance to sand dunes, discouraging drive-up camping and maintaining nighttime security are techniques to sustain the Park's character while increasing outdoor recreational use. The proposed Master Plan improvements are not expected to negatively impact recreational facilities in Waimanalo or greater Ko`olaupoko.

6.0 DESCRIPTION OF ALTERNATIVES

6.1 NO ACTION ALTERNATIVE

The No Action alternative would essentially leave the Park as is with no improvements planned for the foreseeable future. No action would continue the project goal of maintaining security and rural character of the Park, but it would not meet the City and County's objectives to:

- Improve existing park services including repair of comfort stations and supporting infrastructure
- Add park services including camping, picnicking and sports fields

6.2 COMMUNITY CENTER ALTERNATIVES

Initial conceptual plans for the Park included a community center. A community center was identified early in the planning process as highly desired by individuals and Waimanalo community organizations. The community was able to provide a "blueprint" for a community center based on a highly participatory endeavor by the Waimanalo Youth and Family Collaborative. The "blueprint" identified the demand for a central place where community organizations could operate from and included conceptual building layouts and programs. The concept of a community center was adopted early in the design alternatives into concept plan alternatives (described in the following sub-sections). Ultimately, the alternatives that included a community center were rejected for three reasons. 1) In addition to the strong community desire for a community center, there was also a strong desire for maintaining the rural, forested character of the Park. The addition of enclosed structures for programmed, indoor use was incongruous to this goal. 2) The Park is subject to protections under the Land and Water Conservation Fund (LWCF), which was used for development of the outdoor recreational use in 1978 and 1987. These protections require that the Park is accessible and facilities within the Park are available to local residents and visiting general public. There are specific provisions to ensure that

visitors are not excluded from the site or charged excessive fees so as to discourage their use. Thus, from the standpoint of the LWCF, a community center with non-profit offices and programming primarily directed toward Waimanalo or Windward residents would restrict access to the general public. The protections also prohibit the “conversion” of use from public outdoor recreation to other types of uses. Therefore, construction of enclosed building that would provide the needed administrative, instruction and meeting space for non-profits such as those associated with the Waimanalo Youth and Family Collaborative would be considered such a conversion. **3) From a City and County Parks and Recreation perspective, a community center is more appropriate as a District Park element as opposed to a Beach Park. For these reasons, the community center was deemed infeasible and was eliminated from consideration.**

6.2.1 Passive-Recreation/Community Center Alternative

An alternative to add sports fields, but minimize their number was considered. This plan involved two field areas that were flexible in size and design so that one could be used for softball/little league and the other for baseball. Both field areas would be convertible to soccer/football/rugby use. This plan also involved a community center comprised of several buildings and modeled after the Waimanalo Youth and Family Collaborative planning effort.

The plan included one large group camping area, camping cabins, the addition of 30 individual camp sites, picnic pavilions, walking trails and a fitness course. The alternative included a base yard and new caretaker’s residence on the Bellows side of the Park entry road. **This alternative was considered to be beneficial in that it oriented the community center to Kalaniana’ole Highway, allowing the remainder of the Park to be used for outdoor recreation.** One difficulty with this alternative was the inclusion of a sports field at the center of the Park which was deemed to be in conflict with the project goal of maintaining the rural character of the Park. Further, camping cabins are not standard in any City and County parks. Their inclusion would necessitate new, ongoing operational and maintenance costs. Thus, this alternative was rejected in favor of park designs that located sports fields adjacent to Kalaniana’ole Highway and reduced the number of structures overall.

6.2.2 Sports Field/Community Center Alternative

An alternative to maximize the Park for sports fields was also considered. This alternative would involve the addition of three softball/little league fields, plus two multi-play fields that could be used for baseball or football/soccer/rugby. Additionally, this alternative included the community center located at the center of the Park, modeled after the Waimanalo Youth and Family Collaborative plan. This plan also included one large group camping area, the addition of 30 individual camp sites, and camping cabins and beach-side pavilions for picnicking. The alternative included a base yard and new caretaker’s residence on the Bellows side of the Park entry road.

When presented to the Community Advisory Group, this alternative was generally considered to be more activity than desired. Community concerns included proximity of the community center to residential uses, effects of night use on security of campers as well as effects of lighting on seabirds. The alternative also included non-standard camping cabins which would incur new and ongoing operational and maintenance costs for the City and County. This alternative was rejected because it did not meet the project goal to maintain the rural character of the Park.

6.3 PREFERRED ALTERNATIVE

The preferred alternative is a refinement of the alternatives described in section 6.2.1 and 6.2.2 based on project goals, City and County standards, community input and acceptability to the administration of the Department of Parks and Recreation. In order to respond to the community’s strong desire for gathering spaces while preserving the character of the Park, the preferred alternative adds an additional group camping/gathering area at the center of the Park in lieu of an enclosed, programmed community center. As originally envisioned, the center group camping/gathering area included an imu and hula mound. However, the maintenance and liability costs associated with these elements required their removal from the final plan. The preferred alternative also adds sports fields along Kalaniana’ole Highway. Individual or “family” camp sites, desired by the community and a known demand by the Department of Parks and Recreation are proposed to be increased in number (10 additional). **The Preferred Alternative included a base yard and new caretaker’s residence on the Bellows side of the Park entry road.** However, the new caretaker’s residence was eliminated from the maintenance area on the final plan. Forested and intact dunes are proposed to be left essentially undeveloped with the inclusion of walking trails and fitness course. Beach comfort stations are proposed to be rehabilitated in place and low impact development techniques are recommended for parking

areas. Trees, beach vistas, and perimeter security, valued attributes of the Park are proposed to be maintained. This alternative was selected as it satisfies all project objectives:

- Improve existing park services including repair of comfort stations and supporting infrastructure
- Add park services including camping, picnicking and sports fields
- To minimize operational and maintenance costs, utilize Low Impact Development (LID) and green building techniques for new improvements
- Maintain the security and rural character of the Park.

7.0 DETERMINATION, FINDINGS, & REASONS FOR SUPPORTING THE DETERMINATION

To determine whether the proposed action may have a significant impact on the environment, including all phases of the project, expected consequences, both primary and secondary, cumulative as well as short- and long-term effects have been evaluated. Based on the research performed and studies evaluated, the Approving Authority, the Department of Design and Construction, has made a Finding of No Significant Impact (FONSI) as detailed in this section.

7.1 SIGNIFICANCE CRITERIA

According to the Department of Health Environmental Assessment Rules Section 11-200-12 HAR, an applicant or agency must determine whether an action may have a significant impact on the environment, including all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects and its short and long-term effects. In making the determination, the rules establish “significance criteria” to be used as a basis for identifying whether significant environmental impact will occur. According to the Rules, an action shall be determined to have a significant impact on the environment if it meets any one of the following criteria:

(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resources;

The Master Plan does not involve an irrevocable commitment to loss or destruction of any natural or cultural resources. The Master Plan improvements have been designed to avoid natural and cultural resources. **The likelihood of encountering burials in the beach dunes has prompted the recommendation that the beach comfort stations be constructed at their current locations.** Areas proposed for earth disturbance and increased activity are those which have been previously disturbed, however, Archaeological Impact Assessment will be required prior to construction. Areas of known burials are planned to be avoided. New construction is recommended to use “green” materials that can also withstand the harsh coastal conditions of the site. **New parking areas are proposed to be surfaced with pervious materials and new landscaping is proposed to include native plants that are adapted to the local environment.**

(2) Curtails the range of beneficial uses of the environment;

The Master Plan does not curtail the range of beneficial uses of the environment. The purpose of master planning a park is to ensure the beneficial use of the environment for the foreseeable future. **Park elements that reduced opportunities for outdoor recreation, such as the community center, were eliminated through the concept development process.**

(3) Conflicts with the State’s long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders;

The proposed Master Plan is consistent with the Environmental Policies established in Chapter 344-3, HRS:

- The Park Master Plan conserves public open space in a manner that promotes the general welfare of the people of Hawai‘i [344-3(1)].
 - The Park Master Plan enhances quality of life by contributing to Waimanalo’s sense of identity, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian [344-3(2)(C)].
- Further, the Park Master Plan does not conflict with the goals and guidelines enumerated in Chapter 344-4, HRS that support the Environmental Policies.
- The plan elements support the guidelines relating to land, water, mineral, visual, air and stormwater and by utilizing reuse water for irrigation [344-4(2)(A),(B),(C)].
 - The plan elements support the guidelines relating to flora and fauna by fostering the planting of native as well as other trees, shrubs and flowering plants compatible to the enhancement of our environment [344-4(3)(B)].

- The Park supports the guidelines relating to parks, recreation and open space by maintaining the park use and shoreline; by not proposing artificial improvements along the shoreline and maintaining view planes for their natural beauty and as an ennobling, living environment for its people [344-4(4)(A-C)]

- The Master Plan process was supportive of the guidelines relating to citizen participation by encouraging all individuals to fulfill the responsibility as trustees of the environment for the present and succeeding generations; and providing for citizen participation in the decision making process [344-4(10)(A),(B)].

(4) Substantially affects the economic or social welfare and cultural practices of the community or State;

The Park Master Plan does not substantially affect the economic or social welfare or the cultural practices of the community or State. The site is currently a park and the land has not been intended for uses other than public open space. Through careful consideration of the Park's valuable assets, the Park Master Plan elements contribute to the social fabric of Waimanalo and the State as a whole.

(5) Substantially affects public health;

The Park Master Plan does not substantially affect public health. Consideration of the Park features into the future allow for an orderly progression of phased improvements that are intended to benefit public health in the long term.

(6) Involves substantial secondary impacts, such as population changes or effects on public facilities;

The Park Master Plan does not involve substantial secondary impacts. It will not contribute to a change in the local demographics, nor will it place a significant burden on public facilities.

(7) Involves a substantial degradation of environmental quality;

The Park Master Plan improvements do not involve a substantial degradation of environmental quality. Proposed elements that involve constructed facilities such as a pavilion and comfort stations are recommended to be constructed of "green materials" that can also withstand the coastal environment. Community members have encouraged minimization of pervious surfaces so as to minimize the amount of storm water that runs into drainages and the nearshore marine environment. Thus, pervious parking areas and landscaped swales are proposed. Reuse water will be used for ballfield irrigation so as to reduce the Park's dependence on potable water for non-drinking water uses.

(8) Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for larger actions;

The Park Master Plan does not contribute to a larger cumulative negative effect on the environment. The act of master planning a park contributes to the viability of the site for outdoor recreation for both the near term and into the future.

(9) Substantially affects a rare, threatened or endangered species or its habitat;

With exception of ball field lighting, the proposed park improvements are not of a nature to affect animal species. Ball field lighting, if installed, will be oriented downward and shielded so that it does not create a hazard for fledgling seabirds.

(10) Detrimentially affects air or water quality or ambient noise levels;

The Master Plan improvements will not detrimentally affect air, water or ambient noise quality in the long term. During construction, best management practices to control erosion, fugitive dust and equipment noise will be employed.

(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters;

The proposed Park facilities are not expected to suffer damage by being located in a hazardous area. Portions of the Park are in the floodplain and the entire Park is located in the tsunami evacuation zone. Open space in the floodplain provides a valuable function in the form of flood water storage. Of the new structures proposed within the Park, none are proposed to be constructed in the floodplain.

(12) Substantially affects scenic vistas and view planes identified in County or State plans or studies;

The Master Plan improvements will not conflict with scenic viewplanes identified by the County in the Ko'olaupoko Sustainable Community Plan.

(13) Requires substantial energy consumption;

The Master Plan improvements will not require substantial energy consumption.

7.2 DETERMINATION

On the basis of the above criteria, the discussion of impacts and mitigation measures contained in this document, the Approving Authority, the Department of Design and Construction, finds that the Waimanalo Bay Beach Park Master Plan will not have a significant effect on the environment.

8.0 CONSULTED PARTIES

8.1 COMMUNITY ADVISORY GROUP & PUBLIC MEETINGS

A Community Advisory Group was convened at the onset of the master planning process. The group membership was initially comprised of known active community members, elected officials, non-profit organizations and sports interests. As knowledge of the Master Plan activities spread through the community, additional individuals expressed interest in participating as advisory group members. Membership was not limited and the group operated on an informal basis, engaging in discussion and encouraging contributions from anyone who expressed interest. Three Community Advisory Group meetings were held. The first two meetings were designed to understand the community's desires for the Park and to review concept park plans. After the first two Advisory Group meetings, one open community meeting was held to further refine the Master Plan and ensure that the ideas developed in the Community Advisory Group meetings were favorable to the greater community. The third and final Advisory Group meeting was in preparation for the issuance of the Environmental Assessment to ensure that issues raised by the community were adequately addressed as best as possible by the Master Plan that is included in this document. Advisory Group meeting notes are included in Appendix A.

8.2 PRE-CONSULTATION

As part of the Environmental Assessment process, agencies were also consulted in preparation for the Master Plan. Consulted agencies are identified in the following table.

8.3 DRAFT ENVIRONMENTAL ASSESSMENT COMMENTS & RESPONSES

The Draft Environmental Assessment was published for public review on March 23, 2012. Pursuant to HRS 343, the 30-day response period closed on April 23, 2012. Comments received are documented in Appendix E. Responses to comments were provided to the commenting individuals and agencies. The responses are also documented in Appendix E.

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