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FEB 8 2019

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DEPUTY DIRECTOR

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January 29, 2019

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OFC. OF ENVIRONMENTAL QUALITY CONTROL

Mr. Scott Glenn, Director
Office of Environmental Quality Control
Department of Health
State of Hawai'i
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Mr. Glenn:

Subject: Chapter 343, Hawai'i Revised Statutes and
Title 11, Chapter 200, Hawai'i Administrative Rules
Second Draft Environmental Impact Statement (SDEIS)

| | |
|---|---|
| Project: | Ala Moana Regional Park and Magic Island Improvements |
| Applicant: | City and County of Honolulu, Department of Design and Construction (Elaine Morisato) |
| Agent: | Belt Collins Hawaii LLC (Joanne Hiramatsu) |
| Location: | Makai of Ala Moana Boulevard and Ala Moana Shopping Center between Kamakee Street and Atkinson Drive |
| Tax Map Keys: | TMK: 2-3-37: 001, 002 022, 023 and 025 |
| Proposal: | The City is proposing to restore, revitalize, enhance, and improve the Ala Moana Regional Park (AMRP) and the Magic Island peninsula (Magic Island) grounds and facilities as a result of a recent master plan process that outlined both long-term and short-term improvement plans. The project area receives the most usage of any other park in the State and is also one of the oldest. Many park users visit it daily or several times during the week. The City wishes to extend the Parks' longevity as a gradual increase in visits is forecasted for the foreseeable future. Some of the major improvements include sand replenishment, renovations to existing structures, improving pond edges, widening access over the drainage canal along Ala Moana Boulevard, create a wider promenade along Ala Moana Park Drive and reconfiguring the parking. |

We respectfully request publication of the Project Summary of the SDEIS in the next edition of *The Environmental Notice* on February 8, 2019. Enclosed is one (1) hard copy and one (1) electronic copy on compact disc of the SDEIS and forms.

19-242

Should you have any questions, please contact Elaine Morisato, Project Manager for the Department of Design and Construction, at 768-8406.

Very truly yours,

Robert J. Kroning, P.E.
Director

RJK:ln

Enclosures

# AGENCY
# PUBLICATION FORM

| | |
|---|---|
| Project Name: | Ala Moana Regional Park and Magic Island Improvements |
| Project Short Name: | AMRP and Magic Island Improvements |
| HRS §343-5 Trigger(s): | Use of state or county land and funds |
| Island(s): | O‘ahu |
| Judicial District(s): | Honolulu |
| TMK(s): | 2-3-37: 001, 002 022, 023 and 025 |
| Permit(s)/Approval(s): | U.S. Department of Army Permit; Section 401 Water Quality Certification; Coastal Zone Management Federal Consistency Certification; Conservation District Use Permit; National Pollutant Discharge Elimination Systems Permit; Chapter 6E Review; Special Management Area Use Permit |
| Proposing/Determining Agency: | City and County of Honolulu, Department of Design and Construction |
| *Contact Name, Email, Telephone, Address* | Robert Kroning, Director<br>alamonaeis@bchdesign.com<br>(808) 768-8480<br>650 S. King Street, 11th Floor<br>Honolulu, HI 96813 |
| Accepting Authority: | Office of the Mayor, City and County of Honolulu |
| *Contact Name, Email, Telephone, Address* | Mayor Kirk Caldwell<br>alamoanaeis@bchdesign.com<br>(808) 768-5885<br>530 S. King Street, Room 300<br>Honolulu, HI 96813 |
| Consultant: | Belt Collins Hawaii LLC |
| *Contact Name, Email, Telephone, Address* | Joanne Hiramatsu, Director of Planning<br>alamoanaeis@bchdesign.com<br>(808) 521-5361<br>2153 North King Street, Suite 200<br>Honolulu, HI 96819-4554 |

| **Status (select one)** | **Submittal Requirements** |
|---|---|
| ____ DEA-AFNSI | Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice. |
| ____ FEA-FONSI | Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice. |
| ____ FEA-EISPN | Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice. |
| ____ Act 172-12 EISPN (“Direct to EIS”) | Submit 1) the proposing agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice. |
| ____ DEIS | Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice. |
| ____ FEIS | Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice. |

| | |
|---|---|
| ____ FEIS Acceptance Determination | The accepting authority simultaneously transmits to both the OEQC and the proposing agency a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no comment period ensues upon publication in the Notice. |
| FEIS Statutory Acceptance | Timely statutory acceptance of the FEIS under Section 343-5(c), HRS, is not applicable to agency actions. |
| ____ Supplemental EIS Determination | The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon publication in the Notice. |
| ____ Withdrawal | Identify the specific document(s) to withdraw and explain in the project summary section. |
| __X__ Other | Contact the OEQC if your action is not one of the above items. Second Draft EIS. |

**Project Summary**

The City is proposing to restore, revitalize, enhance, and improve the Ala Moana Regional Park (AMRP) and the Magic Island peninsula (Magic Island) grounds and facilities as a result of a recent master plan process that outlined both long-term and short-term improvement plans. The project area receives the most usage of any other park in the State and is also one of the oldest. Many park users visit daily or several times during the week. The City wishes to extend the Parks' longevity as a gradual increase in visits is forecasted for the foreseeable future. Some of the major improvements include sand replenishment, renovations to existing structures, improving pond edges, widening pedestrian access over the drainage canal along Ala Moana Boulevard, create a wider shared use path along Ala Moana Park Drive and reconfiguring the parking. This Second Draft Environmental Impact Statement (SDEIS) is being published because additional studies were prepared or updated. These include a new Cultural Impact Assessment, an updated Beach Nourishment report that discusses a new sand source off AMRP, and update on the Playground.

VOL. 1

# Ala Moana Regional Park and Magic Island Improvements Second Draft Environmental Impact Statement

February 2019

BELT COLLINS

BRV BIEDERMAN REDEVELOPMENT VENTURES

WCIT ARCHITECTURE

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# SECOND DRAFT ENVIRONMENTAL IMPACT STATEMENT

# ALA MOANA REGIONAL PARK AND MAGIC ISLAND IMPROVEMENTS

## VOLUME 1 OF 2

Waikīkī, Island of O'ahu, Hawai'i
Tax Map Keys: (1) 2-3-037:001, 022, 023, and 025

Date: February 2019

Prepared for:

The City and County of Honolulu
Department of Design and Construction

Prepared by:
**Belt Collins Hawaii LLC**
**2153 North King Street, Suite 200**
**Honolulu, HI 96819**

Project Number: 2015-71-0100

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# Preface

The purpose of the Second Draft Environmental Impact Statement (SDEIS) is to include additional studies and information that were provided for the proposed projects at Ala Moana Regional Park (AMRP). These additional studies and information include:

1. Inclusion of a Cultural Impact Assessment (CIA).
2. Addition of an Ala Moana sand source found just offshore of AMRP.
3. Additional discussion provided for the playground from the Star Advertiser article.

Ramsyer format has been used in Chapter 2 and Chapter 4 showing deletions with a line striking through the text (~~text~~) and new additions with highlight text (highlighted text) and the left margin will have a line where the changes were made for ease of identification.

In addition, comments received on the Draft Environmental Impact Statement (DEIS) will be responded to after comments are received on the SDEIS. If a person commented on the DEIS and sends comments again on the SDEIS, only one response letter will be sent to address both comment letters. Should you have any questions, please send your comments to alamoanaeis@bchdesign.com.

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# List of Acronyms

| | |
|---|---|
| ADA | Americans with Disabilities Act |
| AGL | Above Ground Level |
| AMRP | Ala Moana Regional Park |
| BLNR | Board of Land and Natural Resources, State of Hawaiʻi |
| BMPs | Best Management Practices |
| BS | Beaches |
| BWS | Board of Water Supply, City and County of Honolulu |
| CAA | Clean Air Act |
| CAB | Clean Air Branch, Department of Health, State of Hawaiʻi |
| CFR | Code of Federal Regulations |
| City | City and County of Honolulu |
| CSH | Cultural Surveys Hawaiʻi, Inc. |
| CWA | Clean Water Act |
| CWB | Clean Water Branch, Department of Health, State of Hawaiʻi |
| CWRM | Commission on Water Resource Management |
| CZM | Coastal Zone Management |
| DA | Department of the Army |
| DAR | Division of Aquatic Resources, Department of Land and Natural Resources, State of Hawai´i |
| dBA | Decibels Adjusted |
| DBEDT | Department of Business, Economic Development & Tourism, State of Hawaiʻi |
| DDC | Department of Design and Construction, City and County of Honolulu |
| DEIS | Draft Environmental Impact Statement |
| DEM | Department of Emergency Management |
| DLNR | Department of Land and Natural Resources, State of Hawai´i |
| DOE | Department of Education / Energy |

| | |
|---|---|
| DOH | Department of Health, State of Hawai´i |
| DPP | Department of Planning and Permitting, City and County of Honolulu |
| DPR | Department of Parks and Recreation, City and County of Honolulu |
| DTS | Department of Transportation Services, City and County of Honolulu |
| DTS | Department of Transportation Services |
| EA | Environmental Assessment |
| EFH | Essential Fish Habitat |
| EIS | Environmental Impact Statement |
| EISPN | Environmental Impact Statement Preparation Notice |
| EMF | Electromagnetic Field |
| EMF RAPID | Electric and Magnetic Field Research and Public Information Dissemination |
| EMS | Emergency Medical Services |
| ENV | Department of Environmental Services |
| EO | Executive Order |
| EPA | Environmental Protection Agency |
| ESA | Environmental Site Assessment / Endangered Species Act |
| ESCP | Erosion and Sediment Control Plan |
| FAA | Federal Aviation Agency |
| FEMA | Federal Emergency Management Agency |
| FIRM | Flood Insurance Rate Map |
| FL | Fill Land |
| HAR | Hawai´i Administrative Rules |
| HASA | Hawaiian Amateur Surf Association |
| HCDA | Hawaiʻi Community Development Authority |
| HEPA | Hawaiʻi Environmental Policy Act |
| HESD | Honolulu Emergency Services Department, City and County of Honolulu |
| HFD | Honolulu Fire Department, City and County of Honolulu |

| | |
|---|---|
| HPD | Honolulu Police Department, City and County of Honolulu |
| HRHP | Hawai´i Register of Historic Places |
| HRS | Hawai´i Revised Statutes |
| KIRA | Kānaka Ikaika Racing Association |
| LID | Low Impact Development |
| LOS | Level of Service |
| LUO | Land Use Ordinance, City and County of Honolulu |
| MBTA | Migratory Bird Treaty Act |
| MGD | Million gallons per day |
| MHHW | Mean Higher High Water |
| MLLW | Mean Lower Low Water |
| MRCI | Marine Research Consultants, Inc. |
| MSL | Mean Sea Level |
| NAAQS | National Ambient Air Quality Standards |
| NIEHS | National Institute of Environmental Health Services |
| NMFS | National Marine Fisheries Services |
| NOAA | National Oceanic and Atmospheric Administration |
| NPDES | National Pollutant Discharge Elimination System |
| NRHP | National Register of Historic Places |
| OCCL | Office of Conservation and Coastal Lands, Department of Land and Natural Resources, State of Hawai´i |
| OEQC | Office of Environmental Quality Control |
| OP | Office of Planning |
| OSLS | Ocean Safety and Lifeguard Services |
| PUC DP | Primary Urban Center Development Plan, City and County of Honolulu |
| RII | Realty Inspections, Inc. |
| ROH | Revised Ordinance of Honolulu |
| SCAP | Stream Channel Alternation Permit |

| | |
|---|---|
| SEI | Sea Engineering, Inc. |
| SHPD | State Historic Preservation Division, Department of Land and Natural Resources |
| SIHP | State Inventory of Historic Places |
| SMA | Special Management Area |
| State | State of Hawaiʻi |
| SUP | Stand Up Paddle |
| SWCA | SWCA Environmental Consultants, Inc. |
| SWPCP | Storm Water Pollution Control Plan |
| TCLP | Toxicity Characteristic Leaching Procedure |
| TCP | Traffic Control Plan |
| TMDL | Total Maximum Daily Load |
| TMK | Tax Map Key |
| U.S. | United States |
| UBC | Uniform Building Code |
| UH | University of Hawai´i |
| UH – CGG | University of Hawai´i, Coastal Geology Group |
| UIC | Underground Injection Control |
| USACE | U.S. Army Corps of Engineers |
| USC | U.S. Code |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | United States Geological Survey |
| WQC | Water Quality Certification |
| WWB | Waste Water Branch, Department of Health, State of Hawai´i |
| WWII | World War II |
| WWPS | Waste Water Pumping Station |
| ZCTAs | Zip Code Tabulation Areas |

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# EXECUTIVE SUMMARY

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# EXECUTIVE SUMMARY

Pursuant to Ordinance 18-46, enacted December 21, 2018, projects that are described in the Proposed Action on the Makai side of Ala Moana Park Drive that will result in either (a) widening of existing walkways; or (b) reduction of existing grassy areas will not be allowed. During the review process of this Second Draft Environmental Impact Statement (SDEIS) the Ordinance will be evaluated to determine if any projects makai of Ala Moana Park Drive should be deleted in the Final Environmental Impact Statement (FEIS). Since all proposed projects have been evaluated as part of this SDEIS, the removal of certain projects will not result in adverse impacts on the environment.

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| **PROPOSING ORGANIZATION** | City and County of Honolulu, Department of Design and Construction |
| **ACCEPTING AUTHORITY** | City and County of Honolulu, Mayor's Office |
| **GENERAL PROJECT DESCRIPTION** | The Proposed Action of this project is:<br>• Add a dog park near Kewalo Basin;<br>• Improve the pond edges and paths around the Hawaiian Pond and Japanese Pond;<br>• Pi'ikoi Street and Queen Street pedestrian entrance expansions and partial drainage canal cover;<br>• Repair drainage canal walls;<br>• Reconfigure parking on the mauka side of Ala Moana Park Drive to add more stalls;<br>• Rearranging the parking along the makai side of Ala Moana Park Drive to add loading and unloading zones near crosswalks;<br>• Keyhole parking lot expansion and reconfiguration;<br>• Reconfigure and expand Magic Island parking lot;<br>• Widening the shared-use path along the makai side of Ala Moana Park Drive;<br>• Repair Roosevelt Portals at Atkinson Street entrance;<br>• Improve the Kamakee Street entrance;<br>• Repair the Bridle Bridge;<br>• Widening the shared-use path along the Ala Wai Small Boat Harbor;<br>• Improve the existing canoe launch ramp and crossing from the Canoe Hālau;<br>• Renovate McCoy Pavilion and the banyan courtyard;<br>• Improve "high spot" terrace for ADA access, repair pergola, and widen the shared-use paths on both sides;<br>• Sand replenishment and long-term beach nourishment; |

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| | • Build a playground;<br>• Relocate the maintenance yard;<br>• Create a multiuse facility near the Lawn Bowling area and Lawn Bowling building improvements;<br>• Relocate the Ocean Safety's Honolulu Headquarters. |

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| **PROJECT LOCATION** | Ala Moana Regional Park (AMRP) and Magic Island, hereinafter referred to as "Park" or "project area," are located along Ala Moana Boulevard, between Kamakee Street and Atkinson Drive. The Park is bounded by Kewalo Basin on the 'Ewa side and the Ala Wai Boat Harbor on the Diamond Head side. Ala Moana Shopping Center and Ward Centre are located mauka of the Park and on the mauka side of Ala Moana Boulevard. The project area has two main vehicular entrances at the intersections of Kamakee Street and Ala Moana Boulevard, and Atkinson Drive and Ala Moana Boulevard. Magic Island is located along the 'Ewa end of the AMRP and can be accessed from Ala Moana Park Drive. Pedestrian access is available at the two main entrances to the AMRP and there are four bridges spanning the drainage canal for additional pedestrian access along Ala Moana Boulevard.<br><br>Located in the Honolulu and Waikīkī districts, the project area is identified by Tax Map Key (TMK) as (1) 2-3-037:001 (Ala Moana Regional Park), (1) 2-3-037:002 (fee owner State of Hawai'i, maintenance building and lot), (1) 2-3-037:022 and 023 (fee owner City and County of Honolulu, lessee Tasty Foods of Hawaii LTD), and (1) 2-3-037:025 (Magic Island). The total land acreage comprised of the five TMKs is about 119 acres. |
| **EXISTING USES** | Public park for recreational purposes. |
| **Zoning / Land Use** | State Land Use: Urban<br><br>Zoning: P-2 General Preservation District<br><br>Special District: No<br><br>Special Management Area: Within Special Management Area |
| **ANTICIPATED DETERMINATION** | |
| **REQUIRED PERMITS AND APPROVALS** | US Army Corps of Engineers (USACE), Clean Water Act (CWA), Section 404 permit<br><br>USACE, Rivers and Harbors Act, Section 10 permit<br><br>National Marine Fisheries Service (NMFS), Endangered Species Act (ESA), Section 7 consultation and U.S. Fish and Wildlife Service (USFWS)<br><br>NMFS, Essential Fish Habitat (EFH) consultation<br><br>State Department of Health (DOH), Clean Water Branch, Section 401 Water Quality Certification |

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| **REQUIRED PERMITS AND APPROVALS**<br>*(continued)* | CWA, Section 402, National Pollutant Discharge Elimination System (NPDES) permit (DOH)<br>DOH, Noise Permit/Variance<br>State Office of Planning, Hawai'i Coastal Zone Management Federal Consistency Review<br>State Department of Land and Natural Resources (DLNR), Office of Conservation and Coastal Lands (OCCL), Conservation District Use Permit<br>Office of Environmental Quality Control (OEQC) Chapter 343, Hawai'i Revised Statutes (HRS), Environmental Review<br>City Department of Planning and Permitting (DPP), Special Management Area Permit |
| CONSULTED AGENCIES AND STAKEHOLDERS DURING EARLY CONSULTATION PERIOD<br><br>(Italicized text indicates a comment was received) | FEDERAL AGENCIES<br>Department of Agriculture National Resources Conservation Service<br>Department of Commerce National Marine Fisheries Service<br>Department of the Interior, Geological Survey, Pacific Islands Water Science Center<br>Department of the Interior Fish and Wildlife Service<br>Department of the Interior National Parks Service<br>Department of the Navy<br>Department of Transportation (DOT) Federal Aviation Administration<br>Department of Transportation, Federal Transit Administration<br>Department of Transportation, Federal Highways Administration<br>Department of Homeland Security Coast Guard<br>Environmental Protection Agency<br>U.S. Army Corps of Engineers, Honolulu District<br>U.S. Representative<br>U.S. Senator<br><br>STATE AGENCIES<br>Department of Agriculture<br>*Department of Accounting and General Services*<br>Department of Accounting and General Services, Archives Division<br>Department of Business, Economic Development, and Tourism<br>Department of Business, Economic Development, and Tourism, Research Division Library<br>Department of Business, Economic Development, and Tourism, Strategic Industries Division<br>Department of Business, Economic Development, and Tourism, Office of Planning<br>Department of Commerce and Consumer Affairs, Division of Consumer Advocacy<br>Department of Commerce and Consumer Affairs, Public Utilities Commission |

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| CONSULTED AGENCIES AND STAKEHOLDERS DURING EARLY CONSULTATION PERIOD<br><br>(continued) | *Department of Defense*<br>Department of Education<br>Department of Education, Hawaiʻi State Library, Hawaiʻi Documents Center<br>Department of Education, Hawaiʻi State Library, McCully-Mōʻiliʻili Regional Library<br>*Department of Hawaiian Home Lands*<br>*Department of Health (DOH), Environmental Planning Office*<br>Department of Health, Clean Water Branch<br>*Department of Land and Natural Resources, Division of Aquatic Resources*<br>*Department of Land and Natural Resources, Division of Boating and Ocean Recreation*<br>*Department of Land and Natural Resources, Office of Conservation and Coastal Lands*<br>*Department of Land and Natural Resources, Engineering Division*<br>Department of Land and Natural Resources Commission on Water Resources Management<br>*Department of Land and Natural Resources Division of State Parks*<br>Department of Land and Natural Resources, Forestry and Wildlife<br>*Department of Land and Natural Resources, Land Division*<br>Department of Land and Natural Resources, State Historic Preservation Division<br>*Department of Land and Natural Resource*s, State Historic Preservation Division, Oʻahu Island Burial Council<br>*Department of Transportation – Airport Division*<br>*Department of Transportation – Highways Division*<br>*Department of Transportation – Harbors Division*<br>Hawaiʻi State Legislature Senate Districts<br>University of Hawaiʻi, Office of Capital Improvement<br>University of Hawaiʻi, Water Resources Research Center<br>University of Hawaiʻi, Environmental Center<br>University of Hawaiʻi, Marine Program<br>UH University of Hawaiʻi, Thomas H. Hamilton Library<br>University of Hawaiʻi, at Hilo, Edwin H. Moʻokini Library<br>University of Hawaiʻi, Maui College Library<br>University of Hawaiʻi, Kauaʻi Community College Library<br>Office of Hawaiian Affairs<br>Legislative Reference Bureau Library<br>State Senator<br>State Representative<br><br>CITY AND COUNTY OF HONOLULU<br>*Board of Water Supply*<br>Department of Customer Services Municipal Library |

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| CONSULTED AGENCIES AND STAKEHOLDERS DURING EARLY CONSULTATION PERIOD<br><br>(continued) | *Department of Community Services*<br>*Department of Design and Construction*<br>*Department of Community Services*<br>*Department of Emergency Management*<br>Department of Environmental Services<br>*Department of Facility Maintenance*<br>*Department of Parks and Recreation*<br>*Department of Planning and Permitting*<br>*Department of Transportation Services*<br>Department of Emergency Management<br>Honolulu City Council Districts 4 and 5<br>*Honolulu Fire Department*<br>*Honolulu Police Departmen*t<br>Honolulu Emergency Services Department<br>County Council Representative<br>Neighborhood Board No. 9, Waikīkī<br>Mayor's Office<br><br>ORGANIZATIONS<br>Hawaiian Electric<br>*Historic Hawai'i Foundation*<br>Waikīkī Business Improvement District Association<br>Waikīkī Community Center<br>Waikīkī Improvement Association<br>Waikīkī Surf Club<br><br>INDIVIDUAL STAKEHOLDERS AND PARK USERS<br>Ai Oyama<br>Audrey Lee<br>Bradley Ebisuya<br>Brandon Yoza<br>Brian Furumoto<br>Brian Walter<br>Bruce Lum<br>Channing Ching<br>Charles Langlas<br>ClaudeTakanishi<br>Craig Sugihara<br>Derek Hama<br>Diane Fujimura<br>Richard Fujie<br>Gail Murakami<br>Guy Kudo<br>Helene Philips<br>Ivan Kaisan |

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|---|---|
| CONSULTED AGENCIES AND STAKEHOLDERS DURING EARLY CONSULTATION PERIOD<br><br>(continued) | James Kaneshiro<br>Jan Asuncion<br>Jon Nishimot<br>Kimo<br>KVIBE<br>Lance Higa<br>Larry Erwin<br>Leighton and Maude Fujinaka<br>Linda Howe<br>Lori McCarney<br>Michael Arita<br>Michael Garsva<br>Michael Tominaga<br>Michelle Matson<br>Michelle Wong<br>Mikal Weiss<br>Nancy Ardito<br>Overdafalls<br>Patti Choy<br>Ray Madigan<br>Sen Uyeunten<br>Sharlene Chun-Lum<br>Stan Sakai<br>Steve Kalilimoku<br>Steven Horio<br>Sylvia Hayashi<br>William Kaeo |

# CHAPTER 1

Purpose and Need

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# CHAPTER 1
# PURPOSE AND NEED

## 1.1 INTRODUCTION

The Ala Moana Regional Park (AMRP) and Magic Island, hereinafter referred to as "Park" or "project area," are man-made developments owned and operated by the City and County of Honolulu (City). In colloquial conversation, the AMRP is also known as "Ala Moana Beach Park" and "Ala Moana Park." The project area is vastly known for its ocean recreational activities and spacious open space for picnicking and land recreational activities. Every year, the Park hosts thousands of visitors during large community events such as the Lantern Floating Festival and the 4th of July Fireworks show. There are water features located within the AMRP property which include a mile-long drainage canal that borders the majority of the mauka (inland) park boundary and empties into two ponds on the 'Ewa (west) and Diamond Head (east) ends of the Park. A two-way driveway separates the green open space of the AMRP from Magic Island and the beach. Parking is currently available on both sides of the driveway and is the major artery that allows access to other parking lots within the project area. Recreational amenities on land include: ten tennis courts, a lawn bowling facility, exercise apparatuses, walk/run/jog paths, a canoe shelter, and large open lawn spaces (The Great Lawn) for field activities such as soccer and football. There are over 1,000 trees scattered throughout the project area providing ample shade for picnicking and gatherings, many of which are considered exceptional trees. Two concession stands that serve local food are located in the AMRP. A popular aspect of the project area is the mile-long beach that stretches from Magic Island to the Kewalo Basin. A lagoon surrounded by a seawall fronts Magic Island for more beach and water activities. The calm nearshore waters on the makai (seaward) end of the Park attracts people from different levels of water experience making it suitable for ocean recreational activities, such as swimming and paddle boarding. Ocean waters beyond the reef that protects the nearshore waters are popular for surfing.

## 1.2 LOCATION AND OWNERSHIP

The project area is located along Ala Moana Boulevard, between Kamakee Street and Atkinson Drive. The Park is bounded by Kewalo Basin on the 'Ewa side and the Ala Wai Boat Harbor on the Diamond Head side. Ala Moana Shopping Center and Ward Centre are located mauka of the Park and on the mauka side of Ala Moana Boulevard. The project area has two main vehicular entrances at the intersections of Kamakee Street and Ala Moana Boulevard, and Atkinson Drive and Ala Moana Boulevard. Magic

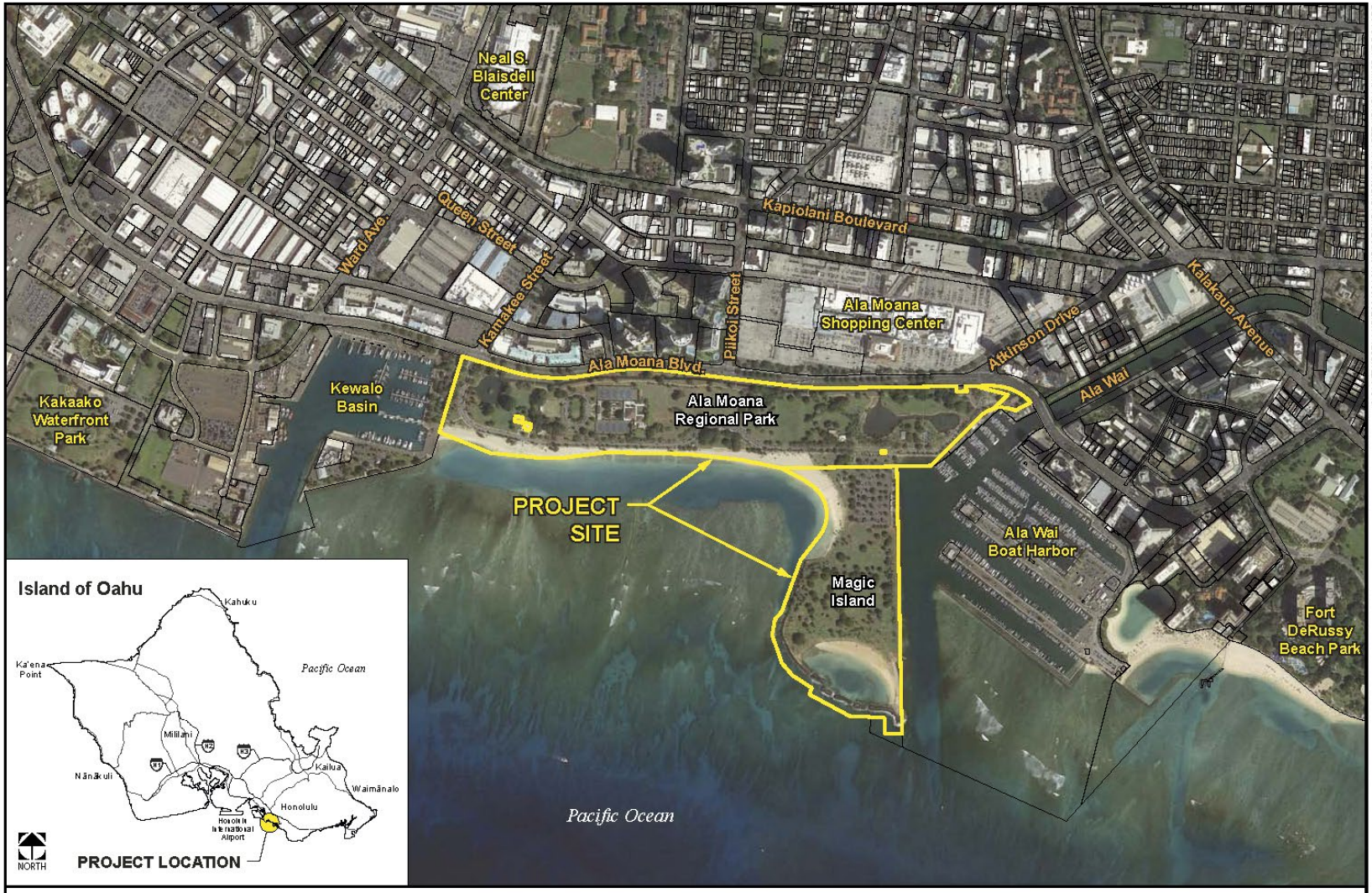
Island is located along the Diamond Head end of the AMRP and can be accessed from Ala Moana Park Drive. There is a total of 934 free parking stalls that are a mix of parallel stalls along Ala Moana Park Drive and perpendicular parking lots on Magic Island, near McCoy Pavilion (Keyhole), and the Canoe Hālau. Pedestrian access is available at the two main entrances to the AMRP and there are four bridges spanning the drainage canal for additional pedestrian access along Ala Moana Boulevard.

Located in the Honolulu and Waikīkī districts, the project area is identified by Tax Map Key (TMK) as (1) 2-3-037:001 (Ala Moana Regional Park), (1) 2-3-037:002 (fee owner State of Hawaiʻi, maintenance building and lot), (1) 2-3-037:022 and 023 (fee owner City and County of Honolulu, lessee Tasty Foods of Hawaii LTD), and (1) 2-3-037:025 (Magic Island). (see Table 1-1 and, Figures 1-1 and 1-2 below) The total land acreage comprised of the five TMKs is about 119 acres.

**Table 1-1: Land Use and Ownership**

| Property Name | Parcel Number | Address | Land Usage | Land Acreage |
|---|---|---|---|---|
| Ala Moana Regional Park, City and County of Honolulu, fee owner | (1) 2-3-037:001 | 1201 Ala Moana Boulevard | Public Park | 75.21 |
| State of Hawaiʻi, fee owner, under the control and management of the City and County of Honolulu (E.O. 1348) | (1)-2-3-037:002 | 1605 Ala Moana Boulevard | Maintenance Building and lot | 0.857 |
| Tasty Foods of Hawaiʻi, LTD lessee, City and County of Honolulu, fee owner | (1) 2-3-037:022 | 1401 Ala Moana Boulevard | Concession Stand | 0.11 |
| Tasty Foods of Hawaiʻi, LTD lessee, City and County of Honolulu, fee owner | (1) 2-3-037:023 | 1141 Ala Moana Boulevard | Concession Stand | 0.17 |
| Magic Island, City and County of Honolulu, fee owner | (1) 2-3-037:025 | 1365 Ala Moana Boulevard | Public Park | 42.67 |
| | | | **Total land acreage (approx.)** | 119 |

Source: City and County of Honolulu, Department of Budget and Fiscal Services Real Property Assessment Division, property records search at:
http://qpublic9.qpublic.net/hi_honolulu_display.php?county=hi_honolulu&KEY=230370010000
http://qpublic9.qpublic.net/hi_honolulu_display.php?county=hi_honolulu&KEY=230370020000
http://qpublic9.qpublic.net/hi_honolulu_display.php?county=hi_honolulu&KEY=230370220000
http://qpublic9.qpublic.net/hi_honolulu_display.php?county=hi_honolulu&KEY=230370230000
http://qpublic9.qpublic.net/hi_honolulu_display.php?county=hi_honolulu&KEY=230370250000

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BELT COLLINS

NORTH

0 300 600 1200
SCALE IN FEET

**Figure 1-1**
**LOCATION MAP**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

BELT COLLINS

NORTH

0 200 400 800
SCALE IN FEET

**Figure 1-2**
**LOCATION WITH TMK MAP**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

# 1.3 PURPOSE AND NEED

## 1.3.1 Introduction

The City is proposing to restore, revitalize, enhance, and improve the AMRP and Magic Island recreational park's grounds and facilities as a result of a new master plan process that outlined both long-term and short-term improvement plans. The City, primarily, has a commitment to public safety for its park users while restoring the historical and popular features, and maximizing usage of other features and spaces. Some of the proposed improvements are motivated by public safety through restoration of the features, and by providing better access to the amenities. Other proposed improvements are motivated by landscape aesthetics to maximize park space usage.

## 1.3.2 Purpose

The project area receives the most usage compared to other parks in the State and is also one of the oldest. Many park users visit daily or several times during the week. The AMRP receives over 3 million visitors per year and serves as one of the few large beach parks in Honolulu. The Park are conveniently located and can accommodate large gatherings with a generous amount of park and beach space, and parking. The new urban residential development and the impending rail transit developing near the Park could result in more residents using the Park. The Proposed Action will help the Park adapt to the evolving neighborhood around it.

The Park's resources have a significant amount of wear and tear from a high volume of usage and vandalism over the last 80 years (Figure 1-3). Safety has been a growing concern over the years with more homeless encampments scattered throughout the Park. About 300-350 homeless either pass through or stay at the Park every day. Other matters raised by the community and focus groups were park accessibility, nighttime lighting, ocean safety, sand erosion, steep canoe ramp, condition of the comfort stations, tree health, concession food quality, lack of parking, lack of loading and unloading zones, and general park maintenance and management concerns. Some of these issues are currently being addressed by the "9-Point Community Action Plan" that was announced on July 15, 2015. Major improvements like park access ways, parking, park lighting, restoration of the canal and lagoons, McCoy Pavilion renovation, and sand erosion are addressed in this draft Environmental Impact Statement (EIS).

Various plans and management policies have been proposed over the last few decades, and a plan to solidify the park's preservation for the future is now being implemented. The City continues the on-going efforts to keep the Park at a functioning level. Basic repairs and improvements that could fulfill some short-term needs (some listed in the 9-Point Community Action Plan) were recommended prior to any major renovations keeping the Park accessible. The community and current park users have expressed concerns to keep the Park's character the same. There was no desire to

upscale the Park with modern design and added structures. The community and the City recognize the need to update and enhance certain aspects of the Park. The master plan will have full details of the City's Proposed Action over a period of several years once the EIS is completed. The long-term goal for the Park's revitalization is to maintain and improve the grounds and facilities while remaining true to its local character as "The People's Park." [1]

### 1.3.3 Need

The Proposed Action is needed to accommodate the anticipated volume of visitors associated with the projected population growth of Hawai'i residents. The City needs to restore the aging and deteriorating facilities to a sustainable standard that will comply with current polices and regulations.

[1] Named "The People's Park" by President Franklin Delano Roosevelt in 1934; City and County of Honolulu, Department of Customer Service. Updated January 3, 2017. http://www.honolulu.gov/cms-csd-menu/site-csd-sitearticles/982-site-csd-news-2016-cat/25596-11-01-16.html

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**Figure 1-3**
**EXISTING CONDITIONS**

Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

## 1.4 ENVIRONMENTAL REVIEW

This EIS has been prepared in accordance with the provisions of Chapter 343, Hawai'i Revised Statutes (HRS), and Title 11, Department of Health (DOH), Chapter 200 (EIS Rules), Hawai'i Administrative Rules (HAR) because City funds and lands will be used. This document evaluates the improvements proposed by the City's Master Plan for the Ala Moana Regional Park and Magic Island. The main purpose is to disclose environmental, economic, social, cultural, and technical impacts of the Master Plan improvements and to propose measures for minimizing potential adverse impacts.

There are nine environmental review "triggers" initiated by the Hawai'i Environmental Policy Act (HEPA) outlined as HRS §343-5. The proposed project area is owned by the City and the City will also fund the repairs and improvements thus triggering an environmental review. The AMRP is also on the Hawai'i Register of Historic Places. The City has determined that an EIS is required by a review of the proposed action's overall and cumulative effects pursuant of HAR §11-200-12, Environmental Impact Statement Rules, Significance Criteria. An EIS, rather than an environmental assessment (EA), is being prepared because the Park is considered to be public facilities, is a historic site, and some of these proposed improvements could potentially have impacts on the natural environment, historic properties, and attract more park users thus increasing effects on public facilities.

Discretionary permits will need to be obtained because the project is within the Special Management Area (SMA), regulated by the State of Hawai'i, Department of Business, Economic Development & Tourism (DBEDT), Office of Planning (OP). The mauka of the shoreline is within the State Urban District, but the shoreline and offshore waters are in the State Conservation District and will need a permit from the State of Hawai'i, Board of Land and Natural Resources (BLNR), Office of Conservation and Costal Lands (OCCL) for beach nourishment. See Chapter 5 for a listing of all permits needed for this project.

The 75.2-acre Ala Moana Park is listed on the Hawai'i State Register of Historic Places (State Inventory of Historic Properties [SIHP] No. 50-80-14-1388). The proposed action is subject to a historic preservation review pursuant of HRS §6E-8 and HAR §13-275. The summaries of the archaeological and architectural surveys completed for this EIS can be found in Chapter 4 and the full reports by the consultants can be found in the Appendices.

## 1.5 APPLICANT AND ACCEPTING AUTHORITY

HRS Chapter 343, Environmental Impact Statement, establishes an environmental review process whereby a public entity proposing a project must prepare an EIS that considers potential adverse environmental impacts from the project. In this environmental review process, the City is the applicant and the Honolulu Mayor's Office is the accepting authority.

# 1.6 PUBLIC INVOLVEMENT AND OUTREACH

## 1.6.1 Introduction

Early consultation is the most important element of the HEPA process. Section 11-200-15, HAR requires that the proposing agency consult appropriate agencies, citizen groups, or individuals. Scoping and other outreach procedures to identify environmental concerns to be addressed in the EIS are described in Sections 1.6.2 and 1.6.3, respectively. Input received through consultation is summarized in Section 1.6.4.

## 1.6.2 Scoping

Scoping for the AMRP and Magic Island Improvement project was an early and open process for actively and constructively involving agencies (federal, state and county), organizations, stakeholders, and the public in helping to determine the environmental concerns to be addressed in the EIS. The following activities, described below, were conducted during scoping: meetings, publication and distribution of an EIS preparation notice (EISPN), and three public informational meetings.

The first public informational meeting was held on March 10, 2015 to provide opportunities for the community to obtain information on the Proposed Action and to provide their concerns about changes to the Park. A second public meeting was held on April 28, 2016 to show the community some of the improvements being considered at the Park, based on what the development team heard at the first meeting. As a result of these public interactions, substantial input from agencies and the public was obtained.

**EIS Preparation Notice**

On December 23, 2017, the EISPN was published by the State Office of Environmental Quality Control (OEQC) in its *Environmental Notice.* The notice announced that an EIS would be prepared for the proposed Ala Moana Regional Park and Magic Island Improvements project. The EISPN included a description of the Proposed Action, alternatives, and potential impacts. Copies of the EISPN were mailed to interested parties for review and comment.

A list of more than 600 e-mail and postal addresses had been compiled including: 66 government/institutional agencies (federal, state, and county), 25 elected officials, four libraries and 44 community organizations, special interest groups and other stakeholders. Of the 139-plus parties who received the EISPN by mail, 22 provided comments (see Appendix A for copies of comment and response letters). There were an additional 49 individual community members that sent comments via email. Several parties requested to be placed on the EIS mailing list to receive updates on the project and to be notified when the DEIS will be available for public review. Other commenters offered project information to be included in the DEIS, and requested compliance with existing government regulations. Table 1-2 below was used to alert interested parties to the publication of the EISPN and DEIS. Only community members who responded to the email notification are listed here since they provided their name and a valid email address.

**Table 1-2: Agency and Public Comments on EISPN**

| Respondents and Distribution | Received EISPN | Comment |
|---|---|---|
| **UNITED STATES** | | |
| U.S. Army Corps of Engineers | x | |
| U.S. Coast Guard | x | |
| U.S. Fish and Wildlife Service | x | |
| National Oceanic and Atmospheric Administration | | |
| National Marine Fisheries Service | x | |
| National Park Service | x | |
| Environmental Protection Agency | x | |
| Department of Transportation | | |
| Federal Highways Administration | x | |
| Federal Transit Administration | x | |
| Federal Aviation Administration | x | |
| U.S. House of Representatives, Rep. Tulsi Gabbard | x | |
| U.S. House of Representatives, Rep. Colleen Hanabusa | x | |
| U.S. Senator Mazie Hirono | x | |
| U.S. Senator Brian Schatz | x | |
| **STATE OF HAWAIʻI** | | |
| Department of Agriculture | x | |
| Department of Accounting and General Services | x | x |
| Department of Budget & Finance | x | |
| Department of Business, Economic Development and Tourism | | |
| Office of Planning | x | |
| Department of Commerce and Consumer Affairs | x | |
| Department of Defense | x | x |
| Department of Education | x | |
| Department of Hawaiian Home Lands | x | x |
| Department of Health | x | |
| Environmental Planning Office | x | x |
| Office of Environmental Quality Control | x | |
| Department of Land & Natural Resources | x | |
| Division of Aquatic Resources | x | x |
| Division of Boating and Ocean Recreation | x | x |
| Division of Forestry and Wildlife | x | |
| Engineering Division | x | x |

**Table 1-2: Agency and Public Comments on EISPN**

| Respondents and Distribution | Received EISPN | Comment |
|---|---|---|
| Land Division | x | x |
| Office of Conservation and Coastal Lands | x | x |
| State Historic Preservation Division | x | |
| Oʻahu Island Burial Council | x | |
| Department of Transportation | x | |
| Airport Division | x | x |
| Highways Division | x | x |
| Statewide Transportation Office | x | x |
| Governor's Office | x | |
| Land Use Commission | x | |
| Office of Hawaiian Affairs | x | |
| University of Hawaiʻi at Mānoa, Environmental Center | x | |
| State Senator Les Ihara, Jr. | x | |
| State Senator Brickwood Galuteria | x | |
| State Senator Brian T. Taniguchi | x | |
| State Representative Della Au Belatti | x | |
| State Representative Tom Brower | x | |
| State Representative Issac W. Choy | x | |
| State Representative Sylvia Luke | x | |
| State Representative Scott Y. Nishimoto | x | |
| State Representative Scott K. Saiki | x | |
| **CITY AND COUNTY OF HONOLULU** | | |
| Mayor, City and County of Honolulu | x | |
| Department of Community Service | x | x |
| Department of Design and Construction | x | x |
| Department of Environmental Services | x | |
| Department of Emergency Management | x | x |
| Department of Facility Maintenance | x | x |
| Department of Transportation Services | x | x |
| Department of Parks and Recreation | x | x |
| Department of Planning and Permitting | x | x |
| Honolulu Authority for Rapid Transportation | x | |
| Honolulu Emergency Services Department | | x |
| Honolulu Fire Department | x | x |

**Table 1-2: Agency and Public Comments on EISPN**

| Respondents and Distribution | Received EISPN | Comment |
|---|---|---|
| Honolulu Board of Water Supply | x | x |
| Honolulu Police Department | x | x |
| Ocean Safety and Lifeguard Services | x | |
| Satellite City Hall No. 1, Ala Moana | x | |
| Neighborhood Board No. 8, McCully/Mōʻiliʻili | x | |
| Neighborhood Board No. 9, Waikīkī | x | |
| Neighborhood Board No. 10, Makiki/Lower Punchbowl/Tantalus | x | |
| Neighborhood Board No. 11, Ala Moana-Kakaʻako | x | |
| Councilmember Ann Kobayashi | x | |
| Councilmember Trevor Ozawa | x | |
| **LIBRARIES AND NEWS OUTLETS** | | |
| Hawaiʻi State Main Library | x | |
| McCully-Mōʻiliʻili Public Library | x | |
| Salt Lake/Moanalua Public Library | x | |
| Waikīkī Public Library | x | |
| University of Hawaiʻi Library | x | |
| Honolulu Star-Advertiser | x | |
| Hawaiʻi Midweek | x | |
| Hawaiʻi Public Radio | x | |
| **SPECIAL INTEREST AND STAKEHOLDERS GROUPS** | | |
| 808 Adult Recreation Sports | x | |
| 808 Clean Ups | x | |
| Ala Wai Watershed Association | x | |
| Beach Workout | x | |
| Big Brothers Big Sisters Hawaiʻi | x | |
| Boy Scouts of Honolulu | x | |
| Boys and Girls Club of America | x | |
| Cycle on Hawaiʻi | x | |
| Cycle Mānoa | x | |
| Dragon Boat Races | x | |
| Hawaiian Canoe Racing Association | x | |
| Greek Festival | x | |
| Hawaiʻi Amateur Surfing Association | x | |
| Hawaiʻi Architectural Foundation | x | |

**Table 1-2: Agency and Public Comments on EISPN**

| Respondents and Distribution | Received EISPN | Comment |
|---|---|---|
| Hawai‘i Bicycling League | x | |
| Hawai‘i Bikeshare | x | x |
| Hawai‘i Lodging & Tourism Association | x | |
| Hawai‘i Paddleboard Association | x | |
| Hawai‘i Tennis League | x | |
| Hawai‘i Tourism Association | x | |
| Hawai‘i Surfing Association | x | |
| Historic Hawaii Foundation | x | x |
| Honolulu Hawaiian Civic Club | x | |
| Honolulu Lawn Bowls Club | x | |
| Lantern Floating Hawai‘i | x | |
| No ‘Ohana O Nā Hui Wa‘a | x | |
| O‘ahu Hawaiian Canoe Racing Association | x | |
| Outdoor Circle | x | |
| Paddle Surf Hawai‘i | x | |
| Purple Lotus Yoga, Surf n Wellness | x | |
| Regatta Racing | x | |
| Scottish Festival | x | |
| Soccer Club | x | |
| Standup Paddle Association of Hawai‘i | x | |
| U.S. Tennis Association (USTA) Hawai‘i Pacific Section | x | |
| Waikīkī Community Center | x | |
| Waikīkī Hawaiian Civic Club | x | |
| Waikīkī Improvement Association | x | |
| Waikīkī Surf Club | x | |
| Waikīkī Yacht Club | x | |
| Yoga Kai Hawai‘i | x | |
| Young Men Christian’s Association | x | |
| **INDIVIDUAL STAKEHOLDERS AND PARK USERS** | | |
| Ai Oyama | | x |
| Audrey Lee | | x |
| Bradley Ebisuya | | x |
| Brandon Yoza | | x |
| Brian Furumoto | | x |

**Table 1-2: Agency and Public Comments on EISPN**

| Respondents and Distribution | Received EISPN | Comment |
|---|---|---|
| Brian Walter | | x |
| Bruce Lum | | x |
| Channing Ching | | x |
| Charles Langlas | | x |
| ClaudeTakanishi | | x |
| Craig Sugihara | | x |
| Derek Hama | | x |
| Diane Fujimura | | x |
| Richard Fujie | | x |
| Gail Murakami | | x |
| Guy Kudo | | x |
| Helene Philips | | x |
| Ivan Kaisan | | x |
| James Kaneshiro | | x |
| Jan Asuncion | | x |
| Jon Nishimot | | x |
| Steve Kalilimoku | | x |
| KVIBE | | x |
| Lance Higa | | x |
| Larry Erwin | | x |
| Leighton and Maude Fujinaka | | x |
| Michael Arita | | x |
| Michael Garsva | | x |
| Michael Tominaga | | x |
| Michelle Matson | | x |
| Mikal Weiss | | x |
| Overdafalls | | |
| Patti Choy | | x |
| Ray Madigan | | x |
| Sen Uyeunten | | x |
| Sharlene Chun-Lum | | x |
| Stan Sakai | | x |
| Steven Horio | | x |
| Sylvia Hayashi | | x |

**Table 1-2: Agency and Public Comments on EISPN**

| Respondents and Distribution | Received EISPN | Comment |
|---|---|---|
| William Kaeo | | x |
| All persons on the list of stakeholders who have attended Park planning meetings since 2015 or commented during the process were notified of the publication of the EISPN and invited to comment. | | |
| **UTILITIES** | | |
| Hawaiian Electric Company | x | x |
| Hawaiian Telcom | x | |
| Spectrum | x | |

## Public Meetings

Three public informational meetings were held to inform the public about the project and to gather community input. The first meeting was held at McCoy Pavilion on March 10, 2015 to provide opportunities for the community to obtain information on the Proposed Action and to provide their concerns about changes to the Park. Approximately 400 people attended this first public informational meeting. They included mainly residents and users of the park facilities. The primary comment from the participants was to not commercialize the Park for tourists and maintain it for the residents. The participants divided into small group sessions to brainstorm their comments on maps that were provided.

The second public meeting was held on April 28, 2016 at McCoy pavilion. This meeting presented the Master Plan. After receiving a large quantity of comments through the various outreach efforts, the City proposed short-term improvements through a 9-Point Community Action Plan that could address immediate facility needs. These were actions that could be completed without an environmental review. The 9-Points included the following:

1. Hire More Staff
2. Renovate Comfort Stations
3. Repair Magic Island Exercise Path
4. Irrigate Great Lawn
5. Fix rocky Beach Areas
6. New Street Trees along Ala Moana Boulevard
7. New Playground
8. Make the Park Safer
9. Local Favorites in Concession

Not all alternatives presented at the second public meeting were acceptable to the public and specifically the removal of the makai parking stalls along Ala Moana Drive.

The third public meeting was held on January 29, 2018 at the McCoy Pavilion (See Figure 1-4) to present the Proposed Action that is in the environmental review process. The City proposed modest improvements to historical features, beach nourishment, and access improvements to the Park. The Mayor also provided the status of the 9-Point Community Action Plan and other smaller projects. Several hundred community members were in attendance to hear the updates to the Proposed Action and to express their concern about removing the makai parallel parking stalls along Ala Moana Park Drive. Many park users have been erecting tents and barbecue grills for their picnic areas along the grassy area on the makai side of the Ala Moana Park Drive, which impedes other beachgoers from accessing the sandy beach. These tents also block views to the ocean from areas mauka of the makai parking. The City proposed to widen the makai walkway by removing the parallel stalls for better access for all park users. The new walkway would have additional bench seating and landscaped improvements for infiltration and drainage purposes. Drop off areas for loading and unloading were proposed for safer access for all including children, elderly, and the disabled. The number of parking stalls would increase at the Park by reconfiguring the mauka parallel parking to perpendicular stalls and by expanding the Keyhole parking lot near McCoy Pavilion and the Magic Island lot. At the meeting participants strongly opposed the changes to the parking and the walkway and felt that the changes were for the tourists and people living in the condominiums adjacent to the Park. After the presentation, the participants were asked to split into focus groups to discuss the proposed improvements. Most of the crowd congregated around the Mayor to discuss their dissatisfaction with the changes to the parking and the procedures of the meeting. Some people wanted their concerns heard by everyone in attendance at the meeting rather than just to the Mayor and a smaller group. Even though the majority attended to discuss the parking, the plan for the meeting was chosen to give everyone a chance to discuss other issues or give feedback on other proposed improvements. The Mayor assured the public that the plans are not final and the City will continue to refine the plan throughout the EIS process.

**Figure 1-4**
**JANUARY 2018 MASTER PLAN PUBLIC MEETING**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

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### 1.6.3 Other Outreach

**Project Website**

A project website called "Our Ala Moana Park" was launched in July 2015 to keep the public informed during the master plan period. It included the following pages: Welcome, Preview, Presentation, Comments, Summary, Updates, Results, and Early Projects. The website address is www.ouralamoanapark.com. There are links to current news and latest information from the City and the media. It also shares results from any public event involving the improvements for the Park. The website is regularly updated and has a contact box for the public to ask questions or express concerns. The public was encouraged to add feedback on the various proposed projects and to provide ideas. Commenters could vote on whether or not they agreed or disagreed with the comments made. There were over 30,000 interactions on the website. These comments ranged from basic restoration of the Park to higher to dramatic new elements to the Park.

### 1.6.4 Summary of Input from Consultations

Agency input was predominantly requesting for information to be included in the EIS in order for the agencies to review project impacts. Stakeholder input generally included information about their recreational use of the Park, which was used to describe proposed activities and assess their environmental impacts. Issues and concerns identified during the EISPN consultation process are summarized below.

- Some community members did not want the makai parallel parking removed
- Ocean safety wants to be centrally located since they are the first responders to all emergencies in AMRP
- Incorporate security and safety measures
- Address general maintenance issues (restrooms, drainage, vandalism etc…)
- Sea level rise needs to be discussed
- No metered parking
- A traffic study should be prepared
- Provide visible signage indicating the rules and regulations of the Park to assist the Honolulu Police Department in enforcing them.
- Provide an access road for the Honolulu Fire Department and sufficient water flow for fire protection.
- Complete Streets policies are being addressed
- Implement Best Management Practices (BMP) during construction

- Clarify the role of the Honolulu Emergency Services Department as the primary providers for emergencies at the Park.
- Discuss the project's compliance with City policies and the new Rules Relating to Water Quality.
- Discuss the Applicant/Contractor's awareness to the State of Hawaii Office of Planning Technical Assistance Memorandum relating to the airport.
- Improvements should comply with the American Disabilities Act (ADA)
- Do not commercialize the park
- Remove the rocks from the shoreline

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# CHAPTER 2

Proposed Action and Alternatives

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# CHAPTER 2
# PROPOSED ACTION AND ALTERNATIVES

## 2.1 INTRODUCTION

An analysis was conducted to define the proposed project and the alternatives to be evaluated in this EIS, in compliance with the requirements of the State of Hawaiʻi (State) HRS Chapter 343 and its implementing rules, HAR 11-200. The alternatives analysis also meets anticipated requirements of the project's Department of the Army (DA) permit, specifically those relating to the Clean Water Act (CWA) Section 404(b)(1) Guidelines.

The first step in identifying the range of alternatives developed during the planning process involved public outreach to create the Park's master plan. A scoping meeting for the master plan was held in 2015 for members of the public to brainstorm improvement ideas for the Park that could address overall needs. Additional sources such as the Park's official website, social media, stakeholder and agency meetings, and regular site visits by planning staff were used to engage the public and collect feedback. Both long-term and short-term needs were discussed along with needs that required immediate attention. In 2016, the public reconvened to review the master plan alternatives presented by the Mayor. The alternatives derived from the input gathered from the public and the various participating agencies with the intent to restore existing character features, promote current inactive areas of the Park, and enhance the popular amenities. The master plan's goal was to address the overall needs, and to find long-term, sustainable solutions for the Park. The City also created the "Mayor's 9-Point Action Plan" (Table 2-1) to address the immediate short-term needs. The following categories were used to distinguish each alternative: restore, enhance, and evolve. These alternatives were then compared to the purpose, and, need of the project (see section 1.3).

**Table 2-1: Progression of the 9-Point Community Action Plan**

| Actions | Progress | Media Source |
|---|---|---|
| Offer Local Favorites in Concession | Opened two L & L Barbeque locations in Summer 2015 | L&L Barbeque concession stand: http://khon2.com/2015/07/03/ll-hawaiian-barbecue-opens-concession-stand-at-ala-moana-beach-park/ |
| Renovate Comfort Stations, not replace | Comfort stations at Magic Island were renovated. Improvements to the Diamond Head side bathhouse beginning on 12/11/17. Plans to renovate Ewa-side bathhouse with similar renovations. | khon2.com/2016/01/07/many-ala-moana-beach-park-improvements-could-take-years-to-complete-2/ |
| Hire More Park Staff | Hired 14 permanent staff including groundskeepers and park caretakers | khon2.com/2017/03/20/ala-moana-beach-park-improvement-work-continues/ |
| Repair Magic Island's Exercise Path | Repairs and repaving of the pathway completed in 2016 | khon2.com/2016/02/02/new-path-staffing-in-the-works-as-ala-moana-park-upgrades-continue/ |
| Beautify the Park | 44 trees installed Along Ala Moana Blvd. in September 2016. Added the island's first designated sand volleyball courts to the Ewa-side of the Park in October 2017. Informed public about dangers and damage caused by improperly dumping cooking coals through media coverage. | Tree planting ceremony for phase 1: www.ouralamoanapark.com/blog/community-action-9-point-plan<br><br>http://khon2.com/2016/08/08/city-to-plant-dozens-of-trees-as-part-of-ala-moana-park-improvements/<br><br>http://the.honoluluadvertiser.com/article/2006/Jan/14/ln/FP601140337.html<br><br>http://khon2.com/2017/11/10/sand-volleyball-courts-open-at-ala-moana-regional-park/ |
| Fix Rocky Areas of the Beach | Volunteers and park staff relocated beach rocks/coral on two separate occasions in October 2016. Maintenance staff also conducted sand pushing following the relocation efforts. | Beach Rocks Cleanup by Volunteers: khon2.com/2016/10/08/city-tackles-beach-erosion-problem-driven-by-tourism-revenue/ |

**Table 2-1: Progression of the 9-Point Community Action Plan**

| Actions | Progress | Media Source |
|---|---|---|
| Irrigation Improvements | Work on the irrigation system began at the Great Lawn on November 1, 2016 and is expected to be completed by February 2018. Magic Island irrigation improvements are scheduled to be completed by the end of 2018. | khon2.com/2016/11/01/irrigation-system-upgrade-begins-at-ala-moana-regional-park/ |
| Make the Park Safer | Converted park lights to brighter, more efficient LED lights, added security staff to monitor the Park during afternoon and evening hours, added security gates and screens to bathroom facilities, and added security cameras to two bathhouses. Following the installation of the cameras, staff have not noticed vandalism in these two facilities. | khon2.com/2016/11/21/security-cameras-to-begin-operating-at-ala-moana-regional-park-comfort-stations/<br><br>http://www.civilbeat.org/2016/02/ala-moana-park/ |
| Build a playground | Currently in design stage | https://www.staradvertiser.com/2018/12/03/hawaii-news/world-class-playground-approved-for-ala-moana-park/ and http://www.staradvertiser.com/2017/05/09/hawaii-news/playground-in-vision-for-ala-moana-park/?HSA=3cb75f3d5344fc1b633e164ad3987037f6f6c87f |

## 2.2 PROJECT COMPLIANCE

One of the long-term needs of the Park is replenishing the sand at the beach. Years of constant wave action and other natural elements have eroded the beach and exposed sharp rocks at the shoreline. The only alternative is to recover beach sand from various offshore sites rather than another beach or offsite location on land. Therefore, the sand replenishment phase of the project will be conducted in waters of the United States (US) requiring a DA permit pursuant to CWA Section 404. The CWA Section 404(b)(1) Guidelines prohibit "discharges of dredged or fill material if a practicable[1] alternative to the proposed discharge exists that would have less adverse impacts on the aquatic ecosystem, as long as the alternative does not have other significant adverse environmental consequences."[2] Hence, the next step of the alternatives analysis involved identifying alternatives to meet the CWA Section 404(b)(1) Guidelines. The possible site location options for beach sand recovery are listed as separate alternatives. The City examined practicable alternatives to the proposed discharge that will not have an adverse effect on the aquatic environment.[3] A sand replenishment study was conducted for the project to investigate potential offshore sand sources, and to develop a recovery and placement plan. Identifying such alternatives was challenging considering the purpose, need, and objectives of the proposed project. In particular, the following objectives are needed for a beach nourishment project:

- To create a wider beach to increase the sandy beach area
- Increase the elevation for a dry beach for more useable area during high tides
- Reduce inundation or flooding of the backshore area

At the City level in terms of water quality, the project must comply with new City Rules Relating to Water Quality that became effective on August 16, 2017. The proposed designs of the land improvements are predicated on compliance with these rules. A Storm Water Quality Strategic Plan will be prepared for the initial grouping of projects which is programmed to include the Japanese and Hawaiian pond edge improvements, Bridle Bridge repairs, keyhole parking reconfiguration, widening of the beachfront shared use path along Ala Moana Park Drive, and adding perpendicular parking along its mauka side. The Strategic Plan will contain a written description of the projects, expected activities and likely pollutant generated at the site, low impact development (LID) strategies being implemented and the projects' schedules. In addition, an Erosion and Sediment Control Plan (ESCP) prepared in accordance with the Rules will also be completed for each project. The ESCP is required to contain pre-construction, during construction and post-construction best management practices

1 The term practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes (40 Code of Federal Regulations [CFR] §230.3[q]).

2 40 CFR §230.10(a)

3 40 CFR §230.5(c)

(BMPs). The Strategic Plan will address the activities common to all the projects including post-construction BMPs, with the ESCP containing project-specific requirements.

The initial grouping will constitute a Category 5 project under the Rules, and all requirements for plan preparation, content and BMPs will be addressed, along with BMP inspections at least once every 7 days by ESCP Coordinator during, and certification upon completion of, construction. A National Pollutant Discharge Elimination System (NPDES) permit for construction storm water discharges will also be obtained for the project grouping. Subsequent master plan projects will follow similar procedures complying with the Rules and obtaining a NPDES permit when the project or group of projects involves ground disturbance of one acre or more.

The alternatives considered in this EIS ranged in site location options for sand replenishment, parking configuration options, and site access location options. They were evaluated in terms of the project purpose, need, and objectives. The Proposed Action and the Sand Replenishment alternatives were carried forward for further evaluation, in compliance with HRS Chapter 343, and CWA Section 404(b)(1) requirements. The Alternative Action was determined to meet the stated purpose, need, and objectives.

- Proposed Action (Section 2.3). Under the Proposed Action, restoration of the Park's features can be accomplished and the potential to maximize usage of other features/spaces can be recognized. These actions are meant to sustain the popular recreational spaces for the future while evolving with City's policies and initiatives that relate to the environment and public health.

- Sand Replenishment Alternatives— (Section 2.4). There are no design codes for beach nourishment projects. Nourishment of the beach could be as little or as much as the owner desires, but is limited by the availability of sand, the cost and adverse impacts. There are three alternatives that vary by the volume of sand placed on the beach but is also constrained by the available space on the beach.

Section 2.7 discusses the alternatives that were considered but were not carried forward for further analysis in this EIS, including reasons why the alternatives were dismissed.

## 2.3 PROPOSED ACTION

In January 2018, the City held a third public meeting to present the preferred alternative for the master plan which is referenced as the Proposed Action for the EIS. Some of the proposed projects presented herein were revised based on the feedback received at the meeting. Since the AMRP is on the State's Historic Register, the City had an early consultation meeting with the State Historic Preservation Division (SHPD) and decisions made from that meeting reflect in some of descriptions of this Proposed

Action. Several projects are proposed to restore the historic features of the AMRP in a historically appropriate manner.[4] SHPD has concurred with the proposed mitigation per the determination letter dated June 18, 2018 (Appendix D-1). See Section 2.3.1 to Section 2.3.18 for a current description of the Proposed Action. An annotated list of the projects is as follows:

- Add a dog park near Kewalo Basin;
- Improve the pond edges and paths around the Hawaiian Pond and Japanese Pond;
- Pi'ikoi Street and Queen Street pedestrian entrance expansions and partial drainage canal cover;
- Repair drainage canal walls;
- Reconfigure parking on the mauka side of Ala Moana Park Drive to add more stalls;
- Rearranging the parking along the makai side of Ala Moana Park Drive to add loading and unloading zones near crosswalks;
- Keyhole parking lot expansion and reconfiguration;
- Reconfigure and expand Magic Island parking lot;
- Widening the shared-use path along the makai side of Ala Moana Park Drive;
- Repair Roosevelt Portals at Atkinson Street entrance;
- Improve the Kamakee Street entrance;
- Repair the Bridle Bridge;
- Widening the shared-use path along the Ala Wai Small Boat Harbor;
- Improve the existing canoe launch ramp and crossing from the Canoe Hālau;
- Renovate McCoy Pavilion and the banyan courtyard;
- Improve "High Spot" terrace for ADA access, repair pergola, and widen the shared-use paths on both sides;
- Sand replenishment and long-term beach nourishment;

[4] Letter from Robert Kroning (City Department of Design and Construction, Director) to Kaiwi Yoon (State Historic Preservation Division, Architecture Branch Chief) requesting a determination letter pursuant to Hawaii Revised Statutes Chapter 6E-8 and Hawaii Administrative Rules Chapter 13-275-3.

- Build a playground;
- Relocate the maintenance yard;
- Create a multiuse facility near the Lawn Bowling area and Lawn Bowling building improvements;
- Relocate the Ocean Safety's Honolulu Headquarters.

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**Figure 2-1**
**PROPOSED ACTION**
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Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

### 2.3.1 Dog Park

The location for the proposed dog park is currently used as an open space and is situated on the 'Ewa side of the AMRP and adjacent to Kewalo Basin. One of the goals of the Master Plan is to bring activity to areas of the Park that are overlooked. This area is underutilized and away from the more active areas of the Park.

A dog park is proposed for park users to have an open area for their dogs. Some dog owners walk their dogs through the Park, but do not clean up after them according to feedback from the scoping meetings. A dog park could be a solution to this since the area will be contained by a fence and it will include waste stations. It will also provide two play areas, one for small dogs and another for all dogs (Figure 2-2).

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Source: PRB Hawaii and Associates, Inc.

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NORTH

0 8 16 12
SCALE IN FEET

**Figure 2-2**
**DOG PARK**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

### 2.3.2 Hawaiian Pond and Japanese Pond Improvements

Louise Gaylord Dillingham was the president of the Outdoor Circle and had a significant influence on the design of the AMRP in the late 1920s[5]. Her husband, Walter Francis Dillingham and his company Hawaiian Dredging Company, would play a substantial role in reclaiming the Park land over coral reef. It was Louise Dillingham's suggestion to incorporate water features in the Park to keep maintenance low and to add aesthetic and recreational benefit. The Hawaiian Pond/Eastern Lagoon[6] and the Japanese Pond/Western Lagoon were dredged by 1932 along with the drainage canal.

The edges around the two ponds on the AMRP property are currently covered by hardened top soil, sparse shrubs and grass. Two rows of filter socks are observed along the banks of Hawaiian Pond to address storm water runoff. The filter socks hinder access to the water feature for recreational use such as fishing. Earlier photographs of the Japanese Pond showed more shrubs and a wall surrounding the banks, although it appeared discontinuous. Current conditions of the Japanese Pond edges have less shrubs and sections of the wall need repairs.

Proposed improvements include both vegetative and hardened edges (Figure 2-3). Hardened edges would be installed along the immediate shoreline of the ponds and low maintenance vegetation would be planted behind it. Design of the improvements would be cohesive with the need to prevent storm water discharge into the ponds and to meet recreational needs. Pathways leading to seating areas around the ponds are proposed to increase access. These pathways could connect the ponds to the rest of the Park.

[5] Weyeneth, Robert. 1987. *Ala Moana: The People's Park.* Prepared for the City and County of Honolulu Department of Parks and Recreation. Pg. 7

[6] Referred to as "lagoon" in the *Ala Moana: The People's Park* book.

JAPANESE POND - BEFORE

HAWAIIAN POND - BEFORE

JAPANESE POND - AFTER

HAWAIIAN POND - AFTER

**Figure 2-3**
**POND EDGE AND PATH IMPROVEMENTS**
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### 2.3.3 Pedestrian Entrance Expansions at Piʻikoi Street and Queen Street

There are four secondary pedestrian access points into the Park that are designated by openings through the AMRP's park boundary wall. These access points are from Ala Moana Boulevard and are located across from Ward Center, at Queen Street, at Piʻikoi Street, and across from the Park Lane condominiums at Ala Moana Center. A pedestrian bridge is located near each of the access points for crossing over the drainage canal.

Formal entrances at Piʻikoi Street and Queen Street would enhance pedestrian ingress/egress to the Park and provide for emergency pedestrian evacuation from the Park. Several new condominiums have been developed adjacent to the Park including: Park Lane, Waiea, Anaha, ʻAʻaliʻi, Gateway Towers, 1133 Waimanu, Waihonua, Koolani, and Hokua. These developments are in addition to the Nauru Tower, 1350 Ala Moana, and the Yacht Harbor Towers located along Ala Moana Boulevard and across from the Park. Wider access points would encourage more pedestrian traffic and less vehicle traffic entering the Park from these high-density areas. These secondary main entrances could also alleviate pedestrian traffic congestion during large events like the 4th of July Fireworks Show or during an emergency.

The current pedestrian bridges around Piʻikoi Street and Queen Street are offline with the street's crosswalk. The Park's boundary wall presents some obstacles between the crosswalk and the Park with narrow openings. The proposed crossing and new entrances would align with the crosswalks over Ala Moana Boulevard. The Park boundary wall fronting the new entrances will be removed to increase safety and access while entering and exiting the Park.

The locations at Piʻikoi Street and Queen Street would add central main entrances since the other main entrances are located at the Diamond Head and ʻEwa ends of the AMRP. Adding additional pedestrian access at the center of the Park would direct less pedestrian traffic toward the vehicle entrances which would promote public safety. A rail station is proposed on the mauka side of the Ala Moana Center and near Piʻikoi Street. A pedestrian crossing to the AMRP could benefit those using the rail for transportation to the Park. A conceptual rendering plan proposes to align a wider access point at Piʻikoi Street with the crosswalk (Figure 2-4).

At least three options were considered for crossing the drainage canal. The first option proposed to install a pipeline system and backfill the entire canal. This option was considered costly and not feasible because there was no available space for a new pipeline system. The second option proposed to install wider bridges. This option was also costly and there was uncertainty on whether the existing canal walls could support the larger structures. Therefore, it was recommended to remove and replace the canal walls to install the new bridges. This option was not explored further due to cost and the recommendation to remove and replace the canal walls. The third option proposes to install a box culvert in the canal to reinforce a 25-foot wide walkway over the canal. The existing bridges will be removed, and a large box culvert would be placed in the canal to expand the walkways above while allowing water to flow

beneath them. The walls of the culverts are meant to blend in with the existing canal walls and bottom. Railings will be installed on the new walkways.

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Current view of Pi'ikoi Entrance

Proposed improvements to Pi'ikoi Entrance

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**Figure 2-4**
**PI 'IKOI PEDESTRIAN ENTRANCE**
Ala Moana Regional Park and Magic Island Improvements EIS
Honolulu, Oahu, Hawaii

### 2.3.4 Repair Drainage Canal Walls

The drainage canal is about a mile long and stretches between the Japanese Pond on the ʻEwa side and the Hawaiian Pond on the Diamond Head side. The ponds and the canal were dredged around 1932 to manage stormwater runoff toward the ocean. The canal serves the same function today as when it was built. Currently, it drains Ala Moana Boulevard and portions of Kakaʻako and most of lower Makiki. Over time, the canal walls have deteriorated, and sections of the walls have collapsed (Figure 2-5). Attempts have been made to address the collapsed sections and general restoration of all the walls, but its historic structural composition has challenged structural engineers. For one, there is no record of the material or construction method that was used for the walls. Another challenge was the lack of footings which may have been the cause for collapse. Finally, the soil composition around the walls is very weak lagoonal deposits and mostly comprised of sandy-gravel, sand, and silt. These materials are considered unstable as support for the canal walls.

Restoration of the sections of the fallen walls is needed and proposed. Several alternatives were considered and were predicated on safety, feasibility, and historic significance for both construction materials and methods. After consultation with structural engineers and concrete ready-mix suppliers, it was determined that the option to use the same materials and construction method from the 1930s was not considered a viable option. This is because the material used is no longer available or made and 1930s practices do not conform to current codes and industry standards. Other alternatives considered, consisted of stabilization with tie-back support and using the existing walls, but the condition of failed sections does not allow for reuse. A full replacement of the walls was considered but was the highest in cost. The preferred alternative is to replace the existing walls that have collapsed with a precast concrete panel in combination with using tie-back support to stabilize some of the walls that are near collapse. The surface finish of the panel should blend with the existing wall. Removal of the existing walls should be limited to those sections that have failed.

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**Figure 2-5**
**CANAL WALLS EXISTING CONDITIONS**
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### 2.3.5 Parking

The AMRP design through time has evolved as demand increased for certain amenities. The first plans from the 1930s for the AMRP did not show parking lots even though automobiles were present in Hawai‘i. A few parking stalls were observed within the Keyhole area, however, in earlier photographs from 1935. Plans for parking were mentioned about 30 years later when the City was looking to capitalize on the tourism industry by building a resort. A resort endeavor would have demanded more parking. Lack of public support for a resort eradicated the idea and Magic Island was added to the AMRP as park space with a parking lot in the 1970s.

Over time, more parking lots have been added to the Park as demand increased for more stalls. Besides the Magic Island lot, there are public parking lots at McCoy Pavilion (Keyhole lot), and the Canoe Hālau. Parallel parking stalls are available along the mauka and makai sides of the 1.1-mile Ala Moana Park Drive.

The original proposal for the current Master Plan was to convert the mauka side parking to perpendicular stalls and remove about 50 stalls along the makai side of Ala Moana Park Drive. The reconfiguration of parking was mainly intended to accommodate an improved makai shared-use path. Compensation for the loss of stalls along the makai side would be acquired by reconfiguring the Keyhole lot and the Magic Island lot. This plan would have also increased the number of stalls by 221 and provide closer access to the Magic Island lagoon.

Members of the public strongly opposed the removal of the parking on the makai side of Ala Moana Park Drive at the public meeting in January 2018 and by letter/email responses to the project’s EISPN announcement. Therefore, the City reviewed and revised the proposed parking plan to obtain an acceptable response by the public. Only about 20 stalls would be removed fronting the new Keyhole parking lot to create a wider walkway for people moving their supplies to the preferred beachside location. This new walkway will have drop off zones and crosswalks on both sides for safe crossing to the mauka parking lot. All other parallel stalls on the makai side would remain. See Table 2-2 and Table 2-3 below, for the current stall count along with the proposed number of stalls.

The City’s new proposal for parking is to retain the makai parallel stalls except for those fronting the Keyhole (See Figure 2-6). The reason for the removal of these stalls is to add pedestrian crossing safety features from the newly expanded Keyhole lot that will gain 103 stalls. Parking along Ala Moana Park Drive at the Keyhole lot will be removed to provide a clear visual for cars maneuvering through that area and for pedestrian crossing to the makai side of the roadway where the pathway will be installed for easier pedestrian movement. The total number of parking stalls within the AMRP and Magic Island will be increased by 243 public and staff parking stalls to meet the demand from the growing population.

The mauka stalls are still proposed to be reconfigured to perpendicular stalls but will also include parallel stalls where appropriate. Sidewalk improvements are also

proposed for the entire length of the mauka parking expansion. The Magic Island lot will also have more stalls by reconfiguring the lot length-wise. The City recently received concurrence for the Keyhole lot expansion by the SHPD. As noted above, the Keyhole has been documented by earlier photographs and design plans declaring it as a historic feature that has been altered over time.

A total of five, two-car drop off zones have been added on the makai side of Ala Moana Park Drive at the crosswalks for park users to drop of their supplies before parking their cars.

**Table 2-2: Proposed and Existing Parking Count (Public Parking)**

| Parking Area | Proposed | Existing |
|---|---|---|
| Mauka Side: | | |
| Parallel | 87 | 175 |
| Perpendicular | 190 | |
| Makai Side | | |
| Parallel | 167 | 181 |
| McCoy Pavilion (Keyhole Parking Lot) | 182 | 77 |
| Magic Island | 515 | 469 |
| Canoe Halau | 32 | 32 |
| Reserved Stalls (Life guards and maintenance staff) | 18 | 14 |
| **TOTAL:** | **1191** | **948** |

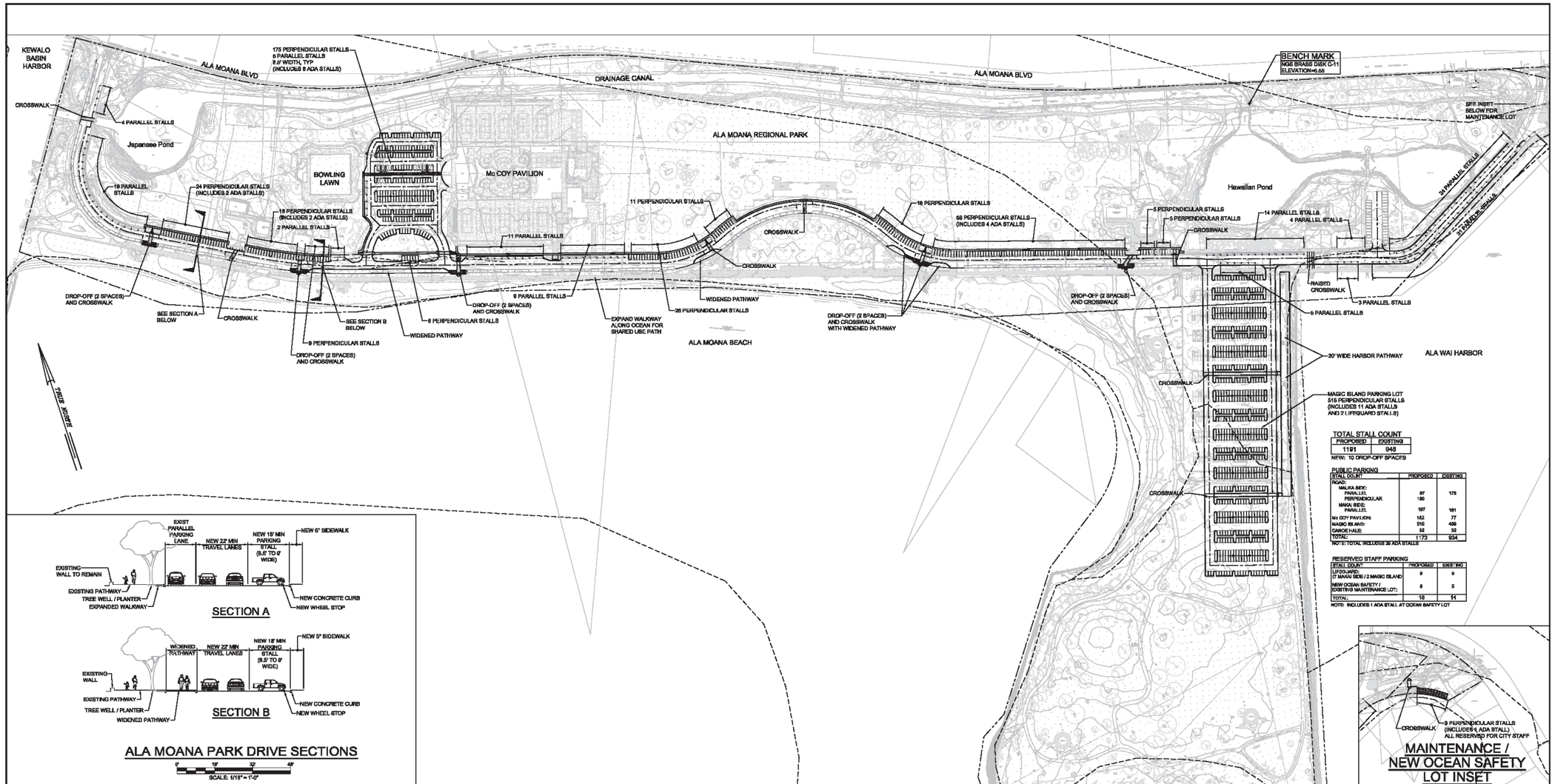
Note: Proposed total includes 25 ADA stalls; 239 additional public stalls

**Table 2-3: Proposed and Existing Parking Count (Staff Parking)**

| Parking Area | Proposed | Existing |
|---|---|---|
| Lifeguard: | | |
| Makai Side | 7 | 7 |
| Magic Island | 2 | 2 |
| New Ocean Safety/Existing Maintenance Lot | 9 | 5 |
| **TOTAL:** | **18** | **14** |

Note: Proposed total includes 1 ADA stall at the Ocean Safety Lot

1




TOTAL STALL COUNT

| PROPOSED | EXISTING |
|---|---|
| 1191 | 948 |

NEW: 10 DROP-OFF SPACES

PUBLIC PARKING

| STALL COUNT | PROPOSED | EXISTING |
|---|---|---|
| ROAD: | | |
| MALIKA SIDE: | | |
| PARALLEL | 87 | 175 |
| PERPENDICULAR | 180 | |
| MAKAI SIDE: | | |
| PARALLEL | 187 | 181 |
| Mc COY PAVILION: | 152 | 77 |
| MAGIC ISLAND: | 515 | 468 |
| CANOE HALE: | 32 | 32 |
| TOTAL: | 1173 | 934 |

NOTE: TOTAL INCLUDES 26 ADA STALLS

RESERVED STAFF PARKING

| STALL COUNT | PROPOSED | EXISTING |
|---|---|---|
| LIFEGUARD: (7 MAKAI SIDE / 2 MAGIC ISLAND) | 9 | 9 |
| NEW OCEAN SAFETY / EXISTING MAINTENANCE LOT: | 9 | 5 |
| TOTAL: | 18 | 14 |

NOTE: INCLUDES 1 ADA STALL AT OCEAN SAFETY LOT

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**Figure 2-6**
**PARKING PLAN**
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### 2.3.6 Makai Shared-Use Path

Catherine Jones Richards and Robert Oliver Thompson[7] were tasked to design the landscaping of the Park in the 1930s[8]. They originally designed a shoreline walkway with a line of trees for shade. Later design concepts in the 1970s proposed a wider promenade that replaced the road making the promenade accessible for pedestrians and bicyclists only. Designers believed that future use of the Park should not be a parking lot, but a place for active recreation and aesthetic enjoyment. Earlier planners and designers predicted the evolution of transportation to be less dependent on automobiles and more adaptive to other modes of transportation. This is seen today as becoming more of a reality with the establishment of the rail transit system and the Complete Streets initiative. The Complete Streets Ordinance 12-15 was passed in 2012 by the City Council. Some of the objectives of the ordinance includes: "protect and promote accessibility and mobility for all; balance the needs and comfort of all modes and users; encourage opportunities for physical activity and recognize the health benefits of an active lifestyle; and incorporate trees and landscaping as integral components of complete streets."[9]

Today, the makai shared-use path is one of the most actively used recreational features of the Park. Access to the beach and views of the ocean attract recreational users to it. The shared-use path/walkway has been a popular attraction of the AMRP since before the installation of the beach. Currently, the shared-use path is mostly used for walking, jogging, running, cycling, sunset watching, group exercise, and picnicking (Figure 2-7). Early mornings and evenings are when the path is crowded with walkers, joggers, runners, and cyclists. Picnickers are also seen under pop-up tents with barbeques in the grassy area of the path. The path has sporadic park benches, trees, and drinking fountains along a narrow walkway.

The proposed shared-use path will comply with the Complete Streets Ordinance by creating a proper shared-use path along the beachfront allowing safe passage for both bicyclists and pedestrians. A shared-use path also exists on the mauka side of the AMRP along the drainage canal. More bikeways are being planned on City streets around urban Honolulu. The AMRP shared-use paths are used to seamlessly connect these commuting areas. Other similar paths have been established in many other public areas, such as the edges of Kapiʻolani Park.

During the scoping meetings, the public asked for a wider and shaded pathway that could serve a variety of recreational needs and purposes. This could be accomplished by landscaping alterations (Figure 2-8). Additional planters and trees will increase shade and address storm water quality issues. Additional benches will be added to allow park users to sit on a shaded bench to watch the sunset or their family members

[7] Catherine Jones Richards and Robert Oliver Thompson were later referred to as "Thompson and Thompson" after marriage.

[8] Weyeneth, Robert. 1987. *Ala Moana: The People's Park.* Prepared for the City and County of Honolulu Department of Parks and Recreation. Pg. 9

[9] https://www4.honolulu.gov/docushare/dsweb/Get/Document-126869/6_3g_8rv.pdf

enjoying the sandy beach or swimming in the calm ocean waters. Improvements to the lighting and pathway pavement are proposed to keep the path safe and accessible especially during peak hours.

The grassy area alongside the shared-use path must comply with the City's new Rules Relating to Water Quality adopted by the Department of Planning and Permitting that went into effect August 16, 2017. The proposal design of the shared-use path is predicated on compliance with these rules. Adoption of these rules is one of the requirements of the City's NPDES Permit No. HI-S000002.

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**Figure 2-7**
**SHARED-USE PATH RECREATIONAL USES**
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**Figure 2-8**
**WIDEN SHARED-USE PATH**
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### 2.3.7 Roosevelt Portals

The Roosevelt Portals were completed in the early 1930s and dedicated by President Franklin Delano Roosevelt in 1934.[10] The president's involvement in providing the labor to complete some of the work for the AMRP was significant during the Depression Era. The portals are designed by Harry Sims Bent, an architect hired to provide associated designs to the landscaping plan for the Park. His designs for the AMRP are known as Art Deco. They are two gates on either side of Ala Moana Park Drive and were meant to stand as a welcoming pedestrian entrance to the Park. Over time, the street grid changed as the city developed around the Park and transportation evolved to automobiles. The portals today remain as a reminder of the Park's history but show its need for restoration (Figure 2-9). Boulder concrete was the material used to construct the Roosevelt Portals and many other features in the Park. This material consists of concrete poured over coral and lava rocks and was considerably lower in cost during the Depression Era. The portal walls were coated with stucco and painted white to conceal any deformities.[11]

Repairs to the Roosevelt Portals are proposed to restore and preserve its historic character. The repairs were recommended by the project's master plan to restore sections that need attention and to preserve the historic construction. Options to use the same materials used in the 1930s were considered but were not feasible because boulder concrete is no longer available, and it would not comply with current industry standards and building codes. A corrosion inhibiting concrete penetrating sealer is the recommended material to be used by the structural engineers. The sealer could be used to protect the outer surface of the portals from moisture without disturbance to its historical nature.

[10] Ibid, Weyeneth, Robert. 1987. Pg. 14

[11] Ibid, Weyeneth, Robert. 1987. Pg. 23

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**BEFORE**

Current view of Roosevelt Gate and entry plaza

**AFTER**

Proposed improvements to Roosevelt Gate and entry plaza

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**Figure 2-9**
**ROOSEVELT PORTALS**

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### 2.3.8 Kamakee Street Entrance

Plans for the Kamakee Street Entrance were included with earlier design plans but were never implemented. It does not appear to have the character of a main entrance even though it is considered to be like the Atkinson Drive Entrance. The coral walls that border the entryway are historic but understated in comparison with the Park's historic theme.

The proposed plan is a new entry gate that would complement the Roosevelt Portals at the Atkinson Drive Entrance (Figure 2-10). The updated entry would include a new park sign and designed wall over the existing coral wall to emphasize the area. Entry portals for the pedestrian entrance are also proposed. The landscaping around the entryway will be included in the update.

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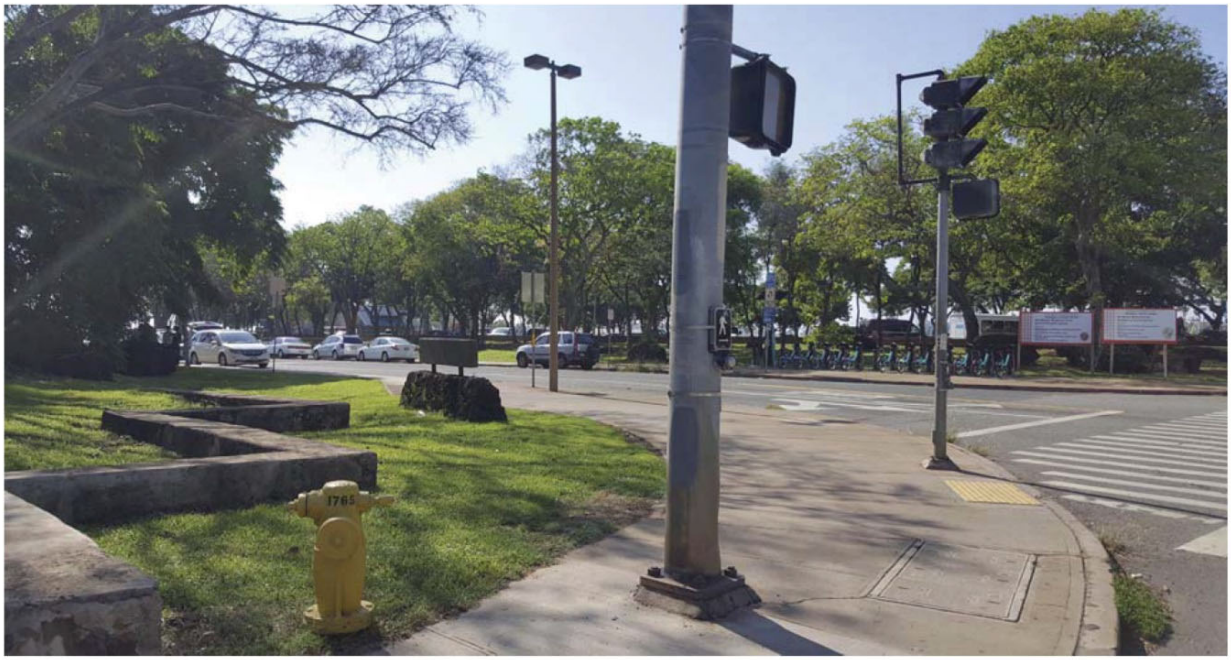
**BEFORE**



Current view of Kamakee Entry

**AFTER**

Proposed improvements to Kamakee Entry

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**Figure 2-10**
**IMPROVE KAMAKEE ENTRANCE**

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### 2.3.9 Repair Bridle Path Bridge

The Bridle Path Bridge is one of the more recognized designs of Harry Sims Bent in Honolulu. The bridge is referred to as "Equestrian Bridge," and "Canal Bridge" in earlier documents. It was originally designed in the landscaping plans to be part of a series of connecting paths between the AMRP and Kapiʻolani Park. The bridge was completed in 1934 as Bent's first design in the Park. The bridge is composed of rebar and concrete with concrete columns for support.[12] It is unknown if boulder concrete was the type of concrete used to construct the bridge. The condition of the bridge is poor in comparison to the Roosevelt Portals. A site inspection of all the bridges of the AMRP was completed by Realty Inspections, Inc. (RII). They reported that the underside of the bridge is crumbling, and rebar is exposed in many areas due to moisture. The support columns and footings are damaged at the base. The white painted finish is also cracking, and patches of discoloration show signs of vandalism (Figure 2-11). The pathway above is composed of concrete and is worn and cracking.[13] RII recommended that a structural engineer should further assess the condition of the bridge and provide applicable mitigation. The City engaged a structural assessment of all AMRP bridges[14]. The need for maintenance repairs to the Bridle Path Bridge was confirmed. Like the Roosevelt Portals, an immediate measure to prevent the bridge from further depreciation would be to use a corrosion inhibiting concrete penetrating sealer on the entire bridge. Other recommendations included repairs to the exposed areas on the underside of the bridge and to address the damaged areas of the columns and footings. Restoration of the bridge should be done in a historically appropriate manner.

[12] Realty Inspections Inc. May 2015. "Inspection Report of Ala Moana Beach Park Bridges". Pg 7.

[13] Ibid.

[14] Nagamine Okawa Engineers Inc. September 2016. "Ala Moana Regional Park Structural Assessment of Pedestrian Bridges".

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**Figure 2-11**
**BRIDLE BRIDGE EXISTING CONDITIONS**
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### 2.3.10 Magic Island (Ala Wai Boat Harbor) Shared-Use Path

The Magic Island shared-use paths provide a series of connected walking/running routes that are popular with recreational users. There seems to be a disconnect of the path, however, between where the Park ends and where the parking lot begins. Currently, there is a simple sidewalk along the parking lot. Large tour buses are often seen parked along this area. Many users gather along the Park's edge near the Ala Wai Boat Harbor side to picnic, watch the Friday evening fireworks from the Hilton Hawaiian Village, pole fishing, take photographs of Waikīkī and Diamond Head, or watch a sailboat race and canoe paddling race. Improvements to the path would benefit these users by expanding it along the parking lot as well.

The proposed plan to reconfigure the Magic Island parking lot will give the City the opportunity to improve and widen the path. The City proposes to separate the path from the parking lot by using landscaped improvements. Additional seating benches are proposed to enhance the use of the area by spectators. Much like the Makai Shared-Use Path, the design of this path will comply with the Complete Streets initiatives.

### 2.3.11 Canoe Hālau Crossing and Canoe Launch Ramp

The Canoe Hālau building was completed within the last 10 years and it is located near the Atkinson Drive entrance to the AMRP and the Ala Wai Boat Harbor. Canoe paddling was gaining popularity which prompted public need for a new canoe storage facility. It was built to support the local canoeing community that promoted "personal growth, character development, education, and awareness of Hawaiian cultural values."[15] The hālau was designed to house up to 30 six-man canoes with ancillary space to store related equipment.[16]

The canoe launch is located across Ala Moana Park Drive from the hālau. Currently, the canoe paddlers are crossing Ala Moana Park Drive with large canoes causing safety and traffic concerns. There is a speed bump and marked crosswalk in the road fronting the Canoe Hālau, but they are inadequate as a safe crossing for the paddlers. Options, such as relocating the Canoe Hālau to Magic Island, were considered to resolve the concerns, but were not considered feasible. Proposed improvements will increase visibility at the street crossing with a larger raised crosswalk and crossing signage (Figure 2-12). The raised crosswalk slows traffic and alerts drivers to expect crossing pedestrians. The raised crosswalk is proposed to be wider than normal so that the paddlers can cross safely with their canoe and without having to step on and off the street curbs.

The current launch ramp is proposed to be replaced with two longer concrete ramps for easier access to the water. Attendees from the public meetings reported that the current launch ramp is too short, steep, and slippery which made accessing the water

[15] Arthur Kimbal Thompson Architect, AIA. August 2004. *Ala Moana Regional Park Canoe Hālau Final Environmental Assessment*. Prepared for the City and County of Honolulu, Department of Design and Construction. Pg. 6

[16] Ibid

hazardous. Other proposed improvements could include additional landscaping along the boat harbor side of the road such as trees and seating areas. Such amenities could enhance an active area that hosts spectators of marine activities and fishermen.

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**Figure 2-12**
**CANOE LAUNCH AND ROAD CROSSING IMPROVEMENTS**

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Honolulu, Oahu, Hawaii

### 2.3.12 McCoy Pavilion and Banyan Court Renovations

McCoy Pavilion and Banyan Court was once known as the "Sports Pavilion and Banyan Court" before it was renovated and reopened in 1978.[17] The renovations were mostly done for the Sports Pavilion and they included: meeting rooms, a large auditorium to host events, dining hall, kitchen, dressing room, 10 restrooms, administrative offices and storage, 10 tennis courts, and open outdoor lanai areas.[18] The Sports Pavilion and Banyan Court was previously completed in 1937 and it was envisioned to be a recreation center that included: craft rooms, game rooms, and men and women locker rooms.[19] The Banyan Court had six planters with banyan trees and a few ponds. The Banyan Court was also designed by Harry Sims Bent, but did not follow the art deco theme found throughout the Park. The inspiration for the design came from a postcard of a Balinese garden.[20] Bent thought it was suitable to use the idea because the design would complement the materials and labor that was available to them.[21]

Today, the Banyan Court has four exceptional banyan trees and remains mostly intact from its original design. Overall conditions of the McCoy Pavilion and Banyan Court were assessed by Realty Inspections, Inc. and they rated the building as fair with some areas that needed immediate attention.[22] The Banyan Court and McCoy auditorium have the most damage due to the banyan tree roots growing under them. The foundation of the courtyard and auditorium is cracked and uneven causing hazardous walking conditions for users. Some of the auditorium doors are unable to open because of the uplifted surface.

In order to address the physical condition of the courtyard and auditorium, the City proposes to remove the four exceptional banyan trees in the courtyard. This removal will allow installation of a filtration system in the Banyan Court ponds and restore the areas damaged by tree roots. The filtration system will address water quality issues in the ponds. An update to the kitchen and dining facility is also proposed. The AMRP hosts community events and festivals at the pavilion and improvements are meant to sustain these events for the long-term. Plans to add a restaurant and more food vendors could be considered in the long-term future. Although a total overhaul of the pavilion's infrastructure will be needed to accomplish this vision. Planting of a replacement tree(s) will also be considered.

### 2.3.13 High Spot Improvements

Mention of the "High Spot" was recorded in earlier documents and was referred to as the "central terrace." This was part of the Richard and Thompson design and was

[17] Ibid. Weyeneth, Robert. 1987. Pg. 17

[18] Realty Inspections Inc. April 2015. "Inspection Report of Ala Moana Beach Park McCoy Pavilion". Pg 3-12

[19] Ibid. Weyeneth, Robert. 1987. Pg. 17

[20] Ibid. Weyeneth, Robert. 1987. Pg. 18

[21] Ibid.

[22] Ibid. Realty Inspections, Inc. May 2015. Pg. 3

completed by 1932. The "terrace" was described as "raised with a retaining wall."[23] Like the Roosevelt Portals, boulder concrete was the material used to create the walls and terraces. The retaining walls were also coated with stucco and painted white. The character of the boulder concrete construction is most reflective at the High Spot since it shows more of the crushed rocks in the finish.

The High Spot offers a larger picnicking area with closer beach access and an ocean view. Today, the High Spot is underutilized due to broken amenities (picnic benches) and access issues. The stairs leading to the raised area are narrow, uneven, and difficult to use for those using wheelchairs and strollers. The stairs may also cause potential issues for people bringing large equipment for picnicking. The trees around the High Spot are overgrown and would need maintenance. And like other historical features on the AMRP, the original retaining wall should be restored. The City proposes to bring people back to this area by adding an ADA-compliant ramp in place of the stairs and to restore the picnicking areas by adding more benches and sitting areas. A raised traffic calming table at the mauka to makai pedestrian crossing near the High Spot is also proposed for safer traffic circulation. Other potential uses for High Spot could be programming such as musical and artistic performances.

### 2.3.14 Sand Replenishment and Long-Term Beach Nourishment

The beach was added to the Park in 1955 after 55,000 cubic yards of sand was brought in from west side of Oʻahu to fill in a mile-long stretch from Magic Island to Kewalo Basin.[24] It instantly became a popular attraction and is still the most popular attraction today. As mentioned in the Section 2.1, the beach requires replenishment since wave action and variable weather erodes the sand into the swim channel. The dredging of the boat channel in 1928 prevented the beach from replenishing the sand naturally. Beach nourishment treatment usually lasts about 20 years before another treatment is required. Ala Moana Beach is due for nourishment and park staff have been undertaking smaller projects to mitigate the erosion in the meantime such as removing the coral rocks from the shoreline and a sand pushing project.

Based on results from Sea Engineering's Coastal Assessment and Design Report, sand for beach nourishment could come from four different locations: Reef Runway (inner section), Diamond Head, Hilton, and Waikīkī Maintenance area. The volume of sand to nourish the beach varies from a 20- or 35-year estimated life before the shoreline returns to current conditions.

### 2.3.15 Playground

~~The immediate goals of the master plan are to address the condition of the existing facilities of the Park before adding larger scale amenities.~~ Plans for the playground are currently being developed ~~considered~~ with a volunteer group ~~potential sponsor~~. The volunteer group is also sponsoring the playground through donated funds. The

[23] Ibid, Weyeneth, Robert. 1987. Pg. 10

[24] Ibid, Weyeneth, Robert. 1987. Pg. 32

playground is proposed between the Diamond Head concession building and the Hawaiian Pond. This area is currently not an active area of the Park. A recent rendering shows miniature zip lines, slides, swings, and a splash pad as the main amenities of the playground (Figure 2-13). Age-appropriate play equipment is also proposed. A stakeholder meeting that included children from schools on O‘ahu was conducted to determine the new playground amenities. The playground’s capacity would hold more than 500 children. The proposed playground is designed like no other playground in the public parks system because it features access and appropriate play equipment for children with disabilities. Safety features would include a perimeter fence, security cameras, and safety lighting.

Overall community feedback for the playground was considered positive during the scoping meetings.

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**Figure 2-13**
**PROPOSED PLAYGROUND**
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### 2.3.16 Relocate Maintenance Base Yard

Relocation of the maintenance base yard to a more central location in the AMRP is considered, but will be a long-term project. The details of the relocation have not been designed or determined.

### 2.3.17 Multiuse Facility and Lawn Bowling Building Improvements

The Lawn Bowling facility was installed during the original establishment of the Park's recreational amenities in the late 1930s. It was another design by Harry Sims Bent. The area is tucked away behind large banyan trees and a surrounding a wall.

A recent assessment from the City staff found the lawn bowling building in need of structural repairs and upgrades for building, electrical, mechanical, and accessibility requirements.

There are no immediate plans for the multiuse facility. Additional recreational games such as shuffle board, bocce, and Portuguese horseshoe are possible suggestions near the lawn bowling area to provide more options and to attract more park users to the area. Renovations adjacent to the site such as expanding the Keyhole parking and improvements to McCoy Pavilion could also indirectly attract more awareness to an underutilized area.

### 2.3.18 Relocate Ocean Safety Office

Relocation of the Ocean Safety headquarters has been discussed and brought to the attention of the landowner during the outreach meetings, but it is considered a long-term project. The details of the relocation have not been designed or determined.

## 2.4 SAND REPLENISHMENT ALTERNATIVES

A report documenting the source and characteristics of the sand required to nourish the beach at AMRP was prepared by Sea Engineering, Inc. (SEI). SEI identified several locations on the south shore that would be compatible for sand nourishment of AMRP. They also identified several viable options for beach nourishment as follows:

- Option 1 included widening the beach in the central area to 60 ft., measured from the beach crest to the backshore seawall to straighten the shoreline. The dry portion of the beach would increase up to 45 ft. wide and the mean sea level (MSL) would move seaward by up to 52 ft. The elevation of the dry sand beach will increase to +6 ft. MSL, which is the approximate height of the beach wall and where the beach begins. On the Diamond Head and ‘Ewa areas the sand would also be placed at +6 and inshore of the MSL line and would taper to the existing beach. The foreshore slope would be 1V:6H, which matches the slope of the existing beach. The entire beach would increase to about +6 ft. MSL, which is the approximately elevation of the backshore wall crest (see Figure 2-13~~Figure 2-14~~). The total fill volume in Option 1 is approximately 37,600 cubic yards of sand.

- Option 2 would consist of beach nourishment to widen the beach in the central area to match the 1957 shoreline location. A review of historical images suggests that the shoreline in 1957 was the widest the beach has been. The dry beach at the central area would increase in width by up to 78 ft. MSL and move seaward by up to 85 ft. Again, the dry beach would have an elevation of approximately +6 ft. MSL and tapered into the existing beach face. The foreshore slope would also be 1V:6H, which matches the existing slope. This option would require approximately 50,600 cubic yards of sand for beach nourishment. The majority of the fill would be placed in the central and Diamond Head side of beach (see Figure 2-~~Figure 2-15~~).

- Option 3 has the greatest volume of sand for beach nourishment at approximately 65,700 cubic yards. This option widens the beach in both the ‘Ewa and Central areas to the 1957 shoreline location and along the Magic Island area, which is the widest the beach has been historically. Most of the sand would be placed in the central and Diamond Head areas. The dry beach in the central area would be about 78 ft. wide from the beach wall and +6 ft. MSL with a slope of 1V:6H. On the Diamond Head side of the beach would be nourished above the MSL contour and extend to the Magic Island seawall (see Figure 2-~~Figure 2-16~~).

In addition to the Options described above, a 77,000-sq. ft. footprint could be added on the Diamond Head side of the beach to provide for future sand pushing that may be required for the central beach area. Approximately 2,200 cubic yards of sand could be placed over the 77,000-sq. ft. area which would increase the height from +6 ft. MSL to approximately 7 ft. MSL for a 1-ft. increase in elevation (see Figure 2-~~Figure 2-17~~). If more "reserve" sand is needed another 2,200 cubic yards could be added to increase the elevation to approximately 8 ft. Erosion is expected to continue with sea level rise, so this could be an option to consider, since the erosion rate of 2.4 ft. per year has occurred

It is anticipated that Option 1 would take approximately 20 years before it returns to the current condition. Nourishment from Options 2 and 3 could take approximately 35 years before the shoreline erodes to current conditions. However, storm impacts from hurricanes or Kona storms could result in a more rapid erosion of the shoreline. The State forecast for sea level rise could be as much as 3.2 ft. by the year 2100. In order to maintain the usability of the beach, regular maintenance is recommended. A reserve of sand on the Diamond Head end of the Park could be used in a similar manner as the 2016 sand pushing project

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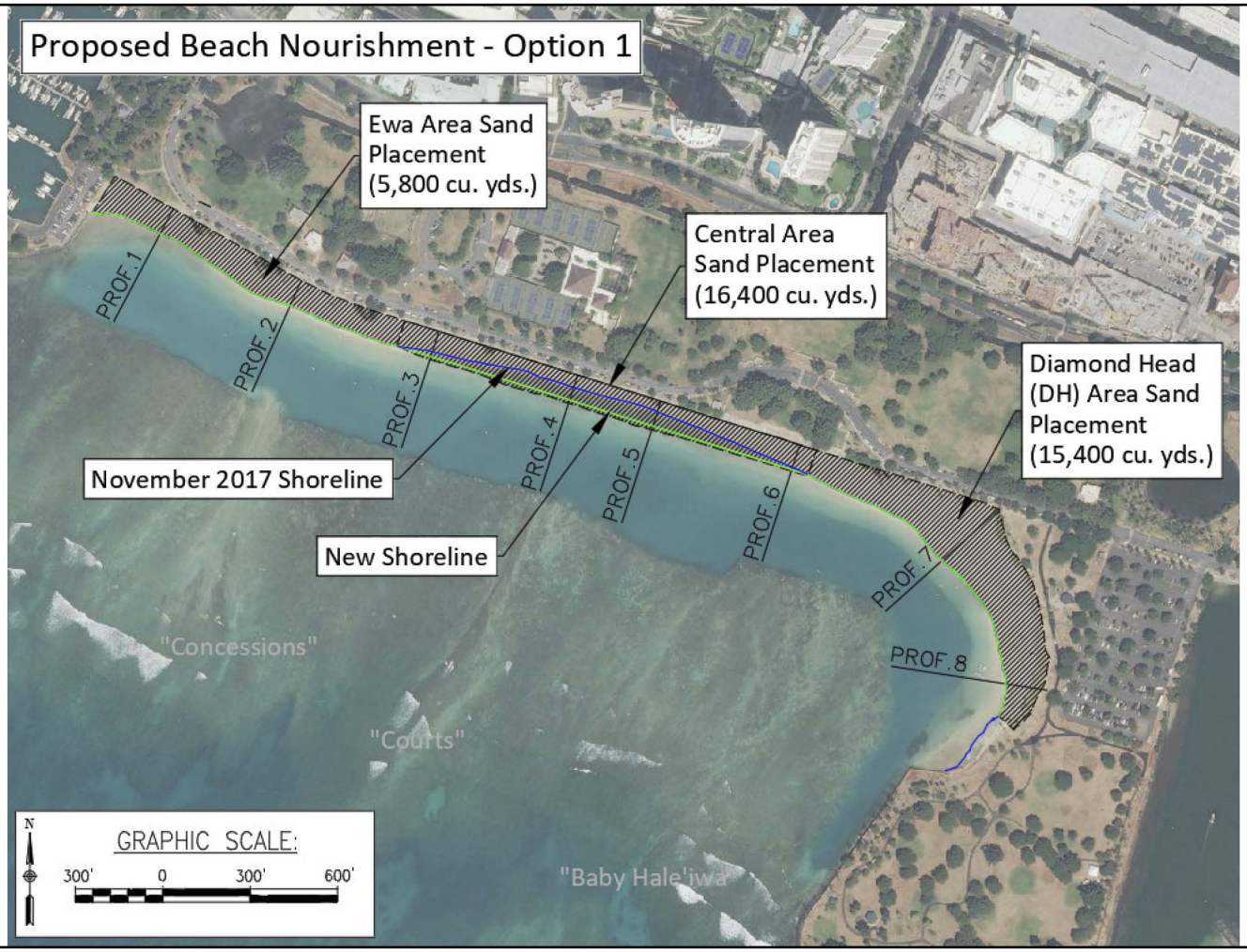


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Sea Engineering, Inc.

**Figure 2-14**
**PROPOSED BEACH NOURISHMENT–OPTION 1**
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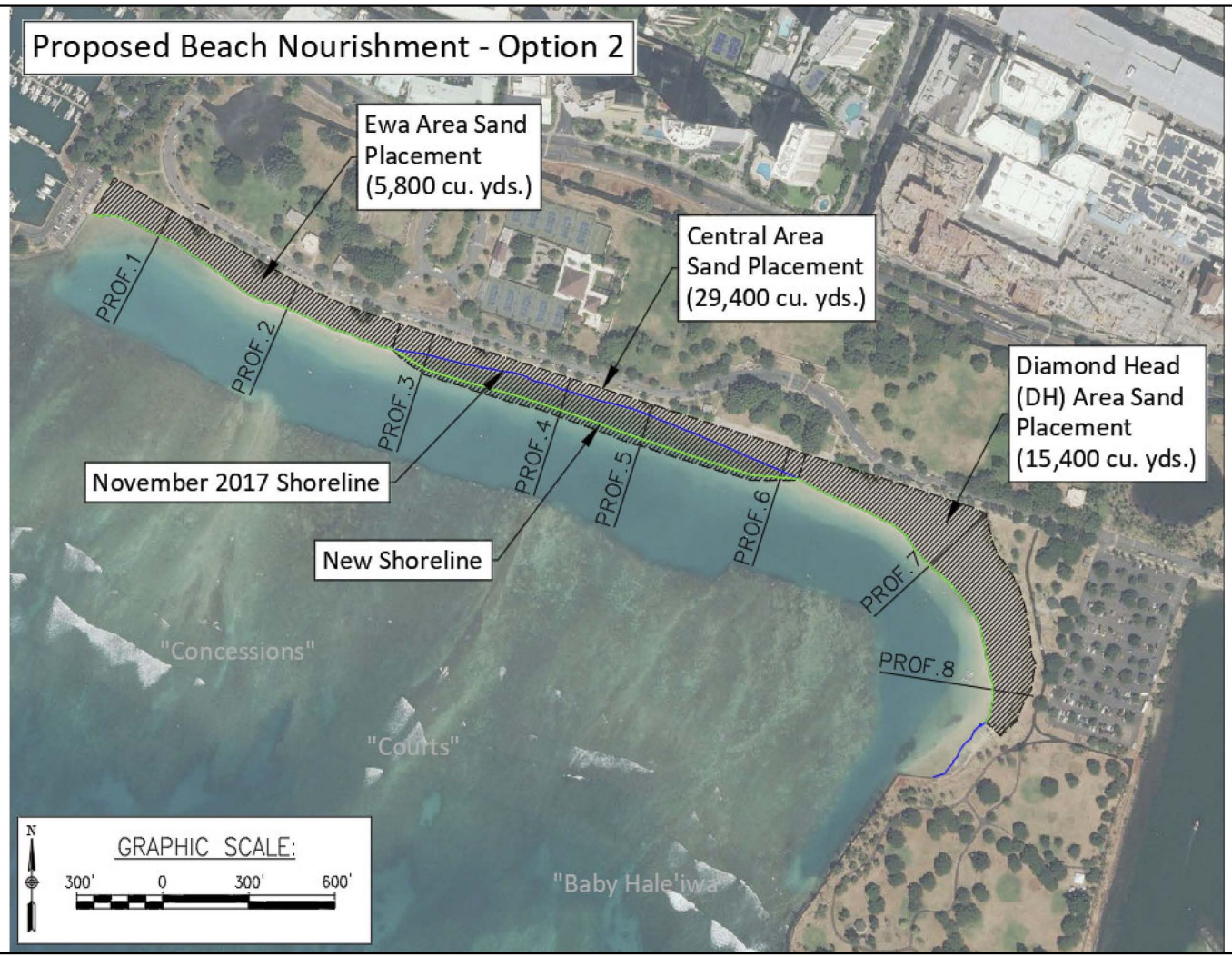


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**Figure 2-15**
**PROPOSED BEACH NOURISHMENT–OPTION 2**
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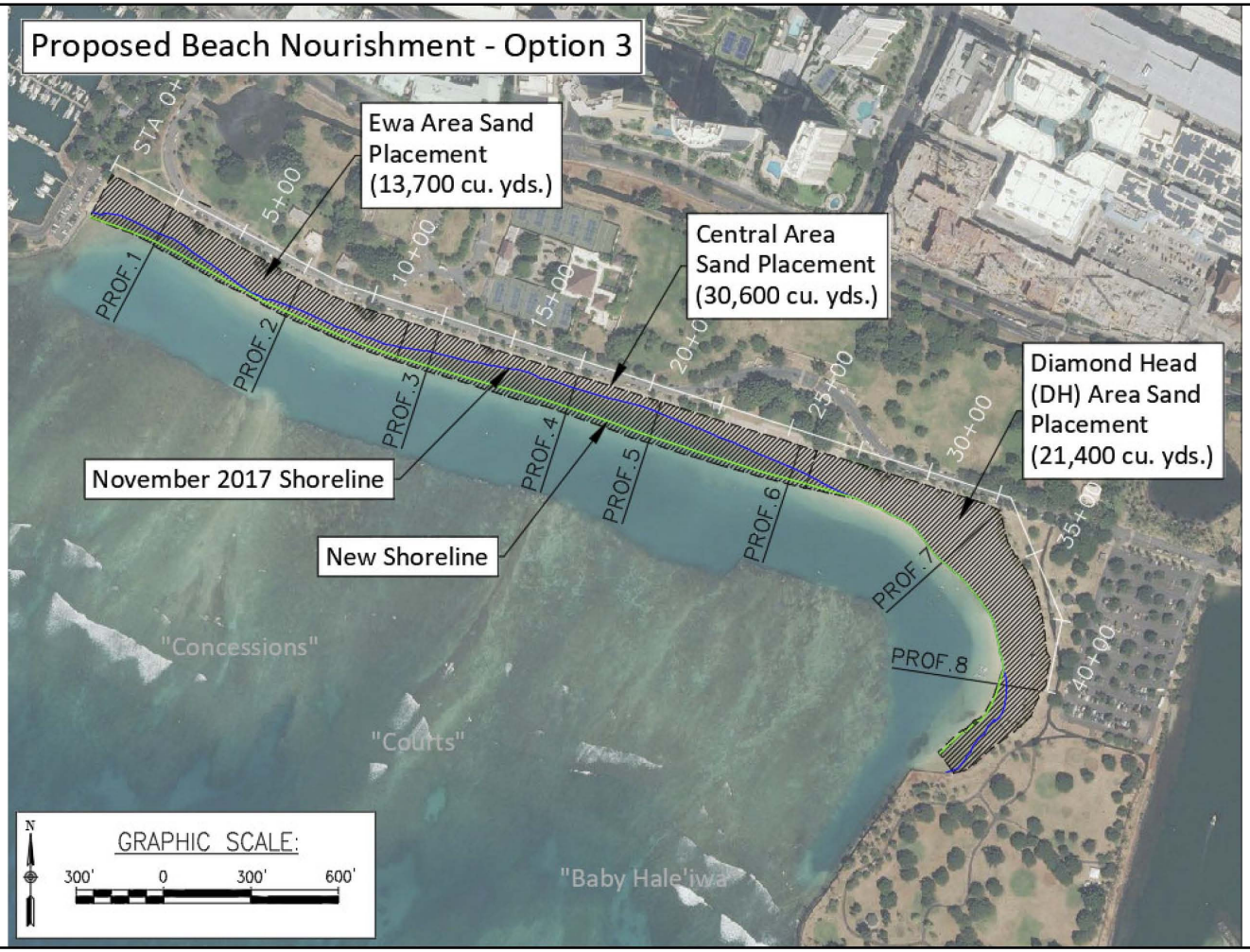


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**Figure 2-16**
**PROPOSED BEACH NOURISHMENT–OPTION 3**
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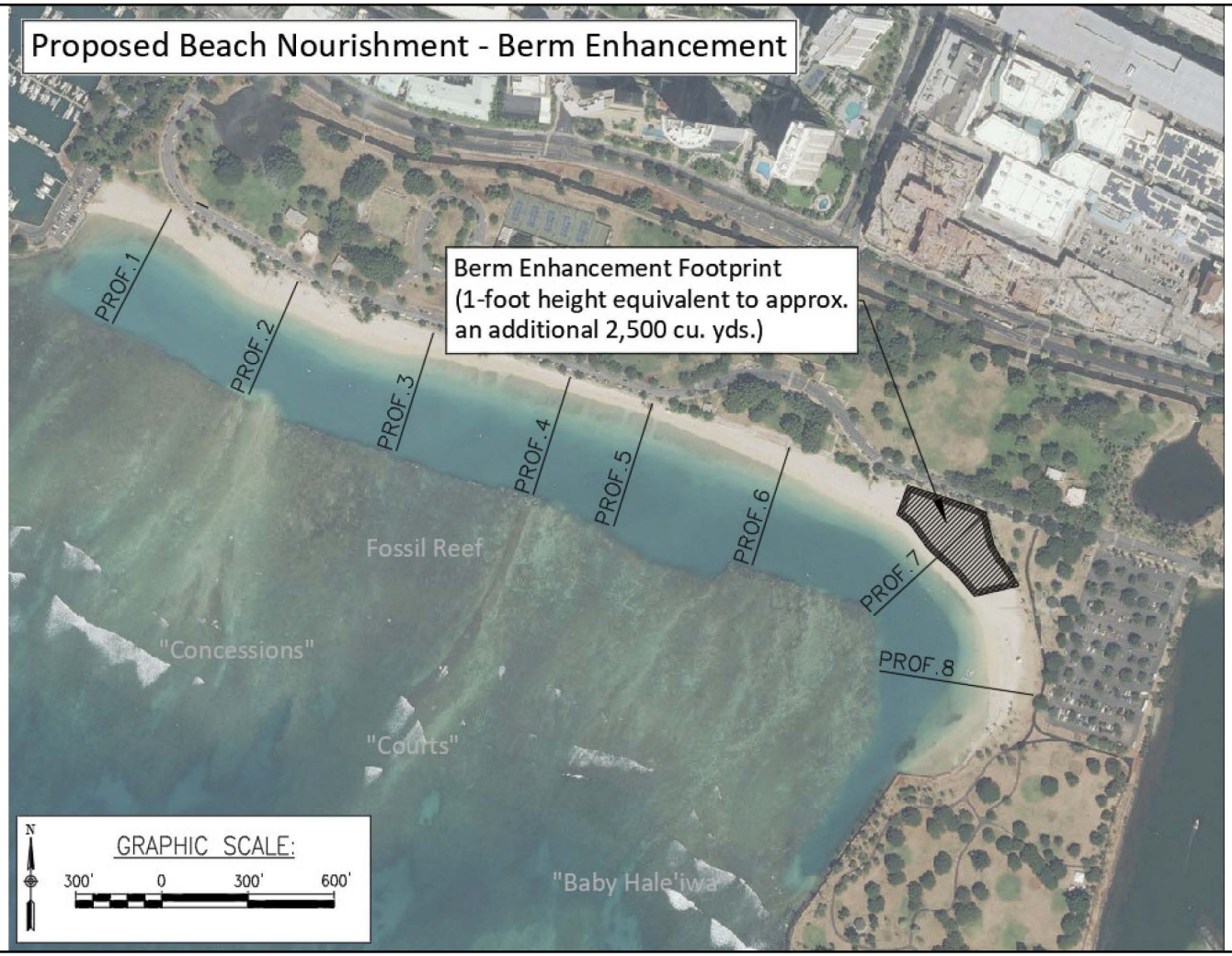


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**Figure 2-17**
**PROPOSED BEACH NOURISHMENT–BERM ENHANCEMENT**
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### 2.4.1 Construction Activities

There are several methods for recovering the sand from offshore locations. The sand could be pumped to the shore or dredged using a clamshell excavator and loading the sand onto a barge. Each location or recovery method have different regulatory requirements that also need be considered before a location is selected. The following methods could be used to recover the sand:

- Clamshell Dredging – This recovery method will use an excavator that has a clamshell bucket. There are various sizes ranging from one cubic yard to 20 cubic yards. The bucket could also be sealed or open. The sealed bucket would create less turbidity in the ocean, but will contain a lot of water that would need to be disposed of properly. The clamshell bucket would lift the sand out of the water and dispense the sand onto a waiting barge, such as a hopper barge. Once the barge reaches capacity, the barge will go to a dock to offload the sand where it would be transported by truck to the AMRP beach. Alternatively, the barge could be taken offshore, closer to the site, then utilizing a hydraulic or slurry pump deposit the sand directly onto the beach.

- Submersible Slurry Pump – This method lowers the pumps to just above the sand bottom via hydraulic or electric pumps. The barge will require a minimum four-point mooring array to stabilize the barge. A booster pump may also be required depending on the distance to the shoreline. One of the benefits of the submersible pump is the ability to reach into tight spaces. However, this method is very labor intensive and dewatering the sand is also an issue. Given the distant locations of the available sand that could be recovered, pumping the sand to AMRP will not be feasible.

## 2.5 PRELIMINARY SCHEDULE

Table 2-4 below shows a list of projects that are considered for construction in the short-term and long-term future. Short-term projects could be approved for bidding as soon as the 4th quarter of 2019.

**Table 2-4: Preliminary Project Schedule**

| Short-Term Projects (1-5 Years) | Long-Term Projects (5-10 Years) |
|---|---|
| Pi'ikoi Street and Queen Street pedestrian entrance expansions and partial drainage canal cover | Sand replenishment and Beach Nourishment |
| Widening the shared-use path along the makai side of Ala Moana Park Drive | Relocate Maintenance Base Yard |
| Widening the shared-use path along the Ala Wai Small Boat Harbor | Relocate Ocean Safety Headquarters |
| Improve the existing canoe launch ramp and crossing from the Canoe Hālau | |
| Reconfigure parking on Ala Moana Park Drive and all parking lots | |
| Improve the pond edges and paths around the Hawaiian Pond and Japanese Pond | |
| Renovate McCoy Pavilion and the banyan courtyard | |
| Improve "High Spot" terrace for ADA access, repair pergola, and widen the shared-use paths on both sides | |
| Repair drainage canal walls, Repair Bridle Bridge, Repair Roosevelt Portals | |
| Add a dog park near Kewalo Basin | |
| Build a playground | |
| Create a multiuse facility near the Lawn Bowling area and Lawn Bowling Building improvements | |

## 2.6 PRELIMINARY COST ESTIMATES

The proposed improvements will be paid for by the City's capital improvement project funds. The estimated construction costs for the project is approximately $144M in 2016 dollars.

## 2.7 ALTERNATIVES ANALYSIS

The process used to determine the reasonable range of alternatives evaluated in this EIS, described in Section 2.1 and 2.2 was based on screening the alternatives with the project's purpose, need, and objectives. Environmental issues and community concerns were also considered. The Proposed Action and Sand Replenishment Alternative met the purpose, need, and objectives, as stated in Chapter 1. The alternatives that were screened out and not further considered for evaluation in this EIS include: the no action, the restore, and the evolve alternative.

### 2.7.1 No Action Alternative

Under this alternative, the Proposed Action would not occur. The City would continue to perform routine maintenance to the Park's grounds and facilities. The project area would continue to operate with existing facilities at their existing locations. Future increases in vehicular and foot traffic volume from population growth would create stress on facilities, grounds, and aging infrastructure and park maintenance would suffer. This intensified use could cause delays for parking spaces and prolonged closure of the Park's amenities. A modest increase in routine maintenance may be possible, but not sufficient to meet future needs.

Environmentally on land, no improvement of the project area would result in no changes to the Park's physical and biological conditions and to the nearby waters. Existing land uses within the Park would continue to operate as they do today without providing enhancements to assist with park maintenance.

No Action for the beach would result in the central section of the beach continuing to erode up to three feet per year until the fossil reef flat and other debris buried beneath the sand become exposed back to the wall. This area would likely be submerged at all tide levels and there would no longer be dry beach for lateral access. The inundation and constant wave action at the backshore wall are expected to eventually cause deterioration and undermining of the wall. This condition has been evident at the Magic Island seawall and at the wall near the canoe launch ramp. Without beach nourishment, the City may need to shut down the central section of the beach should the wall collapse due to undermining. The rest of the sandy shoreline will likely erode and eventually disappear. The shared-use path and Ala Moana Park Drive will have reduced defense against coastal flooding and could be damaged along with existing utility infrastructure.

Environmentally, no beach nourishment would result in changes to the beach's physical conditions. Existing land uses on the property would be affected in the long-term if the City needs to permanently shut down sections of the beach. As already seen today, beach users would crowd to other sandy areas of the beach which puts more stress on those diminishing resources.

Under the No Action Alternative, population growth and demand for recreational space would not change. Therefore, the No Action Alternative was not considered further because it would not meet the need for the project, which is to provide recreational resources and access for residents and visitors.

~~Under this alternative, the Proposed Action would not occur. The City would continue to perform routine maintenance to the park's grounds and facilities. The project area would continue to operate with existing facilities at their existing locations. Future increases in vehicular and foot traffic volume from population growth would create stress on facilities, grounds, and infrastructure. This intensified use could cause delays for parking spaces and prolonged closure of the park's amenities. A modest increase in routine maintenance may be possible, but not sufficient to meet future needs.~~

~~Environmentally, no improvement of the project area would result in no changes to the Park's physical and biological conditions and to the nearby waters. Existing land uses on the property would continue to operate as they do today.~~

~~Under the No Action Alternative, population growth and demand for recreational space would not change. Hence, evaluation of the No Action Alternative would involve considering the effects of trying to meet anticipated demands without the Proposed Action. Proceeding with the no action alternative would not meet the purpose and need for the project.~~

### 2.7.2 Alternative: Restore

The restore alternative was intended to maintain the Park with a more aggressive approach to bring the Park quickly up to standards by proposing repairs to the grounds and facilities. As mentioned in Section 2.1, the Mayor announced a proposal for a "9-Point Community Action Plan" over the next three years. Table 2-1 lists the nine points and the current progress of those actions. Some of the minor improvements listed in the plan have been completed or are currently under construction.

The major improvements proposed in the master plan restore alternative are a remediation program for the beach erosion, parking management, drainage canal restoration, widening the pedestrian promenades within the Park, and public accessibility to McCoy Pavilion.

The restore alternative is intended to improve the existing conditions without any additional facilities or changes. The repairs to the grounds and facilities will meet short-terms needs, but may not sustain the longevity of the Park and ensure its preservation. For these reasons, the restore alternative was not considered further.

### 2.7.3 Alternative: Enhance

The enhance alternative includes all proposed improvements in the restore alternative with some changes to the existing conditions. This is the preferred alternative that was selected, and the projects are identified in Section 2.3.

### 2.7.4 Alternative: Evolve

The evolve alternative includes all proposed improvements in the restore and enhance alternatives and also conceptualizes a large-scale modernization of the Park's facilities. These additional improvements included:

- A large elevated curving promenade with steps and platforms down to the water's edge on the Ala Wai Boat Harbor side of Magic Island.
- Modern sunbathing seating along the wall that separates the beach from the Ala Moana Park Drive.

- A multi-story parking structure where the outer shell would be designed to camouflage the concrete walls
- Decks and viewing areas over the ponds with access to the pond edge in some areas and wetland vegetation in other areas.
- Relocating the Canoe Hālau to Magic Island near the canoe launch ramp.
- Placing modern art features throughout the park.

These grandiose improvements were viewed as impacting the historic nature of the existing Park. The art deco character of the Bridle Path Bridge, the Roosevelt portals and coral walls would not blend well with the modernized park features described above. Modernization of the Park could attract more visitors and would not preserve the Park's existing character. The community has expressed strong opinions to have the Park remain as a local recreational resource. For these reasons, the evolve alternative was not considered further.

## 2.8 MAJOR PERMITS AND APPROVALS FOR THE PROPOSED ACTION

Permits and approvals required for all segments of work are listed in **Table 2-5,** Permits, Required Approvals and Reviews. Required permits and approvals apply to the construction phase, rather than operation of the proposed improvements.

## Table 2-5: Permits, Required Approvals and Reviews

| Permit or Approval | Approving Agency | Basis |
|---|---|---|
| **Federal** | | |
| Department of Army Permit | U.S. Army Corps of Engineers (USACE) | Project construction in or above the waters of the U.S. |
| Section 10 of the Rivers and Harbors Act, Section 404 of the Clean Water Act<br>Bridge and Causeway Permits | USACE<br>U.S. Coast Guard | Project construction in or above the waters of the U.S. |
| Endangered Species Act (ESA), Section 7 consultation and U.S. Fish and Wildlife Service (USFWS) | National Marine Fisheries Service (NMFS) | Beach Nourishment activities |
| Essential Fish Habitat (EFH) consultation | NMFS | Beach Nourishment activities |
| **State of Hawaii** | | |
| Compliance Review | State Historic Preservation Division (SHPD) | Chapter 6E, HRS |
| Environmental Assessment | DOH | Use of public lands and funds, Chapter 343, HRS |
| Community Noise Control Permit | DOH | Exceeding noise standards during construction |
| Community Noise Control Permit Variance | DOH | Extend noise permit hours |
| Clean Water Act, Section 401 Water Quality Certification (WQC) | DOH | Compliance of federal permits with state water quality standards |
| Coastal Zone Management (CZM) Certification | State Department of Business, Economic Development and Tourism (DBEDT) | Compliance of federal permits affecting navigable waters or waters of the U.S. |
| Clean Water Act, Section 402, NPDES NOI Form C General Permit | DOH | Discharges associated with construction activities that disturb more than one acre |
| Clean Water Act, Section 402<br>NPDES NOI Form G General Permit | DOH | Discharges associated with construction activity dewatering |
| Special Management Area (SMA) | State DBEDT, Office of Planning | Project activities in the SMA |
| Conservation District Use Permit | State Department of Land and Natural Resources (DLNR), Office of Conservation and Coastal Lands (OCCL) | Project activities in the Conservation District |
| **City and County of Honolulu** | | |
| SMA | City Department of Planning and Permitting (DPP) | Project Activities in the SMA |

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# CHAPTER 3

Built Environment

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# CHAPTER 3
# BUILT ENVIRONMENT

Chapters 3 and 4 describe the affected environment (existing/baseline conditions) at the Ala Moana Regional Park and Magic Island,[1] disclose any impacts of the Proposed Action, and propose mitigation measures if needed. Chapter 3 addresses resources/issues in the built environment (listed below), while Chapter 4 addresses issues/resources in the natural environment. The built environment includes:

- Land Use
- Land Ownership
- Public Health and Safety
- Noise
- Circulation, Traffic, and Parking
- Infrastructure
- Public Services and Facilities
- Visual and Aesthetic Resources
- Recreation
- Socio-Economic Setting

## 3.1 LAND USE

This section describes existing land uses at the AMRP and Magic Island as well as in the surrounding areas, and then analyzes the project's land use compatibility with those areas. The extent of the impact is first determined by whether the proposed activities are allowable within the designated State land use district or City zoning district. The analysis then determines the proximity of the proposed activities to other land uses in the immediate vicinity.

[1] For purposes of this EIS, identification of existing conditions establishes the baseline in the environment from which changes in the affected area caused by the Proposed Action are measured.

### 3.1.1 Existing Land Use

The AMRP and Magic Island are owned and managed by the City's Parks and Recreation Department (DPR). The Park lies on the southeast side of the island on Oʻahu and along Ala Moana Boulevard, a major thoroughfare into Waikīkī. The Park is a public recreational park used for various outdoor and community purposes. The Park is equipped with six comfort stations, showers, a bowling lawn, ten tennis courts, exercise apparatus area, ocean safety services and headquarters, canoe storage, beach access, two concessions, pedestrian pathways, and free parking. See Figure 3-1a and Figure 3-1b for examples of the amenities at the Park and their locations. Park users can use the open spaces on the lawn for parties, gatherings and other activities allowed by permits. The beach area of the AMRP is available for sunbathing and water activities. The Park also hosts annual events like the Fourth of July fireworks show, the Lantern Floating Festival, and Dragon Boat Racing. An overall existing land use map is shown in Figure 3-2.

The entire project area is within the Urban State Land Use District (Figure 3-3) and the City P-2, General Preservation District zone (Figure 3-4). The intent of P-2 "…is to preserve and manage major open space and recreation lands and lands of scenic and other natural resource value. It is also the intent that lands designated urban by the state, but well-suited to the functions of providing visual relief and contrast to the city's built environment or serving as outdoor space for the public's use and enjoyment be zoned P-2 general preservation district. Areas unsuitable for other uses because of topographical considerations related to public health, safety and welfare concerns shall also be placed in this district."[2] Permitted structures allowed for development in a P-2 zone are listed in Table 21-3, Master Use Table of the Land Use Ordinance, Chapter 21 Article 3, Establishment of Zoning Districts and Zoning District Regulations.

The project would need to conform with the development standards of the P-2 zone or the developer would need to seek a permit or waiver from the City's Department of Planning and Permitting (DPP). The development standard for the P-2 zone is[3]:

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

(2) 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 above 15 feet.

[2] Land Use Ordinance [LUO]. Sec. 21-3.40 Preservation districts--Purpose and intent.

[3] Ibid. Sec. 21-3.40-1 Preservation uses and development standards.

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**Figure 3-1a**
**PARK AMENITIES PICTURES WITH MAP**
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**Figure 3-1b**
**PARK AMENITIES PICTURES WITH MAP**
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Honolulu, Oahu, Hawaii
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**Figure 3-2**
**EXISTING LAND USE MAP**
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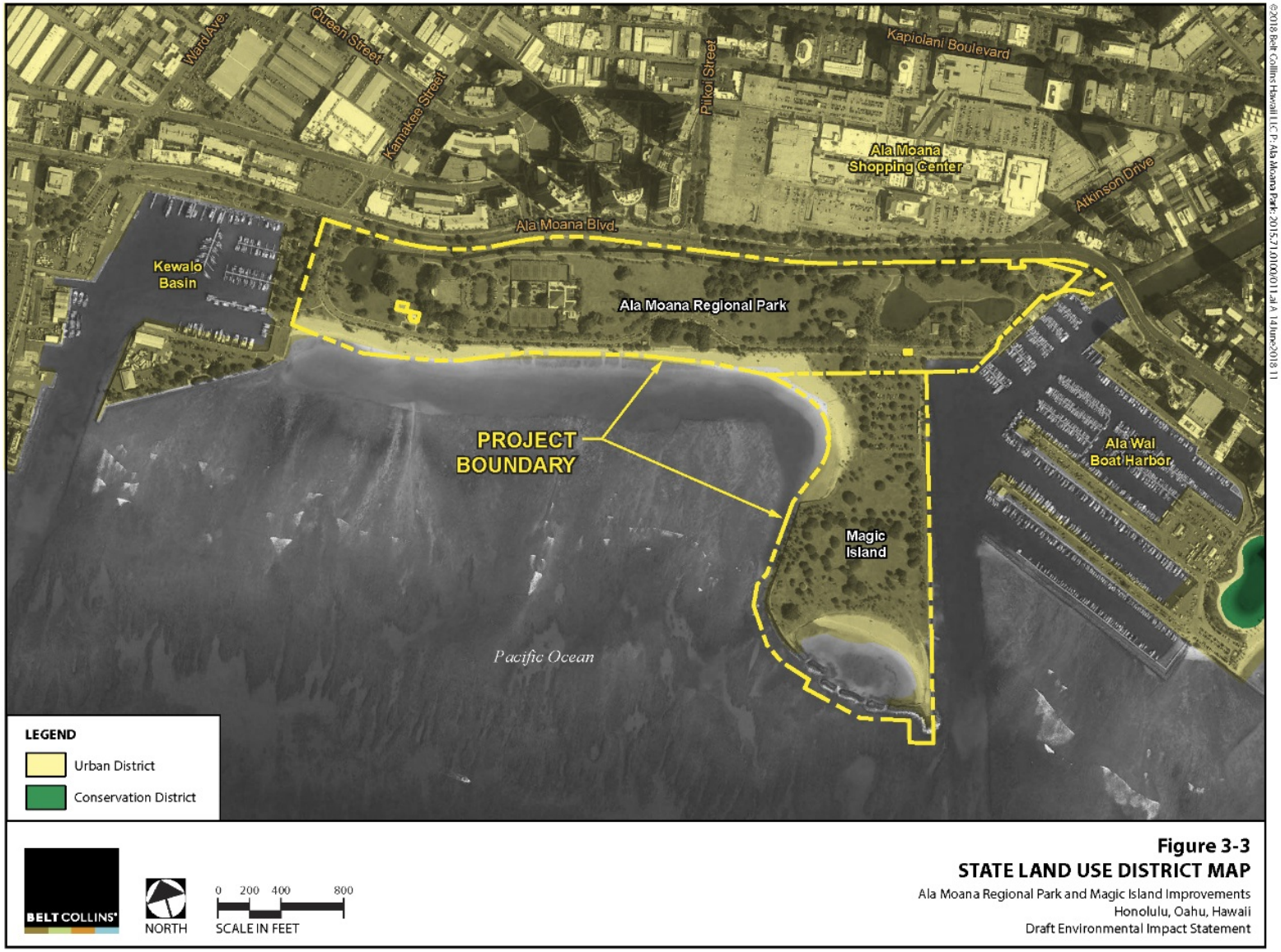


**Figure 3-3**
**STATE LAND USE DISTRICT MAP**
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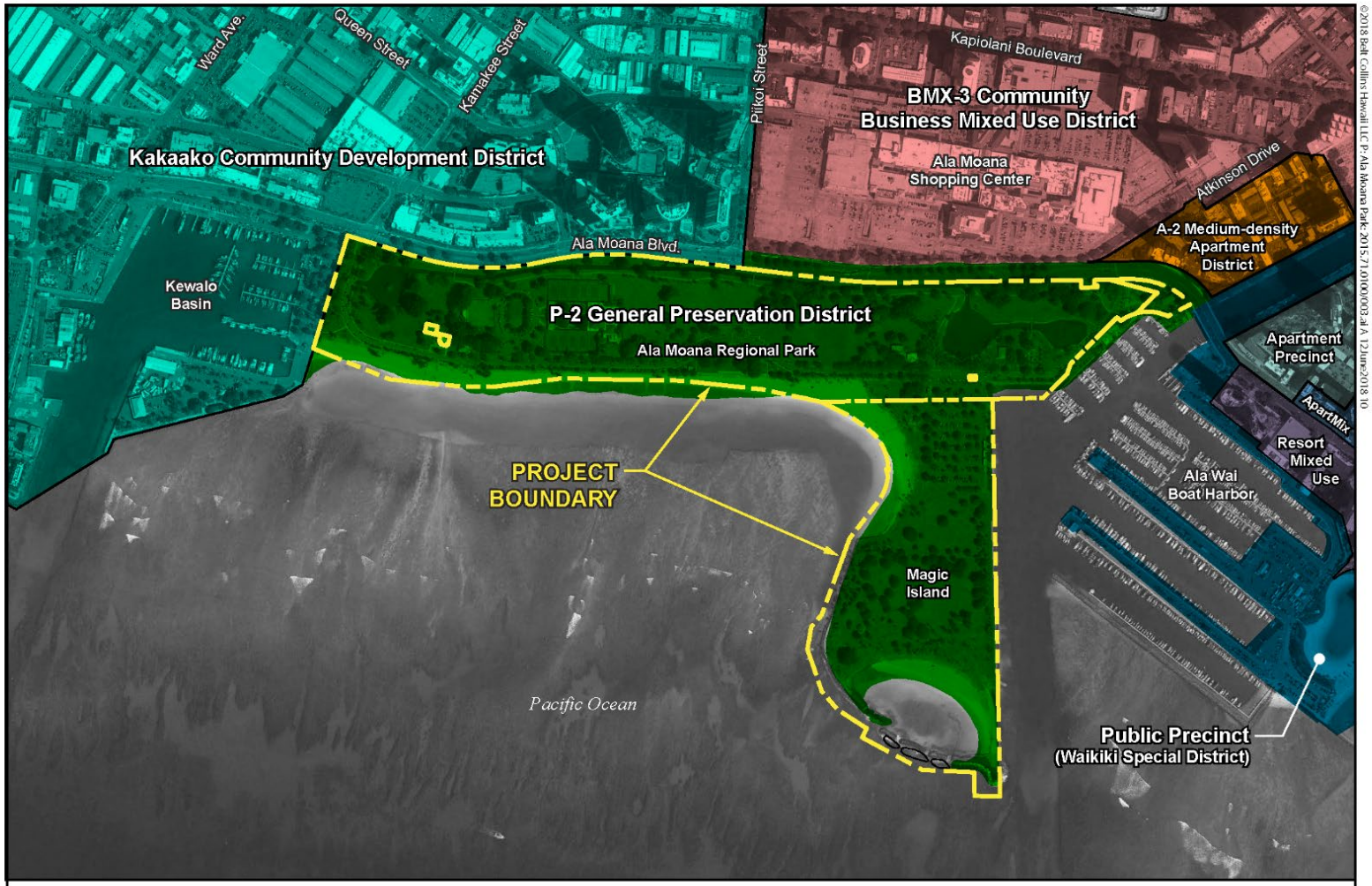


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**Figure 3-4**
**ZONING MAP**
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### 3.1.2 Surrounding Land Uses

Land uses surrounding the project area include: The Ala Moana Shopping Center, Ward Centre, high-rise residential condominiums, rental apartments, and single-family dwellings to the north; Kewalo Basin to the west; Ala Wai Canal to the northeast; Ala Wai Boat Harbor and Waikīkī to the east; and the Pacific Ocean to the south.

The main residential areas surrounding the project area are Waikīkī, Kakaʻako, and, Ala Moana neighborhoods. Waikīkī includes residential condominiums and apartment buildings, hotels, transient residences, visitor-oriented commercial establishments, and recreational and public facilities. The Waikīkī areas surrounding the project area are zoned as A-2, Medium-Density Apartment District, Apartment Precinct, Apartment Mix, Resort Mixed Use, and the Waikīkī Special District (Figure 3-5). Waikīkī serves primarily as a visitor destination in Hawaiʻi bringing in millions of visitors each year. According to the DBEDT 2016 Hawaiʻi State Data Book, Waikīkī has a residential population of 20,095 in 2010.[4] However, the de facto[5] population increased to 96, 859[6] when including visitors.

The Ala Moana/Kakaʻako areas surrounding the project area are zoned as BMX-3, Community Business Mixed Use District and the Kakaʻako Community Development District (Figure 3-6). Within the BMX-3 zone are the Ala Moana Shopping Center, commercial establishments, residential condominiums, and apartment buildings. Ala Moana Boulevard serves as a major thoroughfare through Kakaʻako, Ala Moana, and is one of the main access roads to Waikīkī. Residential space is growing rapidly in this area with the residential addition to the Ala Moana Shopping Center and residential developments on the Howard Hughes Ward Villages properties. Further west along Ala Moana Boulevard and within Kakaʻako more residential developments on the Kamehameha School properties will replace most of the commercial establishments. The resident population of the Kakaʻako/Ala Moana area in 2010 was 19,014.[7]This number is expected to increase gradually over the next ten years.

The Ala Wai Boat Harbor is approximately 120 acres and identified as TMK 2-3-37:12. It borders the project area on the east. The State Department of Transportation (DOT) Harbors Division has ownership of the harbor. The harbor is known as one of the four main docking facilities in Honolulu. It is used primarily for small recreational vessels and the largest of its kind in the State. The harbor includes both privately-owned yacht

[4] State Department of Business, Economic Development and Tourism [DBEDT]. *2016 Hawaiʻi State Data Book,* Table 1.15. Posted at http://files.hawaii.gov/dbedt/economic/databook/2016-individual/01/011516.pdf.

[5] The de facto population is defined as the number of persons physically present in an area, regardless of military status or usual place of residence. It includes visitors present but excludes residents temporarily absent, both calculated as an average daily census.

[6] Ibid. State Department of Business, Economic Development and Tourism [DBEDT]. 2015 Hawaiʻi State Data Book, Table 1.20.

[7] Ibid. State Department of Business, Economic Development and Tourism [DBEDT]. *2015 Hawaiʻi State Data Book,* Table 1.15.

clubs like the Waikīkī Yacht Club and the Hawai'i Yacht Club, and public mooring facilities operated by the State. The total capacity of the harbor is about 1,000 vessels.

Kewalo Basin is located to the west of the project area. It is a commercial and recreational boat harbor that was first developed in the 1920s and later expanded in the 1950s. It is approximately 35 acres and identified by TMK: 2-1-058-132. The State Hawai'i Community Development Authority (HCDA) has had jurisdiction and management of Kewalo Basin since 2009. Total capacity of the harbor is 143 vessels; however, it should be noted that the slips vary in size due to the harbor's commercial and recreational uses. Tenants at the harbor are a mix of charter tour vessels, commercial fishing vessels, research vessels, and private vessels.

#### 3.1.2.1 *Airport*

The Office of Planning provided an advisory (TAM – 2016-1, Issued 08-01-2016)[8] that examines FAA Order 5190.6B[2] and its potential impact to land use near the airports. The project area is approximately 3.75 miles from a proposed runway extension at the Daniel K. Inouye Airport. Per the advisory memorandum, for any project within five miles from an airport, the Contractor hired by the City would need to be aware of the advisory and apply the subsequent responsibilities. Specifically, the State DOT[9] outlined the following as possible precautions:

- 2-1. General. The wildlife attracted to the airport environment vary considerably, depending on several factors, including land-use practices on or near the airport. Other hazards that attract wildlife include glint/glare hazards, certain street and property lighting designs, and aerial obstruction hazards, all of which threaten aviation safety. In addition to the specific considerations outlined below, airport operators should refer to Wildlife Hazard Management at Airports, Glint/Glare, and Obstruction guidance materials prepared by the FAA.

- 4-3. Other Land-Use Practice Changes. As a matter of policy, the FAA encourages operators of public-use airports who become aware of proposed land use practice changes that may attract hazardous wildlife within 5 statute miles of their airports, to include glint/glare hazards and aerial obstructions to promptly notify the FAA. The FAA also encourages proponents of such land use changes to notify the FAA as early in the planning process as possible. Advanced notice affords the FAA an opportunity (1) to evaluate the effect of a particular land-use change on aviation safety and (2) to support efforts by the

[8] State of Hawaii. Office of Planning. August 01, 2016. State of Hawai'i Office of Planning Technical Assistance Memorandum (TAM-2016-1). http://files.hawaii.gov/dbedt/op/docs/TAM-FAA-DOT-Airports_08-01-2016.pdf

[9] Letter from Jade Butay (State Department of Transportation, Interim Director of Transportation) to Joanne Hiramatsu (Belt Collins Hawaii, Director of Planning) responding to the Ala Moana Regional Park and Magic Island Improvements EISPN notice. January 31, 2018.

airport sponsor to restrict the use of land next to or near the airport to uses that are compatible with the airport.

Land use practices that may attract hazardous wildlife, and may also be a glint/glare hazard or an aerial obstruction hazard to existing flight paths include, but are not limited to:

- Underwater waste discharges
- Aquaculture activities conducted outside of fully enclosed buildings
- Water features on properties such as fountains or ponds, areas of permanent or temporary standing water, and furrow irrigation and drainage systems
- Landfills and material recycling/processing facilities
- Photovoltaic/Solar panels
- Utility poles and lines
- Wind turbines
- Antenna towers
- High rise building structures
- Cranes
- Tethered Air Balloon Devices
- Street and exterior property lights
- Certain landscape, trees, and ground cover

- The project area is also located within the 55-65 Day-Night Average Night Sound Level noise contours on the 2008 Noise Exposure Map. The City and park users should be aware of the Park's proximity to the airport and any potential noise impacts from airport operations.

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**Figure 3-5**
**WAIKIKI SPECIAL DISTRICT**
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**Figure 3-6**
**KAKA'AKO COMMUNITY DEVELOPMENT DISTRICT**
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### 3.1.3 Potential Impacts and Mitigation Measures

Improvements to the project area would not change current land uses in the project area. The proposed actions are designed to serve and improve the existing land uses. Certain sections of the Park may be shutdown or temporarily unavailable during construction. For example, the City shutdown the immediate sections surrounding the work site during the irrigation system upgrade project of the Great Lawn. The majority of the Park remained open to the public.

In the short term, temporary project impacts are expected during the project's construction phase. Full use of the affected properties may be temporarily hindered by site preparation, trenching, stockpiling, utility installation, backfilling, site cleaning, and restoration. Construction work in existing parking lots and roadways will experience temporary traffic delays from possible lane closures, rerouting, and parking prohibitions.

To mitigate these potential impacts, the contractor will be responsible for following the City's approved construction management plan and traffic control plan (TCP) as prepared for the individual projects as they are implemented. The contractor will likely perform work during routine work hours, which generally off-peak traffic hours for the Park. See Section 3.8.2 of this chapter for detailed mitigation measures. Project scheduling and public notification for sections of the Park closed to the public during construction could help minimize impacts to park usage. The City has been using multiple media outlets to announce updates on the project and its upcoming schedule.

In regards to the airport, the Contractor/City is required to notify the FAA if the following is proposed:[10]

(a) Any construction or alteration that is more than 200 ft. above ground level (AGL) at its site.

(b) Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:

(1) 100 to 1 for a horizontal distance of 20,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway more than 3,200 ft. in actual length, excluding heliports.

(2) 50 to 1 for a horizontal distance of 10,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway no more than 3,200 ft. in actual length, excluding heliports.

(3) 25 to 1 for a horizontal distance of 5,000 ft. from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph (d) of this section.

[10] Ibid. State of Hawaii. Office of Planning. August 01, 2016.

# 3.2 PUBLIC HEALTH AND SAFETY

## 3.2.1 Flood Hazards

Land areas affected by surface flooding are identified on the Federal Insurance Rate Maps (FIRMs) prepared by the Federal Emergency Management Agency (FEMA). The maps, based on flood studies, identify flood hazard areas and flood elevations (Figure 3-7).

The majority of the AMRP and the mauka portion of Magic Island are in Flood Zone AE, which is within the 1 percent annual chance of flood and where the base flood elevations of 6 to 10 feet have been determined. The makai portions of Magic Island are within Flood Zone X, which is within the 0.2 percent annual chance of flood and where it is at a moderate risk of flooding.

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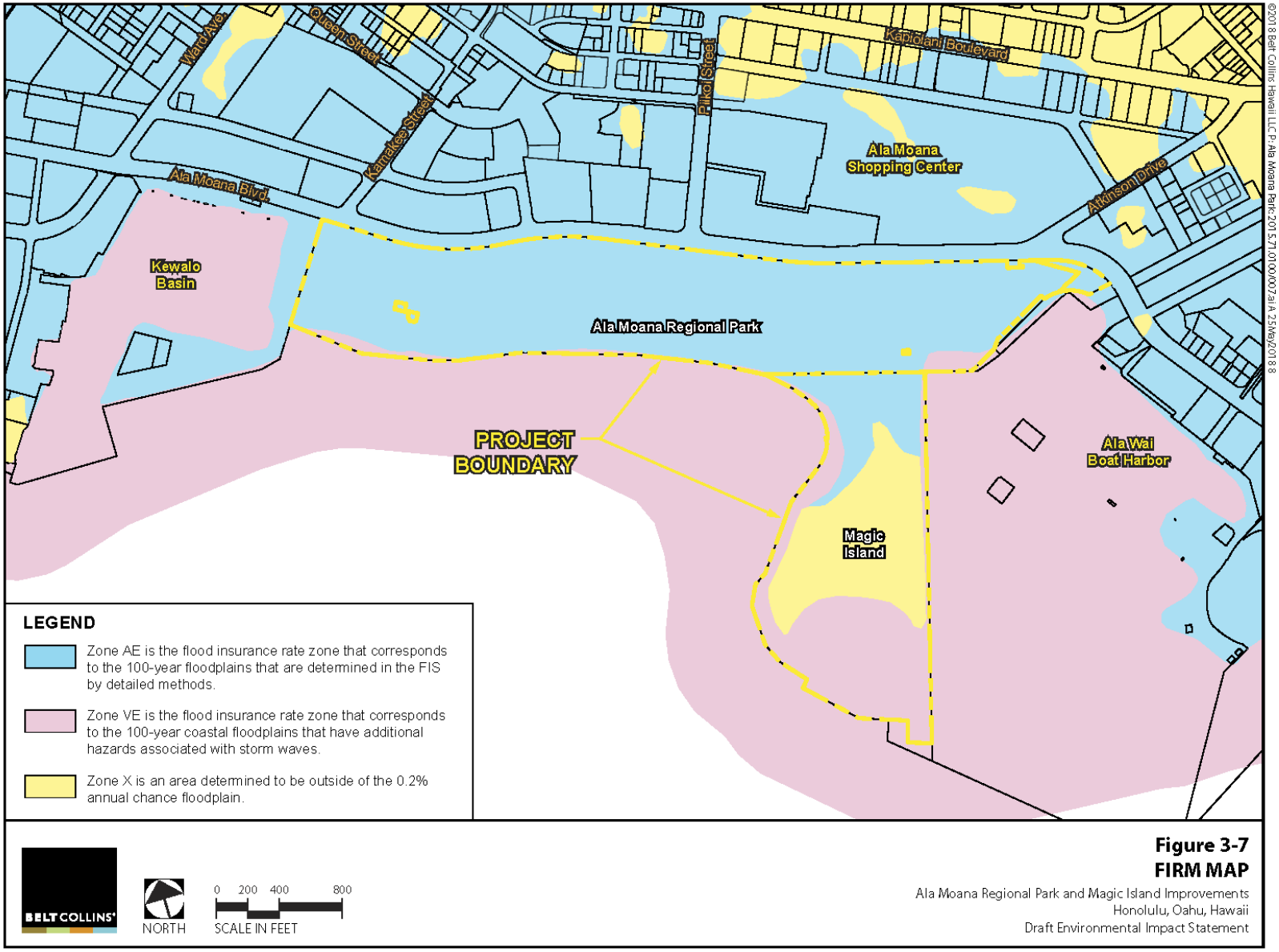


**Figure 3-7**
**FIRM MAP**
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The shoreline of the AMRP and the Magic Island Lagoon are within Zone VE (El 10). These areas are within the 1 percent annual chance of flood and is susceptible to wave action. The base flood elevation for this Zone VE has been determined to be 10 feet.

### 3.2.2 Tsunami Evacuation Zone

Tsunamis are caused by displacement of large volumes of ocean water, typically caused by underwater earthquakes and landslides. The downward pull of gravity on the displaced water initiates the tsunami. Hawai‘i is at risk from tsunamis caused by both distant ("teleseismic") and local sources. In either case, a large, shallow earthquake originating beneath the ocean floor has the potential to generate a tsunami, as described by the NOAA Pacific Tsunami Warning Center:

- Tsunamis from Distant Sources: Most tsunamis that affect Hawai‘i originate from seismically active areas around the Pacific. Tectonic subduction zones such as Alaska's Aleutian Island chain and the west coast of South America, generate most of the world's tsunamigenic earthquakes. Seismic activity in Alaska allows for approximately four hours of tsunami warning in Hawai’i as the dispersed water travels in sets of waves across the Pacific Ocean, while seismic activity in Chile allows for approximately 10 hours warning. Distant tsunamis with run ups exceeding three meters in Hawai‘i have occurred in 1868 (Chile), 1877 (Chile), 1896 (Japan), 1906 (Chile), 1923 (Kamchatka), 1933 (Japan), 1946 (Aleutians), 1952 (Kamchatka), 1957 (Aleutians), 1960 (Chile), 1964 (Alaska).

- Tsunamis from Local Sources: Because Hawai‘i is seismically active, a shallow undersea earthquake can generate a local tsunami. While destructive local tsunamis are less frequent, the proximity to land leaves little time for evacuation warnings. For example, a tsunami generated from the seismically active southeast coast of Hawai’i Island only take about 30-40 minutes to reach O’ahu. Local tsunamis with run ups exceeding three meters have occurred in 1868 (Ka`u) and 1975 (Kalapana).

The Tsunami Evacuation Zone Map was prepared for the City by the Department of Emergency Management (DEM). This map was last updated in April 2015. The project area can be found on map number 19 from the DEM website. Given the project’s proximity to the coastline, the project area is located in the Tsunami Evacuation Zone (Figure 3-8).[11] The Tsunami Evacuation Zone calls for evacuation in the event of any tsunami warning. The DEM website suggests a minimum distance of 2,000 feet inland from the shoreline is the safe zone.

[11] City and County of Honolulu, Department of Emergency Management. Tsunami Evacuation Zones. Updated April 2015, http://www.honolulu.gov/rep/site/dem/dem_docs/tsunami_evac/etez_final/Waikiki_map_1_waikiki.pdf

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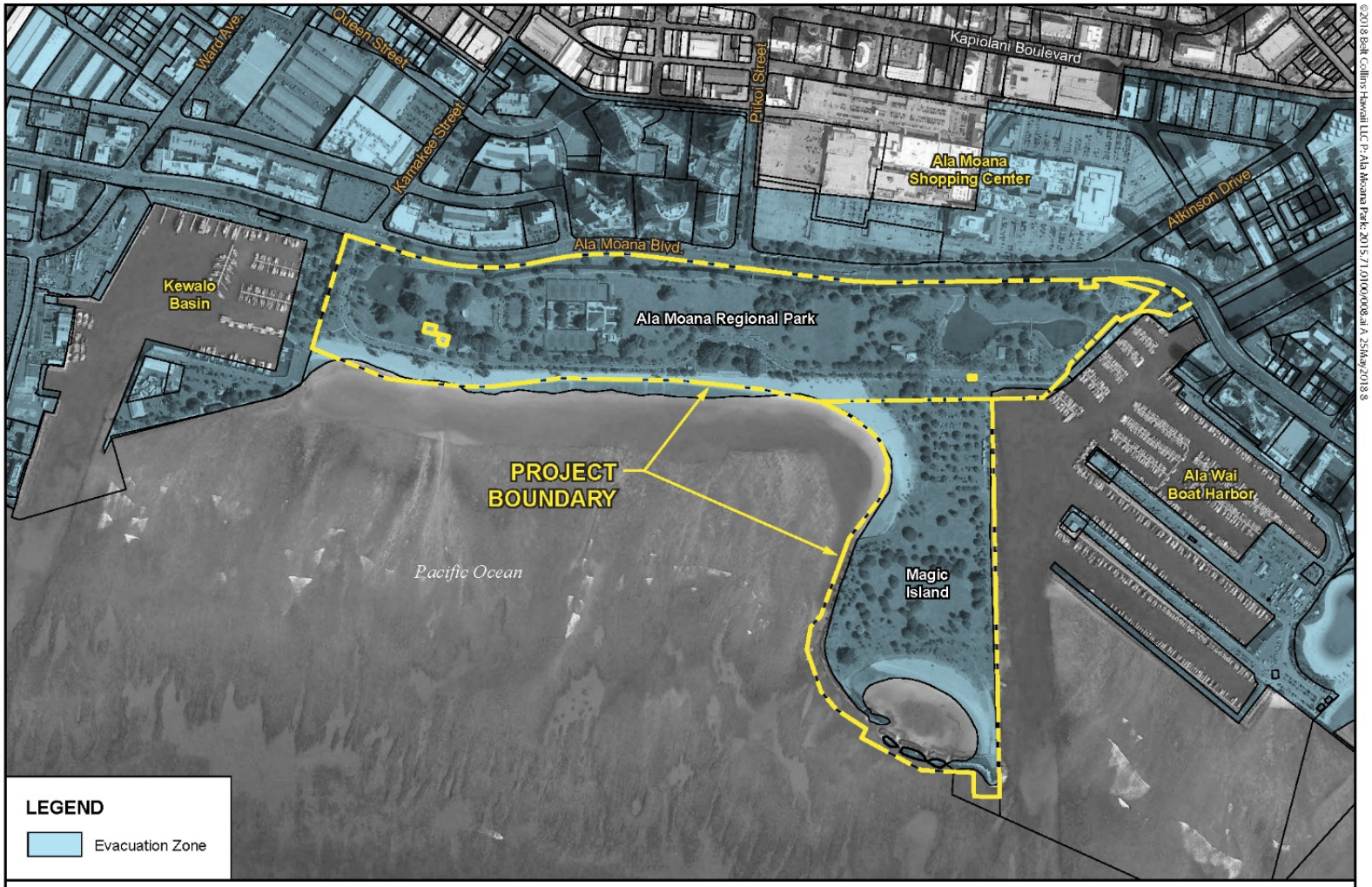


**Figure 3-8**
**TSUNAMI EVACUATION ZONE MAP**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

### 3.2.3 Climate Change / Sea Level Rise

The State of Hawaiʻi has taken a leading role in climate change mitigation. Act 234. (Session Laws of Hawaiʻi 2007) requires that statewide emissions be reduced to levels at or below 1990 levels by January 1, 2020. It recognized that, "climate change poses a serious threat to economic well-being, public health, natural resources, and the environment."[12] It further identifies major industries in Hawaiʻi vulnerable to climate change impact such as tourism and recreation. The AMRP is a part of the tourism and recreation industry. The State recently published the *Sea Level Rise Vulnerability and Adaptation Report for Hawaii*, which discusses the anticipated impacts of projected future sea level rise on coastal hazards, and the potential physical, economic, social, environmental, and cultural impacts of sea level rise in Hawaii (Hawaii Climate Change Mitigation and Adaptation Commission, 2017). The University of Hawaii conducted numerical modeling to estimate the potential impacts that a 3.2-foot rise in sea level would have on coastal hazards including passive flooding, annual high wave flooding, and coastal erosion. These three coastal hazards are combined to form the "Sea Level Rise Exposure Area," encompassing a large portion of the Park and extending mauka of Ala Moana Boulevard.

The National Oceanic and Atmospheric Administration's (NOAA) online sea level rise mapping tool uses nationally consistent data sets and analyses to provide a preliminary look at sea level rise and coastal flooding impacts. Key implications for the Park include beach erosion and flooding from the ponds and drainage canal. With sea level rise, storm surge along Hawaiʻi's coasts will reach farther inland than it does today. Figure 3-9 shows conditions of the Park at the current Mean Higher High Water (MHHW) mark. The low-lying areas that may flood during current MHHW are the Japanese Pond, Hawaiian Pond, and the drainage canal. Figure 3-10**,** shows coastal flooding potential with a plus-six-foot MHHW mark. Under this scenario, flooding is predicted to occur within the entire AMRP and the Magic Island parking lot. Kalākaua Avenue and Kapiʻolani Boulevard above the Park also have the potential for flooding at a plus six-foot MHHW.

Hawaii has thus far experienced a rate of sea level rise that is less than the global average; however, this is expected to change. Hawaii is in the "far field" of the effects of melting land ice. This means that those effects have been significantly less in Hawaii compared to areas closer to the ice melt. Over the next few decades, this effect is predicted to spread to Hawaii, which will then experience sea level rise greater than the global average.

In 2012, Act 286 amended the Hawaiʻi State Planning Act, Chapter 226, by adding climate change adaptation priority guidelines, 10 total, to part III; creating Chapter 226-109. The AMRP project area is a man-made development; the park land and beach were both created from swamp and shallow coral bed. All proposed project activities

[12] State of Hawaiʻi, Office of Planning. Adapting to Climate Change. Copyright 2018. http://planning.hawaii.gov/czm/initiatives/adapting-to-climate-change-2/

are to be implemented in a sustainable way to minimize contributions to climate change.

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BELT COLLINS

NORTH

0 500 1000 1500
SCALE IN FEET

LEGEND
Project Area
Low-lying Area

**Figure 3-9**
**CURRENT MEAN HIGH WATER MARK**
Kalākaua Avenue Water System Improvements
Honolulu, O'ahu, Hawai'i
Environmental Assessment

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BELT COLLINS

NORTH

0 500 1000 1500
SCALE IN FEET

LEGEND
Project Area
Low-lying Area

**Figure 3-10**
**6 FT ABOVE CURRENT MEAN HIGH WATER MARK**
Kalākaua Avenue Water System Improvements
Honolulu, O'ahu, Hawai'i
Environmental Assessment

### 3.2.4 Earthquakes

In Hawai'i, earthquakes tend to be concentrated in volcanically active areas, primarily around the island of Hawai'i. On O'ahu, the occurrence of earthquakes is generally related to tectonic activity along seafloor fractures and faults, such as the Diamond Head Fault, which extends along the seafloor northeast of O'ahu.[13] Several earthquakes ranging in magnitude from 4.0 to 5.0 have been historically documented along the Diamond Head Fault.[14] While the seismic risk on O'ahu is relatively low compared to more volcanically active areas, the sedimentary layer that underlies Honolulu, particularly along the shoreline, is more prone to heightened ground motion than adjacent areas of bedrock.[15]

In 1997, the Uniform Building Code (UBC) seismic risk ranking for O'ahu was upgraded from 1 to 2A, indicating a higher risk of seismicity than previously thought.[16] UBC's seismic provisions contain six seismic zones, ranging from 0 to 4. Zone 0 has no chance of severe ground shaking, while zone 4 has a 10 percent chance of severe shaking in a 50-year interval. Ground shaking is quantified in terms of g-force, the earth's gravitational acceleration.

### 3.2.5 Hurricanes

Hurricane season in Hawai'i typically begins in June and lasts through November. Storms can originate in the Central Pacific and the Eastern Pacific near the coasts of southern Mexico and Central America. Some hurricanes arrive near the Hawaiian Islands region but most weaken to tropical storms. They take a northwesterly path over cooler waters and less favorable atmospheric conditions.

Hurricane winds are measured by the Saffir-Simpson Hurricane Wind Scale. Hurricanes for Hawai'i are measured from a 1 to 5 categorization based on their intensity. The scale does not address the potential for such other hurricane-related impacts as coastal inundation, waves, and storm surge, rainfall-induced floods, and tornadoes. The wind-caused impacts are to apply to the worst winds reaching the coast and the damage would be less elsewhere. Hurricane wind damage is also dependent upon such other factors as duration of high winds, change of wind direction, amount of accompanying rainfall, and age and strength of structures.[17] Recent hurricanes that impacted the Hawaiian Islands were Hurricane Iwa in 1982

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[13] Furumoto, A.S., E. Herrero-Bevera and W.M. Adams. 1990. *Earthquake risk and hazard potential of the Hawaiian Islands*. Hawai'i Institute of Geophysics.

[14] Fletcher, C.H., E.E. Grossman, Richmond, B.M., and A.E. Gibbs. 2002. *Atlas of Natural Hazards in the Hawaiian Coastal Zone*. U.S. Geological Survey. Prepared in cooperation with University of Hawai'i, State of Hawai'i Office of Planning, and National Oceanic and Atmospheric Administration (NOAA).

[15] Ibid. Furumoto, A.S., E. Herrero-Bevera and W.M. Adams. 1990.

[16] U.S. Geological Survey (USGS) Hawaiian Volcano Observatory. *Hazards in Hawai'i*. http://hvo.wr.usgs.gov/earthquakes/hazards. Accessed March 4, 2016.

[17] US National Oceanic and Atmospheric Administration. 2017. Central Pacific Hurricane Center, Saffir-Simpson Hurricane Wind Scale. http://www.prh.noaa.gov/cphc/pages/aboutsshs.php

and Hurricane Iniki in 1992. Hurricane Iwa was a Category 1 storm (sustained winds 74-95 mph). Kauai had the most wave action damage along the south shore. The Waiʻanae coast, parts of central Oʻahu, and windward Oʻahu had the most wind damage. Hurricane Iniki was a Category 4 storm (sustained winds 130-156 mph). Kauaʻi absorbed most of the damage from Iniki which included wind and storm surge damages. The leeward coast received the most damage for Oʻahu.

### 3.2.6 Electromagnetic Fields (EMFs)

The National Institute of Environmental Health Sciences (NIEHS) of the National Institutes of Health and the Department of Energy (DOE) started the EMF evaluation process and also consulted with public and private agencies. This evaluation, known as the Electric and Magnetic Fields Research and Public Information Dissemination (EMF RAPID) Program, was a six-year project with the goal of providing scientific evidence to determine whether exposure to power-frequency EMF involves a potential risk to human health.[18] Electric fields are a result of the voltage or electric potential of an object. They are generated by devices that operate on electricity. An appliance does not need to be in operation to create an electric field; an electric field is established as soon as it is plugged into an outlet. Magnetic fields, on the other hand, are created when an electrical current flows through a conductor. Magnetic fields are present only when an electrical device is in operation or a wire is transmitting electricity. Both electric and magnetic fields are strongest at the source and become exponentially weaker with increased distance from the source. Electric fields can be blocked by walls and objects, while magnetic fields are not as easily blocked and can pass through walls and objects.

There are both natural and manmade sources of EMFs. Power lines, electrical wiring, electrical equipment (such as generators), and home appliances all produce EMFs. Other power lines, electrical wiring, and electrical equipment in the vicinity of the project area are existing sources of EMFs. In this project, construction equipment will be a temporary source of EMFs.

### 3.2.7 Potential Impacts and Mitigation Measures

The proposed project is not expected to adversely affect public health or safety. The project will not increase the risk of flood hazards, tsunamis, earthquakes, or hurricanes. With regards to EMFs, hazardous and regulated material, the proposed project is not expected to adversely affect or increase exposure. The project will update the existing conditions, pedestrian and vehicle access, and some of the infrastructure at the Park. Some of the proposed elements of the project will improve

[18] National Institute of Environmental Health Sciences and National Institutes of Health. June 2002. *EMF: Electric and Magnetic Fields Associated with the Use of Electric Power Questions and Answers.* https://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf

emergency egress in the event of a natural disaster by widening walkways and crossings over the drainage canal for pedestrian evacuation.

**FLOOD HAZARDS, TSUNAMIS, EARTHQUAKES, HURRICANES:** In the case of unpredicted tsunamis or flooding during construction operations, construction activities would cease and equipment and materials would be secured in support areas; BMPs would be followed to ensure the safety of construction workers and community members who live near the project area.

**ELECTROMAGNETIC FIELDS:** Health concerns regarding EMFs came into focus following a 1979 report on the possibility of an association between EMFs and childhood leukemia.[19] Many studies have been done since then to verify the results or to identify other health concerns regarding EMFs. According to a publication by the National Grid, these health reviews have, in general, failed to definitively conclude that EMFs cause any long-term, adverse effects on health.[20]

Currently there are no federal, state, or county standards for powerlines related to EMFs. In Hawai'i, DOH has a policy of "prudent avoidance" as written in a 1994 statement:[21]

> *"The Department of Health, in response to continuing but inconclusive scientific investigation concerning electric and magnetic fields (EMF) from low-frequency power sources, recommends a "prudent avoidance" policy. "Prudent avoidance" means that reasonable, practical, simple, and relatively inexpensive actions should be considered to reduce exposure.*
>
> *A cautious approach is suggested at this time concerning exposure to electric and magnetic fields (EMF) around low-frequency sources, such as electric appliances and power lines. The existing research data on possible adverse health effects, including cancer, are inconclusive and not adequate to establish or quantify a health risk. For example, the biological mechanisms that might underlie any apparent relationship between EMF and cancer, it is a very small increase. Other epidemiological studies suggest that there is no increased risk.*
>
> *The Department of Health will continue to collect and evaluate information on possible health hazards associated with electric and magnetic fields. If adequate data ever become available to establish what level may be harmful, appropriate standards will be established."*

---

[19] Wertheimer, N. and E. Leeper. 1979. *Electrical Wiring Configurations and Childhood Cancer*. In American Journal of Epidemiology, 109: 3.

[20] National Grid. November 2009. *Electric and Magnetic Fields*. Downloaded from www.nationalgridus.com.

[21] State of Hawai'i, Department of Health. January 19, 1994. *DOH Policy Relating to Electric and Magnetic Fields from Power-Frequency Sources.*

At the project area, no increase in EMF is expected as a result of the proposed improvements of the project area.

**CLIMATE CHANGE:** The Proposed Action will not increase the risk of climate change and sea level rise. However, sea level rise has the potential to impact beaches and shorelines in Hawaii. The AMRP is adjacent to the shoreline and thus directly impacted by coastal hazards related to climate change such as sea level rise, coastal erosion, and high storm surge. Impacts may include beach narrowing and beach loss, loss of land due to erosion, and infrastructure damage due to inundation and flooding. The impacts from anomalous sea level events (e.g., king tides, mesoscale eddies, storm surge) are also likely to increase.

The beach nourishment designs presented in Section 2.4 are partially constrained by existing infrastructure. The top of the retaining wall that extends along the inshore margin of the beach was measured to vary in elevation between +5.5 and +6.5 ft msl.[22] The beach fill options are limited to that elevation or only slightly higher to keep sand from spilling over the wall. The retaining wall is considered historic and there are no current plans to modify the wall.

The effect of sea level rise on the beach is a consideration for the City. While academic models show that the beach profile can move higher and inshore with rising water levels, these models assume an unconstrained and continuous sandy profile. This, however, is not the case at Ala Moana beach. As sea levels rise, sand that would be mobilized to form a higher inshore berm would likely be washed over the wall. In addition, the availability of sand will be less, since the supply of sand is limited to the amount of sand inshore of the swim channel. The beach can be re-nourished periodically to account for sea level rise; however, a higher backshore wall may soon become necessary to achieve and maintain the beach elevations necessary to mitigate flooding.

# 3.3 NOISE

## 3.3.1 Existing Conditions

The zoning district categories (see Section 3.1.1) determine the "maximum permissible sound level" outlined by HAR §11-46-4 which allows varying sound levels without a noise permit. According to the State DOH Community Noise Control, HAR §11-46-2, the definition of zoning districts is "the land use districts established by rules or ordinances adopted by council, legislature, county, or state government agencies."[23] The zoning district for the project area is classified based on the guidelines outlined by HAR §11-46-3 below:

[22] Sea Engineering, Inc. January 2019. *Costal Assessment and Design Report Ala Moana Regional Park Beach Nourishment Project Honolulu, O'ahu, Hawai'i*. Prepared for Belt Collins Hawaii LLC. Pg 34

[23] State of Hawai'i. 1996. *Hawai'i Administrative Rules, Title 11, Chapter 46, Community Noise Control*

(1) Class A zoning districts include all areas equivalent to lands zoned residential, conservation, preservation, public space, open space, or similar type.

(2) Class B zoning districts include all areas equivalent to lands zoned for multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type.

(3) Class C zoning districts include all areas equivalent to lands zoned agriculture, country, industrial, or similar type.

The project area is classified into Class A and the surrounding neighborhoods and commercial areas are classified into Class B zoning districts. HAR §11-46-4d explains that "the primary land use designation shall be used to determine the applicable zoning district class and the maximum permissible sound level." Table 3-1 illustrates the maximum permissible sound levels (HAR §11-46-4) in dBA (decibels adjusted) according to the zoning districts.

**Table 3-1: Maximum Permissible Sound Levels in dBA**

| Zoning Districts | Daytime 7 a.m. to 10 p.m. | Nighttime 10 p.m. to 7 a.m. |
|---|---|---|
| Class A | 55 | 45 |
| Class B | 60 | 50 |
| Class C | 70 | 70 |

**Ambient Noise**

Ambient noise is generally known as "background noise" which can be described as sounds that are existing in the area. Traffic noise, car alarms, nearby conversation, birds, waves, etc. can be described as background noise. Traffic and recreational noises are most likely the largest contributors to the ambient noise levels in the project area. Ala Moana Boulevard is a major roadway that passes along on the mauka side of the AMRP and connects downtown Honolulu to Waikīkī. Ala Moana Park Drive which is a highly-used roadway passes through the Park. Parking along Ala Moana Park Drive is popular for visitors who go to the beach or have picnics on the AMRP lawn. The Park's wide-open spaces, however, do allow park users to find quieter areas even during busier weekends. It is possible that the ambient noise could muffle some of the construction noise. Ambient noise is oftentimes used to calculate acceptable levels of noise for specific areas.

## 3.3.2 Potential Impacts and Mitigation Measures

**Land Construction:** No adverse noise impacts are anticipated during land construction activities. Construction is expected to be done in phases which will leave

ample space for park users to avoid work areas. Once construction is completed, noise will return to ambient levels.

HAR §11-46-7 states that "a permit may be granted by the director to operate any excessive noise source which emits or may emit noise levels in excess of the maximum permissible sound levels." The project may obtain a noise permit which will allow the use of construction equipment and machines that would exceed the maximum permissible sound level for a prolonged period of time.

A noise permit may require action by the contractor to incorporate noise mitigation into the construction activities. The contractor should use BMPs to mitigate noise, such as using mufflers on diesel and gasoline engines, maintaining properly tuned and balanced machines, and scheduling etc. The DOH noise permit does not regulate the noise levels that are excessive from the construction site, but rather limits the time for excessive construction noise. Specifically, HAR §11-46-7 states that:

1. No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels for the hours before 7:00 a.m. and after 6:00 p.m. of the same day, Monday through Friday;

2. No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels for the hours before 9:00 a.m. and after 6:00 p.m. on Saturday; and

3. No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels on Sundays and on holidays.

## 3.4 INFRASTRUCTURE

The majority of the project area is open space that is heavily used for recreational purposes. Infrastructure at the Park includes water supply for irrigation and potable use, wastewater collection, storm drainage, electricity, telecommunications, and solid waste collection. Existing utilities within the proposed area of work are shown in Figure 3-11- Figure 3-14.

### 3.4.1 Water

There are existing water mains owned by the City Board of Water Supply (BWS) within Ala Moana Boulevard. The Park is served from the BWS system through a master meter connection, that branches off to provide potable water and fire protection to AMRP and Magic Island. A secondary meter is also in place, but has not been in service since 2013. The network of water lines within the Park, as shown in Figure 3-11, is owned and maintained by DPR. There are only two fire hydrants within the Park; one is located at the 'Ewa concession stand and the other at the Canoe Hālau. Both hydrants are connected into the potable system.

Based on interviews and discussions with DPR staff during the master plan process, no issues with cross-connection, pressure, metering, or line breaks with the existing potable water system were reported by the park staff.[24] In contrast, "frequent line failures" were reported for the irrigation system at the time, which have been addressed with the new systems being installed. The AMRP irrigation system installation is scheduled to be complete by July 2018, with installation of a new irrigation system for Magic Island scheduled to be completed by the end of 2018.

### 3.4.2 Sewer

There are existing sewer mains owned by the City's Department of Environmental Services (ENV) within the adjacent public roadway ROW. City-owned force mains and several gravity lines are located in the mauka portion of AMRP, including a 69-inch diameter gravity sewer trunk main extending through the middle of AMRP from the Diamond Head to 'Ewa direction (Figure 3-12). This main conveys regional wastewater flows to the Sand Island Treatment Plant for treatment and discharge through a deep ocean outfall. The 69-inch diameter trunk main originates at the sewer manhole near the Moana Park Wastewater Pumping Station (WWPS), located along Ala Moana Boulevard northeast of AMPR; this WWPS is on separate parcel, TMK: 2-3-037:010.

The Beachwalk WWPS buffer zone (Figure 3-13) is centered on the original force main, the line labeled FM42" in Figure 3-12. Per the City DPP Waste Water Branch (WWB), any project that is within this zone will be sent by them to Department of Design and Construction (DDC) for review that the proposed alignment, profile and construction method would not cause undue vibration or disruption of the force main.

The DPR staff did not note any sewer system deficiencies.[25] Grease interceptors are in-place at both concession stands and McCoy Pavilion. The units at the concession stands are routinely serviced. The unit at McCoy Pavilion has not been in use and will need to be inspected and possibly replaced as part of the facility renovations.

The showers in the bathhouses at the comfort stations discharge to the building sewer system. Outdoor showers drain to the storm drainage system or surrounding area. Improvements to collect the outdoor shower runoff which may contain soap and shampoo used by bathers were the subject of a separate assessment,[26] the recommendations from which are being reviewed and implemented by the City individual projects. Drinking fountain is disposed through seepage wells, designed in accordance with the Parks Standard Details. These seepage wells are manhole cone

[24] Meeting Memorandum, subject City and County of Honolulu Ala Moana Park Master Plan, Cheryl Palesh, Belt Collins Hawaii, January 8, 2016, and Meeting Memorandum, subject Ala Moana Regional Park Master Plan, Jordan Stewart, Belt Collins Hawaii, April 27, 2017.

[25] Ibid, Meeting Memorandum April 27, 2017.

[26] Fukunaga & Associates, Inc., Amended Pre Final Report, January 2012, *Outdoor Shower Assessment Engineering Report*.

sections, intended to only serve the drinking fountains and are not part of the park's storm drainage system.

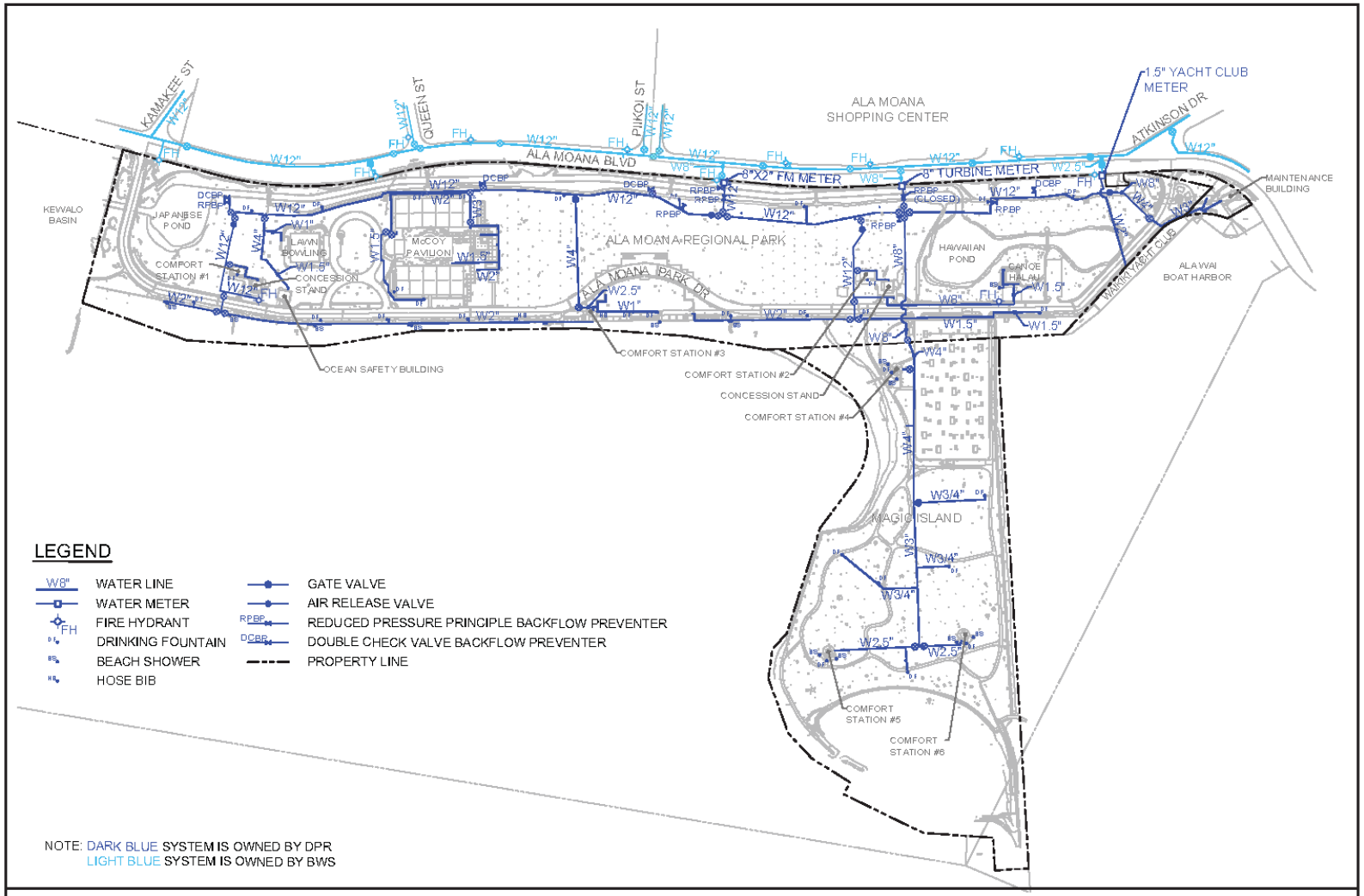


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**Figure 3-11**
**EXISTING WATER SYSTEM**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
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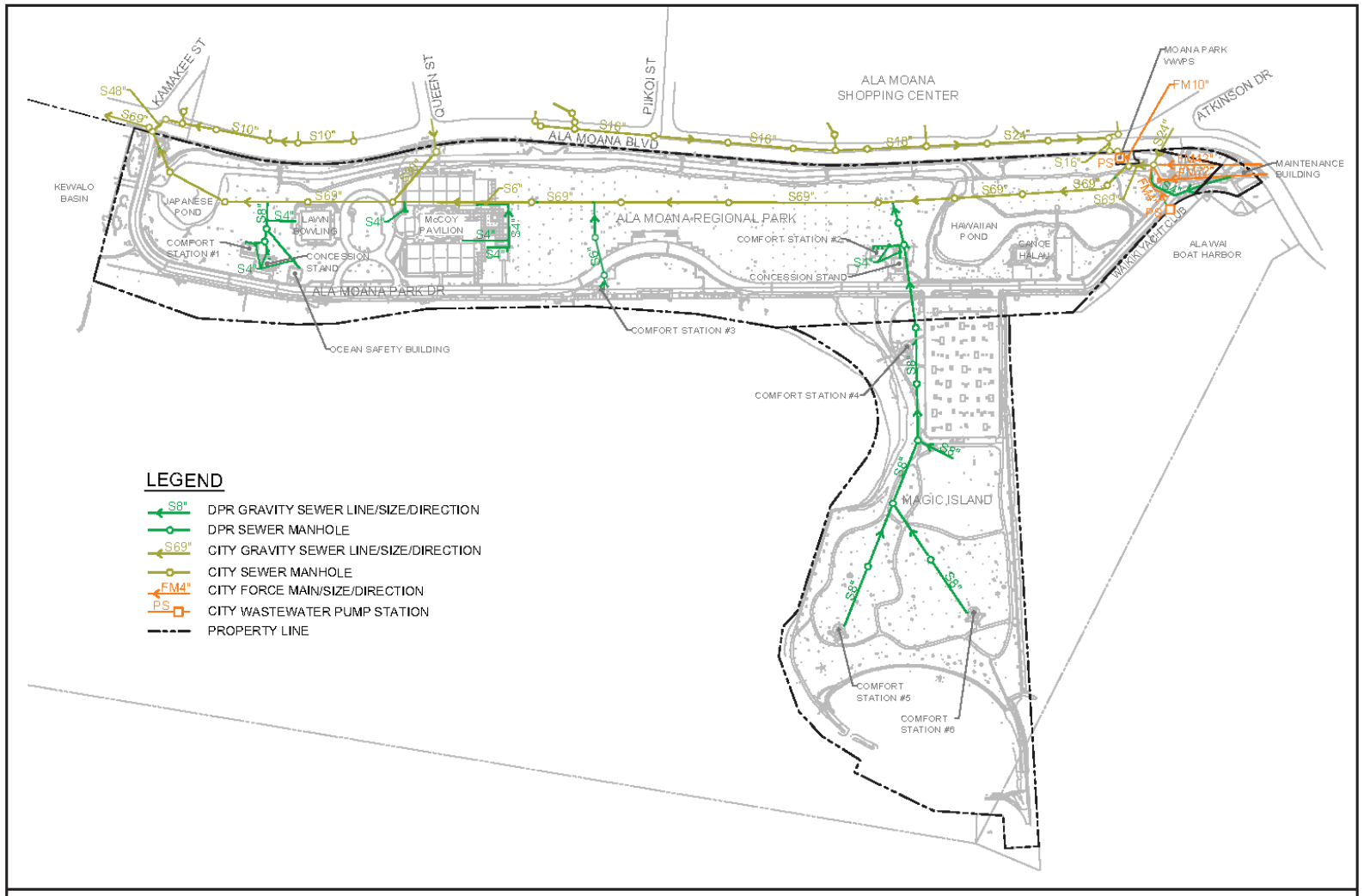


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**Figure 3-12**
**EXISTING SEWER SYSTEM**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
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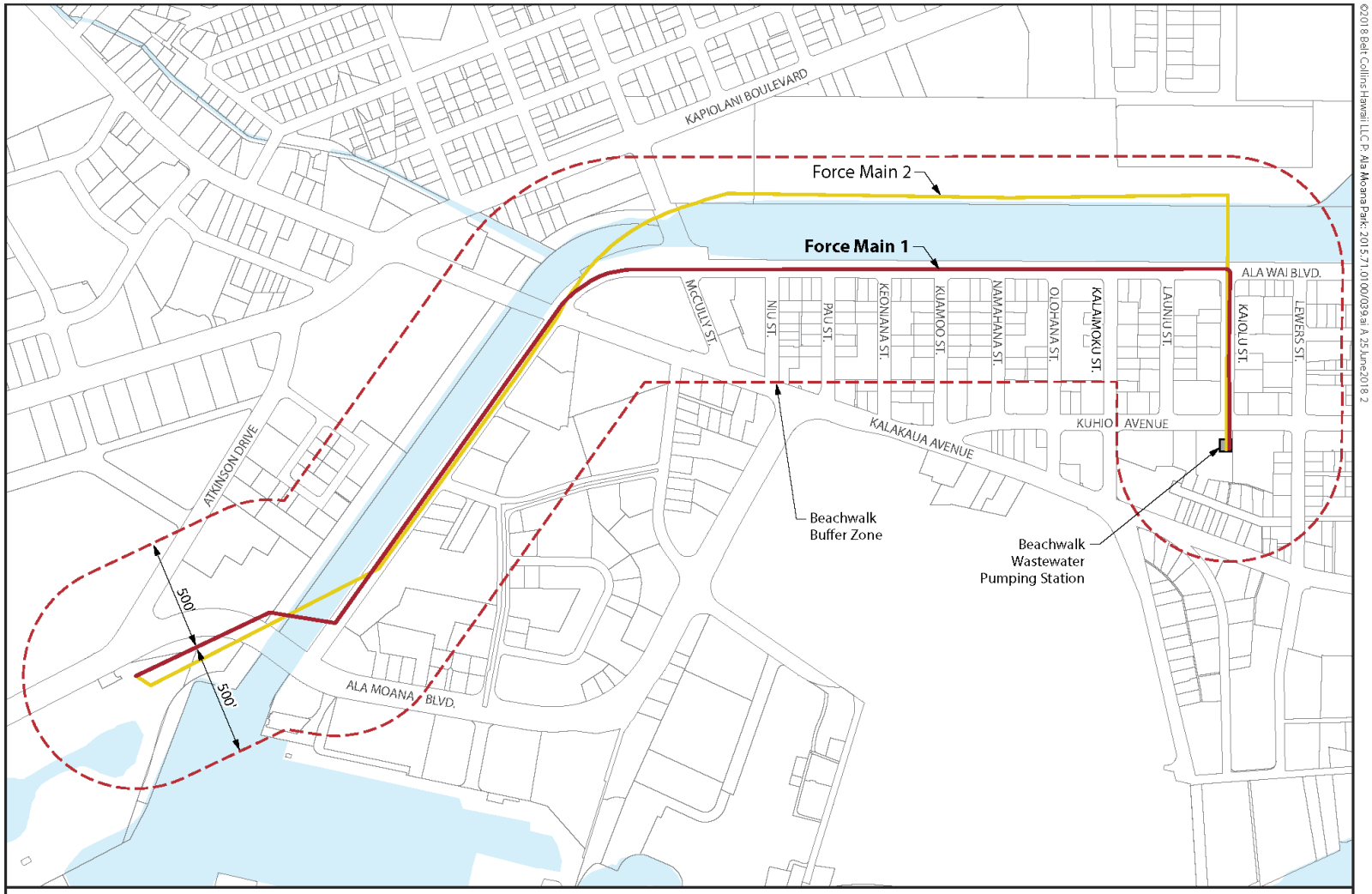


BELT COLLINS

NORTH

0 150 300 600
SCALE IN FEET

**Figure 3-13**
**BEACHWALK BUFFER ZONE**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

### 3.4.3 Drainage

DOT maintains the drainage pipes and inlets within Ala Moana Boulevard shown in Figure 3-14. The Kamakee Street drain box is part of the Hawai'i Community Development Authority (HCDA) system. The drainage structures and pipelines within AMRP are owned and maintained by DPR. Magic Island has no drainage facilities beyond the parking lot.

The Park has relatively flat pervious grassy surfaces and stormwater primarily infiltrates into the ground. During heavy rainfall events, based on the current topographic survey information, stormwater can flow from the central grassy areas towards Ala Moana Park Drive, the drainage canal, or one of the two ponds. Only the beach area, makai of the wall, in AMRP slopes toward to ocean. The portion of Magic Island makai of the parking lot drains towards the lagoon or westerly to the ocean. The only drainage concerns noted by DPR staff were clogged drains at the McCoy Pavilion loading dock and courtyard at due to tree roots. The flooding of Ala Moana Park Drive experience in March 2017 was reportedly due to lack of filter fabric maintenance.[27] No mention of the canal overflowing or lack or areas drying out after heavy rains were reported.

The Park has a Storm Water Pollution Control Plan (SWPCP), which was prepared and implemented in compliance with City's NPDES permit for its Municipal Separate Storm Sewer System (MS4). There are no structural stormwater quality control devices, such as drain inlet filters or hydrodynamic separators in the AMRP. An assessment of physical improvements to reduce contamination or potential contamination from the park's stormwater runoff was completed in compliance with City's subsequent NPDES MS4 permit.[28] The City's NPDES Permit No. is HI S000002. The City is addressing the recommendations in the assessment as improvements in the Park are undertaken and there are no specific stormwater quality projects included in the master plan.

[27] Meeting Memorandums, January 8, 2016 and April 27, 2017.

[28] Fukunaga & Associates, Inc., Preliminary Report January 2012, *Storm Water Assessment Engineering Report Department of Parks & Recreation Sites – District 2*.

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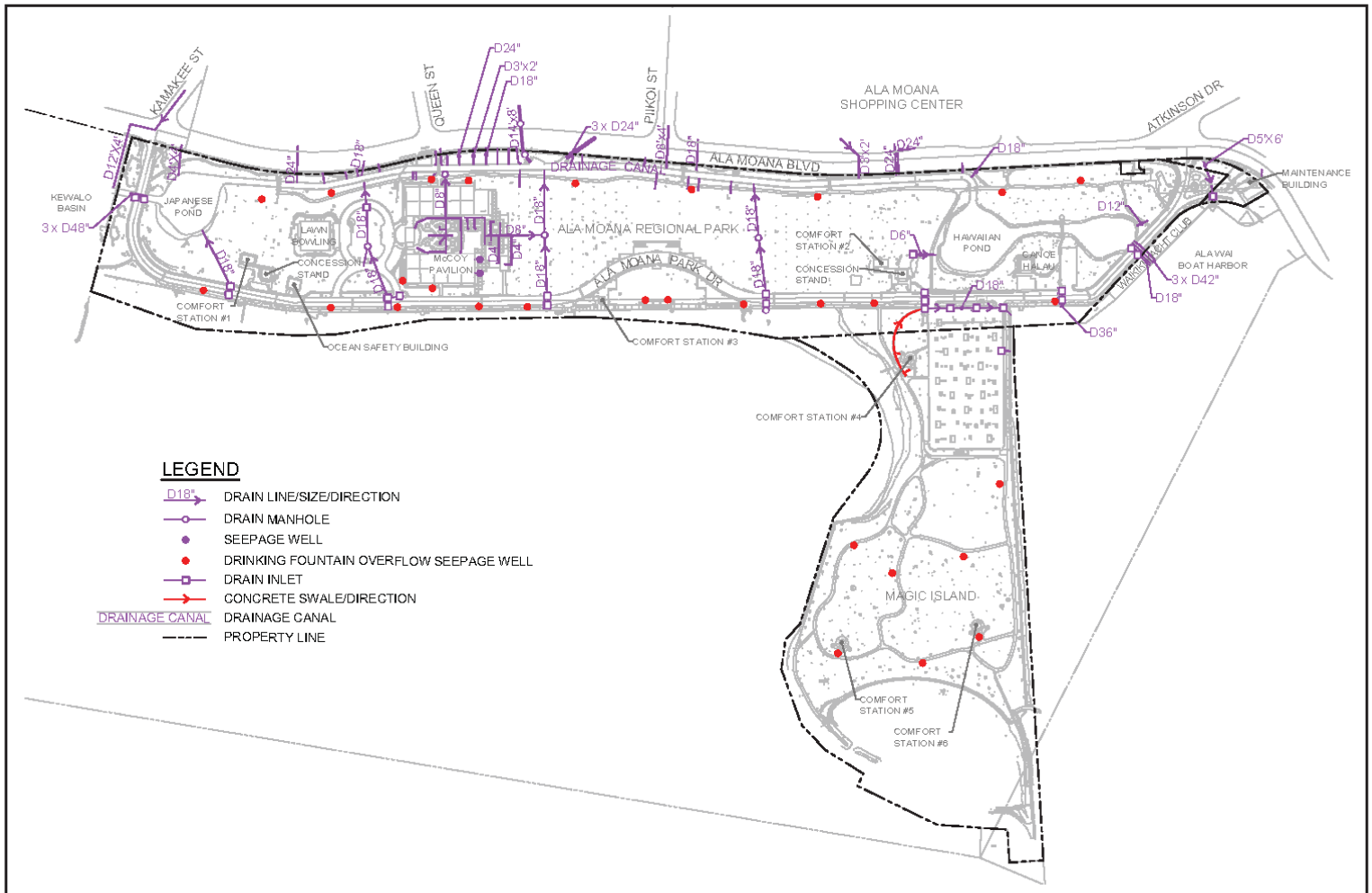


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BELT COLLINS

NORTH

0 150 300 600
SCALE IN FEET

**Figure 3-14**
**EXISTING DRAINAGE SYSTEM**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
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### 3.4.4 Electricity, Telephone, and Cable TV

Hawaiian Electric, Hawaiian Telecom, and Spectrum have sub-surface duct banks for electrical power, telephone, cable TV and internet communications within Ala Moana Boulevard. Electric power and telephone are brought into AMRP on overhead lines. The lines extended from the public grid on Ala Mona Boulevard near the Roosevelt Arch, across the canal for the ʻEwa comfort station and concession, and across the canal for the tennis courts.

### 3.4.5 Fuel and Utility Gas Lines

Hawaiʻi Gas has utility distribution lines for synthetic natural gas within the public roadway ROW. There are no gas lines within the Park. Hawaiʻi Gas provides propane gas to the concession stands, with each served by a 499-gallon propane tank. Each tank is screened by a walled enclosure on the Diamond Head side of the buildings. McCoy Pavilion originally had a gas tank in the service court near the loading dock, however, it has since been removed and there is no existing gas service to the facility.

### 3.4.6 Potential Impacts and Mitigation Measures

The proposed project is not anticipated to have any long-term or short-term impacts to existing infrastructure utilities. Excavation within the Park will require coordination with DPR to ensure adequate clearance from trees and other utilities as identified from record drawings or determined by construction contractor toning.

## 3.5 PUBLIC SERVICES AND FACILITIES

### 3.5.1 Ocean Safety

The Ocean Safety and Lifeguard Services (OSLS) is governed by the Honolulu Emergency Services Department (HESD). This Department acts as the primary medical and ocean rescue responder to all emergencies occurring in the AMRP and Magic Island as mandated by the Revised Charter of the City and County of Honolulu 1973 (2017 Edition)[29]:

> CHAPTER 6 - DEPARTMENT OF EMERGENCY SERVICES
> **Section 6-601. Organization** --
> There shall be a department of emergency services headed by a director of emergency services who shall be appointed and may be removed by the mayor.

[29] City and County of Honolulu. 1973 (2017 Edition). Chapter 6 Department of Emergency Services. Section 6-601. Organization.

(1992 General Election Charter Amendment Question No. 16; 1998 Reorganization)

**Section 6-603. Powers, Duties and Functions --**
The director of emergency services shall:
(a) As to medical services:
(1) Be the primary provider of emergency medical care;
(2) Develop programs and provide training and educational programs related to emergency medical services and injury prevention;
(3) Be responsible for medical matters relating to public health and welfare.
(4) Be responsible for the administration of the city's health services programs and medical evaluations of current and prospective city employees.
(b) As to ocean safety:
(1) Be the primary responder to emergencies arising on the beach and in the near shore waters;
(2) Be responsible for ocean safety training, educational, and risk reduction programs relating to ocean safety.
(c) Perform such duties as may be required by law.

(1992 General Election Charter Amendment Question No. 16; 1998 Reorganization; 2006 General Election Charter Amendment Question No. 10; Reorganization 2007; Reorganization 2012)

The AMRP is in the South Shore operational district of the OSLS. Beach attendance has remained relatively stable at the Park indicating that it is reaching full carrying capacity. [30] The AMRP contains five stations, lifeguard towers, and there is one Ocean Safety substation.

### 3.5.2 Police, Fire, and Emergency Services

Police services on the island of O'ahu are provided by the Honolulu Police Department (HPD). HPD's headquarters are located in downtown Honolulu, at 801 South Beretania Street. The island is divided into eight patrol districts; police response for the project area would come from District 1 (Honolulu). The administrative office for District 1 is located at the downtown HPD headquarters. After park closure, the project area is regularly patrolled by officers posted at the AMRP.

Fire protection services for the island of O'ahu are provided by the Honolulu Fire Department (HFD). The island is divided into five battalions containing 44 fire stations. The total number of companies in a platoon is 43 engine companies, 14 ladder or quint companies, 2 rescue companies, 2 hazardous materials companies, 2

[30] City and County of Honolulu. Ocean Safety and Lifeguard Services website https://www.honolulu.gov/esdosls.html

tower companies, 5 tankers, 2 helicopters, and 1 helicopter tender.[31] Also supporting the HFD's mission are several personal watercrafts and 3 rescue boats (2 of which are assigned to the search and rescue companies and 1 to the Waialua Fire Station). The HFD headquarters is located at 636 South Street. HFD would provide emergency fire service to the project area from its Pāwaʻa Fire Station (No. 2), located approximately 1.0 miles north of the project area. Support could also come from the Kakaʻako Fire Station (No. 9), which is located approximately 1.4 miles west of the project area on South Street.

Ambulance services are provided throughout Oʻahu by the City's Department of Emergency Medical Services (EMS). The City has 20 ambulance units and two Rapid Response Vehicles covering the island's two districts. The project area is located within Oʻahu's District 2. The nearest EMS ambulance unit is based at the Pāwaʻa Fire Station, approximately 1.0 miles away from the project area. HFD co-responds with first responder emergency services.

### 3.5.3 Medical Centers

Nearby emergency medical facilities include Kaiser Permanente Honolulu Medical Office, Straub Hospital, Queen Medical Center, and Kapi'olani Medical Center for Women and Children. Kaiser Permanente Honolulu Medical Office and Straub Hospital are full-service hospitals, located less than a mile from the project area, in the Ward/Kaka'ako neighborhood. Kapi'olani Medical Center for Women and Children is located in lower Makiki, approximately one mile from the project area. Kapiʻolani Medical Center specializes in care for women and children and offers a full array of medical services, including pediatric emergency services and intensive care facilities. Queen's Medical Center, considered to be the primary trauma hospital on the island, is approximately one mile from the project area.

### 3.5.4 Parks and Recreation Areas

The main focus of the Proposed Action at the project area is improvements for recreational usage. The AMRP and Magic Island offer large open spaces for land activities and beach access for water activities. There are water features located within the AMRP property which include a mile-long drainage canal that borders the majority of the mauka park boundary and empties into two ponds on the ʻEwa and Diamond Head ends of the Park. Recreational amenities on land include: ten tennis courts, a lawn bowling facility, exercise apparatuses, walk/run/jog paths, a canoe shelter, and large open lawn spaces (The Great Lawn) for field activities like soccer (Figure 3-1a and Figure 3-1b). There are over 1000 trees scattered throughout the project area providing ample shade for picnicking and gatherings, many of which are considered exceptional trees. Two concession stands that serve local food are located in the AMRP. A popular aspect of the project area is the mile-long beach that stretches from Magic Island to the Kewalo Basin. A lagoon surrounded by a seawall fronts Magic

[31] City and County of Honolulu. Honolulu Fire Department. Last updated February 2016. http://www.honolulu.gov/hfd/abouthfd.html

Island for more beach and water activities. The calm nearshore waters on the southern end of the Park attracts people from different levels of water experience making it suitable for ocean recreational activities, such as swimming and paddle boarding. Ocean waters beyond the reef that protects the nearshore waters are popular for surfing.

### 3.5.5 Schools

The project area is located within the Department of Education's (DOE) Honolulu District and the Kaimukī-McKinley-Roosevelt Complex. There are 28 schools in the complex. School age children residing near the project area attend:

- Ka‘ahumanu Elementary School (0.87 miles);
- Stevenson Middle School (1.5 miles);
- Washington Middle School (0.80 miles); and
- McKinley High School (0.35 miles).

McKinley High School, which is the closest school to the project area, is a ninth to twelfth grade DOE school and there are 1583 students enrolled for the 2017/2018 school year. ‘Iolani School is about one mile away and the closet private school to the project area. ‘Iolani is a kindergarten to twelfth grade private college preparatory school with approximately 1,900 students total.

### 3.5.6 Solid Waste

Solid waste services for the island of O’ahu are provided by the City’s Department of Environmental Services. Solid waste services include drop-off facilities, curbside collection, and recycling. Most residential and general commercial trash is disposed at H-POWER, the City’s waste-to-energy plant, which is located at Campbell Industrial Park. H-POWER processes over 600,000 tons of waste annually, producing approximately 10 percent of O‘ahu’s electricity.[32] The island’s two landfills, Waimānalo Gulch Sanitary Landfill and PVT Landfill, are located on the Wai‘anae Coast, approximately 30 miles west of the project area. Noncombustible construction and demolition debris and industry waste go directly to the PVT Landfill. Solid waste at the Park is collected and managed by DPR staff.

### 3.5.7 Potential Impacts and Mitigation Measures

The Proposed Action is not expected to generate an increase in demand for police, fire, emergency response, medical services, schools, parks, or recreation areas. Special off-

[32] City and County of Honolulu Department of Environmental Services. 2005. *How the City Manages Our Waste.* Obtained from http://www.opala.org/solid_waste/archive/How_our_City_manages_our_waste.html

duty police officers may be hired if required by DPP to assist with traffic control during construction.

In the short-term, the Proposed Action would temporarily affect sections of the Park and recreation areas and their users. Full use of AMRP and Magic may be temporarily hindered by construction staging, site preparation, trenching, stock piling, utility installation, back filling, site cleaning, and restoration.

During construction, solid waste generated from construction activities would be sent either to a recycler or to a licensed debris landfill, such as the PVT Landfill. Excavated soil will be tested for chemicals of potential concern using appropriate EPA SW-846 methods to determine if the soil is suitable for reuse.[33] Suitable soil will be reused to fill trenches of new utilities. Any remaining soil that cannot be reused will be characterized using the toxicity characteristic leaching procedure (TCLP) to determine if the soil is suitable for disposal as non-hazardous waste at PVT Landfill in Nanakuli. Any soil failing the TCLP testing will need to be handled as hazardous waste and disposed at a permitted facility on the U.S. mainland. The impact on the area's solid waste facilities is anticipated to be minor.

In the long-term, the proposed improvements would improve access by providing wider walkways and crossings over the drainage canal for pedestrians. Possible relocation of the Ocean Safety headquarters to a more strategic location is being discussed.

## 3.6 VISUAL AND AESTHETIC RESOURCES

### 3.6.1 Existing Conditions

Visual resources include scenic vistas, scenic overlooks, unique topography, or visual landmarks having scenic value. Improvements to the Park's visual and aesthetic resources are not expected to be impacted by the Proposed Action. The City proposes to remove diseased trees and plant more trees, as well as improve the irrigation system. The City also proposes to restore the historical elements on the AMRP to preserve them and improve their aesthetic condition.

### 3.6.2 Potential Impacts and Mitigation Measures

No long-term aesthetic or visual impacts will occur as a result of the Proposed Action, therefore no mitigation is recommended. Construction-related equipment and

[33] State of Hawai'i, Department of Health, Hazard Evaluation and Emergency Response Office. October 2011. *Guidance for the Evaluation of Imported and Exported Fill Material, Including Contaminant Characterization of Stockpile.* Pg. 3

structures are expected to be temporarily on the property during implementation of the improvements.

# 3.7 RECREATION

## 3.7.1 Existing Conditions

The Park is used extensively for both ocean and land-based recreation. The beach and offshore waters are heavily used daily, and are the main attractions at the Park. Magic Island beach includes a seawall enclosed lagoon area and the AMRP beach features about a mile-long stretch of white sand from Magic Island to Kewalo Basin. The reef protects the deeper swim channel and calm waters near the shoreline. The most common activities for the beach and ocean include: swimming, surfing, wading, bodyboarding, standup paddling, one-man or two-man canoe paddling, sunbathing, picnics, pole fishing, walking, running, metal detecting, and taking wedding photos. Group exercise activities are organized throughout the day for the beach areas and in the water. Parking along Ala Moana Park Drive makes the beach accessible and many who park along the road use the beach. The west end of the road is a popular parking area for the surfers to access highly used surf spots near Kewalo Basin. The most popular location on the AMRP beach is along the west side of the Magic Island parking lot. This area affords the opportunity to have large gatherings on the grass with closer access to the beach and water. People attending the gatherings may park close by in the open lot. The restrooms, showers and concession are also within short distances.

Recreation on site ranges from individual play and fitness activities to group events. The Park is much used for family and small group gatherings. Its protected waters, beach and extensive grassy areas provide space for play, picnics and relaxation for all ages. Figure 3-15 depicts some of the more popular recreational uses at the project area.

1

©2018 Belt Collins Hawaii LLC P:\Ala Moana Park\2015\71 0100\013-3 ar A 12June2018 7

**Figure 3-15**
**WATER AND LAND RECREATION**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

### Water Recreational Uses

AMRP is heavily used for water recreation. More than 3.3 million annual users were estimated as using the Park's ocean resources in 2016.[34] That count is 13.6 percent of the total beach goers for Oʻahu. (Waikīkī beaches accounted for 47.2 percent of the total count; no other counts are nearly as large as the Waikīkī and Ala Moana beaches.)

#### Swimming and wading

The beach was constructed in 1955; prior to this a seawall separated the ocean from the Park.[35] Lifeguard towers were added in the 1960s. Magic Island, and its lagoon, is a manmade peninsula constructed in 1964. The beach portion of the Park was an old boat channel which was later dredged and sand brought in to cover the coral fill. The beach's ocean floor has a gentle slope and an outer reef resulting in calm waters which makes it ideal for family swimming and lap swimmers.

The lagoon on Magic Island has a sandy bottom and slopes gently toward deeper areas. The main hazards are not swimming in the lagoon, but the surf that hits the rock wall which protect the lagoon.[36] The surf is unpredictable and could injury swimmers if they are near or on the wall.

Additionally, lifeguard towers enhance safety for swimmers and waders. Two existing dangers are water depth which becomes deep after a certain distance, posing risk to inexperienced and unknowing swimmers; and the current coral build-up on the beach and on the ocean floor, causing risk of injury to swimmers. There were at least 49 rescues and 3 drownings at the beach in 2016.[37]

#### Surfing

"Surf Oʻahu's" website[38] features a listing and a map of all the surf spots on Oʻahu. It also includes videos, surf news and updates, and logistics of the areas. The map found at least six surf locations fronting Ala Moana Beach including: Kewalos, Concessions, Tennis Courts, Big Rights, Baby Haleʻiwa's, and Bomboras. It is a long paddle out to the surf break which also includes a walk across the reef to reach the waves. There are three popular surf locations off to the east of Magic Island fronting the Ala Wai Boat Harbor that include: [Ala Moana] Bowls, Break and Kaisers. Popularity of these spots may vary due to season and quality of swells. The recommended season to surf the south shore is during the summer when the south swells can reach up to seven feet or higher.

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[34] Ibid. DBEDT, *State of Hawaiʻi Data Book 2016*, Table 7.48.

[35] Ibid. Weyeneth, Robert. *Ala Moana: The People's Park*

[36] Clark, John. 1977 The Beaches of Oʻahu. The University Press of Hawaiʻi

[37] Ibid. DBEDT, *State of Hawaiʻi Data Book 2016*, Table 7.48

[38] http://surf-oahu.com/map/

"Ala Moana Bowls" and "Kewalos" are the more popular surf spots near the Park. Both locations tend to draw large crowds regardless of surf conditions since the conditions tend to be consistent. This is a result of the boat channel dredging through the reef to build Kewalo Basin and the Ala Wai Boat Harbor. "Kewalos" surf break starts to the east of the Kewalo Basin channel and stretches across the west end of the AMRP beach. Surfers can reach the surf break from the Kewalo Basin Park or from the AMRP beach. "Ala Moana Bowls" surf break is located to the east of Magic Island and fronts the Ala Wai Boat Harbor. Surfers will usually access the surf break from the Ala Wai Boat Harbor parking lot that is adjacent to the Hilton Hawaiian Village Hotel. Some may choose a route via Magic Island. Surf competitions are held at these surf breaks during the late Spring months. See "Surf Competition" section below for more information about the events.

**Stand-up Paddle (SUP) Surfing**

The placid nature of the water makes this beach an ideal location for SUP surfing. There are many companies which cater to SUP surfing at the Park.

**Canoe Paddling**

Like SUP surfing, the calm waters make the Park an ideal location for canoe launching and practice. Several canoe clubs are located, or launch, from the Park's shores. Additionally, a Canoe Hale exists on the makai side of the AMRP creating easy canoe access.

**Land Recreational Uses**

**Walking and Jogging**

The Park offers a 2+mile paved shared-use path that covers the entire perimeter. This path can be seen frequented by walkers and joggers. An internet search produces several websites listing the Park as a running and walking route in the downtown area. Additionally, events such as fundraiser walks and runs occur here.

**Biking**

Like walking and jogging, the Park offers a 2+ mile plus paved shared-use path that covers the perimeter. This path can be seen frequented by bicyclist. An internet search produces several websites listing the Park as a bike path in the downtown area. Additionally, there are 3 Biki Bike stations in Ala Moana Park, which are located at: Ala Moana and Kamakee intersection, Ala Moana Concession #2, and Ala Moana and Atkinson intersection.

**Lawn Bowling**

The AMRP features the only lawn bowling facility in Hawai'i. The lawn bowl green and related facility was built sequentially with the AMRP in the 1930s and by Australian

servicemen.[39] The majority of the visitors come from countries where lawn bowling is popular like Canada, New Zealand and Australia. The bowling green overlays three feet of crushed coral to allow the grass to dry quicker during the wetter seasons.[40] It is located on the west side of the AMRP and can be accessed from Ala Moana Park Drive. The L&L Hawaiian Barbeque concession stand is southwest, the Ocean Safety Building is south, and the keyhole parking area is east of the facility. The green is surrounded by a five feet high white wall which helps preserve the facility. The bowling green had a brief lapse of time with no usage in the 1950s and the maintenance of the lawn was neglected. Then in 1956, the facility was restored and club members and volunteers have maintained it ever since.

Honolulu Lawn Bowls Club was formed in 1974 and is an active club today. According to their club website, the club bowls every Saturday at 10 am and may have games on Monday, Wednesday, and Friday mornings. The website suggests green maintenance donations in various amounts for visitors to use the facility. Club membership is offered for yearly renewal or lifetime purchase. The facility provides equipment for use and free lessons on Saturday mornings. The facility also hosts an annual tournament called "The Unofficial Barefoot Bowls World Championships." The last tournament was in February 2018.

**Tennis**

There are 10 tennis courts located at McCoy Pavilion. Public outreach comments, conducted for the Preferred Master Plan, suggested a desire for organized sports club teams and tennis tournaments. Currently, there are tennis tournaments that occur at these tennis courts.

**Volleyball**

At the end of 2017, the City presented two new sand volleyball courts. These courts are located adjacent to Kewalo Basin and at the 'Ewa end of the AMRP beach. Additionally, public outreach comments conducted for the Preferred Master Plan, suggested a desire for organized sports club teams such as volleyball.

**Sunset/Firework Watching**

The Hilton Hawaiian Village's Friday night fireworks can be best viewed from Magic Island. The Preferred Master Plan takes into consideration the viewing of these Friday night fireworks into consideration when designing the overall landscape approach. An

[39] Honolulu Lawn Bowls Club, Ala Moana Regional Park, Honolulu. 2018. http://honolululawnbowls.com/Mapsdirections.html

[40] Thompson, David. "Hit the Green at Ala Moana Beach Park with the Honolulu Lawn Bowls Club." Honolulu Magazine. October 16, 2014. http://www.honolulumagazine.com/Honolulu-Magazine/October-2014/Hit-the-Green-at-Ala-Moana-Beach-Park-with-Honolulu-Lawn-Bowls-Club/.

internet search reveals a high level of people and interest in viewing these fireworks from the Park.

**Large Events at the Park**

**4th of July Fireworks**

The 4th of July Firework Spectacular is the most-attended and largest fireworks display on the island. At least 50,000 people are expected to attend the event each year. Spectators may set up tents for families the night before, and parking at both the Park and Ala Moana Center fills during the day. 2018 will mark the 27th year of the annual event.

**Lantern Floating -Memorial Day**

The Lantern Floating ceremony, held annually on Memorial Day by the Shinnyo-En Buddhist sect, includes ceremonies conducted by the sect's leaders along with the opportunity for participants to inscribe and launch their own lanterns with prayers. The ceremony represents elements that are inspired by the Buddhist ceremonial tradition and the Hawaiian culture. About 50,000 people attend this event that has been held at the AMRP since 2002. More than 6,000 lanterns are provided for the 2018 event and the public is reminded that availability of lanterns is on a first come, first serve basis. [41] Information about the event and how to participate is available on the "Lantern Floating Hawai'i" website at http://www.lanternfloatinghawaii.com/. The website accepts online message to include with the "Collective Remembrance Lantern" for those who are unable to attend the ceremony in person. Any donations received for the event is distributed between supporting the event and to the City's park maintenance fund for the AMRP and Magic Island.

**Annual Greek Festival**

2018 will mark the 37th year of the Greek Festival that will be held in August. The McCoy Pavilion has been hosting the festival every year. The two-day event charges a small fee for attendees to enjoy performing entertainment and authentic food. More information about the festival can be found on their website at http://greekfestivalhawaii.com/about-festival/.

**Surf Competitions**

Surf competitions are listed on the "Aloha Surf Guide" website.[42] The competitions hosted near the project area are held during the spring or summer. Some of the competitions that were hosted by "Ala Moana Bowls" and "Kewalos" include: the Hawaiian Amateur Surf Association (HASA) State Championships, the Oakley Surf

[41] Lantern Floating Hawai'i. 2018. http://lanternfloatinghawaii.com/page/faqs#cost.

[42] Aloha Surf Guide. http://www.alohasurfguide.com/events-contests/

Shop Challenge, the Local Motion Surf Into Summer, and the Hawai'i Surf Association Surf Series.

**The Honolulu Triathlon**

The Honolulu Triathlon involves a 1500-meter swim at the AMRP Beach, 25-mile bike along Ala Moana Boulevard and Nimitz Highway to the Arizona Memorial and back, and then a 6.2-mile run in the AMRP. The races are usually scheduled on a Sunday in mid-May. Other related events occur within the days leading up to the races. This event is advertised and hosted in both English and Japanese. It is notable as an international event based in AMRP. Updates about the races and events can be found on The Honolulu Triathlon website http://www.honolulutriathlon.com/.

**Annual Parades and Activities**

The City's Department of Transportation Services (DTS) website[43] shows a listing of parades and other activities that require a permit to temporarily close the streets. The activities listed below are ones that start at AMRP and Magic Island for 2018.

**Dr. Martin Luther King Jr. Day Parade** – starts at the AMRP, to Ala Moana Blvd., to Kalākaua Ave., to Monsarrat Ave., end at Waikīkī Shell Parking Lot in Queen Kapi'olani Park.

**Tax March O'ahu** – starts at Magic Island to Ala Moana Blvd., to Punchbowl St., to end at the Federal IRS Building.

**Annual Visitor Industry Charity Walk** – starts at the AMRP's McCoy Pavilion Key Hole, clockwise around AMRP, to Ala Moana Blvd., to Ala Wai Promenade area, to Kalākaua Ave., crossover to King Kalākaua Park, to Seaside Ave. via Kalākaua Ave., to turnaround at Ohua Ave., to Lewers St. via Kalākaua Ave., to Kalia Rd., to Ala Moana Blvd., to end at the AMRP McCoy Pavilion Key Hole area.

**Aloha Festivals Floral Parade** – starts at the AMRP 'Ewa Entrance and Exit, to Ala Moana Blvd., to Kalākaua Ave., to Monsarrat Ave., to end at the Waikīkī Shell Parking Lot in Queen Kapi'olani Park.

**Peace in Asia – Unification of Korea 10K Run/Walk** – Starts at Magic Island, to Ala Moana Blvd., to Kalākaua Ave., turnaround at Dillingham Fountain, return via the same route back to Magic Island.

**Street Bikers United – Toys for Tots Caravan** – starts at Magic Island, to Ala Moana Blvd., to Kalākaua Ave., to Monsarrat Ave., to Waikīkī Shell Lots 1 thru 4.

[43] City and County of Honolulu. Department of Transportation Services. http://www.honolulu.gov/cms-dts-menu/site-dts-sitearticles/983-site-dts-usage-cat/site-dts-usage-2017-cat/25868-jan.html

**Yacht Racing**

The Waikiki Yacht Club is on State land next to the eastern entrance of the Park, and not part of the Park. It is the sponsor of the Transpac Race, the leading long-distance yacht race in the Pacific. The yacht club also hosts at least one regatta a month from the Ala Wai Boat Harbor.

**Ocean Paddle Sports Racing**

The Kānaka Ikaika Racing Association (KIRA) hosts various races throughout the year. Racers are allowed to use Outrigger canoes, stand up paddleboards, surfskis, and prone paddleboards. There are 18 events planned for 2018 and a few of the races end at Magic Island.

### 3.7.2 Potential Impacts and Mitigation Measures

In the short-term, the Proposed Action would temporarily affect sections of the Park and recreation areas and their users. Full use of AMRP and Magic Island may be temporarily hindered by construction staging, site preparation, trenching, stock piling, utility installation, back filling, site cleaning, and restoration.

In the long-term, the Proposed Action would improve recreation by improving access to the Park and replenishing the sand on the beach. The number of visitors is anticipated to increase regardless if the improvements are completed or not. However, without the improvements, the more popular facilities may not be able to accommodate the rising population in the state.

## 3.8 CIRCULATION AND TRAFFIC

### 3.8.1 Existing Conditions

Ala Moana Boulevard is a major two-way arterial that connects downtown Honolulu to the Waikīkī district. The two main vehicular entrances to the project area are at the intersection of Kamakee Street and Ala Moana Boulevard on the west and the intersection of Atkinson Drive and Ala Moana Boulevard on the east. The project area receives a regular amount of vehicular and foot traffic every day. The weekends, school breaks, and big surf days usually attract more visitors to the Park.

A traffic study was conducted to assess whether or not the improvements within the Park will impact vehicular or pedestrian traffic (see Appendix B). This study projected out to year 2028, representing a 10-year horizon. Under the existing conditions the level of service (LOS) at the Ala Moana Boulevard and Kamakee intersection shows an LOS C (average traffic delays) for the AM and PM peak hours and the Saturday peak, with LOS A being the least congested with little or no delay to LOS F, where the volume exceeds capacity, resulting in extreme delays causing severe congestion. The AM peak hour is from 7:15 to 8:15 AM and the PM peak is from 4:15 to 5:15 PM during the week

days. On Saturday, the peak hour occurred from 2:00 to3:00 PM. At the Ala Moana Boulevard and Atkinson Drive, the AM and PM peak hours and on Saturday's Peak hour LOS D (long traffic delays) condition was determined. The Ala Moana Boulevard through movements also operate at an LOS D condition with the left turn movements operating at an LOS of E and F. Much of the delays at the Ala Moana Boulevard and Atkinson intersection are attributed to split phasing of the traffic signals. Pedestrian were also shown to trigger the signals regularly Approximately one-fourth of the pedestrian traffic crossing Ala Moana Boulevard were associated with the Park. On the Saturday mid-day peak, all vehicles were observed to clear within one cycle for all movements.

### 3.8.2 Future Conditions

Future traffic volumes were derived from historical DOT Highways Division data from between 2009 and 2016. This data showed that the traffic volumes on Ala Moana Boulevard were either stagnant or declining during this time period. Therefore, a conservative growth rate of 0.5% was applied to calculate future growth.

The Ward Villages Transportation Master Plan was used for the future traffic volumes at the Ala Moana Boulevard/Kamakee Street intersection. In addition the Kamehameha Schools Kaiāulu ʻo Kakaʻako Master Plan was consulted to generate the 2028 background traffic. The analysis showed that the Ala Moana Boulevard through movements will continue to operate at an LOS C or better condition during all AM, PM and Saturday peak hours. However, the left turn lanes from Ala Moana Boulevard is projected to operate at an LOS E-F. Mauka bound turning movements from Ala Moana Regional Park and makai bound from Kamakee Street is projected to operate at and LOS D-E

The Ala Moana Boulevard/Atkinson intersection is projected to operate at LOS D during the AM and Saturday mid-day peak hours and LOS E during the PM peak hour. Through movements on Ala Moana Boulevard is projected to operation at LOS D or better during all peak periods except for the westbound PM peak through. Ala Moana Boulevard left runs are projected to operate at LOS E-F. Mauka-bound from Ala Moana Park Drive and the ma kai-bound are projected to operate at LOS D-F.

Overall the intersection of Ala Moana Boulevard and Kamakee Street intersection is projected to continue to operate at an acceptable LOS during peak hours. At the Ala Moana/Atkinson intersection the LOS is projected to have a higher day, mainly due to regional growth.

To increase protection of pedestrians crossing from Kamakee Street into and out of the Park, it was recommended that the State DOT consider removing the left turn movement from Kamakee to Ala Moana Boulevard. This could encourage vehicles to use the Queen Street left turn movement onto Ala Moana Boulevard. At the Atkinson Drive pedestrian crossing to and from Ala Moana Shopping Center and AMRP could expand the pedestrian island at the AMRP side of the crossing to comfortably hold

more pedestrians compared to the Ala Moana Shopping Center pedestrian island. Pedestrian facilities should also be ADA compliant.

### 3.8.3 Potential Impacts and Mitigation Measures

The improvements at Ala Moana Regional Park is not projected to have a significant impact on the overall delays at the intersections of Ala Moana Boulevard and the Kamakee Street and Atkinson Drive. Delays are attributed mainly to regional growth. The park improvements and additional parking facilities will continue to accommodate the area roadway traffic to the year 2028. Improvements could be made at the AMRP pedestrian island crossing over to Ala Moana Shopping center for increased safety.

## 3.9 PARKING

A parking study (Appendix C) was done to identify if there is adequate parking and propose options for areas where additional parking is possible. It evaluated the parking reconfiguration and lane options and its impact to the current ambient traffic.

The parking study was conducted one weekday, July 13, 2017 and two consecutive weekends, July 15, and 16, 2017, from 8am to 6pm in AMRP and Magic Island. These days were chosen because they were projected to have higher than normal attendance levels due to projected events. Ultimately, no projected events occurred for any chosen days; thus, all surveys are based solely on recreation and visitor demand.

Parking spaces were broken into lots and segments for the study. There were three parking lots, Keyhole, Magic Island, and Canoe Hālau; and three parking segments along Ala Moana Park Drive, ʻEwa Parking, Central Parking, and Diamond Head Parking.

Current available parking within AMRP and Magic Island is 934 spaces, including 24 ADA designated spaces. Additionally, there are 64 on-street parking spaces on Ala Moana Boulevard which are available weekday late nights, starting at 10am, and all-day on weekends.

Peak hours for each day were calculated based on vehicle occupancy each hour divided by the capacity of each lot or study segment. When occupancy reached capacity, 100%, illegally parked vehicles were included; thus, some calculations reached over 100% vehicle occupancy.

The study defined effective maximum desirable occupancy (effective occupancy) for parking to be 90% with a 10% “cushion” of spaces for reasonable search times. Peak hour for Thursday was at 6pm ranging from 99% occupancy in the ʻEwa Parking segment to 102% occupancy in the Diamond Head Parking segment. Peak hour for Saturday was at 5pm ranging from 97% occupancy in the ʻEwa Parking segment to 168% occupancy in the Canoe Hālau Parking Lot. Peak hour for Sunday was at 2pm

ranging from 102% occupancy in the Central Parking to 115% occupancy in the Magic Island Parking Lot.

Parking demand exceeded effective occupancy for all parking lots and parking segments on Thursday between 4pm and 5pm. Parking demand exceeded effective occupancy for all parking lots and parking segments on Saturday between 10am and 11am. Parking demand exceeded effective occupancy, except for the Keyhole Parking Lot, for all parking lots and parking segments on Sunday by or before 11am.

The occupancy data from the study concludes that Thursday can be generally accommodated by the existing park parking. To accommodate peak Thursday demand, a total of 58 spaces are recommended. Saturday parking demand begins to exceed total parking supply, in most areas, between 9am-6pm. Sunday parking demand exceeds total parking supply, in most areas, between 11am to 5pm. For both Saturday and Sunday, no vehicles were observed parking in permitted street parking along Ala Moana Boulevard. To accommodate peak Saturday and Sunday demand, a total of 113 new spaces are recommended; this calculation assumes all 64 parking spaces along Ala Moana Boulevard are fully used before the new supply addition.

### 3.9.1 Potential Impact and Mitigation Measures

Based on the traffic and parking studies the additional parking stalls will not significantly impact traffic within the Park. However, the additional parking could minimize the number of illegally parked cars in the park. The additional stalls added will provide better parking accommodations for the growing population. No long-term impacts are expected with the increase in parking stalls.

## 3.10 SOCIO-ECONOMIC SETTING

### 3.10.1 Existing Conditions

#### Demographics

AMRP serves residents of the entire City and County of Honolulu, since it is the base for family parties and island events. It also serves as a beach park and outdoor recreation area for residents of nearby neighborhoods. Figure 3-16 shows the nearby Zip Code Tabulation Areas (ZCTAs). Many regular users of the Park likely come from these areas. [44]

[44] ZCTAs are Zip Code areas, as recognized by the U.S. Census for the 2010 Census. In the present case, these correspond to Zip Code areas in everyday use.

1

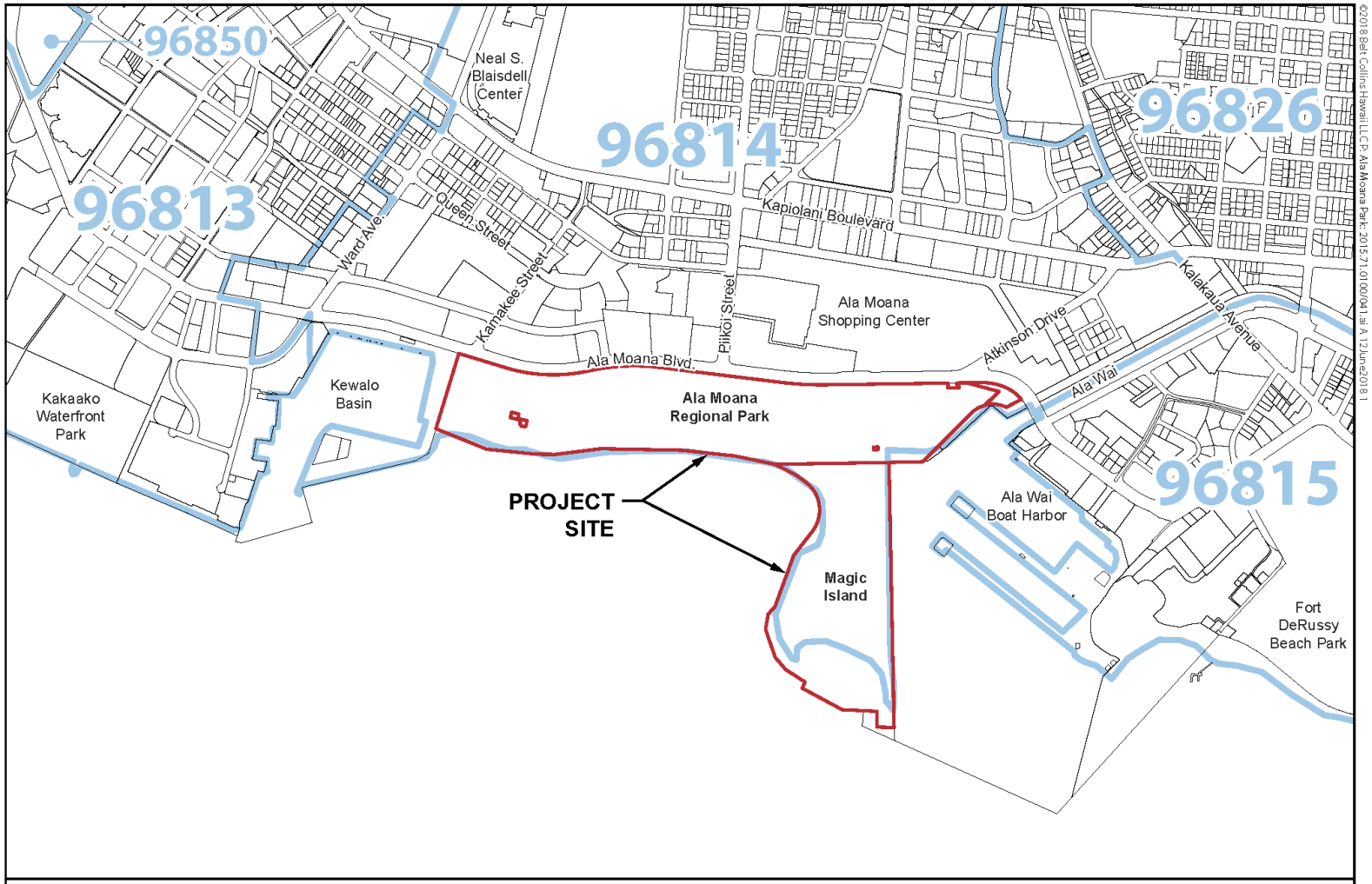


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**Figure 3-16**
**STATE ZIP CODE TABULATION AREAS**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

Waikiki beaches are enjoyed both by visitors staying in that area and by Honolulu residents living either in Waikiki or communities located farther from the ocean. AMRP, in contrast, is largely used by residents.

Residents of the area near the Park tend to be older than the population of the island as a whole (as shown by the median ages shown in Table 3-2). The Hawai‘i-born share of the population is smaller than island-wide. The Asian “racial” population is larger than for the island average, while the share of people claiming more than one racial affiliation is slightly lower than the island average. Households tend to be small, and median household incomes are smaller than the island-wide median (Table 3-3).

Most residents of the area near the Park live in large multi-unit buildings, in contrast to the island population as a whole (Table 3-4). About a quarter of nearby households do not have an automobile (Table 3-5), and a large minority of the resident workforce commutes either by walking or by public transport (Table 3-6).

The share of the local population with incomes below the poverty line is higher in the Zip Codes near the Park than for the island population as a whole (Table 3-7).

**Table 3-2: Resident Population, City and County of Honolulu and Zip Code Tabulation Areas (ZCTAs) near AMRP**

| | City and County of Honolulu | ZCTA 96814 Ala Moana | ZCTA 96815 Waikīkī | ZCTA 96826 McCully Mōʻiliʻili |
|---|---|---|---|---|
| **Population** | | | | |
| Total Population | 975,690 | 18,846 | 50,656 | 31,346 |
| Under 5 years | 63,691 | 739 | 2,021 | 1,551 |
| 5 to 9 years | 57,223 | 395 | 2,468 | 1,072 |
| 10 to 14 years | 58,239 | 632 | 2,666 | 1,265 |
| 15 to 19 years | 57,388 | 627 | 2,322 | 1,520 |
| 65 to 74 years | 76,422 | 1,812 | 4,725 | 2,661 |
| 75 to 84 years | 46,211 | 1,203 | 3,388 | 1,856 |
| 85 years and over | 25,220 | 638 | 2,557 | 986 |
| Median age (years) | 37.2 | 45.5 | 45.1 | 39.9 |
| Race (alone or in combination) | | | | |
| White | 37.9% | 32.6% | 32.2% | 28.5% |
| Black or African American | 4.0% | 2.2% | 1.8% | 2.8% |
| American Indian and Alaska Native | 2.1% | 1.9% | 1.8% | 2.6% |
| Asian | 60.9% | 68.5% | 71.4% | 69.3% |
| Native Hawaiian and Other Pacific Islander | 23.7% | 11.4% | 17.7% | 21.4% |
| Some other race | 2.5% | 2.7% | 1.6% | 1.2% |
| Average Number of Race Identifications/Person | 1.31 | 1.19 | 1.27 | 1.26 |
| Hispanic (of any race) | 8.9% | 6.0% | 6.3% | 4.8% |
| Place of Birth | | | | |
| Hawaiʻi | 53.5% | 37.9% | 26.9% | 49.6% |
| Other state | 23.5% | 22.8% | 39.2% | 18.0% |
| US Island | 3.6% | 4.0% | 2.9% | 2.5% |
| Foreign born | 19.4% | 35.3% | 31.1% | 29.9% |

SOURCE: U.S. Census, *American Community Survey*, Five Year Data for 2010-2014. Data profiles compiled at http://census.hawaii.gov/acs/acs-2014/.

**Table 3-3: Housing and Resident Households, City and County of Honolulu and ZCTAs near AMRP**

| | City and County of Honolulu | ZCTA 96814 Ala Moana | ZCTA 96815 Waikīkī | ZCTA 96826 McCully Mōʻiliʻili |
|---|---|---|---|---|
| **HOUSING AND HOUSEHOLDS** | | | | |
| Total housing units | 339,830 | 11,481 | 22,250 | 16,022 |
| Occupied housing units | 310,141 | 9,592 | 15,035 | 14,719 |
| Vacant housing units | 29,689 | 1,889 | 7,215 | 1,303 |
| HOUSEHOLDS BY TYPE | | | | |
| Total households | 310,141 | 9,592 | 15,035 | 14,719 |
| Households with one or more people under 18 years | 106,347 | 1,444 | 1,804 | 2,776 |
| Households with one or more people 65 years and over | 99,009 | 2,823 | 4,460 | 4,330 |
| Average household size | 3.03 | 1.95 | 1.89 | 2.06 |
| Median household income (dollars) | 73,581 | 57,946 | 50,832 | 44,946 |

SOURCE: U.S. Census, *American Community Survey*, Five Year Data for 2010-2014. Data profiles compiled at http://census.hawaii.gov/acs/acs-2014/.

**Table 3-4: Units in Structure, City and County of Honolulu and ZCTAs near AMRP**

| | City and County of Honolulu | ZCTA 96814 Ala Moana | ZCTA 96815 Waikīkī | ZCTA 96826 McCully Mōʻiliʻili |
|---|---|---|---|---|
| **UNITS IN STRUCTURE** | | | | |
| Total housing units | 339,830 | 11,481 | 22,250 | 16,022 |
| 1-unit, detached | 45.5% | 4.3% | 9.9% | 5.4% |
| 1-unit, attached | 10.4% | 1.6% | 1.6% | 4.2% |
| 2 units | 2.2% | 1.3% | 1.0% | 2.7% |
| 3 or 4 units | 4.8% | 2.0% | 1.0% | 7.8% |
| 5 to 9 units | 6.9% | 5.2% | 2.6% | 14.4% |
| 10 to 19 units | 5.3% | 7.2% | 8.1% | 12.9% |
| 20 or more units | 24.6% | 78.4% | 75.5% | 52.6% |
| Mobile home | 0.1% | 0.0% | 0.1% | 0.0% |
| Boat, RV, van, etc. | 0.0% | 0.0% | 0.2% | 0.0% |

SOURCE: U.S. Census, *American Community Survey*, Five Year Data for 2010-2014. Data profiles compiled at http://census.hawaii.gov/acs/acs-2014/.

**Table 3-5: Number of Vehicles per Household, City and County of Honolulu and ZCTAs near AMRP**

| | City and County of Honolulu | ZCTA 96814 Ala Moana | ZCTA 96815 Waikīkī | ZCTA 96826 McCully Mōʻiliʻili |
|---|---|---|---|---|
| **VEHICLES AVAILABLE** | | | | |
| Occupied housing units | 310,141 | 9,592 | 15,035 | 14,719 |
| No vehicles available | 10.2% | 24.8% | 30.3% | 25.4% |
| 1 vehicle available | 34.8% | 51.3% | 50.6% | 50.7% |
| 2 vehicles available | 35.0% | 20.6% | 14.1% | 21.4% |
| 3 or more vehicles available | 20.0% | 3.3% | 5.0% | 2.5% |

SOURCE: U.S. Census, *American Community Survey*, Five Year Data for 2010-2014. Data profiles compiled at http://census.hawaii.gov/acs/acs-2014/.

**Table 3-6: Commuting by Resident Workers, City and County of Honolulu and ZCTAs near AMRP**

| | City and County of Honolulu | ZCTA 96814 Ala Moana | ZCTA 96815 Waikīkī | ZCTA 96826 McCully Mōʻiliʻili |
|---|---|---|---|---|
| **COMMUTING TO WORK** | | | | |
| Workers 16 years and over | 480,392 | 10,502 | 15,911 | 17,165 |
| Car, truck, or van -- drove alone | 64.2% | 50.5% | 44.2% | 52.9% |
| Car, truck, or van -- carpooled | 14.7% | 8.2% | 8.1% | 12.6% |
| Public transportation (excluding taxicab) | 8.4% | 12.7% | 12.5% | 13.3% |
| Walked | 5.2% | 18.4% | 21.6% | 10.0% |
| Other means | 4.0% | 7.3% | 7.5% | 8.4% |
| Worked at home | 3.5% | 2.8% | 6.2% | 2.8% |
| Mean travel time to work (minutes) | 27.6 | 21.4 | 21.5 | 20.7 |

SOURCE: U.S. Census, *American Community Survey*, Five Year Data for 2010-2014. Data profiles compiled at http://census.hawaii.gov/acs/acs-2014/.

**Table 3-7: Poverty Status of Residents, City and County of Honolulu and ZCTAs near AMRP**

| | City and County of Honolulu | ZCTA 96814 Ala Moana | ZCTA 96815 Waikīkī | ZCTA 96826 McCully Mōʻiliʻili |
|---|---|---|---|---|
| **PERCENTAGE OF PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL** | | | | |
| All people | 9.8% | 10.3% | 13.3% | 16.0% |
| Under 18 years | 13.0% | 9.9% | 10.1% | 17.5% |
| 18 to 64 years | 9.3% | 9.5% | 15.1% | 15.8% |
| 65 years and over | 7.0% | 13.0% | 8.0% | 15.4% |

SOURCE: U.S. Census, *American Community Survey*, Five Year Data for 2010-2014. Data profiles compiled at http://census.hawaii.gov/acs/acs-2014/.

### The Homeless Population

Honolulu's parks serve all groups within the resident population. Persons without homes and often without employment have more time than many others to enjoy beach parks. In 2017, 639 unsheltered homeless persons were counted in the Downtown Honolulu region (including Ala Moana).[45] Islandwide, some 2,635 persons were counted as sheltered, many of whom were in facilities such as First Step (in Kakaʻako) and the Institute for Human Services (in Iwilei), in walking distance of AMRP.

Members of the homeless population have been seen as intruding on visitors' and residents' enjoyment of public spaces and businesses' ability to serve paying customers. The City has enacted "sit-lie" bans on public streets and sidewalks[46], while the HPD enforces park closure rules that ban overnight camping, notably in Kapiʻolani, Ala Moana and Kakaʻako Waterfront Parks. In Kakaʻako, the HCDA has found it necessary to close Kakaʻako Waterfront Park and Mother Waldron Park because of deteriorated infrastructure due to heavy use by homeless campers.

### Economy

Waikīkī is the center of Hawaiʻi's tourism industry. Visitors outnumber residents, and some 44,000 jobs are located in Waikīkī. Visitor expenditures in Waikīkī amount to more than $7 billion, or 42 percent of total Statewide visitor spending.[47] However, the Ala Moana ZCTA, also has a large workforce.[48] Annual counts by the U.S. Census show that local employment in the Ala Moana ZCTA reached a high point in 2005. Meanwhile, the City and County of Honolulu workforce returned to pre-recession levels as of 2014.

The area nearest the Park has a diverse mix of businesses, as shown in Table 3-8. In addition to the retail and food service establishments at Ala Moana Center nearby, many other medical, other professional and business services are located in the area.

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45 Bridging the Gap and Partners in Care. *2017 Statewide Homeless Point in Time Count, January 22, 2017.* Posted at http://www.partnersincareoahu.org/sites/default/files/2017%20Statewide%20PIT%20Report%20-%20Full%20Report%20-%20FINAL.pdf ; viewed on January 12, 2018.

46 City and County of Honolulu. Revised Ordinances of Honolulu, Section 29.15 (Waikīkī) and 15B (other areas in Honolulu).

47 Ibid. DBEDT, *State of Hawaiʻi Data Book 2015*, Tables 1.20 and 7.33.

48 The Census count of employees in 2014 shows 39,887 workers in ZCTA 96814, as compared to 32,382 in ZCTA 96815: the Ala Moana workforce appears to be larger than the Waikiki workforce. The only two ZCTAs with larger employment in Hawaiʻi are Downtown Honolulu (96813) and the Honolulu Airport area (96819).

**Table 3-8: Business Establishments in ZCTA 96814, 2014, by Industry and Employment**

| | | *Number of Establishments by Employment-size class* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Industry** | **Total Establistments** | **1 -4** | **5-9** | **10-19** | **20-49** | **50-99** | **100-249** | **250-499** | **500-999** | **1000 or more** |
| Total for all sectors | 2,417 | 1,203 | 502 | 337 | 225 | 93 | 37 | 14 | 3 | 3 |
| Agriculture, Forestry, Fishing and Hunting | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Utilities | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| Construction | 47 | 25 | 9 | 5 | 6 | 2 | 0 | 0 | 0 | 0 |
| Manufacturing | 40 | 16 | 10 | 4 | 8 | 0 | 0 | 2 | 0 | 0 |
| Wholesale Trade | 85 | 49 | 20 | 7 | 6 | 3 | 0 | 0 | 0 | 0 |
| Retail Trade | 427 | 130 | 105 | 94 | 61 | 23 | 8 | 4 | 2 | 0 |
| Transportation and Warehousing | 28 | 12 | 9 | 2 | 2 | 2 | 1 | 0 | 0 | 0 |
| Information | 32 | 16 | 3 | 6 | 4 | 1 | 2 | 0 | 0 | 0 |
| Finance and Insurance | 153 | 86 | 30 | 15 | 13 | 6 | 1 | 1 | 0 | 1 |
| Real Estate and Rental and Leasing | 156 | 121 | 19 | 10 | 5 | 1 | 0 | 0 | 0 | 0 |
| Professional, Scientific, and Technical Services | 266 | 169 | 43 | 36 | 10 | 7 | 1 | 0 | 0 | 0 |
| Management of Companies and Enterprises | 20 | 11 | 5 | 0 | 3 | 1 | 0 | 0 | 0 | 0 |
| Administrative and Support and Waste Management and Remediation Services | 110 | 58 | 20 | 6 | 9 | 7 | 7 | 2 | 0 | 1 |
| Educational Services | 38 | 17 | 7 | 7 | 5 | 1 | 1 | 0 | 0 | 0 |
| Health Care and Social Assistance | 370 | 194 | 114 | 37 | 13 | 5 | 4 | 3 | 0 | 0 |
| Arts, Entertainment, and Recreation | 25 | 9 | 5 | 4 | 2 | 3 | 1 | 1 | 0 | 0 |
| Accommodation and Food Services | 348 | 111 | 56 | 85 | 60 | 25 | 9 | 1 | 0 | 1 |
| Other Services (except Public Administration) | 265 | 174 | 47 | 19 | 18 | 6 | 1 | 0 | 0 | 0 |
| Industries not classified | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SOURCE: https://censtats.census.gov/cgi-bin/zbpnaic/zbpdetl.pl

### Emerging Trends in the Surrounding Area

While Honolulu has settled into a pattern of slow population growth, the Kakaʻako and Ala Moana area population is expected to grow more rapidly, with new development of condominiums and apartments. The Ala Moana-Kakaʻako area population is estimated as increasing by some 22,000 between 2005 and 2035, to reach 36,913 persons. The annual average growth rate over that period would be 3.1 per cent, as

opposed to 0.5 per cent for the island as a whole.[49] The Ala Moana-Kakaʻako area population is likely to supply a large share of regular Park users.

The Honolulu Rapid Transit project involves construction of a rail line from Leeward Oʻahu to a terminus at Ala Moana. While the project has been delayed, and financing of the entire line remains to be secured, operations of part of the line will occur by 2020, and completion of the planned segment seems likely in the next few years. The rail line will bring more residents to Ala Moana. It is likely to increase user numbers at AMRP, notably for special events such as the Greek Festival.

### 3.10.2 Potential Impacts and Mitigation Measures

The proposed improvements at the Park are not expected to have a social effect on the park users. All the planned projects are beneficial to the park users because the improvements are expected to enhance the experience by increasing parking space, wider egress and ingress access along Ala Moana Boulevard, control erosion around the two ponds and restoring the historic features in the Park, such as the Bridle Bridge and the Roosevelt Portals.

The project will have a short term beneficial impact on the economy because of the various construction projects within the project area. The construction industry will gain short-term direct and indirect jobs. Direct impacts will come from the prime contractor who will then employ subconsultants for supplies required for the construction of the proposal improvements. The money gained will probably be spent on the local community via personal expenses that will add to the Hawaiʻi economy.

[49] City and County of Honolulu, Department of Planning and Permitting, Socioeconomic Projections to 2035, posted at http://www.honoluludpp.org/Portals/0/pdfs/planning/demographics2/Projections/2000-2035byDPSA.pdf.

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# CHAPTER 4

Natural Environment

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# CHAPTER 4
# NATURAL ENVIRONMENT

This chapter reviews the natural environment and identifies potential impacts and mitigation measures. Sections included in this chapter are as follows:

- Geological, Soil and Topography
- Hydrology
- Air Quality
- Historical, Archaeological and Cultural Resources
- Flora, Fauna and Aquatic Biology
- Beach Nourishment

## 4.1 GEOLOGY, SOILS AND TOPOGRAPHY

### 4.1.1 Geology

There are eight major islands (Niʻihau, Kauaʻi, Oʻahu, Maui, Kahoʻolawe, Lānaʻi, Molokaʻi, and Hawaiʻi) in the state that comprises of 99% of the land area of the Hawaiʻi Archipelago. The remaining one percent are smaller volcanic atolls to the northwest of the main islands. The island of Oʻahu consists of two basaltic shield volcanoes: the Koʻolau volcano to the east and the Waiʻanae volcano to the west. Each volcano extends several thousand feet below the seafloor. Urban Honolulu's geological components are alluvium or late volcanic deposit from the Koʻolau range that extend seaward into elevated coral reefs.[1] Millions of years of erosion and sea level change have further shaped the island and its subsurface composition to the Oʻahu we are familiar with today.[2]

[1] Macdonald, G., Abbott, A., & Peterson, F. 1983. *Second Edition Volcanoes in the Sea*. University of Hawaiʻi Press. Pg. 420

[2] Stearns, H., & K. Vaksvik. 1935, Reprinted March 2001. *Geology and Ground-Water Resources of the Island of Oʻahu, Hawaiʻi*. Prepared for U.S. Geological Survey. Pg 98.

The geology of the Waikīkī and Kakaʻako area consists of marshy, swamp lands and sedimentary deposits.[3] The project area was part of a land reclamation event with Waikīkī and Kakaʻako in the early 20th century that created artificial dry land and a reconfigured shoreline. The project area sits atop the original 1817 reef that was filled in with marine dredge. This fill is described as "brown to white permeable marine mud containing shells, coral, and other calcareous marine organisms dredged from the ocean floor and used to fill up salt marshes and other low lands."[4] The alluvia plain of sedimentary deposits continues upland and stretches east (Waikīkī) and west (Kakaʻako) of the project area.

The beach section of the project area transitions from fill composed of marine deposits to unconsolidated marine calcareous sediments. The coastline of the manmade sections of the south shores is described as unconsolidated marine calcareous sediments. This material is "chiefly cream-colors and light-tan, very permeable beach sand consisting of grains of worn coral, coralline algae, and shells with appreciable amounts of foraminifers and other calcareous marine organisms."[5] The sand that formed the current shoreline from Waikīkī to Sand Island was imported from Waiʻanae or Bellows Field. Typically, ocean or brackish water is abundant in this sand.

### 4.1.2 Soils

The U.S. Department of Agriculture's Soil Conservation Service, now known as the Natural Resources Conservation Service, classifies the soil at the project area as mixed fill land (zero to three percent slope) and beaches (one to five percent slope).[6] Mixed fill land (FL) consists of materials dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources.[7] This soil type occurs in urban areas, near Pearl Harbor and in Honolulu adjacent to the ocean. Beaches (BS) occur as sandy, gravelly, or cobbly areas on all the islands. They are washed and rewashed by ocean waves. The beaches consist mainly of light colored sands derived from coral and seashells. Beaches are highly suitable for recreational uses and resort development. See Figure 4-1, Soils Map depicting the soil classification of the project area.

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3 Stearns, H., & K. Vaksvik. 1938, Reprinted March 2001. *Geologic and Topographic Map of the Island of Oʻahu, Hawaiʻi* Bulletin 2, Plate 2. Prepared for U.S. Geological Survey.

4 Ibid.

5 Ibid

6 U.S. Department of Agriculture, Natural Resource Conservation Service, Survey Area Data: Version 9, September 25, 2014.

7 Foote et al. 1972. Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.

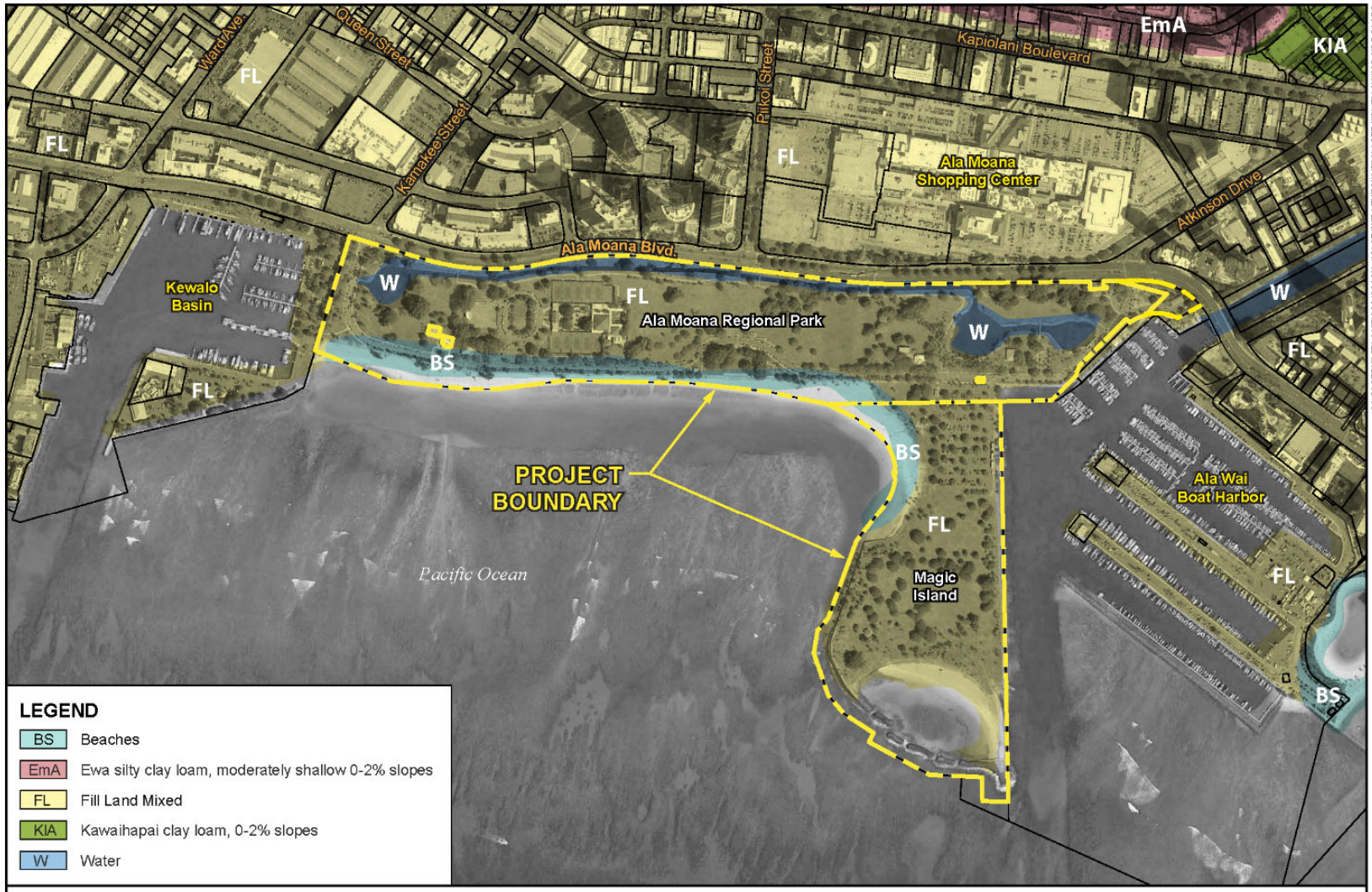


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**Figure 4-1**
**SOILS MAP**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

### 4.1.3 Topography

The project area is relatively level at an approximate elevation of 5.1 feet and 5.6 feet above msl. Over the project area's approximate 118 acres, the elevation ranges from zero feet above msl at the shoreline to about 5.0 feet above msl around the northern sections of the Park. The AMRP contains a mile-long canal on the northern side of the park that empties into two ponds on the northeastern and northwestern sides. Ala Moana Park Drive bisects the AMRP from Magic Island and the beach through the middle of the project area. The elevation of Ala Moana Park Drive is approximately 4.3 feet above msl. The project area is drained through surface flow directly into the canal, ponds or Ala Moana Park Drive. Drainage into Ala Mona Park Drive is piped to the Ala Wai Harbor, canal or ponds.[8]

### 4.1.4 Potential Impacts and Mitigation Measures

The Proposed Action would not adversely impact the integrity of the project area's geology, soil, or topography. The Proposed Action will disturb the soil at the project area, but the disturbed locations will be restored to their original condition once construction is completed.

Construction activities would be conducted in compliance with the required project-specific BMP Plan to minimize the potential for erosion that could cause soil runoff into local waterways, drainage system or the ocean. Any sediment captured by the erosion protection devices would be dewatered and used for backfill or properly disposed, along with any excess material.

## 4.2 HYDROLOGY

This section describes site hydrology (surface water and groundwater) for the Proposed Action. Factors considered in the evaluation of hydrology include site changes that would affect surface water and groundwater.

### 4.2.1 Water Resources

The project area is located on the southeastern side of the island of O'ahu, where the climate is relatively dry, mild, and seasonably uniform. The AMRP receives about 26 inches of rainfall and Magic Island receives about 24 inches of rainfall per year.[9] Four sides of the project area are surrounded by water: a drainage canal and two ponds to the north, Kewalo Basin to the west, Ala Wai Boat Harbor to the east, and the Pacific Ocean directly south. Figure 4-2 shows the surrounding surface waters near or within the Park.

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8 Belt Collins Hawaii LLC, 2018, *Preliminary Engineering Report Ala Moana Regional Park*. Pg. 8.

9 Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S. Chu, J.K. Eischeid, and D.M. Delparte, 2013: Online Rainfall Atlas of Hawai'i. *Bull. Amer. Meteor. Soc.* 94, 313-316, doi: 10.1175/BAMS-D-11-00228.1.

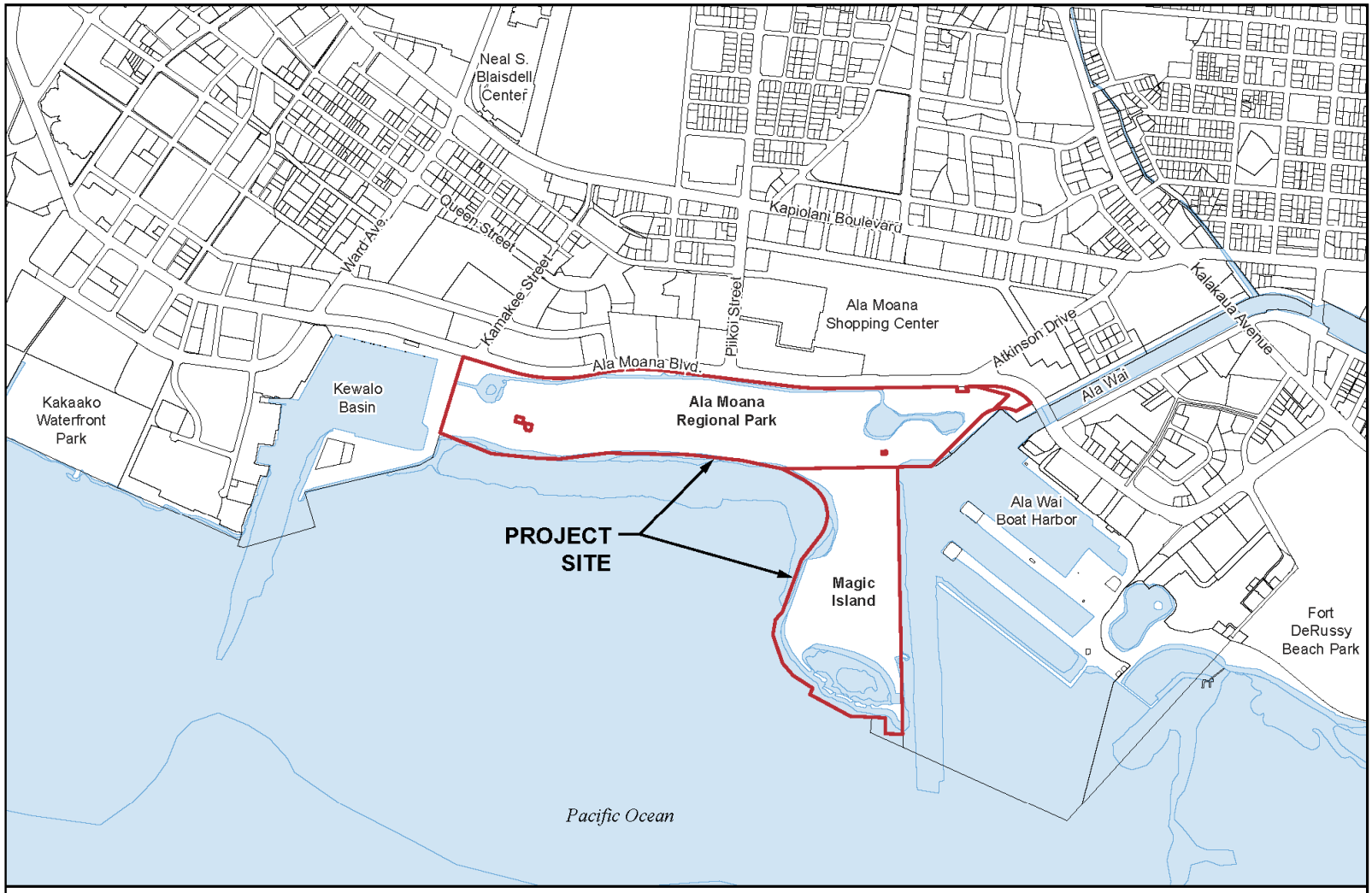


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**Figure 4-2**
**SURFACE WATERS**
Kalākaua Avenue Water System Improvements
Honolulu, O'ahu, Hawai'i
Environmental Assessment

### 4.2.2 Surface Water

DOH defines surface water in HAR §11-54-1[10], Definitions as "both contained surface water (that is, water upon the surface of the earth in well-defined basins created naturally or artificially including, but not limited to, streams, other watercourses, lakes, and reservoirs) and diffused surface water (that is, water occurring upon the surface on the ground other than in contained basins). Water from natural springs and seeps is surface water when it exits from a spring onto the earth's surface." According to the State Commission on Water Resource Management (CWRM), there are approximately 376 streams that flow continuously in Hawai'i. They are fed by rainfall (surface runoff) and underground sources of water (subsurface flow). The State Water Code, HRS Chapter 174C, authorizes the Commission to designate water management areas for surface water use. Individual surface water management areas are similar to the watershed designations. The project area is located within the Ala Wai watershed. The Ala Wai watershed encompasses approximately 10,378 acres.[11] There are at least 17 streams that occur within the Ala Wai watershed.[12] Storm water from five sub-watersheds (Makiki, Mānoa, Pālolo, Ala Wai Canal, and Waikīkī) feed into the Ala Wai Canal which empties into Māmala Bay at the Ala Wai Boat Harbor. The boat harbor connects to Māmala Bay via a channel that was dredged through the reef platform when the harbor was built in 1935.[13] However, storm water from the project area does not enter the Ala Wai Canal. Discharge from the Park is directed toward the Ala Wai Boat Harbor and Kewalo Basin either via the AMRP canal and ponds or the drain inlets located in the park's parking lots and roadway. Ala Wai Boat Harbor and Kewalo Basin adjoin to the Pacific Ocean.

#### 4.2.2.1 *Project Area Surface Waters*

The surface water features located in the project area are a drainage canal and two ponds. They were manmade features dredged shortly after the AMRP was filled in during the early-1930s. Their main feature is storm water drainage for the local areas surrounding the project area. They also serve recreation and aesthetic purposes as part of the AMRP's amenities. Recent observation and feedback from park users note that the areas around the ponds are not popular for recreational or lounging use. Therefore, the City proposes to activate vacant park spaces around the ponds with improvements to the water edges. However, the public is advised to not enter the ponds or the canal because the water quality is not meant for swimming or wading. The ponds and canal receive urban storm runoff from outlets located in the canal. There are numerous drainage outlets that discharge local urban runoff from the Kaka'ako and Ala Moana areas, as well as Ala Moana Boulevard. The water features

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10 State of Hawai'i. 2014. *Hawaii Administrative Rules, Title 11, Chapter 54, Water Quality Standards.* Updated November 15, 2014.

11 U.S. Army Corps of Engineers (USACE). August 2015. *Draft Ala Wai Canal Project, O'ahu, Hawai'i Feasibility Study with Integrated Environmental Impact Statement*. Pg. 6.

12 Hawai'i Division of Aquatic Resources and Bishop Museum. 2008. *Atlas of Hawaiian Watersheds & Their Aquatic Resources.* http://www.hawaiiwatershedatlas.com/oa_honolulu.html

13 Ibid. USACE. August 2015. Pg. 5-10.

are also tidally influenced and receive salt water from the box culverts located at each pond, along with groundwater intrusion.

The canal is about 3,400 feet long, 27 feet wide, and 4 feet deep, with an invert at mean sea level.[14]. Under the existing drainage conditions, about 465 acres drain to the canal and ponds; majority of this area is off-site with only 57 acres of the Park land.[15] The remaining 45 acres discharges directly into the canal from Ala Moana Boulevard. The first storm drain to discharge into the canal was the Piʻikoi Street drain, which was constructed in the 1930s.[16] The Pensacola Street drain was later added in 1971 to reduce flooding in the areas near Piʻikoi Street. Plans to upgrade the AMRP canal were proposed since the 1950s, but those plans were met with objections from the public and various government agencies.

The Hawaiian Pond is located on the mauka/Diamond Head side of the AMRP. It discharges into the Ala Wai Boat Harbor via a box culvert under Ala Moana Park Drive. It is of irregular shape with a small channel connecting two ponds. The total surface area of the Japanese Pond is about 2.8 acres.[17] It is relatively shallow with a maximum depth of minus 5.0 feet msl at the center. The pond was also called "Diamond Head Lagoon" and later "Hawaiian Lagoon." A Hawaiian Village called "Ulu Mau" complete with grass huts was constructed near the Japanese Pond in the late 1940s. The village served as a learning center of Hawaiian crafts and occasionally as a backdrop for local pageants.[18] The Canoe Hālau built around 2007 and parking lot currently occupies the space of the former Hawaiian Village.

The Japanese Pond is located on the mauka/ʻEwa side of the AMRP. It discharges into Kewalo Basin via box culvert under Ala Moana Park Drive. The total surface area of the Japanese Pond is about 1.1 acres and has a circular shape. An islet with overgrown brush lies in the approximate center of the lagoon. It was remodeled in 1950. The Japanese Pond was also called the "Oriental Lagoon" and had a Japanese Village and teahouse. Landscaping and architectural features represented Chinese and Japanese characteristics.[19] The State DOH commits to water quality standards by assigning regulatory and administrative oversight of Hawaiʻi's waters to the Clean Water Branch (CWB) as derived from the federal law passing of the CWA in 1972 (P.L. 92-500).

### 4.2.3 Water Quality Standards

CWB protects Hawaiʻi's coastal and inland water resources for recreational use and restoration of the aquatic environment. The goal of the CWB is to continue monitoring coastal waters and the watershed-based environment through permitting, water

[14] VTN Pacific. 1981. *Ala Moana Canal Revised Environmental Impact Statement.* Pg. iv.

[15] Ibid. Belt Collins Hawaii LLC, 2018. Pg. 9

[16] Ibid. VTN Pacific. 1981. Pg. 1.

[17] Ibid. VTN Pacific. 1981. Pg. 30.

[18] O'Hare, C.R., Shideler, D.W., & Hammatt, H.H. January 2017. *Draft Literature Review and Field Inspection with Cultural Section for the Ala Moana Regional Park Master Plan, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu, TMKs: (1)2-3-037:001, 022, 023, 025.* Pg. 115

[19] Ibid. Weyeneth, Robert. 1987. Pg. 27

quality monitoring, enforcement, sponsorship of polluted runoff control projects, and public education. One of its main functions is issuing the NPDES permit. An NPDES permit must be obtained for the discharge of any pollutants by a point source into waters of the U.S./State waters. Point sources include construction sites, industrial facilities, and municipal systems. Most commonly, NPDES permits are obtained for construction activities resulting in discharges to water bodies (e.g., disturbance of 1 acre or more of total land area during construction activities resulting in discharges composed entirely of storm water runoff, discharges of construction dewatering effluent, or discharges of hydrotesting waters).

#### 4.2.3.1 *Surrounding Waters*

Māmala Bay stretches from Diamond Head to Barber's Point. Most of the major harbors on the south shore discharge directly into the bay. Water quality samples of the bay have been taken often to ensure the well-being of the near shore aquatic environment. Māmala Bay is, therefore, classified as a Class A marine water based on the State DOH Water Quality Standards, HAR §11-54-3, "Classification of water uses." Specifically, the standard states that "…their use for recreational purposes and aesthetic enjoyment be protected. Any other use shall be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class." Discharge may be allowable if the NPDES general permit is obtained and approved.

The DOH classifies the Ala Wai Boat Harbor as a Class A embayment that should be protected "for recreational purposes and aesthetic enjoyment."[20] The embayment category is further defined by inclusion of a wet or dry criterion, depending on the level of freshwater input. The Ala Wai Canal is classified as Class 2 waters. Class 2 waters are protected "for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping and navigation."[21] Water quality in the Ala Wai Canal is determined by its source waters (nearshore ocean water, groundwater, streams), mixing, and tidal exchange, and input from the accumulated sediment via resuspension and regeneration.[22] As the collecting point for the Makiki, Mānoa, Pālolo and Kapahulu sub-watersheds, the Canal accumulates sediments, nutrients, some heavy metal contamination, and solid waste trash. The results of this contamination is reflected in discoloration of the water due to phytoplankton growth, suspended sediments and trash. In addition, some incidence

[20] Ibid. State of Hawai'i. 2014.

[21] Ibid.

[22] Edward K. Noda and Associates. 1992. *A Management Plan for the Ala Wai Canal Watershed.* For the Department of Land and Natural Resources. Honolulu.

Edward K. Noda and Associates, and KRP Information Services. April 1993. *Ala Wai Canal Improvement Environmental Assessment.* For the Department of Land and Natural Resources. Honolulu. Pg. 2-10

of bacterial infections has been reported.[23] The Ala Wai Boat Harbor's water quality is also affected since the Ala Wai Canal discharges into it.

Like the Ala Wai Boat Harbor, Kewalo Basin is also classified by DOH as a Class A embayment that should be protected "for recreational purposes and aesthetic enjoyment." Since the late 1960s, plans to direct runoff in Kewalo Basin from the project area were met with objection from the government agencies due to the potential impact of the aquatic environment. The 1981 EIS that studied improvement needs for the AMRP canal chose an alternative that would divert runoff into the Ala Wai Boat Harbor.

The Ala Moana Beach is considered a "coastal water" which is classified as "all waters surrounding the islands of the State from the coast of any island to a point three miles seaward from the coast, and, in the case of streams, rivers, and drainage ditches, to a point three miles seaward from their point of discharge into the sea and includes those brackish waters, fresh waters and salt waters that are subject to the ebb and flow of the tide."[24] Water quality along the shoreline and swim channel is characterized by the manmade events of the AMRP development and later the beach installation. The swim channel was originally dredged in 1928 for the AMRP development and to allow boats to travel between Ala Wai Boat Harbor and Kewalo Basin. This dredging created a protected area behind the reef that prevents the open ocean waters from circulating with near shore waters. As a result, higher levels of nutrients and turbidity are found near the shoreline. In January 2018, the DOH issued a high bacteria advisory for the beach and reported higher levels of enterococci.[25] Warning signs were posted to alert swimmers and beach users of the hazards in the water. Exposure to polluted water could make a person ill or develop an infection.

Water chemistry field collection was conducted on April 30, 2018.[26] Water chemistry was assessed by collecting four linear sets of samples (i.e., transects) extending perpendicular from the shoreline, extending from the highest wash of waves to the boundary of the dredged basin and un-dredged reef flat.

Several patterns of distribution are evident. Most evident is that there are elevated values of several nutrient constituents at the shoreline on several of the transects. The values of Si are elevated at the shoreline of Transect 2, coupled with an anomalously low value of salinity. This pattern is indicative of freshwater entering the ocean at the shoreline. As this pattern is only evident at one site, it can be assumed that this is not the normal situation along the entire beach front.

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23 Ibid., *Ala Wai Canal Improvements.* Pg 2-6.

24 Ibid. State of Hawai'i. 2014. *Hawaii Administrative Rules, Title 11, Chapter 54, Water Quality Standards.* Updated November 15, 2014.

25 Honolulu Star Advertiser staff. January 10, 2018. High bacteria levels detected in water at Ala Moana Beach Park. http://www.staradvertiser.com/2018/01/10/breaking-news/high-bacteria-levels-detected-in-water-at-ala-moana-beach-park/

26 Marine Research Consultants, Inc. June 2018. *Baseline Assessment of the Marine Environment Ala Moana Regional Park Beach Replenishment Honolulu, HI*. Prepared for Sea Engineering, Inc. Pg. 2

The values of dissolved nutrients ($NO_3^-$, $NH_4^+$, and TN) all show a general trend of elevated values at the shoreline with decreasing concentrations through the swimming channel. This trend is most apparent at Transect 1, where the values at the shoreline are substantially elevated relative to values at the shoreline of the other three transects. As there is no indication of depressed salinity in the nearshore waters of Transect 1, the source of these elevated nutrients is not from groundwater input. Nutrient composition throughout the swimming channel is relatively consistent on all transects. In the channel bounding the west side of Magic Island, nutrient concentrations are overall lower than in the swimming channel and show consistent values between the sampling locations 250 m (820 ft) and 400 m (1,300 ft) from the shoreline. Considering physical properties of the water column, turbidity, chlorophyll a, temperature, dissolved oxygen, and pH all display similar patterns, with peak values at the shoreline, and decreasing values with distance seaward. As with nutrients, the lowest values occur in the Magic Island channel.

#### 4.2.3.2 *Offshore Waters (Sand Donor Sites)*

Three areas that could serve as potential offshore sand donor sites have been selected by Sea Engineering Inc.[27] These three areas are designated as "Hilton", "Ala Moana—Offshore" and "Reef Runway—Inner". Within each of these areas three water sampling stations were selected. Within each site, one station was near the eastern boundary, one in the central region, and on near the western boundary. Within the "Reef Runway—Inner" site, there was a smaller area to the west of the main site, which was designated "Reef Runway—Inner 1b" in which a single water sampling station was established.

Results reveal that two stations in the "Hilton" donor site had elevated concentrations in surface waters of all dissolved nutrients (PO43-, NO3-, NH4+, Si, TP, TN) along with reduced salinity. These stations (1 and 3) were located closest to the discharge of the Ala Wai Canal. Nutrient concentrations at station 10 located in the smaller "Reef Runway—Inner 1b" donor site were elevated relative to the concentrations at the larger "Reef Runway—Inner 1a" site, although salinity was not correspondingly depressed. The "Reef Runway—Inner 1b" site was located closest to the Hickam Harbor entrance channel. Flow of water seaward from the inner areas of Hickam Harbor may be the cause of the elevated values at the "Reef Runway—Inner 1b" sampling station.

Considering physical properties of the water column, turbidity and Chlorophyll a were uniformly low with all values below 0.56 NTU and 0.49 µg/L. Temperature, dissolved oxygen, and pH all display similar patterns, with similar values throughout the sampling range. There were no indications of distinctive vertical stratification through the water column for any of the measured constituent.

[27] Marine Research Consultants, Inc. December 2018. *Baseline Assessment of the Marine Environment Ala Moana Regional Park Beach Replenishment Donor Sites Honolulu, HI*. Prepared for Sea Engineering, Inc. Pg. 1

#### 4.2.3.3 *Water Quality Monitoring*

The DOH is required by §305(b) of theCWA to biennially submit a list of impaired waters defined by CWA §303(d) to Congress. The U.S. EPA may approve Total Maximum Daily Load (TMDL) for specific receiving waters that does not meet water quality standards due to specific pollutants. The TMDL process implements a plan to restore the water quality of the water bodies that are identified by the State of Hawaiʻi Water Quality Monitoring and Assessment Report. The TMDL identifies the maximum amount of a pollutant that a water body can receive and remain within the water quality standards, and by what method of discharge. Non-point source and point source, for example, determines the indirect or direct method of discharge. The list is updated when new data justifies additional TMDL or delisting of specific receiving water segments or pollutants.

A TMDL was assigned to the Ala Wai Boat Harbor in 1996 for pathogens, metals, total suspended solids and pesticides. As of the date of the 2014 annual report to the EPA, no other TMDLs have been established for the Ala Wai Boat Harbor tributary area. The 2008/2010 Integrated Report listed Ala Moana Beach (Diamond Head) as impaired for one or more pollutants that include Total Nitrogen, Nitrate + Nitrite Nitrogen, Chlorophyll a, and/or Ammonium Nitrogen. The 2014 annual report listed Magic Island due to turbidity. Turbidity is the most common pollutant to trigger a marine water listing for impairment. A TMDL was assigned to both bodies of water. Magic Island previously had no determination due to insufficient available data or support. Kewalo Basin was also listed in the 2014 report as an impaired water body for having traces of Total Nitrogen, Total Phosphorus, turbidity, and Chlorophyll a. The basin has not been assigned a TMDL and has been listed as a low priority.

### 4.2.4 Groundwater

Groundwater accounts for almost 99 percent of Hawaii's domestic water and about 50 percent of all freshwater used in the state.[28] The Ala Wai watershed area contributes to the Nuʻuanu Aquifer (30102). The Nuʻuanu Aquifer is one of six aquifer systems that form the Honolulu Groundwater Management Area. According to the State CWRM, the Nuʻuanu Aquifer generates a groundwater sustainable yield of 14 million gallons per day (MGD). The larger Honolulu (301) groundwater system generates a sustainable yield of 50 MGD.[29]

BWS has established a No-Pass Line on Oʻahu to demarcate the boundary between non-potable brackish and potable fresh groundwater. Groundwater beneath areas that are seaward of the line are not considered to be a drinking water source. After DOH was assigned primacy by EPA for Underground Injection Control (UIC) regulations, DOH also accepted responsibility to control activities that could impact potable aquifers landward of the No Pass Line. The project area is below the UIC Line. Underground Injection Wells are wells used for injecting water or other fluids into a

28 Gingerich, Stephen B. and Delwyn S. Oki. 2000. Ground Water in Hawaiʻi. Obtained from http://www.higp.hawaii.edu/~scott/GG104/Readings/Gingerich_Oki_2000.pdf.

29 State of Hawaiʻi Commission on Water Resource Management. 2016. dlnr.hawaii.gov/cwrm/groundwater/

groundwater aquifer. Department of Health Administrative Rules, Title 11, Chapter 23 provides conditions governing the location, construction, and operation of injection wells so that injected fluids do not migrate and pollute underground sources of drinking water.[30] The main functions of the UIC are[31]:

- To protect the quality of Hawaii's underground sources of drinking water from chemical, physical, radioactive, and biological contamination that could originate from injection well activity.
- Process permits and project reviews for new and renewal permits, modifications, and abandonment of injection wells.
- Evaluate geologic logs of soil and rock, injectivity tests, geologic maps, and groundwater quality profiles to determine the viability of subsurface injection.
- Maintain inventory and database of all injection well files.
- Organize and conduct site inspections to verify the location and performance of injection wells and to verify compliance with all testing or well closure plans.
- Conduct site investigations to identify problems such as unpermitted facilities and correction of deficiencies.
- Enforce Underground Injection Control rules and permit conditions.
- Serve the public by providing information and technical assistance.

### 4.2.5 Potential Impacts and Mitigation Measures

**On Land**

Project design provisions and compliance with NPDES permit requirements would control storm water runoff impacts during construction. A Storm Water Quality Strategic Plan will be prepared for the initial grouping of projects which is programmed to include the Japanese and Hawaiian pond edge improvements, Bridle

[30] State of Hawai'i Department of Health, Safe Drinking Water Branch. 2017. Underground Injection Control Program. http://health.hawaii.gov/sdwb/underground-injection-control-program/

[31] State of Hawai'i Department of Health, Safe Drinking Water Branch. 2017. Groundwater Pollution Control Section. http://health.hawaii.gov/sdwb/groundwater/

Bridge repairs, keyhole parking reconfiguration, widening of the beachfront shared use path along Ala Moana Park Drive, and adding perpendicular parking along its mauka side. The Strategic Plan will be prepared in accordance with the City's Rules Relating to Water Quality effective August 16, 2017. The project is also expected to meet LID standards. These standards set requirements for implementation of BMPs that infiltrate, treat, or propose off-site mitigation measures. Due to the close proximity to the water table, many retention and biofiltration treatment control BMPs would be infeasible. However, filter media installed in trench drains and drain inlets could provide some filtration before entering the storm drain. An ESCP prepared in accordance with the Rules will also be completed for each project. The ESCP is required to contain pre-construction, during construction and post-construction BMPs. The Strategic Plan will address the activities common to all the projects including post-construction BMPs, with the ESCP containing project-specific requirements.

The initial grouping will constitute a Category 5 project under the Rules, and all requirements for plan preparation, content and BMPs will be addressed, along with BMP inspections at least once every 7 days by ESCP Coordinator during, and certification upon completion of, construction. Subsequent master plan projects will follow similar procedures complying with the Rules, and obtaining a NPDES permit when the project or group of projects involves ground disturbance of one acre or more. Implementation of BMPs to control, treat, or reduce runoff (before entering nearby surface waters via drain inlets or sheet flow) would occur before construction begins and remain until permanent BMPs are in place.

Provided that the master plan project will follow the standards noted above, and with implementation of BMPs and other measures required under the NPDES permit program, it is anticipated there will be no substantial impacts on surface water quality. No impacts on potable groundwater resources are anticipated.

**Beach Nourishment**

Placement of sand onto the beach will result in some turbidity and may temporarily increase resuspended sediment in the water. Large amounts of sand are not expected to reach the water and cause a higher increase in turbidity that could affect marine life. Care should be taken during placement to avoid having large amounts of sand enter the water. BMPs such as silt curtains should be used to prevent turbidity caused by the project. Results of the water monitoring indicate that the current turbidity conditions in the nearshore area and swim channel are considered high, due to resuspension and lack of flushing of fine-grained sediment. As a result, marine biota that currently occur in the area are already adapted to high-turbidity environments. While turbidity is likely to increase temporarily and immediately following sand placement, it is not likely to be significantly different than existing conditions. In addition, turbidity is also one attribute that small fish may use for defense against predation from larger fish, so turbidity may also serve as a positive attribute for juvenile fish. Turtles also occur often in the highly-turbid waters of the swim channel and are not likely to be affected by small, temporary changes associated with sand placement.

# 4.3 AIR QUALITY

## 4.3.1 Existing Conditions

As required by the Clean Air Act (CAA), the EPA has established the National Ambient Air Quality Standards (NAAQS) for the following pollutants: carbon monoxide (CO), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), ozone ($O_3$), lead (Pb), and particulate matter (PM). The NAAQS are described in Title 42 of the U.S. Code (USC) §7409 and Title 40 of the Code of Federal Regulations (CFR), Part 50.

**Table 4-1: Air Quality Standards**

| | | Standards | | |
|---|---|---|---|---|
| **Air Pollutant** | **Averaging Time** | **Hawai'i State Standard** | **Federal Primary Standard** | **Federal Secondary Standard** |
| Carbon Monoxide (CO) | 1-hour | 9 ppm | 35 ppm | - |
| | 8-hour | 4.4 ppm | 9 ppm | - |
| Lead (Pb)[1] | 3-months | 1.5 µg/m³ | 0.15 µg/m³ | 0.15 µg/m³ |
| Nitrogen Dioxide ($NO_2$) | 1-hour[2] | - | 100 ppb | - |
| | Annual | 0.04 ppm | 53 ppb | 53 ppb |
| Ozone ($O_3$) | 8-hour | 0.08 ppm | 0.070 ppm | 0.070 ppm |
| $PM_{2.5}$ | 24-hour | - | 35 µg/m³ | 35 µg/m³ |
| | Annual | | 12 µg/m³ | 15 µg/m³ |
| $PM_{10}$ | 24-hour | 150 µg/m³ | 150 µg/m³ | 150 µg/m³ |
| | Annual[3] | 50 µg/m³ | - | - |
| Sulfur Dioxide ($SO_2$) | 1-hour[4] | - | 75 ppb | - |
| | 3-hour | 0.5 ppm | - | 0.5 ppm |
| | 24-hour | 0.14 ppm | - | - |
| | Annual | 0.03 ppm | - | - |
| Hydrogen Sulfide ($H_2S$) | 1-hour | 0.025 ppm | - | - |

Notes:

Source: Clean Air Branch, Department of Health, State of Hawai'i. Updated November 19, 2015. *Federal and State Ambient Air Quality Standards.* Available at: health.hawaii.gov/cab/files/2013/05/naaqs_nov_2015.pdf

ppb = parts per billion by volume

ppm = parts per million by volume

µg/m3 = micrograms per cubic meter of air

1 Due to almost non-detectable levels, ambient air monitoring for lead was discontinued in October 1997 with EPA approval. However, since 2003 lead continues to be measured as part of the Air Toxics monitoring program.

2 Effective January 22, 2010.

3 Due to lack of evidence linking health problems to long-term exposure to coarse particle pollution, EPA revoked the annual PM10 standard effective December 17, 2006. However, the State still has an annual standard.

4 Effective June 2, 2010.

The NAAQS includes primary and secondary standards for ambient air quality. Primary standards set limits to protect public health. This includes protecting "sensitive" populations such as asthmatics, children, and the elderly.[32] Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The secondary standards for lead and ozone are the same as the primary standards.

In Hawaiʻi, the Clean Air Branch (CAB) of the DOH is responsible for air pollution control. CAB conducts engineering analysis and permitting, performs monitoring and investigations, and enforces the federal and state air pollution control laws and regulations. Hawaiʻi has an ambient air standard for hydrogen sulfide ($H_2S$), in addition to the pollutants identified above. Relative to the project area, the nearest air quality monitoring station is located on the roof of the DOH building, Kīnaʻu Hale. This station monitors for CO, $SO_2$, $PM_{10}$ and, $PM_{2.5}$. Kīnaʻu Hale is on Punchbowl Street, approximately 1.8 miles northwest of the project area.[33]

The State's Annual Summary: 2014 Air Quality Data Summary, released in September 2015, confirms the State was in attainment of almost all the NAAQS. Exceptions include exceedances of the NAAQS for $SO_2$ and $PM_{10}$ due to volcanic events on Hawaiʻi Island. The 2014 report notes the EPA considers the volcano a natural, uncontrollable event. The State is requesting exclusion of these NAAQS exceedances from their attainment/non-attainment determination. Between 2010 to 2014, readings taken at Kīnaʻu Hale did not exceed Federal and State standards for CO, $SO_2$, $PM_{10}$ or, $PM_{2.5}$.[34]

There are no major air pollution generators in the vicinity of the project area. Air pollution generated by existing uses at the project area is limited to vehicles accessing the area and the moderate use of motorized vessels in the Ala Wai Boat Harbor and Kewalo Basin.

### 4.3.2 Potential Impacts and Mitigation Measures

Short-term air quality impacts would occur as part of the proposed project's construction activities. BMPs will be employed to minimize air emissions from equipment and dust during construction activities, such as frequent watering to control dust. No adverse air impacts are anticipated during construction activities.

[32] U.S. Environmental Protection Agency (EPA). *NAAQS Table*. Available at: https://www.epa.gov/criteria-air-pollutants/naaqs-table. Accessed 3.17.17.

[33] State of Hawaiʻi, Department of Health, Air Quality Monitoring Sites Mapping Tool. Available at: http://emdweb.doh.hawaii.gov/air-quality/. Accessed 3.17.17.

[34] State of Hawaiʻi Department of Health. 2016. *Annual Summary: 2015 Air Quality Data Summary.* Available at: https://health.hawaii.gov/cab/files/2016/12/aqbook_2015.pdf. Pages 18-26.

After construction is complete, the project area will return to its existing conditions with no long-term impacts. No further mitigation is needed.

# 4.4 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

## 4.4.1 Historical Background

The project area fronts a traditional Hawaiian trail known before as "Beach Road" which was within an area known as Kālia during Pre-Contact.[35] It was a walking path during the Pre-Contact period and then later developed into a horse path and then a cart path. It was a coastal trail during Pre-Contact times that appeared to follow the natural shoreline in historic maps. Further inland from the Beach Road were marshlands filled with taro fields, saltpans, and fishponds. Early maps depict an abundance of wetland food sources suggesting a highly populated area during pre-Contact times. The trail was a demarcation that separated the wetlands from the shoreline. Today, the traditional Hawaiian trail is a major thoroughfare known as Ala Moana Boulevard.

The shoreline morphed into harbors once Western Contact was established in the early-1800s. The area that would be the future AMRP and Magic Island was within the offshore fisheries of Kukuluāeʻo and Kālia.[36] The project area is located within the shallow reef of the fisheries.

Historical reviews of the project area reveal a significant past from the time of its inception. Figure 4-3 shows a timeline and some historic photographs of AMRP during its development. The plan for AMRP was associated with the City's public works overall agenda to incorporate open spaces in the populated areas on Oʻahu. The majority of the area surrounding the project was swampy marshlands and ponds. The ponds and marshlands served as agricultural lands until they became more of a health concern with a mosquito epidemic. For about 20 years prior to the land acquisition for AMRP, portions of the project area were used as a garbage and refuse site.[37] A transformation of Waikīkī began by accommodating the new tourism industry with the reclamation of swampy land space to repurpose for urban needs. The Territory's agricultural resources could no longer sustain the population due to the growing curiosity of visitors and foreign settlement.

**1920 - 1930**

[35] O'Hare, C.R., Shideler, D.W., & Hammatt, H.H. January 2017. *Draft Literature Review and Field Inspection with Cultural Section for the Ala Moana Regional Park Master Plan, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu, TMKs: (1)2-3-037:001, 022, 023, 025.* Pg. 15

[36] Ibid. O'Hare, C.R., Shideler, D.W., & Hammatt. Pg. 25

[37] Weyeneth, Robert. Ala Moana:ThePeople's Park. Honolulu: Department of Parks and Recreation, City and County of Honolulu,1987. Pg. 5

AMRP was built on swampy marshlands and the Ala Moana reef as reclaimed land. The City saw an opportunity to develop a large area of open space that was needed during the Depression-era. Construction to fill in the marshland began in the late 1920s with dredging of the nearby channel leading to the Kewalo Basin. Sand from offsite beaches was brought in to fill the swampy areas, too. In the 1930s structural construction on the new land began with the Sports Pavilion and Banyan Court, a lawn bowling green, the Bridle Path Bridge, and the Roosevelt Portals. The two ponds and drainage canal were dredged around 1932 for both aesthetic and local run-off control purposes. These earlier structures remain today and are considered for preservation in this EIS. The main goal for AMRP during its conception in the 1920s was to have a place with lots of green open space that was accessible to all communities and recreational activities.

**World War II**

AMRP carries a significant historical past through World War II (WWII) for the United States US military. The military began to establish roots within the harbors and other strategic areas around Oʻahu. AMRP was used as a temporary staging area for the military during WWII. A gun battery was built, but was later destroyed shortly after a brief post-war extension in military jurisdiction. AMRP was given back to the people in poor condition and restoration of the area took time. The City announced a new "re-opening" of AMRP after post-war restoration was completed with the Hawaiian Village of ʻUlu Mau in 1948 as a new feature.[38]

**1950 – 1960**

During post-war, AMRP restoration efforts served as a symbol of the growing tourism economy in Hawaiʻi. Oʻahu in particular began to expand rapidly due to tourism and real estate development. This development triggered the need for a beach expansion as Waikīkī beaches rose in popularity. About 55,000 cubic yards of sand were brought in from the west side of the island to create the beach.[39] The beach was a major post-war improvement even though AMRP was not meant to be a beach park. Today, the mile-long beach requires periodic replenishment from erosion and a sand replenishment study is reviewed in this EIS. Another post-war addition to AMRP was the 47-acre Magic Island Peninsula. Developers wanted to capitalize on Waikīkī's popularity by creating a resort expansion that included at least five resorts, entertainment and activity areas, beaches, and park space. The idea for Magic Island was first conceptualized in the late-1950s. Belt Collins and Associates completed an engineering report in 1961 that weighed the possibilities for development of the resort area and offshore island through reef reclamation. The plans for the resort area and island did not develop due to overwhelming public opposition to the proposal. As it is true today, the people wanted AMRP to remain localized for the residents and the

[38] Ibid. Weyeneth, Robert. Ala Moana:ThePeople's Park. Pg 30

[39] Ibid. Weyeneth, Robert. Ala Moana:ThePeople's Park. Pg. 32

hotel expansions contained in Waikīkī. As a result, Magic Island was added to the AMRP as additional open space.

**1970 – 1980**

The development of a new park master plan began in the 1970s. Wilson, Okamoto & Associates produced the Ala Moana Beach Park Master Plan Report.[40]. Amidst the backdrop of the 1970s energy crisis, the report proposed a "fresh approach" to the Park. Specifically, evicting cars from them, proposing to convert Ala Moana Park Drive into a pedestrian and bicycle promenade, and constructing three multi-story parking structures. The proposed parking structures were to house automobile parking, restrooms, food concessions, and maintenance sheds. Ultimately, the fresh approach and visionary idea of automobile deemphasis did not come to fruition and the cash strapped governments of the 1980's had to scale down the proposals of the 1975 master plan.

In the 1980s, AMRP became eligible for historic designation by the National Register of Historic Places (NRHP). Historic designation brought with it a stronger protection mechanism from proposed changes.

**1990s - Present Day**

In 1991, an application was submitted for a project consisting of grading and/or redistributing existing sand, removing exposed coral chunks and importing additional sand within a portion of Ala Moana Beach to restore the shoreline. In 1992, an Environmental Assessment was completed for a project proposal that contained five phases. The Environmental Assessment described the plans as a "facilities and landscape improvement plan," leaving the entire park layout "intact."

Today, the heavy usage of the Park by the public and exposure to moisture warrant repairs to its facilities and improvements to restore its historical landscape.

40 Ibid. Weyeneth, Robert. Ala Moana:ThePeople's Park. Pg. 37

| | |
|---|---|
| 1930 | AMRP site filled in with 400,000 cubic yards of fill |
| 1932 | Canal and lagoons dredged |
| 1934 | Bridle Bridge completed |
| 1934 | Entrance portals dedicated and named Roosevelt Portals |
| 1937 | Sports Pavilion, Banyan Garden, Eskridge murals completed |
| 1939 | Bowling green completed |
| 1941-1946 | World War II and military constructs battery and staging areas |
| 1954 | Children's Center opens in Pavilion |
| 1954-1955 | Sandy beach fronting the AMRP constructed |
| 1957 | Diamond Head concession stand constructed |
| 1959 | Diamond Head bathhouse constructed |
| 1961 | 'Ewa bathhouse and concession constructed |
| 1962 | Magic Island constructed |
| 1966-1967 | Bowling green renovated |
| 1969 | Lifeguard towers constructed |
| 1975 | McCoy Pavilion completed |

*Ala Moana 1931-1933*

*Ala Moana 1931-1933*

*Ala Moana Park 1934*

*Atkinson Entrance 1934 Opening*

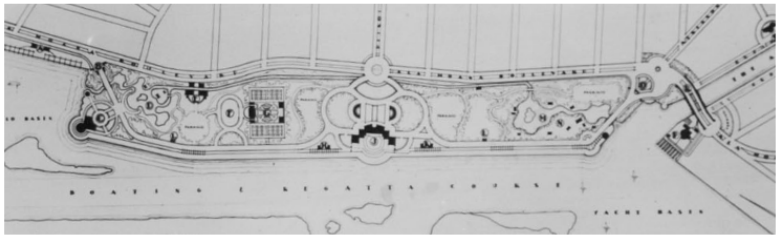
*Ala Moana Bridge 1935-1940*

*Promenade 1934-1938*

*Banyan Court Construction 1935*

*Banyan Courtyard 1940s*

*Ala Moana Beach 1935-1939*



*Thompson and Thompson Plan 1932*

*Ala Wai Boat Harbor 1954*

*Honolulu Harbor to Waikiki 1959*

*Honolulu Harbor to Waikiki 1978*

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BELT COLLINS

Source: Weyeneth, Robert. 1987. *Ala Moana: The People's Park*. Prepared for the City and County of Honolulu Department of Parks and Recreation. Pg. 48

**Figure 4-3**
**HISTORIC TIMELINE AND PHOTOS**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

### 4.4.2 Archaeological Resources

An archaeological literature review and field inspection was completed by Cultural Surveys Hawai‘i, Inc. (CSH) and is included as Appendix D-2 of this document. The Proposed Action is subject to a historic preservation review pursuant to HRS Chapter 6E-8 and Chapter 13-275, HAR because it is a public project that may affect historic properties. The entire AMRP is a historic site and on the Hawai‘i Register of Historic Places (HRHP) as SIHP # 50-80-14-1388. The archaeological literature review provides general historical background ranging from Pre-Contact to historic periods. A search consisting of any archaeological fieldwork conducted in or around the project area was completed and summarized in CSH’s review. The review document was prepared to advise the SHPD of any known archaeological sites or human burials on or near the project area and if further mitigation is warranted.

CSH provided summaries of 63 archaeological studies in or around the project area. The limits of the studies were just ‘Ewa of Kewalo Basin and from the makai side of Kapi‘olani Boulevard. Of the 63 studies, one study was conducted in AMRP and six studies were conducted immediately mauka of AMRP and in Ala Moana Boulevard. The seven studies are tabulated below:[41]

**Table 4-2: Archaeological Resources**

| Reference | Nature of Study | Location | Results (SIHP #s 50-80-14) |
|---|---|---|---|
| **Studies Within Project Area** | | | |
| Ah Sam and Cleghorn 2003 | Archaeological Assessment | Proposed Canoe Hālau, Ala Moana Regional Park, TMK: (1) 2-3-037 | No archaeological or historic features identified |
| **Studies for Ala Moana Boulevard** | | | |
| Souza et al 2002 | Archaeological monitoring | Kaka‘ako Improvement District 7, Kamakee Street | Three disturbed pre-Contact burials recorded (SIHP #s -6376, -6377, -6378; location of -6378 unknown); old A horizon in seven of ten profiles |
| Tulchin and Hammatt 2004 | Literature review and field inspection | Kapi‘olani area, bounded by Ala Moana Regional Park, Ward Ave, Kalākaua Ave, and King Street, TMKs: (1)2-3-004, 005, 007, 009, 010, 013, 014, 017, 018, 022, 035, 036, and 038 | No archaeological or historic features identified |
| Petrey et al. 2009 | Archaeological monitoring | Nimitz Hwy and Ala Moana Blvd, TMKs (1) 2-1-014 and 027 | No cultural deposits identified |

41 Ibid. O’Hare, C.R., Shideler, D.W., & Hammatt. Pg. 81-90

**Table 4-2: Archaeological Resources**

| Reference | Nature of Study | Location | Results (SIHP #s 50-80-14) |
|---|---|---|---|
| Altizer et al. 2011 | Archaeological monitoring | Kapiʻolani Area Revised Sewer System, TMKs: (1) 2-3-004, 005, 007, 009, 010, 013, 014, 017, 018, 022, 035, 036, 038, and 041 | One site documented: previously identified SIHP # -6636, a wetland deposit with signs of historic modification for rice cultivation |
| Tome and Spear 2011 | Archaeological monitoring | Ala Moana, TMKs: (1) -2-3-006 and 038 | No cultural materials or subsurface features identified |
| Enanoria et al. 2015 | Archaeological monitoring | Ala Moana Blvd/Nimitz Hwy Resurfacing and Lighting project | Identified three historic properties, only one near project area, SIHP # -7435, four sets of human skeletal remains within sand deposits near Ala Moana Blvd and Queen Street. |

Source: O'Hare, C.R., Shideler, D.W., & Hammatt, H.H. January 2017. *Draft Literature Review and Field Inspection with Cultural Section for the Ala Moana Regional Park Master Plan, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu, TMKs: (1)2-3-037:001, 022, 023, 025.*

As noted above in Section 4.1.2, Soils, and in the Historical Background (Section 4.4.1), the project area was once a composition of coral reef or marshlands. The land present today was artificially constructed from dredged material and other fill soils. Background research from Weyeneth (1987), O'Hare et. al (2017), and Ah Sam and Cleghorn (2003), supports the theory that there are no localized, subsurface archaeological resources within the project area. CSH does note the possible presence of imported archaeological remains from the dryland soils that were used to fill the Park.

There were two burial sites recorded on Ala Moana Boulevard near the project area (Souza et al 2002; Enanoria et. al 2015). Souza et. al (2002) recorded three disturbed Pre-Contact burials near the Ala Moana Boulevard and Kamakee Street intersection (SIHP# 50-80-14-6376).[42] Enanoria et. al (2015) recorded four sets of human skeletal remains (SIHP # 50-80-14-7435) near the Ala Moana Boulevard and Queen Street intersection.[43]

As mentioned in Section 4.4.1, portions of the project area were used as a trash dump site before it was acquired for park space. Possible remnants of historical trash such as glass bottles and ceramics could be present within the subsurface. Neighboring Kakaʻako Waterfront Park was a large trash site prior to becoming a park, as well.

[42] Ibid. O'Hare, C.R., Shideler, D.W., & Hammatt. Pg. 95

[43] Ibid. O'Hare, C.R., Shideler, D.W., & Hammatt. Pg. 106

### 4.4.3 Architectural Resources

The original architectural features in AMRP are included with its historic property designation (SIHP #-1388). The City proposes to restore some of the features that are deteriorating as part of the proposed project (see Chapter 2, Section 2.3 and Appendix D-4). Some of the other features are proposed to be slightly altered to better serve the community, while also preserving the characteristics of the features. Like the archaeological review above, the architectural features of AMRP are reviewable under HRS Chapter 6E-8 and Chapter 13-275, HAR. There are 14 features on the property that consist of buildings, road, landscaped arrangements and trees, entryways, waterways, and a bridge. Each feature was evaluated based on its significance per Chapter 13-275-6, HAR, Evaluation of significance. The features were assessed and deemed significant under the following Criterion:

- Criterion A – Be associated with events that have made an important contribution to the broad patterns of our history;

- Criterion C – Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value.

Below is the tabulated evaluation, prepared by Mason Architect, Inc., of the proposed improvements and their effect to the historic features. Proposed mitigation for these features is also provided.

**Table 4-3: Architectural Resources**

| Building/ Feature Name | Year Built | Significance Evaluation | Proposed Work | Evaluation of Effect | Proposed Mitigation |
|---|---|---|---|---|---|
| Thoroughfare/ Looped Drive | 1932 | Eligible, Criterion A&C | -Remove grass and trees at makai shared-use path to widen the path<br>-Add drop-off areas to makai side<br>-Add perpendicular parking to mauka side<br>-Remove trees lining mauka side | Effect, with proposed mitigation commitments | *Architectural Recordation:*<br>Addendum to HALS HI-21 (5 large-format shots) |
| Hawaiian Lagoon (pond) | 1932 | Eligible, Criterion A&C | -Improve edges and hardscaping<br>-Add viewing area | Effect, with proposed mitigation commitments | *Architectural Recordation:*<br>Addendum to HALS HI-21 (4 large-format shots)<br>-Plant Hawaiian plant specimens / landscaping |
| Japanese Lagoon (pond) | 1932 | Eligible, Criterion A&C | -Add walkway leading to a seating area | Effect, with proposed mitigation commitments | *Architectural Recordation:*<br>Addendum to HALS HI-21 (4 large-format shots)<br>-Plant Japanese specimens / landscaping |
| Drainage Canal | 1932 | Eligible, Criterion A&C | -Add new canal crossings<br>-Repair canal walls | Effect, with proposed mitigation commitments | *Architectural Recordation:*<br>-Addendum to HALS HI-21 (5 large-format shots)<br>*Preservation*: City will remove two existing non-historic pedestrian bridges (built ca. 1994); City will ensure that repairs are done in an historically appropriate manner |

**Table 4-3: Architectural Resources**

| Building/ Feature Name | Year Built | Significance Evaluation | Proposed Work | Evaluation of Effect | Proposed Mitigation |
|---|---|---|---|---|---|
| Central Terraces, Pergolas | 1932 | Eligible, Criterion A&C | No work | N/A | N/A |
| Landscaping and Vegetation: Open lawns, palm trees, banyans, flowering tropical trees. Some are Exceptional Trees) | ca. 1932 | Eligible, Criterion A&C | *See Banyan Court, Looped Drive, and Keyhole Parking for information* | *See Banyan Court, Looped Drive, and Keyhole Parking for information* | *See Banyan Court, Looped Drive, and Keyhole Parking for information* |
| Spatial arrange-ment; alternating areas of foliage and open space | ca. 1932 | Eligible, Criterion A&C | No work | N/A | N/A |
| Entry Portals / scalloped walls | 1934 | Eligible, Criterion A&C | -Repairs to portals | Effect, with proposed mitigation commitments | *Preservation*: City will ensure that repairs are done in an historically appropriate manner |
| Equestrian (bridle) canal bridge | 1934 | Eligible, Criterion A&C | -Repairs to underside of bridge | Effect, with proposed mitigation commitments | *Preservation*: City will ensure that repairs are done in an historically appropriate manner |
| "Keyhole" Parking area | ca. 1935 | Eligible, Criterion A&C | -Change configuration of the historic keyhole layout; remove grassy open area and convert to formal parking lot. This parking area contains two exceptional trees. | Effect, with proposed mitigation commitments | *Architectural Recordation:*<br>-Addendum to HALS HI-21 (4 large-format shots)<br><br>*Preservation*:<br>- Exceptional trees will be avoided. Layout along 'Ewa side revised from original proposal to avoid work within tree driplines; stall count reduced by 27. |

**Table 4-3: Architectural Resources**

| Building/ Feature Name | Year Built | Significance Evaluation | Proposed Work | Evaluation of Effect | Proposed Mitigation |
|---|---|---|---|---|---|
| Sports Pavilion | 1937 | Eligible, Criterion A&C | No work | N/A | N/A |
| Banyan Courtyard | 1937 | Eligible, Criterion A&C | Remove four historic exceptional banyan trees from the banyan planters in the courtyard. | Effect, with proposed mitigation commitments | *Architectural Recordation:*<br>-Addendum to HALS HI-21 (6 large-format shots)<br><br>-Plant four new banyans where four large Exceptional banyans will be removed. |
| Tennis Courts | 1937 | Eligible, Criterion A&C | N/A | N/A | N/A |
| Lawn Bowling Green | 1939 (renovated 1966-7) | Eligible, Criterion A&C | N/A | N/A | N/A |

Source: Mason Architects, Inc. for letter from Robert Kroning (DDC, Director) to Kaiwi Yoon (SHPD – Architecture Branch, Branch Chief) requesting a determination letter per HRS Chapter 6E-8 and Chapter 13-275-3, HAR.

### 4.4.4 Cultural Resources

CSH included a cultural impact evaluation section in the archaeological literature review report. As mentioned, the land occupied by the present-day Park was shallow ocean waters and the coral reef. It is possible for the area to have been used for gathering marine resources by Native Hawaiian during Pre-Contact times. During the western contact period, the area was converted to fisheries which means the area was preferable for fishing during Pre-Contact as well. According to O'Hare et. al (2017)[44], Kālia's shallow waters were known for having an abundance of mollusks, crabs, and a specific edible seaweed. Large net fishing was a technique used to catch schools of mullet most notably in the Kālia area.[45]

Today, fishing is a continued practice and popular locations are off the 'Ewa side ledge of Magic Island and along the walkway fronting the canoe launch ramp. Fishermen are seen at these locations early in the morning and early to late evenings. Large nets are not observed as practiced very often today and most fishermen at the Park are seen using fishing poles connected to lines. The Magic Island peninsula extends into the deep waters which makes the location attractive for fishing. The area fronting the canoe launch ramp is an ideal location because a deep channel was dredged when the boat harbor was constructed.

A cultural impact assessment (CIA) study was conducted by CSH in compliance with HRS Chapter 343 which constitutes "information gathering about the cultural practices and cultural features that may be affected by actions, and promotes responsible decision-making." A final copy of the CIA is included with this second draft EIS as Appendix D-3. Information for the CIA was gathered from various resources and consultation methods that include: cultural and historical documents and sources, a review of previous archaeological studies, library research from various institutions including in-house, historic maps, historic photographs, stakeholder interviews with parties who have cultural interests, and LCAs.

CSH mailed community consultation letters to at least 114 interested parties with association to the project area or the greater Waikīkī and Honolulu Ahupuaʻa. These community contacts include: cultural descendants and practitioners, Native Hawaiian Organizations (NHOs), SHPD, State Office of Hawaiian Affairs (OHA), the Oʻahu Island Burial Council (OIBC), various club organizations (canoe clubs, festival coordinators and foundations), and the Waikīkī Neighborhood Board. As a result of CSH's consultation outreach efforts, CSH recorded two written testimonies and two interviews. CSH prepared summaries or included the full correspondences in the CIA. The main points from the CIA outreach are as follows:

- Shad Kane responded in writing on behalf of Ke One O Kākuhihewa. He is a representative or a member of other affiliations that include: the Kapolei Hawaiian Civic Club, Chair of the Oʻahu Council of the Association of Hawaiian

[44] Ibid. O'Hare, C.R., Shideler, D.W., & Hammatt. Pg. 12
[45] Ibid. O'Hare, C.R., Shideler, D.W., & Hammatt. Pg. 115

Civic Clubs Committee on the Preservation of Historic Sites and Cultural Properties, Aliʻi Ai Moku of the Kapuaiwa Chapter of the Royal Order of Kamehameha Ekahi, and ʻEwa Moku Representative on the State Aha Moku Advisory Committee. His concerns were related to *iwi kūpuna* (traditional Hawaiian burials) that were documented in the surrounding areas of the project. His comments were generalized by the shoreline between Kewalo and Waikīkī. Mr. Kane explains that burials are unlikely around Piʻikoi Street and Queen Street. If they are found in this area, then they would be previously disturbed by other construction related activities that urbanized the area. Within the Park, he believes disturbed burials could be present in the import sands on the beach and possible sand used as fill to install Ala Moana Park Drive[46]. He suggests limiting excavations in these areas. As for Magic Island, Mr. Kane believes the probability for finding *iwi* is less likely.

- Kaleo Patterson submitted a written testimony via email to CSH. He is a cultural and lineal descendant of Honolulu ahupuaʻa and affiliated with the Pacific Justice and Reconciliation Center (PJRC) and Native Hawaiian Church. As a Native Hawaiian priest, he has conducted cultural protocol for *iwi kūpuna* burials found just mauka of the Park and conducted memorial and funeral services at the Park. Mr. Patterson relates the area as important for Native Hawaiian cultural practices such as fishing and gathering, surfing, and canoeing. He states that "any known historic sites and potential burial discoveries should be treated appropriately."[47] He also supports the initiative to use indigenous plant species for landscaping improvements.

- Bruce Lum agreed to be interviewed by CSH. He is a fisherman and Native Hawaiian gatherer of marine resources at the Park. He gathers various Niʻihau shells that include: momi (*Euplica varians*), laikī (*Mitrela margarita*), and kahelelani (*Leptothyra verruca*). Mr. Lum also gathers various fish within the near shore waters of the Park. He believes gathering practices could be affected by different elements such as: increased park usage, time of year, and the tide. An example would be during low tide and less people as a better time to gather bait. According to Mr. Lum, the exposed reef along the shoreline functions as an incubation zone for juvenile fish. The area feeds and protects the juvenile fish from the larger fish. Mr. Lum expresses his concern about the plans for beach nourishment having a long-term effect on the current ecosystem of the shoreline and reef, and gathering practices. Beach nourishment would bury the Niʻihau shells he collects and disrupt the shoreline's ecosystem with increased turbidity. He believes "it will take a while for it to go back to how it was."[48] His other concerns pertain to the Magic Island shared-use path improvements and how it may affect access for the

[46] Referred as Ala Moana Park Beach Road in Mr. Kane's written response.

[47] Tanaka, Kellen & Hammatt, H.H. December 2018. *Draft Cultural Impact Assessment for the Ala Moana Regional Park Master Plan Project, Waikīkī and Honolulu Ahupuaʻa, Honolulu District, Oʻahu, TMKs: (1)2-3-037:001, 022, 023, 025.* Pg. 174

[48] Ibid. Tanaka, Kellen & Hammatt, H.H. Pg. 177

fishermen. He thinks a widened path extending from the wall would interfere with or limit their access since they fish from the wall. He also concerned about construction activity runoff during the makai shared-use path improvements. He believes historic trash from the former refuse dump is buried under it. A historical 1925 map in the CIA, however, shows that the former city refuse dump was located more mauka and closer to Ala Moana Boulevard.[49] There are no path improvements proposed in the master plan for the mauka side of the Park. Overall, Mr. Lum opposes beach nourishment and widening of any paths at the Park because he believes the improvements would obstruct access from gatherers and fishermen who use the marine resources for subsistence purposes. He suggests more studies be done for the beach nourishment project and its impact on the shoreline ecosystem.

- Hinaleimoana Wong-Kalu also agreed to an interview with CSH. She is a Native Hawaiian teacher, cultural practitioner, community leader, and the Chair of the Oʻahu Island Burial Council (OIBC). Her recollection of Waikīkī and Honolulu ahupuaʻa is stories passed down to her from her grandmother. Her family spent their time on the south shore (Kāhala to Kakaʻako) collecting limu (seaweed). She recalled her grandmother's stories about the McInerny family and the locations of their stores. One of their stores was in Ala Moana Shopping Center. They also owned land that was subdivided and known as "McInerny Tract." It was supposedly located in proximity to the AMRP. Ms. Wong-Kalu also spent time at the AMRP beach as a paddler for Kamehameha Schools. She requests that the City remove the stagnant water in the Park because it produces offensive odors. She would also like to have traditional place names (such as Kalia, Kewalo) mentioned and used more in City reports. As a longtime member of the OIBC, Ms. Wong-Kalu suggests, even though not required, that the City presents the master plan for the AMRP and Magic Island to the OIBC. This is so the public has a chance to talk about it. Although, she does not believe *iwi kūpuna* are expected makai of Ala Moana Blvd because of the area's historic composition as coral reef and mudflats.

## 4.4.5 Potential Impacts and Mitigation Measures

### 4.4.5.1 *Archaeology*

Through background research, CSH found no archaeological resources related to the Pre-Contact period within the project area which concurs with the conclusion made by Weyeneth. The inadvertent discoveries found through archaeological monitoring were adjacent to the Park and on Ala Moana Boulevard. The expansion of the pedestrian walkways (at Queen Street and Kamakee Street) over the drainage canal,

[49] Ibid. Tanaka, Kellen & Hammatt, H.H. Pg. 76

however, should not impact those burials because the work should not exceed the limits of the property boundary.

Building contractors should be aware of the specific areas where human remains were identified and use caution if work should be done near burials. Caution should be taken if the contractors need to excavate within the imported beach sand on the property since fragmented human remains could be present. According to HAR §13-280-3,[50] groundwork activities should stop and SHPD should be informed if historic properties, other than human remains, are discovered during the project's construction. If human remains are discovered, all groundwork activities will stop and the area quarantined until further notice. HAR §13-300-40[51] states that the SHPD, Police Department and medical examiner's office should be notified. If the remains are historic, cultural and lineal descendants of the area should be consulted for preservation efforts and proper protocol to mitigate the disturbance.

#### 4.4.5.2 *Architecture*

Some of the architectural features as noted above will be impacted by the Proposed Action (Table 4-3 above) and appropriate mitigation was proposed for each impact. Based on a pre-consultation meeting with SHPD, the City is proposing both Preservation and Architectural Recordation as mitigation for the proposed work. The mitigation proposal under review per Chapter 13-375-8, HAR was accepted by SHPD[52].

The City will ensure that repairs are made in an historically appropriate manner at the portals, underside of the Bridle Bridge, and the drainage canal walls.[53] Further, two pedestrian bridges (built ca. 1994) across the drainage canal will be removed. This work should be monitored by a historical architect who meets the Secretary of the Interior's (SOI) Professional Qualification Standards for historic architecture.

Preparation of a large-format photos-only addendum to the existing Ala Moana Park HALS No. HI-21 is proposed for the Ala Moana Park Drive, Hawaiian Pond, Japanese Pond, Drainage Canal, Keyhole parking lot, and Banyan Court. This will include 28 photographs.

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50 State of Hawai'i. 2002. *Hawaii Administrative Rules, Title 13, Chapter 280, Rules Governing General Procedures for Inadvertent Discoveries of Historic Properties During a Project Covered by the Historic Preservation Review Process. Section 3, Procedures for inadvertent discoveries.*

51 State of Hawai'i. 1996. Hawaii Administrative Rules, Title 13, Chapter 300, Rules of Practice and Procedure Relating to Burial Sites and Human Remains. Section 40, Inadvertent discovery of human remains.

52 Letter from Alan Downer, PhD (Deputy State Historic Preservation Officer, Administrator, State Historic Preservation Division) to Robert Kroning (City Department of Design and Construction, Director) historic preservation review pursuant to Hawaii Revised Statutes Chapter 6E-8 and Hawaii Administrative Rules Chapter 13-275-3. June 18, 2018.

53 Letter from Robert Kroning (City Department of Design and Construction, Director) to Kaiwi Yoon (State Historic Preservation Division, Architecture Branch Chief) requesting a determination letter pursuant to Hawaii Revised Statutes Chapter 6E-8 and Hawaii Administrative Rules Chapter 13-275-3. June 5, 2018.

#### 4.4.5.3 *Cultural*

The CIA did not identify any additional recorded historic properties in the immediate project area. Confirmation of burial finds on the mauka side of Ala Moana Boulevard was noted. The CIA suggests that *iwi kūpuna* and other subsurface cultural resources are unlikely because of the historic composition of the Park as reclaimed land. One informant claimed that skeletal fragments could be present along the AMRP Beach shoreline. Section 4.4.5.1 above outlines the required mitigation measures if skeletal fragments are found during construction. Excavation on the beach, however, is not proposed.

Beach nourishment is expected to cause some turbidity during sand placement. The contractor is required to use BMPs to minimize turbidity. As the new sediment should not be qualitatively different than the existing sand, it is not likely that there will be a change in habitat composition sufficient to alter seagrass abundance. Results of the water monitoring indicate that the current turbidity conditions in the nearshore area and swim channel are considered high, due to resuspension and lack of flushing of fine-grained sediment.[54] As a result, marine biota that currently occur in the area are already adapted to high-turbidity environments. While turbidity is likely to increase temporarily and immediately following sand placement, it is not likely to be significantly different than existing conditions. In addition, turbidity is also one attribute that small fish may use for defense against predation from larger fish, so turbidity may also serve as a positive attribute for juvenile fish. Turtles also occur often in the highly-turbid waters of the swim channel and are not likely to be affected by small, temporary changes associated with sand placement.

Section 4.6.3 of this chapter lists other potential impacts to the environment and mitigation of those impacts for beach nourishment. The beach nourishment project is expected to cover sections of the shoreline that have eroded, resulting in a loss of habitat for juvenile fish. The offshore reef located on the opposite side of the swim channel also serves as a habitat for juvenile fish. SEI estimates covering the rocky shoreline to be about a four percent loss.[55] Mitigation options for the shoreline coral includes: relocation to the reef, relocation to a similar rocky area that is not proposed for beach nourishment, or donate the coral to the State DAR Coral Nursery on Sand Island.[56] Consultation with the National Marine Fisheries Service (NMFS) regarding the Essential Fish Habitat should begin and potential mitigation for any loss of habitat should be discussed. The City may consider beach nourishment options that do not cover parts of the exposed reef to allow the coral and juvenile fish to reside there.

Mitigation for runoff related to the project is addressed in Section 4.2.5 of this chapter.

Full use of the AMRP and Magic Island will be temporarily suspended during construction. The project does not expect to hinder ceremonial practices or other

[54] Sea Engineering, Inc. January 2018. *Costal Assessment and Design Report Ala Moana Regional Park Beach Nourishment Project Honolulu, O'ahu, Hawai'i*. Prepared for Belt Collins Hawaii LLC. Pg 120

[55] Sea Engineering, Inc. January 2018. *Costal Assessment and Design Report Ala Moana Regional Park Beach Nourishment Project Honolulu, O'ahu, Hawai'i*. Prepared for Belt Collins Hawaii LLC. Pg 119

[56] Ibid. Marine Research Consultants, Inc. June 2018. Pg. 11

cultural festivals at the Park since construction would be conducted in sections of the Park. This would keep most of the Park available for recreational users and cultural practitioners. A project schedule will be released to the public through the DPR website and signage will be used at the Park to alert the public of any temporary closures.

## 4.5 FLORA, FAUNA AND AQUATIC BIOLOGY

A terrestrial and aquatic biological resources survey within the land areas of the Park was completed by SWCA Environmental Consultants (SWCA). The findings of this survey are summarized below. The SWCA report is included as Appendix E.

A survey of the marine environment consisting of the shoreline, swim channel, and coral reef was completed by Marine Research Consultants, Inc (MRCI). The findings are summarized in Section 4.5.4 and the report is included in Appendix F.

### 4.5.1 Flora

The pedestrian survey examined (more intensely) areas likely to support native plants. The survey results found no naturally occurring, state or federally listed threatened, endangered, proposed listed, or candidate plant species, or rare native Hawaiian plant species. Eleven native Hawaiian species were found. One of the observed native Hawaiian species, *Polyscias racemose*, is critically endangered, but occurs in the survey as a cultivated plant only. All other native plant species observed are not rare.

The landscaped vegetation contains a diverse mix of ornamental trees and shrubs. The ornamental trees are diverse. At least 25 ornamental trees are designated as exceptional trees. The remainder of the landscaped areas consist of a mixture of introduced lawn grasses and herbaceous weeds.

The ruderal vegetation exists at the margins of maintained areas in the survey area such as the pond and canal edges. Most of the plant species found are herbaceous species adapted to colonizing disturbed areas

### 4.5.2 Exceptional Trees

The Exceptional Tree Act (Act 105) was passed in 1975. The Hawaiʻi State Legislature saw the need to preserve the trees after so many were destroyed due to urban development. The Act authorized a County Arborist Advisory Committee and programs to provide rules and guidelines for protecting trees of exceptional nature. The Arborist Advisory Committee, managed by the City's Department of Parks and

Recreation's Division of Urban Forestry, meets monthly. The County Arborist Advisory Committees are mandated by the following powers and duties:[57]

- Research, prepare and recommend to the City Council exceptional trees to be protected by City ordinance or regulation.
- Advise property owners relative to the preservation and enhancement of exceptional trees.
- Recommend to the City Council appropriate protective ordinances, regulations and procedures.
- Review all actions deemed by the City Council to endanger exceptional trees.

A tree may be deemed "exceptional" based on seven criteria: Historic or cultural value, age, rarity, location, size, esthetic quality, and endemic status.[58] If a tree is deemed "exceptional" based on one or more of the above criteria then it could be nominated and recommended to the City Council for review. Once approved for protection under law, the tree will be added to the Revised Ordinance of Honolulu (ROH) Section 41-13.7, Register of exceptional trees. Below is the list of exceptional trees in the Park as listed in the ordinance.

**Table 4-4: Exceptional Trees**

| Name of Tree and/or Scientific Name | Description of Location (if available) | TMK (if available) |
|---|---|---|
| Adansonia digitata, Baobab Tree | Grove of 11 trees – Ala Moana Regional Park | 2-3-037:001 |
| Bucida buceras, Geometry Tree | Ala Moana Regional Park | 2-3-037:001 |
| Ficus spp., Banyan Trees | 45 trees that comprise 4 groves and 6 single trees at Ala Moana Regional Park; 1 Ficus religiosa near the McCoy Pavilion roundabout, 4 Ficus spp. within McCoy Pavilion Courtyard, and 1 large Ficus benghalensis near the Ewa lagoon | 2-3-037:001 |
| Ficus benghalensis, Indian Banyan Tree | End of Magic Island | 2-3-037:025 |
| Sterculia apetala, Panama Trees | 4 trees – Ala Moana Regional Park | 2-3-037:001 |

57 City and County of Honolulu, Department of Parks and Recreation. June 2018. http://www.honolulu.gov/parks/hbg/exceptional-tree-program.html

58 Ibid

*Source: Revised Ordinance of Honolulu, Chapter 41, Regulated Activities Within the City, Article 13, Protective Regulations for Exceptional Trees, Section 41-13.7, Register of exceptional trees.*

The actual count within the Park at the time of this EIS is: 11 Adansonia digitata (Baobab Tree), 1 Bucida buceras (Geometry Tree), 45 Ficus spp. (Banyan Trees) including the one at Magic Island, and 4 Sterculia apetala (Panama Trees).[59]

### 4.5.3 Fauna

The pedestrian survey, for terrestrial fauna, examined (more intensely) areas likely to support native wildlife. All terrestrial fauna observed (birds, mammals, reptiles, amphibians, and invertebrate species) were noted.

The observed terrestrial fauna included twenty bird species, including seven birds protected by the Migratory Bird Treaty Act (MBTA). The white tern, one of the seven protected by MBTA, is also listed as threatened on Oʻahu by the State of Hawaiʻi. For terrestrial mammals, favorable habitat for roosting and foraging was observed for the Hawaiian hoary bat; no hoary bats were directly observed. No other terrestrial mammals were observed at the time of the survey. No terrestrial reptiles or amphibians were detected by the survey. The non-native carpenter bee was the only observed insect/invertebrate.

### 4.5.4 Aquatic Biology (AMRP Ponds and Drainage Canal)

The aquatic fauna survey focused on fish and large aquatic invertebrates. Benthic grab samples were taken from the two ponds as well as visual surveys conducted for the aquatic fauna in the canals and ponds.

Three species of marine algae were observed in the canal system and western pond. Sediments in all three grab samples in the eastern pond comprised dense sticky mud; no infauna were found. Also observed in the canal were abundant schools of cichlids (i.e. tilapia). In the ponds, tilapia and peociliid fish were observed.

### 4.5.5 Marine Environment (Near Shore)

The marine environment around the near shore waters of the AMRP beach have developed from the arrangement of the swim channel and shallow reef. The shoreline has smaller species of coral (*Leptastrea purpurea* and *Pocillopora damicornis*) attached to the rocky areas of the beach.[60] Coral coverage in the area was less than one percent. Within the swim channel bottom copious amounts of Hawaiian seagrass

[59] Email from Joshlyn D. Sand, (City Department of Parks and Recreation, Division of Urban Forestry, Director, Honolulu Botanical Gardens) to Elaine H. Morisato (City Department of Design and Construction, Facilities Division, Civil Engineer) Ala Moana Regional Park - Exceptional Tree list. May 18, 2018.

[60] Marine Research Consultants, Inc. June 2018. *Baseline Assessment of the Marine Environment Ala Moana Regional Park Beach Replenishment Honolulu, HI*. Prepared for Sea Engineering, Inc. Pg. 7

(*Halophila hawaiiana*) were observed in all sections of the survey.[61] Hawaiian seagrass is commonly found in waters that are protected and near a calm, sandy shoreline. Green sea turtles are known to feed on Hawaiian seagrass and are also attracted to protected areas that are away from predators. Other common plants within the survey area were red algae (*Gracilaria Salicornia*), brown algae (*Padina sp.* and *Lyngbya sp.*).[62]

Larger coral that are normally found on the reef were observed along the Magic Island side of the open channel. The water flow is different from the swim channel and the area operates in a more natural ocean environment. This condition allows reef coral to colonize and grow. Coral species found here are *Pocillopora meandrina*, *Porites lobata*, *Montipora patula* and *Montipora capitata*.[63] A species that was commonly observed but is not commonly observed on exposed coastal reefs is *Pocillopora damicornis.* [64]

During the swim survey, several species of fish were observed including surgeonfish *Acanthurus triostegus* and *A. leucoparius*, damselfish *Dascyllus albisella*, the tetradonts *Canthigastor jactator, Diodon holocanthus* and *Ostracion meleagris*, the trumpetfish *Aulostomus chinensis*, triggerfish *Rhinecanthus rectangulus*, and the Moorish idol *Zanclus cornutus*.[65] None of the fish observed were considered rare and are typical species that are seen on the reef.

Threaten or endangered species in the marine environment could consist of the endangered humpback whale (*Megatera novaeangliae*) and the endangered Hawaiian monk seal (*Monachus schauinslandi*). Both mammals were not observed during the survey, but are known to occur in Hawaiian waters, and on the shore for the Hawaiian monk seal. Several threatened green sea turtles (*Chelonia mydas*) were observed during the survey and are commonly found in south shore waters. The calm water protected by the coral reef is a preferred habitat for the green sea turtle because there is an abundance of food source and they are sheltered from predators. The endangered hawksbill turtle (*Eretmochelys imbricata*) was not observed and they are not commonly found in Hawaiian waters.

### 4.5.6 Marine Environment (Donor Sites)

*Common Results for Three Sites*[66]*:*

[61] Ibid

[62] Ibid. Marine Research Consultants, Inc. June 2018. Pg. 8

[63] Ibid

[64] Ibid

[65] Ibid. Marine Research Consultants, Inc. June 2018. Pg. 8-9

[66] Marine Research Consultants, Inc. December 2018. *Baseline Assessment of the Marine Environment Ala Moana Regional Park Beach Replenishment Donor Sites Honolulu, HI*. Prepared for Sea Engineering, Inc. Pg. 5- 7

No reef fish observed at the central location of the donor site. Fish were observed within the limits of the algae bed or rubble that were located along the outer boundaries of the sites.

Threatened or Endangered species may transverse the waters of the donor sites as many are known to occur in the south shore. These species could include: the threatened green sea turtle (*Chelonia mydas*), the endangered hawksbill turtle (*Eretmochelys imbricata*), the endangered humpback whale (*Megaptera novaeangliae*), and the endangered Hawaiian monk seal (*Monachus schauinslandi*).

*Reef Runway – Inner*

At the "RR—Inner 1a" site, the sand deposits were bounded by meadows of the endemic Hawaiian seagrass *Halophila hawaiiana*.

*Hilton*

Seagrass was not observed at the donor site. The bottom was covered by extensive tracts of the blue-green alga *Lyngbya majuscule*. The inner edge of the "Hilton" deposit site forms a distinct margin that abuts a solid platform that can be considered a thriving coral reef. Several large helmet-shaped colonies of *Porites lutea* and *P. lobata* greater than one meter in diameter suggest that the area has not been subjected to severe stresses in recent decades.

*Ala Moana Offshore*

Common marine plants such as the green alga *Avrainvillea erecta* were observed at the boundaries of the sand deposits. Interspersed in the meadows of *A. erecta* were patches of seagrass. Beds of the green calcareous algae *Halimeda* sp. were also common. A metal frame of unidentified source was embedded in the sand near the inshore boundary of the site. The upper surfaces of the frame were colonized by numerous coral colonies consisting of the species *Porites lobata*, *Pocillopora meandrina*, *Montipora capitata*, and *Leptastrea spp*. Scattered rubble fragments that were the dead remnants of large corals also were observed to provide solid substratum for new settlement and growth. Other attached biota that were abundant within the boundary areas included the conical shaped sponge *Spirastrealla vagabunda*, and scattered sea cucumbers (*Holothuria sp.*).

## ~~4.5.6~~4.5.7 Potential Impacts and Mitigation Measures

### ~~4.5.6.1~~4.5.7.1 *Flora*

In regard to flora, some of the non-native species are designated as exceptional trees and are protected under the Exceptional Tree Act. Any action that may endanger these trees is to be reviewed by the City's Arborist Advisory Committee. The City proposes to remove four banyan trees that are undermining the foundation of Banyan

Courtyard and McCoy Pavilion. Possible replacement trees could be trees that are better suited for sites near buildings. Removing these trees may cause temporary construction impacts such as temporary closure of the courtyard, noise and, dust. Proposed mitigation is to replace the banyans with a species that is more conducive to areas near buildings. The removal of the existing trees will allow for renovations and restoration of the courtyard area and the pavilion. The contractor overseeing the removal should exercise caution by not causing damage to the surrounding buildings or their foundation.

Additionally, non-native species are common in the survey area. The following recommendations are to minimize invasive species introduction: all construction equipment/vehicles arriving from outside Oʻahu should be washed and inspected; all construction material arriving outside of Oʻahu should be washed and/or visually inspected; inspection and cleaning activities should be conducted at a designated location prior to entry to the project site; raw materials should be purchased from a local supplier; if landscaping occurs, native Hawaiian plants or non-invasive plants should be used.

New plantings within the Park will be consistent with Chapter 46 HRS §103D-408[67] which requires incorporation Hawaiian plants into landscaping of public building, facilities and housing, subject to the conditions noted therein.

#### ~~4.5.6.2~~4.5.7.2 *Terrestrial Fauna*

In regard to terrestrial fauna, avoidance and mitigation measures for the white tern include the following: tree removal and trimming should be conducted in the fall and early winter; inspection of trees prior to any tree removals; if a chick is found nesting that tree should not be trimmed or removed until the chick has fledged. While the Hawaiian hoary bat was not directly observed, suitable habitat was. The following measures are recommended: no trees taller than 15 feet should be trimmed or removed between June 1 and September 15; and any erected fences for the project should be barbless top strand wire.

#### ~~4.5.6.3~~4.5.7.3 *Marine Life*

Potential impacts are evaluated based on: potential impacts on threatened and endangered marine species listed under the Endangered Species Act of 1973 (ESA), as amended; impacts on marine habitats, specifically coral reefs; impacts on Essential Fish Habitats (EFH) managed and protected under 1996 amendments to the Magnusson-Stevens Fishery Conservation and Management Act; impacts on marine species regulated by the State, Department of Land and Natural Resources (DLNR), Division of Aquatic Resources (DAR); impacts due to alien marine species; and existing management measures designed to avoid, minimize, or prevent such impacts.

[67] State of Hawaiʻi. 2015. *Hawaii Revised Statutes, Chapter 103D, Hawaii Public Procurement Code, 103D-408, Hawaiian plants; use in public landscaping.*

**Sand Placement/Beach Nourishment**

Placement of sand onto the beach will result in some turbidity and may temporarily increase resuspended sediment in the water. Large amounts of sand are not expected to reach the water causing a higher increase in turbidity that could affect the Hawaiian seagrass, the reef coral along Magic Island, and the green sea turtles. It is apparent that the elevated levels of turbidity owing to resuspended sediment in the water column of the channel are not an impediment to seagrass occurrence. While placement of offshore sand on the beach will likely result in a temporary increase in resuspended sediment, it is not likely that there will be substantial settlement of new sediment on the floor of the channel sufficient to bury or impact existing assemblages of seagrass. As the new sediment should not be qualitatively different than the existing sand, it is not likely that there will be a change in habitat composition sufficient to alter seagrass abundance. Care should be taken during placement to avoid having large amounts of sand enter the water. BMPs such as silt curtains should be used to prevent turbidity caused by the project.

The new sand will cover some of the smaller coral that are attached to the rocky areas of the shoreline resulting in a loss of habitat for juvenile fish. The offshore reef located on the opposite side of the swim channel also serves as a habitat for juvenile fish. SEI estimates covering the rocky shoreline to be about a four percent loss.[68] Mitigation options for the shoreline coral includes: relocation to the reef, relocation to a similar rocky area that is not proposed for beach nourishment, or donate the coral to the State DAR Coral Nursery on Sand Island.[69] Consultation with the National Marine Fisheries Service (NMFS) regarding the EFH should begin and potential mitigation for any loss of habitat should be discussed.

The threatened green sea turtle is known to occur in the swim channel and mitigation measures and BMPs should be performed to avoid impact. As mentioned in Section 4.5.4, other endangered species may also occur in the area. Further mitigation and BMPs are recommended by the ~~National Marine Fisheries Service (~~NMFS~~)~~ to protect endangered species:[70]

1. Conduct a survey for marine protected species before any work in the water starts, and if a marine protected species is in the area a 150-foot buffer must be observed between the protected species and the work zone.

2. Establish a safety zone around the project area whereby observers will visually monitor this zone for marine protected species 30 minutes prior to, during, and 30 minutes post project in-water activity. Record information on the species, numbers, behavior, time of observation, location, start and

[68] Sea Engineering, Inc. January 2018. *Costal Assessment and Design Report Ala Moana Regional Park Beach Nourishment Project Honolulu, O'ahu, Hawai'i*. Prepared for Belt Collins Hawaii LLC. Pg 119

[69] Ibid. Marine Research Consultants, Inc. June 2018. Pg. 11

[70] Ibid. Sea Engineering, Inc. January 2018. Pg 137

end times of project activity, sex or age class (when possible) and any other disturbances (visual or acoustic).

3. Conduct activities only if the safety zone is clear of turtles.

4. Upon sighting of a turtle within the safety zone during project activity, immediately halt the activity until the animal has left the zone. In the event a marine protected species enters the safety zone and the project activity cannot be halted, conduct observations and immediately contact NMFS staff in Honolulu to facilitate agency assessment of collected data.

5. For on-site project personnel that may interact with a protected species potentially present in the project area, provide education on the status of any listed species and the protections afforded to those species under Federal laws.

A summary of anticipated effects on endangered species is as follows:

- By using the above BMPs noise/physical disturbance to green sea turtles is expected to be temporary and insignificant and not result in adverse behavioral changes.
- Based on the in-water work being conducted in relatively shallow water with silt curtains confining the sediment, any exposure of marine protected species to turbidity and sedimentation would be temporary and not significant.
- The sand recovery sites are not frequented by turtles or used as a foraging area due to a lack of algae on the sand bottom, the sand recovery equipment will be fitted with fences/barriers to prevent turtle entanglement or entrapment, and the above discussed BMPs will be implemented, thus physical disturbance to turtles is anticipated to be temporary and not significant during the sand recovery operations.

Given the extensive turtle foraging area in Ala Moana Regional Park, and the relatively small percent loss which would result from the project, the change in turtle foraging habits and habitats is not expected to be significant.

**Offshore Sand Recovery**

The operation of an underwater pump during dredging activities will produce an underwater sound that can be perceived by marine creatures. The ears of marine mammals and sea turtles are sensitive to changes in sound pressure which is produced by the amplitude, wavelength, and frequency of a sound wave. While audiograms are not available for whales and sea turtles, it is generally accepted that 120 dB causes disturbance to these sea creatures. Thus, sea turtle disturbance would be limited to within about a 130-foot radius of the pumping operation. Turtles would be expected to move away from the disturbance.

In-water construction activities at the sand recovery site would have varying impacts on biotic communities. A benthic survey to identify marine life at the sand recovery, such as coral, fish or endangered marine life was performed by Marine Research Consultants, Inc. Their report is included as Appendix F-2. Based on the results of the benthic survey, it is recommended that environmental impacts can be eliminated or minimized by limiting sand extraction to the central regions of the donor site. In addition, management and mitigation practices should be put in place to limit to the extent possible release of fine-grained material to the water column during the extraction of donor sand. With these conditions, the proposed project should have little or no potential for significant permanent effects to the existing marine environment.

A U.S. Army Corps of Engineers (USACE) permit application will be required when construction and dredging plans are completed and submitted for agency review. The application will include a BMP plan to mitigate impacts on marine life. During the review process for the application, appropriate mitigation measures may be modified as needed to minimize impacts on marine life. Significant impacts on the marine environment would be averted because sediment testing, water quality monitoring, and evaluation of construction methods will be conducted to obtain permits and approvals required under the CWA Section 404. The USACE, with the EPA's concurrence, is responsible for authorizing these permits and approvals.

## 4.6 BEACH NOURISHMENT

### 4.6.1 Introduction/Existing Conditions

The AMRP beach (Beach) was developed in 1955 as additional space for other water recreation such as swimming even though the area was not originally intended for swimming. Prior to the development of the Beach, water recreation was related more to boating and fishing. Boats from Ala Wai Boat Harbor passed in front of AMRP via the original channel that was dredged in 1928. The crossing channel was not needed by the 1950s because a new channel was dredged directly from the Ala Wai Boat Harbor to the open ocean.[71] About 55,000 cubic yards of sand was imported from the north and west shores of O'ahu to create the Beach. After the new Beach was installed, the crossing channel became the swim channel which is popular for calm water activities.

The urban landscape continued to develop around the Beach and Park because beachfront property is a coveted commodity. Today, beachfront property is becoming vulnerable to sea level rise, inundation, flooding, erosion, and drainage issues. Shoreline assessment studies have been conducted by various Federal and State agencies to address the erosion rates at the beaches and to ascertain the impact on the

[71] Ibid. Weyeneth, Robert. Ala Moana:ThePeople's Park. Pg 31

economy, natural resources, and society.[72] Beach nourishment and groin structures have been used to mitigate shoreline erosion in areas where erosion is most critical. These measures have been temporary solutions especially for artificial beaches like Waikīkī and Ala Moana. However, without beach nourishment these beaches will continue to erode and eventually return to their natural state.

The Beach is absent of a natural method for replenishing the sand because of the topography between the shoreline and the reef. The deep swim channel prevents sand movement from the reef to the shore. The widest point of the swim channel is approximately 300 ft. across.[73] As discussed in Chapter 2, Section 2.3, the Beach needs mechanical replenishment every 20-35 years and three options were provided by Sea Engineering, Inc. (SEI). These options were based on the estimated time between replenishment and approximately how much sand would be needed for that time period. The section that is critical for beach nourishment is the section fronting the AMRP tennis courts which is the Station (Sta.) 15+00 location on SEI's profiles (Figure 4-4). During high tide and King Tide, the water reaches the retaining wall and the area is inundated for that period (Figure 4-5). Short-term solutions included sand pushing and relocating the rocks from the shoreline were completed in 2016, but those improvements did not sustain for very long. A long-term solution is desired and the City is tasked with finding options that would align with the purpose and objectives of the Purposed Action and have the least impact on the environment.

#### 4.6.1.1 *Study Results Beach Nourishment*

SEI completed an investigative study (Appendix G) for the existing conditions of the Beach, developed a beach nourishment plan, provided options for sand placement and, identified offshore sand source locations. The surveys and analyses reported in their assessment included: a shoreline survey to determine width and elevation of the Beach, topographic and bathymetric surveys for the Beach and swim channel, historic shoreline analysis through Google aerial images, and background research to create the three options for beach nourishment.

**Shoreline Survey**

The shoreline survey noted the various widths of the Beach and its elevation above sea level. Figure 4-4 shows the locations of the recorded profiles from the survey. This survey helped determine the locations that needed replenishment and the locations were carried forward to create the three options outlined in Section 2.4 of Chapter 2. SEI also noted areas of inundation during periods of high tides and King Tides (near Magic Island, near Lifeguard Tower 1C, near Lifeguard Tower 1B, and near the new volleyball courts). The highest water level was recorded in June 2017 at +3.2 ft. mean

[72] Fletcher, C.H., Romine, B.M., Genz, A.S., Barbee, M.M., Dyer, Matthew, Anderson, T.R., Lim, S.C., Vitousek, Sean, Bochicchio, Christopher, and Richmond, B.M., 2012, National assessment of shoreline change: Historical shoreline change in the Hawaiian Islands: U.S. Geological Survey Open-File Report 2011–1051, 55 p.

[73] Ibid. Sea Engineering, Inc. January2019. Pg. 2

lower low water (mllw).[74] Figure 4-5 shows an example of inundation during King Tide fronting the Keyhole parking lot and tennis courts.

**Topographic and Bathymetric Survey**

In December of 2017 SEI performed a topographic survey of the Beach from the retaining wall to the shoreline and a bathymetric survey within the swim channel from the shoreline to the reef. The purpose of these surveys was to collect feedback that would establish the design.

The results of the topographic survey showed a lower elevation for the backshore that was between three and five feet above msl.[75] A lower elevation is related to the cause of inundation at higher tides, even during less wave action. The shoreline reef was about one to three feet below msl.[76] The swimming channel depths were between 10 feet and 23 feet deep.[77]

[74] Ibid. Sea Engineering, Inc. January 2019. Pg. 13
[75] Ibid. Sea Engineering, Inc. January 2019. Pg. 16
[76] Ibid
[77] Ibid

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BELT COLLINS

Sea Engineering, Inc.

**Figure 4-4**
**SHORELINE SURVEY AREA**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

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**Figure 4-5**
**KING TIDE**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

Sand samples were collected from the swim channel at eight different locations to analyze the grain size and to determine if the beach sand was appropriate for reuse. The swim channel sand was considered "muddy."[78] The grain size analysis results showed the sand that could be used as too fine and scattered. The sand within the near shore waters was, therefore, not considered further as a beach sand source.

**Shoreline Aerial Photograph Analysis**

A shoreline analysis through aerial images provide by Google was also completed. Available images from 1927, 1949, 1956, 1975, 1982, and 2005 were compared to the construction events of AMRP and the Beach. The 1927 shoreline was the area before any development of the AMRP and would be considered as the natural condition. By 1949 AMRP was constructed and the Beach was installed by the time the 1956 photograph was taken (Figure 4-6). The 1956 photograph shows erosion over time that is from the original installment of the Beach and the 2005 shoreline. It should be noted that the Beach was nourished in 1976 with 30,000 cubic yards of sand from a land source.[79] The University of Hawaii Coastal Geology Group (UH-CGG) also studied the erosion pattern of the Beach through historic photographs. The study concluded that the shoreline has patterns of erosion at the middle and end sections of the Beach with the Magic Island end having been affected the most.

Recent Google aerial images from 2004 – 2014 show the rate of erosion in a different pattern than what the study done by UH-CGG found. Based on the ten-year trend from 2004 – 2014, erosion at the central section of the Beach averaged about -2.9 ft./yr.[80] The erosion rate is factored into the estimation of the shoreline response and timeframe between each nourishment.

**Wave Pattern**

The shoreline is fronted by a 300-foot wide swimming channel with depths up to 23 feet.[81] The reef extends the entire shoreline from Kewalo Basin to Magic Island. It is shallow at a depth of about 5 ft. and extends about 1,000 ft. to the surf break. The surf break depth is about 10 ft. and the ocean floor gradually slopes to lower depths. Bathymetry becomes a factor on wave patterns as the waves move closer to shore. More energy is released when waves connect with the ocean bottom. BOUSS-2D is a wave model used to describe nearshore wave patterns. Figure 4-7 shows a BOUSS-2D model image of the wave patterns interaction with the "Courts" surf break. The wave crest transforms into two curved-shape patterns as it moves over the reef. These curved waves disseminate over the reef and toward the middle section of the Beach. When the wave breaks onto the Beach, the curved crests of the waves push the sand along the beach in opposite directions from the middle. The wave heights at the shore

78 Ibid. Sea Engineering, Inc. January 2019. Pg. 18
79 Ibid. Sea Engineering, Inc. January 2019. Pg. 20
80 Ibid. Sea Engineering, Inc. January 2019. Pg. 27
81 Ibid. Sea Engineering, Inc. January 2019. Pg. 28

break are usually small but, the regular wave action onto the Beach causes enough movement to steadily erode the area.

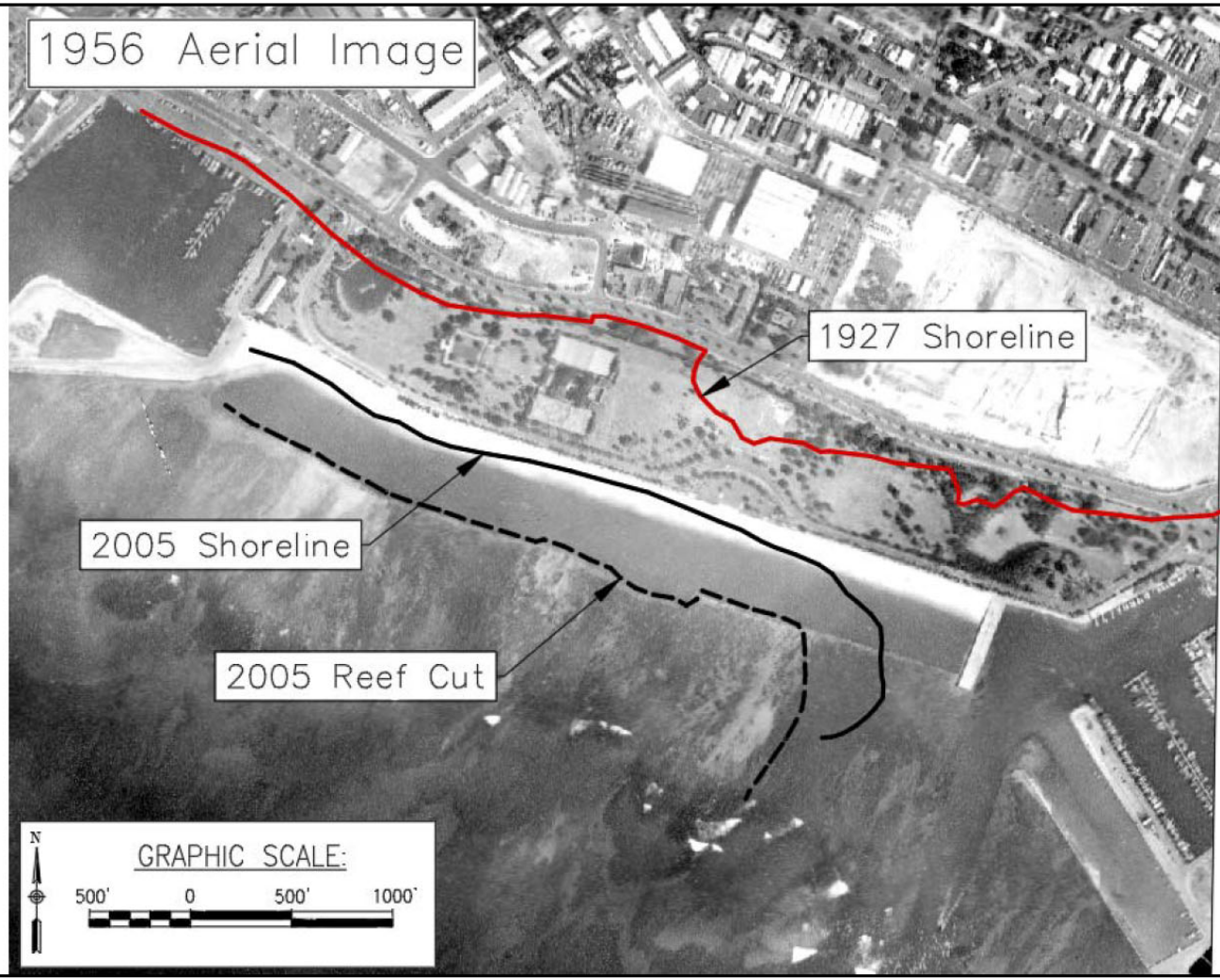


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**Figure 4-6**
**1956 HISTORIC SHORELINE**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

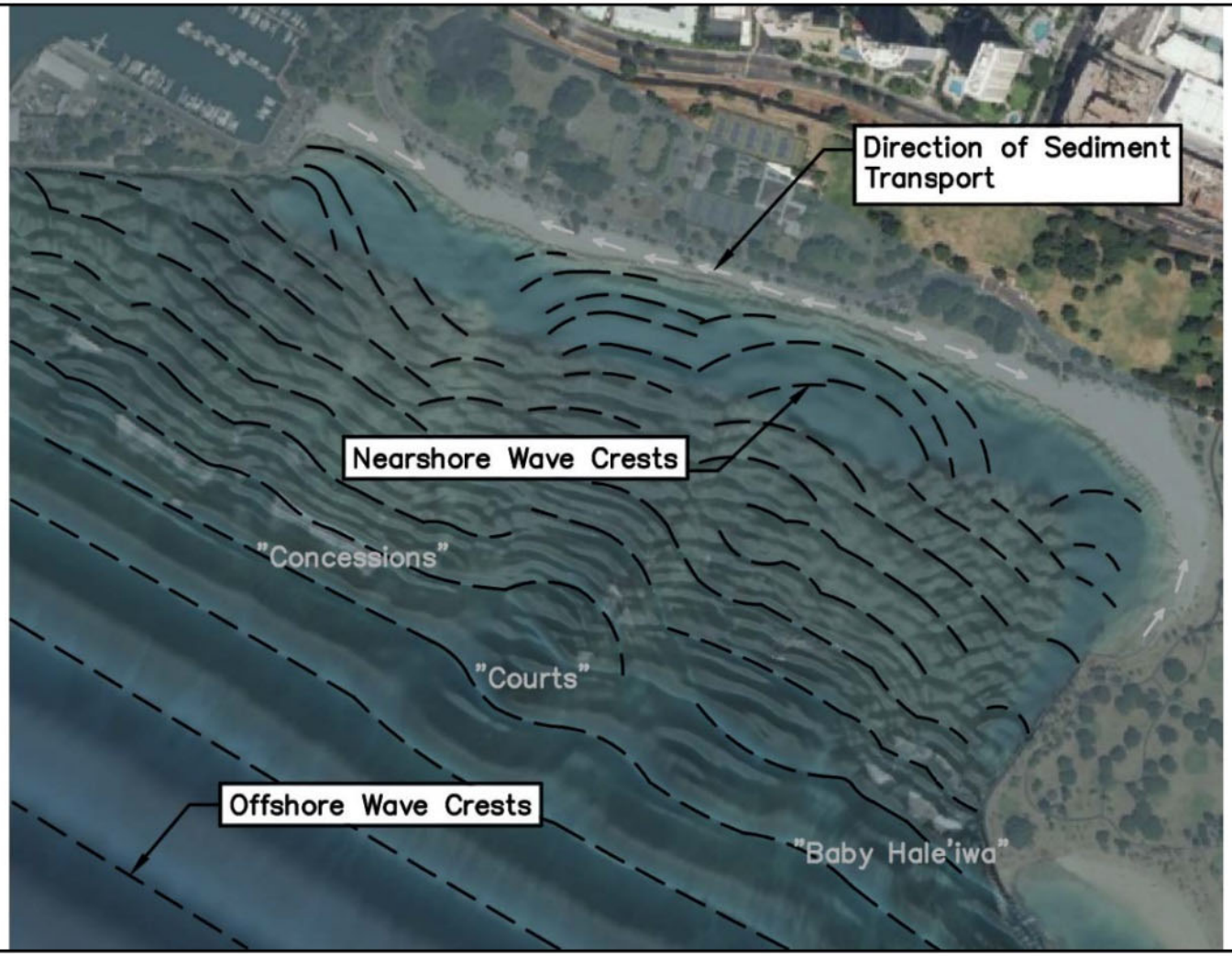


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**Figure 4-7**
**BOUSS-2D WAVE PATTERN**
Ala Moana Regional Park and Magic Island Improvements
Honolulu, Oahu, Hawaii
Draft Environmental Impact Statement

### 4.6.2 Introduction Sand Source Investigation

SEI conducted a sand source investigation that included six offshore locations and one location on land to determine availability, quality, quantity, cost, and general feasibility. As mentioned above in Section 4.1.2, Soils, Hawaii beaches are characterized as calcareous (calcium carbonate) sand, and comprised of various skeletal fragments of marine organisms. The general components of sand are related to location because of varying species.

Until recent years, sand for beach nourishment was mined from other beaches on Oʻahu or from a manufactured source on land. Hawaiian Cement had a commercial source located inland of Mokulēʻiʻa beach. This sand has been used for beach maintenance projects at the Hilton Hawaiian Village, Kuhio Beach, and Makaha Surfside.[82] This sand, however, is no longer available.

Offshore sand deposits have been the preferred alternative because they do not deplete sand sources on land and do not contribute to erosion of natural beaches. Offshore sources would need to be dredged and transported to shore which trigger many environmental permits on the Federal and State level. Offshore sand deposits present more options in location and can be a cost-effective alternative. Sand deposits found offshore are also mostly likely to meet the criteria for use on land. SEI used the following guidelines from the State DLNR during their sand source investigation:[83]

- The sand shall contain no more than six percent fine material (sand grain size smaller than 0.074 mm)
- The sand shall contain no more than ten percent coarse material (sand grain size greater than 4.76 mm)
- The grain size distribution will fall within 20% of the existing beach grain size distribution
- The overfill ratio of the fill sand to existing sand shall not exceed 1.5
- The sand will be free of contaminants such as silt, clay, sludge, organic matter, turbidity, grease, pollutants, and others
- The sand will be primarily composed of naturally occurring carbonate beach or dune sand

#### 4.6.2.1 *Sand Source Investigation Locations*

SEI surveyed for available quantity and collected sand samples from ~~six~~ three offshore sites that included: ~~Kūhiō Beach, Halekūlani Channel,~~ Hilton, Ala Moana (offshore)~~Diamond Head~~, and the Reef Runway. One inland source was investigated

[82] Ibid. Sea Engineering, Inc. January 2019. Pg. 60

[83] Ibid.

at a quarry in Waiʻanae that is operated by Pacific Aggregate. SEI conducted seafloor investigations that consisted of: sub-bottom profiling, side scan sonar surveys, towed camera surveys, diver reconnaissance and sampling, jet probing, and vibracoring.[84] These methods were used to analyze the thickness of the sand layer at each potential source location and to extract core samples from the seafloor for analysis.

**Hilton**

In 2004, SEI investigated an area offshore from the Hilton Hawaiian Village Lagoon that was approximately 850 ft. by 620 ft. in dimension. The area was located in water depths of 40 to 55 feet. Results from 2004 reported an estimated volume of sand to be approximately 40,500 cubic yards. SEI returned to the Hilton site to verify the 2004 findings and discovered the area increased in volume to about 45,400 cubic yards of sand. Five vibracore samples were collected from the Hilton site.

**Ala Moana - Offshore**

The Ala Moana-Offshore deposit is located in waters off the AMRP and about 2,300 feet from the reef.[85] In 2018, SEI preformed investigations offshore from the AMRP and in between the Ala Wai Small Boat Harbor channel and Kewalo Basin channel. They focused their search in water depths of 40 to 100 feet. The sand deposit was found in 70 to 100 feet of water. Sand samples were taken from eight different location. The sand samples had median diameters in the range of 0.18 mm to 0.51 mm and contained up to 5.4% fine material which is within DLNR's range of acceptability.[86] SEI determined that the site had an estimated volume of 250,000 cubic yards of sand. The central section was the thickest section of the deposit and it contained an estimated 71,000 cubic yards of sand.

**Reef Runway**

In March and May of 2017, SEI conducted investigations on the Reef Runway sand deposits that is known to stretch several hundred acres. The outer sand fields were within areas of reef. The vibracore collected five samples from an area of sand with a profile that was at least 40 ft. thick.

Further investigation near the Reef Runway found an area of sand that measured 2,000 ft. across and located inshore of the areas investigated in 2017. Jet probes were able to penetrate two to four ft. into the sand. The volume of the deposit is estimated to have about 200,000 cubic yards of sand.

**Inland Sand – Pacific Aggregate**

Pacific Aggregate operates a 200-acre quarry and processing operation in Waianae that manufactures sand from coral. Their product is mostly used for mixture in

[84] Ibid. Sea Engineering, Inc. January 2019. Pg. 63

[85] Ibid. Sea Engineering, Inc. January 2019. Pg. 70

[86] Ibid.

concrete. There is buried "natural/inland" sand located on their property that is about 10 ft. thick. Pacific Aggregate excavates from the natural source and keeps it separate from other sediments. Blended products are also available and could contain various sediments from the around the natural area. There is no certainty of how much of the natural sediment is contained in a blended product.

Sand samples were taken of the natural sand had a high quantity of fine material, and was poorly sorted. SEI requested additional processing of the sand, to remove fine material through reducing the speed of the rinsing augers and increasing the water flow. This sand could be used as stockpile for sand pushing at the beach berm location. It is not considered natural sand, but it would take decades before it would be needed and exposed. Periodic replenishment of this sand for stockpile could be taken from the quarry instead of using offshore sand.

#### 4.6.2.2 *Sand Investigation Results*

The sand samples were analyzed by geologists and grain size analyses were performed by a professional laboratory. The "Reef Runway—Inner", "Waikiki Maintenance", and "Diamond Head" sand samples are within the DLNR guidelines. "Hilton" sand is coarser than the Ala Moana beach sand, which provides more stability and should be considered. ~~The sand found below the surface at the Diamond Head site closely matches the sand that was imported to Ala Moana from West O'ahu.~~ Below are some of the revealing factors of the sand borrow site assessment and sand source investigation~~studies~~ to consider from the locations:[87]

**"Reef Runway—Inner"**

- Located near the 'Ewa end of the Daniel K. Inouye Honolulu International Airport Reef Runway. However, no effect is expected to the Reef Runway or any other structure since the deposit is at least 600 feet from the runway.
- The deposit is in 60 to 100 ft. of water and could contain more than~~up to~~ 200,000 cubic yards of sand.
- The measured median grain size is slightly finer than the Ala Moana Beach sand.
- The offshore sand contains a significant amount of fine material which is expected to produce noticeable turbidity, even though the fines are less than the limit set forth by DLNR.
- Oceanographic conditions are not expected to be a concern, though waves and weather will have to be monitored.

[87] Ibid. Sea Engineering, Inc. January 2019. Pg. 91-93

- The site is not near to any surf sites or other recreational activities.
- The site is near the Pearl Harbor channel and may require coordination with the military.
- Water samples from the "RR-Inner 1b" site recorded nutrient concentrations at station 10 and were elevated relative to the concentrations at the larger "RR—Inner 1a" site, although salinity was not correspondingly depressed. The "RR—Inner 1b" site was located closest to the Hickam Harbor entrance channel. Flow of water seaward from the inner areas of Hickam Harbor may be the cause of the elevated values at the "RR—Inner 1b" sampling station.

**"Hilton"**

- Located in nearshore waters off Waikiki near the Hilton Hawaiian Village resort.
- Oceanographic conditions are not expected to be a concern.
- The area is a popular recreational spot that includes swimmers, kayakers, and stand-up paddleboarders. Ala Moana Bowls, Rockpiles, In Betweens, and Kaisers are popular surf spots. The Atlantis Submarine tour boats pass this area several times per day.
- The "Hilton" sand deposit contains an estimated 45,000 cubic yards of sand. The sand is slightly coarser than the Beach sand.
- The State of Hawaii is drafting an EIS for maintenance of Waikiki Beach. The "Hilton" sand deposit has been considered for the nourishment project for at least part of the beach. The sand deposits are within the State's Conservation District which will trigger a permitting process from the State.
- Two water quality stations in the "Hilton" donor site had elevated concentrations in surface waters of all dissolved nutrients ($PO_4^{3-}$, $NO_3^-$, $NH_4^+$, Si, TP, TN) along with reduced salinity. These stations (1 and 3) were located closest to the discharge of the Ala Wai Canal.

**"Ala Moana – Offshore"**

- The deposit is located directly offshore from the "Courts," "Concessions" and "Baby Haleiwa surf breaks. SEI performed a wave model analysis with the dredging scenario and found that dredging at the sand deposit location would not cause a noticeable change in the surf breaks. Dredging would likely be performed over a large area of the deposit which would result in a shallower pit and have less of an impact. Sand would eventually fill the dredged section and return it to pre-dredged conditions.

- About 52,000 cubic yards of sand could be recovered from the central section of the deposit if dredged at an average of four feet.

### 4.6.3 Potential Impacts and Mitigation Measures

Below is a summary of the impacts and mitigation for beach nourishment. A full description can be found in SEI's assessment report (Appendix G) from pages 119 – 139.

**Turbidity**

Sand recovered from the ocean can be compacted with the dry beach sand, but would still contain fine grains that could be resuspended in the ocean environment. Dredging, transport, and placement of the imported sand can also increase the percent of the finer sediment through the mechanical movement from one place to the other.

Turbidity is caused by fine sediment particles suspension in the water column. Turbidity is usually a temporary construction impact, and would naturally settle out of the water column. Shoreline turbidity is anticipated during sand placement. BMPs such as silt curtains and containment barriers would be placed along the shoreline during beach maintenance. There may be a period of turbidity after sand placement as finer sediment moves across the shoreline. The finer sediment is expected to disperse and move offshore.

Turbidity is also expected at the offshore dredge site. Fine sand could be disturbed during the recovery from the seafloor. Impacts of turbidity could be minimized at the dredge site by using an environmental clamshell bucket, which is recommended as an industry best practice. Environmental clamshell buckets are designed to have tighter seals and overlapping sides which retains the sediment within the bucket and results in less turbidity at the dredge site. Turbidity caused by the sand recovery work may move with the inbound waves towards the shore. These water quality impacts are expected to be temporary, lasting only during the actual dredging operations, and are expected to be localized to the immediate vicinity of the dredging. BMPs will be followed throughout the sand recovery work, consistent with the State DOH Water Quality Certification that will be required for the project.

SEI performed turbidity tests on the samples that were taken from the three possible sand donor sites and the beach sand from the AMRP. The samples had a higher initial turbidity and then showed a rapid decrease. The "Reef Runway" sample showed the fastest decrease which was within two hours. The "Hilton" and "Ala Moana Offshore" samples averaged about six hours. Samples from the AMRP shoreline had lower initial turbidity results but did not decrease as rapidly as the offshore sands. Back beach samples were also taken from the AMRP and it had a higher level of initial turbidity but like the offshore samples, they decreased quicker than the sample taken from the shoreline. The results suggest that initial elevated turbidity is expected during sand placement and periodically during larger wave events. The results also indicate that

the offshore sand is compatible with the existing beach sand and turbidity should return to typical existing levels after a short period of adjustment.

Results of the water monitoring indicate that the current turbidity conditions in the nearshore area and swim channel are considered high, due to resuspension and lack of flushing of fine-grained sediment. As a result, marine biota that currently occur in the area are already adapted to high-turbidity environments. While turbidity is likely to increase temporarily and immediately following sand placement, it is not likely to be significantly different than existing conditions. In addition, turbidity is also one attribute that small fish may use for defense against predation from larger fish, so turbidity may also serve as a positive attribute for juvenile fish. Turtles also occur often in the highly-turbid waters of the swim channel and are not likely to be affected by small, temporary changes associated with sand placement.

**Sand Compaction**

Compaction occurs when grains harden by being compressed. During the 2012 Waikiki Beach Maintenance project, compaction occurred while the loading truck was transporting the sand to the sand placement area. The activities during transport created a hardened berm along the seaward edge of the truck's path.

The road should be used during transportation of sand to the sand placement sites to minimize sand compaction. The combination of weight, suspension of calcium carbonate matter from fresh water, and the presence of finer sediment could increase hardening of the new sand. To minimize the impact of hardening, bulldozers could be used to disseminate the sand. Additional monitoring of sand could be done after sand placement and the sand can be mechanically loosened where needed.

**Initial Sand Placement**

When sand is first placed on a beach, the sand will generally be loose and uncompacted. Wave action will help the beach adjust toward an "equilibrium profile" based on the characteristics of the nourishment sand. During this period, the sand can be expected to be loosely compacted and users might sink into the sand somewhat. Over a period of time, the sand is expected to become compacted and resemble the present condition of the beach. The length of time that compaction would take is a function of wave energy, and therefore, the exact time compaction would take is unknown.

Users should be alerted of potential changed conditions until the equilibrium profile has been achieved. The City should consider implementing proper signage noting such conditions.

**Coral Rubble**

Coral cobbles and rubble left on the beach can be a hazard for walking and deterrents for beach users. Most of the rubble are found near the shoreline which creates a hazard when entering the water. There is potential for larger pieces of cobbles to be present

in hidden portions of the dredged sand. Coral rubble was observed periodically during the sand source investigations offshore. The contractor may need to remove coral rubble by hand after placement.

There is a high probability of encountering rubble if clamshell dredging is chosen as the preferred construction method. There is no method to separate the coral rubble from the sand at the recovery site. The clamshell bucket should be monitored by the contractor as it empties the sand onto the barge. The sand recovery operation could move to an alternate location if excessive coral rubble is encountered.

Screening the sand at the offloading site from the barge could be considered, but it would delay the construction schedule and would not guarantee sterile sand from coral cobbles. Monitoring the sand during recovery may be more efficient and a way to identify if the sand is appropriate for use.

**Erosion**

Beach nourishment is not a permanent solution and will not prevent chronic erosion. Erosion would continue to affect the full length of the shoreline. The Beach may also be impacted by other natural occurrences such as strong Kona storms, hurricanes, tsunamis, king tides, and other oceanographic and atmospheric events. These events could cause significant impacts to the Beach and could result in large volumes of sand loss from the Beach.

**Design Life**

Current options presented by SEI recommend regular maintenance of the Beach every 20 years for the Option 1 nourishment and every 35 years for the Option 2 and Option 3 nourishments. Sea level rise is predicted to increase and could increase erosion rates. Studies have predicted sea levels to rise as much as 3.2 feet by the year 2100.

Regular maintenance of the Beach is recommended to keep it operational. The additional sand on the Diamond Head side could be available for use when needed for sand pushing.

**Anoxic Content**

Some of the recovered sand may be anoxic and could be grayish in color with an odor. The condition of the sand is expected as part of the beach nourishment process. The color and odor is temporary and will dissolve once the sand is exposed to drier conditions.

**Marine Activities**

Offshore operations of the sand recovery may impact ocean recreational users, but the impact is expected to be temporary. The barges used to recover and transport the sand would be anchored in place and the anchor lines would be marked with floats and lights where needed. Scheduling may be an option to minimize impacts to recreational

users which could include longer work days and working seven days a week to reduce the overall duration of the project.

The public should be notified of the construction schedule and pertinent details of the project through public notices and media. A Notice to Mariners should be issued through the United States Coast Guard prior to the start of construction. DPR will coordinate awareness efforts at the Park. All onshore and offshore hazards should be clearly labeled with signage, safety devices, and/or marker floats. Detours to avoid certain areas, both on land and in the water, will be clearly identified. Flag persons will be provided as needed.

**Beach Activities**

Sand placement onto the Beach would require sections of the Beach to be confined during mobilization. Construction personnel would be available at specific locations to assist beach users to alternate areas. Noise, dust, and fumes from the exhaust may be temporary impacts during operation of the heavy machinery. Scheduling may be an option to reduce these impacts. The City operated the sand pushing project during off-peak hours with less beach users and reduced the impact to recreational use.

**Surf Activities**

Many surf breaks are located along the reef that stretch the length of AMRP. The beach nourishment project is expected to have no effect on the surf break. South swells are produced during the summer months, but surfing is popular year-round. Access route to the surf breaks may be temporarily hindered since surfers enter the water from the Beach. The Beach will be closed in sections to keep access open to other areas during construction.

**Recreational Hazards**

Users currently experience recreational hazards on the Beach or in the water. These hazards include but not limited to: swimming accidents such as drowning and collisions, trips and falls, sharp objects, and poor water quality. These hazards exist at the Beach and will continue to exist after the project is completed. Over time, the rocky shoreline will be exposed again due to erosion. These exposed rocks will pose a risk to users who may otherwise believe that the bottom is completely sand. Additionally, sand is mobile by nature and should not be expected to remain in place. Sand that is present in a certain location at one point in time may not be in the same place later. Changing bottom conditions should be expected even with a successfully completed nourishment project.

Users should be forewarned that bottom conditions have changed and may continue to change, and that hard material still lies below the sand. The City should consider implementing proper signage noting such conditions.

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# CHAPTER 5

Federal State and County Land Use, and Environmental Policies

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# CHAPTER 5 FEDERAL, STATE, AND COUNTY LAND USE, AND ENVIRONMENTAL POLICIES

This EIS satisfies the requirements of Chapter 343, HRS, and Title 11, DOH, Chapter 200 (EIS Rules), HAR because City funds and lands will be used. In addition, several additional federal and state laws, Executive Orders (EO), permits and consultations, identified during the scoping/pre-consultation process and in preparation of this document, are described in this section. The EISPN was published on December 23, 2017. Comments received on the EISPN during the public comment period and the responses are incorporated throughout this EIS.

## 5.1 FEDERAL LAWS

While the EIS is written according to HRS Chapter 343 and its implementing rules, it is also intended to provide preliminary information to USACE for a DA permit. For the AMRP and Magic Island project, the Chapter 343 law is triggered by the use of City land and funds.

In-water construction for sand replenishment, drainage canal bridge replacement, repair of the Bridal Bridge and hardening of the Japanese and Hawaiian pond edges will require a USACE Permit in accordance with the federal CWA, Section 404; the State of Hawaiʻi, Department of Health, Water Quality Certification (WQC), Section 401; and compliance with the State DBEDT, Office of Planning (OP), Coastal Zone Management (CZM) Act, Endangered Species Act, and other applicable laws and regulations. A major part of the in-water construction will involve offshore sand dredging to restore the sandy beach. Improvements to the canal along the northern border of the AMRP will also require these permits, including review by the SHPD.

### 5.1.1 Rivers and Harbors Act of 1899, Section 10

The Rivers and Harbors Act is the oldest federal environmental law in the U.S. This Act makes it illegal to discharge refuse matter of any kind into the navigable waters of the U.S. without a permit. Section 10 of the Rivers and Harbors Act makes it illegal to excavate, fill, or alter the course, condition, or capacity of any port, harbor, channel, or other navigable water without a permit. Although many activities covered by the

Rivers and Harbor Act are regulated under the CWA, the Rivers and Harbors Act retains independent vitality. The Act is administered by USACE.

The proposed project will involve activities within navigable waters of the U.S., namely the AMRP ponds and canal, and the neighboring water bodies (see Section 4.2.3).

**Relationship of the Proposed Action to this Act.** This project proposes to widen the bridges over the canal at Pi‘ikoi and Queen Street; enhance the edges of the two existing ponds; repair the Bridal Bridge and locate sand offshore for beach nourishment. Therefore, a DA Permit from the USACE will be required for this project to adhere to Section 10 of the Rivers and Harbors Act.

### 5.1.2 Migratory Bird Treaty Act (MBTA) of 1918

The purpose of the MBTA is to protect migratory birds and birds native to the U.S. The MBTA prohibits the unregulated “taking” of covered species, which is defined as “hunting, pursuing, killing, possessing or transporting any migratory bird, nest, egg or part thereof.” The MBTA extends to all bird species native to the U.S., even those that are not migratory. Over 1,000 species are currently protected. The MBTA is administered by the U.S. Fish and Wildlife Service (USFWS).

**Relationship of the Proposed Action to this Act.** A biological resource survey was conducted and seven birds protected by the MBTA were observed. The white tern, one of the seven protected birds, is also listed as threatened on O‘ahu by the State of Hawai‘i. See 5.1.4 for further details regarding the white tern. The survey concluded that construction may temporary displace the observed migratory birds, but long-term effects are not expected. It is not expected to affect individual survival or the overall observed species population.

### 5.1.3 Coastal Zone Management Act of 1972

The federal CZM Act of 1972 establishes a program for management, development, and protection of the nation’s coastal zone. The program is administered by the NOAA Office of Ocean and Coastal Resource Management. States are authorized to develop and implement their own CZM Programs.

The Hawai‘i CZM Program is administered by the Office of Planning, under the DBEDT. HRS Chapter 205A-1 establishes that all lands within the State are within the CZM area. The individual counties of the State are responsible for identifying and establishing the SMA and shoreline setback areas of their jurisdiction.

**Relationship of the Proposed Action to this Act.** All of O‘ahu is within the coastal zone. The CZM consistency determination is undertaken on the basis of permit requests and would be issued only after this EIS is accepted and a permit request is made.

### 5.1.4 Endangered Species Act of 1973

USFWS enacted the ESA of 1973 to protect critically imperiled species and the ecosystems upon which they depend from extinction. The ESA's provisions encompass plants and invertebrates as well as vertebrates. The USFWS and the NOAA administer the ESA.

Section 7 of the ESA requires that federally-funded projects not jeopardize species listed as threatened or endangered, or adversely modify designated critical habitats.

**Relationship of the Proposed Action to this Act:** While this project is not federally funded, State regulations protecting endangered and threatened species (HRS Chapter 195D) do apply. A biological resource survey was conducted for the EIS and one state listed species, the white tern, was observed in the survey area. Additionally, based on the current distribution and habitat requirements, it was also noted that the endangered Hawaiian hoary bat may forage or roost in the survey area.

White tern avoidance and mitigation measures:

1. Tree removal and trimming should be conducted in the fall and early winter when breeding is at its lowest.
2. Inspection of trees for birds prior to removal.
3. If a nest or chick is found, the tree should not be trimmed or removed prior to chick fledging.

Hawaiian hoary bat recommended measures:

1. Trees taller than 15 feet, in the survey area, should not be trimmed or removed between June 1and September 15.
2. Any erected fences should be barbless top-strand wire to prevent entanglements.

Threaten or endangered species in the marine environment could consist of the endangered humpback whale (*Megatera novaeangliae*) and the endangered Hawaiian monk seal (*Monachus schauinslandi*). Both mammals were not observed during the survey, but are known to occur in Hawaiian waters, and on the shore for the Hawaiian monk seal. Several threatened green sea turtles (*Chelonia mydas*) were observed during the survey and are commonly found in south shore waters. The calm water protected by the coral reef is a preferred habitat for the green sea turtle because there is an abundance of food source and they are sheltered from predators. The endangered hawksbill turtle (*Eretmochelys imbricata*) was not observed and they are not commonly found in Hawaiian waters.

## 5.2 STATE POLICIES AND STATUTES

The following is a brief summary of the various state policies and statutes that exist in Hawai'i. Compatibility with components of these policies and statutes are addressed

below. This Draft EIS was preceded by an EISPN which was prepared in compliance with Chapter 343, HRS and under authority of Act 172-12.

### 5.2.1 State Land Use Law

The State Legislature adopted the State Land Use Law in 1961 to protect Hawai'i's valuable lands from development that resulted in only short-term gains for a few and long-term losses to the income and growth potential of the State's economy. The State Land Use Law (HRS Chapter 205) established the Land Use Commission and placed all lands in one of four land use districts: Urban, Agricultural, Conservation, or Rural. The AMRP is in the Urban district. According to HRS Chapter 205-2(b),[1] "Urban districts shall include activities or uses as provided by the ordinances or regulations of the county within which the urban district is situated." The parks in Hawai'i are both State and County operated.

For the circumstance of the AMRP, the City has jurisdiction. The existing and proposed uses for the project area are permitted in the designated Urban District. As such, the proposed action would take place in an urban environment where development and foreseeable growth are anticipated and planned.

**Hawai'i State Plan**

In 1978, the State Legislature adopted the Hawai'i State Planning Act (Planning Act) as HRS Chapter 226 to establish direction and provide long-range planning for the State. The Planning Act consists of a series of broad goals, objectives, and policies that serve as guidelines for the State's future long-term growth and development. The Planning Act provides a basis for determining priorities and allocating limited resources. It also seeks to improve coordination of federal, state, and county plans, policies, programs, projects, and regulatory activities. Furthermore, the Planning Act establishes a system for plan formulation and program coordination to provide for an integration of all major State and County activities.

The Planning Act is divided into three sections: Part I—Overall Theme, Goals, Objectives and Policies; Part II—Planning Coordination and Implementation; and Part III—Priority Guidelines. Part I of the Planning Act consists of three overall themes: (1) individual and family self-sufficiency; (2) social and economic mobility; and (3) community or social well-being. These themes are considered "basic functions of society" and goals toward which government must strive (HRS §226-3). Objectives and policies focus on general topic areas, including population, economy, physical environment, facility systems, and socio-cultural advancement.[2]

Part II of the Planning Act primarily addresses internal government policies to help streamline, coordinate, and implement various plans and processes between governmental agencies. It seeks to eliminate or consolidate burdensome or

[1] State of Hawai'i. 2007. *Hawai'i Revised Statues, Chapter 205-2(b), Districting and classification of lands.*

[2] Objectives and policies of the State Plan are listed in HRS Chapter 226-5 through 226-27.

duplicative governmental requirements imposed on business, where public health, safety, and welfare would not be adversely affected.

Part III of the Planning Act establishes overall priority guidelines to address areas of statewide concern (HRS §226-101). The overall direction and focus are on improving the quality of life for Hawai‘i’s present and future population through the pursuit of desirable courses of action (HRS §226-102).

Table 5-1 evaluates the proposed action alternatives conformance with the State’s goals and objectives of Part I of the Planning Act. Parts II and III are not presented as those sections pertain to internal government affairs and statewide concerns.

**Table 5-1: Hawaii State Plan–HRS Chapter 226, Part I**

| SECTION | CHAPTER 226 - PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES | RATING |
|---|---|---|
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| **226-3** | OVERALL THEME | |
| **226-4** | STATE GOALS. In order to guarantee, for present and future generations, those elements of choice and mobility that insure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve: | |
| (1) | A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai‘i's present and future generations. | C |
| (2) | A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people. | A |
| (3) | Physical, social, and economic well-being, for individuals and families in Hawai‘i, that nourishes a sense of community responsibility, of caring, and of participation in community life. | A |
| CONFORMANCE DETERMINATION: The proposed park actions support HRS Section 226-4 since it would revitalize a unique and an historic park. It would encourage responsibility in community life and pride in a local community park through proposed park improvements and enhancements. | | |
| **226-5** | **OBJECTIVE AND POLICIES FOR POPULATION** | NA |
| **226-6** | **OBJECTIVE AND POLICIES FOR THE ECONOMY – IN GENERAL** | NA |
| **226-7** | **OBJECTIVE AND POLICIES FOR THE ECONOMY --AGRICULTURE** | NA |
| **226-8** | **OBJECTIVE AND POLICIES FOR THE ECONOMY – VISITOR INDUSTRY** | |
| (a) | Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaii's economy. | |
| (b) | To achieve the visitor industry objective, it shall be the policy of this State to: | |

| Table 5-1: Hawaii State Plan–HRS Chapter 226, Part I | | |
|---|---|---|
| **SECTION** | **CHAPTER 226 - PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES** | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| (1) | Support and assist in the promotion of Hawaii's visitor attractions and facilities. | A |
| (2) | Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people. | A |
| (3) | Improve the quality of existing visitor destination areas by utilizing Hawaii's strengths in science and technology. | NA |
| (4) | Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities. | A |
| (5) | Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaii's people. | C |
| (6) | Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the visitor industry. | NA |
| (7) | Foster a recognition of the contribution of the visitor industry to Hawaii's economy and the need to perpetuate the aloha spirit. | NA |
| (8) | Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawaii's cultures and values. | C |
| CONFORMANCE DETERMINATION: The Proposed Actions would increase visitor use of an historic park via restoring existing features; activating and improving underutilized park areas; and enhancing and expanding upon used areas. Thus, proposed improvements would contribute to the visitor industry by encouraging increased visitation as a result of proposed park improvements. | | |
| **226-9** | **OBJECTIVE AND POLICIES FOR THE ECONOMY – FEDERAL EXPENDITURES** | NA |
| **226-10** | **OBJECTIVE AND POLICIES FOR THE ECONOMY – POTENTIAL GROWTH AND INNOVATIVE ACTIVITIES** | NA |
| **226-10,5** | **OBJECTIVE AND POLICIES FOR THE ECONOMY – INFORMATION INDUSTRY** | NA |
| **226-11** | **OBJECTIVES AND POLICIES FOR THE PHYSICAL ENVIRONMENT – LAND BASED, SHORELINE, AND MARINE RESOURCES.** | |
| (a) | Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives: | |
| (1) | Prudent use of Hawai'i's land-based, shoreline, and marine resources. | C |
| (2) | Effective protection of Hawai'i's unique and fragile environmental resources. | C |
| (b) | To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to: | |

| Table 5-1: Hawaii State Plan–HRS Chapter 226, Part I | | |
|---|---|---|
| **SECTION** | **CHAPTER 226 - PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES** | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| (1) | Exercise an overall conservation ethic in the use of Hawaiʻi's natural resources. | C |
| (2) | Ensure compatibility between land-based and water-based activities and natural resources and ecological systems. | A |
| (3) | Take into account the physical attributes of areas when planning and designing activities and facilities. | A |
| (4) | Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage. | A |
| (5) | Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions. | NA |
| (6) | Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaiʻi. | A |
| (7) | Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion. | C |
| (8) | Pursue compatible relationships among activities, facilities, and natural resources. | A |
| (9) | Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes. | A |
| CONFORMANCE DETERMINATION: The Master Plan goals support the sustainable use of shoreline and marine resources. The stated goals encourage a harmonious interaction of public recreation with the park's natural resources. | | |
| **226-12** | **OBJECTIVE AND POLICIES FOR THE PHYSICAL ENVIRONMENT--SCENIC, NATURAL BEAUTY, AND HISTORIC RESOURCES** | |
| (a) | Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources. | |
| (b) | To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to: | |
| (1) | Promote the preservation and restoration of significant natural and historic resources. | A |
| (2) | Provide incentives to maintain and enhance historic, cultural, and scenic amenities. | C |
| (3) | Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features. | A |
| (4) | Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage. | A |

| Table 5-1: Hawaii State Plan–HRS Chapter 226, Part I | | |
|---|---|---|
| **SECTION** | **CHAPTER 226 - PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES** | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| (5) | Encourage the design of developments and activities that complement the natural beauty of the islands | A |
| CONFORMANCE DETERMINATION: The Proposed Actions would preserve and enhance important natural, historic, cultural and scenic resources. More specifically, it would restore, improve, and expand upon the park's natural and scenic beauty as well as its historical structures and significance. | | |
| **226-13** | **OBJECTIVES AND POLICIES FOR THE PHYSICAL ENVIRONMENT – LAND, AIR, AND WATER QUALITY.** | |
| (a) | Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives: | |
| (1) | Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources. | C |
| (2) | Greater public awareness and appreciation of Hawai'i's environmental resources. | C |
| (b) | To achieve the land, air, and water quality objectives, it shall be the policy of this State to: | |
| (1) | Foster educational activities that promote a better understanding of Hawai'i's limited environmental resources. | C |
| (2) | Promote the proper management of Hawai'i's land and water resources. | C |
| (3) | Promote effective measures to achieve desired quality in Hawai'i's surface, ground, and coastal waters. | C |
| (4) | Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai'i's people. | NA |
| (5) | Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters. | NA |
| (6) | Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities. | NA |
| (7) | Encourage urban developments in close proximity to existing services and facilities. | NA |
| (8) | Foster recognition of the importance and value of the land, air, and water resources to Hawai'i's people, their cultures and visitors. | NA |
| CONFORMANCE DETERMINATION: Restoration, improvement, and enhancement for the proposed park action would follow best management practices to minimize impacts on the environment. | | |
| **226-14** | **OBJECTIVE AND POLICIES FOR FACILITY SYSTEMS – IN GENERAL** | |
| **226-15** | **OBJECTIVE AND POLICIES FOR FACILITY SYSTEMS – SOLID AND LIQUID WASTES** | |
| **226-16** | **OBJECTIVE AND POLICIES FOR FACILITY SYSTEMS – WATER** | |

**Table 5-1: Hawaii State Plan–HRS Chapter 226, Part I**

| SECTION | CHAPTER 226 - PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES | RATING |
|---|---|---|
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| **226-17** | **OBJECTIVE AND POLICIES FOR FACILITY SYSTEMS – TRANSPORTATION** | |
| **226-18** | **OBJECTIVE AND POLICIES FOR FACILITY SYSTEMS – ENERGY** | |
| **226-18,5** | **OBJECTIVE AND POLICIES FOR FACILITY SYSTEMS – TELECOMMUNICATIONS** | |
| **226-19** | **OBJECTIVES AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT--HOUSING** | |
| **226-20** | **OBJECTIVES AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT—HEALTH** | |
| **226-21** | **OBJECTIVES AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT--EDUCATION** | |
| **226-22** | **OBJECTIVES AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT—SOCIAL SERVICES** | |
| **226-23** | **OBJECTIVE AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT--LEISURE.** | |
| (a) | Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations. | |
| (b) | To achieve the leisure objective, it shall be the policy of this State to: | |
| (1) | Foster and preserve Hawaii's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities. | C |
| (2) | Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently. | A |
| (3) | Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance. | A |
| (4) | Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved. | A |
| (5) | Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources. | A |
| (6) | Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs. | A |
| (7) | Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawaii's people. | C |
| (8) | Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms. | NA |

| Table 5-1: Hawaii State Plan–HRS Chapter 226, Part I | | |
|---|---|---|
| **SECTION** | **CHAPTER 226 - PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES** | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| (9) | Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawaii's population to participate in the creative arts. | NA |
| (10) | Assure adequate access to significant natural and cultural resources in public ownership. | C |
| CONFORMANCE DETERMINATION: Proposed Actions would enhance and add to the Park's recreational opportunities and needs of present and future generations. | | |
| **226-24** | **OBJECTIVE AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT – INDIVIDUAL RIGHTS AND PERSONAL WELL BEING** | |
| **226-25** | **OBJECTIVE AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT--CULTURE.** | |
| (a) | Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawaii's people. | |
| (b) | To achieve the culture objective, it shall be the policy of this State to: | |
| (1) | Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaii. | C |
| (2) | Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawaii's people and which are sensitive and responsive to family and community needs. | C |
| (3) | Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawaii. | C |
| (4) | Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors. | C |
| CONFORMANCE DETERMINATION: The AMPR is historic and includes significant historic sites. Its respectful interpretation would promote knowledge of Hawaiʻi's history and heritage. | | |
| **226-26** | **OBJECTIVE AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT – PUBLIC SAFETY** | |
| **226-27** | **OBJECTIVE AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT -- GOVERNMENT** | |
| **226-108** | **SUSTAINABILITY PRIORITY GUIDELINES** | |
| (1) | Encouraging balanced economic, social, community, and environmental priorities; | NA |
| (2) | Encouraging planning that respects and promotes living within the natural resources and limits of the State; | A |
| (3) | Promoting a diversified and dynamic economy | NA |
| (4) | Encouraging respect for the host culture; | C |
| (5) | Promoting decisions based on meeting the needs of the present without compromising the needs of future generations; | C |

| Table 5-1: Hawaii State Plan–HRS Chapter 226, Part I | | |
|---|---|---|
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| (6) | Considering the principles of the ahupuaa system; and | C |
| (7) | Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawaii | NA |
| CONFORMANCE DETERMINATION: The Master Plan addresses the long-term improvements to the Park in support of sustaining and enhancing scenery, activities, and role as a recreational resource for a growing city. | | |
| **226-109** | **CLIMATE CHANGE ADAPTATION PRIORITY GUIDELINES** | |
| (1) | Ensure that Hawaii's people are educated, informed, and aware of the impacts climate change may have on their communities; | NA |
| (2) | Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies; | NA |
| (3) | Invest in continued monitoring and research of Hawaii's climate and the impacts of climate change on the State; | NA |
| (4) | Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change; | NA |
| (5) | Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands, that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change | C |
| (6) | Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments | NA |
| (7) | Promote sector resilience in areas such as water, roads, airports, and public health, by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options; | NA |
| (8) | Foster cross-jurisdictional collaboration between county, state, and federal agencies and partnerships between government and private entities and other nongovernmental entities, including nonprofit entities; | C |
| (9) | Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans | NA |
| (10) | Encourage planning and management of the natural and built environments that effectively integrate climate change policy. | NA |
| CONFORMANCE DETERMINATION: The master plan proposes actions via sustainable methods whereby preservation of structures and natural environment are restored or kept intact. | | |

### 5.2.2 Hawai'i Climate Change Initiative: Act 286 of 2012

The State of Hawai'i recognizes the importance of climate change. Act 286 of 2012 amended the State Planning Law (HRS Chapter 226) to include climate change adaptation as one of seven areas of statewide concern crucial to the quality of life. Ten priority guidelines were adopted. The guidelines oversee outreach, stewardship, monitoring and the development of knowledge and strategies that integrate climate change adaptation into state activities.

Chapter 226-109 of the Hawai'i State Plan is outlined in the above referenced Table 5-1. The proposed actions for the AMRP conform to objectives of the Climate Change guidelines, as noted above, while others are not applicable. The project plans will conduct proposed improvements with sustainable methods which will support actions related to climate change mitigation.

### 5.2.3 State Functional Plan

The purpose of the State Functional Plans is to supplement the policies and procedures of the Hawai'i State Plan in further detail. The State Functional Plans were designed in the early 1980s and adopted by the Hawai'i State Legislature. Committees were developed for each functional plan that involve community leaders who are appointed by the governor. These committees hold a forum to discuss the matters within their functional plan that relates to budget, executing actions and implementing a timeframe. The functional plans include: Agriculture, Conservation Lands, Employment, Energy, Health, Higher Education, Historic Preservation, Housing, Recreation, Tourism, Transportation, and Human Services. This project coincides with the polices of the State Functional Plans. The project will revitalize one of the few large open park spaces on O'ahu and ensure its reliability for recreational use. State of Hawai'i Functional Plans combine statements of long-term objectives and near-term actions and projects to address those objectives. Table 5-2 lists the functional plans and applicability to this project.

**Table 5-2: Hawaii State Plan–HRS Chapter 226, Part II**

| PLAN YEAR | PART II. PLANNING COORDINATION AND IMPLEMENTATION: FUNCTIONAL PLANS | RATING |
|---|---|---|
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| **1991** | **AGRICULTURE FUNCTIONAL PLAN** | NA |
| **1991** | **CONSERVATION LANDS STATE FUNCTIONAL PLAN** | A |
| | **I. ISSUE AREA: INVENTORIES OF RESOURCES AND BACKGROUND INFORMATION AND BASIC RESEARCH** | |
| | **OBJECTIVE I.A.** ESTABLISHMENT OF DATA BASES FOR INVENTORIES OF EXISTING LANDS AND RESOURCES. | |

| Table 5-2: Hawaii State Plan–HRS Chapter 226, Part II | | |
|---|---|---|
| **PLAN YEAR** | **PART II. PLANNING COORDINATION AND IMPLEMENTATION: FUNCTIONAL PLANS** | **RATING** |
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| | Policy I.A.1. Develop and maintain a centralized statewide data base of conservation areas and natural resources. | NA |
| | Policy I.A.2.Develop and maintain a centralized statewide data base of all permits/actions relative to land usage within the Conservation District. | NA |
| | Policy I.A.3.Locate, preserve and encourage the availability of site suitable for commercial aquaculture by both private and public-sector landowners. | NA |
| | Policy I.A.4. Identify appropriate lands for commercial forest production. | NA |
| | Policy I.A.5. Conduct inventories of aquatic and terrestrial resources. | A |
| | Policy I.A.6. Survey important native aquatic and terrestrial ecosystems and species. | NA |
| | **OBECTIVE I.B.** ESTABLISHMENT OF CRITERIA FOR MANAGEMENT OF LAND AND NATURAL RESOURCES | |
| | Policy I.B.1. Develop and institute new controls in regions where necessary to ensure equitable sharing of water use commensurate with replenishment, and long-term availability. | NA |
| | Policy I.B.2. Develop regulatory criteria for stream channel alterations to protect instream uses. | NA |
| | Policy I.B.3. Identify and assess high quality and other streams for preservation. | NA |
| | Policy I.B.4. Study movement and behavior of fish in local waters. | NA |
| | Policy I.B.5. Establish standards and feasibility of alternate uses of public lands. | NA |
| | **OBJECTIVE II.A.** Establishment of plans for natural resources and land management. | |
| | Policy II.A.1. Formulate and maintain a management plan for resources and lands having significant conservation value. | NA |
| | Policy II.A.2. Identify and enhance appropriate lands for commercial forest production and sustained-yield hunting. | NA |
| | Policy II.A.3. Identify and enhance appropriate areas for wildlife sanctuaries. | NA |
| | **OBJECTIVE II.B.** PROTECTION OF FRAGILE OR RARE NATURAL RESOURCES | |
| | Policy II.A.1. Develop protection and preservation of habitats of rare and endangered wildlife and native ecosystems in Hawaii. | NA |
| | Policy II.A.2. Intensify protection of important native aquatic ecosystems and species. | NA |
| | Policy II.B.3 Develop a coordinated approach to wetlands protection, acquisition, and management. | NA |

| Table 5-2: Hawaii State Plan–HRS Chapter 226, Part II | | |
|---|---|---|
| **PLAN YEAR** | **PART II. PLANNING COORDINATION AND IMPLEMENTATION: FUNCTIONAL PLANS** | **RATING** |
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| | Policy II.A.4. Continue aggressive management to protect Hawaii's intact forested ecosystem. | NA |
| | **OBJECTIVE II.C. ENHANCEMENT OF NATURAL RESOURCES** | |
| | Policy II.C.1. Expand marine and fresh water fishing areas and promote fishing opportunities. | NA |
| | Policy II.C.2. Expand and enhance outdoor recreation opportunities and other resource uses. | A |
| | **OBJECTIVE II.D.** Appropriate development of natural resources. | |
| | Policy. II.D. 1. Develop and expand resources to protect natural shoreline and wilderness recreation areas. | NA |
| | Policy. II.D. 2. Develop aquatic resources | NA |
| | Policy. II.D. 3. Develop recreational and archaeological resources on the shoreline and mauka areas. | A |
| | Policy. II.D. 4. Expand the forest reserve system and game management area. | NA |
| | Policy. II.D. 5. Determine feasibility of product development for commercially viable natural resources and assist in initial steps necessary for such determination. | NA |
| | **OBJECTIVE II.E.** PROMOTION AND MARKETING OF APPRORIATE NATURAL RESOURCES DESIGNATED FOR COMMERICAL DEVELOPMENT. | |
| | Policy II.E.1. Establish broader project applicability, easier availability and realistic loan limits in public and private sector aquaculture loan programs. | NA |
| | Policy II.E.2. Expand aquaculture business assistance and investment incentives in the public sector to increase Hawaii's attractiveness as a location for aquaculture. | NA |
| | Policy II.E.3. Increase demand for Hawaii's aquaculture products and services in local, national and international markets. | NA |
| | Policy II.E.4. Assist the fishing industry to develop new markets and improve production and processing of fishery products. | NA |
| CONFORMANCE DETERMINATION: The proposed project actions' goals are to restore, activate, and enhance park features such as historic structures and utilized park areas. This project actively supports this functional plan because it proposed to expand and enhance outdoor recreation and resources. | | |
| **1989** | **EDUCATION STATE FUNCTIONAL PLAN** | NA |
| **1989** | **EMPLOYMENT STATE FUNCTIONAL PLAN** | NA |
| **1991** | **ENERGY STATE FUNTIONAL PLAN** | NA |
| **1989** | **HEALTH STATE FUNCTIONAL PLAN** | NA |
| **1984** | **HIGHER EDUCATION FUNTIONAL PLAN** | NA |

| Table 5-2: Hawaii State Plan–HRS Chapter 226, Part II | | |
|---|---|---|
| **PLAN YEAR** | **PART II. PLANNING COORDINATION AND IMPLEMENTATION: FUNCTIONAL PLANS** | **RATING** |
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| **1984** | **HISTORIC PRESERVATION STATE FUNCTIONAL PLAN** | A |
| | **I. ISSUE AREA: PRESERVATION OF HISTORIC SITES** | |
| | **OBJECTIVE A:** IDENTIFICATION OF HISTORIC PROPERTIES | |
| | Policy A.1: Expand statewide historic sites inventory program | NA |
| | **OBJECTIVE B:** PROTECTION OF HISTORIC PROPERTIES | |
| | Policy B.1: Provide timely historic property reviews which are integrated effectively into the land use regulatory system. | NA |
| | Policy B.2: Establish and make available a variety of mechanisms to better protect historic properties | C |
| | **OBJECTIVE C:** MANAGEMENT AND TREATMENT OF HISTORIC PROPERTIES | |
| | Policy C.1: Evaluate and designate significant historic properties for legal recognition in a timely manner | NA |
| | Policy C.2: Encourage the preservation and maintenance of historic properties through economic incentives and support. | A |
| | Policy C.3: Explore innovative means to better manage historic properties | A |
| | Policy C.4: Encourage proper preservation techniques | C |
| | **II. ISSUE AREA: COLLECTION AND PRESEVATION OF HISTORIC RECORDS, ARTIFACTS AND ORAL HISTORIES AND PERPETUATION OF TRADITIONAL SKILLS** | |
| | **OBJECTIVE D:** PROVISION OF ADEQUATE FACILITIES TO PRESERVE HISTORIC RESOURCES | |
| | Policy D.1: Provide adequate facilities to preserve historic resources | NA |
| | **OBJECTIVE E:** THE ESTABLISHMENT OF PROGRAMS TO COLLECT AND CONSERVE HISTORIC RECORDS, ARTIFACTS, AND ORAL HISTORIES AND TO DOCUMENT AND PERPETUATE TRADITIONAL ARTS, SKILLS AND CULTURE | |
| | Policy E.1: Provide support and coordination to activities involved with collection and conservation of historic records and materials. | A |
| | **III. PUBLIC INFORMATION AND EDUCATION ON THE ETHNIC AND CULTURAL HERITAGES AND HISTORY OF HAWAII** | |
| | **OBJECTIVE F:** PROVISION OF BETTER ACCESS TO HISTORIC INFORMATION | |
| | Policy F.1: Support programs to facilitate the public's gathering of historic information. | NA |

| Table 5-2: Hawaii State Plan–HRS Chapter 226, Part II | | |
|---|---|---|
| **PLAN YEAR** | **PART II. PLANNING COORDINATION AND IMPLEMENTATION: FUNCTIONAL PLANS** | **RATING** |
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| | Policy F.2.: Coordinate and support programs to disseminate information to the public. | NA |
| | **OBJECTIVE G:** ENHANCMENT OF SKILLS AND KNOWLEDGE NEEDED TO PRESERVE HISTORICAL RESOURCES | |
| | Policy G.1: Provide opportunities for continuing education for persons involved with collecting and preserving historic resources. | NA |
| CONFORMANCE DETERMINATION: The Operational Plan of the Master Plan states that the City should consider alternative methods and strategies for park maintenance and security. A robust management strategy would be able to monitor historic structures as they are used through time in the Park. | | |
| **2017** | **HOUSING STATE FUNCTIONAL PLAN** | NA |
| **1991** | **HUMAN SERVICES STATE FUNCTIONAL PLAN** | NA |
| **1991** | **RECREATION STATE FUNCTIONAL PLAN** | A |
| | **I. ISSUE AREA: OCEAN AND SHORELINE RECREATION** | |
| | **OBJECTIVE I.A.:** ADDRESS THE PROBLEM OF SATURATION OF THE CAPACITY OF BEACH PARKS AND NEARSHORE WATERS | |
| | Policy I.A.1: Acquire additional beach parkland and rights-of-way to remaining undeveloped shorelines to provide increased capacity for future public recreational use. | NA |
| | Policy I.A.2. Acquire or obtain use of Federal lands and waters for ocean recreation and public access to the shoreline. | NA |
| | Policy I.A.3. More aggressively manage and control the use of existing beach parks. | A |
| | Policy I.A.4. Develop areas mauka of existing parks to increase their capacities and to diversify and encourage activities away from the shoreline. | NA |
| | **OBJECTIVE I.B:** REDUCE THE INDIDENCE OF OCEAN RECREATION ACCIDENTS | |
| | Policy I.B.1: Increase support for water safety programs | C |
| | **OBJECTIVE I.C.** RESOLVE CONFLICTS BETWEEN DIFFERENT ACTIVITIES AT HEAVILY USED OCEAN RECREATION | |
| | Policy I.C.1. Promote implementation and enforcement of an effective Ocean Recreation Management Plan | NA |
| | Policy I.C.2. Develop an approach to resolve conflicts relating to commercial use of popular ocean recreation areas. | NA |
| | Policy I.C.3. Mitigate the impact of increased use of popular ocean recreation areas by visitors. | NA |
| | Policy I.C.4. Take action to minimize or alleviate potentially dangerous user conflicts | C |

| Table 5-2: Hawaii State Plan–HRS Chapter 226, Part II | | |
|---|---|---|
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| | **OBJECTIVE I.D.** PROVIDE ADEQUATE BOATING FACILTIES | |
| | Policy I.D.1. Provide moorings and boat launching facilities for recreational boats | NA |
| | Policy I.D.2. Implement programs for private sector participation in the developing and managing of slips, moorings, and boating support facilities for public use | NA |
| | Policy I.D.3. Provide facilities for outrigger canoe and kayak activities | A |
| | **II. ISSUE AREA: MAUKA, URBAN, AND OTHER RECREATION OPPORTUNITIES** | |
| | **OBJECTIVE II.A. PLAN, DEVELOP, AND PROMOTE RECREATIONAL ACTIVITIES AND FACILITIES IN MAUKA AND OTHER AREAS TO PROVIDE A WIDE RANGE OF ALTERNATIVE ACTIVITIES** | |
| | Policy II.A.1. Plan and develop facilities and areas that feature the natural and historic/cultural resources of Hawaii. | A |
| | Policy II.A.2. Plan and develop camp sites and other recreational amenities in mauka areas. | NA |
| | Policy II.A.3. Proceed with planning, acquisition, and development of trails. | NA |
| | Policy II.A.4 Implement a bikeway system based on the statewide bikeways master plan. | NA |
| | Policy II.A.5 Plan and develop facilities and programs to increase freshwater recreational fishing opportunities. | NA |
| | **OBJECTIVE II.B. MEET SPECIAL RECREATION NEEDS OF THE ELDERLY, THE DISABLED, WOMEN, SINGLE-PARENT FAMILIES, IMMIGRANTS, AND OTHE GROUPS** | |
| | Policy II.B.1. Involve the public in the planning, development, and operation of recreational facilities and programs. | A |
| | Policy II.B.2 Give higher priority to providing physical access to the disabled | A |
| | **OBJECTIVE II.C IMPROVE AND EXPAND THE PROVISION OF RECREATION FACILITIES IN URBAN AREAS AND LOCAL COMMUNITIES** | |
| | Policy II.C.1 Meet the demand for recreational opportunities in local communities. | A |
| | **III. ISSUE AREA: PUBLIC ACCESS TO THE SHORELINE AND UPLAND RECREATION AREAS** | |
| | **OBJECTIVE III.A:** PREVENT THE LOSS OF ACCESS TO SHORELINE AND UPLAND RECREATION AREAS DUE TO NEW DEVELOPMENTS. | |
| | Policy III.A.1. Require land use permit applicants to fully address the impact of their projects on trails and public access. | NA |
| | **OBJECTIVE III.B.** RESOLVE THE PROBLEM OF LANDOWNER LIABILITY THAT SERIOUSLY HAMPERS PUBLIC ACCESS OVER PRIVATE LANDS. | |

| Table 5-2: Hawaii State Plan–HRS Chapter 226, Part II | | |
|---|---|---|
| **PLAN YEAR** | **PART II. PLANNING COORDINATION AND IMPLEMENTATION: FUNCTIONAL PLANS** | **RATING** |
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| | Policy III.B.1: Seek legislative reform of landowner liability laws to expand the provision of public access over private roads. | NA |
| | **OBJECTIVE III.C.** INCREASE ACCESS TO STATE FOREST RESERVE LANDS OVER FEDERAL PROPERTY, LEASE STATE LANDS, AND OTHER GOVERNMENT LANDS. | |
| | Policy III.C.1. Assure access to recreational areas in Forest Reserve Lands | NA |
| | **OBJECTIVE III.D.** ACQUIRE, DEVELOP, AND MANAGE ADDITIONAL PUBLIC **ACCESSWAYS** | |
| | Policy III.D.1. Give priority to acquiring public access to selected shoreline and mauka recreation. | NA |
| | Policy III.D.2 Provide adequate improvements at public accessways | A |
| | Policy III.D.3Effectively manage and maintain existing public accessways | A |
| | **IV. ISSUE AREA IV: RESOURCE CONSERVATION AND MANAGEMENT** | |
| | **OBJECTIVE IV.A:** PROMOTE A CONSERVATION ETHIC IN THE USE OF HAWAII'S RECREATIONAL RESOURCES | |
| | Policy IV.A.1. Emphasize and educational approach, in coordination with enforcement efforts, to promote environmental awareness. | NA |
| | **OBJECTIVE IV.B.** PREVENT DEGREDATION OF THE MARINE ENVIRONMENT | |
| | Policy IV.B.1. Enhance water quality to provide high-quality ocean recreation opportunities. | NA |
| | Policy IV.B.2. Protect, preserve, restore, and enhance recreational fishery resources. | NA |
| | Policy IV.B.3. Protect surfing sites | NA |
| | **OBJECTIVE IV.C** IMPROVE THE STATE'S ENFORCEMENT CAPABILITES | |
| | Policy IV.C.1 Develop a coordinated approach to enforcement | NA |
| | Policy IV.C.2. Increase funding support for enforcement | NA |
| | **OBJECTIVE IV.D.** MITIGATE ADVERSE IMPACTS OF TOUR HELICOPTERS ON THE QUALITY OF RECREATIONAL EXPERIENCES IN WILDERNESS AREAS. | |
| | Policy IV.D.1 Facilitate interagency cooperation to address the tour helicopter problem | NA |
| | **V. MANAGEMENT OF RECREATION PROGRAMS, FACILITIES, AND AREAS** | |
| | **OBJECTIVE V.A.** PROPERLY MAINTAIN EXISTING PARKS AND RECREATION AREAS | |
| | Policy V.A.1. Improve the maintenance of existing parks. | A |
| | **OBJECTIVE V.B.** PROMOTE INTERAGENCY COORDINATION AND COOPERATION TO FACILITATE SHARING OF RESOURCES, JOINT DEVELOPMENT EFFORTS, CLARIFICATION OF RESPONSIBILITIES AND JURISDICAITONS, AND IMPROVEMENTS IN ENFORCEMENT CAPABILITIES. | |

| Table 5-2: Hawaii State Plan–HRS Chapter 226, Part II | | |
|---|---|---|
| **PLAN YEAR** | **PART II. PLANNING COORDINATION AND IMPLEMENTATION: FUNCTIONAL PLANS** | **RATING** |
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| | Policy V.B.1 Foster closer relationships between recreation agencies | NA |
| | **OBJECTIVE V.C.** ASSURE ADEQUATE SUPPORT FOR PRIORITY OUTDOOR RECREATION PROGRAMS AND FACILITIES | |
| | PolicyV.C.1 Explore alternative funding strategies and sources | NA |
| | Policy V.C.2 Explore alternative land acquisition strategies | NA |
| | Policy V.C.3 Explore innovative ways to manage and maintain recreation resources. | NA |
| | **ISSUE AREA VI: WETLANDS PROTECTION AND MANAGEMENT** | |
| | **OBJECTIVE VI.A.** INCREASE RECREATIONAL ACCESS AND OPPORTUNITIES IN HAWAII'S WETLANDS. | |
| | Policy VI.A.1. Identify existing wetlands with the potential for recreational development | NA |
| | **OBJECTIVE VI.B.** DEVELOP AN ADEQUATE INFORMATION BASE TO ASSIST THE COUNTY PLANNING DEPARTMENTS AND OTHER REGULATORY AGENCIES IN MAKING DECISIONS REGARDING WETLANDS | |
| | Policy VI.B.1 Expand the wetlands information base | NA |
| | **OBJECTIVE VI.C.** ASSURE THE PROTECTION OF THE MOST VALUABLE WETLANDS IN THE STATE | |
| | Policy VI.C.1 Develop a coordinated approach to wetlands protection, acquisition, and management, as well as to the provision of public school education. | NA |
| CONFORMANCE DETERMINATION: The master plan is a result of intensive public involvement. An aspect of the proposed plan is to enhance management of the park for long-term sustainability; a more aggressive approach to park monitoring in order to keep up with park needs such as maintenance of park spaces and historic structures and operations. | | |
| **1991** | **TOURISM STATE FUNCTIONAL PLAN** | A |
| | **I. GROWTH** | |
| | **OBJECTIVE I.A:** DEVELOPMENT, IMPLENTATION, AND MAINTENANCE OF POLICIES AND ACTIONS WHICH SUPPORT THE STEADY AND BALANCED GROWTH OF THE VISITOR INDUSTRY | |
| | Policy I.A.1: Identify and ensure a rate of industry growth that is consistent with the social, physical and economic needs of the residents and the preservation of Hawaii's natural environment. | NA |
| | Policy I.A.2. Ensure that visitor industry growth maximizes benefits to the residents of the State in general and revenues to State and County governments specifically. | NA |

| Table 5-2: Hawaii State Plan–HRS Chapter 226, Part II | | |
|---|---|---|
| **PLAN YEAR** | **PART II. PLANNING COORDINATION AND IMPLEMENTATION: FUNCTIONAL PLANS** | **RATING** |
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| | Policy I.A.3 Provide opportunities for the visitor industry to grow keeping in mind the effects of the importation of labor | NA |
| | Policy I.A.4. Ensure that the growth of the visitor industry assists in the overall State goal of expansion and diversification of the economy. | NA |
| | Policy I.A.5. Ensure that the benefits of tourism development are spread evenly throughout the State, to the extent desired by the counties, by making special efforts to distribute growth to the Neighbor islands. | NA |
| | Policy I.A.6. Identify, support, and coordinate priority statistical and research activities in tourism needed to support optimum tourism growth. | NA |
| | **II. PHYSICAL ENVIRONMENT** | |
| | **OBJECTIVE II. A:** DEVELOPMENT AND MAINTENANCE OF WELL-DESIGNED VISITOR FACILITIES AND RELATED DEVELOPMENTS WHICH ARE ASENSITIVE TO THE ENVIRONMENT, SENSITIVE TO NEIGHBORHING COMMUNITIES AND ACTIVITIES, AND ADEQUATELY SERVICES BY INFRASTRUCTURE AND SUPPORT SERVICES. | |
| | Policy II.A.1: Maintain high standards of overall quality of existing visitor destination and attraction areas. | A |
| | Policy II.A.2: Enhance tourism product and encourage continued development of a diverse range of tourism products. | NA |
| | Policy II.A.3: Facilitate the reasonable distribution of financial responsibilities between government and private parties to fund tourism-related capital improvements and related infrastructure requirements. | A |
| | Policy II.A.4: Coordinate tourism development planning with human resource planning. | NA |
| | Policy II.A.5: Improve the availability of affordable housing for those employed in the visitor industry. | NA |
| | Policy II.A.6: Improve accessibility and arrival conditions at ports of entry | NA |
| | Policy II.A.7: Improve the quality of existing parks and recreational areas, and ensure that sufficient recreational areas are available for future use. | A |
| | Policy II.A.8: Encourage the development of hotels and related facilities within designated visitor destination areas with adequate infrastructure and support services before the development of other possible visitor destinations. | NA |
| | **III. ENVIRONMENTAL RESOURCES AND CULTURAL HERITAGE** | |
| | **OBJECTIVE III. A:** ENCHANCEMENT OF RESPECT AND REGARD FOR THE FRAGILE RESOURCES WHICH COMPRISE HAWAII'S NATURAL AND CULTURAL ENVIRONMENT. INCREASED PRESERVATION AND MAINTENANCE EFFORTS. | |

| Table 5-2: Hawaii State Plan–HRS Chapter 226, Part II | | |
|---|---|---|
| **PLAN YEAR** | **PART II. PLANNING COORDINATION AND IMPLEMENTATION: FUNCTIONAL PLANS** | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| | Policy III.A.1: Assist in preserving and maintaining recreational resources | A |
| | Policy III.A.2: Assist in preserving, perpetuating, and interpreting cultural, historic and archaeological resources. Preserve cultural authenticity as much as possible in commercialized and tourist-oriented presentations. | A |
| | Policy III.A.3: Assist in keeping Hawaii clean, beautiful and safe | A |
| | **IV. COMMUNITY, VISITOR AND INDUSTRY RELATIONS** | |
| | **OBJECTIVE IV. A:** SUPPORT OF HAWAII'S DIVERSE RANGE OF LIFESTYLES AND NATURAL ENVIRONMENT, | |
| | Policy IV.A.1: Maintain a Visitor Impact Management System | NA |
| | Policy IV.A.2: Make recommendations and disseminate information as needed to address impacts including those identified in the Visitor Impact Management System | NA |
| | **OBJECTIVE IV. B:** ACHIEVEMENT OF MUTUAL APPRECIATION AMONG RESIDENTS, VISITORS, AND THE VISITOR INDUSTRY | |
| | Policy IV.B. 1. Expand and improve programs designed to inform residents about the contributions of the visitor industry and the role residents play in making the industry successful. | NA |
| | Policy IV.B. 2. Expand and improve programs designed to inform visitors about: what to expect when visiting Hawaii, what is expected of them, water safety procedures, and safety procedures in the event of emergencies. | NA |
| | Policy IV.B. 3. Develop, maintain, and encourage corporate citizenship programs which monitor and disseminate information. | NA |
| | **V. EMPLOYMENT AND CAREER DEVELOPMENT** | |
| | **OBJECTIVE V.A.** DEVELOPMENT OF A PRODUCTIVE WORKFORCE TO MAINTAIN A HIGH-QUALITY VISITOR INDUSTRY. | |
| | Policy V.A.1. Development of a productive workforce to maintain a high quality of visitor industry | NA |
| | Policy V.A.2 Encourage development of training programs which improve the quality of services provided at tourism-related facilities. | NA |
| | **OBJECTIVE V.B.** ENCHANCEMENT OF CAREER AND EMPLOYMENT OPPORTUNITIES IN THE VISITOR INDUSTRY | |
| | Policy V.B.1. Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the visitor industry. | NA |

| Table 5-2: Hawaii State Plan–HRS Chapter 226, Part II | | |
|---|---|---|
| **PLAN YEAR** | **PART II. PLANNING COORDINATION AND IMPLEMENTATION: FUNCTIONAL PLANS** | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| | Policy V.B.2. Encourage the visitor industry to consider Hawaii residents first when hiring and to provide opportunities for upward mobility. | NA |
| | **VI. MARKETING** | |
| | **OBJECTIVE VI.A.** MAINTENANCE OF A HIGH CUSTOMER AWARENESS OF HAWAII AS A VISITOR DESTINATION IN SPECIFIC DESIRED MARKET SEGMENTS | |
| | Policy VI.A.1 Diversify pleasure markets geographically and by market segment. | NA |
| | Policy VI.B.2. Ensure that the business segment increases as a percentage of overall visitors | NA |
| | Policy VI.B.3. Provide adequate backup and support to maintain marketing campaigns. | NA |
| CONFORMANCE DETERMINATION: The proposed actions are meant to enhance, improve, and restore well utilized structures, areas, and activities of the park as well as ensure sustainable park upkeep. Through these actions, the AMRP will garner an increased reputation amongst tourist as a safe, secure, and an historic park that is a "must-see" tourist destination. | | |
| **1991** | **TRANSPORTATION STATE FUNCTIONAL PLAN** | NA |

### 5.2.4 State Environmental Policy

The State Environmental Policy under HRS Chapter 344 establishes an environmental policy that: (1) encourages productive and enjoyable harmony between people and their environment; (2) promotes efforts that will prevent or eliminate damage to the environment and biosphere; (3) stimulates the health and welfare of humanity; and (4) enriches the understanding of the ecological systems and natural resources important to the people of Hawai'i. Table 5-3 outlines related policy to the proposed project actions.

| Table 5-3: Hawaii State Environmental Policy and Guidelines–HRS Chapter 344-3 & 344-4 | |
|---|---|
| **HRS CHAPTER 344-3 & 344-4** | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | |
| **§344-3 Environmental Policy.** It shall be the policy of the State, through its programs, authorities, and resources to: | |

| Table 5-3: Hawaii State Environmental Policy and Guidelines–HRS Chapter 344-3 & 344-4 | |
|---|---|
| **HRS CHAPTER 344-3 & 344-4** | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | |
| 1. Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawaii. | A |
| 2. Enhance the quality of life by: | |
| A. Setting population limits so that interaction between the natural and artificial environments and the population is mutually beneficial; | NA |
| B. Creating opportunities for the residents of Hawaii to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments; | NA |
| C. Establishing communities which provide a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian; and | A |
| D. Establishing a commitment on the part of each person to protect and enhance Hawaii's environment and reduce the drain on nonrenewable resources. | NA |
| CONFORMANCE DETERMINATION: Proposed plans preserve, restore, and expand upon the historic structures and used amenities of the Park. The plans will create a preserved and enhanced environment for public recreational use; establish a deeper sense of identity for the community to the Park. | |
| **§344-4 Guidelines.** In pursuance of the state policy to conserve the natural resources and enhance the quality of life, all agencies, in the development of programs, shall, insofar as practicable, consider the following guidelines: | |
| 1. Population. | |
| A. Recognize population impact as a major factor in environmental degradation and adopt guidelines to alleviate this impact and minimize future degradation; | NA |
| B. Recognize optimum population levels for counties and districts within the State, keeping in mind that these will change with technology and circumstance, and adopt guidelines to limit population to the levels determined | NA |
| 2. Land, water, mineral, visual, air, and other natural resources. | |
| A. Encourage management practices which conserve and fully utilize all-natural resources; | A |

| Table 5-3: Hawaii State Environmental Policy and Guidelines–HRS Chapter 344-3 & 344-4 | |
|---|---|
| **HRS CHAPTER 344-3 & 344-4** | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | |
| B. Promote irrigation and waste water management practices which conserve and fully utilize vital water resources; | A |
| C. Promote the recycling of waste water; | NA |
| D. Encourage management practices which conserve and protect watersheds and water sources, forest, and open space areas; | NA |
| E. Establish and maintain natural area preserves, wildlife preserves, forest reserves, marine preserves, and unique ecological preserves; | NA |
| F. Maintain an integrated system of state land use planning which coordinates the state and county general plans; | A |
| G. Promote the optimal use of solid wastes through programs of waste prevention, energy resource recovery, and recycling so that all our wastes become utilized. | NA |
| 3. Flora and fauna. | |
| A. Protect endangered species of indigenous plants and animals and introduce new plants or animals only upon assurance of negligible ecological hazard; | A |
| B. Foster the planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment. | A |
| 4. Parks, recreation, and open space. | |
| A. Establish, preserve and maintain scenic, historic, cultural, park and recreation areas, including the shorelines, for public recreational, education, and scientific uses; | A |
| B. Protect the shorelines of the State from encroachment of artificial improvements, structures, and activities; | C |
| C. Promote open space in view of its natural beauty not only as a natural resource but as an ennobling, living environment for its people. | A |
| 5. Economic Development. | |
| A. Encourage industries in Hawaii which would be in harmony with our environment; | C |
| B. Promote and foster the agricultural industry of the State; and preserve and conserve productive agricultural lands; | NA |
| C. Encourage federal activities in Hawaii to protect the environment; | NA |
| D. Encourage all industries including the fishing, aquaculture, oceanography, recreation, and forest products industries to protect the environment; | NA |

| Table 5-3: Hawaii State Environmental Policy and Guidelines–HRS Chapter 344-3 & 344-4 | |
|---|---|
| **HRS CHAPTER 344-3 & 344-4** | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | |
| E. Establish visitor destination areas with planning controls which shall include but not be limited to number of rooms; | NA |
| F. Promote and foster the aquaculture industry of the State; and preserve and conserve productive aqua cultural lands. | NA |
| 6. Transportation | |
| A. Encourage transportation systems in harmony with the lifestyle of the people and environment of the State; | NA |
| B. Adopt guidelines to alleviate environmental degradation caused by motor vehicles; | NA |
| C. Encourage public and private vehicles and transportation systems to conserve energy, reduce pollution emission, including noise, and provide safe and convenient accommodations for their users. | NA |
| 7. Energy | |
| A. Encourage the efficient use of energy resources | NA |
| 8. Community life and housing. | |
| A. Foster lifestyles compatible with the environment; preserve the variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods which reflect the culture and mores of the community; | A |
| B. Develop communities which provide a sense of identity and social satisfaction in harmony with the environment and provide internal opportunities for shopping, employment, education, and recreation; | A |
| C. Encourage the reduction of environmental pollution which may degrade a community; | C |
| D. Foster safe, sanitary, and decent homes; | NA |
| E. Recognize community appearances as major economic and aesthetic assets of the counties and the State; encourage green belts, plantings, and landscape and designs in urban areas; and preserve and promote mountain-to-ocean vistas. | A |
| 9. Education and culture | |
| A. Foster culture and the arts and promote their linkage to the enhancement of the environment; | NA |
| B. Encourage both formal and informal environmental education to all age groups. | NA |
| 10. Citizen participation | |

**Table 5-3: Hawaii State Environmental Policy and Guidelines–HRS Chapter 344-3 & 344-4**

| HRS CHAPTER 344-3 & 344-4 | RATING |
|---|---|
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | |
| A. Encourage all individuals in the State to adopt a moral ethic to respect the natural environment; to reduce waste and excessive consumption; and to fulfill the responsibility as trustees of the environment for the present and succeeding generations; and | C |
| B. Provide for expanding citizen participation in the decision-making process so it continually embraces more citizens and more issues | A |

CONFORMANCE DETERMINATION:

The Proposed Actions include projects related to physical design (restoring historic features, improving underutilized park areas, and expanding upon well-used areas) as well as developing additional programming opportunities for the Park. Additionally, one of the Proposed Actions examines proper investment, organization, and alternative methods and strategies for sustainable park management.

The proposed irrigation system will offer water conserving and maintenance reduction benefits. Lawns and trees will be sufficiently irrigated and areas receiving salt spray will be replaced with salt tolerant groundcover. Proposed plantings are to be native flora.

The results of the biological resource study noted one state threatened species, the white tern, and habitat suitable for one federally endangered species, the Hawaiian hoary bat. The Report outlines avoidance and mitigation measures for the white tern and recommended measures for the potential habitation of the Hawaiian hoary bat.

Throughout the process of project plan formulation, a public outreach plan was created and intensive public involvement was engaged via public meetings and an interactive website for citizens to post comments.

The Ala Moana Regional Park Master Plan has been developed to preserve, restore, and expand upon the historic amenities and structures of the Park. It will create a preserved and enhanced environment for public recreational use.

### 5.2.5 Section 401 Water Quality Certification (WQC)

A Section 401 WQC is a statement which asserts that a proposed discharge resulting from an activity will not violate applicable water quality standards. Under Section 401 of the CWA, the DOH CWB is responsible for issuing or denying Section 401 WQCs for any project that requires a federal license or permit that may result in a water pollutant discharge to State surface waters. Since the proposed project will involve navigable waters of the U.S. and requires a DA permit from USACE, a Section 401 WQC will also be required. Section 401 WQC is regulated under HAR Chapter 11-54, Water Quality Standards.

The Master Plan outlines changes to the canoe ramp, and the two pond edges, drainage canal, and beach nourishment, restoration and enhancement; these activities involve navigable waters of the US. Thus, this project will require a WQC asserting that the proposed discharge resulting from aforementioned activities will not violate applicable water quality standards.

### 5.2.6 Stream Channel Alteration Permit

The Stream Channel Alteration Permit (SCAP) is administered by the DLNR, CWRM. As outlined in HAR Chapter 13-169-50, no stream channel shall be altered until a SCAP is issued by the commission. In this context, channel alteration means to "obstruct, diminish, destroy, modify, or relocate a stream channel; to change the direction of flow of water in a stream channel; to place any material or structures in a stream channel; or to remove any material or structures from a stream channel.

The Master Plan proposes remediation and restoration of the drainage canal walls as well as enlargement of pedestrian bridges at Pi'ikoi and Queen Streets. These proposed actions require a SCAP due to canal alterations. Any alterations will not be commenced until the SCAP application is approved by CWRM.

### 5.2.7 Hawai'i Water Pollution Law

The Hawai'i Water Pollution Law,[3] which provides a comprehensive regulatory program for discharges[4] of pollution to the waters of Hawai'i, establishes the National Pollutant Discharge Elimination System (NPDES) permit program required under the CWA, as amended. Permits covered under this program are issued by DOH CWB. The CWB is responsible for reviewing and approving project compliance with HRS Chapter 342D (Water Pollution), HAR Chapter 11-55 (Water Pollution Control), and HAR Chapter 11-54 (Water Quality Standards). Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation.

This project could generate discharges of stormwater runoff from its construction site to State surface waters and as a result would require a NPDES permit for construction activity. All necessary permits will be obtained from CWB prior to any construction which could generate discharge to State waters.

### 5.2.8 HRS Chapter 6E, Historic Preservation

The Ala Moana Park (SIHP # 50-80-14-1388) was listed on the Hawai'i Register of Historic Places in 1988 and is designated as a "significant historic property" under

[3] State of Hawai'i. 2010. *Hawai'i Revised Statues, Chapter 342D, Water Pollution.*

[4] Discharge definition: It includes, but is not limited to, allowing the following pollutants to enter State waters: solid waste, sewage, chemicals, biological material, rock/sand/dirt, construction debris, fugitive dust, spray paint, industrial wastes, concrete, sealant, epoxy, heat, agricultural waste, and washing/cleaning effluent.

HAR Title 13. The project is required to comply with a review and consultation with the SHPD pursuant of HRS Chapter 6E. Specifically, Chapter 6E-8[5] (Review of effect proposed state projects) states "Before any agency or officer of the State or its political subdivisions commences any project which may affect historic property, aviation artifact, or a burial site, the agency or officer shall advise the department and allow the department an opportunity for review of the effect of the proposed project on historic properties, aviation artifacts, or burial sites, consistent with section 6E-43, especially those listed on the Hawaii register of historic places. The proposed project shall not be commenced, or, in the event it has already begun, continued, until the department shall have given its written concurrence."

A (Draft) Literature Review and Field Inspection with Cultural Section for the Ala Moana Regional Park Master Plan Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu was submitted to the SHPD along with a letter from the City seeking concurrence for the proposed improvements and mitigation associated with the historic features on the AMRP. The mitigation proposal under review per Chapter 13-375-8, HAR was accepted by SHPD[6] in a letter dated June 18, 2018.

## 5.3 COUNTY POLICIES AND STATUTES

County policies and statutes are summarized below and the compatibility with the components will be addressed in the DEIS.

### 5.3.1 Oʻahu General Plan

The City's General Plan, which was last amended in 2002, is comprised of 11 sections relating to: Population; Economic Activity; Natural Environment; Housing; Transportation and Utilities; Energy; Physical Development and Urban Design; Public Safety; Health and Education; Culture and Recreation; and Government Operations and Fiscal Management.

**Table 5-4: Oʻahu General Plan**

| Objectives and Policies | | RATING |
|---|---|---|
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| **I.** | **POPULATION** | NA |
| **II.** | **ECONOMIC ACTIVITY** | NA |

[5] State of Hawaiʻi. 1998. *Hawaiʻi Revised Statues, Chapter 6E-8, Review of effect of proposed state projects.*

[6] Letter from Alan Downer, PhD (Deputy State Historic Preservation Officer, Administrator, State Historic Preservation Division) to Robert Kroning (City Department of Design and Construction, Director) historic preservation review pursuant to Hawaii Revised Statutes Chapter 6E-8 and Hawaii Administrative Rules Chapter 13-275-3. June 18, 2018.

| Table 5-4: O'ahu General Plan | | |
|---|---|---|
| **Objectives and Policies** | | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| **III.** | **NATURAL ENVIRONMENT** | |
| | **Objective A:** To protect and preserve the natural environment | |
| | Policy 1: Protect O'ahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development. | C |
| | Policy 2: Seek restoration of environmentally damaged areas and natural resources. | NA |
| | Policy 3: Retain the Island's streams as scenic, aquatic, and recreation resources. | A |
| | Policy 4: Require development projects to give due consideration to natural features such as slope, flood and erosion hazards, water-recharge areas, distinctive land forms, and existing vegetation. | NA |
| | Policy 5: Require sufficient setbacks of improvements in unstable shoreline areas to avoid the future need for protective structures. | A |
| | Policy 6: Design surface drainage and flood-control systems in a manner which will help preserve their natural settings. | NA |
| | Policy 7: Protect the natural environment from damaging levels of air, water, and noise pollution. | C |
| | Policy 8: Protect plants, birds, and other animals that are unique to the State of Hawai'i and the Island of O'ahu. | A |
| | Policy 9: Protect mature trees on public and private lands and encourage their integration into new developments. | A |
| | Policy 10: Increase public awareness and appreciation of O'ahu's land, air, and water resources. | NA |
| | Policy 11: Encourage the State and Federal governments to protect the unique environmental, marine, and wildlife assets of the Northwestern Hawaiian Islands. | NA |
| | **OBJECTIVE B:** To preserve and enhance the natural monuments and scenic views of O'ahu for the benefit of residents and visitors. | |
| | Policy 1: Protect the Island's well-known resources: its mountains and craters; forests and watershed areas; marshes, rivers, and streams; shoreline, fishponds, and bays; and reefs and offshore islands. | C |
| | Policy 2: Protect O'ahu's scenic views, especially those seen from highly developed and heavily traveled areas. | C |
| | Policy 3 Locate roads, highways, and other public facilities and utilities in areas where they will least obstruct important views of the mountains and sea. | NA |
| | Policy 4 Provide opportunities for recreational and educational use and physical contact with Oahu's natural environment. | A |

| Table 5-4: O'ahu General Plan | | |
|---|---|---|
| **Objectives and Policies** | | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| CONFORMANCE DETERMINATION: The Proposed Actions will retain recreation resources for this urban area which provides recreational activities in the natural environment. Additionally, a biological and marine resources survey was conducted and a report generated; the report outlines flora and fauna and mitigation for endangered species in the Park and waters. | | |
| **IV.** | **HOUSING** | NA |
| **V.** | **TRANSPORTATION AND UTILITIES** | NA |
| **VI.** | **ENERGY** | NA |
| **VII.** | **PHYSICAL DEVELOPMENT AND URBAN DESIGN** | |
| | **OBJECTIVE A:** To coordinate changes in the physical environment of O'ahu to ensure that all new developments are timely, well designed, and appropriate for the areas in which they will be located. | NA |
| | **OBJECTIVE B:** To develop Honolulu, 'Aiea, and Pearl City as the Island's primary urban center. | NA |
| | **OBJECTIVE C:** To develop a secondary urban center in 'Ewa with its nucleus in the Kapolei area. | NA |
| | **OBJECTIVE D:** To maintain those development characteristics in the urban-fringe and rural areas which make them desirable places to live. | NA |
| | **OBJECTIVE E:** To create and maintain attractive, meaningful, and stimulating environments throughout O'ahu. | A |
| | Policy 1: Prepare and maintain a comprehensive urban-design plan for the Island of O'ahu. | NA |
| | Policy 2: Integrate the City and County's urban- design plan into all levels of physical planning and developmental controls. | NA |
| | Policy 3: Encourage distinctive community identities for both new and existing districts and neighborhoods. | NA |
| | Policy 4: Require the consideration of urban-design principles in all development projects. | NA |
| | Policy 5: Require new developments in stable, established communities and rural areas to be compatible with the existing communities and areas. | NA |
| | Policy 6: Provide special design standards and controls that will allow more compact development and intensive use of lands in the primary urban center. | NA |
| | Policy 7: Promote public and private programs to beautify the urban and rural environments. | C |
| | Policy 8: Preserve and maintain beneficial open space in urbanized areas, | A |
| | Policy 9: Design public structures to meet high aesthetic and functional standards and to complement the physical character of the communities they will serve. | A |

| Table 5-4: O'ahu General Plan | | |
|---|---|---|
| **Objectives and Policies** | | **RATING** |
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| | Policy 10: Establish a review process to evaluate the design of major development projects. | NA |
| | **OBJECTIVE F:** To promote and enhance the social and physical character of O'ahu's older towns and neighborhoods. | A |
| | Policy 1: Encourage new construction to complement the ethnic qualities of the older communities of O'ahu. | NA |
| | Policy 2: Encourage, wherever desirable, the rehabilitation of existing substandard structures. | A |
| | Policy 3: Provide and maintain roads, public facilities, and utilities without damaging the character of older communities. | A |
| | Policy 4: Seek satisfactory relocation before permitting their displacement by new development, redevelopment, or neighborhood rehabilitation. | NA |
| CONFORMANCE DETERMINATION: The Proposed Actions are to build upon existing activities and refurbish existing historic structures and buildings. All actions will respect the character and history of the park while creating opportunities for new programs which are meaningful and stimulating for both tourists and residents. | | |
| **VIII.** | **PUBLIC SAFETY** | NA |
| **IX.** | **HEALTH AND EDUCATION** | NA |
| **X.** | **CULTURE AND RECREATION** | A |
| | **OBJECTIVE A:** To foster the multiethnic culture of Hawaii | A |
| | Policy 1: Encourage the preservation and enhancement of Hawaii's diverse cultures. | NA |
| | Policy 2: Encourage greater public awareness, understanding, and appreciation of cultural heritage and contributions to Hawai'i made by the City's various ethnic groups. | NA |
| | Policy 3: Encourage opportunities for better interaction among people with different ethnic, social, and cultural backgrounds. | C |
| | Policy 4: Encourage the protection of the ethnic identities of the older communities of O'ahu. | NA |
| | **OBJECTIVE B:** To protect O'ahu's cultural, historic, architectural, and archaeological resources. | A |
| | Policy 1: Encourage restoration and preservation of early Hawaiian structures, artifacts, and landmarks. | NA |
| | Policy 2: Identify, and to the extent possible, pre-serve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance. | A |

| Table 5-4: O'ahu General Plan | |
|---|---|
| **Objectives and Policies** | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | |
| Policy 3: Cooperate with State and Federal governments in developing and implementing a comprehensive preservation program for social, cultural, historic, architectural, and archaeological resources. | NA |
| Policy 4: Promote the interpretive and educational use of cultural, historic, architectural, and archaeological sites, buildings, and artifacts. | NA |
| Policy 5: Seek public and private funds, and public participation and support, to protect social, cultural, historic, architectural, and archaeological resources. | NA |
| Policy 6: Provide incentives for the restoration, preservation, and maintenance of social, cultural, historic, architectural, and archaeological resources. | NA |
| **OBJECTIVE C:** To foster the visual and performing arts. | NA |
| **OBJECTIVE D:** To provide a wide range of recreational facilities and services that are readily available to all residents of O'ahu. | A |
| Policy 1: Develop and maintain community-based parks to meet the needs of the different communities on O'ahu. | A |
| Policy 2: Develop and maintain a system of regional parks and specialized recreation facilities. | C |
| Policy 3: Develop and maintain urban parks, square, and beautification areas in high density urban places. | A |
| Policy 4: Encourage public and private botanic and zoological parks on O'ahu to foster an awareness and appreciation of the natural environment. | NA |
| Policy 5: Encourage the State to develop and maintain a system of natural resource-based parks, such as beach, shoreline, and mountain parks. | A |
| Policy 6: Provide convenient access to all beaches and inland recreation areas. | A |
| Policy 7: Provide for recreation programs which serve a broad spectrum of the population. | C |
| Policy 8: Encourage ocean and water-oriented recreation activities that do not adversely impact on the natural environment. | C |
| Policy 9: Require all new developments to provide their residents with adequate recreation space. | NA |
| Policy 10: Encourage the private provision of recreation and leisure-time facilities and services, | C |
| Policy 11: Encourage the after-hours, weekend, and summertime use of public school facilities for recreation. | NA |
| Policy 12: Provide for safe and secure use of public parks, beaches, and recreation facilities. | A |
| Policy 13: Encourage the safe use of O'ahu's ocean environments. | NA |
| Policy 14: Encourage the State and Federal governments to transfer excess and underutilized land to the City and County for public recreation use. | NA |

| Table 5-4: O'ahu General Plan | | |
|---|---|---|
| **Objectives and Policies** | | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| CONFORMANCE DETERMINATION: The Proposed Actions include refurbishing historic structures; building off existing activities in order to create the right mix of new and old activities for a wide range of the public; and improving management which would assist in the safe and secure use of the Park. | | |
| **XI.** | **GOVERNMENT OPERATIONS AND FISCAL MANAGEMENT** | NA |

## 5.3.2 Primary Urban Center Development Plan (PUC DP)

The PUC DP (2004), which encompasses the proposed project area, is one of eight regional plans based on the O'ahu General Plan that establish more detailed policies to shape growth in the urban core of the island. The Development Plan identifies five major vision elements; Table 5-5 below specifically outlines its relation to this project.

| Table 5-5: Primary Urban Center Development Plan | | |
|---|---|---|
| **Objectives and Policies** | | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| **I.** | **PROTECT AND ENCHANCE NATURAL, CULTURAL, AND SCENIC RESOURCES** | A |
| | Objective: addresses the natural and cultural setting, the need for natural areas and open spaces, and the concept of an open space network that pervades urbanized areas and links them to the mountains and the shoreline. That culturally and historically important sites, landforms, and structures be preserved and enhanced. | A |
| CONFORMANCE DETERMINATION: The AMRP and Magic Island are urban parks and offers open space in an urbanized area; the Proposed Actions, outlined in the Master Plan, are to improve and enhance upon the Park features. It specifically outlines preserving and enhancing the important historic sites. | | |
| **II.** | **NEIGHBORHOOD PLANNING AND DEVELOPMENT** | A |
| | Objective: that livable neighborhoods have business districts, parks, plazas, and walkable streets. It is deemed key to livability that convenient access to work and to the many services and attractions be found in the urban area. | A |

| Table 5-5: Primary Urban Center Development Plan | | |
|---|---|---|
| **Objectives and Policies** | | **RATING** |
| A = ACTIVELY SUPPORTS C= CONFORMS F = FAILS TO MEET PLAN GOAL NA = GOAL IS NOT APPLICABLE | | |
| CONFORMANCE DETERMINATION: The intent of proposed actions is to restore existing features, improve upon underutilized park areas and expand upon well-used elements. The proposed actions would improve upon the goal of livable neighborhoods by improving existing structures and utilized spaces as well as implementing projects that expand upon existing utilized park areas. | | |
| **III.** | **IN-TOWN HOUSING CHOICES FOR PEOPLE OF ALL AGES AND INCOMES** | NA |
| **IV.** | **HONOLULU IS THE PACIFIC'S LEADING CITY AND TRAVEL DESTINATION** | A |
| | Objective: One aspect of this goal is the urban waterfront, more specifically recapturing visual and physical access to the urban waterfront with the intent to stimulate economic renewal and create a source of civil pride. | A |
| CONFORMANCE DETERMINATION: The Master Plan outlines short and long-term plans to revitalize this historic park. The Proposed Actions would complement the downtown area as a travel destination because it would revitalize the park and garner increased visitation. | | |
| **V.** | **A BALANCED TRANSPORTATION SYSTEM THAT PROVIDES EXCELLENT MOBILITY** | NA |

### 5.3.3 City Land Use Ordinance

The City's *Land Use Ordinance (LUO)* establishes zoning regulations, which regulate the use of land and provide for appropriate controls and review of proposed land uses. The LUO is designed to accomplish the goals and objectives in the O'ahu General Plan and PUC DP.

The project area involves work in public lands in zone P-2 General Preservation District. Preservation districts are intended to preserve and manage major open space lands and lands of scenic and other natural resource value.

The intent of P-2 "…is to preserve and manage major open space and recreation lands and lands of scenic and other natural resource value. It is also the intent that lands designated urban by the state, but well-suited to the functions of providing visual relief and contrast to the city's built environment or serving as outdoor space for the public's use and enjoyment be zoned P-2 general preservation district. Areas unsuitable for other uses because of topographical considerations related to public health, safety and welfare concerns shall also be placed in this district."[7]

[7] City and County of Honolulu. Chapter 21 Land Use Ordinance [LUO] 99-12. Section 21-3.40. Preservation districts – Purpose and intent.

The proposed action follows with the intent of this zoning district as outlined in Sections 21-3.4 and 21-3.40-1.

### 5.3.4 Special Management Area (SMA)

Although the SMAs originated under the federal CZM and Hawaiʻi CZM Programs, the counties in Hawaiʻi regulate and administer the SMAs in their respective jurisdictions. On Oʻahu, the SMA is administered by Department of Planning and Permitting(DPP), City and County of Honolulu. The proposed project area is within the SMA boundary and would be subject to the City's SMA rules and regulations.

Pursuant to HRS Section 205A-22, "development" within the SMA means any uses, activities, or operations on land or in the water; more specifically, for proposed actions of the AMRP Master Plan, construction, reconstruction, demolition, or alteration of the size of any structure. The project would require an SMA major permit because the proposed actions surpass the cost threshold of $500,000. The SMA permit is the first step prior to obtaining any other required permits; the SMA permit will be obtained first in the chain of any other required permits.

## 5.4 LIST OF PERMITS REQUIRED

The following is a list of permits that will be required to construct the improvements identified in this document.

- US Army Corps of Engineers (USACE), Clean Water Act (CWA), Section 404 permit
- USACE, Rivers and Harbors Act, Section 10 permit
- National Marine Fisheries Service (NMFS), Endangered Species Act (ESA), Section 7 consultation and possibly U.S. Fish and Wildlife Service (USFWS)
- NMFS, Essential Fish Habitat (EFH) consultation (possible)
- State Department of Health (DOH), Clean Water Branch, Section 401 Water Quality Certification
- CWA, Section 402, National Pollutant Discharge Elimination System (NPDES) permit (DOH)
- DOH, Noise Permit/Variance
- State Office of Planning, Hawaiʻi Coastal Zone Management Federal Consistency Review

- State Department of Land and Natural Resources (DLNR), Office of Conservation and Coastal Lands (OCCL), Conservation District Use Permit
- Office of Environmental Quality Control (OEQC) Chapter 343, Hawai‘i Revised Statutes (HRS), Environmental Review
- City Department of Planning and Permitting (DPP), Special Management Area Permit

# CHAPTER 6

Cumulative Impacts

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# CHAPTER 6
# CUMULATIVE IMPACTS

## 6.1 CUMULATIVE IMPACTS

Cumulative impacts are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. They can result from individually minor but collectively significant actions taking place over a period of time.[1] Because the proposed improvements at AMRP and Magic Island are for an existing City park and do not change the existing use, the improvements do not change the overall purpose and use of the Park. The proposed actions at the Park are to enhance the existing Park and conduct some needed maintenance to the park facilities to bring them up to current standards. Therefore, there are no long-term cumulative impacts that will be created as a result of implementing the various improvements at the Park.

[1] Hawai'i Administrative Rules (HAR) §11-200.

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# CHAPTER 7

Summary of Impacts

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# CHAPTER 7
# SUMMARY OF IMPACTS

## 7.1 INTRODUCTION

This chapter summarizes the potential impacts of the Proposed Action (including Alternative Action and No Action Alternative), and possible mitigation measures, if needed, as disclosed in this Environmental Impact Statement (EIS).

### 7.1.1 Impacts on the Built Environment

The proposed improvements at the Park includes some positive, negative and in some cases, no impacts on the built environment. These impacts are described below:

- Land Use – There will be no impacts to land use at the Park. The Park will continue to be for recreational activities.
- Land Ownership – No change in land ownership is being proposed.
- Public Health and Safety – The City is currently upgrading the restrooms and installing security cameras. Two pedestrian access points over the canal along Ala Moana Boulevard is also being widened in the event of an emergency, such as an imminent tsunami, flooding or hurricane. These are positive impacts on the environment.
- Noise – During construction there is a potential for adverse noise impacts from construction equipment. These impacts are short term and can be mitigated by use of mufflers on equipment and using machines that exceed noise levels for a shorter duration. Curfew times will also be in place for hours of construction activities.
- Circulation and Traffic – The traffic study indicated that by year 2028, the traffic volumes in the vicinity of AMRP will not significantly increase. Past traffic volumes records indicate that increase in traffic from 2009 to 2016 was either stagnant or declining along the Ala Moana Boulevard corridor.
- Infrastructure – No long-term impacts on the infrastructure servicing the Park are anticipated. Any upgrades to the infrastructure may have short-term construction noise and access impacts.

- Public Services and Facilities – No impacts on public services and facilities are anticipated. The proposed improvements will not cause an increase in population growth that will contribute a higher demand for these services.

- Visual and Aesthetic Resources – The improvements in the Park have a positive impact on the appearance of the park facilities by repairing some of the historic character of the park property.

- Recreation – There will be no change in the recreational uses of the Park, therefore no adverse impacts on recreation is expected.

- Socio-Economic Setting – The project will have a short-term positive impact on the economy during construction by creating direct construction employment and indirect funds to their subcontractors and suppliers.

### 7.1.2 Impacts on the Natural Environment

Similar to the built environment, the impacts on the natural environment are described below:

- Geology, Soil, Topography – Some excavation may be required for certain improvements such as the reconfigured parking along Ala Moana Park Drive, erosion control around the ponds, providing ADA access to the highpoint in the middle of the Park, and the new Keyhole parking lot. These improvements will change the topography of the park lands, but most of the excavated soils will be reused. If the soil cannot be reused, it will be hauled away to a landfill. The underlying geology should not change since most of the Park are in fill condition. The exception will be the beach nourishment activity, which will restore the eroding areas of the shoreline. Years of erosion from wave action and wind has caused the beach sand to be eroded. The topography of the beach will increase in height. Sand used for the beach nourishment will be of similar grain size as the existing sand. Beach nourishment is considered a positive impact because it will provide safer access to the water by covering the rocks that have been exposed from erosion.

- Hydrology – The surface and ground water will be adversely impacted during the construction of the new pedestrian walkways, erosion control around the ponds, and restoration of the Bridle Bridge. BMPs will be used to mitigate any impact on receiving waters in these locations to prevent pollution. Once completed there will be no impacts to the surrounding water bodies.

- Air Quality – During construction there may be short-term adverse impacts on air quality from dust and emissions from construction equipment. However,

after construction is completed, no long-term adverse impacts are anticipated on air quality.

- Historical, Archaeological, and Cultural Resources – The AMRP is on the register of historic places and some of the features within the Park will be impacted by the park improvements, both positive and negative. The positive impacts include the restoration of the Roosevelt Portals at the Atkinson Drive entrance to the park and the Bridal Bridge. The stucco exterior of both historic features within the Park will be restored. Through the aging process some of the exterior façade has been damaged and will be restored. The existing character of these features will not change. This restoration will have a positive impact on these historic features.

  The widening of two, 20- to 25-feet wide pedestrian bridges will remove small sections of the drainage canal along Ala Moana Boulevard and be replaced with box culverts. The location of these new bridges over the canal will be at Pi‘ikoi Street and Queen Street. These new bridges will replace the existing narrow bridges to allow for more pedestrians to enter and exit the Park, especially during large events, like the Lantern Floating Festival. Once completed the bridges will have a positive impact on the egress and ingress for the Park.

  The remaining sections of the canal walls will be untouched except for the section of the makai canal wall that has fallen into the canal. A 700-foot section of the wall has collapsed into the canal because the existing wall does not have a footing and was not built to industry standards. The collapsed wall is on the mauka side of the tennis courts. The wall will be reconstructed with a footing to prevent future collapse. The surfaces of the exposed section of the wall will mimic the existing wall appearance. This is a positive impact in terms of health and safety because the new section of the wall will be built to current standards to prevent future collapses. However, it does replace a historic feature of the Park that was built in the 1930s.

  At the middle of the Ala Moana Park Drive where the road curves around the “high spot” will involve the repair of the beach side access to allow for ADA improvements. The existing stairs in that area are deteriorated and unsafe. Therefore, a ramp will replace the stairs to allow ADA access. The pergola that is used to cover the area will be replaced.

  Although the “Keyhole” parking area between the lawn bowling and McCoy pavilion has been modified over time, a new parking lot will be installed in the current location. The original design of the keyhole area did not have any parking. However, because of the demand for parking on the ‘Ewa side of the AMRP, a new parking lot will be developed to increase the parking stalls. The

egress and ingress of the parking lot along Ala Moana Park Drive will be similar in design to the current condition with curved entry/exit. The parking stalls will increase from the 77 stalls to 182 stalls.

McCoy Pavilion and Banyan Court Plaza will be renovated to the original condition. The Banyan tree roots within the courtyard has caused major structural damage to the ponds and to the McCoy Pavilion building. Both the courtyard and the McCoy Pavilion floors are uneven and unsafe to walk on, posing a safety hazard. Therefore, the McCoy Pavilion and courtyard will be repaired and renovated to the original condition.

- Flora, Fauna and Aquatic Biology – A Baseline Assessment of the Marine Environment was prepared for the AMRP by Marine Research Consultants, Inc. The study included water quality measurements and biological assessment of the marine habitat. Because the nearshore area contains a reef that hinders flushing of the ocean waters, certain water quality measurements are above the DOH standards, such as turbidity. However, these standards are specific criteria for open coastal waters. The swim channel has patchy meadows of Hawaiian seagrass, which is a food source for juvenile Green Sea Turtles. The beach nourishment activity is not expected to impact the Hawaiian seagrass, but care should be taken to minimize suspended solids migrating into the swim channel.

  On the inland rubble face of the swim channel, there are small corals attached to the rubble. These small corals will likely be buried during the beach nourishment process. The rubble face can easily be broken, therefore, if required, the small coral could be harvested and taken to the ʻĀnuenue Fisheries Research Center prior to beach nourishment. On the outer channel of Magic Island, there are large, healthy corals. Beach nourishment will temporarily increase turbidity in the area, but should not be of a magnitude beyond the tolerance of these species. In addition, this area has more rapid flushing to prevent sediment depositing on the coral. This area near Magic Island is more characteristic of an open ocean setting.

- Beach Nourishment – Three options for beach nourishment were prepared and are discussed in Chapter 2.4. All three options can be implemented at AMRP. The difference in the three options is the volume of sand that is placed on the beach. Option 1 could last as long as 20 years before returning to the shorelines current location. Options 2 and 3 could last as long as 35 years before returning to current conditions. The only difference is that Option 3 includes nourishing ʻEwa side of the beach, therefore the quantity of sand required is the greatest. There is a "berm" option that could be used for any of the three options. This would be a berm of one to three feet high of sand that could be used for maintenance, such sand pushing to the central area of the

beach. The use of a clamshell excavator is the recommended method for recovery of the sand offshore at four possible locations: 1) Reef Runway (Inner), 2) Ala Moana (offshore), 3) Hilton, and 4) Pacific Aggregate Inland Sand. Grain size and color of the sand at these sites are similar to AMRP beach sand.

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# CHAPTER 8

Other Considerations

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# CHAPTER 8
# OTHER CONSIDERATIONS

## 8.1 RELATIONSHIPS BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

Section 11-200-17, Hawai'i Administrative Rules (HAR) requires discussion of the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity. Short-term and long-term do not necessarily refer to fixed time periods but are viewed relative to environmentally significant consequences of the Proposed Action. This section discusses the extent to which the Proposed Action involves trade-offs among short-term and long-term gains and losses, as well as the extent to which the Proposed Action forecloses future options and/or narrows the range of beneficial uses of the environment.

Short-term impacts would result from construction activities for the various projects in the Park and in the waters at AMRP during the beach nourishment operation. Short-term construction-related activities would not be significant given implementation of required BMPs to avoid or minimize impacts. In addition, there is a potential for short-term impacts on ESA during the breeding season of the Hawaiian Hoary Bat and the State-threatened White Tern. Although no Hawaiian Hoary Bats were seen at AMRP, there is potential habitat for bat roosting or nesting. No trees can be trimmed or removed between June 1 and September 15 when flightless juvenile bats may be roosting in the trees.

The White Tern is a State listed threatened species that was observed at the AMRP. It is recommended that inspections be performed before any trees are trimmed or cut down. Trees should be inspected for eggs or chicks before they are trimmed or removed. Although the white tern breeds throughout the year, breeding is lowest in the fall and early winter. If any chicks or eggs are found in the trees, the tree should not be trimmed or removed until the chick has fledged.

There were seven bird species federally protected under the Migratory Bird Treaty Act (MBTA). However, during construction these birds may be temporarily displaced, but long-term effects are not expected.

Threaten or endangered species in the marine environment could consist of the endangered humpback whale (*Megatera novaeangliae*) and the endangered Hawaiian

monk seal (*Monachus schauinslandi*). Both mammals were not observed during the survey, but are known to occur in Hawaiian waters, and on the shore for the Hawaiian monk seal. Several threatened green sea turtles (*Chelonia mydas*) were observed during the survey and are commonly found in south shore waters. The calm water protected by the coral reef is a preferred habitat for the green sea turtle because there is an abundance of food source and they are sheltered from predators. The endangered hawksbill turtle (*Eretmochelys imbricata*) was not observed and they are not commonly found in Hawaiian waters.

## 8.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES BY THE PROPOSED ACTION

A commitment of resources is considered irreversible when it precludes restoration of those resources to their pre-project condition. Use, consumption, destruction, or degradation of resources resulting from implementation of the Proposed Action, such that those resources cannot be retrieved or replaced in any form, is considered an irretrievable commitment of resources. One issue to be addressed is the use of non-renewable resources during the construction and operational phases of the Proposed Action.

Irreversible and irretrievable commitments of resources during construction include:

- Use of construction materials;
- Excavation and disposal of soil and sediment;
- Use of available space in the construction and demolition landfill;
- Expenditure of funds to finance construction;
- Construction manpower; and
- Use of energy in the form of direct consumption of fossil fuel for vehicles and equipment.

Fossil fuel would be irreversibly and irretrievably committed during operations to provide electrical power to the Parks.

## 8.3 PROBABLE ADVERSE ENVIRONMENTAL IMPACTS WHICH CANNOT BE AVOIDED

The Proposed Action, will not have any impacts which cannot be avoided. Measures are available to mitigate these impacts to levels that are not significant.

Construction associated with the Proposed Action would generate short-term impacts such as turbidity, noise, fugitive dust, emissions from vehicles and equipment, traffic congestion, and sedimentation. These impacts cannot be avoided but would be limited to the immediate construction vicinity and managed through implementations of BMPs in accordance with applicable regulations.

## 8.4 UNRESOLVED ISSUES

No unresolved issues have been identified.

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# CHAPTER 9

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