

# **APPLICATION MATERIALS**

## **Special Management Area D: Ke‘ehi Lagoon Beach Park**



## **I. GENERAL INFORMATION**

### **A. Applicant (Name, Address, Phone)**

City and County of Honolulu  
Department of Transportation Services (DTS)  
650 South King Street, 3<sup>rd</sup> Floor  
Honolulu, HI 96813  
(808) 768-8303

### **B. Recorded Fee Owner (Name, Address, Phone)**

Within the Special Management Area (SMA) D: Ke‘ehi Lagoon Beach Park portion of the Project, the fixed guideway is being constructed within three parcels.

- (1) 1-1-003:006: Owned by the State of Hawaii  
Department of Transportation Airports Division  
400 Rodgers Boulevard, 7<sup>th</sup> Floor  
Honolulu, HI 96819-1880  
808-838-8600
- (1) 1-1-003:004: Owned by the State of Hawaii  
Department of Transportation Airports Division
- (1) 1-1-003:138: Owned by the State of Hawaii  
Department of Transportation Airports Division
- (1) 1-1-003:003: Owned by the State of Hawaii  
Department of Transportation Airports Division

The SMA D: Ke‘ehi Lagoon Beach Park portion of the Project is restricted to the portion of the Project that will be built within the SMA, in Ke‘ehi Lagoon Beach Park. In addition, other Project features will be built mauka of the SMA boundary, just outside and adjacent to/abutting the SMA (Attachment H). The City will acquire three parcels directly adjacent to the SMA D: Ke‘ehi Lagoon Beach Park area for the construction of the guideway and a station.

- (1) 1-1-016:005: Owned by 2676 Waiwai Loop, LLC  
P.O. Box 29177  
Honolulu, HI 96820
- (1) 1-1-016:006: Owned by Alert Holdings Group, Inc.  
2668 Waiwai Loop  
Honolulu, HI 96819
- (1) 1-1-016:014: Owned by Chevron USA, Inc.  
P.O. Box 285  
Houston, TX 77001

The Project will also acquire portions of three parcels that abut the SMA – (1) 1-1-016: 007, 012, and 013; however, the portions of these parcels to be acquired by the Project do not abut the SMA.

## C. Agent

City and County of Honolulu  
Department of Transportation Services Rapid Transit Division (DTS-RTD)  
1099 Alakea Street, Suite 1700  
Honolulu, HI 96813  
(808) 768-8344

## D. Tax Map Key

Project features will be built on the following current Tax Map Keys (TMKs) within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project. The portions of these parcels on which Project features will be built will be acquired by the City and designated as right-of-way (ROW).

- (1) 1-1-003:006: Project ROW requirements will result in a strip take 50 feet wide for 1,150 linear feet within this TMK, which will result in a total Project acquisition of approximately 57,500 square feet, or 1.32 acres; the total lot area is 69.171 acres.
- (1) 1-1-003:004: Project ROW requirements will result in a strip take 30 feet wide for 400 linear feet within this TMK, which will result in a total Project acquisition of approximately 12,000 square feet, or 0.28 acre; the total lot area is 11.087 acres.
- (1) 1-1-003:138: Project ROW requirements will result in a strip take 20 feet wide for 300 linear feet within this TMK, which will result in a total Project acquisition of approximately 6,000 square feet, or 0.14 acre; the total lot area is 4.967 acres.
- (1) 1-1-003:003: Project ROW requirements will result in a strip take up to 20 feet wide for roughly 300 linear feet within this TMK, which will result in a total Project acquisition of approximately 5,000 square feet, or 0.11 acre; the total lot area is 5.166 acres.

The City will also acquire three parcels directly adjacent to the SMA D: Ke‘ehi Lagoon Beach Park area for the construction of the guideway and a station.

- (1) 1-1-016:005: the Project will require a full take of this parcel for the guideway; the total lot area is 0.57 acre.
- (1) 1-1-016:006: the Project will require a full take of this parcel for the guideway; the total lot area is 0.53 acre.
- (1) 1-1-016:014: the Project will require a full take of this parcel for the Lagoon Drive station; the total lot area is 0.65 acre.

## E. Lot Area

Please see Item D above.

## F. Agencies Consulted in Making Assessment

Please see the Introduction to this SMA Application for the agencies consulted, and Attachment 2 to this Application for copies of correspondence. Some of the public outreach activities listed took place in the immediate area of the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project. This included public meetings at Aliamanu Elementary School.

### *Section I References*

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke‘ehi Lagoon Beach Park.

DPP 2009. City and County of Honolulu, Department of Planning and Permitting (DPP), Interactive GIS Maps and Data. <http://gis.hicentral.com/>. Accessed between November 1, 2009 and January 19, 2010.

City and County of Honolulu, City Council 2006 - 2009. Bill 06-79, CD2, FD2 and Ordinance 07-001; Resolution 07-039, FD1(C); Resolution 08-97, CD1; Resolution 08-166, CD1, FD1; and Resolution 08-261.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

## II. DESCRIPTION OF THE PROPOSED ACTION

### A. General Description

A National Environmental Policy Act (NEPA) and Hawai‘i Revised Statutes (HRS) Chapter 343 compliant Final Environmental Impact Statement (EIS) has been prepared for the Project. The information herein is drawn from the preparation of the Final EIS, including supporting technical reports referenced within it that include detailed information concerning the studies performed to support the Final EIS.

#### 1. Brief Narrative Description of Proposed Project

The Introduction to this SMA Application provides a description of the entire proposed Project. The Final EIS (Attachment 1), Sections 2.4 and 2.5, provide more detailed information.

#### 2. Relation of Parcel to Special Management Area

This package discusses the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project. The discussion focuses on Project facilities that will be within the SMA. The SMA D: Ke‘ehi Lagoon Beach Park portion of the Project extends from where the Project enters Ke‘ehi Lagoon Beach Park (Project Station 1217+60) to Makai Frontage Road (Project Station 1241); this is 2,340 linear feet (0.44 mile) of the overall 20-mile alignment. Based on Preliminary Engineering designs, the following features are planned to be built within the SMA. Items may change slightly as the design progresses from a preliminary design stage to final design.

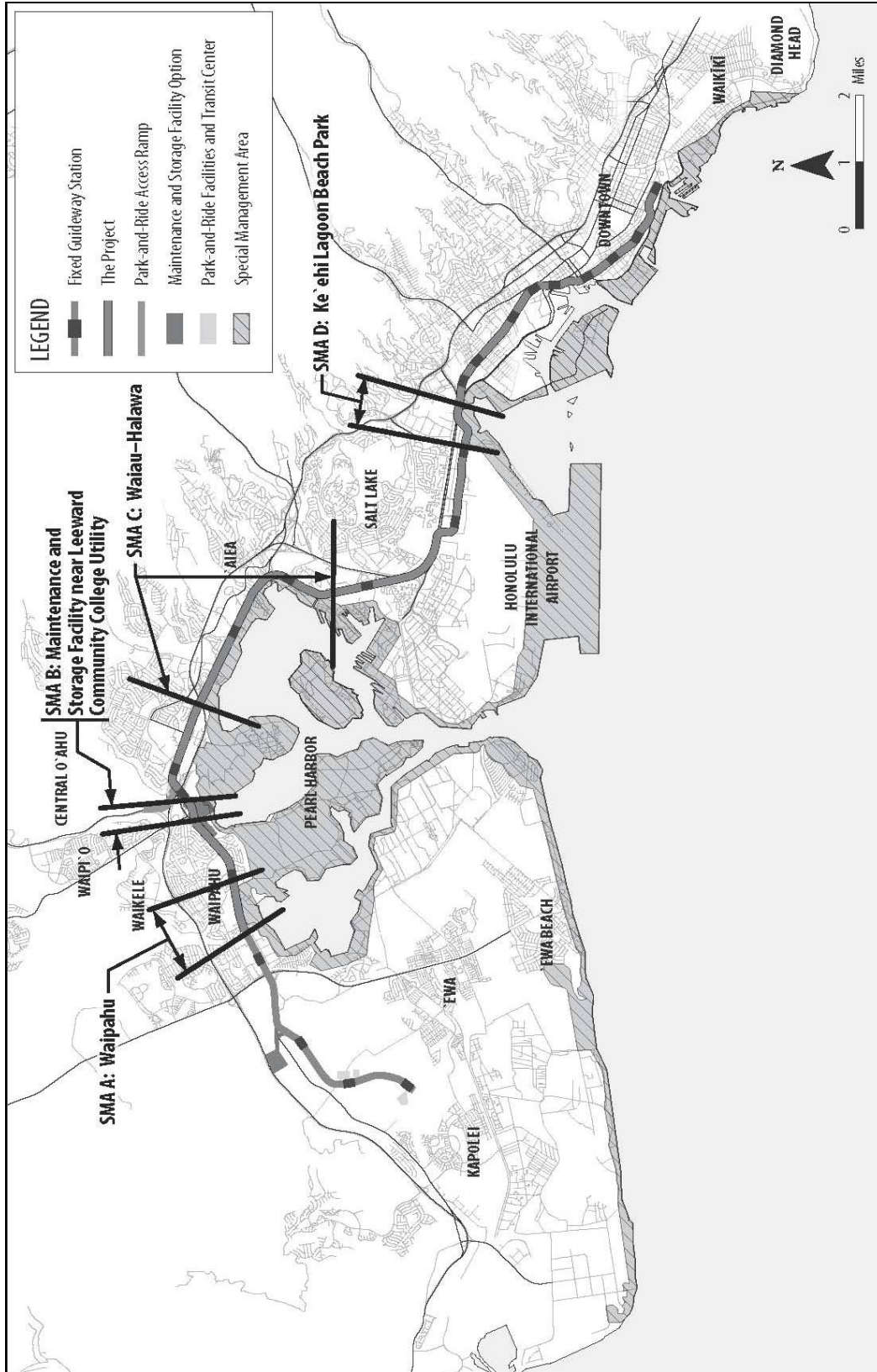
1. 17 columns and approximately 2,340 linear feet of elevated guideway supported by those columns.
2. 1,850 linear feet of ROW acquisition, varying from 20 to 50 feet wide for a total take of approximately 75,500 square feet, or 1.74 acres.
3. Traction power substation (TPSS) #29.
4. Lighting for the four mauka tennis courts in the Ke‘ehi Lagoon Beach Park.

In addition to the Project features within the SMA, other Project features are adjacent to or abutting the SMA. These adjacent/abutting features are also illustrated on figures in Attachments G and H, and are discussed in this package to a lesser degree. These features include:

5. 2 columns and roughly 350 linear feet of elevated guideway supported by those columns; this is the guideway within TMKs 1-1-016:005 and 006.
6. A portion of the makai side of the Lagoon Drive station will be located on parcel TMK 1-1-016:014.

### 3. Location Map

Figure 1 illustrates the location of the SMA D: Ke‘ehi Lagoon Beach Park portion of the overall Project. Detail maps of the Project in SMA D: Ke‘ehi Lagoon Beach Park are provided in Attachment G.



**Figure 1: Overview of SMA D: Ke'ehi Lagoon Beach Park Portion of the HHCTC Project**

#### 4. Land Use Approvals Granted and/or Approvals Required

The following land use approvals and other permits are required for Project construction and/or operation within the SMA D: Ke‘ehi Lagoon Beach Park area.

##### *Federal*

- Section 9 of the Rivers and Harbors Act: U.S. Coast Guard has provided advanced approval (December 23, 2008);
- Clean Water Act (CWA) Section 404 – Department of the Army permit; various nationwide permits and/or Section 10 of the Rivers and Harbors Act: City will submit application prior to construction of the Project in waters of the U.S.;
- Form 7460.1 Notice of Proposed Construction or Alteration of Impacts to the Airport and Federal Aviation Administration (FAA) Facilities: To be prepared and submitted by the City to FAA within 18 months prior to construction at the Honolulu International Airport; and
- Interstate airspace use approval for crossing H-1 Freeway access ramps at Ke‘ehi Interchange: To be prepared and submitted to the Federal Highway Administration by the City prior to construction.

##### *State*

- CWA Section 401, Water Quality Certification: To be prepared;
- CWA Section 402, National Pollutant Discharge Elimination System (NPDES) Permit for stormwater associated with construction activities: General Permit Application submitted October 23, 2009. Notice of General Permit Coverage (NGPC) received December 3, 2009 (file number HI R10D518);
- CWA Section 402, NPDES Permit for dewatering discharges: To be prepared and submitted by contractors as needed;
- CWA Section 402, NPDES Permit for hydrotesting discharges: To be prepared and submitted by contractors as needed;
- Community Noise Permit: Application for first construction segment granted August 26, 2009, permit for this segment to be obtained prior to construction;
- Community Noise Variance: Application for first construction segment granted April 13, 2010, permit for this segment to be submitted prior to construction;
- Agreement for storm drain connection to existing MS4 – construction, dewatering, and operation; ROW access to construct Project (use and occupancy): City working with Hawai‘i Department of Transportation (HDOT) to develop master agreement to be completed prior to construction in the highway ROW and airport property; and
- Waiver to construct in the Runway Protection Zone (RPZ): To be prepared and submitted to HDOT – Airports by the contractor within two years of intended construction of the airport portion of the Project; HDOT – Airports will submit to FAA.

### *County*

- Grading, grubbing, stockpiling, trenching: To be prepared and submitted by contractors;
- Final Design Phase one-time review of construction plans by various City agencies;
- Final Design Flood Hazard District Compliance: To be submitted by the City as required to comply with Flood Hazard District Regulation (Article 9. Special District Regulations, Section 21-9.10) before construction of segment begins; and
- Building Permit – for work outside of ROW: To be submitted by contractor by construction segment as designs become available.

### *Shoreline Setback*

Within SMA D: Ke‘ehi Lagoon Beach Park, there will be no construction within the 40-foot shoreline setback area; the Project is therefore in compliance with the Shoreline Setback Ordinance, Chapter 23, Revised Ordinances of Honolulu (ROH).

### *Environmental Review*

The following documents have been published in compliance with HRS Chapter 343 and/or NEPA:

- An EIS Preparation Notice (EISPN) was published in the *Environmental Notice* dated December 8, 2005 (RTD 2005);
- The Alternatives Analysis was completed in October 2006 (RTD 2006);
- A Notice of Intent (NOI) to prepare an EIS was published in the *Federal Register* in March 2007 (RTD 2007);
- The Draft EIS was published in the *Environmental Notice* dated November 23, 2008, and in the *Federal Register* dated November 21, 2008 (RTD 2008u);
- The notice of availability for the Final EIS was published in the *Environmental Notice* dated July 8, 2010 and in the *Federal Register* dated June 25, 2010 (RTD 2010);
- The Governor’s acceptance will conclude the HRS Chapter 343 process; and
- Following the 30-day publication notice of the Final EIS and acceptance of the Final EIS by the governor per the requirements of HRS Chapter 343, FTA will issue a Record of Decision (ROD) that will identify the selected alternative and conclude the Federal environmental review process.

### *Project Consistency with General and Development Plans*

The SMA D: Ke‘ehi Lagoon Beach Park portion of the Project is within the *Primary Urban Center (PUC) Development Plan* area, and it, as well as the entire Project, is consistent with applicable objectives and policies of the *City and County of Honolulu General Plan* (as amended) (DPP 2002a) and the *Primary Urban Center (PUC) Development Plan* (DPP 2004). The following sections describe the Project’s consistency with a variety of plans. Attachment 3

is Appendix J of the Final EIS and provides a detailed review of the Project's consistency with land use plans.

*City and County of Honolulu General Plan (as amended)*

As required by the City Charter, the *General Plan* for the City and County of Honolulu establishes long-range objectives that focus on the social, economic, environmental, and design objectives for the general welfare and prosperity of the residents of O'ahu. The *General Plan* also establishes broad policies designed to achieve these objectives. Please see Table 7 of Attachment 3 for details.

*Primary Urban Center Development Plan*

The *Primary Urban Center Development Plan* presents a vision and clear set of planning policies for the area extending from Kāhala to Pearl City across the valley and coastline plains that characterize the island's southern coastline. The Plan is designed as a general framework intended to support more detailed planning at the neighborhood level.

Protected views and vistas, including mauka and makai views and views of prominent landmarks in the study corridor, are identified in City development plans, including the *Primary Urban Center Development Plan*. The Project is consistent with land use objectives included in the plan. The City's general urban design principles protect public views based on the type of view and are applicable to both public streets and public and private structures. Some protected views and vistas will change as a result of the Project, including public views along streets and highways; mauka-makai view corridors; panoramic and significant landmark views from public places; views of natural features, heritage resources, and other landmarks; and view corridors between significant landmarks. The guideway and some stations will partially block mauka-makai public views from streets that intersect with the alignment.

The Project will introduce a new elevated linear visual feature to the corridor and, as a result, changes to some views will be unavoidable. Depending on the degree of view obstruction or blockage, some view changes will be significant. Viewers' responses to these changes will vary with their exposure and sensitivity and depend on the alignment orientation, guideway and station height, and height of surrounding trees and buildings. View changes will be less notable in wider vistas or panoramic views where project elements are smaller components of the larger landscape. Generally project elements will not be dominant features in these views.

Protected views and vistas identified in the *Primary Urban Center Development Plan* include Waimano Home Road/Kamehameha Highway Intersection; Ka'ahumanu Street/Kamehameha Highway Intersection; Kaonohi Street/Kamehameha Highway Intersection; Honomanu/Kamehameha Highway Intersection; Bougainville Drive-mauka/makai; Maluna-mauka/makai; Wanaka Street-mauka/makai; Ala Liliko'i Street-mauka/makai; Bishop Street-mauka/makai; Panoramic views-Punchbowl Lookout toward Diamond Head; Panoramic views-Kaka'ako Waterfront Park toward Punchbowl and the Ko'olau Mountain Range; Cooke Street-mauka/makai; Ward Avenue-mauka/makai; Panoramic views-Kewalo Basin toward the Ko'olau Mountain Range and Punchbowl; Panoramic views-Ala Moana Beach Park toward the Kooalu Mountain Range; Pi'ikoi Street-mauka/makai; Ke'eumoku Street-mauka/makai; Āina Moana Park (Magic Island)-mauka/makai; and Panoramic views-Ala Wai Canal Promenade toward the Ko'olau Mountain Range.

Please see Tables 12 and 13 of Attachment 3 for details.

### *Other Plans*

Additional land use plans and policies that promote transit-oriented development (TOD) patterns, pedestrian-friendly environments, and an inter-modal transportation network include the following:

- *Hawai‘i Statewide Transportation Plan* (HDOT 2002)
- *O‘ahu Regional Transportation Plan 2030* (Oahu MPO 2007)
- *Kalihi-Palama Action Plan* (DPP 2004c)

### *Summary of Relationship to Land Use Plans, Policies, and Controls*

Within the SMA D: Ke‘ehi Lagoon Beach Park area, the Project will link Honolulu with outlying developing areas and activity centers that have been designated for future residential and employment growth through the land use plans discussed above.

### *Section II.A References*

Attachment G: Preliminary Engineering Plan/Profile Sheets, SMA D: Ke‘ehi Lagoon Beach Park.

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke‘ehi Lagoon Beach Park.

DPP 2002a. City and County of Honolulu Department of Planning and Permitting. 2002. *City and County of Honolulu General Plan*.  
<http://honolulu.dpp.org/planning/OahuGenPlan.asp>.

DPP 2004. City and County of Honolulu Department of Planning and Permitting. June 2004. *Primary Urban Center Development Plan*. Adopted by Ordinance 04-14.  
<http://honolulu.dpp.org/planning/DevSustCommPlans.asp>.

DPP 2010. City and County of Honolulu, Department of Planning and Permitting, Interactive GIS Maps and Data. <http://gis.hicentral.com/>. Accessed between November 1, 2009 and January 19, 2010.

HDOT 2002. State of Hawai‘i Department of Transportation. September 2002. *Hawai‘i Statewide Transportation Plan*. <http://www6.hawaii.gov/dot/stp/hstp.htm>.

Oahu MPO 2007. O‘ahu Metropolitan Planning Organization. May 2007. *O‘ahu Regional Transportation Plan 2030*. <http://www.oahumpo.org/programs/ortp.html>.

RTD 2005. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 2005. *Honolulu High-Capacity Transit Corridor Project Environmental Impact Statement Preparation Notice*.

RTD 2006. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 1, 2006. *Honolulu High-Capacity Transit Corridor Project Alternatives Analysis Report*. <http://www.honolulustransit.org/library/>.

RTD 2008u. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. November 2008. *Honolulu High-Capacity Transit Corridor Project*

*Draft Environmental Impact Statement/Section 4(f) Evaluation.*  
<http://www.honolulustransit.org/library/>.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement.*

## B. Technical Characteristics

### 1. Use Characteristics

The 0.44 mile portion of the Project in the SMA D: Ke‘ehi Lagoon Beach Park area is part of the larger 20 mile fixed guideway transit system between East Kapolei to Ala Moana Shopping Center. The transit system will operate from roughly 4 a.m. to midnight on the fixed guideway in the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project. Along the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project, it is planned that trains will operate every three minutes in each direction during morning and afternoon peak periods (6 a.m. to 9 a.m. and 3 p.m. to 6 p.m., respectively), every six minutes during off-peak hours throughout much of the rest of the day, and every ten minutes during late night periods (8 p.m. to midnight). Section 2.5 of the Final EIS (Attachment 1) provides additional detail on Project operation.

### 2. Physical Characteristics

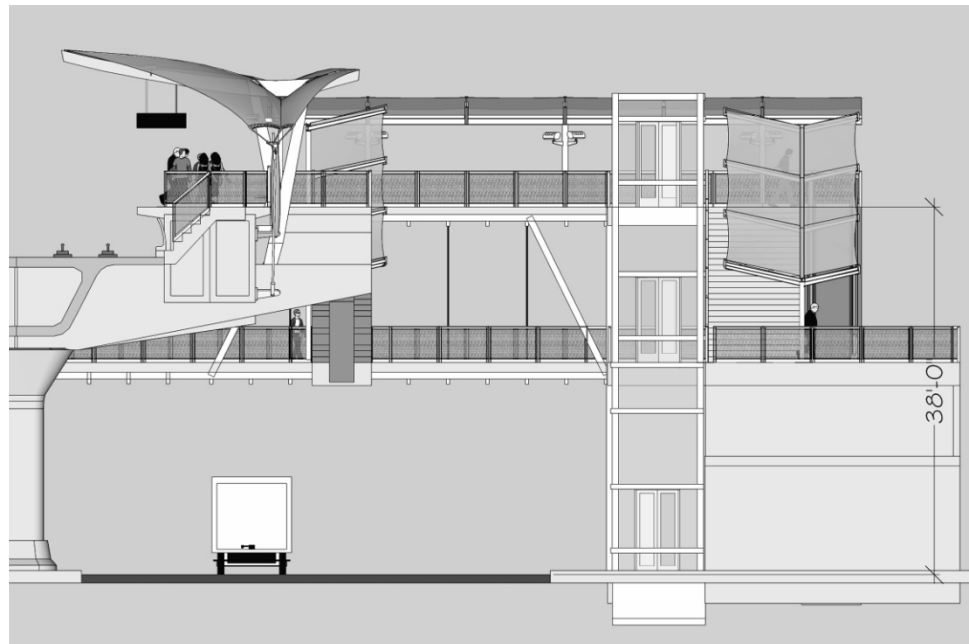
Preliminary plan and profile drawings of the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project are provided in Attachment G. These plans generally illustrate that the Project will consist of an elevated fixed guideway with two sets of tracks. The bottom of the guideway will be roughly 18 to 60 feet above the ground surface, supported by columns that are six to eight feet wide and located approximately every 120 feet. The guideway deck is about 30 feet wide, and incorporates an integrated parapet wall at the edge of the guideway that extends three feet above the top of the rail; the parapet wall will reduce noise exposure from transit vehicles to the surrounding area.

The Project also requires a TPSS in this area. A TPSS requires an approximately 3,200-square-foot area to access and maintain an approximately 40-foot-long, 16-foot-wide, and 12-foot-high painted steel box that houses transformers, rectifiers, batteries, and ventilation equipment. Figure 2 is a photograph of an example of a TPSS in another city. The TPSS will be connected to the existing power grid.



**Figure 2: Example of a Traction Power Substation (TPSS)**

The guideway that abuts, but is outside the SMA area will be the same as the guideway within the SMA area. The Lagoon Drive station will be a typical station with entrances on both the makai and mauka side of Waiwai Loop; a portion of the makai entrance will be located on TMK 1-1-016:014, which is being acquired in full and is adjacent to the SMA. Figure 3 illustrates the makai portion of a typical station in cross section. The Lagoon Drive station will have this general layout. The platform will be roughly 240 feet long and have a layout as illustrated on Drawing D-00 in Attachment H.



**Figure 3: Station Cross Section**

### 3. Construction Characteristics

Construction of the Project in SMA D: Ke‘ehi Lagoon Beach Park will occur primarily within the mauka portion of the park near Nimitz Highway. The Project will traverse the park near its mauka property line, generally following the alignment of the park’s access road until it leaves the park, where it will continue on an elevated guideway within the ROW of Nimitz Highway.

Construction work details will be developed during preliminary and final design. The following primary construction activities will take place:

- Column installation, including drilling a shaft, pouring the foundation, and forming and pouring the column. This will be accomplished using cranes, bucket-auger drill equipment, and concrete.
- Guideway installation, including erection of a “bridge” between each column using pre-cast concrete segments. This will be accomplished using a gantry crane.
- Track and system installation. This will be accomplished using specialized equipment to lay the track plus standard electrical equipment to install the control and power systems.

#### 4. Utility Requirements

The only utility connection within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project will be an electrical connection at TPSS #29.

Additional utility connections will be required at the Lagoon Drive station abutting the SMA D: Ke‘ehi Lagoon Beach Park area. These connections will include water, electrical, telecommunications, and cable.

#### 5. Liquid Waste Disposal

There are no bathrooms located within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project; therefore, no connection to the sewer system for liquid waste disposal will be made within this portion of the Project.

There Lagoon Drive Station abutting the SMA D: Ke‘ehi Lagoon Beach Park area will require connection to the municipal sewer system.

#### 6. Solid Waste Disposal

During the operational phase, the Project will not generate solid waste within the SMA D: Ke‘ehi Lagoon Beach Park area. There are no stations in this portion of the Project, and train windows will not open, so items cannot be thrown from the train as it passes along the SMA D: Ke‘ehi Lagoon Beach Park guideway. Because waste will not be generated within this portion of the Project, disposal is not anticipated to take place within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project.

Prior to construction the contractor will be required to prepare and implement the following plans to mitigate construction impacts related to wastes:

- Construction Safety and Security Plan
- Construction Health and Safety Plan
- Construction Contaminant Management Plan
- Construction Contingency Plan

- Solid Waste Management Plan

## 7. Access to Site

During operation there will be no access to the “site”, the guideway, within SMA D: Ke‘ehi Lagoon Beach Park area. All access will be at stations, the nearest stations are located at Lagoon Drive and Middle Street Transit Center.

During construction, access to the site will be from Nimitz Highway, Lagoon Drive, and Waiwai Loop.

Within the SMA D: Ke‘ehi Lagoon Beach Park area the Project will not affect access to any site. During construction, short-term access impacts within SMA D: Ke‘ehi Lagoon Beach Park may occur. Access to the park will be maintained during construction in accordance with Project maintenance of traffic and safety plans.

Moanalua Stream is in this portion of the Project, but access will be maintained to the extent possible during construction and there are multiple access points to the stream and shoreline, so overall access is not anticipated to be adversely affected.

## 8. Other Pertinent Information

A Final EIS compliant with NEPA and HRS Chapter 343 has been prepared for the Project. The information herein is drawn from information contained in the Final EIS, including supporting technical reports referenced within it that include detailed information concerning the Project-specific field studies performed to support the Final EIS.

### *Section II.B References*

Attachment G: Preliminary Engineering Plan/Profile Sheets, SMA D: Ke‘ehi Lagoon Beach Park.

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke‘ehi Lagoon Beach Park.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

## C. Economic and Social Characteristics

### 1. Estimated Cost and Time Phasing of Construction

#### *Estimated Costs*

The cost estimates presented are based on Preliminary Engineering and operations analysis. This financial analysis considers costs, resources, and funding strategies associated with public transit services provided by the City, and excludes financing costs. Unless otherwise stated, costs and revenues are presented in fiscal year (FY) 2009 dollars. For the City and County of Honolulu, the fiscal year begins on July 1 and ends on June 30 (e.g., FY2009 is from July 1, 2008, to June 30, 2009); all year references are to fiscal years.

It is estimated that the cost of construction for the entire 20 mile alignment, including construction within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project will be \$4,281 million in FY2009 dollars. The cost estimate excludes amounts already incurred during FY2007 and FY2008 and financing costs. Assuming the costs are generally equal throughout the length of the Project, the 2,340 linear foot (0.44 mile) portion of the Project within SMA D: Ke‘ehi Lagoon Beach Park would cost roughly \$95 million in FY2009 dollars.

### *Time Phasing of Construction*

It is estimated that construction within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project will occur between December 2012 (starting with utility relocation) to April 2018 (for the completion of power systems). However, because the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project is just a small part of the overall Project being built during this construction phase, there will be long periods during which no construction activities will be taking place within the SMA D: Ke‘ehi Lagoon Beach Park area.

## 2. Other Pertinent Information

A Final EIS compliant with NEPA and HRS Chapter 343 has been prepared for the Project. The information herein is drawn from information contained in the Final EIS, including supporting technical reports referenced within it that include detailed information concerning the Project-specific field studies performed to support the Final EIS.

### *Section II.C References*

- RTD 2009. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. August 2009. *Honolulu High-Capacity Transit Corridor Project Financial Plan*.
- RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

## D. Environmental Characteristics

### 1. Soils

In the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project the two soil types found along the Project alignment are ‘Ewa Silty Clay Loam (EmA) and Fill Land (FL). ‘Ewa Silty Clay Loam is typical of footslopes, has slopes of 0 to 2 percent, is well-drained, and transmits water at a moderately low to high rate. Fill Land is typical of flats, has slopes of 0 to 3 percent, is well-drained, and transmits water at a low to moderately low rate. The SMA D: Ke‘ehi Lagoon Beach Park portion of the Project will largely be constructed within the existing driveway and parking lot of Ke‘ehi Lagoon Beach Park.

## 2. Topography

In the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project the topography is generally flat with some sloped areas. No major grading activities will take place within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project; the existing grade of the roads and park area will remain unchanged.

## 3. Surface Runoff, Drainage, and Erosion Hazard

Runoff in the area of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area generally flows overland and into Moanalua Stream or Ke‘ehi Lagoon. The surrounding area is developed, and surface runoff travels to a drainage system. The City and County of Honolulu has an extensive storm drain system serving the surrounding community. The low slopes of the lands here, combined with the soil types and high level of vegetative cover in the area, contribute to a minimal erosion threat.

## 4. Federal FIRM Zone, Land Use Ordinance (LUO) Flood Hazard District, Other Geological Hazards

The Flood Insurance Rate Maps (FIRM) indicate that the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project will cross flood zones AE and AEF, and be in the vicinity of flood zone AO, all of which are associated with Moanalua Stream. The FIRM are being updated, and the new maps will go into effect in 2011. Figures D-FZ and D-FZ2 in Attachment H illustrate the location of the flood zones, current and 2011, respectively. Please see the flood zone definitions below. The updated FIRM indicate that the Project will still only cross flood zones AE and AEF, but will now be in the vicinity of a newly indicated flood zone VE, rather than AO in SMA D: Ke‘ehi Lagoon Beach Park. This floodplain serves largely to convey stormwater toward the ocean. The Project will not adversely impact or interfere with this floodplain or its functions.

*Flood Zone AE:* The flood insurance rate zones that correspond to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. In most instances, base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

*Flood Zone AEF:* The area within Zone AEF reserved to pass the base flood, with the “F” standing for floodway.

*Flood Zone VE:* The flood insurance rate zones that correspond to areas along the coasts subject to inundation by the 100-year floodplains with additional hazards due to storm-induced velocity wave action. In most instances, base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

In regard to the LUO Flood Hazard District compliance, the City and County of Honolulu will submit documents as required to comply with Flood Hazard District Regulation (Article 9. Special District Regulations, Section 21-9.10) before construction of a segment begins.

Floods, hurricanes, earthquakes, and tsunamis can all affect Hawai‘i. The International Building Code (IBC) and the American Association of State Highway and Transportation Officials

(AASHTO) provide minimum design criteria to address the potential for damages caused by these hazards. The Project will be designed to meet design standards related to natural hazards. Tsunamis are a concern for coastal portions of O‘ahu. The State Civil Defense publishes a series of maps showing areas that should be evacuated in the event of a tsunami warning. The Final EIS for the HHCTC Project indicated that the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project is not within a tsunami evacuation zone. Since the publication of the Final EIS, State Civil Defense has revised the maps. A portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park is now within the tsunami evacuation zone; the portion within the evacuation zone stretches from near the boundary of Ke‘ehi Lagoon Beach Park and the Pacific War Memorial to where the Project leaves the SMA. Because the only Project facility within the tsunami evacuation zone in the SMA D: Ke‘ehi Lagoon Beach Park area is the guideway and the guideway is elevated roughly 30 feet above ground level, tsunamis are not anticipated to affect the Project in this area.

## 5. Other Pertinent Information

A survey of street trees was conducted in the Project corridor to identify species, size, maturity, condition, and the Project’s probable effect on each tree; this information is presented in Section 4.15 of the Final EIS and in the *Honolulu High-Capacity Transit Corridor Project Street Trees Technical Report*. Trees were also listed as “Notable” or “Excellent”, if applicable. Notable trees are those deemed to be important to the urban landscape character, while Excellent trees are mature trees, without any plantings nearby, that have been allowed to expand to their fullest possible canopy and have not been pruned or affected in such a manner to take away from their appearance.

Coordination with the DPR Division of Urban Forestry and community groups was initiated at the start of the HRS Chapter 343/NEPA process to identify Exceptional Trees along the guideway alignment. Coordination is ongoing as the Project progresses. Results of the survey revealed that there is an Excellent Monkeypod tree located on Lagoon Drive in the vicinity of the SMA D: Ke‘ehi Lagoon Beach Park area. The tree has a 70-foot canopy and may require minimal pruning.

Planting of trees, and other mitigation, has been included in the design criteria and Special Provisions for the Project. Street tree pruning, removal, and planting will comply with City ordinances.

### *Section II.D References*

Attachment G: Preliminary Engineering Plan/Profile Sheets, SMA D: Ke‘ehi Lagoon Beach Park.

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke‘ehi Lagoon Beach Park (Figures D-FZ1 and D-FZ2).

Department of Emergency Management, 2010. New Tsunami Evacuation Zone Maps. Accessed at [http://www.honolulu.gov/dem/draft\\_tsunami\\_evacuation\\_zone\\_maps\\_.htm](http://www.honolulu.gov/dem/draft_tsunami_evacuation_zone_maps_.htm).

FEMA 2007. Federal Emergency management Agency (FEMA). Digital Flood Insurance Rate Maps; GIS “Flood” shapefile. <http://hawaii.gov/dbedt/gis/dfirm.htm>.

- RTD 2008l. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Street Trees Technical Report*.
- RTD 2008m. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Geology, Soils, Farmlands, and Natural Hazards Technical Report*.
- RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Multiple Sections, including Section 4.15 “Street Trees”.
- USDA 2007. U.S. Department of Agriculture Natural Resources Conservation Service, Hawai‘i. 2007 (original data from 1972). GIS “Soils” shapefile. <http://hawaii.gov/dbedt/gis/soils.htm>.

### **III. AFFECTED ENVIRONMENT**

This section discusses both the affected environment and the Project’s impacts to the various resources discussed.

#### **A. Brief Description of Subject Site in Relation to Surrounding Area and Description of Surrounding Area**

Airport runways, a maintenance facility, and a bus parking lot are located near the Lagoon Drive Station. There is also a dense warehouse and distribution district which includes Ualena Street and Waiwai Loop.

Within SMA D: Ke‘ehi Lagoon Beach Park the Project will traverse the park near its mauka property line, generally following the alignment of the park’s access road until the alignment diverges from the road near the tennis courts. From there the alignment remains near the mauka boundary of the park until it leaves the park, where the alignment continues within the SMA near and parallel Nimitz Highway. The Project is expected to have little impact on uses found in the surrounding area. The SMA boundary follows the mauka boundary line of the park’s parcel here.

##### *Section III.A References*

- Attachment G: Preliminary Engineering Plan/Profile Sheets, SMA D: Ke‘ehi Lagoon Beach Park.
- Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke‘ehi Lagoon Beach Park.
- RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report*.
- RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*.

## B. Project Site in Relation to Publicly Owned or Used Beaches, Parks, and Recreation Areas; Rare, Threatened, or Endangered Species and Their Habitats; Wildlife and Wildlife Preserves; Wetlands, Lagoons, Tidal Lands, and Submerged Lands; Fisheries and Fishing Grounds; Other Coastal/Natural Resources

### 1. Publicly Owned Beaches, Parks, and Recreation Areas

#### *Ke‘ehi Lagoon Beach Park*

Ke‘ehi Lagoon Beach Park is located within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project. The City Department of Parks and Recreation (DPR) operates and maintains the 70-acre park located at Lagoon Drive near Honolulu International Airport. It contains 12 tennis courts, a baseball diamond, walking trails, picnic areas, restrooms, and access to the water. The Project guideway will cross over approximately 1 acre of the park at its mauka edge and will have no direct effect on the tennis courts nearby. Approximately 10 guideway support columns will be placed in the park at 120-foot intervals in the vicinity of the access road. The guideway will cross above the park, just makai of the four lighted tennis courts near Nimitz Highway. Given their proximity to the guideway, these tennis courts will be closed during construction and reopened once this portion of the Project is completed. To mitigate temporary impacts to these lighted mauka tennis courts, the Project will coordinate with DPR during Final Design to provide lighting and associated resurfacing for four of the tennis courts near the park entrance prior to construction so that nighttime tennis court use will be maintained during construction and after Project completion. The lighting will be designed and constructed in accordance with regulatory requirements. During Final Design, the Project will coordinate with DPR to restore the area around the four mauka tennis courts to a condition that provides recreational benefit to park users including, but not limited to, restoring the four mauka tennis courts to their original condition for daytime use, planting grass, and installing landscaping and picnic tables.

During construction, there will be a temporary loss of approximately 10 percent of the parking spaces within the park. During construction, the Project will temporarily provide additional bus service from existing City transit centers or parking lots for major events. After construction, the parking area will be restored and there will be no net loss of parking.

In the park, the Project guideway will be approximately 30 feet wide, between 30 to 35 feet high, and will be elevated above approximately 1 acre of land within the park, primarily in the parking lot and the park access road. Within the park, the guideway will be constructed on approximately 10 columns that will be about 6 feet in diameter, which will result in the use of approximately 280 square feet of park land for the placement of columns. Because the Project will permanently incorporate the land for the columns into the transportation facility, this will be a direct use. Officials with the DPR, which operates and maintains Ke‘ehi Lagoon Beach Park, have been involved in the planning and design process within the boundaries of the park; coordination will continue during final design and construction.

Although there will be a direct use of the site, the City and County of Honolulu Department of Parks and Recreation (DPR), who operates and maintains the park, indicated in a letter dated September 25, 2008 (page 441-444 of Attachment 2), that the Project will have a *de minimis* impact on Ke‘ehi Lagoon Beach Park. For parks and recreational areas, *de minimis* is defined in 23 CFR 774.17 as an impact that would not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f). Therefore, the Project will not adversely affect Ke‘ehi Lagoon Beach Park.

#### *Pacific War Memorial Site (Disabled American Veterans Ke‘ehi Lagoon Memorial)*

Although loosely referred to as a park in various planning documents prepared by the Ke‘ehi Memorial Organization and Hawai‘i Disabled American Veterans (KMO-DAV), which manage the property for the Department of Land and Natural Resources, Parks Division (DLNR-Parks), the Pacific War Memorial Site property has not been designated for park or recreation uses by the governor of the State of Hawai‘i, nor is it listed on the State’s inventory of parks. In addition, the Project does not use portions of the property currently used or planned for memorial or recreational uses. Although the property could be viewed as a non-Section 4(f) property, the property is evaluated below as if it were a Section 4(f) property using a *de minimis* analysis.

The property comprises approximately 11 acres and is located between Ke‘ehi Lagoon Beach Park (‘Ewa boundary), Moanalua Stream (Koko Head boundary), Nimitz Highway (mauka boundary), and Ke‘ehi Lagoon (makai boundary).

Pursuant to Governor’s Executive Order (GEO) 3967, February 19, 2003, the property was “set aside for the following public purposes: FOR PACIFIC WAR MEMORIAL PROPERTY PURPOSES[.]” GEO 3967 cancelled GEOs 1534 and 1550 and transferred jurisdiction from the abolished Pacific War Memorial Commission of Hawai‘i to DLNR-Parks. DLNR-Parks oversees the KMO-DAV, which has been maintaining the property.

KMO-DAV manages the property for multiple uses, including memorial and recreational uses. Facilities on the property include a rental office, memorial obelisk, several community centers and meeting rooms, Disabled American Veterans Headquarters, a storage building, a rehabilitation facility, and two chapels. The property also has a basketball/volleyball court, a grass field with a baseball backstop, small pavilions, and a picnic area. It is fenced-in along its perimeter and has a lockable gate at its entrance for security at night. The property is closed between the hours of 10:00 p.m. and 6:00 a.m., except by permit.

In 2005, KMO-DAV prepared the *Ke‘ehi Lagoon Memorial Master Plan Update*. The Plan included four goals: (1) Maintain the park for use by veterans and their families, youth groups, and the community and complement Ke‘ehi Lagoon Beach Park; (2) maintain the integrity of the obelisk; (3) provide a rehabilitation center for disabled veterans; and (4) maintain the park property “as self-sustaining so that the public may not be asked constantly for support.”

All of the memorial and recreational features, attributes, and activities of the property are located makai of the Project. The Project will traverse the property near the mauka property line next to Nimitz Highway and grade-separated ramps for the H-1 Freeway. On the property, the Project guideway will be approximately 30 feet wide, between 30 and 35 feet high, and will be elevated above approximately 0.5 acre of land. The guideway will be constructed on approximately three columns that will be about 6 feet in diameter each, which will result in the use of approximately

150 square feet of the property. The area where the three guideway columns will be constructed is generally where the elevated guideway will pass over the property. This area is not used for memorial or recreational activities and is in an area where there are existing utility easements. The Project will not adversely affect the activities, features, or attributes of the memorial or recreational areas on this property.

Measures to minimize harm were considered in the Project's design in coordination with DLNR-Parks and KMO-DAV. To minimize Project use of the property, the Project's guideway was located as close to the mauka boundary as possible, consistent with operational and engineering constraints, and to be away from the memorial and recreational activities and facilities, such as the memorial obelisk, rehabilitation center, chapels, basketball/volleyball court, small pavilions, and picnic area. The guideway support columns have been designed to use as little of the property as practicable, be located in areas away from memorial and recreational activities, and accommodate access to the property by users. Based on the existing use of the property, the area where the three guideway columns will be constructed and where the elevated guideway will pass over the property is not used for memorials or recreational activities and is in an area where there are utility easements.

During final design, DTS will coordinate with KMO-DAV to replant and relocate any affected trees and to landscape the area near the columns. In addition, the fence will be replaced with "security fencing" on the mauka property line and the utility bridges, as feasible. The area where the columns will be constructed is not in an area that would change KMO-DAV's future plans for the property.

Access to the property will be maintained during construction in accordance with the Project's maintenance of traffic and safety plans. During construction, the work area generally will be limited to the area under the guideway. After construction, the property will be restored in consultation with KMO-DAV. DTS will coordinate with KMO-DAV to develop a landscaping and planting plan to replace vegetation and trees disturbed during construction. KMO-DAV agrees with the mitigation measures. Coordination with KMO-DAV will continue during final design and construction.

KMO-DAV officials who operate and maintain the property have been involved in the planning and design process for the portion of the Project within the boundaries of the property. Meetings have been held to ensure that the Project will result in a net benefit regarding access to this multi-use memorial and recreational property. With the measures to minimize harm and mitigation described above, DLNR/KMO-DAV has stated its concurrence that the Project's use of the property would have a *de minimis* impact on the property since it would not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f).

### *Section III.B.1 References*

RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Chapter 5 "Section 4(f) Evaluation".

## 2. Rare, Threatened, or Endangered Species and Their Habitats/Wildlife and Wildlife Preserves

No rare, threatened, or endangered species were observed in the SMA D: Ke‘ehi Lagoon Beach Park area and coordination with governmental agencies and the literature review indicate that there are no designated critical habitats or wildlife preserves within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project.

### *Fauna*

One protected “migratory” waterbird species was observed at Moanalua Stream and the drainage channel along Aolele Street during the project survey. The Migratory Bird Treaty Act (MBTA) protects this species, the Black-crowned night heron (*Nycticorax nycticorax hoactii*), although it is not listed as threatened or endangered. Local colonies are known to roost and nest in mangrove trees within Pearl Harbor and Ke‘ehi Lagoon; however, nests have not been observed in the mangroves along the east bank of Moanalua Stream.

Construction activities over Moanalua Stream may temporarily affect the availability of foraging sites for Black-crowned night herons. But over time, the waterbird will adjust to new structures built for the Project; they continue to occupy other wetland areas despite the construction of nearby buildings and overhead utilities and the construction or widening of adjacent roads and highways. The Project will not adversely impact this waterbird species in the SMA D: Ke‘ehi Lagoon Beach Park area.

### *Flora*

There are no rare, threatened, or endangered floral species in the SMA D: Ke‘ehi Lagoon Beach Park area. The only endangered plant known in the study corridor is ko‘oloa‘ula (*Abutilon menziesii*), which does not occur within the SMA D: Ke‘ehi Lagoon Beach Park area.

### *Section III.B.2 References*

RTD 2008j. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Ecosystems and Natural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 “Ecosystems”.

## 3. Wetlands, Lagoons, Tidal Lands, and Submerged Lands

In the SMA D: Ke‘ehi Lagoon Beach Park area, there are three “wetland” areas present within Aolele Ditch. Aolele Ditch is a man-made drainage feature constructed to drain stormwater to Ke‘ehi Lagoon from the northeastern portion of Honolulu International Airport and the adjacent light industrial area. The lower end of the ditch is tidal; however, the part of the ditch crossed by the guideway is an intermittently flowing (non-relatively permanent water), unlined, open ditch fed by several small drains from the light industrial area mauka. These drains provide sufficient freshwater to establish three small semi-permanent wet areas along the bottom of the ditch, one of which occurs under the planned guideway. These “wetland” features support a variety of

wetland plants and aquatic insects, such as dragonflies. The most downstream of the three wetlands connects to the tidal reach of Aolele Ditch and harbors top minnows and American crayfish, suggesting a permanent fresh or slightly brackish wetland that has developed on a thin layer of sediment over the concrete channel bed in this segment.

Although some shading impacts to these wetland areas are anticipated, these are minimal and there will be no adverse impacts on wetlands due to the Project in the SMA D: Ke‘ehi Lagoon Beach Park area.

### *Section III.B.3 References*

- RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.
- RTD 2009b. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Wetland and Waters of the U.S. Study*.
- RTD 2009h. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Ecosystem Function and Values of Wetland Waters of the U.S.*
- RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.14 “Water”.

## 4. Fisheries and Fishing Grounds

The Project in SMA D: Ke‘ehi Lagoon Beach Park will not impact the use or availability of coastal or stream-based fishing grounds used because of the distance between the Project and the coast in this area, and the linear nature of the streams that allow for access at multiple locations.

### *Section III.B.4 References*

- RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.
- RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 “Ecosystems”.

## 5. Other Coastal/Natural Resources

The Project will not adversely affect the opportunities for public enjoyment and use of any other coastal or natural resources within the SMA D: Ke‘ehi Lagoon Beach Park area.

### *Section III.B.5 References*

- RTD 2008d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report*.
- RTD 2008j. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Ecosystems and Natural Resources Technical Report*.
- RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.13 “Ecosystems”.

## C. Relation to Historic, Cultural, and Archaeological Resources

### 1. Archaeological

The archaeological study area was determined and three general categories of archaeological resources that could be affected were identified: burials, pre-contact archaeology, and post-contact archaeology. There is a low chance of encountering burials and post-contact archaeological resources, but a moderate chance of encountering pre-contact archaeological resources in the SMA D: Ke‘ehi Lagoon Beach Park area. Subsurface features and deposits, including iwi kupuna or Hawaiian burials, that have not been previously identified may be affected by the Project.

The City will develop an archaeological inventory survey (AIS) plan for the area of potential effects (APE) for each construction phase in accordance with 36 CFR 800.4, which allows for phased identification of archaeological resources to limit disturbance of potential resources during the investigation. The City will use Preliminary Engineering plans to focus the investigation in locations where there is the potential to affect archaeological resources by project construction. The AIS plans will follow the requirements of HAR Chapter 13-276. The City will conduct the archaeological fieldwork as presented in the AIS plan for each construction phase. The archaeological fieldwork will be completed in advance of the completion of final design so that measures to avoid and/or minimize adverse effects to the historic properties can be incorporated into the design. The City has consulted and continues to consult with the State Historic Preservation Division (SHPD) and O‘ahu Island Burial Council (OIBC) on burial issues. As required under HRS Chapter 6E, the City will ensure that City and State agencies that grant land use entitlements for the Project consult with SHPD prior to the issuance of permits in areas where the Project may affect a burial site. To ensure that OIBC maintains jurisdiction to determine whether preservation in place or relocation of previously identified native Hawaiian burial sites is warranted, the City will complete an AIS prior to construction in each construction phase. The City has committed to conducting archaeological investigations in locations where foundations will be placed. This will limit the area disturbed for archaeological investigations and construction to potentially less than 10 percent of what would be disturbed if archaeological investigations were conducted for 100 percent of the alignment. Mitigation will be conducted in advance of, and in some cases during, the construction phases in the Project’s different geographic areas.

If, in the unlikely event that subsurface cultural deposits or human skeletal remains are encountered during the course of project-related construction activities, all work in the immediate area should stop and the SHPO will be notified in accordance with Federal and State law. If archaeological resources are identified during construction, the City will minimize impacts.

### *Section III.C.1 References*

RTD 2008n. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Archaeological Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 “Archaeological, Cultural, and Historic Resources”.

## 2. Cultural

Archival and ethnographic research shows that most of the traditional cultural resources within the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project have been heavily damaged or destroyed through previous development. Short-term effects are related to site work or construction-related activity and usually only temporarily affect access or operation of identified resources. Potential long-term effects on cultural resources include permanent modification, such as displacement, damage, or destruction.

There are no cultural resources that have been previously identified as having potential long-term adverse effects in the SMA D: Ke‘ehi Lagoon Beach Park area. Any cultural resources that are uncovered will be assessed through collaborative consultation with appropriate cultural practitioners and/or community groups in accordance with the Programmatic Agreement (PA) developed pursuant to Section 106 of the National Historic Preservation Act (NHPA).

### *Section III.C.2 References*

RTD 2008p. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Cultural Resources Technical Report*.

RTD 2009e. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Cultural Resources Technical Report*.

RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 “Archaeological, Cultural, and Historic Resources”.

## 3. Historical

Through agency coordination, the Project’s Area of Potential Effects (APE) was defined generally as one parcel deep from the fixed guideway alignment in the SMA D: Ke‘ehi Lagoon

Beach Park portion of the Project. The APE also includes parcels immediately adjacent to all facilities associated with the fixed guideway system, including TPSS.

#### *Historical Resources Within SMA D: Ke‘ehi Lagoon Beach Park*

There are no historical resources within the Project APE in the SMA D: Ke‘ehi Lagoon Beach Park area.

#### *Historical Resources in the Vicinity of SMA D: Ke‘ehi Lagoon Beach Park*

The Hawai‘i Employers Council (TMK 1-1-016:004) is located mauka of and directly adjacent to Ke‘ehi Lagoon Beach Park. Figure D-HR in Attachment H illustrates the location of this historic resource. The Hawai‘i Employers Council was built in 1961. The council was founded in 1943 in response to the National Labor Relations Act of 1935, which guaranteed the rights of workers to organize. By February 1962, when the council moved to its new offices, it had more than 300 members. This resource is eligible for nomination to the NRHP under Criterion A for its association with the history of labor relations in Hawai‘i and under Criterion C for its association with the architectural firm of Wimberly and Cook. In addition, its successor firm, Wimberly, Allison, Tong & Goo, had a major influence on Hawaiian architecture in this period. The Project entails construction of an elevated guideway along the mauka edge of Ke‘ehi Lagoon Beach Park and within the neighboring TMK 1-1-016:005 that will skirt the corner of the parcel the building is on, and be approximately 40 feet from the corner of the building and about 40 feet high. The primary views of the building are from the front of the building (on Waiwai Loop) at ground level. The guideway will be behind and beside the building, and therefore, will not eliminate primary views of the historic building. There will be no direct use of the historic building or its parcel and the Project will not substantially impair the visual and aesthetic qualities of the building that contribute to the resource’s NHRP eligibility. Nevertheless, it was determined that the Project will cause effects to the integrity of the setting, feeling, and association of this resource; therefore, there will be an adverse effect on this resource.

A PA was developed in consultation among the Section 106 consulting parties (identified in the Introduction – Section I.4). The Section 106 process identified historic properties potentially affected by the Project, assessed effects, and sought ways to avoid, minimize, or mitigate any adverse effects on any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. The PA records the terms and conditions agreed upon to resolve potential adverse effects and is attached to the Final EIS (Attachment 1) in Appendix H. The PA incorporated comments from Section 106 consulting parties listed in the Introduction to this permit application in Section I.4. FTA, SHPO, and the Advisory Council on Historic Preservation, in coordination with the invited signatories, will finalize the PA prior to the Record of Decision (ROD). FTA will distribute an executed PA to the Section 106 consulting parties and invite them to participate as concurring parties to the PA.

#### *Section III.C.3 References*

Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke‘ehi Lagoon Beach Park (Figure D-HR)

- RTD 2008o. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Historic Resources Technical Report*.
- RTD 2009c. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Historic Resources Technical Report*.
- RTD 2009d. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Historic Effects Report*.
- RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.16 “Archaeological, Cultural, and Historic Resources”.
- SHPD 2010. State of Hawai‘i Department of Land and Natural Resources State Historic Preservation Division. 2010. *Honolulu High-Capacity Transit Corridor Project Programmatic Agreement*.

#### D. Coastal Views from Surrounding Public Viewpoints and from the Nearest Coastal Highway Across the Site to the Ocean or Coastal Landform

The Project in the SMA D: Ke‘ehi Lagoon Beach Park area will require the installation of the guideway and columns along the mauka perimeter of the park, as well as lighting at currently unlit tennis courts. Project elements will fit with the bulk and scale of other structures near the airport, which is surrounded by other transportation elements and industrial buildings. The open special quality of the park will be altered by the guideway and columns; this change will be noticeable but not substantial to park users because the alignment will be along the periphery of the park and closely follow Nimitz Highway and the H-1 Freeway. Views of Honolulu Harbor and the park are already obstructed by the interchange and will not be substantially affected by the Project. The guideway and stations will not be dominant elements in views of regional scenic features.

The nearest coastal highway is Nimitz Highway. The view from this highway toward the coast is currently obscured by buildings along the highway and surrounding industrial area, highway elements, and trees; therefore the Project will not substantially interfere with or detract from the line of sight toward the sea.

##### *Section III.D References*

- RTD 2008e. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Visual and Aesthetic Resources Technical Report*.
- RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.8 “Visual and Aesthetic Conditions”.

E. Quality of Receiving Waters and Ground Water (Including Potable Water) Resources. Describe Effects on the Groundwater Recharge Cycle within the Groundwater Control Area, Show Existing and Proposed Well Locations with Pumping Estimates. Describe Effects on Receiving Waters – Streams and Ocean Waters

*Streams*

The Project will directly impact Moanalua Stream in the SMA D: Ke‘ehi Lagoon Beach Park area; Moanalua Stream is on the Hawai‘i State Department of Health’s (HDOH) 303(d) List of Impaired Waters (HDOH 2008). Moanalua Stream, a channelized stream with associated tidal mangrove wetlands, is connected to Ke‘ehi Lagoon, an embayment of the Pacific Ocean. The stream is subject to tidal flow and the estuary is within the OHWM. Various fish species were noted to inhabit the stream.

Because of the 300-foot width of the channel where the Project crosses Moanalua Stream, two guideway columns (approximately 36 square feet each on 10-foot drilled shaft foundations) will need to be constructed in the estuary; this location is makai of the H-1 Freeway ramp to Nimitz Highway but mauka of a utility/pedestrian bridge crossing the channel. In this area, there exist multiple bridge crossings, including Kamehameha Highway, the H-1 Freeway, Nimitz Highway ramps, and two utility/pedestrian bridges makai of the guideway crossing. The guideway columns will be aligned with the upstream viaduct piers, as feasible, to minimize obstruction of stream flow. Placement of the piers is not expected to have any consequences on the Moanalua Stream estuarine environment or its fauna beyond a loss of 175 square feet, or 0.004 acre, of sandy mud bottom.

Stormwater discharged from the guideway will be managed using permanent stormwater best management practices (BMPs). Permanent BMPs will include discharging stormwater from the guideway to the landscaped ground for infiltration and potentially the use of downspout filters.

*Marine Waters*

In the SMA D: Ke‘ehi Lagoon Beach Park area there is Ke‘ehi Lagoon, a Class A Marine Embayment. Ke‘ehi Lagoon has associated inlets of point-source discharges and streams, and is on HDOH’s 303(d) List of Impaired Waters (HDOH 2008). The Project will not discharge stormwater directly into the lagoon and is not anticipated to adversely affect Ke‘ehi Lagoon.

*Flood Zones*

The Project will cross one developed floodplain associated with Moanalua Stream in the SMA D: Ke‘ehi Lagoon Beach Park area. Figures D-FZ and D-FZ2 in Attachment H illustrate the location of these flood zones. The flood zones traversed by the guideway are AEF and AE; this floodplain serves largely to convey stormwater toward the ocean. The Project will not cause significant floodplain encroachment as defined by USDOT Order 5650.2. The Project will not have a substantial effect on the groundwater recharge cycle, nor will it have any detrimental effects on the quality of surrounding waters. The guideway in SMA D: Ke‘ehi Lagoon Beach

Park will be elevated above the floodplain by piers and there will be no impact to water levels in this floodplain. Any impacts to floodplains caused by the Project will be mitigated through design to comply with current flood zone regulations. There will be no notable adverse impacts on natural and beneficial floodplain values. There will be no impact to water levels in flood zones.

### *Groundwater*

In the SMA D: Ke‘ehi Lagoon Beach Park area, the Project overlies the Honolulu Aquifer Sector of the Southern O‘ahu Basal Aquifer (SOBA). The Project meets the coordination requirements of Section 1424(e) of the Safe Drinking Water Act, in accordance with the 1984 Sole Source Aquifer Memorandum of Understanding between the EPA and the USDOT. A Water Quality Impact Assessment was reviewed by EPA, and EPA concurred that contamination of the SOBA will not occur (letter dated March 27, 2009, located on page 433 of Attachment 2). The construction methods and BMPs employed and the presence of an upward hydraulic gradient in the area will protect the groundwater and there will be no adverse effect to groundwater quality.

Caprock overlies the SOBA and impedes the escape of groundwater from this basaltic aquifer. Water in the caprock is brackish and not potable, though the water in the upper portion of the caprock has a low enough salinity to be used for irrigation. Beneath the caprock and underlying all of southern O‘ahu, the SOBA is heavily used because it contains large supplies of fresh water. The boundary between non-drinking water aquifers and underground sources of drinking water is referred to as the Underground Injection Control (UIC) line by the State Department of Health (HDOH); in the SMA D: Ke‘ehi Lagoon Beach Park area, the Project will generally follow the edge of the UIC line. The Project alignment will be downgradient of active drinking water wells on the island and the overall groundwater flow direction is seaward. HDOH’s Safe Drinking Water Branch (SDWB) publishes groundwater contamination maps, and included in that report are the locations of water wells. Most of these water wells are located mauka of the alignment, and all wells makai of the alignment are either inactive or used for irrigation. Potential contamination from the guideway will not migrate to drinking water wells. These wells are drawing from a depth of several hundreds of feet below ground surface, and the shafts will not penetrate anywhere near those depths.

Subsurface conditions in the SMA D: Ke‘ehi Lagoon Beach Park area generally consists of artificial fills approximately 10 feet thick, placed over thick stratum of recent alluvium over lagoonal and estuarine deposits extending to depths of 80 to over 150 feet below ground surface (bgs). Sands, coral detritus, and silty clays underlie the soft soils and extend to the approximately 200-foot maximum depth explored. The existing ground surface elevation ranges from +5 to +15 feet above mean sea level (MSL). Local areas may have been built up by the addition of fill to maintain grades above tidal influences from nearby waters. Brackish groundwater due to the nearby ocean in this area is expected within 10 feet of the ground surface.

Two general foundation construction methods will be used to support the aerial guideway structure: single drilled shafts that will be integral with columns, and driven piles that will require pile caps for connection to columns. Drilled shafts will be used for most of the alignment because they can be installed faster, require a smaller area of soil disturbance, and are quieter to install than driven piles. At this time, all shafts within the SMA D: Ke‘ehi Lagoon Beach Park

area are planned to be installed using the drilled shaft method. The drilled shafts will be 6 feet in diameter, and the depth of the shaft will depend on local soil conditions. Foundation depths are expected to range from about 55 to 250 feet. In the SMA D: Ke‘ehi Lagoon Beach Park area foundations will not penetrate into the basalt.

Groundwater in the shafts or excavations for pile caps could be contaminated with petroleum products or other chemicals. These contaminants will be removed from water pumped from the excavations in accordance with standards established by the HDOH. Petroleum products might require the use of oil/water separators, strippers, or other remediation techniques. The water removed from the excavations or shafts must either be returned to the groundwater system or added to the stormwater drainage system. Any water discharged into the drainage system and surface water bodies will require an NPDES Dewatering Permit. This discharge must meet water quality standards. A monitoring program will ensure compliance with water quality standards. An NPDES Construction Stormwater Permit has been obtained by the Project, and will ensure proper handling of hazardous materials and other pollutants.

Construction of each pier is expected to take less than one week, and the shafts will only be open long enough to install a rebar cage in the completed shaft and fill it with concrete. Once the shaft is filled with concrete, it is unlikely that an open pathway that could allow surficial contaminants to travel down the side of the shaft will remain, because the flowable concrete used for shaft construction will seal against the ground.

Casing will be required at drilled shaft excavations that extend through soft or loose surficial deposits. Where these unstable deposits extend to considerable depth, the casing may be incorporated into the shaft’s structural design. Additionally, where drilled shaft completion depths extend below static water levels, the fluid levels within the excavation must be maintained until concreting is complete for excavation stability. The counterbalancing fluid may simply be water and naturally derived cuttings, or specially formulated drilling mud. In areas of loose sands or soft clays, casings or drilling fluids such as environmentally inert polymer slurry may be necessary to maintain the integrity of the drilled hole during construction. In either case, this fluid will be managed in accordance with BMPs to protect the environment from uncontrolled releases.

Construction-derived wastes will be managed in accordance with prevailing regulations. Uncontrolled releases will not be allowed. Slurry will be recycled through a de-sander and reused. Water will be collected and treated as needed prior to disposal or reuse. No contaminated soils will be disposed of in the Sole Source Aquifer area. No long-term impacts to the SOBA are anticipated.

The Project will slightly increase impermeable surfaces in the SMA D: Ke‘ehi Lagoon Beach Park area. By installing permanent BMPs, most of the runoff will be directed back into the ground to recharge the groundwater system, resulting in little change in the amount of infiltration. In this way, although runoff from surrounding surfaces may enter the groundwater system along a different path than previously, the groundwater recharge needed to sustain the aquifer system will continue. Therefore, the Project will not result in any long-term changes to groundwater levels. Runoff from the guideway itself is expected to be relatively free of pollutants and will not threaten groundwater quality.

### *Section III.E References*

- Attachment H: Preliminary Engineering Project Drawings, SMA D: Ke‘ehi Lagoon Beach Park.
- HDOH 2008. State of Hawai‘i Department of Health. 2008. *2006 State of Hawai‘i water quality monitoring and assessment report: Integrated report to the U.S. Environmental Protection Agency and the U.S. Congress pursuant to Sections 303(d) and 305(b), Clean Water Act (PL 97-117)*.
- RTD 2008k. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2008. *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report*.
- RTD 2009b. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2009. *Honolulu High-Capacity Transit Corridor Project Wetland and Waters of the U.S. Study*.
- RTD 2010. City and County of Honolulu Department of Transportation Services, Rapid Transit Division. 2010. *Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement*. Section 4.14 “Water”.

## F. Include Suitable and Adequate Location and Site Maps

Please see Attachments G and H.

## G. Other Pertinent Information

A Final EIS compliant with NEPA and HRS Chapter 343 has been prepared for the Project. The information herein is drawn from the Final EIS, including supporting technical reports referenced within it that include detailed information concerning the detailed Project-specific field studies performed to support the Final EIS.

## IV. PROJECT IMPACTS

This section discusses impacts within the SMA D: Ke‘ehi Lagoon Beach Park area specifically. The Introduction portion of the SMA application provides a Project-wide discussion of impacts related to CZM objectives and SMA guidelines

### A. Coastal Zone Management Objectives

The text in italics below is copied directly from HRS Section 205A-2, *Coastal Zone Management Program; Objectives and Policies*.

#### *1. Recreational Resources*

*A. Provide coastal recreational opportunities accessible to the public.*

Section 4.5 of the Final EIS (Attachment 1) describes the Project’s effect on parks and recreation areas. Please see Section III.B.1 for details regarding publicly owned beaches, parks, and recreation areas, and Section III.B.5 for details regarding other coastal/natural resources in the SMA D: Ke‘ehi Lagoon Park area.

While the portion of the Project in SMA D: Ke‘ehi Lagoon Beach Park does not provide any new coastal recreational opportunities for the public, it will not adversely affect the existing coastal recreational resources or their uses by the public. Ke‘ehi Lagoon Beach Park and the Pacific War Memorial Site will remain accessible to the public and offer the same uses they currently do. Overall the Project will improve the availability of access to existing and future parks and recreational facilities along the alignment.

## 2. *Historic Resources*

- A. *Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*

Section 4.16 of the Final EIS (Attachment 1) discusses the Project’s effect on archaeological, cultural, and historic resources. Please see Section III.C for details regarding historic resources in the SMA D: Ke‘ehi Lagoon Beach Park area.

There is a low chance of encountering burials and post-contact archaeological resources, but a moderate chance of encountering pre-contact archaeological resources in the SMA D: Ke‘ehi Lagoon Beach Park area. There are no historic resources within the SMA D: Ke‘ehi Lagoon Beach Park area.

Outside of the SMA D: Ke‘ehi Lagoon Beach Park area, but in the general vicinity, the Project will have an adverse impact on the Hawai‘i Employers Council building.

Because the Project will result in adverse effects on some resources and avoidance is not possible, a PA was prepared in consultation with the State Historic Preservation Officer (SHPO) and the Section 106 consulting parties to outline measures to minimize and mitigate the Project’s effects on these resources.

## 3. *Scenic and Open Space Resources*

- A. *Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.*

Section 4.8 of the Final EIS (Attachment 1) identifies the Project’s impacts and mitigation measures related to protected views. Scenic impacts associated with the Project in the SMA D: Ke‘ehi Lagoon Beach Park area include a potential change in the setting of a historic resource (The Hawai‘i Employers Council) and alteration of ‘Ewa-Koko Head and mauka-makai views. The guideway will largely be constructed along the park’s mauka perimeter. Views of Honolulu Harbor and the park are already obstructed by the Nimitz Highway and H-1 Freeway interchange.

## 4. *Coastal Ecosystems*

- A. *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*

Section 4.14 of the Final EIS (Attachment 1) discusses the Project’s effect on water quality, which could impact coastal ecosystems. Please see Section III.B.5 for details regarding coastal/natural resources in the SMA D: Ke‘ehi Lagoon Beach Park area.

The Project will not have an adverse impact on coastal ecosystems. There will be no direct drainage into Ke‘ehi Lagoon in the SMA D: Ke‘ehi Lagoon Beach Park portion of the Project, due to the distance between the alignment and the coast. The Project is being designed so as to ensure minimal environmental impacts throughout the alignment through the use of construction and permanent BMPs. Stormwater runoff will be filtered through landscaped areas and sedimentation collars where possible. Stormwater will be filtered through downspout filters or specially designed bioinfiltration units near water bodies on the HDOH 303(d) list of water quality limited segments, such as Moanalua Stream. The BMPs will promote a natural, low-maintenance, sustainable approach to managing and increasing stormwater quality. At a minimum, all stormwater downspouts from the guideway will include erosion control BMPs and energy dissipation devices to prevent any scour of landscaped medians.

#### *5. Economic Uses*

- A. Provide public or private facilities and improvements important to the State's economy in suitable locations.*

Section 4.3 of the Final EIS (Attachment 1) discusses the Project’s effect on economic activity. To accomplish the economic development objectives for O‘ahu’s urban corridor, suitable infrastructure must be developed. The Project will result in improved infrastructure and long-term benefits to residents, businesses, and commuters. The portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area will not adversely affect coastal-dependent economic activities.

#### *6. Coastal Hazards*

- A. Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.*

A portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area is located in a tsunami evacuation zone based on new maps issued by State Civil Defense in 2010. The only Project facility within the tsunami evacuation zone in the SMA D: Ke‘ehi Lagoon Beach Park area is the guideway and the guideway is elevated roughly 30 feet above ground level; therefore, tsunamis are not anticipated to affect the Project in this area. The Project is being designed to applicable standards and specifications regarding storm weather and associated risks. Erosion is not anticipated to be an issue in this area, due to the slight slopes, as well as the soil types and level of vegetative cover. Sea level rise may have an impact on the Project, due to its fairly low elevation, but that impact is not expected to occur until sometime in the future. According to Project engineers’ estimates, based on a general analysis of the topography and contours in the area, sea level would have to rise more than 3 feet to have an impact on the portion of the Project in the SMA D: Ke‘ehi Lagoon Beach Park area. Subsidence is not expected to be an issue in the area, according to initial geological findings; Project foundations, the columns on which the guideway sits, will be installed to a depth sufficient to prevent subsidence. The Project is not anticipated to increase pollution.

#### *7. Managing Development*

- A. Improve the development review process, communication, and public participation in the management of coastal resources and hazards.*

The Project will require State and City permits and approvals that include provisions for public participation and ensure protection of coastal resources, as described in Section 4.21 of the Final

EIS (Attachment 1). The Project will also provide necessary infrastructure to accommodate existing and planned future travel demand. The Project is consistent with the transportation and land use elements of adopted State and Local government plans.

#### 8. *Public Participation*

- A. *Stimulate public awareness, education, and participation in coastal management.*

Chapter 8 of the Final EIS (Attachment 1) discusses the Project's public outreach activities. Agencies, non-governmental groups, and the public have been engaged throughout the Project's planning process, as required by Federal and State law. Various public outreach activities were held near the SMA D: Ke'ehi Lagoon Beach Park area, as discussed above in Section I.F.6..

#### 9. *Beach Protection*

- A. *Protect beaches for public use and recreation.*

Ke'ehi Lagoon Beach Park is located within SMA D. The Project will have a direct impact on the park; however, the impact is to the four tennis courts in the mauka portion of the park and there will be no impact to the makai beach area of the park. During Final Design, the Project will coordinate with DPR to restore the area around the four mauka tennis courts to one that provides recreational benefit to park users including, but not limited to, restoring the area around the four mauka tennis courts to their original condition for daytime use, planting grass, and installing landscaping and picnic tables. The Project will not cause long-term adverse effects to the park's use by the public because the Project will provide park improvements to off-set its impacts. The Project will not affect coastal erosion in this area.

#### 10. *Marine Resources*

- A. *Promote the protection, use, and development of marine and coastal resources to assure their sustainability.*

The portion of the Project within the SMA D: Ke'ehi Lagoon Beach Park area is not adjacent to or abutting a shoreline and will not affect marine resources.

## B. SMA Guidelines

The text in italics below is copied directly from ROH Chapter 25-3.2, *Review Guidelines*.

The following guidelines shall be used by the council or its designated agency for the review of developments proposed in the SMA.

- a) *All development in the special management area shall be subject to reasonable terms and conditions set by the council to ensure that:*
  - 1) *Adequate public access, by dedication or other means, to and along the publicly owned or used beaches, recreation areas and natural reserves is provided to the extent consistent with sound conservation principles;*

Please see Section III.B.1 for details regarding publicly owned beaches, parks, and recreation areas in the SMA D: Ke'ehi Lagoon Beach Park area.

The portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area will not adversely affect access to and along publicly owned beaches, recreation areas, and natural reserves. Temporary modifications to access public recreation areas will be required for public safety during construction; however, public access will be maintained. Ke‘ehi Lagoon Beach Park, the Pacific War Memorial Site, and Moanalua Stream will experience direct impacts due to the Project, but these effects will not be adverse and all three resources will remain open and accessible during Project construction and operation. Once constructed, the Project will increase mobility and improve options to access public recreation areas, such as public beaches and parks.

- 2) *Adequate and properly located public recreation areas and wildlife preserves are reserved;*

The portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area will not adversely affect or in any way diminish the quality of public recreation areas or wildlife preserves; there are no wildlife preserves in the SMA D: Ke‘ehi Lagoon Beach Park area. Ke‘ehi Lagoon Beach Park and the Pacific War Memorial Site will retain their functions, and although they will be directly impacted, neither park will not be adversely affected. Roughly 1.5 acres of land, in total, will be acquired for the Project, but this impact will be mitigated through coordination with DPR and DLNR/KMO-DAV as described in Section III.B.1.

- 3) *Provisions are made for solid and liquid waste treatment, disposition and management which will minimize adverse effects upon special management area resources; and*

For the portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area DTS will ensure that proper containment, treatment, and disposal methods for solid and liquid wastes are followed during construction and operation of the Project in accordance with Federal, State, and Local regulations as discussed in the Final EIS (Attachment 1) Section 4.12 Hazardous Waste and Materials. There will be no adverse impacts to SMA resources.

- 4) *Alterations to existing land forms and vegetation; except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, wind damage, wave damage, storm surge, landslides, erosion, sea level rise, siltation or failure in the event of earthquake.*

The portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area will not have an adverse effect on water resources. During construction (as describe in the Final EIS (Attachment 1) Section 4.18.10 Construction Phase Effects Water Resources), temporary Best Management Practices (BMPs) for the management of stormwater will be designed, installed, and maintained to reduce the potential for impacts to water resources from erosion and other construction activities. Permanent BMPs also will be designed and installed as discussed in Section III.E; stormwater from the guideway will be discharged to landscaped areas for infiltration and discharged to specifically designed bioinfiltration units near Moanalua Stream, a HODH 303(d) listed water body. The Project will avoid or minimize impacts on recreational and scenic amenities where reasonable. The Project will not impact floodways, cause wind damage, wave damage, storm surges, landslides, erosion of coastal resources, sea level rise, or siltation. The Project is designed to meet seismic standards and other natural hazards as applicable.

- b) *No development shall be approved unless the council has first found that:*

- 1) *The development will not have any significant adverse environmental or ecological effect except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or compelling public interest. Such adverse effect shall include but not be limited to the potential cumulative impact of individual developments, each one of which taken in itself might not have a significant adverse effect and the elimination of planning options;*

In the SMA D: Ke‘ehi Lagoon Beach Park area, there will be no significant adverse environmental or ecological impacts due to the Project as discussed in the Final EIS (Attachment 1) Section 4.13.3 Ecosystems Environmental Consequences and Mitigation. The Project design includes measures to avoid and minimize impacts to the environment, and there will be no significant cumulative impact from the Project within the SMA. The Project’s impacts are outweighed by the Project’s benefit of providing additional mobility in the study corridor, as well as improving corridor travel reliability, access, and transportation equity.

- 2) *The development is consistent with the objectives and policies set forth in Section 25-3.1 and area guidelines contained in HRS Section 205A-26;*

As discussed above, the portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area is consistent with the objectives and policies set forth for Special Management Areas.

- 3) *The development is consistent with the county general plan, development plans and zoning. Such a finding of consistency does not preclude concurrent processing where a development plan amendment or zone change may also be required;*

The portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area is consistent with all plans and zoning, as discussed above in Section II.A.4. and Attachment 3.

- 4) *That the development has been adequately planned to minimize the risk from coastal hazards such as tsunamis, hurricanes, wind, storm waves, flooding, erosion, and sea level rise; and*

A portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area is located in the tsunami evacuation zone, based on revised maps published by State Civil Defense in 2010. The only Project facility within the tsunami evacuation zone in the SMA D: Ke‘ehi Lagoon Beach Park area is the guideway and the guideway is elevated roughly 30 feet above ground level; the Project has been adequately planned and designed to the extent practical to minimize the risk from coastal hazards, including tsunamis. The Project design meets applicable standards and specifications regarding storm weather and construction in floodplains. Temporary and permanent BMPs will minimize the risk to coastal areas from erosion. According to Project engineers’ estimates, based on a general analysis of the topography and contours in the area, sea level would have to rise more than 3 feet to have an impact on the portion of the Project in the SMA D: Ke‘ehi Lagoon Beach Park area.

- 5) *That the development does not impede public access to the shoreline or beach area.*

The portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area will not impede public access to the shoreline or beach area. Short-term changes to Ke‘ehi Lagoon Beach Park may arise during construction, but the Project will not impede public access to the shoreline or beach area. Conversely, the Project will increase mobility and thereby access to such areas outside of the SMA D: Ke‘ehi Lagoon Beach Park area.

c) *The council shall seek to minimize, where reasonable:*

1) *Dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough or lagoon;*

Two guideway support columns will be constructed in Moanalua Stream and will impact approximately 0.004 acre below the stream's ordinary high water mark. To avoid these impacts, different bridge types would be needed to clear span the 300-foot-wide stream. This stream is wider than the practical length limit for precast concrete girders (150 feet). Long spans to cross this stream could add \$5 million to total project costs. In addition there are multiple bridge crossings of Moanalua Stream in this area with support columns in the water, including Kamehameha Highway, the H-1 Freeway, and Nimitz Highway. The guideway columns will be aligned with the upstream viaduct piers, as feasible, to minimize obstruction of stream flow. This area is tidal and near the stream mouth at Ke'ehi Lagoon. Placement of the piers is not expected to have any consequences on the Moanalua estuarine environment or its fauna.

2) *Any development which would reduce the size of any beach or other area usable for public recreation;*

In the SMA D: Ke'ehi Lagoon Beach Park area, the Project will not reduce or impact any beaches and will not significantly reduce areas usable for public recreation. The Project will coordinate with DPR during Final Design to provide lighting and associated resurfacing for four of the tennis courts near the park entrance prior to construction so that nighttime tennis court use will be maintained during construction and after project completion. The Project will coordinate with KMO-DAV to ensure that it results in a net benefit for access to the memorial and recreational area. Therefore, there will be no permanent loss to public recreation facilities within the SMA area.

3) *Any development which would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the special management area and the mean high tide line where there is no beach;*

The portion of the Project within the SMA D: Ke'ehi Lagoon Beach Park area will not result in any reductions or restrictions on public access to tidal and submerged lands, beaches, portions of rivers and streams within the SMA, and the mean high tide line where there is no beach. Moanalua Stream will be directly impacted by the Project, but those impacts are not expected to be adverse; access to the stream will be maintained. Public access to the shoreline in this area will not be reduced or restricted by the Project, due to the distance between the fixed guideway and the shoreline.

4) *Any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast; and*

The portion of the Project within the SMA D: Ke'ehi Lagoon Beach Park area will require the installation of the guideway and columns along the park's existing driveway and parking lot. Views of Honolulu Harbor and the park are already obstructed by the Nimitz Highway and H-1 Freeway interchange. Overall, the Project has minimized its visual intrusion to the extent possible.

An evaluation of the SMA Coastal Views is provided in Section 4.8 of the Final EIS (Attachment 1; page 4-103). This section states "The portion of the guideway that will run along

the makai side of Nimitz Highway and the mauka side of the SMA boundary is between Lagoon Drive near Honolulu International Airport and Kalihi. In this area, the alignment will be along the mauka edge of Ke‘ehi Lagoon Beach Park and closely follow Nimitz Highway and the H-1 Freeway. Figure 4-27 illustrates where the guideway will be in relationship to the roadway. There will be moderate impacts on makai views of the shoreline from these state highways.”

- 5) *Any development which would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.*

The portion of the Project within the SMA D: Ke‘ehi Lagoon Beach Park area will not adversely affect water quality in this area. Section 4.14 and 4.18.10 of the Final EIS (Attachment 1) discuss BMPs to be employed during operation and construction of the Project, respectively, to limit water quality impacts. Though Moanalua Stream will be directly impacted due to the placement of two columns in the stream, there will be no adverse effects due to the use of temporary and permanent BMPs. In addition, this stream already contains visible structures and modifications. The Project will not have an adverse impact on Ke‘ehi Lagoon in this area due to the distance between the guideway and the coast. Existing and potential fishing grounds are likely coastal or associated with the stream or coastline; there shall be no interference with these areas due to the Project. The Project will not have an adverse effect on any wildlife habitats or potential or existing agricultural uses of land, as it will be constructed in an area used for open space and surrounded by a commercially-developed area unlikely to be used for agriculture.

## **V. MITIGATION MEASURES**

Please see Attachment 4.