

05

CHAPTER

Section 4(f) Evaluation

This chapter provides documentation necessary to support determinations required to comply with the provisions of Section 4(f) of the U.S. Department of Transportation Act of 1966 (commonly referred to as Section 4(f)).

5.1 Introduction

The Project, as described in Chapter 2, Alternatives Considered, is a transit project that may receive Federal funding and/or discretionary approvals through the U.S. Department of Transportation (USDOT) Federal Transit Administration (FTA); therefore, documentation of compliance with Section 4(f) is required. Section 4(f), as amended, of the USDOT Act of 1966 (49 USC 303) protects public parklands and recreational lands, wildlife refuges, and historic sites of National, State, or Local significance. Federal regulations that implement Section 4(f) may be found in 23 CFR 774.3.

Section 4(f) specifies that the FTA may not approve the use, as defined in 23 CFR 774.17, of a Section 4(f) property unless the FTA determines the following:

- There is no prudent and feasible alternative, as defined in Section 774.17, to the use of land from the property; and
- The program or project includes all possible planning, as defined in Section 774.17, to minimize harm to the property resulting from such use.

Section 4(f) regulations further require consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture (USDA) and the Department of Housing and Urban Development (HUD), as well as relevant State and Local officials, in developing transportation projects and programs that use lands protected by Section 4(f). Consultation with the USDA would occur whenever a project uses Section 4(f) land from the National Forest System. Consultation with HUD would occur whenever a project uses Section 4(f) land for/on which certain HUD funding had been used. Since neither of these conditions apply to the Project, consultation with the USDA and HUD is not required.

For historic sites, consultation with the State Historic Preservation Officer is required. For recreational resources, consultation with the agency responsible for the resources is also required.

This Section 4(f) evaluation has been prepared in accordance with the joint Federal Highway Administration (FHWA)/FTA regulations for Section 4(f) compliance codified as 23 CFR 774 and the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU) (PL 2005). Although not directly applicable to FTA programs and activities, additional guidance has been obtained from the FHWA Technical Advisory T6640.8A (FHWA 1987b) and the revised FHWA Section 4(f) Policy Paper (FHWA 2005).

5.1.1 Section 4(f) “Use” Definitions

As defined in 23 CFR 774.17, the “use” of a protected Section 4(f) property occurs when any of the following conditions are met.

Direct Use

A direct use of a Section 4(f) resource occurs when property is permanently incorporated into a proposed transportation project. This may occur as a result of partial or full acquisition of a fee simple interest, permanent easements, or temporary easements that exceed regulatory limits noted below.

Temporary Use

A temporary use of a Section 4(f) resource occurs when there is a temporary occupancy of property that is considered adverse in terms of the preservationist purpose of the Section 4(f) statute. Under the FHWA/FTA regulations (23 CFR 774.13), a temporary occupancy of property does not constitute a use of a Section 4(f) resource when all the following conditions are satisfied:

- Duration is temporary (i.e., less than the time needed for construction of the project), and there is no change in ownership of the land

- Scope of work is minor (i.e., both the nature and magnitude of the changes to the Section 4(f) property are minimal)
- There are no anticipated permanent adverse physical impacts, nor is there interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis
- The land being used will be fully restored (i.e., the property must be returned to a condition that is at least as good as that which existed prior to the project)
- There is a documented agreement of the official(s) having jurisdiction over the Section 4(f) resource regarding the above conditions

Constructive Use

A constructive use of a Section 4(f) resource occurs when a transportation project does not permanently incorporate land from the resource, but the proximity of the project results in impacts (e.g., noise, vibration, visual, and property access) so severe that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only if the protected activities, features, or attributes of the resource are substantially diminished (23 CFR 774.15).

De Minimis Impacts

The requirements of Section 4(f) would be considered satisfied with respect to a Section 4(f) resource if it is determined that a transportation project would have only a “*de minimis* impact” on the Section 4(f) resource. The provision allows avoidance, minimization, mitigation, and enhancement measures to be considered in making the *de minimis* determination. The agencies with jurisdiction must concur in writing with the determination. *De minimis* impact is defined in 23 CFR 774.17 as follows:

- For parks, recreation areas, and wildlife and waterfowl refuges, a *de minimis* impact is one

that would not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f).

- For historic sites, *de minimis* impact means that the FTA has determined, in accordance with 36 CFR 800, that no historic property is affected by the project or the project would have “no adverse effect” on the property in question. The State Historic Preservation Division (SHPD) must be notified that the FTA intends to enter a *de minimis* finding for properties where the project results in “no adverse effect.”

5.2 Description of the Project

The Build Alternatives would include the construction and operation of a grade-separated fixed guideway transit system between East Kapolei and Ala Moana Center. The alternatives are described in Chapter 2, and conceptual plans of the alignment are included in Appendix A, Conceptual Alignment Plans and Profiles. The system would use steel-wheel-on-steel-rail technology and could be either automated or employ drivers.

The guideway would follow the same alignment for all Build Alternatives through most of the project alignment, except between Aloha Stadium and Kalihi.

Beginning at the East Kapolei end of the corridor, the alignment would follow Farrington Highway Koko Head on an elevated structure and continue along Kamehameha Highway to near Aloha Stadium.

Between Aloha Stadium and Kalihi, the alignment differs for each of the Build Alternatives, as detailed in Chapter 2. The Salt Lake Alternative would follow Salt Lake Boulevard until it crosses Pu‘uloa Road and then follow Pūkōloa Street across Nimitz Highway to Middle Street. The Airport Alternative would follow Kamehameha Highway

and North Nimitz Highway to Aolele Street and Middle Street.

Koko Head of Middle Street, both alternatives would follow Dillingham Boulevard to the vicinity of Ka‘aahi Street and then turn Koko Head to connect to Nimitz Highway near Iwilei Road. The alignment would follow Nimitz Highway Koko Head to Halekauwila Street, then along Halekauwila Street past Ward Avenue where it would transition to Queen Street and Kona Street. The alignment would cross from Waimanu Street to Kona Street near Pensacola Street. The guideway would run above Kona Street to Ala Moana Center.

In addition to the guideway, the Project would require the construction of stations and supporting facilities. Supporting facilities include a vehicle maintenance and storage facility, transit centers, park-and-ride lots, and traction power substations.

5.3 Description of Section 4(f) Properties

Properties subject to Section 4(f) consideration include publicly owned parks, recreation areas, wildlife refuges of National or Local significance, and historic properties of National, State, or Local significance, whether privately or publicly owned. As described in Section 4.4, Community Services and Facilities, 14 parks and recreational resources are adjacent to the project alignment. Only 10 of these are publicly owned (Table 5-1), which under Section 4(f) definition qualifies them as Section 4(f) resources.

The Section 106 consultation and evaluation of historic properties along the alignment is ongoing. The FTA has finalized determination of eligibility through consultation with SHPD (see Appendix D letter from SHPD, September 26, 2008). Table 4-32 in Section 4.15, Archaeological, Cultural, and Historic Resources, presents affects to these historic properties, as established by current consultation.

Table 5-1 Publicly Owned Parks and Recreation Areas Adjacent to Project Alignment

Property	Description	Section 4(f) Use Determination
West Loch Golf Course	West Loch Golf Course is located off Fort Weaver Road. The parcel is a 94-acre municipal golf course owned by the City and County of Honolulu. It extends across Fort Weaver Road and is adjacent to Honouliuli (Village) and the St. Francis West Medical Center. The golf course is generally a quiet setting, but bounded on end by Farrington Highway, a major transportation corridor. Scenic views are in the background, mauka toward the mountains.	All alternatives—no use
Neal S. Blaisdell Park	The park is approximately 26 acres and is owned by the City and County of Honolulu. The park consists primarily of open space, but also supports some amenities, such as trails and exercise areas. It is located immediately makai of Kamehameha Highway, a major transportation corridor. All views are makai, toward the harbor.	All alternatives—no use
ʻAiea Bay State Recreation Area	ʻAiea Bay State Recreation Area encompasses approximately 7.75 acres. The recreation area is owned by the State and is under the jurisdiction of the Hawaiʻi Department of Land and Natural Resources. The area is used for general recreation and picnicking. It is located immediately makai of Kamehameha Highway, a major transportation corridor. All views are makai toward the harbor.	All alternatives—no use
Āliamanu Neighborhood Park	The park is approximately 4 acres and is owned by the City. Park amenities include a baseball field playground, basketball court, tennis courts, and picnic areas. This public facility would not be affected by the project footprint. The park is located mauka of Salt Lake Boulevard, surrounded by residential and commercial development.	All alternatives—no use
Walker Park	This small urban park provides shade in a busy downtown area. It is primarily used by pedestrians walking through downtown. It does not provide any benches, picnic tables or other amenities.	All alternatives—no use
Irwin Memorial Park	Irwin Memorial Park is at the ʻEwa-makai corner of the Bishop Street and Nimitz Highway intersection. The park is approximately 2 acres and can be accessed from Aloha Tower Drive. Irwin Memorial Park is primarily used as a parking lot for surrounding office buildings. Amenities include sitting areas and tables near the corner of Bishop Street and Nimitz Highway. The property is owned by the State Department of Transportation Harbors Division and is part of the Aloha Tower Project administered by the Aloha Tower Development Corporation. All scenic views are makai toward the harbor and Aloha Tower.	All alternatives—no use
Mother Waldron Park	This neighborhood park is mauka of Ala Moana Boulevard and makai of Kapiʻolani Boulevard at 525 Coral Street in the redeveloped area of Downtown Kakaʻako. The park is approximately 1 acre and supports a children's play structure and unlit basketball courts. The park also hosts the People's Open Market Program, which offers local agriculture and aquaculture products. The park is owned by the State. The park is located in a predominantly commercial/industrial area, and one side is bordered by a residential area.	All alternatives—no use
Aloha Stadium	This 50,000-seat stadium is on an 89-acre property owned by the State under the jurisdiction of the Stadium Authority. Aloha Stadium is primarily used for athletic competitions, such as the Hula Bowl, the Aloha Bowl, the Pro Bowl, and University of Hawaiʻi football games. Other recreational uses include hosting various concerts and family-oriented fairs; the stadium parking lot is used for a weekly flea market.	All alternatives—direct use (<i>de minimis</i>)
Keʻehi Lagoon Beach Park	Keʻehi Lagoon Beach Park is an approximately 72-acre community park at Lagoon Drive and Aolele Street. Recreational amenities include canoeing and boating, 12 tennis courts, 1 baseball field, restroom facilities, walking trails, and picnic areas. The park is operated and maintained by the City of Honolulu on State-owned land. All scenic views are makai toward the harbor.	Airport and Airport & Salt Lake Alternatives—direct use Salt Lake Alternative—no use
Future Queen Street Park	Queen Street Park will be a 2-acre passive recreation area, with a children's playground and other limited amenities. The land is owned by HCDA and is surrounded by mixed-use commercial and high-rise residential development.	All alternatives—direct use (<i>de minimis</i>)

Each historic property is listed in Table 5-2 with a Section 4(f) use determination.

The following sections describe use of Section 4(f) resources. An assessment has been made as to whether any permanent or temporary occupancy of a property would occur and whether the proximity of the Project would cause any access disruption, noise, vibration, or aesthetic impacts that would substantially impair the features or attributes that qualify the resource for protection under Section 4(f) and, therefore, constitute a use.

5.4 Direct Use of Section 4(f) Properties

Chapter 2 provides a history of the systematic process by which alternatives were developed, evaluated, and refined to become the alternatives remaining under consideration in this Draft EIS. During the Alternatives Analysis, several other alternative corridors and multimodal alternatives were considered to determine if the Project's Purpose and Need could be achieved. No such alternative was identified that would completely avoid Section 4(f) resources while meeting the Project's Purpose and Need. Only the No Build Alternative would not use any Section 4(f) resources. However, the No Build Alternative would not meet the Project's Purpose and Need; therefore, it would not be prudent.

The avoidance of Section 4(f) properties was an important consideration in designing and screening the alternatives; thus, the majority of public parks, recreational resources, and historic properties identified within the study corridor were avoided in designing the Build Alternatives.

As the design phase evolved, each alignment was further refined, with site-specific shifts occurring in the alignment or placement of individual stations to avoid, where feasible, Section 4(f) resources. Through this iterative process, the

number of Section 4(f) properties that would be affected by the Build Alternatives was reduced to six direct uses and four (Salt Lake Alternative) or five (Airport Alternative and Airport & Salt Lake Alternative) *de minimis* impacts identified in Sections 5.4.1, Park and Recreational Resources, and 5.4.2, Historic Sites, and shown in Table 5-3.

5.4.1 Park and Recreational Resources

As described in Section 4.4, there are 14 parks and recreational resources adjacent to the project alignment. Only 10 of these are publicly owned. The Project would require direct property acquisition at Aloha Stadium, Ke'ehi Lagoon Beach Park, and Queen Street Park, which would result in a Section 4(f) use. The use of Aloha Stadium and Queen Street Park would be *de minimis*, as described below. The existing environment includes major highways and thoroughfares. Since significant elements of urban development already exist, the Project would not impair or diminish the activities, features, or attributes that qualify these properties for protection under Section 4(f). Table 5-1 lists the publicly owned parks and their Section 4(f) use. Potential constructive uses are discussed in Section 5.5, Constructive Use of Section 4(f) Properties.

Aloha Stadium

Description and Significance of Property

Aloha Stadium is bordered by Salt Lake Boulevard, H-1 Freeway, Kamehameha Highway, and Moanalua Road (Figures 5-1 and 5-2). The 50,000-seat stadium is on an 89-acre property, most of which is used for event parking, and is under the jurisdiction of the Stadium Authority. Aloha Stadium is designated as a General Preservation District (P2).

The stadium property was originally owned by the U.S. Department of the Interior and was transferred to the City in 1967. The Quitclaim Deed of that transfer, dated June 30, 1967, requires the land be used and maintained for public recreational

Table 5-2 Historic Properties and Section 4(f) Use (continued on next page)

Tax Map Key	Resource Name	Description of Impact ¹	Preliminary Section 106 Determination	Section 4(f) Use Determination ²
Common to All Build Alternatives				
None	Hono'uli'uli Stream Bridge (Farrington Highway)	No use of land	No Effect	No Use
94025008	Ishihara House	No use of land	No Adverse Effect	No Use
94027127	West O'ahu Christian Church/former American Security Bank (round plan)	No use of land	No Adverse Effect	No Use
94036071	Waipahu Hawai'i Stake, Church of Jesus Christ of Latter-Day Saints	No use of land	No Adverse Effect	No Use
94039082	Tehahira Apartments	No use of land	No Adverse Effect	No Use
None	Waikele Stream Bridge, eastbound span and bridge over OR&L spur	No use of land	No Effect	No Use
94017043	Cavalho Apartments	No use of land	No Adverse Effect	No Use
94019020	Ohara Apartments	No use of land	No Adverse Effect	No Use
94038050	Sandobal House	No use of land	No Adverse Effect	No Use
96003026	Watercress of Hawaii	No use of land	No Effect	No Use
96003018	Solmirin House	Full acquisition, including building	Adverse Effect	Direct Use
None	Waiawa Booster Pump Station	No use of land	No Effect	No Use
None	Waiawa Stream 1932 Bridge (westbound lanes)	No use of land	No Effect	No Use
None	Waiawa Stream 1952 Bridge (eastbound lanes)	No use of land	No Effect	No Use
None	Waiawa Separation Bridge	No use of land	No Effect	No Use
98003010	Hawaiian Electric Company Waiiau Plant	No use of land	No Adverse Effect	No Use
98006024	Nishi Service	No use of land	No Adverse Effect	No Use
98016047	Sumida Watercress Farm	No use of land	No Adverse Effect	No Use
98018041	Akiona House (Quonset)	No use of Land	No Adverse Effect	No Use
98018042	Forty-Niner Saimin Restaurant	No use of land	No Adverse Effect	No Use
98022081	Waimalu Shopping Center	No use of land	No Adverse Effect	No Use
None	Waimalu Stream Bridge	No use of land	No Effect	No Use
None	Kalauao Springs Bridge	No use of land	No Effect	No Use
None	Kalauao Stream Bridge	No use of land	No Effect	No Use
99012006 & 99012001	`Aiea (Honolulu Plantation) Cemetery	No use of land	No Adverse Effect	No Use
12013006	Foremost Dairy	No use of land	No Adverse Effect	No Use
12013007	GasPro Store	No use of land	No Adverse Effect	No Use
None	Lava Rock Curbs (Laumaka Street to South Street, except not along Nimitz Highway)	No use of land	No Effect	No Use
12002108	Duarte House	No use of land	No Adverse Effect	No Use
12002113	Ten Courtyard Houses	No use of land	No Adverse Effect	No Use
12009017	Afuso House	Acquisition, including building	Adverse Effect	Direct Use

Table 5-2 Historic Properties and Section 4(f) Use (continued on next page)

Tax Map Key	Resource Name	Description of Impact ¹	Preliminary Section 106 Determination	Section 4(f) Use Determination ²
12009017	<i>Higa Fourplex</i>	<i>Acquisition, including building</i>	<i>Adverse Effect</i>	<i>Direct Use</i>
12009018	<i>Teixeira House</i>	<i>Full acquisition, including building</i>	<i>Adverse Effect</i>	<i>Direct Use</i>
12009060	Pang Craftsman-style House	No use of land	No Effect	No Use
12012014	Pu'uhale Market	No use of land	No Adverse Effect	No Use
15029060	<i>Boulevard Saimin Restaurant</i>	<i>Minor parcel acquisition (0.01 acre), close to building</i>	<i>Adverse Effect</i>	<i>Direct Use</i>
15015008	Six Quonset Huts	Minor strip acquisition (0.1 acres) along Dillingham Boulevard	No Adverse Effect	Direct Use (<i>de minimis</i>)
15022004	Two-story (Tsumoto) Shop House	No use of land	No Adverse Effect	No Use
15022005	AC Electric	No use of land	No Adverse Effect	No Use
None	Kapālama Stream Bridge	No use of land	No Effect	No Use
<i>None</i>	<i>True Kamani Trees on Dillingham Boulevard</i>	<i>Removal of approximately 28 trees along Dillingham Boulevard</i>	<i>Adverse Effect</i>	<i>Direct Use</i>
15007001 & 15007002	OR&L Office/Document Storage Building and Terminal Building	No impact to historic resources	No Adverse Effect	No Use
15007001 & 15007002	OR&L basalt street paving	No impact to historic resources	No Adverse Effect	No Use
15007001	Former filling station on OR&L Property	No impact to historic resources	No Adverse Effect	No Use
15007003	Tong Fat Co.	No use of land	No Adverse Effect	No Use
15007003	Wood Tenement Buildings	No use of land	No Adverse Effect	No Use
15007033	Tamura Building	No use of land	No Adverse Effect	No Use
17002, 17003, & 17004 plats	Chinatown Historic District	Minor parcel acquisition near Chinatown Marketplace (0.3 acre), no impact to building	No Adverse Effect	Direct Use (<i>de minimis</i>)
None	Nu'uanu Stream Bridge	No use of land	No Effect	No Use
21001056	Harbor retaining wall of coral blocks from Honolulu Fort	No use of land	No Effect	No Use
Tax Map Keys in plats 17002 & 21002	Merchant Street Historic District	No use of land	No Adverse Effect	No Use
21001001	Pier 10/11 Building	No use of land	No Adverse Effect	No Use
21001005	Department of Transportation Harbors Division Offices	No use of land	No Adverse Effect	No Use
21001013	Aloha Tower	No use of land	No Effect	No Use

Table 5-2 Historic Properties and Section 4(f) Use (continued on next page)

Tax Map Key	Resource Name	Description of Impact ¹	Preliminary Section 106 Determination	Section 4(f) Use Determination ²
21013007	Irwin Park	No use of land	No Adverse Effect	No Use
21014003	<i>Dillingham Transportation Building</i>	<i>Minor parcel acquisition (0.06 acre), very close to building</i>	<i>Adverse Effect</i>	<i>Direct Use</i>
21014006	Hawaiian Electric Company Downtown Plant	Minor parcel acquisition (0.14 acre), no impact to building	No Adverse Effect	Direct Use (<i>de minimis</i>)
various	Hawai`i Capital Historic District	No use of land	No Adverse Effect	No Use
None	Walker Park	No use of land	No Adverse Effect	No Use
21030014	Kamaka Ukulele	No use of land	No Effect	No Use
21031012	Department of Transportation Building	No use of land	No effect	No Use
21031018	[Old] Kaka`ako Fire Station	No use of land	No Effect	No Use
21031021	Royal Brewery/The Honolulu Brewing & Malting Co.	No use of land	No Effect	No Use
21051006 & 21051005	Mother Waldron Playground	No use of land	No Adverse Effect	No Use
21050049	Ching Market & House	No use of land	No Effect	No Use
21050052	American Savings Bank/Liberty Bank—Queen-Ward Branch/Blair’s	No use of land	No Effect	No Use
21052008	Fuji Sake Brewing Co.	No use of land	No Adverse Effect	No Use
23007029	Pacific Development Office Building	No use of land	No Adverse Effect	No Use
23039023	Hawaiian Life Building	No use of land	No Adverse Effect	No Use
23039001	Ala Moana Building	No use of land	No Adverse Effect	No Use
Salt Lake Alternative				
11010011	Facility X-24/Quonset Hut (Navy Public Works Center)	No impact to historic resources	No Adverse Effect	No Use
99002023	Radford High School	Minor parcel acquisition (0.01 acres)	No Adverse Effect	Direct Use (<i>de minimis</i>)
11021018	Āliamanu Pumping Station (Board of Water Supply)	No use of land	No Adverse Effect	No Use
11007036	First Hawaiian Bank—Māpunapuna Branch	No use of land	No Adverse Effect	No Use
11017006–11018014	Potential Salt Lake Duplexes Historic District	No use of land	No Adverse Effect	No Use
Airport Alternative				
99003029	Pearl Harbor Naval Base National Historic Landmark	Minor parcel acquisition (0.6 acre)	No Adverse Effect	Direct Use (<i>de minimis</i>)
99003066 (partial)	Kamehameha Highway Bridge over Hālawā Stream (mauka span)	No use of land	No Effect	No Use
99002004	CINCPACFLT Admin Building/CINCPAC Headquarters—Facility 250	No use of land	No Adverse Effect	No Use
99001008	Ossipoff’s Aloha Chapel, SMART Clinic, and Navy-Marine Corps Relief Society—Facility 1514	No impact to historic resources	No Adverse Effect	No Use
99001008	Navy WWII splinterproof shelter —Facility S-51	No use of land	No Adverse Effect	No Use

Table 5-2 Historic Properties and Section 4(f) Use (continued from previous page)

Tax Map Key	Resource Name	Description of Impact ¹	Preliminary Section 106 Determination	Section 4(f) Use Determination ²
99001008	Navy Rehab Center/former Fire Station—Facility 199	No use of land	No Adverse Effect	No Use
99002004	Potential Makalapa Housing Historic District	No impact to historic resources	No Adverse Effect	No Use
99002004	Potential Little Makalapa Housing Historic District	No impact to historic resources	No Adverse Effect	No Use
11016004	Hawai`i Employers Council	No use of land	No Adverse Effect	No Use
Airport & Salt Lake Alternative				
11010011	Facility X-24/Quonset Hut (Navy Public Works Center)	No impact to historic resources	No Adverse Effect	No Use
99002023	Radford High School	Minor parcel acquisition (0.01 acres)	No Adverse Effect	Direct Use (<i>de minimis</i>)
11021018	Āliamanu Pumping Station (Board of Water Supply)	No use of land	No Adverse Effect	No Use
11007036	First Hawaiian Bank—Māpunapuna Branch	No use of land	No Adverse Effect	No Use
11017006–11018014	Potential Salt Lake Duplexes Historic District	No use of land	No Adverse Effect	No Use
99003029	Pearl Harbor Naval Base National Historic Landmark	Minor parcel acquisition (0.5 acre)	No Adverse Effect	Direct Use (<i>de minimis</i>)
99003066 (partial)	Kamehameha Highway Bridge over Hālawā Stream (mauka span)	No use of land	No Effect	No Use
99002004	CINCPACFLT Admin Building/CINCPAC Headquarters—Facility 250	No use of land	No Adverse Effect	No Use
99001008	OSSIPOFF'S Aloha Chapel, SMART Clinic, and Navy-Marine Corps Relief Society—Facility 1514	No impact to historic resources	No Adverse Effect	No Use
99001008	Navy WWII splinterproof shelter — Facility S-51	No use of land	No Adverse Effect	No Use
99001001	Fuel Oil Pump House—Facility S-386	No impact to historic resources	No Adverse Effect	No Use
99002004	Potential Makalapa Housing Historic District	No impact to historic resources	No Adverse Effect	No Use
99002004	Potential Little Makalapa Housing Historic District	No use of land	No Adverse Effect	No Use
11016004	Hawai`i Employers Council	No use of land	No Adverse Effect	No Use

Adverse effects are noted in bold italic font.

¹Some impacts are listed as “no impact to historic properties.” These are Section 4(f) properties located on large TMKs. Although the Project might require right-of-way from these TMKs, the impact would be away from the historic building(s) listed in this table.

²Some properties with no Section 4(f) use have Section 106 determinations of No Adverse Effect. This is because they do not incorporate any land into the transportation facility, and Federal guidance stipulates that where there is a Section 106 determination of No Adverse Effect, there cannot be a constructive use.

Table 5-3 Parks, Recreation Areas and Historic Properties Section 4(f) Uses by Alternative

Alternative	Direct Use	Direct Use, <i>de minimis</i>	Temporary Use	Constructive Use
Salt Lake	7	6	0	0
Airport	8	6	0	0
Airport & Salt Lake	8	7	0	0

purposes. In October 1970, with the approval of the Department of the Interior, the property was transferred to the State with similar provisions as the Quitclaim Deed.

Aloha Stadium is primarily used for athletic competitions, such as the Hula Bowl, the Aloha Bowl, the Pro Bowl, and University of Hawai'i football games. Other recreational uses include hosting various concerts and family-oriented fairs; and the stadium parking lot is used for a weekly flea market.



Figure 5-1 Aloha Stadium

Application of Section 4(f)

All Build Alternatives would use Aloha Stadium parking facilities, with no effect on recreational use. As illustrated in Figure 5-2, the Project would require a narrow strip through the Aloha Stadium parcel. The Salt Lake Alternative and the Airport & Salt Lake Alternative would require approximately 6.2 acres to accommodate the elevated guideway, station, and access to the adjacent park-and-ride lot. While the alternatives would displace a maximum of 125 parking spaces, they would provide off-site park-and-ride lots with more than

600 additional spaces along the alignment, which would be connected to Aloha Stadium by the Project. The Airport Alternative would require less area and displace no parking spaces. Because the Project would permanently incorporate land from the Aloha Stadium parcel into the transportation facility, this would be a direct use.

The Project would result in a net benefit to Aloha Stadium operations through enhanced access. The operation of the Project would not interfere with the features, attributes, or activities of the property. Therefore, any of the Build Alternatives would have a *de minimis* impact as defined in 23 CFR 774.17. The Aloha Stadium Authority is being consulted regarding the findings of the *de minimis* impact. Because the Project would have a *de minimis* impact on Aloha Stadium, consideration of avoidance alternatives is not required.

Coordination and Consultation

The Aloha Stadium Authority has participated in the planning of the alignment, the station location, and the park-and-ride lot within the boundaries of Aloha Stadium. Coordination included meetings on March 14 and March 25, 2008, and is ongoing with the Aloha Stadium Authority to ensure that the Project would result in a net benefit, in terms of both enhanced access and parking.

Measures to Minimize Harm

The direct impacts to the Aloha Stadium parcel would be the placement of the station and support piers within the parking lot. These support piers have been designed to be as unobtrusive as possible, while maintaining safety.

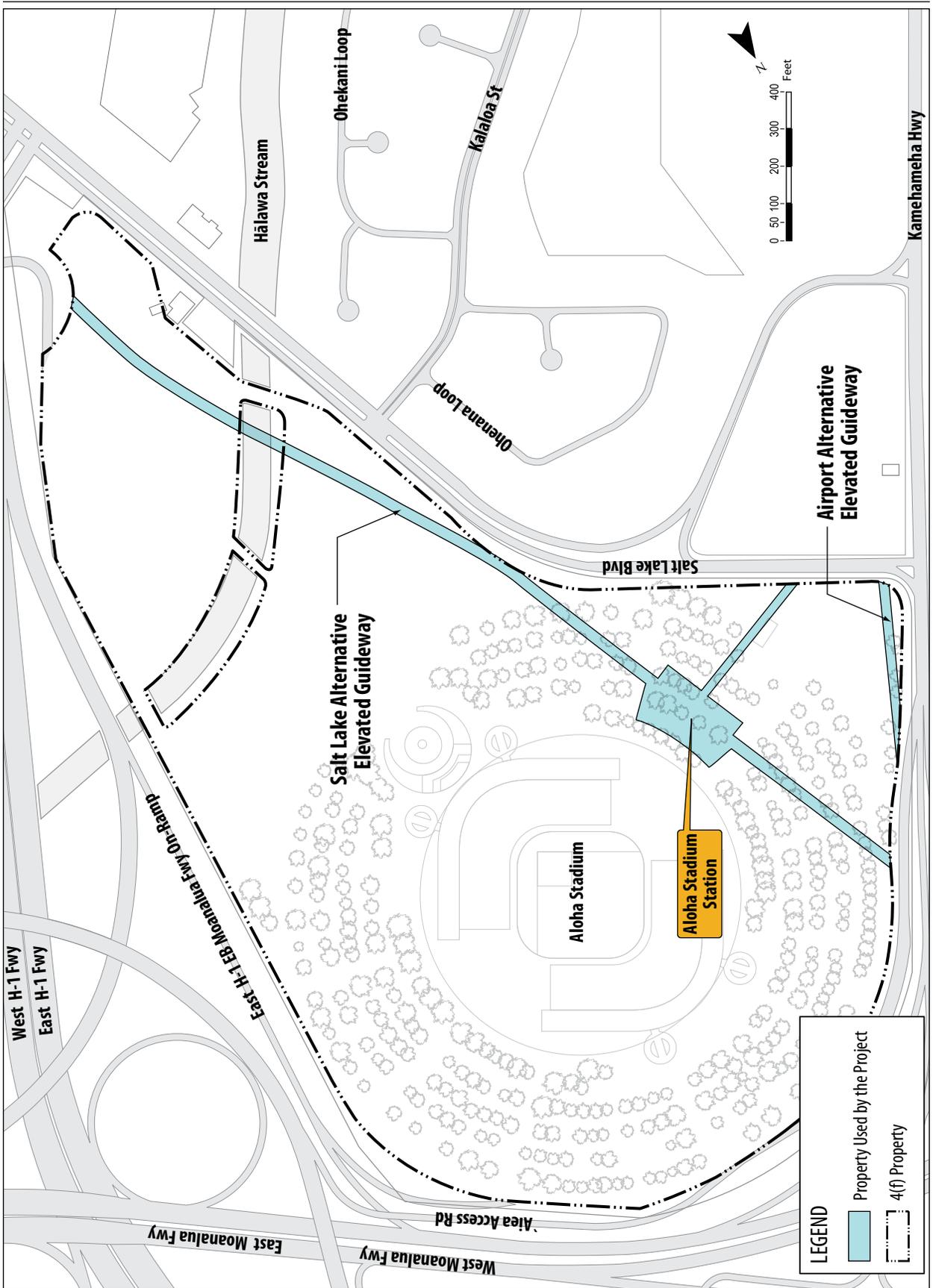


Figure 5-2 Aloha Stadium Project Alternative Alignments and Features

Ke'ehi Lagoon Beach Park

Description and Significance of Property

Ke'ehi Lagoon Beach Park is an approximately 72-acre community park at Lagoon Drive and Aolele Street (Figures 5-3 and 5-4). It is bounded on the mauka side by Nimitz Highway and some industrial developments, on the makai side by the lagoon and airport property, 'Ewa by Lagoon Drive, and Koko Head by the Veterans of Foreign Wars Memorial property. It is operated and maintained by the City and is part of a General Preservation District (P2) on State-owned land. Recreational amenities include twelve tennis courts, one baseball field, restroom facilities, walking trails, and picnic areas. The baseball field is near the shoreline of Ke'ehi Lagoon, and eight of the tennis courts are near Lagoon Drive, while the other four are near Nimitz Highway. Canoe clubs engage in active practice sessions. Soccer and softball practices and games are also held regularly. Two separate parking areas contain 50 and 435 parking spaces.



Figure 5-3 Ke'ehi Lagoon Beach Park

Since Ke'ehi Lagoon Beach Park is located under a flight path of one of the main runways at Honolulu International Airport, night lights are prohibited in the park; therefore, the park is only used during the day.

Application of Section 4(f)

The Airport Alternative and the Airport & Salt Lake Alternative would impact Ke'ehi Lagoon Beach Park (Figure 5-4); the Salt Lake Alternative would not impact the park, as it does not directly serve the airport area. The approximately 2.8 acres (122,000 square feet) of impact would be associated with the elevated guideway. The placement of support columns would require 1,600 square feet of use. The elevated guideway would be approximately 40 feet above the ground to maintain clearance over Lagoon Drive and still meet the clearance required by the airport's runway flight path. This 40-foot clearance from grade would be maintained through the park to provide continued use of the area under the guideway, including an area for replacement parking.

The alignment through the park would be located adjacent to the mauka property line of the park on a narrow strip of parkland between the access road through the park and its northern boundary. This station would serve nearby industrial areas as well as the park. Because the Project would permanently incorporate the land for the columns into the transportation facility, this would be a direct use.

Avoidance Alternatives

The guideway would pass 40 feet above approximately 2.8 acres of the 72-acre park on its mauka side, using approximately 1,600 square feet for the placement of columns. In evaluating alternatives to the use of Ke'ehi Lagoon Beach Park, consideration was given to providing the greatest accessibility to the system with minimum impact to the park and the community.

Avoidance alternatives are limited by the need to connect the Lagoon Drive Station to the proposed Airport Station. Avoidance alternatives that run parallel to the proposed alignment on Ualena Street or Koapaka Street would create additional impacts by requiring more right-of-way acquisition

and displacing more commercial properties along Waiwai Loop before entering the park. They would reduce the impact to the park but would still impact the tennis courts and parking.

The avoidance alternative that presents the least impact to Ke'ehi Lagoon Beach Park runs immediately makai of the Nimitz Highway and moves the Lagoon Drive Station mauka, adjacent to the highway. In order to connect the Airport and Lagoon Drive Stations, the alignment turns mauka at Aolewa Place (Figure 5-5). This avoidance alternative entirely avoids the parking and tennis courts at Ke'ehi Lagoon Beach Park.

To connect the Airport Station and Lagoon Drive Station, the guideway would pass over several additional commercial properties, resulting in at least nine additional full acquisitions and nine business displacements than the proposed alignment.

Further, the Lagoon Drive Station would have to be double-stacked (one platform above the other), and the guideway would have to be double-stacked from approximately Peltier Avenue to Ahua Street, a distance of about 600 meters. This, and the right-of-way requirements, would result in an additional \$75 million (2007 USD) in construction costs. For these reasons, this alternative is not considered prudent.

Agency Coordination and Consultation

Officials with the City Department of Parks and Recreation (DPR), which has jurisdiction over Ke'ehi Lagoon Beach Park, have been involved in the project planning and design process within the boundaries of the park. A meeting was held with DPR in May 2008 to discuss project impacts and ensure that the Project would result in a net benefit with regard to parking and recreational use.

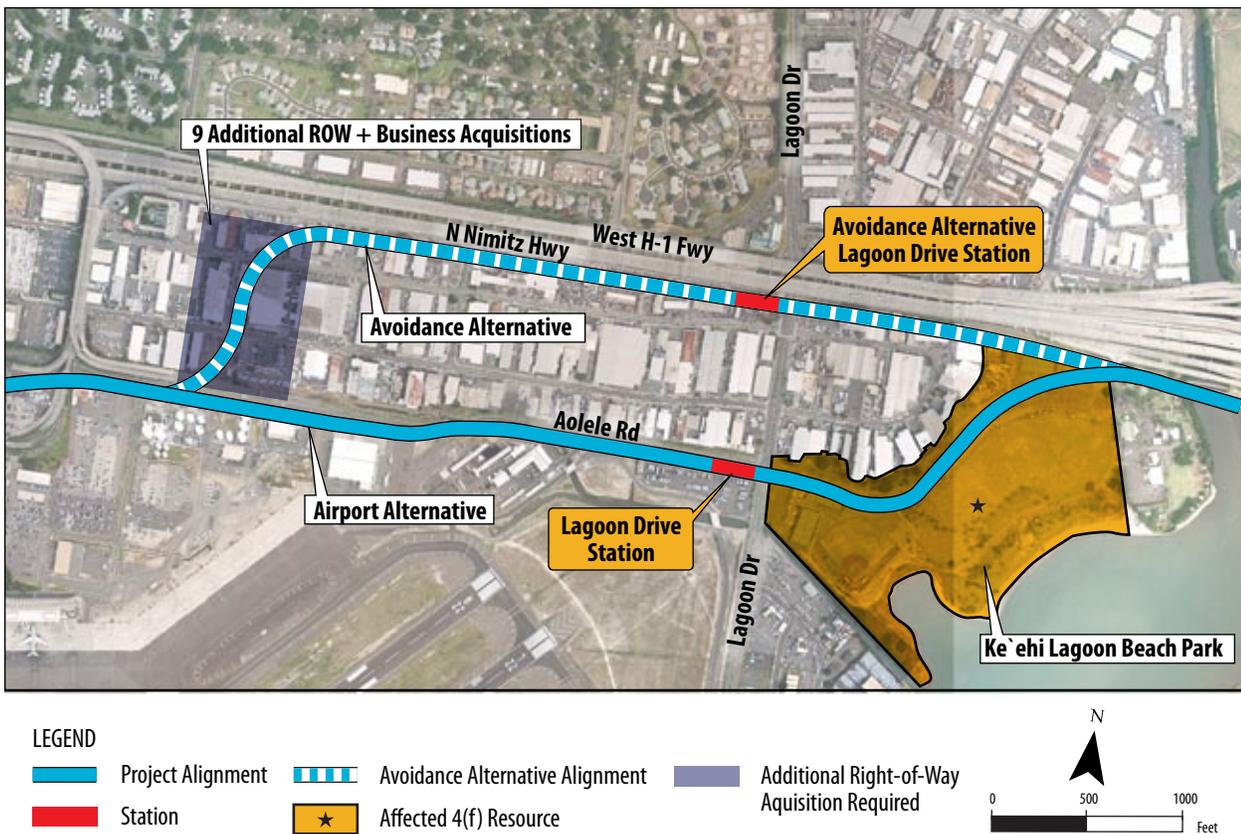


Figure 5-5 Ke'ehi Lagoon Beach Park Project Alignment and Avoidance Alternative

Measures to Minimize Harm

To minimize impacts to the park, minimum radius curves were used that would maintain efficient system operation while serving the Lagoon Drive Station. Although the four tennis courts adjacent to Nimitz Highway would be displaced, impacts to the tennis courts would be mitigated in their entirety and their use would be enhanced as the Project would move the tennis courts away from the highway or would provide another beneficial recreational facility that would be comparable. This could include bleachers or other improved facilities to provide a more enjoyable experience for the park's users. The lost parking spaces would be replaced with shaded parking under the guideway, which would result in no net loss of parking.

Queen Street Park

Description and Significance of Property

The Hawai'i Community Development Authority (HCDA) has set aside public funding for a 2-acre planned park on the Queen Street extension. It is planned as a passive recreation area with a children's playground and limited other amenities. The park will be built on both the mauka and makai sides of the street. The Project would use a portion of the park on the mauka side of Queen Street (Figures 5-6 and 5-7).

Application of Section 4(f)

All of the Build Alternatives would use Queen Street Park. Because the park is being funded with public money, and because it is planned for a recreational use, it qualifies as a Section 4(f) resource. The Project would use approximately 250 square feet of land along the mauka side of Queen Street for construction of five straddle-bent column structures to support the guideway. The Project would require right-of-way from the park and convert land to a transportation use. This constitutes a direct use of the park. The use is not temporary and cannot be considered a constructive use (23 CFR 774.15).

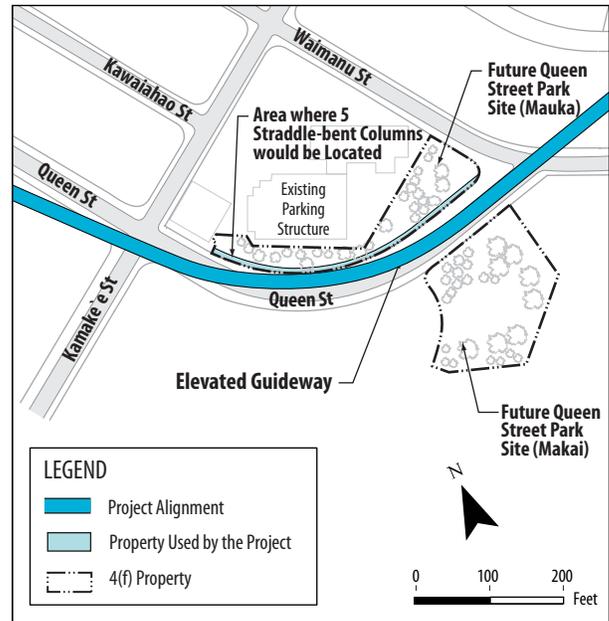


Figure 5-6 Future Queen Street Park Project Alignment and Features



Figure 5-7 Future Queen Street Park Site

The area required from the park is small, approximately 250 square feet of the 2 acres, and would be located within a 10-foot-wide strip along the mauka side of Queen Street. Only five straddle-bent columns would touch down within the park itself, and they would not interfere with the use of the park because they are located adjacent to Queen Street where no park amenities would be located. The park owner would be compensated for all land acquired. Because the amount of right-of-way required is small, is located along the mauka edge, and does not substantially impact use of the

park, the use of this planned park is considered *de minimis* and no avoidance alternatives are necessary.

Agency Coordination and Consultation

A meeting was held with representatives from HCDA on October 20, 2008, to discuss the Project and the planned development of this park. Coordination is ongoing to ensure that the Project would not impact park use.

Measures to Minimize Harm

The direct impacts to the Queen Street Park parcel are limited to the placement of supports for straddle-bent structures within a small strip of land on the mauka side of Queen Street within the Park. No additional measures other than coordination for park planning are required.

5.4.2 Historic Sites

This section discusses the historic sites with potential Section 4(f) use. Section 4.15 discusses 63 historic sites that would be affected by the Project.

Table 5-2 lists each historic 4(f) property and includes a use determination. For most of the properties, there has been a proposed Section 106 determination of “No Adverse Effect” (see Section 4.15). For these properties, FTA has determined that there would be either no Section 4(f) use of the property (No Use) or only a *de minimis* impact (direct use, *de minimis*). Therefore, no consideration of avoidance alternatives is necessary. The Project would have a direct use of seven historic properties. They are described in greater detail below, with a consideration of avoidance alternatives and planning to minimize harm.

Although the majority of the historic resources have no direct use from the Project, ongoing discussion with the SHPD indicate that the agency may consider that under Section 106 there would be an effect, but no adverse effect, on these

resources. In consultation with SHPD, effects to these resources may include effects upon, for example, visual settings and community context. As a result, under Section 4(f), no use findings have been identified for these resources, as listed in Table 5-2. Concurrence of findings will be completed prior to the Final EIS.

Historic sites with no Section 4(f) use include sites that the elevated guideway would pass over, such as eight low-level highway bridges, lava rock curbs along Dillingham Boulevard, and the O‘ahu Railway and Land Company basalt street paving. For all sites with no use, the elevated guideway, stations, and other project-related features would not substantially impair or diminish the activities, features, or attributes that qualify these sites for protection under Section 4(f).

De Minimis Impacts

Five historic properties would be directly impacted by the Project, but not adversely affected. In each case, the impact from the Project would be a small partial acquisition of land adjacent to the project alignment ranging from 0.01 to 0.6 acre, with no direct impact to any structures or contributing resources. The impact to each would be small enough that the historic properties would not be adversely affected, as described in 36 CFR 800.5. These historic properties listed in Table 5-2 are the Six Quonset Huts, the Chinatown Historic District, the HECO Downtown Plant, Radford High School, and the Pearl Harbor National Historic Landmark (Figures 5-8 through 5-12).

As described above, Section 4(f) regulations are clear that Section 106 findings of no adverse effect equate to *de minimis* impact findings. Because the use of these five properties would be *de minimis*, and Section 4(f) is satisfied once *de minimis* applies, no avoidance alternatives are discussed.



Figure 5-8 Six Quonset Huts



Figure 5-11 Radford High School



Figure 5-9 Chinatown Historic District



Figure 5-12 Pearl Harbor National Historic Landmark



Figure 5-10 HECO Downtown Plant

Solmirin House

Description and Significance of Property

This single-story plantation-style house dates from 1937 and is an example of vernacular residential style. Although this structure has no particular architectural distinction or known association with an important historic person or event, it is representative of a local building type in a rural setting (Figure 5-13).



Figure 5-13 Solmirin House

Application of Section 4(f)

The Solmirin House would be affected by the Pearl Highlands park-and-ride facilities. The park-and-ride structure would be constructed on an 11-acre site that would provide 1,600 parking spaces for the Pearl Highlands Transit Center. The parking facility would require acquisition of the Solmirin House and underlying parcel. The property would permanently be incorporated into the transportation facility, resulting in a direct use. Consultation between FTA and SHPD has determined that this would be an Adverse Effect; therefore, it would be a Section 4(f) use.

Avoidance Alternatives

The Pearl Highlands Station is projected to have the second-highest passenger volume of all stations in the system and would serve as the transfer point for all users in Central O‘ahu, whether they drive to the station or transfer from TheBus. This transit center and park-and-ride facility would

be designed to provide easy access to the fixed guideway transit system from the H-1 and H-2 Freeways, Kamehameha Highway, and Farrington Highway. This station location would provide the most convenient access to the system for residents of Central O‘ahu (i.e., locations mauka and ‘Ewa of the station). Therefore, elimination of the station and associated park-and-ride structure is not prudent. Two alternative guideway and highway ramp alignments, station locations, and park-and-ride locations have been evaluated to avoid the Solmirin House (Figures 5-14 and 5-15). Neither of these alternatives represents a prudent or feasible avoidance alternative or minimization measure, as described below.

One avoidance alternative would move the park-and-ride to Leeward Community College. Under this alternative, the H-2 Freeway access ramp would need to be re-designed from a one-way ramp to a two-way ramp. This would cost approximately \$50 million more than the ramps that would serve the Pearl Highlands Station. For this location, the access road for Leeward Community College would also require improvement, which would cost approximately \$25 million. In addition, the guideway’s crossing of the H-1 Freeway would need to be realigned, costing an additional \$5 million.

In addition to the \$80 million of roadway and guideway improvements discussed above, there would be an additional \$1 million cost to acquire right-of-way from the Hawai‘i Laborers Training Program site Koko Head and makai of the ramp connecting Farrington Highway to Kamehameha Highway, as well as loss of parking for Leeward Community College which would cost \$30 million to replace. These costs would be offset by approximately \$20 million since the Pearl Highlands Station would not be constructed under this avoidance alternative. Therefore, the net increase in cost for this avoidance alternative would be approximately \$90 million.

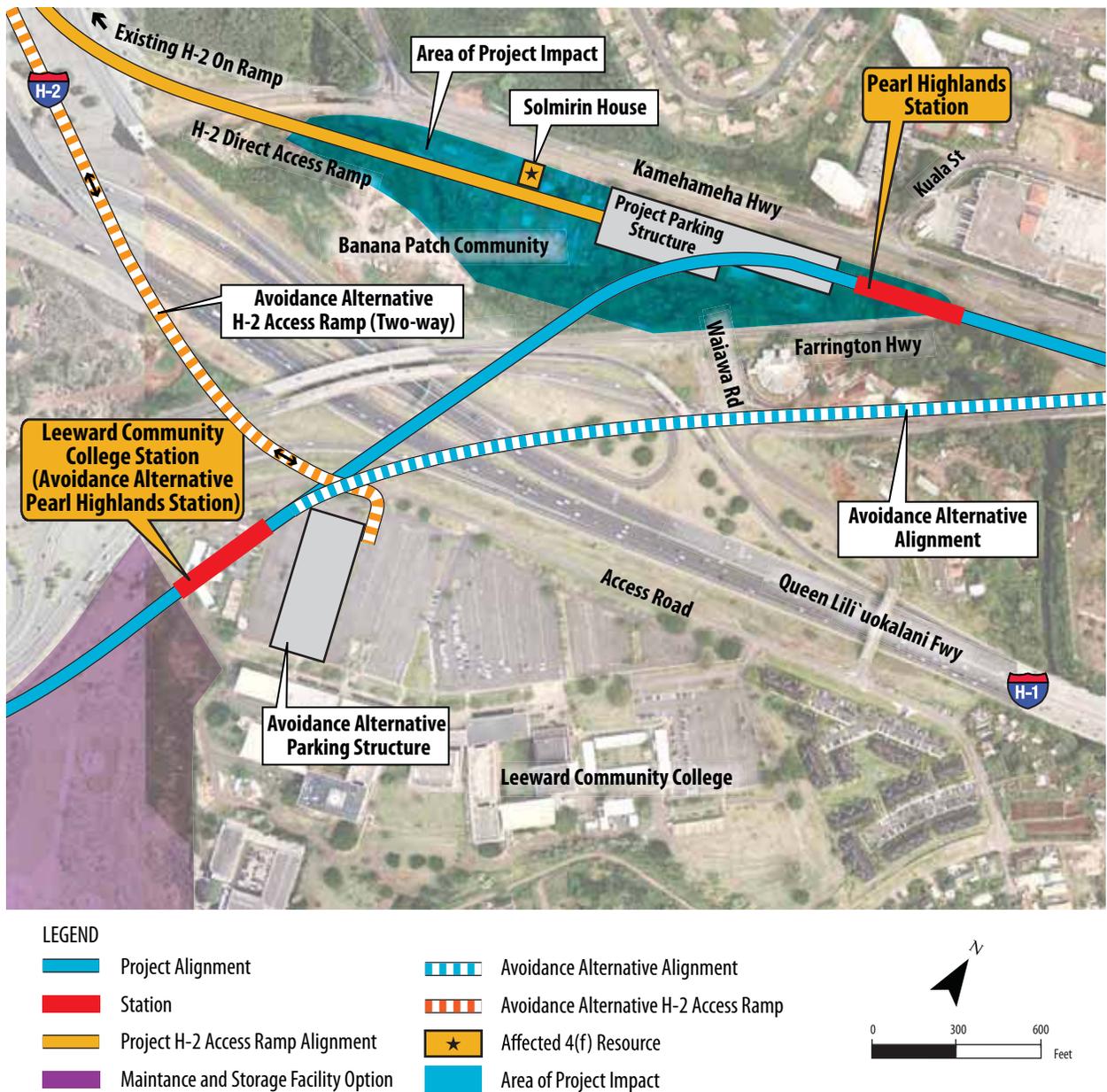


Figure 5-14 Leeward Community College Avoidance Alternative

The second avoidance alternative that was evaluated would move the park-and-ride to the Hawai'i Laborers Training Program site. The shift in guideway alignment to serve this location would prevent the placement of a track switch to access the maintenance and storage facility site near Leeward Community College in the Koko Head direction, which would make this maintenance and storage facility impractical with

this alternative. The design also would require spanning both directions of the H-1 Freeway with a single guideway span exceeding 300 feet in length at a cost of \$5 million. A longer access ramp from the H-2 Freeway would be required at a cost of \$20 million. Access roads would also need to be improved at a cost of about \$20 million.

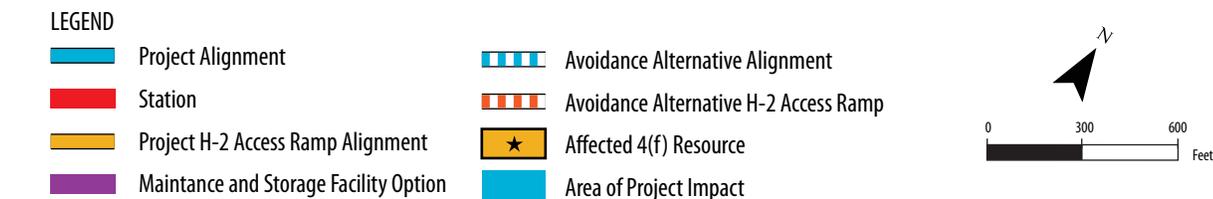
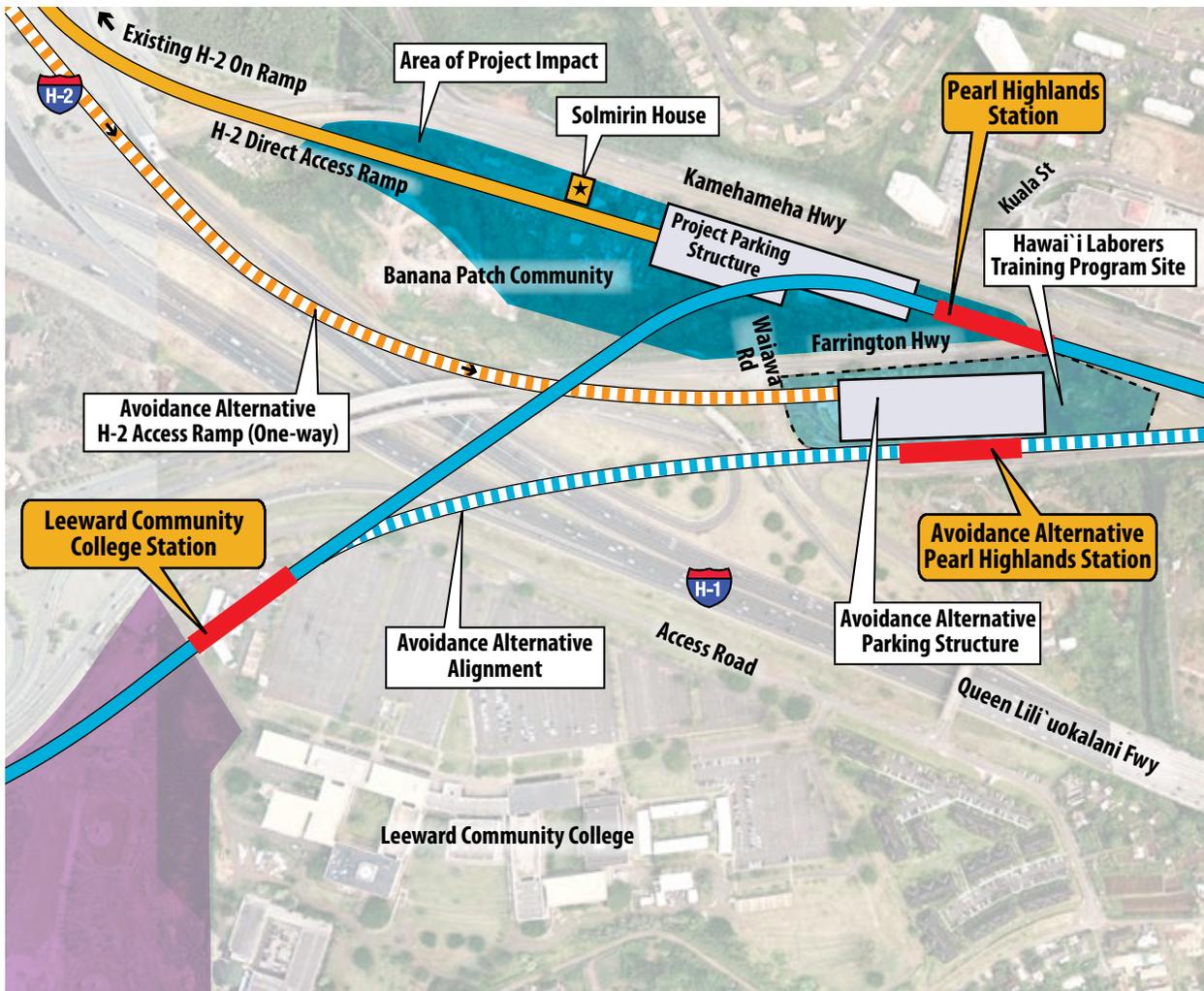


Figure 5-15 Hawai'i Laborers Training Program Site Avoidance Alternative

Land improvements, right-of-way, and relocation costs at this site would add an additional \$8 million dollars. In addition, the park-and-ride structure would cost approximately \$10 million more than it would for the proposed Pearl Highlands Station.

Locating the park-and-ride facilities at either of the two avoidance alternative sites would cost substantially more and provide less efficient transportation

circulation, as access would be less direct. For these reasons, this alternative is not considered prudent.

Agency Coordination and Consultation

Consultation among FTA, Hawai'i SHPD, and other Section 106 consulting parties is ongoing, as described in Chapter 8, Comments and Coordination. The Solmirin House has been determined to be a historic property, eligible for nomination to the National Register of Historic Places (NRHP).

The impact of the Project would be an Adverse Effect under Section 106 of the National Historic Preservation Act (NHPA).

Measures to Minimize Harm

The park-and-ride lot has been designed to minimize impacts to the extent practicable. Given that a prudent avoidance alternative cannot be found, the Project would require full acquisition of Solmirin House. There are no further design measures to minimize harm beyond mitigating for the residential relocation. Mitigation under Section 106 of the NHPA would also serve to minimize harm.

Afuso House

Description and Significance of Property

This single-story plantation-style residence is associated with the residential development of the Kalihi Kai neighborhood in the early 1900s. This structure embodies the distinctive characteristics of a type and period of construction and retains a high degree of integrity of location, design, materials, workmanship, feeling, and association. Its integrity of setting has been somewhat changed from its historic dense residential character, as there are now adjacent vacant lots on one side; however, other historic residential buildings are present in the immediate area. The added carport and jalousie windows are apparent non-historic alterations; however, most of the other features are historic and part of the design history of the house (Figure 5-16).



Figure 5-16 Afuso House and Higa Fourplex

Application of Section 4(f)

As a result of the widening of Dillingham Boulevard, approximately 10 feet to accommodate the columns of the fixed guideway, all Build Alternatives would impact the Afuso House (Figure 5-17). There would be an acquisition of the parcel and the structure. Because the widening of Dillingham Boulevard would permanently incorporate land into the transportation facility, this qualifies as a direct use.

Avoidance Alternatives

During the Alternatives Analysis phase, two alignments between Middle Street and Iwilei were considered, one along Dillingham Boulevard and another along North King Street. The North King Street alignment would have resulted in as many as 36 historic Section 4(f) property impacts, a greater number of residential relocations, and more noise-sensitive issues compared to the Dillingham Boulevard alignment.

Other avoidance alternatives to the project alignment would be to move the guideway to either the mauka or makai side of Dillingham Boulevard. Neither alternative represents a prudent or feasible avoidance or minimization measure, as discussed below:

- Mauka Shift (Figure 5-17)—to shift the guideway mauka and out of the median would require relocating 8,000 feet of a 138-kilovolt (kV) high-voltage electrical line and 20 steel poles. This would result in an extremely high cost, in excess of \$12 million. In addition, a mauka shift would also impact more historic Section 4(f) properties, such as the AC Electric building, the Duarte House, 10 Courtyard Houses, Pu'uhale Market, the Tsumoto shophouse, and additional True Kamani Trees. Therefore, a mauka shift would not avoid Section 4(f) uses.
- Makai Shift—to shift the alignment makai and out of the median would impact this Section 4(f) resource to the same extent



LEGEND

Project Alignment

Avoidance Alternative Alignment

Powerline

Affected 4(f) Resource

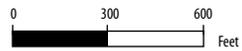


Figure 5-17 Afuso House, Higa Fourplex, and Teixeira House and Avoidance Alternative

(removal of resource) as placing the guideway in the median and widening the road to the makai side.

Agency Coordination and Consultation

Consultation among FTA, Hawai'i SHPD, and other Section 106 consulting parties is ongoing, as described in Chapter 8. The Afuso House has been determined to be a historic property, eligible for nomination to the NRHP. The impact of the Project would have an Adverse Effect under Section 106 of the NHPA.

Measures to Minimize Harm

The project guideway has been designed to be as narrow as possible to minimize impact. The widening of Dillingham Boulevard has been reduced to as narrow a width as possible to still address all safety concerns. Mitigation under Section 106 of the NHPA would also serve to minimize harm.

Higa Fourplex

Description and Significance of Property

This two-story plantation-style fourplex residence (Figure 5-16) is associated with the residential development of the Dillingham Boulevard area in the 1940s when there was increased demand for housing in the build-up period before World War II. This structure is also associated with the history of Dillingham Boulevard's development and its effect on the Kalihi Kai neighborhood, which originally consisted of mostly single-family residences. The building has a high degree of integrity; all alterations appear to be historic and are considered part of the building's design history.

Application of Section 4(f)

The Higa Fourplex would be affected by widening Dillingham Boulevard (Figure 5-17) approximately 10 feet to accommodate the Project in the median, as common to all Build Alternatives. There would be a full acquisition, requiring the parcel and the structure. Because the widening of Dillingham Boulevard by approximately 10 feet

would permanently incorporate land into the transportation facility, this qualifies as a direct use. Consultation between FTA and SHPD has determined this to be an Adverse Effect and, therefore, a Section 4(f) use.

Avoidance Alternatives

During the Alternatives Analysis phase, two alignments between Middle Street and Iwilei were considered, one along Dillingham Boulevard and another along North King Street. The North King Street alignment would have resulted in as many as 36 historic Section 4(f) property impacts, a greater number of residential relocations, and more noise-sensitive issues, compared to the Dillingham Boulevard alignment.

Other avoidance alternatives to the project alignment would be to move the guideway to either the mauka or makai side of Dillingham Boulevard. Neither alternative represents a prudent or feasible avoidance or minimization measure, as discussed below:

- Mauka Shift (Figure 5-17)—to shift the guideway mauka and out of the median would require relocating 8,000 feet of a 138-kV high-voltage electrical line and 20 steel poles. This would result in an extremely high cost, in excess of \$12 million. In addition, a mauka shift would also impact more historic Section 4(f) properties, such as the AC Electric building, the Duarte House, 10 Courtyard Houses, Pu'uhale Market, the Tsumoto shophouse, and additional True Kamani Trees. Therefore, a mauka shift would not avoid Section 4(f) uses.
- Makai Shift—to shift the alignment makai and out of the median would impact this Section 4(f) resource to the same extent (removal of resource) as placing the guideway in the median and widening the road to the makai side.

Agency Coordination and Consultation

Consultation among FTA, Hawai‘i SHPD, and other Section 106 consulting parties is on-going, as described in Chapter 8. The Higa Fourplex has been determined to be a historic property, eligible for nomination to the NRHP. The impact of the Project would have an Adverse Effect under Section 106 of the NHPA by the FTA and Hawai‘i SHPD.

Measures to Minimize Harm

The project guideway has been designed to be as narrow as possible to minimize impact. The widening of Dillingham Boulevard has been reduced to as narrow a width as possible to still address all safety concerns. Mitigation under Section 106 of the NHPA would also serve to minimize harm.

Teixeira House

Description and Significance of Property

This single-story plantation-style residence is associated with the residential development of the Kalihi Kai neighborhood in the first half of the 20th century, before North Queen Street was renamed Dillingham Boulevard. This structure embodies the distinctive characteristics of a type, period, and method of construction and is a good example of a 1940s, single-wall, plantation-style house. There have been some changes made to the structure, but it retains sufficient integrity to qualify for the NRHP. Integrity of setting is especially compromised from its historic dense residential character due to a new, large commercial building on the consolidated adjacent lot. The historic setting remains apparent due to the presence of other historic residential buildings in the immediate area. There have been some non-historic design changes made to the structure, including installation of jalousies and removal of a rock wall fronting the lot (Figure 5-18).

Application of Section 4(f)

The Teixeira House parcel would be affected by widening Dillingham Boulevard by approximately



Figure 5-18 Teixeira House

10 feet (Figure 5-17) to accommodate the fixed guideway in the median under all Build Alternatives. There would be a full acquisition, requiring the parcel and the structure. Because the widening of Dillingham Boulevard would permanently incorporate land into the transportation facility, this qualifies as a direct use. Consultation between FTA and SHPD has determined this to be an Adverse Effect and Section 4(f) use.

Avoidance Alternatives

During the Alternatives Analysis phase, two alignments between Middle Street and Iwilei were considered, one along Dillingham Boulevard and another along North King Street. The North King Street alignment would have resulted in as many as 36 historic Section 4(f) property impacts, a greater number of residential relocations, and more noise-sensitive issues compared to the Dillingham Boulevard alignment.

Other avoidance alternatives to the project alignment would be to move the guideway to either the mauka or makai side of Dillingham Boulevard. Neither alternative represents a prudent or feasible avoidance or minimization measure, as discussed below:

- Mauka Shift (Figure 5-17)—to shift the guideway mauka and out of the median would require relocating 8,000 feet of a 138-kV high-voltage electrical line and 20 steel poles. This would result in an extremely

high cost, in excess of \$12 million. In addition, a mauka shift would also impact more historic Section 4(f) properties, such as the AC Electric building, the Duarte House, 10 Courtyard Houses, Pu'uhale Market, the Tsumoto shophouse, and additional True Kamani Trees. Therefore, a mauka shift would not avoid Section 4(f) uses.

- Makai Shift—to shift the alignment makai and out of the median would impact this Section 4(f) resource to the same extent (removal of resource) as placing the guideway in the median and widening the road to the makai side.

Agency Coordination and Consultation

Consultation among FTA, Hawai'i SHPD, and other Section 106 consulting parties is ongoing, as described in Chapter 8. The Teixeira House has been determined to be a historic property, eligible for nomination to the NRHP. The impact of the Project would have an Adverse Effect under Section 106 of the NHPA.

Measures to Minimize Harm

The project guideway has been designed to be as narrow as possible to minimize impact. The widening of Dillingham Boulevard has been reduced to as narrow a width as possible to still address all safety concerns. Mitigation under Section 106 of the NHPA would also serve to minimize harm.

Boulevard Saimin Restaurant

Description and Significance of Property

This two-story building fronting Dillingham Boulevard was built in 1960 and is of masonry construction with a stucco finish and flat roof. This building has a full-height section of decorative concrete grille on the side facing Dillingham Boulevard and contains multiple storefronts. This structure is associated with the commercialization of saimin (a noodle soup unique to Hawai'i). Boulevard Saimin Restaurant has become an important and popular purveyor of saimin on O'ahu.

This structure appears unaltered and retains a high level of integrity (Figure 5-19).



Figure 5-19 Boulevard Saimin Restaurant

Application of Section 4(f)

The Boulevard Saimin parcel would be affected widening Dillingham Boulevard approximately 10 feet (Figure 5-17) to accommodate the fixed guideway in the median, as common to all Build Alternatives. A total of 698 square feet of parking area would be necessary. Because the widening of Dillingham Boulevard would permanently incorporate land into the transportation facility, this qualifies as a direct use. Consultation between FTA and SHPD has determined this to be an Adverse Effect; therefore, there would be a Section 4(f) use.

Avoidance Alternatives

During the Alternatives Analysis phase, two alignments between Middle Street and Iwilei were considered, one along Dillingham Boulevard and another along North King Street. The North King Street alignment would have resulted in as many as 36 historic Section 4(f) property impacts, a greater number of residential relocations, and more noise-sensitive issues compared to the Dillingham Boulevard alignment.

Other avoidance alternatives to the project alignment would be to move the guideway to either the mauka or makai side of Dillingham Boulevard. Neither alternative represents a prudent or feasible

avoidance or minimization measure, as discussed below:

- **Mauka Shift** (Figure 5-17)—to shift the guideway mauka and out of the median would require relocating 8,000 feet of a 138-kV high-voltage electrical line and 20 steel poles. This would result in an extremely high cost, in excess of \$12 million. In addition, a mauka shift would also impact more historic Section 4(f) properties, such as the AC Electric building, the Duarte House, 10 Courtyard Houses, Pu‘uhale Market, the Tsumoto shophouse, and additional True Kamani Trees. Therefore, a mauka shift would not avoid Section 4(f) uses.
- **Makai Shift**—to shift the alignment seaward and out of the median would impact this Section 4(f) resource to a greater extent than placing the guideway in the median and widening the road to the makai side.

Agency Coordination and Consultation

Consultation among FTA, Hawai‘i SHPD, and other Section 106 consulting parties is ongoing, as described in Chapter 8. Boulevard Saimin Restaurant has been determined to be a historic property, eligible for nomination to the NRHP. The impact of the Project would have an Adverse Effect under Section 106 of the NHPA.

Measures to Minimize Harm

The project guideway has been designed to be as narrow as possible to minimize impact. The widening of Dillingham Boulevard has been reduced to as narrow a width as possible to still address all safety concerns. Mitigation under Section 106 of the NHPA would also serve to minimize harm.

True Kamani Trees on Dillingham Boulevard

Description and Significance of Property

These mature True Kamani Trees were planted along both sides of Dillingham Boulevard, circa 1934, and are spaced about 55 to 75 feet apart. Many of the trees have asymmetrical canopies,

due to pruning them away from overhead utility lines. These trees are associated with the 1930s roadway infrastructure development of Dillingham Boulevard and the history of street tree plantings in Honolulu. They have also been found to embody distinctive characteristics of 1930s landscaping and remain unaltered, except for necessary maintenance pruning (Figure 5-20).



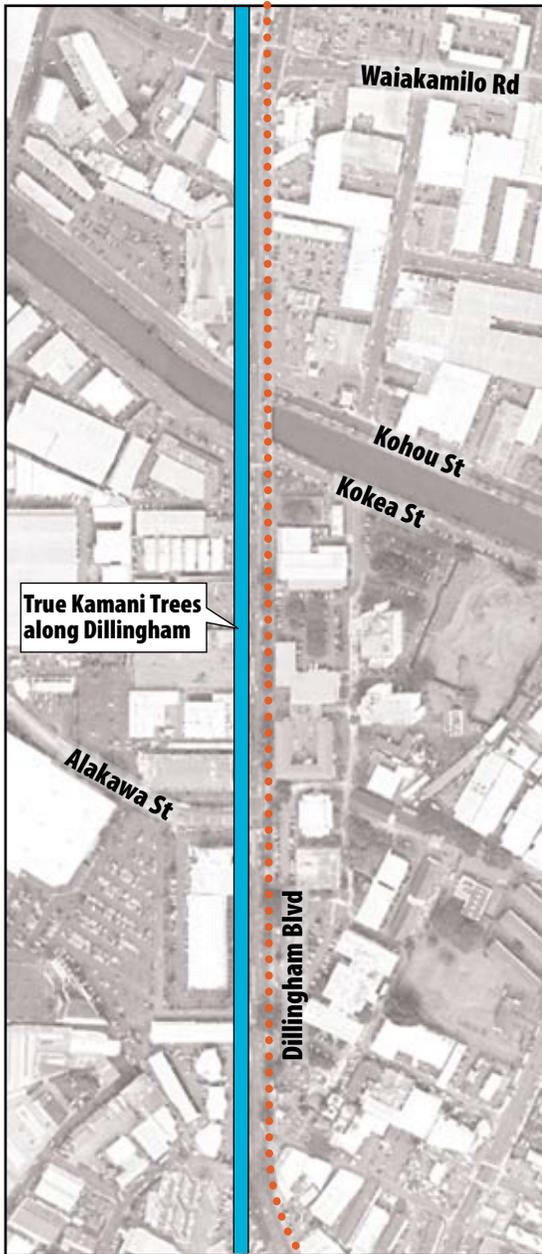
Figure 5-20 True Kamani Trees on Dillingham Boulevard

Application of Section 4(f)

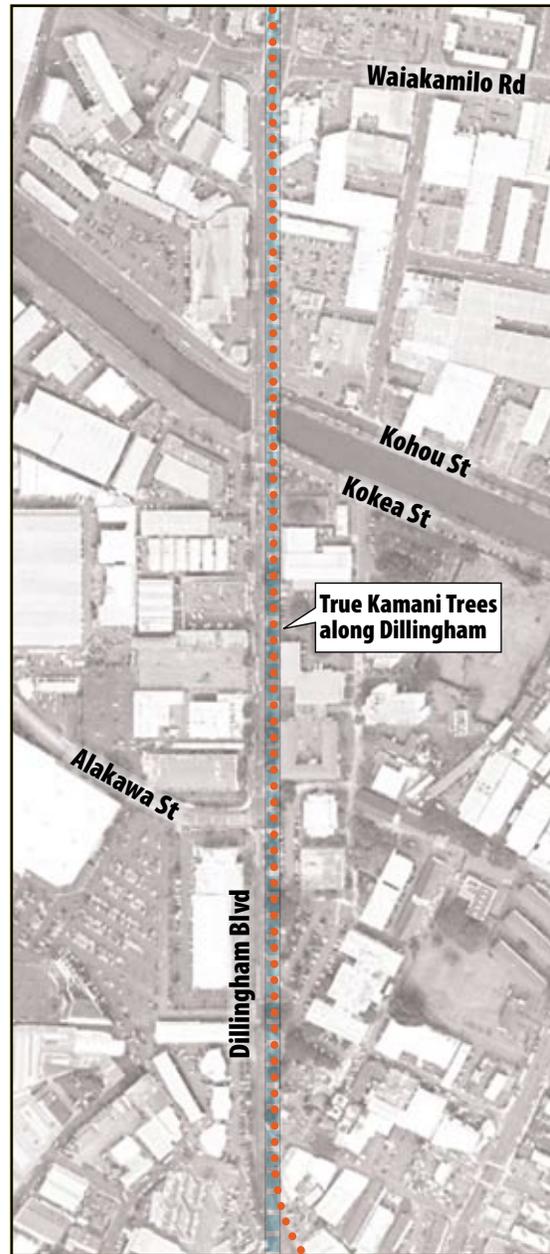
The True Kamani Trees would be affected by widening Dillingham Boulevard by approximately 10 feet (Figure 5-21) to accommodate the fixed guideway being placed in the median, as common to all Build Alternatives. Approximately 28 trees would be removed. Because the widening of Dillingham Boulevard would permanently incorporate land into the transportation facility, this qualifies as a direct use. Consultation between FTA and SHPD has determined this to be an Adverse Effect; therefore, there would be a Section 4(f) use.

Avoidance Alternatives

During the Alternatives Analysis phase, two alignments between Middle Street and Iwilei were considered, one along Dillingham Boulevard and another along North King Street. The North King Street alignment would have resulted in as many as 36 historic Section 4(f) property impacts, a greater number of residential relocations, and more



Proposed Alternative



Avoidance Alternative

LEGEND

- Project Alignment
- Avoidance Alternative Alignment
- Powerline

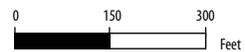


Figure 5-21 True Kamani Trees on Dillingham Boulevard and Avoidance Alternatives

noise-sensitive issues compared to the Dillingham Boulevard alignment.

The other avoidance alternative to the Project would be to move the guideway to the mauka side of Dillingham Boulevard. This does not represent a prudent or feasible avoidance or minimization measure, as discussed below:

- Mauka Shift (Figure 5-21)—to shift the guideway mauka and out of the median would require relocating 8,000 feet of a 138-kV high-voltage electrical line and 20 steel poles. This would result in an extremely high cost, in excess of \$12 million. In addition, a mauka shift would also impact more historic Section 4(f) properties, such as the AC Electric building, the Duarte House, 10 Courtyard Houses, Pu‘uhale Market, the Tsumoto shophouse, and additional True Kamani Trees. Therefore, a mauka shift would not avoid Section 4(f) uses.

Agency Coordination and Consultation

Consultation among FTA, Hawai‘i SHPD, and other Section 106 consulting parties is ongoing, as described in Chapter 8. The True Kamani Trees have been determined to be a historic resource, eligible for nomination to the NRHP. The impact of the Project would have an Adverse Effect under Section 106 of the NHPA.

Measures to Minimize Harm

The project guideway has been designed to be as narrow as possible to minimize impact. The widening of Dillingham Boulevard has been reduced to as narrow a width as possible to address all safety concerns. Five trees would be removed, but could not be transplanted. The trees would be replaced. Mitigation under Section 106 of the NHPA would also serve to minimize harm.

Dillingham Transportation Building

Description and Significance of Property

This structure is associated with the commercial development of Downtown Honolulu, specifically the early development of Bishop Street as the center of commerce for the territory of Hawai‘i, as well as the Dillingham family empire of businesses. The Dillingham Transportation Building is listed on the Hawai‘i Register of Historic Places. It is a four-story Italian Renaissance Revival-style building. The entry lobby has elaborate Art Deco decorations. This building retains a high level of integrity, as the only major changes involve the creation of first-floor storefronts and two arcades by removal of some of the store spaces to provide Bishop Street access and addresses for the circa-1980 Pacific Guardian Center towers (Figure 5-22).



Figure 5-22 Dillingham Transportation Building

Application of Section 4(f)

An entrance to the planned Downtown Station would impact the Dillingham Transportation Building under all Build Alternatives. The Downtown Station would be the highest-volume station in the system without an associated transit center. It is the only station that would serve the Central Business District. Approximately 2,400 square feet of the plaza area between the Dillingham Transportation Building and neighboring office buildings would be used for the station entrance. This area is part of the parcel eligible for the

NRHP. It is privately owned and currently used as an open space, with tables, chairs, and walkways (Figure 5-23). The station entrance would replace a fountain and trash dumpster storage area. It would not eliminate the open space or alter its use. The station entrance would be designed to be compatible with the use of the open space. Because the Project would permanently incorporate land from within the boundaries of a historic property into the transportation facility, it would result in a Section 4(f) use.



Figure 5-23 Plaza at Planned Downtown Station Entrance

Avoidance Alternatives

Avoidance alternatives are limited by Honolulu Harbor and by the geometry of Nimitz Highway. Several alternative alignments were considered during the Alternatives Analysis phase, one of which included Queen Street. While this alternative would avoid this particular resource, it was determined that it would also affect properties within the Hawai'i Capital Historic District, including the Post Office, Ali'iōlani Hale, and Hale Auhau. It would also affect three National Register properties along Queen Street (the C. Brewer, Alexander and Baldwin, and Royal Brewery Buildings). Therefore, it does not represent a Section 4(f) avoidance.

Another alternative, suggested by the American Institute of Architects, would replace the elevated guideway through the downtown section with

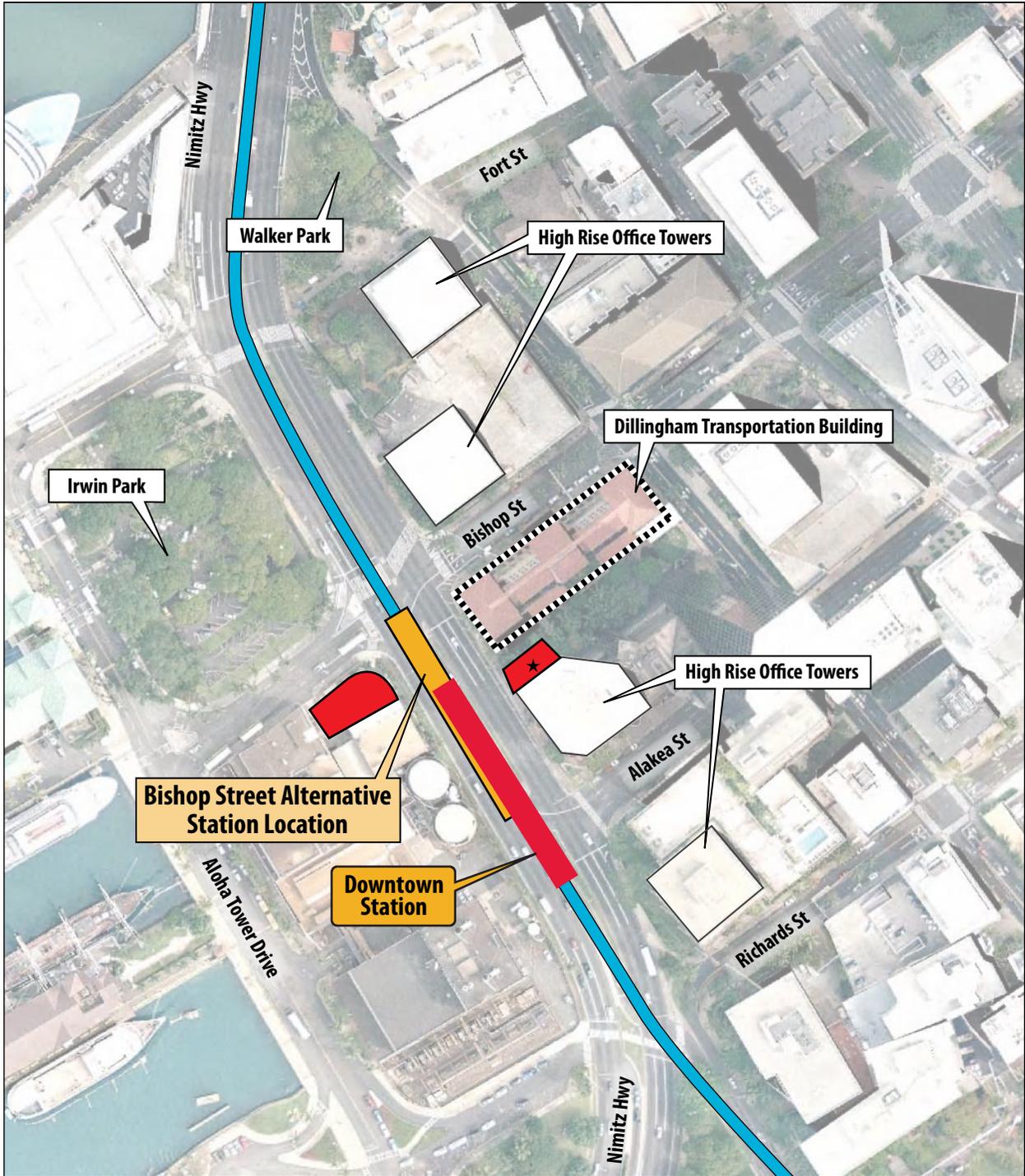
at-grade operation. The Project's third-rail technology could not be used at-grade in mixed traffic flow. Switching technologies for this section of the alignment would compromise reliability and maintenance and would not meet the operating parameters outlined in Chapter 2. Therefore, after careful consideration, it was determined that this alternative is not prudent and feasible.

Other, small shifts of the station entrance are not feasible because they would require the demolition of one of the high-rise office buildings that surround the parcel. In addition to considering small shifts of the station entrance, three more significant avoidance alternatives were considered. Each considers relocating the Downtown Station to avoid this Section 4(f) use (Figures 5-24 through 5-26).

Bishop Street

The Downtown Station could be moved 'Ewa to Bishop Street (Figure 5-24). This shift would require moving the entrance 60 feet closer to the Dillingham Building, creating a greater visual impact to this historic resource. In addition, the entrance serving the makai side of Nimitz Highway would impact Irwin Memorial Park, another Section 4(f) property. The station would overhang across Bishop Street and impact the Protected View Corridor (DPP 2004a). This potential avoidance alternative is not considered prudent because it would worsen the impact to the Dillingham Building, directly impact Irwin Memorial Park, and impact the Bishop Street Protected View Corridor.

Note that Bishop Street was originally considered for the Downtown Station entrance, but the additional impacts described above prompted a design shift Koko Head to its proposed location. Thus, the proposed location represents the avoidance and minimization of harm alternative to the original Bishop Street location.

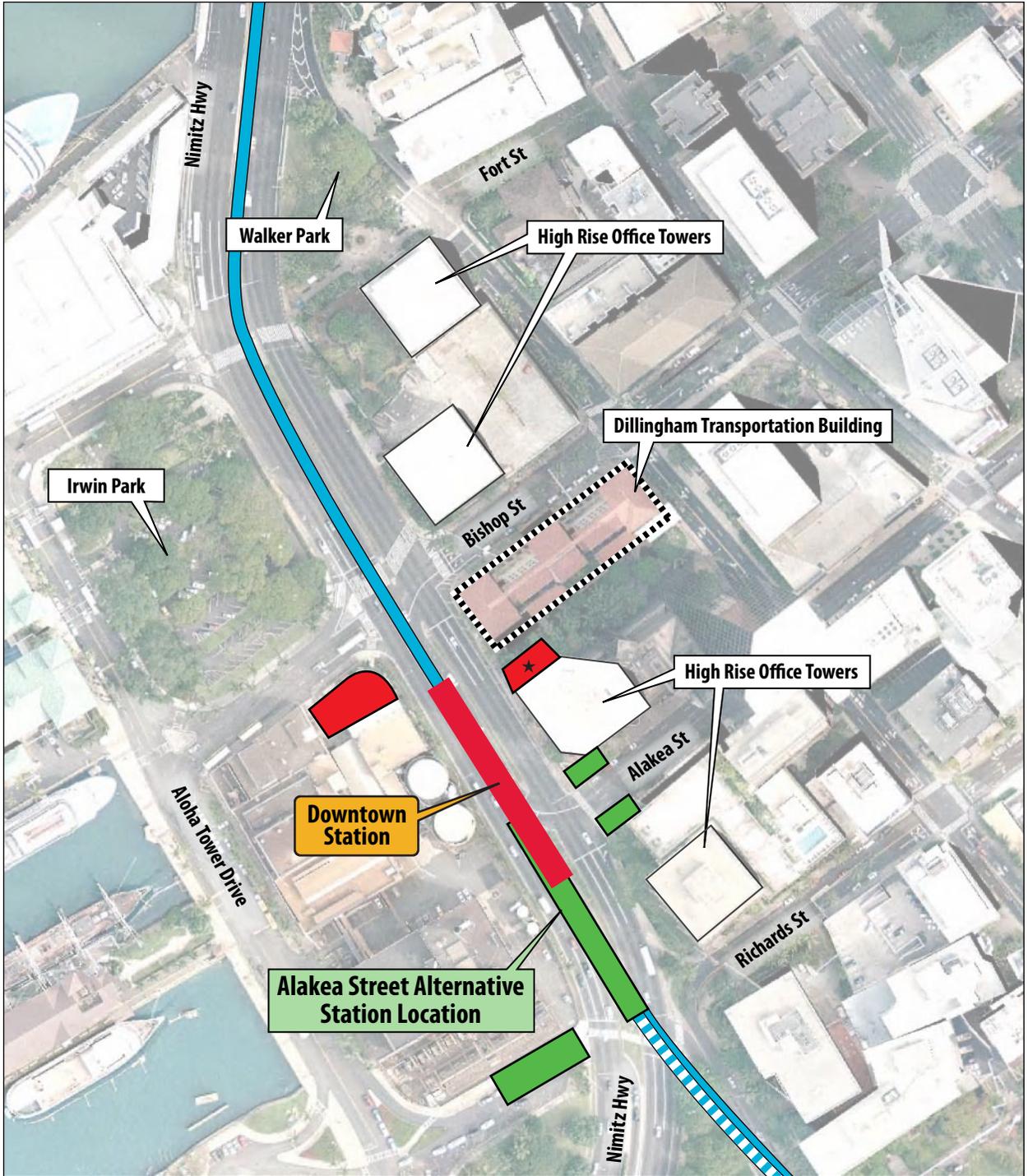


LEGEND

- Project Alignment
- Bishop Street Alternative Station Location
- Station
- Affected 4(f) Resource



Figure 5-24 Dillingham Transportation Building and Avoidance Alternatives—Bishop Street Alternative

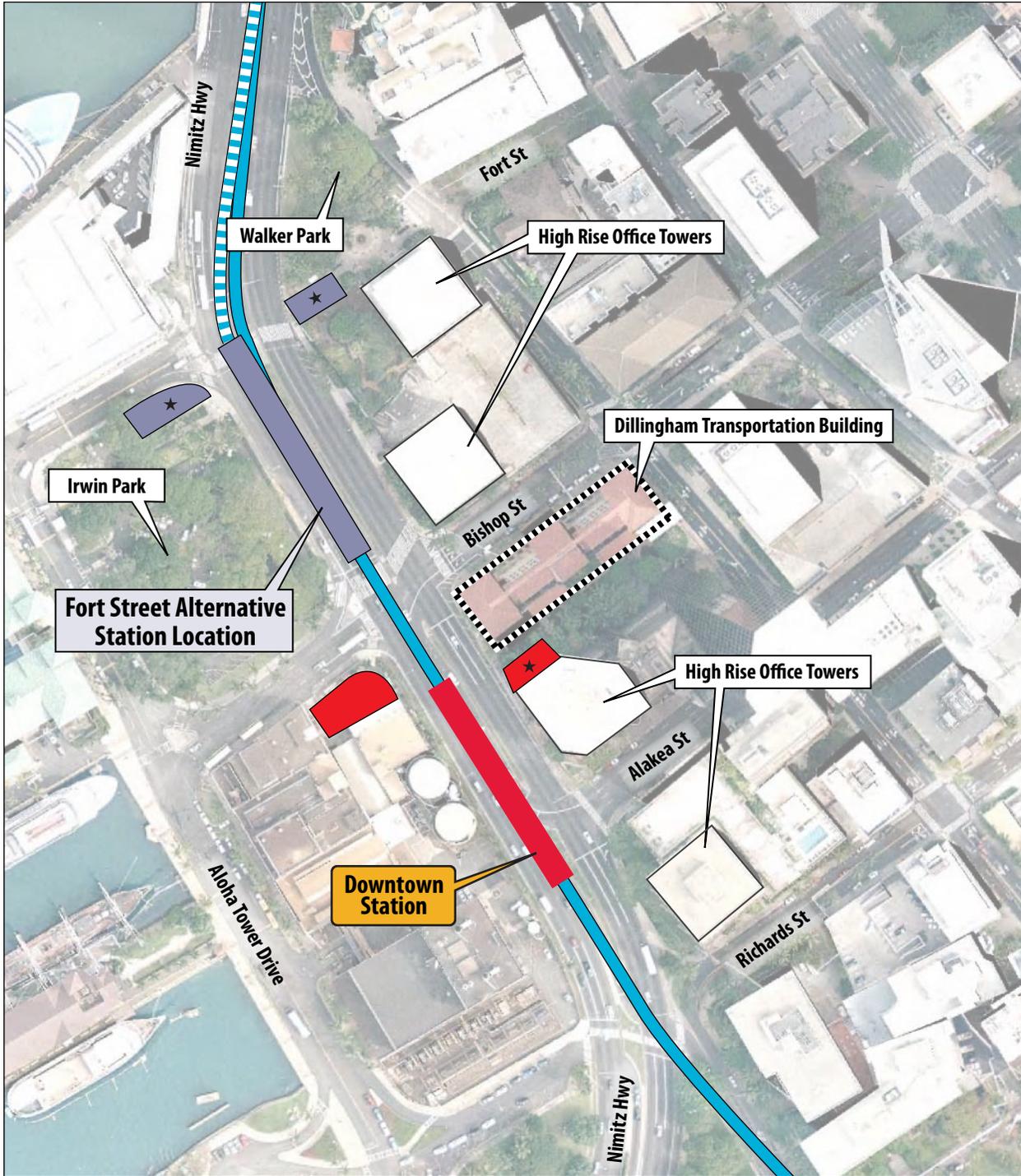


LEGEND

- Project Alignment
- Station
- Alakea Street Alternative Station Location
- Alakea Street Alternative Project Alignment
- ★ Affected 4(f) Resource



Figure 5-25 Dillingham Transportation Building and Avoidance Alternatives—Alakea Street Alternative



LEGEND

- Project Alignment
- Fort Street Alternative Station Location
- Station
- Fort Street Alternative Project Alignment
- ★ Affected 4(f) Resource



Figure 5-26 Dillingham Transportation Building and Avoidance Alternatives—Fort Street Alternative

Alakea Street

Moving the station Koko Head and shifting the entrance to Alakea Street (Figure 5-25) were evaluated to avoid the historic parcel and to site them away from the Dillingham Transportation Building. Two options exist for the station entrance on Alakea Street. One option would be to locate the entrance on the ‘Ewa side of the street, adjacent to the Pacific Guardian Center. The other would be to place the entrance on the Koko Head side of Alakea Street, adjacent to the Harbor Square building. Neither alternative is considered prudent and feasible for the reasons discussed below.

A station entrance adjacent to the Pacific Guardian Center (Figure 5-27) would force pedestrians to walk past the entrance to the building’s parking garage. The garage is a busy facility for downtown commuters and has 760 parking stalls. This alternative would create an unsafe conflict between pedestrians and automobiles, with an average of 16 pedestrians crossing and 4 automobiles using the



Figure 5-27 Entrance to Pacific Guardian Center

entrance each minute of the peak hour. For these reasons, a station entrance adjacent to the Pacific Guardian Center would create an unsafe conflict between pedestrians and automobiles at the Pacific Guardian Center parking garage and is not considered prudent.

Placing the station entrance on the Koko Head side (Figure 5-25) presents many of the same problems. The Harbor Square building is a residential high-rise with a parking garage below (Figure 5-28). As with the ‘Ewa side of the street, a station entrance at this location would create an unsafe conflict between pedestrians and automobiles using the parking garage. This is not considered prudent.



Figure 5-28 Parking Entrance at Harbor Square Building

In either case, the station entrance on the makai side of Nimitz Highway would also have to be moved about 500 feet Koko Head to Richards Street. This would place transit users farther from the primary destinations of the Waterfront and Aloha Tower Marketplace. It would force a longer walk along Nimitz Highway, which currently lacks a sidewalk, or along Ala Moana Boulevard.

Fort Street

The third alternative would move the station ‘Ewa to Fort Street (Figure 5-26). Under this avoidance alternative, the entrances would be in Irwin Memorial Park on the makai side and either Walker Park or the Fort Street Mall on the mauka side.

However, this station location would require a 250-foot curve radius to maintain a minimum distance between the edge of the station platform and end of curve. A 250-foot curve radius is substantially less than the Project’s design criteria

of 500 feet. Such a tight radius would necessitate reducing speeds to 5 to 10 miles per hour, which is substantially below the Project’s design speed of 30 miles per hour. This would result in increased travel time and a substantial decrease in user benefits. Additionally, placing an entrance makai of Nimitz Highway would impact Section-4(f)-protected Irwin Memorial Park, and a mauka entrance would block either the Fort Street Mall or Walker Park, another Section 4(f) resource.

The Fort Street alternative would: (1) violate the Project’s design standards, (2) reduce user benefits in a manner contrary to the Purpose and Need of the Project, and (3) impact additional Section 4(f) properties. For these reasons it is not considered a prudent avoidance alternative.

Agency Coordination and Consultation

Consultation among FTA, Hawai‘i SHPD, and other Section 106 consulting parties is ongoing, as described in Chapter 8, Comments and Coordination. The impact of the Project has been deemed an Adverse Effect under Section 106 of the NHPA by the FTA and Hawaii’s SHPD.

Measures to Minimize Harm

The station has been placed Koko Head of the Dillingham Transportation Building facade to minimize exposure to the building. As a result, there would be minimal use of property and no physical impact to the historic building. Mitigation under Section 106 of the NHPA would also serve to minimize harm.

5.5 Constructive Use of Section 4(f) Properties

5.5.1 Historic 4(f) Resources

Section 4(f) regulations, 23 CFR 774.15(a), states: “A constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify the property

for protection under Section 4(f) are substantially impaired.” Therefore, for each of the six historic properties discussed in Section 5.4, Direct Use of Section 4(f) Properties, the use is determined to be a direct use, not a constructive use, because the Project would incorporate land from each one.

The Project would have an adverse effect at each of these six resources, and ongoing consultation is particularly focused on visual impacts of the proposed raised guideway. This is especially true at the Dillingham Transportation Building where the proposed Downtown Station would be built very close to this historic structure. Despite the adverse visual impact to this resource, its Section 4(f) use is considered a direct use because the Project requires right-of-way within the historic parcel, therefore precluding a constructive use determination. Mitigation for all adverse impacts will take visual effects into account.

In summary, the Project would not result in a constructive use of any historic Section 4(f) resources because:

- The Project would create a direct use at the Solmirin House, Afuso House, Higa Fourplex, Teixeira House, the Boulevard Saimin Restaurant, the True Kamani Trees along Dillingham Boulevard, and Dillingham Transportation Building because it would incorporate land into the transportation facility, therefore precluding constructive use (23 CFR 774.15(a)); and,
- The Project would have no adverse effect or no effect on the remaining historic Section 4(f) resources (23 CFR 774.15(f)1).

5.5.2 Parks and Recreation Resources

Table 5-1 lists nine parks or recreation areas considered for Section 4(f) use. As discussed in Section 5.4.1, the Project would create a direct use of two of them—Ke’ehi Lagoon Beach Park and Aloha Stadium (albeit a *de minimis* impact at Aloha Stadium). Because the Project would

incorporate land from these two resources into the proposed facility, they constitute direct uses, which necessarily excludes constructive use, as described above and in 23 CFR 774.15(a). The remaining seven parks and recreation areas are considered for constructive uses.

23 CFR 774.15(d) states: “When a constructive use determination is made, it will be based upon the following:

1. Identification of the current activities, features, or attributes of the property which qualify for protection under Section 4(f) and which may be sensitive to proximity impacts;
2. An analysis of the proximity impacts of the proposed project on the Section 4(f) property. If any of the proximity impacts will be mitigated, only the net impact need be considered in this analysis. The analysis should also describe and consider the impacts which could reasonably be expected if the proposed project were not implemented, since such impacts should not be attributed to the proposed project; and
3. Consultation, on the foregoing identification and analysis with the official(s) with jurisdiction over the Section 4(f) property.”

This constructive use analysis is focused on identifying potential proximity impacts that would substantially impair Section 4(f) properties. “Substantial impairment occurs only when the protected activities, features, or attributes of the property are substantially diminished (23 CFR 774.15(a)).”

Table 5-1 lists the seven remaining 4(f) properties and identifies the current activities, features, or attributes of the properties that qualify them for protection under Section 4(f). Each of these properties is within an urban or semi-urban

setting where major transportation facilities or commercial/industrial developments are present. Users have little to no expectation of high visual quality. While setting has some importance, these facilities do not derive their value in *substantial* part due to their setting.

West Loch Golf Course

West Loch Golf Course is a recreational golf course. The proposed guideway would be placed at the mauka end of the course, along the Farrington Highway. Although the guideway would introduce a new element, Farrington Highway is a major transportation corridor. The guideway would not substantially impair any distant or panoramic views, and would have limited effect on the area’s scenic quality (Section 4.7). Therefore, the Project would not substantially impair aesthetic features that are important contributing elements of the property and would not create a constructive use from visual impairment.

Neal S. Blaisdell Park and Aiea Bay State Recreation Area

Neal S. Blaisdell Park (Figure 5-29) and Aiea Bay State Recreation Area are located immediately makai of Kamehameha Highway. To the extent that the facilities derive any part of their value from their visual setting, all high quality views are makai, toward Pearl Harbor. In each case, the elevated guideway would be located along Kamehameha Highway, a 12-lane, major transportation corridor mauka of the parks. No views of the harbor would be obstructed. Therefore, the Project would not substantially impair aesthetic features that are important contributing elements of the property, and the Project would not be a constructive use of these properties.



Figure 5-29 Neal S. Blaisdell Park

Āliamanu Neighborhood Park

Āliamanu Neighborhood Park is located mauka of Salt Lake Boulevard, where the elevated guideway would be located (Figure 5-30). The park provides baseball, basketball, and tennis facilities and is sometimes used by pedestrians and joggers. The mauka end of the park is separated from Salt Lake Boulevard by a retaining wall about 15 feet high. The rest of the park is surrounded by commercial and residential development. The park does not derive a substantial part of its value from its visual setting. To the extent that the facility derives any part of its value from visual setting, the guideway would be located on the mauka side, above the 15-foot retaining wall. The only obstructed view would be of the Tesoro Gas Station.



Figure 5-30 Āliamanu Park, looking makai. Guideway would be above retaining wall.

Walker Park

Walker Park is a small park located in Downtown Honolulu, makai of Nimitz Highway (Figure 5-31). It is surrounded by high-rise buildings and the highway. The elevated guideway would be located in the median of the highway. The park provides shade in a busy downtown area and is primarily used by pedestrians walking through Downtown. It does not provide any benches, picnic tables, or other amenities and does not derive a substantial part of its value due to its visual setting. Although the Aloha Tower is makai of the park, the Project's impact on surrounding views would be limited, as the park is situated within an urban core. Therefore, the Project would not substantially impair aesthetic features that are important contributing elements of the property, and the Project would not be a constructive use of this property.



Figure 5-31 Walker Park

Irwin Memorial Park

Irwin Memorial Park is a publicly owned park in Downtown Honolulu (Figure 5-32). It is most commonly used for parking and lunch breaks in a busy urban setting. To the extent that it derives any part of its value from its visual setting, all high-quality views are makai toward Honolulu Harbor and the Aloha Tower. The Project is proposed for the mauka side of the park and recreation areas. As a result, most obstructed views would be of high-rise office buildings. The guideway would run between this park and the Dillingham Transportation Building (Figure 5-33). However, since the

park does not derive a substantial part of its value from its visual setting and is already bordered by a seven-lane highway, the Project would not substantially impair aesthetic features that are important contributing elements of the property, and the Project would not be a constructive use of this property.



Figure 5-32 Irwin Memorial Park



EXISTING



SIMULATION

Figure 5-33 Nimitz Highway/Fort Street Intersection `Ewa of Irwin Memorial Park and Aloha Tower Market Place, looking Koko Head

Mother Waldron Park

Mother Waldron Park is in a commercial and industrial area. The park is surrounded by commercial buildings and an apartment building and does not derive a substantial part of its value from its visual setting. To the extent that the park derives any part of its value from its visual setting, the guideway would be located on the mauka side, in front of 610 Cooke Street (Figure 5-34). Therefore, the Project would not substantially impair any aesthetic features that are important contributing elements of the property, and the Project would not be a constructive use of this property.



EXISTING



SIMULATION

Figure 5-34 Halekauwila Street/Cooke Street Intersection, looking Mauka past Mother Waldron Park

5.5.3 Refuges and Restriction of Access

None of the Section 4(f) resources along the alignment are wildlife or waterfowl refuges and, therefore, impacts due to ecological intrusion are not applicable. Likewise, the Project's design would not restrict access to any Section 4(f) property.

Vibration impacts are expected to be low or absent throughout the entire corridor (Section 4.9). Similarly, noise analysis indicates no more than moderate impacts along the alignment. Therefore, as described in 23 CFR 774.15(f), no constructive uses to any Section 4(f) resources would result from these potential impacts (see Table 5-3).

23 CFR 774.15(d)2 states that the constructive use analysis "should also describe and consider the impacts which could reasonably be expected if the proposed project were not implemented, since such impacts should not be attributed to the proposed project." Because many of these parks are located within urban or commercial areas, it is reasonable to expect continued development will contribute visual impairment that compromises the setting of these parks. In particular, the Hawai'i Community Development Association Master Plan allows for conversion of the area surrounding Mother Waldron Park to mid- and high-rise mixed-use buildings (HCDA 2005).

5.5.4 Summary

In summary, there would be no constructive use of Section 4(f) resources. For historic properties, regulations prohibit a constructive use determination when the proposed action would incorporate land into the transportation facility, or when a No Adverse Effect finding is applicable via Section 106 consultation. These two conditions cover all historic Section 4(f) properties along the corridor. This determination does not deny the potential for indirect or proximity impacts to historic properties, which have been a focus of Section 106 consultation.

Regarding other types of Section 4(f) resources, there are no wildlife or waterfowl refuges along the corridor and, therefore, there would be no proximity impacts from ecological intrusion. The Project would not restrict access to any Section 4(f) resources.

Vibration and noise impacts along the corridor range from negligible to moderate and do not rise to the level of "substantial impairment." Few, if any, of the Section 4(f) parks and recreation areas derive a substantial part of their value through their visual setting. Rather, they are used for games and sports, picnics, and parking. Visual impacts, while present, would not substantially impair any aesthetic features that are important contributing elements of the property. For these reasons, the Project would not result in a constructive use of any Section 4(f) resource.

5.6 Temporary Use or Occupancy of Section 4(f) Properties

Section 5.1.1 defines temporary use of Section 4(f) properties. The Project does not include any temporary use of Section 4(f) properties, nor do project plans include any temporary occupancy of Section 4(f) properties.

5.7 Determination of Section 4(f) Use

Considering the foregoing discussion of the Project's potential use of Section 4(f) resources, avoidance alternatives, and measures to minimize harm, there would be a direct use (not *de minimis*) of seven historic 4(f) properties. For all Build Alternatives, the use of these seven properties would be identical. The Airport and Airport & Salt Lake Alternatives would create one additional use of Ke'ehi Lagoon Beach Park. There would be an additional five or six *de minimis* uses, depending on the alternative selected (Table 5-3).

For this Project, the Airport and Airport & Salt Lake Alternatives impact Ke‘ehi Lagoon Beach Park. This means that the Salt Lake Alternative would have less Section 4(f) impact than any other alternative; however, the Salt Lake Alternative would not serve the airport. In situations where all Build Alternatives use Section 4(f) properties, “the Administration may approve only the alternative that causes the least overall harm in light of the statute’s preservation purpose. The least overall harm is determined by balancing the following factors:

- The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property);
- The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;
- The relative significance of each Section 4(f) property;
- The views of the official(s) with jurisdiction over each Section 4(f) property;
- The degree to which each alternative meets the Purpose and Need for the Project;
- After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
- Substantial differences in costs among the alternatives. (23 CFR 774.3(c)1)”

All Build Alternatives meet Purpose and Need. For historic resources, the alternatives only differ by one *de minimis* use. No mitigation is required for the one *de minimis* use because the Section 106 effect is “No Adverse Effect.” Therefore, all mitigation under each alternative would be identical.

Least Overall Harm

Because the use of Ke‘ehi Lagoon Beach Park is the only difference in non-*de minimis* Section 4(f) resource use between the alternatives, and because the Section 4(f) value of the park

would be enhanced, all three alternatives would be about equal in impact to Section 4(f) resources. For Ke‘ehi Lagoon Beach Park, consultation has identified mitigation measures and potential benefits. Consultation is ongoing with regard to the measures are discussed below.

The Project would pass above 2.8 acres and affect tennis courts and parking stalls (Figure 5-4). Minimally, impacts to the tennis courts would be mitigated by moving them makai of their current location. This provides a better setting by moving them away from the H-1 Freeway. Consultation with DPR has considered other kinds of athletic amenities in lieu of moving the tennis courts, such as bleachers, and improvements to the park’s ballfield.

The Project would provide compensatory mitigation for the loss of park amenities, and the park would benefit by moving parking under the guideway. This would provide shade where existing parking is currently exposed. This effort would also include providing shade trees or awnings for picnic tables, most of which are currently underused because they are exposed to the sun.

As a result, the Project would provide compensatory mitigation for all impacts to the park and include improvements for users of the park that would provide for a more enjoyable experience. After the mitigation and improvements are provided to the park, the severity of the remaining harm would be low.

These benefits would provide greater recreational value to the park’s users and enhance the elements and attributes that qualify the park for Section 4(f) protection.

5.8 Mitigation

Section 4.15, Archaeological, Cultural, and Historic Resources, discusses mitigation for historic

properties, and Section 4.17, Construction Phase Effects, discusses mitigation of construction-related impacts. At the conclusion of the Section 106 consultation process, a Memorandum of Agreement will be completed that describes mitigation for adverse effects to historic properties. All Section 106 consulting parties will be invited to participate in the creation of the Memorandum of Agreement.