HONOLULU RAIL TRANSIT PROJECT

DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT/SECTION 4(f) EVALUATION

HART

HONOLULU AUTHORITY for RAPID TRANSPORTATION

U.S. Department of Transportation
Federal Transit Administration

MAY 2013

Honolulu Rail Transit Project

(formerly the Honolulu High-Capacity Transit Corridor Project)
City and County of Honolulu, Oʻahu, Hawaiʻi

Draft Supplemental Environmental Impact Statement/Section 4(f) Evaluation

Submitted pursuant to Title 42 USC 4322(2)(c), Title 49 USC 303, 23 CFR 774, 23 CFR 771, and the Judgment and Partial Injunction order of the United States District Court for the District of Hawaiʻi in Honolulu Traffic.com et al. vs. Federal Transit Administration et al. Civ. No. 11-00307 AWT.

The FTA may issue a single Final Supplemental Environmental Impact Statement/Section 4(f) Evaluation and Record of Decision document pursuant to Pub. L. 112-141, 126 Stat. 405, Section 1319(b) unless the FTA determines statutory criteria or practicability considerations preclude issuance of the combined document pursuant to Section 1319. In that case, FTA would issue a Final Supplemental Environmental Impact Statement followed by a supplement to the Record of Decision, as needed.

by the

U.S. Department of Transportation Federal Transit Administration

Honolulu Authority for Rapid Transportation

MAY 28 2013
Date of Approval

Regional Administrator
U.S. Department of Transportation
Federal Transit Administration

5/28/13
Date of Approval

Executive Director and CEO
Honolulu Authority for Rapid Transportation
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Abstract

This Draft Supplemental Environmental Impact Statement/Section 4(f) Evaluation [EIS/4(f)] for the Honolulu Rail Transit Project is a limited-scope document that evaluates the prudence and feasibility of the Beretania Street Tunnel Alternative and reconsiders the no use determination for Mother Waldron Neighborhood Park. This Draft Supplemental EIS/4(f) was prepared to address the Judgment and Partial Injunction order of the United States District Court for the District of Hawai'i in *HonoluluTraffic.com et al. vs. Federal Transit Administration et al.* The Judgment, filed December 27, 2012 requires the FTA and the City and County of Honolulu to comply with the Court's Summary Judgment Order dated November 1, 2012. The Federal Transit Administration is the lead federal agency and the Honolulu Authority for Rapid Transportation is the project sponsor for the 20-mile rail transit project that extends from Kapolei to Ala Moana Center, via the Honolulu waterfront.

Comments concerning the Section 4(f) evaluation of the Beretania Street Tunnel Alternative and Mother Waldron Neighborhood Park may be returned during the 45-day Draft Supplemental EIS/4(f) review period to Mr. Matley or Mr. Grabauskas at the addresses on the prior page. Substantive comments received during the 45-day review period will be addressed in the Final Supplemental EIS/4(f). A disk containing the Draft Supplemental EIS/4(f) is available at no cost. The document is available on the project website at honolulutransit.org and may be reviewed at the following locations:

City and County of Honolulu Municipal Library
All O'ahu public libraries
Honolulu Authority for Rapid Transportation, 1099 Alakea Street, Suite 1700

Printed copies of the document are available for purchase.

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Appendixes (on enclosed compact disk)

Acronyms and Abbreviations

ACHP	Advisory Council on Historic Preservation
CFR	Code of Federal Regulations
City	City and County of Honolulu
Court	United States District Court for the District of Hawai‘i
dBA	A-weighted decibels
DPP	City and County of Honolulu Department of Planning and Permitting
DPR	City and County of Honolulu Department of Parks and Recreation
EIS	environmental impact statement
EIS/4(f)	Environmental Impact Statement/Section 4(f) Evaluation
‘Ewa	toward the ‘Ewa plain, generally west
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HART	Honolulu Authority for Rapid Transportation
HCDA	Hawai‘i Community Development Authority
HECO	Hawaiian Electric Company
Koko Head	toward Koko Head, generally east
Leq	equivalent sound level
Leq(h)	hourly-equivalent sound level
Makai	toward the ocean
Mauka	toward the mountains
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
PA	Programmatic Agreement
PUC	Primary Urban Center
ROD	Record of Decision
SCC	standard cost categories
SHPD	State Historic Preservation Division
SHPO	State Historic Preservation Officer
TBM	tunnel boring machine
TCP	Traditional Cultural Property
TPSS	Traction Power Substation
VdB	vibration decibels
YOE	year of expenditure

Executive Summary

In January 2011, the Federal Transit Administration (FTA) issued a Record of Decision (ROD) for the Honolulu High-Capacity Transit Corridor Project (now called the Honolulu Rail Transit Project), which is a 20-mile rail transit project that extends from Kapolei to Ala Moana Center, via the Honolulu waterfront. This alternative is referred to as the Project. The Project would use four Section 4(f) properties: OR&L Office/Document Storage Building and Terminal Building property, Chinatown Historic District, the Dillingham Transportation Building, and the HECO Downtown Plant/Leslie A. Hicks Building. All four are historic properties.

This Draft Supplemental Environmental Impact Statement/Section 4(f) Evaluation [EIS/4(f)] was prepared to address the Judgment and Partial Injunction order (Judgment) of the United States District Court for the District of Hawai'i (Court) in *HonoluluTraffic.com et al. vs. Federal Transit Administration et al.* The Judgment, filed December 27, 2012 requires the FTA and the City and County of Honolulu (City) to comply with the Court's Summary Judgment Order dated November 1, 2012. The Court's Summary Judgment Order granted the Motions for Summary Judgment of the FTA and the City with regard to the Plaintiffs' claims under the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA). The Court granted the Plaintiffs' Motion for Summary Judgment with regard to three claims under Section 4(f) of the Department of Transportation Act [Section 4(f)]. The Summary Judgment Order concluded that the FTA and the City were required to conduct additional analyses regarding (1) whether the Beretania Street Tunnel Alternative was a feasible and prudent avoidance alternative under Section 4(f), (2) whether the Project would "use" Mother Waldron Neighborhood Park under Section 4(f), and (3) the identification of traditional cultural properties (TCP) and complete a Section 4(f) analysis for any TCPs identified as eligible for the National Register of Historic Places.

This Draft Supplemental EIS/4(f) includes the analysis of the Beretania Street Tunnel Alternative required by the Judgment and the additional analysis of whether the Project will have a constructive use of Mother Waldron Neighborhood Park under Section 4(f). A separate evaluation is underway related to the identification of previously unidentified potential TCPs, as required in the Project's Section 106 Programmatic Agreement. Any identified TCPs would be evaluated in accordance with 36 CFR 800 and any use would be documented in a supplement to the Project's Record of Decision. The scope of this Draft Supplemental EIS/4(f) is limited to the evaluation and findings under Section 4(f) of the Department of Transportation Act related to the prudence and feasibility of the Beretania Street Tunnel Alternative and the Section 4(f) analysis of Mother Waldron Neighborhood Park.

The Section 4(f) regulations (23 CFR 774.17) indicate that, with certain identified exceptions, a "use" of Section 4(f) property occurs: (1) When land is permanently incorporated into a transportation facility; (2) When there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose as determined by the criteria in Section 774.13(d); or (3) When there is a constructive use of a Section 4(f) property as determined by the criteria in Section 774.15.

The Beretania Street Tunnel Alternative, as defined in the Honolulu High-Capacity Transit Corridor Project Alternatives Analysis (DTS 2006), would connect to the Dillingham Boulevard Alignment ʻEwa (toward the ʻEwa plain, generally west) of Kaʻaahi Street, where it would transition from an aerial alignment to a 5,980-foot tunnel. To transition from an aerial structure to a tunnel, the aerial guideway would descend to ground level, then into a trench, and finally into a tunnel portal. The tunnel would cross under the OR&L Office/Document Storage Building and Terminal Building property, Aʻala Park, and Nuʻuanu Stream, then follow under Beretania Street past Punchbowl Street, where it would transition back to an aerial structure from the portal through a trench section along the mauka edge of the municipal parking structure and preschool to an aerial structure over the corner of the municipal parking structure.

As an aerial structure, the alignment would cross Alapai Street and transition to King Street through the recently constructed Alapai Transit Center then follow King Street to University Avenue and turn mauka crossing over H-1 to the University of Hawaiʻi at Mānoa (UH Mānoa) lower campus.

The Beretania Street Tunnel Alternative is feasible, but it is not prudent because of its extraordinary cost, additional Section 4(f) impacts, and other factors such as long-term construction impacts. It is adjacent to 7 parks, 4 National Register of Historic Places (NRHP)-listed properties, 2 properties determined NRHP-eligible, and an additional 42 historic resources that are in-period and treated as eligible for nomination to the NRHP. The Beretania Street Tunnel Alternative would use two historic properties already listed on the NRHP and two NRHP-eligible properties. These are the OR&L parcel (including the NRHP-listed OR&L Terminal Building and Office/Document Storage Building and the NRHP-eligible former filling station), the NRHP-listed McKinley High School, and the NRHP-eligible King Florist Building. Thus, the Beretania Street Tunnel Alternative is not a Section 4(f) avoidance alternative because it does not avoid the use of Section 4(f) properties.

The Beretania Street Tunnel Alternative is imprudent; as a result, the least overall harm standard does not apply. Nonetheless, to further consider differences between the Project and the Beretania Street Tunnel Alternative, the relative severity of each alignment's impact has been compared from a least overall harm perspective. The Project would have the Least Overall Harm compared to the Beretania Street Tunnel Alternative.

Mother Waldron Neighborhood Park and Playground is a 3.4-acre urban park bounded by Coral, Halekauwila, Cooke, and Pohukaina Streets. Halekauwila

Street was constructed through the mauka (toward the mountains) portion of the historic playground in the early 1990s and an elderly housing project has been constructed on this former playground property. The park and playground is protected under Section 4(f) as both a public park and as a historic site. The Project will be constructed outside the boundaries of the park, along Halekauwila Street (the mauka side of the park). Project pillars and the aerial guideway will be visible from within the park, especially on the mauka side, where a playground and several benches are located.

This Draft Supplemental EIS/4(f) evaluates whether the Project's impacts will result in constructive use of the park's activities, features, and attributes that qualify the park for Section 4(f) protection. A constructive use would occur if 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. In general terms, this means that the value of the resource, in terms of its Section 4(f) purpose and significance, will be meaningfully reduced or lost.

The protected activities, features, and attributes that qualify Mother Waldron Neighborhood Park for protection include both its recreational use and its historic significance. Recreational uses include walking and jogging, use by organized sporting events, playing basketball, play-structure use, and bicycling. The Project will not substantially impair any of these uses.

The protected activities, features, and attributes that qualify Mother Waldron Neighborhood Park for protection as a historic site are its historical development and use as a playground and its remaining architectural and landscape design features, including an Art Moderne comfort station and some remaining Art Deco design elements and layout. The mauka (Halekauwila Street) portion of the playground lacks historic integrity. When Halekauwila Street was realigned in the early 1990s, the playground was reduced and the mauka boundary wall was reconstructed in a modified configuration approximately 90 feet makai (toward the ocean) of its original location, substantially reducing the area of the historic playground by approximately 12,700 square feet. The original recreational features, perimeter wall, and benches were removed, along with a convex curved entrance at the original playground's Koko Head (toward Koko Head, generally east) corner. The current perimeter wall and benches are not contributing elements to the historic site and, therefore, are not subject to protection as historic elements of the park.

The Project will not alter primary views of the remaining contributing historic elements within the park, as the primary views of those elements are all from within the park and the guideway is located entirely outside the park. While the Project will have significant effects on views of and over the park from the apartment building across the street, this view is not a contributing element to the significant activities, features, and attributes of the park that qualifies it for protection under Section 4(f). The Project will not use Mother Waldron Neighborhood Park and Playground under Section 4(f).

In response to public comments, alternatives to avoid Mother Waldron Neighborhood Park were considered. Alternatives makai of the park were rejected because a shift to Pohukaina Street would still border the park and a shift to Auahi Street would not be able to transition back to the terminal station at Ala Moana Center as a result of recent development of the Ward Village Shops. An alignment further mauka along Queen Street would use two Section 4(f) properties and require additional displacements.

1 Background, Purpose and Need

1.1 Purpose and Scope of this Draft Supplemental Environmental Impact Statement/Section 4(f) Evaluation

The Federal Transit Administration (FTA) and City and County of Honolulu (City) prepared and distributed a Final Environmental Impact Statement (EIS)/Section 4(f) Evaluation for the Honolulu High-Capacity Transit Corridor Project (now called the Honolulu Rail Transit Project) in June 2010. The Final EIS identified environmental impacts and mitigations for the Project, including the use of properties protected under Section 4(f) of the Department of Transportation Act. In January 2011, the FTA issued a Record of Decision (ROD) for the Project, selecting a 20-mile alternative that extends from Kapolei to Ala Moana Center, via Honolulu's waterfront. The Honolulu Authority for Rapid Transportation (HART) is the agency within the City with jurisdiction to oversee the planning, construction, operation, and extension of the rail system. The FTA is the lead federal agency and HART is the project sponsor.

This Draft Supplemental Environmental Impact Statement/Section 4(f) Evaluation [EIS/4(f)] has been prepared to address the Judgment and Partial Injunction order (Judgment) of the United States District Court for the District of Hawai'i (Court) in *HonoluluTraffic.com et al. vs. Federal Transit Administration et al.* (Appendix A). The Judgment, filed December 27, 2012 requires the FTA and the City to comply with the Court's Summary Judgment Order dated November 1, 2012 (Appendix B). The Court's Summary Judgment Order granted the Motions for Summary Judgment of the FTA and the City with regard to the Plaintiffs' claims under the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA), as well as under Section 4(f) of the Department of Transportation Act [Section 4(f)], with the exception of three claims. The Summary Judgment Order concluded that the FTA and the City were required to conduct additional analyses regarding (1) whether the Beretania Street Tunnel Alternative was feasible and prudent avoidance alternative under Section 4(f), (2) if the Project would "use" Mother Waldron Neighborhood Park under Section 4(f), and (3) to complete the identification of traditional cultural properties (TCPs) and, for any TCPs identified, complete a Section 4(f) Analysis.

The Summary Judgment Order required the FTA and the City to prepare a Supplemental EIS with regard to the analysis of whether the Beretania Street Tunnel Alternative was feasible and prudent (Summary Judgment Order, page 27). The Summary Judgment Order stated that the Final EIS must be supplemented with regard to Mother Waldron Neighborhood Park to the extent that the analysis of the use of Mother Waldron Neighborhood Park affects the analysis or conclusions of the Final EIS (Summary Judgment Order, page 21).

This Draft Supplemental EIS/4(f) includes the analysis of the Beretania Street Tunnel Alternative required by the Judgment. It also includes the additional

analysis of whether the Project will have a constructive use of Mother Waldron Neighborhood Park under Section 4(f).

In addition to this Draft Supplemental EIS/4(f), the FTA and the City are completing an identification of previously unidentified above-ground TCPs within Phase 4 of the project corridor. The identification and evaluation of TCPs is complete for Phases 1 through 3 of the Project. In Phases 1 through 3, the FTA identified no TCPs that would be adversely affected by the Project and no use of TCPs would occur (HART 2012a, HART 2012b, HART 2012c, HART 2012e). Reports were available for public review. The State Historic Preservation Officer (SHPO) concurred with the determination (SHPD 2012). The TCP study for Phase 4 was distributed to consulting parties in April 2013. Preliminary analysis indicates that none of the evaluated resources are TCPs eligible for nomination to the National Register of Historic Places (NRHP).

This supplement does not alter or withdraw any approvals or decisions made under other regulations or authorities, including, but not limited to, the Hawai‘i Environmental Policy Act (Hawai‘i Revised Statutes Chapter 343), Section 106 of the National Historic Preservation Act, Section 7 of the Endangered Species Act, Sections 401, 402, and 404 of the Clean Water Act, or Sections 9 and 10 of the Rivers and Harbors Act.

1.2 Section 4(f) Background

Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303), in pertinent paragraphs, provides: (c) Approval of programs and projects. Subject to subsection (d), the Secretary may approve a transportation program or project (other than any project for a park road or parkway under Section 204 of title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if:

> (1) there is no prudent and feasible alternative to using that land; and
>
> (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

FTA has developed and promulgated joint regulations with the Federal Highway Administration (FHWA) implementing and interpreting Section 4(f) (23 CFR 774). In addition to the Section 4(f) regulations, FTA has adopted FHWA’s Section 4(f) Policy Paper (USDOT 2012) to guide Section 4(f) analyses. The analysis in this Draft Supplemental EIS/4(f) has been conducted in accordance with 23 CFR 774 and the Section 4(f) Policy Paper.

1.2.1 Section 4(f) Uses

The Section 4(f) regulations (23 CFR 774.17) indicate that, with certain identified exceptions, a "use" of Section 4(f) property occurs:

> (1) When land is permanently incorporated into a transportation facility;
>
> (2) When there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose as determined by the criteria in Section 774.13(d); or
>
> (3) When there is a constructive use of a Section 4(f) property as determined by the criteria in Section 774.15.

Constructive Use

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. Substantial impairment occurs only when the protected activities, features, or attributes of the property are substantially diminished [23 CFR 774.15(a)].

The FTA has determined that a constructive use occurs when:

- The projected noise level increase attributable to the project substantially interferes with the use and enjoyment of a noise-sensitive facility of a property protected by Section 4(f), such as
  - Hearing the performances at an outdoor amphitheater
  - Sleeping in the sleeping area of a campground
  - Enjoyment of a historic site where a quiet setting is a generally recognized feature or attribute of the site's significance
  - Enjoyment of an urban park where serenity and quiet are significant attributes
  - Viewing wildlife in an area of a wildlife and waterfowl refuge intended for such viewing
- The proximity of the proposed project substantially impairs esthetic features or attributes of a property protected by Section 4(f), where such features or attributes are considered important contributing elements to the value of the property. Examples of substantial impairment to visual or esthetic qualities would be the location of a proposed transportation facility in such proximity that it obstructs or eliminates the primary views of an architecturally significant historic building, or substantially detracts from the setting of a Section 4(f) property which derives its value in substantial part due to its setting;

- The project results in a restriction of access which substantially diminishes the utility of a significant publicly owned park, recreation area, or a historic site;
- The vibration impact from construction or operation of the project substantially impairs the use of a Section 4(f) property; or
- The ecological intrusion of the project substantially diminishes the value of wildlife habitat in a wildlife and waterfowl refuge adjacent to the project.

The FTA has determined that a constructive use does not occur when:

- Compliance with the requirements of 36 CFR 800.5 for proximity impacts of the proposed action, on a site listed on or eligible for the National Register, results in an agreement of "no historic properties affected" or "no adverse effect";
- The impact of projected traffic noise levels of the proposed highway project on a noise-sensitive activity do not exceed the FHWA noise abatement criteria as contained in Table 1 in part 23 CFR 772, or the projected operational noise levels of the proposed transit project do not exceed the noise impact criteria for a Section 4(f) activity in the FTA guidelines for transit noise and vibration impact assessment;
- The projected noise levels exceed the relevant threshold in paragraph (f)(2) of [23 CFR 774.15] because of high existing noise, but the increase in the projected noise levels if the proposed project is constructed, when compared with the projected noise levels if the project is not built, is barely perceptible (3 dBA or less);
- There are proximity impacts to a Section 4(f) property, but a governmental agency's right-of-way acquisition or adoption of project location, or the Administration's approval of a final environmental document, established the location for the proposed transportation project before the designation, establishment, or change in the significance of the property. However, if it is reasonably foreseeable that a property would qualify as eligible for the National Register prior to the start of construction, then the property should be treated as a historic site for the purposes of this section; or
- Overall (combined) proximity impacts caused by a proposed project do not substantially impair the activities, features, or attributes that qualify a property for protection under Section 4(f);
- Proximity impacts will be mitigated to a condition equivalent to, or better than, that which would occur if the project were not built, as determined after consultation with the official(s) with jurisdiction;
- Change in accessibility will not substantially diminish the utilization of the Section 4(f) property; or
- Vibration levels from project construction activities are mitigated, through advance planning and monitoring of the activities, to levels that do not cause

a substantial impairment of protected activities, features, or attributes of the Section 4(f) property.

The Section 4(f) Policy Paper (USDOT 2012) provides additional guidance on constructive use. Constructive use occurs when the proximity impacts of a project on an adjacent or nearby Section 4(f) property, after incorporation of impact mitigation, are so severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. Substantial impairment occurs when the protected activities, features, or attributes of the Section 4(f) property are substantially diminished. As a general matter, this means that the value of the resource, in terms of its Section 4(f) purpose and significance, will be meaningfully reduced or lost. The degree of impact and impairment must be determined in consultation with the officials with jurisdiction in accordance with 23 CFR 774.15(d)(3). In those situations where a potential constructive use can be reduced below a substantial impairment by the inclusion of mitigation measures, there will be no constructive use and Section 4(f) will not apply. If there is no substantial impairment, notwithstanding an adverse effect determination (under Section 106), there is no constructive use and Section 4(f) does not apply.

1.2.2 Prudent and Feasible Avoidance Alternatives

If an alternative would use a Section 4(f) resource and the use is not *de minimis*, FTA can approve that alternative only by determining that (1) there is no prudent and feasible avoidance alternative, and (2) the project includes all possible planning to minimize harm resulting from the use. A *de minimis* impact is one that, after taking into account any measures to minimize harm (such as avoidance, minimization, mitigation or enhancement measures), results in either:

- A Section 106 finding of no adverse effect or no historic properties affected on a historic property; or
- A determination that the project would not adversely affect the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f).

When the use is not *de minimis*, the first step in meeting the requirements for approval is to develop and consider avoidance alternatives.

An avoidance alternative is one that completely avoids the use of Section 4(f) resources. Per the Section 4(f) Policy Paper (USDOT 2012), "[A] project alternative that avoids one Section 4(f) property by using another Section 4(f) property is not an avoidance alternative." An avoidance alternative must first be evaluated to determine whether it is prudent and feasible. FTA Section 4(f) regulations list a series of factors to consider in determining whether an alternative is prudent and feasible. A feasible and prudent avoidance alternative is defined in 23 CFR 774.17 as:

(1) A feasible and prudent avoidance alternative avoids using Section 4(f) property and does not cause other severe problems of magnitude that substantially outweighs the importance of protecting the Section 4(f) property. In assessing the importance of protecting the Section 4(f) property, it is appropriate to consider the relative value of the resource to the preservation purpose of the statute.

(2) An alternative is not feasible if it cannot be built as a matter of sound engineering judgment.

(3) An alternative is not prudent if:

(i) It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;

(ii) It results in unacceptable safety or operational problems;

(iii) After reasonable mitigation, it still causes:

(A) Severe social, economic, or environmental impacts;

(B) Severe disruption to established communities;

(C) Severe disproportionate impacts to minority or low income populations; or

(D) Severe impacts to environmental resources protected under other Federal statutes;

(iv) It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;

(v) It causes other unique problems or unusual factors; or

(vi) It involves multiple factors in paragraphs (3)(i) through (3)(v) of this definition, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

1.2.3 Least Overall Harm

If there is no feasible and prudent Section 4(f) avoidance alternative, FTA may approve only the alternative that causes the least overall harm as defined in 23 CFR 774.3(c)(1) as the alternative that:

(1) Causes the least overall harm in light of the statute's preservation purpose. The least overall harm is determined by balancing the following factors as applicable:

i) The ability to mitigate adverse impacts of each Section 4(f) property (including any measures that result in benefits to the property);

ii) 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;

iii) The relative significance of each Section 4(f) property;

iv) The views of the official(s) with jurisdiction over each Section 4(f) property;

v) The degree to which each alternative meets the purpose and need for the project;

vi) After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and

vii) Substantial differences in costs among the alternatives.

(2) The alternative selected must include all possible planning, as defined in 23 CFR 774.17, to minimize harm to Section 4(f) property.

A least overall harm analysis balances these factors to eliminate the alternative(s) that, on balance, present the greatest harm in light of the Section 4(f) statute's preservationist perspective. Many of the factors included in the least overall harm standard duplicate the factors in the prudence test.

For more information about Section 4(f) requirements, see the FHWA Section 4(f) regulations in 23 CFR 774; the FHWA Section 4(f) Policy Paper (FHWA 2012); and the FHWA Guidance for Determining *de minimis* Impacts to Section 4(f) Resources (FHWA 2005a).

1.3 Environmental Review Process

This Draft Supplemental EIS/4(f) is being distributed for public review and comment prior to the issuance of a Final Supplemental EIS/4(f) and any required supplement to the Record of Decision. Any comments on this Draft Supplemental EIS/4(f) should be limited to the scope of analysis of the Draft Supplemental EIS/4(f).

All substantive comments on the content of this Draft Supplemental EIS/4(f) will be addressed in the Final Supplemental EIS/4(f).

The FTA may issue a single Final Supplemental EIS/4(f) and Record of Decision document pursuant to Public Law 112-141, 126 Statute 405, Section 1319(b) unless the FTA determines statutory criteria or practicability considerations preclude issuance of the combined document pursuant to Section 1319. In that case, FTA would issue a Final Supplemental Environmental Impact Statement followed by a supplement to the Record of Decision, as needed.

1.4 Purpose and Need

The Purpose and Need for the Project is included in the Final EIS/4(f) and is repeated here for the convenience of the reader.

1.4.1 Purpose of the Project

The purpose of the Honolulu [Rail Transit] Project is to provide high-capacity rapid transit in the highly congested east-west transportation corridor between Kapolei and UH Mānoa, as specified in the *O'ahu Regional Transportation Plan 2030* (ORTP) (O'ahuMPO 2007). The project is intended to provide faster, more reliable public transportation service in the study corridor than can be achieved with buses operating in congested mixed-flow traffic, to provide reliable mobility in areas of the study corridor where people of limited income and an aging population live, and to serve rapidly developing areas of the study corridor. The project also will provide additional transit capacity, an alternative to private automobile travel, and improve transit links within the study corridor. Implementation of the project, in conjunction with other improvements included in the ORTP, will moderate anticipated traffic congestion in the study corridor. The project also supports the goals of the Honolulu General Plan and the ORTP by serving areas designated for urban growth.

1.4.2 Need for Transit Improvements

There are several needs for transit improvements in the study corridor. These needs are the basis for the following goals:

- Improve corridor mobility
- Improve corridor travel reliability
- Improve access to planned development to support City policy to develop a second urban center
- Improve transportation equity

Improve Corridor Mobility

Motorists and transit users experience substantial traffic congestion and delay at most times of the day, both on weekdays and on weekends. Average weekday peak-period speeds on the H-1 Freeway are currently less than 20 mph in many places and will degrade even further by 2030. Transit vehicles are caught in the same congestion. In 2007, travelers on O‘ahu’s roadways experienced 74,000 vehicle hours of delay on a typical weekday, a measure of how much time is lost daily by travelers stuck in traffic. This measure of delay is projected to increase to 107,000 daily vehicle hours of delay by 2030, assuming implementation of all planned improvements listed in the ORTP (except for a fixed-guideway system). Without these improvements, the ORTP indicates that daily vehicle hours of delay would increase to 154,000 vehicle hours.

Currently, motorists traveling from West O‘ahu to Downtown experience highly congested traffic during the a.m. peak period. By 2030, after including all the planned roadway improvements in the ORTP, the level of congestion and travel time are projected to increase further. Average bus speeds in the study corridor have been decreasing steadily as congestion has increased. TheBus travel times are projected to increase through 2030. Within the urban core, most major arterial streets will experience increasing peak-period congestion, including Ala Moana Boulevard, Dillingham Boulevard, Kalākaua Avenue, Kapi‘olani Boulevard, King Street, and Nimitz Highway. Expansion of the roadway system between Kapolei and UH Mānoa is constrained by physical barriers and by dense urban neighborhoods that abut many existing roadways. Given current and increasing levels of congestion, an alternative method of travel is needed within the study corridor independent of current and projected highway congestion.

Improve Corridor Travel Reliability

As roadways become more congested, they become more susceptible to substantial delays caused by such incidents as traffic accidents or heavy rain. Even a single driver unexpectedly braking can have a ripple effect that delays hundreds of cars. Because of the operating conditions in the study corridor, current travel times are not reliable for either transit or automobile trips. Because TheBus primarily operates in mixed traffic, transit users experience the same level of travel time uncertainty as automobile users. To arrive at their destination on time, travelers must allow extra time in their schedules to account for the uncertainty of travel time. During the a.m. peak period, more than one-third of bus service is more than five minutes late. This lack of predictability is inefficient and results in lost productivity or free time. A need exists to provide more reliable transit services.

Improve Access to Planned Development to Support City Policy to Develop a Second Urban Center

Consistent with the Honolulu General Plan, the highest population growth rates for the island are projected in the ʻEwa Development Plan area (comprised of the ʻEwa, ʻEwa Beach, Kapolei, Kalaeloa, Honokai Hale, and Makakilo areas), which is expected to grow by approximately 150 percent between 2000 and 2030. This growth represents nearly 50 percent of the total growth projected for the entire island. The communities of Waiʻanae, Wahiawā, North Shore, Windward Oʻahu, Waimānalo, and East Honolulu will have much lower population growth of up to 23 percent, if infrastructure policies support the planned growth rates in the ʻEwa Development Plan area. Kapolei, which is developing as a "second city" to Downtown, is projected to grow by more than 350 percent, to 55,500 people, the ʻEwa district by more than 100 percent, and Makakilo by nearly 125 percent between 2000 and 2030.

Accessibility to the overall ʻEwa Development Plan area is currently severely impaired by the congested roadway network, which will only get worse in the future. This area is less likely to develop as planned unless it is accessible to Downtown and other parts of Oʻahu; therefore, the ʻEwa Development Plan area needs improved accessibility to support its future planned growth.

Improve Transportation Equity

Equity is about the fair distribution of resources so that no group carries an unfair burden of the negative environmental, social, or economic impacts or receives an unfair share of benefits. Many lower-income and minority workers who commute to work in the PUC Development Plan area live in the corridor outside of the urban core. Transit-dependent households concentrated in the Pearl City, Waipahu, and Makakilo areas [Figure 1-9 of the Final EIS/4(f)] rely on transit availability, such as TheBus, for access to jobs in the PUC Development Plan area. Delay caused by traffic congestion accounts for nearly one-third of the scheduled time for routes between ʻEwa and Waikīkī. Many lower-income workers also rely on transit because of its affordability. These transit-dependent and lower-income workers lack a transportation choice that avoids the delay and schedule uncertainty currently experienced by TheBus. In addition, Downtown median daily parking rates are the highest among U.S. cities, further limiting access to Downtown by lower-income workers. Improvements to transit availability and reliability would serve all transportation system users, including minority and moderate- and low-income populations.

2 Alternatives Considered

2.1 Alternative Evaluation

Chapter 2 of the Final EIS/4(f) documents how alternatives were developed, evaluated, and refined. The full range of alternatives considered is presented in Chapter 2 of the Final EIS/4(f).

During the Alternatives Analysis and preliminary engineering process, many corridors and modal alternatives were considered to identify transportation solutions to meet the project's Purpose and Need. The Beretania Street Tunnel Alternative was considered and eliminated in the Alternatives Analysis. The avoidance of Section 4(f) properties was an important consideration in designing and screening the alternatives that were considered. As a result of this approach, the majority of public parks, recreational properties, and historic properties identified within the study corridor are avoided by the project's design and location.

Section 5.5 of the Final EIS/4(f) evaluated alternatives that avoided the use of individual Section 4(f) resources and measures to minimize harm. As summarized in Section 5.9 of the Final EIS/4(f), no prudent and feasible alternative was identified that will completely avoid Section 4(f) properties. Also, as described in Section 5.8 of the Final EIS/4(f), all of the alternatives would have resulted in use of Section 4(f) properties.

Based on an assessment of the transportation benefits, public comments, and environmental analysis, the Final EIS/4(f) documented that the Airport Alternative would result in the least overall harm to Section 4(f) resources and met the purpose and need for the Project. The Airport Alternative was selected as the Project with the issuance of the Record of Decision on January 18, 2011.

2.2 Description of the Project

The Honolulu Rail Transit Project is an exclusive right-of-way rail project being developed by the FTA and HART. As defined in the ROD, the Project includes the construction and operation of a 20-mile, elevated fixed guideway transit system along the Airport Alignment, extending from East Kapolei to Ala Moana Center (Figure 1). The Project will begin in East Kapolei and follow Kualaka'i Parkway and other future roadways to Farrington Highway. The guideway will follow Farrington Highway Koko Head (toward Koko Head, generally east) and continue along Kamehameha Highway to the vicinity of Aloha Stadium.

The Project will continue along Kamehameha Highway past Aloha Stadium to Nimitz Highway and turn makai onto Aolele Street, Ualena Street, and Waiwai Loop through the Honolulu International Airport to reconnect to Nimitz Highway near Moanalua Stream. From there, the Project continues to the Middle Street

Transit Center, Koko Head along Dillingham Boulevard to the vicinity of Ka‘aahi Street and then turn makai to connect to Nimitz Highway in the vicinity of Iwilei Road.

The Project will follow Nimitz Highway Koko Head to Halekauwila Street and then proceed along Halekauwila Street past Ward Avenue, where it will transition to Queen Street and Kona Street. The guideway will run above Kona Street to Ala Moana Center.

The Project includes 21 stations as well as supporting facilities that include a maintenance and storage facility near Leeward Community College, transit centers, park-and-ride lots, a parking structure, and traction power substations. The project schedule is shown in Figure 2.

2.3 Content of the Final EIS/4(f) being Supplemented

This Draft Supplemental EIS/4(f) supplements Chapter 5 of the Final EIS/4(f) in two areas. First, it reconsiders the Beretania Street Tunnel Alternative, previously dismissed during the Alternatives Analysis, to determine if it would be a feasible and prudent alternative with less overall harm than the Project [Section 3 of this Draft Supplemental EIS/4(f)]. Second, it reconsiders the no-use determination for Mother Waldron Neighborhood Park, taking full account that the Project will have an adverse effect on the park under Section 106 and significant visual effects in the vicinity of the park according to the NEPA finding [Section 4 of this Draft Supplemental EIS/4(f)].

Figure 1. The Project

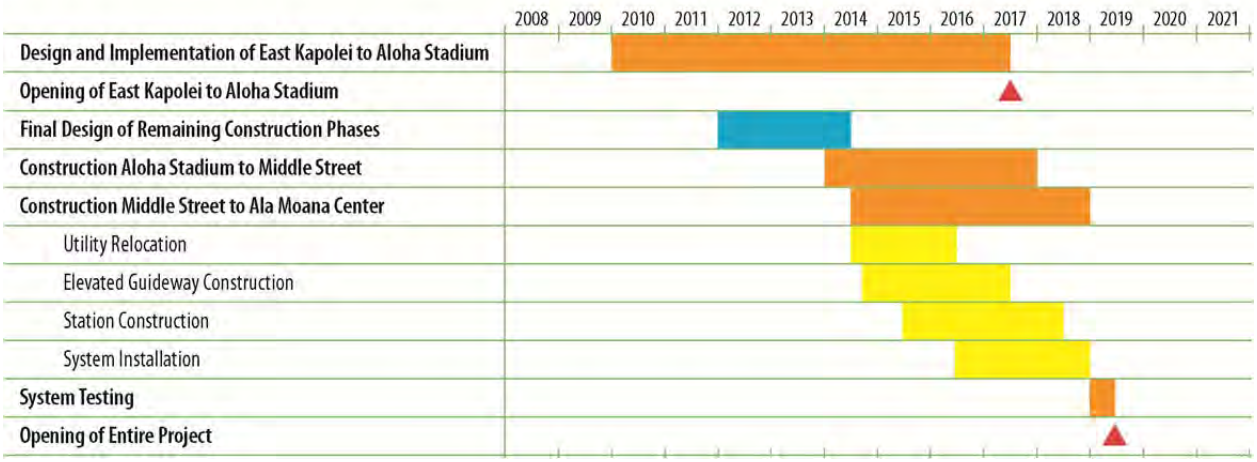


Figure 2. Project Schedule

3 Evaluation of the Beretania Street Tunnel Alternative

The Beretania Street Tunnel Alternative (Figure 3) is being reconsidered to determine if it is a feasible and prudent avoidance alternative or is the alternative that has the least overall harm to Section 4(f) resources in comparison to the Project. The Beretania Street Tunnel Alternative that was previously considered and eliminated during the Alternatives Analysis would avoid direct use of the Chinatown Historic District, Dillingham Transportation Building, and HECO Downtown Plant and Leslie A. Hicks Building. This chapter includes the analysis required by the Summary Judgment Order. The Beretania Street Tunnel Alternative was evaluated for Section 4(f) use according to the regulations and guidance outlined in Section 1.2.1 of this Draft Supplemental EIS/4(f) using the same process and assumptions detailed for the Project in Chapter 5 of the Final EIS/4(f).

3.1 Description of the Beretania Street Tunnel Alternative

The Beretania Street Tunnel Alternative, as defined in the Honolulu High-Capacity Transit Corridor Project Alternatives Analysis (DTS 2006), would connect to the Dillingham Boulevard Alignment ʻEwa (toward the ʻEwa plain, generally west) of Kaʻaahi Street, where it would transition from an aerial alignment to a 5,980-foot tunnel. To transition from an aerial structure to a tunnel, the aerial guideway would descend to ground level, then into a trench, and finally into a tunnel portal. The tunnel would cross under the OR&L Office/Document Storage Building and Terminal Building property, Aʻala Park, and Nuʻuanu Stream then follow under Beretania Street past Punchbowl Street, where it would transition back to an aerial structure from the portal through a trench section along the mauka edge of the municipal parking structure and preschool to an aerial structure over the corner of the municipal parking structure.

As an aerial structure, the alignment would cross Alapai Street and transition to King Street through the recently constructed Alapai Transit Center then follow King Street to University Avenue and turn mauka crossing over H-1 to the University of Hawaiʻi at Mānoa (UH Mānoa) lower campus (Figure 3). The guideway would follow the makai edge of King Street and require right of way at each station because the station platforms would overhang the properties makai of each station. Tunnel stations would be constructed at Kaʻaahi and Fort streets and elevated stations would be constructed at Alapai, Pensacola, Kalākaua, McCully, and Hausten streets, and at UH Mānoa Lower Campus (Figure 4 through Figure 12). These figures identify NRHP-listed properties, eligible properties, and properties assumed to be eligible for the NRHP in the vicinity of the stations as historic. The Beretania Street Tunnel Alternative continues to UH Mānoa because no logical terminus exists prior to this point. The schedule for the Beretania Tunnel Alternative is shown in Figure 13, which extends two years beyond that for the Project (Figure 2).

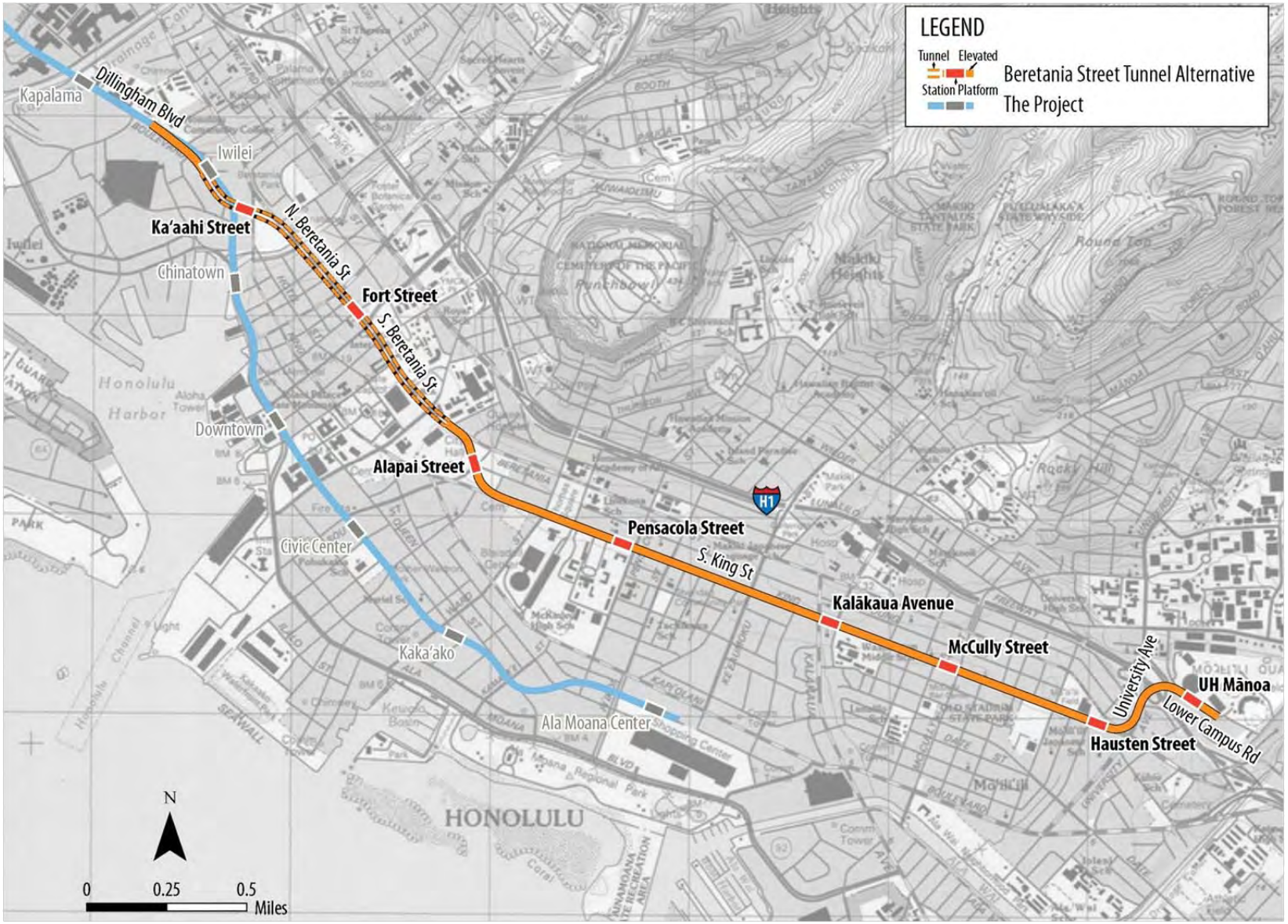


Figure 3. Beretania Street Tunnel Alternative

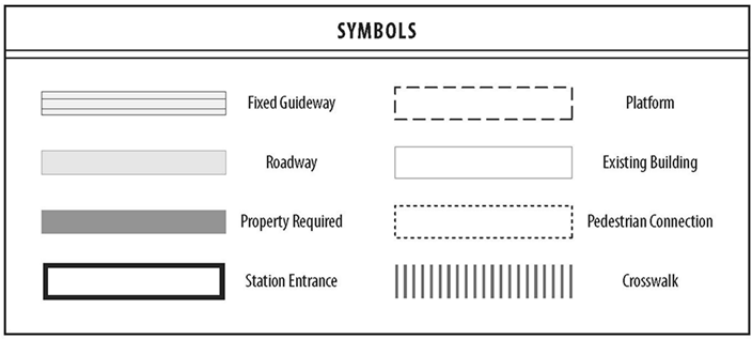


Figure 4. Key to Figure 5 through Figure 12

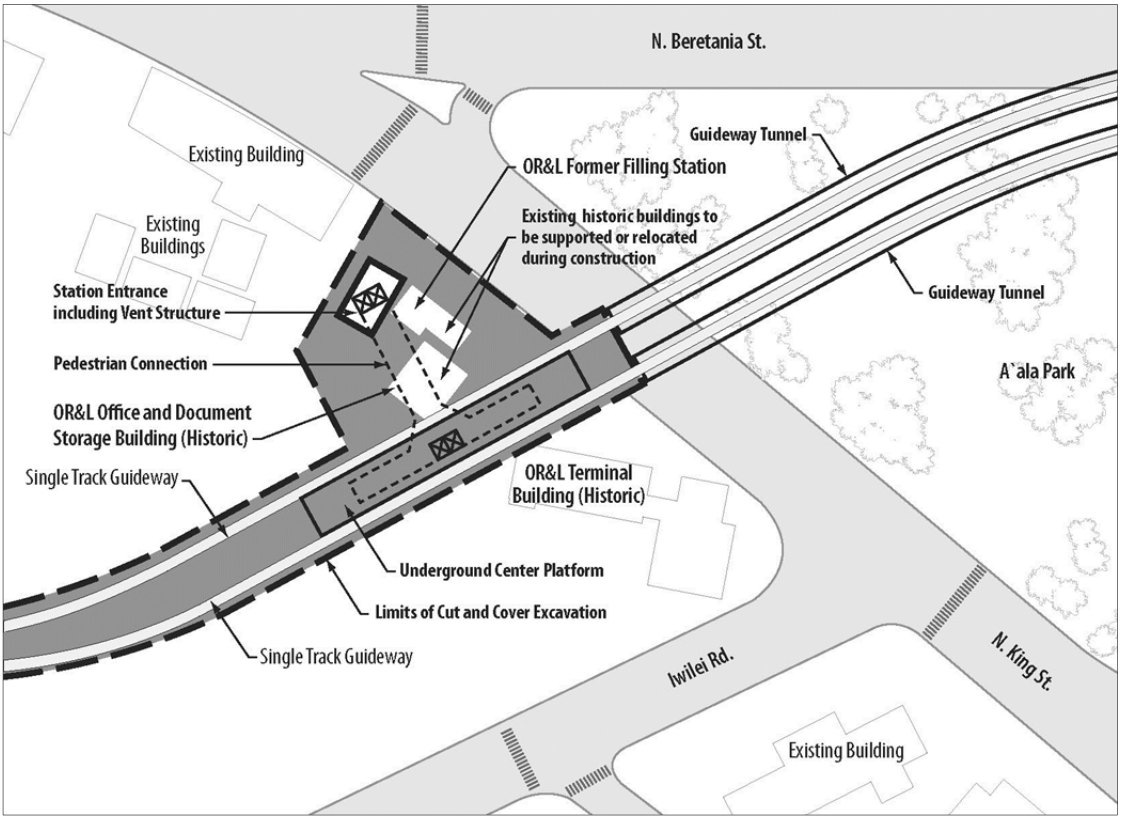


Figure 5. Beretania Street Tunnel Alternative Ka‘aahi Street Station

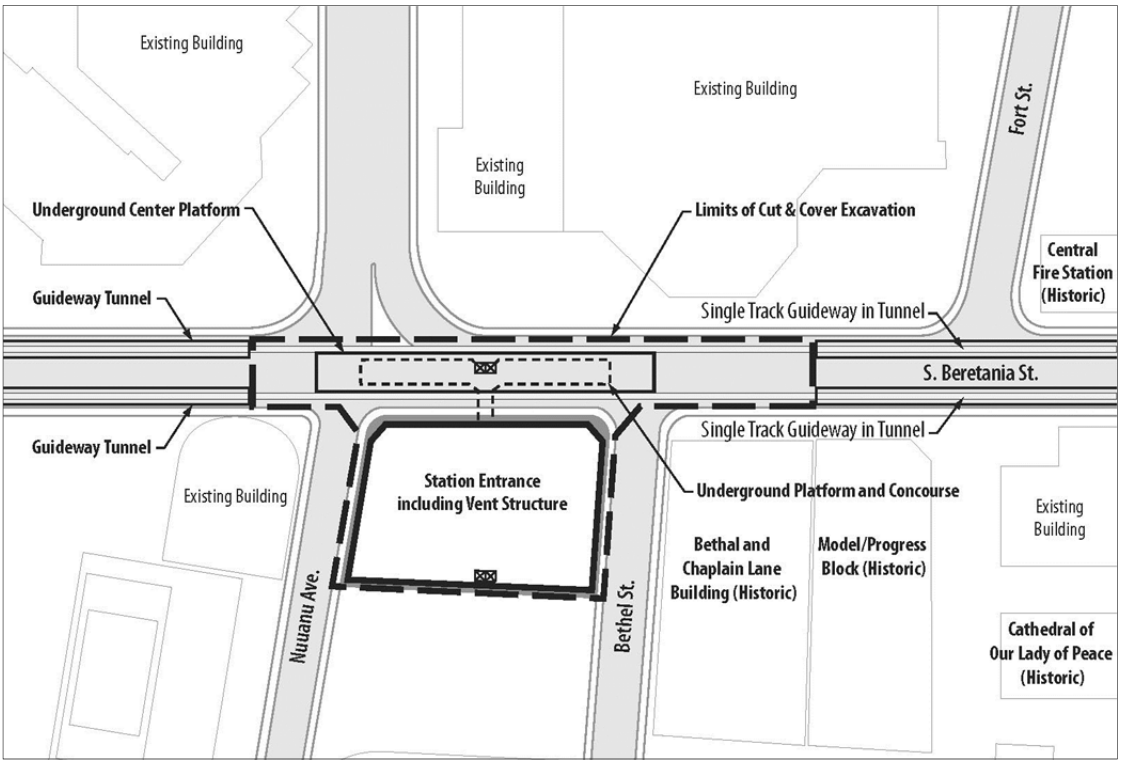


Figure 6. Beretania Street Tunnel Alternative Fort Street Station

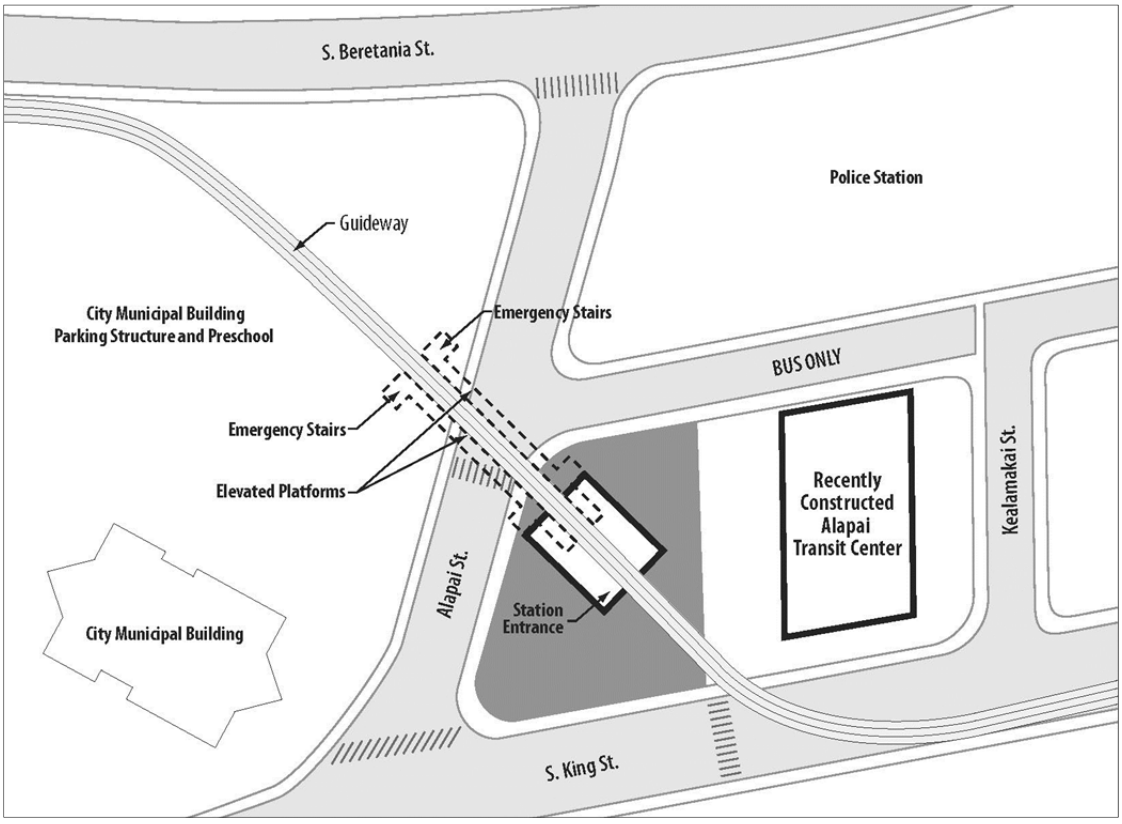


Figure 7. Beretania Street Tunnel Alternative Alapai Street Station

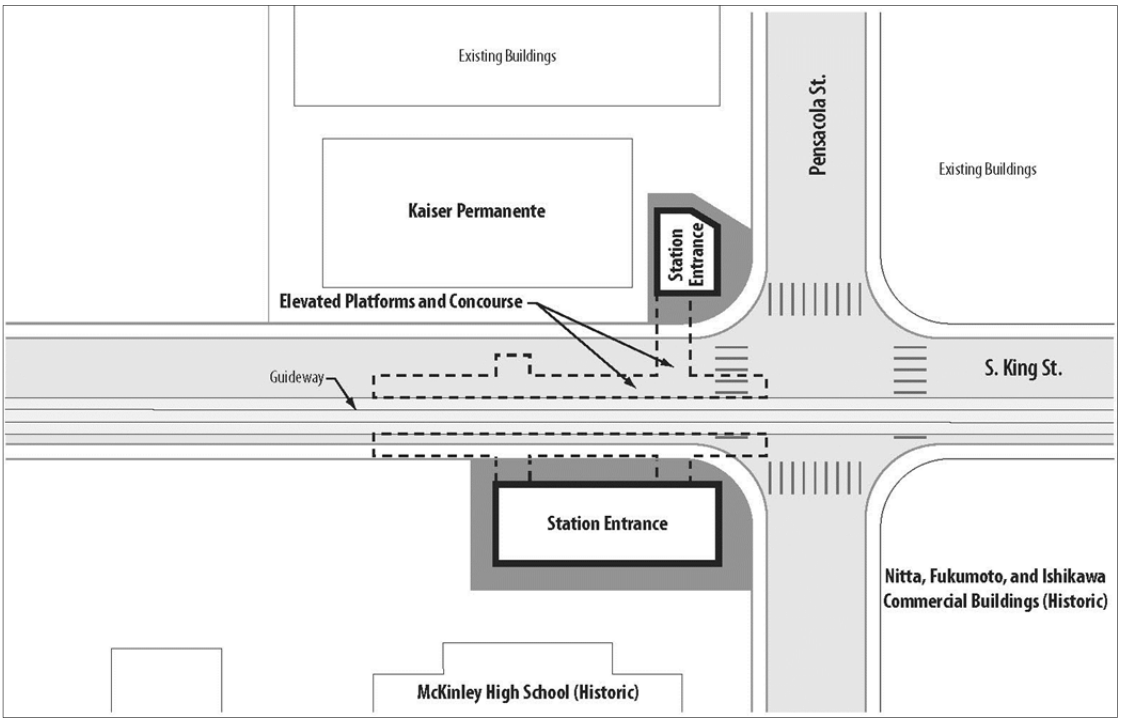


Figure 8. Beretania Street Tunnel Alternative Pensacola Street Station

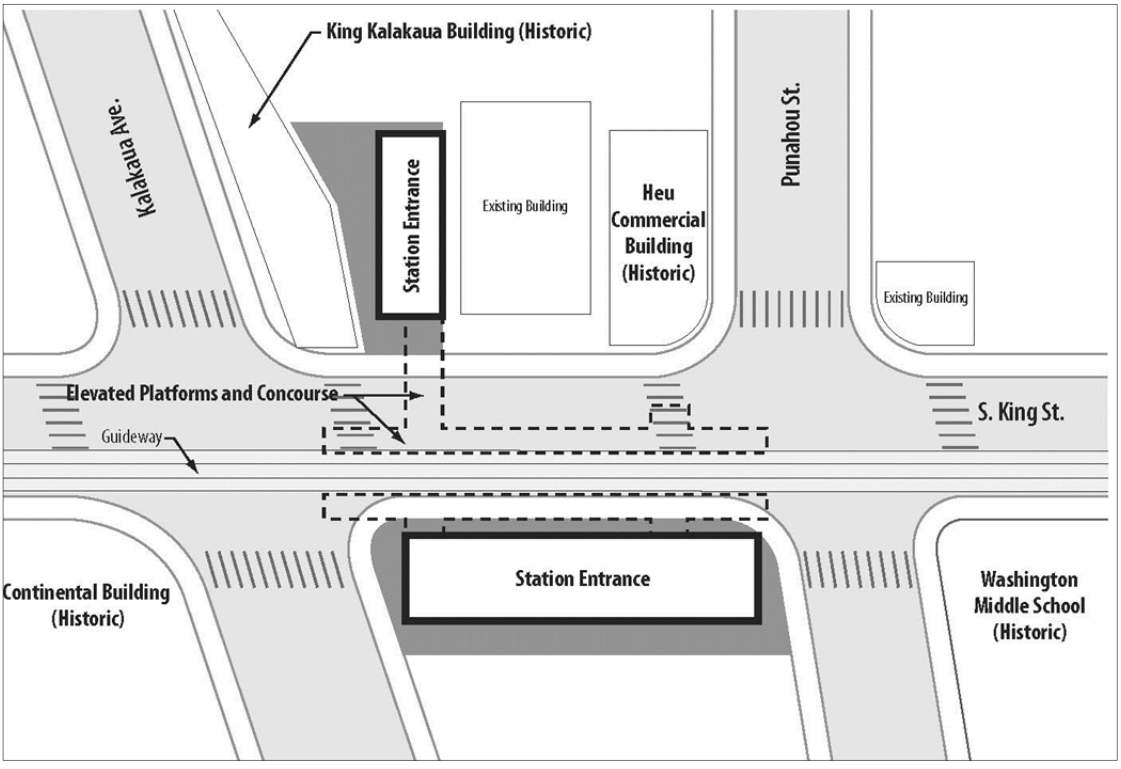


Figure 9. Beretania Street Tunnel Alternative Kalākaua Avenue Station

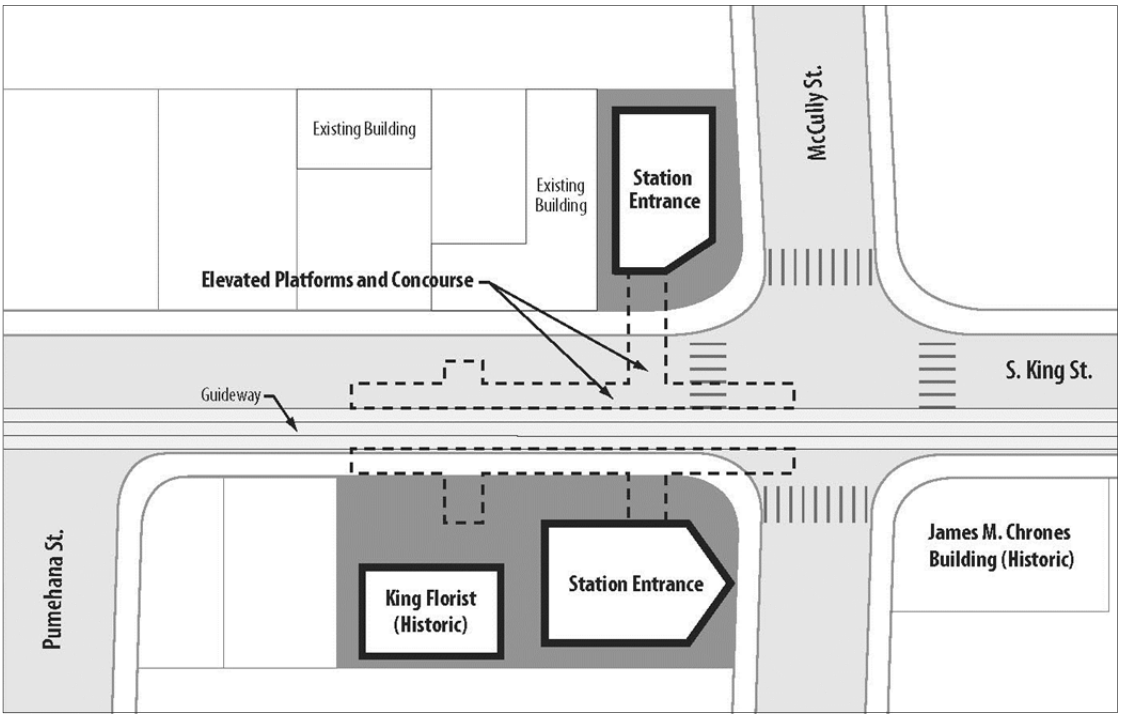


Figure 10. Beretania Street Tunnel Alternative McCully Street Station

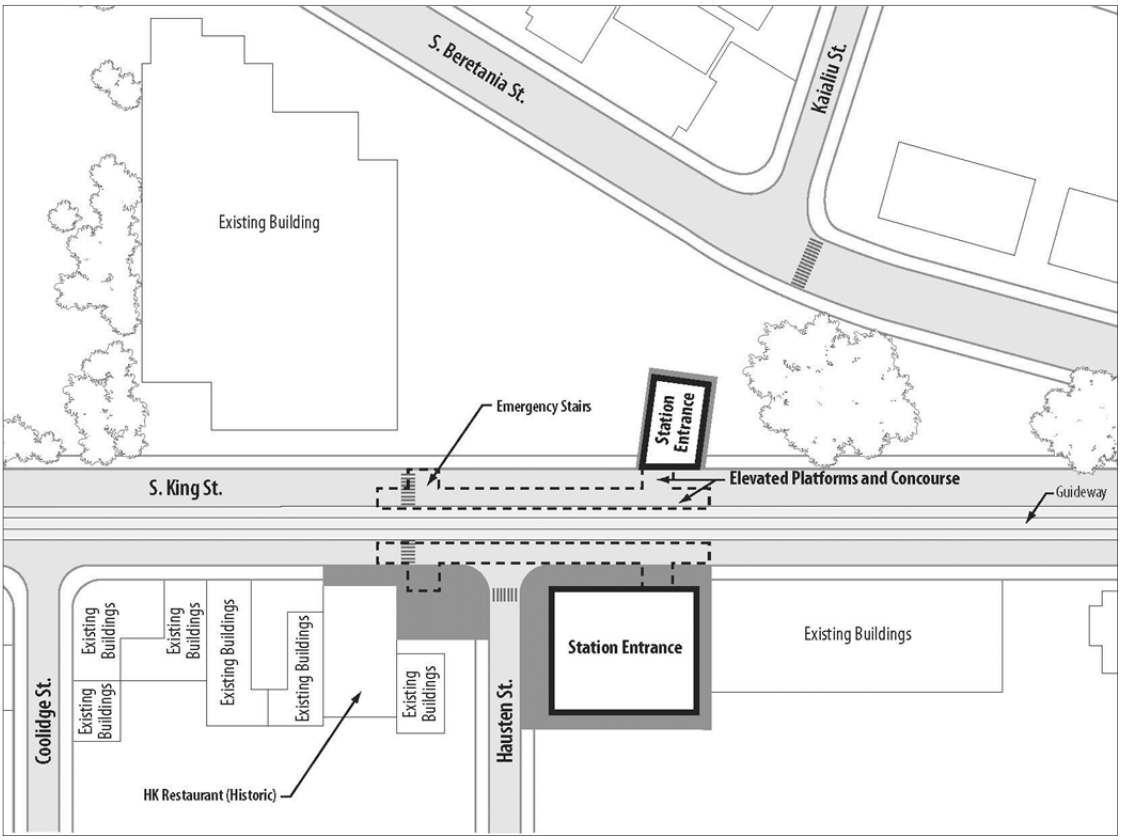


Figure 11. Beretania Street Tunnel Alternative Hausten Street Station

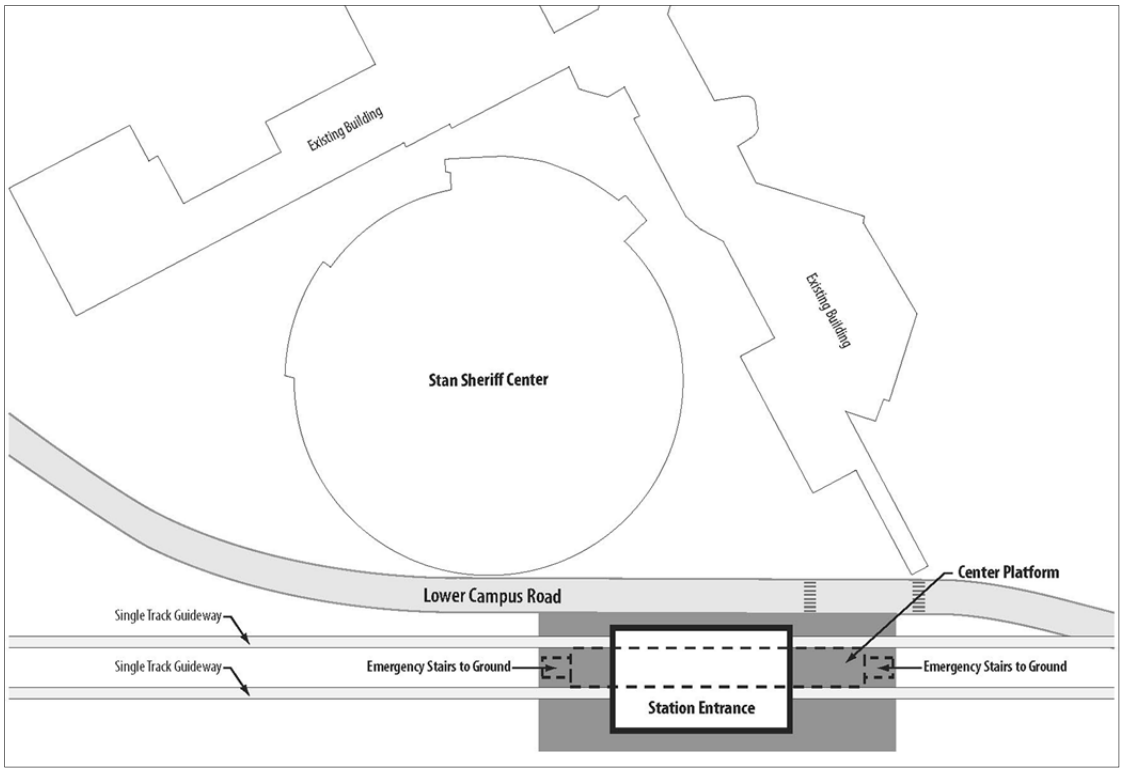


Figure 12. Beretania Street Tunnel Alternative UH Mānoa Station

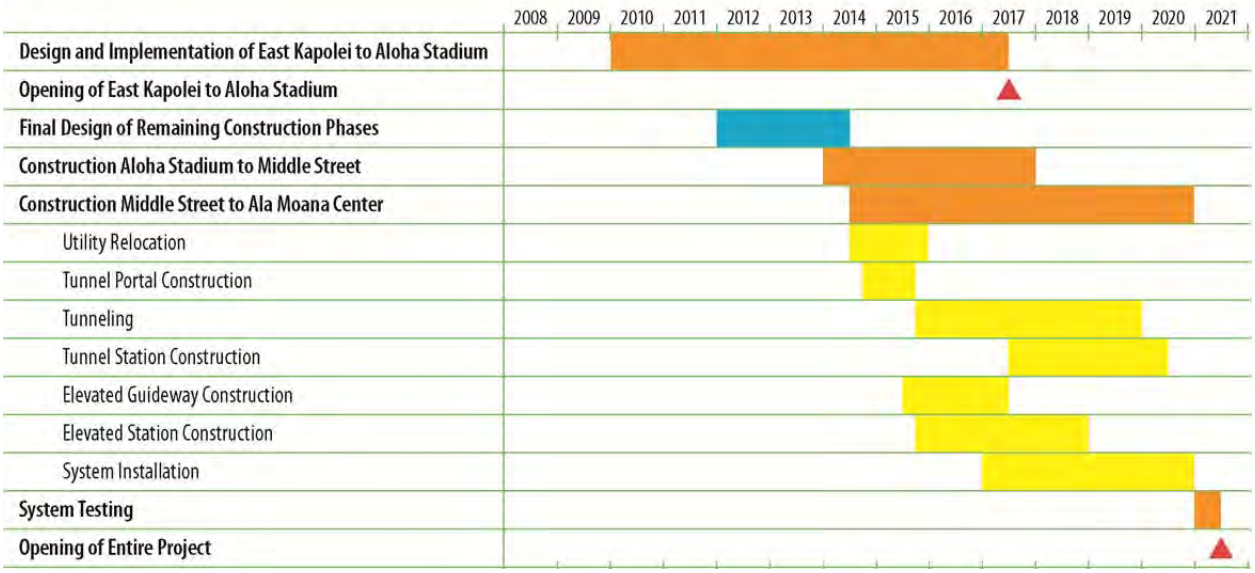


Figure 13. Project Schedule for the Beretania Street Tunnel Alternative

The alignment and station locations reflect all possible planning to avoid or minimize harm to Section 4(f) properties. As proposed in the Alternatives Analysis, the Beretania Street Tunnel Alternative would have used several Section 4(f) properties. The alternative was refined in the following ways to minimize and avoid such use.

The Fort Street Station, which would be underground, was moved one block ʻEwa to a parking lot, which would avoid the use of the following Section 4(f) properties, which surround the original station location (Figure 14):

- Central Fire Station
- Model/Progress Block
- Cathedral of Our Lady of Peace
- Kamaliʻi Mini Park

Construction impacts, station entrances and ventilation shafts would have used one or more of these properties. With this shift, there would be no Section 4(f) use in the vicinity of the Fort Street Station.

Similarly, the Kalākaua station location proposed in the Alternatives Analysis was between Kalākaua Avenue and Punahou Street with two entrances. The mauka station entrance would have used the Heu Commercial Building (Figure 15). To avoid Section 4(f) properties on the mauka side, the mauka station entrance was relocated adjacent to the King Kalākaua Building, which is also historic. This avoids all direct use of Section 4(f) properties by the station, but would require the full acquisition of 1340 King Street, currently occupied by Paradise Cruise LTD. This would increase business displacements, acquisitions, and right-of-way costs compared to the use of the Heu Commercial Building. Shifting the entire station Koko Head or ʻEwa would not be an avoidance alternative, as the makai entrance would use either the Washington Middle School or the Continental Building, both of which are NRHP eligible.

Finally, at the Hausten Street station location proposed in the Alternatives Analysis, the mauka station entrance would create a use of Mōʻiliʻili Triangle Park (Figure 16). The mauka entrance was shifted ʻEwa, out of the park. This avoidance alternative would require additional right-of-way acquisition from a parking lot ʻEwa of the park.

Despite all possible planning to avoid and minimize 4(f) impacts, the Beretania Street Tunnel Alternative would still create uses at other station locations. Avoidance alternatives for each of these are discussed in Section 3.3.

Figure 14. Avoidance Alternative Development at the Fort Street Station

Figure 15. Avoidance Alternative Development at the Kalākaua Avenue Station

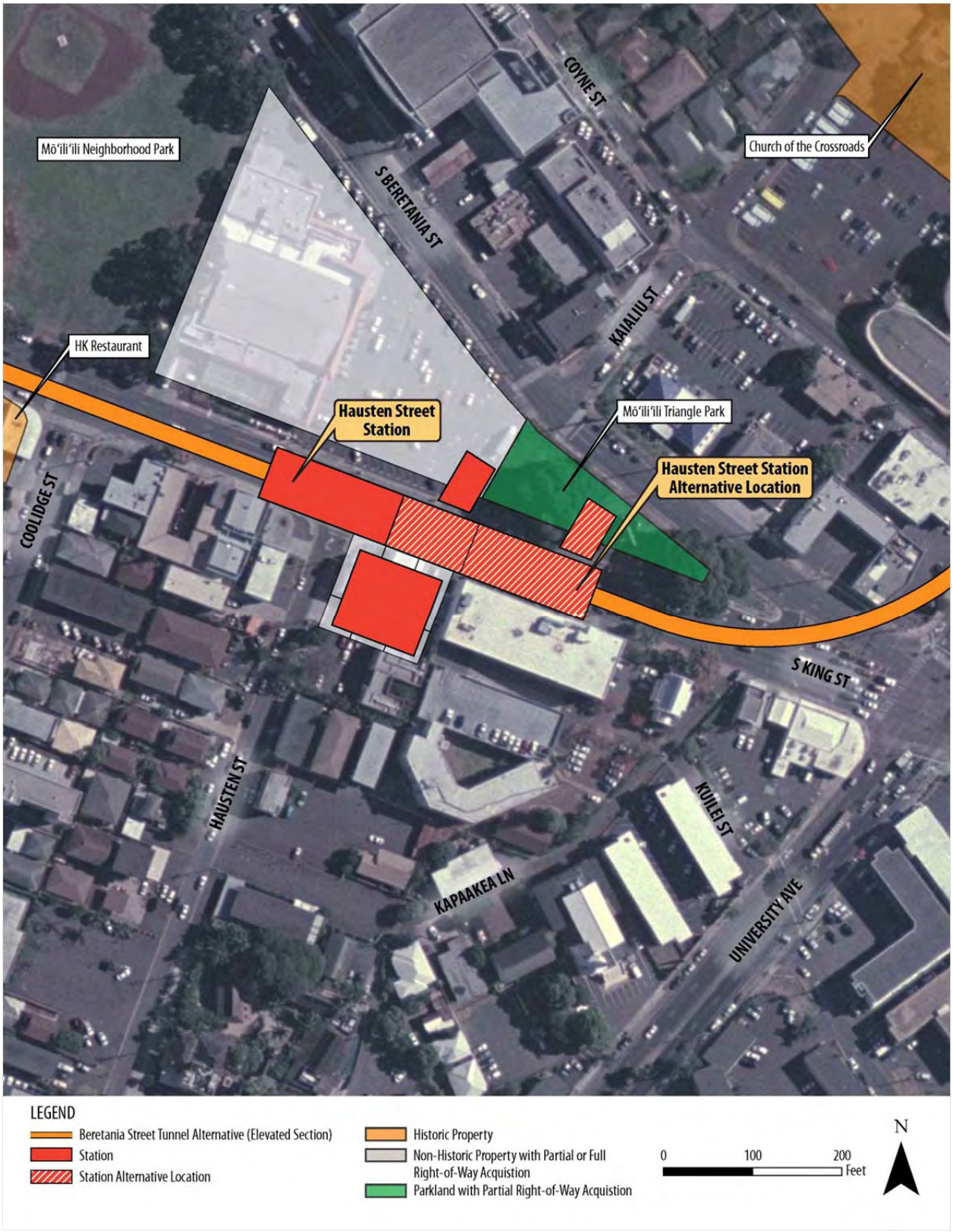


Figure 16. Avoidance Alternative Development at the Hausten Street Station

3.2 Section 4(f) Properties

Section 4(f) properties that would be affected by the Beretania Street Tunnel Alternative were identified using the same process and assumptions detailed for the Project in Section 5.4 of the Final EIS/4(f).

Seven public parks would be adjacent to the Beretania Street Tunnel Alternative (Table 1). The locations of the parks are shown on Figure 17. The City and County of Honolulu parks are open to the public from 5:00 a.m. to 10 p.m.

In addition to the park resources listed in Table 1, there are 4 NRHP-listed, 2 NRHP-eligible, and 42 additional historic resources that are in-period and treated as eligible for nomination to the NRHP (Table 2). The locations of the historic properties are shown on Figure 17. The properties that were evaluated as eligible for the NRHP were analyzed by qualified architectural historians based on age and review of integrity during the Alternatives Analysis (DTS 2006). The analysis of historic properties is detailed in Section 3.5.3 of this Draft Supplemental EIS/4(f). There are no known archaeological resources eligible for listing in the NRHP that would be used by the Beretania Street Tunnel Alternative [see Section 3.5.3 of this Draft Supplemental EIS/4(f)]. Information on Section 106, including NRHP-eligibility criteria, is included in Section 4.16.1 of the Final EIS/4(f).

Table 1. Publicly Owned Park and Recreational Properties Adjacent to the Beretania Street Tunnel Alternative

Property*	Description	Section 4(f) use
Aʻala Park	Aʻala Park is a 291,000-square-foot community park owned and maintained by the City and County of Honolulu Department of Parks and Recreation. It is open green space with basketball courts, a skatepark, and picnicking, walking, and jogging uses.	Guideway in tunnel below park, no use
Kamaliʻi Mini Park	Kamaliʻi Mini Park is a 30,000-square-foot park owned and maintained by the City and County of Honolulu Department of Parks and Recreation. The park contains planters, sidewalks, and urban landscaping. There are no active recreational facilities.	Guideway in tunnel adjacent to park, no use
Thomas Square	Thomas Square is a park and NRHP-listed historic property. It is a 256,000-square-foot open space owned and maintained by the City and County of Honolulu Department of Parks and Recreation. It is commonly used for walking, jogging, and passive recreation. There are no active recreational facilities, such as tennis or basketball courts. Views of and from the park are identified as significant in Chapter 21 of the Revised Ordinances of Honolulu.	Elevated guideway adjacent to park, no use
Pāwaʻa Inha Park	Pāwaʻa Inha Park is a 55,600-square-foot community park owned and maintained by the City and County of Honolulu Department of Parks and Recreation. It is open green space with park benches and footpaths but no active recreational facilities, such as tennis or basketball courts.	Elevated guideway adjacent to park, no use
Old Stadium Park	Old Stadium Park is a 265,000-square-foot park owned and maintained by the City and County of Honolulu Department of Parks and Recreation. It is commonly used for picnicking, walking, jogging, and passive recreation. There are no active recreational facilities, such as tennis or basketball courts.	Elevated guideway adjacent to park, no use
Mōʻiliʻili Neighborhood Park	Mōʻiliʻili Neighborhood Park is a 140,000-square-foot park owned and maintained by the City and County of Honolulu Department of Parks and Recreation. It includes a baseball diamond and a softball diamond along the ʻEwa side, with open space to the Koko Head side.	Elevated guideway adjacent to park, no use
Mōʻiliʻili Triangle Park	Mōʻiliʻili Triangle Park is a 16,600-square-foot park owned and maintained by the City and County of Honolulu Department of Parks and Recreation. It located in the triangle of land between Beretania and King Street. It contains park benches and holds the Mōʻiliʻili torii (Shinto-style gateway gifted by Honolulu's sister city of Hiroshima Japan).	Elevated guideway and station adjacent to park, no use

*The locations of Section 4(f) properties are shown on Figure 17.

Table 2. National Register of Historic Places Eligible or Listed Properties Evaluated for Section 4(f) Use

Property	Description	Impact or relationship to the Beretania Street Tunnel Alternative	Section 4(f) use
OR&L Office/Document Storage Building and Terminal Building within OR&L Parcel (NRHP Listed)	The OR&L Office/Document Storage Building is a two-story, Colonial Revival-style building at 355 North King Street constructed in 1914. The OR&L Terminal Building is a two-story, Spanish Mission Revival-style building constructed in 1925.	Ka‘aahi Street Station construction would require temporary support, relocation, or removal of the OR&L Office/Document Storage Building and temporary loss of existing street access and parking for the OR&L Terminal Building. Permanent entrances for underground Ka‘aahi Street Station located within boundary of historic property	Direct use
Former filling station within OR&L Parcel (NRHP eligible)	Building at 355 North King Street is a single-story, flat-roofed, masonry building constructed in 1940	Ka‘aahi Street Station construction would require temporary support, relocation, or removal of the former filling station. Permanent entrances for underground Ka‘aahi Street Station located within boundary of historic property	Direct use
Basalt paving blocks within OR&L Parcel (NRHP Eligible)	Roughly shaped, rectangular basalt paving blocks installed along Iwilei Road circa 1914	No use of paving blocks	No use
Chinatown Historic District (NRHP Listed)	The Chinatown Historic District encompasses approximately 36 acres near Nu‘uanu Stream and Honolulu Harbor and just ‘Ewa of Downtown Honolulu. The area derives its historical significance from its central role in the life of the local Chinese community, including its commerce, architecture, and institutions	Guideway in tunnel below district, construction impacts within roadway right-of-way inside district boundary	No use
Bethel and Chaplain Lane Building*	Building at 1171 Bethel Street built in 1951	Entrances for underground station located across Bethel Street from building	No use
Schnak Building*	Building at 1183 Bethel Street built in 1929	Entrances for underground station located across Bethel Street from building	No use
Hawai‘i Capital Historic District	The Hawai‘i Capita Historic District includes historic properties dating between 1794 and 1969. The area derives its historical significance from its central role in the governance of Hawai‘i	Guideway in tunnel below district, construction impacts adjacent to district	No use
Board of Water Supply Engineering Building*	Building at 630 S Beretania Street built in 1939	Elevated guideway adjacent to property	No use
Board of Water Supply Administration Building*	Building at 630 S Beretania Street built in 1957	Elevated guideway adjacent to property	No use
Thomas Square (NRHP Listed)	NRHP-listed park where Kamehameha III was restored to the throne in 1843. Established as a city park in 1925	Elevated guideway adjacent to park	No use

Table 2. National Register of Historic Places Eligible or Listed Properties Evaluated for Section 4(f) Use (continued)

Property	Description	Impact or relationship to the Beretania Street Tunnel Alternative	Section 4(f) use
McKinley High School (NRHP Listed)	NRHP-listed property at 1039 South King Street. The historic campus includes six contributing buildings built between 1923 and 1939	Entrances for aerial Pensacola Street Station located within boundary of historic property	Direct use
First Chinese Church of Christ*	Building at 1050 S King Street built in 1930	Elevated guideway adjacent to property	No use
1-story Deco Building, 1026 S King St*	Building at 1026 S King Street built in 1951	Elevated guideway adjacent to property	No use
Nitta Commercial Building*	Building at 1103 S King Street built in 1951	Elevated guideway adjacent to property	No use
Fukumoto Commercial Building*	Building at 1111 S King Street built in 1947	Elevated guideway adjacent to property	No use
Ishikawa 1-story Commercial Building*	Building at 1117 S King Street built in 1940	Elevated guideway adjacent to property	No use
Chang Commercial Building*	Building at 1125 S King Street built in 1948	Elevated guideway adjacent to property	No use
Chow 1-story Commercial Building*	Building at 1133 S King Street built in 1950	Elevated guideway adjacent to property	No use
Masui 1-story Commercial Building*	Building at 1145 S King Street built in 1940	Elevated guideway adjacent to property	No use
Saiki 1-1/2 Story Commercial Building*	Building at 1149 S King Street built in 1941	Elevated guideway adjacent to property	No use
Wong Commercial Building*	Building at 1155 S King Street built in 1947	Elevated guideway adjacent to property	No use
Precision Radio*	Building at 1160 S King Street built in 1950	Elevated guideway adjacent to property	No use
Clyde's Cleaners*	Building at 1234 S King Street built in 1949	Elevated guideway adjacent to property	No use
Mediterraneo*	Building at 1275 S King Street built in 1949	Elevated guideway adjacent to property	No use
Dr. A Tsuda Office*	Building at 1290 S King Street built in 1917	Elevated guideway adjacent to property	No use
Trophy House*	Building at 1301 S King Street built in 1957	Elevated guideway adjacent to property	No use
American Stereo*	Building at 1327 S King Street built in 1964	Elevated guideway adjacent to property	No use
Ikuta Commercial Building*	Building at 1401 S King Street built in 1955	Elevated guideway adjacent to property	No use
Sushi Sasabune*	Building at 1423 S King Street built in 1960	Elevated guideway adjacent to property	No use
Territorial Board of Agriculture and Forestry Building*	Building at 1428 S King Street built in 1961	Elevated guideway adjacent to property	No use
King Center Bank of Hawai'i*	Building at 1451 S King Street built in 1960	Elevated guideway adjacent to property	No use
Professional Center*	Building at 1479 S King Street built in 1955	Elevated guideway adjacent to property	No use
Continental Building*	Building at 1515 S King Street built in 1955	Elevated guideway and station adjacent to property	No use

Table 2. National Register of Historic Places Eligible or Listed Properties Evaluated for Section 4(f) Use (continued)

Property	Description	Impact or relationship to the Beretania Street Tunnel Alternative	Section 4(f) use
King Kalākaua Building*	Building at 1534 S King Street built in 1946	Elevated guideway and station adjacent to property	No use
Heu Commercial Building*	Building at 1562 S King Street built in 1940	Elevated guideway and station adjacent to property	No use
Washington Middle School*	Building at 1633 S King Street built between 1939 and 1953	Elevated guideway adjacent to property	No use
Dental Office, 1702 S King St*	Building at 1702 S King Street built in 1928	Elevated guideway adjacent to property	No use
KNDI Radio*	Building at 1734B S King Street built in 1928	Elevated guideway adjacent to property	No use
Miss Hawai'i Building*	Building at 1738 S King Street built in 1930	Elevated guideway adjacent to property	No use
Kimura Florist*	Building at 1809 S King Street built in 1925	Elevated guideway adjacent to property	No use
T. Ishibashi Building*	Building at 1869 S King Street built in 1962	Elevated guideway adjacent to property	No use
Tenrikyo Honolulu Church*	Building at 1902 S King Street built in 1946	Elevated guideway adjacent to property	No use
King Florist*	Building at 1915B S King Street built in 1945	Station Entrance and support buildings would displace the property.	Direct use
James M. Chrones Building*	Building at 2017 S King Street built in 1948	Elevated guideway adjacent to property	No use
Ishizuchi Shrine*	Building at 2020 S King Street built in 1962	Elevated guideway and station adjacent to property	No use
Safety Loan Building*	Building at 2065 S King Street built in 1964	Elevated guideway adjacent to property	No use
J.C. Tom Building*	Building at 2239 S King Street built in 1929	Elevated guideway adjacent to property	No use
Choy Commercial Building*	Building at 2342 S King Street built in 1955	Elevated guideway adjacent to property	No use
HK Restaurant*	Building at 2425 S King Street built in 1963	Elevated guideway adjacent to property	No use
Church of the Crossroads (NRHP Listed)	Building at 1212 University Avenue built in 1935	Elevated guideway adjacent to property	No use

*Forty-two properties were evaluated by qualified architectural historians based on age (built before 1967) and review of integrity during the Alternatives Analysis and treated as eligible for the purpose of this analysis.

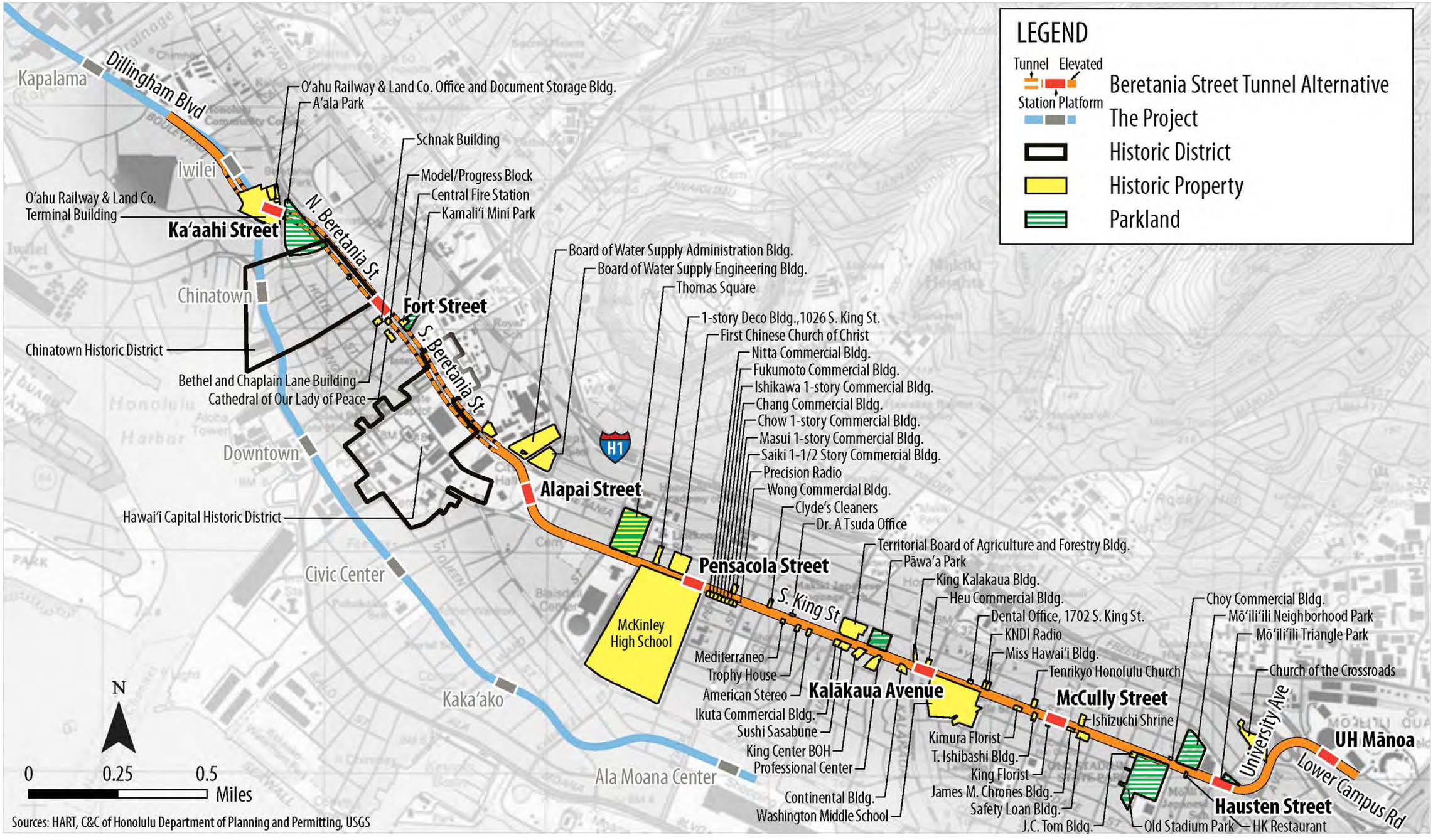


Figure 17. Historic and Recreational Properties Affected by the Beretania Street Tunnel Alternative

3.3 Use of Section 4(f) Properties by the Beretania Street Tunnel Alternative

The Beretania Street Tunnel Alternative was evaluated for Section 4(f) use according to the regulations and guidance outlined in Section 1.2.1 of this Draft Supplemental EIS/4(f) using the same process and assumptions detailed for the Project in Chapter 5 of the Final EIS/4(f).

The Section 4(f) use analysis incorporates design changes to the Beretania Street Tunnel Alternative that was evaluated in the Alternatives Analysis to avoid and minimize the use of Section 4(f) resources [see Section 3.1 of this Draft Supplemental EIS/4(f)]. The changes are detailed in the evaluation of use of individual Section 4(f) properties.

Consistent with the findings of the Section 4(f) evaluation for the Project included in Chapter 5 of the Final EIS/4(f) and in Chapter 4 of this Draft Supplemental EIS/4(f), there would be no direct or constructive use of the parks (Table 1) or historic properties (Table 2) adjacent to, but not directly affected by the Beretania Street Tunnel Alternative. Views to and from Thomas Square are protected as significant in Chapter 21 of the Revised Ordinances of Honolulu. The views to and from Thomas Square along South King Street are screened by trees and utility lines [shown in Figure 24 and discussed in Section 3.5.3 of this Draft Supplemental EIS/4(f)]. The views were not identified as significant to the setting in the NRHP listing for the property. Therefore, they do not constitute significant features or attributes considered important contributing elements to the historic value of the property for purposes of Section 4(f). No use was found for parks with similar properties in a context similar to the Project. This assessment was based on the similarity between the range of resources and proximity of the guideway evaluated in Section 5.6.3 of the Final EIS/4(f) and the range of park and historic resources affected by the Beretania Street Tunnel Alternative.

De minimis impacts were considered for properties with direct use. As detailed in Section 1.2.2, the incorporation of land from individual historic properties where an adverse effect determination has been made would not qualify as a *de minimis* impact. The consideration of *de minimis* impacts applies the same process and assumptions detailed for the Project in Chapter 5 of the Final EIS/4(f).

Except for the portal, station, and vent structures, the portion of the alternative traveling in a tunnel would not have a Section 4(f) use of the property above the tunnel, as per the Section 4(f) Policy Paper (USDOT 2012). The elevated guideway is generally located within the existing roadway right-of-way and would not require additional right-of-way. Right-of-way would be required for each of the stations, and in many cases there are Section 4(f) properties in the vicinity of the stations (Figure 17). Because the Section 4(f) properties that would be used by

the Beretania Street Tunnel Alternative are grouped around stations, the properties are evaluated by grouping around each station area.

3.3.1 O‘ahu Rail and Land Parcel

Property Description

The OR&L parcel includes four historic elements—the OR&L Office/Document Storage Building, OR&L Terminal Building, former filling station on the OR&L parcel, and basalt paving blocks along Iwilei Road. The OR&L Office/Document Storage Building and Terminal Building are two buildings on one property (OR&L parcel), which is listed on the NRHP. They are considered contributing elements to the NRHP-listed OR&L property.

- The **O‘ahu Railway & Land Co. (OR&L) Terminal Building** is a two-story, Spanish Mission Revival-style building constructed in 1925. The property is important for its association with the OR&L, a force in the development of O‘ahu, and as an example of a Spanish Mission Revival-style building with high artistic value. The property is listed on the NRHP along with the OR&L Office/Document Storage Building under Criteria A and C.
- The **OR&L Office/Document Storage Building** is a two-story, Colonial Revival-style building constructed in 1914. The property is important for its association with the OR&L, and as a rare surviving example of Colonial Revival architecture in Honolulu. The property is listed on the NRHP under Criteria A and C.
- The **former filling station** on the OR&L property is a single-story, flat-roofed, masonry building constructed in 1940. The property is important for its association with the development of the A‘ala neighborhood. Although it is located on the OR&L property, because of the period of significance it is not a contributing resource to that historic complex. The filling station has been identified as a separate historic property. The property is eligible for listing on the NRHP under Criterion A.

The **OR&L basalt paving blocks** are roughly shaped, rectangular basalt paving blocks installed along Iwilei Road circa 1914. They are important for their association with the development of Honolulu’s roadway infrastructure, and because they demonstrate the distinctive method of using basalt paving blocks in road construction in Honolulu. The paving blocks were not identified as a contributing resource to that historic complex but therefore have been identified as a separate historic property. The property is eligible for listing on the NRHP under Criteria A, C, and D.

Section 4(f) Evaluation

The Kaʻaahi Street Station is within the boundary of the NRHP-listed OR&L parcel that includes two contributing elements, the OR&L Office/Document Storage Building and Terminal Building. In addition the parcel includes two historic properties that are not identified as contributing to the listed OR&L property, but have been determined eligible individually: basalt paving blocks along Iwilei Road, and a former filling station (Figure 18).

The Kaʻaahi Street Station would be constructed using a cut-and-cover approach that opens a large pit the size of the station, which is closed and restored at the end of station construction. This would require temporary support, relocation, or removal of the OR&L Office/Document Storage Building and the former filling station and would constitute use of the Section 4(f) property. The OR&L Terminal Building would not be directly affected during construction; however, access to the building would be restricted. The permanent station entrances, ventilation structures, and other above-ground features would be within the boundary of the OR&L parcel (Figure 5) and would result in a direct permanent use of the property. The Kaʻaahi Street Station would result in use of the OR&L Office/ Document Storage Building, OR&L Terminal Building, and former filling station; land within the boundary of these resources would be permanently incorporated into a transportation use. The basalt paving blocks would not be altered by the Kaʻaahi Street Station. The Beretania Street Tunnel Alternative would tunnel under Aʻala Park, which would not constitute a use of the park.

Avoidance Alternatives and Measures to Minimize Harm

The Kaʻaahi Street Station is located at the ʻEwa end of the tunnel where the tracks would be transitioning from above ground to tunnel. Stations must be placed on a flat and straight track section to meet Americans with Disabilities Act requirements for safe loading and unloading of the train; therefore, the station could not be moved ʻEwa. Moving the station Koko Head would place it in Aʻala Park, another Section 4(f)-protected resource. The construction would still require substantial disturbance to the OR&L property to excavate for the station, resulting in use of both the OR&L property, resulting in use of both the OR&L property and Aʻala Park. Nuʻuanu Stream and the Chinatown Historic District are immediately Koko Head of Aʻala Park.

Section 4(f) Use

After incorporating all measures to minimize harm, the Kaʻaahi Station would result in the use of three Section 4(f) properties: the OR&L Office/Document Storage Building, OR&L Terminal Building, and the former filling station on the OR&L property.

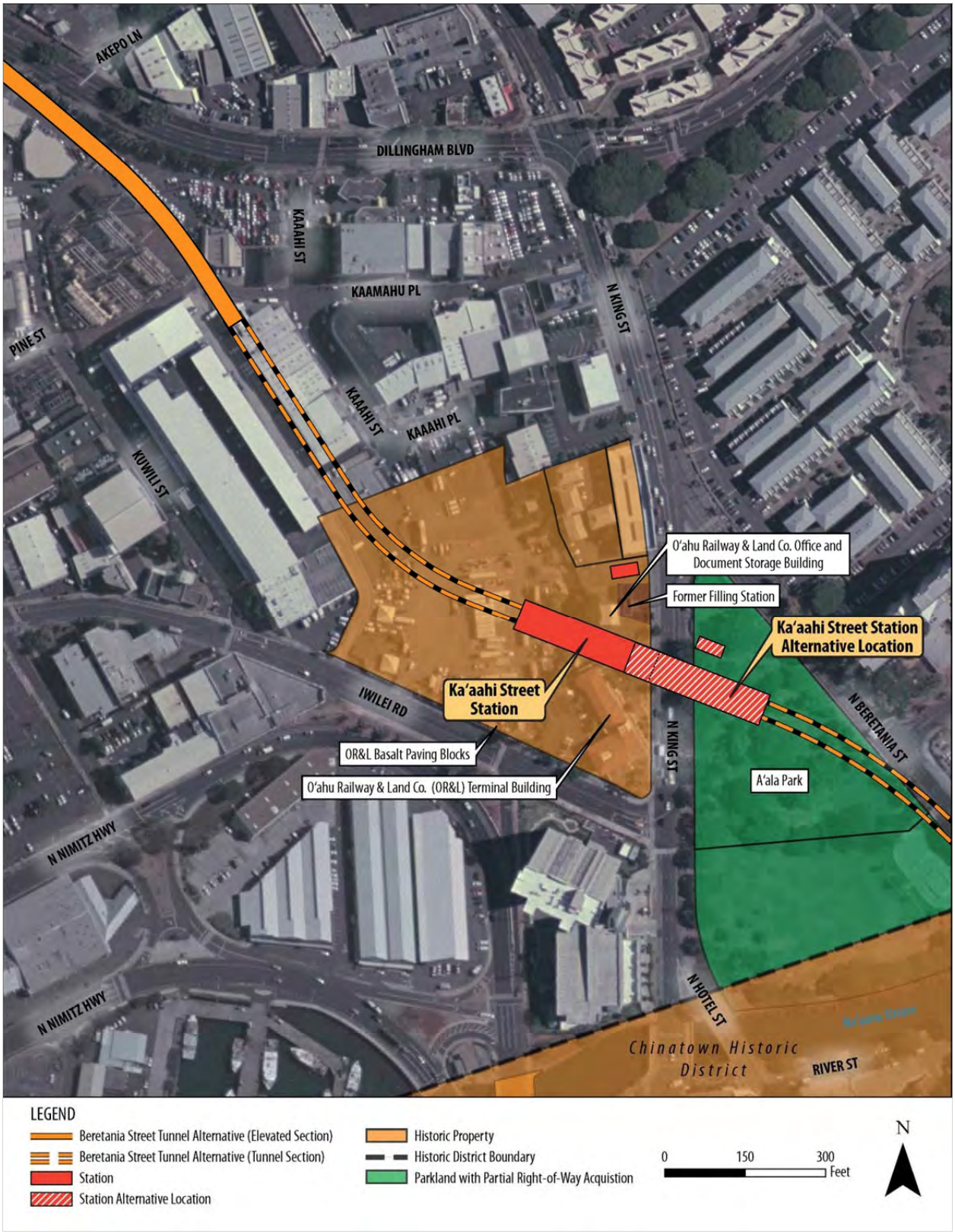


Figure 18. Avoidance Alternatives Evaluated for the Ka'aahi Street Station

3.3.2 McKinley High School

Property Description

The **McKinley High School** NRHP listing form states "The McKinley High School is significant in the history of education in the State of Hawai'i as the oldest high school in the State and the leading public school in Hawai'i during the nineteen twenties and thirties." The form identifies five buildings, demonstrates that the school is also "architecturally significant as one of the most elegant examples of Spanish Colonial revival architecture in Hawai'i." The property is NRHP-listed under Criteria A and C.

Section 4(f) Evaluation

The Pensacola/King intersection is in the vicinity of the NRHP-listed McKinley High School on the makai/'Ewa corner, a series of eight historic buildings on the makai/Koko Head corner, the Kaiser Permanente Honolulu Clinic and parking garage on the 'Ewa/mauka corner and businesses and residences on the mauka/Koko Head corner (Figure 19). The station layout includes a makai entrance within the McKinley High School property, and the use is limited to a grassy area adjacent to King Street. The elevated platforms would cross over the mauka edge of the McKinley High School property. The support structure of the platform and guideway, station entrance, and associated ground level station features would affect non-contributing elements of the McKinley High School property. The station construction would permanently incorporate land into a transportation use and introduce visual elements, which would diminish the integrity of the property's setting. Therefore, the Beretania Tunnel Alternative would have an adverse effect on the historic property. The use of the property would not be considered to have a *de minimis* impact.

Avoidance Alternatives and Measures to Minimize Harm

One alternative would be to shift the station Koko Head. However this would impact a series of Section 4(f) buildings on the makai side of King Street, and create full acquisitions or demolition of either 3 or 4 of them. Since this alternative would use other Section 4(f) properties, it would not be an avoidance alternative. The 15,800 square-foot partial acquisition at McKinley High School would generate less harm than the demolition of multiple Section 4(f) properties.

Section 4(f) Use

The Pensacola Street Station would result in the use of McKinley High School.

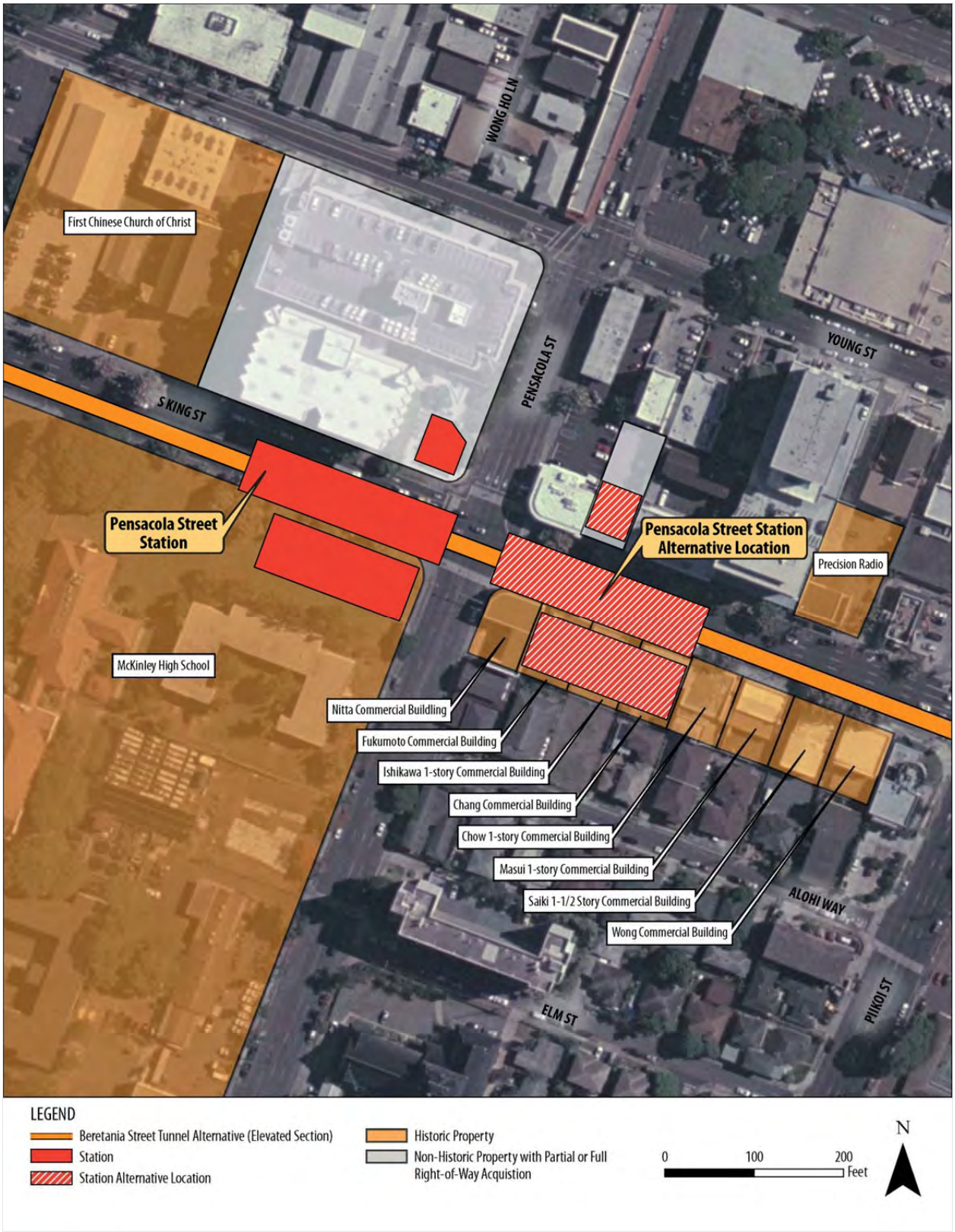


Figure 19. Avoidance Alternatives Evaluated for McKinley High School

3.3.3 King Florist

Property Description

King Florist at 1915B South King Street was built in 1945 and was identified in the alternatives analysis as potentially eligible for nomination to the NRHP under Criteria C (DTS 2006).

Section 4(f) Evaluation

The McCully Street Station would require property along the makai side of South King Street to accommodate makai edge of the station platform, station entrance building, and traction power substation (TPSS). This would require acquisition and demolition of King Florist, a NRHP-eligible property (Figure 20). The McCully Street Station would permanently incorporate the land into a transportation use.

Avoidance Alternatives and Measures to Minimize Harm

The station location proposed in the Alternatives Analysis was situated closer to Wiliwili Street, where the makai entrance and ancillary facilities would have demolished the NRHP-eligible Safety Loan Building. The mauka entrance would have been adjacent to the NRHP-eligible Ishizuchi Shrine (Figure 20). There is another NRHP-eligible building that takes up most of the block between McCully Street and the Safety Loan Building—the James M. Chrones Building. Shifting the station slightly ‘Ewa of Wiliwili Street, but within the same block, would use the James M. Chrones Building.

Section 4(f) impacts were reduced by shifting the station one block to the ‘Ewa side of McCully Street. The intersection of McCully and King Streets has historic properties on both makai corners. With the ‘Ewa shift, the station would avoid the Safety Loan Building as well as the James M. Chrones Building; however, it would use the King Florist Building, which is a smaller and less prominent building than either the Safety Loan Building or James M. Chrones Building. Its acquisition would be less expensive as well. For these two reasons, it is a least harm alternative to using the Safety Loan or James M. Chrones buildings.

Another possible avoidance for impact to the King Florist Building would be to move the TPSS and other ancillary buildings mauka of King Street. However, the space requirements around the station entrance and station platforms would still require a right-of-way acquisition at King Florist, resulting in a use of the property. Therefore, moving the ancillary buildings would not avoid the use, while creating an additional right-of-way acquisition mauka of the station.

Section 4(f) Use

The McCully Street Station would result in the direct use of King Florist.

Figure 20. Avoidance Alternatives Evaluated for King Florist

3.3.4 Temporary Occupancy

Construction of the Fort Street Station would include excavation within the roadway right-of-way inside the Chinatown Historic District boundary. Because it would be limited to within the right-of-way, it would not constitute a temporary occupancy. Beretania Street Tunnel Alternative construction would not cause temporary occupancy of any Section 4(f) properties beyond those already identified for direct use.

3.3.5 Summary of Use of Section 4(f) Properties by the Beretania Street Tunnel Alternative

The Beretania Street Tunnel Alternative would use two historic properties already listed on the NRHP and two NRHP-eligible properties. These are the OR&L parcel (including the NRHP-listed Office/Document Storage Building and OR&L Terminal Building and the NRHP-eligible former filling station), the NRHP-listed McKinley High School, and the NRHP-eligible King Florist Building.

3.4 Evaluation of Feasibility

23 CFR 774 defines a feasible and prudent avoidance alternative as an alternative that avoids using Section 4(f) property and does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting Section 4(f) properties [see Section 1.2.1 of this Draft Supplemental EIS/4(f)]. An alternative is not feasible if it cannot be built as a matter of sound engineering judgment.

The Beretania Street Tunnel Alternative would require tunnel construction through mixed ground conditions below the water table for most or all of its length (DTS, 2007), which would increase the risk of settlement and damage to adjacent buildings, including those in the Chinatown and Hawai‘i Capital Historic Districts, which are listed in the NRHP. Because of the ground conditions and shallow depth of the Beretania Street Tunnel (between 20 and 40 feet of cover), ground settlement is a particular risk. Pre-construction testing and pre-grouting of vulnerable ground would be required to reduce the potential for creating voids that lead to settlement.

Surface settlement can occur if the ground exposed by the tunnel excavation relaxes into the excavation before the tunnel lining can be installed to check the inward movement. Earth-pressure balance tunnel boring machines (TBM) reduce settlement to a minimum by supporting the ground beyond the machine’s rotating cutterhead with pressurized fluids (Figure 21). As the TBM is advanced, fluid carrying the excavated soil is conducted via pressure doors through the machine to a muck-train for disposal. Segments of the tunnel lining are assembled into rings behind the cutter-head and bolted to the previously assembled ring. As the machine is advanced, cement grout is pumped behind the lining to fill the circumferential void left by the steel skin of the advancing machine.

If silt, sands, or other fine soils above the tunnel under significant hydro-static pressure are encountered at the face, the pressurized soils can flow quickly into the excavated face, leaving a void high above the tunnel which is not reached by the regular cement back-grout. This void can then work its way to the surface as material caves in resulting in surface settlement. The risk is reduced by carefully and continually measuring the volume of material being extracted through the machine and comparing that volume with theoretical volume of the advancing excavation. If the monitored amount of excavated material exceeds the volume of the tunnel excavation, tunneling must be temporarily halted and the voids located by drilling from the surface or from the tunnel. Cement-grout or other fill material is pumped into the void before it can reach the surface and cause settlement and damage to structures or surface roadways near the tunnel.

Source: John Walser of Sound Transit

Figure 21. Example of a Tunnel Boring Machine

The Beretania Street Tunnel Alternative would require surface excavation of portals, stations, and ventilation facilities in areas with congested traffic. As discussed later in Section 3.5.3, the construction period would include prolonged lane closures and disturbance of historic properties. These issues pose difficulty to construction, increase construction costs, and introduce a potential for damage to historic properties, but it would be feasible as a matter of technical engineering to construct the Beretania Street Tunnel Alternative.

3.5 Evaluation of Prudence

23 CFR 774 defines a feasible and prudent avoidance alternative as an alternative that avoids using Section 4(f) property and does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting Section 4(f) properties [see Section 1.2.1 of this Draft Supplemental EIS/4(f)]. An alternative is not prudent if:

- It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- It results in unacceptable safety or operational problems;
- After reasonable mitigation, it still causes:
  - Severe social, economic, or environmental impacts;
  - Severe disruption to established communities;
  - Severe disproportionate impacts to minority or low income populations; or
  - Severe impacts to environmental resources protected under other Federal statutes;
- It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- It causes other unique problems or unusual factors; or
- It involves multiple factors in [the paragraphs above], that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

3.5.1 Effectiveness at Meeting Purpose and Need

The first test for prudence is whether or not an alternative would compromise the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need [Section 1.4 of this Draft Supplemental EIS/4(f)]. This section evaluates how well the Beretania Street Tunnel Alternative meets these needs considering the measures evaluated in Section 7.2 of the Final EIS/4(f).

Improve corridor mobility

The Beretania Street Tunnel Alternative would serve the same corridor and generate similar transit ridership and benefits to the Project (Table 3). The Beretania Street Tunnel Alternative would include additional stations and directly serve UH Mānoa, while requiring a bus transfer to Ala Moana Center. The approved Project would directly serve Ala Moana Center and requires a bus transfer to UH Mānoa. These transfers are reflected in the transit travel times presented in Table 3.

With the Beretania Street Tunnel Alternative there would be a less than 1-percent increase in daily transit trips taken on O‘ahu, but the user benefits (travel time savings) for the average user would decrease by approximately 2 percent (Table 3).

Table 3. Effectiveness in Improving Corridor Mobility

Attribute	Alternative (2030)		
	Beretania Street Tunnel	The Project	The Project with Future Extension to UH Mānoa
Transit Travel Time (minutes)*			
Wai‘anae to UH Mānoa	84 minutes	93 minutes	86 minutes
Kapolei to Ala Moana Center	71 minutes	59 minutes	59 minutes
Transit Performance			
Daily rail boardings	120,700	116,300	132,700
Daily total transit trips	284,400	282,500	290,800
Transit user benefits (hours per year)	20,435,000	20,775,000	23,301,000
Highway Performance			
Daily islandwide vehicle miles traveled	13,065,000	13,049,000	13,019,000
Daily islandwide vehicle hours traveled	384,100	383,800	381,800
Daily islandwide vehicle hours of delay	85,700	85,800	84,500

*Travel time includes transfer time

As shown in Table 3, vehicle miles traveled, vehicle hours traveled, and vehicle hours of delay would differ by less than 1 percent between the Project and the Beretania Street Tunnel Alternative.

The Final EIS analyzed the Project, including future extensions to Waikiki and UH Mānoa. With the planned future extension to UH Mānoa only, rail boardings with the Project would increase to 132,700, which would be a 10 percent increase compared to the Beretania Street Tunnel Alternative (Table 3). Likewise, total islandwide transit trips would increase by two percent and user benefits by 14 percent compared to the Beretania Street Tunnel Alternative. A drawback of the Beretania Street Tunnel Alternative is the mauka location of its alignment, which would preclude future extension to Waikiki or direct service to Ala Moana Center, requiring bus transfer to serve those destinations. The Project, by comparison, serves these major destinations ultimately with fewer transfers (Figure 3).

Improve corridor travel reliability

Reliability for transit riders would be similar for the Project and the Beretania Street Tunnel Alternative, as similar percentage of passengers would be carried on fixed guideway transit and exclusive right-of-way (Table 4).

Table 4. Effectiveness of Alternatives in Improving Corridor Travel Reliability

Measure	Beretania Street Tunnel Alternative	The Project
Percent of transit trips carried on fixed guideway	42%	43%
Percent of transit passenger miles in exclusive right-of-way	44%	43%

Improve access to planned development to support City policy to develop a second urban center

Both the Project and the Beretania Street Tunnel Alternative would support urban development consistent with the City General Plan (DPP 2002), which is the blueprint for future population and employment growth. With both alternatives, the majority of transit users in ‘Ewa and Central O‘ahu, which are areas planned for future development, would experience similar travel times (Table 3).

Improve transportation equity

Equity relates to the fair distribution of a project’s benefits and impacts, so that no group would carry an unfair burden of a project’s negative environmental, social, or economic impacts or receive less than a fair share of a project’s benefits. Equity considers the population segments benefiting and net benefits by population segment. The benefit is calculated in travel-time savings and is compared between areas with concentrations of communities of concern and the remainder of O‘ahu. Communities of concern are defined as concentrations of minority, low-income, transit-dependent, and linguistically isolated households. Approximately 35 percent of O‘ahu’s population currently live in areas that have concentrations of communities of concern. The spread of transit benefits would be similar between alternatives (Table 5). The calculation of travel-time savings is detailed in Section 3.4.2 of the Final EIS/4(f).

Summary of Purpose and Need Evaluation

Based on the above analysis, both the Project and the Beretania Street Tunnel Alternative would have similar effectiveness at meeting the Purpose and Need for the project. The Project would provide slightly greater user benefits by requiring a smaller percentage of transit passengers to transfer from rail to bus to reach their final destination.

Table 5. Equity Comparison of 2030 Transit Travel-time Savings Compared to the No Build Alternative

Percent of Islandwide Population	That will experience	Percent of Population within Category	
		Within Communities of Concern	Outside Communities of Concern
The Beretania Street Tunnel Alternative			
60%	Travel-time savings compared to the No Build Alternative	32%	68%
38%	Negligible travel-time change compared to the No Build Alternative	27%	73%
2%	Travel-time increase compared to the No Build Alternative	22%	78%
The Project			
61%	Travel-time savings compared to the No Build Alternative	34%	66%
39%	Negligible travel-time change compared to the No Build Alternative	36%	64%
0%	Travel-time increase compared to the No Build Alternative	0%	0%

3.5.2 Safety and Operational Considerations

The second test for prudence is if the alternative would result in unacceptable safety or operational problems. The Beretania Street Tunnel Alternative would include a tunnel section below the water table, which would increase operational and maintenance costs. Lighting, ventilation, and emergency egress systems would be required. The issues could be acceptably addressed through design and operating procedures. The elevated portion of the alignment would be similar to the Project guideway and stations; however, it would reduce capacity on King Street by one travel lane. King Street currently has excess capacity during peak hours; therefore, the reduction in capacity would adversely affect automobile travel but would not cause a failure in traffic operations. The alternative would be prudent regarding safety and operational concerns.

3.5.3 Social, Economic, Environmental, and Community Impacts

The third test for prudence is if the alternative, after reasonable mitigation, would cause severe social, economic, or environmental impacts; disruption to established communities; disproportionate impacts to minority or low-income populations; or impacts to environmental resources protected under other Federal statutes. The Beretania Street Tunnel Alternative would have long-term social, economic, environmental, community, and environmental justice impacts that are similar to the Project. As with the Project [Section 4.10.3 of the Final

EIS/(4f)], operational noise levels with the Beretania Street Tunnel Alternative could be mitigated to less than the FTA noise exposure impact criteria. The Beretania Street Tunnel Alternative would substantially differ from the Project regarding visual, historic architecture, archaeological, and construction impacts.

Visual Impacts

The visual assessment completed as part of the Alternatives Analysis (DTS 2007a) identified visual impacts ranging between medium and high in the South King Street corridor. King Street is a major arterial lined by a range of land uses, including parks, schools, historic buildings, and high-rise developments. Most of the corridor is low- to mid-rise commercial development dating from the middle part of the 20th century (Figure 22). The guideway would cross view corridors protected as either prominent or significant in Chapter 21 of the Revised Ordinances of Honolulu (Figure 23), including views from Alapai Street between King and Beretania Streets in the Hawai‘i Capital Special District and views to and from Thomas Square in the Thomas Square/Honolulu Academy of Arts Special District (Figure 24). The views to and from Thomas Square along South King Street are screened by trees and utility lines.

The views in the Capital Special District are defined as prominent in the ordinance and the views in the Thomas Square/Honolulu Academy of Arts Special District are defined as significant; both sets of views are protected by the ordinance. As described in Section 4.8.3 of the Final EIS/4(f), where the guideway would be a dominant element within a protected view corridor, there would be a significant visual impact on that view corridor.

Compared to the Project, the Beretania Street Tunnel Alternative would avoid view impacts in Chinatown and along the waterfront by traveling in a tunnel through the Chinatown and Hawai‘i Capital Historic Districts. However, from the portal on Beretania Street and continuing along King Street, the elevated guideway would be in a heavily traveled mixed-use corridor with view-sensitive elements, including the Thomas Square/Honolulu Academy of Arts Special District. In contrast, once the Project turns from Nimitz Highway onto Halekauwila Street, the guideway travels through a mixed-use neighborhood with mostly industrial and commercial uses that are not visually sensitive along Halekauwila and Queen Streets. Overall, the Beretania Street Tunnel Alternative would avoid view impacts in Chinatown and along the waterfront but introduce significant view impacts along South King Street.

Figure 22. Typical Views along the South King Street Corridor

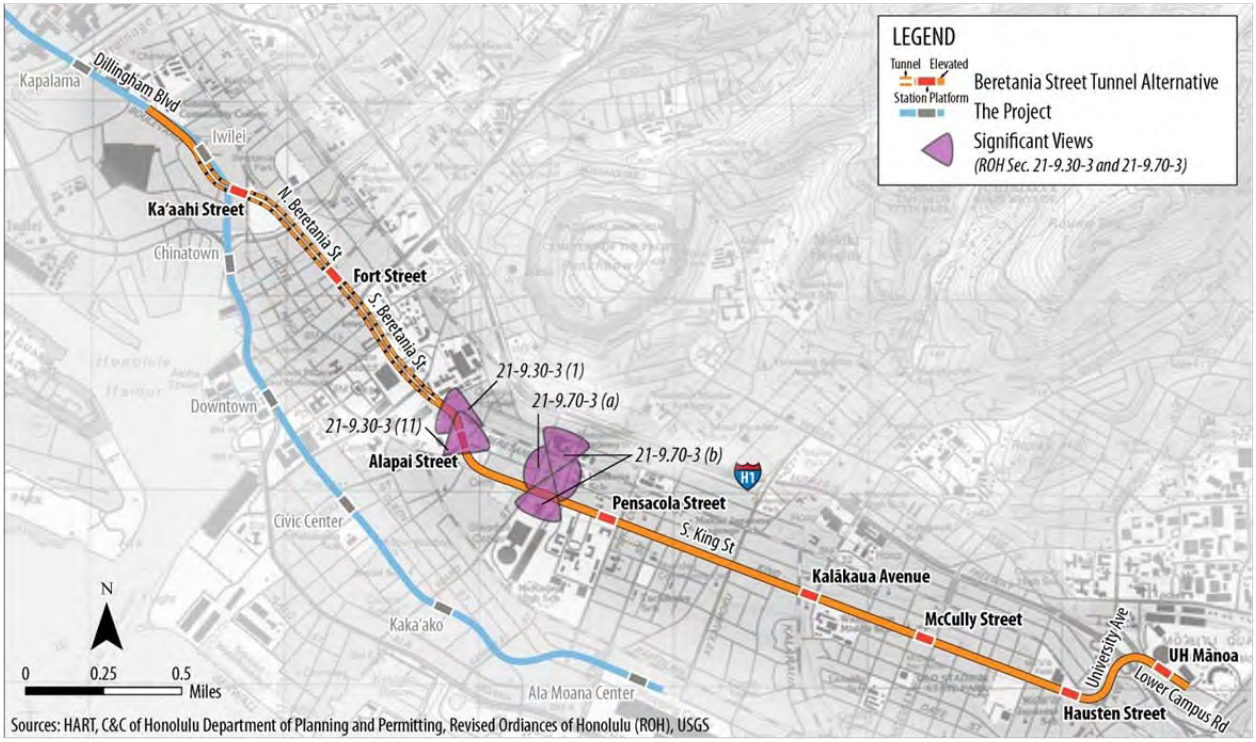


Figure 23. Significant Views Identified in Chapter 21 of the Revised Ordinances of Honolulu

Figure 24. View of Guideway from Thomas Square Looking Makai

Parklands

The Beretania Street Tunnel Alternative would travel as an elevated guideway adjacent to five City parks and in a tunnel adjacent to two additional parks (Table 6 and Figure 17). The effects on the parks adjacent to the elevated guideway would be similar to the effects on Mother Waldron Neighborhood Park [Section 4 of this Draft Supplemental EIS/4(f)] and Irwin Memorial Park [Section 5.6.1 of the Final EIS/4(f)] because the elevated guideway would be adjacent to the edge and visible from the five parks. The one exception would be Thomas Square, which, as described under Visual Impacts above, includes protected significant public views, including the view of Thomas Square from King Street and the view of the Neal S. Blaisdell Center from Thomas Square, that are defined in Section 21-9.70 of the Revised Ordinances of Honolulu that would be adversely affected by the Beretania Street Tunnel Alternative.

Table 6. Parklands Koko Head of Ka‘aahi Street Station

Property	Relationship
A‘ala Park	Guideway in tunnel below park
Kamali‘i Mini Park	Guideway in tunnel adjacent to park
Thomas Square	Elevated guideway adjacent to park
Pāwa‘a Inha Park	Elevated guideway adjacent to park
Old Stadium Park	Elevated guideway adjacent to park
Mō‘ili‘ili Neighborhood Park	Elevated guideway adjacent to park
Mō‘ili‘ili Triangle Park	Elevated guideway and station adjacent to park

Historic Architecture

As shown on Figure 17, the Beretania Street Tunnel Alternative would incorporate land from two NRHP-listed historic properties and two eligible historic properties (the OR&L Office/Document Storage Building and Terminal Building, McKinley High School, former filling station on the OR&L property, and the King Florist Building) and would have station entrances adjacent to two additional NRHP-eligible properties (Bethel and Chaplain Lane Building and Schnak Building). The elevated guideway would travel adjacent to an additional 2 listed and 39 properties treated as eligible for listing on the NRHP (Table 7 and Table 8). These are significant historic and architectural properties that were identified during the Alternatives Analysis process (DTS 2007b). As shown in Figure 17, there is a high concentration of historic properties located on South King Street, which is a result of the development pattern of Honolulu in the early- and mid-twentieth century.

Table 7. Affected Properties Listed in or Determined Eligible for the National Register of Historic Places

Property		Location
1.	OR&L Office/Document Storage Building and Terminal Building (NRHP listed)	Entrances for underground Ka‘aahi Street Station located within boundary of historic property
2	Former filling station within OR&L Parcel (NRHP eligible)	Entrances for underground Ka‘aahi Street Station located within boundary of historic property
3.	Thomas Square (NRHP listed)	Elevated guideway adjacent to park
4.	McKinley High School (NRHP listed)	Entrances for aerial Pensacola Street Station located within boundary of historic property
5.	Church of the Crossroads (NRHP listed)	Elevated guideway adjacent to property

The FTA, following the process included in 36 CFR 800.5, in consultation with the SHPO, went through an extensive process of evaluating potential impacts on historic properties immediately adjacent to the Project that was approved in the Record of Decision. Eligibility determinations made for the Project used property boundaries as the boundary for eligible historic properties unless there was a barrier or other physical element that provided a more logical boundary for a specific property. The impacts were determined based on age, resource integrity, integrity of setting, and visual and physical proximity to the historic resource (RTD 2009a). The SHPD concurred with the adverse effect determinations made by FTA and identified additional adverse effects that FTA agreed to for historic properties affected by the Project. The ACHP participated in the resolution of effects and signed the Programmatic Agreement (PA) (Attachment 2 to the PA [FTA 2011]). The determined effects included general effects, visual effects, and effects to integrity of setting, feeling, and association.

Applying the same methodology to the 47 historic properties adjacent to the Beretania Street Tunnel Alternative, the properties would be adversely affected under Section 106 of the National Historic Preservation Act of 1966 (as amended) by the elevated guideway, tunnel portals, and stations (Figure 17). The same approach to historic property boundaries as used in the Section 106 evaluation was applied to the 47 properties along the Beretania Street Tunnel Alternative. The adverse effect to King Florist would be demolition of the property, while the effect to the remaining properties would be the same as determined for the Project to historic properties adjacent to the elevated guideway including general effects, visual effects, and effects to integrity of setting, feeling, and association. As mentioned above, the SHPD concurred with adverse effect determinations for historic properties similarly affected by the Project. This analysis is conservative, in that it assumes all of the 47 properties preliminarily identified by historians would be determined historic and that the same types of visual, atmospheric, or audible elements found to cause adverse effects by the Project would also cause adverse effects to these properties. Should the Beretania Street Tunnel Alternative be selected, additional evaluation and consultation with the SHPO would be required for these properties.

*Table 8. Affected Properties Eligible for the National Register of Historic Places**

Property	Location
1. Bethel and Chaplain Lane Building	Entrances for underground station located across Bethel Street from building
2. Schnak Building	Entrances for underground station located across Bethel Street from building
3. Board of Water Supply Engineering Building	Elevated guideway adjacent to property
4. Board of Water Supply Administration Building	Elevated guideway adjacent to property
5. First Chinese Church of Christ	Elevated guideway adjacent to property
6. 1-story Deco Building, 1026 S King St	Elevated guideway adjacent to property
7. Nitta Commercial Building	Elevated guideway adjacent to property
8. Fukumoto Commercial Building	Elevated guideway adjacent to property
9. Ishikawa 1-story Commercial Building	Elevated guideway adjacent to property
10 Chang Commercial Building	Elevated guideway adjacent to property
11. Chow 1-story Commercial Building	Elevated guideway adjacent to property
12. Masui 1-story Commercial Building	Elevated guideway adjacent to property
13. Saiki 1-1/2 Story Commercial Building	Elevated guideway adjacent to property
14. Wong Commercial Building	Elevated guideway adjacent to property
15. Precision Radio	Elevated guideway adjacent to property
16. Clyde's Cleaners	Elevated guideway adjacent to property
17. Mediterraneo	Elevated guideway adjacent to property
18. Dr. A Tsuda Office	Elevated guideway adjacent to property
19. Trophy House	Elevated guideway adjacent to property
20. American Stereo	Elevated guideway adjacent to property
21. Ikuta Commercial Building	Elevated guideway adjacent to property

Property	Location
22. Sushi Sasabune	Elevated guideway adjacent to property
23. Territorial Board of Agriculture and Forestry Building	Elevated guideway adjacent to property
24. King Center Bank of Hawai'i	Elevated guideway adjacent to property
25. Professional Center	Elevated guideway adjacent to property
26. Continental Building	Elevated guideway and station adjacent to property
27. King Kalākaua Building	Elevated guideway and station adjacent to property
28. Heu Commercial Building	Elevated guideway and station adjacent to property
29. Washington Middle School	Elevated guideway adjacent to property
30. Dental Office, 1702 S King St	Elevated guideway adjacent to property
31. KNDI Radio	Elevated guideway adjacent to property
32. Miss Hawai'i Building	Elevated guideway adjacent to property
33. Kimura Florist	Elevated guideway adjacent to property
34. T. Ishibashi Building	Elevated guideway adjacent to property
35. Tenrikyo Honolulu Church	Elevated guideway adjacent to property
36. King Florist	Station Entrance and support buildings would displace the property.
37. James M. Chrones Building	Elevated guideway adjacent to property
38. Ishizuchi Shrine	Elevated guideway and station adjacent to property
39. Safety Loan Building	Elevated guideway adjacent to property
40. J.C. Tom Building	Elevated guideway adjacent to property
41. Choy Commercial Building	Elevated guideway adjacent to property
42. HK Restaurant	Elevated guideway adjacent to property

*These 42 properties were evaluated by qualified architectural historians based on age (built before 1967) and review of integrity during the Alternatives Analysis. Because the Beretania Street Tunnel Alternative was not advanced beyond that phase, formal eligibility determinations with consultation of the State Historic Preservation Officer (SHPO) were not completed; however, their eligibility for NRHP listing would be consistent with guidance provided by the SHPO and eligibility determinations made by the FTA for properties within the Area of Potential Effect of the Project.

These adverse effects to 47 historic properties would compare to the 15 historic properties between Kaʻaahi Street Station and Ala Moana Center identified as adversely affected by the approved Project (Figure 4-77 of the Final EIS). The high concentration of historic commercial buildings on South King Street is in direct contrast to the combination of mixed-use, industrial, and redeveloped properties along the Project alignment. Overall, the Beretania Street Tunnel Alternative would have an adverse effect on 47 historic properties as compared to 15 with the Project.

Archaeology

The Archaeological Technical Report completed for the Alternatives Analysis identified the Beretania Street Tunnel Alternative as extending predominantly over the Honolulu Plain, away from the intensive coastal prehistoric and historic land use (DTS 2007b). No field survey was completed during the Alternatives Analysis; however, substantial information was available from literature review that indicated that the portion of the alignment in a tunnel under Beretania Street is through an area of much higher potential for encountering archaeological deposits and burials than the area along South King Street. The Beretania Street area includes the tunnel portals and excavated stations, which would not disturb any known archaeological features or burials but would have a high potential for encountering unknown archaeological features or burials (DTS 2007b). The area of disturbed ground for each portal or underground station is much greater than for the elevated stations on the Project alignment. In total, the Beretania Street Tunnel Alternative would disturb 13 acres of ground between the Kaʻaahi station and UH Mānoa, including tunnel portals, underground stations, column foundations, utility relocations, repaving, and elevated stations. A total of approximately 400,000 cubic yards of material would be excavated during construction of the tunnel portals and underground stations to an average depth of between 50 and 60 feet below the surface. Any archaeological resources encountered in the portal and station areas could not be avoided.

The surveys for previously unidentified below-ground archaeological sites required by the agreement among FTA, the City, the U.S. Navy, the State Historic Preservation Division, and the Advisory Council on Historic Preservation have been completed for the entirety of the project alignment. The results of the below-ground surveys along the project alignment are reported in several volumes of an archaeological inventory survey report (HART 2010, HART 2012d, HART 2013a, HART 2013b). The surveys were conducted in accordance with survey protocols and procedures approved by the State Historic Preservation Division. In construction phases 1 and 2, no human skeletal remains were encountered. Two NRHP-eligible archaeological sites were documented in phases 1 and 2. In each case, they were determined eligible under Criterion D for their information potential. Thus, Section 4(f) does not apply to these sites [23 CFR 774.13(b)(1)].

Two NRHP-eligible sites were documented in construction phase 3, also eligible under criterion D. No human remains were encountered. HART and FTA have concluded that Section 4(f) does not apply and are consulting with the SHPD in accordance with section 774.13(b)(2).

The surveys identified 17 NRHP-eligible archaeological sites in construction phase 4. All these sites are eligible for their informational value only under criterion D of the Advisory Council regulations. Human skeletal remains were documented in 7 trenches within 4 of the 17 sites in construction phase 4. The human skeletal remains do not contribute to the sites' NRHP eligibility at all. HART and FTA have concluded that Section 4(f) does not apply and are consulting with the SHPD in accordance with section 774.13(b)(2).

The City and HART previously agreed that in the event any NRHP burials are identified during the archaeological inventory survey, the design of the Project would be modified to allow preservation of the burials in place and thus avoid any "use" of the site. HART has modified the design of the Project to avoid all the previously identified human remains in phase 4. Under Hawai'i law, the final determination regarding treatment of previously identified human skeletal remains is made by the O'ahu Island Burial Council and the State Historic Preservation Division. Regardless of the final determination, HART has modified the design of the Project to avoid any Section 4(f) use of the previously identified human skeletal remains. Overall, the Beretania Street Tunnel Alternative is located in an area with a lower potential to encounter archaeological resources and burials than the Project; however, the alignment, station locations, and portal locations for a tunnel are much less flexible than the column locations for an elevated guideway. As a result, the potential impact at the portals and stations is higher for the Beretania Street Tunnel Alternative than for the Project, which would disturb a limited area at column footings and stations. The Project would disturb 8 acres of land for column foundations, utility relocations, repaving, and elevated stations, which is 5 acres less than the Beretania Street Tunnel Alternative.

Construction

The construction methods for the Beretania Street Tunnel Alternative and the Project are different. Construction duration would be approximately 2 years longer than for the Project (Figure 13). Tunnel construction would require a large area at the 'Ewa portal to launch the tunnel boring machine and support the removal and dewatering of tunnel spoils (material removed from the tunnel). This area would be in use for the duration of the tunnel construction.

Tunnel construction would also require an area around each underground station and the Koko Head portal to allow for excavation (Figure 25). The top of the bored tunnel would be between 20 and 40 feet below the surface and the construction of stations would include digging a large pit to this depth at each station. The areas affected by the excavation for each station are shown on

Figure 25. Tunnel Portal and Tunnel Station Area Disturbance during Construction

Figure 25 and the staging is discussed for each station individually. The duration of construction would be much longer and the area required larger for tunnel stations than for elevated stations. The total area of construction easements required for the Beretania Street Tunnel Alternative would be approximately 18 acres, compared to 9 acres required Koko Head of Iwilei for the Project.

In total, approximately 490,000 cubic yards of spoils would be removed from the tunnel and stations and require disposal. This would result in approximately 49,000 round-trip truck trips to and from the Kaʻaahi Street portal site if typical 10-yard dump trucks are used. If construction occurs 6 days per week over the approximately five-year tunnel construction period (Figure 13), there would be an average of 63 one-way truck trips to or from the site per day to transport the tunnel spoils.

A currently vacant former auto dealership along with 6 parcels that would be acquired on the makai side of Kaʻaahi Street near the ʻEwa portal would provide sufficient space to stage tunnel construction. Construction beginning at the ʻEwa portal and extending through the Kaʻaahi Street Station would be cut-and-cover (excavated down from the surface, then re-covered once the station structure is constructed to support the cover). A tunnel boring machine would bore the two parallel tunnels from the Kaʻaahi Street Station to the Koko Head Portal.

The Kaʻaahi Street Station and the tunnel staging area is constrained by the surrounding historic OR&L buildings. Construction would require relocation, demolition, or temporary support of at least one of the buildings and closure of the parking lot, requiring alternative access to the State of Hawaiʻi Department of Human Services offices. The makai lanes of King Street would be temporarily closed, first to relocate utilities, then for construction of the Koko Head end of the Kaʻaahi Street Station.

The Fort Street Station also would be constructed using a cut-and-cover method by excavating from above. During construction, the entire parking lot between Nuʻuanu Avenue and Bethel Street at Beretania Street would be used for staging. Construction of the station would require closure of lanes in Beretania Street and a portion of adjacent streets for periods extending up to several months. The total station construction duration for underground stations would be approximately 33 months for each station compared to 21 months for elevated stations. Over the nearly three-year station construction period, the station would be excavated from above in three stages to maintain traffic on three or four of Beretania Street's six lanes during peak periods. Once the shell of the station is complete, the roadway would be restored above it and the station would be finished from inside. In contrast, construction of the elevated guideway and the Chinatown Station for the Project would require substantially shorter periods of lane closures on Nimitz Highway, totaling only a few months of the 21-month construction duration, both because of the segmental construction technique used for the elevated structure and because much of the Chinatown Station will be located outside the Nimitz Highway right-of-way on what is currently a parking lot.

The Koko Head portal would require reconfiguration and reconstruction of a portion of the municipal parking garage near Beretania Street and Alapai Street. The construction would require closure of the two makai lanes of Beretania Street at various times, extending for up to several months. Because of the limited space at the Koko Head portal, the tunnel boring machine would have to be dismantled and returned to the ‘Ewa end to bore the second tunnel. The closures and restrictions would be temporary and, after construction, the facilities would be reopened.

Construction of the elevated section and stations along South King Street would be more rapid than in the tunnel section, similar to construction of the Project; however, South King Street is a major arterial that provides one of the few ‘Ewa to Koko Head connections through the city center. According to 2007 traffic counts (RTD 2009), King Street carries approximately 1,600 cars per hour in the vicinity of Cooke Street, while Halekauwila carries approximately 700 cars per hour. The much greater traffic volumes on King Street would result in greater traffic impacts during the construction phase than for the Project.

Unlike the Project, where the guideway would generally run along the center of streets, the guideway would run along the makai side of King Street, creating a greater impact on properties along the makai side during construction. Access to Neal S. Blaisdell Center would be restricted from King Street but maintained from Kapi‘olani Boulevard during construction. While sidewalk access to businesses along King Street would be maintained during construction, street parking in the construction area would be eliminated, making access to small businesses more difficult. Driveway access from King Street to parking lots would be maintained to the extent feasible but would be closed at certain times, such as utility relocation across the driveways, repaving of portions of South King Street, or when guideway sections are being placed over the entrance.

Construction noise would be of similar magnitude to that described in Section 4.18.5 of the Final EIS/4(f) for the Project, except at the launch and retrieval sites of the tunnel boring machine and at construction areas where the removal and dewatering of tunnel spoils are conducted. These activities would have potential noise and vibration impacts on sensitive land uses in their vicinity.

3.5.4 Costs of an Extraordinary Magnitude

The fourth test for prudence is if the alternative would result in additional construction, maintenance, or operational costs of an extraordinary magnitude. The Beretania Street Tunnel Alternative would increase the capital cost of the Project (the cost to construct) by $960 million in year of expenditure (YOE) dollars (Table 9). YOE-dollar cost estimates include inflation to the date of the expenditure, while dated-dollar cost estimates reflect prices in the given fiscal year. Cost estimation was completed following FTA methodology using standard cost categories (SCC) for transit projects. The SCC are a standardized breakdown of common elements that make up the capital cost for a transit

project. Cost estimates were originally completed in 2006 dollars during the Alternatives Analysis phase of the Project, then updated and adjusted for inflation to 2009 and YOE dollars for the Final EIS. Capital costs for only the portion of the corridor Koko Head of Iwilei are shown for each SCC in Table 10 to detail the differences in cost between the alternatives that are shown in Table 9. Costs for the maintenance and storage facility and vehicles are project wide; therefore, they are not calculated for individual sections of the Project.

Table 9. Capital Costs Excluding Finance Charges

Capital Costs	The Project	Beretania Street Tunnel	Difference
2006 $M	4,190	4,840	650
2009 $M	4,280	5,030	750
YOE* $M	5,120	6,080	960

* Year of Expenditure

2009 and YOE cost values for the Project are from the Final EIS, Table 6-1. 2006 project cost values are from the Alternatives Analysis, Table 5-1. Values for the Beretania Street Tunnel Alternative were calculated using the same methodology and assumptions. All costs are rounded to the nearest 10 million.

Table 10. Standard Cost Categories Comparison of Alternatives Koko Head of Iwilei (2006 $M)

SCC	Category Description	The Project*	Beretania Street Tunnel*
10.0	Guideway and Track	$133	$340
20.0	Aerial & Underground Stations	$46	$223
30.0	Yards, Shops, Admin Facilities	Not Included	Not Included
40.0	Sitework & Special Conditions	$136	$103
50.0	Systems	$24	$39
	Sub-total Construction Costs (SCC 10 – 50)	$339	$705
	Construction Contingency (SCC 10 – 50)	$98	$202
	Other Construction Cost Adjustments (including GET)	$24	$49
60.0	ROW, Land, Existing Improvements	$33	$12
	ROW Contingency (SCC 60)	$17	$6
70.0	Vehicles	Not Included	Not Included
80.0	Soft Costs	$138	$287
90.0	Contingency (Project Reserve)	$39	$76
Total Alternative Costs		$688	$1,337

*All values are in millions of 2006 dollars

Source: Updated from the Honolulu High-Capacity Transit Corridor Project Final Capital Costing Memorandum (DTS, 2006)

According to projections from the Final EIS, which have been supported by the execution of a Full Funding Grant Agreement between HART and the FTA, $5,544 million (YOE) is the total of anticipated available funds from all sources to construct the Project (Table 6-4 of the Final EIS). In addition to capital costs, the funds must also cover interest and finance charges, estimated in the Final EIS to total $398 million (YOE) for the Project. The 19-percent increase in project costs

(YOE) for the Beretania Street Tunnel Alternative would be greater than all available funding sources and would exceed contingencies.

During the December 12, 2012 remedy hearing before Judge Tashima, plaintiffs suggested that the additional costs of a tunnel could be offset by shortening the system at the ‘Ewa end. Shortening the system to end at the Leeward Community College Station, which is adjacent to the maintenance and storage site, would reduce project cost by approximately $580 million in 2009 dollars. According to Figure 3-10 of the Final EIS, 23,680 daily boardings (20 percent of all rail boardings) are projected at stations that would be eliminated by shortening the system to Leeward Community College.

Further shortening the alignment at the ‘Ewa end, so that it does not reach Leeward Community College, would prevent the system from being operable because it would not reach the maintenance and storage site (Figure 1). Other potential maintenance and storage site options are located even farther ‘Ewa of the selected site [Section 2.5.8 of the Final EIS/4(f)].

Shortening to Leeward Community College would not save the needed $750 million (2009 dollars), it would have a major effect on system ridership and would not meet the Purpose and Need element related to improving access to planned development to support City policy to develop a second urban center because the shortened system would fail to reach the ‘Ewa plain. Transit from that region would continue to be limited to unreliable bus service operating in mixed traffic. Shortening the system in such a way would not be prudent because such major changes to the project would make it unreasonable to proceed with the project in light of the project’s purpose and need.

3.5.5 Unique Problems or Unusual Factors

The fifth test for prudence is if the alternative would cause unique problems or have unusual factors. The Beretania Street Tunnel Alternative would delay system opening by approximately two years. The cost of the delay has been captured in the year of expenditure cost estimate, but the delay in benefits to system users would be an additional impact.

3.5.6 Cumulative Consideration of Factors

The final test for prudence is if the alternative would involve multiple factors that are individually minor but would cumulatively cause unique problems or impacts of extraordinary magnitude. The use of other Section 4(f) properties; settlement risks from tunnel construction; environmental effects related to visual, historic architecture, and traffic and business access disruption during construction; delayed benefits from the system; and the extraordinary increase in the cost of the alternative all contribute to the imprudence of the Beretania Street Tunnel Alternative. Cumulatively, the severe environmental effects and extraordinary

increase in the cost of the alternative make the Beretania Street Alternative not prudent.

3.6 Overall Feasibility and Prudence of the Beretania Street Tunnel Alternative

The use of other Section 4(f) properties; settlement risks from tunnel construction; environmental effects related to visual, historic architecture, and traffic and business access disruption during construction; and delayed benefits from this alternative would contribute to the imprudence of the Beretania Street Tunnel Alternative. The overall extraordinary increase in the cost of the alternative would be the overwhelming factor making the alternative imprudent.

3.7 Least Overall Harm

An avoidance alternative is one that completely avoids all Section 4(f) property. The Beretania Street Tunnel Alternative is not an avoidance alternative. An alternative that uses some Section 4(f) property is evaluated to determine whether it causes the least overall harm [Section 1.2.3 of this Draft Supplemental EIS/4(f)]. Least overall harm analysis does not apply to alternatives that are not prudent.

The Beretania Street Tunnel Alternative has been demonstrated to be imprudent [Section 3.6 of this Draft Supplemental EIS/4(f)]; as a result, the least overall harm standard does not apply. Nonetheless, to further consider differences between the Project and the Beretania Street Tunnel Alternative, the relative severity of each alignment's impact has been compared from a least overall harm perspective. The factors considered in the least overall harm analysis are detailed in Section 1.2.3 of this Draft Supplemental EIS/4(f). Neither alternative would have any Section 4(f) use of parks in this portion of the corridor; therefore, the lease overall harm analysis is limited to historic properties.

3.7.1 The Ability to Mitigate Adverse Impacts of each Section 4(f) Property (including any measures that result in benefits to the property)

The Project resulted in a Section 106 programmatic agreement to mitigate adverse effects to historic properties. Mitigation includes National Register nomination forms for each historic property found to be adversely affected through the Section 106 process, including all properties the Project would use. Mitigation also includes historic property documentation of the OR&L Station and Document Storage Building, Dillingham Transportation Building, and the HECO Downtown Plant/Leslie A. Hicks Building. General mitigation for overall project-related effects includes $2 million for an historic preservation program, in addition to historic context studies, cultural landscape reports, educational and interpretive programs, material, and signage.

Were the Beretania Street Tunnel Alternative selected as the build alternative, the programmatic agreement would be amended to mitigate effects to the newly affected historic resources. There are more historic resources along the Beretania Street Tunnel Alternative than the Project. Based on the effect determinations for the Project, even with mitigation, the effect on these resources would not be less than adverse under Section 106.

The ability to mitigate adverse effects for both alternatives would be about the same, but mitigation for the Beretania Tunnel Street Alternative could be greater than for the Project.

3.7.2 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

Table 11 summarizes impacts to historic properties for both alternatives after all possible planning to minimize harm. The Project would create unique uses of five Section 4(f) properties within this portion of the corridor, all of which are historic properties. The impacts described in the Final EIS/4(f) are the result of all possible planning to minimize harm (see definition in 23 CFR 774.17). All possible planning to minimize harm from the Beretania Street Tunnel Alternative, pursuant to 23 CFR 774.3(a)(1), is described in Section 3.3.

The Project's permanent and construction impacts would use land from historic properties, but it would not alter or physically affect any historic buildings or contributing elements to the historic properties. The Project would have adverse visual and setting effects to the historic buildings and contributing elements to the historic properties. Although the project would directly use property from the OR&L property, Chinatown Historic District, the Dillingham Transportation Building, and the HECO Downtown Plant/Leslie A. Hicks, combined uses of the parcels would be 39,600 square feet and there would be no direct use of any contributing buildings (Figure 26 and Figure 27).

The Beretania Street Tunnel Alternative would create unique uses of four Section 4(f) properties. Both alternatives would impact the historic properties comprising the OR&L property, but in significantly different ways. For the Beretania Street Tunnel Alternative, permanent and construction impacts would use a total of 163,200 square feet. A majority of that use would result from construction impacts to 141,100 square feet at the OR&L property. Cut-and-cover construction of the Ka‘aahi Station would use the NRHP-listed OR&L Terminal Building and OR&L Office/Document Storage Building as well as the NRHP-eligible former filling station on the same property. Permanent impacts at the King Florist Building would demolish the historic resource, which is likely NRHP-eligible. Table 11 summarizes the remaining harm to Section 4(f) properties for both alternatives.

Table 11. Comparison of Remaining Harm Between Alternatives

Resource	Significance	Beretania Street Tunnel Alternative		The Project	
		Impact	Type of Use	Impact	Type of Use
OR&L Office/ Document Storage Building and Terminal Building	NRHP-listed historic property	Removal, relocation, or alteration to support the OR&L Office/Document Storage Building in place during construction. Substantial disturbance including loss of access to the OR&L Terminal Building during construction. Permanent station entrance within boundary of the historic property.	Direct use	Construction of guideway within a transportation easement within the boundary of the historic property.	Direct use
Former filling station on OR&L property	NRHP-eligible historic property	Removal, relocation, or alteration to support facility in place during construction. Permanent station entrance within boundary of the historic property.	Direct use	Construction of guideway within a transportation easement within the boundary of the historic property.	Direct use
Chinatown	NRHP-listed historic district	Constriction within roadway right-of-way inside boundary of historic district.	None	Permanent station entrance within a non-contributing vacant parking lot within the historic district boundary.	Direct use
Dillingham Transportation Building	NRHP-listed historic property	None	None	Permanent station entrance within a non-contributing modern plaza within the boundary of the historic property.	Direct use
HECO Downtown Plant/Leslie A. Hicks	NRHP-eligible historic property	None	None	Demolition of a modern non-contributing ancillary addition and construction of a permanent station entrance within boundary of the historic property.	Direct use
McKinley High School	NRHP-listed historic property	Permanent station entrance within a non-contributing open space within the boundary of the historic property.	Direct Use	None	None
King Florist	NRHP-eligible historic property	Demolition of resource and use of property for a permanent station entrance.	Direct use	None	None
Summary of use of contributing historic elements		Demolition, removal, relocation, or alternation of three historic properties. Direct use of four Section 4(f) properties.		Use is limited to non-contributing elements of historic properties. Direct use of five Section 4(f) properties.	

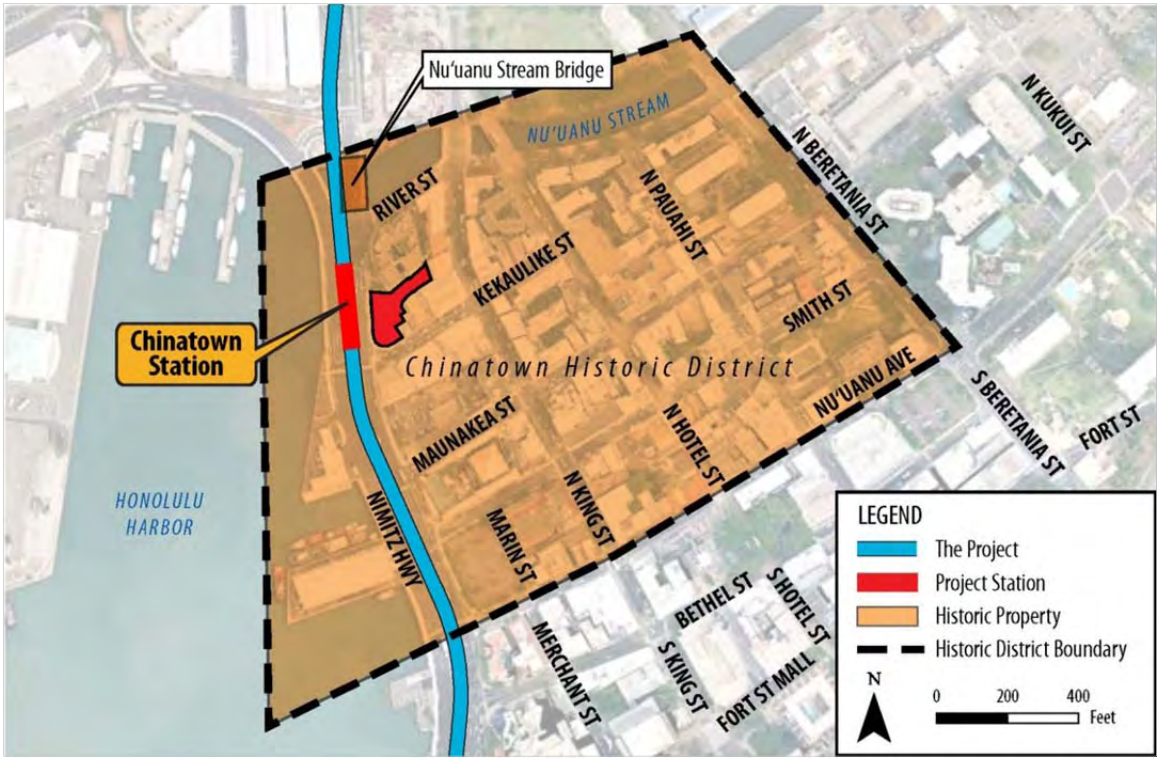


Figure 26. Section 4(f) Use by the Project in the Chinatown Area

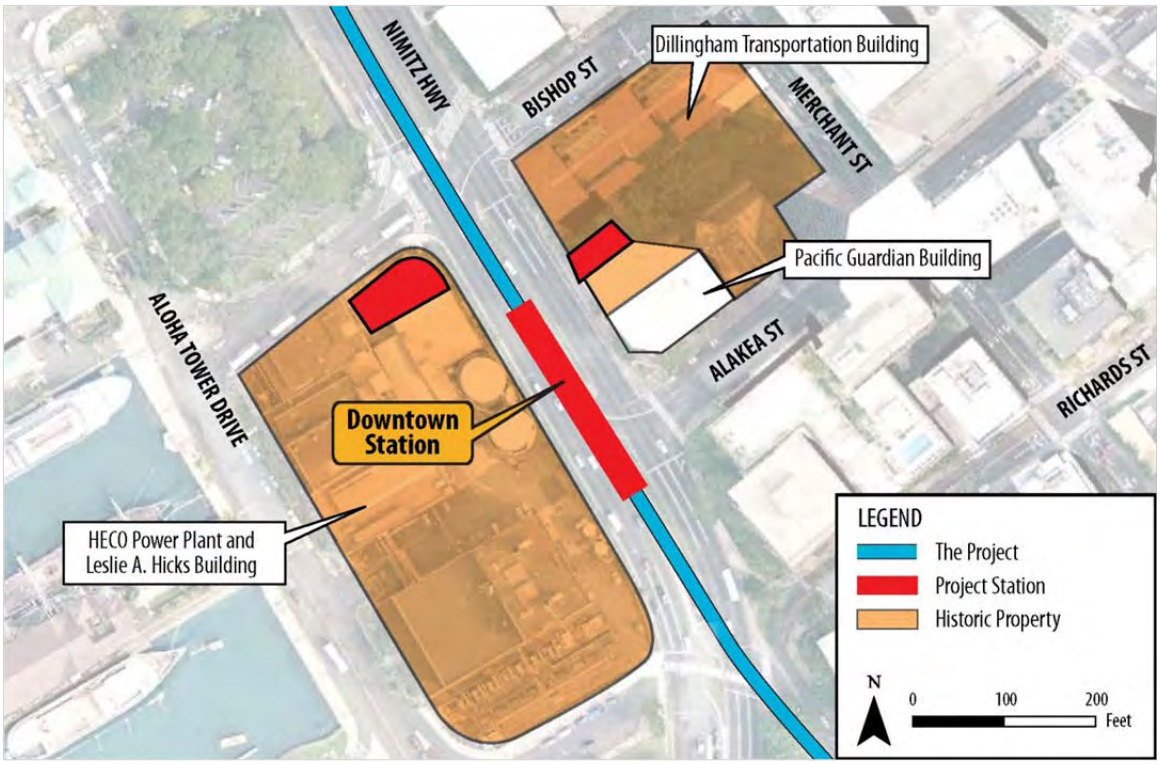


Figure 27. Section 4(f) Use by the Project in the Downtown Area

The Project would have the least remaining harm, because it has no impacts to historic buildings or contributing elements of historic properties. The Beretania Street Tunnel Alternative would use four historic properties and would have over 110,000 square feet more construction impact within historic properties.

3.7.3 The Relative Significance of Each Section 4(f) Property

The historic 4(f) properties used by the Project are OR&L Office/Document Storage Building and Terminal Building, former filling station on the OR&L property, Chinatown Historic District, the Dillingham Transportation Building, and the HECO Downtown Plant/Leslie A. Hicks parcel. The OR&L Terminal and Documents Storage Buildings, Chinatown, and the Dillingham Transportation Building are listed in the NRHP. The effort committed to list these resources in the NRHP is a demonstration of their relative significance as historic properties in Honolulu. The portions of each property being used are non-contributing elements and, in the case of Chinatown and the Dillingham Transportation Building, the areas date outside each property's period of significance. The HECO Downtown Plant/Leslie A. Hicks Building is not currently listed on the NRHP but has been determined eligible for nomination. The impact would occur in a non-contributing, out-of-period extension to the original building.

The historic properties that the Beretania Street Tunnel Alternative would use are the OR&L Office/Document Storage Building and Terminal Building, former filling station on the OR&L property, McKinley High School, and the King Florist Building. Both the OR&L Office/Document Storage Building and Terminal Building, and McKinley High School are listed in the NRHP. The OR&L property also contains the individually eligible former filling station. The King Florist Building was built in 1945 and was identified during the Alternatives Analysis (DTS 2006) as potentially eligible for the NRHP.

The five historic Section 4(f) properties used by the Project are significant as demonstrated by their listing in the NRHP. Along the Beretania Street Tunnel Alternative, two of the four properties that would be used are NRHP-listed.

3.7.4 The Views of the Official(s) with Jurisdiction over Each Section 4(f) Property

The official with jurisdiction over historic properties is the SHPO. The SHPO views on the Project's impacts are reflected in the Project's PA, in which the SHPO concurred with the FTA's "adverse effect" finding under Section 106 of the NHPA for the four properties with Section 4(f) uses. The only exception to that is the King Florist Building, which was not included in the Section 106 consultation because it would not have been used by the Project. It is likely the SHPO would concur with a determination of eligibility and adverse effect to the property based on its age, integrity, and similar significance to other properties on which the SHPO concurred.

Because the project elements that would cause impact are about the same between alternatives, it is unlikely that officials' views would vary significantly between the alternatives.

3.7.5 The Degree to which Each Alternative Meets the Purpose and Need of the Project

Each alternative's performance regarding purpose and need is described in Section 3.5.1 of this Draft Supplemental EIS/4(f). The alternatives are about equal in the degree to which they meet purpose and need.

3.7.6 After Reasonable Mitigation, the Magnitude of any Adverse Impacts to Resources Not Protected by Section 4(f)

This Draft Supplemental EIS/4(f) provides a comparison of social, economic, environmental, and community impacts that result from both alternatives in Section 3.5.3. Section 106 effects to historic architecture and construction impacts would be substantially greater for the Beretania Street Tunnel Alternative.

There are 15 historic properties adversely affected by the Project in the area Koko Head of Iwilei. By applying the same logic to determine NRHP eligibility as applied in the Final EIS, the Beretania Tunnel Street Alternative would affect 47 historic properties (Table 8). Effect determinations have not been made for the Beretania Tunnel Street Alternative, but it has greater potential to affect historic properties under Section 106 of the NHPA.

Section 3.5.3 also discusses construction impacts. Tunnel construction would be more costly and cause construction impacts at both portals (near Ka‘aahi and Alapai Transit Center) as well as cut-and-cover construction of both subsurface stations. Construction techniques for the Beretania Tunnel would take at least two years longer than for the Project.

At Fort Street Station, the entire Beretania Street roadway right-of-way would have some type of utility relocation trenches from approximately Smith Street (in Chinatown) to Fort Street Mall and extend down about 200 feet on both the mauka and makai sides of Nu‘uanu, Bethel, and Fort Streets. Beretania Street, Nu‘uanu Avenue, and Bethel Streets may need to be temporarily closed during off-peak periods during utility relocations and installation of heavy equipment. Entire street closures would not affect more than one street at a time. Two lanes of traffic on Beretania Street may need to be closed during peak periods for several months to install retaining wall supports.

For the Koko Head portal, construction would require the same off-peak roadway closure requirements; for Beretania Street, Alapai Street, and Punchbowl Street, there would be a two-lane closure on Beretania Street during peak periods. The

City's underground parking between the driveway extension of Hotel Street and Beretania Street would be closed during construction of the Koko Head tunnel portal. The vacant parcel on the 'Ewa side of the newly constructed Alapai Bus Transit Center could be used as a laydown area.

After reasonable mitigation, the Beretania Tunnel Street Alternative would have a greater magnitude of adverse impacts regarding historic architecture, construction duration, and construction-related traffic impacts. Impacts to other non-Section 4(f) resources discussed in the EIS would be different for each alignment but generally equal in magnitude.

3.7.7 Substantial Differences in Costs among the Alternatives

Section 3.5.4 of this Draft Supplemental EIS/4(f) discusses differences in costs between the two alternatives. As detailed above, the Beretania Street Tunnel Alternative would cost about $650 million (2006 dollars) more than the Project, which translates to $960 million more in year of expenditure (Table 9). As described in Section 3.5.4, the 19-percent increase in project costs (YOE) for the Beretania Street Tunnel Alternative would be greater than all available funding sources and would exceed contingencies. No additional sources have been identified that could fund the $960 million (YOE) cost increase.

3.7.8 Summary

The least overall harm analysis focuses on seven factors that must be balanced to identify the alternative that causes the least harm in light of the Section 4(f) statute's preservationist purpose. This analysis shows that, on balance, the Project alternative causes the least overall harm for the reasons summarized in Table 12. Remaining harm to Section 4(f) properties from impacts to two contributing elements and three historic properties, substantial differences in cost, construction impacts, and impacts to historic architecture tip the balance in favor of the Project.

Table 12. Summary of Least Overall Harm

Factor	Least Harm Alternative	Comments
Ability to mitigate	About equal	Either alternative would end in specified mitigation per Section 106. The Beretania Alternative might require more mitigation than the Project owing to more historic properties and more parks.
Remaining harm	The Project	Project uses are minor uses from non-contributing elements to historic properties. Beretania uses would include removal, relocation, or alteration to support to two specific resources at the OR&L property and require demolition of the King Florist Building.
Relative significance	Beretania Street Tunnel Alternative	The Project uses more NRHP-listed non-park properties.
View of officials	About equal	Impacts to historic properties from either alternative would end in specified mitigation, and neither alternative would result in a direct use of parks. Given the similarity of the guideway in both alternatives, the impacts would be the same nature and type. All that would vary is the nature of the affected resource.
Purpose and need	About equal	Each alternative performs similarly regarding purpose and need.
Non-Section 4(f) impacts	The Project	While potential for most impacts discussed in the Final EIS/4(f) are different but generally equal, potential impacts to historic architecture and construction impacts are more severe for the Beretania Alternative.
Substantial difference in cost	The Project	The Beretania Alternative would cost $960 million more than the Project.

4 Mother Waldron Neighborhood Park and Playground

The Court's Summary Judgment Order dated November 1, 2012, ordered a reconsideration of the no-use determination for Mother Waldron Neighborhood Park, taking full account of evidence that the Project will significantly affect the park.

4.1 Description of the Property

Mother Waldron Neighborhood Park is a 3.4-acre urban park bounded by Coral, Halekauwila, Cooke, and Pohukaina Streets (Figure 28). Portions of the park are owned by the City and County of Honolulu, State of Hawai'i, and Hawai'i Community Development Authority (HCDA), a State agency. The park is managed and maintained by the City and County of Honolulu Department of Parks and Recreation.

Mother Waldron Playground is the 1.5-acre remnant of a 1.8-acre historic playground site built by the Works Progress Administration in 1937. The remaining portion of the original playground is entirely located within the current boundary of Mother Waldron Neighborhood Park (Figure 28). Between 1991 and 1993, Halekauwila Street was realigned through the mauka portion of Mother Waldron Playground, approximately 90 feet makai of its original alignment, to make the street continuous between Keawe Street and Cooke Street.

The park was expanded in the 'Ewa and Koko Head directions by incorporating previously industrial property and the adjacent right-of-way for Coral Street and Lana Lane. The expanded area outside the boundary walls is a combination of grass-covered and paved open-space. Along Pohukaina Street, road widening associated with district improvements forced the makai perimeter wall and benches to be removed and reconstructed approximately 5 to 10 feet inside the playground's original boundary. To open Mother Waldron Playground to its newly acquired 54,000 square feet, a boundary wall running along Lana Lane and intersecting with the rear of the comfort station, which had separated the original playground from the adjacent commercial development, was removed and never replaced. The original handball court was also removed and never replaced.

The Halekauwila Street realignment eliminated approximately 12,700 square feet of the original playground area. The playground area was reconfigured to fit into the smaller space, including removal of a basketball court, volleyball court, parallel bars, swings, see-saw, and sandbox. The Koko Head boundary wall was removed mauka of the comfort station, and the mauka boundary wall was reconstructed in a modified configuration approximately 90 feet makai of its original location (Figure 29), substantially reducing the area of the playground.

Figure 28. Mother Waldron Neighborhood Park Vicinity

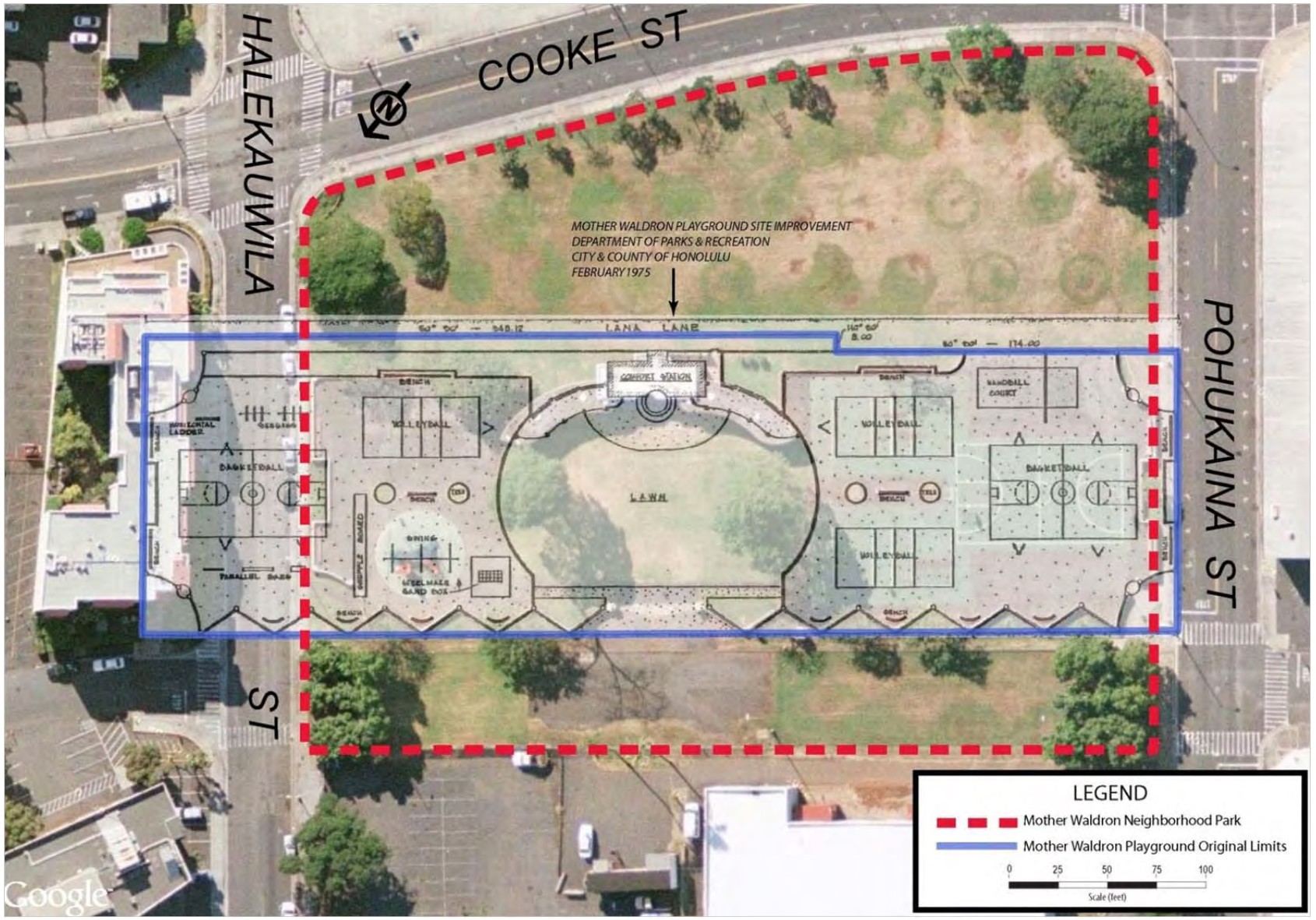


Figure 29. Original Mother Waldron Playground and Current Mother Waldron Neighborhood Park Boundaries

The playground area in the mauka portion of the park was again reconfigured around 2006, adding a children's climbing structure.

The park is located in a mixed commercial, residential, and industrial area of Kaka'ako. The park is surrounded by open lots, a large surface parking lot, warehouses, and low- and high-rise residential buildings. Park improvements were made in the Coral Street corridor portion of the park in 2011. Current mauka, 'Ewa, makai, and Koko Head views from the park are shown on Figure 30.

Every building adjacent to the original playground has been demolished or replaced. The roadways on two sides of the playground have been assimilated into the current park. Halekauwila Street has been realigned to within the original boundary of the park (Figure 28 and Figure 31) on the mauka end Pohukaina Street has been widened, relocating the makai boundary wall and pushing the sidewalk into the park on the makai end.

4.1.1 Mother Waldron Neighborhood Park Recreational Activities, Features, and Attributes Eligible for Protection under Section 4(f)

The current recreational features of the Mother Waldron Neighborhood Park include a playground with a climbing structure, basketball courts, volleyball courts, benches, and open grass areas that are used for informal sporting activities, picnicking, and daytime resting. Students from Voyager Public Charter School use the park. A farmer's market with a typical attendance of 5 vendors and 75 customers per week is held at the park on Monday mornings.

The City and County Department of Parks and Recreation confirmed that basketball, playground, picnicking, and volleyball are the activities designated for the park (DPR 2012). Between 2009 and 2012, the Department of Parks and Recreation has permitted various organized uses of the park (Table 13).

A survey of park activity was conducted between November 9, 2012, and November 20, 2012. Eleven spot-visits were completed during park open hours and a single visit during park closure hours (Table 14). By far, the primary use of the park is by a "resident population" during park-open hours, who have sleeping mats, blankets, food coolers, bags, and wash and dry laundry around the comfort station. Nighttime observation indicated that this group of daytime users leaves the park during its hours of closure. Use by this resident-population is concentrated around the comfort station, is opportunistic as to the availability of the park, and is not sensitive to setting.

Figure 30. Existing Views from Mother Waldron Neighborhood Park

Original photograph did not include scale.

Figure 31. 1952 USGS Aerial Photograph of Mother Waldron Playground and Surrounding Area

Walkers, joggers, and dog walkers using or crossing the park were the second-most frequently observed use, followed by basketball, play-structure, and bicycling. Observed organized sporting events included a youth sports day and coaching of youth basketball skills. The majority of recreational use occurs in the makai portion of the park. Only the limited use of the play-structure is located adjacent to Halekauwila Street. Non-recreational uses included a weekly farmer's market and food bank delivery to neighborhood elderly.

With the continued urbanization and increased residential density in the vicinity of Mother Waldron Neighborhood Park, the use of the park is anticipated to increase. The increased neighborhood activity may, over time, displace the current resident population, which accounts for the majority of current park use.

Table 13. Permitted Uses and Events at Mother Waldron Neighborhood Park (2009–2012)

Date(s)	Organization/Event	Times	Facility/Area	Attendance
8/2/2009	USA Track and Field/Race staging	Sunday 2:30–5:00 pm	Field/restrooms	80
12/30/2010	Plug in America/Green-Renewable Energy Event	6:00 am–7:00 pm	Field/restrooms	250
8/2011–present	Voyager Charter School/P.E. classes	M–F/8–2 pm	Field/courts/restrooms	100
1/2012–6/2012	Ke Aloha Hoʻokahi Preschool/P.E. activities, picnics	Various	Field/restrooms	35
2/2012–4/2012	Hawaiʻi Jokgu Association/Jokgu League	Sundays 2:00–7:00 pm	Volleyball court/restrooms	25
3/17/2012	Hawaiʻi Jokgu Association/Jokgu Tournament	7:30 am–7:00 pm	Volleyball court/restrooms	45
Various (1–2 times/year)	Hawaiʻi 5-0/film staging, crew rest area	5:00 am– 5:00 pm	Field/parking/restrooms	100

Table 14. Observed Use of Mother Waldron Neighborhood Park

Date and Time	Basketball	Play-structure	Walking/ Jogging	Sitting/ Sleeping	Organized Sport	Bicycling	Other Non-recreation
Nov. 9, 2012, 5 pm			4	8			
Nov. 10, 2012, 9 am			1	7			3 maintenance/construction
Nov. 11, 2012, 2 pm	4	1	1	15	36		
Nov. 12, 2012, 11 am			1	21			8 farmers' market (low turn-out on holiday)
Nov. 13, 2012, 7 am			2	10		1	18 awaiting food bank
Nov. 13, 2012, 6 pm	1			11			
Nov. 14, 2012, 3 pm			1	15		1	
Nov. 15, 2012, 7 pm				8		2	
Nov. 16, 2012, 1 pm	18	3	2	10			1 park maintenance
Nov. 18, 2012, 11 pm				2			
Nov. 19, 2012, 12 pm	1	2	6	10			
Nov. 20, 2012, 4 pm	2	3		14			
Total	26	9	18	131	36	4	30 various activities

4.1.2 Historic Elements Eligible for Protection under Section 4(f)

Mother Waldron Playground was listed on the Hawai'i Register of Historic Places on June 9, 1988 (prior to the Halekauwila Street realignment) as an element of the thematic group "City & County of Honolulu Art Deco Parks." The state listing noted the park as significant for its associations with the playground movement, both nationally and locally, as well as its architectural and landscape design by Harry Sims Bent (Criterion A of the NRHP). This park is considered one of Bent's best playground designs and a good example of Art Deco/Art Moderne styles in hardscape (Criterion C of the NRHP). The state listing identified recreation and architecture as areas of significance. Setting, feeling, and association are not identified as significant.

The Programmatic Agreement (PA) pursuant to Section 106 of the National Historic Preservation Act of 1966 (as amended) between the FTA, SHPO, U.S. Navy, and Advisory Council on Historic Preservation (ACHP) stipulated that the FTA will complete NRHP nominations for adversely affected historic properties. The FTA has completed the nomination for listing Mother Waldron Playground on the NRHP. The draft nomination was submitted to the SHPO on April 17, 2013, for review.

As discussed in Section 4.1, the original Mother Waldron Playground has been highly altered. Remaining historic elements of the original playground include the Art Deco/Art Moderne-style comfort station, remaining portion of the 'Ewa boundary wall, internal walls and benches, and the general layout of the makai portion of the playground. The entire mauka end of the park, adjacent to the Project, has been altered. Boundary walls were removed and subsequently reconstructed in a different location. A perimeter wall and benches nearly identical to the original were reconstructed along Halekauwila Street, but the wall now connects to the original low wall topped by terracotta tile that remains extant; the tile was not used on the replacement wall. There is no longer a convex curved entrance at the original playground's east corner as a result of the alterations. The playground layout and size also have been altered.

Considering the significant changes to the playground, the Significance Evaluation for the draft NRHP nomination concludes that:

> *Mother Waldron Playground is eligible for the National Register of Historic Places under Criterion A for its association with the national playground movement, which aimed to provide supervised play and character-molding opportunities. The property correlates with the rise of playground construction in urban areas throughout the United States.*

Mother Waldron Playground is not eligible under Criterion B. Although the park is named in honor of Margaret "Mother" Waldron, the property is not associated with her productive life or her lasting contributions to the Kaka'ako community.

This property is also eligible under Criterion C for its architectural and landscape design by Harry Sims Bent. The property displays a streamlined Art Moderne appearance with some Art Deco elements, a modern approach and a display of Harry Sims Bent's desire to create a pleasing environment for the park's users.

The boundary of the NRHP-eligible historic property is the current boundary of the park, which contains both historic contributing and non-historic, non-contributing elements. The period of significance for Mother Waldron Playground spans from its construction date in 1937 until 1945, when supervised play ceased and Honolulu's Board of Parks and Recreation was formed. Effects on non-contributing elements do not constitute an adverse effect to the historic property.

The contributing historic elements include the Art Deco/Art Moderne-style comfort station, the remaining portion of the 'Ewa boundary wall, internal walls and benches, and the general layout of the makai portion of the playground, which constitutes the remaining portion of the recreational landscape that is still in its original configuration (Figure 32).

The structures (walls and benches) on the mauka side of the park have been reconstructed and relocated. As a result, they are not eligible for the NRHP per 36 CFR 60.4, "structures that have been moved from their original locations shall not be considered eligible for the NRHP". The shape and size of the mauka side playground have been revised, and the configuration and equipment have been changed.

In summary, Mother Waldron Playground derives its significance from its historical development and use as a playground and its remaining architectural and landscape design features. The playground retains limited integrity and includes substantial non-historic, non-contributing elements, including recon-figured play areas and moved, altered, and reconstructed walls. The setting, feeling, and association of the park are not part of the playground's historic significance. The use of every surrounding parcel had changed since the playground was developed, diminishing the integrity of setting.

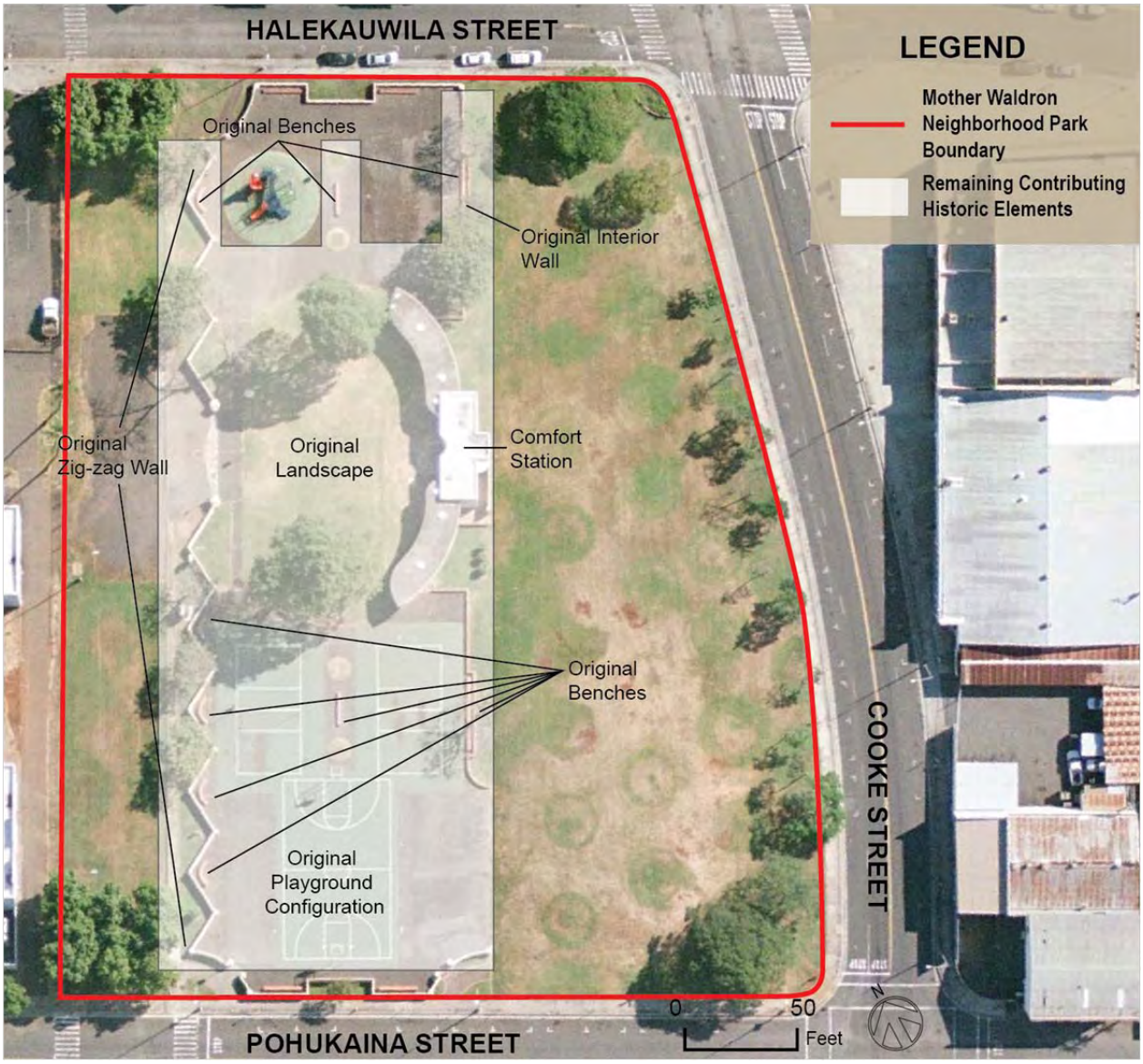


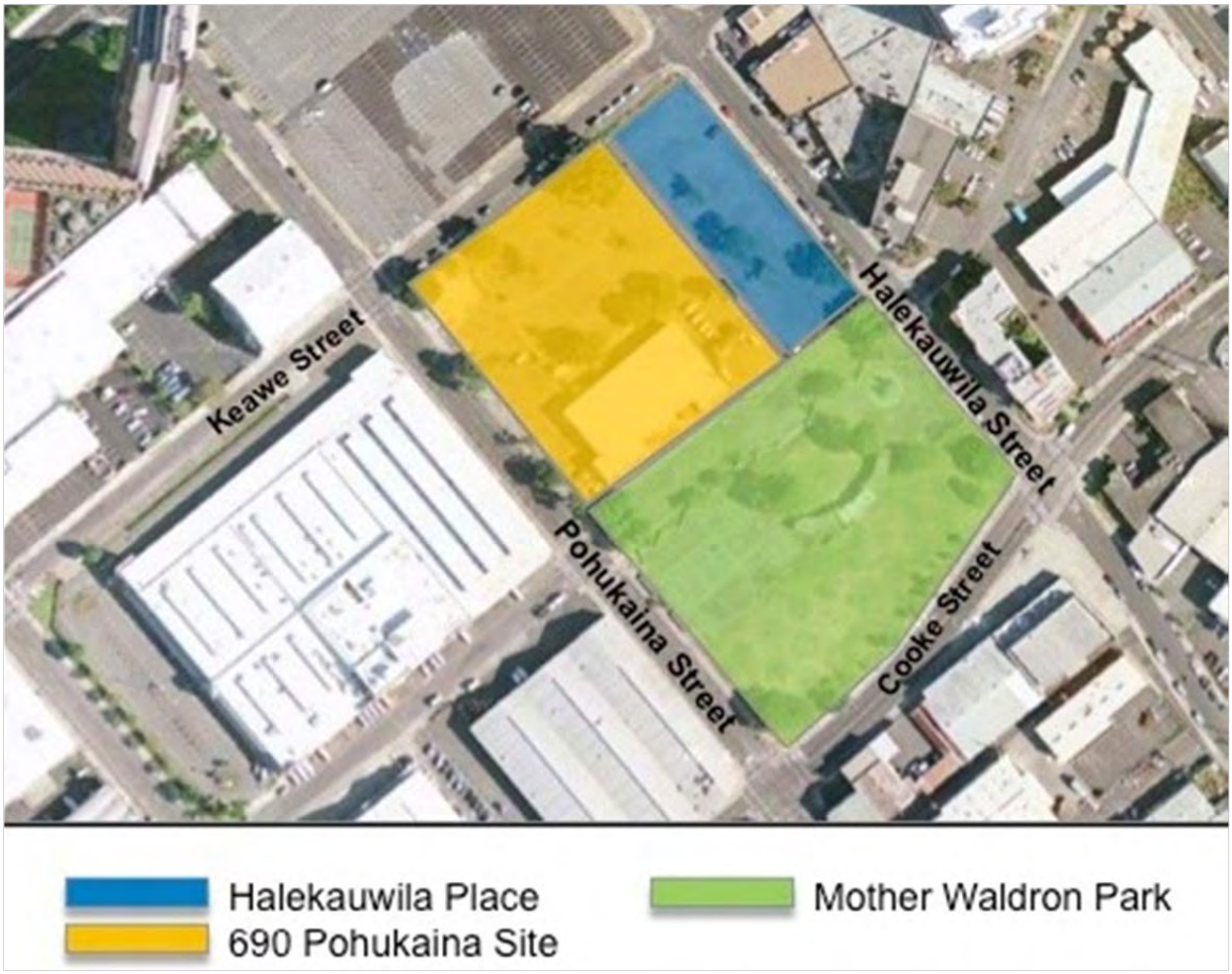
Figure 32. Remaining Contributing Historic Elements to Mother Waldron Playground

4.1.3 Proposed Changes to Mother Waldron Neighborhood Park

HCDA's 2011 Mauka Area Plan (HCDA 2011) envisions substantial mixed-use redevelopment replacing the existing low-rise commercial and industrial uses surrounding the park (Figure 33). HCDA has identified the adjacent parcels 'Ewa of the park for a combination of mid- and high-rise development (Figure 34). The 18-story Halekauwila Place project began construction in early 2013, while the adjacent 690 Pohukaina is in the development process to construct the tallest building in Hawai'i (Figure 35).

Source: Mauka Area Plan, HCDA, September 2011.

Figure 33. Existing and Simulated Future Land Use adjacent to Mother Waldron Neighborhood Park



Source: HCDA 2011 public comment materials on 690 Pohukaina Project. Original graphic does not include a scale. North is at top of page.

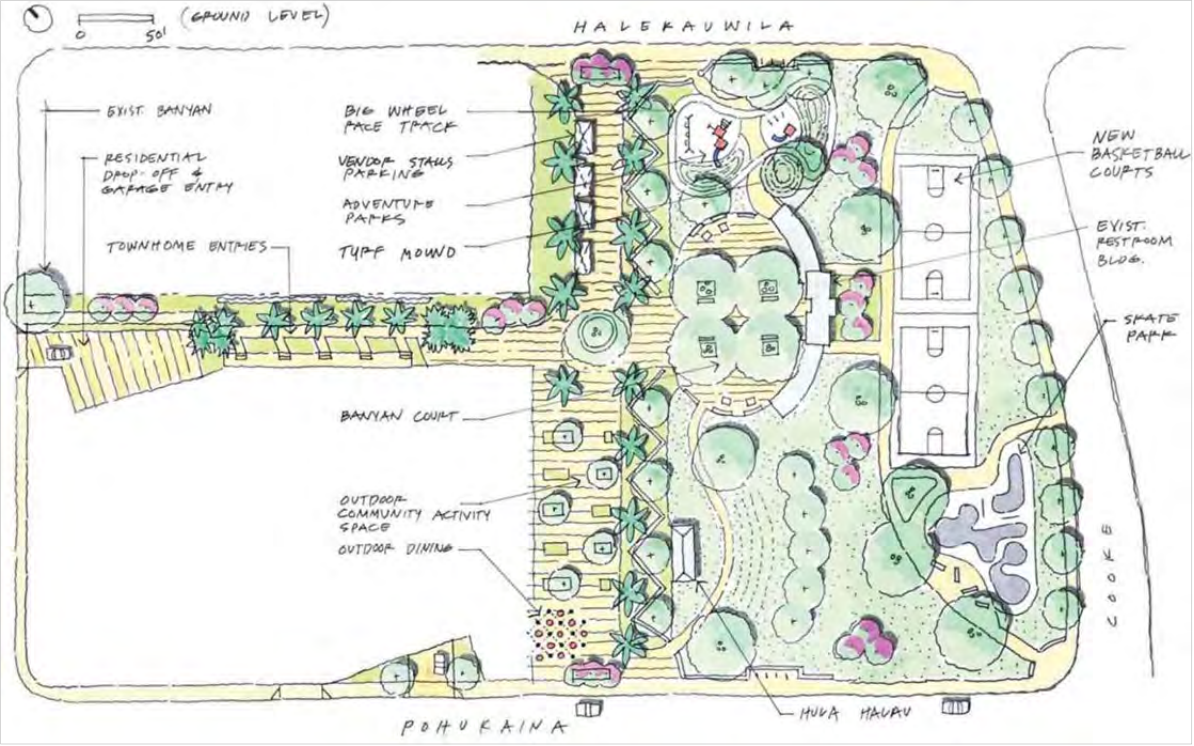
Figure 34. Site Plan for Proposed Development Adjacent to Mother Waldron Neighborhood Park

Source: HCDA 2012 public comment materials on 690 Pohukaina Project.

Figure 35. Proposed 690 Pohukaina Street Project

On December 13, 2012, HCDA announced that it had selected Forrest City to develop the 690 Pohukaina Street project. In its offer, which represents a proposal and not an approved design, Forrest City stated that "*integrated planning and design result in an informed solution that achieves… support for existing transit systems and potential future solutions… and aggressive recreational programming of the adjacent Mother Waldron Park.*" The offer, which was developed with full consideration of the Project, proposes to program Mother Waldron Neighborhood Park "*with uses for all ages; with play areas and a 'big wheel race track' for the very young, basketball courts and a skate park for teens and young adults, and a hula hālau, gracious walking paths, and ample canopy trees.*"

Forrest City's proposal for Mother Waldron Neighborhood Park (Figure 36) includes a complete restructuring of the park's recreational uses, eliminating its historic configuration. The comfort station and 'Ewa boundary wall would be the only retained original historic elements. The park would link Keawe Street and the development through a new "pedestrian plaza." The City and County Department of Parks and Recreation, the entity with jurisdiction of the park, has not approved the proposed concept. The current recreational uses of the park would be changed or relocated within the park. For example, volleyball courts would be eliminated, a skate park and hula area would be introduced, and the basketball courts would be relocated within the park.



Source: Forrest City 2012, Best and Final Offer Mixed-use Transit-oriented Development Project at 690 Pohukaina Street

Figure 36. Forrest City Proposed Site Plan for Mother Waldron Neighborhood Park Programming

4.2 Evaluation of Use of the Property

Section 1.2.1 of this Draft Supplemental EIS/4(f) explains the considerations included in the Section 4(f) evaluation.

4.2.1 Evaluation of Direct Use

The Project is located outside the boundary of Mother Waldron Neighborhood Park (Figure 37). A 32-foot-wide elevated guideway will be constructed along Halekauwila Street (the mauka side of the park), carrying automated trains in

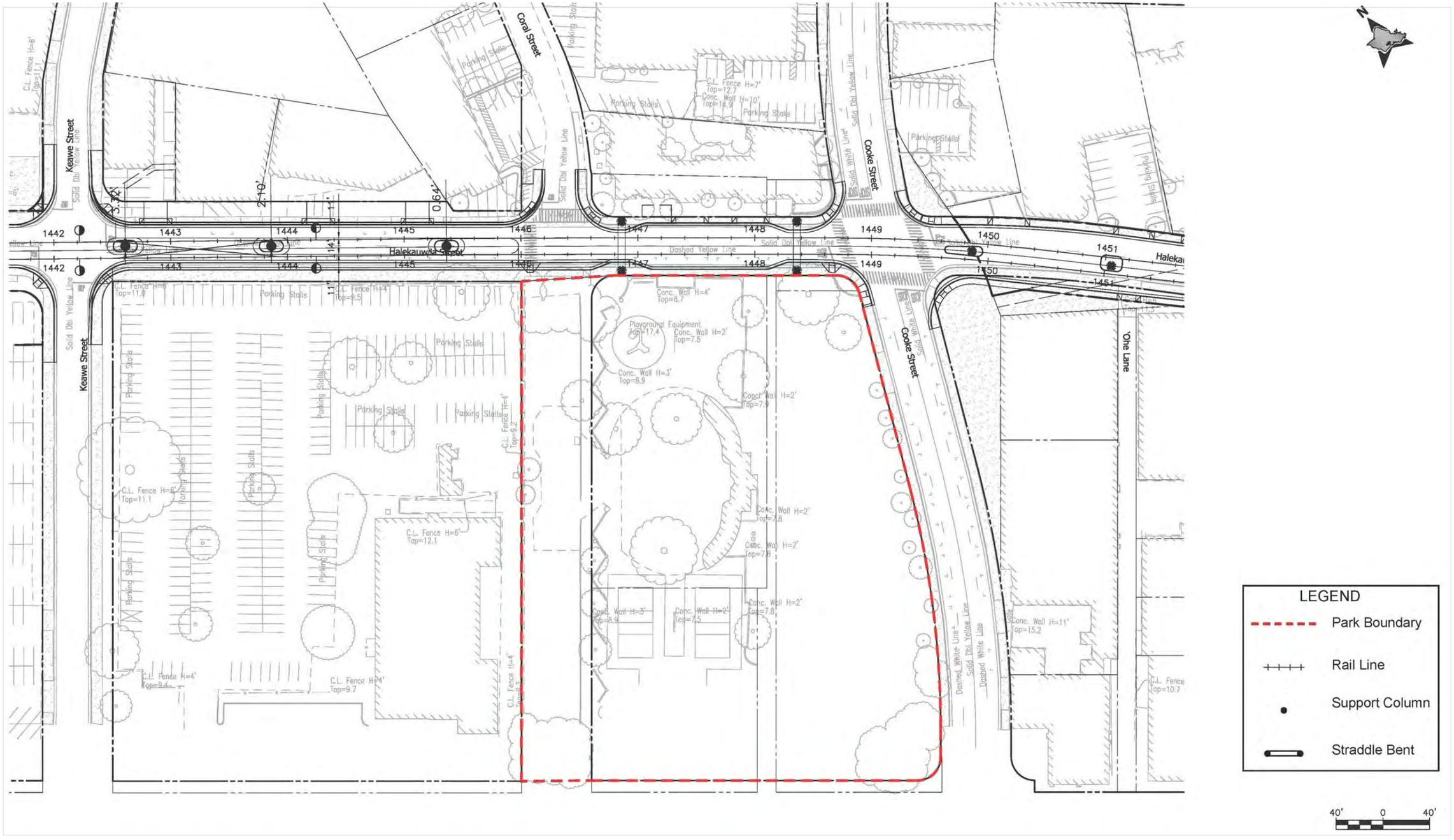


Figure 37. Detail of Honolulu Rail Transit Project in Relation to Mother Waldron Neighborhood Park

each direction between 4 a.m. and midnight. The guideway will include an integrated parapet wall that will partially shield surrounding uses from the passing trains. Adjacent to the park, the guideway will be supported by straddle bents approximately every 150 feet along Halekauwila Street. The straddle bents consist of approximately 6-foot-by-6-foot columns placed behind a relocated sidewalk on each side of the street supporting a beam crossing above the travel lanes. There will be two columns adjacent to the mauka side of the park. The guideway will be centered over the street and carried atop the series of beams (Figure 38).

The edge of the elevated guideway will be approximately 10 feet mauka of the park's edge and its height above the ground will be approximately 30 feet to the bottom and 40 feet to the top of the structure. The edge of the guideway will be located about 50 feet from the playground structure and about 290 feet from the volleyball court. The mauka-most roof edge of the park's Art Deco/Art Moderne-style comfort station is about 100 feet makai of the alignment.

The nearest transit station will be on Halekauwila Street between South Street and Keawe Street (Figure 28), approximately 450 feet 'Ewa of the park. The station will provide a new mode of access to the neighborhood, including park users.

There would be no direct use of Mother Waldron Neighborhood Park and Playground.

4.2.2 Evaluation of Constructive Use

Mother Waldron Neighborhood Park and Playground is protected under Section 4(f) as both a public park and as a historic site. No land in the park will be permanently incorporated into the Project. Thus, there will be no direct use. There will also not be any temporary occupancy of the park. This evaluation considers the potential for constructive use of the park. The park's activities, features, and attributes that qualify the park for Section 4(f) protection are individually considered for its recreational and historic significance.

Noise

The FTA has determined that a constructive use does not occur when the projected operational noise levels of the Project do not exceed the noise impact criteria for a Section 4(f) activity in the FTA guidelines for transit noise and vibration impact assessment.

Figure 38. Existing View and Simulation of Elevated Guideway in Relation to the Mauka Boundary of Mother Waldron Neighborhood Park

Per the Final EIS Figure 4-56, Mother Waldron Neighborhood Park and Playground is a Category 3 Land Use with an existing loudest-hour Leq of 58 dBA. Category 3 land uses include recreational facilities and certain historic sites and parks; therefore, the same noise criteria and assessment is applicable to both the recreational and historically significant aspects of the park. Per the FTA noise impact criteria shown in Figure 4-52 of the Final EIS, a noise impact will occur if the Project generates a noise exposure (the noise generated by the individual project, excluding other noise sources in the environment) of 62 dBA Leq(h) or greater. The Project incorporates sound-reducing features in its design, including a parapet wall along the edge of the guideway that reduces ground-level noise along the entire project length. The noise analysis for the Project found that the future project-generated noise exposure will be 56 dBA Leq(h) during the loudest hour and the Project will not create a noise impact (Table 15). The Leq noise level generated by the Project would be less than the existing environmental noise level at the park; therefore, the Project would have little effect on the cumulative future noise level in the park. The Project-generated noise would be less than the FTA noise impact criteria for a moderate impact.

Table 15. Noise Data for Mother Waldron Neighborhood Park

Attribute	Value
Existing Noise Level	58 dBA Leq
Impact Criteria	62 dBA Leq(h)
Project-generated Noise Exposure	56 dBA Leq(h)
Cumulative Noise Level with Project	60 dBA Leq(h)

Source: Final EIS, Figure 4-56, RTD 2010.
Mother Waldron Neighborhood Park is an FTA Category 3 Land Use for noise impact analysis.

Per 23 CFR 774.15 [see Section 1.2.1 of this Draft Supplemental EIS/4(f)], constructive use does not occur when the projected operational noise levels of the Project do not exceed the noise impact criteria for a Section 4(f) activity in the FTA guidelines for transit noise and vibration impact assessment. Accordingly, the Project will not have a constructive use of Mother Waldron Neighborhood Park and Playground related to noise.

Vibration Impact

Per Section 4.10.3 of the Final EIS, no operational vibration level within the project corridor will exceed the protective FTA criterion of 72 VdB for locations where people sleep. Construction vibration was addressed in Section 4.18.5 of the Final EIS. Only pile driving occurring within 75 feet of sensitive structures was identified to potentially cause vibration damage. No pile driving will occur near Mother Waldron Neighborhood Park and Playground. Accordingly, the Project will not have a constructive use of Mother Waldron Neighborhood Park and Playground related to vibration.

Access

The Project will not affect access to Mother Waldron Neighborhood Park and Playground. Any temporary restriction of access during construction will be limited to the mauka boundary of the park, and access through the other edges of the park will still be possible. The Project will provide an additional mode of access to the park and, in the long term, will improve park access. Accordingly, the Project will not have a constructive use of Mother Waldron Neighborhood Park and Playground related to access.

Ecological Intrusion

Mother Waldron Neighborhood Park and Playground is not a wildlife or waterfowl refuge. Moreover, there are no significant wildlife or waterfowl resources in the vicinity of the park and playground. The park and playground includes grass lawn area, ornamental trees, and landscaping and contains no water features or natural landscaping. Thus, an ecological intrusion is extremely unlikely. Accordingly, the Project will not have a constructive use of Mother Waldron Neighborhood Park and Playground related to ecological intrusion.

Aesthetic Qualities

The FTA has determined that a constructive use occurs when the proximity of a proposed project substantially impairs aesthetic features or attributes of a property protected by Section 4(f), where such features or attributes are considered important contributing elements to the value of the property. Aesthetic impacts are evaluated for three sets of features or groups: park and recreational uses, historic features, and views from residences outside the park.

Effect on Park and Recreational Uses

The City and County of Honolulu Department of Parks and Recreation, the agency with authority over Mother Waldron Neighborhood Park, identified active and passive recreation as significant activities, features, or attributes of the park. These activities are not highly sensitive to visual setting.

The existing visual setting is typical of an urban park environment. Even in the absence of the Project, the setting will continue to urbanize, with high-rise residential buildings currently being developed adjacent to the ‘Ewa boundary of the park (Figure 34). The park does not provide an unspoiled natural setting or provide significant views or vistas (Figure 30). Because recreational uses are the park’s significant attributes, impacts to views from or to the park do not qualify for Section 4(f) protection; therefore, there will be no constructive use related to recreational use.

The elevated guideway will dominate mauka views from the mauka edge of the park (Figure 39). It will be visible, but of similar scale as surrounding buildings, from areas of the park with greater use (Figure 40). Current views are of mid- and high-rise residential and commercial buildings mauka of the park. Views of the Koʻolau Mountains are largely blocked by existing development (Figure 30, Figure 39, and Figure 40), and the guideway will have little additional effect on distant views.

Introduction of the elevated guideway immediately beyond the mauka boundary of the park will not introduce an inconsistent visual element that will substantially diminish the use of the park related to any of the activities, features, and attributes identified as significant to the park. The City and County of Honolulu Department of Parks and Recreation is in agreement that the park will continue to serve future users providing the same activities, features, and attributes available today without substantial impairment.

The guideway will shade the very mauka edge of the park during morning hours throughout the year and extending into early afternoon around the summer solstice. The affected area will be small. At this time of year, most park users are seeking shade, making this effect a minor benefit to park users.

Effect on Historic Features

During the Section 106 historic review process, the FTA determined the eligibility of an effect on historic properties located within the Area of Potential Effects for the Project. In consultation with the SHPO, the FTA determined that the Project will have an adverse effect on Mother Waldron Playground. The Court noted in its November 1, 2012, Order on Cross-Motions for Summary Judgment that the Historic Effects Report observed that the Project's adverse effect will be to the park's setting. The Historic Effects Report states:

> *Mother Waldron Playground is primarily an outdoor designed space, although it does contain a comfort station. Generally, the effects on building settings are different than those on a resource that is primarily an outdoor facility. While these recently constructed adjacent buildings detract from the playground's overall historic setting, the surrounding buildings are separated from the playground by the streets that encircle the playground. Because the guideway would introduce a new element into Mother Waldron Playground's setting in a close proximity, an effect that is particularly apparent to an outdoor resource, there would be an adverse effect. No audible or atmospheric effects to this property were identified.*

Figure 39. Existing View and Simulation Near Elevated Guideway from within Mother Waldron Neighborhood Park

Figure 40. Existing View and Simulation Showing Elevated Guideway from Area of Frequent Use within Mother Waldron Neighborhood Park

The SHPO concurred with this effect determination; measures to mitigate the effect were included in the PA, which was executed between the FTA, the SHPO, the Navy, HART and the ACHP on January 18, 2011. Attachment B to the PA summarized the final effect determination for each property that will be adversely affected by the Project. The text for Mother Waldron Playground states:

> *There is no direct impact to the property. The Project will be about 10 feet mauka of the park's edge, 150 feet makai of the Art Deco/ Art Moderne-style comfort station and elevated about 35 to 40 feet high in this location. The Project will not affect the park's design elements or aesthetic features that contribute to the park's use and enjoyment. However, there will be an effect to setting.*

This determination was made by the FTA and concurred with by the SHPO and included in the PA signed by the ACHP.

The PA required completion of an NRHP nomination for Mother Waldron Playground. During completion of the nomination, significant changes to Mother Waldron Playground were discovered, indicating that the playground retains only limited integrity. The draft NRHP nomination notes that:

> *In 1991–1992, the Hawai'i Community Development Authority undertook street improvements along Halekauwila Street, among others. This realignment of Halekauwila Street required a taking of approximately 12,700 square feet of Mother Waldron Playground on the park's northern end. To mitigate the taking and the subsequent diminished park size, the developed area opposite Lana Lane and to the playground's southeast was removed. Lana Lane, separating the playground from the developed area, was also removed. Mother Waldron Playground was subsequently enlarged by approximately 54,000 square feet toward the southeast. Although this 54,000 square foot area was officially designated as part of Mother Waldron Playground, Coral Street's closure on the park's northwest side was never officially considered part of the park.*

As a result of the taking, the mauka (Halekauwila Street) end of the playground lost its basketball court, perimeter wall, and benches. A perimeter wall and benches nearly identical to the original were reconstructed along Halekauwila Street, but the wall now connects to the original low wall topped by terracotta tile that remains extant; the tile was not used on the replacement wall. There is no longer a convex curved entrance at the original playground's east corner as a result of the alterations.

Along Pohukaina Street, road widening associated with district improvements forced the perimeter wall and benches to be removed and reconstructed approximately 5 to 10 feet inside the playground's original boundary. In order to

open Mother Waldron Playground to its newly acquired 54,000 square feet, a wall running along Lana Lane and intersecting with the rear of the comfort station was removed and never replaced. The original handball court was also removed and never replaced.

Considering the significant changes to the playground, the Significance Evaluation for the draft NRHP nomination concludes that:

> *Mother Waldron Playground is eligible for the National Register of Historic Places under Criterion A for its association with the national playground movement, which aimed to provide supervised play and character-molding opportunities. The property correlates with the rise of playground construction in urban areas throughout the United States.*
>
> *Mother Waldron Playground is not eligible under Criterion B. Although the park is named in honor of Margaret "Mother" Waldron, the property is not associated with her productive life or her lasting contributions to the Kaka'ako community.*
>
> *This property is also eligible under Criterion C for its architectural and landscape design by Harry Sims Bent. The property displays a streamlined Art Moderne appearance with some Art Deco elements, a modern approach and a display of Harry Sims Bent's desire to create a pleasing environment for the park's users.*

In summary, Mother Waldron Playground derives its significance from its historical development and use as a playground and its remaining architectural and landscape design features. The playground retains limited integrity and includes substantial non-historic, non-contributing elements, including reconfigured play areas and moved, altered, and reconstructed walls. The Project would not affect the features of the playground or the architecture and landscape design of the park. The Project would not adversely affect the activities, features, or attributes that make the property eligible for the NRHP.

Effect on Views from Residences Outside the Park

The District Court in November 1, 2012, Summary Judgment Order noted a comment in the record stating that "there would be 'devastating' impacts on seaward views of and over the park from the apartment buildings inland of the guideway." While this is a significant visual impact under NEPA that was disclosed in the Final EIS (Final EIS, Page 4-100), it is not a Section 4(f) use. Impacts that are sufficient to cause an impact under NEPA may not constitute a constructive use under Section 4(f). The Section 4(f) regulations limit constructive use to circumstances where a "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." [23 CFR 774.15(a)] Thus,

constructive use could only occur if views of and over the park from adjacent apartment buildings were a protected activity, feature, or attribute of the park.

The views of the park from private residences mauka of the park are not important contributing elements to the significant activities, features, and attributes of the park because setting was not the basis of listing the park, either for recreation or as an historic site. In fact, the apartments contributed directly to the alteration of the park's setting and to the fact that the mauka portion of the park is not a contributing feature. When Halekauwila Street was expanded, the street expansion and the apartment buildings were constructed on part of the playground, and the remaining uses and features were altered, moved, and rebuilt.

Summary of Constructive Use Evaluation

The Project will not result in a constructive use of Mother Waldron Neighborhood Park and Playground. The Project will not substantially impair the significant historic features or recreational activities, features, and attributes that qualify for protection under Section 4(f). As a result, there will be no constructive use of the significant recreational and historic activities, features, and attributes of Mother Waldron Neighborhood Park and Playground.

4.2.3 Coordination with Agency with Jurisdiction

The City and County of Honolulu Department of Parks and Recreation noted that Moanalua Community Park (Figure 41) is immediately adjacent to the elevated Pu'uloa Road interchange with Moanalua Freeway (DPR 2013). The interchange ramp is larger, closer to recreational uses, and generates more noise than the rail guideway will generate at Mother Waldron Neighborhood Park. Parks and Recreation staff observed that the area under and immediately adjacent to the elevated ramp, which includes basketball and tennis courts and a children's playground, is well used and benefits from the shade and weather protection provided by the elevated roadway. A field survey was conducted over a period of seven days to confirm the Department of Parks and Recreation's observations (Table 16). During one rainy day, all park users were under the elevated roadway structure. Traffic noise levels were measured at 61 dBA Leq at Moanalua Community Park, which is 5 dBA louder than the projected project-generated level at Mother Waldron Neighborhood Park (Table 15).

Overall, the proximity of the elevated ramp did not substantially diminish the use of Moanalua Community Park, or shift users to parts of the park further from the structure. The types of recreational uses that occur at Mother Waldron Neighborhood Park also occur at Moanalua Community Park with no observed effect from the elevated roadway. These observations further indicate that the presence of an elevated guideway will have no detrimental effects on the recreational use of Mother Waldron Neighborhood Park.

Figure 41. Moanalua Community Park

Table 16. Observed Use of Moanalua Community Park

Distance from Elevated Structure	Number of Park Users Observed
0 to 30 feet	56
30 to 60 feet	15
60 to 90 feet	10
More than 90 feet	18

The Department of Parks and Recreation was provided a draft of this Draft Supplemental EIS/4(f) for review. They concurred with the content and findings of this analysis on May 22, 2013 [Appendix C to this Draft Supplemental EIS/4(f)].

4.3 Avoidance of Impacts to Mother Waldron Playground

In response to public comments, alternatives to avoid the impacts to Mother Waldron Neighborhood Park were considered. Alternatives makai of the park were rejected because a shift to Pohukaina Street would still border the park and a shift to Auahi Street would not be able to transition back to the terminal station at Ala Moana Center as a result of recent development of the Ward Village Shops. An alignment further mauka was considered along Queen Street (Figure 42).

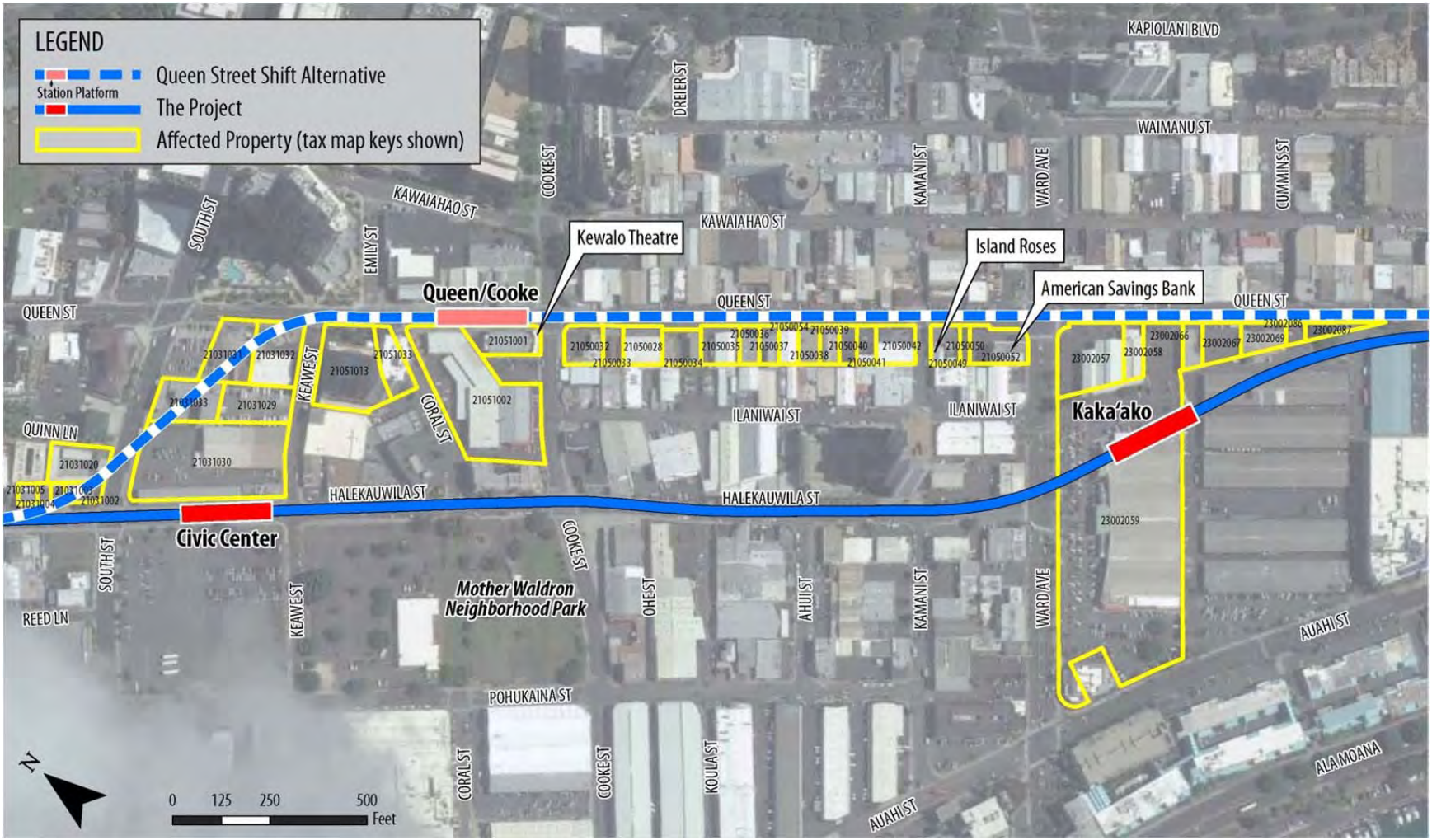


Figure 42. Queen Street Shift Alternative Evaluated to Reduce Impacts to Mother Waldron Neighborhood Park

Queen Street has a narrow 60-foot right-of-way between Coral Street and Ward Avenue, which would have to be widened to accommodate the elevated guideway. As a result, the Queen Street Shift Alternative would require full or partial property acquisition from 39 parcels, including three historic properties: Kewalo Theatre, American Savings Bank Queen Street and Ward Avenue Branch, and Island Roses. Two of the three properties, Kewalo Theatre and Island Roses, have minimum setbacks from the property line and widening of Queen Street to accommodate the guideway would require their demolition. The acquisition would result in a Section 4(f) use of these historic properties. The current uses of 28 of these parcels would be displaced. This compares to displacements on 5 parcels in this area of the Project. The Queen Street Shift Alternative would increase the cost of the project by approximately $70 million in 2009 dollars. Relocation of the Civic Center and Kaka‘ako Stations would have a minor effect on ridership.

Because of the additional use of Section 4(f) properties, additional displacements, and additional cost, the Queen Street Shift Alternative would not be a prudent alternative to reduce impacts to Mother Waldron Neighborhood Park. The Halekauwila Street Alignment avoids Section 4(f) uses that would occur with the Queen Street Shift Alternative.

4.4 Summary of Use

The Project will not result in a constructive use of Mother Waldron Neighborhood Park and Playground. The Project will not substantially impair the significant historic or recreational activities, features, and attributes that qualify for protection under Section 4(f). As a result, there will be no constructive use of the significant recreational and historic activities, features, and attributes of Mother Waldron Neighborhood Park and Playground. There will be neither direct use nor temporary occupancy of Mother Waldron Neighborhood Park and Playground. The Project will not have a Section 4(f) use of Mother Waldron Neighborhood Park and Playground.

FTA and HART have coordinated with the agencies with jurisdiction over the Section 4(f) resources that are evaluated in this Draft Supplemental EIS/4(f). Additional public and agency comments on this Draft Supplemental EIS/4(f) may be submitted per the instructions included in the Abstract.

5.1 Agency Consultation

HART met with the City and County Department of Parks and Recreation on two instances (DPR 2012, DPR 2013) and provided a draft of the evaluation of Mother Waldron Neighborhood Park and Playground for their review. They concurred with the content and findings of this analysis on May 22, 2013 [Appendix C to this Draft Supplemental EIS/4(f)]. The information provided by the Department of Parks and Recreation is included in Sections 4.1.1 and 4.2.3 of this Draft Supplemental EIS/4(f).

FTA and HART submitted the draft NRHP nomination for listing Mother Waldron Playground on the NRHP to the SHPO for review on April 17, 2013 [Appendix C to this Draft Supplemental EIS/4(f)]. The SHPD previously concurred with adverse effect determinations for the Project. The ACHP participated in the resolution of effects and signed the PA, including the determination for Mother Waldron Playground that [Attachment 2 to the PA (FTA 2011)]:

> *There is no direct impact to the property. The Project will be about 10 feet mauka of the park's edge, 150 feet makai of the Art Deco/ Art Moderne-style comfort station and elevated about 35 to 40 feet high in this location. The Project will not affect the park's design elements or aesthetic features that contribute to the park's use and enjoyment. However, there will be an effect to setting.*

5.2 Public and Agency Comment

This Draft Supplemental EIS/4(f) is being distributed for public review and comment prior to the issuance of a Final Supplemental EIS/4(f) and any required supplement to the Record of Decision. Comments may be returned during the 45-day Draft Supplemental EIS/4(f) review period to FTA or HART. FTA and HART will hold a public hearing on the content and finding of this Draft Supplemental EIS/4(f) during the 45-day review period.

Any comments on this Draft Supplemental EIS/4(f) should be limited to the scope of analysis of the Draft Supplemental EIS/4(f). All substantive comments on the content of this Draft Supplemental EIS/4(f) will be addressed in the Final Supplemental EIS/4(f).

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Ala Moana Center
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