

04

CHAPTER

Environmental Analysis, Consequences, and Mitigation

This chapter of the Final Environmental Impact Statement (EIS) discusses the environmental analysis, consequences, and mitigation for the No Build Alternative and the Airport Alternative (Project). The analysis is based on Federal and Hawai‘i regulatory requirements as well as Federal and State guidelines. The National Environmental Policy Act (NEPA) and Hawai‘i Revised Statutes (HRS) Chapter 343 require the evaluation of potential effects of proposed government actions on the environment. The U.S. Department of Transportation (USDOT), through the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), has adopted regulations to implement NEPA. The selection of the Airport Alternative as the Preferred Alternative was made by the City to comply with FTA’s NEPA regulations that state the Final EIS shall identify the Preferred Alternative (23 CFR 771.125(a)(1)).

The Project is described in Chapter 2, Alternatives Considered. The No Build Alternative assumes that this project would not be built. All other projects in the O‘ahu Regional Transportation Plan 2030 (ORTP) will be implemented. In this document, the No Build Alternative serves as an

environmental baseline to which the impacts of the Project are compared.

Chapter 3, Transportation, includes a discussion of potential parking effects, including those to neighborhoods and businesses, and mitigation commitments during operation (Section 3.4.4) and construction (Section 3.5.4).

Section 4.1, Changes to this Chapter since the Draft Environmental Impact Statement, summarizes the changes made to this chapter since publication of the Draft EIS. Sections 4.2 through 4.16 address the regulatory context and methodology by which each resource is studied, the affected environment, and the long-term effects on individual aspects of the environment of the Project. Measures that will be incorporated into the Project to mitigate long-term adverse effects are also identified. These sections are as follows:

- 4.2 Land Use
- 4.3 Economic Activity
- 4.4 Acquisitions, Displacements, and Relocations
- 4.5 Community Services and Facilities

- 4.6 Neighborhoods
- 4.7 Environmental Justice
- 4.8 Visual and Aesthetic Conditions
- 4.9 Air Quality
- 4.10 Noise and Vibration
- 4.11 Energy and Electric and Magnetic Fields
- 4.12 Hazardous Waste and Materials
- 4.13 Ecosystems
- 4.14 Water
- 4.15 Street Trees
- 4.16 Archaeological, Cultural, and Historic Resources

Section 4.17, Maintenance and Storage Facility, describes the environmental consequences of the preferred site near Leeward Community College and the alternative site near the future Ho’opili master planned community. Section 4.18, Construction Phase Effects, addresses the construction-phase effects and mitigation that will be considered and the relationship between short-term uses of the environment and long-term productivity. Section 4.19, Indirect and Cumulative Effects, presents the indirect and cumulative effects of the Project, including the effects of prior actions to the future planned extensions and other planned projects. Section 4.20, Irreversible and Irrecoverable Commitments of Resources, describes resources that will be used by the Project. Section 4.21, Anticipated Permits, Approvals, and Agreements, includes a list of environmental permits required for the Project and their status as of the date of this Final EIS.

The following technical reports include analyses of the individual environmental topics that have been evaluated for the Project:

- *Honolulu High-Capacity Transit Corridor Project Land Use Technical Report* (RTD 2008b)

- *Honolulu High-Capacity Transit Corridor Project Economics Technical Report* (RTD 2008c)
- *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report* (RTD 2008d)
- *Honolulu High-Capacity Transit Corridor Project Visual and Aesthetics Resources Technical Report* (RTD 2008e)
- *Honolulu High-Capacity Transit Corridor Project Noise and Vibration Technical Report* (RTD 2008f)
- *Honolulu High-Capacity Transit Corridor Project Air Quality and Energy Technical Report* (RTD 2008g)
- *Honolulu High-Capacity Transit Corridor Project Electric and Magnetic Fields Technical Report* (RTD 2008h)
- *Honolulu High-Capacity Transit Corridor Project Hazardous Materials Technical Report* (RTD 2008i)
- *Honolulu High-Capacity Transit Corridor Project Ecosystems and Natural Resources Technical Report* (RTD 2008j)
- *Honolulu High-Capacity Transit Corridor Project Water Resources Technical Report* (RTD 2008k)
- *Honolulu High-Capacity Transit Corridor Project Street Trees Technical Report* (RTD 2008l)
- *Honolulu High-Capacity Transit Corridor Project Geology, Soils, Farmlands, and Natural Hazards Technical Report* (RTD 2008m)
- *Honolulu High-Capacity Transit Corridor Project Archaeological Resources Technical Report* (RTD 2008n)
- *Honolulu High-Capacity Transit Corridor Project Historic Resources Technical Report* (RTD 2008o)
- *Honolulu High-Capacity Transit Corridor Project Cultural Resources Technical Report* (RTD 2008p)

- *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Noise and Vibration Technical Report* (RTD 2009a)
- *Honolulu High-Capacity Transit Corridor Project Wetland and Waters of the U.S. Study* (RTD 2009b)
- *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Historic Resources Technical Report* (RTD 2009c)
- *Honolulu High-Capacity Transit Corridor Project Historic Effects Report* (RTD 2009d)
- *Honolulu High-Capacity Transit Corridor Project Addendum 01 to the Cultural Resources Technical Report* (RTD 2009e)
- *Honolulu High-Capacity Transit Corridor Project Ecosystem Function and Values of Wetland and Waters of the U.S.* (RTD 2009h)

The analyses demonstrated that the Project will not have an adverse effect upon geology, soils, or natural hazards; therefore, they are not addressed in this chapter. The Project will be designed to meet seismic and other design standards related to natural hazards, such as wind forces from tropical storms. The project alignment is outside the tsunami evacuation zones.

Geographic areas are discussed in four categories, as appropriate to the resource:

- **Project Region**—the entire Island of O‘ahu ([Figure 1-1](#) in Chapter 1, Background)
- **Study Corridor**—the southern coast of O‘ahu where the Project is located ([Figure 4-1](#))
- **Project Station Area**—areas within one-half mile of a project station ([Figure 4-1](#)); one-half mile is generally considered an acceptable walking distance
- **Project Alignment**—the route of the fixed guideway ([Figure 4-1](#)); discussions involving the project alignment include those properties adjacent to the alignment (i.e., properties fronting the roadway along which the guideway will be built)

[Table 4-1](#) summarizes the environmental effects of the Project; mitigation measures to avoid, minimize, or reduce the effects; and probable unavoidable adverse effects that are detailed in this chapter.

The City and County of Honolulu (City) will incorporate mitigation measures required by permits, approvals, and agreements into the Project during final design and construction. During construction, the City will employ an environmental compliance manager to oversee and enforce mitigation commitments.

While the Project will be environmentally preferable regarding air quality, energy use, and water quality, the No Build Alternative is the environmentally preferable alternative based on overall consideration of the criteria listed in 40 CFR 1505.2(b). The No Build Alternative would directly affect fewer historic and cultural resources, waters of the U.S., have no direct visual impact, and cause no displacements. However, the No Build Alternative does not meet the Purpose and Need for the Project.

4.1 Changes to this Chapter since the Draft Environmental Impact Statement

This chapter has been updated to reflect the identification of the Airport Alternative as the Project. It includes updated analyses of the effects of the Project on the natural and built environments as compared to the No Build Alternative. [Table 4-1](#) includes updated mitigation commitments for the Project and identifies probable unavoidable adverse environmental effects.

Since publication of the Draft EIS, design has been advanced, further analysis has been completed, and information has been added in response to comments on the Draft EIS and agency coordination since the publication of the Draft EIS. The sections in Chapter 4 have been renumbered and

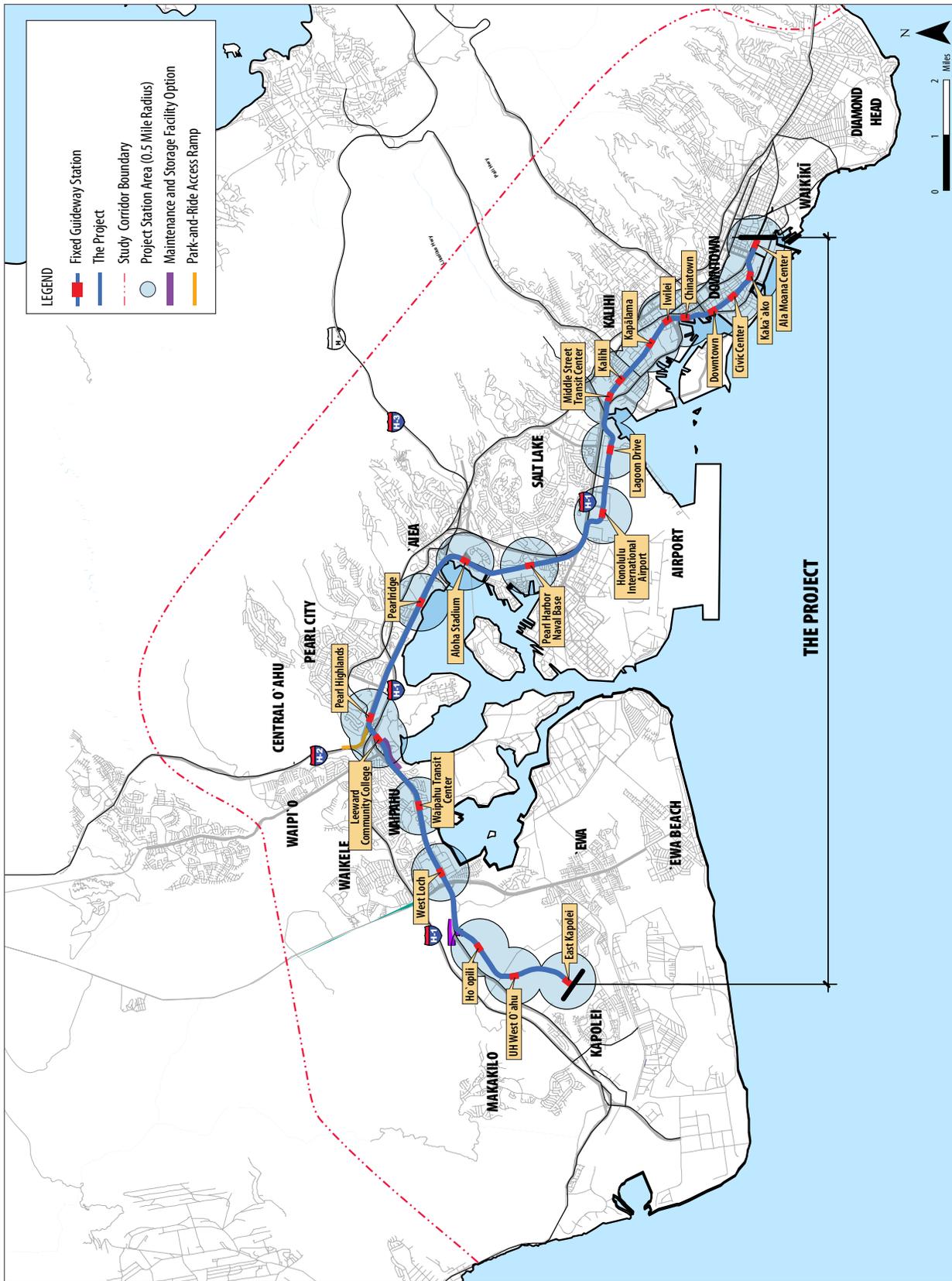


Figure 4-1 Project Overview

Table 4-1 Summary of Direct Environmental Effects and Mitigation Measures to Avoid, Minimize, or Reduce Impacts
(continued on next page)

Land Use, Section 4.2	
Environmental Effects	<p>Approximately 160 acres of existing land use will be converted to transportation use. Included are 88 acres of prime and statewide-important farmlands. This is less than one-tenth of one percent of available agricultural land on O'ahu. The Project is consistent with future land use plans and policies.</p> <p>The land needed for the Project represents approximately 1 percent of the total acreage within the study corridor. A majority of the land uses being converted to a transportation use represent business uses (approximately 84 percent), which include retail, office, industrial, and agricultural. The remaining 16 percent of land conversions will be from residential land uses.</p>
Mitigation Measures	Based on the relatively small amount of land that will be acquired, including farmland, no mitigation is required.
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.
Economic Activity, Section 4.3	
Environmental Effects	For the Project, property will be acquired from private owners and converted to a transportation use that will be owned by the City. This will result in a direct reduction in annual property tax revenues. These reductions are estimated to be \$1.2 million annually for the Project. The Project is not expected to result in substantial long-term adverse effects on property tax revenues.
Mitigation Measures	No mitigation is required.
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.
Acquisitions, Displacements, and Relocations, Section 4.4	
Environmental Effects	<p>Acquisitions: 33 full, 158 partial Displacements: 20 residences, 61 businesses, 1 church</p>
Mitigation Measures	Where acquisition of property will occur, compensation will be provided to affected property owners, businesses, or residents in compliance with all applicable Federal and State laws and will follow the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act.
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.
Community Services and Facilities, Section 4.5	
Environmental Effects	<p>There will be impacts to schools, libraries, churches, parks, and recreation facilities adjacent to the alignment that are detailed below. There will be partial acquisition or use of land at 14 community facilities and displacement of 1 church. The Project will not affect the operation of the community facilities where partial acquisition is required, and the church will receive relocation assistance.</p> <p>A number of properties owned by utility providers will be affected by partial acquisitions, and some utilities will be relocated and/or modified to accommodate the Project.</p>
Mitigation Measures	<p>Buildings, parking, lighting, fencing, and other features will be replaced or compensation will be provided.</p> <p>Where acquisition of property will occur, compensation will be provided to affected property owners in accordance with all applicable Federal and State laws and will follow the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act.</p>
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.

Table 4-1 Summary of Direct Environmental Effects and Mitigation Measures to Avoid, Minimize, or Reduce Impacts
(continued on next page)

Neighborhoods, Section 4.6	
Environmental Effects	<p>The Project will provide people living and working in neighborhoods within the study corridor with increased mobility. The Project will provide an alternative to traveling by personal vehicle or bus within the existing transportation corridors. Passengers using the new transit system will experience reduced travel times to other neighborhoods and growth centers along the project alignment and near transit stations.</p> <p>The project alignment will follow busy, heavily traveled Kamehameha Highway and transition to Aolele Street near the airport.</p> <p>The transit facility is not expected to be a physical barrier in neighborhoods and will not affect community identity or cohesion. Potential new development and redevelopment along the project alignment, as well as the scale of transit system, will not substantially affect community character.</p> <p>Ongoing coordination efforts with the public will help develop design measures that will enhance the interface between the transit system and the surrounding community.</p>
Mitigation Measures	Since there will be no adverse effects to neighborhoods, no mitigation is required.
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.
Environmental Justice, Section 4.7	
Environmental Effects	<p>There will be no disproportionately high and adverse effects on residents and businesses in O`ahuMPO Environmental Justice Areas.</p> <p>The Banana Patch community was not identified as an Environmental Justice Area using the O`ahuMPO method. However, following public outreach, the area has been identified as an Environmental Justice area of concern. The community is 100 percent minority and will be relocated as part of the Project.</p> <p>A meeting was held in the Banana Patch community during the Draft EIS public comment period. All concerns expressed by residents were related to acquisition and relocation assistance and schedule.</p> <p>Where relocations will occur in O`ahuMPO Environmental Justice Areas and the Banana Patch community, compensation will be provided to affected property owners, businesses, or residents in compliance with all applicable Federal and State laws and will follow the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act.</p>
Mitigation Measures	The Project will not result in disproportionately high and adverse impacts within O`ahuMPO Environmental Justice Areas or to the Banana Patch community. Therefore, no specific mitigation measures to reduce impacts are required.
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.
Visual and Aesthetic Conditions, Section 4.8	
Environmental Effects	<p>The fixed guideway and stations will be elevated structures. They will change views where project elements are near existing views or in the foreground of these views. This change will also occur for motorists traveling on roadways along and under the guideway. Stations will be dominant visual elements in their settings, and will noticeably change views.</p> <p>The Project will block views in several areas of the corridor, including protected mauka-makai views.</p> <p>The Project will introduce a new linear visual element to the corridor and changes to views will be low to significant (or, a high level of visual impact) and unavoidable.</p>
Mitigation Measures	As part of the final design process, RTD has developed specifications and design criteria to address the City's requirements for the Project. Guideway materials and surface textures will be selected in accordance with generally accepted architectural principles to achieve effected integration between the guideway and the surrounding environment. Landscape and streetscape improvements will mitigate potential visual impacts, primarily for street-level views.

Table 4-1 Summary of Direct Environmental Effects and Mitigation Measures to Avoid, Minimize, or Reduce Impacts
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Probable Unavoidable Adverse Environmental Effects	Although mitigation measures will minimize many adverse visual effects by providing visual buffers and reducing visual contrasts between the project elements and their surroundings, the Final EIS acknowledges, as concluded in the Draft EIS, that probable unavoidable adverse effects, such as view blockage, cannot be mitigated and will be significant (noted as a “high” level of visual impact in the Draft EIS) in some areas.
Air Quality, Section 4.9	
Environmental Effects	The Project will reduce regional pollutant emissions between 3.9 to 4.6 percent. The study area is in attainment for all national ambient air-quality standards. The Project will reduce emissions of greenhouse gases.
Mitigation Measures	Because no substantial air quality impacts are anticipated, no mitigation will be required.
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.
Noise and Vibration, Section 4.10	
Environmental Effects	The Project would have moderate noise impacts at the following locations: 94-340 Pupumomi Street, 5th floor and above; 860 Halekauwila, moderate impact to 6th floor and above; 1133 Waimanu, moderate impact to 5th through 9th floors. A 3-foot parapet wall is included in Project design. There will be no vibration impacts.
Mitigation Measures	Wheel skirts and sound-absorptive materials will be added within the guideway structure in the vicinity of anticipated impacts.
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.
Energy and Electric and Magnetic Fields, Section 4.11	
Environmental Effects	The Project will reduce daily transportation energy demand by 3 percent. Electric and magnetic fields from the Project could affect one electron microscope. Motor vehicle consumption islandwide: 90,756 MBTUs. Fixed guideway energy consumption: 1,690 MBTUs.
Mitigation Measures	None required.
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.
Hazardous Waste and Materials, Section 4.12	
Environmental Effects	Sites of concern near the Project could be contaminated. Sites where hazardous materials are or have been used or stored will be acquired. The City will perform a Phase I Environmental Site Assessment for properties that will be acquired for the Project. Depending on the outcome, a Phase II Environmental Site Assessment may be appropriate. The City will decide the necessity of the Environmental Site Assessment for each property acquisition.
Mitigation Measures	Properties identified as contaminated will be remediated in accordance with regulations.
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.

Table 4-1 Summary of Direct Environmental Effects and Mitigation Measures to Avoid, Minimize, or Reduce Impacts
(continued from previous page)

Ecosystems, Section 4.13	
Environmental Effects	There will be “no effect” to threatened, endangered, or protected species or designated critical habitats.
Mitigation Measures	The City will secure a Certificate of Inclusion from the Hawai`i Department of Transportation for Ko`oloa`ula (<i>Abutilon menziesii</i>) and will comply with the measures identified in the Habitat Conservation Plan.
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.
Water, Section 4.14	
Environmental Effects	There will be effects to five streams from construction of guideway support columns below OHWM, which will affect a maximum of 0.02 acre of waters of the U.S. (linear transportation features) and 0.06 acre of other project features. Effects to wetlands will include shading from the guideway. There will be no adverse effects to marine waters, groundwater, or floodplains.
Mitigation Measures	Permanent mitigation features are proposed and include enhancement of the stream, establishment of wetlands, ecological restoration with native Hawaiian plantings, extension of existing culvert, and enhancement of floodway capacity conveyance to achieve zero rise in flood zone. Where the Project crosses an estuary reach and placement of columns cannot be avoided, the columns will align with existing columns.
Probable Unavoidable Adverse Environmental Effects	No unavoidable adverse environmental effects are anticipated.
Street Trees, Section 4.15	
Environmental Effects	Tree removal will be minimized to the greatest extent possible, but pruning is likely next to the guideway. Twenty-eight “Notable” true kamani trees along Dillingham Boulevard will be removed. Approximately 100 street trees will be pruned, 550 will be removed, and 300 will be transplanted.
Mitigation Measures	Mitigation measures will consist of transplanting existing trees or planting new ones. Pruning will be in compliance with City and County ordinances and require supervision by a certified arborist. The City will coordinate with HDOT’s landscape architect.
Probable Unavoidable Adverse Environmental Effects	Street trees will be removed in areas where they are not compatible with the Project.
Archaeological, Cultural, and Historic Resources, Section 4.16	
Environmental Effects	There will be adverse effects to 33 historic resources and effects to 5 cultural resources.
Mitigation Measures	Mitigation measures for historic resources affected by the Project have been developed in consultation with the Section 106 consulting parties. A Programmatic Agreement has been executed for the Project that details mitigation for adverse effects to resources eligible for the National Register of Historic Places.
Probable Unavoidable Adverse Environmental Effects	While mitigation will be provided for all adverse effects, the Project will still require demolition of three historic buildings.

are listed below using the new Final EIS section number. The changes are summarized below.

Section 4.2, Land Use—acreage of land converted from existing use to transportation use has been updated based on design refinement.

Section 4.3, Economic Activity—no changes.

Section 4.4, Acquisitions, Displacements, and Relocations—the number of partial and full acquisitions and displacements has been updated based on design refinement and coordination with property owners. Appendix B, Conceptual Right-of-Way Plans (in the Draft EIS), has been updated and is now Appendix C, Preliminary Right-of-Way Plans, for this Final EIS. Appendix C reflects design revisions since the Draft EIS and includes acquisitions, displacements, and general land use type. This was added to Appendix C to provide additional information to affected property owners.

Section 4.5, Community Services and Facilities—minor updates were made to this section to confirm community facilities adjacent to the alignment. Impacts and mitigation commitments have been updated to reflect design refinements.

Section 4.6, Neighborhoods—discussion of the neighborhoods along the Salt Lake Alternative alignment was removed from this section.

Section 4.7, Environmental Justice—public outreach coordination with O’ahuMPO Environmental Justice populations and the Banana Patch community during the Draft EIS comment period is described and an Environmental Justice determination added.

Section 4.8, Visual and Aesthetic Conditions—viewer group responses on the Draft EIS resulted in the refinement of the visual impact rating for several key views. Several additional simulations were added to illustrate project effects discussed in

the Draft EIS. Mitigation commitments have been updated and include measures to integrate project elements with surroundings. Also, discussion of probable unavoidable adverse environmental effects has been added.

Section 4.9, Air Quality—air quality emission values has been updated based on updated vehicle-miles-traveled data. An analysis of greenhouse gas emissions for the Project has been added.

Section 4.10, Noise and Vibration—additional noise analysis has been completed along the Airport Alternative alignment and at high-rise buildings; mitigation commitments have been further detailed. Additional noise analysis was also completed at the Honolulu International Airport when the Airport Alternative became the Preferred Alternative. At the request of the National Park Service, additional noise analysis has been completed at three locations at the Arizona Memorial; after mitigation, no impact is expected from the Project.

Section 4.11, Energy and Electric and Magnetic Fields—energy demand has been updated based on new vehicle-miles-traveled data.

Section 4.12, Hazardous Waste and Materials—additional information about probable contaminated sites and mitigation commitments has been expanded in case hazardous materials are found prior to acquisition of properties.

Section 4.13, Ecosystems—changes have been made to reflect agency coordination regarding inclusion in the Hawai’i Department of Transportation’s (HDOT) Habitat Conservation Plan for ko’oloa’ula (*Abutilon menziesii*) (HDOT 2004) and informal consultation with the U.S. Fish and Wildlife Service (USFWS) on “no effect” to threatened and endangered species or designated critical habitats related to the Project.

Section 4.14, Water—this section has been revised to include U.S. Coast Guard (USCG) and U.S. Army Corps of Engineers (USACE) input on navigable waters and waters under the jurisdiction of the USACE. Impacts and mitigation to waters of the U.S. have been added based on design refinements and agency coordination since the Draft EIS.

Section 4.15, Street Trees—mitigation has been refined to include coordination between the City and HDOT’s highway landscape architect and gives further transplant mitigation details.

Section 4.16, Archaeological, Cultural, and Historic Resources:—historic resources in the Area of Potential Effects (APE) have been reevaluated following publication of the Draft EIS as a result of ongoing Section 106 consultation. The Historic Effects Report (RTD 2009d) was completed and effect determination recommended by the State Historic Preservation Division (SHPD) were accepted by the FTA. The effect determinations of the 81 historic resources have been presented; the discussion of Section 106 consultation has been updated; and mitigation has been confirmed in accordance with the signed Programmatic Agreement (PA).

Section 4.17, Maintenance and Storage Facility—the site near Leeward Community College is identified as the preferred site option; a site in Ho’opili remains an option. Impacts and mitigation have been revised to reflect design refinement of the preferred option.

Section 4.18, Construction Phase Effects—the section has been revised to update effects and mitigation based on design refinements, agency coordination, and comments raised during the Draft EIS public comment period. A new section on invasive species was added as a result of agency comments and coordination. Updated multipliers have been used to estimate the employment impacts from construction.

Section 4.19, Indirect and Cumulative Effects—the section was updated to reflect adoption of the new City Transit-Oriented Development Ordinance 09-4 (ROH 2009). Additional detail is included on planned and foreseeable development. The indirect effect of the Project on growth and development and cumulative effects has been expanded in the Final EIS.

Section 4.20, Irreversible and Irrecoverable Commitments of Resources—irreversible and irretrievable commitments of natural and cultural resources has been added.

Section 4.21, Anticipated Permits, Approvals, and Agreements—this section was revised to include permits, approvals, and agreements needed and notes the status of each permit as of the date of this Final EIS.

4.2 Land Use

This section describes the existing land uses, including farmlands, development trends, and long-term plans for the study corridor. It also evaluates the Project’s consistency with the long-term plans for the study corridor. An assessment of potential changes in land use that could result from the improved mobility that will be provided by the long-term operation of the Project is presented in Section 4.19. For additional information and references, see the *Honolulu High-Capacity Transit Corridor Project Land Use Technical Report* (RTD 2008b) and the *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report* (RTD 2008d). Farmlands are described in detail in the *Honolulu High-Capacity Transit Corridor Project Geology, Soils, Farmlands, and Natural Hazards Technical Report* (RTD 2008m).

4.2.1 Background and Methodology

A variety of data sources, including field surveys, were used to record existing land uses on

properties adjacent to and within close proximity of the study corridor.

For farmlands, this investigation documented the location of existing properties that are actively cultivated and also checked information published by the U.S. Department of Agriculture, Natural Resources Conservation Service, to determine if properties in the study corridor have been designated as prime, unique, and/or of statewide importance.

Additionally, government documents related to planned transportation improvements and land development were reviewed to assess the future context of the Project in the urban environment. The Project was also evaluated to assess whether it will be consistent with adopted transportation and urban development plans and policies.

4.2.2 Affected Environment **Existing Land Use**

Table 4-2 provides an overview of existing land use within the study corridor in the planning areas delineated by the *City and County of Honolulu General Plan (as amended)* (DPP 2002a). **Figure 4-2** illustrates the location of these planning areas and shows the future planned land uses. The corridor traverses through three major planning areas—‘Ewa, Central O‘ahu, and the Primary Urban Center (PUC).

The *‘Ewa Development Plan* (DPP 2000) was the first of the conceptual development plans to be adopted by the City. Significant growth in population and employment are projected for the ‘Ewa area by 2030.

The ‘Ewa region is a rural and agricultural area that is undergoing urbanization and includes Kapolei, which is developing as O‘ahu’s “second city.” The Wai‘anae terminal station for the Project is at East Kapolei. The Wai‘anae end of the Project will serve the area where both population and

employment are forecasted to grow by approximately 400 and 300 percent, respectively. Some of the new developments in this area include the University of Hawai‘i (UH) at West O‘ahu campus, the Salvation Army Kroc Center, and the Ho‘opili master planned development. All are planned to open between 2009 and 2012 and are consistent with the goals of transit-oriented development (TOD). TOD creates a mixed-use higher density residential or commercial area designed to maximize access to public transportation. It often incorporates features to encourage transit ridership and decrease dependence on driving.

Commercial space in ‘Ewa is anticipated to increase to 7.1 million square feet (compared to 8.4 million square feet existing in Honolulu today). The new UH West O‘ahu campus will support pedestrian access to and from a major transit node on North-South Road. The campus is projected to have 7,600 students and 800 staff and faculty by 2020. Central O‘ahu has a suburban development pattern encompassing smaller cities and community centers. Only part of the Central O‘ahu planning area is within the study corridor. The *Central O‘ahu Sustainable Communities Plan* (DPP 2003) establishes a Central O‘ahu Urban Community Boundary (UCB) that protects agricultural lands and open space and focuses planned urban development within its boundaries. This plan calls for moderate density/mid-rise housing and commercial development within walking distance of two major nodes and transit stations in Waipahu. The *Waipahu Neighborhood Transit Oriented Development Plan* (DPP 2009) and the *Pearl Harbor Historic Trail Master Plan* (City 2001) are two master plans that support TOD. The PUC encompasses the most urbanized part of the island, including Downtown Honolulu. **Figures 4-3 through 4-6** show existing land uses within one-half mile of the project alignment. TOD is supported by policies and guidelines that promote transit use and related TOD. The *‘Aiea-Pearl City Livable Communities Plan* (DPP 2004b), *Ala*

Table 4-2 Existing Land Use Overview by Planning Area

Planning Area	Land Use Overview ¹
`Ewa—including Kapolei-`Ewa and Makakilo	`Ewa, previously a predominantly agricultural area, is now being developed rapidly into single-family and garden-style apartment residential uses, as well as some light industrial and commercial uses. A number of State and Local government offices, as well as some light industry, have moved to Kapolei.
Central O`ahu—including Waipahu-Waikele and Waiawa ²	Waipahu, the portion of the Central O`ahu planning region nearest the Project, is comprised of moderate-density residential, commercial, and light industrial uses. Waipahu's commercial and light industrial uses are mostly clustered along Farrington Highway. Other portions of the Central O`ahu planning region within the study corridor include lower-density residential developments and some commercial and light industrial areas in Waikele and Kunia. The Waiawa and Koa Ridge areas remain largely undeveloped at this time.
Primary Urban Center—including Pearl City-`Aiea, Salt Lake-`Āliamanu, Airport-Pearl Harbor, Kalihi-Iwilei, Palama-Liliha, Downtown, Kaka`ako, Makiki-Mānoa, Mō`ili`ili-Ala Moana	<p>The Primary Urban Center is a wide-ranging development region stretching from Pearl City through Salt Lake, Honolulu International Airport, Downtown, and Kaka`ako to the Koko Head end of the study corridor. The uplands in this area are dominated by single-family residential uses while the coastal plain has a broader range of uses. Land uses in the Pearl Highlands and Pearlridge Station areas include big-box retail, a regional shopping center, health services, smaller commercial and industrial uses, and apartments.</p> <p>The Aloha Stadium Station area is dominated by the stadium and nearby military uses, but some civilian residential development and neighborhood shopping centers are also present. All the station areas along the Airport Alignment are dominated by military, military housing, airport, or light industrial uses.</p> <p>As the corridor approaches Downtown, moderate- to high-density uses become more prominent. The four station areas in Kalihi and Iwilei are dominated by residential and commercial uses with commercial uses generally increasing closer to Downtown. The Chinatown and Downtown areas are comprised of high-density uses, including major office buildings, retail, and high-density condominiums. Federal, State, and Local government offices are also located near the Downtown and Civic Center Stations. Adjacent to Downtown, Kaka`ako contains a mix of large retail uses, industrial uses, restaurants, and theaters. Ala Moana Center has 1.8 million square feet of retail space; this area is dominated by this shopping center. Big-box retailers, medical, smaller commercial development, hotel, and residential uses are also in this area.</p>

¹ Land uses described include current uses within the study corridor.

² Planning area extends beyond the study corridor.

Moana Sheridan Community Plan, and the *Kaiāulu ‘O Kaka’ako Mauka Area Master Plan* (HCDA 2008) are a few of the master planned development areas within the PUC.

Farmlands

Much of the study corridor is currently developed, and only a small portion of the corridor—primarily in the ‘Ewa Development Plan area—consists of land that is currently used for agriculture.

The ‘Ewa Plain, which is contained within the ‘Ewa Development Plan area and includes properties surrounding the Project, was once a major agricultural area. Prior to 1995, the primary crop had been sugar cane. Despite recent rapid urbanization, much of the ‘Ewa Plain is still classified or zoned for agricultural use by either the State of Hawai‘i or the City. Much of ‘Ewa that is not developed is also classified as “prime agricultural land.” The *‘Ewa Development Plan* (DPP 2000) includes an agricultural preservation area as illustrated on [Figure 4-7](#). A small amount of agricultural land located near Pearl Highlands Station is illustrated in [Figure 4-8](#).

Future Land Use Plans and Policies

State, regional, and community plans and policies affecting future land use are currently in place and enforced through zoning and other requirements at State and Local levels. Proactive neighborhood-based plans establish a comprehensive framework for implementing long-range land use policies and goals for O‘ahu’s future. The plans that are relevant to the goals and objectives of providing improved transit services within the study corridor include the following:

- *Hawai‘i Statewide Transportation Plan* (HDOT 2002)—this plan envisions a multi-modal transportation system and promotes transit-supportive development (TSD) in activity centers along the corridor.
- *O‘ahu Regional Transportation Plan 2030* (O‘ahuMPO 2007)—this plan focuses on improving mobility with a series of strategies

and programs to address future transportation needs. Within the 2030 planning horizon, this plan calls for a rail transit system that will serve the corridor between Kapolei and Honolulu.

- *City and County of Honolulu General Plan (as amended)* (DPP 2002a)—this plan establishes transit-supportive objectives and policies for Honolulu’s future and directs future growth on O‘ahu to the PUC, Central O‘ahu, and ‘Ewa.

Prime farmland is land that has the best combination of physical and chemical characteristics for producing agricultural crops.

Unique farmland is land other than prime farmland with a special combination of qualities to produce specific high-value crops.

Farmland of statewide importance is land other than prime or unique farmland, important for the production of agricultural crops as determined by the State.

Development plans for the PUC and ‘Ewa direct new growth and its supporting transit facilities and TOD to these areas. Sustainable community plans for East Honolulu, Central O‘ahu, and other parts of the island focus on supporting the character of these communities and preserving their natural and cultural resources.

The City passed a TOD special district amendment to a land use ordinance (ROH 2009) in March 2009. TOD special districts will restrict development in agricultural and open-space areas and encourage mixed-use, high-density, walkable communities around transit stations. The special districts also encourage public input into the design of TOD neighborhood plans to reflect unique community identities. TOD planning is underway and will occur before the fixed guideway stations are constructed.

Figure 4-3 Existing Land Use (East Kapolei to Fort Weaver Road)

Figure 4-4 Existing Land Use (Fort Weaver Road to Aloha Stadium)

Figure 4-5 Existing Land Use (Aloha Stadium to Kalihi)

Figure 4-6 Existing Land Use (Kalihi to Ala Moana Center)

Figures 4-7 Designated Agricultural Lands

Figure 4-8 Farmlands to Be Acquired

4.2.3 Environmental Consequences and Mitigation

Environmental Consequences

Land Use

No Build Alternative

Under the No Build Alternative, the Project would not be built and would not have any impacts to existing land use. It is assumed that the projects in the ORTP will be built and their environmental impacts will be studied in separate documents. The No Build Alternative is not consistent with local and regional long-range plans.

Project

Approximately 160 acres will be affected by the Project where existing land use will be converted to a transportation use. Only those parcels that will be completely acquired (full acquisition) will result in changes in land use resulting directly from the Project. For some properties, only a small portion of the parcel will be required (partial acquisition), and existing land uses will remain unchanged by the Project. The preferred maintenance and storage facility site option near Leeward Community College is vacant, previously industrial land. The largest potential effect would be displacement of Aloun Farms mauka of Farrington Highway for the proposed 41-acre maintenance and storage facility Ho'opili site option. Traction power substations will be located approximately every mile along the project alignment. A description of the substations is provided in Section 2.5.9. The substations have been placed in roadway rights-of-way, vacant lots, or in rights-of-way that will be acquired for stations and station features. Acquisitions and displacements are discussed in Section 4.4 and included in Appendix C. General land use categories for land that will be acquired or obtained by easement are included in Appendix C.

The acquired acreage for the Project will be approximately 160 acres, which represents approximately 1 percent of the total acreage within the study corridor. A majority of the land uses

being converted to a transportation use represent business uses (approximately 84 percent), which include retail, office, industrial, and warehouse. The remaining 16 percent of land conversions will be from residential land uses.

Farmlands

No Build Alternative

Under the No Build Alternative, the Project would not be built and would not have any impacts to farmlands designated prime, unique, or agricultural lands of statewide importance. Although the projects in the ORTP are assumed to be built, their environmental impacts will be studied and reported in separate documents. The adopted *'Ewa Development Plan* (DPP 2000), however, has recognized that agricultural lands adjacent to the project alignment will be developed in the future.

Project

The only farmlands that will be acquired for the Project are in the 'Ewa Plain. Because the properties are relatively large, only a small portion of each agricultural parcel will be acquired (Figures 4-7 and 4-8). These figures show the agricultural lands currently in cultivation, as well as agricultural lands that have been designated by the U.S. Department of Agriculture (USDA), the Natural Resources Conservation Service (NRCS), or the State of Hawai'i as prime, unique, or of statewide importance. Some of the designated lands are not currently in active cultivation. Approximately 80 acres of prime farmland and 8 acres of statewide-important farmlands will be acquired by the Project, of which 70 acres are actively cultivated. This acreage is designated for agriculture by County zoning.

All of the affected properties designated as prime, unique, or of statewide importance and/or actively being farmed are owned by individuals, corporations, or agencies that plan to develop them in conformance with the *'Ewa Development Plan* (DPP 2000). About half of the agricultural

property needed would be for the Ho‘opili maintenance and storage facility. The preferred site for the maintenance and storage facility is, however, the former Navy fuel storage and delivery facility near Leeward Community College. If the Project can acquire this site, about 47 acres of agricultural land designated prime or of statewide importance will be acquired for the Project.

The City coordinated with the Hawai‘i State Office of the NRCS, pursuant to the Farmland Protection Policy Act (USC 1981). As shown on the NRCS-CPA-106 Form for the Project, the total of points is below the established threshold (Appendix F, Record of Agency Correspondence and Coordination).

The *2002 Census of Agriculture* (USDA 2004) reported that there are more than 70,000 acres of agricultural land in cultivation on O‘ahu, including those designated as prime, unique, or of statewide importance. The displacement of agricultural lands as a result of the Project represents less than one-tenth of one percent of available agricultural land. Considering that the amount of affected farmland is such a small proportion of all agricultural lands on O‘ahu, including those designated as prime, unique, or of statewide importance, the effect will not be substantial and no mitigation will be required.

Future Land Use Plans and Policies

No Build Alternative

Under the No Build Alternative, a transit system would not be constructed. However, this is not consistent with transportation and land use components in planning documents that support the development of a central transit system within the study corridor. Future projects on the ORTP are assumed to be constructed, and separate environmental documents will be prepared for those projects.

Project

The Project is consistent with the transportation and land use elements of adopted State and Local government plans. The transit system will link Honolulu with outlying developing areas and activity centers that have been designated to receive increasing amounts of future residential and employment growth. The system will provide reliable rapid transit within the study corridor that will serve all population groups, improve transit links, and offer an alternative to the use of private automobiles.

Mitigation

Based on the relatively small number of parcels affected by full acquisitions, the effects on different types of land uses in the study corridor will be minimal. No mitigation measures will be needed.

4.3 Economic Activity

This section describes the effect of the Project on regional economics in the study corridor. Existing and future employment and growth in the study corridor were considered in the analysis. In addition, the anticipated changes to property tax revenues that will result from acquisition of property for the Project were evaluated. Economic effects related to construction are discussed in Section 4.18, and the Project’s financial analysis is presented in Chapter 6, Cost and Financial Analysis. For additional information and references, see the *Honolulu High-Capacity Transit Corridor Project Economics Technical Report* (RTD 2008c).

4.3.1 Background and Methodology

Regulatory Context

Regulations applicable to this analysis are as follows:

- Definition of Real Property Tax Rates—Real Property Tax Rate Tables, City of Honolulu, Department of Budget and Fiscal Services, Real Property Assessment Division

- Definitions of Real Property Tax Classifications—Revised Ordinances of Honolulu, Chapter 8

Methodology

Employment trends and forecasted growth were reviewed for the three development and sustainable plan areas in the study corridor—PUC, ‘Ewa, and Central O‘ahu. The data were obtained from the O‘ahu Regional Transportation Plan Data, Department of Business, Economic Development and Tourism (DBEDT).

Based on land acquisition information identified in Section 4.4, changes in tax revenue were estimated using the City’s 2008 tax rates.

**4.3.2 Affected Environment
Employment**

The PUC has more jobs than any area on O‘ahu or in the State, accounting for 74 percent of the State’s total non-farm employment. Employment is primarily dependent on the tourism industry, although the professional and business services sectors are growing and currently account for 14 percent of total non-farm employment.

In general, employment in O‘ahu and in the study corridor is expected to increase at a compound annual growth rate of approximately 1 percent per year between 2000 and 2030 (Table 4-3). In particular, growth in high-tech jobs in the sectors of biotechnology, research and development, and professional and business services is expected. According to DBEDT’s second-quarter 2008 forecasts, visitor arrivals will decrease in 2008 and stabilize in 2009. However, tourism will continue to be the largest industry and job generator on O‘ahu.

As O‘ahu’s emerging “second city,” the ‘Ewa and Kapolei areas are expected to experience the most growth in the study corridor (DPP 2000). This is due in large part to several major residential,

governmental, and education projects currently under development. In particular, residential growth in West O‘ahu is expected to result in the need for additional population-serving employment, such as retail and service jobs.

Real Property Tax

For the fiscal year ending June 30, 2007, real property tax revenues totaled \$685,868,000. This comprised approximately 70 percent of total revenues for the General Fund, which is the primary funding source for the City’s operating budget, and accounts for more than 60 percent of all City revenues. Other budget funds, including the Highway Fund, Sewer Fund, and Liquor Commission Fund, have different sources of revenue and collectively comprise less than 40 percent of the total budget.

**4.3.3 Environmental Consequences
and Mitigation**

Environmental Consequences

No Build Alternative

Under the No Build Alternative, the Project would not be constructed. There would not be a conversion of property and associated reduction in tax base. This alternative would result in increased traffic congestion and delays with an associated loss in productivity.

Project

Employment

The Project will require the acquisition of some commercial and industrial properties. This will

Table 4-3 Forecast Employment for the Project Region and Study Corridor

	2000	2030	2000-2030 Compound Annual Growth Rate
O‘ahu	501,100	630,700	0.8%
Study corridor	399,300	524,200	0.9%

Source: O‘ahu Regional Transportation Plan Data, Department of Business, Economic Development and Tourism.

displace the businesses using the properties as well as their employees. However, it is anticipated that these businesses will be relocated to new sites.

Once constructed, the Project will employ workers for maintenance and operation of the system. It is anticipated that workers will be hired from the existing local labor force and trained to meet job requirements. The number of new workers will be small compared to the total labor force on O‘ahu and is included in the operating and maintenance costs for the Project. Workforce costs are included in the operating and maintenance cost estimates discussed in Section 6.4.1. Employment related to construction of the Project is discussed in Section 4.18.

Real Property Tax

For the Project, property will be acquired from private owners and converted to a transportation use that is owned by the City. This will result in a direct reduction in annual property tax revenues. These reductions are estimated to be \$1.2 million as a result of the Project. A more detailed table of results is included in the Economics Technical Report (RTD 2008c). Section 4.19 discusses the potential indirect economic effects of new development and redevelopment near the project alignment and around the stations, which could have a beneficial effect on the regional economy.

Mitigation

The Project is not expected to result in long-term adverse effects on the economy or property tax revenues. No mitigation measures will be needed.

4.4 Acquisitions, Displacements, and Relocations

This section documents the effects on properties from required right-of-way acquisition for the Project. For additional information and references, see the *Honolulu High-Capacity*

Transit Corridor Project Land Use Technical Report (RTD 2008b) and the *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report* (RTD 2008d).

4.4.1 Background and Methodology ***Regulatory Context***

Federal and State laws govern the acquisition of property for transportation projects. The Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (49 CFR 24), requires all Federal agencies to meet certain standards for the fair and equitable treatment of persons displaced by federally supported actions. The USDOT’s regulations implementing this act require that relocation and advisory assistance be provided to all individuals and businesses displaced and that it be done in accordance with the provisions set forth in 49 CFR 24. Comparable housing that is decent, safe, and sanitary must be available and affordable for displaced persons, and commercial space must be available for displaced businesses. It also prohibits discrimination with regard to appraisals and acquisitions of properties. HRS Chapter 101, Eminent Domain, and Chapter 113, Land Acquisition Policies for Federally Assisted Programs, encompass these Federal regulations.

Methodology

The parcels that could be affected by the Project were identified based on preliminary engineering drawings prepared for the Project. Generally, if only a portion of the property will be required and remain usable, then it is considered a *partial acquisition*. However, if a substantial amount of the land and/or the primary structure is located within the portion of the parcel to be acquired, then the entire property will be purchased. This is referred to as a *full acquisition*. For residential properties, if the right-of-way line comes within approximately 5 feet of a residential structure, it is considered a full acquisition. If the right-of-way line is more

than 5 feet away, it is generally considered a partial acquisition. For commercial properties, including situations where the commercial property could lose its function, full acquisition will be considered. Once it is determined that a parcel will be acquired, the displacement and relocation of residences, businesses, and uses will be analyzed. Information regarding the amount of acreage needed for the Project, the number of parcels to be acquired, the type of acquisition (partial or full), the type of uses affected, and the number of dwelling units and businesses that will be relocated were included in the analysis.

Most of the information used to assess the types of land uses that will be affected by displacements and relocations was based on property tax assessment records. This information was used to determine land use type, including residential structures and units, commercial-type structures, and square footage. In addition to reviewing real property tax records, a windshield survey was conducted in May 2009 to determine the number of businesses and, in some cases, residential units that will be acquired.

4.4.2 Affected Environment

The project alignment traverses a variety of different land uses and different urban, suburban, rural, and agricultural environments as described in Section 4.2.

Some land within the study corridor has been designated as ceded land. Ceded lands are those crown, public, and government lands that were once held by the kingdom of Hawai‘i. With the annexation of Hawai‘i in 1896, 1.8 million acres were ceded to the Federal government. In 1959, the Federal government granted absolute title to approximately 1.2 million acres of ceded lands to the State. These lands are held by the State as a public trust.

4.4.3 Environmental Consequences and Mitigation

Environmental Consequences

No Build Alternative

Under the No Build Alternative, the Project would not be built and would not have any impacts to residential or commercial properties. Although the projects in the ORTP will be built, their environmental impacts will be studied in separate documents.

Project

Table 4-4 summarizes the number of partial and full parcel acquisitions required for the Project. Appendix C provides information on a parcel-by-parcel basis for partial and full acquisitions anticipated for the Project.

A partial acquisition typically is either a narrow strip of land or a more substantial portion of a large parcel. It is assumed that for the properties

Table 4-4 Acquisitions and Displacements Summary

	Parcel Acquisitions			Access Easements	Displacements by Land Use			
	Total*	Partial	Full		Residential Units	Commercial and Industrial Businesses	Churches	Total
Project	191	158	33	12	20	61	1	82

*Total parcel acquisitions includes full and partial acquisitions.

Partial Acquisition = acquisition of only land and possibly minor buildings on a property. The existing owners will continue to be able to own and use the property in the future.

Full Acquisition = acquisition of the entire property—land and all buildings on the property. The existing owner and existing land uses will be displaced by project improvements.

that will be partially acquired, existing land uses will not change.

Full acquisition of land will result in displacements and relocations. *Displacement* means that the land, including any structures, will be acquired and converted to transportation use and the user of that property will be relocated.

Table 4-4 also shows the number of residential units, commercial and industrial businesses, and a church located on the parcels that will be displaced as a result of the anticipated full acquisitions.

Considering that there are approximately 780 parcels adjacent to the alignment, the full acquisitions and displacements from the Project will be a small change to the commercial and residential elements along the alignment. While displacements of residential and commercial properties may be difficult for the individuals involved, the number of displacements for a project of this length and magnitude will not have a substantial effect.

For land designated as ceded lands within the project right-of-way, ownership of these lands will not change. The Rapid Transit Division (RTD) will obtain the appropriate permissions from the State for any ceded lands needed for the Project.

Mitigation

Where relocations will occur, compensation will be provided to affected property owners, businesses, or residents in compliance with all applicable Federal and State laws and will follow the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act (49 CFR 24). The following measures will be implemented for relocations:

- The City will assist all affected persons in locating suitable replacement housing and business sites within an individual's or business's financial means.

- A minimum 90-day written notice will be provided before any business or resident will be required to move.
- Relocation services will be provided to all affected business and residential property owners and tenants without discrimination; persons, businesses, or organizations that are displaced as a result of the Project will be treated fairly and equitably.
- Where landscaping, sidewalks, and driveway access will be affected by the Project, coordination will occur with the landowner, and these property features will be replaced and/or the property owner will be compensated in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act.

4.5 Community Services and Facilities

This section describes the community services and facilities, public services, and utilities in the study corridor and the potential effects on these resources for the Project as compared to the No Build Alternative. Community facilities are schools, libraries, religious institutions, cemeteries, government institutions, and military installations. Public and private parks and recreational facilities include pedestrian trails, golf courses, regional recreational complexes, community and neighborhood parks, memorial parks, and a major sports stadium. Public services include police, fire, hospitals and emergency medical services, and transit (bus). Utilities include electricity, natural gas, telecommunications, and surface water management. For additional information and references, see the *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report* (RTD 2008d).

4.5.1 Background and Methodology Regulatory Context

Section 6(f) of the Land and Water Conservation Fund Act of 1964 was created to preserve, develop,

and increase accessibility of outdoor recreational resources. In the case of a transportation project, Section 6(f) protects recreational properties that were constructed from Land and Water Conservation Fund (LWCF) funds from being converted to transportation use. Section 4(f), as amended, of the USDOT Act of 1966 (49 USC 303) protects public parks and recreational lands, wildlife refuges, and historic sites of National, State, or Local significance.

The National Park Service's Federal Lands to Parks Program conveys surplus Federal land to communities under Section 203(k)(2) of Public Law 91-485, as amended (40 USC 484). The Program helps ensure continued public access and stewardship of resources and, for public park and recreational purposes, is usually done at no cost.

Methodology

Community services and facilities within one-half mile of the project alignment were identified via Geographic Information System (GIS) information provided by the City, Internet sources, and field verification. Parks and recreational facilities within one-half mile of the alignment were identified based on information from the General Plan (DPP 2002a), the Department of Planning and Permitting (DPP), the Department of Parks and Recreation (DPR), land use and zoning plans, the State of Hawai'i Department of Land and Natural Resources (DLNR), and field visits. Public services within one-half mile of the project alignment also were identified from the information above. These included fire stations, police stations, and hospitals.

Right-of-way acquisition and displacement impacts were analyzed to assess if community services and facilities, public service buildings, and/or public services would be disrupted or changed as a result of long-term operation of the Project. If right-of-way would be required, it was then determined whether full or partial acquisition would be required and the types of facilities and amenities

that would be displaced by property acquisition (see Section 4.4 for information on acquisitions).

4.5.2 Affected Environment

The following sections describe existing community facilities, parks and recreational facilities, public services, and utilities within one-half mile of and along the project alignment. **Figures 4-9 through 4-12** illustrate the general location of existing religious institutions, police and fire services, hospitals and medical facilities, libraries, schools, parks, and recreational facilities within one-half mile of the project alignment. These figures identify, by name, facilities affected by the Project.

Community Facilities

Many community facilities are within one-half mile of the project alignment and station areas. Some are on large parcels with associated recreational amenities or large parking facilities. Others are buildings or structures located on small parcels. Only a few community facilities are located in the 'Ewa area because of its rural, agricultural environment. In contrast, substantial numbers of community facilities are clustered in Central O'ahu and the PUC, including the dense urban environment of Downtown Honolulu.

Many different types of community facilities are within one-half mile of the project alignment. These include schools, libraries, churches, hospitals, parks and recreational areas, and cemeteries. Each is noted below.

Schools

There are 46 schools within one-half mile of the project alignment. The following 11 schools are adjacent to the alignment:

- Waipahu Intermediate
- St. Joseph Elementary (private)
- Waipahu High School
- Leeward Community College

- UH Mānoa Urban Garden Research Center
- Pearl City Elementary
- Joy of Christ Preschool (private)
- Holy Family Catholic Academy (private)
- Kalihi Kai Elementary
- Kalākaua Middle School
- Honolulu Community College

Public schools also typically have recreational amenities, including baseball diamonds, soccer fields, and gymnasiums. However, these types of recreational resources are considered a community facility, not a park, because their primary use is public education, not recreation.

Libraries

Five libraries are within one-half mile of the project alignment. There are no libraries adjacent to the Project.

Religious Institutions

Approximately 82 religious institutions are within one-half mile of the project alignment. Fifteen of these are adjacent to the project alignment. They are listed in [Table 4-5](#) with addresses.

Cemeteries

Five cemeteries are located within one-half mile of the project alignment. One cemetery near Aloha Stadium and one near Waimano Home Road are adjacent to the project alignment.

Government and Military Facilities

For many decades, a sizable Federal government presence has been located on O‘ahu. The project alignment is adjacent to Pearl Harbor Naval Station, Hickam Air Force Base, and Fort Shafter Military Reservation. Land uses within these installations nearest the project alignment are primarily used for housing, offices, or recreation.

There are both Local government and Federal office buildings adjacent to the project alignment, as well as Honolulu International Airport (a State

facility). In addition, a correctional facility, a post office, and several public housing complexes are in the study corridor.

In addition to military facilities, the following government facilities are adjacent to the project alignment:

- Pearl City Post Office
- Honolulu Post Office
- Honolulu International Airport
- Disabled American Veterans Memorial Headquarters Office
- Ke‘ehi Transfer Station
- O‘ahu Community Correctional Facility
- Prince Jonah Kūhiō Kalaniana‘ole Federal Building

Honolulu International Airport

Honolulu International Airport (HNL) is owned by HDOT and includes 4,520 acres of land and water. The airport has four active runways; is served by 27 international and domestic carriers, 3 interisland airlines, and 4 commuter airlines; and has more than 20 million visitors each year. In addition, Honolulu International Airport is an international gateway for air freight activity between the United States and Pacific Rim countries. The airport has more than 450,000 square feet of warehouse space and more than 1 million square feet of cargo ramp area. Cargo facilities at Honolulu International Airport are located at five different sites in the airport complex. There are nine cargo terminal buildings.

At any given daytime or evening hour, an estimated 10,000 people are in the airport complex as passengers, employees, or visitors. Approximately 15,000 people work at the airport every day and another 20,000 depend on the airport daily for their livelihood. The airport has a workforce of 550 employees, half of whom are custodians and maintenance personnel.

Figure 4-9 Community Resources and Facilities within One-half Mile (East Kapolei to Fort Weaver Road)

Figure 4-10 Community Resources and Facilities within One-half Mile (Fort Weaver Road to Aloha Stadium)

Figure 4-11 Community Resources and Facilities within One-half Mile (Aloha Stadium to Kalihi)

Figure 4-12 Community Resources and Facilities within One-half Mile (Kalihi to Ala Moana Center)

Table 4-5 Religious Institutions Adjacent to Project Alignment

Name	Address
New Hope Leeward	94-050 Farrington Highway
Koinonia Christian Center	94-216 Farrington Highway #A2
West O'ahu Christian Church	94-420 Farrington Highway
Iglesia Ni Cristo	94-592 Farrington Highway
St. Joseph Waipahu	94-675 Farrington Highway
Bible Baptist Church	94-210 Hanawai Circle
Hawai'i Fellowship	94-810 Moloalo Street
Church of Jesus Christ of Latter Day Saints	94-210 Kahualii Street
Waipahu Church of Christ	94-289 Kahualena Street
Alpha Omega Christian Fellowship Church	96-171 Kamehameha Highway
Bethesda Temple Apostolic Church	941 Kamehameha Highway #202
Joy of Christ Lutheran Church	784 Kamehameha Highway
La Luz Del Mundo	719 Kamehameha Highway #A206
Child Evangelical Fellowship	1190 Dillingham Boulevard
Ola Nui	760 Halekauwila Street

Parks and Recreational Facilities

There are approximately 53 parks and recreational facilities within one-half mile of the project alignment. These parks and recreational resources are scattered throughout the area and include large regional or community facilities exceeding 100 acres, as well as smaller neighborhood resources less than one-half acre in size. They include pedestrian trails, golf courses, regional recreational complexes, community and neighborhood parks, memorial parks, national monuments, and a major sports stadium. These facilities include publicly owned resources, some of which are on military bases where public access is restricted, as well as resources that are privately owned. Of these 53 facilities, 12 are directly adjacent to the project alignment right-of-way:

- West Loch Golf Course (public)
- Neal S. Blaisdell Park (public)
- 'Aiea Bay State Recreational Area (public)

- Richardson Field (military)
- Aloha Stadium (public)
- Pearl Harbor Historic Sites (public and private)
- Nimitz Field (military)
- Ke'ehi Lagoon Beach Park (public)
- Walker Park (public)
- Irwin Memorial Park (public)
- Mother Waldron Neighborhood Park (public)
- Future Queen Street Park (public)

The Pearl Harbor Historic Sites (USS Bowfin Submarine Museum and Park, Pacific Aviation Museum, Battleship Missouri Memorial, and World War II Valor in the Pacific National Monument [formerly the USS Arizona Memorial]) receive more than 1.5 million visitors a year, making them among the most visited destinations in the Pacific. These resources are adjacent to the Project.

Section 6(f) Resources

The Hawai'i State Parks and Recreation Department was contacted in September 2008. Two parks adjacent to the alignment have received LWCF funding and are, therefore, Section 6(f) resources. They are the Neal S. Blaisdell Park and 'Aiea Bay State Recreation Area. No Section 6(f) lands will be converted to a project use. For this reason, they are not considered in Section 4.5.3.

Aloha Stadium

Aloha Stadium, owned and maintained by the State, comprises 97 acres. Approximately 56 acres of this property was originally owned by the U.S. Department of the Interior and was transferred to the City on June 30, 1967. The Quitclaim Deed for that transfer contains use conditions and covenants that require the land to be used and maintained for public recreational purposes. The Quitclaim Deed also states that "the property shall not be sold, leased, assigned, or otherwise disposed of except to another local governmental agency that

the Secretary of the Interior is satisfied can ensure the continued use and maintenance of the property for the aforesaid purposes.” The Quitclaim Deed further states that if any condition or covenant is breached, regardless of cause, the property is to revert to the United States upon demand in writing by the Secretary of the Interior.

In October 1970, with the approval of the Department of the Interior, the property was transferred to the State with similar provisions as the Quitclaim Deed. The Aloha Stadium was then developed on the property, along with other parcels of land the City had obtained from private sources, and transferred to the State (DTS 1992).

Emergency Services

The Island of O‘ahu is governed by the City, which provides a number of public services to both residents and businesses. The City has 18 emergency management centers that are typically located at either fire stations or hospitals and provide advanced life support, ambulance, and paramedic services. In addition, the Honolulu Department of Emergency Services has responsibility over Homeland Security and natural disasters caused by thunder and lightning, hurricanes, tropical storms, tsunamis, high surf conditions, floods, and earthquakes.

Police

The Honolulu Police Department provides public safety to residents and businesses via eight patrol districts. The project alignment traverses District 1 Downtown, District 3 Pearl City, District 5 Kalihi, District 7 East Honolulu, and District 8 Kapolei.

The police stations listed below are within one-half mile of the alignment, but none of them are adjacent to the alignment.

- Waipahu Police Department
- Pearl City Police Station
- Central Honolulu City Police Department

- Honolulu City Police Department Alapa‘i Headquarters

Fire

The Honolulu Fire Department has 5 battalions, or districts, on O‘ahu and 42 individual fire stations; 11 of these are within one-half mile of the alignment. Two are adjacent to the alignment:

- Waterfront Fire Station
- No. 8 Mokulele Fire Station

Hospitals and Medical Facilities

There are 21 hospitals and medical facilities within one-half mile of the alignment. Five of these are adjacent to the project alignment:

- Kahi Mohala Behavioral Health
- St. Francis Medical Center West
- Waipahu Medical Center
- Y. Makalapa Branch Medical Clinic
- Dillingham Medical Building

Buses

O‘ahu Transit operates the bus system in the project region. The company works closely with the Honolulu Police Department. Individual bus operators are provided with two-way communication equipment and can call for assistance should there be a problem on a bus. In addition, the company participates with the Honolulu Police Department in the Mobile Watch Program. This program provides assistance to anyone in need of help. Anyone can board a bus and inform the bus operator of his or her need for either public safety or emergency medical assistance.

Utilities

Both public and private utilities operate within or adjacent to the study corridor and within the project alignment. The City provides many urban services. The Honolulu Board of Water Supply provides drinking water. The Department of Environmental Services provides solid waste, wastewater, and stormwater services. The Hawaiian Electric Company (HECO), an investor-owned utility

regulated by the Hawai‘i Public Utilities Commission, provides electricity to residential, commercial, and industrial customers. The Gas Company is also an investor-owned utility regulated by the Hawai‘i Public Utilities Commission and provides synthetic natural gas manufactured at Campbell Industrial Park to mostly commercial and industrial customers on O‘ahu. Telecommunications services are provided by Hawaiian Telecom. Cable services are provided by Oceanic Time Warner Cable.

Much of the project alignment is along heavily urbanized roadways. Many utilities and associated infrastructure are located in the study corridor. Typically, overhead utility lines and buried conduits and pipelines are installed in the right-of-way for those roadways. At-grade utility facilities, such as substations, pumping stations, pressurizing stations, and gas odorizing stations, are on parcels adjacent to the right-of-way.

4.5.3 Environmental Consequences and Mitigation

Environmental Consequences

No Build Alternative

Under the No Build Alternative, the Project would not be built and, therefore, would not have any impacts to community services and facilities, parks and recreational facilities, public services, or utilities. However, continued congestion within the project alignment would impact emergency response times. Although the projects in the ORTP are assumed to be built, their environmental impacts will be studied and reported in separate documents.

Project

Community Facilities

Section 4.5.2 lists schools, libraries, churches, parks and recreational facilities, and cemeteries adjacent to the alignment. Of these, one church will be displaced by the Project. Land from 14 community facilities will be partially acquired by the Project. [Table 4-6](#) lists community, government,

and military facilities that will be affected by the Project. No cemeteries or known burial sites will be affected by the Project.

The schools that will be affected by partial acquisitions from the Project are Honolulu Community College, Waipahu High School, Leeward Community College, and the UH Mānoa Urban Garden Research Center. The Alpha Omega Christian Fellowship will be displaced as part of full acquisition of the building where this facility is located.

Government and Military Facilities

Additional community facilities affected by partial property acquisition will involve various parcels owned by the State and Federal governments. The Project will require partial acquisition or use of land from parcels associated with government or military facilities. These are the Pearl City Post Office (0.1 acre), Honolulu Post Office (0.1 acre), the Prince Kūhiō Kalaniana‘ole Federal Building/Courthouse (0.3 acre), and the O‘ahu Correctional Facility (0.2 acre). Partial acquisitions will be required at Little Makalapa Naval Housing and Hickam Air Force Base. A utility easement will be required from the Pearl Harbor Naval Reservation. The military properties include lands used for military operations as well as residential accommodations for enlisted personnel and their families.

Honolulu International Airport

The guideway alignment is being designed to minimize the effect on current and future operations at the airport. The guideway alignment has been located to avoid the new Mauka Terminal and airplane tarmac planned for the location of the existing commuter terminal parking lot. Approximately 2 acres of airport land will be needed to accommodate the placement of elevated guideway support columns and for two passenger stations on airport property.

Table 4-6 Affected Community, Government, and Military Facilities

Community Facility	Effect ¹	Mitigation
Schools		
Honolulu Community College	Partial acquisition of land (0.3 acre); 7 light posts will be removed and impacts a lawn area.	Light posts will be replaced. Property use agreement or acquisition will be negotiated with the University of Hawai`i System.
Waipahu High School	Partial acquisition of land (1.4 acres); relocation of portable classroom buildings and area near the football field.	The affected portable buildings will be relocated on school property. Football field will be protected by a retaining wall and a new access road to the field will be provided.
Leeward Community College	Partial acquisition of land (2.5 acres); affected area includes portable administration buildings and parking lot; 180 parking spaces will be removed.	The portable administration buildings and parking spaces will be relocated. Property use agreement or acquisition will be negotiated with the University of Hawai`i System.
UH Mānoa Urban Garden Research Center	Partial acquisition of land (0.2 acre); an urban agricultural research garden owned and operated by UH Mānoa.	Property use agreement or acquisition will be negotiated with the University of Hawai`i System.
Religious Institutions		
Alpha Omega Christian Fellowship Church	Displacement of community church located in the area being acquired for the Pearl Highlands Station.	Property will be acquired in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act.
Parks and Recreational Facilities		
Nimitz Field	0.7 acre needed adjacent to the H-1 Freeway.	Property use agreement or acquisition will be negotiated with the Federal government.
Ke`ehi Lagoon Beach Park ²	2.8 acres affected either directly or by overhead guideway; affects park entrance, parking, and tennis courts near the H-1 Freeway.	Tennis court will be relocated within Ke`ehi Lagoon Beach Park. Area under guideway will be configured to provide additional parking.
Aloha Stadium ²	2 acres affected at `Ewa edge of property for guideway and station, pave shared-use parking area.	Transit will provide additional access to the stadium. Kamehameha lot will be paved. Park-and-ride spots will be used for stadium events.
Government and Military		
Pearl City Post Office	Partial acquisition or use of land (0.1 acre) adjacent to Kamehameha Highway.	Property use agreement or acquisition will be negotiated with the Federal government.
Honolulu International Airport	Partial acquisition or use of land (2 acres) .	Property use agreement or acquisition will be negotiated with the Federal government.
Honolulu Post Office	Partial acquisition or use of land (0.2 acre).	Property use agreement or acquisition will be negotiated with the Federal government.
Prince Kūhiō Kalaniana`ole Federal Building/Courthouse	Partial acquisition or use of land (0.3 acre).	Property use agreement or acquisition will be negotiated with the Federal government.
O`ahu Correctional Facility	Partial acquisition of land (0.2 acre); 13 off-street parking spaces will be displaced.	Property use agreement or acquisition will be negotiated with the State of Hawai`i Department of Public Safety.
Little Makalapa Naval Housing	Partial acquisition or use of land (0.3 acre).	Property use agreement or acquisition will be negotiated with the Federal government.
Pearl Harbor Complex	Utility easement.	Property use agreement will be negotiated with the Federal government.

¹ Acres of land acquisition are estimated based on Preliminary Design Plans and indicate the area of land underneath the elevated guideway. For many resources, the acquisition of land will be from support columns, and the actual acreage of impact will be less than shown in this table.

² Section 4(f) uses are discussed in Chapter 5, Section 4(f) Evaluation.

Near the overseas parking garage, a station entrance building will be constructed on what is now a surface parking lot just 'Ewa of the parking garage exit lanes, fronting Alaonaona Street, removing about 110 existing parking spaces. There will be a need to create pedestrian connections from the station to both the overseas and interisland terminals.

Farther Koko Head along Aolele Street, land will be needed for a station and for approaching Lagoon Drive where the guideway will pass near the end of runways 22R/4L and 22L/4R. The City will work with the Airport to relocate Runway 22R/4L approximately 750 feet makai and Runway 22L/4R approximately 300 feet makai to make the Runway Protection Zones compatible with the Project and existing buildings near Lagoon Drive. The City is working with the Airport and FAA to eliminate or mitigate any other obstructions that may exist; coordination is taking place to ensure the Project will not affect Airport operations. This approach was agreed upon at a meeting held on September 30, 2009, between the City, FAA, and HDOT and finalized during a phone call with those parties.

Parks and Recreational Facilities

The Project will affect Ke'ehi Lagoon Beach Park and Nimitz Field.

The City-owned Ke'ehi Lagoon Beach Park is a 72-acre park located at Lagoon Drive near Honolulu International Airport. It contains 12 tennis courts, a baseball field, walking trails, picnic areas, and restrooms. The Project will move 4 of the 12 tennis courts to accommodate the guideway columns. The tennis courts that will be moved are at the edge of the park near Nimitz Highway.

Nimitz Field consists of five baseball diamonds on 10 acres on a larger military-owned property. Use or partial acquisitions of the grass fields near

the fence line along Kamehameha Highway will be required for guideway supports.

Aloha Stadium

Aloha Stadium will be affected by the Project by construction of an elevated guideway and rail transit station through a portion of the Aloha Stadium parking area along the 'Ewa edge of the property parallel to Kamehameha Highway. The Project will affect approximately 2.0 acres of land that is either under the guideway or station and the existing unpaved stadium event overflow parking area Koko Head of Salt Lake Boulevard.

The elevated guideway will be about 35 to 40 feet above the ground through this area and 28 to 30 feet wide. It will be supported by columns that are about 6 to 8 feet in diameter, placed about 120 feet apart. The base of each of the columns will impact approximately 100 square feet of area. The elevated guideway will pass over a small portion of the main parking lot, next to Kamehameha Highway. Approximately four columns will be placed in the main parking lot to support the guideway, requiring removal of approximately three parking spaces. The guideway will cross over Salt Lake Boulevard at Kamehameha Highway, continuing above the existing gravel overflow parking lot, supported by approximately six columns. In the overflow lot, the Project will construct a rail station and bus transit center to serve the stadium and will pave and stripe the existing gravel lot. Approximately 600 paved parking spaces will be for use by stadium patrons during stadium events. Currently, the gravel overflow lot is not used for stadium parking except during events, when attendants are required to help guide cars and collect parking fees.

Approximately six additional guideway support columns will be located on the strip of Aloha Stadium property south of the overflow parking lot next to Kamehameha Highway. At the request of the Department of Accounting and General

Services, a third track on the elevated guideway will be constructed for trains to park in this area to provide more frequent service before and after stadium events. This will benefit stadium patrons by providing additional transit service during stadium events to accommodate the anticipated demand.

This Project will provide transportation benefits to Aloha Stadium that will enhance its ability to provide recreational opportunities to users, offering additional transit choices, greater transit capacity, and improved service. The recreation use of the site will not change as a result of the Project. The Stadium will be one of 21 station stops on the 20-mile system that will be used by more than 100,000 riders on an average weekday. Trains will arrive every few minutes, and extra trains can be coordinated to accommodate peak demand during Aloha Stadium events. Normally, the system will provide capacity for more than 6,000 riders per hour in each direction, but this could be greatly increased to meet demand during Stadium events or other peak periods. In addition to providing train service, the Project will also improve automobile access by transforming the existing gravel overflow parking area into a paved, striped parking lot and bus transit center. This will enhance the existing auto access to the overflow parking lot. In addition, buses, shuttles, and taxis will be able to pull off-street to serve the station and Aloha Stadium, providing a multi-modal transit center that will provide access from all directions. The lot will continue to be set aside for the exclusive use of stadium patrons during events, but at other times would be available for commuters. The project will provide additional transportation options and increase overall accessibility for stadium property users.

The Aloha Stadium Authority, Aloha Stadium Manager, and Department of Accounting and General Services have participated in the planning of the Project through the Aloha Stadium property,

including the elevated guideway, parking area, and station elements to minimize impact to the stadium property. In the context of the original land transfer the Department of Accounting and General Services requested Federal Lands to Parks Program concurrence that this Project is an acceptable transportation improvement and provides value in supporting the recreational use of Aloha Stadium. The effects on Section 4(f) recreational resources are discussed in more detail in Chapter 5, Section 4(f) Evaluation.

Public Services

For all public services, response time during emergencies is critical and, for most of them, access to the sites of emergencies requires the use of public roadways. The Project will improve the operation of the roadway network as compared to the No Build Alternative by reducing congestion and will improve emergency response times. The Project will not affect police, fire, or emergency medical facilities adjacent to the alignment. A Maintenance of Traffic (MOT) Plan will also be developed during final design to manage traffic and emergency services during construction (see Chapter 3 for more information about the MOT Plan).

Section 4.5.2 lists two fire stations and six hospitals and medical facilities adjacent to the alignment. There will be no effect on these facilities.

Utilities

A number of properties owned by utility providers will be affected by partial acquisitions. This includes two properties owned by HECO and one owned by HDOT. A narrow strip of land will be acquired from each. Coordination will occur to further assess these effects during preliminary and final engineering.

In addition to the direct effects on utilities from project right-of-way acquisitions, the construction of a new fixed guideway transit system will involve relocation and modification of existing utilities.

These construction effects are discussed in more detail in Section 4.18.

Mitigation

Measures to mitigate effects to community, government, and military facilities are summarized in [Table 4-6](#).

Community Facilities

Mitigation efforts will involve coordination with individual property owners as necessary to appropriately address effects to community facilities. Effects on access, signage, or parking will be replaced or compensation will be provided. In addition, all property will be acquired following the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act and applicable State regulations.

The City will coordinate and consult with other agencies and stakeholders on the final design of the streetscape affected by the Project.

Parks and Recreational Facilities

Effects to parks and recreational resources from partial acquisitions will be mitigated in coordination with parkland property owners. [Table 4-6](#) lists mitigation measures for each affected resource. A separate evaluation has also been conducted for each publicly owned parkland property that meets Federal criteria as a Section 4(f) resource (see Chapter 5).

Public Safety and Security

As described in Section 2.5.4 of this Final EIS, the Project includes safety and security measures to protect public services and facilities. Additional mitigation measures will include:

- Design and architectural details to enhance safety
- Use of closed-circuit television cameras and lighting included as a specific design measure

- Security patrols of transit property and vehicles, ongoing train safety awareness education, and ongoing public security awareness education

4.6 Neighborhoods

This section describes the neighborhoods adjacent to the project alignment and the anticipated effects on these neighborhoods from the long-term operation of the Project. Effects on neighborhoods include adverse and beneficial effects on neighborhood character, quality of life, and cohesion. For additional information and references, see the *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report* (RTD 2008d).

4.6.1 Background and Methodology

Neighborhood board boundaries were used to define neighborhood divisions. Neighborhood boards were created by City Charter to facilitate citizen participation on the island and in regional planning activities. Only those neighborhoods adjacent to the project alignment are discussed in this section. [Figure 4-13](#) illustrates the neighborhood boundaries. The discussion of local neighborhoods is focused on their individual demographics and character.

4.6.2 Affected Environment Neighborhoods

The Project transects eight city-designated neighborhoods ([Figure 4-13](#)). In 2000, the population within the study corridor was about 552,100. The area had experienced moderate growth over the previous decade with less than 1 percent average annual growth per year.

Residents in the neighborhoods of the study corridor are very diverse with 60 to 80 percent of Asian ancestry. However, based on the 2000 census, the Airport and Waikīkī neighborhoods are more than 50 percent White, including

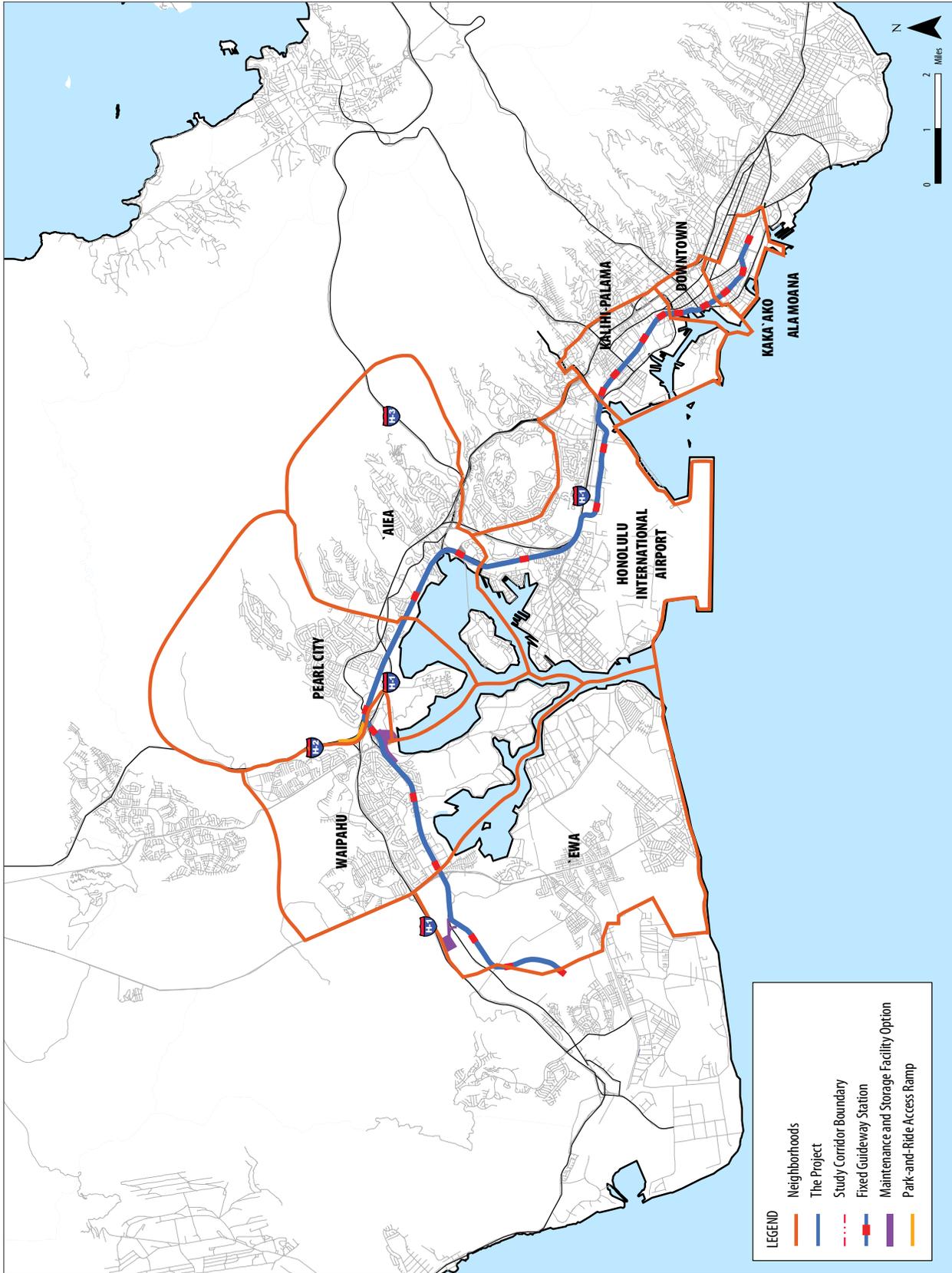


Figure 4-13 Corridor Neighborhoods

military personnel and their dependents, as well as people who have moved from the mainland. In general, there is a wide diversity of household sizes throughout the study corridor, ranging from studio apartments to larger multi-family households.

Due to their location in the urban core, the Kalihi-Palama, Downtown, Ala Moana-Kaka'ako, Waikiki, and McCully-Mō'ili'ili neighborhoods are distinct from the 'Ewa O'ahu neighborhoods, which are predominantly comprised of single-family residences. Households in these urban core neighborhoods tend to be smaller with more than 40 percent of individuals living alone.

The following paragraphs describe the general land use, character, and unique physical or social attributes of the study corridor neighborhoods.

'Ewa

'Ewa is one of O'ahu's suburban growth centers and is experiencing rapid change. It encompasses the communities of Kapolei (the "second city"), 'Ewa Villages, 'Ewa by Gentry, Honouliuli, 'Ewa Beach, Ocean Pointe, and Iroquois Point. Between 1990 and 2000, the population of this neighborhood doubled as sugar cane lands were developed into housing and commercial uses. Despite ongoing development, some former sugar cane land is being used for diversified agriculture.

Waipahu

Historically, the Waipahu community makai of Interstate Route H-1 (H-1 Freeway) was a sugar plantation town, and the community retains strong identity to this historic economic activity. Newer apartment buildings and strip retail plazas are generally limited to the fringes of the commercial district along Farrington Highway. Waipahu has a recreational center, health clinics, churches, and social services offices. Many residents travel outside of the community for employment.

Pearl City

The Pearl City area consists of residential development, mixed-commercial uses, and military housing and facilities. The community was originally developed by Benjamin Dillingham in the 1890s as Hawai'i's first planned city and suburban development for affluent and independent farmers. Retail and commercial venues include the Pearl City Shopping Center and the Pearl Highlands Center. Blaisdell Park at the edge of Pearl Harbor (East Loch) is a regional recreational amenity that is popular for outdoor community activities. A small area known as the Banana Patch lies within the Pearl City neighborhood boundary. This neighborhood is unique in that, while it is in an urban region, residents are able to maintain an agricultural, subsistence lifestyle. The community, which is discussed in more detail in Section 4.7, has a high concentration of Filipinos.

'Aiea

This community consists of residential development, mixed-commercial uses, and military housing and facilities. Most of the residential subdivisions are mauka of Kamehameha Highway. The makai areas tend to be commercial, light industrial, and military. Pearlridge Center is a major employment center and tourist destination. Many 'Aiea residents work at the nearby Pearl Harbor Naval Base, Hickam Air Force Base, and Marine Corps Base Camp Smith.

Airport

The Airport neighborhood is characterized by non-residential land uses. The Airport Commercial District, located makai of the Nimitz Viaduct, is primarily an industrial, commercial, service-oriented district. The Māpunapuna Light Industrial District, between the Moanalua Freeway, Moanalua Stream, Nimitz Highway, and Pu'uloa Road, includes primarily light industrial businesses with some retail and commercial businesses and offices. The Fort Shafter Military Reservation, mauka of the H-1 Freeway in Moanalua, is an

active military base. The Pearl Harbor Naval Base residential housing area (known as Catlin Housing) is bounded by Salt Lake Boulevard, Pu‘uloa Road, Nimitz Highway, and Namur Road/Valkenburgh Street.

Kalihi-Palama

The Kalihi-Palama neighborhood contains a wide variety of land uses with unique community identities, such as Kalihi Kai, Kapālama, and Iwilei. The Kalihi-Palama communities makai of the H-1 Freeway are a mix of residential, business, retail, and industrial-commercial land uses. Residential housing is generally more prevalent in the mauka areas, and commercial and industrial businesses are more prevalent in the makai areas. Businesses vary in size from “mom-and-pop” stores to big box retail establishments, such as Costco and Best Buy, as well as Dole Cannery Mall. The Bishop Museum (mauka of the H-1 Freeway) is a popular tourist attraction that houses an extensive collection of Hawaiian artifacts and royal family heirlooms.

Downtown

Downtown Honolulu is a vibrant city center and one of the State’s largest employment centers. It is experiencing substantial redevelopment to higher-density land uses. It is the State’s principal government office and business center, as well as the location of many tourist attractions. It continues to have a substantial residential population. The Hawai‘i Capital District is the seat of City and County, State, and Federal government offices and includes a number of historic mid-19th century buildings. The historic Chinatown District is a popular attraction for O‘ahu residents and tourists. High-rise condominiums and apartments are interspersed throughout Downtown. Fort Street Mall is a major gathering place for Hawai‘i Pacific University students, downtown workers, and residents.

Ala Moana-Kaka‘ako

The Kaka‘ako community encompasses the 614-acre Kaka‘ako Community Development District from the shoreline makai of South King Street and between Pi‘ikoi and Punchbowl Streets. Redevelopment is replacing old one- and two-story warehouses and light industrial uses with new urban mixed-use development. The area between Ke‘eaumoku and Pensacola Streets mauka of Kapi‘olani Boulevard is characterized by two- and three-story walk-up apartments in a quieter residential environment. The neighborhood’s shopping and retail centers, especially the Ala Moana and Ward Centers, are popular with residents as well as tourists staying in nearby Waikiki. These centers are being expanded and redeveloped. Other activity centers include a number of popular parks, the Neal S. Blaisdell Center and Concert Hall, and the Hawai‘i Convention Center.

Demographic Characteristics

Table 4-7 presents economic and racial characteristics for each neighborhood based on the 2000 census data. It illustrates considerable variation in neighborhood population size and median household income. Racial characteristics vary less widely. Military housing areas in the Airport neighborhood have higher percentages of White and Black residents in comparison to the racial composition of O‘ahu.

4.6.3 Environmental Consequences and Mitigation

Environmental Consequences

This section evaluates potential effects on neighborhoods adjacent to the project alignment. A discussion of neighborhood safety and security issues is found in Section 4.5. Aesthetic issues and their effect on adjacent land uses are discussed in Section 4.8.

No Build Alternative

Under the No Build Alternative, the Project would not be built and would not have any impacts to

Table 4-7 Year 2000 Demographic Characteristics of Neighborhoods

Neighborhood	Household Median Income	White	Black	American Indian & Alaska Native	Asian	Native Hawaiian & Pacific Islander	Other	Two or More Races
ʻEwa	\$58,230	17%	2%	0.2%	50%	7%	1%	23%
Waipahu	\$60,270	9%	2%	0.2%	62%	9%	1%	18%
Pearl City	\$66,500	16%	2%	0.2%	56%	6%	1%	18%
ʻAiea	\$55,240	18%	2%	0.3%	49%	9%	1%	21%
Airport	\$41,000	61%	12%	1.0%	11%	1%	4%	9%
Kalihi-Palama	\$31,630	4%	1%	0.1%	66%	14%	1%	14%
Downtown	\$29,950	22%	1%	0.2%	58%	6%	1%	12%
Ala Moana-Kakaʻako	\$30,620	19%	1%	0.2%	62%	4%	1%	12%
Total Oʻahu	\$52,280	21%	2%	0.2%	46%	9%	1%	20%

Source: Department of Planning and Permitting, City and County of Honolulu, 2006. Selected Economic Characteristics: 2000 by Neighborhood Area.

neighborhoods. The quality of life, however, would be reduced by increased congestion, increased travel time, and reduced mobility affecting single-occupancy vehicles, high-occupancy vehicles, and bus transit passengers.

Project

The Project will provide people living and working in the neighborhoods within the study corridor with increased mobility. The Project will provide an alternative to traveling by personal vehicle or bus transit within the existing transportation corridors. Passengers using the new transit system will experience reduced travel time to other neighborhoods and growth centers along the project alignment and near transit stations. The Project will provide a reliable and efficient travel mode for accessing the region's current and future jobs, shopping, and social resources, particularly those in Kapolei and Downtown—the major urban centers of the study corridor in the future. This increase in mobility for neighborhood residents will generally improve the quality of life, especially for those with limited financial resources and those who may be transit-dependent.

The transit agency could experience three types of crimes: crimes against persons, crimes involving transit property, and other crimes committed on transit property. To reduce the potential for crime, the FTA requires the development and implementation of a Safety and Security Management Plan (SSMP) for new fixed guideway projects (49 CFR 633). The SSMP addresses the technical and management strategies for analyzing safety or determining security risks throughout the life of the Project. The SSMP commits that the highest practical level of operational safety and security will be used. In addition, it lays the foundation for future safety and security once the Project is operating. The Honolulu Police Department, the Honolulu Fire Department, the Department of Emergency Management, and the Honolulu Emergency Services Department will be involved in preparing and implementing the SSMP. The SSMP is reviewed and updated regularly throughout the life of the Project.

Potential new development and redevelopment along the project alignment, as well as the scale of the transit system itself, may affect the character of development along the alignment. This change in character will not have a substantial effect on

the existing development patterns or community character within the surrounding neighborhoods. Currently, most of the residential housing is more prevalent within the mauka areas, and commercial and industrial businesses are primarily within the makai areas. The Project will not substantially change this development pattern. Since the transit system will be elevated, it will not create a physical barrier to pedestrian or other forms of travel within the study corridor. It also will not pose a barrier to the social network of the community since it will be located within an existing transportation corridor or in the ‘Ewa area, along a planned future transportation system.

The following paragraphs describe the Project’s effects on individual neighborhoods.

‘Ewa

The three transit stations in ‘Ewa—East Kapolei, UH West O‘ahu, and Ho‘opili—as well as the project alignment will not affect community character and cohesion in ‘Ewa because the affected area is undeveloped and primarily used for agriculture (see Section 4.2 for more information on farmlands). The area is planned to be developed into urban land uses, and the Project will support these development plans.

Waipahu

The project alignment follows Farrington Highway through the Waipahu neighborhood. The area is urbanized, with land uses along the highway consisting primarily of commercial uses, strip retail plazas, and both mid-rise and medium-density apartments. The Koko Head end of Farrington Highway in Waipahu consists mostly of single-family housing but also includes Waipahu High School. Most of the residential communities are oriented away from this heavily traveled roadway. Because Farrington Highway functions as both a major arterial and collector road, and varies in width from four to six lanes with a landscaped median, the transit facility will not create an access

or transportation barrier between the makai and mauka sides of the road. As an elevated structure, which will span all intersections, it will not prevent pedestrians and motorists from conducting their normal travel patterns within the community. Potential redevelopment along the project alignment, and in particular at the station locations, may represent an asset to the neighborhood by providing new resources and an accessible transit option.

Pearl City

The project alignment extends through the Pearl City neighborhood, along the median of Kamehameha Highway, a heavily traveled roadway with adjacent multi-story commercial uses near the Pearl Highlands Station. The surrounding residential uses will not be affected by property acquisitions and, being located within the highway median, the Project will not form a barrier to adjacent residential communities as residences are oriented away from the highway. In addition, being an elevated structure, the transit system will not create a physical barrier to pedestrians or other forms of travel within the community. The Project will not affect community identity or cohesion as the transit system will be compatible with the existing community character along the alignment. The Project will impact the Banana Patch community, which is discussed in Section 4.7.

‘Aiea

The route through the ‘Aiea neighborhood continues to follow Kamehameha Highway, and the effects will be very similar to those described for the Pearl City and Waipahu neighborhoods. Most of the residential areas are mauka of Kamehameha Highway with land uses makai of the highway being primarily commercial or military. As such, the Pearlridge Station will not create a barrier to adjacent communities nor will it limit pedestrian or other travel modes within these communities. As the transit route passes Aloha Stadium, there are very few buildings adjacent to the alignment

due to the expanse of the stadium parking. Few residential communities are located nearby.

Airport

The Project will travel along busy, heavily traveled Kamehameha Highway and transition to Aolele Street at the airport. The neighborhood is primarily characterized by military and industrial uses and Honolulu International Airport. Most of the residential land uses are mauka of the Nimitz Viaduct. The Project will require minimal acquisitions or changes in current land uses. No properties will be acquired in full. The transit facility is not expected to be a visual or physical barrier in the neighborhood and will not affect community identity or cohesion.

Kalihi-Palama

The Project through the Kalihi-Palama neighborhood follows Dillingham Boulevard. The boulevard is a major arterial that travels through smaller, well-established residential communities, but also functions as a major collector for neighborhood circulation. Small-scale commercial businesses and a few historic land uses line the boulevard. Dillingham Boulevard is a much narrower roadway than either the Farrington or Kamehameha Highways. As a result, the Project will require widening the roadway to maintain the same number of travel lanes while accommodating the guideway's support columns. Several true kamani trees will also be removed by the Project. Impacts will occur to historic properties, as discussed in Section 4.16.

Downtown

The Project will continue through the Downtown neighborhood within the median of Nimitz Highway. This highway is similar to Farrington and Kamehameha Highways as it is a heavily traveled roadway with limited cross traffic. As such, the highway already represents a physical barrier to the neighborhoods on each side. The Project will not create a new barrier or affect the physical character of adjacent communities. Within the

Downtown area, the Project will pass the historic districts of Chinatown and Merchant Street. Nimitz Highway is located along the perimeter of these two districts between the Downtown uses and Honolulu Harbor; therefore, the transit system will have little effect on their uses. However, it will contrast with their historic character. As the alignment transitions to Halekauwila Street, a relatively narrow city street, the adjacent buildings become primarily mid-rise government office buildings with little or no open space between them. Views of the alignment will be limited to short segments as the guideway crosses city streets since high-rise buildings and tall trees already obstruct views. The transit system will be elevated so it will not affect the flow of traffic, bicyclists, or pedestrians within the Downtown neighborhood.

Ala Moana and Kaka'ako

The Project will extend to Ala Moana Center traveling mostly along Halekauwila and Kona Streets. The transition between these streets will require property acquisitions and displacements. Land uses adjacent to the alignment include two- and three-story walk-up apartments and commercial uses within the Kaka'ako area and newer urban mixed-use development within the Ala Moana area. In general, land uses are less dense than in the Downtown neighborhood. Kaka'ako has been designated a redevelopment area, which may result in a change in character along the Project alignment. However, substantial development has recently occurred in the neighborhood; several high-rise condominium developments have been built, and additional residential and commercial developments are planned. The elevated transit structure will not create a barrier to pedestrian or other modes of travel.

Mitigation

Since there will be no adverse effects to these neighborhoods, no mitigation is required. Ongoing coordination efforts with the public will help develop design measures that will enhance the

interface between the transit system and the surrounding community.

4.7 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (USEO 1994) was signed by President Clinton on February 11, 1994. This Executive Order directs Federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse effects of their projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. The order directs Federal actions, including transportation projects, to use existing law to avoid discrimination on the basis of race, color, or national origin and to avoid disproportionately high and adverse impacts on minority and low-income populations. These are often referred to as environmental justice (EJ) populations.

There are three fundamental EJ principles:

- To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations

Executive Order 12898 requires all Federal agencies to incorporate EJ into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities.

A “disproportionately high and adverse effect” is defined as follows:

Disproportionately High and Adverse Effect on Minority and Low-Income Populations means an adverse effect that:

- (1) is predominately borne by a minority population and/or a low-income population; or
- (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population. (USDOT Order 5610.2).

The EJ analysis for the Project identifies O’ahu Metropolitan Planning Organization (O’ahuMPO) EJ Areas within the study corridor and presents the impact determinations regarding the likelihood that disproportionately high and adverse impacts will be experienced in those areas. This section discusses potential measures to avoid, minimize, and/or mitigate those impacts to EJ populations and documents the Project’s public outreach efforts to EJ communities. For more detailed information and references, see the *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report (RTD 2008d)*.

4.7.1 Background and Methodology Regulatory Context

The principles of EJ are rooted in Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving Federal financial assistance. Additional laws, statutes, guidelines, and regulations that relate to EJ issues include the following:

- Title 49 of the United States Code Section 5332 (49 USC 5332), Nondiscrimination (USC 1994)
- Title 49 of the Code of Federal Regulations Part 21 (49 CFR 21), *Nondiscrimination in*

Federally Assisted Programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964 (CFR 1996d)

- Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (USEO 1994)
- *Environmental Justice Guidance Under the National Environmental Policy Act* (CEQ 1997b)
- *USDOT Order to Address Environmental Justice in Minority Populations and Low-Income Populations* (USDOT 1997)
- *FHWA Actions to Address Environmental Justice in Minority Populations and Low-income Populations* (FHWA 1998)
- Hawai‘i Revised Statutes (HRS) Chapter 368, Hawai‘i Civil Rights Commission (HRS 1989)
- Executive Order 13166, *Improving Access to Services for Persons with Limited English Proficiency* (USEO 2000)
- *Americans with Disabilities Act of 1990* (ADA 1990)
- *Hawai‘i Environmental Justice Initiative Report* (HEC 2008)

Methodology

This analysis identifies potential effects on minority and low-income populations that reside within the study corridor. The effects of the Project on identified O‘ahuMPO EJ Areas were analyzed as follows:

- How well the Project will serve the transportation needs of the identified EJ populations and communities of concern in comparison to all other population groups within the study corridor
- Whether the effects of the Project (e.g., construction, visual, noise) will have disproportionately high and adverse effects on the social, cultural, health, and well-being of the identified EJ populations and communities of concern as compared to other population groups within the study corridor

Defining Environmental Justice Areas

USDOT Order 5610.2 and subsequent agency guidance defines the term “minority” to include any individual who is Black, Hispanic, Asian-American (Asian), American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander. Based on guidance from the Federal Council on Environmental Quality (CEQ), “minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis” (CEQ 1997a).

The term “low-income,” in accordance with USDOT Order 5610.2 and agency guidance, is defined as a person with a household income at or below the U.S. Department of Health and Human Services (USHHS) poverty guidelines. These poverty guidelines are a simplified version of the Federal poverty thresholds used for administrative purposes (e.g., for determining financial eligibility for certain Federal programs). The U.S. Census Bureau has developed poverty thresholds, which are used for calculating all official poverty population statistics. The Census Bureau applies these thresholds to a family’s income to determine its poverty status.

O‘ahu, however, has unique demographic characteristics because minorities make up the majority of the population. Because of this racial and ethnic diversity, the O‘ahuMPO developed a method to define O‘ahuMPO EJ Areas that are more meaningful to the demographics of the island. O‘ahuMPO EJ Areas are defined as areas where the minority or low-income population concentration is meaningfully greater than the surrounding population.

Using 2000 Census data, O‘ahuMPO’s analysis uses the Federal definition of minority as well as

the “poverty thresholds” as defined by the Census Bureau. Rather than relying on EJ definitions that are less meaningful to O’ahu’s unique demographic composition, O’ahuMPO’s method normalizes census block group data so that basic statistical measures can be applied. The method relates the relative concentration of a minority group or low-income households within a census block group to the total population within the census block group. A block group qualifies as EJ if the relative frequency of one or more minority groups or low-income households was in the highest 16 percent (greater than one standard deviation) of frequencies across the island. Block groups were then assembled into the O’ahuMPO EJ Areas (O’ahuMPO 2004) (Figure 4-14). These data are presented in Section 4.7.2.

Coordination with the City and County of Honolulu Department of Transportation Services (DTS), DPP, HDOT, FTA, and the U.S. Environmental Protection Agency (EPA) resulted in the determination that the O’ahuMPO method for determining O’ahuMPO EJ Areas was appropriate for the Project. Therefore, EJ populations for this Project consist of low-income and/or minority populations that are within the O’ahuMPO EJ Areas.

Communities of Concern

In addition to minority and income status, other data were used as additional indicators of communities of concern, including linguistically isolated households, transit-dependent populations, and areas with public housing and community services. The U.S. Census Bureau defines a *linguistically isolated household* as a household in which all members age 14 or over speak English less than “very well.” Block groups with 25 percent or more of households with no vehicle or with 21 percent or more linguistically isolated households are included in the areas designated as communities of concern and are illustrated on Figure 4-15. These criteria serve to further identify potentially transit-dependent populations but are not included in the

definition of EJ populations. Data on communities of concern also serve to direct public outreach efforts. In addition to the census data, field surveys, data gathered for other projects within the study corridor, and on-going public involvement activities were used to assist in identification of communities of concern.

4.7.2 Affected Environment

Figure 4-14 shows the areas that have met the O’ahuMPO EJ threshold that are within one-half mile of the project alignment. Figure 4-15 shows areas identified as containing communities of concern. As described in Section 4.6, the physical, social, and economic characteristics across and within each neighborhood vary, including the racial, ethnic, and economic composition of the population. The demographics of the neighborhood areas are also described in Section 4.6.

Table 4-8 lists each of the O’ahuMPO EJ Areas illustrated in Figure 4-14, with the demographic data from the 2000 census. It shows there is considerable ethnic and racial diversity along the project alignment.

Banana Patch Community

Through public involvement activities, a previously unidentified minority EJ area was identified. The Banana Patch community is not an O’ahuMPO EJ Area. The Banana Patch, or lower Waiawa, is located along the border of the Pearl City and Waipahu neighborhoods. It is bounded by Kamehameha Highway mauka, Farrington Highway makai, and the H-1 Freeway ‘Ewa. Neither the Pearl City nor the Waipahu neighborhoods were identified as EJ Areas using the O’ahuMPO method. However, the Banana Patch area was identified as a minority EJ area after outreach in July 2008 revealed that all residents who will be relocated as a result of the Project belong to a minority group. No other previously identified EJ Areas were identified.

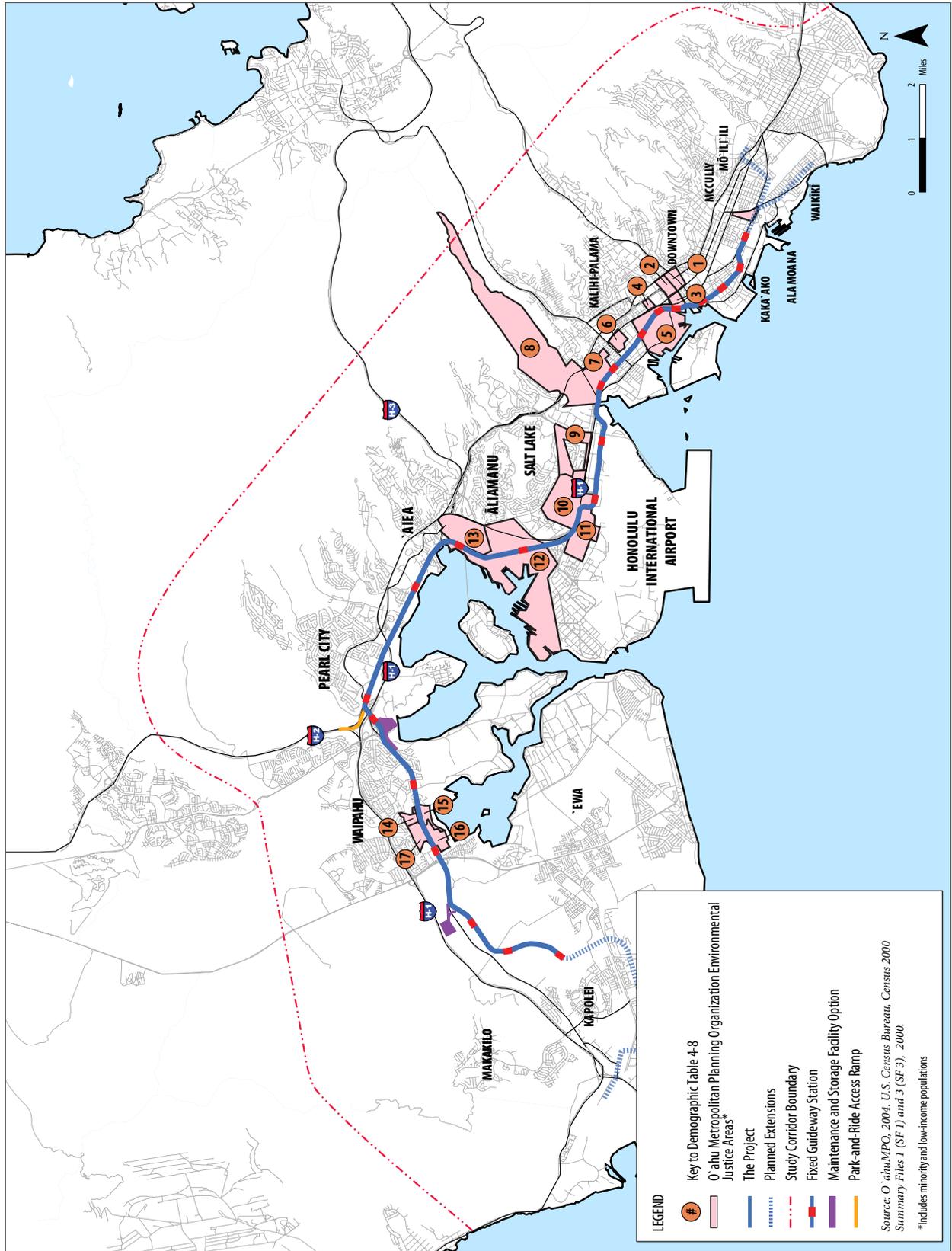


Figure 4-14 Environmental Justice Populations within the Study Corridor

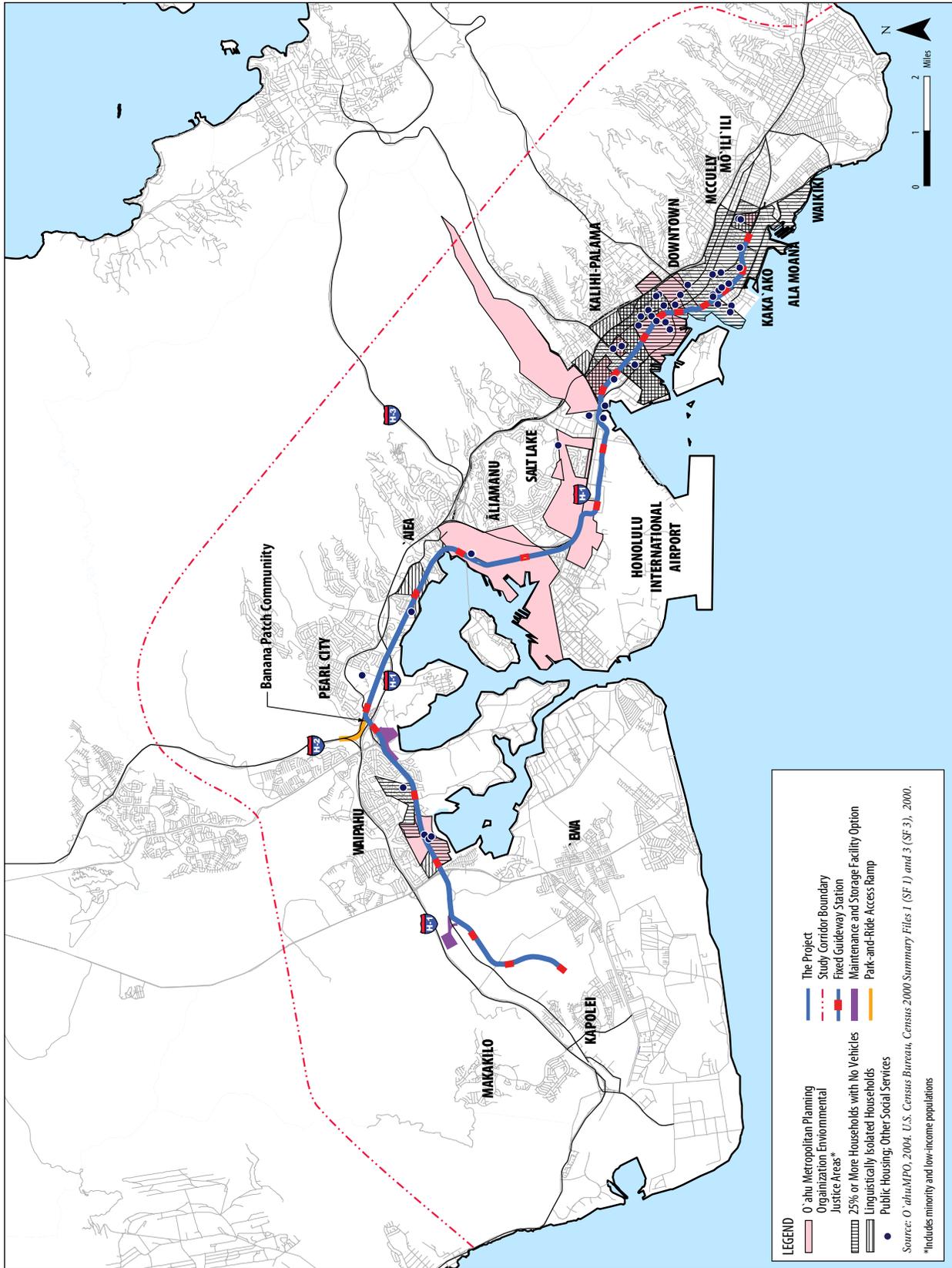


Figure 4-15 Communities of Concern within the Study Corridor

Table 4-8 Demographic Characteristics of O`ahuMPO Environmental Justice Areas

O`ahuMPO EJ Area (illustrated on Figure 4-14)	% White	% Black	% American Indian or Alaska Native	% Asian	% Native Hawaiian or Pacific Islander	% Hispanic	Low Income?
1	23	1	0	57	4	3	Yes
2	14	0	1	75	2	3	Yes
3	11	2	0	69	6	5	Yes
4	1	1	0	53	23	5	Yes
5	17	5	0	43	16	7	Yes
6	4	1	0	46	18	14	Yes
7	6	1	0	62	13	6	No
8	60	20	1	6	2	11	No
9	62	11	1	13	1	11	No
10	60	10	1	14	1	7	No
11	58	15	1	9	3	11	No
12	63	16	1	11	1	6	No
13	7	1	0	33	27	13	Yes
14	3	1	0	25	49	5	No
15	5	2	0	19	50	8	Yes
16	4	1	0	23	43	11	No
17	7	2	0	54	18	10	No

Source: O`ahuMPO, 2004. U.S. Census Bureau, Census 2000 Summary Files 1 (SF 1) and 3 (SF 3), 2000.

The Banana Patch community is located in Census Tract 80.01 Block Group 2, Block 2001, and Census Tract 87.01 Block Group 2, Block 2001. Some of the land in Census Tract 87.01 is used for construction equipment storage. There are no residences in this portion of the Banana Patch. However, approximately 10 residential structures and the Alpha Omega Christian Fellowship Church are located within Census Tract 80.01. According to the 2000 Census, approximately 55 persons who identified themselves as Asian reside in this area. As such, the census block that encompasses the Banana Patch residential community is 100 percent minority. Because income data are not available at the census block level, income determinations cannot be made.

Other characteristics of the community stand out. Several parcels within the Banana Patch area have multi-generational families living in one or more dwelling units on the property. In some instances, the structures have been substantially altered to provide the multi-generational housing. The residents do not have access to public water and sewer services. In addition, the community is unique in that it is located in an urban region but some residents maintain an agricultural lifestyle. While farming does not appear to be the primary source of employment or income for community residents, it is a part of household income for some of the families.

4.7.3 Environmental Consequences

No Build Alternative

Under the No Build Alternative, the Project would not be built and would not have any impacts to O'ahuMPO EJ Areas or populations. However, some populations, such as transit-dependent and low-income, may continue to be underserved. Although the projects in the ORTP will be built, their environmental impacts will be studied in separate documents.

Project

As a result of public outreach efforts, this EJ analysis, and the analyses presented throughout Chapter 4, the following have been identified as areas of particular concern for EJ populations:

- Impacts from right-of-way acquisition
- Impacts to community cohesion
- Impacts to social and cultural resources
- Visual quality impacts
- Noise and air quality impacts
- Traffic and transportation impacts
- Short-term construction impacts

Section 4.4 discusses right-of-way acquisitions. There are approximately 780 parcels adjacent to the project alignment. The Project will acquire partial or full right-of-way from 24 percent of the parcels adjacent to the alignment. Of this 24 percent, 22 percent lie within O'ahuMPO EJ Areas. This demonstrates that the relative proportion of the right-of-way acquisitions inside the O'ahuMPO EJ Areas is less than the Project as a whole. Therefore, there are no disproportionately high and adverse effects on O'ahuMPO EJ Areas for the Project.

Sections 4.5 and 4.6 discuss potential effects on social and community cohesion and community facilities. Because the Project will be constructed primarily within an existing transportation corridor in developed areas, it will not physically divide or bisect any communities beyond existing conditions or the No Build Alternative. Therefore,

there will be no adverse effect on community cohesion in O'ahuMPO EJ Areas. Unlike freeways with restricted access, vehicular and pedestrian access to areas along the project alignment will not be restricted by the Project.

Section 4.8 discusses visual impacts from the Project. Examples of visual impacts include loss of trees, altered 'Ewa-Koko Head and mauka-makai views, and inconsistent scale and context of setting. The Project is set in an urban context where visual change is expected and differences in scales of structures are typical. Moderate to high visual impacts will occur throughout most of the study corridor. There will not be any disproportionately high and adverse effects in O'ahuMPO EJ Areas.

The air quality analysis described in Section 4.9 indicates a net improvement in air quality by 2030. O'ahuMPO EJ Areas will not experience any disproportionately high and adverse impacts to air quality.

Section 4.10 discusses potential noise impacts that could occur along the project alignment. The noise analysis indicates there will be no severe noise impacts caused by the Project, although moderate impacts will occur in three areas. These noise impacts will occur outside of O'ahuMPO EJ Areas.

Section 4.16 indicates the Project will result in 22 adverse effects on historical resources. None of these occur in O'ahuMPO EJ Areas. Overall, the Project will have few effects on social or community facilities within O'ahuMPO EJ Areas. While there will be partial acquisition of some community facilities, there will not be any disproportionately high and adverse effects to resources of special importance to EJ populations within O'ahuMPO EJ Areas.

The effects of construction within the study corridor are discussed in Chapters 3 and 4. Section 3.5, Construction-related Effects on Transportation,

discusses traffic-related impacts during construction, including road closures and rerouting, sidewalk and bike lane closures and rerouting, and bus stop closures. Section 4.18 discusses construction impacts, including those related to relocations; noise and dust generated by construction vehicles and activities; and visual disruption associated with large equipment use and storage, work-site screening, and removal of vegetation or structures. These construction effects will be temporary, and measures to mitigate or minimize temporary construction impacts will be implemented. Construction activities will occur throughout the study corridor and will affect both O'ahuMPO EJ and non-EJ Areas alike. Therefore, there will be no disproportionately high and adverse impacts on O'ahuMPO EJ Areas.

Effects of the Project also will result in benefits to transit users. These benefits include increased transit options, improved mobility, proximity to transit links, and access to expanding employment opportunities. As Chapter 3 illustrates, traffic and transit performance will improve within the study corridor, and these benefits can be realized by all populations. There are 21 stations proposed for the Project. Nine are in, or adjacent to, O'ahuMPO EJ Areas. Therefore, people living in O'ahuMPO EJ Areas will have the same opportunity to access the transit and mobility improvements.

Based on the demographics within the study corridor, the need for public transit appears to be greatest within the project alignment. Transit service is meant to serve where the demand is greatest, and these areas are often within neighborhoods that have O'ahuMPO EJ Areas and communities of concern. Although populations adjacent to the alignment will be affected the most by operational and construction-related impacts, these groups include O'ahuMPO EJ and non-EJ Areas, and they will also receive improved transit access. Effects will be the same for all population groups and will not represent a high or disproportionate impact to

residents in O'ahuMPO EJ Areas or communities of concern.

Public Outreach

During the public outreach effort for the Project, particular attention has been paid to identifying and reaching low-income and minority populations that are traditionally underserved and under-represented in the public involvement process. This is in accordance with Executive Order 12898 and the O'ahuMPO Public Participation Plan (O'ahuMPO 2004). Materials have been prepared in the major languages of O'ahu, and translators have been available upon request at meetings. Information has been distributed through cultural organizations, ethnic associations, housing associations, community development groups, and similar organizations. Community issues brought forth in community meetings, stakeholder interviews, and at public workshops were addressed as part of evaluating the Project.

To reach populations that do not speak and/or read English, information on how to obtain reading materials in native languages has been provided. Project flyers containing information about the scoping meetings and Draft EIS public hearings were printed in 12 languages (English, Chinese, Japanese, Korean, Vietnamese, Tagalog, Ilocano, Samoan, Spanish, Hawaiian, Laotian, and Chuukese) and placed at several local churches, health centers, and local civic and ethnic organizations. The project website was updated as new project information became available. Information concerning upcoming public meetings regarding the Project was distributed periodically by "walkers" in several of the O'ahuMPO EJ Areas. Important project notifications were placed in local ethnic and cultural newspapers, including the following:

- *Hawai'i Hochi*
- *Korean Times*
- *Filipino Chronicle*
- *Korean Times*

-
- *Ka Nūpepa*
 - *Fil-Am Courier*
 - *Ka Wai Ola*

In addition to sending flyers to all addresses on the project mailing list, an effort was made to distribute information to non-native English speakers in their appropriate languages. This action consisted of sending information to local churches and community service organizations that may have access to EJ populations and communities of concern.

An effort was made to reach out to local churches, elderly care, and community organizations through the efforts of the Speakers Bureau. Thirty-nine Speakers Bureau presentations were given to senior care facilities and local ethnic organizations, as well as organizations that serve the disabled and low income communities.

Community updates were held in or near communities of concern, including at Waipahu Elementary School, Alvah Scott Elementary School, Radford High School, and Farrington High School. Community updates were conducted at major project milestones. Presentations were given at senior living facilities throughout the study corridor.

Communications with Native Hawaiian groups have also identified potential concerns regarding impacts to burials, native Hawaiian landscapes, and indigenous flora and fauna. Communications with Hawaiian civic groups, recognized community leaders, and community organizations have increased as project information has become available, and this will continue throughout the process.

Public involvement efforts to work with EJ populations, the elderly, and communities of concern will continue throughout the design and construction of the Project.

Strategic Outreach during the Draft EIS

Comment Period

Outreach activities were performed to promote the maximum participation by, and awareness of, the Project and the availability of the Draft EIS to stakeholders in O‘ahuMPO EJ Areas and communities of concern.

A project information postcard was developed and mailed within three days of release of the Draft EIS to social services, public housing units, and churches within one-half mile of the project alignment. Some of the social service providers included the Pacific Gateway Center, Kalihi-Palama Center, Mayor Wright Housing, Hale Pauahi, Chinatown Gateway residences, Kūhiō Park Terrace, Kamehameha IV Housing, and Federated States of Micronesia Consulate. The postcard alerted readers to the release of the Draft EIS and presented information about how to comment on the document.

Public Hearings

Draft EIS public hearings were held at the following locations in or adjacent to communities of concern:

- Downtown—transit-dependent, December 8, 2008, 777 Ward Avenue, Blaisdell Center
- Waipahu—adjacent to transit-dependent and linguistically isolated, December 10, 2008, 94-428 Mokuola Street, Waipahu
- Kalihi—linguistically isolated, December 11, 2008, 1525 Bernice Street

Multi-language Outreach

Information about the Project, the Draft EIS, and the beginning of the comment period was translated into 12 languages common to cultural groups that had been identified as EJ populations in the project corridor (English, Chinese, Japanese, Korean, Vietnamese, Tagalog, Ilocano, Samoan, Spanish, Hawaiian, Laotian, and Chuukese) in the form of flyers, ads, and other mediums. The translations provided a short summary of project highlights, a summary of the purpose and topics

included in the Draft EIS, and information on how to comment on the Draft EIS. The translated material also included a listing of all public hearing dates, times, and locations in English.

Distribution of the translated material was a critical element of the outreach in EJ Areas and to communities of concern. Efforts included distribution of flyers to the Chinese Chamber of Commerce and businesses in Chinatown, Kalihi, and along the Dillingham Boulevard corridor and dissemination through business networks and to customers. To effectively reach the Vietnamese community, flyers were given to church leaders at St. Theresa's Catholic Church to distribute to their communities. The owner of Duc's Bistro, a Vietnamese restaurant in Chinatown, facilitated the distribution of 150 flyers in Vietnamese to the community through his business contacts.

For communities with radio media, paid radio advertisements were aired during peak commute and listening hours in the morning and afternoon. Three ethnic radio stations aired the advertisements: KZOO, a Japanese station; Radio Korea, a Korean station; and KNDI, which broadcasts in many languages, such as Filipino dialects (Tagalog and Ilocano), Chinese dialects (Cantonese and Mandarin), Vietnamese, and Spanish.

Bus Advertisements

An advertisement was placed in TheBus for two months that notified the transit-dependent community regarding release of the Draft EIS and how to comment on it. The advertisement included a map of the project alignment, encouragement to provide comments, and information on how to make comments. The advertisement was posted in the entire active bus fleet of 528 vehicles during the comment period through December 2008 and January 2009.

Military

Military communities are within the O'ahuMPO EJ Areas. To ensure these communities were engaged with the Draft EIS process and aware of the comment period, paid advertisements were placed with local military specialty newspapers: *The Hawaii Army Weekly*, *Navy News*, and *Hickam Kukini*. A special press release requesting Draft EIS comments from members of the military community was released to these same newspapers.

Mitigation

While the Project will not result in disproportionately high and adverse impacts within O'ahuMPO EJ Areas, the Banana Patch community will be affected, and residents and the church will be relocated in compliance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act.

4.7.4 Environmental Justice Determination

The EJ analysis below examines both the O'ahuMPO EJ Areas, as well as one specific EJ area of concern—the Banana Patch community.

Environmental Justice Finding with Respect to O'ahuMPO EJ Areas

No minority or low-income communities consistent with the O'ahuMPO EJ Areas were identified to have potential disproportionately high and adverse effects in either the analysis of the Project or as a finding of the public outreach activities. As a result, no additional special measures were required by the USDOT Order on Environmental Justice (USDOT 1997).

Environmental Justice Finding with Respect to the Banana Patch Community

The Pearl Highlands Station will be located immediately Koko Head of the Banana Patch. The parking facility and approach roads will be located in the Banana Patch. The Project will displace this small community. In total, the Project will displace 14 residences, 1 business, and 1 church. Because

the Banana Patch community was identified as an EJ area of concern, special strategic outreach was conducted to involve the community in the public decision-making process and to better understand the community's views of the potential impacts and mitigation measures.

Strategic Outreach for the Banana Patch during the Draft EIS Comment Period

The City has been coordinating with residents of the Banana Patch community since October 2008. Every household has been visited by City staff, right-of-way staff, and engineering staff to discuss the Project, as well as special needs and relocation assistance for residents who will be displaced.

A special community meeting was held at the Alpha Omega Christian Fellowship Church on January 24, 2009. Invitations were sent to each Banana Patch community household. At this meeting, a brief presentation was given on the Project and public testimony was recorded by a court reporter. A complete transcript is included in Appendix A, Comments Received on the Draft Environmental Impact Statement and Responses, of this Final EIS.

Several key comments were raised at this community meeting. Mostly, residents were interested in learning more about the right-of-way acquisition process. Residents asked when acquisition might occur, how their property would be appraised, and how soon they might receive compensation, since it appeared that housing prices were currently declining in the area. As such, residents of the community did not object to being relocated to decent, safe, and sanitary housing in compliance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act. Nor was there concern expressed about keeping the community intact for relocation purposes.

At the time the Draft EIS was published, community cohesion was assumed to be a concern of the

residents of the Banana Patch. After meeting with the residents of this community, the City learned that the residents were primarily interested in the right-of-way acquisition process and relocation issues. Therefore, community cohesion as an issue for the Banana Patch community was removed from this Final EIS as a concern.

Environmental Justice Finding

Because the Banana Patch community is made up of people of Asian descent, it was identified as an EJ area of concern. Because the Pearl Highlands Station will displace this community, the location of the station and associated facilities was examined under the USDOT Order on Environmental Justice (USDOT 1997).

First, the need for the station was examined. Analysis showed that the Pearl Highlands Station is projected to have the second highest passenger volume of all of the project stations. It will serve as the transfer point for all users in Central O'ahu, whether they drive to the station or transfer from TheBus. The transit center and park-and-ride facility will provide easy access to the fixed guideway transit system from the H-1 and H-2 Freeways, Kamehameha Highway, and Farrington Highway. The station location will provide the most convenient access to the transit system for residents of Central O'ahu. As such, there is a substantial need for the Pearl Highlands Station.

Second, two alternatives to the guideway and highway ramp alignments, station locations, and park-and-ride locations for the Pearl Highlands Station were evaluated to assess feasibility. One alternative would move the park-and-ride to Leeward Community College. This modification of the station layout would require a number of changes. The H-2 Freeway access ramp would need to be redesigned from a one-way ramp to a two-way ramp. The access road for Leeward Community College would require improvement. In addition, the guideway's crossing of the H-1

Freeway would need to be realigned. Additional right-of-way would need to be required from the Hawai'i Laborers Training Program site Koko Head and makai of the ramp connecting Farrington Highway to Kamehameha Highway. The existing parking for the college would need to be replaced. The net increase in cost for this alternative would be approximately \$90 million.

The second alternative considered moving the park-and-ride to the Hawai'i Laborers Training program site. This change would prevent the placement of a track switch to access the maintenance and storage facility site near Leeward Community College in the Koko Head direction, which would make this maintenance and storage facility site impractical. Both directions of the H-1 Freeway would need to be spanned with a single guideway approximately 300 feet in length. A longer access ramp from the H-2 Freeway would be required, and access roads would be needed. There would be additional land improvement, right-of-way, relocation, and park-and-ride structure costs. The net increase in cost for this alternative would be more than \$63 million.

In conclusion, relocating the park-and-ride facilities under either of the two alternatives would provide less efficient transportation access and circulation to the park-and-ride. Moreover, displaced residents of the Banana Patch community did not voice opposition to the Project, did not express concern about the adverse effects, and appeared satisfied with mitigation measures with regard to relocation. As such, the Project will not result in disproportionately high and adverse impacts to the Banana Patch community.

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