04
CHAPTER

Environmental Analysis, Consequences, and Mitigation

This chapter of the Draft Environmental Impact Statement (EIS) discusses the environmental analysis, consequences, and mitigation for the No Build and Build Alternatives of the 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 alternatives studied in this Draft EIS include three Build Alternatives: the Salt Lake Alternative, the Airport Alternative, and the Airport & Salt Lake Alternative (see Chapter 2, Alternatives Considered). The Draft EIS also includes the No Build Alternative, under which this project would not be built. All other projects in the O’ahu Regional Transportation Plan 2030 (ORTP) would be implemented. In this document, the No Build Alternative serves as an environmental baseline to which the impacts of other alternatives are compared.

Sections 4.1 through 4.15 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 for each alternative. Mitigation measures that could be incorporated into the Project to address long-term adverse effects are also identified. These sections are as follows:

- 4.1 Land Use
- 4.2 Economic Activity
- 4.3 Acquisitions, Displacements, and Relocations
- 4.4 Community Services and Facilities
- 4.5 Neighborhoods
- 4.6 Environmental Justice
- 4.7 Visual and Aesthetic Conditions
- 4.8 Air Quality

4.9 Noise and Vibration

4.10 Energy/Electric and Magnetic Fields

4.11 Hazardous Waste and Materials

4.12 Ecosystems

4.13 Water

4.14 Street Trees

4.15 Archaeological, Cultural, and Historic Resources

Section 4.16, Maintenance and Storage Facility, describes the environmental consequences of the two site options. Section 4.17, Construction Phase Effects, addresses the construction-phase effects and mitigation that could be considered and the relationship between short-term uses of the environment and long-term productivity. Section 4.18, Indirect and Cumulative Effects, presents the indirect and cumulative effects of the alternatives, including the effects of the future planned extensions and other planned projects. Section 4.19, Irreversible and Irretrievable Commitments of Resources, describes resources that would be used by the Project. Section 4.20, Anticipated Permits and Approvals, includes a list of environmental permits required for the Project.

The following *Honolulu High-Capacity Transit Corridor Project Technical Reports* include analyses of the individual environmental topics that have been evaluated for the Project:

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

The analyses demonstrated that the Project would not have an adverse effect upon geology, soils, or natural hazards; therefore, they are not addressed in this chapter. The Project would 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 of the tsunami evacuation zones.

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

- **Project Region**—the entire Island of Oʻahu (Figure 1-1 in Chapter 1, Background)
- **Study Corridor**—the southern coast of Oʻahu where the Project is located (Figure 4-1)
- **Project Station Area**—all 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 would be built)

The environmental effects and possible mitigation measures to avoid, minimize, or reduce the impacts that are detailed in this chapter are summarized in Table 4-1.

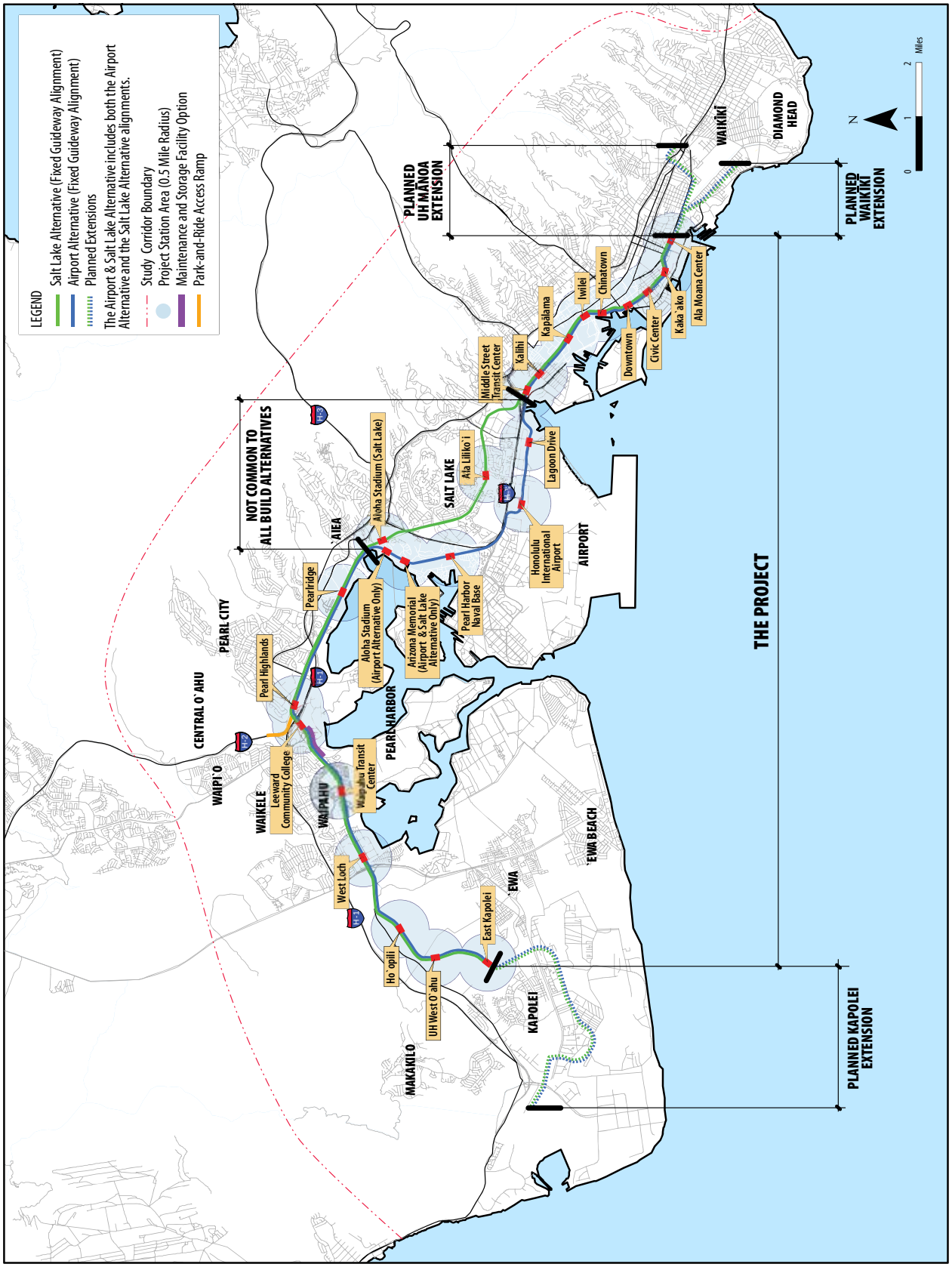

Figure 4-1 Project Overview

As required by the Code of Federal Regulations Title 40 Part 1505.2(b), both the No Build and Build Alternatives are considered to be environmentally preferable, depending on the factors considered. The No Build Alternative would best protect historic and cultural resources, while the Build Alternatives would cause the least damage to the biological and physical environment and best preserve natural resources because they would reduce transportation energy consumption and air and water pollution.

Considered Resource	No Build Alternative	Build Alternatives
Biological Environment		X
Physical Environment		X
Historic Resources	X	
Cultural Resources	X	
Natural Resources		X

X = Alternative causes least damage or best protects, preserves, or enhances resource.

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

Land Use (Section 4.1)—land acquired for transportation use		
Environmental Effects	**No Build Alternative**	Project would not be built and would not impact land use. However, it is not consistent with local and regional long-range plans.
	Common to All Build Alternatives	Land that would be acquired that is common to all Build Alternatives is included in the numbers presented for each alternative. Included is 88 acres of prime and statewide-important farmlands (included in acreage totals below). This is less than one-tenth of one percent of available agricultural land on O`ahu. The Build Alternatives are consistent with future land use plans and policies.
	Salt Lake Alternative	147 acres of existing land use converted to transportation use.
	Airport Alternative	141 acres of existing land use converted to transportation use.
	Airport & Salt Lake Alternative	160 acres of existing land use converted to transportation use.
	Proposed Mitigation Measures	The acquired acreage under each of the Build Alternatives 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 would be residential land uses. Based on the relatively small amount of land that will be acquired, including farmland, no mitigation measures would be needed.
Economic Activity (Section 4.2)—property tax revenue		
Environmental Effects	**No Build Alternative**	Project would not be built and there would not be a conversion of property and associated reductions in tax base. There would be no mobility enhancements for travel to employment or recreation areas.
	Common to All Build Alternatives	For all of the Build Alternatives, property would be acquired from private owners and converted to a transportation use that is owned by the City. This would result in a direct reduction in property tax revenues. These reductions are estimated to be $1.2 million for any of the Build Alternatives.
	Salt Lake Alternative	Same as Common to All Build Alternatives.
	Airport Alternative	Same as Common to All Build Alternatives.
	Airport & Salt Lake Alternative	Same as Common to All Build Alternatives.
	Proposed Mitigation Measures	The Project is not expected to result in substantial long-term adverse effects on property tax revenues. No mitigation measures would be needed.

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

Acquisitions, Displacements, and Relocations (Section 4.3)		
Environmental Effects	**No Build Alternative**	Project would not be built and would not have impacts on properties.
	Common to All Build Alternatives	Parcels that would be acquired that are common to all Build Alternatives are included in the numbers presented for each alternative
	Salt Lake Alternative	Acquisitions: 35 full, 155 partial Displacements: 20 residential, 62 businesses, 1 church
	Airport Alternative	Acquisitions: 34 full, 145 partial Displacements: 20 residential, 65 businesses, 1 church
	Airport & Salt Lake Alternative	Acquisitions: 35 full, 170 partial Displacements: 20 residential, 67 businesses, 1 church
	Proposed Mitigation Measures	Where relocations would occur, compensation would be provided to affected property owners, businesses, or residents in compliance with all applicable Federal and State laws and would follow the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, as well as procedures outlined in the Real Estate Acquisition Management Plan.
Community Services and Facilities (Section 4.4)		
Environmental Effects	**No Build Alternative**	Project would not be built and would not have impacts to community services and facilities.
	Common to All Build Alternatives	There are impacts to schools, libraries, churches, parks, and recreation facilities adjacent to the alignment that are detailed below. All are partial acquisitions of property other than the displacement of one church. A number of properties owned by utility providers would be affected by partial acquisitions. This includes two properties owned by the Hawaiian Electric Company and one owned by the State of Hawai`i Department of Transportation. Relocation and modification of existing utilities would be required.
	Salt Lake Alternative	Partial acquisitions: 12 community facilities Displacements: 1 church Utilities: Partial property acquisition would be needed from the City Sewer Pump Station.
	Airport Alternative	Partial acquisitions: 10 community facilities Displacements: 1 church Utilities: Same as Common to All Build Alternatives.
	Airport & Salt Lake Alternative	Partial acquisitions: 15 community facilities Displacements: 1 church Utilities: Same as Salt Lake Alternative.
	Proposed Mitigation Measures	Measures to reduce adverse effects on community facilities would be evaluated during future design. Mitigation efforts would involve coordination with individual property owners as necessary.

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

Neighborhoods (Section 4.5)		
Environmental Effects	**No Build Alternative**	Project would not be built and would not have any impacts to neighborhoods. The quality of life, however, would be reduced by increased congestion and travel time and reduced mobility.
	Common to All Build Alternatives	All Build Alternatives would provide people living and working in the neighborhoods within the study corridor with increased mobility. The Project would provide an alternative to traveling by personal vehicle or bus transit within the existing transportation corridors. Passengers using the new transit system would experience reduced travel time to other neighborhoods and growth centers along the project alignment and near transit stations. Potential new development and redevelopment along the Project, as well as scale of transit system, would not have substantial effect on community character.
	Salt Lake Alternative	The project alignment would follow Salt Lake Boulevard, which is the northern boundary of the Airport neighborhood and the southern boundary of the Āliamanu-Salt Lake neighborhood. The project alignment would be located on the fringe of the community and, therefore, there would not be changes to community character.
	Airport Alternative	The project alignment would travel along busy, heavily traveled Kamehameha Highway and transition to Aolele Street near the airport. The transit facility is not expected to be a visual or physical barrier in the neighborhood and would not affect community identity or cohesion.
	Airport & Salt Lake Alternative	The Airport & Salt Lake Alternative would have the combined effect on neighborhoods as described above for the Salt Lake Alternative and the Airport Alternative.
	Proposed Mitigation Measures	Since there would be no adverse effects to neighborhoods, no mitigation is required. Ongoing coordination efforts with the public would help develop design measures that would enhance the interface between the transit system and the surrounding community.
Environmental Justice (Section 4.6)		
Environmental Effects	**No Build Alternative**	Project would not be built and would not have impacts to O`ahuMPO Environmental Justice (EJ) Areas.
	Common to All Build Alternatives	There would be no disproportionately high and adverse effects on residents in O`ahuMPO EJ Areas.  The Banana Patch community was not identified as an EJ area using the O`ahuMPO method. However, after public outreach, the area has been identified as an EJ area of concern. The neighborhood is 100 percent minority and would need to be relocated as part of the Project.
	Salt Lake Alternative	Same as Common to All Build Alternatives.
	Airport Alternative	Same as Common to All Build Alternatives.
	Airport & Salt Lake Alternative	Same as Common to All Build Alternatives.
	Proposed Mitigation Measures	No disproportionately high and adverse impacts would be caused by the Project. Therefore, no specific mitigation measures to reduce impacts are warranted. Where relocations would occur, compensation would be provided to affected property owners, businesses, or residents in compliance with all applicable Federal and State laws and would follow the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, as well as procedures outlined in the Real Estate Acquisition Management Plan. A community meeting will be held in the Banana Patch community. The FTA Civil Rights Officer will attend this meeting.

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

Visual and Aesthetic Conditions (Section 4.7)		
Environmental Effects	**No Build Alternative**	Project would not be built and there would be no impact to the visual and aesthetic conditions.
	Common to All Build Alternatives	The Build Alternatives would be set in an urban context where visual change is expected and differences in scales of structures are typical. However, some viewer groups may perceive that visual changes associated with the Project are substantial, particularly when considered at a single location. The fixed guideway and stations would be elevated structures. They would result in changes to views where project elements would be near existing views or in the foreground of these views. This change would also occur for motorists traveling on the roadways along and under the guideway. The stations would be dominant visual elements in their settings and would noticeably change views. Impacts to visual quality would range from low to high. In some areas, the guideway would block views and contrast with the surrounding buildings in terms of size, scale, and character. In other areas, the guideway would not block any important views or contrast with local development.
	Salt Lake Alternative	Same as Common to All Build Alternatives.
	Airport Alternative	Same as Common to All Build Alternatives.
	Airport & Salt Lake Alternative	Same as Common to All Build Alternatives.
	Proposed Mitigation Measures	Mitigation measures would focus on preserving visual resources and enhancing the project design to comply with applicable policies: • Develop and apply design guidelines that would establish a consistent design framework for the Project with consideration of local context • Retain existing trees where practical and provide new vegetation • Shield exterior lighting • Coordinate the project design with transit-oriented development planning and DPP • RTD will consult with the communities surrounding each station for input on station design elements
Air Quality (Section 4.8)		
Environmental Effects	**No Build Alternative**	There would be no reduction in regional pollutant emissions. Study area in attainment for carbon monoxide, no violations of NAAQS.
	Common to All Build Alternatives	Reduce regional pollutant emissions between 3.2 to 4.0 percent. Study area in attainment for carbon monoxide, no violations of NAAQS.
	Salt Lake Alternative	Same as Common to All Build Alternatives.
	Airport Alternative	Same as Common to All Build Alternatives.
	Airport & Salt Lake Alternative	Same as Common to All Build Alternatives.
	Proposed Mitigation Measures	Because no substantial air quality impacts are anticipated, no mitigation would be required.

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

Noise and Vibration (Section 4.9)—project includes an integrated noise-blocking parapet wall at the edge of the guideway structure that extends 3 feet above the top of rail		
Environmental Effects	**No Build Alternative**	Project would not be built and future noise and vibration would be from traffic on local streets and highways.
	Common to All Build Alternatives	The Project would include an integrated noise blocking parapet wall that extends 3 feet above the top of rail and wheel skirts. This will substantially reduce ground-level noise. 94-340 Pupumomi Street: Moderate impact to 5th floor and above 1060 Kamehameha Highway: Moderate impact to 2nd through 5th floors Kamehameha Highway at Kauhale Street: 14 buildings with moderate impact at ground level 860 Halekauwila: Moderate impact to 6th floor and above 1133 Waimanu: Moderate impact to 7th through 9th floors Vibration: no impacts
	Salt Lake Alternative	3215 Ala `Ilima Boulevard: Moderate impact above 9th floor 2889 Ala `Ilima Boulevard: 4 buildings with moderate impact above 9th floor
	Airport Alternative	Same as Common to All Build Alternatives.
	Airport & Salt Lake Alternative	Same as Common to All Build Alternatives.
	Proposed Mitigation Measures	No feasible and reasonable mitigation is available to reduce moderate noise impacts that remain.
Energy/Electric and Magnetic Fields (Section 4.10)		
Environmental Effects	**No Build Alternative**	Motor vehicle consumption islandwide: 94, 610 MBTUs No EMF-generating features.
	Common to All Build Alternatives	Reduce daily transportation energy demand by 2 percent. EMF could affect one electron microscope.
	Salt Lake Alternative	Motor vehicle consumption islandwide: 91, 082 MBTUs Fixed guideway energy consumption: 1,163 MBTUs
	Airport Alternative	Motor vehicle consumption islandwide: 91,013 MBTUs Fixed guideway energy consumption: 1, 224 MBTUs
	Airport & Salt Lake Alternative	Motor vehicle consumption islandwide: 91,132 MBTUs Fixed guideway energy consumption: 1,194 MBTUs
	Proposed Mitigation Measures	None required.
Hazardous Waste and Materials (Section 4.11)		
Environmental Effects	**No Build Alternative**	Project would not be built and there would be no impacts associated with hazardous materials.
	Common to All Build Alternatives	8 sites of concern.
	Salt Lake Alternative	Same as Common to All Build Alternatives plus 1 additional site of concern.
	Airport Alternative	Same as Common to All Build Alternatives.
	Airport & Salt Lake Alternative	Same as Common to All Build Alternatives.
	Proposed Mitigation Measures	Some properties acquired for right-of-way may undergo a Phase I Environmental Site Assessment prior to acquisition. Depending on the outcome, a Phase II assessment may be appropriate. The City will decide the necessity of the Environmental Site Assessment for each property acquisition.
Ecosystems (Section 4.12)		
Environmental Effects	**No Build Alternative**	Project would not be constructed and there would not be impacts on ecosystems.
	Common to All Build Alternatives	There would be no effect on any threatened, endangered, or protected species.
	Salt Lake Alternative	Same as Common to All Build Alternatives.
	Airport Alternative	Same as Common to All Build Alternatives.
	Airport & Salt Lake Alternative	Same as Common to All Build Alternatives.
	Proposed Mitigation Measures	Obtain Certificate of Inclusion for Ko`oloa`ula and implement conditions of the certificate, if warranted

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

Water (Section 4.13)—best management practices would be incorporated into Project to address storm water quality; construction methods would be employed to protect contamination of Southern O`ahu Basal Aquifer; floodplains would be considered during design		
Environmental Effects	**No Build Alternative**	Project would not be built and there would not be impacts on water resources.
	Common to All Build Alternatives	There would be no adverse effect to surface and marine waters, groundwater, floodplains, and wetlands.
	Salt Lake Alternative	Same as Common to All Build Alternatives.
	Airport Alternative	Same as Common to All Build Alternatives.
	Airport & Salt Lake Alternative	Same as Common to All Build Alternatives.
	Proposed Mitigation Measures	No mitigation measures would be required based on project design.
Street Trees (Section 4.14)—tree removal would be minimized to greatest extent possible; pruning likely next to guideway		
Environmental Effects	**No Build Alternative**	Project would not be built and street trees would not be affected.
	Common to All Build Alternatives	Notable effects: 2 monkeypods identified as Excellent trees along Kamehameha Highway and 28 Notable true kamani trees would be removed along Dillingham Boulevard.
	Salt Lake Alternative	100 pruned 350 removed 250 transplanted
	Airport Alternative	100 pruned 550 removed 300 transplanted
	Airport & Salt Lake Alternative	150 pruned 650 removed 350 transplanted
	Proposed Mitigation Measures	Mitigation measures would consist of transplanting existing trees or planting new ones. Pruning would be in compliance with City and County ordinances and require supervision by a certified arborist.
Archaeological, Cultural, and Historic Resources (Section 4.15)		
Environmental Effects	**No Build Alternative**	Project would not be built and there would be no impacts associated with archaeological, cultural, or historic resources.
	Common to All Build Alternatives	There would be adverse effects to 7 historic resources and effects to 7 cultural resources.
	Salt Lake Alternative	Same as Common to All Build Alternatives.
	Airport Alternative	Same as Common to All Build Alternatives.
	Airport & Salt Lake Alternative	Same as Common to All Build Alternatives.
	Proposed Mitigation Measures	Mitigation measures for historic resources affected by the Project are being developed in consultation with the State Historic Preservation Division (SHPD) and other Section 106 consulting parties that will be incorporated into a Memorandum of Agreement. Discussions with SHPD have included preparation of cultural landscape reports. These will be developed in coordination with SHPD and appropriate stakeholders.

4.1 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 would be provided by the long-term operation of the Project is presented in Section 4.18. 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).

4.1.1 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 see 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 would be consistent with transportation and urban development plans and policies.

4.1.2 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—ʻEwa, Central Oʻahu, and the Primary Urban Center (PUC).

The ʻEwa region is a rural and agricultural area that is undergoing urbanization and includes Kapolei, which is developing as Oʻahu's "second city." The Waiʻanae terminal station for the Project is at East Kapolei. The Waiʻanae end of the Project would serve the area where both population and employment are forecasted to grow by approximately 400 percent. This area includes the UH West Oʻahu campus, the Salvation Army Kroc Center, and a master-planned development in Hoʻopili. All are planned to open between 2009 and 2012 and are consistent with the goals of transit-oriented development (TOD). Commercial space will grow to 7.1 million square feet (compared to 8.4 million square feet existing in Honolulu today). The UH West Oʻahu campus is projected to have 7,600 students and 800 staff and faculty by 2020. Central Oʻahu has a suburban development pattern

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.

Table 4-2 Existing Land Use Overview by Planning Area

Planning Area	Land Use Overview[1]
`Ewa—includes 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 industry and commercial uses. A number of State and Local government offices , as well as some light industry, have moved to Kapolei.
Central O`ahu—includes 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—includes Pearl City-`Aiea, Salt Lake-Āliamanu, Airport-Pearl Harbor, Kalihi-Iwilei, Palama-Liliha, Downtown, Kaka`ako, Makiki-Mānoa, Mō`ili`ili-Ala Moana	The Primary Urban Center is a wide-ranging development region stretching from Pearl City through Salt Lake, 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. 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. The Ala Liliko`i Station area is dominated by civilian residential uses on the mauka side of the alignment and military residential and other facilities on the makai side. Other than the high-density residential Salt Lake area, most residences are single-family. All the station areas along the airport alignment are dominated by military, airport, or light industrial uses. 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 area is comprised of high-density uses, including major office buildings, retail, and high-density condominiums. Major 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, 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 the area.

[1] Land uses described include current uses within the study corridor.
[2] Planning area extends beyond the study corridor.

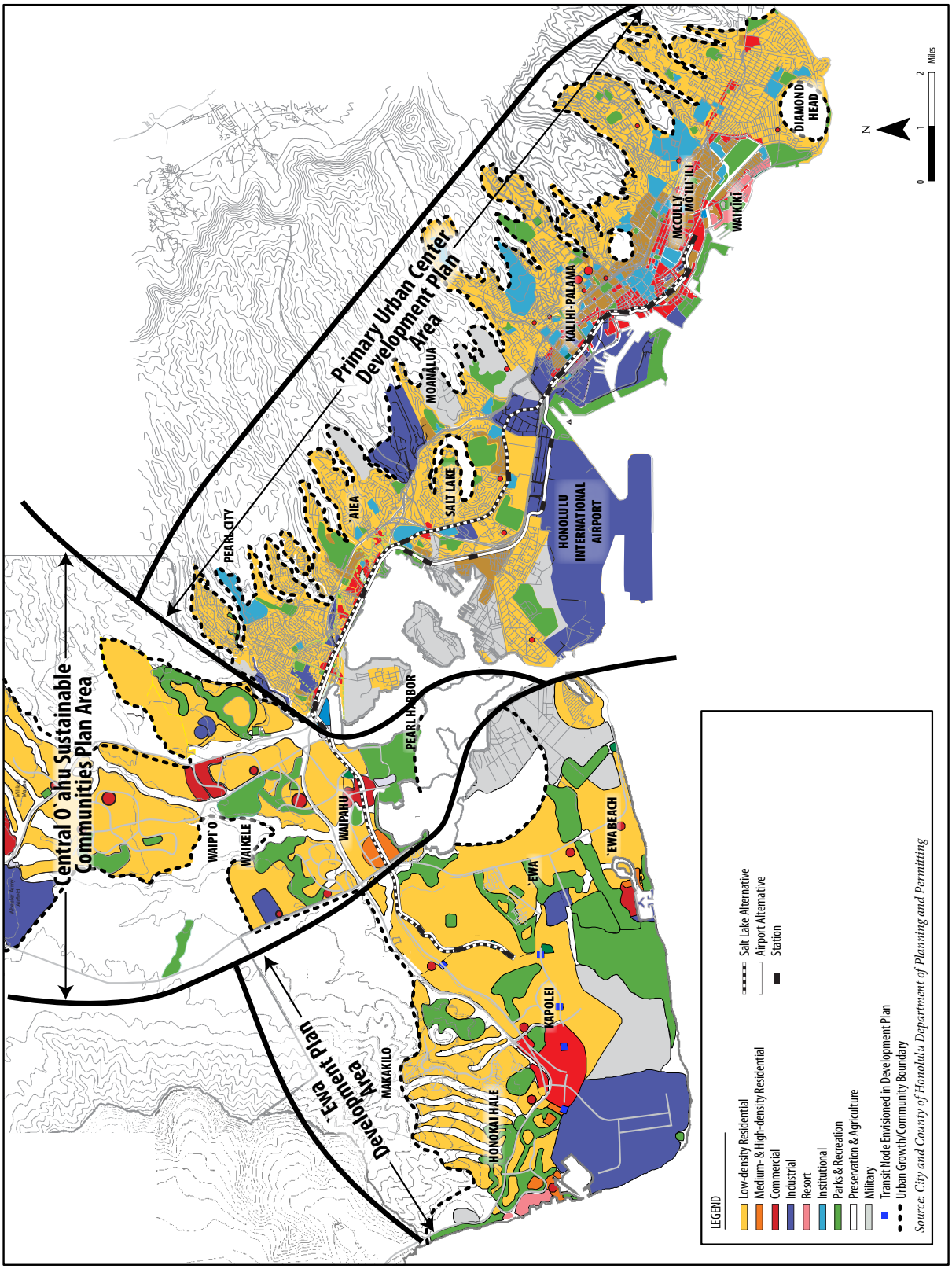

Figure 4-2 Planning Regions and Planned Land Use

encompassing smaller cities and community centers. Only part of the Central Oʻahu planning area is within the study corridor. The PUC encompasses the most urbanized part of the island, including Downtown Honolulu. Figures 4-3 through 4-6 show existing land uses within the study corridor (one-half mile from the project alignment).

Farmlands

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

The ʻEwa Plain, including 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 ʻEwa Plain is still classified or zoned for agricultural use by either the State of Hawaiʻi or the City and County of Honolulu (City). Much of ʻEwa that is not developed is also classified as "Prime Agricultural Land."

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 Oʻahu's future. The plans that are relevant to the goals and objectives of providing improved transit services within the study corridor include the following:

- The *Hawaiʻi Statewide Transportation Plan* (HDOT 2002)—this plan envisions a multimodal transportation system and promotes transit-supportive development in activity centers along the corridor.
- The *Oʻahu Regional Transportation Plan 2030* (OʻahuMPO 2006)—this plan focuses on improving mobility with a series of strategies and programs to address future transportation needs. Within the 2030 scope, this plan calls for a rail transit system that would serve the corridor between Kapolei and Honolulu.
- The *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 Oʻahu to the PUC, Central Oʻahu, and ʻEwa.

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

The City is currently pursuing a TOD special district amendment to a land use ordinance. TOD special districts would 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 would occur before the fixed guideway stations are constructed.

The *Waipahu Livable Communities Initiative* (DPP 1998) and the *ʻAiea-Pearl City Livable Communities Plan* (DPP 2004b) promote transit-supportive development patterns and pedestrian-friendly environments.

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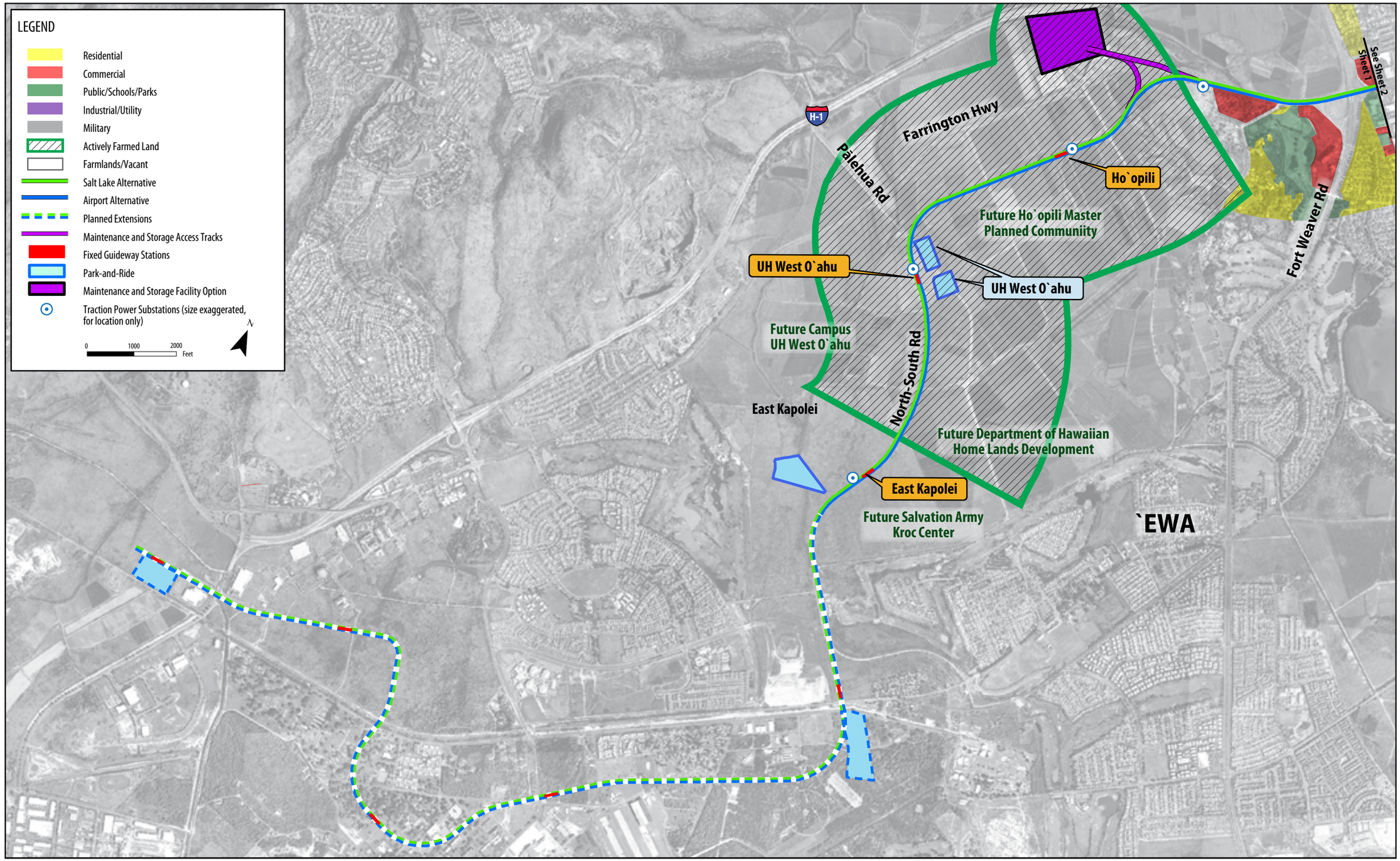

Figure 4-3 Existing Land Use, Kapolei to Fort Weaver Road

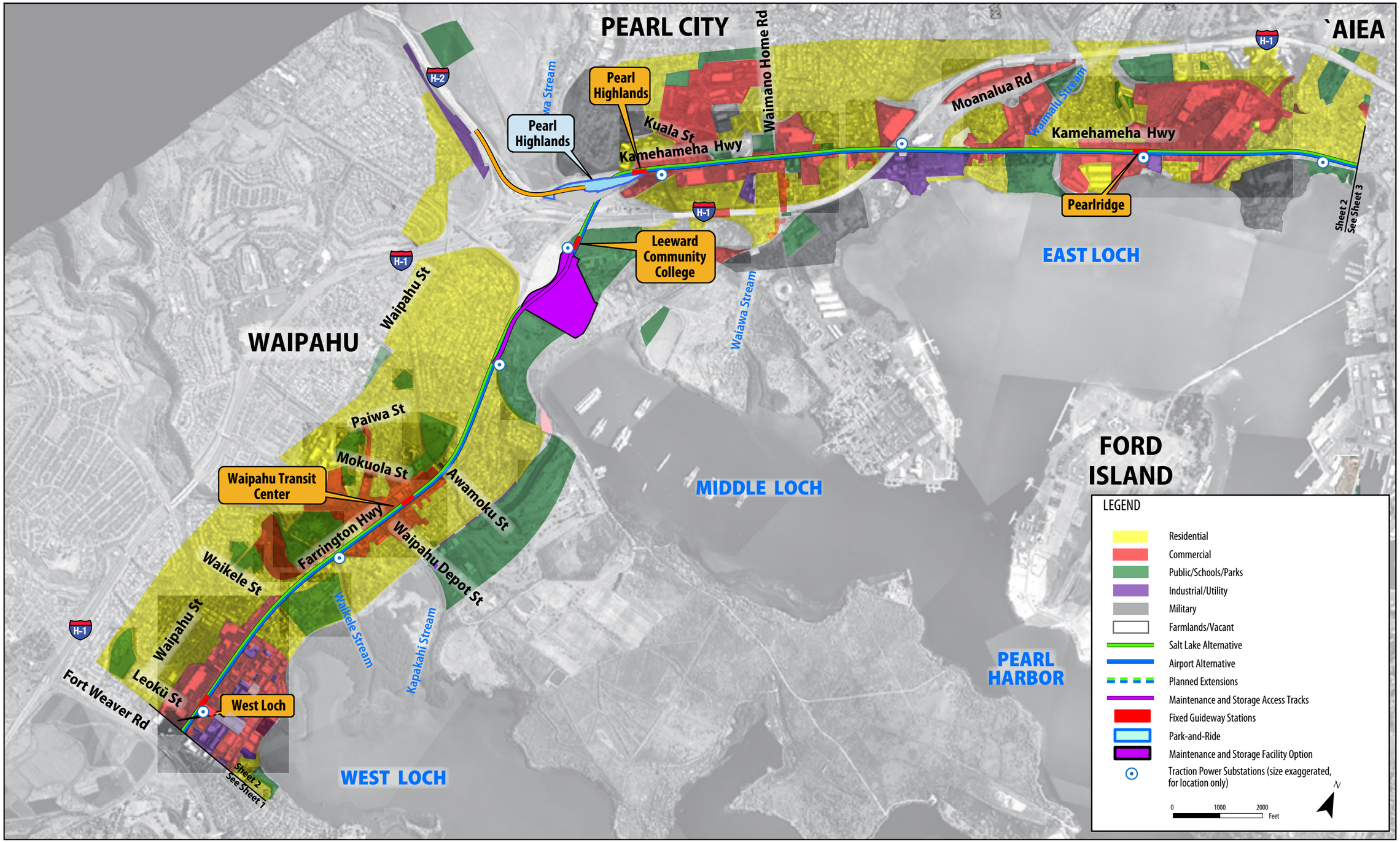

Figure 4-4 Existing Land Use, Fort Weaver Road to Aloha Stadium

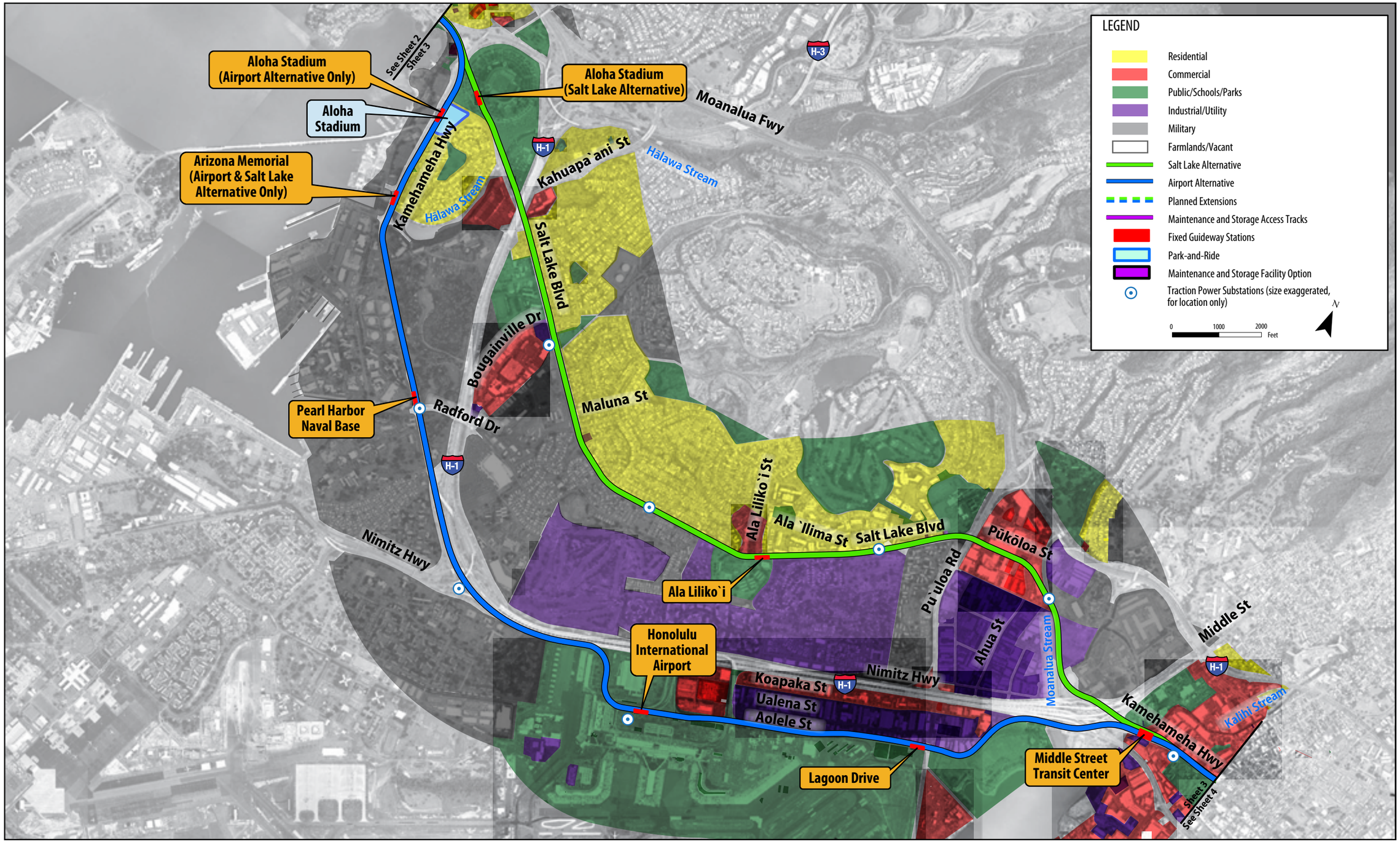

Figure 4-5 Existing Land Use, Aloha Stadium to Kalihi

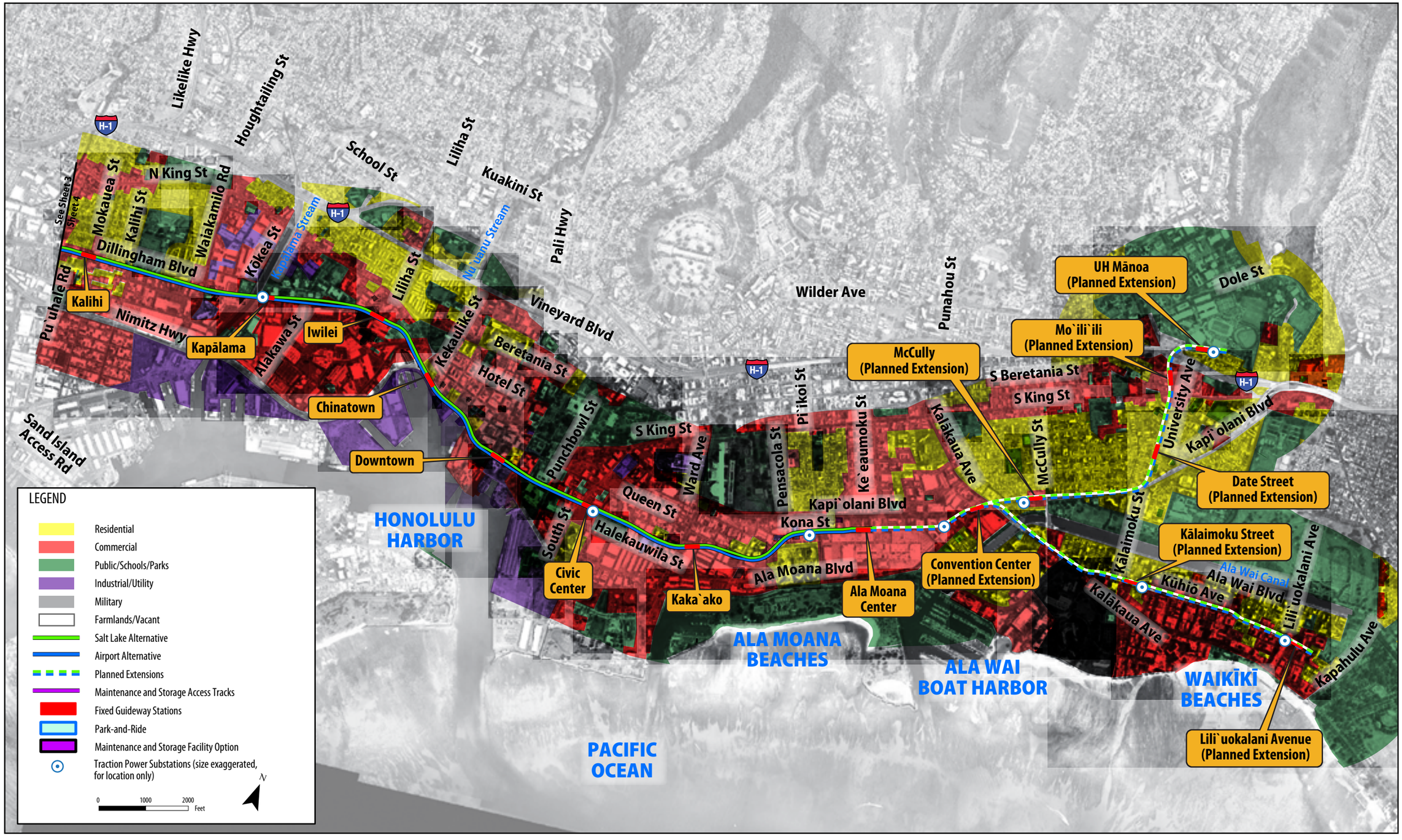

Figure 4-6 Existing Land Use, Kalihi to UH Mānoa and Waikīkī

4.1.3 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. Although the projects on the ORTP would be built, their environmental impacts would be studied in separate documents. The No Build Alternative is not consistent with local and regional long-range plans.

Common to All Build Alternatives

Table 4-3 identifies the acreage that would be affected by each of the project's Build Alternatives where existing land use would be converted to a transportation use. Only those parcels that would be completely acquired (full acquisition) would result in changes in land use resulting directly from the Project. For some properties, only a small portion of the parcel would be required (partial acquisition), and existing land uses would remain unchanged by the Project. The largest potential effect would be displacement of Aloun Farms operations mauka of Farrington Highway for the proposed 45-acre maintenance facility. Traction power substations will be located approximately every mile. A description of the substations is provided in Chapter 2. 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. A more complete analysis of the types of land uses that would be affected is presented in Section 4.3, where displacements and relocations associated with the acquisition of residential, commercial, and other types of properties are discussed.

Table 4-3 Property Acquisition by Alternative

Alternative	Acquisition Acreage
Salt Lake	147
Airport	141
Airport & Salt Lake	160

The acquired acreage under each of the Build Alternatives 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 would be 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 on the ORTP would be built, their environmental impacts would be studied in separate documents. The adopted *'Ewa Development Plan* (DPP 2000), however, has recognized that agricultural lands adjacent to the project alignment would be developed some time in the future.

Common to All Build Alternatives

The only farmlands that would be acquired for the Project are in the 'Ewa Plain and, therefore, common to all Build Alternatives. Because the properties are relatively large, only a small portion of each agricultural parcel would be acquired (Figures 4-7 and 4-8). The 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 would be acquired by the Build Alternatives, of which 70 acres are actively cultivated.

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).

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 would not be significant and no mitigation would 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 public transportation and land use planning documents that call for the development of a central transit system within the study corridor. Projects on the ORTP will be constructed, and separate environmental documents will be prepared for those projects.

Common to All Build Alternatives

The Build Alternatives would be consistent with adopted State and Local government transportation and land use plans and policies. The transit system would 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 would provide reliable rapid transit within the study corridor that would serve all population groups, improve transit links, and offer an alternative to the use of private automobiles.

The *'Ewa Development Plan* 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 Development Plan* states that higher-density residential and commercial uses should be developed along a major rapid transit corridor linking Kapolei with Primary Urban Center communities to the east (DPP 2000). In addition, the plan recommends that the new UH West O'ahu campus should be oriented to support pedestrian access to and from a major transit node on North-South Road.

All of the Build Alternatives are equally consistent with adopted State and Local plans and policies.

Mitigation

The acquisition of property for the Build Alternatives would be conducted consistent with Federal and State regulations and with the procedures outlined in the *Honolulu High-Capacity Transit Corridor Project Real Estate Acquisition Management Plan* (RTD 2008q).

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

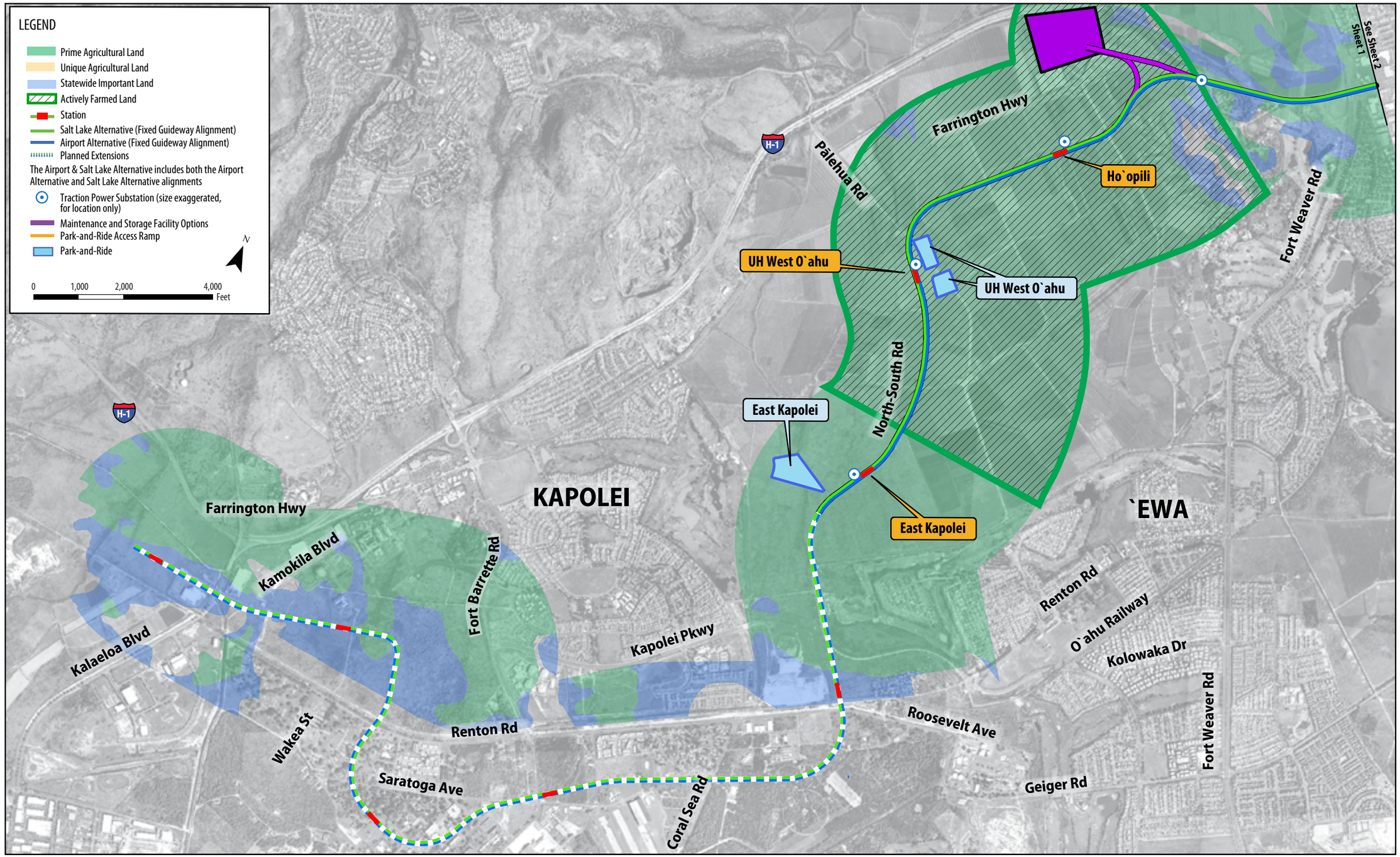

Figure 4-7 Designated Agricultural Lands , Kapolei to Fort Weaver Road

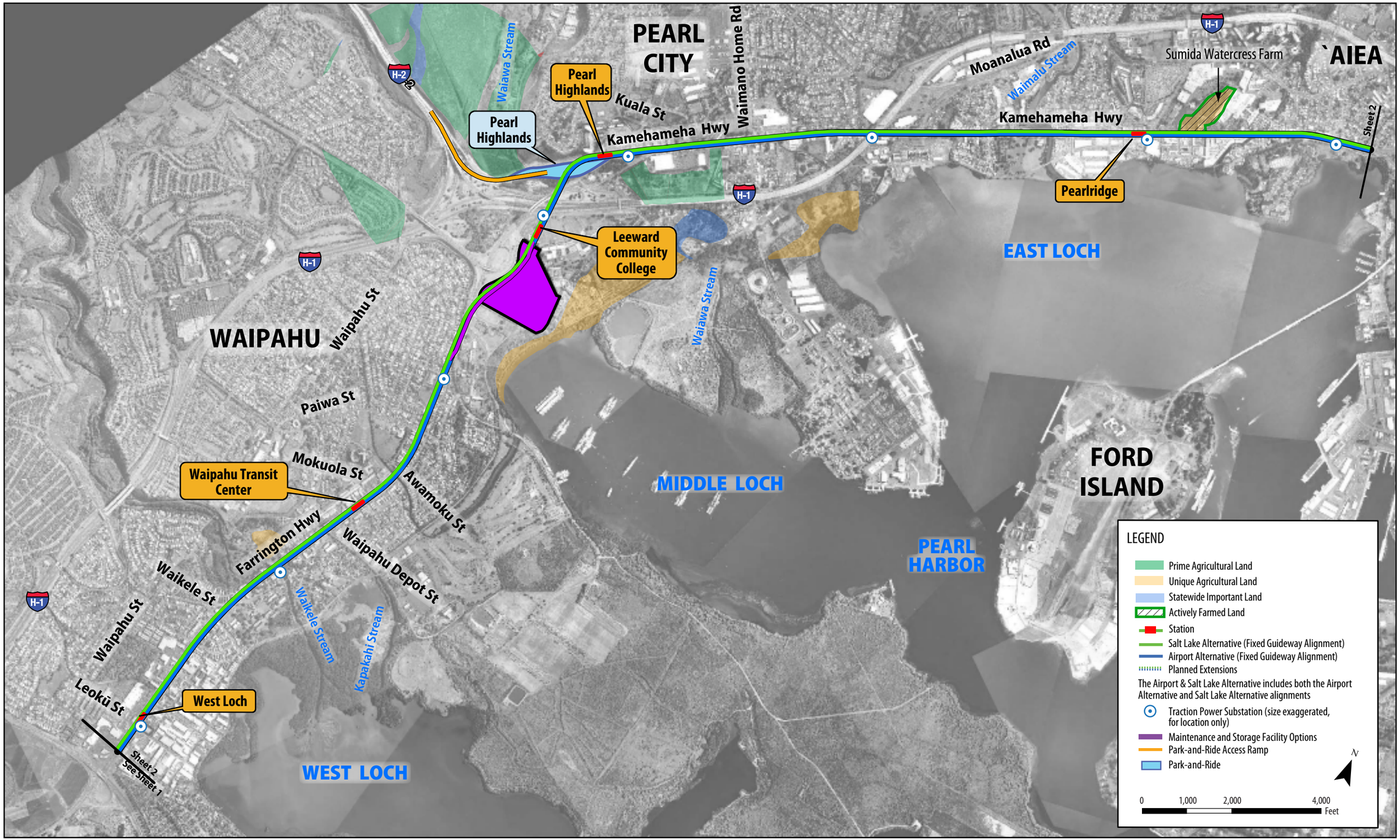

Figure 4-8 Designated Agricultural Lands, Fort Weaver Road to Aloha Stadium

4.2 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 would result from acquisition of property for the Project were evaluated. Economic effects related to construction are discussed in Section 4.17 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).

4.2.1 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: the 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 4.3, changes in tax revenue were estimated using the City's 2008 tax rates.

4.2.2 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 4-4). 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.

Table 4-4 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.

Real Property Tax

For the fiscal year ended 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.

4.2.3 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. While TheBus would continue to provide transit services, there would be no mobility enhancements for travel to employment or recreation areas or additional transit options to transit-dependent households.

Common to All Build Alternatives

Employment

The Project would require the acquisition of some commercial and industrial properties. This would displace the businesses using the properties as well as their employees. It is anticipated that these businesses would be relocated to new sites.

Once constructed, the Project would employ workers for maintenance and operation of the system. It is anticipated that workers would be hired from the existing local labor force and trained to meet job expectations. The number of new workers would be very small compared to the total labor force on O'ahu. Employment related to construction of the Project is discussed in Section 4.17.

Real Property Tax

For all of the Build Alternatives, property would be acquired from private owners and converted to a transportation use that is owned by the City. This would result in a direct reduction in property tax revenues. These reductions are estimated to be $1.2 million for any of the Build Alternatives. Because all alternatives are similar, from a land acquisition perspective, all would have similar potential effects given the depth of this study. A more detailed table of results is included in the Economics Technical Report (RTD 2008c). Section 4.18 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 substantial long-term adverse effects on the economy or property tax revenues. No mitigation measures would be needed.

4.3 Acquisitions, Displacements, and Relocations

This section documents the effects on properties from required right-of-way acquisition for each of the Build Alternatives. For additional information and references, see the *Honolulu High-Capacity Transit Corridor Project Land Use Technical Report* (RTD 2008b), the *Honolulu High-Capacity Transit Corridor Project Neighborhoods and Communities Technical Report* (RTD 2008d), and the *Honolulu High-Capacity Transit Corridor Project Real Estate Acquisition Management Plan* (RTD 2008q).

4.3.1 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 (49 CFR 24), as amended, 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 conceptual engineering drawings prepared for the Project's Build Alternatives. Generally, if only a portion of the property would be required, then it is considered a partial acquisition. However, if a substantial amount of the land and/or the primary structure were located within the portion of the parcel to be acquired, then the entire property would be purchased. This is referred to as a *full acquisition*. For residential properties, if the proposed right-of-way line comes within 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 considered a partial acquisition. For commercial properties, including situations where the commercial property could lose its function, full acquisition was considered. Once it was determined that a parcel would be acquired, the displacement and relocation of residences, businesses, and uses were analyzed. Information regarding the amount of acreage needed for each alternative, 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 would be relocated were included in the analysis.

Most of the information used to assess the types of land uses that would 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 2008 to determine the number of businesses and, in some cases, residential units that would be acquired. The calculation of displaced persons for residential acquisitions was based on the average persons per household (2000 census data) in the study corridor. The calculation of displaced employees for business acquisitions was based on industry multipliers by type of commercial property (windshield survey).

4.3.2 Affected Environment

The project alignment traverses a variety of different land uses and different urban, suburban, rural, and agricultural environments as described in Section 4.1.

4.3.3 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 would be built, their environmental impacts would be studied in separate documents.

Common to All Build Alternatives

Table 4-5 summarizes the number of partial and full parcel acquisitions by Build Alternative.

Partial acquisitions would vary more than full acquisitions depending on the alternative. 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 that

Table 4-5 Acquisitions and Displacements Summary

Alternative	Parcel Acquisitions			Displacements by Land Use		
	Total*	Partial	Full	Residential Units	Commercial & Industrial Businesses	Churches
Salt Lake	190	155	35	20	62	1
Airport	179	145	34	20	65	1
Airport & Salt Lake	205	170	35	20	67	1

* Total parcel acquisitions includes full and partial acquisitions.
Partial Acquisition = acquisition of only land and possibly minor buildings on a property. The existing owners would 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 would be displaced by project improvements.

would be partially acquired, existing land uses would not change.

The number of full acquisitions for each of the Build Alternatives would only vary by one parcel. Of the full acquisitions required for each of the Build Alternatives, 34 of these acquisitions would be the same for each alternative.

Appendix B, Conceptual Right-of-Way Plans, provides information on a parcel-by-parcel basis for partial and full acquisitions anticipated for the Project.

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

Table 4-5 also shows the number of residential units, business units, and churches located on the parcels that would be displaced as a result of the anticipated full acquisitions. The effects on residential units would be the same for all Build Alternatives. The remaining acquisitions, with the exception of one church, would be business displacements.

Considering that there are more than 1,200 parcels adjacent to the alignment, the full acquisitions and displacements from any Build Alternative would 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 would not have a substantial effect.

Salt Lake Alternative

The Salt Lake Alternative would require more parcel acquisitions than the Airport Alternative but would result in the same number of residential displacements and fewer business displacements. The one additional full parcel acquisition would affect a warehouse/wholesale business. The effects of full acquisitions on residential and commercial uses would be identical to the effects described under the heading *Common to All Build Alternatives,* which include conversion of land uses and displacements.

Airport Alternative

The Airport Alternative would require fewer parcel acquisitions than the Salt Lake Alternative but would result in more business displacements. The effects of full acquisitions on residential and commercial uses would be similar to the effects described under the heading *Common to All Build Alternatives*.

Airport & Salt Lake Alternative

The Airport & Salt Lake Alternative would require more parcel acquisitions than the other alternatives because it includes the effects of both the Airport and Salt Lake Alternatives. It would result in the same number of residential displacements and more business displacements than the other Build Alternatives. The effects of partial and full acquisitions on residential and commercial uses would be similar to the effects described under the headings *Common to All Build Alternatives, Salt Lake Alternative,* and *Airport Alternative.*

Mitigation

Where relocations would occur, compensation would be provided to affected property owners, businesses, or residents in compliance with all applicable Federal and State laws and would follow the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, as well as procedures outlined in the *Real Estate Acquisition Management Plan* (RTD 2008q). The plan includes the following measures related to relocations:

- The City would assist all affected persons in locating suitable replacement housing and business sites within an individual's or business's financial means.
- The City would provide relocation advisory services to businesses where acquisition of adjacent property may substantially reduce clientele, limit accessibility, or affect a business in other substantial ways.
- A minimum 90-day written notice would be provided before any business or resident would be required to move.
- Relocation services would be provided to all affected business and residential property owners and tenants without discrimination; and persons, businesses, or organizations that are displaced as a result of the Project would be treated fairly and equitably.
- Where landscaping, sidewalks, and driveway access would be affected by the Project, coordination would occur with the landowner, and these property features would be replaced and/or the property owner would be compensated in accordance with the *Real Estate Acquisition Management Plan* (RTD 2008q).

4.4 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 under each of the Build Alternatives 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).

4.4.1 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 funds from being converted to transportation use. The study corridor does not contain any Section 6(f) properties. Section 4(f), as amended, of the USDOT Act of 1966 (49 USC 303) protects public parklands and recreational lands, wildlife

refuges, and historic sites of National, State, or Local significance.

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 alignments were identified based on information from the General Plan (DPP 2002a), the Department of Planning and Permitting, the Department of Parks and Recreation, land use and zoning plans, the State of Hawaiʻi Department of Land and Natural Resources, 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 4.3 for information on acquisitions).

4.4.2 Affected Environment

The following sections describe community facilities, parklands 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 religious institutions, police and fire services, hospitals and medical facilities, libraries, schools, parks, and recreation 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 ʻEwa area because of its rural, agricultural environment. In contrast, substantial numbers of community facilities are clustered in 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 recreation areas, and cemeteries. Each is considered below. Impacts are listed in Section 4.4.3, Environmental Consequences and Mitigation.

Schools

There are 58 schools within one-half mile of the project alignments. The 16 following schools are adjacent to the alignment:

- Āliamanu Elementary and Middle School
- Honolulu Community College
- Kalākaua Middle School
- Kalihi Kai Elementary
- Makalapa Elementary
- Moanalua High
- Pearl City Elementary
- Radford High
- St. Joseph Elementary (private)
- Waipahu High
- Waipahu Intermediate
- Leeward Community College
- Moanalua/ʻAiea Community School
- UH Mānoa Urban Garden Center
- Holy Family Catholic Academy (private)
- Joy of Christ Preschool (private)

Public schools also typically have recreational amenities, including baseball diamonds, soccer

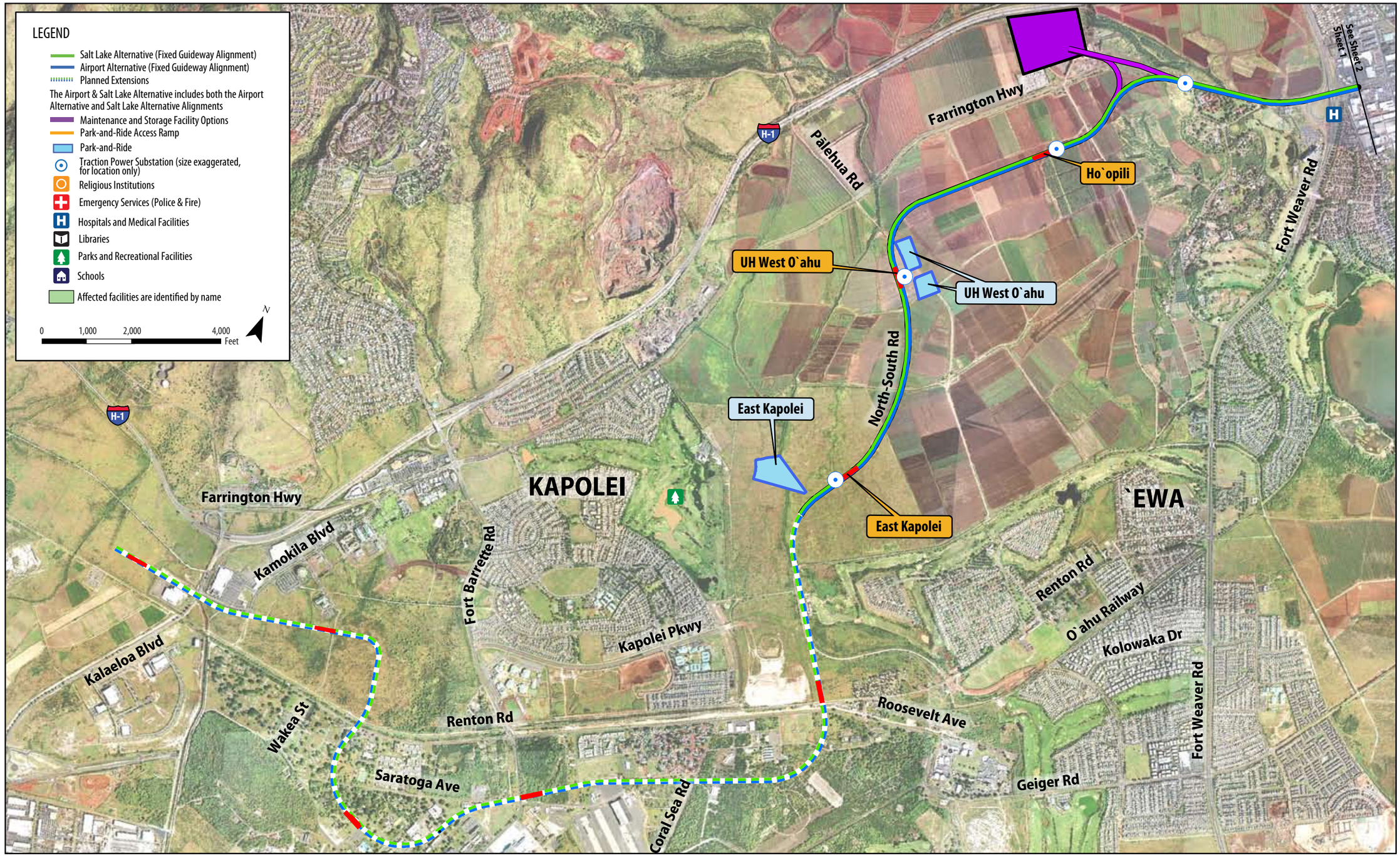

Figure 4-9 Community Resources and Facilities within One-half Mile, Kapolei to Fort Weaver Road

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

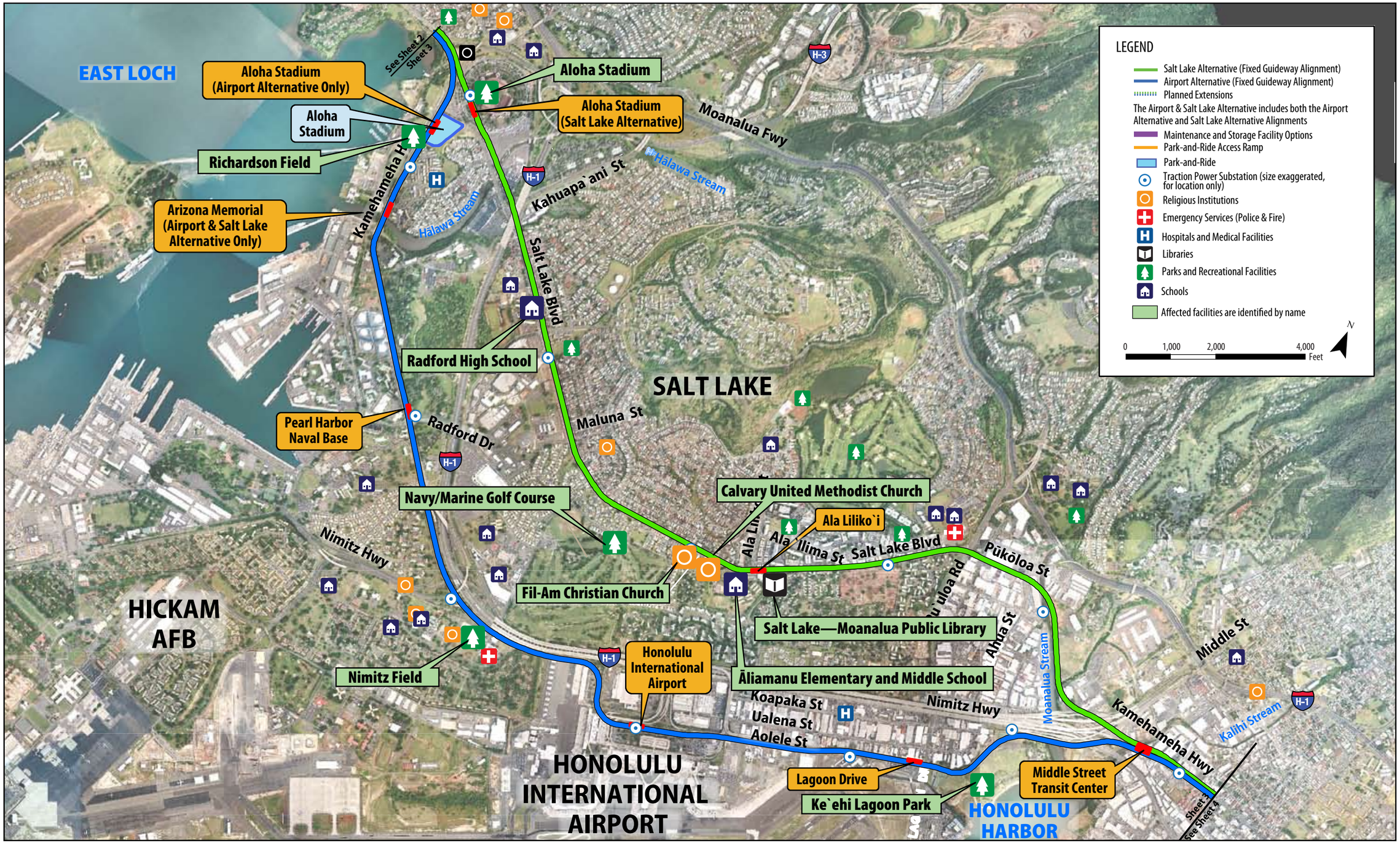

Figure 4-11 Community Resources and Facilities within One-half Mile, Aloha Stadium to Kalihi

Figure 4-12 Community Resources and Facilities within One-half Mile, Kalihi to UH Mānoa and Waikīkī

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

Six libraries are within one-half mile of the project alignment. The Salt Lake-Moanalua Public Library is the only library adjacent to the Project.

Religious Institutions

A total of 93 religious institutions are within one-half mile of the project alignment. Nineteen of these are adjacent to the project alignment. They are listed in Table 4-6 with addresses. (Addresses are included for religious institutions to identify the locations where religious institutions along the corridor have the same name.)

Table 4-6 Religious Institutions Adjacent to Project Alignment

Name	Address
Bible Baptist Church	94-210 Hanawai Circle
Hawai`i Fellowship	94-810 Moloalo Street
Iglesia Ni Cristo	765 Kamehameha Highway
Joy of Christ Lutheran Church	784 Kamehameha Highway
Koinonia Christian Center	94-216 Farrington Highway #A2
La Luz Del Mundo	719 Kamehameha Highway #A206
New Hope Leeward	94-050 Farrington Highway
Bethesda Temple Apostolic Church	941 Kamehameha Highway #202
St. Joseph Waipahu	94-675 Farrington Highway
Waipahu Church of Christ	94-289 Kahualena Street
West O`ahu Christian Church	94-420 Farrington Highway
Calvary United Methodist Church	3375 Salt Lake Boulevard
Fil-Am Christian Church	3600 Kamehameha Highway
Alpha Omega Christian Fellowship Church	96-171 Kamehameha Highway
First Samoan Full Gospel Pentecostal Church	3814 Salt Lake Boulevard
Iglesia Ni Cristo	94-592 Farrington Highway
Ola Nui	760 Halekauwila Street
Child Evangelical Fellowship	1190 Dillingham Boulevard
Church of Jesus Christ of Latter Day Saints	94-210 Kahualii Street

Cemeteries

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

Government and Military

For many decades, a sizable Federal government presence has been located on Oʻahu, and 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:

- Kapolei Municipal Government Complex
- Keʻehi Transfer Station
- Disabled American Veterans Memorial Headquarters Office
- Honolulu International Airport
- Oʻahu Community Correctional Facility
- U.S. Post Office
- U.S. District Court

Parks and Recreational Facilities

There are 64 parklands 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, 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 64 facilities, 14 are directly adjacent to the project alignment right-of-way:

- Irwin Memorial Park (public)
- Mother Waldron Park (public)
- Āliamanu Neighborhood Park (public)
- Keʻehi Lagoon Park (public)
- ʻAiea Bay State Recreational Area (public)
- Aloha Stadium (public)
- Navy Housing Community Park (private)
- Navy-Marine Golf Course (military)
- Nimitz Field (military)
- Richardson Field (military)
- Neal S. Blaisdell Park (public)
- West Loch Golf Course (public)
- Walker Park (public)
- Future Queen Street Park (public)

Section 6(f) Resources

The Hawaiʻi State Parks and Recreation Department was contacted in September 2008. Two parks adjacent to the alignment have received Water and Land Funding and are, therefore, Section 6(f) resources. They are the Neal S. Blaisdell Park and ʻAiea Bay State Recreation Area. No Section 6(f) resources have been identified along the project alignment. Therefore, no Section 6(f) lands would be converted to a project use. For this reason, they are not considered below in Environmental Consequences.

Emergency Services

The Island of Oʻahu is governed by the City and County of Honolulu, 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 the following: District 1 Downtown, District 3 Pearl City, District 5 Kalihi, and District 7 East Honolulu. Five police stations are within one-half mile of the alignment, but none of them are adjacent to the alignment.

Fire

The Honolulu Fire Department has 5 battalions, or districts, on Oʻahu and 42 individual fire stations; 13 of these are within one-half mile of the alignment. Three are adjacent to the alignment:

- Waterfront Fire Station
- #8 Mokulele Fire Station
- #30 Moanalua Fire Station

Hospitals and Medical Facilities

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

- Kahi Mohala Behavioral Health
- Y. Makalapa Branch Medical Clinic
- Waipahu Medical Center
- Dillingham Medical Building
- Maurice J. Sullivan Family Hospice Center
- Puʻuwai Momi Housing Complex—Teen Center

Buses

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

Because much of the project alignment is located along heavily urbanized roadways, many utilities and associated infrastructure are located in the project study area. 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.

4.4.3 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, parklands 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 would be built, their environmental impacts would be studied in separate documents.

Community Facilities

Section 4.4.2, Affected Environment, lists schools, libraries, churches, parks and recreational facilities, and cemeteries adjacent to the alignment. Of those, one church would be displaced by the Project. Fourteen community facilities would be partially acquired by the Project. The number of community facilities varies by alternative. Table 4-7 lists all affected community facilities, the nature of the acquisition, and by which alternative the resource might be affected. No cemeteries or known burial sites would be affected by the Build Alternatives.

The schools that would be affected by partial acquisitions from the Build Alternatives are Honolulu Community College, Waipahu High, Leeward Community College, and the UH Mānoa Urban Garden Center. Partial acquisition would occur at the Bethesda Temple Apostolic Church, and the Alpha Omega Christian Fellowship would be displaced as part of full acquisition of the commercial building where this facility is located.

Additional community facilities expected to be affected by partial property acquisition would involve various parcels owned by the Local, State, and Federal governments. The Project would require partial acquisition of land from parcels associated with government or military

Table 4-7 Affected Community Facilities and Services

Facility	Acquisition[1]	Alternative
Schools/Libraries		
Āliamanu Elementary and Middle School	Partial acquisition of land (0.04 acre)	Salt Lake
Honolulu Community College	Partial acquisition of land (0.18 acre)	All
Radford High	Partial acquisition of parking (0.01 acre)	Salt Lake
Waipahu High	Partial acquisition of land (0.16 acre)—a small number of temporary or permanent buildings may be displaced or may require minor modification in addition to the required purchase of a narrow strip of land	All
Leeward Community College	Partial acquisition of land (3.94 acres)	All
UH Mānoa Urban Garden Center	Partial acquisition of land (0.16 acre)	All
Salt Lake-Moanalua Public Library	Partial acquisition of land (0.28 acre)	Salt Lake
Religious Institutions		
Bethesda Temple Apostolic Church	Partial acquisition of land (0.05 acre)	All
Calvary United Methodist Church/ Fil-Am Christian Church	Partial acquisition of land[2] (0.22 acre)	Salt Lake
Alpha Omega Christian Fellowship	Displacement	All
Parks and Recreational Facilities		
Nimitz Field	Partial acquisition of land (0.58 acres)	Airport
Richardson Field	Partial acquisition of land (0.05 acres)	Airport
Navy-Marine Golf Course	Partial acquisition of land[2] (0.22 acres)	Salt Lake
Ke`ehi Lagoon Park[3]	Partial acquisition of land (2.88 acres)	Airport
Aloha Stadium[3]	Partial acquisition of land and parking (6 acres for Salt Lake Alternative, 0.8 acre for Airport Alternative)	All
Future Queen Street Park	Partial acquisition of land (250 square feet)	All

[1] Acres of land acquisition are estimated based on Conceptual Plans and indicate the area of land underneath the elevated guideway. For many resources, the acquisition of land would be from support columns, and the actual acreage of impact would be less than shown in this table.
[2] Denotes permanent easement.
[3] 4(f) uses are discussed in Chapter 5.

facilities. These are the Pearl City Post Office (0.06 acres), the Federal office building at 300 Ala Moana Boulevard (0.34 acres), the Oʻahu Correctional Facility (0.21 acres), and a City office building. Partial acquisitions would be required at the Fort Shafter Army Reservation, Makalapa Naval Housing, the Pearl Harbor Complex, and the Naval Reservation. The military properties include lands used for military operations as well as residential accommodations for enlisted personnel and their families.

Salt Lake Alternative

The Salt Lake Alternative would also require parts of Āliamanu Elementary and Middle Schools, Radford High, the Salt Lake-Moanalua Public Library, the Calvary United Methodist Church, and the Fil-Am Christian Church. There would be a partial parcel acquisition at U.S. Navy Base Housing and a State property.

Airport Alternative

There would be a partial parcel acquisition at Hickam Airforce Base.

Airport & Salt Lake Alternative

This alternative would include all of the effects discussed for the Salt Lake Alternative above.

Parklands and Recreational Facilities

Common to All Build Alternatives

Aloha Stadium would be affected by all Build Alternatives, but the Salt Lake Alternative would have a greater effect on Aloha Stadium than the Airport Alternative. This is because the Salt Lake Alternative includes a pedestrian structure, which connects to the park-and-ride lot, and a transit station within the stadium parking lot. Partial acquisitions at Aloha Stadium would affect long-term and temporary parking spaces and circulation as a result of the location of a park-and-ride connector and a bus turnout. In addition, the Aloha Stadium overflow parking lot bounded by two segments of Salt Lake Boulevard and Kamehameha Highway would become a shared-use facility providing event parking and a transit park-and-ride lot (see Chapter 3, Transportation, for a more detailed discussion of parking effects at Aloha Stadium). The presence of the transit station would reduce the need for stadium parking to a greater degree than it would displace parking.

Salt Lake Alternative

The Salt Lake Alternative would acquire 0.22 acres from the Navy-Marine Golf Course parcel but would not affect the course itself.

Airport Alternative

The Airport Alternative also would affect three additional facilities: Richardson Field, Nimitz Field, and Keʻehi Lagoon Park.

The City-owned Keʻehi Lagoon Park is a 72-acre park located at Lagoon Drive and Aolele Street near Honolulu International Airport. It contains 12 tennis courts, a baseball field, walking trails, picnic areas, and restrooms. Property acquisition would displace 4 of the 12 tennis courts and some parking stalls to accommodate the guideway columns. The tennis court that would be displaced is located at the end of the park near Nimitz Highway. An evaluation of the effect on this Section 4(f) park resource is discussed in more detail in Chapter 5, Section 4(f) Evaluation.

Richardson Field, located at Ford Island Boulevard and Kamehameha Highway, is a 25-acre military recreational facility with grassy fields, park tables, benches, and a swimming pool. Nimitz Field consists of five baseball diamonds on 10 acres on a larger military-owned property. Effects on these two parks include partial acquisitions of the grass fields near the fence line along Kamehameha Highway

Public Services

Common to All Build Alternatives

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 Build Alternatives would improve the operation of the roadway network as compared to the No Build Alternative by reducing congestion and would improve emergency response times. The Build Alternatives would not affect police, fire, or emergency medical facilities adjacent to the alignment. A Maintenance of Traffic Plan would also be developed during final design to manage traffic and emergency services during construction (see Chapter 3 for more information about the Maintenance of Traffic Plan).

Airport Alternative

Section 4.4.2 lists three fire stations and six hospitals adjacent to the alignment. The only effect on these facilities would be a partial acquisition (0.28 acre) of land and parking in the vicinity of the Y. Makalapa Branch Medical Clinic. Only the Airport and the Airport & Salt Lake Alternatives would impact this facility.

Utilities

Common to All Build Alternatives

A number of properties owned by utility providers would be affected by partial acquisitions. This includes two properties owned by the Hawaiian Electric Company and one owned by the State of Hawai'i Department of Transportation. A narrow strip of land would be acquired from each. Coordination would 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 would involve relocation and modification of existing utilities. These construction effects are discussed in more detail in Section 4.17.

Salt Lake Alternative

In addition to effects common to all Build Alternatives, required partial property acquisition for the Project would be needed from the City Sewer Pump Station.

Airport Alternative

No additional effects would occur under the Airport Alternative other than those described previously as common to all Build Alternatives.

Airport & Salt Lake Alternative

The effects on utilities for the Airport & Salt Lake Alternative would be the same as those described previously as common to all Build Alternatives, plus the additional effects described for the Salt Lake Alternative.

Mitigation

Community Facilities

Measures to reduce the adverse effects on individual community facilities would be evaluated during preliminary and final engineering design. Mitigation efforts would involve coordination with individual property owners as necessary to appropriately address effects to community facilities. In addition, all property would be acquired following the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act and applicable State regulations.

Parklands and Recreational Facilities

Effects to parklands and recreational resources would be mitigated in coordination with parkland property owners. Depending on the final design, additional mitigation measures may be necessary to avoid a net loss in recreational amenities in adjacent neighborhoods. 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 Services

A project-specific Safety and Security Management Plan (SSMP) would be developed in accordance with FTA requirements to mitigate potential effects on community services, such as fire prevention, emergency preparedness, and response. The Honolulu Police Department, the Honolulu Fire Department, the Department of Emergency Management, and the Honolulu Emergency Services Department would be involved in preparing and implementing the plan. The plan would address public safety and security concerns, including the following:

- Threats and hazards associated with the Project
- Specific issues that arise through community outreach efforts
- 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.

4.5 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).

4.5.1 Background and Methodology

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.

4.5.2 Affected Environment

Neighborhoods

The Project transects nine 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. The population of the neighborhoods ranges from 12,300 in Downtown and Ala Moana-Kakaʻako to more than 54,000 in Āliamanu-Salt Lake.

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 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-Kakaʻako, Waikīkī, and McCully-Mōʻiliʻili neighborhoods are distinct from the western Oʻahu 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

ʻEwa is one of Oʻahu's suburban growth centers and is experiencing rapid change. It encompasses the communities of Kapolei (the "second city"), ʻEwa Villages, ʻEwa by Gentry, Honoʻuliʻuli, ʻEwa 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 the substantial development, some former sugar cane land is being used for diversified agriculture.

Waipahu

Historically, the Waipahu community makai of the 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 recreation 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

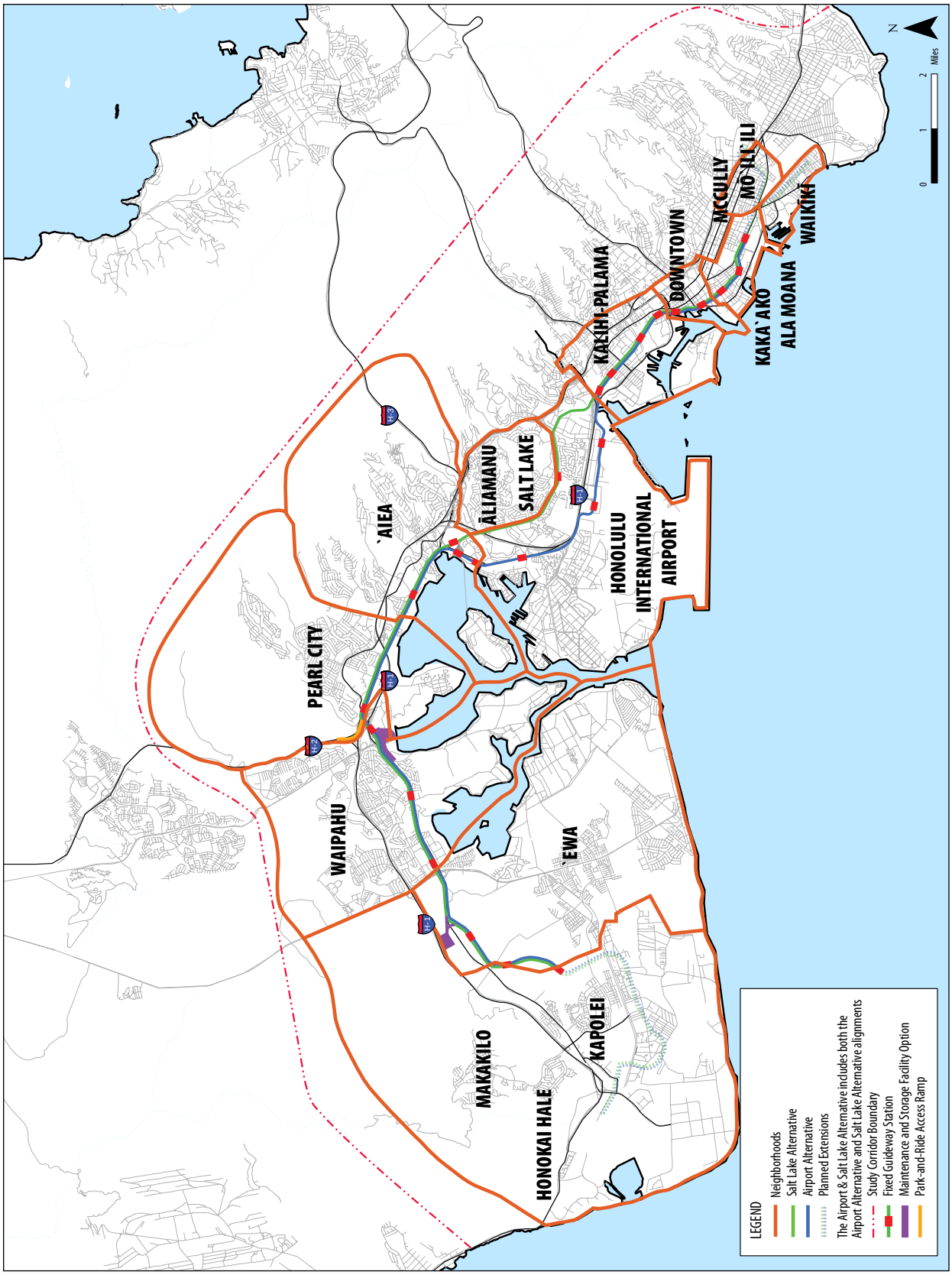

Figure 4-13 Corridor Neighborhoods

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 near Pearl Harbor is a regional recreation 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 4.6, Environmental Justice, 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 or 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.

Āliamanu-Salt Lake

The Āliamanu-Salt Lake area offers a variety of housing options. The primary residential areas are Foster Village, Āliamanu, and Salt Lake. The area of Salt Lake within Ala 'Ilima Street and Likini Street between Ala Liliko'i and Ala Napunani Streets is dominated by a large number of high-rise apartments. The main commercial areas include the Salt Lake Shopping Center.

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. Although 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

Table 4-8 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
`Ewa	$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%
`Aiea	$55,240	18%	2%	0.3%	49%	9%	1%	21%
Airport	$41,000	61%	12%	1.0%	11%	1%	4%	9%
Āliamanu-Salt Lake	$51,750	19%	6%	0.3%	52%	6%	2%	14%
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-Kaka`ako	$30,620	19%	1%	0.2%	62%	4%	1%	12%
Total O`ahu	$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.

Hawai‘i Pacific University students, downtown workers, and residents.

Ala Moana-Kaka`ako

The Ala Moana-Kaka‘ako community encompasses the 600-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 Waikīkī. These centers are being expanded and redeveloped. Other activity centers include a number of popular parks, Neal S. Blaisdell Center and Concert Hall, and the Hawai‘i Convention Center.

Demographic Characteristics

Table 4-8 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.

4.5.3 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 4.4. Aesthetic issues and their effect on adjacent land uses are discussed in Section 4.7.

No Build Alternative

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

Common to All Build Alternatives

All Build Alternatives would provide people living and working in the neighborhoods within the study corridor with increased mobility. The Project would provide an alternative to traveling by personal vehicle or bus transit within the existing transportation corridors. Passengers using the new transit system would experience reduced travel time to other neighborhoods and growth centers along the project alignment and near transit stations. The Build Alternatives would 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 would 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 an 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 Project's life cycle. The SSMP commits that the highest practical level of operational safety and security would be used. In addition, it lays the foundation for future safety and security once the Project is operating. The SSMP is reviewed and updated regularly throughout the Project's life cycle.

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 would 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 would not substantially change this development pattern. Since the transit system would be elevated, it would not create a physical barrier to pedestrian or other forms of travel within the study corridor. It also would not pose a barrier to the social network of the community since it would 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, would not affect community character and cohesion in 'Ewa because the affected area is undeveloped and primarily used for agriculture (see Section 4.1 for more information on farmlands). The area is planned to be developed into urban land uses, and the Project would 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 high-rise and medium-density apartments. The Koko Head end of Farrington Highway in Waipahu is mostly 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 route would not create an access or transportation barrier between the makai and mauka sides of the road. As an elevated structure, which would span all intersections, it would not prevent pedestrians and motorists from

conducting their normal travel pattern 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 and Pearlridge Stations. The surrounding residential uses would not be affected by property acquisitions and, being located within the highway median, the Project would 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 would not create a physical barrier to pedestrians or other forms of travel within the community. The Project would not affect community identity or cohesion as the transit system would be compatible with the existing community character along the alignment. The Project would impact the Banana Patch community, which is discussed in Section 4.6.

'Aiea—The route through the 'Aiea neighborhood continues to follow Kamehameha Highway, and the effects would 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 Project would not create a barrier to adjacent communities nor would 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.

The effects on the Airport and Āliamanu-Salt Lake neighborhoods are discussed separately for the individual alternatives below.

Kalihi-Palama—The project alignment 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 would require widening the roadway to maintain the same number of travel lanes while accommodating the guideway's support columns. This widening would result in full acquisitions of two residential parcels and partial property acquisitions along Dillingham Boulevard. Several true Kamani trees would also be removed by the Project. Impacts would occur to historic properties, as discussed in Section 4.15. These impacts would be mitigated, and mitigation may include replacing the trees.

Downtown—The Project would 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 would not create a new barrier or affect the physical character of adjacent communities. Within the Downtown area, the Project would 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 the shoreline; therefore, the transit system would have little effect on the integrity of the historic districts or their uses. As the alignment transitions to Halekauwila Street, a relatively narrow city street, the adjacent buildings become

primarily high-rise government office buildings with little or no open space between them. Views of the alignment would be limited to short segments as the guideway crosses city streets since high-rise buildings and tall trees already obstruct views. The transit system would be elevated so it would not affect the flow of traffic, bicyclists, or pedestrians within the Downtown neighborhood.

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

Salt Lake Alternative

The Salt Lake Alternative would affect all of the communities listed above under the heading Common to All Build Alternatives, plus the Āliamanu-Salt Lake neighborhood.

Āliamanu-Salt Lake—The project alignment would follow Salt Lake Boulevard, which is the northern boundary of the Airport neighborhood and the southern boundary of the Āliamanu-Salt Lake neighborhood. The boulevard is a busy, heavily traveled roadway. The section from Aloha Stadium to Wanaka Street was recently widened. The City is planning to widen the section from Wanaka Street to Ala Lilikoʻi Street. Most of Salt Lake Boulevard is adjacent to single-family and duplex residences. The mauka side includes the Foster Village and Āliamanu neighborhoods. The makai side of the street is mostly used for Navy housing, but is generally not visible from the road. Except for certain areas, the Navy allows the general public to drive through these areas, and many motorists travel to and from Kamehameha Highway and the H-1 Freeway. The access points along Salt Lake Boulevard are Maluna Street/Namur Road and Likini Place/Radford Drive. The project alignment would be located on the fringe of the community, and no full acquisitions or displacements would be necessary; therefore, changes in land use and potential effects on community character would not occur.

Airport Alternative

The Airport Alternative would affect all the communities listed above under the heading Common to All Build Alternatives, plus the Airport neighborhood.

Airport—The project alignment would travel along busy, heavily traveled Kamehameha Highway and transition to Aolele Street near 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 Nimitz Highway. The project alignment would require minimal acquisitions, redevelopment, or changes in current land uses. No properties would be acquired in full under this alternative. The transit facility is not expected to be a visual or physical barrier in the neighborhood and would not affect community identity or cohesion.

Airport & Salt Lake Alternative

The Airport & Salt Lake Alternative would have the combined effect on neighborhoods as described above for the Salt Lake Alternative and the Airport

Alternative. The number of full acquisitions and displacements for the Airport & Salt Lake Alternative would be 35 parcels. These are the same full acquisitions and displacements that would occur for the Salt Lake Alternative.

Mitigation

Since there would be no adverse effects to these neighborhoods, no mitigation is required. Ongoing coordination efforts with the public will help develop design measures that would enhance the interface between the transit system and the surrounding community.

4.6 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 Environmental Justice 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 would be experienced. 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).*

4.6.1 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, statues, guidelines, and regulations that relate to EJ issues include the following:

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

The 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 and Alaskan Native, and Native Hawaiian and 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 would be more meaningful to the demographics of the island. O'ahuMPO EJ Areas are defined as areas where the minority or low-income population concentration was 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). These data are presented in Section 4.6.2, Affected Environment.

Coordination with the City and County of Honolulu Department of Transportation Services (DTS) and Department of Planning and Permitting (DPP), the State of Hawai'i Department of Transportation (HDOT), the 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, the definition of EJ populations for this Project includes low-income and 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 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.

4.6.2 Affected Environment

Figure 4-14 shows the areas that have met the O'ahuMPO EJ threshold within the study corridor (one-half-mile from the project alignment). Figure 4-15 shows areas identified as containing communities of concern. As described in Section 4.5, 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 4.5.

Table 4-9 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.

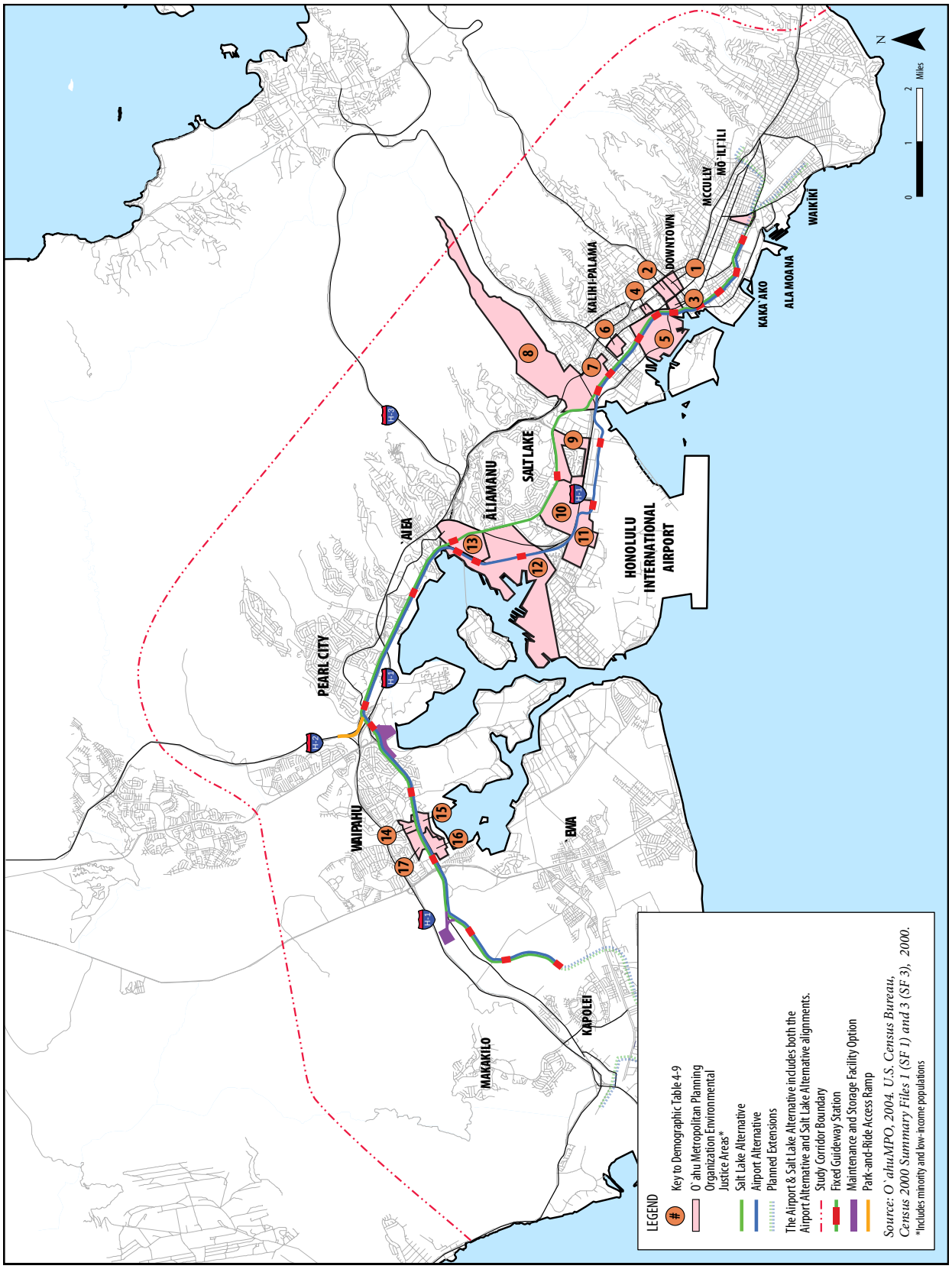

Figure 4-14 Environmental Justice Populations within the Study Corridor

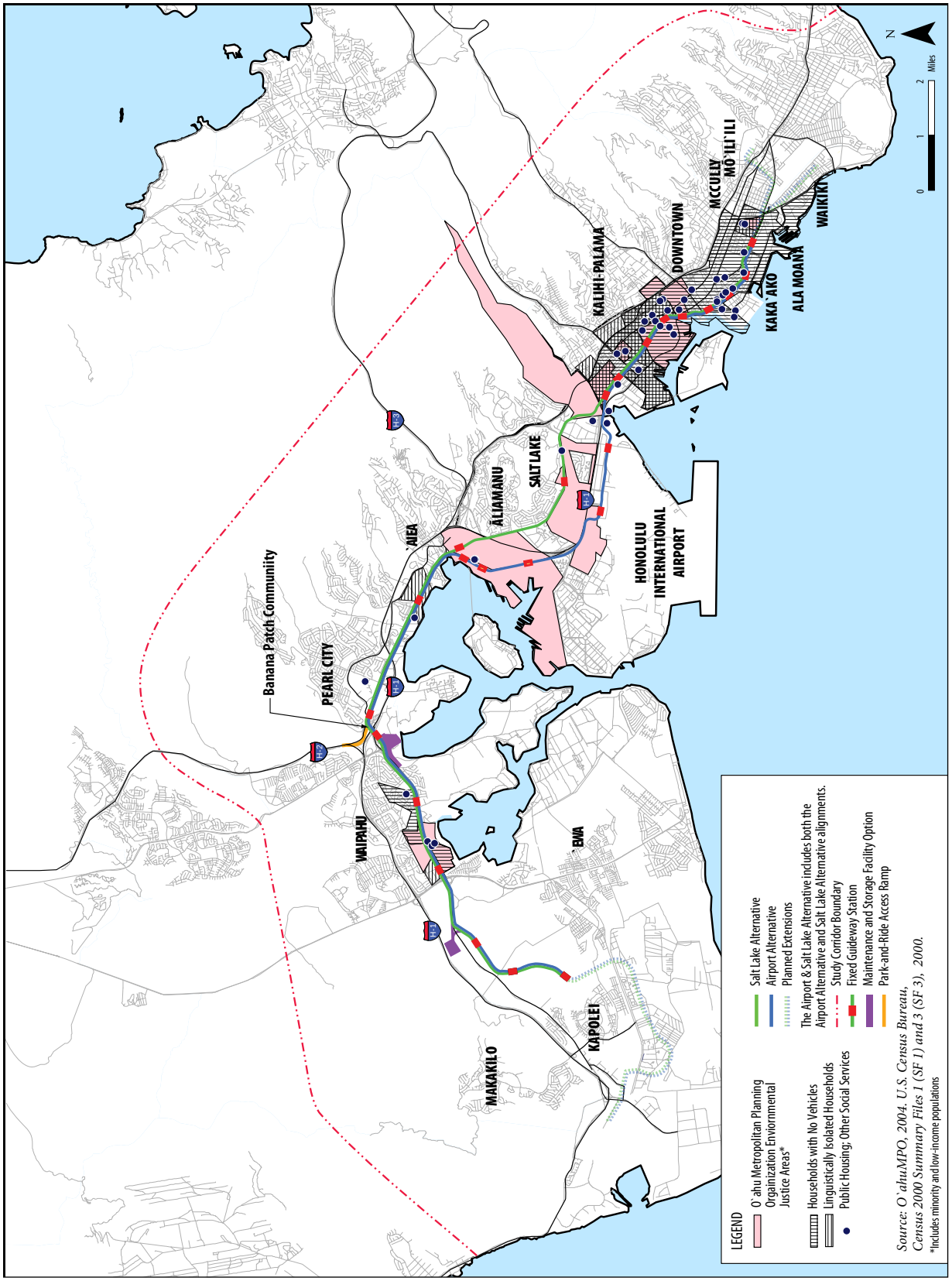

Figure 4-15 Communities of Concern within the Study Corridor

Table 4-9 Demographic Characteristics of O`ahuMPO Environmental Justice Area

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 (Yes/No)
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.

Because potential impacts to O'ahuMPO EJ Areas could include social and community resources, such as meeting halls, public gathering places, or community resources of special importance to EJ populations, this analysis documented five community resources adjacent to the alignment. Potential impacts to these facilities are discussed in the following section. The five community resources include:

- Goodwill
- Pu'uwai Momi
- Pu'uwai Momi Housing Complex Teen Center
- Salt Lake Apartments
- Institute for Human Services

Through public involvement activities, an EJ area of concern was identified. The Banana Patch community is not an O'ahuMPO EJ Area but is discussed in Section 4.6.5, Banana Patch Community.

4.6.3 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. Although the projects in the ORTP would be built, their environmental impacts would be studied in separate documents.

Common to All Build Alternatives

As a result of the public outreach efforts, this EJ analysis, and the analyses presented throughout Chapter 4, the following have been identified as resource 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 4.3 discusses right-of-way acquisitions. There are approximately 1,200 parcels adjacent to the alignment. The Project would acquire right-of-way from 14 percent of the parcels adjacent to the corridor. This number equally affects the Oʻahu MPO EJ Areas and non-EJ Areas. This demonstrates that the relative proportion of the right-of-way acquisitions inside and outside the Oʻahu MPO EJ Areas are about equal. Therefore, there are no disproportionately high and adverse effects on Oʻahu MPO EJ Areas.

Sections 4.4 and 4.5 discuss potential effects on social and community cohesion and community facilities. There is a public perception that community cohesion would be adversely affected by the Project. Because the Project would be constructed primarily within an existing transportation corridor in developed areas, it would not divide or bisect any communities beyond existing conditions or the No Build Alternative. Therefore, there would be no adverse effect on community cohesion in Oʻahu MPO EJ Areas. Unlike freeways, with restricted access, vehicular and pedestrian access to areas along the project alignment would not be restricted by the Project.

Section 4.7 discusses visual impacts from the Project. Examples of visual impacts include loss of trees, altered ʻEwa-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 would occur throughout most of the study corridor. There would not be any disproportionately high and adverse effects in Oʻahu MPO EJ Areas.

The air quality analysis described in Section 4.8 indicates a net improvement in air quality by 2030. Oʻahu MPO EJ Area would not experience any disproportionately high and adverse impacts to air quality.
Section 4.9 discusses potential noise impacts that could occur along the corridor. The noise analysis indicates there would be no severe noise impacts in the study area, although moderate impacts would occur in several areas. These noise impacts would occur outside of Oʻahu MPO EJ Areas.

Section 4.15 indicates the Project would result in seven adverse effects on historical resources. None of these occur in Oʻahu MPO EJ Areas. Overall, the Project would have few effects on social or community facilities within Oʻahu MPO EJ Areas. While there would be partial acquisition of some community facilities, there would not be any disproportionately high and adverse effects to resources of special importance to EJ populations within Oʻahu MPO 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; bus stop closures. Section 4.17 discusses construction impacts 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 would be temporary, and measures to mitigate or minimize temporary construction impacts would be implemented. Construction activities would occur throughout the study corridor and would affect both Oʻahu MPO EJ and non-EJ areas alike. Therefore, there would

be no disproportionately high and adverse impacts on O'ahuMPO EJ Areas.

Effects of the Build Alternatives also would result in transit benefits. 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 would improve within the study corridor, and these benefits can be realized by all populations. The Salt Lake Alternative proposes 19 stations, 7 of which are in, or adjacent to, O'ahuMPO EJ Areas. Two of these are exclusive to the Salt Lake Alternative. There are 22 stations proposed for the Airport Alternative. Nine are in, or adjacent to, O'ahuMPO EJ Areas. Four stations exclusive to the Airport Alternative are located in O'ahuMPO EJ Areas. Therefore, people living in O'ahuMPO EJ Areas would 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 would be affected the most by operational and construction-related impacts, these groups include O'ahuMPO EJ and non-EJ Areas, and they would also receive improved transit access. Effects would be the same for all population groups and would not represent a high or disproportionate impact to residents in O'ahuMPO EJ Areas or communities of concern.

4.6.4 Public Outreach

During the public outreach effort for the Project, particular attention has been paid to reaching low-income and minority populations that are traditionally underserved and underrepresented in the public involvement process. This is in accordance with Executive Order 12898 (USEO 1994) and O'ahuMPO regulations. 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 will be addressed as part of evaluating project alternatives.

The use of public involvement to engage communities of concern consists of public reading materials offered via the project website and handed out at meetings or other community events and the Speakers Bureau program. 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 have been printed in 10 languages (Chinese, English, Ilocano, Japanese, Korean, Laotian, Samoan, Spanish, Tagalog, and Vietnamese) and placed at several local churches, health centers, and local civic and ethnic organizations. The project website is continually updated as new project information becomes available. Information concerning upcoming public meetings regarding the Project has been distributed periodically by "walkers" in several of the O'ahuMPO EJ Areas. Important project notifications also 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. As the Project has progressed, more than 80 community service organizations have been included on the project mailing list. These organizations have also been provided with appropriate translated flyers to distribute to the community.

A concerted effort has been made to reach out to local churches, elderly care, and community organizations that cater to populations in need through the efforts of the Speakers Bureau. All organizations that previously received presentations were asked whether they would like to receive new presentations regarding updates to the Project, and new organizations were also contacted with offers to receive presentations.

Speakers Bureau presentations have been given at senior care facilities and local ethnic organizations (e.g., the Japanese and Chinese women's societies). Efforts have also been made to reach out to Native Hawaiian organizations. Targeted efforts through a new advertising campaign will also specifically target EJ populations and communities of concern. Public outreach and coordination with EJ populations and communities of concern have been ongoing throughout the Project. Outreach has included translated flyer materials, presentations to cultural groups (i.e., Japanese and Chinese organizations), distribution of project information to low-income communities, and one-on-one discussions with community members. The Project has been responsive to Neighborhood Boards, providing frequent updates about the Project in O'ahuMPO EJ Areas and communities of concern.

Although the public has been generally supportive of the Project, concerns regarding noise, costs, and visual impacts have been voiced. The majority of these concerns has been identified through scoping comments, Speakers Bureau presentations, Community Updates, Neighborhood Board presentations, and hotline and website comments. Community Updates have been 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 have been conducted at major project milestones. Presentations have also been 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 throughout the Draft EIS public comment period will continue to include close work with EJ populations, elderly, and communities of concern to identify potential concerns and to consider cultural sensitivity throughout the design and construction of the Project. Efforts will be made to identify and coordinate with EJ populations to actively solicit their input.

4.6.5 Banana Patch Community

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 has been identified as an EJ area of concern after outreach to community residents in July 2008 revealed that the predominantly Asian neighborhood would need to be relocated as part of the Project.

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

Parcels within the Banana Patch area often contain multi-generational families living in several dwelling units. In some instances, the structures have been altered to accommodate additions, which is representative of multi-generational housing and is consistent with the Asian culture. The residents of this area do not have access to public water and sewer services. This community is unique in that it is located in an urban region, but residents are able to maintain an agricultural, subsistence lifestyle. While farming is not the primary source of employment or income for some of these families, it is a part of their household income.

The area was assessed in terms of potential property acquisition and/or displacements of residential and commercial buildings. An analysis of the potential displacements in the Banana Patch neighborhood was based on conceptual design plans for the Project. All of the Build Alternatives would displace residences, including single-family homes, businesses, and one church for the construction of the Pearl Highlands park-and-ride lot that would serve the Pearl Highlands Station. The community is bounded by several major highways and provides the optimal location for the Pearl Highlands park-and-ride lot. Further design refinements are not anticipated to reduce the number of impacts.

Although the alignment requires the above residential displacements, it would result in an overall minimal number of displacements that would result from construction of the Project. Therefore, displacements are not considered a disproportionately high or adverse impact from the alignment. However, impacts to the Banana Patch community suggest a disproportionate effect on community cohesion and isolation in addition to the relocation effects. The displacement of residences could result in adverse changes in social interaction or sense of community, stability, and psychological unity by removing residents from other residents who have resided in the same community for generations. Due to the high cost of living and available land, it is unlikely that residents would be co-located in another area of the city. Ongoing coordination with potentially affected residents would identify the extent of effects to social interactions and community cohesion.

The Project would have a beneficial effect on access to and from the Pearl City and Waipahu neighborhoods and other destinations by supporting the ability to travel using a variety of modes, including transit, motor vehicle, bicycle, and walking.

4.6.6 Mitigation

The identification of a disproportionately high and adverse effect on EJ populations does not preclude a project from moving forward. FHWA's Actions to Address Environmental Justice in Minority Populations and Low-income Populations (USDOT 1998) indicates that a disproportionately high and adverse effect may be carried out under the following conditions:

- "Programs, policies, and activities that will have disproportionately high and adverse effects on minority populations or low-income populations will only be carried out if further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effects are not practicable. In determining whether a mitigation measure

or an alternative is 'practicable,' the social, economic (including costs), and environmental effects of avoiding or mitigating the adverse effects will be taken into account.

- Respective programs, policies or activities that have the potential for disproportionately high and adverse effects on populations protected by Title VI (protected populations) will only be carried out if:
  (1) A substantial need for the program, policy, or activity exists, based on the overall public interest; and
  (2) Alternatives that would have less adverse effects on protected populations have either:
    (a) adverse social, economic, environmental, or human health impacts that are more severe; or
    (b) would involve increased costs of an extraordinary magnitude."

CEQ guidelines state that "mitigation measures identified in an EIS or developed as part of a Finding of No Significant Impact should reflect the needs and preferences of affected low-income populations, minority populations, or Indian tribes to the extent practicable."

The Project would not result in disproportionately high and adverse impacts within O'ahuMPO EJ Areas. Therefore, no specific mitigation measures to reduce impacts are warranted.

Mitigation for Banana Patch Community

During the public comment period, a community meeting will be held in the Banana Patch community. All residents will be invited to attend this meeting. The FTA Civil Rights Officer will attend this meeting. This coordination will enable the FTA and RTD to develop mitigation specific to this community.

Mitigation Summary

The Project has and will continue to actively solicit input regarding project alternatives and design. This ongoing public outreach effort is described in Section 4.6.4, Public Outreach. EJ populations and communities of concern would receive the same level of mitigation that other population groups along the project alignment would receive. Such measures would include the following: the acquisition of property would comply with all applicable Federal and State laws, including the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, as well as procedures outlined in the project-specific Real Estate Acquisition Management Plan (RTD 2008q). Coordination would occur with O'ahuMPO EJ populations and communities of concern during preparation of the project-specific SSMP and other design-phase plans.