



City and County of Honolulu

Downtown

Neighborhood Transit-Oriented Development Plan

Existing Conditions Report

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1 INTRODUCTION

1.1 Background and Purpose

Honolulu High-Capacity Transit Corridor Project

The U.S. Department of Transportation Federal Transit Administration and the City and County of Honolulu (City) Department of Transportation Services are undertaking a project that will provide rail transit service on Oahu.

The High-Capacity Transit Corridor is approximately 20 miles, and starts from Kapolei in the west to Ala Moana Center in the east with a subsequent phase, to the University of Hawaii at Manoa and Waikiki. The fixed guideway system will operate in an exclusive right-of-way to ensure speed and reliability and avoid conflicts with vehicles and pedestrians. Each multi-vehicle train, electrically powered by a third-rail system, will carry up to 500 passengers. The service will connect employment and residential centers, and provide links via feeder buses at stations to access areas not served by the rail. Overall goals of the project are to improve corridor mobility and reliability, access to existing and planned development, and transportation equity.

The project is to be constructed in four phases with the portion of the corridor serving the Downtown planning area being constructed in the last phase. Preliminary construction preparations have begun to locate utilities, transplant trees, and drill for soil samples between East Kapolei and Middle Street.¹ The first phase will be constructed between East Kapolei and Pearl Highlands and is expected to be operational by 2014.

The second phase will extend to Aloha Stadium and is expected to be operational by 2017. The third phase will end at Middle Street and is projected to be opened by the end of 2017.² The last phase will be under construction between 2013 and 2018. The entire 20-mile long project is projected to be operational in 2019.

Downtown Neighborhood Transit Oriented Development (TOD) Planning

Downtown Neighborhood TOD Plan Overview

The City is preparing neighborhood plans that integrate land use planning with planning for the High Capacity Transit Corridor Project. Closer integration of transportation and land use will help support transit ridership, minimize traffic congestion as more people use transit, decrease the need for parking and even car ownership, and enable more people to live close to a rail station. Community members will be able to walk to the station to get to their job or school, or shop or recreate more easily using the new rail system. The Downtown TOD Plan will address land use, local transportation, and economic, and infrastructure planning around three planned stations: Downtown, Chinatown, and Iwilei (collectively referred to as the Downtown planning area in this report). According to City analysis, the Downtown Sub-area (a smaller City-defined area, which includes much of the Downtown planning area) has the largest number of jobs (approximately 63,400 in 2000) among all sub-areas of Oahu;

1 Honolulu Rail Transit. "Traffic Update: Week of May 1, 2011, Kiewit Preliminary Engineering Field Work." <http://www.honolulutransit.org/traffic_updates/> Accessed May 9, 2011.

2 Honolulu High-Capacity Transit Corridor Project Environmental Impact Statement; by the United States Department of Transportation Federal Transit Administration and the City and County of Honolulu Department of Transportation Services; June 2010; Page 2-48, Figure 2-42.



The Downtown Neighborhood TOD planning area encompasses three stations: Downtown (top two rows) and Chinatown (middle) stations, along Nimitz Highway, and Iwilei just makai of Dillingham Boulevard (bottom rows). The Downtown station is projected to be one of the most heavily used stations (second only to Ala Moana). Chinatown station will provide access to a bustling marketplace and historic cultural center. Iwilei station is set amidst existing warehouse, industrial and retail uses and may inspire opportunities for new development and new uses.

this number is projected to increase by 11 percent by 2030 to approximately 70,500 jobs. Although the area has fewer residents (approximately 12,300 in 2000), resident population is expected to increase by 86 percent by 2030 to approximately 22,900.³ The TOD Plan can help to cohesively plan for growth in the area.

In 2008, the City passed an amendment to its Land Use Ordinance, creating a framework for the development of neighborhood TOD plans to include:

- Objectives for economic revitalization; neighborhood character, and community historic and other design themes; desired mix of land uses, intensities, circulation strategies, general urban design forms, and cultural and historic resources;
- Market interest in redevelopment and the benefits of transit including the potential to increase ridership;
- Recommended zoning controls, including architectural and community design principles, open space requirements, parking standards, and other modifications to existing zoning requirements;
- Preservation and expansion of affordable housing opportunities, as well as ways to avoid gentrification; and
- General direction on implementation of the recommendations, including the phasing, timing and approximate costs and financing strategies.

The Land Use Ordinance also describes how the planning process should be inclusive, open to residents, businesses, landowners, community organizations, government agencies, and others. The public process will be complemented with technical data, such as population, economic, and market analyses and infrastructure analyses, including capacities of water, wastewater, and roadway systems. Where appropriate, public-private partnership opportunities should be investigated. The ordinance also specifies that the neighborhood TOD

plans should be consistent with the applicable regional development plan (e.g. the Primary Urban Development Plan) and other community or master plans.

This Report: Exploring Transit-Oriented Development Opportunities

This report explores opportunities and challenges for TOD in the Downtown planning area. TOD typically refers to development within easy walking distance of a major transit stop that both capitalizes on and supports transit ridership. Development may be on vacant land, or redevelopment of sites with low-density buildings. TOD should be designed at the pedestrian scale, since virtually all transit trips begin and end as walking trips. Therefore, the TOD catchment area is typically a five- or ten-minute walk from the station.

TOD is relatively more intense development, in an urban environment that is safe and appealing to pedestrians. While a mix of uses is desirable to maintain street vitality, depending on the context, uses may be primarily residential or commercial, or a combination of the two. Major activity centers and destinations—such as shopping and educational institutions—should also be located to be easily transit accessible. Higher densities are an important part of the TOD definition in order to encourage transit use and efficient use of land, as well as to support a diverse mix of uses and a range of daily activities easily accessible on foot. In other words, a community cannot support the amenities inspired by a TOD opportunity without an adequate population base (residents or employees). For example, a contemporary grocery store of about 45,000 square feet requires the support of 8,000 to 10,000 people, ideally within a ¼-mile radius (five-minute walk).⁴ Additionally, a diversity of housing choices and densities can enable all population groups—including those needing more affordable housing and others who need or desire to use transit as their primary mode of travel—to live in a transit-oriented setting.

3 City and County of Honolulu. Honolulu High-Capacity Transit Corridor Project. Final Environmental Impact Statement. p. 1-10, 1-11. June 2010. Note that planning boundaries for sub-area referenced in the EIS and the Downtown TOD planning area are not identical.

4 Hinshaw, Mark and Brian Vanneman, “The Supermarket as a Neighborhood Building Block: Redefining the notion of an anchor.” Planning. March 2010.

Public Outreach for TOD Plan Preparation

Preparation of the Downtown Neighborhood TOD Plan is proceeding with integrated community outreach and technical analysis processes. Throughout the planning process, community members will be offered a variety of opportunities to help develop a vision and plan for these station areas that reflects the community's most important values and priorities. Outreach activities include stakeholder interviews, community workshops, a community needs assessment survey, meetings with an advisory committee, and ongoing updates to the City's website. The input gathered during the outreach activities will assist in plan development.

Report Organization

This report represents one of the first steps toward the development of the Downtown Neighborhood TOD Plan. It provides a summary of existing conditions, opportunities, and challenges related to land use, urban design, transportation, and infrastructure. (An analysis of market demand and economic factors will be distributed separately.) This report also documents and responds to community needs and priorities identified during initial community outreach activities. It is organized as follows:

- **Chapter 1: Introduction** includes an overview of the project, planning area, and discussion of the existing planning context (adopted and ongoing planning efforts and policies).
- **Chapter 2: Corridors** analyzes land use, community design, public safety, transportation, infrastructure, and environmental factors at the corridor level (that is, for the three Downtown stations collectively).

- **Chapter 3: Stations** analyzes station configuration, pedestrian accessibility to and around the station, and potential development opportunity sites for each of the three stations.
- **Chapter 4: Planning Issues and Implications** identifies key issues that emerged from this analysis that will need to be addressed by the planning team, the advisory committee, and other community members through this planning process.

Next Steps

This report concludes the research and analysis phase of the project. Following publication of this report, the project team will work with the Advisory Committee and other community members to develop a Project Area Vision and Principles, synthesizing concepts and objectives expressed during early community outreach activities, and providing a framework for policy development. Next, the planning team will prepare a Station Area Alternatives Report, analyzing future land use and development possibilities based on ideas emanating from the opportunities and challenges described herein and direction from community outreach activities. Based on feedback about the alternatives, the Preferred TOD Plan will be prepared, which will outline the preferred policy direction for each station area, including the vision, land use, circulation, and key characteristics. The preferred plan may be one of the alternative concepts or some combination of two or more concepts.



Finally, the Neighborhood TOD Plan will be prepared, providing a land use and circulation plan; goals and policies for the station areas; implementation actions and zoning recommendations; and a phasing plan.

Public meetings and workshops will be held through the planning process in order to maintain ongoing communication with community members and feedback on the direction and components of the plan.

1.2 Location and Planning Area

The Downtown stations are located in central Honolulu, as shown in Figure 1-1. The planning area for examining opportunities for land use, transportation improvements, and community facilities will be approximately a ¼-mile radius around each station. (The final area may be larger or smaller depending upon opportunities). A larger ½-mile area is used to examine existing land use, environmental, transportation, and infrastructure conditions, as shown in Figure 1-2.

1.3 Existing Plans and Policies

While the focus of the Downtown Neighborhood TOD Plan is to create new policies to promote TOD, the TOD Plan should incorporate current policies and programs that promote development that is transit oriented. The TOD Plan will seek to help implement many of these policies, but may also recommend amendments where existing City policies may need to be altered to meet Plan goals. A summary of existing plans and policies is provided below.

Transportation

Oahu Regional Transportation Plan 2030

Adopted by the Oahu Metropolitan Planning Organization in 2006, the Oahu Regional Transportation Plan (ORTP) provides a framework to address mobility issues and meet transportation needs, in the context of future growth patterns and available financing. It includes a vision and goals, identifies projects, and provides an implementation program to allocate available

transportation funds across Oahu in a fair and equitable manner. The \$15 billion in available funding is split roughly evenly between capital projects and operations/maintenance.

The ORTP's vision acknowledges dual objectives: the importance of relieving congestion in the H-1 travel corridor, and providing transportation choices, including rail, bus, ferry, bicycle, and pedestrian accessibility. The plan calls rail to be the "backbone" of the transit system, with bus and ferry service providing feeder access. Within the Neighborhood TOD planning area, the ORTP includes funding to implement the rail project and an intra-island ferry between Ewa and Honolulu harbor.

Harbors Modernization Plan

The State Department of Transportation Harbors Division is implementing a Harbors Modernization Plan to address facilities upgrades in order to accommodate current and projected shipping requirements. Honolulu Harbor, a portion of which lies in the planning area, is the hub of the State's commercial harbor operations. Nearly all overseas cargo passes through this port before it is shipped out or into the rest of the state. According to the Oahu Commercial Harbors 2020 Master Plan, the harbor is congested due to a lack of berths, insufficient landside operations, and constant vessel traffic. Specific improvements identified around the planning area include increase in berthing and roadway capacity, cruise ship terminal expansion, submarine maintenance facility (Pier 15), and a maritime office (Piers 10-11). In addition to use fees, rentals, federal funds, and potential public-private partnerships, tax-exempt bonds and a grant both provided through the American Recovery and Reinvestment Act will help fund modernization projects.⁵

5 Hawaii State Department of Harbors Division. Oahu Commercial Harbors 2020 Master Plan. May 1997; "Fact Sheet" and "Honolulu Harbor to Receive \$24.5 Million in Federal Stimulus Funds" <http://hawaii.gov/dot/harbors/whats-new/harbors-modernization-plan>.

Oahu Bike Plan (Draft)

Prepared by the Department of Transportation Services in 2009, the Draft Oahu Bike Plan provides strategies for integrating bicycling and bicycle planning into Oahu's transportation system. Currently, community members are hesitant to travel by bicycle for fear of excessive vehicle speeds and due to an incomplete system and the lack of bike friendly facilities. The plan offers five "Es" to improve safety and increase bicycle trips: encouraging biking through improved marketing, events, and information/maps; engineering new bike lanes, signage, and routes; educating community members about safety and rules; enforcing violations by drivers and bicyclists; and evaluating the links between programs/policies and outcomes in terms of ridership and accidents.

The plan divides implementation between priority one, two, and three projects. Projects within the planning area that provide access to and from the station include:

- **Iwilei Station:** Priority two and three projects include a path through the station from Dillingham Boulevard to Nimitz Highway and bike lanes on King and Beretania streets (which pass through all three stations).
- **Chinatown Station:** Priority two and three projects include a bike lane on King Street and extension of the Nuuanu Stream path to Nimitz Highway and the station.
- **Downtown Station:** Priority one projects include continuing the Nimitz Bike Lane along Ala Moana Boulevard and creating a path through Aloha Tower. Priority two and three projects include bike routes (not lanes) on the Fort Street Mall and Alakea, Bishop, Halekauwila and Queen Streets.

In addition, the plan supports integration of bicycle facilities with the rail transit. At each station, the plan calls for bike storage (racks or lockers depending on the number of boardings), "stair rails" to facilitate moving bicycles up and down stairs, and services such as attended parking and repair facilities at stations with high AM peak period boardings (e.g. >1,000).⁶

6 City and County of Honolulu. Oahu Bike Plan: Public Review Draft. July 2009. P. 4-3 – 4-5.

Land Use

City Charter

The City Charter directs the Planning and Permitting Department to prepare a General Plan and development plans "for the improvement and development of the city" and implementing regulations to carry out these plans.⁷ The City directs land use and growth through a three-tier system. The General Plan represents the first tier of planning, defining goals and broad policies for the long-term development of the city. Eight development plans, including the Primary Urban Center Development Plan (in which the Downtown planning area is located), represent the second tier, identifying conceptual schemes for implementing the objectives of the General Plan. Finally, implementing ordinances and regulations comprise the third tier, providing standards and implementation actions to accomplish these objectives and guide public and private development.

The City and County of Honolulu General Plan

Prepared in 1977 (and amended several times), the City and County of Honolulu General Plan establishes goals and policies to guide planning in Oahu. The General Plan is divided into 11 chapters: population; economic activity; natural environment; housing; transportation and utilities; energy; physical development and urban design; public safety; health and education; culture and recreation; and government operations and fiscal management. Policies include support for a diverse economy, public transportation options, affordable housing, adequate public facilities/services and energy resources; well-designed buildings and public spaces; safety from natural and manmade disasters; community health and education opportunities; multi-ethnic culture and historic and cultural resources.⁸

The plan distinguishes planning areas within the island. The Downtown TOD planning area lies within the Primary Urban Center planning area; this area has its own plan—part of the second tier of the system—which is discussed below. As the name of the planning area suggests, the Primary Urban Center represents the primary

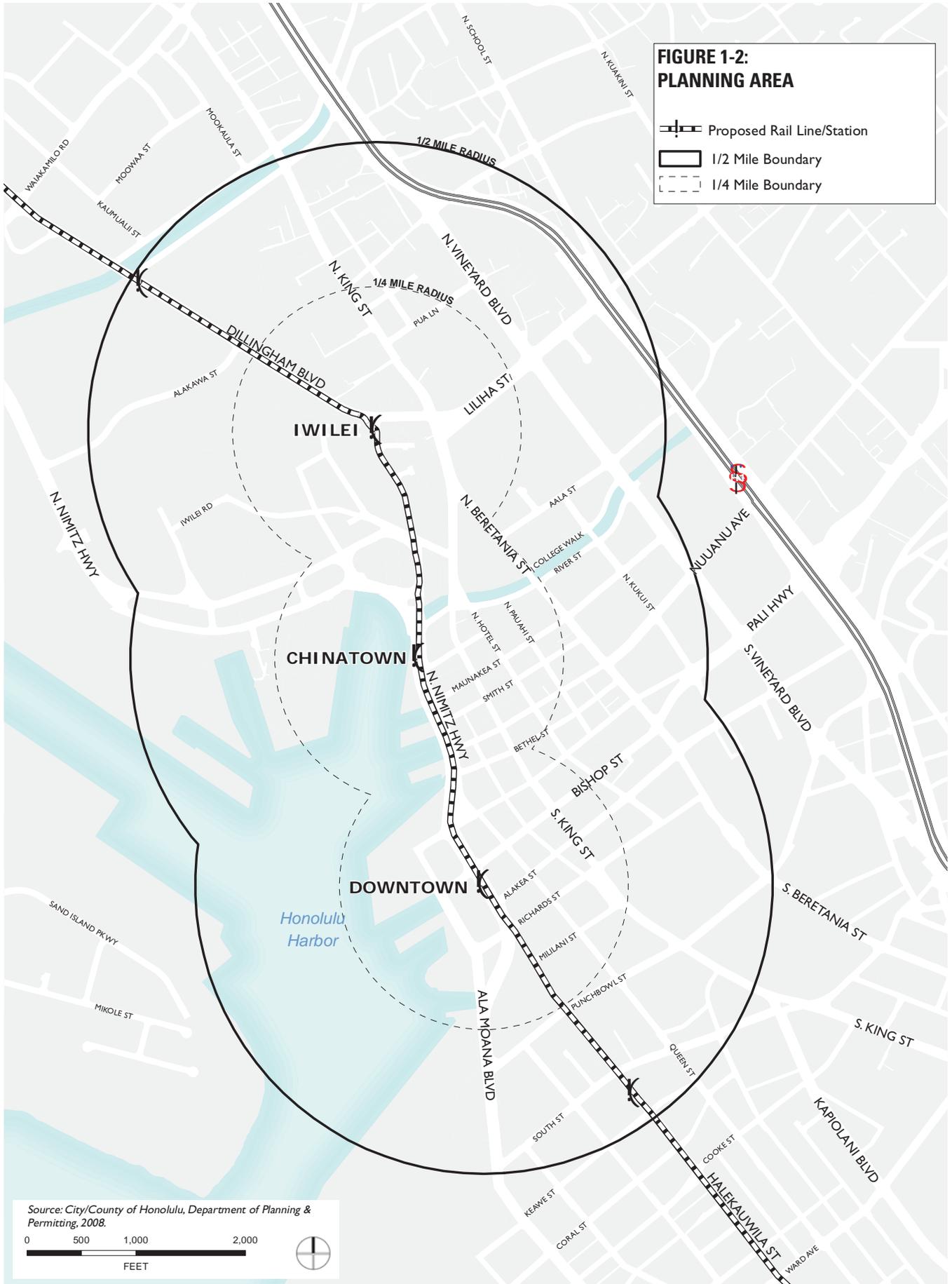
7 City and County of Honolulu. City Charter. Section 6-1503(a).

8 City and County of Honolulu. General Plan. Adopted 1977.

FIGURE 1-1: REGIONAL LOCATION



● Honolulu High-Capacity Transit Corridor and Stations



location for urban development, housing the greatest share of Oahu's population compared with other planning areas, even as other areas, including Ewa with its center in the Kapolei area, expand. Implementing ordinances and regulations, including the Zoning Code, represent the third tier of the planning system. In addition, special area plans may be prepared to provide specific guidance for neighborhoods, communities and specialized resources. All of these plans should be consistent with the General Plan.

Primary Urban Center Development Plan

Adopted in 2004, the Primary Urban Center Development Plan is a policy guide for the development decisions and actions required to support expected growth in Oahu's most populous region. It extends from the core of downtown Honolulu to Pearl City in the west and Wai-alaie-Kahala in the east, and includes all of the Downtown Neighborhood TOD planning area. Key elements of the plan's vision include enhancing natural resources, enabling livable neighborhoods, supplying housing choices, establishing a leading employment center and travel destination, and providing a balanced transportation system. Notably, since this plan was authored in advance of the proposed rail project's plans, it does not reference rail or the stations in this report's planning area. However, it does support TOD, in the form of bus rapid transit corridors within major activity centers, high-density neighborhoods, and redevelopment areas (including Downtown and Chinatown stations).

The plan includes policies on neighborhood planning. This includes developing existing and new "neighborhood centers:" central places where people gather for shopping, entertainment or recreation, and which entail pedestrian and park improvements. While plan policies promote this strategy, specific locations of neighborhood centers are not designated. Policies promote mixed land uses, where commercial and community services uses coexist with housing, creating activity 24 hours a day and convenient access to services. They also call for streetscape and landscape improvements on routes that connect neighborhoods.⁹

The plan sees the harbor as a prime site for new commercial, hotel, and residential development, as well as supportive entertainment and recreation activities. It envisions that revitalization of the waterfront will provide inspiration for the redevelopment of Iwilei.¹⁰ However, Nimitz Highway is an impediment to pedestrian access to the harbor; the plan favors a bypass highway and tunnel from Sand Island so that airport-to-Waikiki and other pass-through traffic can bypass Downtown. This new route would reduce traffic on Nimitz Highway, allowing for a narrower street and the installation of a pedestrian promenade with waterfront activity area and space for restaurants and shops.¹¹ At the same time, the plan supports the continuation of harbor-related and warehouse uses.

The plan recommends improvements to alternative modes of transportation, including bus transit, pedestrian mobility, intra-island ferry service (e.g. between the airport and Waikiki), and bicycle use. It encourages increased bicycle ridership by increasing bike lanes (implementation of the Bicycle Master Plan) and related amenities (e.g. lockers, showers, racks on buses, and bike parking). It acknowledges that "relatively large physical separation between walking destinations and poor pedestrian infrastructure discourage people from walking."¹² To combat this, the plan supports pedestrian improvements—prioritizing routes along the canals, Beretania Street, and portions of Nimitz Highway in Downtown—including crosswalks, bulb-outs, pedestrian refuges, broad promenades, pocket parks, shade trees, street furniture, and adjustment of traffic signal phasing.

Generalized land use designations for the Neighborhood TOD planning area are shown in Figure 1-3. Most of the Downtown planning area—specifically around the Downtown and Chinatown stations—is designated District Commercial, which permits a range of commercial activities as well as mixed-use development with medium- or high-density residential uses. The Iwilei Station also includes Industrial and Medium- and Higher-Density Residential/Mixed Use designations. The Zoning Ordinance stipulates specific uses permitted within each more refined zoning district.

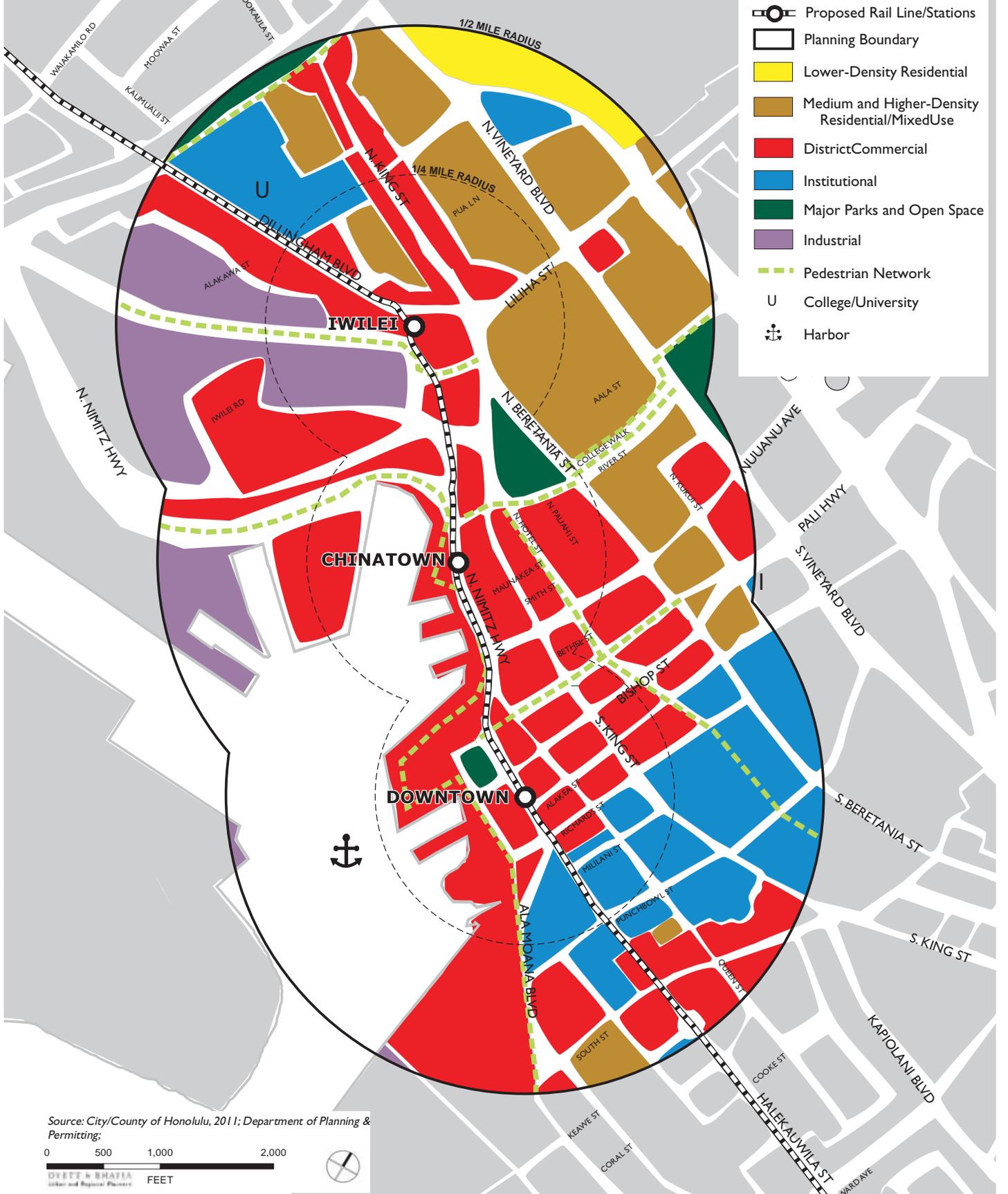
⁹ City and County of Honolulu. Primary Urban Center Development Plan. June 2004. P. 3-24, 3-25.

¹⁰ Ibid., p. 3-38.

¹¹ Ibid., p. 3-45.

¹² Ibid., p. 3-54.

**FIGURE 1-3:
PRIMARY URBAN CENTER
DEVELOPMENT PLAN LAND
USE DESIGNATIONS**



- Proposed Rail Line/Stations
- Planning Boundary
- Lower-Density Residential
- Medium and Higher-Density Residential/Mixed Use
- District Commercial
- Institutional
- Major Parks and Open Space
- Industrial
- Pedestrian Network
- College/University
- Harbor

Source: City/County of Honolulu, 2011; Department of Planning & Permitting;

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FEET

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Rediscovering Chinatown Honolulu

Prepared in 2006, *Rediscovering Chinatown Honolulu* focuses on the needs of the people of Chinatown to create a unified vision and plan for the area. It seeks to balance economic and cultural objectives: “enhancing the overall customer experience, increasing pedestrian traffic, boosting consumer spending, and encouraging private investment.” The report is not adopted City policy, but provides an indication of the community’s vision. The plan identifies three priorities:

1. Address Chinatown’s basic needs, including accessible parking, clean streets and public spaces, a commitment to safety, community collaboration and establishment of public facilities, affordable housing at a range of incomes levels, and use of the regulatory system to encourage effective policy and development.
2. Emphasize and encourage sustainability: meaning preservation and enhancement of the area’s historical significance, diversity and entrepreneurial spirit, and authenticity, including in its sense of place.
3. Improve communication by solidifying “internal” communication among Chinatown stakeholders in order to improve “external communication between government agencies, private entities, and community members.

The report provides very specific analysis and corresponding recommended actions—from creating public/private partnerships and using strategic public relations methods to bolster recommendations, to cleaning up graffiti, placing trashcans at parking lot entrances, and improving streetscapes.

Development Regulations

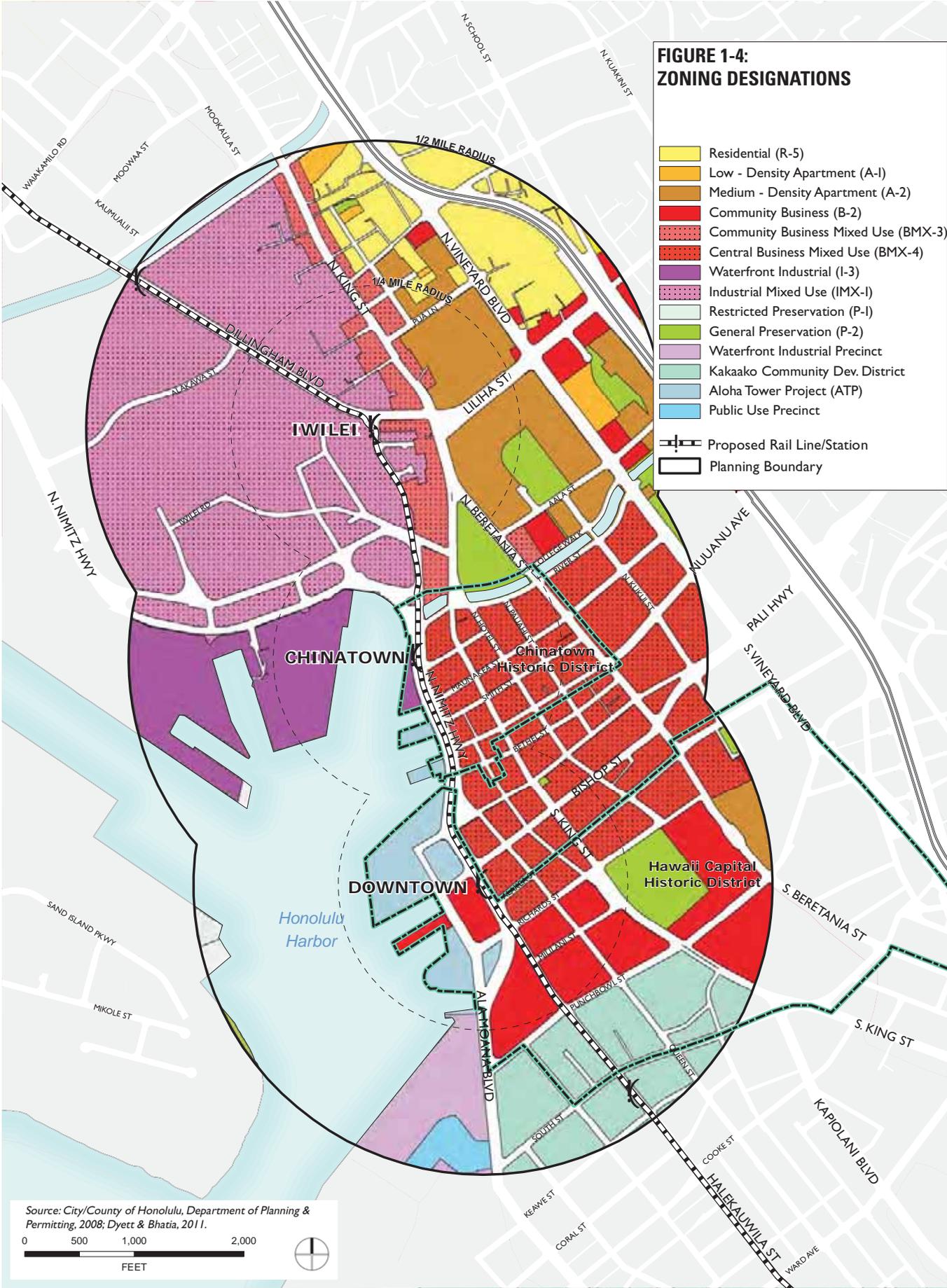
Land Use Ordinance

Regulations in the Land Use Ordinance influence the use and character of development in the city. The City’s Land Use Ordinance includes standards for land use, lot size, setbacks, and building area. The Downtown planning area primarily includes the following zoning districts, as shown in Figure 1-4:

- Central Business Mixed Use District (BMX-4) represents the City’s center for financial, office, and governmental activities, as well as multi-family housing, at the highest intensities. The maximum floor area ratio is 7.5 and the general height limit is 350 feet, although this may be exceeded. A minimum of 35 percent of the lot area should be devoted to open space.
- Community Business Mixed Use District (BMX-3) is intended to provide commercial and residential uses outside of the central business district and at a lower intensity. The maximum floor area ratio is 2.5.
- Community Business District (B-2) is intended to provide community-serving businesses that permit a range of commercial uses that can serve several neighborhoods. The maximum floor area ratio is 2.5. Residential uses are not permitted.
- Medium-Density Apartment District (A-2) is intended to provide medium-density multi-family housing in concentrated urban areas with adequate public facilities and infrastructure. The district permits single-family, duplex, and multi-family homes, with a maximum height of 30 feet and floor area ratio of 1.9.
- Industrial-Commercial Mixed Use District (IMX-1) allows a mix of industrial and commercial uses to create diversified businesses and employment opportunities. To a limited extent, residential uses are permitted (e.g. accessory/caretaker units). The maximum FAR value is 2.5.
- Intensive Industrial District (I-2) allows a full range of industrial uses, including light and heavy activities. Uses in this district should be located away from residential communities. The maximum FAR value is 2.5.
- General Preservation District (P-2) designates open space or recreation land that provides outdoor space for the public’s use and enjoyment within the city’s built environment. The minimum lot area is five acres.
- State Jurisdiction: Aloha Tower Project is designated for the Aloha Tower site, formerly administered by the Aloha Tower Development Corporation.

**FIGURE 1-4:
ZONING DESIGNATIONS**

- Residential (R-5)
 - Low - Density Apartment (A-1)
 - Medium - Density Apartment (A-2)
 - Community Business (B-2)
 - Community Business Mixed Use (BMX-3)
 - Central Business Mixed Use (BMX-4)
 - Waterfront Industrial (I-3)
 - Industrial Mixed Use (IMX-1)
 - Restricted Preservation (P-1)
 - General Preservation (P-2)
 - Waterfront Industrial Precinct
 - Kakaako Community Dev. District
 - Aloha Tower Project (ATP)
 - Public Use Precinct
- Proposed Rail Line/Station
- Planning Boundary



Source: City/County of Honolulu, Department of Planning & Permitting, 2008; Dyett & Bhatia, 2011.



The Land Use Ordinance contains permit and procedural requirements for these areas to preserve and protect natural resources areas along the coast. Proposals must be reviewed by the City Council to ensure compliance with regulations, provide public access where appropriate, and avoid or mitigate environmental damage.

Building Height Regulations

Building height regulations are shown in Figure 1-5. The tallest building heights, up to 450 feet, are permitted in the Downtown core around King and Bishop Streets. Heights of up to 350 feet are permitted mauka of Beretania Street in Downtown and Chinatown. Permitted heights decrease substantially, to just 40 feet, along the waterfront—makai of Nimitz Highway in Downtown—and in the historic Chinatown core (see Chinatown Special District section below). In Iwilei, allowable heights reach 150 feet makai of the station and up to 200 feet along King Street. In the residential areas mauka of the Iwilei station, heights of up to 30 or 60 feet are permitted, depending on the zoning designation.

Standards and Design Precepts for Future Park Development

Previously known as the Islandwide Parks Master Plan, the Standards and Design Precepts for Future Park Development was updated by the City's Department of Parks and Recreation in 2004. The purpose of the plan is to determine current and projected needs for physical facilities that will support recreation activities for Oahu's residents and visitors. The plan reiterates the City's two acres of local parks per 1,000 resident standard and acknowledges that the areas with the greatest deficit are in the City's most urban areas, including the Downtown planning area. With population increases expected, the plan acknowledges that park planning will be essential in these urban neighborhoods to ensure good access to open space. Then plan provides recommendations and standards for size, amenities, parking, and access, by various park types. It also contains policies for promoting the joint use of facilities (e.g. with schools and non-profits) and park financing strategies through exactions, incentives, zoning and streamlining the park

dedication ordinance.

Downtown is constrained a lack of available land, but there are a few strategies proposed for expanding open space access in the Downtown planning area including sharing facilities with the Nuuanu YMCA, consolidating management of Aala Park and Beretania Community Park to enhance linkages and improve access, and improving existing resources by adding outdoor seating, play areas, and places for small community events.

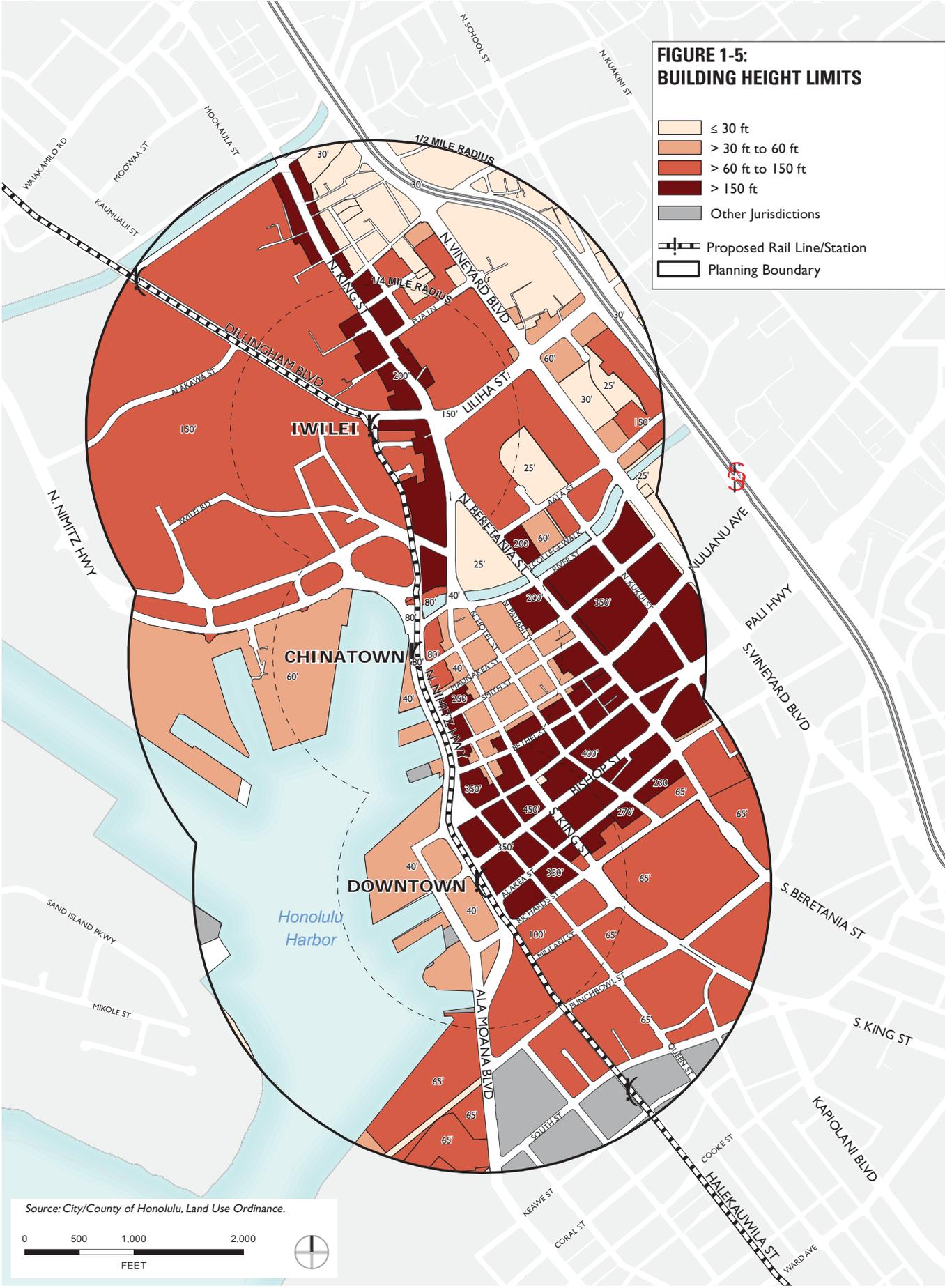
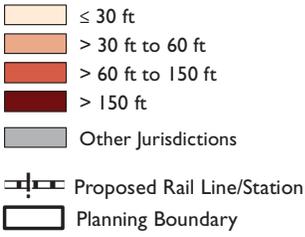
Park Dedication Rules and Regulations

The City's Subdivision Ordinance specifies rules for dedicating park space in residential developments to be accessible to both the occupants of lots or units as well as by the public. The regulation applies to land being subdivided into two or more lots and to construction of multi-family developments. The regulation stipulates the land area required for parks for various residential designations and districts. For example, in special districts (e.g. Chinatown Special District), multi-family dwellings require parkland that totals 10 percent of the maximum permitted floor area or 110 square feet per unit (whichever is less). The same standard is applied to apartment buildings in mixed-use districts. In lieu fees may also be acceptable in meeting the park dedication requirement.

Affordable Housing Policy

Adopted in February 2010, this inclusionary housing Rule requires projects of 10 or more units seeking a zone change to provide affordable units at below market rate. It stipulates that 30 percent of the total number of dwelling units should be sold or rented to low and moderate income households, meaning up to 80 percent and 140 percent of area median income (AMI), respectively. At least 10 percent of the total units must be available to households with incomes at 80 percent of AMI or below and at least 20 percent available to households with incomes at 120 percent of AMI or below. The Rule also offers incentives for TOD housing. In-lieu fees may be paid to satisfy the affordable housing requirement for projects totaling 100 units or fewer.

**FIGURE 1-5:
BUILDING HEIGHT LIMITS**



Source: City/County of Honolulu, Land Use Ordinance.



Chinatown Special District and Design Guidelines

The Chinatown Special District was established to preserve and enhance the historic character of Chinatown, while allowing moderate redevelopment at the edges of the district that is compatible with the historic architecture and the area's cultural significance. Regulations affect most of the Chinatown Station planning area, as well as the western portion of the Downtown Station area, as shown on Figure 1-4. Objectives include retaining view corridors between Chinatown and the harbor and promoting the district's long-term economic vitality as a unique pedestrian-oriented community of retail, office, and residential uses. Building heights are generally restricted to 40 feet in the core of the district and makai of Nimitz Highway, and 80 to 250 feet one parcel deep on the mauka side of Nimitz Highway. In addition, design standards and guidelines for the district describe appropriate architectural treatments, signs, and courtyards.

Hawaii Capital Special District and Design Guidelines

The Hawaii Capital Special District was established to maintain the historic and architectural character and park-like setting of Hawaii's primary civic center. Standards regulate portions of the Downtown station area, namely the waterfront and around Alakea and Richards streets. The northeast portion of the station area is considered part of the Historic Precinct. The station and most of the station planning area are considered "perimeter precincts" which should provide transitions—of heights, open space, density and design—to ensure compatibility with the core civic center area and Historic Precinct. The special district specifies heights limits for various areas, ranging from 65 to 310 feet, as well as open space requirements, and provides design guidelines (e.g. site planning, façade treatments, signs, etc).

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2 CORRIDOR

This chapter analyzes existing conditions at the corridor level, meaning all three stations. It includes analysis of land use, public safety, transportation, infrastructure, and environmental issues.

2.1 Land Use

Land use planning is a fundamental component of a TOD plan. Land use influences the types of users, such as workers, families, shoppers, or commuters, and infrastructure requirements, from parks and schools, to road capacity and water supply. This section examines existing land use development and trends in the planning area.

Land Use Pattern

Existing Land Use

The planning area encompasses a range of land uses, as illustrated in Figure 2-1. Table 2-1 and Chart 2-1 depict the breakdown of land use in acres, for properties that lie partially or completely within 1/2-mile of a station. Building area is also documented for non-residential land uses.

The planning area contains extensive non-residential building space, totaling nearly 23 million square feet. Office uses are dominant, with 10.5 million square feet. Commercial retail uses total over six million square feet, and industrial 3.7 million square feet. However, given the densities of these uses—tall high-intensity office buildings compared to low-intensity warehouse/industrial uses—these uses have different relationships in terms of total land acreage. Office uses represent just 13 percent of the total planning area. However, commercial retail and industrial uses occupy 21 and 19 percent of the land area, respectively, representing the largest share of acres in the planning area. Public/institutional uses comprise 18 percent and residential uses represent 10 percent. About 15 percent of the planning area is devoted to open space/greenways and three percent of the land area (28 acres) is vacant. Notably, public streets and the harbor are not calculated as part of the land use totals here. (“Water” refers to the canal.) Although some buildings have a mix of uses (e.g. ground floor commercial with residential uses on the upper floor), only the predominant use is shown in the acreage values.



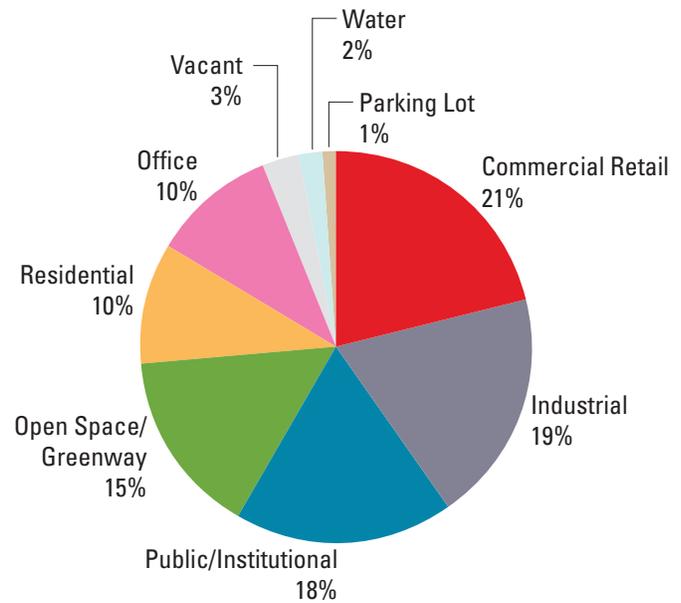
Office uses represent the largest use Downtown, in terms of square footage.

TABLE 2-1: EXISTING LAND USE AND NON-RESIDENTIAL BUILDING AREA

| LAND USE | ACRES | BUILDING AREA (SQ. FT.) |
|----------------------|--------------|-------------------------|
| Residential | 112 | |
| Non-Residential | | |
| Commercial Retail | 234 | 6,263,673 |
| Office | 108 | 10,538,963 |
| Industrial | 214 | 3,725,648 |
| Public/Institutional | 200 | 2,454,443 |
| Open Space/Greenway | 165 | |
| Other | | |
| Parking Lot | 10 | |
| Vacant | 28 | |
| Water | 27 | |
| TOTAL | 1,098 | 22,982,727 |

Source: City/County of Honolulu, Department of Planning and Permitting, 2008; State of Hawaii, 2011; Dyett & Bhatia, 2011.

CHART 2-1: EXISTING LAND USE, PERCENT BY ACRES



Source: City/County of Honolulu, Department of Planning and Permitting, 2008; State of Hawaii, 2011; Dyett & Bhatia, 2011.

The Downtown station area is primarily professional and public office uses, representing the financial hub of Honolulu. It has some retail businesses, including Macy's and smaller retail and office businesses along the pedestrian-only Fort Street Mall. Makai of Nimitz Highway, the Aloha Tower Marketplace provides shopping, restaurants, and services, primarily for cruise ship passengers. The Chinatown station area includes many restaurants, markets, and shops, which are very busy during the day. The Iwilei station area has a variety of commercial uses, including offices, smaller strip commercial uses, auto-repair shops, and fast food fronting Dillingham Boulevard and King Street. Makai of Dillingham Boulevard are larger businesses including building supplies and the Salvation Army Thrift Store, along with manufacturing and warehouse uses, as well as the former Dole Cannery, which is a busy hub of auto-oriented movie theaters, offices, and big-box commercial uses.

Housing in the planning area is primarily located near Iwilei and Chinatown stations, with limited housing located Downtown. There are approximately 8,400 housing units in the 1/2-mile radius planning area. Kukui Gardens and Mayor Wright Homes are two subsidized housing developments on the mauka side of Iwilei Station. More recently, a moderately-priced high rise development was constructed near the intersection of King Street and Iwilei Road, providing views of the water and proximity to Chinatown. Chinatown has a few apartment buildings close to the station (including at the corner of River Street and Nimitz Highway, directly adjacent to the station) and much more dense high-rise apartments on the mauka side of Beretania Street.

Land Ownership

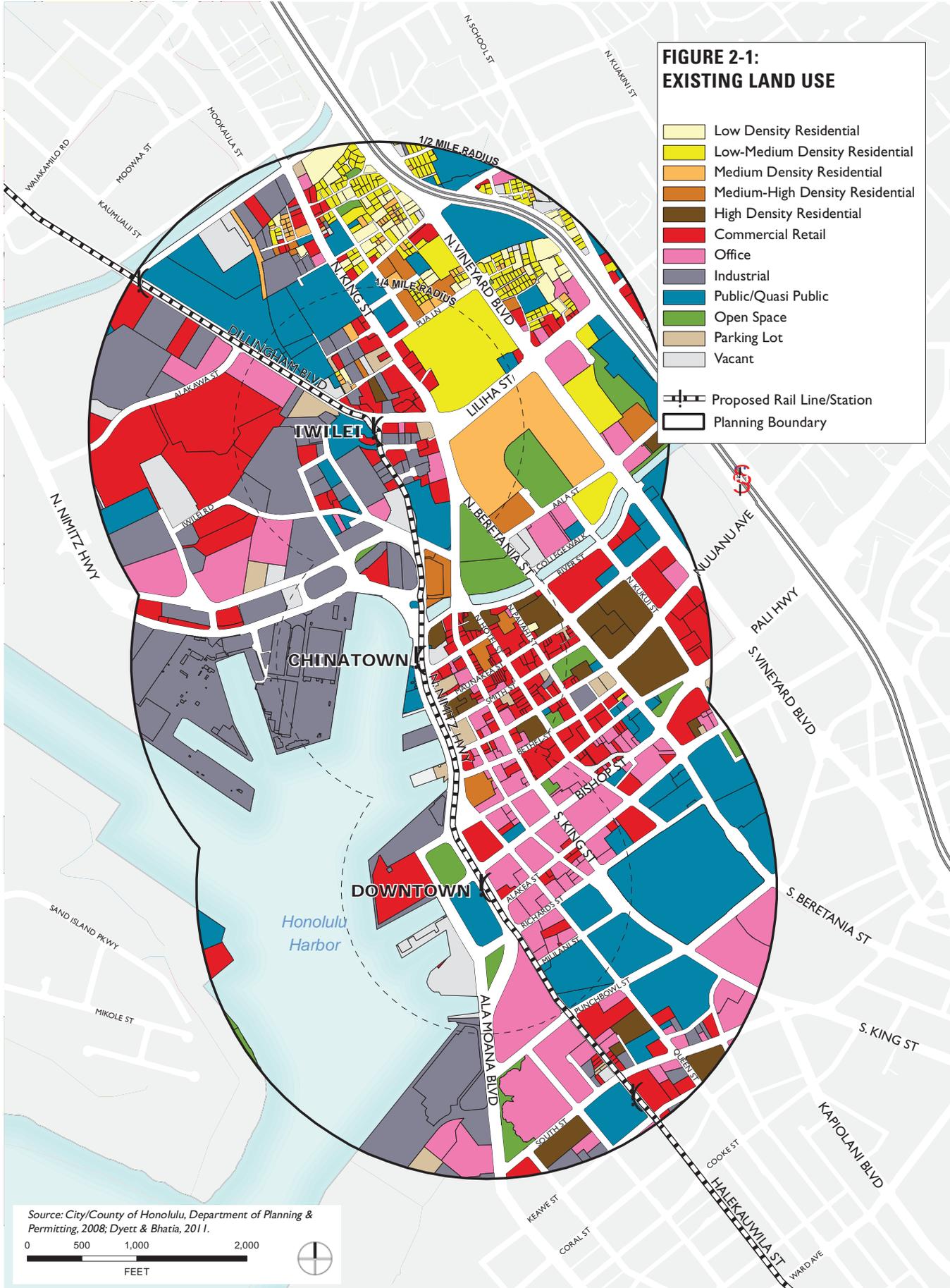
Much of the planning area is owned by the State or City, as shown in Figure 2-2. The Hawaii Department of Transportation operates most of the port lands and the Housing Finance and Community Development Corporation of Hawaii owns the public housing sites. The largest private land owner is Castle & Cook, which owns the Dole Cannery site near Iwilei Station.



The planning area includes a range of commercial retail uses, from the large department stores along Fort Street Mall, such as Macy's, Downtown, entertainment and large-format retail stores at the Dole Cannery in Iwilei, to smaller food and shopping stores in Chinatown.

**FIGURE 2-1:
EXISTING LAND USE**

- Low Density Residential
 - Low-Medium Density Residential
 - Medium Density Residential
 - Medium-High Density Residential
 - High Density Residential
 - Commercial Retail
 - Office
 - Industrial
 - Public/Quasi Public
 - Open Space
 - Parking Lot
 - Vacant
-
- Proposed Rail Line/Station
 - Planning Boundary

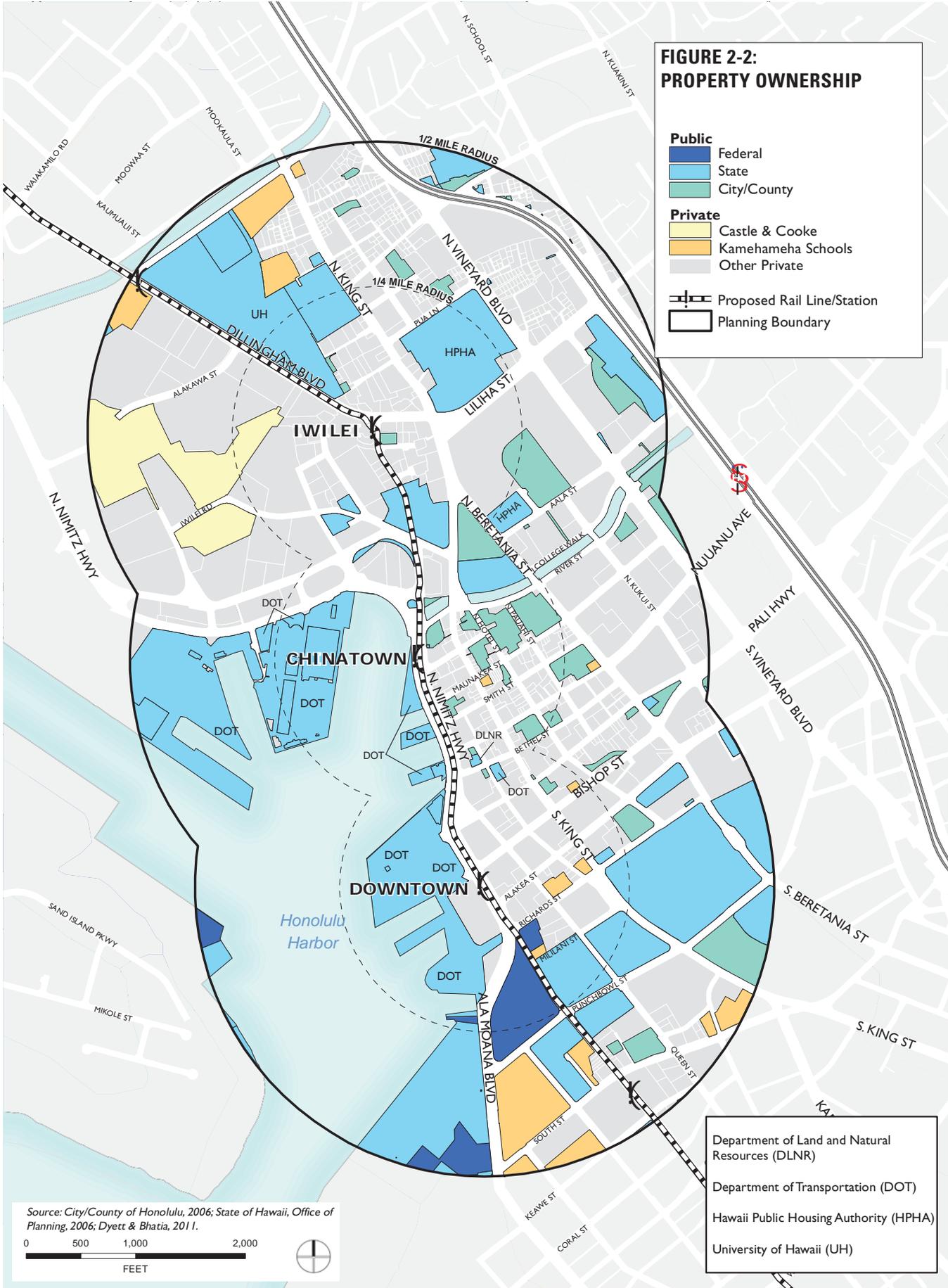


Source: City/County of Honolulu, Department of Planning & Permitting, 2008; Dyett & Bhatia, 2011.

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**FIGURE 2-2:
PROPERTY OWNERSHIP**

- Public**
- Federal
 - State
 - City/County
- Private**
- Castle & Cooke
 - Kamehameha Schools
 - Other Private
- Proposed Rail Line/Station
- Planning Boundary



Source: City/County of Honolulu, 2006; State of Hawaii, Office of Planning, 2006; Dyett & Bhatia, 2011.

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- Department of Land and Natural Resources (DLNR)
- Department of Transportation (DOT)
- Hawaii Public Housing Authority (HPHA)
- University of Hawaii (UH)



Schools have a large presence in the planning area, particularly around the Kapalama station where several K-12 schools and Honolulu Community College are located.

Public/Quasi-Public Facilities

Schools and Libraries

Several schools are located in the planning area, as shown in Figure 2-3. Princess Victoria Kaiulani Elementary serves students in pre-kindergarten through fifth grade and currently (as of 2010-2011 school year) has enrollment of 234 students. Nearly 70 percent of the students are eligible for free or reduced price lunch, which is a proxy for economically disadvantaged households.¹ In addition, the Mun Lun School, an after-school Chinese language school, is located at the corner of Maunakea and Kukui streets.

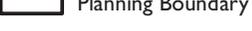
| TABLE 2-2: SCHOOL ENROLLMENT | | | |
|------------------------------|--------|--------------------|----------------------------|
| | GRADES | STUDENT ENROLLMENT | ECONOMICALLY DISADVANTAGED |
| Kauluwela Elementary School | K-5 | 366 | 90% |
| Princess Victoria Kaiulani | PK-5 | 402 | 77% |
| TOTAL | | 768 | |

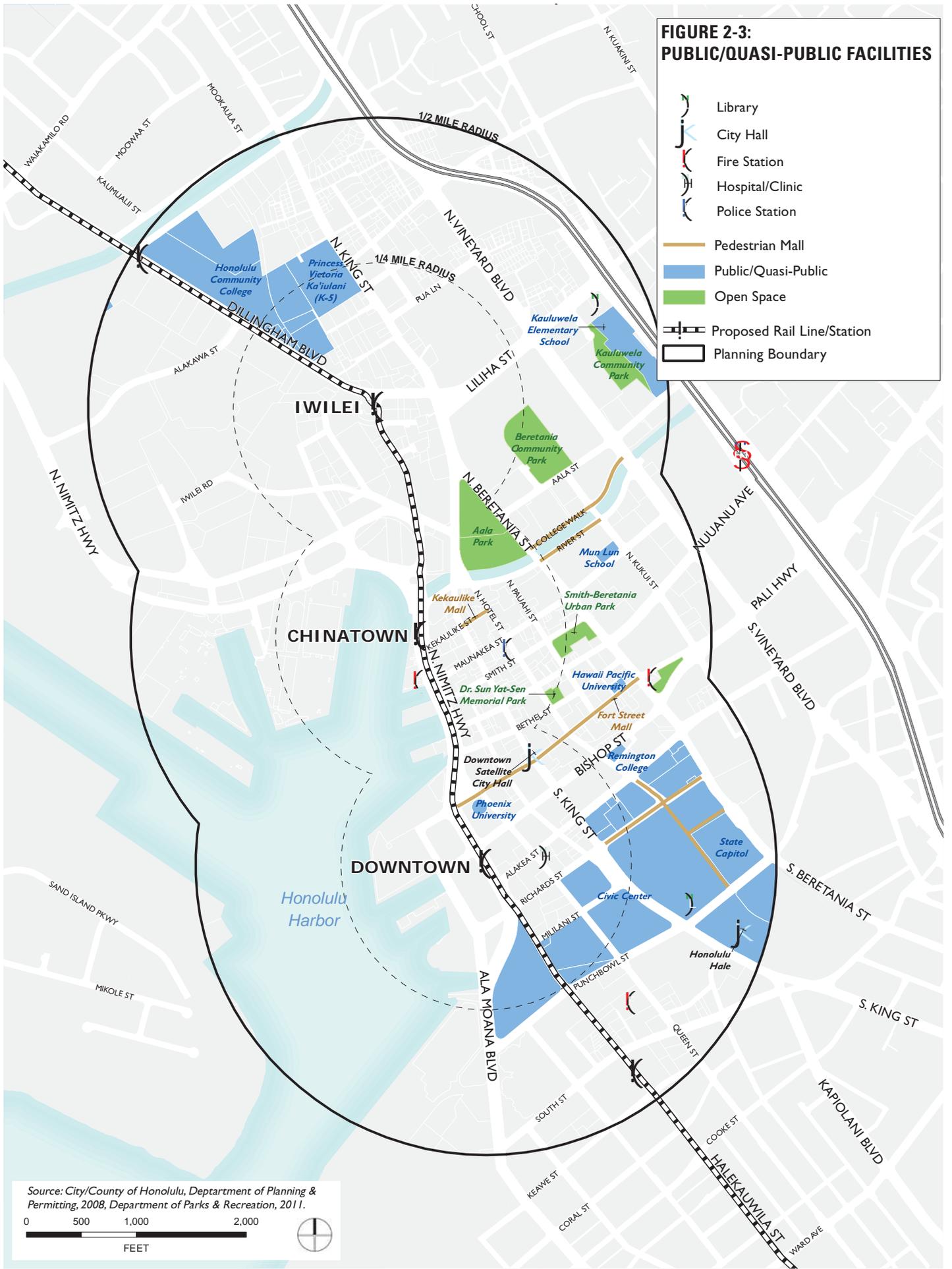
Source: Hawaii Public Schools, Enrollment Report 2010-2011 and School Status and Improvements Report 2009-2010 (public); GreatSchools.net (charter and private).

Hawaii Pacific University has its downtown campus on the Fort Street Mall. It is a private, nonprofit university offering more than 50 undergraduate degrees and 13 graduate programs. Remington College is another private college offering Bachelor's, Associate's and Diploma programs at Bishop and Hotel streets. Lastly, the Hawaii State Library is located at 478 S. King Street and the Liliha Library is located adjacent to the Kauluwela school and park.

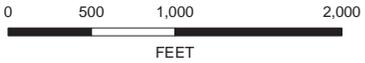
¹ Hawaii Public Schools, Enrollment Report 2010-2011 and School Status and Improvements Report 2009-2010.

**FIGURE 2-3:
PUBLIC/QUASI-PUBLIC FACILITIES**

-  Library
-  City Hall
-  Fire Station
-  Hospital/Clinic
-  Police Station
-  Pedestrian Mall
-  Public/Quasi-Public
-  Open Space
-  Proposed Rail Line/Station
-  Planning Boundary



Source: City/County of Honolulu, Department of Planning & Permitting, 2008, Department of Parks & Recreation, 2011.





Large parks are limited Downtown, though plazas and linear parks, such as Fort Street Mall, provide landscaping and shaded places to sit.

Parks

There are limited open spaces in Downtown planning area, as shown in Figure 2-3. Surrounded by housing, Beretania Community Park’s play areas and basketball courts are well used by the community. Aala Park has skateboard ramps, courts, and a field that are used by youth in the community, but sometimes the park is used by homeless people, making other community members feel unsafe there. The historic Irwin Park on the Aloha Tower site is currently being used as a parking lot. Fort Street Mall, as a pedestrian-only street provides opportunities for strolling and lingering, and is vibrant during the day and during community events. The River Street canal is a pedestrian path and open space used by local residents and visitors. Additionally, small plazas and open spaces are scattered throughout Downtown and Chinatown, and Foster Botanic Gardens lies just outside the planning area.

TABLE 2-3: PARKS INVENTORY

| NAME | ADDRESS | ACRES |
|-------------------------------|-------------------------------|-------------|
| Aala Park | 280 North King Street | 6.7 |
| Beretania Community Park | 1290 Aala Street | 5.4 |
| Dr. Sun Yat-Sen Memorial Park | 1120 Bethel Street | 0.4 |
| Kauluwela Community Park | 198 North Vineyard Boulevard | 2.4 |
| Smith-Beretania Urban Park | N. Beretania and Smith Street | 1.3 |
| TOTAL | | 16.2 |

Source: City and County of Honolulu, Department of Parks & Recreation and Department of Planning & Permitting, 2011.

The City has park citywide standards for the size and service area of public parks and facilities. For example, neighborhood parks should be four to six acres in size and serve a ½-mile radius or population of about 5,000, while a community park should be ten acres and serve a one-mile radius or population of about 10,000. By these standards, park availability in the Downtown planning area is very low. The Primary Urban Center Development Plan acknowledges that Downtown is one of the neighborhoods that lacks adequate parks, recreation and other open space facilities.²

² City and County of Honolulu. Primary Urban Center Development Plan. June 2004: 3-21.

There is a total of 16.2 acres of parkland within the planning area and nearly 8,000 households or 15,000 persons. This results in a parks per 1,000 person ratio of 1.1 acres.³ This does not meet the City's standard for two acres of Neighborhood Parks (4-6 acre parks serving a 1/2-mile area) for every 1,000 residents. This is also low compared with national standards. Since additional employees use Downtown during the day, the deficiency is even more substantial. The National Recreation and Park Association (NRPA) used to publish recommended standards for park provision, from six to ten acres per 1,000 residents for local parks to 15 to 20 acres of total regional open space per 1,000 residents.⁴ Although NRPA now recommends a more localized analysis of level of service needs, it does provide an indication of Downtown's current deficiency. Given the residential and employment population increase that may be expected from TOD

planning, the provision of local neighborhood parks will be essential to creating an attractive, livable, and healthy community.

Affordable Housing

There are nearly 3,000 affordable housing units in the planning area, primarily mauka of the Iwilei station and in Chinatown, as shown in Figure 2-4 and Table 2-4. During meetings with stakeholders in December 2010, most community members agreed that there is a need for more rental housing at a range of income levels, including both affordable and market-rate. However, a recent proposal for a transitional housing development in Chinatown was rejected by the community due to a lack of programming for reintegration into the housing and job market and an overall sense among community members that Chinatown has taken on too much of the burden of providing housing and social services.

Social Services

There are a variety of social service providers throughout the planning area, as shown in Figure 2-4. River of Life Mission provides meals, health clinics, recovery

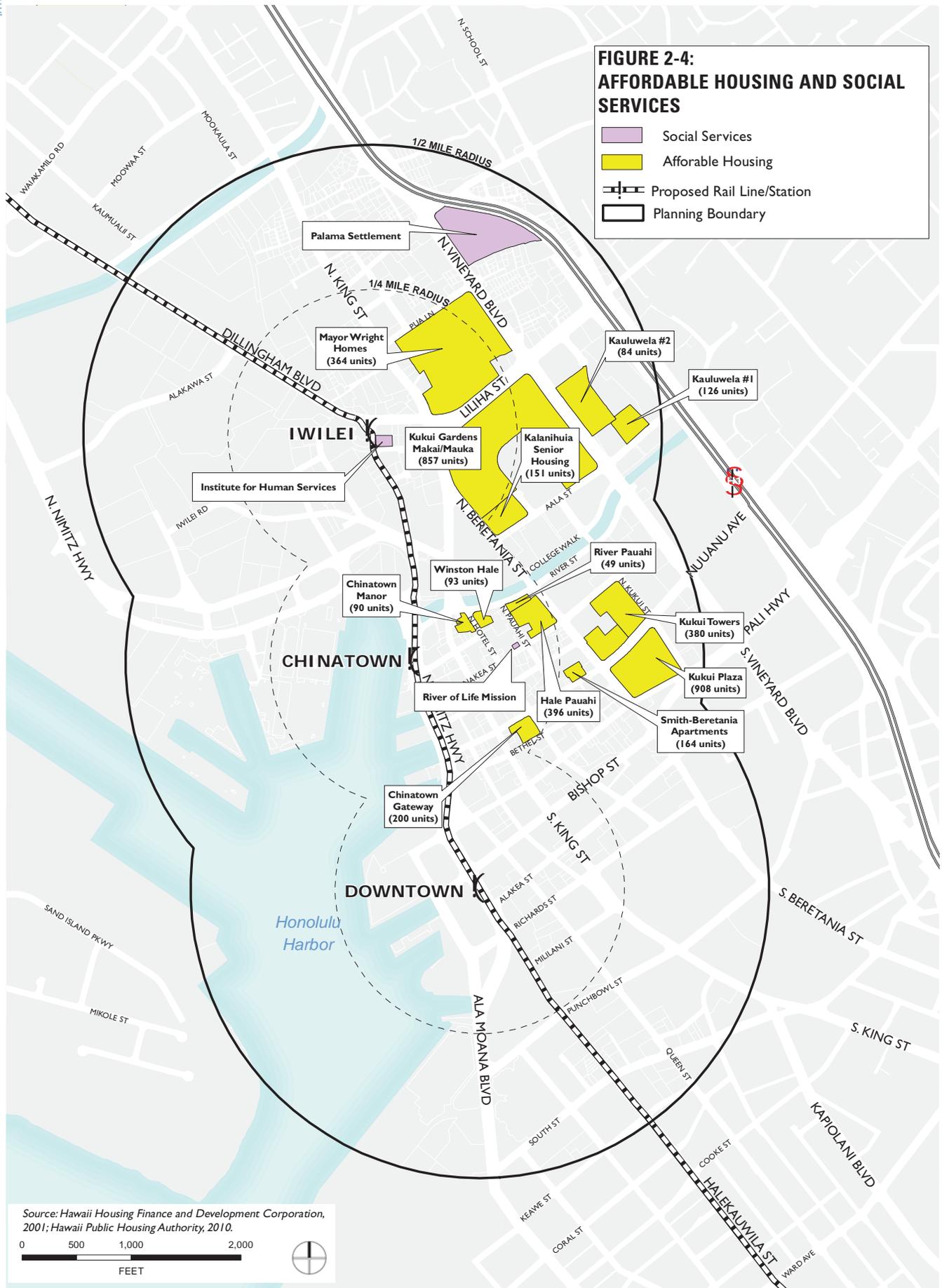
3 To calculate parks per 1,000 person ratio, Dyett & Bhatia estimated 8,411 housing units in the planning area, which translates to 7,990 households (assuming a 5 percent vacancy rate) or over 14,940 persons, assuming 1.87 persons per household (statistic for the Downtown Sub-Area).
4 National Recreation and Park Association. Recreation, Park and Open Space Standards and Guidelines. Revised 1990: 56.

| TABLE 2-4: AFFORDABLE HOUSING INVENTORY | | | |
|---|-------------------------|---------------|--|
| NAME | ADDRESS | HOUSING UNITS | TARGET INCOME LEVEL (% AREA MEDIAN INCOME) |
| Chinatown Gateway | 1031 Nuuanu Avenue | 200 | 80 |
| Chinatown Manor | 175 N. Hotel Street | 90 | 80 |
| Hale Pauahi | 155 N. Beretania Street | 396 | 80 |
| Kalanihua (Senior) | 1220 Aala St. | 151 | 50 |
| Kauluwela #1 | 1450 Aala Street | 126 | 80 |
| Kauluwela #2 | 400 N. Vineyard Blvd | 84 | 80 |
| Kukui Gardens Makai | 1305 Liliha Street | 389 | 60 |
| Kukui Gardens Mauka | 1307 Liliha Street | 468 | 95 |
| Kukui Plaza | 55 S. Kukui St. | 908 | No data |
| Kukui Towers | 35 North Kukui Street | 380 | 60 |
| Mayor Wright Homes | 521 N. Kukui St | 364 | 80 |
| River Pauahi Apartments | 1155 River Street | 49 | 50 |
| Smith-Beretania Apartments | 1170 Nuuanu Avenue | 164 | 50 |
| Winston Hale | 1055 River Street | 93 | 80 |
| TOTAL | | 3,862 | |

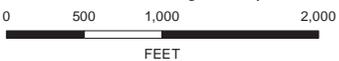
Source: Hawaii Housing Finance and Development Corporation, Affordable Housing Inventory, January 2001. <<http://hawaii.gov/dbedt/hhfdc/resources/Affordable-Housing-Inventory.pdf>> Accessed March 17, 2011.

**FIGURE 2-4:
AFFORDABLE HOUSING AND SOCIAL SERVICES**

- Social Services
- Affordable Housing
- Proposed Rail Line/Station
- Planning Boundary



Source: Hawaii Housing Finance and Development Corporation, 2001; Hawaii Public Housing Authority, 2010.



housing, and other services in Chinatown and Downtown. It also operates two nine-bedroom shelters in the area. The Iwilei station area includes the Institute for Human Services shelter which draws a homeless population seeking shelter and hot meals. From stakeholder meetings completed in December 2010, there is a sense that Chinatown has taken on too much of the burden of providing social services.

Density and Intensity

The intensity of development within the planning area is described below. Through the planning process, determining appropriate future densities and intensities will be paramount to ensure efficient use of land, compatibility between old and new development and the ability to take advantage of locations that are proximate to the rail stations.

Building Heights and Building Footprints

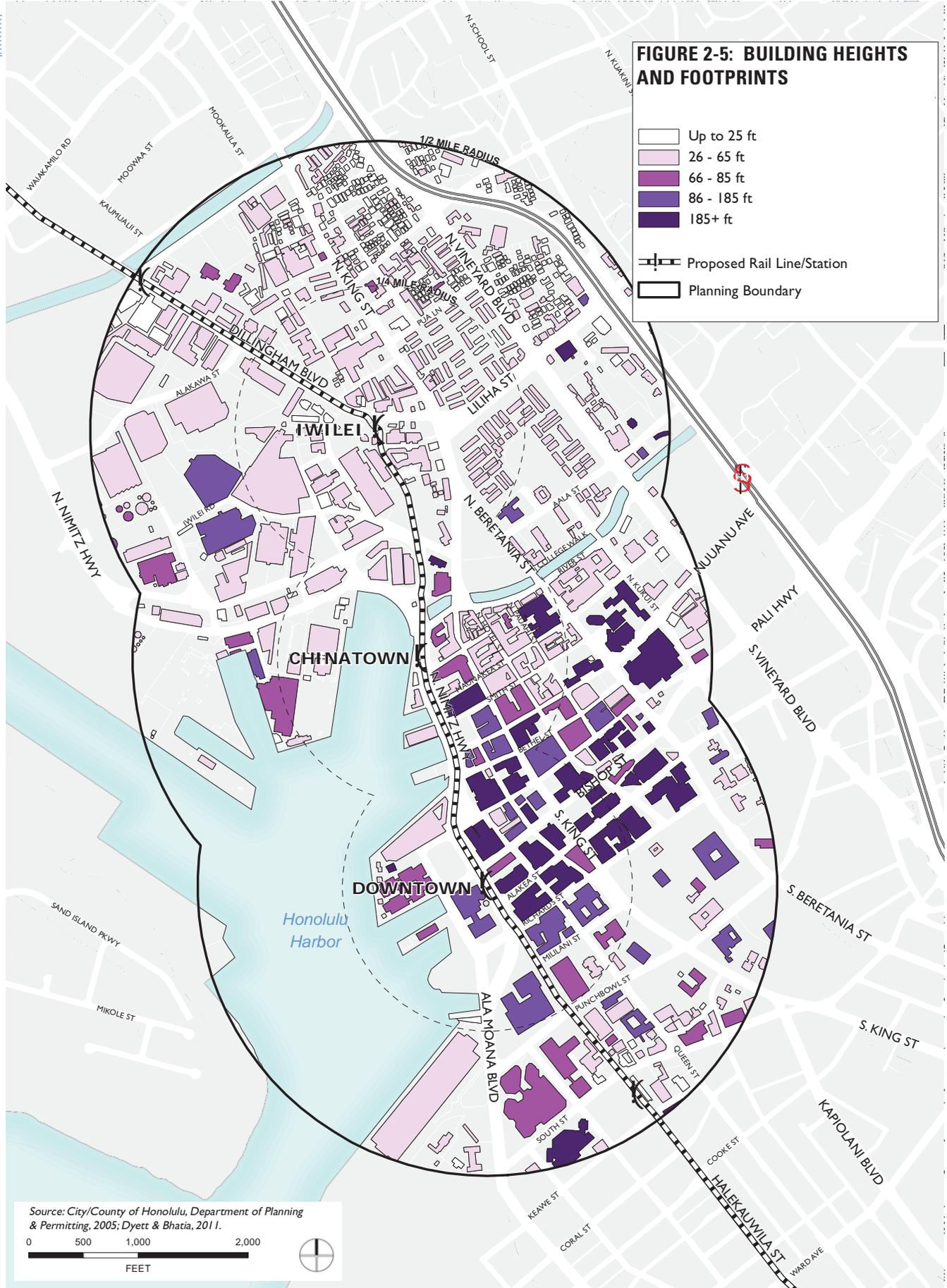
Figure 2-5 shows building footprints and building heights, illustrating the bulk of buildings on the site. The light grey color indicates surfacing parking, streets, open space, and vacant lots, while the darkest colors indicate the taller building heights. In general, taller buildings may need smaller footprints and more open space to ensure good sunlight access and avoid casting large shadows. Building heights are segmented into five categories in the figure to illustrate location and relative heights within the planning area.

Building heights are highest in Downtown and taper off in Chinatown and Iwilei. Downtown office towers and Chinatown residential high-rises reach heights above 185 feet; the First Hawaiian Bank is the tallest building at 440 feet. Within the core of Chinatown, building heights are generally restricted to 40 feet by Special District regulations in order to preserve existing historic buildings and the character of the neighborhood. Around Iwilei Station, which is characterized by mid-rise residential and warehouse buildings, heights are generally low (less than 65 feet). The average building height within the 1/2-mile radius planning area is 43 feet.



Low building heights in the historic Chinatown core stand in contrast to much taller buildings Downtown and along the waterfront (top and middle). The Iwilei station area has generally lower building heights and intensities (bottom).

FIGURE 2-5: BUILDING HEIGHTS AND FOOTPRINTS



Source: City/County of Honolulu, Department of Planning & Permitting, 2005; Dyett & Bhatia, 2011.

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Residential Density

Density is the number of people or housing units in a given area. Residential density is usually measured in housing units per acre. Figure 2-6 illustrates the number of housing units per acre on all residential properties in the planning area, with darker shades indicating higher densities. There are approximately 8,400 housing units in the 1/2-mile radius planning area with an average density of 37 housing units per acre. As shown in Table 2-5 and Chart 2-2, about 58 percent of all units in the planning area are high-density housing (above 110 units per acre), followed by medium- and medium-high density housing each with 12 percent of all units, respectively. Low-density units represent just one percent share of the total.

Residential densities are high in the planning area, particularly in Chinatown, which has a concentration of high-rise towers, with densities ranging from 60 units per acre to well above 100 units per acre. The Smith-Beretania affordable housing development has the highest density in the planning area: 346 units per acre. Densities remain fairly high closer to Iwilei Station. For example, Kukui Gardens and Mayor Wright Homes have residential densities of 45 and 25 units per acre, respectively. Densities decrease further mauka of the station, as housing type shifts towards single-family homes.

Non-Residential Intensity

Intensity of non-residential development (office, commercial, and industrial) is measured by floor area ratio (FAR). The FAR measurement describes the ratio of building floor area to lot size. Thus, a two-story building covering all of a parcel will result in a FAR of 2.0, as will a four-story building covering half the parcel. Figure 2-7 illustrates intensity for non-residential buildings in the planning area, with the darkest colors indicating the most intense developments.

Given the concentration of large office buildings Downtown and limited plaza or open space, it is not surprising the highest FAR values, above 4.5 FAR, are found here. On average, office uses in the planning area have an FAR of 4.8, while commercial and industrial



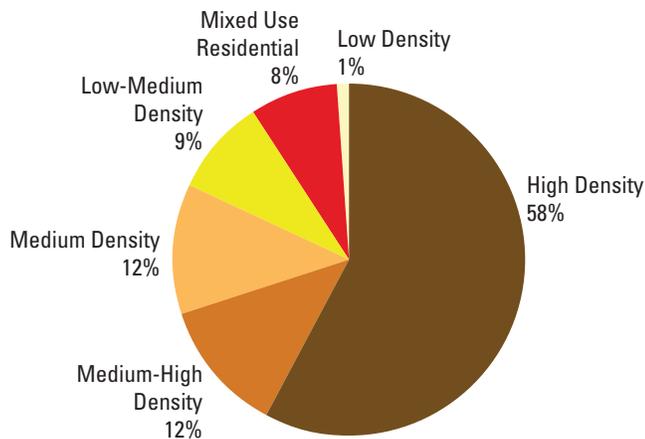
Several recent housing developments have been built at high densities (top, middle), in contrast to more moderate densities in existing developments (bottom).

uses have FAR values of 2.5 and 1.0, respectively. FAR values are more moderate in Chinatown, typically between .75 and 3.5, and drop much lower near Iwilei Station, which contains more low intensity warehouse uses and big box stores with large parking lots. Overall, the average intensity within the 1/2-mile planning area is 2.5 FAR.

| RESIDENTIAL DENSITY | UNITS |
|--------------------------------------|--------------|
| Low Density (1-8 du/acre) | 59 |
| Low-Medium Density (8-25 du/acre) | 769 |
| Medium Density (25-60 hu/acre) | 1,023 |
| Medium-High Density (60-110 hu/acre) | 1,027 |
| High Density (110+ du/acre) | 4,905 |
| Mixed Use Residential (various) | 628 |
| TOTAL | 8,411 |

Source: City/County of Honolulu, Department of Planning and Permitting, 2008; Dyett & Bhatia, 2011.

CHART 2-1: RESIDENTIAL UNITS, BY DENSITY



Source: City/County of Honolulu, Department of Planning and Permitting, 2008; Dyett & Bhatia, 2011.



Aloha Tower and the historic Irwin Park serve as an entryway to the city for cruise ship passengers. However, access is hampered by their location makai of Nimitz Highway from the rest of Downtown.

Major Development Projects

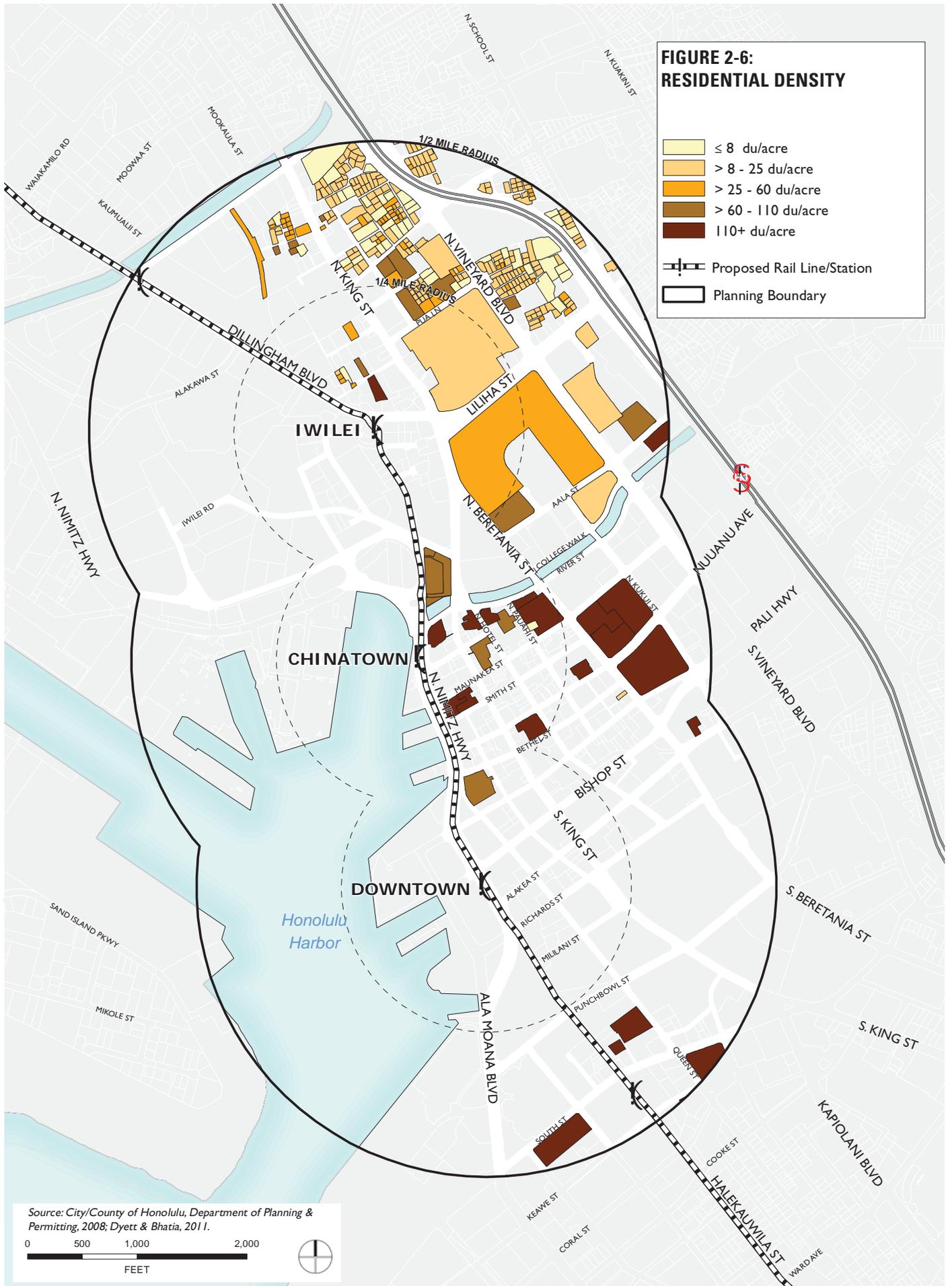
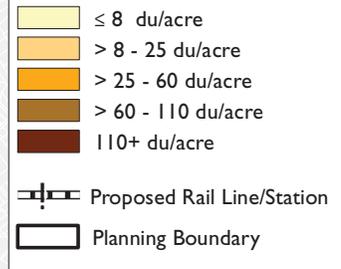
Aloha Tower

Aloha Tower is a historic complex along Honolulu Harbor across the highway from Downtown. The complex encompasses lands makai of Nimitz Highway, including piers 4 through 6, 8 through 23, and portions of the highway and Iwilei. Cruise ship docking, retail, and parking currently occupy the site.

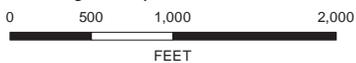
Until recently, the Aloha Tower Development Corporation was responsible for overseeing redevelopment of the State-owned properties. Before disbanding, a Strategic Plan was prepared calling for transit-oriented development that could capitalize on transit access. The plan also suggested a potential pedestrian bridge/mall to improve access to the Aloha Tower Marketplace, expansion of piers, development of structured parking, and restoration of the historic Irwin Memorial Park—currently used as a surface parking lot—into a park. As of this writing, a bill has been approved by the State Legislature to reinstitute the Aloha Tower Development Corporation, but with more limited authority—over piers 4 through 11 only (that is, excluding the Iwilei portion). The bill has been sent to Governor Abercrombie for consideration.⁵

⁵ Hawaii State Legislature. HB No. 1020 HD2, SD2, CD1, “Related to Aloha Tower Development Corporation.” Approved May 3, 2011.

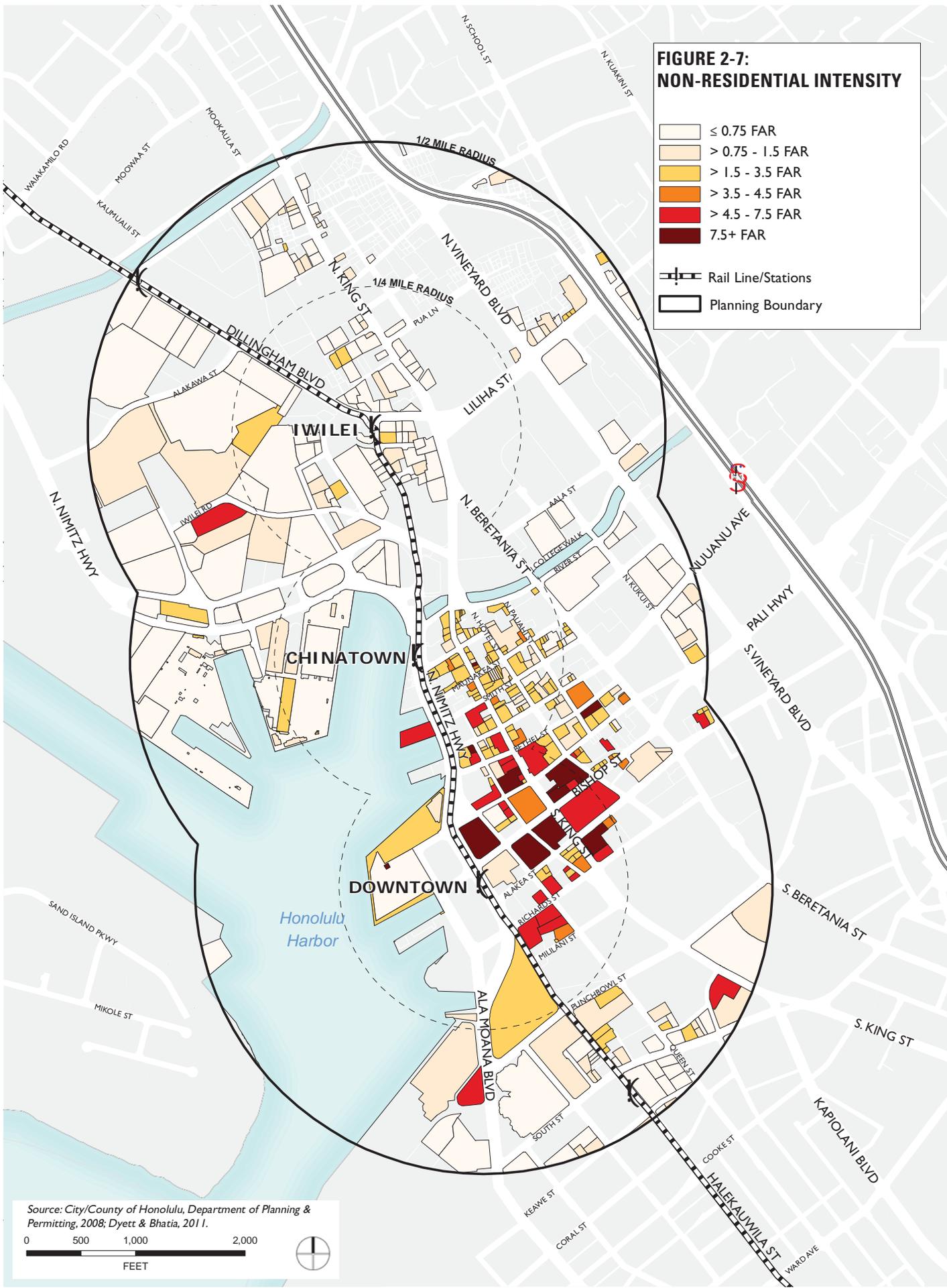
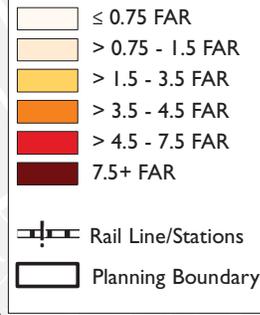
**FIGURE 2-6:
RESIDENTIAL DENSITY**



Source: City/County of Honolulu, Department of Planning & Permitting, 2008; Dyett & Bhatia, 2011.



**FIGURE 2-7:
NON-RESIDENTIAL INTENSITY**



Source: City/County of Honolulu, Department of Planning & Permitting, 2008; Dyett & Bhatia, 2011.



2.2 Community Design

Community Character

Downtown, Chinatown, and Iwilei stations each have a distinct character. Downtown is the financial and professional office hub of Honolulu, exemplified by tall office buildings, a bustling day time population and State harbor operations, with most imports and all cruise ships using this harbor.

Honolulu's Chinatown is one of the oldest Chinatowns in the United States and has served a gateway for new immigrants—Chinese, Vietnamese, Filipino, and other ethnic groups—for over 100 years. Local chefs and home cooks visit its markets each day, along with visitors shopping and touring Chinatown's historic architecture. However, at night, both Chinatown and Downtown “shut down,” with few evening activities to keep workers and visitors in the area. The exception to this is First Fridays, a popular once-a-month arts event, where Chinatown and Downtown galleries, museums and studios are open to the public.

Across the Nuuanu Stream from Chinatown, the Iwilei Station area lies near the often-congested intersection of two large streets—King Street and Dillingham Boulevard—and hosts an assortment of commercial and industrial businesses, as well as harbor activities. The area has a social service operation for homeless persons. Nonetheless, stakeholders see the area as reasonably safe by day, with many workers and through-traffic, but unsafe at night with people loitering around the local shelter.

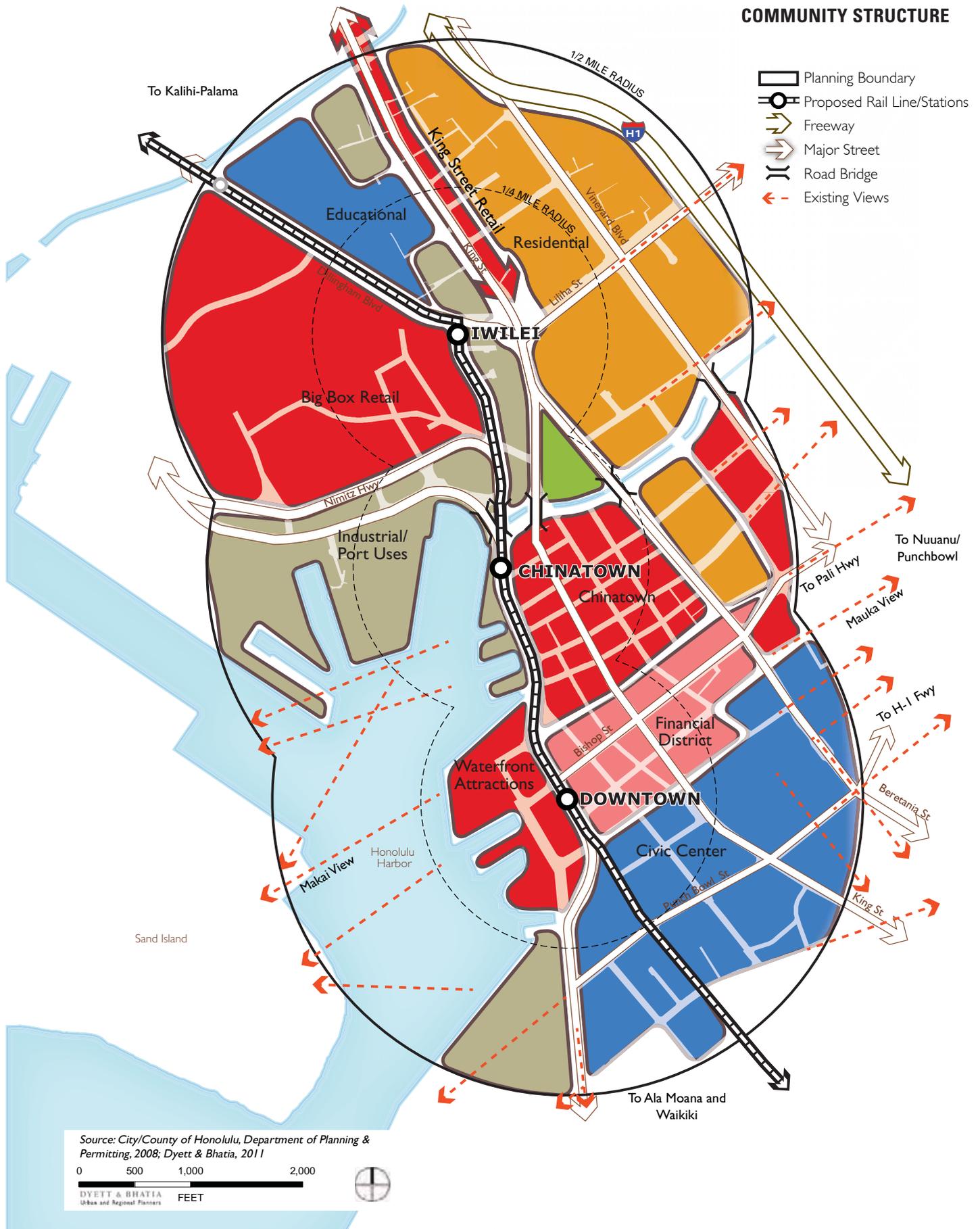
Community Structure

Community design comprises physical elements such as buildings, trees, and streets, as well as the activities and the pace of life that they accommodate. Ultimately, the location, orientation and design of these physical elements determine how a neighborhood feels. Figure 2-8 illustrates the “structure” of the planning area: the mix of land uses, infrastructure, transportation network, topography, and views that create the natural and manmade look and feel of the place.



Several locations in the planning area afford views of the mountains and the harbor from public streets and ground-level.

**FIGURE 2-8:
COMMUNITY STRUCTURE**



- **Form and Framework:** Land in the planning area is bordered by Honolulu Harbor makai of Nimitz Highway. Major roads that traverse the planning area including Nimitz Highway, Dillingham Boulevard, Beretania Street, King Street, Vineyard Boulevard, and the H-1 Freeway. The network of major and minor streets creates the grid of blocks and parcels: small blocks and a walkable environment in Downtown and Chinatown, and oddly-shaped and large blocks in Iwilei creating a less-hospitable environment for pedestrians.
- **Land Use:** Traveling from Diamond Head to Ewa direction, the area includes a historic and civic district Diamond Head of Richards Street, financial district to Bethel Street, and Chinatown to College Walk and Nuuanu Stream. Around Iwilei station, there are a mix of industrial and big-box retail makai of Dillingham Boulevard, while residential uses are predominately mauka of King Street.
- **Linear Park:** A central point in the area is the Nuuanu Stream, which is adjacent to Aala Park and complemented by pedestrian-only pathways (College Walk and parts of River Street), linear park furniture, a pedestrian bridge, and historical buildings. There are some aging facilities in disrepair, but the stream banks' stonework is attractive and the adjoining paths are well used.
- **Views:** Views of landmarks, the mountains, and waterfront can be seen from Nuuanu Stream and Nimitz Highway, Mauanakea Street, Smith Street, Nuuanu Avenue, Fort Street, Bishop Street, and Punchbowl Street. These key views are illustrated in Figure 2-8.
- **Activity Nodes and Destinations:** The area includes major retail centers (Chinatown, Aloha Tower Marketplace, Fort Street Mall), residential housing (Mayor Wright and Kukui Gardens, and high rises in Chinatown), and historic districts (Chinatown and a portion of the Hawaii Capital Historic District).
- **Age of Structures:** There is a mix of new and old buildings and various stages of quality and disrepair. Vacant storefronts and offices can be seen scattered throughout the area. Nearly 30 percent of the



The Iwilei station area reflects a more industrial character with a range of warehouse, distribution, manufacturing, and harbor-related uses.

building stock was constructed before 1930. The average building within a parcel in the 1/2-mile planning area was constructed 60 years ago.

- **Gateways/Identity:** Chinatown contains the area's most prominent gateways: the Chinese guardian lions on Hotel Street from the Diamond Head direction and the bridges crossing Nuuanu stream from the Ewa direction. However, even these structures are not adequate gateway markings amidst the lush street trees, pedestrian and vehicle traffic, street wall, and narrow streets. The commercial nature of Downtown is clear from the tall office buildings that can be seen from afar from all directions, but there is no clear gateway or signage suggesting arrival. The arrival into Iwilei is much less clear and the identity of the place not apparent; this is a key opportunity for improvement, given its proximity to Downtown.

Together, these natural and built features create a sense of place, particularly around the Downtown and Chinatown stations, but also constrain development opportunities and circulation. The TOD Plan will need to consider ways to enhance existing characteristics that community members cherish, while providing incentives to take advantage of development opportunities and meet community needs.

Community Snapshot

The City has divided its neighborhoods into planning areas and sub-areas. Though not contiguous with the Downtown Neighborhood TOD planning area, the Downtown Sub-Area provides demographic statistics and projections for a similar area and can be used to indicate the makeup of current residents and employees and the potential for future ones. For comparison purposes, values for the island as a whole are also provided in Table 2-6.

The Downtown Sub-Area has 14,575 residents. This population is somewhat older, with a median age of 41 and 17 percent of the population over the age of 65. Approximately 58 percent of residents are Asian, 22 percent white, 12 percent two or more races, and six percent Native Hawaiian/Pacific Islander. Nearly 50 percent of residents speak a language other than English at home; this is nearly twice the rate compared with the island as a whole. Median household income is nearly \$30,000, substantially lower than the median of \$52,000 islandwide. (However, this income estimate may be underreported for the Sub-Area since Chinatown is a cash economy.) Downtown Sub-Area residents are much more likely to walk or take transit to work and far less likely to drive alone compared Oahu as a whole. Nevertheless commute times to work tend to be shorter, just 19 minutes on average.

| TABLE 2-6: DEMOGRAPHICS FOR DOWNTOWN SUB-AREA AND OAHU | | |
|---|--------------------------|-------------|
| CHARACTERISTIC | DOWNTOWN SUB-AREA | OAHU |
| Population | 14,570 | 876,156 |
| Age (median) | 41 | 36 |
| Population Under 18 years old | 13% | 24% |
| Population Over 65 years old | 17% | 13% |
| Race | | |
| White | 22% | 21% |
| Black | 1% | 2% |
| American Indian/Alaska Native | 0% | 0% |
| Asian | 58% | 46% |
| Native Hawaiian and Pacific Islander | 6% | 9% |
| Other | 1% | 1% |
| Two or More Races | 12% | 20% |
| Language Spoken Other Than English | 49% | 29% |
| Median Household Income | \$29,946 | \$52,280 |
| Jobs | 59,424 | 501,129 |
| Housing | | |
| Renter Occupied Housing | 72% | 41% |
| Average Persons Per Household | 1.87 | 2.95 |
| Education Attainment | | |
| % high school graduate or higher | 76% | 85% |
| % bachelor's degree or higher | 28% | 28% |
| Transportation | | |
| Mean Travel Time to Work (minutes) | 19 | 27 |
| Commuting to Work | | |
| Driving Alone | 33% | 61% |
| Carpool | 13% | 19% |
| Public Transportation | 19% | 8% |
| Walk | 30% | 6% |
| Other Means | 3% | 2% |

Source: City/County of Honolulu, Department of Planning & Permitting, 2000 Census SF 1 File.



Homelessness, cleanliness, and crime are key concerns for community members and may deter developers from initiating projects, particularly in Chinatown and Iwilei.

2.3 Public Safety

Police and Fire Facilities

The Honolulu Police Department headquarters is located Downtown at 801 South Beretania Street. The department is comprised of 28 divisions and elements and as of January 2011 the department has 1,959 sworn officers and 479 civilian personnel.⁶ The Honolulu Fire Department headquarters is located at 636 South Street, Diamond Head of the Downtown station. The department has over 1,100 firefighters, within 44 fire stations and five battalions.⁷

Crime

Community stakeholders interviewed for this project are concerned about safety, crime, and homeless individuals migrating to Chinatown at night, utilizing the neighborhood's architectural nooks and crannies to take shelter. Community members have concerns about impacts on safety (actual and perceived) as well as the cleanliness of streets. Soup kitchen and homeless services are also perceived as driving potential customers and tenants away from the area. A rough review of crime activity between January 1, 2011 and March 26, 2011 on the Police Department's crime mapping website suggests that there were just over 200 reported crimes during the nearly three-month period within about one-half mile of the stations. Two-thirds of the reported crimes were thefts/larceny and the remaining one-third vehicle break-ins, motor vehicle thefts, burglary and vandalisms. Notably, this mapping service does not map other types of violent crime, including assaults and homicides. Most of these crimes were located in Downtown and Chinatown; the Iwilei station area contained fewer reported crimes.⁸

⁶ Honolulu Police Department. <<http://www.honoluluupd.org/hpd/index.htm>> Accessed March 17, 2011.

⁷ Honolulu Fire Department. <<http://www1.honolulu.gov/hfd/index.htm>> Accessed March 27, 2011.

⁸ Honolulu Police Department, <<http://www.crimemapping.com/map/hi/honolulu>>, Period: January 1, 2011 and March 26, 2011.

Homelessness

Homelessness is particular concern around Iwilei station as well as Downtown and Chinatown in the evenings. Aala Park, including the mauka side along Beretania Street, has become a campsite for homeless persons. Here, they have access to restroom facilities, shelter (under trees), water, and seating. Lighting and security are limited at night, making actual and perceived crime and vandalism disconcerting to other community members. Around the Iwilei station area, loitering around the Institute for Human Services (which provides hot meals and a shelter) and the Salvation Army Thrift Store contribute to crime and safety concerns and may hinder development potential. In Downtown and Chinatown, River of Life provides services that attract homeless persons in the evening, utilizing the neighborhood's architectural nooks and crannies to take shelter.

The City conducted a count of homeless individuals and families in January 2010, providing a “snapshot” of homelessness in the city. The Downtown area surveyed extends from Salt Lake to Piikoi Street, therefore a larger area than the Downtown TOD planning area. The count revealed 1,352 individuals: 394 unsheltered and 958 sheltered (i.e. staying in emergency shelters or transitional housing). Of these persons, 218 (or 16 percent) are considered chronically homeless, meaning that they are an unaccompanied individual with a disabling condition, who have either been continuously homeless for at least one year or have had at least four episodes of homelessness in the past three years.⁹

⁹ City & County of Honolulu, Department of Community Services. Homeless Point-in-Time Count, 2010, Methodology and Results. May 2010.

2.4 Transportation

This section reviews the existing transportation conditions in the segment of the Honolulu High Capacity Transit Project Corridor that includes Downtown planning area stations. The Iwilei station is located over Kaaahi between Dillingham Boulevard and Iwilei Road. The Chinatown and Downtown stations are located along and over Nimitz Highway. The inventory of existing transportation conditions primarily addresses the transportation infrastructure and services within 1/4-mile of these stations. Only major transportation features outside of this radius are referenced when appropriate to do so due to their influence upon, or connectivity with, the TOD planning area.

Available multi-modal transportation information relating to the TOD planning area was gathered and reviewed. This information includes existing plans, traffic studies, on-going planning projects and associated documents and data. Existing and projected conditions contained in pertinent documents are presented.

Public Transportation Services and Facilities

Public transportation on Oahu is the responsibility of the City and County of Honolulu, Department of Transportation Services (DTS). The service is popularly known as *TheBus* for fixed route operations and TheHandi-Van for demand-responsive curb-to-curb service for Americans with Disabilities Act of 1990 (ADA) paratransit-eligible individuals.

DTS plans, designs, operates and maintains transportation systems; locates, selects, installs and maintains traffic control facilities, devices and street lighting systems; approves plans and designs for construction, reconstruction and widening of public streets and roads; administers rules and regulations for the use of streets and roadways; and, manages the City's contract for bus and paratransit operations. Within DTS, the Public Transit Division (PTD) is the division responsible for managing the City's contract for bus and paratransit operations. The current contractor is Oahu Transit Services (OTS), a private, non-profit corporation that operates and maintains *TheBus* and TheHandi-Van services.

Existing Public Transportation Services

The Bus consists of 97 fixed routes and four (4) deviation routes (operated by the paratransit division) for a total of 101 routes. Of these, four (4) are limited stop routes (CityExpress! A, CityExpress! B, CountryExpress! C and CountryExpress! E) and 34 are peak-period, peak-direction express routes. The 101 routes serve about 3,800 bus stops. Passenger amenities include approximately 980 passenger shelters and 2,400 benches.

Table 2-7 lists those existing bus routes operating in the vicinity of the project area planned rail stations. These routes include Rapid Bus, Urban and Suburban Trunk and Peak Express service classifications. Route 1L is a hybrid route providing limited-stop service in the downtown area and full-stop service east of Kahala Mall. Altogether, 54 routes currently pass through the Downtown Neighborhood TOD Plan area.

Figure 2-9 shows the current OTS map that includes the bus routes serving the Downtown neighborhoods. The general demographic characteristics of those who use these routes are further detailed in the Appendix. The Transit Rider Database and Route Profiles Project compiled by the DTS includes selected rider characteristics by route.¹⁰

¹⁰ Transit Rider Database and Bus Route Profiles Project; prepared for The City and County of Honolulu Department of Transportation Services; prepared by Weslin Consulting Services, Inc.; February 2006.

| TABLE 2-7: EXISTING BUS ROUTES | | | | | |
|--------------------------------|-----------------------------|----------|-----------|----------|------------------------|
| EXISTING ROUTES | | STATIONS | | | SERVICE CLASSIFICATION |
| No. | Destinations Served | Iwilei | Chinatown | Downtown | |
| A | Waipahu-UH Manoa | √ | √ | √ | Rapid Bus |
| B | Kalihi-Waikiki | √ | √ | √ | Rapid Bus |
| C | Waianae-Honolulu | √ | √ | √ | Rapid Bus |
| E | Ewa Beach-Waikiki | | | √ | Rapid Bus |
| 1L | Downtown-Hawaii Kai Limited | √ | √ | √ | Limited Stop |
| 1 | Kalihi-Hawaii Kai | √ | √ | √ | Urban Trunk |
| 2 | Kalihi-Waikiki | √ | √ | √ | Urban Trunk |
| 3 | Kaimuki-Salt Lake | √ | √ | √ | Urban Trunk |
| 4 | Nuuanu-UH-Waikiki | | √ | √ | Urban Trunk |
| 6 | Pauoa-Woodlawn | | | √ | Urban Trunk |
| 9 | Pearl Harbor-Palolo Valley | √ | √ | √ | Suburban Trunk |
| 11 | Aiea Heights-Honolulu | √ | √ | √ | Urban Trunk |
| 13 | Liliha-Waikiki | √ | √ | √ | Urban Trunk |
| 19 | Hickam-Waikiki | √ | √ | √ | Urban Trunk |
| 20 | Pearlridge-Waikiki | √ | √ | √ | Suburban Trunk |
| 40 | Makaha-Honolulu | √ | √ | √ | Suburban Trunk |
| 42 | Ewa Beach-Waikiki | √ | √ | √ | Suburban Trunk |
| 43 | Waipahu-Honolulu | √ | √ | √ | Suburban Trunk |
| 52 | Wahiawa-Circle Island | √ | √ | √ | Suburban Trunk |
| 53 | Pacific Palisades-Honolulu | √ | √ | √ | Suburban Trunk |
| 54 | Pearl City-Honolulu | √ | √ | √ | Suburban Trunk |
| 55 | Kaneohe-Circle Island | | | √ | Suburban Trunk |
| 56 | Kailua-Kaneohe-Honolulu | | | √ | Suburban Trunk |
| 57 | Kailua-Honolulu | | | √ | Suburban Trunk |

| TABLE 2-7: EXISTING BUS ROUTES | | | | | |
|--------------------------------|------------------------------|----------|-----------|----------|------------------------|
| EXISTING ROUTES | | STATIONS | | | SERVICE CLASSIFICATION |
| No. | Destinations Served | Iwilei | Chinatown | Downtown | |
| 57A | Kailua-Enchanted Lake | | | √ | Suburban Trunk |
| 62 | Wahiawa Heights-Honolulu | √ | √ | √ | Suburban Trunk |
| 65 | Kaneohe-Honolulu | | | √ | Suburban Trunk |
| 80-82 | East Honolulu Expresses | | | √ | Peak Express |
| 81 | Waipahu Express | √ | √ | √ | Peak Express |
| 83 | Wahiawa Town Express | √ | √ | √ | Peak Express |
| 84 | Mililani Express-North | √ | √ | √ | Peak Express |
| 84A | Mililani Express-South | √ | √ | √ | Peak Express |
| 85 | Windward Express-Kailua | | | √ | Peak Express |
| 85A | Windward Express-Haiku | | | √ | Peak Express |
| 88 | Kahaluu-Ahuimanu Express | | | √ | Peak Express |
| 88A | North Shore Express | | | √ | Peak Express |
| 89 | Waimanalo-Kailua Express | | | √ | Peak Express |
| 90 | Pearl City Express | √ | √ | √ | Peak Express |
| 91 | Ewa Beach Express | √ | √ | √ | Peak Express |
| 92 | Makakilo City Express | √ | √ | √ | Peak Express |
| 93 | Waianae Coast Express-CBD | √ | √ | √ | Peak Express |
| 94 | Kapolei-UH Manoa | √ | √ | √ | Peak Express |
| 96 | Waipio Gentry Express | √ | √ | √ | Peak Express |
| 97 | Village Park Express | √ | √ | √ | Peak Express |
| 98 | Wahiawa-Mililani Park & Ride | √ | √ | √ | Peak Express |
| 98A | Kunia-Wahiawa-Mililani | √ | √ | √ | Peak Express |
| 101 | Ewa Gentry Express | √ | √ | √ | Peak Express |
| 102 | Villages of Kapolei Express | √ | √ | √ | Peak Express |
| 103 | Paiwa-Waikele Express | √ | √ | √ | Peak Express |
| 201 | Ewa Beach-Waikiki | √ | √ | √ | Peak Express |
| 202 | Waipahu-Waikiki | √ | √ | √ | Peak Express |

FIGURE 2-9: EXISTING TRANSIT ROUTES



Source: Oahu Transit Services System Map B Inset

FIGURE 2-10: ASSUMED HHCTCP EIS BUS ROUTES AT THE IWILEI STATION



Source: HHCTCP EIS Appendix D

TOD Planning Area Public Transportation Services

The bus routes and levels of service in the vicinity of each TOD planning area vary considerably. The following provides some of the highlights of those services at each station.

Iwilei Station

Currently 37 bus routes provide service within the ¼ mile radius of the Iwilei rail station location. The Iwilei station area currently includes no transit centers. The closest bus stop to the proposed Iwilei rail station is about 200 feet from where the edge of the rail station’s future passenger platform will be located.

Existing transit services are being reviewed as part of the Oahu Metropolitan Planning Organization’s Short Range Transit Plan now under development. It is anticipated that adjustments will largely be stepping stones to the full set of routes and their service levels identified in the HHCTCP EIS Appendix D. The operating service characteristics of the routes serving the Iwilei station have been extracted from this HHCTCP document and included in Appendix B.

Chinatown Station

The future Chinatown station is located on Nimitz Highway between River Street and Kekaulike Street. Altogether, 38 bus routes provide service within the ¼ mile radius of the Chinatown station. The Chinatown station area major east-west corridors served by transit include Nimitz Highway a two-directional arterial; S. King Street an eastbound arterial; N. Beretania Street a westbound arterial; and, Hotel Street a two-directional bus-only transit mall. Figure 2-11 illustrates existing conditions along Hotel Street.

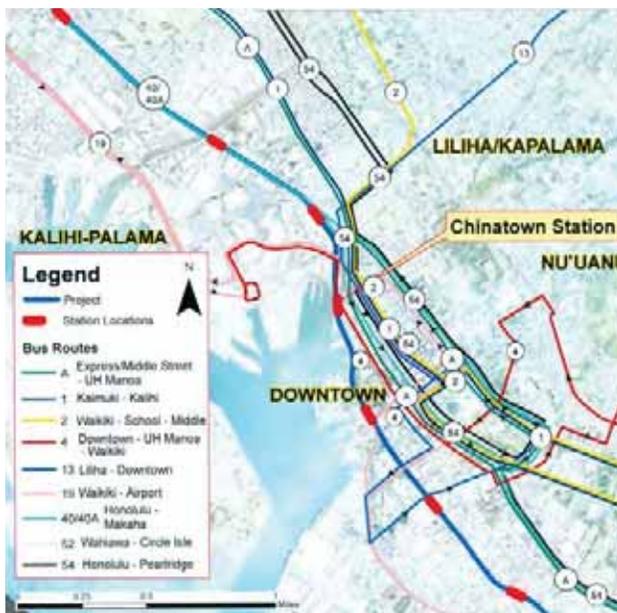
Figure 2-12 depicts the possible future alignments of the routes serving the Chinatown station. The peak period express routes will be replaced by the rail service. Six routes will provide the same alignment as offered today – Routes B, 1L, 1, 2, 40/40A and 52. These routes may provide frequency or span of service changes. Routes A, 19 and 54 will provide today’s current alignment through the downtown area, but other

FIGURE 2-11: HOTEL STREET TRANSIT MALL EXISTING CONDITIONS



Source: Weslin Consulting Services

FIGURE 2-12: ASSUMED HHCTCP EIS BUS ROUTES AT THE CHINATOWN STATION



Source: HHCTCP EIS Appendix D

portions of their routing will change. Service levels and connections previously provided by Routes C, 11, 20, 42, 43 and 53 are replaced by the rail line. Routes 3, 4, 9 and 13 will serve within $\frac{1}{4}$ mile of the Chinatown station but with alignments different from today. Route 17 will replace today's Route 4 Nuuanu service.

Downtown Station

The future Downtown station is currently served by 54 bus routes including all of the services identified for the Chinatown station area plus 16 additional routes. Ten of the additional routes (55, 56, 57, 57A, 65, 85, 85A, 88, 88A, 89) are services traveling to Downtown from Windward communities. Figure 2-12 depicts the possible future alignments of the routes serving the Downtown station. Of the sixteen additional routes currently serving the Downtown station area, Routes 6, 80, 80A, 80B, 82, 88, 88A and 89 will remain the same. Route E will be replaced with the rail service and Routes 85 and 85A will connect with other HHCTCP stations. Routes 55, 56, 57, 57A and 65 will continue to serve the Bishop and Alakea couplet but their terminus will be at the Downtown Station area instead of continuing to Ala Moana Center as they currently do today.

Current and Future Transit Rider Characteristics

This section represents a review of some characteristics of local current bus riders. It reviews forecasts for future station area activity.

Current Transit Rider Characteristics

Table 2-8 presents rider characteristics for passengers boarding or alighting the bus in the Iwilei or Downtown/Chinatown areas obtained from the Transit Rider Database and Bus Route Profile Project (TRD). System totals are provided for comparison purposes. The TRD included the Chinatown neighborhood with the Downtown area. Appendix C presents the rider characteristics for each route serving within the Downtown Neighborhood TOD planning areas with the exception of Routes E, 1L, 94 and 98A which were not operating at the time of the project.

Table 2-8 shows the impact of the many express routes serving the downtown area. Work trips comprised 37.5 percent of all trips systemwide, whereas the downtown had 51.6 percent of the passengers indicating they were on a work trip. Downtown had a higher percentage of passengers indicating they were licensed drivers and had a vehicle available for their trip. Iwilei passengers had a higher shopping trip percentage as compared to systemwide totals as well as a higher percentage of work trips. Both geographical areas had lower percentages of passengers in the younger and older age groups.

Future Transit Rider Forecasts

There will be a total of 116,330 boardings at 21 rail stations by 2030.¹¹ This is an average of 5,540 daily person trips using each rail station. The average for the three stations in the Downtown Neighborhood TOD planning area is 5,233 daily person trips. Notably, projected ridership does not include the potential increase in riders as a result of development adjacent to the stations that may result from the Neighborhood TOD Plan. The Downtown station is projected to be the second highest used station along the rail line with

¹¹ Ibid., p. 3-46, Table 3-20.

TABLE 2-8: EXISTING BUS PASSENGER CHARACTERISTICS

| RIDER CHARACTERISTICS | PASSENGERS BOARDING OR ALIGHTING IN: | | SYSTEM TOTALS |
|-------------------------------------|--------------------------------------|----------------------|---------------|
| | Iwilei | Downtown & Chinatown | |
| Licensed driver | 41.8% | 50.5% | 42.6% |
| Had a vehicle available for trip | 31.4% | 40.8% | 33.5% |
| Student | 13.2% | 19.0% | 28.1% |
| Employed Full-time | 45.6% | 53.5% | 43.8% |
| Visitor or tourist | 9.6% | 3.3% | 7.3% |
| 18 years of age or younger | 7.1% | 6.0% | 14.2% |
| 65 years of age or older | 8.7% | 10.6% | 13.1% |
| Riding bus for 15 years or more | 25.9% | 21.6% | 19.2% |
| Rate TheBus as being good or better | 79.8% | 83.4% | 80.6% |
| On a work trip | 48.1% | 51.6% | 37.5% |
| On a school trip | 14.5% | 14.5% | 19.1% |
| On a shopping trip | 26.3% | 19.8% | 10.4% |

Note: Routes E, 1L, 94 and 98A were not in service at the time of the Transit Rider Database and Bus Route Profiles Project.

Sources: *Transit Rider Database and Bus Route Profiles Project; prepared for The City and County of Honolulu Department of Transportation Services; prepared by Weslin Consulting Services, Inc.; February 2006.*

10,770 boardings, with only Ala Moana Center station having more passenger activity. On the other end of the spectrum, the Chinatown station is projected to be the least used station with 1,560 daily person trips.

Table 2-9 identifies the travel demand forecasting model results for how rail riders access the three Downtown neighborhood stations. As shown, access varies widely among the three stations. Eighty percent (80 percent) of the daily person trips accessing rail at the Chinatown station would do so by walking or biking, while only 19 percent would access the station via bus. The other two stations have the reverse occurring; the majority of passengers would access the rail via bus (74 percent for the Downtown station and 60 percent for the Iwilei station).

While seemingly small in numbers, the 520 person trips accessing the Iwilei station via kiss-and-ride is the third highest among all of the stations; Pearl Highlands is projected to have a total of 590 person trips and Ala Moana Center 890 person trips accessing rail via this mode. The Iwilei station does not have a park-and-ride lot as part of the design; the 120 person trips are anticipated to be accommodated within the neighborhood.

TABLE 2-9: 2030 FORECASTS BY DAILY MODE OF ACCESS TO RAIL STATIONS

| STATION | DAILY PERSON TRIPS USING GUIDEWAY STATIONS BY MODE | | | | | | | | |
|--------------|--|------------|---------------|------------|---------------|-----------|---------------|-----------|---------------|
| | Walk/Bike | | Bus | | Kiss-and-Ride | | Park-and-Ride | | TOTAL |
| | Volume | Share | Volume | Share | Volume | Share | Volume | Share | |
| Iwilei | 720 | 21% | 2,010 | 60% | 520 | 15% | 120 | 4% | 3,370 |
| Chinatown | 1,250 | 80% | 300 | 19% | 10 | 1% | 0 | 0% | 1,560 |
| Downtown | 2,830 | 26% | 7,930 | 74% | 10 | 0% | 0 | 0% | 10,770 |
| TOTAL | 4,800 | 31% | 10,240 | 65% | 540 | 3% | 120 | 1% | 15,700 |

Source: HHCTCP EIS Table 3-20

Bicycle Facilities

Bicycle facilities are limited within 1/4-mile of any station, but are analyzed to 1/2-mile in this section. Table 2-10 identifies bicycle facilities as being either lanes, paths or routes. These three primary bicycle facility types were defined by Bike Plan Hawaii, A State of Hawaii Master Plan (HDOT 2003) and adopted with some revisions in the Oahu Bike Plan: A Bicycle Master Plan (DTS Public Review Draft, July 2009):

- **Lanes:** A bike lane is a roadway section designated by striping, signing, and/or pavement markings for the preferential or exclusive use of bicyclists. A single, wide white line is used to delineate a 4 to 6 foot wide bike lane. The bike lane often contains stencils to indicate they are for bike use only.¹²
- **Path:** A shared-use path is physically separated from motorized vehicular traffic by an open space or barrier and is located either within the highway right-of-way or has an independent right-of-way. The draft Oahu bike plan limited this type of facility to off-street locations whereas the state plan and current international best practices allow separated paths or tracks within the public right-of way.^{13, 14}
- **Routes:** A shared roadway bike path is any street or

highway open to both bicycles and motor vehicle travel. Shared roadways may have signs designating their status as a preferred bike route. A wide outside traffic lane (14 feet) is typically preferable. A “sharrow” stencil may be use for narrow roads. A “sharrow” indicates where bicycles should travel mingled with mixed vehicle traffic.

The bike lanes on Nimitz Highway are the major bicycle facility common to all three stations. Field observations noted a wide variety of bicycle rider behavior in the vicinity of these lanes as shown in Figure 2-13. In the mauka section near the Chinatown station the 4-foot wide bike lane was located 4-feet away from the edge of the gutter line, effectively creating an 8-foot wide bike lane. This portion was well used even allowing two bike riders to travel side-by-side.

When the Nimitz Highway bike lane lost this extra width, bicyclists often avoided the bike lane electing to use the parallel sidewalk instead, even though it meandered and did not provide the most direct pathway. The last four pictures in Figure 2-13 are a series illustrating how one cyclist mastered the weaving section where the bike lane temporarily ended and began again after crossing a high speed turn off to Iwilei Road.

Bicyclists use the Hotel Street Transit Mall which is designated as a bike route. Traffic control signs along Hotel Street at intersecting streets provide exceptions for bikes when prohibiting turns to general purpose vehicle traffic as shown in Figure 2-14. Various types of bike racks are located throughout the area.

12 Oahu Bike Plan: A Bicycle Master Plan; DTS Public Review Draft, July 2009, page 5-4.

13 Bike Plan Hawaii, A State of Hawaii Master Plan, HDOT 2003, page 2-9.

14 Design Manual for Bicycle Traffic, CROW, June 2007, page 103.

| TABLE 2-10: BICYCLE FACILITIES | | |
|--------------------------------|--|--|
| STATION | BICYCLE FACILITIES | |
| | Existing | Proposed |
| Iwilei | Bike Lanes on Nimitz Highway | Iwilei Transit Station Bike Path (project 2-109) Dillingham Blvd. Bike Lane (project 3-100) Liliha Street Bike Lane (project 3-124) |
| Chinatown | Bike Lanes on Nimitz Highway Hotel Street shared use route Nuuanu Stream Bike Path | King Street Bike Lane (project 2-122) Nuuanu Stream Bike Path (project 2-133) River Street Bike Path (project 2-133) King Street Bike Lane (project 3-121) |
| Downtown | Bike Lanes on Nimitz Highway Hotel Street shared use route | Aloha Tower Bike Path (project 1-20) Fort Street Mall Bike Route (project 2-105) Halekauwila Street Bike Route (project 2-106) King Street Bike Lane (project 2-122) Bishop Street Bike Route (project 3-96) |

FIGURE 2-13: NIMITZ HIGHWAY BIKE LANE OBSERVATIONS



Source: Weslin Consulting Services

FIGURE 2-14: DOWNTOWN BIKE MOVEMENT AND PARKING OBSERVATIONS



Source: Weslin Consulting Services

Roadway Facilities

This section of the rail alignment between Iwilei and Downtown Honolulu is the western edge of the Primary Urban Center (PUC). Within this portion of the PUC roadways can functionally be classified into five general categories: interstate, principal arterial, minor arterial, major collector and neighborhood street. The categories are based on geometric and traffic characteristics of each street type. The following describes the roadways within or nearby the TOD planning area using this classification scheme:

- Interstate roads include the H-1 Freeway which traverses in an east-west direction mauka of the TOD areas. Since H-1 does not penetrate the Downtown Neighborhood TOD planning areas, the vehicle traffic served and the roadways that this vehicle traffic uses to access those freeways does not impact the area. However, buses queuing on Liliha Street heading toward the Vineyard Boulevard H-1 on-ramp in the p.m. peak hour tend to add to traffic congestion.
- Three principal arterial alignments accommodate east-west travel within and through the Downtown neighborhoods. Nimitz Highway/Ala Moana Highway, Dillingham Boulevard, North King Street and North Beretania Street are all high vehicle traffic roadways that serve to define the transportation character of the area.
- Minor arterial streets that provide mauka-makai access between the interstate and principal arterials in the Downtown neighborhoods include Liliha Street, Nuuanu Avenue, Pali Highway, Bishop Street and Alakea Street.
- Major collector streets that provide access between arterials and collector streets to obtain access to office, commercial and residential areas within the Downtown Neighborhood TOD planning areas.
- Collector streets provide direct access to office, commercial and residential areas within the Downtown Neighborhood TOD planning areas.

Vehicle circulation within the Downtown neighborhood TOD planning areas is provided by roadways that

generally represent a grid-like network with the exception of the Iwilei area. The principal east-west arterials are complemented by the various north-south arterials and collector streets which allow for a relatively uniform circulation system in Chinatown and Downtown. In contrast, the Iwilei street network lacks symmetry and connectivity due to the dominance of the Nimitz Highway one-way couplet and the accompanying array of dedicated turning lanes between those roadways.

Traffic flow in the area is composed primarily of trips accessing nearby land uses and tends to move relatively slowly because of the number of traffic signals, turning movements, bus operations, pedestrian activity and other traffic conflicts. Motorists experience delays, but not more so than should be expected for a downtown area in a major city.

Traffic Analysis

The HHCTCP Transportation Technical Report included a Level of Services (LOS) analysis of 16 intersections within or near the Downtown Neighborhood TOD planning areas.¹⁵ The results of the HHCTCP LOS traffic analysis are included in Table 2-11.

The South Nimitz Highway and Halekauwila Street intersection with LOS F in the a.m. peak hour was the only one in this section of the PUC determined to have a LOS of E or F in either the a.m. or p.m. peak hour. Most other street intersections operate at LOS A. Only one other intersection at Queen and Bishop Streets operated at LOS D. Downtown area streets carry high volumes of vehicle traffic, but these vehicles use Downtown streets throughout the entire day in contrast with other intersections more impacted by concentrations of commuter weekday movements.

Most streets are used by vehicles to access off-street parking facilities. Although maneuvering through Downtown streets may seem difficult to some unfamiliar with Downtown, it is not for those who know where they need to park. Downtown vehicle traffic functions orderly since most Downtown streets are used by

¹⁵ HHCTCP Transportation Technical Report, August 2008, Table 3-34.

| TABLE 2-11: EXISTING VEHICLE TRAFFIC CONDITIONS AT INTERSECTIONS IN 2007 | | | | | |
|--|-----------------|-------------------------------------|------------------|------------------|------------------|
| INTERSECTION | TYPE OF CONTROL | EXISTING VEHICLE TRAFFIC CONDITIONS | | | |
| | | A.M. Peak Hour | | P.M. Peak Hour | |
| | | Delay in seconds | Level of Service | Delay in seconds | Level of Service |
| N Nimitz Hwy & River Street | signal | 8 | A | 8 | A |
| N Nimitz Hwy & Kekaulike Street | stop sign | 10 | A | 10 | A |
| Nimitz Hwy & Nuuanu Street | signal | 6 | A | 10 | A |
| S Nimitz Hwy & Bethel Street | signal | 8 | A | 9 | A |
| S Nimitz Hwy & Fort Street Mall | signal | 8 | A | 4 | A |
| S Nimitz Hwy & Bishop Street | signal | 10 | B | 9 | A |
| S Nimitz Hwy & Alakea Street | signal | 9 | A | 8 | A |
| S Nimitz Hwy & Halekauwila Street | signal | 82 | F | 44 | D |
| North King Street & River Street | signal | 6 | A | 9 | A |
| North King Street & Kekaulike Street | signal | 9 | A | 5 | A |
| Queen Street & Fort Street Mall | none | 10 | A | 11 | B |
| South King Street & Fort Street Mall | signal | 5 | A | 2 | A |
| Queen Street & Bishop Street | signal | 40 | D | 36 | D |
| South King Street & Bishop Street | signal | 15 | B | 13 | B |
| Queen Street & Alakea Street | signal | 22 | C | 22 | C |
| South King Street & Alakea Street | signal | 10 | A | 14 | B |

Source: HHCTCP Transportation Technical Report Table 3-34.

residents (as opposed to visitors and tourists) most of whom have worked in Downtown for many years and have reserved parking spaces.

However, the LOS in Table 2-12 may be under estimated. Field observations have recorded instances along Downtown streets in the p.m. peak period along both directions on Nimitz Highway where vehicle traffic moves in stop and go conditions. Left-turning vehicle movements from Nimitz Highway to Bethel, Alakea and Halekauwila sometimes block through vehicle traffic. But, these periods of congestion do not seem to be attributable to any single bottleneck but simply more volume of vehicle traffic than can pass through a single traffic signal cycle at one time. The remaining traffic queue is sometimes so long that it blocks the previous intersection.

Some of the observed vehicle traffic congestion is caused by pedestrian movements, especially where vehicle turns share the permissive interval for pedestrians crossing Nimitz Highway and those pedestrians effectively reduce the available intersection capacity for vehicles.

Previous Highway Capacity Manuals only accounted for LOS of one mode: vehicles. The 2010 Highway Capacity Manual, released after the LOS calculations in Table 2-11 were made, accounts for four modes, vehicles, pedestrians, bicycles and transit. Heavy traffic of all varieties – vehicles, pedestrians, bicycles and transit, is frequently observed on North King Street in the Chinatown area. Substantial pedestrian volumes, sight distances obstructed by buses and occasional meandering cyclists all inhibit the amount of vehicle traffic this one-way street can handle.

The Oahu Regional Transportation Plan 2035 includes the HHCTCP, but no new road projects in any of the Downtown Neighborhood TOD planning areas.¹⁶ The plan includes routine islandwide City and State roadway operations and maintenance programs. The types of traffic movement problems that arise in the Downtown Neighborhood TOD planning area would be funded from these ongoing programs.

¹⁶ Oahu Regional Transportation Plan 2035 Public Review Draft, OMPO, February 2011, Table 8.

Downtown streets were never intended to serve vehicle traffic alone. The current vehicle traffic character of the roadways in the downtown area is not reflective of the historical use of these streets. Oahu's development was heavily influenced by streetcars, "From Kalihi to Kaimuki, from Manoa to Moiliili, the streetcar lines created modern Honolulu."¹⁷ Private transit operators developed real estate and used the profits to subsidize transit operations. Oahu's transportation and land development history makes it clear that TOD is not a new concept. However, the basic principles for developing around transit stations for people more so than vehicles fell into disuse as accessibility for automobiles became the focus of development.

Today's road network and the land use being served are as much influenced by past rail operations as today's vehicle movements. The old Iwilei station area was a terminal in the past with 28 passenger trains per day departing to and arriving from destinations in Pearl City and Waipahu.¹⁸ Streetcars once operated on Liliha Street, Queen Street, Ala Moana Boulevard, King Street, Nuuanu Street, Fort Street, Hotel Street, Alakea Street and Beretania Street.

Parking

There is extensive on and off-street parking capacity throughout the Downtown Neighborhood TOD planning area. Both off-street surface and structured parking is heavily used. On-street parking is often time regulated and metered. Typical parking limitations are two hours or less.

Several small off-street surface parking lots are located in the Chinatown area as depicted in Figure 2-15. These seem to be most heavily used by patrons of Chinatown shops and restaurants. Downtown off-street parking garages are used mostly by employees who have reserved spaces for themselves and visitors to their businesses. Parking spaces are often available to the general

public, but these tend to be on the higher floors and expensive.

The picture in Figure 2-15 is typical of surface lots with rates varying by time of day and day of the week. There are 47 parking lots included in the downtown Honolulu parking rate inventory. Daily parking rates reported for 29 locations offered a wide range of \$10 to \$75 per day. Unreserved monthly parking spaces were available at a cost ranging from \$90 to \$252 per month.¹⁹

Parking rate surveys are performed annually by Colliers International showing a decline in parking costs over the past two years in both downtown Honolulu and across the nation. The median daily parking rate for Honolulu was \$44 per day in 2008, the ninth highest in 53 U.S. downtowns.²⁰ By 2010 Honolulu's median daily parking rate had dropped to \$32.75 per day in 2010, but its rank had risen to be the second highest in the Nation with only Midtown New York City being higher.

Honolulu's monthly parking rate was \$222.33 for an unreserved space, \$320 for a reserved space. The monthly unreserved space was the ninth highest of those surveyed.²¹ This parking cost data indicates a pricing preference for monthly parkers versus those visiting Downtown on an occasional basis. Honolulu does not have the real time electronic parking availability information signage found in most major European and Asian city downtowns illustrated in Figure 2-16. Consequently, it may appear that parking capacity is more limited than other evidence might suggest. Colliers rates Honolulu's availability of parking as "Fair" meaning that parking garages are 60-80 percent full Monday through Friday and on weekends during special events.

New York City officials have reported that 30 percent of all Downtown vehicle traffic congestion is composed of drivers cruising to find an empty parking space. San Francisco is now benefitting from a phone application

17 Streetcar Days In Honolulu – Breezing Through Paradise; MacKinnon Simpson and John Brizdle; October 2000; page 71.

18 Next Stop Honolulu – The Story of the Oahu Railway & Land Company; Jim Chiddix and MacKinnon Simpson; September 2004; page 169.

19 Downtown Honolulu Parking Rates, Mariah Mellor, Hawaii Business, October 2010.

20 HHCTCP Transportation Technical Report, Page 3-94.

21 North America Central Business District Parking Rate Survey, Colliers International, 2010.

introduced in April 2011 that relies on wireless sensors imbedded in streets and city garages that can tell in seconds whether a parking spot has become available. The problem with this device is that it distracts the driver while maneuvering through streets filled with pedestrians.²² Honolulu is completing an Urban Core Parking Master Plan which should provide more information on existing parking conditions including parking demand characteristics.

Residential Parking Requirements

The Land Use Ordinance stipulates minimum parking spaces per unit or square footage by land use based on projected parking demand. For multifamily residential units, between one and two spaces are required (plus guest parking) depending on the unit size. However, exemptions and reductions are allowed in certain situations. Affordable housing developments may be eligible for a variety of exemptions, including parking reductions, if the developments are 50 or more units with at least 50 percent affordable units at 80-140 percent of area median income (AMI) or 20 or more units and 100 percent affordable.

Conditions are determined through the development agreement process on a case by case basis, but in general parking ratios should not be lower than one space per unit.²³ For example, a senior development in Iwilei was approved with parking reductions in 2004. Though not yet constructed, the 160-unit development would be affordable to seniors earning up to 60 percent of AMI in a location well-served by public transit. The approved City resolution permits no fewer than 165 off-street parking spaces, essentially a one-to-one parking ratio.²⁴

22 Where to Find Parking Spot? On the Phone, New York Times, May 8, 2011, page 1.

23 Correspondence with Elizabeth Chinn, Department of Planning and Permitting, City and County of Honolulu. April 20, 2011.

24 City & County of Honolulu, City Council. Resolution No. 04-202, CD1 "Authorizing Exemptions from Certain Requirements Relating to the Senior Residence at Iwilei Affordable Housing Project, Oahu, Hawaii, Tax Map Key 1-5-7: 2." July 15, 2004.

FIGURE 2-15: OFF-STREET PARKING FACILITY OBSERVATIONS

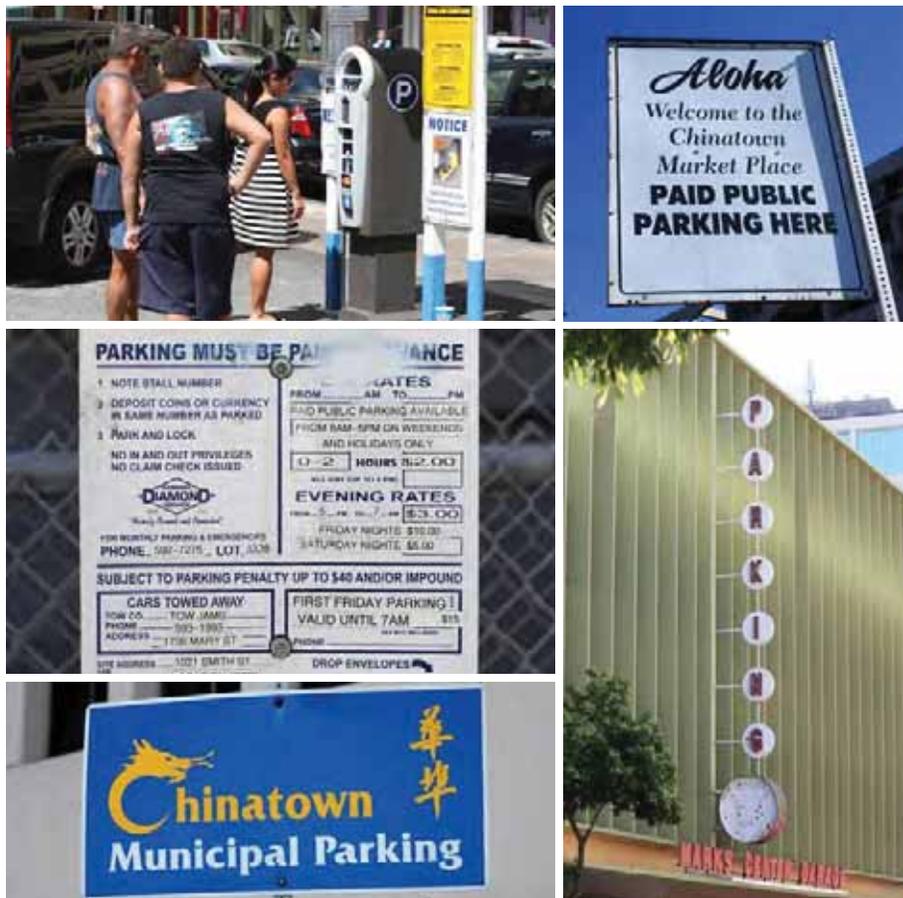


FIGURE 2-16: REAL TIME OFF-STREET PARKING AVAILABILITY ELECTRONIC SIGN EXAMPLES FROM ZURICH AND BASEL SWITZERLAND



Although the examples are from a small country with no common language (German, French, Italian and English are all commonly used in Switzerland) the amount and location of available parking is relatively easy to find. Drivers in Zurich and Basel might think otherwise if it wasn't for this effective electronic parking information.

Source: Weslin Consulting Services

2.5 Infrastructure

The following information provides an overview of the existing infrastructure for the Downtown TOD planning area. Water, sewer and drainage discussions relating to the existing conditions for the areas around the planning area are provided below.

Water

Existing System

The Honolulu Board of Water Supply (BWS) oversees and operates the water system that serves the Downtown planning area. The BWS system has three components. These are source, storage and transmission. BWS pumps ground water from the basal lens underneath the island to concrete storage tanks located at strategic elevations throughout the island. Transmission mains allow flow from the source to the storage tank(s) and to the various service zones. Within the service zone, distribution mains provide water for both domestic and fire fighting purposes.

Iwilei is considered a commercial/industrial area and existing mains are primarily sized to accommodate commercial/industrial fire flows ranging between 2,000/4,000 gpm. Mains in the area vary from 8-inch diameter to 24-inch. There is a 42-inch concrete cylinder transmission main running down Dillingham Boulevard and continuing along Liliha Street. Major transmission mains (like the 42-inch) are reserved for conveying large amounts of water and service connections do not occur on these larger transmission mains. Service connections normally are limited to the 8-inch through 24-inch water lines.

Both the Chinatown and Downtown Station areas are considered commercial and mains are primarily sized to accommodate a commercial district fire flow of 2,000 gpm. The existing Chinatown and Downtown Station area mains are 8-inch and 12-inch.

Future Improvements

The backbone water infrastructure is relatively strong in the Downtown planning area with all major roads containing distribution lines interconnected with distribution lines of crossing streets. Once TOD growth projections are developed (during a subsequent phase of this TOD study), the actual impact of TOD on the water system can be projected.

The procedure to obtain BWS water is typically initiated at the Building Permit processing phase of the development process. Project plans identify fixture unit counts, water meter locations and sizes, fire department connection requirements and adequacy of external fire protection coverage (fire hydrant spacing). Water System Facility Charges (WSFC) are assessed to each building permit based on the total number of fixture units. The WSFC is then applied according to facility charges assessed by land use type. The WSFC allows BWS to provide upgrades to their existing source, storage and transmission water system components to offset the impact of new project construction.

For redevelopment projects credit is given to “existing” fixture units and WSFC is paid on the “net” increase in the fixture unit count.

BWS encourages water conservation for existing future water users. The Board cites leak detection programs, use of water saving fixtures, Xeriscape systems and attention to water saving tips as effective ways to address and be aware of conservation principles.

Sewer

Existing System

The City and County of Honolulu Department of Environmental Services (ENV) provides sewer service to the area. New connections to the wastewater system are processed by the City and County of Honolulu Department of Planning and Permitting-Wastewater Branch (DPP-WWB).

All wastewater from the Downtown planning area is treated at the Sand Island Wastewater Treatment Facility. The treatment facility is under a Consent Decree Order with the U.S. Environmental Protection Agency (USEPA) to provide various upgrades to the treatment process. The Consent Decree is relatively extensive and also includes upgrades to the collection system in many areas of Honolulu. The Consent Decree will not have a direct effect on TOD unless projected densities exceed that allowed by the current underlying zoning. A subsequent phase of this TOD study will develop proposed densities and TOD growth. Once available, a determination of the potential impact of the Consent Decree can be evaluated.

Typically wastewater in the planning area is collected by gravity sewer and transported to strategically located major pump stations. These major pumping stations deliver wastewater to the Sand Island Treatment Facility. The Iwilei area major pump station is the Hart Street Pump Station. The Chinatown and Downtown Station areas are accommodated by the Ala Moana Boulevard Pump Station.

The existing sewer system in the planning area is illustrated in Figure 2-17 and described below:

The Iwilei Station area has existing sewers ranging in size from 8-inch through 24-inch. The larger sewers (21-inch and 24-inch) are adequate to convey wastewater to the main pump station serving the area (Hart Street).

The Chinatown Station area has some of the oldest sewers in Honolulu. Some sewers are in excess of 100 years old. Any development connecting to existing sewer lines will result in collector sewer improvement requirements. The sewer improvements will require new system(s) connecting to the larger sewer lines in the Nimitz Highway/Ala Moana corridor. The existing larger sewer lines are 24-inch and 28-inch in the vicinity of the Chinatown Station and are adequate to deliver wastewater to the area's major pump station (Ala Moana) for the existing flow conditions.

The Downtown Station area is in the heart of the commercial/business district. The local sewers (8-inch through 14-inch) are adequate for the existing flows.

The major line in the Ala Moana Boulevard corridor (32-inch) is adequate to deliver all wastewater to the Ala Moana Pump Station.

Future Improvements

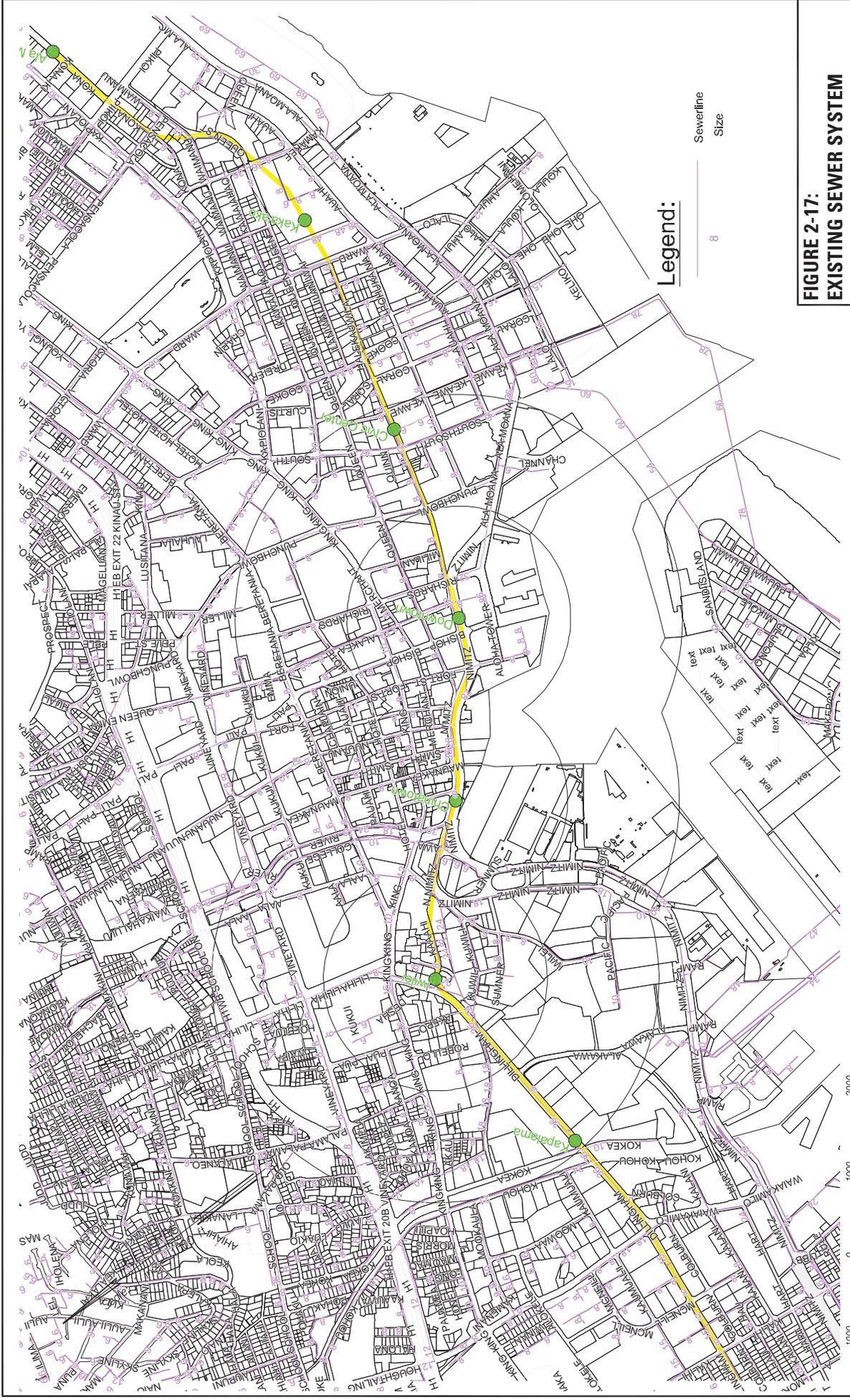
Once TOD growth projections are developed (during a subsequent phase of this TOD study), the actual impact of TOD on the wastewater system can be projected.

The procedure to obtain City sewer service is typically initiated when a potential project is being conceptualized and traditionally during project due diligence. A Sewer Connection Application (SCA) is submitted to DPP-WWB for consideration. The SCA identifies the anticipated project sewer flows. DPP-WWB evaluates the application and determines the adequacy or inadequacy of the existing sewer system. If the system is deficient improvements are identified. The individual project will be required to design and install the deficiencies identified. DPP-WWB also identifies Wastewater System Facility Charges (WSFC) during the sewer connection application process. These charges are assessed to allow the City "replenish" system capacity burdens created by the new project. If there are system deficiencies, money spent to remedy the deficiency can be used as credit against the WSFC.

In the past, multiple projects having the same sewer deficiencies have collaborated on joint efforts with respect to system upgrades. The joint effort however, has been solely coordinated by the various projects for design, construction and dedication. The City (DPP-WWB or ENV) has no mechanism in place to allow for a district improvement concept for sewer improvements or cost sharing.

Drainage

As of January 19, 2011, the City and County of Honolulu adopted revised Flood Insurance Rate Maps (FIRM), as shown in Figure 2-18. The previous FIRM had a date of September 30, 2004. All Downtown stations were identified as being in Zone X, defined as "areas determined to be outside the 0.2 percent annual flood (500-year) chance." The current FIRM has retained a majority of the Zone X designation but has added small

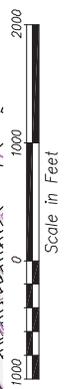


Legend:

- Sewerline
- Size

**FIGURE 2-17:
EXISTING SEWER SYSTEM**

Source: City & County of Honolulu GIS Shape Files



AE zones (with elevations determined) adjacent to the Downtown Station and Chinatown Station. There are no requirements with respect to the Federal Emergency Management Agency (FEMA) and floodplain regulations for Zone X. Zone AE is subject to a 1 percent annual flood (100-year). Finished floors in the AE zone must be at or higher than the elevation number identified on the FIRM. In addition, flood insurance rates carry a higher premium when in an AE zone.

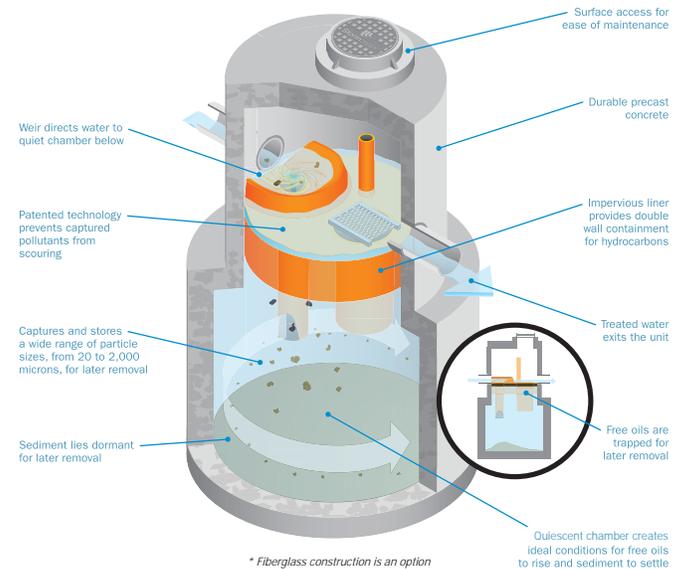
The City and County of Honolulu Department of Planning and Permitting Civil Engineering Branch (DPP-CEB) is the City department responsible for plan review with respect to implementation of the City’s drainage standards. These standards are officially recognized as the “Rules Relating to Storm Drainage Standards, January 2000.”

The Rules have two (2) components. One component governs drainage system sizing for proper conveyance of storm water. This includes hydrologic studies and hydraulic studies to ensure drainage systems are adequate to accommodate various design storms. Design storms have either a 10-year recurrence interval or a 50-year recurrence interval.

The second component of the Rules address storm water quality related to the Federal Clean Water Act and the City’s MS4 National Pollutant Discharge Elimination System (NPDES) Permit. In general, all residential, commercial, public facilities and transportation development projects must address storm water quality through the use of best management practices (BMPs). For residential projects over 10 acres and commercial, public facilities and transportation facilities over 5 acres, there are specific sizing requirements for structural BMPs.

With respect to the hydraulic capacity analysis section of the Rules, the Downtown planning area should not be significantly affected. For all practical purposes the three stations are in almost completely urbanized settings dominated by hard surfaces and existing drainage systems are already in place to convey storm water. TOD redevelopment has a good chance of softening the amount of hard-scape. This in turn would allow a small amount of storm-water runoff to infiltrate into landscape planter areas and reduce the sheet flow in the City drainage systems.

With respect to the storm water quality requirements of the Rules, any redevelopment parcel over 5 acres will have to address the use of structural BMPs. The use of flow-through vortex type devices (such as Stormceptor® unit that can collect sediment from runoff, as shown below) is common to address the structural BMP requirement in the urban environment.



Other Utilities

Hawaiian Electric Company provides electricity services to residential and non-residential customers. Most of the power on Oahu is generated by plants located on the west side of the island and delivered through two primary transmission corridors and then from transmission and distribution substations to customers. Within the planning area, the Honolulu Power Plant is located on Nimitz Highway, Diamond Head of the Downtown Station. The Iwilei Fuel Pipeline is buried underground along a one-mile stretch of Nimitz Highway from Iwilei to Downtown, transporting low sulfur fuel oil to the Honolulu Power Plant.²⁵ Utility poles, including electricity, phone, and/or state or city-owned streetlights, run overhead around the Iwilei Station, but are mostly buried underground in Chinatown and Downtown allowing for more unobstructed views.

²⁵ Hawaiian Electric Company. “Fact Sheets” <<http://www.heco.com/>>

Overhead lines that are in conflict with the rail guideway and safety clearance requirements will be relocated underground.²⁶

2.6 Environment

This section reviews environmental conditions and constraints in the planning area that may affect the potential for development and/or that will need to be preserved or protected. Potential environmental hazards and locations of historic and cultural significances are described below. Evaluation of these resources and their locations will inform the selection of development opportunities and preparation of appropriate policies or mitigations.

Potential Hazards

Potential hazards evaluated include potential hazardous materials, sea level rise, and erosion. Fire hazards, seismic risk are deemed to be low and are not discussed here.

- **Soils and Erosion.** Figure 2-19 describes soil types and erosion potential in the planning area. Most of the land makai of Dillingham Boulevard and Nimitz Highway is landfill. Areas where erosion is possible are shown mauka of Iwilei station, on Kaena clay soils with slightly sloped terrain.

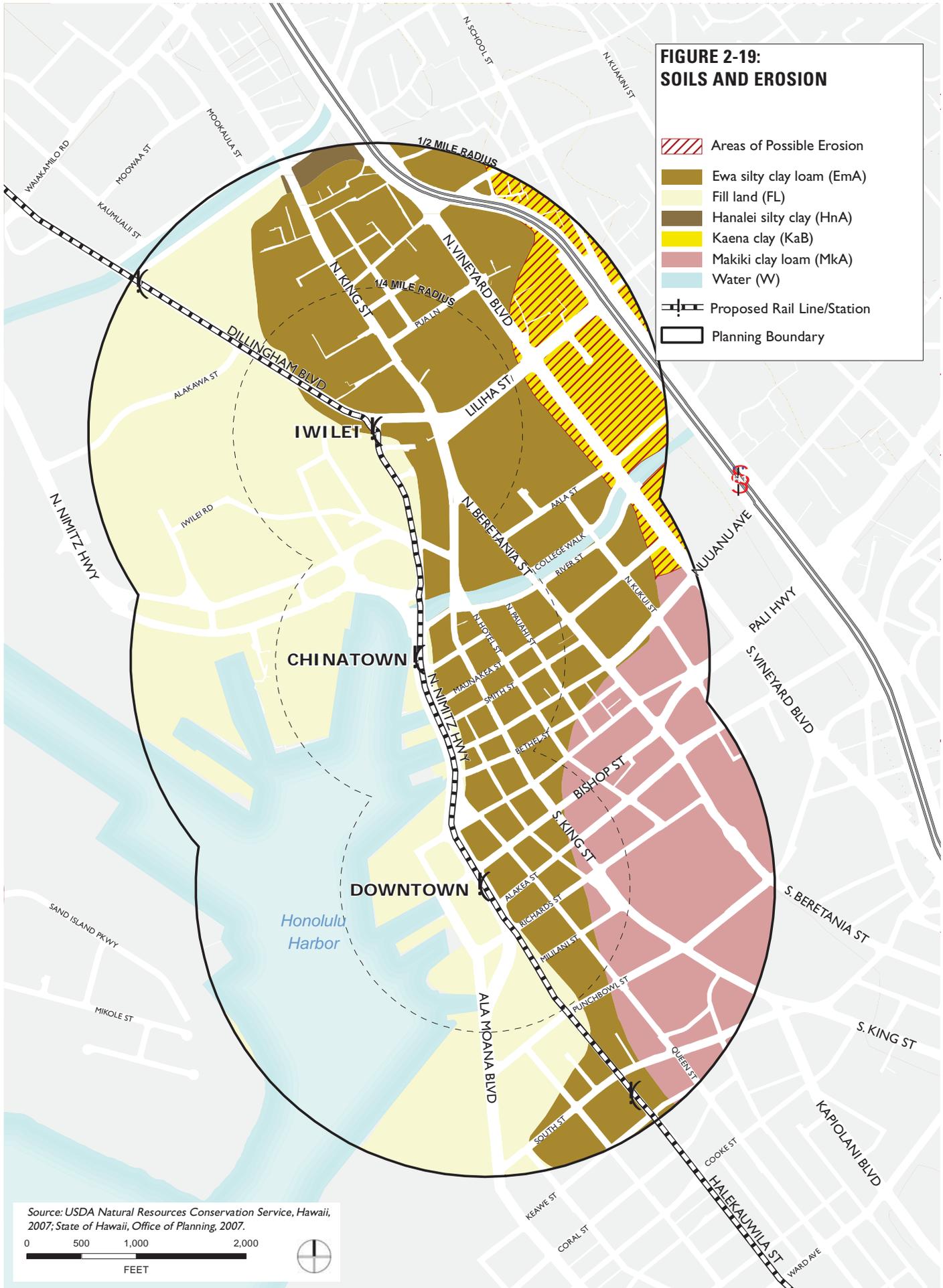
- **Hazardous Materials.** Leaking underground storage tanks can contaminate groundwater. Locations where site clean-up has not yet been completed are shown in Figure 2-20.
- **Flooding.** As described in Section 2.4: Infrastructure, potential flood risk is confined to small portions of Downtown and Chinatown. However, flooding could also occur as a result of storms, sea level rise, and tsunamis, as depicted by the tsunami evacuation areas in Figure 2-20.
- **Sea Level Rise.** Compounding potential flooding, University of Honolulu SOEST Coastal Geology Group researchers predict that up to one meter (just over three feet) of sea level rise may be plausible by 2100. This mapping effort is a work in progress and it is too early to draw conclusions about the implications of this modeling. However, initial modeling suggests that three feet of sea level rise at mean higher high water height (the average of only the higher of the high water heights) could inundate areas makai of Dillingham Boulevard near the Iwilei Station and small portions of Downtown.²⁷

²⁶ Honolulu High-Capacity Transit Corridor Project Environmental Impact Statement. Page 4-203.

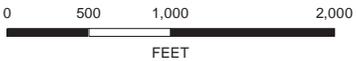
²⁷ Fletcher, Charles H. "Sea level by the end of the 21st century: A review" University of Hawaii at Manoa, http://www.soest.hawaii.edu/coasts/publications/fletcher2009_sealevelreview.pdf.

**FIGURE 2-19:
SOILS AND EROSION**

-  Areas of Possible Erosion
-  Ewa silty clay loam (EmA)
-  Fill land (FL)
-  Hanalei silty clay (HnA)
-  Kaena clay (KaB)
-  Makiki clay loam (MkA)
-  Water (W)
-  Proposed Rail Line/Station
-  Planning Boundary

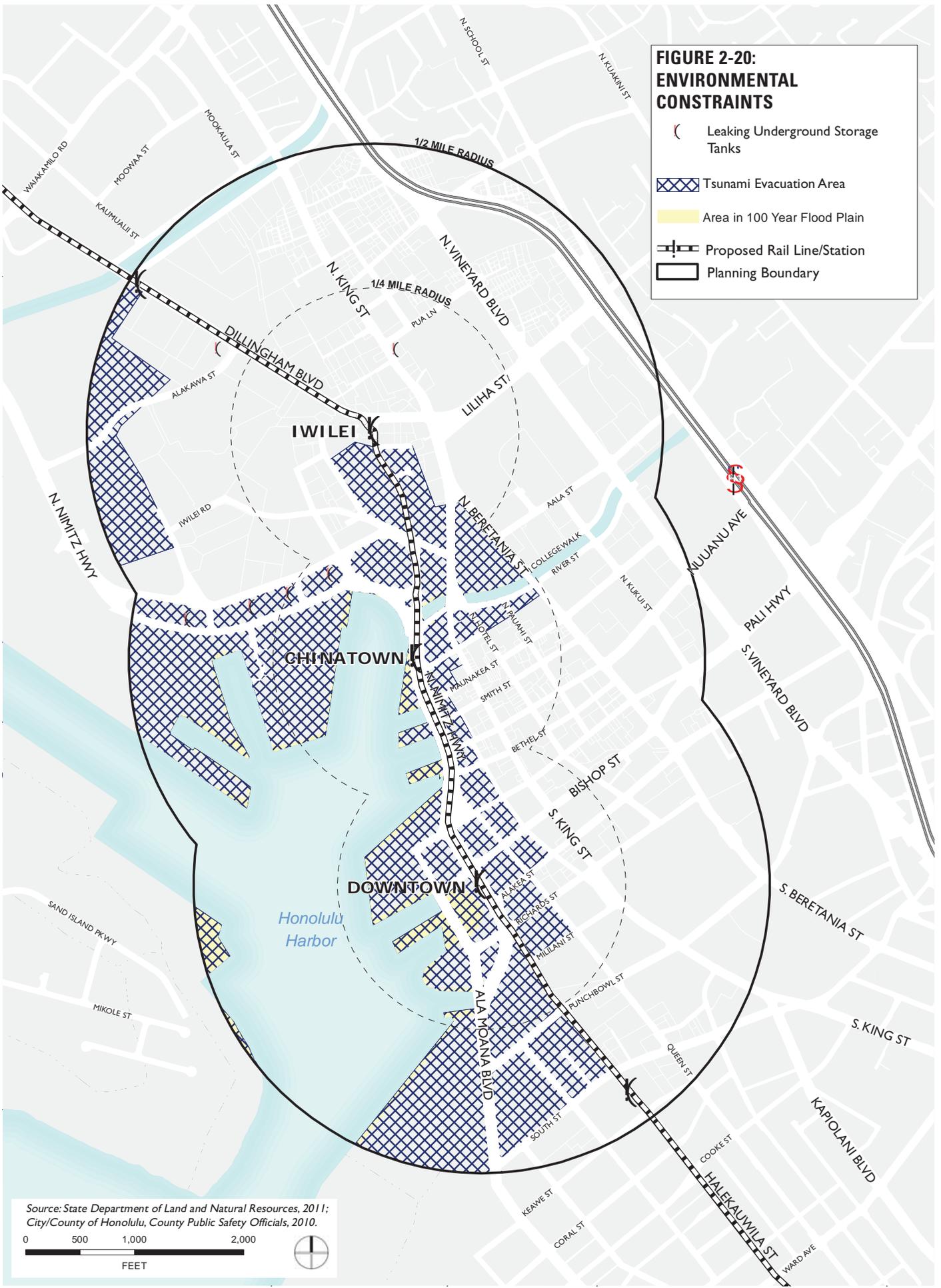


Source: USDA Natural Resources Conservation Service, Hawaii, 2007; State of Hawaii, Office of Planning, 2007.

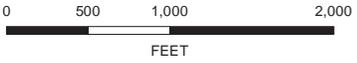


**FIGURE 2-20:
ENVIRONMENTAL
CONSTRAINTS**

-  Leaking Underground Storage Tanks
-  Tsunami Evacuation Area
-  Area in 100 Year Flood Plain
-  Proposed Rail Line/Station
-  Planning Boundary



Source: State Department of Land and Natural Resources, 2011;
City/County of Honolulu, County Public Safety Officials, 2010.





Historic and Cultural Resources

Historic Districts and Sites

There are several sites designated as historic or eligible for listing in the National Register of Historic Places, as shown in Figure 2-21 and Table 2-12. These include the Chinatown Historic District, Aloha Tower, and the adjacent passenger terminal. Irwin Park is a historic property—the site of welcome for dignitaries and other ship passengers in the 1930s and 1940s that many community members would like to be improved beyond its use as a parking lot.



Cultural Resources

Cultural resources include sites associated with significant events or important people in Hawaiian history. According to the Final EIS for the rail, there is a high potential for archeological resources and burial sites in the planning area.²⁸



The planning area is rich with historic facilities, primarily concentrated in Downtown and Chinatown.

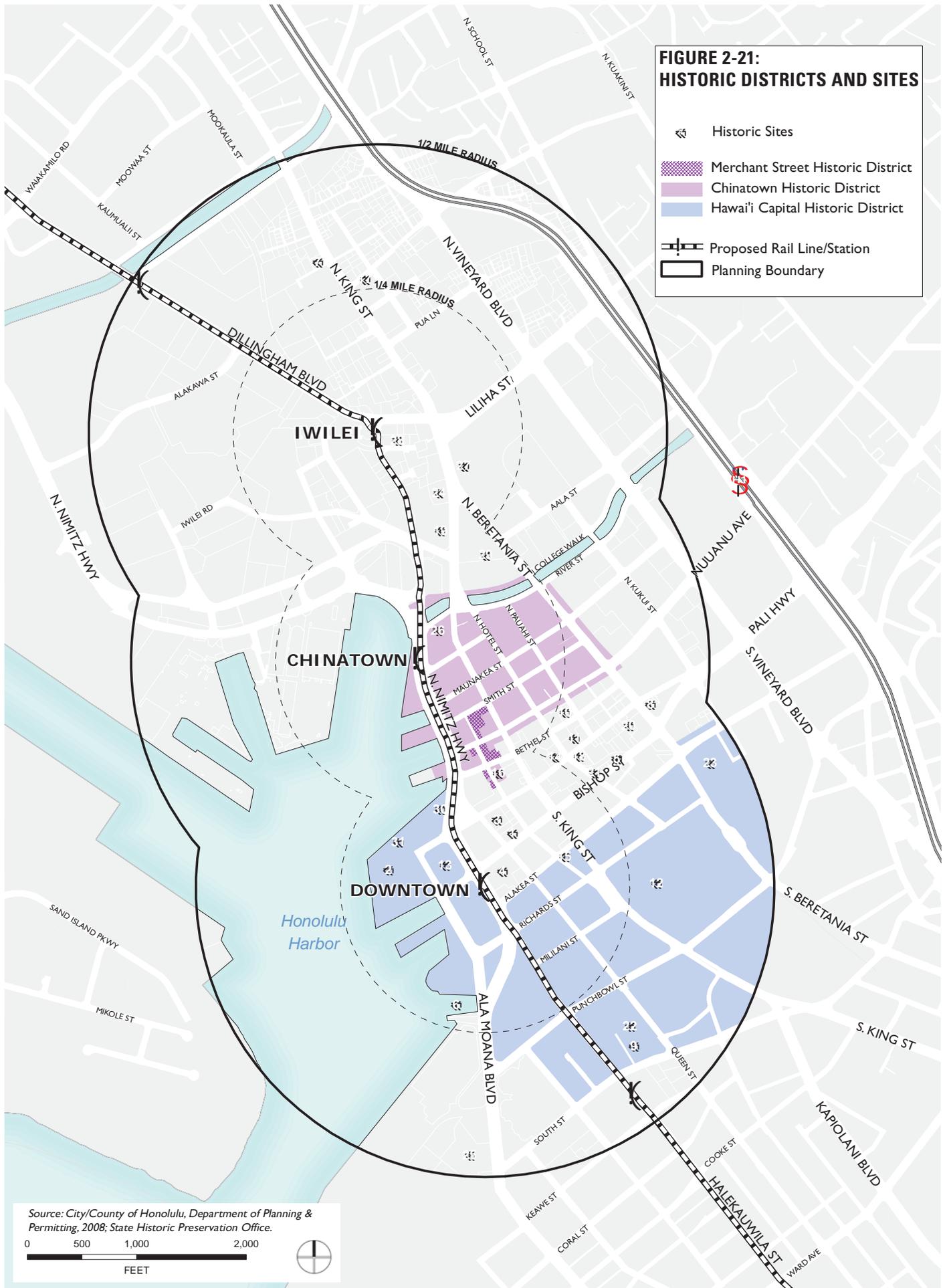
²⁸ City and County of Honolulu. Honolulu High-Capacity Transit Corridor Project. Final Environmental Impact Statement. June 2010: 4-184.

| TABLE 2-12: HISTORIC SITES (LISTED ON STATE/NATIONAL REGISTRY OR ELIGIBLE) | | | | | |
|--|------------------------------------|---------------------------------|----------------|-------------------|----------|
| MAP ID | NAME | ADDRESS | STATE REGISTRY | NATIONAL REGISTRY | ELIGIBLE |
| 1 | Alexander & Baldwin Building | 822 Bishop St. | √ | √ | |
| 2 | Aloha Tower | Pier 9, Honolulu Harbor | √ | √ | |
| 3 | C. Brewer Building | 827 Fort St. | √ | √ | |
| 4 | Dillingham Transportation Building | 735 Bishop St. | | √ | |
| 5 | Emerald Building | Bishop St. | √ | | |
| 6 | Falls of Clyde | Pier 7, Honolulu Harbor | | √ | |
| 7 | Palama Fire Station | 879 N. King St. | √ | √ | |
| 8 | Central Fire Station | 104 S. Beretania St. | √ | √ | |
| 9 | Old Kakaako Fire Station | 620 South St. | √ | √ | |
| 10 | The Hawaii Theatre | 1130 Bethel St. | √ | √ | |
| 11 | Hotel Street Sidewalk Features | Hotel Street | | √ | |
| 12 | Iolani Palace | 364 S King St. | | √ | |
| 13 | Irwin Memorial Park | Nimitz Highway | √ | | |
| 14 | J. Campbell Building | Bethel and Fort Sts. | | √ | |
| 15 | Joseph W. Podmore Building | 202-206 Merchant St. | √ | √ | |
| 16 | Kamehameha V Post Office | Merchant and Bethel Sts. | √ | √ | |
| 17 | Kaumakapili Church | 766 North King Street | √ | | |
| 18 | McCorrison Building | Fort Street | | √ | |
| 19 | OR&L Storage Building & Station | North King Street | √ | √ | |
| 20 | Our Lady of Peace Cathedral | 1183 Fort St. | √ | √ | |
| 21 | Portland Building | Hotel Street | | √ | |
| 22 | Royal Brewery | 553 S. Queen St. | | √ | |
| 23 | Saint Peter's Church | Fort Street | √ | | |
| 24 | Tong Fat Company, Ltd. | Bishop Street | | √ | |
| 25 | U.S. Immigration Office | 595 Ala Moana Blvd. | | √ | |
| 26 | Nuuanu Stream Bridge | Nuuanu Avenue | | | √ |
| 27 | Wood Tenement Buildings | 425 N. King Street | | | √ |
| 28 | Institute for Human Services | 536 Kaahi Street | | | √ |
| 29 | Walker Park | North King Street and Beretania | | | √ |
| 30 | DOT Harbors Division Offices | 79 South Nimitz Highway | | | √ |
| 31 | Pier 10/11 Building | Pier 10/11 | | | √ |

Source: State Historic Preservation Office; Honolulu High-Capacity Transit Corridor Project, Final Programmatic Agreement, Surveyed Properties Considered Eligible for National Register, 2011.

**FIGURE 2-21:
HISTORIC DISTRICTS AND SITES**

-  Historic Sites
-  Merchant Street Historic District
-  Chinatown Historic District
-  Hawai'i Capital Historic District
-  Proposed Rail Line/Station
-  Planning Boundary



Source: City/County of Honolulu, Department of Planning & Permitting, 2008; State Historic Preservation Office.

0 500 1,000 2,000
FEET



3 STATIONS

Though the station plan boundaries may overlap, each station within the rail corridor has particular land use and mobility opportunities and constraints that can be better addressed at the individual station level. To delve into greater detail, Chapter 3 analyzes the character, pedestrian facilities and station access (including station configuration), and potential opportunity sites at each of the three stations.

3.1 Station Level Analysis

Station Character

This section describes the character of each station in text and photographs to illustrate key characteristics, opportunities, and constraints. This analysis helps to identify elements of the station area that should be retained and enhanced, or redeveloped and changed. In some cases, there may be existing characteristics that community members want to change, such as improvements to public safety. On the other hand, there may be qualities that community members want to preserve, such as the small business nature of a station.

Pedestrian Facilities and Station Access

This section describes and illustrates the location of the station and how pedestrians will access it. Maps illustrate pedestrian connections, including locations of sidewalks, pedestrian-only paths, and designated crosswalks. In contrast, they also show barriers to walking to and from the station, including inadequate sidewalks and barriers created by freeways and major roads.

Pedestrian Facility Inventory

Weslin Consulting undertook a complete sidewalk and crosswalk inventory of all streets within 1/4-mile of each station, generally a five-minute walking distance. A crosswalk across a leg of an intersection was counted as being part of the side of the intersection street parallel to the crosswalk. The sidewalk along both sides of each street was placed into one of five categories: (1) no sidewalk, (2) 3-4 feet of effective width, (3) 5-6 feet of effective width, (4) 7-8 feet of effective width, and (5) 9+ feet of effective width. Effective width was defined as that amount of sidewalk that provides a continuously unobstructed pathway with the exception of occasional temporary obstructions such as illegally parked vehicles.

The results of the sidewalk inventory are included in Appendix D. Table 3-1 provides the summary of the sidewalk inventory included in Appendix D and shown graphically for each station in the following sections.

| TABLE 3-1: EXISTING SIDEWALK CHARACTERISTICS IN 2011 BY SIDEWALK CURB LENGTH AND SIDEWALK WIDTH | | | | | | | | | | | | | | |
|---|------------------------------------|-----------|------------|-----------|---------------|------------|---------------|------------|---------------|------------|--------------|-----------|-------------------|-------------|
| STATION | SIDEWALK LENGTH BY EFFECTIVE WIDTH | | | | | | | | | | | | TOTAL CURB LENGTH | Cross-walks |
| | none | | 1 to 2 | | 3 to 4 | | 5 to 6 | | 7 to 8 | | 9+ | | | |
| | feet | % | feet | % | feet | % | feet | % | feet | % | feet | % | | |
| Iwilei | 850 | 5% | 0 | 0% | 3,020 | 18% | 9,730 | 57% | 3,440 | 20% | 0 | 0% | 14,260 | 36 |
| Chinatown | 770 | 2% | 390 | 1% | 8,530 | 25% | 16,830 | 49% | 6,600 | 19% | 1,230 | 4% | 51,580 | 93 |
| Downtown | 1,300 | 4% | 530 | 2% | 5,890 | 19% | 13,170 | 41% | 5,680 | 18% | 5,230 | 16% | 23,400 | 74 |
| TOTALS | 2,920 | 3% | 920 | 1% | 17,440 | 20% | 39,730 | 45% | 15,720 | 18% | 6,460 | 7% | 89,240 | 277 |

Source: Weslin Consulting Services.

Overall, 3 percent of all street curbs within 1/4-mile of the three stations were found not to have sidewalks. Of the 277 crosswalks, many are concentrated in the Chinatown station area. Pedestrian facilities throughout the Downtown Neighborhood TOD area are not limited to these sidewalks and crosswalks. There are other pedestrian malls and pathways in the TOD planning areas. Significant variations exist in the consistency and quality of these pedestrian facilities and their network connectivity as observed in the following sections.

Potential Opportunity Sites

Vacant and underutilized sites can provide strategic opportunities to create new uses, meet community needs, and capitalize on access to the rail station. This section and the maps within each station subsection present potential opportunity sites based on the following methodology:

- Vacant sites or sites currently occupied by surface parking lots;
- Properties where assessed building value is less than land value according to tax records, suggesting that the site is “underutilized”;

- Low intensity sites, where FAR values are below 0.75 or 0.50 and more intensive redevelopment may be appropriate. (sites with low FAR values);
- “Other Opportunity Sites” that have been identified as potential opportunities by stakeholders, landowners, City staff or consultants; but
- Excluding open space, schools, and residential uses (except those identified as “Other Opportunity Sites”).

Using this methodology, there are as many as 260 acres that may be appropriate for redevelopment. These potential opportunity sites have been further categorized to suggest those sites with the highest potential for redevelopment. This is signified by the color gradient in Table 3-2, with the darker color suggesting those sites that are more likely to redevelop. The highest potential includes 24 acres classified as vacant or surface parking and 108 acres that have a FAR value that is less than 0.5 and an assessed value that is less than land value. Not all of these sites will be redeveloped or are in fact appropriate for redevelopment. The planning process will help to identify locations for intensification of existing uses, redevelopment, and preservation.

| TABLE 3-2: POTENTIAL OPPORTUNITY SITES, BY ELIGIBILITY AND ACRES | | | |
|--|-----------------------------|-----------|-------------|
| CRITERIA | BUILDING VALUE < LAND VALUE | | TOTAL ACRES |
| | YES | NO | |
| Vacant/Surface Parking | 24 | n/a | 24 |
| Low FAR: Less than 0.5 | 108 | 14 | 122 |
| Low FAR: Between 0.5 - 0.75 | 22 | 4 | 26 |
| Building Value < Land Value (FAR >0.75) | 66 | n/a | 66 |
| Other Opportunity Sites | 0 | 22 | 22 |
| TOTAL ACRES | 220 | 40 | 260 |

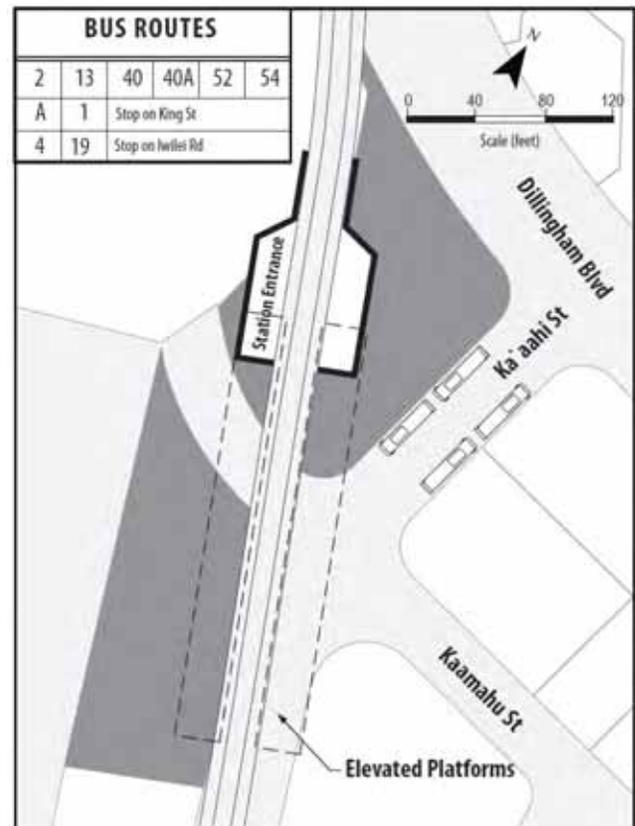
Note: Color gradient suggests likelihood for redevelopment, with the darker colors signifying a higher potential.

Source: City and County of Honolulu, Dyett & Bhatia, 2011.

3.2 Iwilei

Station Character

Iwilei station serves as an entryway to Downtown, providing views and routes to it, but with a decidedly more industrial character, as illustrated in Figure 3-1. The parcels are large and oddly shaped given the confluence of roads and the Nimitz Highway, as well as the inlet of the harbor. Immediately adjacent to the station is an electric substation. Makai of the station, there are a mix of commercial and light industrial/warehouses, as well as a range of big box stores and the redeveloped Dole Cannery shopping, office, and entertainment center, with a tall parking structure for the multiplex. This area is also known for the Institute for Human Resources shelter, Salvation Army’s adult Rehabilitation Services, and Aala Park, which draw the homeless population. Mauka of the station, there are fast food, automobile-related uses, retail, and small offices, as well as some vacant sites. Two affordable housing developments—Kukui Gardens and Mayor Wright Homes—are the primary residential uses in the planning area. Within Kukui Gardens lie a community center, mature trees, and Beretania Community Park.



Iwilei Station Configuration

Pedestrian Facilities and Station Access

The Iwilei station is located on an elevated structure above a property located in the southwest corner of the intersection of Dillingham Boulevard and Kaaahi Street. The station’s elevated platforms and concourse level will include pedestrian connections to grade level within this property.

The following section identifies how this station is currently isolated from good connections to the Iwilei area’s sidewalk system, especially to the south. This obstacle will be removed with the creation of a new roadway under the guideway connecting Dillingham Boulevard with Iwilei Road. There will be no parking provided at the station. New bus stops will be located on either side of Kaaahi Street.

Table 3-1 indicates that 95 percent of all street curbs in the Iwilei Station TOD planning area have sidewalks.



Students from Kaiulani Elementary School dominate the streets at morning and early afternoon peak traffic time.



King Street accommodates a wide variety of uses, from industrial, mom-and-pop stores, residential, and places of worship, to health clinics and gas stations, with equally wide range of site and building designs.



Honolulu Community College, a major land owner in the area, is undergoing a master plan process that proposes open space, a gateway at Kokea Street and street-oriented buildings along Dillingham Boulevard.



Area makai of Dillingham Boulevard along Alakawa Street comprises large blocks with bigbox retail establishments.



Chain link fences are common sights surrounding residential developments, such as at Mayor Wright Housing shown here, and at developments in areas with crime issues.



Dole Cannery is a historic site that currently houses a movie theater, retail, office, and other uses, as well as a large parking structure.



Large electric sub-station right adjacent to the station that may be expensive/difficult to relocate.

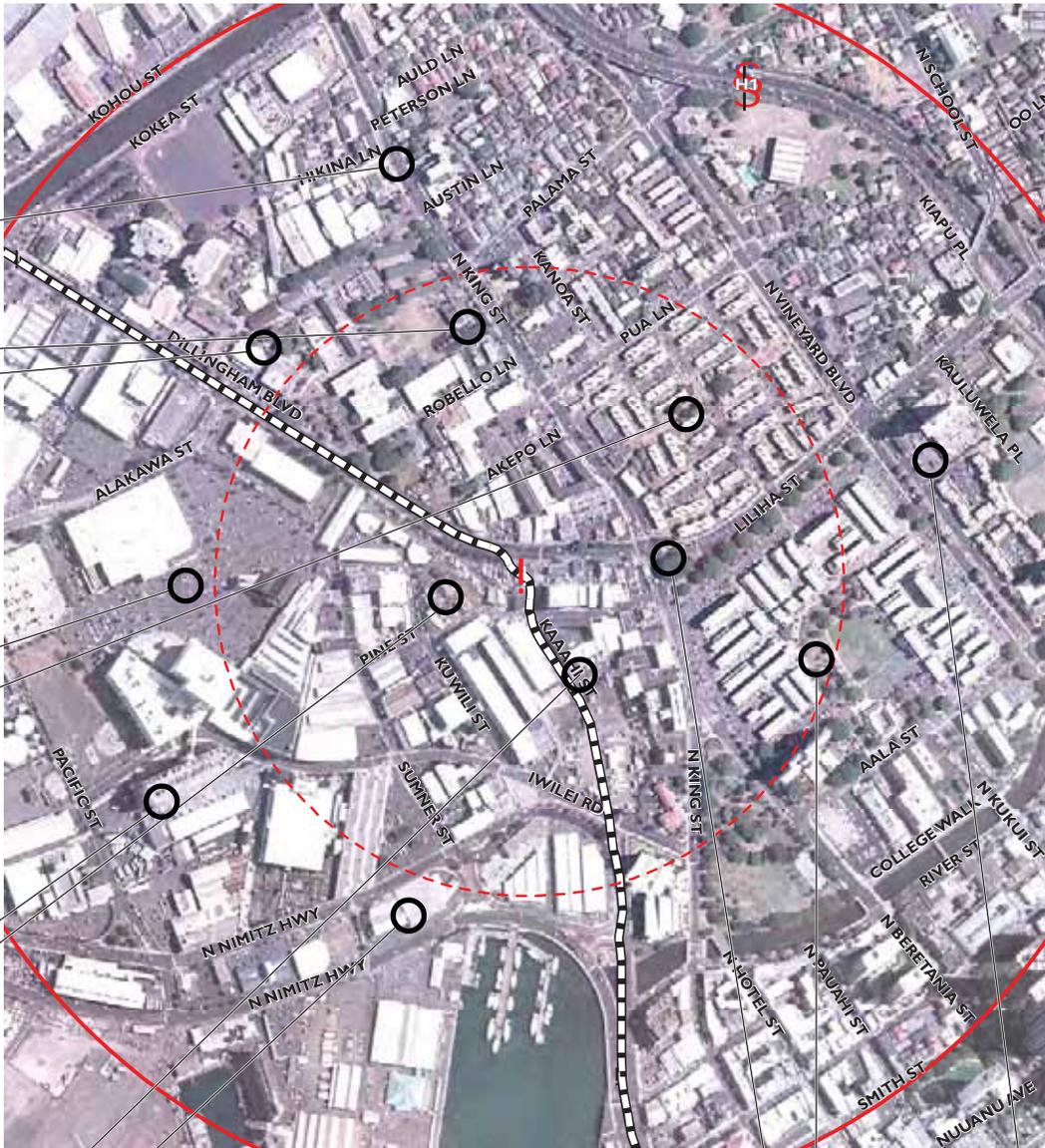


Areas makai of Dillingham Boulevard comprise industrial buildings, large and small.



More industrial buildings along Nimitz Highway

**FIGURE 3-1:
STATION CHARACTER – IWILEI**



Source: City/County of Honolulu, 2011;
State of Hawaii, 2011; Dyett & Bhatia, 2011.

The city is in the process of renovating public housing at Kukui Gardens.



Along Vineyard Boulevard, residential high rises tower above retail podium.



Dillingham Boulevard's defining features at King Street are inconsistent streetscape and wide lanes that accommodate fast traffic.



This would appear to indicate a high degree of pedestrian mobility exists throughout the area. In fact, a major section of the TOD planning area does not have reasonably direct pedestrian access to the Iwilei station.

For example, a person at the intersection of Pine and Sumner Streets leaving the Cannery Commercial Center pictured in Figure 3-2 is about 700 feet airline distance from the station. The natural pathway would be to walk along Pine Street to the intersection of Pine and Kuwili Street to find a path to the station that is easily visible.

Instead of finding a pathway one finds insurmountable obstacles. The Iwilei station will be just on the other side of six foot high chain link fences, some topped with barbed wire. The chain link fence at the end of Kuwili is at the edge of the new Costco surface parking lot and appears to serve no purpose since the Costco parking lot is otherwise not enclosed with fences. The most direct path currently available to a pedestrian from the Cannery Commercial Center to the Iwilei rail station would be a 3,600 foot walk using a path along Sumner St., Iwilei Rd., N. King St. and Kaaahi St.

The entire sector makai of the station location between Dillingham Boulevard and North King Street is essentially isolated from any efficient pedestrian connection to the Iwilei station. Many sidewalks and crosswalks do exist, but they are often a puzzling array of fences, pedestrian islands, gates, widen curbs and other pedestrian accommodations in an otherwise vehicle dominated environment as shown in Figure 3-3 for the area encircled by N. Nimitz Hwy., Sumner St., Awa St. and Iwilei Rd.

Figure 3-4 identifies all sidewalks by width and crosswalks in the Iwilei TOD planning area. The figure includes the location of seven obstacles across what appears to be former public right-of-way that prohibits any passage by the public. Although sidewalks are abundant, safe and secure pedestrian access directly toward the station location is limited.

Akepo Lane is the most direct pathway to the station from the North, but it has no sidewalks and connects with Dillingham at a steep and awkward decent from

the one way road. Liliha serves the major residential areas and offers sidewalks on either side, but pedestrians must cross two legs of the busy Dillingham, North King and Liliha intersection representing an extensive pedestrian wait time for the signal to cycle and allow pedestrians to cross.

Potential Opportunity Sites

Most of the Downtown planning area's opportunity sites are located around the Iwilei station, as shown in Figure 3-5. The area is situated close to Downtown and Chinatown with harbor views, but is currently dominated by underutilized warehouse spaces along Iwilei Road and between east and west bound lanes of Nimitz Highway. Mauka of the station, there may be an opportunity to renovate older affordable housing developments (specifically Mayor Wright Homes, built in 1952; upgrades to Kukui Gardens are underway). New connections to Iwilei Station will need to be created from these residences to support transit ridership and ensure safe and convenient pedestrian routes.

The Jones Lang LaSalle Value Capture Study identifies Iwilei station as having significant redevelopment opportunities due to its proximity to Downtown and sites appropriate for reuse. However, the study also recognizes crime and safety concerns, related to nearby public housing, potential industrial cleanup, as well as the dangerous intersection at King Street and Dillingham Boulevard as constraints to development. Still, the study deems the big box stores and Dole Cannery as successful developments that suggest momentum for further development.

FIGURE 3-2: IWILEI STATION ACCESS EXAMPLE FROM CANNERY COMMERCIAL CENTER



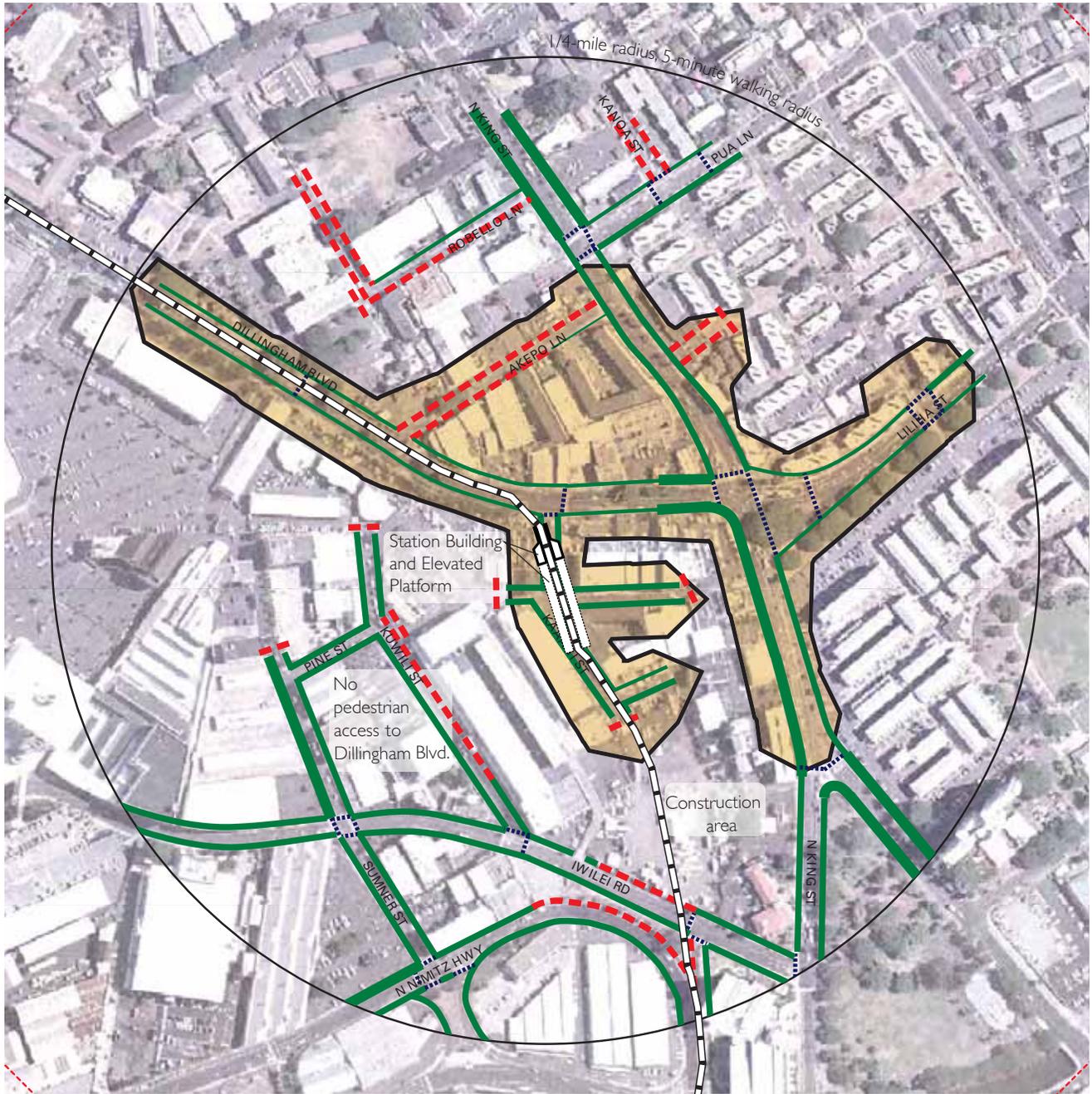
Source: Weslin Consulting Services

FIGURE 3-3: IWILEI STATION ACCESS EXAMPLE FROM NIMITZ HIGHWAY

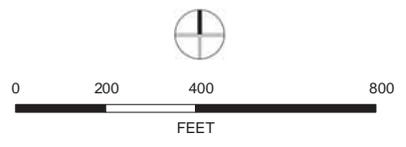


Source: Weslin Consulting Services

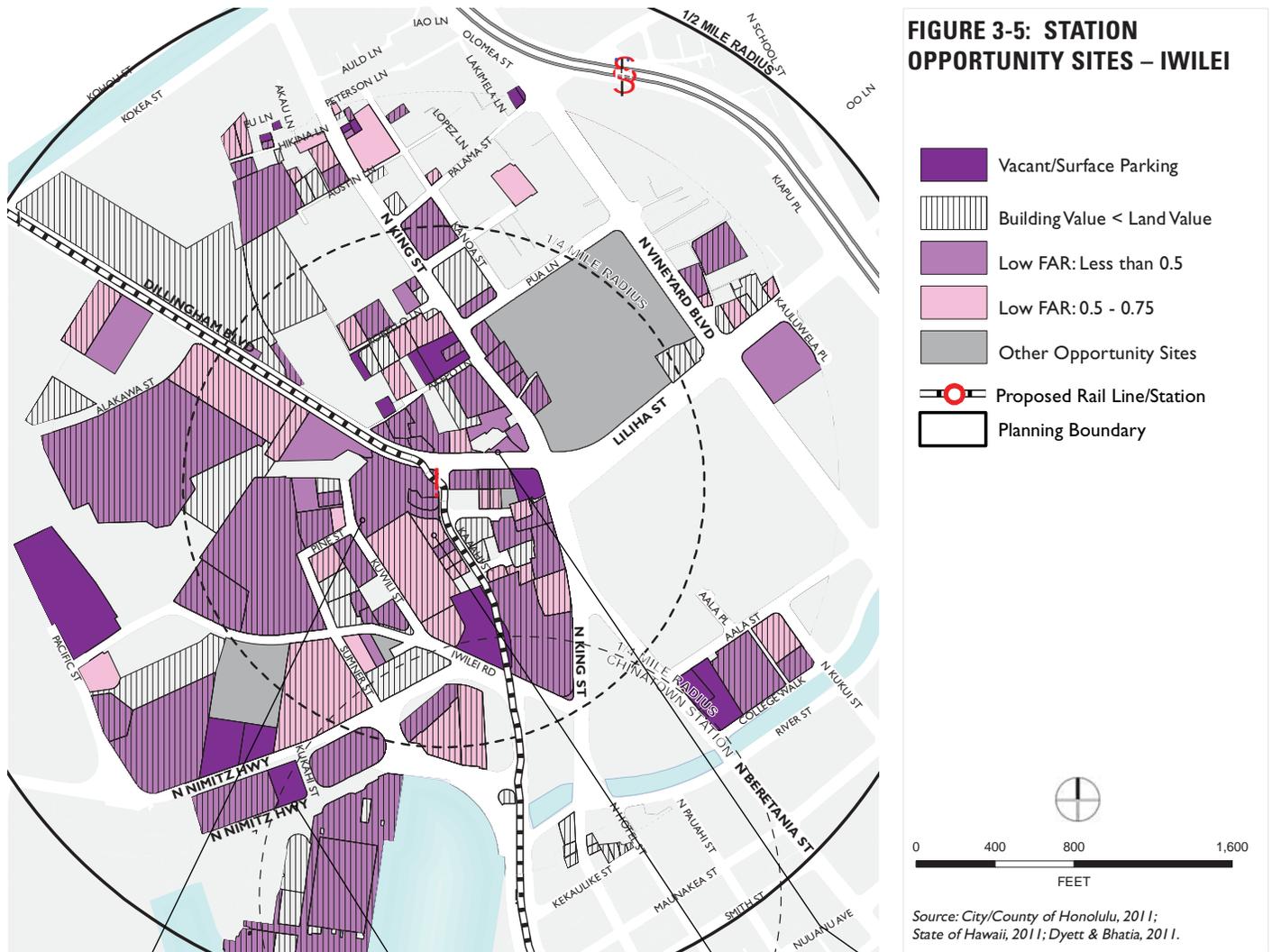
FIGURE 3-4: STATION PEDESTRIAN ACCESS – IWILEI



-  Rail Alignment
-  3 to 4 Foot Sidewalk
-  5 to 6 Foot Sidealk
-  7 to 8 Foot Sidewalk
-  Missing Sidewalk
-  Crosswalk
-  5-minute Walkshed to/from Station



Source: City/County of Honolulu, 2011; Weslin Consulting Services, Inc, 2011; State of Hawaii, 2011; Dyett & Bhatia, 2011



The electric substation adjacent to the station presents a challenge to creating a pedestrian-oriented station area.



Older warehouse uses along Nimitz Highway may be appropriate for redevelopment.



Auto-oriented uses and buildings in disrepair adjacent to the station site.

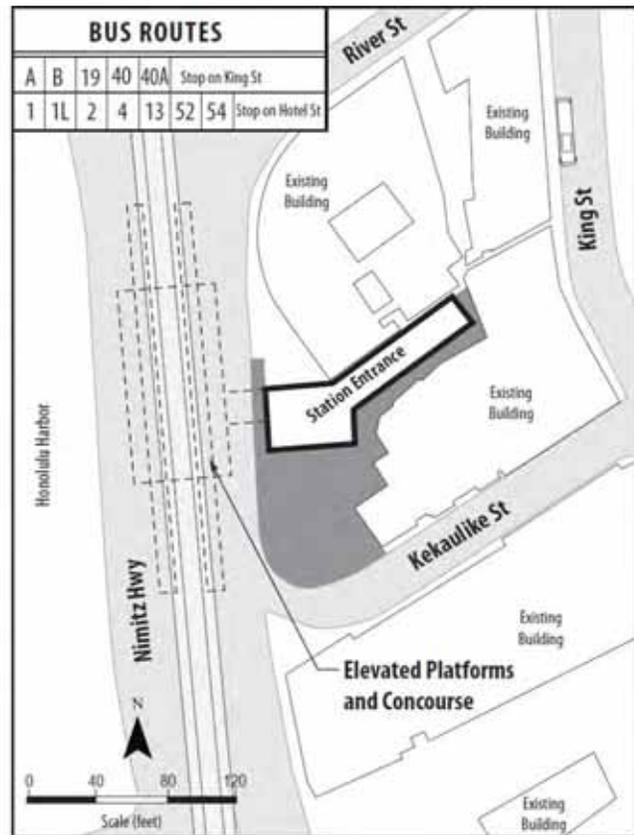


Surface parking lot at the intersection at King Street and Dillingham Boulevard, an entry into Downtown and auto-dominated intersection.

3.3 Chinatown

Station Character

Chinatown is a vibrant historic cultural hub, with a range of uses, including open-air food markets, residences, community facilities, and office businesses, as illustrated in Figure 3-6. The small lot sizes and short blocks create a fine street grid, although not all streets are straight. The Nuuanu Stream is contained with stonewalls and a pedestrian-only walkway. River Street runs along the canal, with shops on the ground-floor and residences and offices above. Temples are located along both banks of the canal. Buildings tend to two to and four-stories high; this is much lower compared with the Downtown station area. But, higher-density residential buildings are located at the edge of the historic core on the mauka side of the planning area. There are many attractive brick buildings and historic properties. The Hotel Street Transit Mall is a bus-only pedestrian-oriented street with shops on the first floor, residential above. There are lots of pedestrians walking along the streets and utilizing diagonal crosswalks and mid-block crossings. Although sidewalks are wide, the roadway right-of-ways are also wide and lack bike lanes, shoulders and parking lanes. The area generally lacks signage despite its prominence as a tourist attraction and key destination in Honolulu. There are a couple surface parking lots along Nimitz Highway.



Chinatown Station Configuration

Pedestrian Facilities and Station Access

The Chinatown station is located on an elevated structure centered above Nimitz Highway mauka of Honolulu Harbor between Kekaulike and River Streets. The station is at the edge of Chinatown’s main shopping and restaurant district and near Nuuanu stream with its notable pedestrian malls and one block away from the Kekaulike pedestrian mall. The area is famous for its inviting array of cultural, shopping and eating establishments.

Access to the elevated platform and concourse will be offered from a station entrance located on off-street property in the northeast corner formed by the inter-

section of Nimitz Highway and Kekaulike Street. The station entrance will be flanked by existing buildings which are not part of the HHCTCP project.

No new major bus facility or off-street parking will be provided. Bus improvements are not included because the station is in close proximity to many existing bus routes and stops including the Hotel Street Transit Mall. The station is near many surface and structured parking facilities including the Chinatown Municipal Parking Garage located near the station entrance.

Figure 3-7 identifies all sidewalks by width and crosswalks in the Chinatown TOD planning area. Table 3-1 shows that 98 percent of all street curbs in the Chinatown station area have a sidewalk. Chinatown has more sidewalk than the other two Downtown neighborhood station areas combined even though the station TOD planning area includes over 30 percent water and some of the uninviting pedestrian environment included within the Iwilei area.

Chinatown has 93 crosswalks, more than even the downtown area. Chinatown's overall pedestrian accessibility is very good both because of the extensive homogeneous sidewalk network in the mauka and diamond head sectors of the TOD planning area and the other pedestrian facilities available to the public not included in the sidewalk inventory.

The entrance to the Chinatown station is located between River Street and Kekaulike Street on the mauka side of Nimitz. Both of these streets have sidewalks on both sides. Crosswalks exist along both of these streets. Both sides of Nuuanu Stream have inviting pedestrian facilities as illustrated in Figure 3-8 including River Mall/Sun Yat-sen Mall, Kekaulike Mall and College Walk Mall.

The pedestrian malls are connected over Nuuanu Stream by a pedestrian bridge located mid-way between North Beretania and North Kukui Street. Although this pedestrian bridge and some of the pedestrian malls are located just mauka of the TOD planning area, they are worthy of note because they represent the type of exclusive pedestrian facilities that can serve to extend pedestrian accessibility of a station; whereas, the lack

of such facilities in the Iwilei area demonstrates how pedestrian accessibility, and coincidentally the effective size of the TOD area, can become limited.

Kekaulike Street becomes the Kekaulike Mall between N. King and Hotel St. as shown in Figure 3-9. Kekaulike Street's intersection with N. King St. offers a full pedestrian scramble, or Barne's Dance, crosswalk. Pedestrians have a dedicated portion of the traffic signal cycle and can cross the intersection diagonally.

The sidewalk widths illustrated in Figure 3-7 for Chinatown are the effective width, or the full sidewalk width minus permanent obstructions such as those shown in Figure 3-10. Such obstacles often include utility poles, mail boxes, light poles, sign posts, parking meters, fire hydrants and street trees.

Chinatown's sidewalks contain more obstacles than most other areas as shown in Figure 3-11, especially during business hours when produce stands locate along public streets. This further constricts the effective sidewalk width below those dimensions shown in Table 3-1. Overall, sidewalk activity of all types definitely overburdens many Chinatown sidewalks.

Potential Opportunity Sites

Development opportunities in Chinatown are limited due to special district regulations and the presence of historic properties. Nonetheless, redevelopment may take the form of renovation of older buildings and small additions. In addition there are a few surface parking lots along Nimitz Highway that may be appropriate for new development as shown in Figure 3-12. Stakeholders generally see two objectives related to TOD in Chinatown: preserving Chinatown culture and enhancing the neighborhood with revitalized uses and amenities, such as services for seniors and youth.



Real and perceived danger and crime has led to buildings with safety fences and introverted design.



Mauka of Beretania Street, wide pedestrian-only streets along the canal serve as a linear park.



Makai of Beretania Street, where cars are allowed along the canal, seatwalls and street trees provide resting space for pedestrians.



Social service centers in and around Chinatown provide aid to the homeless, who mainly reside along sidewalks near Chinatown and Aala Park. Such areas are often avoided for this and due to perceived crime.



Chinatown is also home to many high-density apartments that are built on top of two- to three-story retail platforms.



Izumo Taishakyo Mission is one of the many historical buildings in Chinatown.



Makai of Chinatown, the wide Nimitz Highway, high speed traffic, and limited crosswalks discourage pedestrian movement.

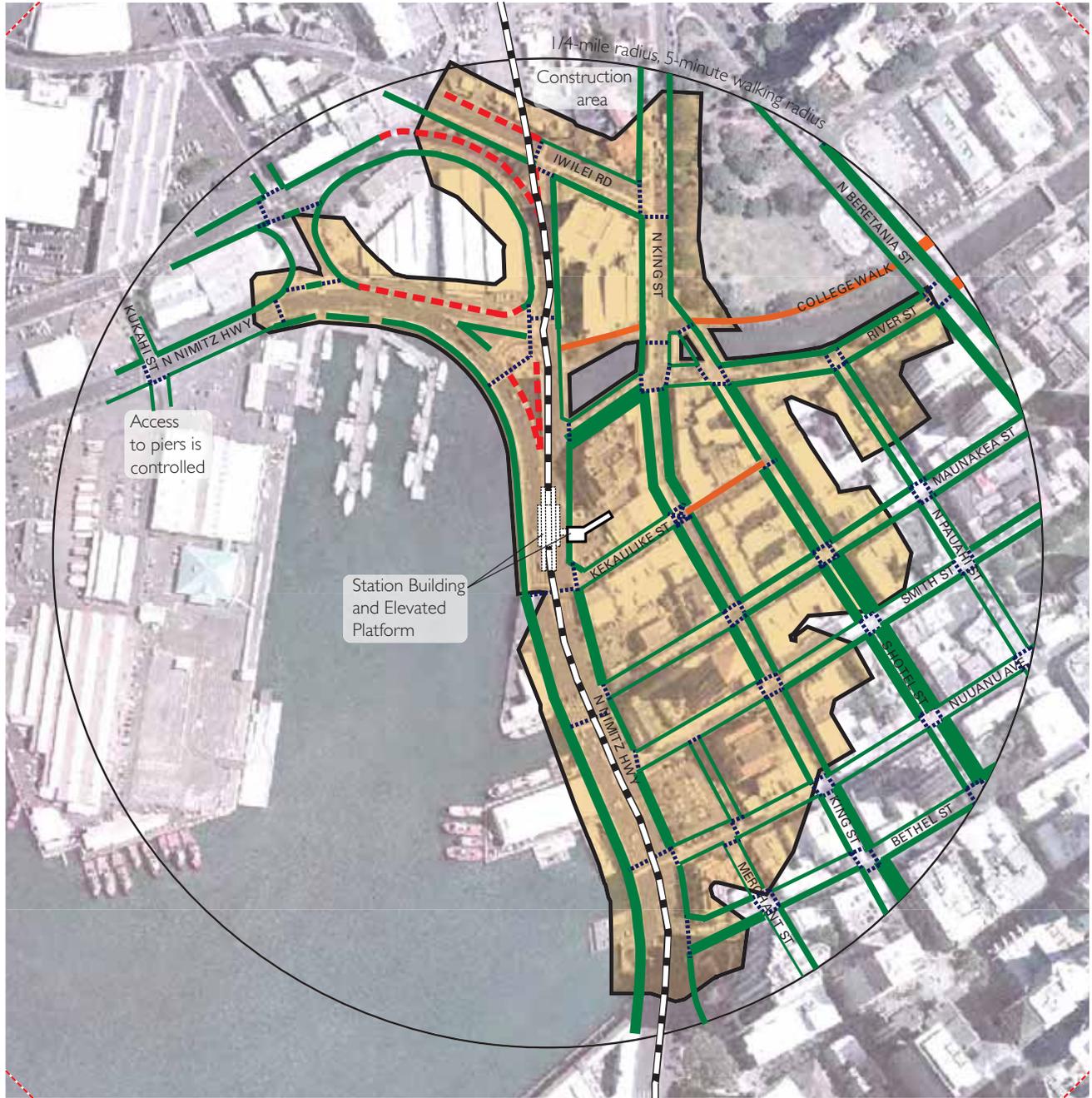


Kekaulike Plaza is Chinatown's main open-air market that leads to an indoor food court mauka of Hotel Street.

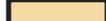


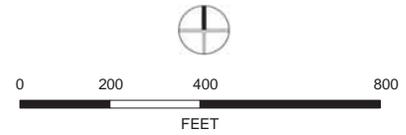
Zero-foot setback, transparent and open storefronts, hanging signs, and covered sidewalks cater to pedestrians.

FIGURE 3-7: STATION PEDESTRIAN ACCESS – CHINATOWN



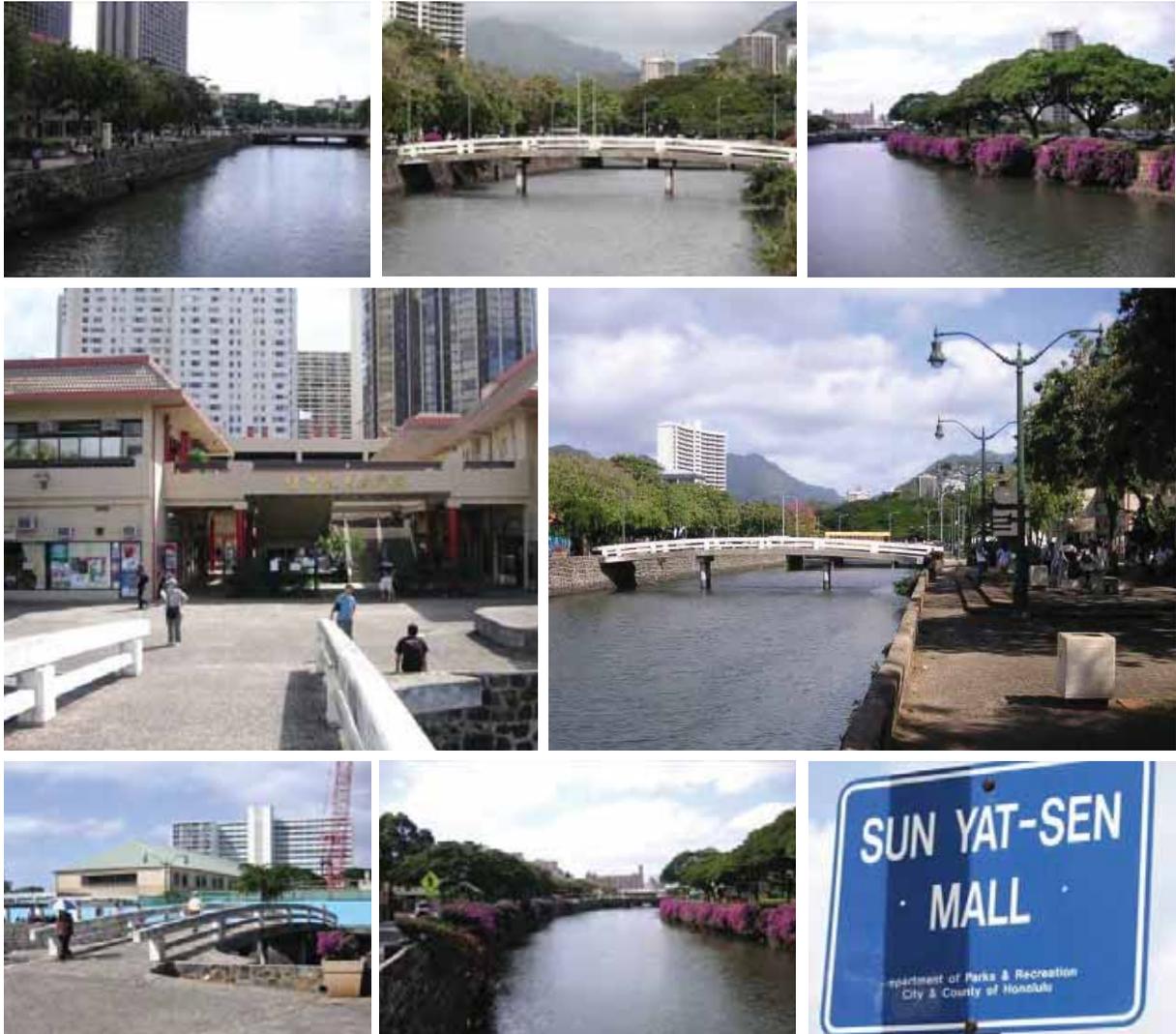
-  Rail Alignment
-  3 to 4 Foot Sidewalk
-  5 to 6 Foot Sidewalk
-  7 to 8 Foot Sidewalk
-  9 Feet or Wider Sidewalk
-  Missing Sidewalk

-  Crosswalk
-  Pedestrian Pathway
-  5-minute Walkshed to/from Station



Source: City/County of Honolulu, 2011; Weslin Consulting Services, Inc, 2011; State of Hawaii, 2011; Dyett & Bhatia, 2011

FIGURE 3-8: NUUANU STREAM EXISTING PEDESTRIAN FACILITIES



Source: Weslin Consulting Services

FIGURE 3-9: KEKAULIKE MALL EXISTING CONDITIONS



Source: Weslin Consulting Services

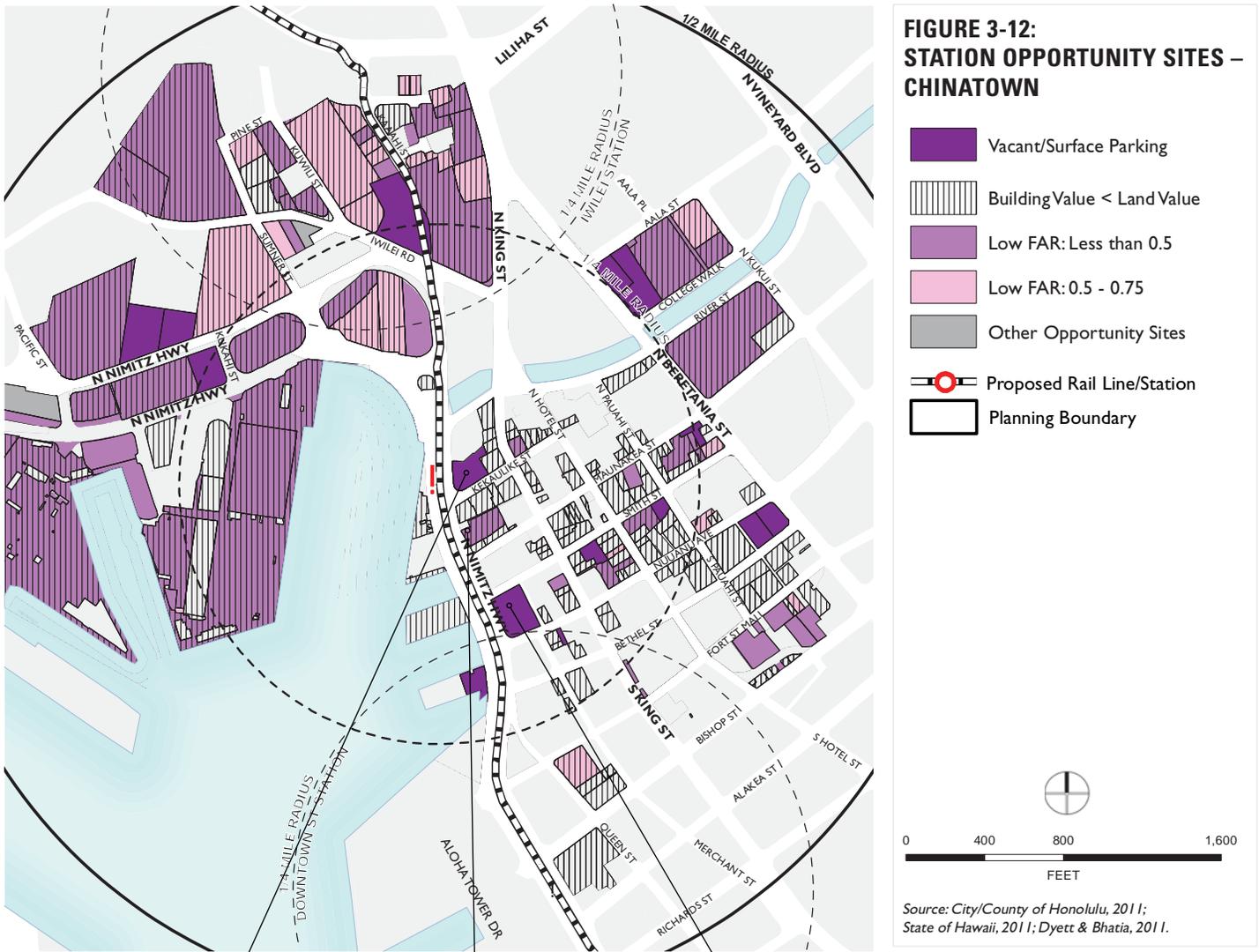
FIGURE 3-10: CHINATOWN STATION AREA PERMANENT SIDEWALK OBSTACLES



FIGURE 3-11: CHINATOWN STATION AREA TEMPORARY SIDEWALK OBSTACLES



Source: Weslin Consulting Services



Surfacing parking lot immediately adjacent to the future station location (NE corner of Nimitz Highway and Kekaulike Street).



Surfacing parking lot on Nimitz Highway between Kekaulike and Maunakea streets.

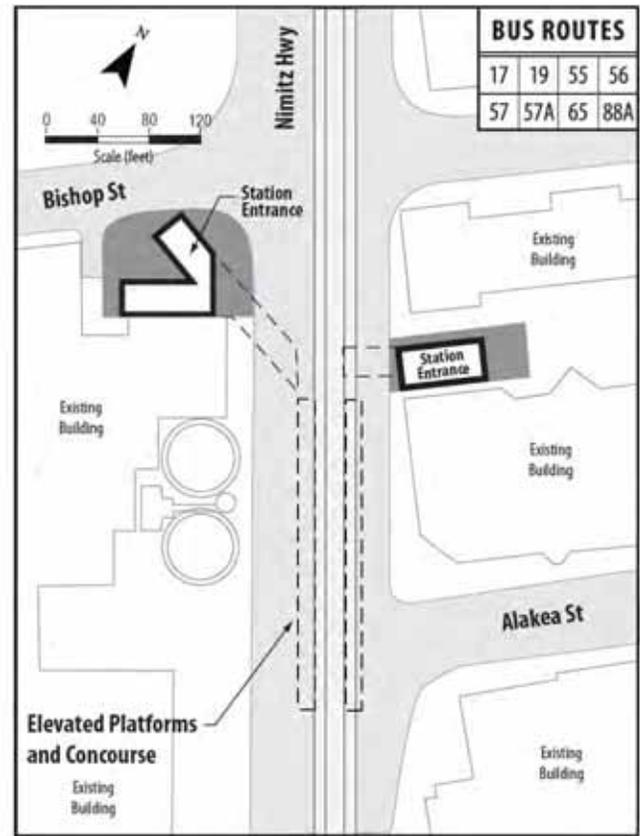


Surfacing parking lot on Nimitz Highway between Smith Street and Nuuanu Avenue.

3.4 Downtown

Station Character

Downtown is the financial and professional hub of Honolulu. Uses include offices, services, lunch venues, and shops, as illustrated in Figure 3-13. There is some high-rise residential development in the area, including one recent luxury high rise at the Diamond Head side of the planning area. Downtown does not have any major hotels, as these are clustered in Waikiki and other parts of Honolulu. The Fort Street Mall includes a range of small retail uses as well as the much larger Macy’s store and the Downtown campus for Hawaii Pacific University. Similar to Chinatown, there is a fine grid pattern to the streets; blocks are short and there are many intersecting streets, making walking convenient. Nimitz Highway is a large six-lane arterial, with wide sidewalks and pedestrians, but without bike lanes. Port activities line the makai side of Nimitz Highway, as well as the Aloha Tower retail development and historic park (primarily used as a parking lot). There is also a power plant/electric utility substation adjacent to the station.



Downtown Station Configuration

Pedestrian Facilities and Station Access

The Downtown station is located on an elevated structure centered above Nimitz Highway between Bishop Street and Alakea Street. Access to the elevated platforms will be offered at two station entrances located on either side of Nimitz Highway. One grade level entrance will be in the southeast corner of the intersection formed by Nimitz Highway and Bishop Street. The other at grade station entrance will be located next to the existing plaza between the two existing buildings between Bishop Street and Alakea Street.

No new major bus facility or off-street parking will be provided. Bus improvements are not necessary because the station is in close proximity to many existing bus routes and stops including the Hotel Street Transit Mall. The station is near many surface and structured parking facilities.



Key intersections such as Fort Street Mall and Pauahi Street could accommodate active uses with building design that respond to the architectural scale and pattern of surrounding historic buildings.



Buildings with expansive blank walls detract from active street level at King Street and Fort Street Mall.



Street vendors welcome visitors and add to an active daytime atmosphere along Fort Street Mall.



Getting to Aloha Tower from Fort Street Mall requires crossing Nimitz Highway, a major road that lacks signage or streetscape to accommodate pedestrians.



Grimy stone seats, dry fountains, and lack of connection to retail make Irwin Memorial Park a less than ideal place for respite.



Aloha Tower is a visual landmark, but efforts over the years to foster its vitality have had limited success, outside of patronage by selected tour groups, some cruiseship passengers, and tourists trickling in from Fort Street Mall.



Surface parking lot adjacent to Irwin Memorial Park.



Historical boats, monuments surround the areas adjacent to Aloha Tower.



Downtown comprises architecturally rich backdrop of modern office towers to classically designed buildings.

Figure 3-14 identifies all sidewalks by width and crosswalks in the Downtown TOD planning area. Table 3-1 shows that 96 percent of all street curbs in the Downtown station area have a sidewalk. Downtown has as much wide sidewalk than the other two Downtown neighborhood station areas combined (a total of 10,910 curb feet as compared to 11,270 curb feet for Iwilei and Chinatown). Downtown has far more sidewalk (5,230 feet) with an effective width of nine feet or more than the other two station areas.

There are two proposed entrances to the Downtown station. The makai entrance is located at the corner of Nimitz Highway and Bishop Street and connects to sidewalks on either side of Bishop Street connected by wide crosswalks as shown in Figure 3-15.

The Mauka entrance is proposed to connect to the plaza between the Dillingham Transportation Building and Pacific Guardian Center. Sidewalks and crosswalks connect in all directions from this location providing an excellent network for pedestrians.

Downtown also has several pedestrian malls. One is the Fort Street Mall serving four blocks in the TOD planning area. Crosswalks between sections of the mall on Queen, Merchant and North King Streets are all extra wide as shown in Figure 3-16. Deliveries are allowed on the mall except between 10:00 a.m. and 2:00 p.m. Fort Street Mall was the only location in any of the three TOD planning areas where Segways were observed being used. Electric bikes and mopeds are also often seen near Hawaii Pacific University, and near Fort and Beretania Streets.

The Mililani Mall is a one block long pedestrianized area located between Halekauwila and Queen Streets. Within and between the government buildings are other courtyards and plazas. The same is true with many private buildings throughout Downtown. Certainly, Aloha Tower Marketplace is designed for the pedestrian. The only problem with the waterfront portions of the downtown is that Nimitz Highway has served as either a real or at least a visual obstacle inhibiting pedestrian activity between the business district and the waterfront. The signals controlling pedestrian ac-

cess across Nimitz Highway are often cited as being too long between intervals.

Potential Opportunity Sites

Potential opportunities for development and redevelopment exist along the harbor and in the core of Downtown as shown in Figure 3-17. The Aloha Tower site could be better utilized with improvements to the historic park. Surface parking areas could be redeveloped with active uses, and parking either provided in structures, or even reduced or eliminated given proximity to the rail. In addition, the current power plant and substation operated by the Hawaiian Electric Company would be an appropriate location for development should the utility decide or have incentive to move the facility. In the heart of Downtown, stakeholders have suggested that there may be an opportunity for redevelopment of the Macy's store and adjacent areas, including along the Fort Street Mall into higher-intensity development with retail and residential uses.

FIGURE 3-14: STATION PEDESTRIAN ACCESS – DOWNTOWN

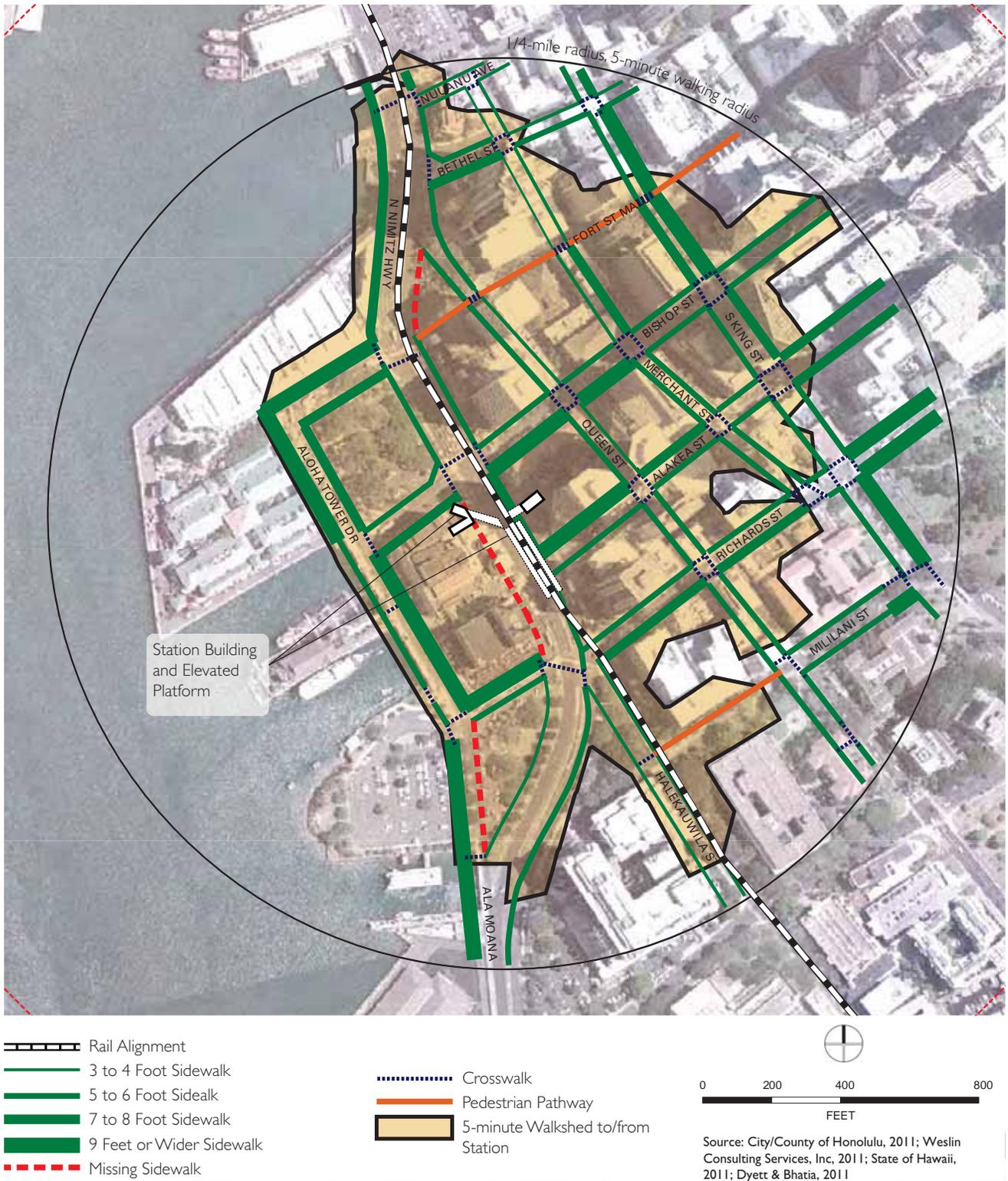


FIGURE 3-15: DOWNTOWN STATION AREA EXISTING SITE CONDITIONS

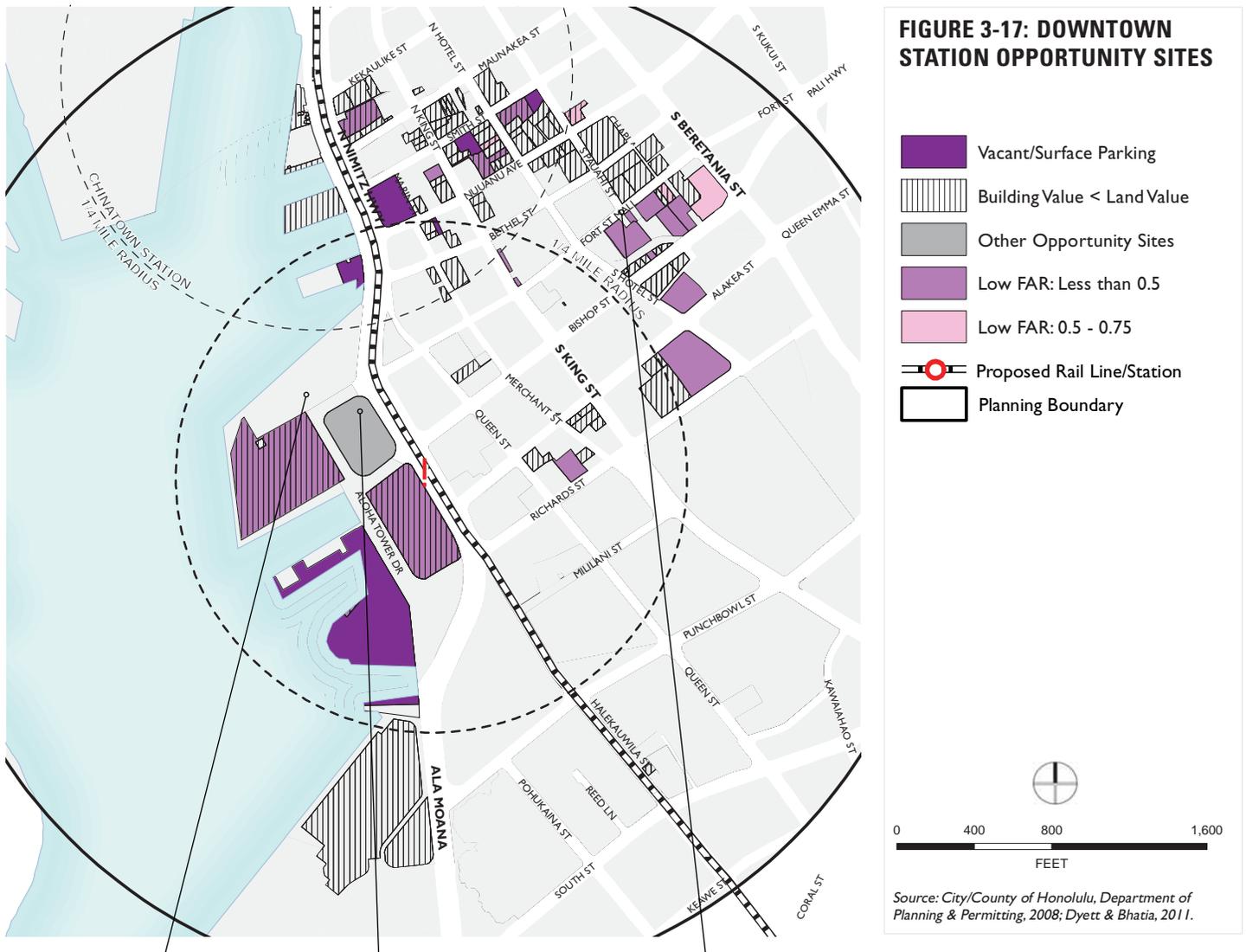


Source: Weslin Consulting Services

FIGURE 3-16: FORT STREET MALL AND ASSOCIATED CROSSWALK



Source: Weslin Consulting Services



Irwin Park and other portions of the Aloha Tower site could be redeveloped to better celebrate its history as a gateway into the city. [Nimitz at Bishop Street]



Façade improvements and strategic redevelopment along the Fort Street Mall could better utilize this pedestrian-only street.

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4 ISSUES AND IMPLICATIONS

This chapter reviews key issues raised in the preceding chapters that will need to be addressed through the Neighborhood TOD planning process.

- 1. Enhance District Identity and Character.** Each of the stations has a distinct character that can be enhanced through the planning process. Chinatown is a historic neighborhood with cultural and retail opportunities that make it an attraction for both residents and visitors. The waterfront that serves as a planning boundary for all three stations is currently largely inaccessible to pedestrians and only used for industrial and port-related activities. There may be opportunities through redevelopment of the Aloha Tower site to create public access to the waterfront along the harbor. In addition, continued improvement of the Nuuanu Stream and linear park should be prioritized. Community outreach activities, including the community needs survey, advisory committee, and public workshops will help refine the community vision for the planning area and priorities for each station.
- 2. Identify Development Possibilities.** A market analysis of the planning area is being prepared in tandem with this report and will help inform the demand and feasibility for various land uses. Stakeholders have identified a variety of land use needs including residential at affordable and market rates, locally-serving retail establishments, and nighttime uses that create a more vibrant 24-hour community (e.g. art galleries, bars, restaurants, etc.). While the recent economic downturn has resulted in empty office space and most likely no additional space is required in the short term, the core area remains the principal office and public employment center. In addition, open space is severely lacking in the planning area, especially given the number of daytime workers.
- 3. Prioritize Opportunity Sites.** Chapter 3 of this report presents an analysis of potential opportunity sites which will require further review and refinement to determine the most appropriate sites for development in the short- and long-term and constraints that will need to be addressed to permit development and redevelopment:
 - Iwilei:* Of the three stations, Iwilei presents some of the greatest potential opportunities, given the low intensity of current buildings, mid- to large-sized parcels, and proximity to Downtown and Chinatown. Larger parcels have retail uses that are thriving; however they are built at very low intensities, with large surface parking lots, making them auto-oriented and not conducive to transit. The planning process will need to consider the future of these big box uses. Another challenge is how to create a TOD and pedestrian-oriented environment adjacent to the station, an area that is dominated by an electric sub-station, industrial uses, lack of access and connectivity, and big box commercial uses.
 - Chinatown:* Development opportunities in Chinatown itself are limited, with key opportunities including a few surface parking lots along Nimitz Highway. However, the broader planning area also presents an opportunity to develop a new high-rise transit-oriented district at the northern end of the harbor. This would require new streets, public spaces, and

traffic calming on Nimitz Highway. Such a development is in accordance with the City's General Plan goal of transit-oriented active uses ringing the waterfront.

- *Downtown:* Selected opportunities in Downtown core include parcels at Fort Street Mall. However, the biggest opportunity and challenge is a future land use and urban design strategy for Aloha Tower, including how to integrate it with development mauka of Nimitz Highway. Stakeholders have identified potential development here, including celebratory public gathering space at Irwin Park, retail and public uses that serve the local population, and potentially new high-intensity residential and hotel development.

4. **Integrate Stations with Surroundings (Public and Private Improvements).** Integrating the stations with the surrounding neighborhoods will be essential to the success of the rail. This may include developing a station that is integrated within a larger development, prioritizing active uses at the ground level (such as cafés to promote self-policing and safety), escalators and moving sidewalks (elevated) to enable people to get to station more easily, and streetscape improvements to improve the appearance and pedestrian comfort.

Implementation of this objective from both a design and development perspective will be the responsibility of both the public and private sectors. While the City and State agencies will provide the rail infrastructure and stations, much of TOD will result from private development. Development standards and City policies should provide a framework for development that responds to the vision of the community while ensuring that projects are feasible from the developers' perspective. Moreover, structured public-private partnerships can create arrangements wherein private developers contribute to public improvements, in return for assistance with land assembly, financing, and the upside of transit ridership over time.

5. **Improve Public Safety.** Homelessness has been identified as one of the key barriers to achieving TOD and greater integration between public space and new private development. The consequence has been that developers are designing introverted buildings, and people are driving or changing bus lines even for short distances to avoid the homeless. While homelessness is a larger problem that cannot be solved by the Neighborhood TOD plan alone, it can be addressed in the plan as a step toward a comprehensive solution to minimize impacts on street safety, appearance, and open spaces. For example, crime prevention through environmental design is a philosophy that effective urban design can reduce actual and perceived crime. Design criteria include maximizing visibility and natural surveillance, and controlling access through differentiation between public and private space.
6. **Improve Multi-Modal Circulation/Manage Traffic Congestion and Parking.** Stakeholders hope that rail will alleviate congestion, provide relief for commuters, and boost Downtown, which is challenged by congestion (some intersections are operating at LOS D or F) and limited or expensive parking. The Zoning Ordinance will need to include a coordinated parking strategy and standards that emphasize transit and pedestrian movement, rather than cars. This could include removing or reducing minimum parking requirements, establishing maximum parking allowances, providing credit for shared parking with adjacent uses that have different peak demand periods, allowing exemptions for certain uses or locations, and/or developing parking benefit districts.
7. **Create a Pedestrian- and Transit-Oriented Environment.** Development of a transit- and pedestrian-oriented district will involve at least three components of development: types of uses, design of streets and streetscapes, and design of buildings:
 - *Use Types:* TOD areas should feel like vibrant places to encourage transit ridership, allow for linking of trips, and provide places to gather, shop, and access services. High levels of population and/or employment are typically needed

to support stores and restaurants, and enable access to services on foot. Downtown and Chinatown already have concentration of uses, while Iwilei does not. It may be appropriate to foster “active” uses along key spines and areas immediately adjacent to stations to generate pedestrian activity.

The types of uses could range from shops to galleries, services to residential. The Land Use Ordinance calls for active uses in the Chinatown Special District: active retail-oriented uses at the ground level and distinctive facade treatments. Outside of special districts, uses are regulated as permitted, conditional permitted, or not permitted. This controls some of the use types allowed in various districts, but does not specify whether or not “active” uses are required. As a result, even BMX-4, which covers much of Downtown, permits uses, such as car sales and warehousing that are not pedestrian-oriented.

- *Streets and Streetscapes:* Much of the road right-of-way (particularly on Nimitz Highway and around Iwilei station) is devoted to vehicle travel lanes, at the expense of bike lanes, shoulders, on-street parking, and sidewalks, as well as actual and perceived pedestrian safety. Ideally, portions of the right-of-way can be devoted to alternative modes to widen sidewalks and provide adequate bikeways. Around Iwilei station in particular, streets, sidewalks, and crosswalks are lacking. City standards require only five-foot sidewalk widths in residential zones and six-foot sidewalks in commercial zones. Pedestrian standards, such as storefront windows, wide sidewalks, street facades, and streetscape improvements are already applied in the Chinatown and Hawaii Capital special districts.
- *Site Planning and Building Design:* The elements that make places feel comfortable for pedestrians include how buildings align to the street and to other buildings, their distance from the sidewalk, the size of entryways, the amount of sun and shade that buildings displace, and whether the outdoor spaces between buildings are “left over” or purposefully created. Specific design standards, such as transparency, building entrance locations, and facade treatments can ensure visual interest at the ground level. The City’s current general development standards help to improve the pedestrian environment only to a limited extent, for example screening parking, loading, utility or other unsightly areas with landscaping or other materials. The Zoning Ordinance can address the relationship between buildings and public sidewalks, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks. These features contribute to the character of a place and, in turn, whether or not residents, workers, and visitors are attracted to the place.

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A APPENDIX

**Downtown Neighborhood Transit Oriented Development Plan
Appendix A-1
Existing Bus Route Characteristics In 2011**

| EXISTING ROUTES | | STATIONS | | | SERVICE CLASSIFICATION | BEGIN SERVICE | END SERVICE | AVERAGE HEADWAYS | | | | | |
|-----------------|-----------------------------|----------|-----------|----------|------------------------|---------------|-------------|------------------|---------|---------|-------|---------|------|
| | | Iwilei | Chinatown | Downtown | | | | AM Peak | Mid-Day | PM Peak | Even. | Weekend | |
| No. | Destinations Served | | | | | | | | | | | Sat. | Sun. |
| A | Waipahu-UH Manoa | ✓ | ✓ | ✓ | Rapid Bus | 4:18 AM | 10:33 PM | 15 | 15 | 15 | 30 | 22 | 30 |
| B | Kalihi-Waikiki | ✓ | ✓ | ✓ | Rapid Bus | 4:50 AM | 10:04 PM | 15 | 20 | 15 | 30 | 15 | 15 |
| C | Waianae-Honolulu | ✓ | ✓ | ✓ | Rapid Bus | 3:07 AM | 10:48 PM | 30 | 30 | 30 | 30 | 30 | 30 |
| E | Ewa Beach-Waikiki | | | ✓ | Rapid Bus | 4:10 AM | 11:25 PM | 30 | 30 | 30 | 30 | 30 | 30 |
| 1L | Downtown-Hawaii Kai Limited | ✓ | ✓ | ✓ | Limited Stop | 6:19 AM | 7:18 PM | 30 | 30 | 30 | -- | -- | -- |
| 1 | Kalihi-Hawaii Kai | ✓ | ✓ | ✓ | Urban Trunk | 4:06 AM | 1:17 AM | 10 | 12 | 10 | 32 | 12 | 15 |
| 2 | Kalihi-Waikiki | ✓ | ✓ | ✓ | Urban Trunk | 4:09 AM | 1:42 AM | 12 | 15 | 12 | 20 | 15 | 15 |
| 3 | Kaimuki-Salt Lake | ✓ | ✓ | ✓ | Urban Trunk | 4:15 AM | 1:18 AM | 10 | 20 | 12 | 35 | 20 | 30 |
| 4 | Nuuanu-UH-Waikiki | | ✓ | ✓ | Urban Trunk | 4:59 AM | 12:20 AM | 12 | 20 | 15 | 45 | 30 | 30 |
| 6 | Pauoa-Woodlawn | | | ✓ | Urban Trunk | 5:03 AM | 11:57 PM | 20 | 22 | 22 | 35 | 25 | 45 |
| 9 | Pearl Harbor-Palolo Valley | ✓ | ✓ | ✓ | Urban Trunk | 5:10 AM | 11:26 PM | 15 | 45 | 15 | 60 | 40 | 50 |
| 11 | Aiea Heights-Honolulu | ✓ | ✓ | ✓ | Suburban Trunk | 5:38 AM | 10:20 PM | 30 | 60 | 30 | 100 | 60 | 60 |
| 13 | Liliha-Waikiki | ✓ | ✓ | ✓ | Urban Trunk | 4:09 AM | 12:24 AM | 12 | 15 | 12 | 20 | 15 | 15 |
| 19 | Hickam-Waikiki | ✓ | ✓ | ✓ | Urban Trunk | 4:04 AM | 1:45 AM | 40 | 40 | 40 | 30 | 50 | 50 |
| 20 | Pearlridge-Waikiki | ✓ | ✓ | ✓ | Urban Trunk | 5:14 AM | 7:35 PM | 38 | 40 | 38 | 0 | 60 | 60 |
| 40 | Makaha-Honolulu | ✓ | ✓ | ✓ | Suburban Trunk | 12:00 AM | 12:00 AM | 30 | 30 | 30 | 60 | 30 | 30 |
| 42 | Ewa Beach-Waikiki | ✓ | ✓ | ✓ | Suburban Trunk | 4:06 AM | 2:51 AM | 26 | 30 | 30 | 30 | 30 | 30 |
| 43 | Waipahu-Honolulu | ✓ | ✓ | ✓ | Suburban Trunk | 7:12 AM | 6:07 PM | 30 | 30 | 30 | -- | 30 | 30 |
| 52 | Wahiawa-Circle Island | ✓ | ✓ | ✓ | Suburban Trunk | 4:05 AM | 1:19 AM | 35 | 30 | 35 | 60 | 33 | 33 |
| 53 | Pacific Palisades-Honolulu | ✓ | ✓ | ✓ | Suburban Trunk | 4:48 AM | 11:27 PM | 25 | 35 | 25 | 60 | 35 | 60 |
| 54 | Pearl City-Honolulu | ✓ | ✓ | ✓ | Suburban Trunk | 4:57 AM | 11:10 PM | 20 | 30 | 15 | 60 | 30 | 30 |
| 55 | Kaneohe-Circle Island | | | ✓ | Suburban Trunk | 4:05 AM | 12:12 AM | 35 | 35 | 35 | 60 | 33 | 33 |
| 56 | Kailua-Kaneohe-Honolulu | | | ✓ | Suburban Trunk | 4:47 AM | 10:39 PM | 20 | 45 | 30 | 70 | 45 | 45 |
| 57 | Kailua-Honolulu | | | ✓ | Suburban Trunk | 5:00 AM | 11:27 PM | 20 | 30 | 20 | 60 | 60 | 60 |
| 57A | Kailua-Enchanted Lake | | | ✓ | Suburban Trunk | 5:03 AM | 6:33 PM | 30 | 60 | 60 | -- | 60 | 60 |
| 62 | Wahiawa Heights-Honolulu | ✓ | ✓ | ✓ | Suburban Trunk | 4:27 AM | 1:19 AM | 15 | 30 | 25 | 30 | 35 | 35 |
| 65 | Kaneohe-Honolulu | | | ✓ | Suburban Trunk | 4:48 AM | 10:37 PM | 15 | 70 | 20 | 70 | 75 | 70 |

**Downtown Neighborhood Transit Oriented Development Plan
 Appendix A-2
 Existing Bus Route Characteristics In 2011**

| EXISTING ROUTES | | STATIONS | | | SERVICE CLASSIFICATION | BEGIN SERVICE | END SERVICE | AVERAGE HEADWAYS | | | | | |
|-----------------|----------------------------------|----------|-----------|----------|------------------------|---------------|-------------|------------------|---------|---------|-------|---------|------|
| | | Iwilei | Chinatown | Downtown | | | | AM Peak | Mid-Day | PM Peak | Even. | Weekend | |
| No. | Destinations Served | | | | | | | | | | | Sat. | Sun. |
| 80 | Hawaii Kai Park-and-Ride Express | | | ✓ | Peak Express | 5:37 AM | 6:43 PM | 20 | -- | 22 | -- | -- | -- |
| 80A | Hawaii Kai Park-and-Ride Express | | | ✓ | Peak Express | 7:38 AM | 8:44 AM | 1 AM trip only | | | -- | -- | -- |
| 80B | Upper Aina Haina Express | | | ✓ | Peak Express | 6:23 AM | 7:10 AM | 1 AM trip only | | | -- | -- | -- |
| 82 | Hawaii Kai Park-and-Ride Express | | | ✓ | Peak Express | 5:28 AM | 6:09 PM | 30 | -- | 45 | -- | -- | -- |
| 81 | Waipahu Express | ✓ | ✓ | ✓ | Peak Express | 4:28 AM | 7:18 PM | 15 | -- | 20 | -- | -- | -- |
| 83 | Wahiawa Town Express | ✓ | ✓ | ✓ | Peak Express | 4:58 AM | 6:49 PM | 15 | -- | 20 | -- | -- | -- |
| 84 | Mililani Express-North | ✓ | ✓ | ✓ | Peak Express | 4:55 AM | 6:27 PM | 28 | -- | 30 | -- | -- | -- |
| 84A | Mililani Express-South | ✓ | ✓ | ✓ | Peak Express | 5:10 AM | 6:37 PM | 20 | -- | 20 | -- | -- | -- |
| 85 | Windward Express-Kailua | | | ✓ | Peak Express | 5:55 AM | 7:01 PM | 15 | -- | 19 | -- | -- | -- |
| 85A | Windward Express-Haiku | | | ✓ | Peak Express | 6:05 AM | 5:51 PM | 18 | -- | 30 | -- | -- | -- |
| 88 | Kahaluu-Ahuimanu Express | | | ✓ | Peak Express | 6:05 AM | 6:22 PM | 25 | -- | 38 | -- | -- | -- |
| 88A | North Shore Express | | | ✓ | Peak Express | 3:53 AM | 8:12 PM | 30 | -- | 43 | -- | -- | -- |
| 89 | Waimanalo-Kailua Express | | | ✓ | Peak Express | 5:42 AM | 5:37 PM | 38 | -- | 40 | -- | -- | -- |
| 90 | Pearl City Express | ✓ | ✓ | ✓ | Peak Express | 5:57 AM | 5:30 PM | 30 | -- | 30 | -- | -- | -- |
| 91 | Ewa Beach Express | ✓ | ✓ | ✓ | Peak Express | 4:30 AM | 7:20 PM | 20 | -- | 20 | -- | -- | -- |
| 92 | Makakilo City Express | ✓ | ✓ | ✓ | Peak Express | 5:10 AM | 6:28 PM | 20 | -- | 34 | -- | -- | -- |
| 93 | Waianae Coast Express-CBD | ✓ | ✓ | ✓ | Peak Express | 4:16 AM | 7:29 PM | 12 | -- | 20 | -- | -- | -- |
| 94 | Kapolei-UH Manoa | ✓ | ✓ | ✓ | Peak Express | 5:40 AM | 6:27 PM | 20 | -- | 20 | -- | -- | -- |
| 96 | Waipio Gentry Express | ✓ | ✓ | ✓ | Peak Express | 5:45 AM | 6:02 PM | 30 | -- | 40 | -- | -- | -- |
| 97 | Village Park Express | ✓ | ✓ | ✓ | Peak Express | 5:15 AM | 5:59 PM | 20 | -- | 30 | -- | -- | -- |
| 98 | Wahiawa-Mililani Park & Ride | ✓ | ✓ | ✓ | Peak Express | 5:12 AM | 6:28 PM | 30 | -- | 30 | -- | -- | -- |
| 98A | Kunia-Wahiawa-Mililani | ✓ | ✓ | ✓ | Peak Express | 4:55 AM | 6:29 PM | 32 | -- | 40 | -- | -- | -- |
| 101 | Ewa Gentry Express | ✓ | ✓ | ✓ | Peak Express | 4:57 AM | 6:25 PM | 20 | -- | 20 | -- | -- | -- |
| 102 | Villages of Kapolei Express | ✓ | ✓ | ✓ | Peak Express | 5:30 AM | 6:18 PM | 20 | -- | 35 | -- | -- | -- |
| 103 | Paiwa-Waialele Express | ✓ | ✓ | ✓ | Peak Express | 5:45 AM | 5:44 PM | 20 | -- | 25 | -- | -- | -- |
| 201 | Ewa Beach-Waikiki | ✓ | ✓ | ✓ | Peak Express | 4:45 AM | 6:23 PM | 15 | -- | 20 | -- | 20 | 20 |
| 202 | Waipahu-Waikiki | ✓ | ✓ | ✓ | Peak Express | 5:00 AM | 5:55 PM | 20 | -- | 25 | -- | 30 | 30 |

B APPENDIX

**Downtown Neighborhood Transit Oriented Development Plan
Appendix B-1
Local Bus Service With Implementation Of The HHCTCP**

| ROUTE | STATIONS | | | SERVICE CHARACTERISTICS | | | | |
|-------|----------|-----------|----------|---|---|---|--|---|
| | | | | Service Coverage | | Service Frequencies | | Routing Description (with Project) |
| | Iwilei | Chinatown | Downtown | Current | Proposed with the Project | Current | Proposed with the Project | |
| A | ✓ | ✓ | ✓ | Connects Waipahu with UH Manoa | Modified to operate between Kalihi Transit Center and Middle Street Station and UH Manoa | 15 minutes in peak and midday periods | 10 minutes in peak and 15 minutes in midday periods | Route A will provide limited stop service between Kalihi Transit Center and UH Manoa. The route will operate its current alignment between Kalihi Transit Center and the University. |
| B | ✓ | ✓ | ✓ | Connects Kalihi with Waikiki | Combined with Route 2 schedule | 15 minutes in peak and midday periods | 8 minute peak and 12 minute midday service | No change in alignment. |
| 1L | ✓ | ✓ | ✓ | Connects East Honolulu with Downtown Honolulu | Connects East Honolulu with Downtown Honolulu | 30-minute peak and off-peak service | 15 minutes in peak and 30 minutes in midday periods | No change in alignment. |
| 1 | ✓ | ✓ | ✓ | Connects East Honolulu with Downtown Honolulu and Kalihi | No change to route | No change to route | No change to route | No change in alignment. |
| 2 | ✓ | ✓ | ✓ | Connects Kalihi with Waikiki | Combined with Route B schedule | 11 to 12 minute peak and 15 minute midday service | 8 minute peak and 12 minute midday service | No change in alignment. |
| 3 | | ✓ | ✓ | Connects Kaimuki with Salt Lake | Modified to operate between Kaimuki and Downtown Honolulu. Salt Lake service will be provided by new Route 31 | 12 minutes in peak and 20 minutes in midday periods | 12 minutes in peak and midday periods | The eastern portion of the route will remain the same, the western portion will serve downtown via Beretania to left on Richards and left on King to return to Kaimuki. |
| 4 | ✓ | ✓ | ✓ | Connects Nuuanu with Waikiki via UH Manoa | Connects Iwilei with Waikiki via UH Manoa (Nuuanu service will be provided by restructured Route 17) | 12 minutes in peak and 20 minutes in midday periods | 15 minutes in the peak periods and 20 minutes in the midday period | Eastbound from Iwilei the route travels Nimitz to Pacific, right on Iwilei, right onto King to Hotel and right on Richards, left on King, to operate the Route 4 current alignment to University. The route continues on Dole to Saint Louis, right Waialae to Kapiolani, left Kaimuki, right on Kapahulu, right on Kuhio, right on Pau, left on Ala Wai, left on Niu to the terminus at Niu and Ala Wai. |
| 6 | | | ✓ | Connects Manoa, the University of Hawaii at Manoa, Ala Moana Transit Center with Downtown and Pauoa | No change to route | No change to route | No change to route | No change in alignment. |

**Downtown Neighborhood Transit Oriented Development Plan
Appendix B-2
Local Bus Service With Implementation Of The HHCTCP**

| ROUTE | STATIONS | | | SERVICE CHARACTERISTICS | | | | |
|--------|----------|-----------|----------|--|--|---|--|---|
| | | | | Service Coverage | | Service Frequencies | | Routing Description (with Project) |
| | Iwilei | Chinatown | Downtown | Current | Proposed with the Project | Current | Proposed with the Project | |
| 13 | ✓ | ✓ | ✓ | Connects Liliha with Downtown Honolulu and Waikiki | Modified to connect Liliha with Downtown Honolulu | 15 minute peak and midday service | 12 minutes in peak and 15 minutes in midday periods | Route will operate along the current Liliha portion of the alignment. Route will continue on Hotel Street to right on Richards and left on King Street, right on Punchbowl, left on Ala Moana, left on South to Alapai Transit Center. |
| 17 | | ✓ | ✓ | Connects Makiki and Ala Moana Center | Restructured Route 17 will connect Nuuanu with downtown Honolulu, Kakaako, Ala Moana Center and Makiki | 30 minute peak and 40 minute midday service | 10 minutes in peak and 20 minutes in midday periods | Eastbound from Old Pali and Niniko, the route travels along the current Route 4 alignment to Nuuanu continuing to Aloha Tower and Ala Moana, serving Kakaako and Ala Moana Transit Center. The route continues along the current Route 17 alignment serving Makiki to its new terminus at Nehoa and Lewalani. |
| 19 | ✓ | ✓ | ✓ | Connects Waikiki with the Honolulu International Airport and Hickam Air Force Base | Restructured route will connect Waikiki with Honolulu International Airport | 30 minute peak and 40 minute midday service | 15 minutes in peak and midday periods | Westbound from Waikiki, the route will follow its current alignment to the Airport Station. The route returns via the same routing with the exception that the route does not circle Ala Moana Center instead staying on Ala Moana Blvd. |
| 40/40A | ✓ | ✓ | ✓ | Connects Makaha with Ala Moana via Kapolei | Connects Makaha with Ala Moana via Kapolei | 30 minute peak and midday service | 15 minutes in the peak periods between West Loch Station and Waianae with 20 minute midday service. 20 service between West Loch and Ala Moana | Two minor changes in alignment. Route 40 will not provide service to the Hawaiian Waters Adventure Park. That service will be provided by new Route 419. Route will directly serve Iwilei Station via Kaaahi to King Street. |
| 52 | ✓ | ✓ | ✓ | Connects Northshore, Wahiawa and Mililani with downtown Honolulu | Connects Northshore, Wahiawa and Mililani with downtown Honolulu | 30 minute service. | No change to route | Minor alignment change from Dillingham, route will directly serve Iwilei Station via Kaaahi to King Street. |
| 54 | ✓ | ✓ | ✓ | Connects Pearl City with downtown Honolulu | Connects Pearlridge with downtown Honolulu via Red Hill | 38 minute peak and 60 minute midday service | 15 minutes in the peak and 20 minutes in the midday period | Route will operate from Kaonohi to Downtown Honolulu via Moanalua, and Red Hill to the Alapai Transit Center. |
| 55 | | | ✓ | Connects Kaneohe with downtown Honolulu | Connects Kaneohe with Honolulu | 30 minute peak and midday service | No change to route | Route will follow its current alignment to and from downtown Honolulu. The route will terminate at Aloha Tower via Bishop to left on Ala Moana Boulevard and left on Alakea. |
| 56 | | | ✓ | Connects Kailua and Kaneohe with downtown Honolulu | Connects Kailua and Kaneohe with downtown Honolulu | 28 minute peak and 45 minute midday service | No change to route | Route will follow its current alignment to and from downtown Honolulu. The route will terminate at Aloha Tower via Bishop to left on Ala Moana Boulevard and left on Alakea. |
| 57/57A | | | ✓ | Connects Sea Life Park, Waimanalo, Kailua with downtown Honolulu | Connects Sea Life Park, Waimanalo, Kailua with downtown Honolulu | 22 minute peak and 20 minute midday service | No change to route | Route will follow its current alignment to and from downtown Honolulu. The route will terminate at Aloha Tower via Bishop to left on Ala Moana Boulevard and left on Alakea. |
| 65 | | | ✓ | Connects Kaneohe with downtown Honolulu | Connects Kaneohe with downtown Honolulu | 23 minute peak and 60 minute midday service | No change to route | Route will follow its current alignment to and from downtown Honolulu. The route will terminate at Aloha Tower via Bishop to left on Ala Moana Boulevard and left on Alakea. |
| 80-82 | | | ✓ | Connects East Honolulu with Downtown Honolulu | No change to route | No change to route | No change to route | No change in alignment. |
| 88 | | | ✓ | Connects Kahekilo and Kahaluu with Downtown | No change to route | No change to route | No change to route | No change in alignment. |
| 88A | | | ✓ | Connects Northshore with Downtown | No change to route | No change to route | No change to route | No change in alignment. |
| 89 | | | ✓ | Connects Waimanalo with Downtown | No change to route | No change to route | No change to route | No change in alignment. |

Source: Adapted from Honolulu High-Capacity Transit Corridor Project Environmental Impact Statement; by the United States Department of Transportation Federal Transit Administration and the City and County of Honolulu Department of Transportation Services; June 2010; Appendix D.

C APPENDIX

Downtown Neighborhood Transit Oriented Development Plan Appendix C-1 Existing Bus Passenger Characteristics

| RIDER CHARACTERISTICS | ROUTE | | | | | | | | | SYSTEM |
|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| | A | B | C | 1 | 2&13 | 3 | 4 | 6 | 9 | TOTALS |
| Licensed driver | 35.1% | 45.3% | 51.0% | 39.4% | 59.7% | 50.2% | 63.2% | 56.0% | 44.8% | 42.6% |
| Had a vehicle available for trip | 59.1% | 17.7% | 25.0% | 19.0% | 28.8% | 24.6% | 33.4% | 22.9% | 20.9% | 33.5% |
| Student | 30.8% | 16.9% | 18.7% | 39.5% | 27.2% | 37.7% | 29.1% | 31.7% | 24.7% | 28.1% |
| Employed Full-time | 31.8% | 53.4% | 56.2% | 35.3% | 48.5% | 46.2% | 56.0% | 41.0% | 53.8% | 43.8% |
| Visitor or tourist | 0.4% | 4.1% | 1.0% | 1.7% | 6.8% | 3.5% | 4.4% | 2.3% | 1.3% | 7.3% |
| 18 years of age or younger | 32.2% | 14.5% | 13.5% | 26.2% | 13.4% | 15.7% | 10.0% | 20.0% | 19.4% | 14.2% |
| 65 years of age or older | 11.8% | 10.3% | 7.8% | 13.7% | 14.9% | 9.8% | 12.2% | 14.8% | 10.9% | 13.1% |
| Riding bus for 15 years or more | 2.1% | 11.7% | 30.6% | 28.6% | 28.8% | 22.2% | 28.1% | 33.8% | 35.9% | 19.2% |
| Rate TheBus as being good or better | 90.2% | 83.2% | 80.5% | 72.2% | 76.6% | 71.6% | 79.1% | 80.0% | 75.5% | 80.6% |
| On a work trip | 23.4% | 52.9% | 55.9% | 35.3% | 53.6% | 41.3% | 48.1% | 37.2% | 49.7% | 37.5% |
| On a school trip | 30.4% | 12.2% | 10.7% | 25.1% | 20.5% | 27.6% | 20.2% | 14.2% | 19.5% | 19.1% |
| On a shopping trip | 21.0% | 15.5% | 12.7% | 8.4% | 6.0% | 7.1% | 7.3% | 10.8% | 7.1% | 10.4% |

Source: Transit Rider Database and Bus Route Profiles Project; prepared for The City and County of Honolulu
Department of Transportation Services; prepared by Weslin Consulting Services, Inc.; February 2006.
Note: Routes E, 1L, 94 and 98A were not in service at the time of the Transit Rider Database and Bus Route Profiles Project.

Downtown Neighborhood Transit Oriented Development Plan Appendix C-2 Existing Bus Passenger Characteristics

| RIDER CHARACTERISTICS | ROUTE | | | | | | | | | SYSTEM |
|-------------------------------------|-------|-------|-------|-------|-------|-------------|-------|-------|-------|--------|
| | 11 | 19&20 | 40 | 42 | 43 | 52/55/62/65 | 53 | 54 | 56 | TOTALS |
| Licensed driver | 8.8% | 64.8% | 43.8% | 46.9% | 38.1% | 53.0% | 48.5% | 47.3% | 41.8% | 42.6% |
| Had a vehicle available for trip | 16.0% | 28.4% | 22.8% | 26.0% | 21.1% | 25.2% | 27.7% | 29.1% | 25.5% | 33.5% |
| Student | 22.1% | 16.0% | 23.6% | 32.0% | 17.7% | 27.2% | 21.4% | 17.0% | 46.6% | 28.1% |
| Employed Full-time | 31.9% | 51.3% | 52.3% | 54.3% | 50.8% | 47.0% | 44.8% | 56.7% | 43.4% | 43.8% |
| Visitor or tourist | 1.6% | 26.2% | 3.5% | 11.5% | 2.0% | 8.3% | 1.1% | 1.0% | 2.8% | 7.3% |
| 18 years of age or younger | 14.1% | 6.7% | 15.3% | 22.7% | 11.2% | 15.2% | 27.7% | 15.3% | 34.0% | 14.2% |
| 65 years of age or older | 36.3% | 17.6% | 5.4% | 5.0% | 15.1% | 7.5% | 17.7% | 22.5% | 6.4% | 13.1% |
| Riding bus for 15 years or more | 7.2% | 19.0% | 22.7% | 20.7% | 25.0% | 26.1% | 27.6% | 24.5% | 23.9% | 19.2% |
| Rate TheBus as being good or better | 90.8% | 86.2% | 68.7% | 72.8% | 87.7% | 76.4% | 87.7% | 84.0% | 65.0% | 80.6% |
| On a work trip | 24.3% | 47.1% | 46.9% | 44.8% | 32.0% | 45.8% | 28.0% | 52.5% | 32.9% | 37.5% |
| On a school trip | 17.3% | 2.6% | 13.5% | 16.8% | 2.7% | 15.9% | 13.9% | 12.9% | 23.0% | 19.1% |
| On a shopping trip | 14.7% | 9.8% | 11.6% | 8.0% | 13.8% | 6.9% | 13.5% | 9.9% | 8.6% | 10.4% |

Source: Transit Rider Database and Bus Route Profiles Project; prepared for The City and County of Honolulu
Department of Transportation Services; prepared by Weslin Consulting Services, Inc.; February 2006.
Note: Routes E, 1L, 94 and 98A were not in service at the time of the Transit Rider Database and Bus Route Profiles Project.

**Downtown Neighborhood Transit Oriented Development Plan
Appendix C-3
Existing Bus Passenger Characteristics**

| RIDER CHARACTERISTICS | ROUTE | | | | | | | | | SYSTEM TOTALS |
|-------------------------------------|--------|-------|-------|--------|-------|-------|--------|-------|-------|---------------|
| | 57&57A | 80/82 | 80A | 80B | 81 | 83 | 83A | 84 | 84A | |
| Licensed driver | 67.6% | 84.1% | 46.6% | 90.0% | 47.8% | 59.4% | 84.2% | 62.3% | 73.9% | 42.6% |
| Had a vehicle available for trip | 37.9% | 68.1% | 30.4% | 40.0% | 38.9% | 60.2% | 73.7% | 51.9% | 58.3% | 33.5% |
| Student | 28.1% | 11.7% | 61.4% | 0.0% | 7.0% | 13.1% | 15.8% | 6.5% | 20.8% | 28.1% |
| Employed Full-time | 53.0% | 83.8% | 39.6% | 100.0% | 85.1% | 77.6% | 100.0% | 90.7% | 79.2% | 43.8% |
| Visitor or tourist | 3.8% | 0.0% | 1.8% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 7.3% |
| 18 years of age or younger | 11.7% | 6.3% | 41.1% | 0.0% | 5.4% | 7.0% | 0.0% | 1.3% | 9.1% | 14.2% |
| 65 years of age or older | 10.1% | 7.1% | 1.8% | 14.3% | 6.8% | 4.5% | 0.0% | 5.3% | 4.5% | 13.1% |
| Riding bus for 15 years or more | 27.5% | 27.9% | 13.8% | 70.0% | 31.9% | 23.2% | 10.5% | 15.6% | 29.2% | 19.2% |
| Rate TheBus as being good or better | 81.3% | 90.3% | 84.2% | 100.0% | 73.5% | 85.1% | 100.0% | 90.9% | 81.8% | 80.6% |
| On a work trip | 52.8% | 82.8% | 29.3% | 100.0% | 87.2% | 79.0% | 94.7% | 89.6% | 82.6% | 37.5% |
| On a school trip | 15.9% | 8.6% | 55.3% | 0.0% | 4.9% | 11.9% | 5.3% | 7.8% | 17.4% | 19.1% |
| On a shopping trip | 5.3% | 1.4% | 3.4% | 0.0% | 0.0% | 2.9% | 0.0% | 1.3% | 0.0% | 10.4% |

Source: Transit Rider Database and Bus Route Profiles Project; prepared for The City and County of Honolulu Department of Transportation Services; prepared by Weslin Consulting Services, Inc.; February 2006.
Note: Routes E, 1L, 94 and 98A were not in service at the time of the Transit Rider Database and Bus Route Profiles Project.

**Downtown Neighborhood Transit Oriented Development Plan
Appendix C-4
Existing Bus Passenger Characteristics**

| RIDER CHARACTERISTICS | ROUTE | | | | | | | | | SYSTEM TOTALS |
|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|
| | 85 | 85A | 88 | 88A | 89 | 90 | 91 | 92 | 93 | |
| Licensed driver | 39.0% | 77.8% | 84.6% | 83.1% | 86.1% | 72.3% | 54.9% | 72.2% | 66.8% | 42.6% |
| Had a vehicle available for trip | 34.3% | 58.2% | 62.8% | 52.2% | 66.7% | 54.3% | 51.4% | 61.1% | 50.3% | 33.5% |
| Student | 64.0% | 23.7% | 17.9% | 28.6% | 10.8% | 16.2% | 16.1% | 16.4% | 16.7% | 28.1% |
| Employed Full-time | 39.8% | 77.1% | 80.5% | 72.9% | 81.1% | 75.4% | 78.7% | 85.5% | 73.7% | 43.8% |
| Visitor or tourist | 0.0% | 1.1% | 0.0% | 0.0% | 0.0% | 0.9% | 1.8% | 0.0% | 1.1% | 7.3% |
| 18 years of age or younger | 55.1% | 13.3% | 6.7% | 16.7% | 9.1% | 9.3% | 8.7% | 4.4% | 14.9% | 14.2% |
| 65 years of age or older | 2.0% | 3.3% | 2.7% | 3.0% | 0.0% | 5.6% | 4.7% | 1.5% | 6.6% | 13.1% |
| Riding bus for 15 years or more | 17.3% | 33.0% | 30.8% | 16.9% | 21.6% | 31.9% | 32.9% | 24.7% | 26.2% | 19.2% |
| Rate TheBus as being good or better | 62.2% | 82.7% | 86.1% | 72.9% | 84.9% | 85.4% | 77.4% | 88.4% | 82.8% | 80.6% |
| On a work trip | 35.0% | 76.3% | 80.8% | 71.9% | 92.1% | 79.8% | 83.0% | 89.0% | 73.6% | 37.5% |
| On a school trip | 62.1% | 17.8% | 12.8% | 18.3% | 7.9% | 14.3% | 11.1% | 9.6% | 12.3% | 19.1% |
| On a shopping trip | 0.0% | 1.0% | 3.8% | 1.4% | 0.0% | 1.7% | 1.4% | 1.4% | 3.4% | 10.4% |

Source: Transit Rider Database and Bus Route Profiles Project; prepared for The City and County of Honolulu Department of Transportation Services; prepared by Weslin Consulting Services, Inc.; February 2006.
Note: Routes E, 1L, 94 and 98A were not in service at the time of the Transit Rider Database and Bus Route Profiles Project.

**Downtown Neighborhood Transit Oriented Development Plan
Appendix C-5
Existing Bus Passenger Characteristics**

| RIDER CHARACTERISTICS | ROUTE | | | | | | | | | SYSTEM |
|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| | 96 | 97 | 98 | 101 | 102 | 103 | 201 | 202 | 203 | TOTALS |
| Licensed driver | 82.2% | 58.4% | 91.1% | 58.5% | 67.6% | 75.0% | 44.2% | 41.9% | 19.4% | 42.6% |
| Had a vehicle available for trip | 64.6% | 52.5% | 81.4% | 58.6% | 52.8% | 59.4% | 46.7% | 34.4% | 23.3% | 33.5% |
| Student | 8.9% | 16.2% | 7.1% | 9.9% | 8.4% | 9.7% | 3.2% | 2.3% | 3.4% | 28.1% |
| Employed Full-time | 92.1% | 78.6% | 92.1% | 86.8% | 83.3% | 90.0% | 86.2% | 91.6% | 90.3% | 43.8% |
| Visitor or tourist | 0.0% | 0.0% | 0.0% | 1.6% | 0.0% | 0.0% | 1.1% | 2.3% | 3.6% | 7.3% |
| 18 years of age or younger | 5.6% | 8.6% | 2.6% | 6.1% | 3.1% | 3.4% | 2.2% | 0.0% | 3.4% | 14.2% |
| 65 years of age or older | 5.6% | 5.4% | 5.8% | 9.4% | 1.0% | 0.0% | 1.1% | 3.9% | 0.0% | 13.1% |
| Riding bus for 15 years or more | 26.3% | 33.3% | 26.0% | 25.8% | 25.2% | 42.4% | 35.8% | 28.6% | 35.5% | 19.2% |
| Rate TheBus as being good or better | 90.8% | 76.1% | 87.6% | 89.3% | 74.8% | 80.7% | 84.9% | 88.6% | 80.0% | 80.6% |
| On a work trip | 88.0% | 80.2% | 95.8% | 84.5% | 82.4% | 90.6% | 89.6% | 93.0% | 74.2% | 37.5% |
| On a school trip | 8.0% | 15.8% | 1.9% | 6.2% | 3.7% | 9.4% | 2.1% | 0.0% | 3.2% | 19.1% |
| On a shopping trip | 0.0% | 0.0% | 1.2% | 2.6% | 3.7% | 0.0% | 0.0% | 0.0% | 0.0% | 10.4% |

Source: Transit Rider Database and Bus Route Profiles Project; prepared for The City and County of Honolulu Department of Transportation Services; prepared by Weslin Consulting Services, Inc.; February 2006.
Note: Routes E, 1L, 94 and 98A were not in service at the time of the Transit Rider Database and Bus Route Profiles Project.

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D APPENDIX

**Downtown Neighborhood Transit Oriented Development Plan
Appendix D-1
Existing Sidewalk Characteristics In 2011 By Sidewalk Width
Within One Quarter Mile Of The Iwilei Station**

| STREET SEGMENT DESCRIPTION | | | | | CURB LENGTH | SIDEWALK LENGTH BY EFFECTIVE WIDTH (feet) | | | | | | NUMBER OF CROSSWALKS |
|----------------------------|----------------------|-------|-----------------|------------------|-------------|---|--------|--------|--------|--------|----|----------------------|
| Segment | Street | Side | From | To | | none | 1 to 2 | 3 to 4 | 5 to 6 | 7 to 8 | 9+ | |
| 1 | Dillingham Boulevard | North | West TOD line | N. King Street | 1,700 | 0 | 0 | 1,500 | 0 | 200 | 0 | 1 |
| 2 | Dillingham Boulevard | South | West TOD line | N. King Street | 1,720 | 0 | 0 | 1,520 | 0 | 200 | 0 | 2 |
| 3 | N. King Street | North | West TOD line | East TOD line | 2,680 | 0 | 0 | 0 | 2,200 | 480 | 0 | 2 |
| 4 | N. King Street | South | West TOD line | East TOD line | 2,780 | 0 | 0 | 0 | 1,520 | 1,260 | 0 | 3 |
| 5 | Beretania Street | North | N. King Street | East TOD line | 520 | 0 | 0 | 0 | 0 | 520 | 0 | 1 |
| 6 | Beretania Street | South | N. King Street | East TOD line | 460 | 0 | 0 | 0 | 0 | 460 | 0 | 1 |
| 7 | Iwilei Road | North | West TOD line | N. King Street | 2,170 | 250 | 0 | 0 | 1,920 | 0 | 0 | 2 |
| 8 | Iwilei Road | South | West TOD line | N. King Street | 2,170 | 0 | 0 | 0 | 2,170 | 0 | 0 | 3 |
| 9 | Nimitz Hwy-Westbound | North | West TOD line | East TOD line | 1,500 | 600 | 0 | 0 | 580 | 320 | 0 | 2 |
| 10 | Nimitz Hwy-Westbound | South | West TOD line | East TOD line | 1,340 | 0 | 0 | 0 | 1,340 | 0 | 0 | 4 |
| 11 | Nimitz Hwy-Eastbound | North | West TOD line | East TOD line | 600 | 370 | 0 | 0 | 230 | 0 | 0 | 1 |
| 12 | Nimitz Hwy-Eastbound | South | West TOD line | East TOD line | 220 | 0 | 0 | 0 | 220 | 0 | 0 | 0 |
| 13 | Kaaahi Street | North | Dillingham Blvd | Fence | 590 | 0 | 0 | 0 | 590 | 0 | 0 | 1 |
| 14 | Kaaahi Street | South | Dillingham Blvd | Fence | 590 | 0 | 0 | 0 | 590 | 0 | 0 | 0 |
| 15 | Kaamahu Place | East | Fence | Fence | 500 | 0 | 0 | 0 | 500 | 0 | 0 | 0 |
| 16 | Kaamahu Place | West | Fence | Fence | 500 | 0 | 0 | 0 | 500 | 0 | 0 | 0 |
| 17 | Kaaahi Place | East | Kaaahi Street | End | 170 | 0 | 0 | 0 | 170 | 0 | 0 | 0 |
| 18 | Kaaahi Place | West | Kaaahi Street | End | 170 | 0 | 0 | 170 | 0 | 0 | 0 | 0 |
| 19 | Sumner | North | Gate | Nimitz Hwy | 1,250 | 0 | 0 | 0 | 1,250 | 0 | 0 | 1 |
| 20 | Sumner | South | Gate | Nimitz Hwy | 1,250 | 0 | 0 | 0 | 760 | 490 | 0 | 2 |
| 21 | Awa | North | Nimitz Hwy | Nimitz Hwy | 770 | 370 | 0 | 0 | 400 | 0 | 0 | 1 |
| 22 | Kuwili | North | Gate | Iwilei Road | 880 | 440 | 0 | 0 | 440 | 0 | 0 | 0 |
| 23 | Kuwili | South | Gate | Iwilei Road | 850 | 0 | 0 | 0 | 850 | 0 | 0 | 0 |
| 24 | Pine | East | Kuwili | Sumner | 280 | 0 | 0 | 0 | 280 | 0 | 0 | 0 |
| 25 | Pine | West | Kuwili | Sumner | 280 | 0 | 0 | 0 | 280 | 0 | 0 | 0 |
| 26 | Akepo Lane | East | N. King Street | Dillingham Blvd. | 590 | 490 | 100 | 0 | 0 | 0 | 0 | 0 |
| 27 | Akepo Lane | West | N. King Street | Dillingham Blvd. | 590 | 590 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | Robello Lane | East | N. King Street | West TOD Line | 830 | 830 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | Robello Lane | West | N. King Street | West TOD Line | 790 | 790 | 0 | 460 | 0 | 0 | 0 | 0 |
| 30 | Pua Lane | East | N. King Street | North TOD Line | 480 | 0 | 0 | 0 | 480 | 0 | 0 | 1 |
| 31 | Pua Lane | West | N. King Street | North TOD Line | 440 | 0 | 0 | 440 | 0 | 0 | 0 | 2 |
| 32 | Kanoa | North | West TOD line | Pua Lane | 180 | 180 | 0 | 0 | 0 | 0 | 0 | 1 |
| 33 | Kanoa | South | West TOD line | Pua Lane | 180 | 180 | 0 | 0 | 0 | 0 | 0 | 1 |
| 34 | Desha Lane | East | N. King Street | End | 150 | 150 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35 | Desha Lane | West | N. King Street | End | 150 | 150 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36 | Liliha Street | East | N. King Street | North TOD Line | 690 | 0 | 0 | 690 | 0 | 0 | 0 | 2 |
| 37 | Liliha Street | West | N. King Street | North TOD Line | 690 | 0 | 0 | 520 | 170 | 0 | 0 | 2 |
| Totals | | | | | 17,040 | 850 | 0 | 3,020 | 9,730 | 3,440 | 0 | 36 |
| Percent by category: | | | | | | 5% | 0% | 18% | 57% | 20% | 0% | |

**Downtown Neighborhood Transit Oriented Development Plan
Appendix D-2
Existing Sidewalk Characteristics In 2011 By Sidewalk Width
Within One Quarter Mile Of The Chinatown Station**

| STREET SEGMENT DESCRIPTION | | | | | CURB LENGTH | SIDEWALK LENGTH BY EFFECTIVE WIDTH (feet) | | | | | | NUMBER OF CROSSWALKS |
|----------------------------|----------------------|-------|----------------|----------------|-------------|---|--------|--------|--------|--------|-------|----------------------|
| Segment | Street | Side | From | To | | none | 1 to 2 | 3 to 4 | 5 to 6 | 7 to 8 | 9+ | |
| 1 | Nimitz Hwy-Westbound | North | West TOD line | River | 1,310 | 250 | 0 | 210 | 850 | 0 | 0 | 2 |
| 1 | Nimitz Hwy-Westbound | North | River | East TOD line | 1,310 | 0 | 0 | 340 | 970 | 0 | 0 | 6 |
| 2 | Nimitz Hwy-Westbound | South | West TOD line | Awa | 1,080 | 0 | 0 | 0 | 1,080 | 0 | 0 | 2 |
| 3 | Nimitz Hwy-Eastbound | North | West TOD line | Awa | 1,480 | 250 | 0 | 0 | 1,230 | 0 | 0 | 2 |
| 4 | Nimitz Hwy-Eastbound | South | West TOD line | River | 1,520 | 0 | 0 | 380 | 1,140 | 0 | 0 | 1 |
| 4 | Nimitz Hwy-Eastbound | South | River | East TOD line | 1,440 | 0 | 0 | 0 | 380 | 1,060 | 0 | 1 |
| 5 | N. King Street | North | West TOD line | East TOD line | 2,180 | 0 | 0 | 0 | 1,460 | 600 | 120 | 6 |
| 6 | N. King Street | South | West TOD line | East TOD line | 2,180 | 0 | 0 | 0 | 1,280 | 900 | 0 | 7 |
| 7 | Hotel Street | North | N. King Street | East TOD line | 1,480 | 0 | 0 | 0 | 260 | 530 | 690 | 5 |
| 8 | Hotel Street | South | N. King Street | East TOD line | 1,350 | 0 | 0 | 370 | 240 | 740 | 0 | 6 |
| 9 | Pauahi | North | River Street | East TOD line | 1,030 | 0 | 0 | 400 | 630 | 0 | 0 | 4 |
| 10 | Pauahi | South | River Street | East TOD line | 1,030 | 0 | 0 | 400 | 630 | 0 | 0 | 4 |
| 11 | Beretania Street | North | West TOD line | East TOD line | 920 | 0 | 0 | 0 | 0 | 920 | 0 | 1 |
| 12 | Beretania Street | South | West TOD line | East TOD line | 1,340 | 0 | 0 | 0 | 700 | 640 | 0 | 2 |
| 13 | Merchant Street | North | Nuuanu Avenue | East TOD line | 390 | 0 | 0 | 160 | 230 | 0 | 0 | 2 |
| 14 | Merchant Street | South | Nuuanu Avenue | East TOD line | 390 | 0 | 390 | 0 | 0 | 0 | 0 | 1 |
| 15 | Marin | North | Smith | Nuuanu Avenue | 220 | 0 | 0 | 220 | 0 | 0 | 0 | 0 |
| 16 | Marin | South | Smith | Nuuanu Avenue | 220 | 0 | 0 | 220 | 0 | 0 | 0 | 0 |
| 17 | Iwilei | North | West TOD line | N. King Street | 550 | 270 | 0 | 280 | 0 | 0 | 0 | 0 |
| 18 | Iwilei | South | West TOD line | N. King Street | 750 | 0 | 0 | 0 | 750 | 0 | 0 | 2 |
| 19 | Sumner | North | Nimitz Highway | Nimitz Highway | 280 | 0 | 0 | 0 | 280 | 0 | 0 | 0 |
| 20 | Sumner | South | Nimitz Highway | Nimitz Highway | 220 | 0 | 0 | 0 | 220 | 0 | 0 | 2 |
| 21 | River Street | East | Beretania | Nimitz Highway | 940 | 0 | 0 | 80 | 570 | 0 | 290 | 3 |
| 22 | River Street | West | Beretania | Nimitz Highway | 980 | 0 | 0 | 370 | 610 | 0 | 0 | 4 |
| 23 | Kekaulike Street | East | N. King Street | Nimitz Highway | 330 | 0 | 0 | 330 | 0 | 0 | 0 | 2 |
| 24 | Kekaulike Street | West | N. King Street | Nimitz Highway | 330 | 0 | 0 | 330 | 0 | 0 | 0 | 1 |
| 25 | Maunakea Street | East | Beretania | Nimitz Highway | 1,320 | 0 | 0 | 420 | 900 | 0 | 0 | 3 |
| 26 | Maunakea Street | West | Beretania | Nimitz Highway | 1,320 | 0 | 0 | 420 | 900 | 0 | 0 | 4 |
| 27 | Smith Street | East | North TOD line | Nimitz Highway | 1,220 | 0 | 0 | 400 | 820 | 0 | 0 | 4 |
| 28 | Smith Street | West | North TOD line | Nimitz Highway | 1,260 | 0 | 0 | 720 | 540 | 0 | 0 | 2 |
| 29 | Nuuanu Avenue | East | North TOD line | Nimitz Highway | 1,070 | 0 | 0 | 1,070 | 0 | 0 | 0 | 4 |
| 30 | Nuuanu Avenue | West | North TOD line | Nimitz Highway | 1,080 | 0 | 0 | 1,080 | 0 | 0 | 0 | 4 |
| 31 | Bethel Street | East | North TOD line | Nimitz Highway | 910 | 0 | 0 | 120 | 550 | 240 | 0 | 3 |
| 32 | Bethel Street | West | North TOD line | Nimitz Highway | 920 | 0 | 0 | 550 | 240 | 0 | 130 | 3 |
| Totals | | | | | 34,350 | 770 | 390 | 8,530 | 16,830 | 6,600 | 1,230 | 93 |
| Percent by category: | | | | | | 2% | 1% | 25% | 49% | 19% | 4% | |

**Downtown Neighborhood Transit Oriented Development Plan
Appendix D-3
Existing Sidewalk Characteristics In 2011 By Sidewalk Width
Within One Quarter Mile Of The Downtown Station**

| STREET SEGMENT DESCRIPTION | | | | | CURB LENGTH | SIDEWALK LENGTH BY EFFECTIVE WIDTH (feet) | | | | | | NUMBER OF CROSSWALKS |
|----------------------------|--------------------|-------|-----------------|-----------------|---------------|---|------------|--------------|---------------|--------------|--------------|----------------------|
| Segment | Street | Side | From | To | | none | 1 to 2 | 3 to 4 | 5 to 6 | 7 to 8 | 9+ | |
| 1 | Ala Moana Blvd. | North | West TOD line | East TOD line | 2,260 | 300 | 0 | 580 | 990 | 390 | 0 | 5 |
| 2 | Ala Moana Blvd. | South | West TOD line | East TOD line | 2,340 | 540 | 0 | 420 | 370 | 770 | 240 | 4 |
| 3 | Aloha Tower Drive | North | East TOD line | Dillingham | 1,790 | 460 | 0 | 0 | 0 | 820 | 510 | 2 |
| 4 | Aloha Tower Drive | South | East TOD line | Dillingham | 1,900 | 0 | 0 | 0 | 550 | 0 | 1,350 | 3 |
| 5 | Halekauwila Street | North | Richards Street | East TOD line | 850 | 0 | 0 | 850 | 0 | 0 | 0 | 0 |
| 6 | Halekauwila Street | South | Richards Street | East TOD line | 810 | 0 | 0 | 810 | 0 | 0 | 0 | 0 |
| 7 | Queen Street | North | Nimitz Highway | East TOD line | 1,930 | 0 | 0 | 910 | 1,020 | 0 | 0 | 6 |
| 8 | Queen Street | South | Nimitz Highway | East TOD line | 2,010 | 0 | 0 | 420 | 1,590 | 0 | 0 | 3 |
| 9 | Merchant Street | North | Nuuanu Avenue | Richards Street | 1,830 | 0 | 0 | 530 | 980 | 320 | 0 | 5 |
| 10 | Merchant Street | South | Nuuanu Avenue | Richards Street | 1,830 | 0 | 530 | 320 | 980 | 0 | 0 | 4 |
| 11 | S. King Street | North | West TOD line | East TOD line | 1,770 | 0 | 0 | 0 | 310 | 830 | 630 | 5 |
| 12 | S. King Street | South | West TOD line | East TOD line | 1,790 | 0 | 0 | 0 | 1,430 | 360 | 0 | 5 |
| 13 | Nuuanu Avenue | East | North TOD line | Nimitz Highway | 260 | 0 | 0 | 260 | 0 | 0 | 0 | 1 |
| 14 | Nuuanu Avenue | West | North TOD line | Nimitz Highway | 210 | 0 | 0 | 210 | 0 | 0 | 0 | 1 |
| 15 | Bethel Street | East | North TOD line | Nimitz Highway | 600 | 0 | 0 | 0 | 360 | 240 | 0 | 2 |
| 16 | Bethel Street | West | North TOD line | Nimitz Highway | 600 | 0 | 0 | 380 | 220 | 0 | 0 | 2 |
| 17 | Bishop Street | East | North TOD line | Aloha Tower | 1,420 | 0 | 0 | 0 | 660 | 280 | 480 | 4 |
| 18 | Bishop Street | West | North TOD line | Aloha Tower | 1,420 | 0 | 0 | 0 | 960 | 180 | 280 | 4 |
| 19 | Alakea Street | East | North TOD line | Ala Moana Blvd. | 1,200 | 0 | 0 | 200 | 620 | 0 | 380 | 3 |
| 20 | Alakea Street | West | North TOD line | Ala Moana Blvd. | 1,200 | 0 | 0 | 0 | 200 | 620 | 380 | 3 |
| 21 | Richards Street | East | S. King Street | Ala Moana Blvd. | 1,470 | 0 | 0 | 0 | 300 | 870 | 300 | 4 |
| 22 | Richards Street | West | S. King Street | Ala Moana Blvd. | 1,470 | 0 | 0 | 0 | 870 | 0 | 600 | 4 |
| 23 | Milliani Street | East | S. King Street | Queen Street | 440 | 0 | 0 | 0 | 360 | 0 | 80 | 1 |
| 24 | Milliani Street | West | S. King Street | Queen Street | 400 | 0 | 0 | 0 | 400 | 0 | 0 | 3 |
| Totals | | | | | 31,800 | 1,300 | 530 | 5,890 | 13,170 | 5,680 | 5,230 | 74 |
| Percent by category: | | | | | | 4% | 2% | 19% | 41% | 18% | 16% | |

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