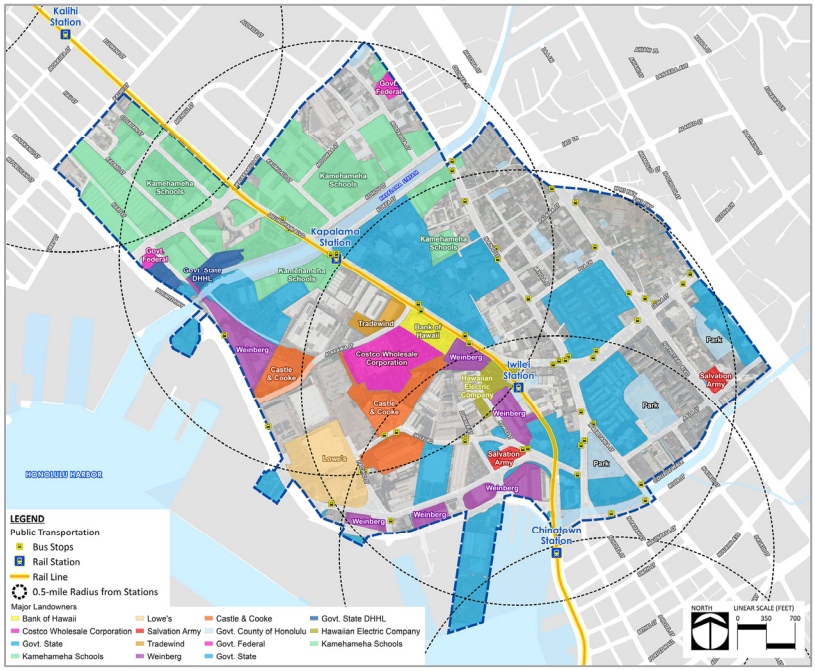
Iwilei/Kapalama Transit-Oriented Development Infrastructure Needs Assessment

Executive Summary

City and County of Honolulu

August 2018

Introduction



The City and County of Honolulu (City) has conducted the Iwilei/Kapalama Transit-Oriented Development (TOD) Infrastructure Needs Assessment to identify and advance improvements needed to support new development around the future Iwilei and Kapalama rail transit stations—in the heart of the City Center segment of the Honolulu Rail Project. As envisioned in the Downtown and Kalihi Neighborhood TOD Plans, the area will grow into an urban mixed-use neighborhood with housing, jobs, shopping, and services within easy walking distance of the rail stations. This transformation will require improvement of current infrastructure to support more transit-oriented land uses and densities.

The planning team (City staff and its consultants) has engaged public and private property owners and infrastructure agencies to identify these critical investments needed to accommodate anticipated growth, with a high priority on supporting affordable housing development. The assessment includes high-level cost estimates for infrastructure improvements, a phasing strategy, and other recommendations to support TOD. An associated study is exploring innovative financial tools to help fund the necessary improvements.

Development Estimates

The Iwilei and Kapalama stations are in an area that currently consists of primarily low-density industrial and commercial uses on large lots. Major landowners include several State of Hawaii agencies, Kamehameha Schools, Castle & Cooke, and the Weinberg Foundation. Due to the low-density character of existing development, close proximity to Downtown, and consolidated landownership, Iwilei/Kapalama is expected to see the highest levels of TOD in the entire rail corridor. Based on land and entitlement capacity, market demand, and landowner input, this study has anticipated that approximately 12,350 new housing units may be constructed over the coming decades.

The development estimates in the following table have been divided into the short (Phase 1: 0-10 years); mid (Phase 2: 11-25 years), and long-term (Phase 3: 26-40+ years). The first phase includes a significant amount of new housing on State-owned lands (e.g., at Mayor Wright Homes). There is also near-term development interest by private landowners, especially in the Kapalama Canal area. Throughout all phases of development, it is anticipated that the number of housing units will increase, while the total amount of commercial square footage (SF) will decrease slightly as industrial uses transition to residences or mixed

use. Although the total amount of commercial square footage is expected to be lower than today, 2.5 million square feet of new commercial development is anticipated as some buildings are demolished and commercial uses are replaced in mixed-use projects.

Existing and Anticipated Redevelopment by Phase

	Approximate Existing	Anticipated New Development			Anticipated Total*
		PHASE 1 1-10 years	PHASE 2 11-25 years	PHASE 3 26-40+ years	
Residential Units	3,030	4,460	3,820	4,760	15,200
Commercial SF	6,770,913	521,100	760,790	1,302,540	5,717,740

* Anticipated total assumes some existing units/SF will be replaced while other units and/or SF will remain. Development estimates subject to change.

Infrastructure Needs

The assessment concluded that nearly all infrastructure systems need to be upgraded to allow for the anticipated growth. The Iwilei area in particular has poor roadway connectivity, which negatively impacts pedestrian, transit, bicycle and vehicular access. There are also significant deficiencies in the drainage, electrical, and sewer systems throughout the district that limit development potential.

The total infrastructure investment needs identified through this study are in the range of $760 to $910 million[1], roughly one third of which is already funded or programmed by the City. The total unfunded infrastructure needs, for those improvements identified below, is roughly $450-475 million, which will need to be funded through a variety of sources, including both public and private contributions. Given the amount of needed upgrades, and the scale of expected development, it is impractical for landowners to make these improvements on a project-by-project basis. The following is a summary of unfunded infrastructure needs that have been identified and costed out. Strategies to address drainage deficiencies and sea-level rise, improvements to area schools, new emergency service facilities, and upgrades to smaller utility systems like natural gas have not yet been estimated.

- Mobility/Circulation: $160 million
- Sewer/Wastewater: $60 million
- Electrical: $45 million (excludes private utility funding responsibility)
- Parks/Recreation: $170 million

Mobility and Circulation Network

A new mobility and street network plan was developed to improve roadway connectivity, provide multimodal access, maximize development potential, and expand the utility network. The Street Network Plan outlines new facilities to improve connections to the rail stations and provide a finer-grained block pattern, along with improved sidewalks, lighting, bicycle facilities, and building/street interface. These improvements are also important for distributing vehicular traffic and providing additional routes for some anticipated growth in driving in the district.

The study assumed new roadways with a 66-foot right-of-way, irrigation and street trees, stormwater catch basins, and street lights. It is assumed that when these new roadways are constructed, sewer, water,

[1] All cost estimates are presented in 2017 dollars.

drainage and underground electrical utilities are also put in place. The new roadways and associated improvements are estimated to cost $110.3 million: approximately $11 million for Phase 1 and approximately $99 million for Phases 2 and 3.

Improvements to existing area streets, including North King Street, Waiakamilo Road, Liliha Street, and Vineyard Boulevard are estimated to cost $45 to $48 million.

Water System

The backbone water infrastructure is relatively strong in the planning area, however aging lines with frequent breaks will need replacement. New development must contribute to pay water system facilities charges, installation and any other charges as determined by the Board of Water Supply (BWS); and projects are required to include, within the project's property, localized water system improvements.

Broadly, the district needs replaced and upsized water mains in many existing roadways, and BWS has system capacity projects programmed through 2042. There may be $12.4 million in additional upgrades needed for fire protection, and new water lines are proposed to be provided with the construction of new roadways; the cost to install these new water lines is estimated to be $2.5 million and is included in the total roadway costs. These costs will increase in areas with petroleum soil contamination and where sea-level rise is expected to frequently expose water lines to brackish and ocean water.

Sewer System

Sewer and wastewater capacity is already constrained throughout the Iwilei/Kapalama area. With the anticipated increase in residential units, capacity will need to be increased, including upgrades to pump stations and local collection lines. There are several projects currently underway to improve regional capacity, including two phases of the Awa Street Wastewater Pump Station, Force Main, and Sewer System Improvements project. These upgrades are already funded or programmed in the City's six-year Capital Improvement Program (CIP) at a cost of roughly $240 million.

There is an additional $60 million need to provide new or upsize existing collection lines under existing streets in the neighborhood. New sewer lines may also be provided with the construction of the new roadways; the cost to install these sewer lines is estimated to be $3.7 million and is included in the total roadway costs.

Drainage System

The stormwater drainage system in Iwilei (the eastern portion of the planning area) is antiquated, incomplete, and in poor condition. Localized flooding occurs during heavy rainstorms due to low-lying areas, a lack of drainage inlets, inadequate storm sewer capacity, and insufficient pump capacity at the discharge location behind the Best Buy store. The City has initiated the Iwilei Drainage Study to determine the solution and cost for the current problem.

Exacerbating this situation is the oncoming challenge of sea-level rise, and associated higher groundwater tables, as well as the expected increase in the frequency and severity of flooding events as a result of climate change. The City is working through its new Office of Climate Change, Sustainability, and Resilience, as well as the US Environmental Protection Agency (EPA), to identify strategies for mitigating these impacts through both innovative infrastructure and development designs.

TOD redevelopment does create opportunities to soften the amount of hardscape in the area through low-impact development and green infrastructure, reducing flows into the City's drainage system. The

provision of new roadway connections also provide opportunities for expansion of the drainage system; the cost of including catch basins and reinforced concrete pipes under the new streets is estimated to be $10.6 million and is included in the total roadway costs.

Electrical and Telecommunications Systems

Utility poles, carrying electrical and telecommunication lines, run overhead throughout the planning area. All TOD areas, including Iwilei/Kapalama, will be required by ordinance to have new utilities or upgrades buried underground. Overhead lines that are in conflict with the rail guideway and safety clearance requirements will be relocated underground as part of the rail project.

The district's electrical system is also nearing capacity and needs upgrades to support the anticipated development. Suggested improvements to electrical facilities from this study are to extend 25-kV distribution circuits throughout Iwilei/Kapalama, provide a new 46-kV transmission line, provide additional transmission station and distribution substation capacity, and explore the need for a new substation in the area. The cost to upgrade and bury the distribution system, the 25-kV improvements, is estimated to cost between $62.1 and $68.1 million, while the 46-kV transmission improvements are estimated to cost between $13.4 and $45.6 million. These costs will be borne by landowners, the City, and Hawaiian Electric Company (HECO). Other system improvements are HECO's responsibility. Depending on who initiates a project (City, State, or private developers) and the improvements needed, funding mechanisms and responsibilities might vary.

Parks and Recreation

The broader Kalihi neighborhood is severely deficient in park space, and the Iwilei/Kapalama district is no exception. This is not surprising given its history as an industrial area and the lack of residences, particularly makai of Dillingham Boulevard. To ensure quality of life for future area residents, and to attract market interest in development, the district needs new park and recreational spaces within walking distance.

The City's current project to create a linear park along Kapalama Canal is a critical part of the area's transformation into a livable urban community. Another community park space within central Iwilei is also justified by the anticipated levels of development. The cost to complete all phases of the Kapalama Canal project is estimated at $108 to $122 million, depending on the dredging method and including the cost for Complete Street upgrades to Kohou and Kokea Streets. Revenues collected from development projects needing to satisfy park dedication requirements could be used to help provide recreational space in the district.

Implementation

The infrastructure projects identified by this study will be implemented by the City, the State, private utilities, and private developers. The City is developing an implementation and financing strategy for these improvements, working closely with the State, infrastructure agencies, and area landowners. This strategy will address infrastructure by type and phase. As part of this process, the City is evaluating the potential revenue that might be generated through a Community Facilities District (CFD) and/or an Improvement District (ID). Ultimately, the funding strategy for the Iwilei/Kapalama area could serve as a model for district-based financing in other TOD areas. As in other TOD areas, private provision of regional infrastructure will be considered a community benefit that may qualify projects for higher building heights and densities.

For the full infrastructure needs assessment report, as well as additional information on TOD planning for the Iwilei and Kapalama rail station areas, please visit www.honolulu.gov/tod.

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