

# Transit-Oriented Development in Hawai'i

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Economic Viability of TOD in Iwilei

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## **Abstract**

Mass transit will not only relieve congestion and provide access to the traditionally underserved on the Leeward Coast; it will influence growth and transform our urban landscape. Uncertainty surrounds the project because transit-oriented development (TOD) is a new concept to Hawai'i and the City & County of Honolulu is learning how to plan for and influence potential development along the alignment. This project can have vast implications and therefore government's role in planning and managing growth must be proactive.

Community workshops have been held in Waipahu, Pearl Ridge, Kapolei, and Leeward Community College to gather input for planning purposes. Developments are being planned in larger suburban areas and in the primary urban core where large land owners are located. These hold the greatest promise because single private entities will be able to coordinate land-use and planning to ensure TOD's promise.

Areas such as Iwilei, Chinatown, and Kalihi are more difficult because ownership of land is spread among many individual entities. Planning for TOD in these areas is more challenging and will likely require government assistance. Not much has been done in such areas to improve their decaying urban situation and yet they have the highest populations of low-income resident who ride public transportation. These are the areas in most need of revitalization and the people who live in these locations could benefit the most from transit and TOD.

Given this need, my research will focus on Iwilei station, an inner city TOD, with fragmented land ownership. This location has fragmented land ownership, but it also has

the neighboring public housing projects within a quarter mile walk from the station, which can provide immediate ridership. The surrounding light industrial areas and vacant or underutilized parcels are ideal for redevelopment.

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## Introduction

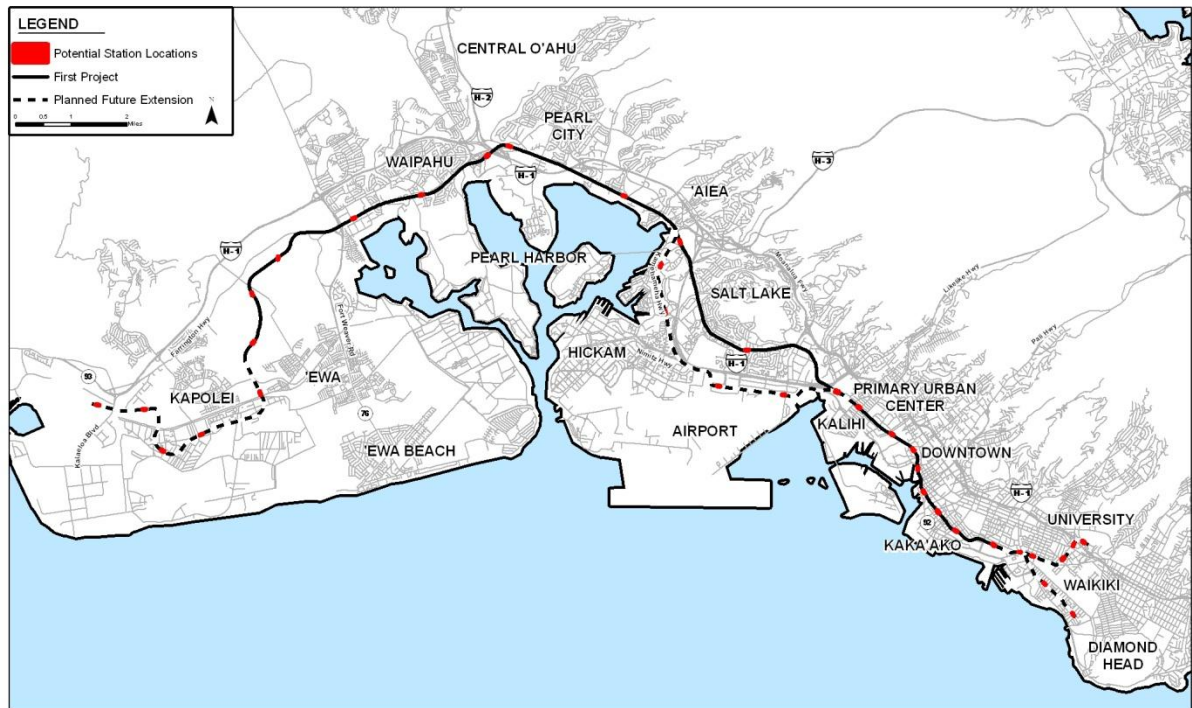
Many organizations in Hawai'i are asking questions about our changing way of life and most of them center on the notion of sustainability – *Is our economy diversified? Are we protecting the natural beauty of Hawai'i? Are our energy, transportation, and food systems enabling self-sufficiency?* The Hawai'i 2050 Plan created by the State of Hawai'i Sustainability Task Force attempt to address some of these issues at a state-wide level. Hawai'i 2050 asks "What is our carrying capacity? Where are we going? What is Hawai'i's preferred future?"<sup>1</sup> While Hawai'i 2050 doesn't make extraordinary progress in terms of answering these questions, it did launch these long-terms concerns into the consciousness of policymakers and residents alike.

On O'ahu, we have a project that may have the most direct and practical impact on sustainability and quality of life, yet it is primarily being looked at as transportation infrastructure for the purpose of alleviating traffic. But it is the so-called secondary impacts of this project that are bound to change O'ahu in a much more dramatic way than a standard road or rail endeavor. The Honolulu High Capacity Transit project presents an opportunity to manage our island's capacity and redirect growth and development so that we can sustain and improve Hawai'i's quality of life. This can result in more affordable and workforce housing in the city within walking distance to amenities and services, and a more holistic approach to our island and its economy.

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<sup>1</sup> State of Hawaii - Sustainability Task Force. "Hawaii 2050 Sustainability Plan: Charting a course for Hawaii's sustainable future." (Report, Honolulu, 2008.), 6.

**Figure 1. Honolulu Rail Transit Alignment**



Source: Data from City & County of Honolulu, Department of Transportation Services, <http://www.honolulutransit.org/library/> (accessed October 28, 2008).

## **Honolulu Transit Will Change the Urban Landscape and the Way We Live**

The Honolulu High Capacity Transit Project (HHCTP), the largest public works project in Honolulu's history, will break ground at the end of 2009. The project was put on the 2008 election ballot and the public voted 52% in favor of rail. There is discussion and speculation currently surrounding this issue, most of which focuses on budget concerns, politics, location of the transit stations and alignment, real estate speculation, and the type of transit technology to be used. Very little conversation is taking place beyond platitudes about how transit-oriented development will affect the livability of Honolulu.

There is little evidence that current city officials are making a proactive and early connection between transit and land use. The city has identified this issue to be addressed but their process in determining changes in land use near transit is unclear. If we are to increase density at stations what will it look like? The public doesn't understand this impact. If we don't increase our density in the PUC, what will the rest of the island look like as we continue to convert agricultural land to urban land?

Transit is not just a means of mitigating traffic congestion. It provides access to opportunities that aren't easily attained by those who live away from the urban center. Access to employment, shopping, education, civic spaces to engage in community activities, culture, and social services will be within reach for a small transit fee. The City is planning the same fare structure as the current bus fare with transfers between modes to be free.<sup>2</sup> It gives mobility to the young, old, and disabled in our society and it provides an additional transportation mode to automobile owners who would never ride the bus. Today, residents in our bedroom communities outside of the urban core travel a long distance to reach services and job opportunities. Current travel time from Ewa to Downtown is 88 minutes by bus and car.<sup>3</sup> (Figure 2)

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<sup>2</sup> U.S. Department of Transportation Federal Transit Administration and The City and County of Honolulu Department of Transportation Services, 6-6.

<sup>3</sup> U.S. Department of Transportation Federal Transit Administration and The City and County of Honolulu Department of Transportation Services, 1-5.

**Figure 2. Existing A.M. Peak-Period Travel Times**

**Table 1-1** Existing A.M. Peak-Period Travel Times (in Minutes)

	Travel Origin and Destination																
	From Wai`anae to Downtown	From Kapolei to Downtown	From `Ewa to Downtown	From Waipahu to Downtown	From Mililani Mauka to Downtown	From Pearlridge Center to Downtown	From Downtown to Ala Moana Center	From Downtown to Waikiki	From Downtown to UH Mānoa	From Airport to Waikiki	From Waipahu to Waikiki	From Downtown to Kapolei	From Wai`anae to UH Mānoa	From Kapolei to Ala Moana Center	From Salt Lake to Downtown	From `Ewa to Airport	From Airport to Downtown
2007 Base Year																	
Walk-to-transit	102	86	88	79	105	52	18	32	29	71	88	67	128	101	39	114	42
Auto travel time	100	89	88	58	84	35	14	19	18	35	69	32	109	94	26	75	25

Source: Graphic from U.S. Department of Transportation Federal Transit Administration and The City and County of Honolulu Department of Transportation Services, Honolulu High-Capacity Transit Corridor Project - City and County of Honolulu, Oʻahu, Hawaiʻi: Draft Environmental Impact Statement/Section 4(f) Evaluation, (Honolulu: City and County of Honolulu Department of Transportation Services, 2008), Table I-1.

Convenient access to employment, healthcare, recreation, retail, and other communities for hundreds of thousands of Oʻahu residents will transform our city, culturally, economically, socially, and geographically. It is critical to understand that we will not achieve maximum benefits of transit unless we carefully integrate transportation, land-use, and development. At present, there is little evidence that the stakeholders from these areas have had the opportunities to work together to achieve this.

### **Redirecting Growth from Suburbs to the Primary Urban Core**

In the next 25 years there will be 85,000 new homes added to the Ewa region and the Primary Urban Center.<sup>4</sup> Most of them will be developed by market-driven forces. Preventing additional sprawl on agriculture land is vital for the ecological and agricultural sustainability of our island state. Therefore redefining zoning for higher density, mixed use, and improving uses of existing vacant or underutilized sites within the urban core is a necessity as our population grows. Transit will influence where many of these new 85,000 units will be located, and we must consciously try to move new growth to development nodes along the alignment. The placement of each transit station in the urban fabric must acknowledge that transit and housing have a mutually reliant relationship. Ridership is dependent on resident demand and housing within one-half a mile of each transit station.<sup>5</sup> We must also be conscious in understanding that transit doesn't create new growth; it redirects and concentrates growth at specific development nodes.

Our present zoning laws force us to have automobile-centric planning and development. For example, many projects aren't approved unless a certain number of parking stalls per square foot are provided. Shopping centers in particular are required to provide parking stalls that ensure that the surrounding neighborhoods don't have to compete with shoppers during the busiest periods of the year. This sounds like community-friendly zoning, but the fact is that only slightly more than half of all parking stalls are being used at most shopping centers, which means that we are using valuable urban area land for parking, and we are creating a regulatory environment that virtually ensures

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<sup>4</sup> City and County of Honolulu Department of Planning and Permitting, 6.

<sup>5</sup> American Planning Association Hawaii Chapter, 20.

that people do their errands in their automobiles. Transit requires a total rethinking of city land use, and while the City asserts that they will create a transit-oriented development overlay zone<sup>6</sup>, much of this has yet to be articulated or explained publicly. The city must be careful to not take a set of zoning ordinances from another city and apply it to Hawai'i without considering our unique culture and way of life on O'ahu. This overlay zone is proposing to focus on intensifying uses surrounding transit stations following Smart Growth principles. Community and business input needs to happen concurrently to minimize opposition and ensure that this zoning is in alignment with market conditions and demand. Zoning should regulate in order to meet the needs of affordable housing but they should also be achievable from a developer's point of view.

We must also strongly consider incentives to redevelop infill projects in the PUC. Tougher restrictions should be applied to development that uses agricultural lands where city and state resources must be redirected to create infrastructure for master-planned communities while urban areas are left to decay.

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<sup>6</sup> American Planning Association Hawaii Chapter, 20.

## **Societal and Economic Trends Influencing Transit**

Major trends influencing transit stem from modernization and our dependency on automobiles. Robert Cervero, a U.S. authority on TOD and mass transit, classifies them into four categories - economic restructuring of our cities, motorization, changing nature of travel, and problems with automobile dependency.<sup>7</sup> These trends are creating large investments in mass transit projects and TOD.

### **Immigrants**

Cities during the 70's and through the 90's were experiencing an out-migration to the suburbs. Demographic and lifestyle changes are now redirecting growth and reinvestment back to America's metropolitan areas. The 2000 Census and Fannie Mae Foundation have shown that this growth in America's downtowns are a result of people moving back into the city and immigrants choosing to live in urban areas.<sup>8</sup> The Center for Immigration Studies shows a steady increase in immigrants in the United States (Figure 3). In Hawai'i, as of 2007 almost a quarter of our population on O'ahu are immigrants including their U.S. born children (Figure 4). Immigrants often come from cultures that use mass transit where automobile ownership is low. In Hawai'i they are usually low-income families that would benefit from the access and affordable housing choices that mass transit could provide. People of low-income and minorities make up a significant share of daily riders.<sup>9</sup>

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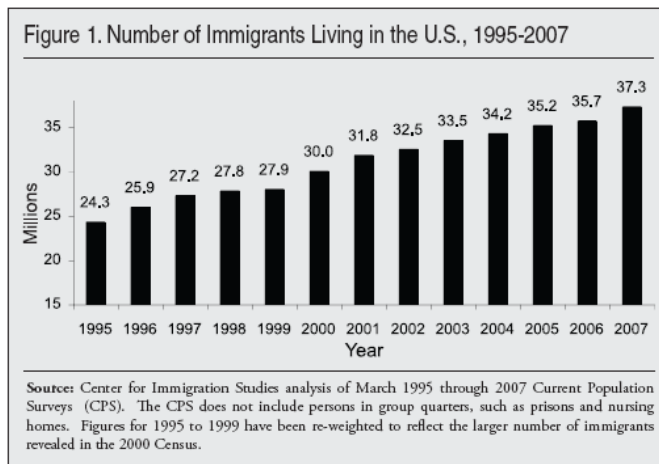
<sup>7</sup> Robert Cervero, *The Transit Metropolis: A Global Inquiry*, (Washington D.C., Island Press, 1998), 27-53.

<sup>8</sup> Dena Belzer and Gerald Autler, *Transit-Oriented Development: Moving from Rhetoric to Reality* (Washington, D.C.: The Brookings Institution Center on Urban and Metropolitan Policy and The Great American Station Foundation, 2002), Foreward.

<sup>9</sup> Robert T. Dunphy et al., *Developing Around Transit: Strategies and Solutions That Work*. (Washington D. C.: ULI-Urban Land Institute, 2004), 13.



**Figure 3. Number of immigrants living in the u.s. from 1995 to 2007**



Source: Data from Steven A. Camarota, "Immigrants in the United States, 2007, A Profile of America's Foreign-Born Population," Center for Immigration Studies, <http://www.cis.org/articles/2007/back1007.html> (accessed October 28, 2008).

**Figure 4. Immigrants by state – Hawai'i's immigrants and their u.s. born children share of the population is 22.2%**

Table 1. Immigrants by State, 2007 (thousands)

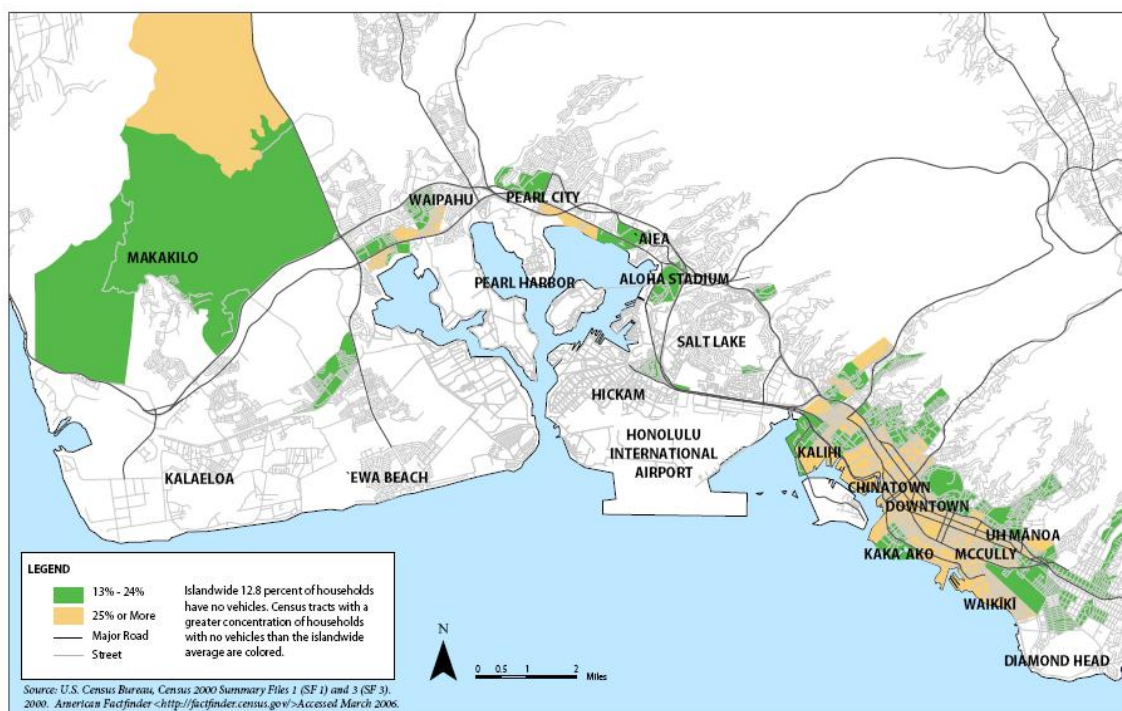
	Number of Immigrants	Share of Pop. that Is Immigrant	Immigrants Who Arrived 2000 to 2007 <sup>1</sup>	Immigrants and Their U.S.-Born Children (Under 18) as a Share of Population <sup>2</sup>
1 California	9,980	27.6 %	2,022	37.9 %
Los Angeles County	3,629	36.6 %	602	50.0 %
2 New York	4,105	21.6 %	877	27.9 %
New York City	2,918	36.0 %	593	46.7 %
3 Florida	3,453	19.1 %	1,068	23.8 %
4 Texas	3,438	14.8 %	1,071	21.0 %
5 New Jersey	1,869	21.6 %	501	27.5 %
6 Illinois	1,702	13.5 %	491	18.3 %
7 Georgia	953	10.2 %	383	13.3 %
8 Massachusetts	897	14.2 %	203	17.4 %
9 Arizona	891	14.2 %	284	19.7 %
10 Virginia	856	11.4 %	276	14.8 %
11 Maryland	731	13.0 %	276	16.3 %
12 Washington	722	11.4 %	239	14.7 %
13 North Carolina	623	7.0 %	282	9.4 %
14 Pennsylvania	581	4.7 %	154	6.0 %
15 Michigan	493	4.9 %	113	6.9 %
16 Nevada	457	18.0 %	105	25.2 %
17 Connecticut	443	12.8 %	134	15.9 %
18 Colorado	435	9.1 %	124	12.1 %
19 Ohio	421	3.7 %	139	5.2 %
20 Minnesota	375	7.3 %	135	9.8 %
21 Oregon	357	9.6 %	107	13.3 %
22 Tennessee	286	4.8 %	144	5.5 %
23 Wisconsin	257	4.7 %	81	6.1 %
24 Utah	239	9.4 %	79	14.1 %
25 Indiana	236	3.7 %	93	5.0 %
26 Hawaii	226	18.0 %	47	22.2 %
27 Missouri	208	3.6 %	77	4.4 %
28 Alabama	190	4.2 %	99	5.1 %
29 New Mexico	179	9.2 %	68	12.5 %
30 Kansas	148	5.4 %	66	7.8 %
31 South Carolina	144	3.4 %	67	4.5 %
32 Rhode Island	140	13.3 %	21	17.7 %

Source: Data from Steven A. Camarota, "Immigrants in the United States, 2007, A Profile of America's Foreign-Born Population," Center for Immigration Studies, <http://www.cis.org/articles/2007/back1007.html> (accessed October 28, 2008).

## **The Growth of Kapolei**

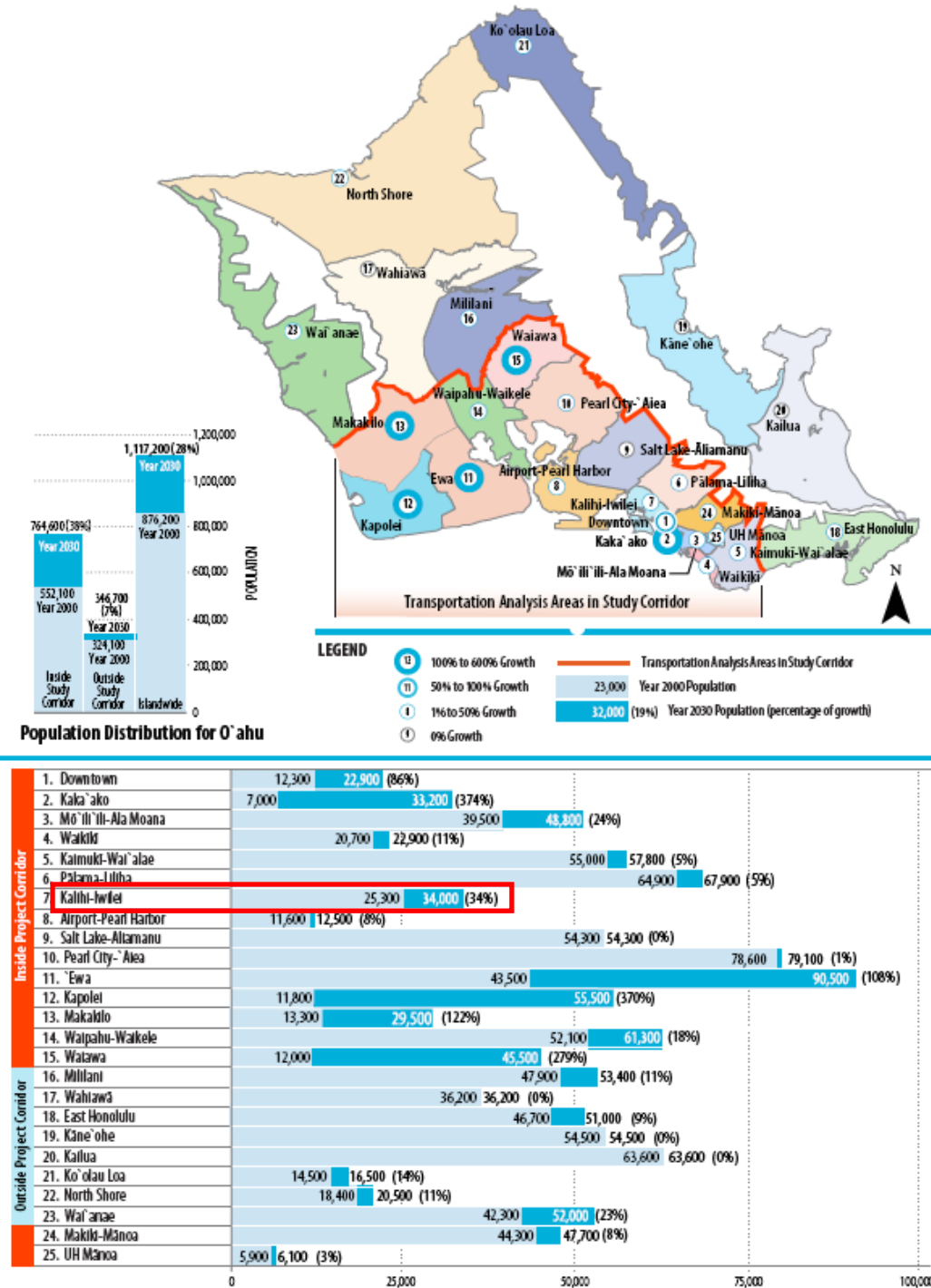
As America's suburbs mature, they struggle to become their own towns. Kapolei is a prime example of these growing pains. They are facing traffic congestion and the inconveniences of separated land uses. As a result, there is a growing demographic that desires TOD products. These people desire transit villages to improve their quality of life and lower their household expenditures by minimizing automobile costs and allow them to spend more time focusing on their family and health. On O'ahu the areas of significant population growth are Kaka'ako, Ewa, Kapolei, and Waiawa. (Figure 6) These areas do not have residents who are heavily dependent on transit. Most transit dependent riders are located in the urban core. (Figure 5)

**Figure 5. Concentration of Transit-dependent Households (2000)**



Source: Graphic from U.S. Department of Transportation Federal Transit Administration and The City and County of Honolulu Department of Transportation Services, Honolulu High-Capacity Transit Corridor Project - City and County of Honolulu, O'ahu, Hawai'i: Draft Environmental Impact Statement/Section 4(f) Evaluation, (Honolulu: City and County of Honolulu Department of Transportation Services, 2008), Table I-9.

Figure 6. Population Distribution for O'ahu



Source: Graphic from U.S. Department of Transportation Federal Transit Administration and The City and County of Honolulu Department of Transportation Services, Honolulu High-Capacity Transit Corridor Project - City and County of Honolulu, O'ahu, Hawai'i: Draft Environmental Impact Statement/Section 4(f) Evaluation, (Honolulu: City and County of Honolulu Department of Transportation Services, 2008), Table I-5.

### **Baby Boomers and The Creative Class**

America's demographic landscape is changing. People who favor city life are nonfamily households which according to the 2000 Census make up 31.9% of our population compared to married couples with kids at 29.5%.<sup>10</sup> These nonfamily households don't require large homes, which is ideal for compact, high-density developments like TOD. Within these growing demographics we see an overlap of baby boomers and young professionals seeking the same lifestyle.

Another demographic trend that is feeding the popularity of cities is a growing class of people called the Creative Class and the Cultural Creatives. Richard Florida's work on the Creative Class has shown that people desire to be at the center of places where they can be part of intellectual and creative endeavors. These people are moving to cities that have very distinct places and experiences. Florida writes, "What they look for in communities are abundant high-quality amenities and experiences, an openness to diversity of all kinds, and above all else the opportunity to validate their identities as creative people."<sup>11</sup> In Hawai'i, we are tolerant, diverse, and the experience of our culture and natural environment is unique. Signs of a growing high-tech and biotech sector and a thriving arts scene show that we are able to attract this Creative Class. Paul H. Ray and Sherry Ruth Anderson, authors of *The Cultural Creatives*, say their lifestyles focus on the desire for authenticity, are pro-environment, believe in

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<sup>10</sup> Hank Dittmar and Gloria Ohland, *The New Transit Town: Best Practices in Transit-Oriented Development* (Washington D.C., Island Press, 2004), 10-11.

<sup>11</sup> Richard Florida, *The Rise of the Creative Class*, (New York, Basic Books, 2002.), 218.

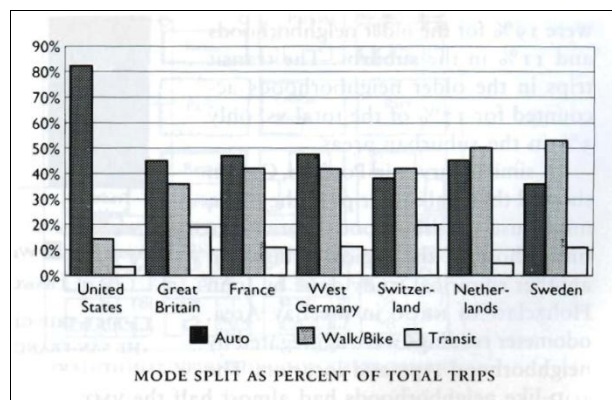
sustainability, choose voluntary simplicity when possible, and they want to rebuild their neighborhoods and communities.<sup>12</sup>

### **Motorization**

Motorization is seen as a sign of prosperity. In 1981, fifty-nine of the poorest countries in the world with 60% of the population owned fewer cars than Los Angeles residents.<sup>13</sup>

In the U.S., our auto ownership rates are 750 vehicles per 1,000 inhabitants. Compared to other developed countries our mode split is unbalanced towards the automobile. (Figure 7).

**Figure 7. Mode split as a percent of total trips by country**



Source: Data from Peter Calthorpe, *The Next American Metroplis: Ecology, Community, and the American Dream* (New York: Princeton Architectural Press, 1993), 47.

Motorization provides great social benefits by giving people economic and social choices. But the direct and hidden subsidies for car ownership are surprising. It is estimated that the dollar amount in subsidies range between \$300 billion to \$2,400 billion annually. Motorists only pay 60% of the total cost of roads, maintenance,

<sup>12</sup> Paul H. Ray, Ph.D. and Sherry Ruth Anderson, Ph.D., *The Cultural Creatives*, (New York, Three Rivers Press, 2000.), 29, 35-37.

<sup>13</sup> Cervero, 27-31.

administration, law enforcement, etc. In 1990, The World Resources Institute, Natural Resources Defense Council, Transportation Policy Institute, and the U.S. Transportation System Center did a study showing hidden subsidies between \$370 billion to \$780 billion annually.<sup>14</sup>

What was once an invention to save time and provide us with the means to get access to better homes, schools, and jobs is now creating traffic congestion and harming our environment.

**Figure 8. Same number of people on a bus and on the road impacts traffic dramatically**



Photograph by Collin Dunn.

### **Changing Nature of Travel**

Our travel patterns have changed since the invention of the automobile and recently our trips have become more frequent and longer in single-occupant cars. We perceive parking to be “free,” which it is often bundled into the cost of the goods we buy or the rents we pay. Families now have two earner households and many people often have

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<sup>14</sup> Cervero, 35-36.

more than one job requiring them to travel from job to job in a timely manner. Women for the last few decades have high numbers in the workforce and have more complicated travel patterns because they often have the responsibility of doing the family errands and picking up the kids from school. Gasoline was relatively cheap and single-use zoning made it basically mandatory to have a car.

This has all taken a toll on society. Over the last year we have seen gas prices sky rocket to more than \$100 per barrel, and back down again. We see traffic congestion getting worse by the month and hurting our pocketbooks and our quality of life. The majority of travel creating traffic is from Ewa to Honolulu. The number of jobs by 2030 on O'ahu will be largely in the PUC.

### **Problems with Automobile Dependency**

Increased traffic congestion affects society's day to day needs. In the U.S., roads take up 35% of all built space. Comparatively, in Europe it is 20-25%, and in the developing countries it is 10%. It's been calculated that the new social costs of traffic congestion is as high as 2 to 3% of the U.S. GDP.<sup>15</sup>

Air pollution due to auto emissions can be lowered by transit but we can't get the full benefits of reduced air pollution unless we align development patterns to transit nodes to reduce trips by internalizing them. In the U.S. we have 4.6% of the world's population yet we produce nearly a quarter of all energy-related carbon dioxide emissions.<sup>16</sup> Compact, mixed-use development along rail lines substantially reduces travel. It has

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<sup>15</sup> Cervero, 40.

<sup>16</sup> Cervero, 45.

lowered travel as much as 84% in Asia cities like Hong Kong, Tokyo, and Singapore.<sup>17</sup> U.S. energy consumption in comparison to other countries is alarming. We consume 25% of the all the petroleum that is produced with only a small fraction of the population. We consume 10 times as much as Japan, 20 times as much as a European city-dweller. Not only is this bad for the environment but our goods on the international market absorb this high cost of energy and we become less competitive as exporters.<sup>18</sup> Some argue that expenditures to construct rail systems could make them inefficient overall in saving energy. This would only be true if the development and new growth were not strategically planned along transit lines to yield the maximum benefits.<sup>19</sup>

Social inequities are made worse by our auto-dependent country. The poor, young, old, and the disabled are often shut out of what communities have to offer for a lack of mobility. For instance, can the kids from Ewa Beach Elementary visit the State Capitol or the Bishop Museum? Can children living in Waipahu find healthy after-school activities when their parents are still working? The rail can help to connect people to the amenities, public and private, of city life, regardless of their economic status.

### **Increasing Interest in Transit & TOD**

Cities around the U.S. are seeing increases in ridership due to traffic congestion, the high price of gasoline, and the desire to take back several hours in the day to more productive tasks. The wait for federal mass transit funding for a new project is now

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<sup>17</sup> Cervero, 79.

<sup>18</sup> Cervero, 46.

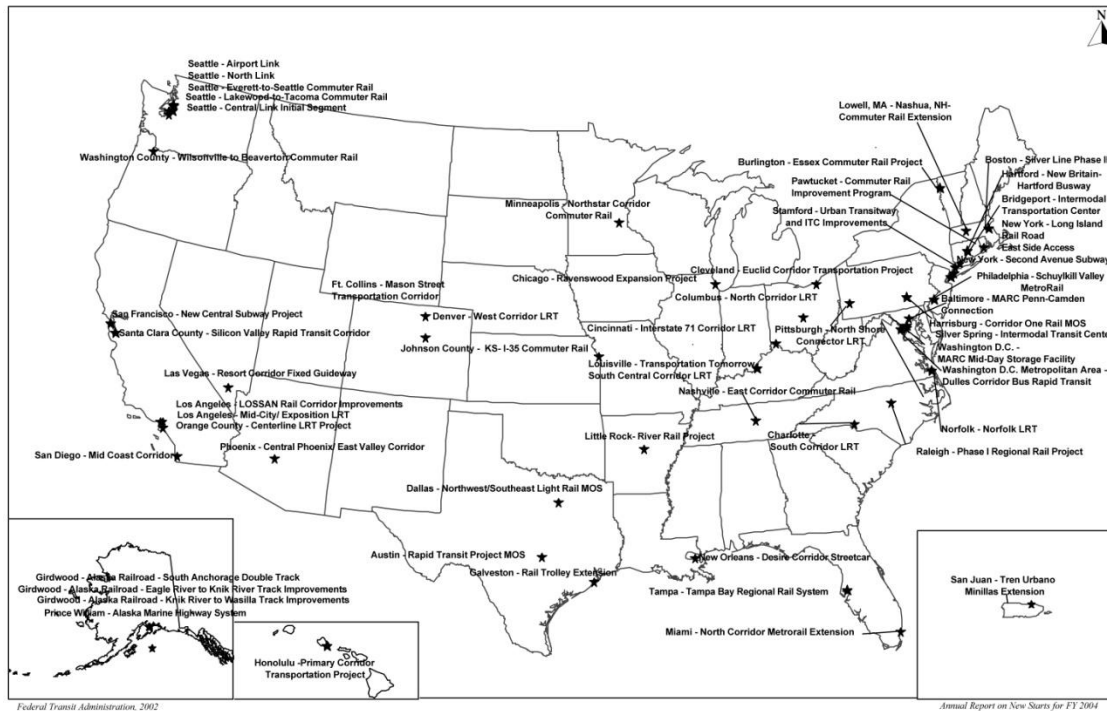
<sup>19</sup> Cervero, 47.



approximately fifty years because the demand is so great. Every major city in the United States is planning some type of mass transit project. (Figure 9)

**Figure 9. Current New Starts projects that are in the process of being funded**

### New Starts Projects in Preliminary Engineering and Final Design



Source: Federal Transit Administration, "New Starts Projects in Preliminary Engineering and Final Design," United States Department of Transportation, <http://www.fta.dot.gov/documents/figure2.pdf>, 2002 (accessed October 28, 2008).

## **The Promise of TOD**

TOD's definitions are often described according to their built form and not by their function. They are often described in terms of its design, density, and diversity. A unit per acre measurement does not tell us whether or not a place is more or less pedestrian friendly. Belzer and Autler identify six performance areas that try to focus on the core principles that make TOD a way to create authentic communities. The six reasons should be adapted to our island and unique way of life. The six performance areas are: <sup>20</sup>

### **Location efficiency**

“Location efficiency converts driving from necessity into an option.”<sup>21</sup> Reducing auto-dependency is a key component and is achieved by convenient and efficient transportation links and the ability to take care of everyday tasks near one's home. Other factors that encourage location efficiency are net residential density, transit frequency and quality, access to community amenities, and a good quality pedestrian environment. Mobility choices such as car sharing can also improve location efficiency.

### **Value Recapture**

When everyday functions are located close to a residence, people save money and time. Traditional development is usually auto-dependent because everyday functions cannot be done within walking distance; uses are generally separated. Measurable outcomes for Value Recapture are as follows:<sup>22</sup>

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<sup>20</sup> Belzer and Autler, 9.

<sup>21</sup> Belzer and Autler, 9.

<sup>22</sup> Belzer and Autler, 12.

- *Increased homeownership rates or more adequate housing, especially among borderline income groups. This can be accomplished through:*
  - *Increased use of location efficient mortgages.*
  - *Creation of housing units with lower-than-average parking ratios where the cost savings from parking reductions are passed on to consumers*
- *Reduced individual and community spending on transportation and therefore greater discretionary individual and community spending. This can include spending a portion of the collective savings on enhanced public amenities such as streetscaping, parks, or better transit.*

### **Livability**

Livability is one of the more important performance measures to focus on because it encompasses the other five measures. The problem with this measure is that it's subjective and difficult to quantify. Government entities believe it has to do with health, safety, and the well-being of its citizens. Private businesses emphasize the need to have economic stability. The average person when asked about livability just wants their basic needs met and a decent paying job. We must acknowledge we can't have health and well-being without financial stability and vice versa.

Livability issues that Belzer and Autler note are:

- *Improved air quality and gasoline consumption*
- *Increase mobility choices*
- *Decreased congestion/commute burden*
- *Improved access to retail, services, recreational, and cultural opportunities*

- *Improved access to public spaces, including parks and plazas*
- *Better health and public safety*
- *Better economic health*

### **Financial Return**

Public and private investors calculate and project their financial return when determining what to build and how. It's reasonable to expect that private investors will perform analysis to determine how to maximize profit for each of the parcels they own. But in order to make TOD work, the public sector must insert itself and change the equation in order to enable a more holistic approach. This can be accomplished in the form of land assembly, incentives, zoning restrictions, fast-track permitting, or fees from developers at the Department of Planning and Permitting level.

Belzer and Autler suggest these financial outcomes:<sup>23</sup>

- *For local governments: higher tax revenues from increased retail sales and property values*
- *For the transit agency: increased fare box revenues and potential ground lease and other joint development revenues*
- *For the developer: greater development opportunities and higher return on investment*
- *For employers: shorter and more predictable commute times, easier employee access*

*A balance between financial return and other goals of TOD so that projects are not judged purely on their monetary return*

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<sup>23</sup> Belzer and Autler, 14.

This requires a balance between the financial return and other goals of TOD. For example, a 30% affordable housing requirement often sounds good to government decision makers but stops all development, and is counterproductive. Jack Wierzenski, director of economic development and planning for Dallas Area Rapid Transit has said, "Big bureaucracies are not in tune with how developers work, and vice versa."<sup>24</sup>

### **Choice**

TOD provides more choices in housing types, places to shop, and modes of transportation. Belzer and Autler argue that enhanced choice includes:<sup>25</sup>

- *A diversity of housing types that reflects the regional mix of incomes and family structures*
- *A greater range of affordable housing options*
- *A diversity of retail types*
- *A balance of transportation choices*

### **Efficient Regional Land-use Patterns**

Pleasant Hill BART station in suburban San Francisco is an ideal example of a TOD station that has maximized benefits. It generates 52% fewer peak period auto trips than typical residential development. Trips are also shorter because services are readily available. Office development creates 25% fewer trips than typical office development.

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<sup>24</sup> Choi, Amy S. "Gridlocked: Transit-Oriented Projects Both Accelerate & Stall." (*Commercial Property News*, March 16, 2004), 10.

<sup>25</sup> Belzer and Autler, 15.

“When a significant number of origins and destinations in the region are well-linked to a station, transit becomes a much more viable option.”<sup>26</sup>

TOD can be used as a tool to create efficient land-use and channel growth. Belzer and Autler cite these results from efficient regional land-use patterns:<sup>27</sup>

- *Less loss of farmland and open space*
- *More suitable regional and sub-regional balance between jobs and housing*
- *Shorter commutes*
- *Less traffic and air pollution*
- *Station areas that can serve as destinations as well as origins*

This performance measure will be difficult to achieve because two-thirds of our alignment is in built up areas of our island. Land ownership in Hawai‘i is either fragmented by small landowners or owned by a handful of large landowners. Our opportunity to create TODs at station areas is limited unless aggressive land assembly is achieved. While large land owners plan for development it is unclear that anyone is currently reviewing how the system acts regionally. Not all transit stations should end up like shopping malls or strictly residential in nature.

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<sup>26</sup> Belzer and Autler, 16.

<sup>27</sup> Belzer and Autler, 16.

## Capture Zones and Land Values

It is widely accepted that the immediate impact zone is one-quarter mile radius from the station area, or roughly a ten-minute walk. Studies have been done of the impacts in these areas but the residual impacts throughout the neighborhood will go well beyond this boundary. Traffic will be redirected to other areas beyond the quarter mile radius. Our current road capacity may not be able to efficiently meet those changes. National data has shown that significant premiums can take place in properties within the impact zone.

City	Premium
Philadelphia	6.4%
Boston	6.7%
Portland	10.6%
San Diego	17%
Chicago	20%
Dallas	24%
Santa Clara County	45%

Source: Parsons Brinckerhoff. *The Effect of Rail Transit on Property Values: A Summary of Studies*.

The problem with these figures is that they are derived from different methods of analysis and therefore a totally valid and equal comparison is difficult. But through all the research it is understood that generally property values will go up.

Nuisance effects like noise and vibration do not affect property values because they can be minimized by good system design.<sup>28</sup> Rapid and commuter rails create an increase in property values more so than light rail because of its speed and regional reach. But

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<sup>28</sup> Parsons Brinckerhoff. *The Effect of Rail Transit on Property Values: A Summary of Studies*. (Cleveland: Parsons Brinckerhoff, 2001), 1.

generally the transit system's reliability, frequency, and speedy service are key to improving value.

However, building transit doesn't guarantee that property values will go up. Other conditions must exist in order for this to happen. A supportive policy and government environment, a growing real estate market, and a good economic climate must all be in play. In Hawai'i, we face challenges with all three of these conditions over the next several years, and an elevated rail may make a pedestrian friendly system more difficult. The choice to elevate the rail way may mean less use of eminent domain but in the end it raises the risks that we may not achieve a seamless walkable environment from transit stop to destination.



## **TOD Stakeholders/Players**

TOD projects are more complicated than traditional development because they require more parties to coordinate and collaborate, an integration of transit and land use, compact development, and mixed uses. TOD experts believe that transit agencies should take the lead in ensuring TOD projects happen even if it doesn't own any land around their transit stations, yet only 1 out of 5 transit agencies currently devote their time to this activity.

In the public sector there are three roles – redevelopment agencies, transit agencies, and local governments. Cervero states that transit agencies should promote TOD by:<sup>29</sup>

- Using agency held lands
- Underwrite land costs
- Assisting in land assembly
- Provide financial incentives
- Working out shared-parking agreements

State and federal agencies are important because of funding. For example the Federal Transit Administration considers transit supportive land use important criteria for making capital investment funding decisions on “new starts” public transit projects.<sup>30</sup>

DPP and DTS are the two City and County departments that are working on transit and TOD. There are no current plans for a transit authority because no consensus on roles and responsibilities could be agreed upon by the Mayor or the council. The Final TOD

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<sup>29</sup> Hess, 28.

<sup>30</sup> Hess, 28.

Bill suggests that DPP will assist in two of the five items Cervero suggests transit agencies should do to promote TOD. They suggest possible financial incentives in the form of tax incentives, development code amendments, public infrastructure investment, and favor shared parking arrangements; however they do not mention that they will assist in arranging shared parking. They have expressed that through the community workshops and planning they will identify vacant land and underutilized sites ripe for development.

The development community feels largely left out of the planning process. Many developers believe that the city will build transit and build it from an engineering standpoint. With the recent hiring of a TOD Coordinator at the Department of Planning and Permitting, the City has begun to engage developers and land owners in the TOD process.

## Density

Density has been perceived as an undesirable feature of developments for communities because it's often associated with crime, traffic, no parking, and bad architecture. However, it is one of the key elements to successful TOD and needs to be executed through good design. Arlington County in Virginia is a good example of creating higher densities through good design. In the 1970's the county began to focus their development along two rail lines. Less than 7% of the county's land area is high-density development but it generates a third of their real estate taxes.<sup>31</sup>

In urban areas, 15 units per acre on residential sites would be appropriate for a TOD project. U.S. residential projects are an average density of 4 to 5 units per acre.<sup>32</sup> Section 3.2.2.3 of the Primary Urban Center Development Plan specifically calls for densities within this range and greater.

***Density.*** Areas close to transit lines and the major east-west arterials should be zoned for medium-density residential, which may range from 13 to 90 units per acre, or high-density residential mixed use, which may range up to 140 units per acre. Neighborhoods in these zones would also include reinforcing uses which support resident lifestyle and livelihood choices, such as convenience or neighborhood stores, dining establishments, professional and/or business services, or other similar activities.

A study was done by the National Resources Defense Council in 2000 that showed vast differences between a high-density community and a low density suburban neighborhood in Sacramento, California. (Table I)

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<sup>31</sup> Local Government Commission. "Creating Great Neighborhoods: Density in Your Community." (Washington, D.C., National Association of Realtors, 2003.), 2.

<sup>32</sup> Hess and Lombardi, 26.

**Table 1. Walkability Indicators in Higher vs. Lower Density**

Distance to:	Metro Square (20 du/acre)	North Natomas (6 du/acre)
<b>Convenience store</b>	815 ft.	15,388ft.
<b>Supermarket</b>	1,941 ft.	14,458 ft.
<b>School</b>	1,962 ft.	17,181 ft.
<b>Bus Stop</b>	666 ft.	11,055 ft.
<b>Parks</b>	347 ft.	702 ft.
<b>Jobs in 1 mile</b>	29,266	0

Source: Local Government Commission. "Creating Great Neighborhoods: Density in Your Community." (Washington, D.C., National Association of Realtors, 2003.), 4.

Cervero recommends these residential density thresholds taken from case studies across the nation shown in Figure 10.<sup>33</sup>

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<sup>33</sup> Cervero, Robert, et al. *Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects*. (Research, Washington, D.C.: Transportation Research Board, 2004), 67.

**Figure 10. Recommended Residential Density Thresholds for TODs**

City/ Source	TOD Type	Minimum Residential Densities (Dwelling Units/Acre)
San Diego TOD Guidelines	<i>Urban TOD</i> (light-rail served)	25 (18)
	<i>Neighborhood TOD</i> (Bus served)	18 (12)
Washington County, Oregon (Land Use and Transportation Air Quality Study)	<i>Urban TOD</i> (light-rail served)	15 (7)
	<i>Neighborhood TOD</i> (Bus served)	8 (7)
Portland Tri Met, TOD Guidelines	<i>Light-Rail Served TOD</i>	30: 0–1/8 mi 24: 1/8–1/4 mi 12: 1/4–1/2 mi
	<i>Bus Served TOD</i>	24: 0–1/8 mi 12: 1/8–1/4 mi

Source: Graphic from Cervero, Robert, et al. *Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects*. Research, (Washington, D.C.: Transportation Research Board, 2004.), Table 4.1.

For commercial densities minimum FAR of 0.35 for nonresidential activities in TODs and 0.5 to 1.0 without structure parking and at least 2.0 for developments with structured parking. For employment, 50 jobs per gross acre will support light rail transit (30,000 jobs within a 1/2-mile radius of a station).<sup>34</sup>

<sup>34</sup> Cervero, Robert, et al., 69.

## Mixed-use

Mixed-use is already a very difficult real estate product to develop. “Financing can be difficult because the mixed-use projects are riskier and banks are not as familiar with them,” said Gerritt Knaap, Executive Director of the National Center for Smart Growth Research & Education in Maryland.<sup>35</sup> Even if mixed-use is difficult to develop, it is gaining more traction. In a joint research study by *National Real Estate Investor* and *Retail Traffic* magazines they performed a survey of developers and 52% say they are planning to develop mixed-use projects, but not necessarily with residential.<sup>36</sup>

In Hawai‘i, we face an even greater challenge because we do not have true mixed-use projects. We have retail or commercial tied to residential units as a necessary zoning requirement for developers to meet but not at the scale TOD stations will command. Many Hawai‘i residents have not experienced successful mixed-use projects and may not understand the benefits it can bring to a neighborhood.

A mix of uses doesn’t have to be in one station. It can be spread across two or more stations and especially in Hawai‘i since our stations are about half a mile to a mile apart in the urban core. Residents can live at one station, work at another, and shop at another station. This not only provides opportunities for each station neighborhood to develop its own unique character and offering but also sets the stage for a holistic regional development plan that leverages the use of transit and maximizes each station’s potential.

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<sup>35</sup> Choi, I2.

<sup>36</sup> Cassidy, Robert. "Timing It Right in Mixed-use." (*Building Design + Construction*, January 2007), 62.

Since mixed-use is another complicated component in addition to urban infill and development around transit, I will focus on mixed-use as it relates to the Iwilei station. The combination of uses will be particularly different from other stations located in the PUC because of the big box retail surrounding the area. The mix-use scale may be limited or in certain areas near affordable housing and along N. King Street maximized. Even though we all would like to see mixed-use in our neighborhoods because they minimize the automobile and provide a stage for a pedestrian-friendly environment, it may not be dominant in all stations. Mixed-use and TOD have become buzz words that developers want executed, but we also must recognize that in some station locations, there will never be the market demand for large scale mixed-use retail and finding the balance between internalized trips and leveraging the entire transit system and its stations is critical. Cervero has been direct in saying, “We have to promote development around transit everywhere. Given market realities, we have to accept that wholesale shopping – the Wal-Marts and the Costcos – is going to be here for a long time, so we have to give up in certain districts and design for efficient car use.”<sup>37</sup>

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<sup>37</sup> Hudnut III, William H. "Blurring Boundary." (*Urban Land*, May 2004), 76.

## **Proposed O‘ahu Land Use Regulations and Incentives**

In reviewing the City and County of Honolulu’s TOD Bill, it seems that zoning regulations will be developed for individual transit stations. The city acknowledges that the regulatory framework that governs land use and development must also have community input and address their needs. There is a suggestion of potential incentive programs to help facilitate TOD. They believe it will help manage urban sprawl and maintain the use of agricultural land and open space. The Land Use Ordinance will be amended to achieve these goals. Special districts will be identified around each station and the Neighborhood TOD plan serves as the basis of the TOD regulations.

In the TOD Bill there is no solid definition of what TOD is. They are careful to point out the objectives of TOD but whether or not developers must meet all or some of these objectives is to be considered TOD is unclear. A clear definition by all stakeholders must be agreed upon in order to work towards a focused unified goal of developing TOD. The objectives noted in the TOD Bill are:

*Sec. 21-9.100 Transit-oriented development (TOD) special districts.*

*Special districts shall be established around rapid transit stations to foster more livable communities that take advantage of the benefits of transit; specifically, reducing transportation costs for residents, businesses, and workers. While taking advantage of more efficient use of land, TOD can provide more walkable, healthier, economically vibrant communities, safe bicycling environments, convenient access to daily household needs as well as special events, and enhancement of neighborhood character, while increasing transit ridership.*



In the general objectives noted above, there is no mention of workforce or affordable housing. One of the main benefits of TOD is the opportunity to provide a mix of housing choices and different price points in one compact location. In reality it is difficult to say that all station locations will provide some form of affordable housing but some mention of mixing price points and product types should be considered. The bill does say, *“Potential opportunities for affordable housing, and as appropriate, with supportive services,”* but this does not require any level of affordable housing in station areas nor will we know if providing affordable housing will reward developers with financial incentives or density bonuses. The problem may lie in the fact that they must provide a TOD Bill in order to release funding for transit and have written the bill to be flexible in order to allow more specificity in TOD special district provisions. They have noted that they will address affordable housing in the neighborhood plans since each station has its varying degree of demand for affordable housing.

A quick review of the comments sent in by public and private entities show that TOD zoning will be added to special district provisions where each transit station resides. However TOD zoning will not override subdivision ordinances and rules. In the bill it states, *“Where a transit station is located within or adjacent to an existing special district, provisions for TOD shall be added to the existing special district provisions, as recommended by the neighborhood TOD plan.”* In actuality, this seems to be an additional layer on top of the current LUO and special district provisions that developers will have to deal with.

### **Concerns with the TOD Bill**

The first concern is the notion of encouraging housing choices is not apparent in the TOD Bill.

Second, there is no mention of any intention to ensure planning is being developed to analyze and ensure that each TOD station leverages each other in the entire region. There are only small mentions of the mechanics that need to be dealt with such as acknowledging that not all stations would benefit from affordable housing requirements and mixed-use development.

Thirdly, lack of any mention on design of the actual station, which is considered to be a DTS responsibility, is a problem. How the physical station is integrated with the surrounding services, retail, commercial, and residential is critical.

The fourth concern is the lack of describing the neighborhood planning process. DPP is concerned with any specificity in terms of how they do their planning because it may ignore other methods of participation, but the other side is that it allows a level of expectation that the public can count on from the City & County to get community input on these plans. It leaves a clear understanding that these neighborhood plans will be executed in a consistent manner that meets their own goals of an inclusive community-based approach to planning.

## **Mixed-income Housing**

Mixed-income housing near and along transit lines is critical. People who would qualify for affordable and workforce housing will ride transit and will benefit from the transportation savings that will allow them to be able to afford a home. Reviewing the list of comments by the public regarding O'ahu's TOD Bill the idea that certain communities may become gentrified appears frequently. Dunphy has clearly stated that, "Local agencies should link transit funding with the provision of affordable housing so that transit and housing can reinforce each other."<sup>38</sup> It seems to make more sense that the TOD Bill should note some minimum of affordable and workforce housing at each station area that currently includes what exists to be preserved.

Shoemaker cites three main approaches to encouraging mixed-income TOD:<sup>39</sup>

- Zoning and planning
- Financing
- Joint development and partnerships

### **Zoning and Planning**

Zoning should be used to create value capture for mixed-income housing by being flexible and providing incentives. For Hawai'i, affordable housing opportunities will be identified in Neighborhood Planning as noted in the TOD Bill. Currently, there is no intention of requiring affordable housing because DPP believes that certain areas on O'ahu would benefit from market-rate housing. Shoemaker notes that the most effective plans have a timeframe and a strategy for implementation. This strategy often addresses

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<sup>38</sup> Dunphy et al., 21.

<sup>39</sup> Shoemaker, 4.

the improvement of infrastructure with identified funding sources. To ensure success, plans should be implemented along with other tools like tax increment financing.<sup>40</sup>

When plans are done early it provides certainty to all parties.

Some potential zoning tools used in the past are:

- A floating TOD zone, which only applies when the market is ready for TOD rather than pre-zoning a station which can cause speculation.
- Incentive-based zoning like density and floor-area bonuses are awarded if affordable housing objectives are met by the developer.
- Inclusionary housing requires a percentage of development projects to be affordable to people earning less than the average median income. Inclusionary zoning often benefits government agencies because it doesn't require financing, land assembly, or acquisition. Generally it produces very little units and therefore doesn't make a dent in meeting market demand.
- In-lieu fees are sometimes allowed to give the developer flexibility but may be a bad idea if the local government doesn't own land to develop within the transit area.
- Inclusionary credit transfers, which work like transferable development rights allow developers to pool their credits together and give them over to a non-profit developer to create low-income housing within the area.
- Parking ordinances or the flexibility of parking ordinances is also key in supporting mixed-income projects.

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<sup>40</sup> Shoemaker, 5.

- Rentals should be accepted by the government if the developer will provide deeper affordability. This option allows developers to apply for low-income housing tax credits. Usually in these instances developers joint venture with non-profits to develop these units.

### **Financing**

Financing is one of the major challenges to TOD because the nature of mixed-use requires complicated financing structures. Traditional underwriting practices cannot be used in this type of development because such things like parking ratios should be different than traditional developments.

Robert Cervero suggests financial assistance mechanisms that encourage TOD which are used in California.<sup>41</sup>

- Income tax credits for development who build in designed station areas
- Tax abatements to underwrite cost of development
- Waive local development impact fees
- Strategic use of enterprise zones

Within the TOD Bill there is mention of using financial incentives to encourage TOD among developers, but no specifics. Recently, Senate Bill 3165 in the 2008 legislative session allowed a general excise tax exemption for projects that provided affordable rental housing or community health care facility within a mixed-use transit-oriented joint development project. Senate Bill 3165 did not pass and received mixed reviews from various rapid transit and TOD supporters. It remains to be seen whether or not the

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<sup>41</sup> Hess, 27.

City and State will take an aggressive approach at providing financial incentives to developers to help direct growth along the transit line.

### **Parking**

There is overwhelming agreement that parking is one of the barriers to successful TOD projects. The City & County has acknowledged that parking requirements should be relaxed in TOD special districts. Currently parking costs \$30,000 to \$35,000 per stall in Hawai'i. This is one factor that can lower their financial risk in developing and make their pro forma work.

Some of the barriers are:

- Requiring to build parking at ratios that meet traditional development guidelines, which take away from affordable housing and the goal of building compact developments
- Free parking, which encourages people to drive more
- Parking is bundled in the cost of a home and the cost could be the difference between qualifying for a mortgage or not

Flexible parking standards are required for TOD since every project is locally specific and unique. Four ways to deal with parking are suggested by the Urban Land Institute and mentioned by Belzer and Autler:<sup>42</sup>

- *Move it* – parking should be a 5 to 7 minute walk to the station
- *Share it* – parking needs should be coordinated according to surrounding uses
- *Deck it* – lowers the foot prints cost, but costly

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<sup>42</sup> Belzer, 28.

- *Wrap it* – provide ground floor retail

### **Joint Development and Partnerships**

Transit joint development occurs when a transit authority or other public entity owns land that surrounds a transit station that they can develop, lease, and build on. These entities can benefit from higher ridership and lease income and developers benefit from higher occupancy and sales volumes.<sup>43</sup> Currently, the City does not have any plans to acquire land for TOD. They do not necessarily view small lots as an obstacle to TOD as noted in Exhibit B of the TOD Bill. They have expressed that they will consider incentives for the private sector to assemble land if it is necessary for TOD to be successful.

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<sup>43</sup> Hess, 27.

## Today's TOD Challenges

*“To pull off a TOD, you need patience, money, and a high tolerance for pain.”*

*—Robert Dunphy, Senior Resident Fellow, Urban Land Institute*

Presently, many TOD's that have been developed or are being built do not meet the promises and maximum benefits that this type of product has to offer. In Dena Belzer and Gerald Autler's "Transit Oriented Development: Moving from Rhetoric to Reality," the following challenges were identified:<sup>44</sup>

- There is no agreed upon definition of what TOD should be
- Projects don't satisfy the notion that stations need to be a "node" within the regional framework and a "place" to ensure it integrates and serves the community
- There are no guidelines for designers and planners to follow that demonstrate how places work
- The regulatory and policy environment is often fragmented and there are many stakeholders with competing goals
- Market conditions may not support TOD

The City ought to view each station as a node within the regional framework. Immense emphasis is being given to the notion of place through community workshops but it

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<sup>44</sup> Dena Belzer and Gerald Autler, *Transit-Oriented Development: Moving from Rhetoric to Reality* (Washington, D.C.: The Brookings Institution Center on Urban and Metropolitan Policy and The Great American Station Foundation, 2002), 37.



seems that these exercises are a means of alleviating community fears more than determining the future of development within the realities of our economic climate. In the Final TOD Bill, Henry Eng, the Director of the Department of Planning and Permitting expresses that the bill “provides the broadest flexibility in creating neighborhood-specific regulations (and incentives) for TOD. The difficulty is that the proposed zoning code amendments precede the prerequisite planning. While the City has embarked on TOD planning for two (2) transit station areas in Waipahu, it cannot complete the entire neighborhood planning for almost two (2) dozen stations in the first phase of the transit line.”<sup>45</sup>

The current market conditions are volatile given a U.S. recession, increasing unemployment across the nation, and a slow tourism and real estate market at home in Hawai‘i. We have not had an economic crisis like this since the Great Depression, so the timing isn’t favorable for immediate development. Nonetheless, O‘ahu must focus on public policy and private initiatives that will develop transit adjacent employment centers and transit based housing.<sup>24</sup>

TOD developments take years to come to fruition. There are indications that developers and landowners are planning TODs but unless economic conditions are ripe and city planning accelerates and becomes more aggressive, we are likely to see a slow start.

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<sup>45</sup> Henry Eng, FAICP, Director’s Report, I.

The factors that affect the success of TOD can be organized at the station level and the regional and metropolitan level.<sup>46</sup>

**Regional and Metropolitan Level:**

- Includes station area factors
- The number of TODs
- Transit quality
- Transit technology
- Retail criteria
- Regional market structure
- Consumer activity patterns
- Travel behavior
- Zoning flexibility
- Housing type preference

**Station Level:**

- Legible street patterns
- Pedestrian accommodation
- Employment and housing density
- Commercial mix

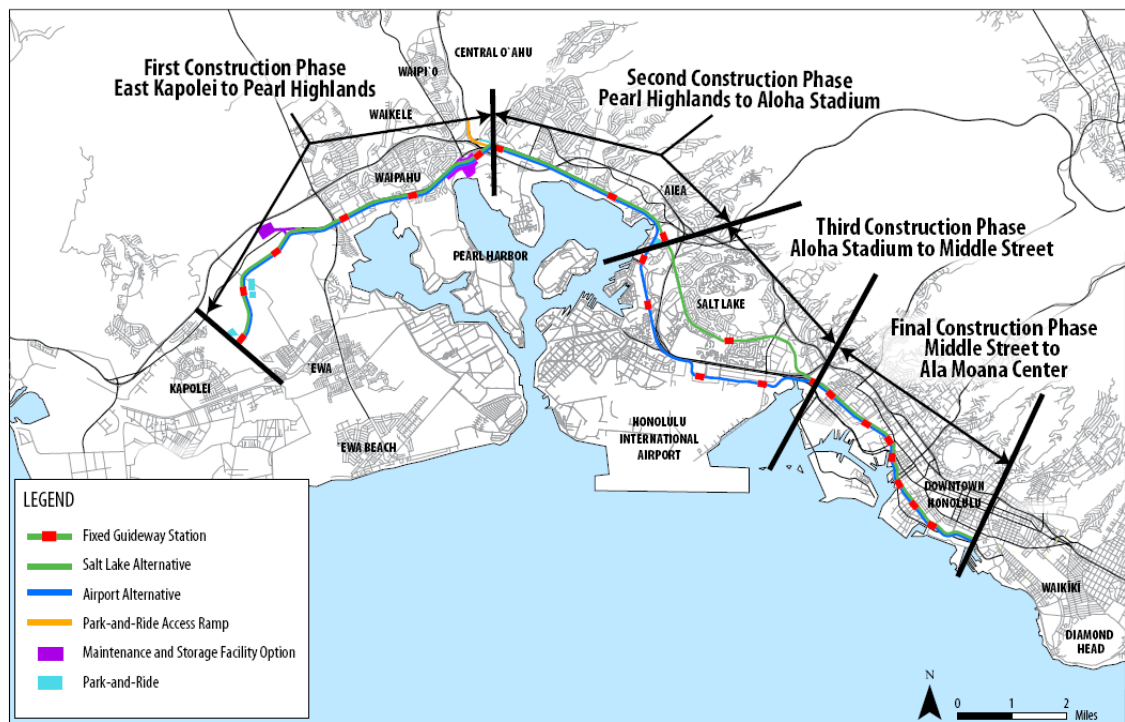
We currently don't have a clear picture from the City about these basics. In the Draft EIS it is noted that, "TOD planning would occur before fixed guideway stations are

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<sup>46</sup> Hess and Lombardi, 28.

constructed.”<sup>47</sup> This is encouraging, but development and implementation of the first construction phase, from East Kapolei to Pearl Highlands, starts in the latter half of 2009, which means that if TOD planning and community engagement doesn’t happen within a matter of months, it will not be completed in time for the launch of the project. (Figure 10 and 11)

**Figure 11. Project Construction Phases**



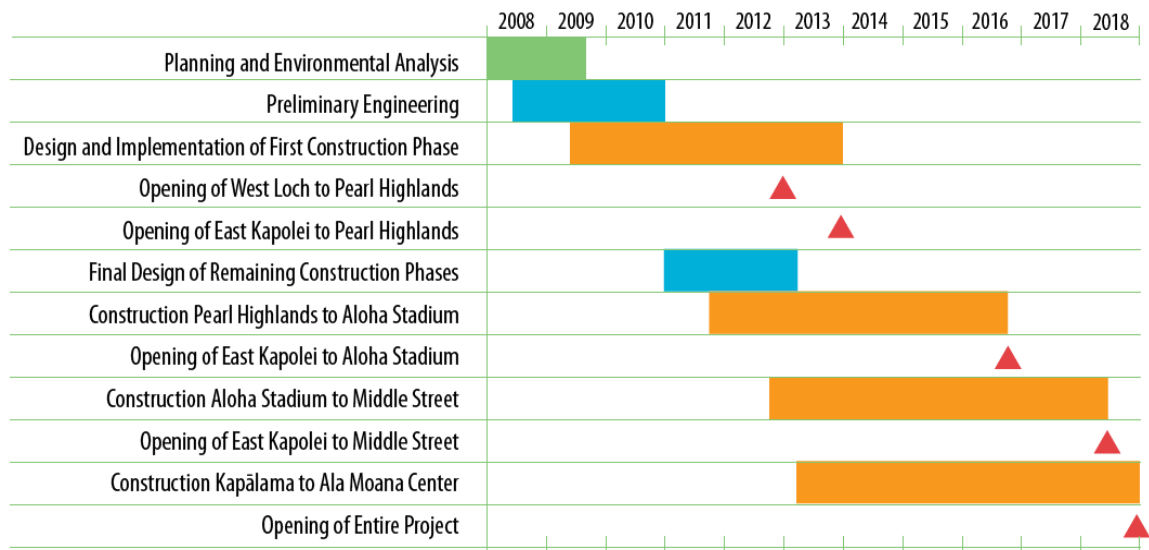
Source: Graphic from U.S. Department of Transportation Federal Transit Administration and The City and County of Honolulu Department of Transportation Services, Honolulu High-Capacity Transit Corridor Project - City and County of Honolulu, O’ahu, Hawai’i: Draft Environmental Impact Statement/Section 4(f) Evaluation, (Honolulu: City and County of Honolulu Department of Transportation Services, 2008), Figure 2-44.

Within less than six months we will begin construction on seven stations. The only community workshops were completed in Waipahu and a draft for public review should be available early next year. The most ideal situation would be to have outreach and

<sup>47</sup> U.S. Department of Transportation Federal Transit Administration and The City and County of Honolulu Department of Transportation Services, 4-13.

community input before construction of the stations begins. The council is requiring it to be done by 2010 and DPP believes there is no reason to rush this process and have requested an extension. The reason to place a sense of urgency on outreach and planning is to prevent a misalignment of constructing each station as a node in the transit system and the potential investment in development to create places within the regional framework.

**Figure 12. Project Schedule**



Source: Graphic from U.S. Department of Transportation Federal Transit Administration and The City and County of Honolulu Department of Transportation Services, Honolulu High-Capacity Transit Corridor Project - City and County of Honolulu, O'ahu, Hawai'i: Draft Environmental Impact Statement/Section 4(f) Evaluation, (Honolulu: City and County of Honolulu Department of Transportation Services, 2008), Figure 2-44.

Cervero points out that the decisions to develop are based on supportive land-use designations and whether or not the community has undergone the community planning process.<sup>48</sup> The degree of integration is critical to the long-term success of rail. Without

<sup>48</sup> Cervero, Robert, et al., *Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects*. Research, (Washington, D.C.: Transportation Research Board, 2004.), 86.

proper holistic planning and community engagement we might have stations planned and built by engineers with development adjacent to transit that ignores the notion of place. Getting community input is not enough. Timing all these moving facets is critical in securing support and investment to maximize on TOD's promise.

### **TOD Models**

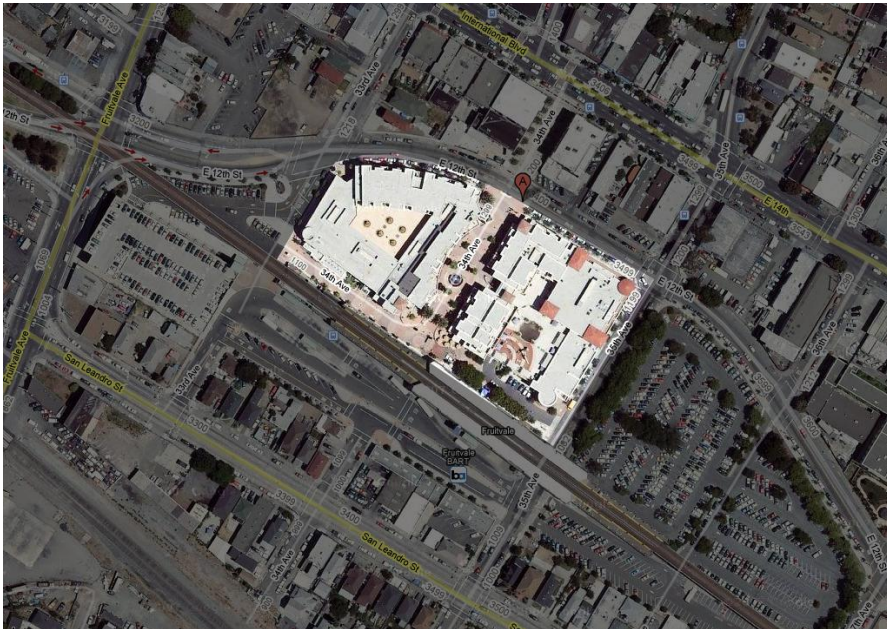
#### **Fruitvale San Francisco Bay Area Rapid Transit, Oakland**

Fruitvale is the most extensive inner city TOD in the United States, located 4.5 miles south of Oakland, California. There is a lot of research information on Fruitvale due to the fact that it is a noble attempt by a non-profit community development corporation to take a blighted area and develop a transit village. For the Iwilei station, there is much to learn about the process in how this project got started. Usually developers control the vision and then go into the community to communicate the vision and garner support. This development model was turned upside down by a non-profit community group called the Unity Council. With an established history in the community they were reacting to BART's desire to develop a parking structure to service the Fruitvale BART station. They held a series of meetings and forums in the community to develop alternatives. They were able to get a Community Development Block Grant of \$185,000 to initiate planning and design.

The project focused on a mix of social services, offices, and mixed-income residential. Phase I, which is the core of the 19 acre project, comprises of 37 market rate loft apartments, 10 affordable housing units, office space, retail space, seniors center, a Head-Start child development center, public library, and health clinic. Over the years this area experienced a growing Latino and Asian community. Many of Fruitvale's

neighborhood characteristics mirror Iwilei and provide an ideal model of how the residents and the local non-profit community of the neighborhood can proactively develop a vision for their community before the City or private developers come to them.

**Figure 13. Fruitvale Village, Oakland, California**



Source: Graphic from Google Maps



Source: Graphic from Google Maps

### Los Angeles Blue Line

The Los Angeles Blue Line is a 22-mile light rail system that goes through South Central Los Angeles to connect Los Angeles and Long Beach. The alignment is incompatible with the Centers Concept Plan, which is Los Angeles's document for policy directives on its future growth. To gain support for the line, many supporters pointed out improved access, mobility, and economic potential for the inner-city. Currently the land along the line remains abandoned because it lacks a few fundamentals. It lacks a population base and a concentration of activities. Physical amenities that make an area livable are also not available like parks, restaurants, convenience stores, and other businesses. There are also signs of abandonment and disinvestment, which encourage high crime rates and an extremely bad perception of the area. The property values along the line are also high.<sup>49</sup> Just like in Iwilei, the problem lies in the difficulty in assembling parcels and prospective house buyers who currently live in the community cannot meet credit requirements.

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<sup>49</sup> Loukaitou-Sideris, Anastasia, Access, "There's No There There" (Los Angeles, 1996), 5.

## **Critical Factors in Determining the Success of TOD in Honolulu**

### **1. Ridership**

Ridership matters for three reasons. First, the project needs the revenue. Second, high ridership will increase public support for additional lines. Finally, higher ridership can deliver critical mass for the purpose of TOD.

### **2. Large Parcels for Redevelopment**

These large parcels can be assembled from smaller ones, but however they are found or created, a successful TOD project depends on the ability to master plan a large enough piece of property to integrate various uses and create a pedestrian-friendly destination.

### **3. Flexible Zoning**

Zoning is always seen as a means to regulate for the safety, health, and well-being of the citizens but it should also be critically examined from the developer's point of view. For example, the current 30% affordable housing requirement imposed by the City and County is a noble cause but from a developer's perspective it is difficult to carry on this financial burden, especially when there are also extreme parking requirements and inefficient permit approval processes. At about \$30,000 per parking stall it could make a project unprofitable.

### **4. Government Initiated Land Assembly**

The government must be in the business of assembling land. Stations such as Kalihi and Iwilei all have small landowners and require the government to take a proactive role in assembly of land. It is part of the process to set up the area for



redevelopment. In our harsh development climate, it can be difficult for any developer to assemble land.

## **5. Incentives**

Incentives such as density bonuses and reduced parking requirements should be available for developers who provide a minimum amount of affordable housing.

## **6. Integrating Department of Transportation Services and Department of Planning and Permitting**

DTS and DPP are two silos that were meant to act independently of each other, but the success of transit and TOD requires an integrated look at both systems. Transit exists to serve development but currently transit is being planned as if development was an afterthought.

### **Getting TOD to Work Will Take Government Leadership**

Government can't be squeamish about getting TOD to work. There will be immense political pressure to keep cost low and regulation and incentives to a minimum from those who are concerned about the cost and scale of the rail project. These forces will continue to make the case that all decisions should be subject to a cost-benefit analysis strictly measuring the level of traffic reduction per dollar expended. If they prevail, taxpayers will have spent billions of dollars on a rail system without reaping the benefits of TOD.

If we leave the market to its own devices TOD will happen where the largest land owners are, but to reorganize a city around TOD you have to reorganize a city's regulatory framework. We must not build transit but be afraid to direct growth along the line. Because land assembly is so difficult the areas with the largest land owners are the most ripe for successful TOD. This is not good enough. If you want Kalihi and Iwilei to be revitalized the government has to be aggressive.

The United States Supreme Court's Kelo Decision essentially leaves it to states and municipalities how aggressively they want to utilize eminent domain. Since the highest court in the land now says that it is a matter of public policy rather than the constitution whether or not a government can condemn land for private purposes, we have a tough decision in front of us.

If the City wants to use eminent domain for land assembly, they need to start saying so, and articulating the reasons for this, otherwise they will have a fight on their hands that could further jeopardize public support for the overall project. If they decide that they don't want to use eminent domain, then they need to focus in on how to achieve land assembly without it.

### **Assessing the Likelihood of Public Sector and Private Sector Land Assembly**

Therefore the question of land assembly may depend on two factors:

1. The economics of private sector land assembly-in other words, is this doable without government intervention?
2. The willingness of the government to, either through eminent domain or financial, or permitting incentives, to make land assembly a priority

If it's not doable without the government, and the government is unwilling or unable to act, then we will not see well-planned TOD projects except in those areas where large parcels of land are owned. This model can work, but it ends up being happenstance (some would call this the free market) that determines where people live, work and play.

#### A Less Controversial Land Assembly Policy

Time is money, so if the government is squeamish about using eminent domain, then here the two most viable tools for policymakers:

#### **1. Fast-track permitting for developers who assemble land in specific target zones for TOD.**

This will no doubt precipitate complaints among some in the community who will view this as a step towards crony capitalism, but this is the lowest cost way to make TOD in the urban core viable.

#### **2. Financial incentives.**

This can come in several forms. First, tax abatements including future tax abatements can work in tweaking a financial analysis towards profitability. For instance, if projects of a certain size, and built within specified TOD zones, were to have all property taxes waived for the first decade, this could jumpstart a project. Second, in limited circumstances the conveying city or state property to a private developer, either through land swaps, or for cash, could be explored.

#### **3. Underwriting government owned land.**

To help with concerns on costs and encourage redevelopment proposals the government should purchase available land and assemble properties where opportunities arise and provide underwriting for the land so that it's cheaper for developers to build on government owned land rather than purchasing land outright.

### **Advantages and Disadvantages of Urban vs. Suburban TOD**

While the parcel I chose is in Iwilei, there are other viable sites for TOD. Below I've summarized the advantages of both urban core redevelopment and suburban development as a model for O'ahu TOD

#### **Why Iwilei and Lower Kalihi?**

**Public Policy:** TOD can revitalize these neighborhoods. They are already densely populated, but underserved in terms of economic, recreational, and commercial activities. TOD can change that.

**Economics:** Because of the population base and the close proximity to the major employment centers, critical mass can be built relatively quickly. Many of the most successful TOD projects are planted in the middle of urban areas.

**Planning:** Much of our other transportation, sewer, and other infrastructure is already paid for in Kalihi. TOD with a strong residential component in the urban core will not strain the resources of the government in quite the same way that a similar project would in the Ewa Plain.

#### **Why West O'ahu?**

**Public Policy:** The City and the State have long targeted Kapolei as the Second City on O'ahu, and it still struggles to meet those goals. With TOD in places such as Waipahu and Kapolei, there will be less of a reason for West O'ahu residents to leave their city

and go to downtown Honolulu. These projects would likely not require the level of government intervention required for TOD in the PUC, because the parcels are larger and less expensive, and land assembly will be easier.

**Economics:** Less expensive land, larger parcels, and proximity to the first part of the transit line make this area more attractive.

**Planning:** This will distribute growth across the island, and would allow TOD to occur where the market allows, not where planners direct. Therefore, where TOD occurs should not be viewed as an either/or proposition, but a both/and opportunity. We ought to be doing both.

## **A Broader Vision for Iwilei, Kalihi**

Inner city areas such as Iwilei and lower Kalihi have strong potential to benefit the most from TOD. For example, while Dillingham Blvd. is not currently a prime place to live, when the rail is built it will be two stops from downtown Honolulu, and only a few more to Ala Moana Center, which may create a different kind of energy and investment in this community.

Inner city areas are the most challenging locations for TOD compared to suburban or greenfield locations, but without growth in the inner city TOD cannot happen. Cervero has said, “Transit investments redistribute growth (instead of generating it) and that there must be growth to redistribute for development to occur.”<sup>50</sup> Gentrified, affluent neighborhoods are seeing TOD projects happen such as the Kaka‘ako redevelopment district and Kapolei.

According to Hess and Lombardi there is sparse information regarding TOD as a tool for urban infill and revitalization, particularly in the inner city. Most inner city TODs are single building projects and not transit village developments because urban areas are often built out and it’s difficult to assemble land. The advantage is that urban areas have the current density to make TOD successful. The only inner city transit village developed within the past decade was Fruitvale Village in Oakland.

Barriers to creating TOD in the inner city have been studied and documented by Anastasia Loukaitou-Sideris, the Department Chair and professor at the UCLA Department of Urban Planning. These barriers listed below came from a study that was

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<sup>50</sup> Hess, 16.

done on the Blue Line that runs through South Central Los Angeles. The Blue Line lacked activity near stations, neighborhood amenities, public sector commitment to development, and a strong local economy. The barriers she notes are:<sup>51</sup>

- Disinterest of private sector to invest in the inner city
- Lack of market demand because mixed-use is expensive
- Competitive disadvantage of inner city
- Stigma of inner city location
- Lack of finance for inner city locations
- NIMBY-ism

Barriers to TOD are often discussed and often times a project is considered a success because it is built not by how it functions and performs. The barriers discussed are often similar to high-density infill projects that have nothing to do with transit. It's difficult to say if these barriers are truly because of TOD.

Throughout the literature there are examples of developments adjacent to transit that took advantage of the allowed higher-density but kept the number of standard parking stalls typical of suburban development. The mix of uses is often skewed in the direction of offices reducing the effect of location efficiency where you can live, work, and play in one area. The improvements are marginal. We must be careful that we don't define TOD based on whether it looks like TOD but whether it functions and performs like TOD should by reducing auto-use, increasing mode splits, creating internal trip captures, and providing location efficiency.

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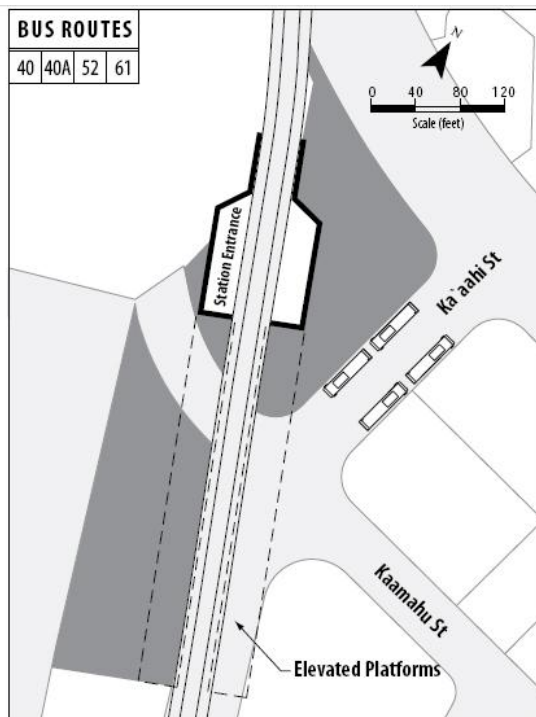
<sup>51</sup> Loukaitou-Sideris, 91.

O'ahu may experience some of these challenges, but Iwilei is not Compton, and while it is a lower-income area, it presents nowhere near the cultural, economic, and crime challenges that South Central Los Angeles has. Iwilei is ripe for redevelopment because it is the last remaining affordable land in the PUC.

### **Iwilei Station**

The station is located on two parcels, one owned by HECO, which is currently used as a car lot. The other parcel is 545 Kaaahi St., which is owned by Nuuanu Auto Company Ltd. It will run from Kaaahi St. through the intersection of Kaamahu St. and Kaaahi St. It will then go through two parcels owned by the State at the corner of N. King St. and Iwilei Road.

**Figure 14. Iwilei Station Diagram from the Draft EIS**



Source: Graphic from U.S. Department of Transportation Federal Transit Administration and The City and County of Honolulu Department of Transportation Services, Honolulu High-Capacity Transit Corridor Project - City and County of Honolulu, O'ahu, Hawai'i: Draft Environmental Impact Statement/Section 4(f) Evaluation, (Honolulu: City and County of Honolulu Department of Transportation Services, 2008), Figure 2-32.



The rapid transit line then heads towards Nimitz Hwy. where it will continue to the edge of downtown. There will be two platforms approximately 300 feet long and a minimum of 12 feet wide.<sup>52</sup> The station entrance will be located at Dillingham Blvd.

**Figure 15. Iwilei Station Diagram Superimposed Over Aerial**



Nuuanu Auto Company Ltd. – The Iwilei station will be located on this site.

Photo by: Linda Schatz

Source: Graphic altered from U.S. Department of Transportation Federal Transit Administration and The City and County of Honolulu Department of Transportation Services, Honolulu High-Capacity Transit Corridor Project - City and County of Honolulu, O'ahu, Hawai'i: Draft Environmental Impact Statement/Section 4(f) Evaluation, (Honolulu: City and County of Honolulu Department of Transportation Services, 2008), Figure 2-32.

My criteria for choosing this station were not purely economic. In fact, if it were pure economics, it's likely that I would have chosen one of the West O'ahu areas. These locations are more straightforward to execute from an entitlement and development standpoint. But they have less potential to transform the city of Honolulu. The Iwilei

<sup>52</sup> U.S. Department of Transportation Federal Transit Administration and The City and County of Honolulu Department of Transportation Services, 2-20.

station presents certain challenges, and may require government intervention to get off the ground, but in terms of fulfilling the promise of TOD, this area has the highest upside.

Imagine a low income community that currently experiences high rates of crime and drug use, being turned into an attractive place to live. Imagine what the developers saw when they created HCDA and wanted more for Kaka'ako. Imagine what the builders of Times Square in New York saw. There is no reason that Iwilei has to continue to suffer economically, and with a relatively small investment of political and economic capital it can change.

I've chosen this station in Iwilei to analyze for the following reasons :

### **1. Existing high ridership**

Mayor Wright Housing and Kukui Gardens are within a quarter mile of the station. In addition, these extremely dense public housing developments are populated by people who currently use public transportation. Kukui Gardens currently has 857 affordable housing units and sits on 21.3 acres. Mayor Wright has 364 affordable housing units. This area has among the highest rates of bus ridership in the city. This means a built-in market.

### **2. Area in need of revitalization**

These areas are generally in need of revitalization, so this project is promising from two standpoints. First, economically, the land in this area is generally not considered premium property, and therefore could be acquired more inexpensively. Second,

this area is ripe for a public-private partnership that could serve economic purposes as well as planning and public policy purposes. In other words, government, which has an interest in the success of public housing projects, in urban revitalization, and in providing economic opportunity and mobility for the working poor may prioritize public investment in the area. This would require leadership at the political and private sector level, but Mayor Hanneman has already taken a strong interest in Kalihi's economic development, and this could be viewed as a west-bound extension of the revitalization work that has been done in Waikiki, HCDA, and Chinatown.

### **3. Proximity to downtown**

This point ought to be emphasized. Instead of thinking of this is a decaying neighborhood, it can be rebuilt to become an attractive, mixed use, urban area, similar to parts of San Francisco, where hipsters, recent immigrants, professionals, service industry workers, students, and young couples all live.

### **4. Large landowners**

A closer look at the area within a quarter mile of the Iwilei Station shows opportunities for land assembly and for underutilized government land to be transformed to revitalize the area. Some of these parcels are more than an acre and have adjacent parcels that can be reasonably assembled. There are also a proportionately large number of non-profit organizations that own parcels in the area.

### **Neighborhood Characteristics**

At first glance, one would see Iwilei as a light industrial area that has been converted to commercial, retail and office uses. At close examination, there are many non-profit organizations that provide social services to the poor, mentally ill, elderly, disabled, and young. Some of the non-profit organizations that exist within the quarter mile commute shed are:

- Institute for Human Services
- The Salvation Army
- Independent Living Housing
- Big Brothers Big Sisters
- Hawai'i Center Independent Living
- Winners at Work
- United Cerebral Palsy Association
- Pu'uhonua Nonprofit Corporation
- Senior Residence at Iwilei
- Hospice Hawai'i

Many of these non-profits are located in buildings owned by the Harry and Jeanette Weinberg Foundation. The government, particularly the state, owns a significant amount of land in the area that is currently vacant or underutilized. Parcels are noted in the map on the next page.

Parcels 15 and 16 located on the map are the most ripe for redevelopment because they remain vacant. Parcel 16 is located along N. King St. and includes the O'ahu Railway

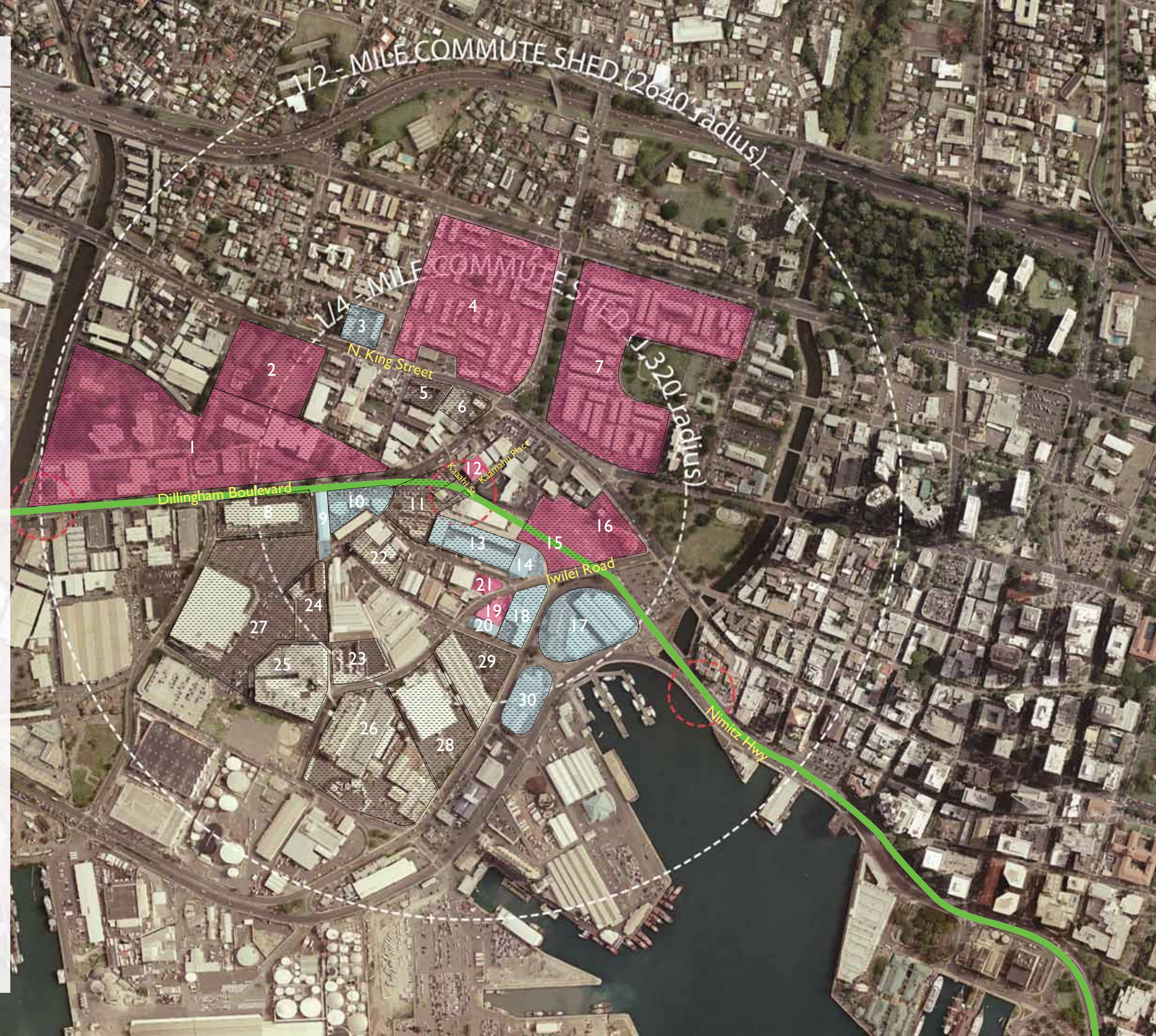


# IWILEI STATION PRELIMINARY ANALYSIS OF 1/4-MILE COMMUTE SHED

## LEGEND

- Non-profits
- Government
- Parcels 1+ acres with a single fee owner
- Rapid Transit Line

- Honolulu Community College
- State of Hawaii
- St. Elizabeth's Episcopal Church
- Mayor Wright
- Island-West Investment Corp. (Residential)
- King's Gate Plaza
- Kukui Gardens
- Bank of Hawaii
- H & J Weinberg Foundation Inc.
- H & J Weinberg Foundation Inc.
- HECO
- City and County of Honolulu
- 300 Corporation
- 3900 Corporation
- State of Hawaii
- State of Hawaii
- H & J Weinberg Foundation Inc.
- The Salvation Army
- State of Hawaii (IHS)
- State of Hawaii
- JTB
- Pamcah-Ua Local 675
- Castle & Cooke
- Castle & Cooke
- Castle & Cooke
- Costco
- GPP LLC (Gentry Pacific Design Center)
- K-Mart
- H & J Weinberg Foundation Inc.





& Land Terminal building which is considered a historical landmark. The State's Housing and Community Development Corp. was planning a senior residential development. Since the state is planning to build senior housing a few hundred feet from the station a more integrated and aggressive effort seems to be required with the approval or rapid transit. Adjacent to the O'ahu Railway & Land Terminal building is the Tong Fat Co. building which is also on the National Register of Historic Places.

**Figure 16. O'ahu Railway & Land Terminal Building**



Photo: Linda Schatz

**Figure 17. Tong Fat Co. Building**



Photo by: Linda Schatz

Redevelopment plans are happening at the Kapalama Station. Iwilei is located just one stop away and the Chinatown station follows just after the Iwilei station. The close proximity to these stations, about half a mile apart will create pressure and incentive for Iwilei to be redeveloped. During the early stages after this phase of the line is built, the Iwilei station will most likely be a station with few arrivals. Its purpose currently is to provide a node on the line for its current resident population. But because of the significant concentration of social services available, it could offer community services to the rest of the urban community.

Kukui Gardens and Mayor Wright housing are currently going through a planning phase. Initially Kukui Gardens was to be sold to San Francisco-based Carmel Partners, but the State of Hawai'i now owns half of the project and will keep it affordable while the other

half is owned by Carmel Partners. They plan to redevelop their portion of the project into office, retail, and low-income housing. Mayor Wright is also going through a planning phase and is in need of major repairs and overwhelmed with crime. In the 2008 legislative session a Senate Resolution was passed asking that the Hawai'i Housing Finance and Development Corporation convene a working group and create a redevelopment master plan for both housing projects. Once these two housing projects are redeveloped, there will be immense pressure to redevelop what lies across the street along N. King St. If mixed-income is part of the redevelopment strategy for these two housing projects than it only encourages more redevelopment.

**Figure 18. King's Gate Plaza (591 N. King St.)**



Photos by: Linda Schatz



**Figure 19. Pfleuger Car Dealership (477 & 499 N. King St.)**



Photos by: Linda Schatz

### **Potential Parcels for Land Assembly**

Potential parcels for land assembly have been noted on the map on the next page. Parcels located across from Mayor Wright and Kukui Gardens will most likely feel the effects of redevelopment because of transit and the redevelopment of Kukui Gardens and Mayor Wright. Their property values will go up and the sites will be underutilized based on an increase in resident population, improved commercial and retail, and proximity to transit. Fortunately, the parcels are not literally adjacent to the elevated rail way but far enough away to create proximity and be buffered from the massive



IWILEI STATION  
POTENTIAL PARCELS FOR LAND ASSEMBLY

LEGEND



Non-profits



Government



Potential parcels for land assembly



Rapid Transit Line

**A**

617 N. King St. - Island-West Investment Corp.  
591 N. King St. - King's Gate Plaza Co.  
Total: 121,701 SF

**B**

525 N. King St. - Higgins Properties, LLC  
477 N. King St. - Pfeuger Group LLC  
499 N. King St. - Pfeuger Group LLC  
Total: 46,481 SF

**C**

536 Ka'aahi St. - Property Investments LLC  
906 Ka'aahi Place - TSR Partners  
Total: 34,410 SF

**D**

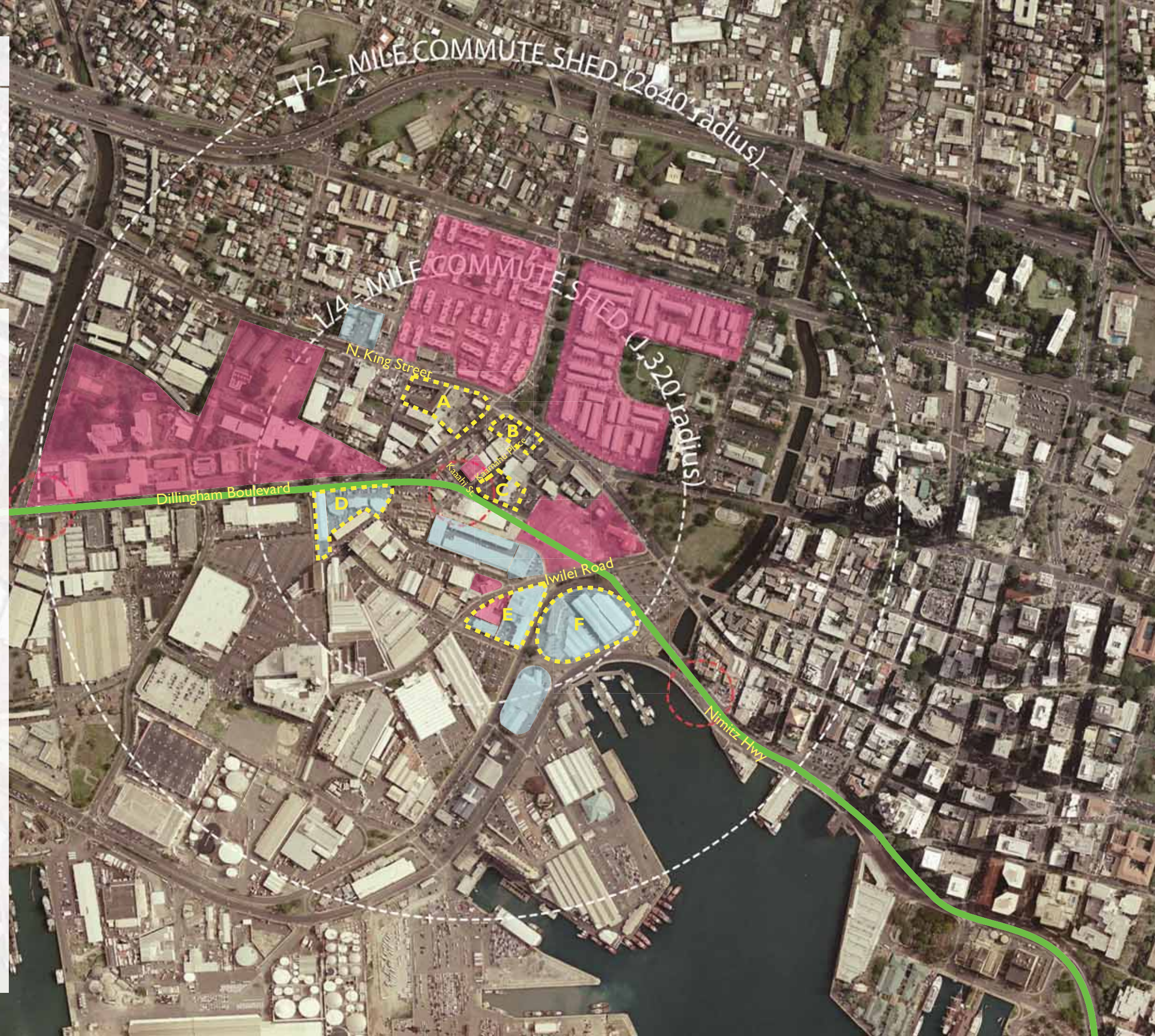
Harry and Jeanette Weinberg Foundation - TMK: 15015005:0000  
735 Dillingham Blvd. - Harry and Jeanette Weinberg Foundation  
Harry and Jeanette Weinberg Foundation - TMK: 15015003:0000  
Harry and Jeanette Weinberg Foundation - TMK: 15015004:0000  
Total: 128,060 SF

**E**

322 Sumner St. - The Salvation Army  
835 Iwilei Road - State of Hawai'i  
835 Iwilei Road - State of Hawai'i  
350 Sumner Street - State of Hawai'i  
Total: 91,288 SF

**F**

Harry and Jeanette Weinberg Foundation - TMK: 15008014:0000  
305 N. Nimitz Hwy. - Harry and Jeanette Weinberg Foundation  
373 N. Nimitz Hwy. - Harry and Jeanette Weinberg Foundation  
Total: 130,569 SF





transit structure and columns. These parcels are included in the following table that demonstrates potential parcels for land assembly.

Other potential parcels are listed in the following table are initial candidates for assembly based on single fee-owner, size of parcel being close to an acre or greater, and position relative to the transit station.

Assembly	Site	SF	Land Value	Building Value	Zoning
<b>A</b>	617 N. King St. Island-West Investment Corp.	40,878	\$3,073,800	\$3,707,600	BMX-3
	591 N. King St. King's Gate Plaza Co.	51,252	\$3,487,600	\$4,445,800	BMX-3
	<b>Total</b>	121,701 SF	\$6,561,400	\$8,153,400	
<b>B</b>	525 N. King St. Higgins Properties, LLC	20,934	\$2,035,500	No building	BMX-3
	477 N. King St. Pfleuger Group LLC	8,810	\$1,030,800	\$637,800	BMX-4
	499 N. King St. Pfleuger Group LLC	16,737	\$1,650,300	\$347,100	BMX-3
	<b>Total</b>	46,481 SF	\$4,716,600	\$984,900	
<b>C</b>	536 Ka'aahi St. Property Investments LLC	20,832	\$1,568,200	\$720,100	IMX-2
	906 Ka'aahi Place TSR Partners	13,578	\$1,337,000	\$225,600	IMX-1
	<b>Total</b>	34,410 SF	\$2,905,200	\$945,700	
<b>D</b>	Harry and Jeanette Weinberg Foundation TMK: 15015005:0000	23464	\$1,839,100	\$644,900	IMX-1
	735 Dillingham Blvd. Harry and Jeanette Weinberg Foundation	60256	\$3,724,200	\$1,184,100	IMX-1

	Harry and Jeanette Weinberg Foundation TMK: 15015003:0000	33168	\$2,039,600	No building	IMX-I
	Harry and Jeanette Weinberg Foundation TMK: 15015004:0000	11172	\$1,014,700	No building	IMX-I
	<b>Total</b>	128,060 SF	\$8,617,600	\$1,829,000	
<b>E</b>	322 Sumner St. The Salvation Army	57689	\$3,984,400	\$4,256,800	IMX-I
	835 Iwilei Road State of Hawai'i	10180	\$1,240,100	\$2,407,800	IMX-I
	835 Iwilei Road State of Hawai'i	8942	\$1,162,500	No building	IMX-I
	350 Sumner Street State of Hawai'i	14477	\$1,506,000	\$14,477	IMX-I
	<b>Total</b>	91,288 SF	\$7,893,000	\$6,679,077	
<b>F</b>	Harry and Jeanette Weinberg Foundation TMK: 15008014:0000	52711	\$2,979,700	\$1,638,000	IMX-I
	305 N. Nimitz Hwy. Harry and Jeanette Weinberg Foundation	44525	\$2,430,800	\$1,830,700	IMX-I
	373 N. Nimitz Hwy. Harry and Jeanette Weinberg Foundation	33333	\$2,380,000	\$1,202,200	IMX-I
	<b>Total</b>	130,569 SF	\$7,790,500	\$4,670,900	

Data from: City & County of Honolulu Department of Planning and Permitting, <http://gis.hicentral.com/>

**Figure 20. Island-West Investment Corp. (617 N. King St.)**



Photos by: Linda Schatz

**Figure 21. Property Investments LLC (536 Ka'aahi St.)**



Photos by: Linda Schatz

**Figure 22. Harry and Jeanette Weinberg Foundation (735 Dillingham Blvd.)**



Photos by: Linda Schatz



**Figure 23. The Salvation Army (322 Sumner St.)**



Photos by: Linda Schatz

# **Key Variables for Success in O‘ahu’s Transit Project**

## **1. Public support for Transit**

The greatest concern is not that the transit project was approved by a narrow margin, but that public opinion appears to remain volatile in this area, and the project has additional political hurdles to jump through. While the success of the ballot question was a threshold moment, it is now up to city officials and their consultants to begin to paint a vision for a more liveable, sustainable Honolulu, and not allow the discussion to get trapped in pure transportation terms.

## **2. Public understanding of TOD**

People do not understand TOD, and even when it is explained to them in words, it remains confusing or uninteresting. The picture must literally be drawn – citizens must be able to visualize what they will get. TOD cannot remain a technical term used by city planners, or it will not gain public support.

## **3. Revenue Streams**

Senator Inouye’s ascension to the Senate Appropriations Committee may bode well for the federal share of the project, but that is money for the building of the line. In the long run, it is City taxpayers who will be footing the bill for the projects operating cost. Right now, there are three proposed sources of money – the feds, the City, and riders. Through public-private partnerships, revenue may be generated for the City for land development through lease rents, land sales, or other business arrangements.



#### **4. Ridership**

Ridership in the first phase will be critical in gaining further support and funding for rapid transit construction of additional phases. The line currently starts in Kapolei and Waipahu and ends up at Pearl City where, compared to the urban core, there are few riders and far fewer residents who depend on transit. Choice riders must make up a significant portion of transit users in the early stages. They are riders who have a vehicle but prefer to ride transit instead. But with many more people working in the primary urban core, it will be difficult to get the sufficient amounts of riders needed to create success. Currently 23,400 people are employed in the Pearl City - 'Aiea area and 63,400 are employed in Downtown with many more in the PUC, if you consider areas such as Kaka'ako, Ala Moana, Waikiki, etc.

#### **5. Federal Funds**

In a survey of TOD projects across the nation, it is clear that some form of federal funding was necessary for initial planning and subsidizing low-income housing. Given Hawai'i's extreme land costs it will play a necessary component to the success of any TOD project locally.

#### **6. Cost of land condemnation for easements**

The cost of land condemnation could be considerably more than expected and also create negative community relations, which could stall the construction of stations.

## **7. Private sector leadership and investment**

Non-profit groups like ULI, AIA, APA, Chamber of Commerce, and many others have taken a position to support rapid transit and realize the potential it could have on our economy. Whether or not the investment will be there remains to be seen and to a degree out of our control because it depends on how markets are doing and whether or not we see growth and active lending for development projects.

## **8. Place-making**

The City is focusing on community workshops to develop special TOD zoning overlays that focus on place-making, understanding that each station has a unique community. This is also important because it allows each station to develop its own unique identity and service offering that can be spread over the urban region. It allows residents to live, work, and shop at different stations leveraging the use of transit.

## **9. Flexible and streamlined zoning ordinances**

The proposal of a TOD overlay must not be another layer of ordinances that creates more hurdles for development. We currently have the Land Use Ordinance and special district provisions. Kaka'ako was able to see a blighted area achieve redevelopment success partly because of the State's intervention and formation of HCDA, which created its own development plan overriding the City's requirements. It is this streamlined process that encourages developers to look at areas such as Iwilei.

# **Key Variables for Success at the Iwilei Station**

## **1. Use of government lands**

The developments of key parcels located near the station could jumpstart a trend to revitalize the area. The unique opportunity here is not only the redevelopment of Mayor Wright and Kukui Gardens but on smaller parcels located near the station. The sites 888 Iwilei Road and 315 N. King St. is where a proposed senior living residence is being developed by the State. It is an ideal use since seniors will ride transit, but convenience retail should be added to service HCC and the residents who will no doubt find it convenient to be able to do their errands on their way to and from work. It is unclear whether they have worked with the City in creating a TOD since the site is just a few hundred feet away from the actual station. There are many families in the low-income housing area where a day-care center might make sense.

## **2. Government investment in master planning**

Because the government owns a number of key parcels, a master plan may be a useful investment. Currently all locations except the O'ahu Railway & Land Terminal building are vacant or underutilized. Accessing Community Development Block Grants and HOPE IV grants to initiate planning seems viable given the critical mass of low-income housing in the area.

### **3. Private investment**

The private sector has already shown significant signs of interest, most notably the partial purchase of Kukui Gardens by San Francisco-based Carmel Partners for \$80 million. It is also important to note that Costco, Home Depot, and K-Mart have recently been introduced into the community because of the inexpensive, large parcels of land available and the close location to Downtown and current low-income population in the area who consume their products.

More private investment will flow into the area, especially if the government starts to consider a master plan and negotiate joint development partnerships on their current land holdings.

### **4. Investment of civic spaces and pedestrian-friendly streetscapes**

If the government initiates joint development partnerships, this would provide an opportunity to negotiate for improved civic spaces, amenities, and pedestrian-friendly streetscapes. For example, the government could provide the land that would minimize land costs and some of those saved dollars could be spent on this key investment to make the neighborhood more walkable.

Improvements to Aala and Beretania Park should be made to create a safe environment for the community. These two parks service the large community and are vital assets to creating a safe residential environment.

## **5. Reinvestment in Mayor Wright and Kukui Gardens**

The reinvestment in Mayor Wright and Kukui Gardens is critical to the success of the area. They are the two largest parcels of land and are ripe for redevelopment with a built-in population for ridership and patronage to services in a TOD project.

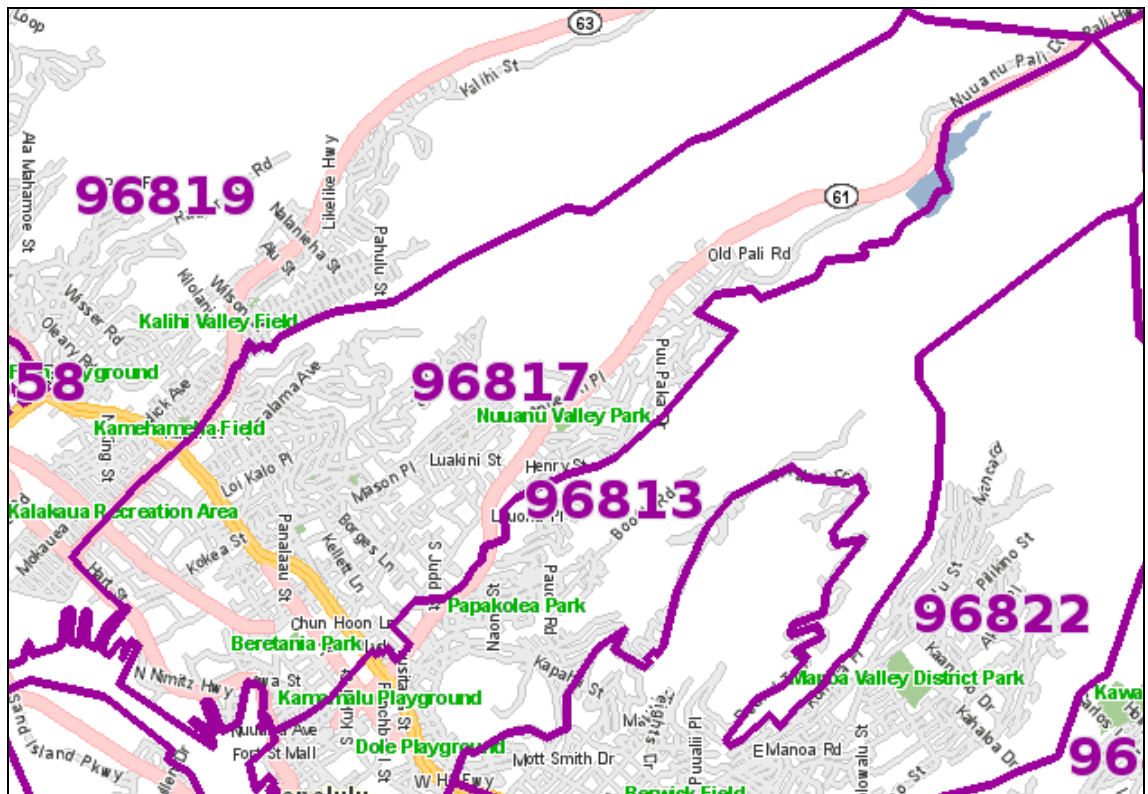
## **6. Integration of affordable and market-rate housing**

The Kalihi, Iwilei area has a disproportionately large amount of low-income housing and would benefit from a mix of workforce and market-rate housing in the area to revitalize and reap the social benefits of a mixed-income neighborhood. In reviewing the land holdings and the future development of the island, there are opportunities to create both workforce and market-rate housing here. Carmel Partners initially wanted to redevelop Kukui Gardens into a high density mixed-use village that includes 3,375 residential units of mixed-income housing, 108,000 SF of retail, 123,000 SF of office, and a 300,000 SF hotel.<sup>53</sup> They have demonstrated that there is a strong interest in reinvestment in the area if we can ensure that we meet the current needs of the community and government can take a proactive role in planning rather than a reactionary one.

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<sup>53</sup> Kukui Gardens, Ecologically Conscious Urban Infill and Revitalization  
[http://www.vmwip.com/projects/pdfs/kukui\\_gardens.pdf](http://www.vmwip.com/projects/pdfs/kukui_gardens.pdf) (accessed 11/19/2008)

## Demographics



Source: Hipcodes.com, <http://hipcodes.com/96817/>

Iwilei falls within the larger 96817 zip code with a total population of 147,070<sup>54</sup>. According to the City and County of Honolulu DEIS, Iwilei is projected to grow in population by 34%. This projection is probably due to the increase in units projected in redevelopment in low-income projects such as Kukui Gardens and Mayor Wright. The population in this area has a larger proportion of seniors 65 years and older at 21.6% compared to the island average of 13.3%. Over 80% are over 18 years old. There is a notably a demand for senior housing in the area.

Asians make up more than half the population at 66.8% made up mostly of Japanese and Filipino descent. Whites make up 9.1% and Native Hawaiian or other Pacific Islander is at 8.2%.

<sup>54</sup> 2000 U.S. Census Data. Includes population data for census tracts with at least one-half of the tract within a 2.5 mile radius.

The average household size is 2.73 compared to the island average of 2.95. The average family size is 3.42 compared to 3.59 for the island average. Smaller numbers in household and family size may be due to the aging population and larger population of seniors concentrated in this area.

### **Housing Statistics**

Based on the City and County of Honolulu Department of Planning and Permitting 94% of housing units are occupied. Only 38.8% are owner-occupied housing. This is significantly low compared to the island-wide percent of 41.2% and the national figure of 66.2%. Many who live in Iwilei rent, which comprise of 61.2% compared to the island-wide percentage of 41.2%. Iwilei is a low-income area compared to nationwide percentages that are reversed at 66.2% owner-occupied and 33.8% renter-occupied.

There are 4,783 single-family owner-occupied homes in the 96817 zip code. In this area there are more renters than owners because of lower average incomes. Vacancy rates are at 6% compared to the island average of 9.3%. In this area it is more difficult to find a rental and there are signs that supply is low and demand could be strong particularly for low-income housing.

### **Social Characteristics**

The population in this area tends to be less educated. Only 71.8% have a high school education or higher compared to the island percentage of 84.8%. Only 22.4% have a bachelor's degree or higher compared to 27.9% island-wide.

Iwilei has always been seen as a gateway because of the high concentration of immigrants. Nearly half (47.2%) of the population speaks a language other than English

compared to the entire island of Oahu, which has a rate of 28.9% speaking another language.

### **Economic Characteristics**

Employment is lower than the island-wide average – 55.1% are employed compared to the entire island at 64.7%. Median household income in 1999 dollars was \$38,792 compared to the island-wide median of \$52,280. The median family income for this area was \$48,776, almost 20% less than the island median of \$60,142.

Due to the high concentration of immigrants poverty levels are higher than the island-wide percentages:

- Families below poverty level – 11.7% (island-wide – 7%)
- Individuals below poverty level – 15.1% (island-wide – 9.9%)

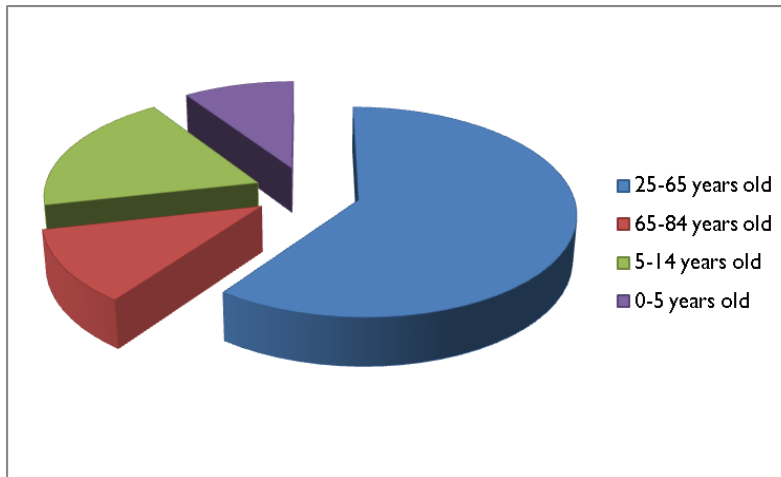
### **Recommended Primary Markets**

DBEDT projects that by 2035, 22% of our population will be 65 and older because there are less births occurring. By 2035, Hawaii will also have a 1% increase in population per year at 1,685,200. The county of Honolulu alone will have a 0.7% annual rate of increase. The makeup of our households are also changing with 29.5% never having married, 10% separated, divorced, or widowed, and 56.7% now married. Based on current and future demographic trends, primary markets for Iwilei tend to be low-income seniors, middle-aged couples and singles, fixed-income empty nesters, and young professionals who want to live close to the Central Business District but cannot afford to buy from neighboring locations such as Downton, Kakaako, and Kapiolani. The primary market is located in Kalihi, Iwilei, Palama, Sand Island, Mapunapuna, Salt lake, Aliamanu, Stadium, Foster Village, and Halawa Valley.



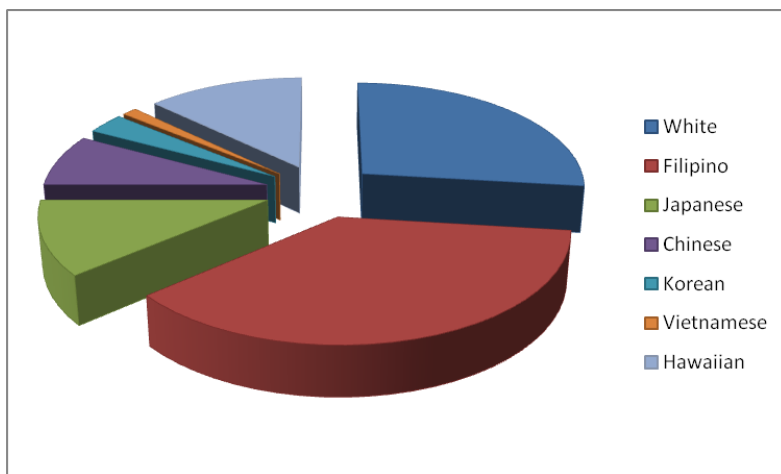
The population in this location that is defined as the primary market is a total population of 101,313.

**Figure 24. Primary market age breakdown**



Almost half of the population is Asian with most being Filipino. The second largest ethnic groups are whites at 20%.

**Figure 25. Primary market ethnic breakdown**



There are more opportunities for low-income rentals because supply is low and there is no new product out to meet this demand. This opportunity should be considered carefully since there is currently a critical mass of low-income housing and the area

would benefit from market rate housing which will bring along employment and improve property values by diluting such a high concentration of government assisted affordable and senior housing.

### **Secondary Market for Residential Development in Iwilei**

The secondary market is comprised of young professionals and empty nesters from West and Central Oahu. This demographic tends to desire the urban lifestyle and values quality of life that minimizes commute times. They often don't have the income to buy, so they are seeking rentals that provide the option of walking to work, primarily in downtown, and the option to park their car and drive to entertainment or recreation destinations after work and on the weekends.

Seniors on fixed incomes from the West and Central Oahu are also a secondary target market. They desire being near urban areas and may be looking at a potential location near downtown and Ala Moana but cannot afford to buy. These individuals may sell their existing home in order to free up cash and downsize for their retirement.

## **Financial Feasibility of Transit-oriented Development in Iwilei**

The high cost of land, construction, low house hold income and onerous parking requirements make it difficult to redevelop urban Honolulu. Redevelopment policies that are created due to transit may help to overcome current hurdles. But the question is what kinds of policies will work and what kind of redevelopment would create a livable city?

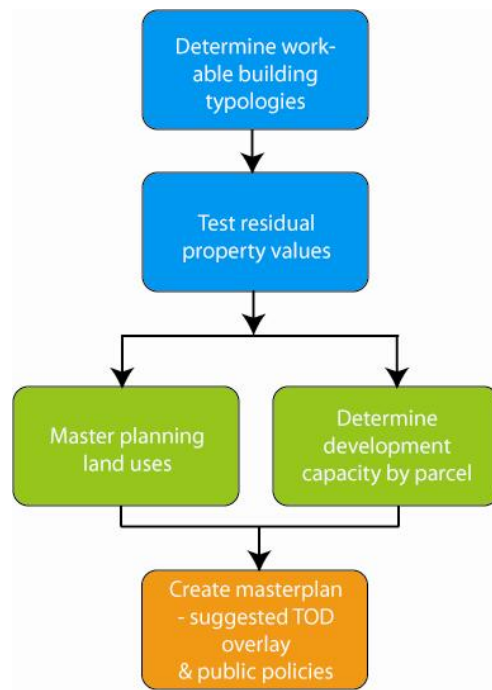
One way to test the viability of transit-oriented development in Hawai'i is to model hypothetical real estate development scenarios on parcels located near proposed station areas. Identifying components that are hurdles to redevelopment can help to determine which tools will work best for private developers. These hurdles will give a perspective on the financial gap that needs to be closed from a policy standpoint.

There are four major variables today that local developers have brought to my attention. They are:

1. Extremely high construction costs compared to the rest of the nation
2. High land costs due to scarcity of large parcels of land for redevelopment
3. Onerous parking requirements
4. The need for allowing more high-density

Identifying the financial gap and redevelopment implications of these four variables will help to determine specific policy recommendations that can be implemented when TOD overlays are being developed. The specific steps performed in this analysis are:

1. Determine workable building typologies that are found in successful TODs
2. Develop and test residual property values for each typology using local construction costs
3. Develop a hypothetical master plan within a quarter mile radius of the transit station
4. Identify how large the financial gaps are based on the four major variables
5. Identify potential policy initiatives that can close these gaps



## **TOD Typologies**

Reconnecting America, a national non-profit organization that works to integrate transportation and communities, have identified eight general TOD typologies:<sup>55</sup>

### **Regional Centers**

Typically regional downtowns have dense mixes of housing, employment types, retail and entertainment. Some examples are San Francisco, Boston, Chicago's Loop, Midtown Manhattan, and downtown Denver.

Proposed Hawaii stations that fit this typology are Downtown Station and Ala Moana Center Station.

### **Urban Center**

Urban centers have the same mixes that regional centers do but at slightly lower densities. These areas typically serve as commuter hubs for the larger region. Some examples are Rosslyn-Ballston Corridor, downtown Baltimore, Houston's Medical Center, and Pasadena in California.

Proposed Hawaii stations that fit this typology are Aloha Tower Station and Ala Moana Station.

### **Suburban Center**

Similar to urban centers in terms of the mix of uses and densities, Suburban centers serve as origins and destinations for commuters. Development in these areas are more recent than in urban centers and generally have more single use areas for employment

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<sup>55</sup> Reconnecting America and the Center for Transit-Oriented Development. TOD 202 Station Area Planning: How to Make Great Transit-Oriented Places. Oakland, CA: Reconnecting America, 2008, 4-7.

and residential. Some examples are Lindbergh City Center, Atlanta; Evanston, Illinois; Addison Circle, Dallas; Stamford, Connecticut; Denver's Tech Center and Englewood.

Proposed Hawaii stations that fit this typology are Ho'opili Station and Kapolei Station.

#### Transit Town Center

This is typically a local-serving center of economic and community activity. They usually attract fewer residents from the rest of the region. There is a mix of origin and destination trips – primarily commuter service to jobs in the region. There are less secondary transit services serving the area. Residential densities are lower than the typologies previously mentioned, but there is still a good mix of retail, employment, civic uses, and multi-family residential. Some examples are Prairie Crossing, Chicago; Suisun City, San Francisco; Roslindale Village, Boston; Hillsboro, Portland, Oregon.

Proposed Hawaii stations that fit this typology is Pearl Ridge Station

#### Urban Neighborhood

These are typically residential areas that are well-connected to regional centers and urban centers. Densities are moderate to high, and housing is usually mixed with local serving retail. Commercial is limited to small businesses and some industry. This typology usually has a well-served secondary transit network like a bus feeder system. Transit is often less of a focal point for activity than in the “center” for other typologies. They are often located at the edge of two distinct neighborhoods. Some examples are Fruitvale, Oakland; Greenwich Village, New York City; Pearl District, Portland; and University City, Philadelphia.

Proposed Hawaii station that fit this typology is the Iwilei Station.

### Transit Neighborhood

Typically these are residential areas that are served by transit. Densities are low to moderate and economic activity is not concentrated around the station. The station may be located at the edge of two distinct neighborhoods. Usually there isn't enough density to support local retail, but there are retail nodes. Some examples are Ohlone-Chynoweth, San Jose; Plano, Texas; Barrio Logan, San Diego; Capitol Hill, Washington D.C.

### Special Use/Employment District

These districts are often single use – either they are low to moderate density employment centers or are focused around a major institution such as a university, or an entertainment venue such as a stadium. Transit stations are not a focus of economic activity. If these stations are well-connected to other parts of the region there could be opportunities for mixed-use development and there could be demand for housing. Densities are distributed evenly through the 1/2-mile radius. Some examples are South of Market, San Francisco; Camden Station, Baltimore; South Waterfront, Portland.

Proposed Hawaii stations that fit this typology are Mo'ili'ili Station and Aloha Stadium Station.

### Mixed-Use Corridor

Mixed use corridors are a focus of economic and community activity but have no distinct center. Typically a mix of moderate-density buildings that house services, retail, employment, and civic or cultural uses characterizes them. These corridors usually have BRT or streetcars running down them rather than mass transit. These offer opportunities for infill and mixed-use development and densities are greater within the

¼ mile radius. Some examples are International Boulevard, Oakland; Washington Street, Boston; University Avenue, Minnesota.

The suggested development guidelines for an “Urban Neighborhood” district such as Iwilei are a mix of housing units that comprise of mid-rise, low-rise, and townhomes. Total number of units around the station area should be 2,500 to 10,000. Density in new housing is recommended at 40-100 du/acres. It is also recommended that there be a minimum FAR of 1.0 for commercial uses.<sup>56</sup>

Based on the DEIS the current population size of Kalihi and Iwilei is 25,300 and will increase 34% to 34,000 residents. That’s an increase of 8,700 people. The current household size is 2.73 people per household, which equates to 3,187 additional units. This does not include units that will need to be replaced due to aging inventory.

The only recommended adjustment that would be made to densities suggested in this TOD typology would be the addition of high-rise towers minimally in strategic areas of Iwilei. Since Hawaii is so land constrained and most parcels are of unique dimensions and sizes what may be spatially feasible are high-rise towers to provide the level of density in the immediate area within the quarter mile radius.

### **Building Typologies**

Based on the mentioned station typologies, Iwilei can be considered an *Urban Neighborhood*. New housing dwelling units per acre are 40-100 du/acre. The housing mix is characterized by mid-rise, low-rise, and townhomes with commercial uses at 1.0 FAR.

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<sup>56</sup> Reconnecting America and the Center for Transit-Oriented Development. TOD 202 Station Area Planning: How to Make Great Transit-Oriented Places. Oakland, CA: Reconnecting America, 2008, 10-11.



Given these densities we can start to narrow the study of building typologies that would work in Iwilei to be tested in the pro forma. The typologies that will be studied are:

1. Townhome (12-40 du/acre, average 30 du/acre)
2. Low-rise multifamily with surface parking (20-75 du/acre, average 55 du/acre)
3. Mid-rise multifamily with parking structure (50-150 du/acre, average 110 du/acre)
4. High-rise multifamily with podium parking structure (75+ du/acre)
5. Mid-rise residential over commercial (40-90 du/acre)
6. High-rise residential over commercial (60+ du/acre)

**Figure 26. Recommended Building Typologies for the "Urban Neighborhood"**

Typology	Density	Characteristics	Construction Type	Parking Configuration
<b>Townhome</b>	12-40 du/ac (30 du/ac)	2-4 stories with attached units, direct entry from street, units can be paired with flats for increased density	Type III/V (maximum 4 stories or 50 feet)	Tuck-under garage/driveway and on-street
<b>Low-Rise Multifamily</b>	20-75 du/ac (55 du/ac)	2-4 stories with apartments/condos, single- or double-loaded corridors lobby entrance, off-street parking in surface/structure	Type III (maximum 4 stories or 50 feet)	Tuck-under garage or surface parking lot, potential for structured parking
<b>Mid-Rise Multifamily</b>	50-150 du/ac (110 du/ac)	4-6 stories with apartments/condos, single- or double-loaded corridors with lobby entrance, off-street parking structure/below grade	Type I/III (maximum 5 stories or 65 feet)	Ground floor podium/sub-grade or elevated structure
<b>High-Rise Multifamily</b>	75+ du/ac	7+ stories, usually with base and tower, single- and double-loaded corridors with lobby entrance, off-street parking in structure or below grade	Type I/II (maximum 12 stories or 120 feet; no limits on Type I)	Off-street parking in structure or below grade
<b>Mid-Rise Residential Over Commercial</b>	40-90 du/ac	3-6 stories with apartments, single- or double-loaded corridors with lobby entrance, off-street parking in structure or below grade	Type I/III (maximum 6 stories with building code modification or 65 feet)	Ground floor podium or subgrade or elevated structure
<b>High-Rise Residential Over Commercial</b>	60+ du/ac	7+ stories, usually with base and tower, single- or double-loaded corridors with lobby entrance, off-street parking in structure or below grade	Type I/II (maximum 12 stories or 120 feet; no limits on Type I)	Off-street parking in structure or below grade
Type I – structures of concrete and/or steel Type II – structures of load-bearing masonry and/or steel Type III – structures of load-bearing masonry, steel and/or wood Type V – wood structures				

Adapted for Hawaii from: Reconnecting America and the Center for Transit-Oriented Development. TOD 202 Station Area Planning: How to Make Great Transit-Oriented Places. Oakland, CA: Reconnecting America, 2008, 12-13.

### Construction Types and Cost

There is a strong relationship between increasing densities and inherent rising cost due to construction type on high-density projects. When projects require concrete construction or Type I costs increase dramatically. Therefore to keep the construction costs down Type III or Type V will be used, but it also minimizes the amount of floors one can go up which thereby also limits the amount of density.

The other disadvantage to Type III is the possible sound transmission between residential floors and issues with rust in our tropical climate. Type V construction has another host of issues with Formosa termites being the major concern for durability, but wood is readily available and cheap, which means construction costs are dramatically low. For Hawaii, 2009 construction costs per square foot for wood structures is approximately \$200/sf and structures in Type I are approximately \$300/sf,<sup>57</sup> which equates to a 33% difference. Below is a table of information based on construction type adapted from Baldrige & Associates Structural Engineering, Inc. The table provides a clear overview of the advantages and disadvantages of each construction type.

**Figure 27. Construction Types - Advantages & Disadvantages**

Construction Type	Characteristics	Structural System	Fire Rating	Advantages	Disadvantages
Concrete structural systems	For larger residential buildings where Type V cannot be met	<p>Floor framing system: post-tension concrete floor system</p> <p>Optimum floor span: 20-25 feet</p> <p>Roof framing system: similar to floor system, or pre-engineered metal trusses with metal roof deck</p> <p>Vertical framing system: concrete columns or structural steel columns</p> <p>Lateral system: concrete or masonry shear walls</p>	I-hour rating	<p>Can be used for Type I or II non-combustible construction without using structural steel.</p> <p>Maximum design flexibility to create large open spaces and large windows and door openings.</p> <p>Thin floor system (6-8") enables higher ceilings and more floors. Solid "feel" of concrete floors.</p> <p>Commercial type construction with long-term durability benefits.</p>	<p>Expensive cost. Slow speed of structural frame construction.</p> <p>Requires a contractor that is capable of commercial-type construction.</p>
Structural Steel Framed Systems	Chosen for large size residential buildings where Type V construction requirements	Floor framing system: concrete topped metal pan deck supported on structural steel beams and girders	I-hour rating	<p>Can be used for Type I or II non-combustible construction without using structural steel</p> <p>Fast speed of structural</p>	<p>High-cost</p> <p>Cost of fire protection for structural steel</p> <p>Cost of cladding and non-</p>

<sup>57</sup> Construction costs were derived from several local sources including architects, developers, and contractors. An Average was used in the land residual valuation pro forma in this research.

	cannot be met	<p>Optimum by size: 30 feet X 30 feet</p> <p>Roof framing system: similar to floor system, or pre-engineered metal trusses with metal roof deck</p> <p>Vertical framing system: structural steel columns</p> <p>Lateral system: structural steel braced frames/moment frames, or concrete/masonry shearwalls</p>		<p>frame construction</p> <p>Maximum design flexibility to create large open spaces and large window and door openings</p> <p>Solid feel of concrete floors</p> <p>Commercial type construction with long-term durability benefits</p>	<p>load-bearing wall system</p> <p>Requires a contractor capable of commercial type construction</p> <p>Thickness of floor system (17-31")</p>
Light-gage Metal Framed Systems with Concrete Floor System	Commonly chosen for medium to large size residential buildings where Type V construction requirements cannot be met	<p>Floor framing system: concrete topped metal pan deck</p> <p>Optimum floor span: 10-15 feet</p> <p>Roof framing system: similar to floor system, or pre-engineered metal trusses with metal roof deck</p> <p>Vertical framing system: light gage framed load bearing walls</p> <p>Lateral system: sheet steel sheathed shear walls, or concrete/masonry shear walls</p>	I-hour ratings	<p>Can be used for Type I or II non-combustible construction without using structural steel.</p> <p>Thin floor system (less than 6") enables higher ceilings or more floors.</p> <p>Has potential to support mid-rise construction up to 6 stories.</p> <p>Solid (feel" of concrete floors.</p> <p>More similar to commercial type construction with some of the long-term durability benefits.</p> <p>Less fire rating assembly issues and penetration issues because floor fire rating is achieved via concrete topping</p>	<p>More costly than all wood construction.</p> <p>Uncommon building system.</p> <p>Few contractors with experience with this structural system</p> <p>Limited ability to create very large open spaces</p> <p>Limited ability to create large window and door openings</p>
Light Gage Metal Frame Systems	Commonly chosen for small to medium size residential buildings where cost of the structural is of critical consideration	<p>Floor framing system: light gage floor joists with plywood subflooring</p> <p>Optimum floor spans: 10-22 feet</p> <p>Roof framing system: pre-engineered wood trusses, ply wood sheathing</p> <p>Vertical framing system: light gage framed load bearing</p>	I-hour rating	<p>Can be cost competitive with all wood structural systems</p> <p>Common building system</p> <p>Has potential to support mid-rise construction up to 6 stories</p> <p>Range of competent and experienced contractors</p> <p>Many structural components are locally stocked</p> <p>Light-weight building</p>	<p>Limited ability to create very large open spaces</p> <p>Limited ability to create large window and door openings</p> <p>Hollow bouncy feel of floor system; can be squeaky or drummy</p> <p>Limited allowable floor areas and development density due to requirements for Type V construction</p> <p>Thickness of floor system</p>

		walls		material	(12-18")
		Lateral system: plywood sheathed shear walls, sheet steel cross bracing			Lower long-term durability
Wood Framed Systems (Type V Construction)	Commonly chosen for small to medium size residential buildings where cost of the structure is of critical consideration	Floor framing system: floor joists with plywood subflooring. Joist options include dimensional lumber or engineered I- joist products  Optimum floor spans: 2X10 (10- 14'), 2X12 (12-18'), I-joists (16-22')  Roof framing system: pre- engineered wood trusses, plywood sheathing  Vertical framing system: wood framed load bearing walls  Lateral system: plywood sheathed shearwalls	I-hour rating	Low-cost compared to other construction types  Very common building system  Range of competent and experienced contractors  Most structural components are locally stocked  Light weight building materials	Limited ability to create very large open spaces  Limited ability to create large window and door openings  Hallow bouncy feel of floor system  Limited to 2-3 story buildings  Limited allowable floor areas and development density due to requirements for type V construction  Thickness of floor system (12-18")  Lower long-term durability  Some perceived termite issues

Source: Adapted from Baldrige & Associates Structural Engineering, Inc., 2009.

In the last few decades we have shied away from low-rise residential and have gone to high-rise, Type I structures with parking podiums and retail liners. Most of this type of product can be seen in Kaka'ako in projects such as Hokua, Koolani, Keola Lai, 909 Kapiolani, Moana Pacific, and even the unsuccessful Moana Vista. At a time when real estate prices were at their highest in decades and absorption was unrealistic this building typology was profitable. It was only profitable because most of these units were sold to speculators. These people had discretionary income to buy these units and flooded the rental market with high-end luxury condos. Currently in our economic downturn it is difficult to make this building typology pencil. There are no more speculative investors to absorb units. The only people who are currently buying are those who are actually

looking for a place to live and with the median household income at approximately \$65,000. This demographic can't afford this kind of building typology even if constructions prices came down significantly.

Therefore looking at low-rise products with construction Types at III and V make considerable sense. It may be the means to keep housing costs down and provide a way to sell homes to those at a median household income of \$62,613 per year.<sup>58</sup> Floor plan sizes are also shrinking in recent years to create affordable projects. Family sizes for 2 bedrooms, 2 baths are below 800 square feet and sometimes below 750 SF to keep parking ratios below 2 per unit to minimize costs on parking structures. It might mean the difference of reducing 1 floor of a concrete parking structure which could make a project feasible when concrete parking costs are \$30,000 to \$35,000 per stall.

#### Smaller Unit Sizes in Hawaii

Recently projects such as Holomua have floor plan sizes from 354 to 546 square feet for 1 bedroom, 1 bath; 693 to 705 square feet at 2 bedroom, 1 baths; and 701 to 752 square feet for a 2 bedroom, 2 bath. The Plantation Apartments have units at 390 square feet for 1 bedroom, 1 bath and 694 square feet for a 3 bedroom, 1 bath. These sizes are considerably small for nationwide standards because land is so valuable. In Japan and Hong Kong they have even smaller residential layouts and have realized that in order to also provide housing they must come up with innovative ways to deal with cars and provide public transportation. In Hawaii and the United States, we still focus a lot of our land use ordinance and building codes in accommodating for the use of a car and

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<sup>58</sup> U.S. Census Bureau, State & County Quick Facts, <http://quickfacts.census.gov/qfd/states/15000.html>, (Accessed: November 29, 2009).

sometimes two cars per family, which create the problem of higher construction costs for higher density based on the need for structured parking.

#### Parking Requirements and Hidden Cost

Unless we start to devise a plan to unbundle parking from the cost of housing, reduce parking requirements, use innovative parking solutions like mechanized parking, or educate people that they can begin to afford a home if parking doesn't need to be required this solution will never be solved. We cannot solve the high cost of land in Hawaii because it is a free market but we can affect and influence how the automobile have become a large part of our society that has inhibited the affordability of housing for the average workforce in our community. National and City figures cite costs at \$8,000 to \$12,000 per year to maintain and use a car in the United States, but no one has ever calculated the affect it has on our building codes and land use ordinance and how these regulations have put huge cost hurdles on developers who want to provide gap group or workforce housing. It has indirectly in large part created a situation where we are unable to maximize density in the urban core for the average person to live in town. And now we find them living in our bedroom communities like in Ewa and we are building a \$5.4 billion dollar elevated railway system to bring them to work every day because traffic is so bad and parking your car downtown now costs slightly less than \$300 per month.

TOD successes usually occur when there are more relaxed parking requirements and higher densities. How relaxed parking requirements will be remains under question. It's been suggested in various documents from the City that they may reduce the requirement to 1 parking stall for an 800 SF unit from 2 parking stalls. This will no doubt

help, but it may be even more advantageous to consider more relaxed parking requirements for projects that meet a percent of the average median income. Certain areas such as Iwilei may not need even 1 parking stall per unit since there is a large population of low-income housing. If the market will accept a unit without parking attached to it, the City should allow for such developments to occur.

### **Comparative Land Residual Values by Building Typologies**

In order to develop a menu of policy options that could have an impact on the barriers to development in TOD projects, hypothetical financial scenarios must be part of the analysis. Developing land residuals that comparatively look at costs in general components can help to identify potential areas where policy or subsidies can influence the likelihood of development to occur.

### **Land Area and Dwelling Units/Acre**

Two pro formas were developed that comparatively tests the proposed building typologies. A 1-acre and 3-acres was tested to see if an increase in density due to a larger parcel size would lead to better land residuals. Total units for the project based on building typology is calculated based on the assigned dwelling units per acre and parcel size.

**Figure 28. Comparative Densities by Typology (1-acre)**

Comparative Land Residuals by Building Typologies						
	Townhome (surface parking)	Low-Rise Multifamily (surface parking)	Mid-rise Multifamily (structured parking)	High-rise Multifamily (structured parking)	Mid-rise Residential Over Commercial (structured parking)	High-rise Residential Over Commercial (structured parking)
<b>Land Area and Dwelling Units/Acre</b>						
Total Land Acres	1.00	1.00	1.00	1.00	1.00	1.00
Total Land Square Feet	43,560	43,560	43,560	43,560	43,560	43,560
Densities (DU/AC)	30	55	110	140	65	110
Total Units	30.00	55.00	110.00	140.00	65.00	110.00

Source: Linda Schatz



**Figure 29. Comparative Densities by Typology (3-acre)**

	Townhome (surface parking)	Low-Rise Multifamily (surface parking)	Mid-rise Multifamily (structured parking)	High-rise Multifamily (structured parking)	Mid-rise Residential Over Commercial (structured parking)	High-rise Residential Over Commercial (structured parking)
<b>Land Area and Dwelling Units/Acre</b>						
Total Land Acres	3.00	3.00	3.00	3.00	3.00	3.00
Total Land Square Feet	130,680	130,680	130,680	130,680	130,680	130,680
Densities (DU/AC)	30	55	110	140	65	110
Total Units	90.00	165.00	330.00	420.00	195.00	330.00

Source: Linda Schatz

### Development Plan and Project Value

Average size of units in terms of net square footage, which does not include common space is based on local average in recent development projects for a 2 bedroom, 2 bath.

The price per square foot amounts were obtained by studying current sales prices of neighboring multifamily and condominium projects in the area. The total residential and commercial values were calculated separately and then added to create the total project value if the typology was a mixed-use scenario.

**Figure 30. Development Plan and Project Value**

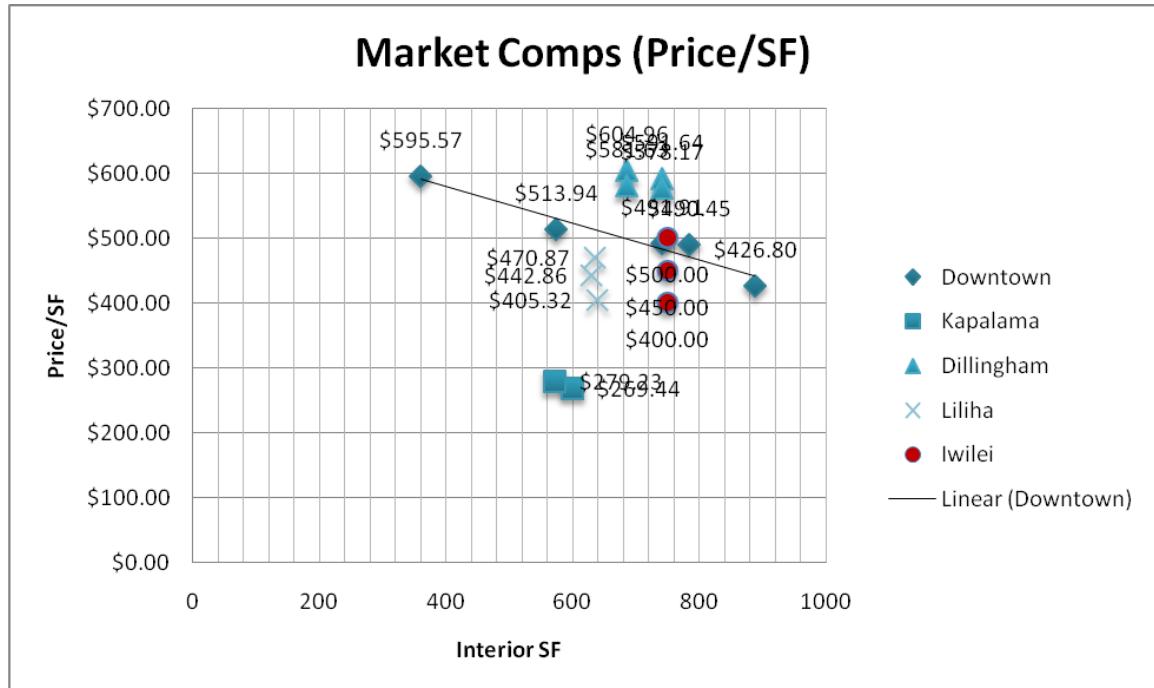
<b>Development Plan and Project Value</b>						
<u>Residential</u>						
Residential average unit size (nsf)	1,200	750	750	750	750	750
Price per square foot (\$/sf)	\$400	\$450	\$450	\$450	\$450	\$450
Total price per unit (base price)	\$480,000	\$337,500	\$337,500	\$337,500	\$337,500	\$337,500
Common areas (% of gsf)	0.5	0.15	0.15	0.15	0.15	0.15
Total residential SF	54,000	47,438	94,875	120,750	56,063	94,875
Total residential value	\$14,400,000	\$18,562,500	\$37,125,000	\$47,250,000	\$21,937,500	\$37,125,000
<u>Commercial</u>						
Total commercial SF	0	0	0	0	10,000	10,000
NNN \$/sf	\$0	\$0	\$0	\$0	\$30	\$30
NOI (net operating income)	\$0	\$0	\$0	\$0	\$300,000	\$300,000
Cap rate	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Total commercial value	\$0	\$0	\$0	\$0	\$4,285,700	\$4,285,700
Total project square feet	54,000	47,438	94,875	120,750	66,063	104,875
Total project value	\$14,400,000	\$18,562,500	\$37,125,000	\$47,250,000	\$26,223,200	\$41,410,700

Source: Linda Schatz

For the townhome typology \$400 per square foot was used and for the other typologies \$450 per square foot was used. Market comparables are based on nearby projects in the Downtown, Kapalama, Dillingham, and Liliha areas. The projects were typically mid-

to high-rise condominiums except for the Kapalama area, which had a large number of low-rise multi-family products. The comparables in Kapalama also tend to be 40 or more years old and the neighborhood generally has light industrial surrounding it, which created a much lower price per square foot at an average of \$275 per SF. Liliha had an average price per SF of \$440. Downtown high-rises had an average of \$504 per SF. The downtown project built in 2005 by Downtown Affordables at 215 North King St. had an average \$589 per SF.

**Figure 31. Iwilei Market Comparables**



Source: Linda Schatz

To test feasibility with realistic price per square foot, a \$450 per SF was used in comparing residual land valuations for each typology, which falls significantly above the older Kapalama low-rise product but within range of the Liliha high-rise re-sales. Due to the Iwilei area being a community that needs much rehabilitation having comparable

prices to Downtown or a fairly new product like 215 North King Street didn't seem realistic.

#### Project Costs

Project costs were based on local figures from builders such as Pankow and Swinerton Builders. General cost per square foot was given based on construction type and typology. For Type III and Type V construction a cost of \$220 per SF was used and for Type I construction \$325 -\$350 per SF was used to calculate cost.

Hard and soft costs were broken out separately to determine what the large cost variables are. For example, parking was broken out into a separate component because for some typologies such as a low-rise multi-family situation one can design a building with surface parking or as a wrap with the parking in a different construction Type than the residential component because they are separated structures. A wrap would have higher densities because typically the parking structure is in Type I to accommodate for more residential units that "wrap" the parking.

Another component is site development costs. For low-rise structures, site development costs are considerably less since smaller footings and potentially the use of a mat slab can accommodate a low-rise surface parked structure. As a structure that goes up in height, piles would be required with larger footings to accommodate the higher structural loads which increase cost.

Soft costs listed here are typical for any for-sale residential development project. The figures were based on percentages through interviewing several local developers. Total project costs are hard and soft costs combined.

**Figure 32. Project Costs (Hard/Construction Costs and Soft Costs)**

<b>Project Costs</b>						
<b>Construction costs/sf</b>						
Residential building costs/sf (nsf)	\$220	\$220	\$325	\$325	\$350	\$350
Commercial building costs/sf (nsf)	\$0	\$0	\$0	\$0	\$350	\$350
Site development costs/sf	\$25	\$40	\$50	\$50	\$50	\$60
<b>Construction costs</b>						
Residential building costs	\$11,880,000	\$10,436,250	\$30,834,375	\$39,243,750	\$19,621,875	\$33,206,250
Commercial building costs	\$0	\$0	\$0	\$0	\$3,500,000	\$3,500,000
Site development costs	\$1,089,000	\$1,742,400	\$2,178,000	\$2,178,000	\$2,178,000	\$2,613,600
Parking stalls	66	91	182	231	138	210
Parking cost/stall	\$5,000	\$5,000	\$30,000	\$30,000	\$30,000	\$30,000
Parking costs	\$330,000	\$455,000	\$5,460,000	\$6,930,000	\$4,140,000	\$6,300,000
<b>Total construction costs</b>	<b>\$13,299,000</b>	<b>\$12,633,650</b>	<b>\$38,472,375</b>	<b>\$48,351,750</b>	<b>\$29,439,875</b>	<b>\$45,619,850</b>
<b>Soft costs</b>						
Development fees % of value	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Condominium insurance % of value (for apartment scenario)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Design fees (architectural & engineering) % of hard cost	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Marketing % of value	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Construction management % of hard cost	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Finance (based on construction & absorption period)	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
Taxes % of hard cost	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%
Contingency % of hard cost	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Development fee cost	\$720,000	\$928,125	\$1,856,250	\$2,362,500	\$1,311,160	\$2,070,535
Condominium insurance	\$0	\$0	\$0	\$0	\$0	\$0
Design fee cost	\$1,063,920	\$1,010,692	\$3,077,790	\$3,868,140	\$2,355,190	\$3,649,588
Marketing cost	\$720,000	\$928,125	\$1,856,250	\$2,362,500	\$1,311,160	\$2,070,535
Construction management cost	\$398,970	\$379,010	\$1,154,171	\$1,450,553	\$883,196	\$1,368,596
Finance cost (applied to 80% of construction)	\$678,249	\$644,316	\$1,962,091	\$2,465,939	\$1,501,434	\$2,326,612
Taxes	\$626,649	\$595,298	\$1,812,818	\$2,278,334	\$1,387,207	\$2,149,607
Contingency	\$1,329,900	\$1,263,365	\$3,847,238	\$4,835,175	\$2,943,988	\$4,561,985
<b>Total soft costs</b>	<b>\$5,537,688</b>	<b>\$5,748,930</b>	<b>\$15,566,608</b>	<b>\$19,623,141</b>	<b>\$11,693,334</b>	<b>\$18,197,458</b>
<b>Total Project Costs (Hard + Soft)</b>	<b>\$18,836,688</b>	<b>\$18,382,580</b>	<b>\$54,038,983</b>	<b>\$67,974,891</b>	<b>\$41,133,209</b>	<b>\$63,817,308</b>

Source: Linda Schatz

### Residual Land Valuation

“Residual land value is the price one can afford to pay at the start of construction that will result in sufficient return to attract investors and provide profit commensurate with risk.”<sup>59</sup> To calculate residual land value the financial analysis took the supported investment and subtracted the development costs without land to determine the residual land value. Based on the assumptions made the current land residuals are calculated to show valuation by price per acre, price per square feet, and price per unit. In Iwilei we must get a land residual value of at least \$75 per SF to \$100 per SF in order to have a feasible project.

<sup>59</sup> Charles A. Long, Public Private Partnerships to Achieve Transit Oriented Development. Honolulu, HI: The Urban Land Institute, March 17, 2009, 40.

**Figure 33. Residual Land Valuation**

<b>Residual Land Valuation</b>	<b>(\$5,625,679)</b>	<b>(\$1,352,764)</b>	<b>(\$22,577,119)</b>	<b>(\$27,932,518)</b>	<b>(\$18,910,158)</b>	<b>(\$28,723,495)</b>
\$/acre	(\$5,625,679)	(\$1,352,764)	(\$22,577,119)	(\$27,932,518)	(\$18,910,158)	(\$28,723,495)
\$/sf	(\$129)	(\$31)	(\$518)	(\$641)	(\$434)	(\$659)
\$/unit	(\$187,523)	(\$24,596)	(\$205,247)	(\$199,518)	(\$290,926)	(\$261,123)

Source: Linda Schatz

**Figure 34. Comparative Land Residuals by Building Typology for 1-Acre Site**

Comparative Land Residuals by Building Typologies						
	Townhome (surface parking)	Low-Rise Multifamily (surface parking)	Mid-rise Multifamily (structured parking)	High-rise Multifamily (structured parking)	Mid-rise Residential Over Commercial (structured parking)	High-rise Residential Over Commercial (structured parking)
<b>Land Area and Dwelling Units/Acre</b>						
Total Land Acres	1.00	1.00	1.00	1.00	1.00	1.00
Total Land Square Feet	43,560	43,560	43,560	43,560	43,560	43,560
Densities (DU/AC)	30	55	110	140	65	110
Total Units	30.00	55.00	110.00	140.00	65.00	110.00
<b>Development Plan and Project Value</b>						
<u>Residential</u>						
Residential average unit size (nsf)	1,200	750	750	750	750	750
Price per square foot (\$/sf)	\$400	\$450	\$450	\$450	\$450	\$450
Total price per unit (base price)	\$480,000	\$337,500	\$337,500	\$337,500	\$337,500	\$337,500
Common areas (% of gsf)	0.5	0.15	0.15	0.15	0.15	0.15
Total residential SF	54,000	47,438	94,875	120,750	56,063	94,875
Total residential value	\$14,400,000	\$18,562,500	\$37,125,000	\$47,250,000	\$21,937,500	\$37,125,000
<u>Commercial</u>						
Total commercial SF	0	0	0	0	10,000	10,000
NNN \$/sf	\$0	\$0	\$0	\$0	\$30	\$30
NOI (net operating income)	\$0	\$0	\$0	\$0	\$300,000	\$300,000
Cap rate	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Total commercial value	\$0	\$0	\$0	\$0	\$4,285,700	\$4,285,700
Total project square feet	54,000	47,438	94,875	120,750	66,063	104,875
Total project value	\$14,400,000	\$18,562,500	\$37,125,000	\$47,250,000	\$26,223,200	\$41,410,700
<b>Project Costs</b>						
<u>Construction costs/sf</u>						
Residential building costs/sf (nsf)	\$220	\$220	\$325	\$325	\$350	\$350
Commercial building costs/sf (nsf)	\$0	\$0	\$0	\$0	\$350	\$350
Site development costs/sf	\$25	\$40	\$50	\$50	\$50	\$60
<u>Construction costs</u>						
Residential building costs	\$11,880,000	\$10,436,250	\$30,834,375	\$39,243,750	\$19,621,875	\$33,206,250
Commercial building costs	\$0	\$0	\$0	\$0	\$3,500,000	\$3,500,000
Site development costs	\$1,089,000	\$1,742,400	\$2,178,000	\$2,178,000	\$2,178,000	\$2,613,600
Parking stalls	66	91	182	231	138	210
Parking cost/stall	\$5,000	\$5,000	\$30,000	\$30,000	\$30,000	\$30,000
Parking costs	\$330,000	\$455,000	\$5,460,000	\$6,930,000	\$4,140,000	\$6,300,000
Total construction costs	\$13,299,000	\$12,633,650	\$38,472,375	\$48,351,750	\$29,439,875	\$45,619,850
<u>Soft costs</u>						
Development fees % of value	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Condominium insurance % of value (for apartment scenario)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Design fees (architectural & engineering) % of hard cost	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Marketing % of value	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Construction management % of hard cost	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Finance (based on construction & absorption period)	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
Taxes % of hard cost	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%
Contingency % of hard cost	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Development fee cost	\$720,000	\$928,125	\$1,856,250	\$2,362,500	\$1,311,160	\$2,070,535
Condominium insurance	\$0	\$0	\$0	\$0	\$0	\$0
Design fee cost	\$1,063,920	\$1,010,692	\$3,077,790	\$3,868,140	\$2,355,190	\$3,649,588
Marketing cost	\$720,000	\$928,125	\$1,856,250	\$2,362,500	\$1,311,160	\$2,070,535
Construction management cost	\$398,970	\$379,010	\$1,154,171	\$1,450,553	\$883,196	\$1,368,596
Finance cost (applied to 80% of construction)	\$678,249	\$644,316	\$1,962,091	\$2,465,939	\$1,501,434	\$2,326,612
Taxes	\$626,649	\$595,298	\$1,812,818	\$2,278,334	\$1,387,207	\$2,149,607
Contingency	\$1,329,900	\$1,263,365	\$3,847,238	\$4,835,175	\$2,943,988	\$4,561,985
Total soft costs	\$5,537,688	\$5,748,930	\$15,566,608	\$19,623,141	\$11,693,334	\$18,197,458
<b>Total Project Costs (Hard + Soft)</b>	<b>\$18,836,688</b>	<b>\$18,382,580</b>	<b>\$54,038,983</b>	<b>\$67,974,891</b>	<b>\$41,133,209</b>	<b>\$63,817,308</b>
<b>Supported Investment</b>						
<u>Hurdle rate</u>	9%	9%	18%	18%	18%	18%
Supported investment	\$13,211,009	\$17,029,817	\$31,461,864	\$40,042,373	\$22,223,051	\$35,093,814
<b>Residual Land Valuation</b>						
\$/acre	(\$5,625,679)	(\$1,352,764)	(\$22,577,119)	(\$27,932,518)	(\$18,910,158)	(\$28,723,495)
\$/sf	(\$129)	(\$31)	(\$518)	(\$641)	(\$434)	(\$659)
\$/unit	(\$187,523)	(\$24,596)	(\$205,247)	(\$199,518)	(\$290,926)	(\$261,123)

Source: Linda Schatz

**Figure 35. Comparative Land Residuals by Building Typology for 3-Acre Site**

Comparative Land Residuals by Building Typologies						
	Townhome (surface parking)	Low-Rise Multifamily (surface parking)	Mid-rise Multifamily (structured parking)	High-rise Multifamily (structured parking)	Mid-rise Residential Over Commercial (structured parking)	High-rise Residential Over Commercial (structured parking)
<b>Land Area and Dwelling Units/Acre</b>						
Total Land Acres	3.00	3.00	3.00	3.00	3.00	3.00
Total Land Square Feet	130,680	130,680	130,680	130,680	130,680	130,680
Densities (DU/AC)	30	55	110	140	65	110
Total Units	90.00	165.00	330.00	420.00	195.00	330.00
<b>Development Plan and Project Value</b>						
<u>Residential</u>						
Residential average unit size (nsf)	1,200	750	750	750	750	750
Price per square foot (\$/sf)	\$400	\$450	\$450	\$450	\$450	\$450
Total price per unit (base price)	\$480,000	\$337,500	\$337,500	\$337,500	\$337,500	\$337,500
Common areas (% of gsf)	0.5	0.15	0.15	0.15	0.15	0.15
Total residential SF	162,000	142,313	284,625	362,250	168,188	284,625
Total residential value	\$43,200,000	\$55,687,500	\$111,375,000	\$141,750,000	\$65,812,500	\$111,375,000
<u>Commercial</u>						
Total commercial SF	0	0	0	0	10,000	10,000
NNN \$/sf	\$0	\$0	\$0	\$0	\$30	\$30
NOI (net operating income)	\$0	\$0	\$0	\$0	\$300,000	\$300,000
Cap rate	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Total commercial value	\$0	\$0	\$0	\$0	\$4,285,700	\$4,285,700
Total project square feet	162,000	142,313	284,625	362,250	178,188	294,625
Total project value	\$43,200,000	\$55,687,500	\$111,375,000	\$141,750,000	\$70,098,200	\$115,660,700
<b>Project Costs</b>						
<u>Construction costs/sf</u>						
Residential building costs/sf (nsf)	\$220	\$220	\$325	\$325	\$350	\$350
Commercial building costs/sf (nsf)	\$0	\$0	\$0	\$0	\$350	\$350
Site development costs/sf	\$25	\$40	\$50	\$50	\$50	\$60
<u>Construction costs</u>						
Residential building costs	\$35,640,000	\$31,308,750	\$92,503,125	\$117,731,250	\$58,865,625	\$99,618,750
Commercial building costs	\$0	\$0	\$0	\$0	\$3,500,000	\$3,500,000
Site development costs	\$3,267,000	\$5,227,200	\$6,534,000	\$6,534,000	\$6,534,000	\$7,840,800
Parking stalls	189	264	528	672	346	562
Parking cost/stall	\$5,000	\$5,000	\$30,000	\$30,000	\$30,000	\$30,000
Parking costs	\$945,000	\$1,320,000	\$15,840,000	\$20,160,000	\$10,380,000	\$16,860,000
Total construction costs	\$39,852,000	\$37,855,950	\$114,877,125	\$144,425,250	\$79,279,625	\$127,819,550
<u>Soft costs</u>						
Development fees % of value	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Condominium insurance % of value (for apartment scenario)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Design fees (architectural & engineering) % of hard cost	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Marketing % of value	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Construction management % of hard cost	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Finance (based on construction & absorption period)	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
Taxes % of hard cost	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%
Contingency % of hard cost	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Development fee cost	\$2,160,000	\$2,784,375	\$5,568,750	\$7,087,500	\$3,504,910	\$5,783,035
Condominium insurance	\$0	\$0	\$0	\$0	\$0	\$0
Design fee cost	\$3,188,160	\$3,028,476	\$9,190,170	\$11,554,020	\$6,342,370	\$10,225,564
Marketing cost	\$2,160,000	\$2,784,375	\$5,568,750	\$7,087,500	\$3,504,910	\$5,783,035
Construction management cost	\$1,195,560	\$1,135,679	\$3,446,314	\$4,332,758	\$2,378,389	\$3,834,587
Finance cost (applied to 80% of construction)	\$2,032,452	\$1,930,653	\$5,858,733	\$7,365,688	\$4,043,261	\$6,518,797
Taxes	\$1,877,826	\$1,783,772	\$5,413,010	\$6,805,318	\$3,735,656	\$6,022,857
Contingency	\$3,985,200	\$3,785,595	\$11,487,713	\$14,442,525	\$7,927,963	\$12,781,955
Total soft costs	\$16,599,198	\$17,232,925	\$46,533,440	\$58,675,308	\$31,437,458	\$50,949,830
<b>Total Project Costs (Hard + Soft)</b>	<b>\$56,451,198</b>	<b>\$55,088,875</b>	<b>\$161,410,565</b>	<b>\$203,100,558</b>	<b>\$110,717,083</b>	<b>\$178,769,380</b>
<b>Supported Investment</b>						
Hurdle rate	9%	9%	18%	18%	18%	18%
Supported investment	\$39,633,028	\$51,089,450	\$94,385,593	\$120,127,119	\$59,405,254	\$98,017,542
<b>Residual Land Valuation</b>						
\$/acre	(\$16,818,171)	(\$3,999,426)	(\$67,024,972)	(\$82,973,439)	(\$51,311,829)	(\$80,751,837)
\$/sf	(\$5,606,057)	(\$1,333,142)	(\$22,341,657)	(\$27,657,813)	(\$17,103,943)	(\$26,917,279)
\$/unit	(\$129)	(\$31)	(\$513)	(\$635)	(\$393)	(\$618)
	(\$186,869)	(\$24,239)	(\$203,106)	(\$197,556)	(\$263,138)	(\$244,703)

Source: Linda Schatz

## Findings

Of the six scenarios the low-rise multi-family surface parking at 55 du/acres has the smallest gap to make up in current market conditions at a sales price of \$450 per square foot. The second building typology is the townhome at 30du/ac. If the price per square foot was increased to \$620 per square foot than the low-rise multifamily surface parking typology has a land residual value of \$101 per square foot, which is the residual land value that must be met for a feasible project to be developed.

**Figure 36. Comparative Land Residual by Building Typology (\$620 per SF)**

	Townhome (surface parking)	Low-Rise Multifamily (surface parking)	Mid-rise Multifamily (structured parking)	High-rise Multifamily (structured parking)	Mid-rise Residential Over Commercial (structured parking)	High-rise Residential Over Commercial (structured parking)
<b>Land Area and Dwelling Units/Acre</b>						
Total Land Acres	1.00	1.00	1.00	1.00	1.00	1.00
Total Land Square Feet	43,560	43,560	43,560	43,560	43,560	43,560
Densities (DU/AC)	30	55	110	140	65	110
Total Units	30.00	55.00	110.00	140.00	65.00	110.00
<b>Development Plan and Project Value</b>						
<b>Residential</b>						
Residential average unit size (nsf)	1,200	750	750	750	750	750
Price per square foot (\$/sf)	\$620	\$620	\$620	\$620	\$620	\$620
Total price per unit (base price)	\$744,000	\$465,000	\$465,000	\$465,000	\$465,000	\$465,000
Common areas (% of gsf)	0.5	0.15	0.15	0.15	0.15	0.15
Total residential SF	54,000	47,438	94,875	120,750	56,063	94,875
Total residential value	\$22,320,000	\$25,575,000	\$51,150,000	\$65,100,000	\$30,225,000	\$51,150,000
<b>Residual Land Valuation</b>						
\$/acre	\$848,376	\$4,379,473	(\$12,094,026)	(\$14,590,400)	(\$12,715,603)	(\$18,240,401)
\$/sf	\$19	\$101	(\$278)	(\$335)	(\$292)	(\$419)
\$/unit	\$28,279	\$79,627	(\$109,946)	(\$104,217)	(\$195,625)	(\$165,822)

Source: Linda Schatz

Townhomes, which are also surface parked, have a residual land value of \$19 per square foot at a sales price of \$620 per square foot. The typologies with structured parking in type I construction have negative land residual values from \$278 to \$419 per square foot. These negative values create a significantly wide gap where high-density housing over 55 du/acres seems more likely to be developed near the Iwilei transit station.



When parking was taken out of the equation there was still a gap present in meeting residual values of \$100 per square feet for all typologies. The only typology that had the smallest negative value was the low-rise multifamily surface parking scenario.

**Figure 37. Residual Land Value with No Parking Requirements (\$450 per square foot base sales price)**

<b>Residual Land Valuation</b>	(\$5,193,999)	(\$757,569)	(\$15,434,784)	(\$18,867,247)	(\$13,494,542)	(\$20,482,339)
\$/acre	(\$5,193,999)	(\$757,569)	(\$15,434,784)	(\$18,867,247)	(\$13,494,542)	(\$20,482,339)
\$/sf	(\$119)	(\$17)	(\$354)	(\$433)	(\$310)	(\$470)
\$/unit	(\$173,133)	(\$13,774)	(\$140,316)	(\$134,766)	(\$207,608)	(\$186,203)

Source: Linda Schatz

When the price per square foot was raised to \$775 the townhome, low-rise, mid-rise, and high-rise multifamily with no parking requirement had a land residual value over \$100 per square foot which makes the project feasible. The mid-rise and high-rise residential over commercial still has a negative residual land value. It may be due to the lower densities gained compared to the high expense in construction costs.

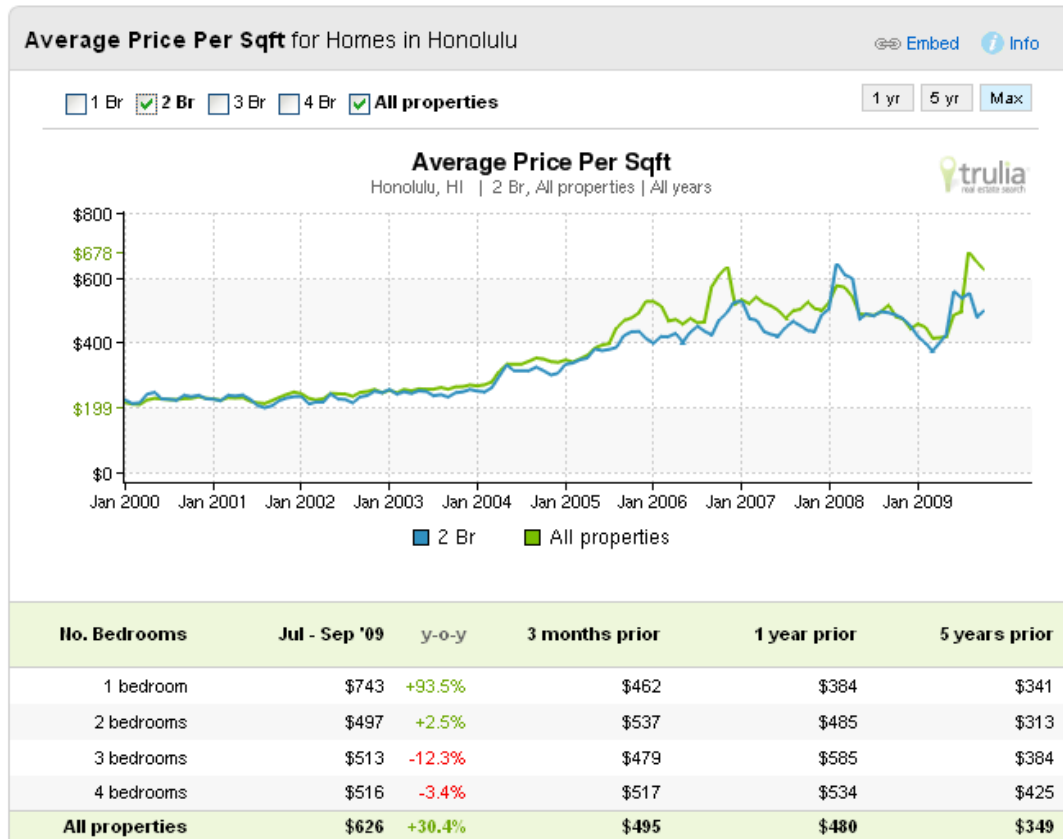
**Figure 38. Residual Land Value with No Parking Requirements (\$775 per square foot base sales price)**

	<b>Townhome</b> (surface parking)	<b>Low-Rise Multifamily</b> (surface parking)	<b>Mid-rise Multifamily</b> (structured parking)	<b>High-rise Multifamily</b> (structured parking)	<b>Mid-rise Residential Over Commercial</b> (structured parking)	<b>High-rise Residential Over Commercial</b> (structured parking)
<b>Land Area and Dwelling Units/Acre</b>						
Total Land Acres	1.00	1.00	1.00	1.00	1.00	1.00
Total Land Square Feet	43,560	43,560	43,560	43,560	43,560	43,560
Densities (DU/AC)	30	55	110	140	65	110
Total Units	30.00	55.00	110.00	140.00	65.00	110.00
<b>Development Plan and Project Value</b>						
<b>Residential</b>						
Residential average unit size (nsf)	1,200	750	750	750	750	750
Price per square foot (\$/sf)	\$775	\$775	\$775	\$775	\$775	\$775
Total price per unit (base price)	\$930,000	\$581,250	\$581,250	\$581,250	\$581,250	\$581,250
Common areas (% of gsf)	0.5	0.15	0.15	0.15	0.15	0.15
Total residential SF	54,000	47,438	94,875	120,750	56,063	94,875
Total residential value	\$27,900,000	\$31,968,750	\$63,937,500	\$81,375,000	\$37,781,250	\$63,937,500

<b>Residual Land Valuation</b>	\$5,841,322	\$10,201,118	\$4,606,424	\$6,639,745	(\$1,652,010)	(\$441,131)
\$/acre	\$5,841,322	\$10,201,118	\$4,606,424	\$6,639,745	(\$1,652,010)	(\$441,131)
\$/sf	\$134	\$234	\$106	\$152	(\$38)	(\$10)
\$/unit	\$194,711	\$185,475	\$41,877	\$47,427	(\$25,416)	(\$4,010)

Source: Linda Schatz

**Figure 39. Average Price per Square Foot**



Source: [http://www.trulia.com/real\\_estate/Honolulu-Hawaii/market-trends/](http://www.trulia.com/real_estate/Honolulu-Hawaii/market-trends/)

The average price per square foot for two bedrooms in Honolulu as of September 2009 was \$497.<sup>60</sup> With high-density multifamily being financially feasible at an unrealistic \$775 per square foot with no parking requirements other factors must come into play in

<sup>60</sup> Trulia Real Estate Research, [http://www.trulia.com/real\\_estate/Honolulu-Hawaii/market-trends/](http://www.trulia.com/real_estate/Honolulu-Hawaii/market-trends/), accessed: November 2009

order to make high-density housing along transit work. The other major variables that can change drastically to create a feasible project are construction costs.

With construction costs lowered by 20% and price per square foot at \$450, land residual value for the low-rise multifamily with surface parking is at \$45 per square foot. For the townhome, mid-rise, high-rise, and mixed use typologies land residuals are still negative and at a degree where it seems insurmountable for the structured parking scenarios.

**Figure 40. Land Residual Values with Lower Construction Costs (20%)**

<b>Project Costs</b>						
<u>Construction costs/sf</u>						
Residential building costs/sf (nsf)	\$176	\$176	\$260	\$260	\$280	\$280
Commercial building costs/sf (nsf)	\$0	\$0	\$0	\$0	\$350	\$350
Site development costs/sf	\$20	\$32	\$40	\$40	\$40	\$48
<u>Construction costs</u>						
Residential building costs	\$9,504,000	\$8,349,000	\$24,667,500	\$31,395,000	\$15,697,500	\$26,565,000
Commercial building costs	\$0	\$0	\$0	\$0	\$3,500,000	\$3,500,000
Site development costs	\$871,200	\$1,393,920	\$1,742,400	\$1,742,400	\$1,742,400	\$2,090,880
Parking stalls	66	91	182	231	138	210
Parking cost/stall	\$4,000	\$4,000	\$24,000	\$24,000	\$24,000	\$24,000
Parking costs	\$264,000	\$364,000	\$4,368,000	\$5,544,000	\$3,312,000	\$5,040,000
Total construction costs	\$10,639,200	\$10,106,920	\$30,777,900	\$38,681,400	\$24,251,900	\$37,195,880

<b>Residual Land Valuation</b>	(\$2,146,341)	\$1,952,502	(\$12,511,822)	(\$15,282,540)	(\$12,123,665)	(\$17,703,931)
\$/acre	(\$2,146,341)	\$1,952,502	(\$12,511,822)	(\$15,282,540)	(\$12,123,665)	(\$17,703,931)
\$/sf	(\$49)	\$45	(\$287)	(\$351)	(\$278)	(\$406)
\$/unit	(\$71,545)	\$35,500	(\$113,744)	(\$109,161)	(\$186,518)	(\$160,945)

Source: Linda Schatz

Out of the six building typologies tested, the low-rise multifamily surface parking scenario using Type V or Type III construction is near feasible or feasible under several conditions:

- At \$450 per square foot, land residual value is -\$31 per square foot
- At \$620 per square foot, land residual value is \$101 per square foot

- At \$450 per square foot, no parking requirement (no parking cost), land residual value is -\$17 per square foot
- At \$450 per square foot, and construction costs lowered by 20%, land residual value is \$45 per square foot

**Figure 41. Land Residual Values for Low-rise Multifamily Surface Parking Building Typology**

Price per SF	Parking Requirement	Construction Cost	Land Residual Value (per square foot)
\$450	Parking required		(\$31)
\$450	No parking requirement		(\$17)
\$450	Parking required	20% lower construction costs	\$45
\$620	Parking required		\$101

Source: Linda Schatz

A combination of reduced parking requirements, lower construction costs, and the option to increase densities in urban areas where land values are high will create an environment where development may be feasible for low-rise multifamily with surface parking.

For mid-rise and high-rise scenarios where construction type requires concrete there may be difficulty in having projects pencil in an area like Iwilei were the ability to sell new housing product has a sales price that will be capped by neighboring low income projects. Even if land costs were subsidized or underwriting was provided for land costs projects still do not pencil out because of the costs in construction and inability to raise sales prices beyond a certain point due to the inner city low-income perception of Iwilei.

Mid- and high-rise would only be feasible if there was district parking available and market units could be sold. Given these characteristics these two typologies could potentially be developed at later phases in the master plan. The low-rise typology could be the first wave of redevelopment surrounding the transit station.

## **Reasons for Urban Redevelopment**

Iwilei has been slowly evolving from a light industrial area into a commercial area with offices and big box retail supporting a high public transit ridership. It will continue to evolve and at a much faster pace due to four major factors.

### **Kamehameha Schools 105 Acres in Kapalama**

Kamehameha Schools' lands surrounding the Kapalama area either many properties with expiring leases. Major master planning efforts are underway to redevelop their holdings, which surrounds the designated Kapalama transit station. They are considering developing a mixed-use community that serves the high-tech and creative community that wants access near the CBD.

### **Redevelopment of Mayor Wright and Kukui Gardens**

Mayor Wright and Kukui Gardens is undergoing a redevelopment process that is currently in its initial stages of planning. These two projects fall within the ¼ mile radius of the Iwilei station and currently provide high ridership for the public bus system. The redevelopment of these two projects are projecting much higher densities, requiring high-rise towers and potentially more open space.

### **West Oahu's New Light Industrial Space Will Compete with Aging Structures in Iwilei**

The increase in new light industrial space in West Oahu will start to compete with the existing old inventory in Iwilei. Many of these light industrial warehouses have been converted to support offices, retail, and nonprofit social services.

### **Introduction of Transit**

Transit will also be a major driver in changing the urban form and land uses in Iwilei. The location of the station through Kaaahi Street will require additional side streets to be

created and also set the stage for planning a more pedestrian friendly environment in order for those who live along King Street to be able to access the station easily. This alone will improve property values and influence market desire to redevelop the area.

## Proposed Iwilei Master Plan

The proposed hypothetical master plan for Iwilei station takes into account recommended densities and units based on the “Urban Neighborhood” TOD typology. The “Urban Neighborhood” prescribes development guidelines for a mix of housing units that comprise of mid-rise, low-rise, and townhomes. Total number of units around the station area would be approximately 3,187 total new units, which does not include replacing aging residential units. Net project density in new housing is recommended at 40-100 du/acres. It is also recommended that there be a minimum FAR of 1.0 for commercial uses.<sup>61</sup>

Currently the existing zoned uses are primarily BMX-3 located along N. King St. and everything west of this area is IMX-1. Kukui Gardens and Mayor Wright parcels are zoned A-2 and will most likely be rezoned to accommodate mixed use in the future. The Existing Land Use map also shows parcel sizes that may dictate future densities and building typologies that can be built in Iwilei. Smaller parcels that are less than 1 acre are difficult to assemble. Near the transit station there are many parcels less than an acre, which would make large scale development more difficult. Parcels that are between 1 and 2 acres are scarce. The majority of parcels larger than 2-acres are zoned industrial with the exception of Kukui Gardens and Mayor Wright. These larger 2-acre parcels offer opportunities to develop low-rise wrap building typologies and potentially garden homes or urban townhomes.

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<sup>61</sup> Reconnecting America and the Center for Transit-Oriented Development. TOD 202 Station Area Planning: How to Make Great Transit-Oriented Places. Oakland, CA: Reconnecting America, 2008, 10-11.



**Figure 42. Existing Land Use and Parcel Sizes (Larger map located in Appendix C)**



Source: Graphic by Linda Schatz

Iwilei Masterplan  
October 2009  
Author: Linda Schatz

### **Master Plan Goals**

When a master plan does not focus on accommodating automobiles it provides opportunity to create more open space, bike paths, and livable compact developments that can appeal to market rate buyers. The master plan should reduce auto-use, increase mode splits, create internal trip captures, and provide location efficiency for its residents.

Iwilei is a community that is open to diversity of all kinds because it is home to many immigrants, which creates a distinct sense of place and experience that cannot be replicated anywhere else. With such a large immigrant population, the Iwilei area has an infusion of culture in an extremely urban-industrial context. The inherent characteristics of such a multi-cultural society living on the outskirts of Chinatown should be celebrated and engaged. There are moments in Iwilei that capture the spirit of immigrants and ethnic pride that can serve as a guide to design and community in the master plan.

**Figure 43. Iwilei Master Plan (Larger map located in Appendix C)**



Source: Graphic by Linda Schatz

### TOD Overlay Zone Should be Mixed-Use

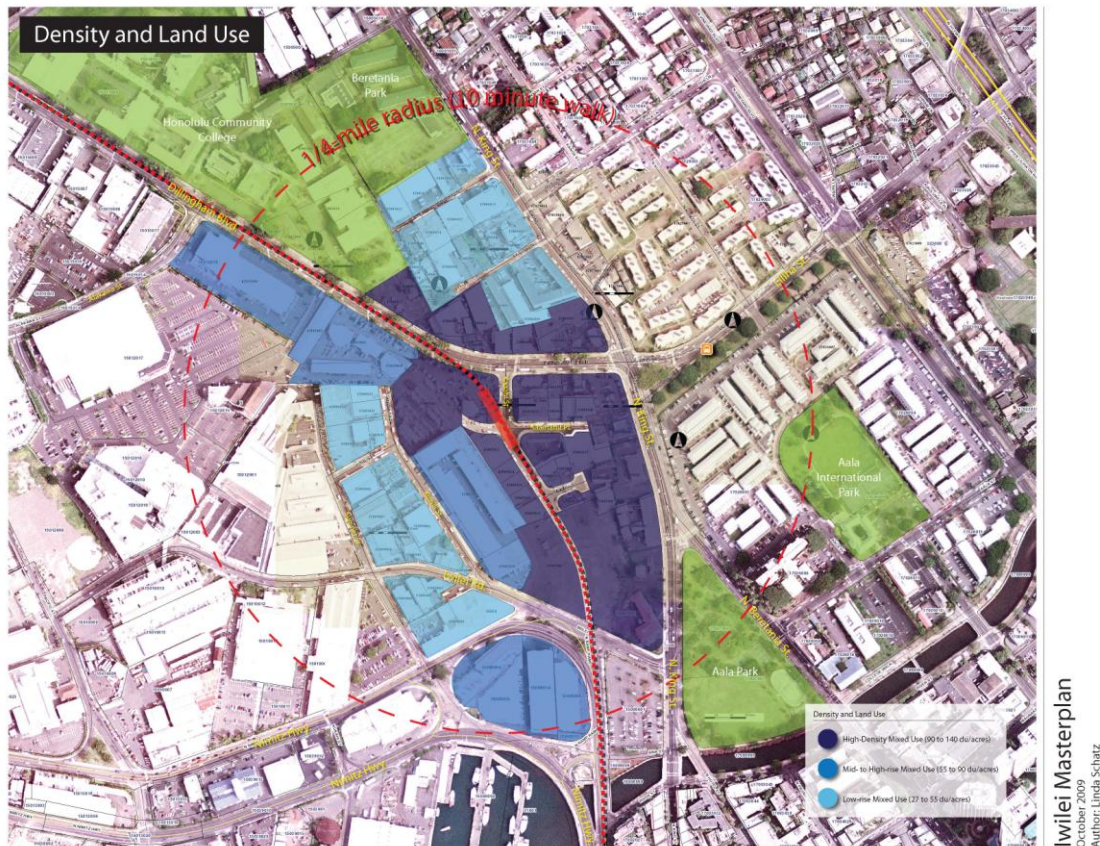
Everything in the quarter mile radius should be changed to BMX-4 to allow the market to dictate where retail should be built and allow residential densities to be increase in the area which is currently mostly zoned IMX-I.

Densities are concentrated along the transit stations near Dillingham Blvd. and N. King St. should be approximately 90-140 du/acres. Density gradually tapers at locations farther away with medium densities at 55-90 du/acres and then at lower densities of 27-55 du/acres. Product types at lower densities are typically low-rise garden or urban townhomes, and flats. Townhomes and garden units offer a single-family home feel in an



urban setting with separate entries from the ground floor that currently do not exist and can meet a demand that exist from young families.

**Figure 44. Proposed Density and Land Use (Larger map located in Appendix C)**



Source: Graphic by Linda Schatz

### Create a Pedestrian Network

Creating a pedestrian-friendly environment that weaves through the community provides opportunities for mom and pop stores to thrive and allows mobility and access for young and old within the 1/4-mile radius around the station is critical. It will help to internalize trips near home and provide a pedestrian connection to Chinatown where many of the current residents now shop and work. Many of Iwilei's current residents

come from countries that are pedestrian-oriented with major public transportation networks.

N. King St. is currently a major pedestrian thoroughfare as well as a major arterial street in this area. The transit line through Kaaahi St. should not compete with N. King St. N. King St. should remain a major traffic area for both automobiles and pedestrians since it is also lined by two major low-income housing projects and leads directly into Chinatown and the Central Business District.

**Figure 45. Pedestrian Network (Larger map located in Appendix C)**



Source: Graphic by Linda Schatz

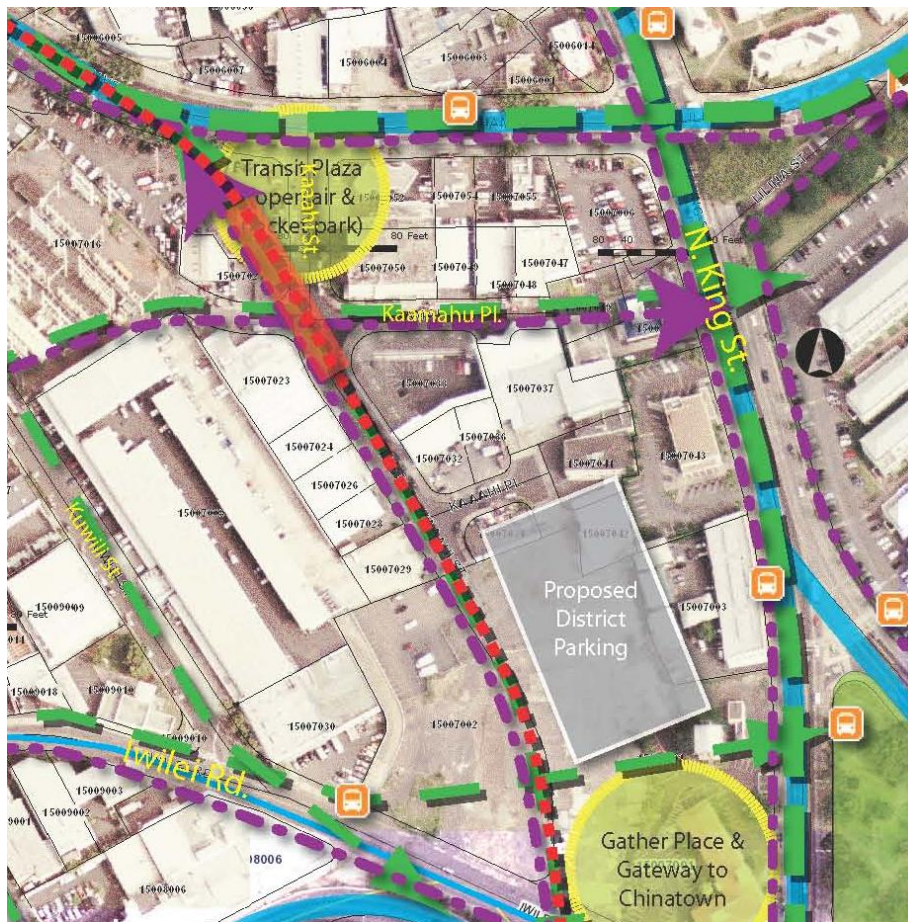
Iwilei Masterplan  
October 2009  
Author: Linda Schatz

### District Parking

The government should consolidate parking into district parking structures located on larger parcels that do not require land assembly. Preferably government owned parcels as shown in the map below should be used for district parking. Consolidating the parking footprint for several projects will create the opportunity for a more pedestrian friendly environment as well as allow for more land to be used for open space or building density. Parking structures can be either coordinate in a larger development or mandated by the City through development fees in order to build and maintain district parking structures. A portion of the parking stalls can be allocated to developments that would like to offer parking nearby but have buyers that will daily ride the elevated rail way. A shared parking arrangement should be coordinated to allow for the most optimal use of the garage structure and minimize the number of stalls. In an area with such a larger number of low-income housing and Iwilei being one of the highest public transportation ridership areas creates the opportunity to make shared parking work. It makes no sense to mandate parking for every residential unit built. Many trips by residents here will be internalized if the opportunities for convenience and service retail are available.



**Figure 46. Proposed District Parking**



Source: Graphic by Linda Schatz

### Initiate Redevelopment of Underutilized and Vacant Sites

Government should initiate redevelopment opportunities on under-utilized lots such as surface parking lots and vacant sites. Iwilei has many of these opportunities and will help to provide pressure for neighboring sites to sell or redevelop. Sites such as parcel 10 owned by the Weinberg Foundation can be redeveloped with retail ground floor uses to activate the street-level right before entry into the transit station to act as a draw. Parcel 15 and 16 owned by the state can provide district parking for the area and surrounding wrap of either residential or commercial.

### Civic Spaces

Fortunately, there are large parks and civic spaces in the Iwilei area. The immediate zone within the ¼-mile radius requires an open air transit plaza at the entry of the transit station located at the intersection of Dillingham Blvd. and Kaaahi St. The site of the Oahu Railway and Land Terminal Building should also be created into a civic space that acts as a landmark and gateway into Chinatown. Both proposed civic spaces are located on government owned property and are connected by pedestrian streetscape, the transit line, and bike pathways proposed in the master plan. These civic spaces become active nodes that connect the immediate transit area to the rest of the Iwilei neighborhood.

**Figure 47. Proposed Civic Spaces**








Source: Graphic by Linda Schatz



Reconnecting America also recommends various sizes of open space depending on open space typology. The gathering place and gateway into Chinatown should follow the Plaza typology with some passive recreation. The transit plaza at the Iwilei station entry should support station access with hardscaped areas and passive recreation.

**Figure 48. Recommended Open Space Typologies**

***A TOD Open Space Typology***

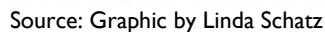
		Size	Characteristics	
OPEN SPACE TYPES	<i>Transit Plaza</i>	0.1-0.5 acres	Small open space adjacent to the station; can be linear or with a defined center; primarily hardscape amenities for riders; used to support station access and passive recreation	
	<i>Plaza</i>	0.1-1.0 acres	Small open space, usually close to buildings; primarily hardscape with some landscaping; primarily passive recreation	
	<i>Small Parks</i>	0.1-2.0 acres	Small open space, often separated from buildings by a roadway; primarily landscaped with some hardscape; primarily passive recreation	
	<i>Community-Scaled Parks</i>	1.0-5.0 acres	Medium-sized open space, usually separated from buildings by a roadway; mix of landscape and hardscape; mix of active and passive recreation	
	<i>Regional Open Space</i>	varies	Large open space as part of a trail system or network of parks; primarily landscaped; primarily active recreation	

Source: Reconnecting America and the Center for Transit-Oriented Development. TOD 202 Station Area Planning: How to Make Great Transit-Oriented Places. Oakland, CA: Reconnecting America, 2008, 14.

### Multi-modal Transportation System

Creating a connection or a link from Kaaahi Street to Mayor Wright and Kukui Gardens that is pedestrian and bike oriented will minimize the dominance of cars and create a connection that can be an extension of Kaamahu Place through to King Street. The

**Figure 49. Multi-Modal Transportation System (Larger map located in Appendix C)**



The master plan should provide more mixed-income housing in the area that meets the high demand for low-income housing but also provides market rate housing for first time buyers who desire urban living. Residential areas are concentrated near the station. Two high-rise towers are also proposed that can serve as land marks for the transit



station as well as one for the Oahu Railway Terminal Building civic space and provide the last phase of development.

The proposed neighborhood retail corridor is along Dillingham Blvd. near the transit station and then along N. King St. The choice to not bring this retail corridor along the transit line is due to the current use and condition of N. King St. as a major arterial that already services the community.

**Figure 50. Residential and Neighborhood Retail Corridor (Larger map located in Appendix C)**



Source: Graphic by Linda Schatz

Iwilei Masterplan  
October 2009  
Author: Linda Schatz

### **Closing the Gap**

Housing in Hawaii has been and continues to be a difficult battle. Because we live on an island where land is limited and our economy is based on the beauty of our nature through tourism, we must find ways to redevelop and integrate our transportation system with land use and development. We have no choice but to revisit urban Honolulu and rediscover these areas as potential vibrant and livable communities.

Through this analysis it is clear that we must transition our automobile dominant society to one that relies on an multi-modal transportation system and find ways to reduce our construction costs to be able to provide housing for middle-income families. There is no one solution for such a complex problem. It will require a combination of policies and advances in building technology and construction to meet the demands of housing for middle-income and low-income families.

With transit the one major factor that it ripe for change is our parking ordinances and the government's willingness to handle this problem by not just providing mass transit but understanding it is a multi-modal strategy that needs to be implemented that takes into account ideas such as district parking for transit communities along the alignment.

Some recommended policies and building technologies that should be seriously considered to enable TOD in Hawaii are:

- **Community Land Trust:** This allows people to purchase a home without purchasing the underlying land. Typically a community land trust is a non-profit, community-based organization with a mission to provide affordable housing in perpetuity. The community land trust and homeowner agree to a long-term

lease agreement, which is typically 99 years. The homeowner has rights such as, the rights to privacy, the exclusive use of the property, and the right to bequeath the property and lease. The trust has the right to purchase the house when and if the owner wants to sell, based on a resale formula that balances the interests of the owner's profits with the long-term goals of the trust to preserve housing affordability in perpetuity.<sup>62</sup>

- **Manufactured Housing:** prefabricated housing keeps cost per square foot very low. The challenge is to negotiate with local unions to be able have them involve in the prefabrication and assembly on site. Currently unions are not in favor of manufactured housing since it is usually done off-island in another country or on the mainland.
- **Location Efficient Mortgages:** allow urban homeowners to increase their borrowing capacity due to close proximity to public transit and neighborhood walkability. This reduces the need for a car or multiple cars in a household. Usually location efficient mortgages support homeowners in densely populated and well served public transit areas.<sup>63</sup>
- **District Parking:** requiring district parking, which is a large-scale application of shared parking, will help reduce construction costs. Since the city or state will not assemble land to take the housing crisis in Honolulu, they could provide district parking and relax parking requirements in Iwilei which will bring down

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<sup>62</sup> Hurley, Jennifer, and Nicole Brown. Affordable Housing Policy Guide Smartcode Module. Hurley-Franks & Associates, 2009, p. 4.

<sup>63</sup> Hurley, Jennifer, and Nicole Brown. Affordable Housing Policy Guide Smartcode Module. Hurley-Franks & Associates, 2009, p. 6.

the cost of construction considerably. It may make mid- to high-rise feasible without having to build parking. An option to purchase or rent parking could be available through government sponsored district parking.

- **Car Sharing Programs:** the city should approve projects that have car sharing programs within their development. If a car sharing program is in place than a very minimal number of parking stalls should be required and a density bonus should be granted that could possibly make high-density apartment rentals feasible if there isn't a requirement to build a parking structure.
- **Mechanized and Robotic Parking Systems:** should be encouraged by the city and potentially even used in proposed district parking structures. For a relatively small foot print compared to conventional structured garages 30% more cars can be parked at a lower cost of 30%. Robotic Parking, Inc. is installing a 334-car garage on a 10,000 square foot site.<sup>64</sup>
- **Optimal Use of Government Lands:** current many parcels in the 1/4-mile TOD zone is owned by the government and underutilized. They should be the initial first phases of redevelopment in the master plan.

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<sup>64</sup> California Department of Transportation. "Special Report – Parking and TOD: Challenges and Opportunities" Statewide Transit-Oriented Development (TOD) Study Factors for Success in California. Business, Transportation and Housing Agency, California Department of Transportation. February 2002, p. 18.

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## Appendix A: Table of landowners located near Iwilei station

828 IWILEI RD	TFI INCORPORATED	820 IWILEI RD	HONOLULU	HI	96817	681,500	262,300	1974	2224	5,242		MOTOR VEHICLE AND ACCESSORIES (AUTO, FARM & MARINE PARTS) (Last update in 2000)
916 KAAMAHU PL	COCKETT, RUDOLPH C TR COCKETT, ELIZABETH E TR	261 ANAPALAU ST	HONOLULU	HI	96825	669,800	216,200	1965	4151	5,600	IMX-1	150 Light Manufacturing, Processing and Fabrication Facility (Photo, publishing) WHOLESALE TRADE (WITH OR WITHOUT STOCK)
922 KAAMAHU PL	NAKAOKA INVESTMENTS INC	515 MAUI ST	HONOLULU	HI	96817	684,300	220,200	1969	3132	5,600	IMX-1	150 CONSTRUCTION (BUILDING CONTRACTORS, SPECIALIZED TRADES) Light Manufacturing, Processing and Fabrication Facility (Photo, publishing)
502 KAAAHIST	THOM, BUCK K FAMILY PRTRNSP	2069 MAKIKI PLACE	HONOLULU	HI	96822	714,300	183,200	1868	3000	5784	IMX-1	150
513 KAAAHIST	YAMUCHI, SHOJIN YAMUCHI, KATHLEEN	776 PUNAHOU ST	HONOLULU	HI	96826	797,200	234,400	1975	3360	6455	IMX-1	
505 KAAAHIST	300 CORPORATION	3660 WAIALAE AVE 400	HONOLULU	HI	96816-3260	791,000	0			8414	IMX-1	150 Parking Structure or Lot (Last update in 2000)
915 KAAAHI PL	ALOHA FENDER WORKS INC	915 KAAAHI PL	HONOLULU	HI	96817	1,070,700	297,300	1972	6300	9,151	IMX-1	150 Limited Repair and Maintenance Facility (Service Station, Car Wash)
545 KAAAHIST	NUUANU AUTO COMPANY LTD	545 KAAAHIST	HONOLULU	HI	96817	1,235,200	508,600	1967	4836	10008	IMX-1	150 Limited Repair and Maintenance Facility (Service Station, Car Wash)
535 DILLINGHAM BLVD.	FOODMAKER INC	PO BOX 4900	SCOTTSDALE	AZ	85261-4900	1,343,500	115,400	1970	900	11,685	BMX-3	200
916 KAAAHI PL	G VON HAMM TEXTILES INC	G VON HAMM TEXTILES INC	HONOLULU	HI	96817	1,309,700	392,300	1971	12814	12621	IMX-1	150
961 AKEPOLN	ALOHA TOFU FACTORY INC	961 AKEPOLN	HONOLULU	HI	96817	1,673,400	1,132,700	1997	18600	21205	IMX-1	d FOOD PROCESSING OTHER THAN SUGAR & PINEAPPLE (FRUIT JUICE ETC.) (Last update in 2000) STREET SETBACK YES-SEE DTS MAP PUC-9. VERIFY WITH TRB 768-8083
445 N KING ST	FIRST HAWAIIAN BANK	P O BOX 3200	HONOLULU	HI	96847	2,713,500	1,260,200	1974	10000	34697	BMX-3	200
322 SUMNER ST	SALVATION ARMY THE					3,984,400	4,256,800	1932	58850	57689	IMX-1	150
888 IWILEI RD	STATE OF HAWAII					5,303,100				79497	BMX-3	200 HISTORIC SITE REGISTER HAWAII REGISTER: VERIFY WITH DLNR 692-8015 HISTORIC SITE REGISTER NATIONAL REGISTER: VERIFY WITH DLNR 692-8015

315 N KING ST	STATE OF HAWAII					140,500	25,400			16513 5	BMX-3	2 0 0	HISTORIC SITE REGISTER HAWAII REGISTER: VERIFY WITH DLNR 692-8015 HISTORIC SITE REGISTER NATIONAL REGISTER: VERIFY WITH DLNR 692- 8015
783 N KING ST	STATE OF HAWAII					14,044, 900	2,484,9 00			2620 57	IMX-1	1 5 0	UNSUBDIVIDED VACANT LAND (Last update in 2000)
420 N KING ST	Kukui Gardens					81,001, 300	23,185, 700	196 9		8225 48	A-2 MEDIUM DENSITY APARTM ENT	1 5 0	
835 IWILEI RD	STATE OF HAWAII					1,240,1 00	2,407,8 00	198 7	16,43 0	1018 0	IMX-1	1 5 0	HEALTH SERVICES (INCLUDING HOSPITAL AND NURSING CARE)(Last update in 2000)
621 DILLING HAM BLVD	HAWAIIAN ELECTRIC CO INC					5,506,4 00	714,500	197 2	1125	1194 19	IMX-1		Utility Substation (Pumping, Transformer Vault, Gas Tank, Telephone Sub Station)
564 DILLING HAM BLVD	SETO,FULTON L TRUST SETO,FULTON L 1996 FAM TRUST SETO,GOODWI N W TRUST SETO,GOODWI N W 1996 FAM TRUST	570 DILLING HAM BLVD	HONOLUL U	HI	9681 7	1,385,8 00	960,000	198 9	11201	1195 3	IMX-1	1 5 0	OTHER MANUFACTURING AND PROCESSING (CEMENT PLANT, APPAREL FACTORY)(updated 2000)
866 IWILEI RD	300 CORPORATION	3660 WAIALAE AVE STE 400	HONOLUL U	HI	9681 6	7,003,4 00	5,838,3 00	195 9	16150	1312 15	IMX-1	1 5 0	TRUCKING, COURIER AND DELIVERY SERVICE (DHL, UPS) Freight Terminal (Moving Van) (Last update in 2000)
906 KAAAH PL	TSR PARTNERS	PO BOX 10242	HONOLUL U	HI	9681 6	1,337,0 00	225,600	197 1	11056	1357 8	IMX-1	1 5 0	
737 IWILEI RD	GPP LLC	PO BOX 295	HONOLUL U	HI	9680 9	7,837,1 00	15,445, 700	198 8	183,9 87	1403 35			Office (Federal Building) (Last update in 2000)
931 AKEPO LN	FUJII FAMILY PARTNERSHIP		HONOLUL U	HI	9682 0- 0607	972,200	744,300	199 3	4881	1405 7	IMX-1	1 5 0	REPAIR SERVICES-NOT AUTOMOTIVE (RE- UPHOLSTERY, TV REPAIR SHOP) (Last update in 2000)
350 SUMNER ST	STATE OF HAWAII					1,506,0 00	1,539,0 00	198 6	1128 0	1447 7	IMX-1	1 5 0	SOCIAL AND CHARITABLE SERVICES (SALVATION ARMY, DAY-CARE, ETC.) (Last update in 2000)
577 DILLING HAM BLVD	YI,DOLE K S YI,CECILIA M M	1538 ALA MAHAMO E ST	HONOLUL U	HI	9681 9	1,550,0 00	293,400	198 9	2,534	1480 7	BMX-3	2 0 0	Limited Repair and Maintenance Facility (Service Station, Car Wash)
546 KAAAH ST	CITY AND COUNTY OF HONOLULU					1,362,3 00	2,076,9 00	197 3	33,69 0	1480 7	IMX-1	1 5 0	Light Manufacturing, Processing and Fabrication Facility (Photo , publishing) WHOLESALE TRADE (WITH OF WITHOUT STOCK)

584 N KING ST	FUJII FAMILY PARTNERSHIP		HONOLULU	HI	96820-0607	1,709,900	289,700	1953	5032	16317	BMX-3	200	HOUSEHOLD DWELLING (Last update in 2000)
533 KAAHAHI ST	KWA LLC					1,417,300	718,600	1966	8288	16395	IMX-1	150	
840 IWILEI RD	STATE OF HAWAII					1,537,400	108,100			16420	IMX-1	150	
499 N KING ST	PFLEUGER GROUP LLC	477 N KING ST	HONOLULU	HI	96817	1,650,300	347,100	1984	9600	16737	BMX-3	200	
431 KUWILI ST	Sasaki Family					1,502,600	2,599,100	1977	44,144	16754			
955 AKEPO LN	ISLAND-WEST INVESTMENT CORP				59349-0905	1,815,800	1,430,200	1961		20822	IMX-1	150	Apartment (More than 2 units, shares common access to street) (Last update in 2000) Apartment (More than 2 units, shares common access to street) (Last update in 2000) Apartment (More than 2 units, shares common access to street) (Last update in 2000)
536 KAAHAHI ST	PROPERTY INVESTMENTS LLC					1,568,200	720,100	1968	24928	20832	IMX-2	150	FOOD PROCESSING OTHER THAN SUGAR & PINEAPPLE (FRUIT JUICE ETC.)
525 N KING ST	HIGGINS PROPERTIES LLC		NEWTON	MA	02458	2,035,500	0			20934	BMX-3	150	
921 KAAMAHU PL	MIN,FRANK K TRUST MIN,ELAINE N TRUST	921 KAAMAHU PL	HONOLULU	HI	96817	1,697,800	1,664,400	1989	21856	21709	IMX-1	150	Warehouse
860 IWILEI RD	3900 CORPORATION					2,036,500	968,400	1956	16150	27403	IMX-1	150	
590 DILLINGHAM BLVD	AALA PROPERTIES LLC					2,321,800	803,500	1959	12000	32193	IMX-1	150	STREET SETBACK YES--SEE DTS MAP PUC-9. VERIFY WITH TRB 768-8083 Light Manufacturing, Processing and Fabrication Facility (Photo , publishing)
425 N KING ST	CUPBOARD LLC		HONOLULU	HI	96817	2,600,200	1,190,200	1914	20616	32526	BMX-3	200	NATIONAL REGISTER: VERIFY WITH DLNR 692-8015
373 N NIMITZ HWY	WEINBERG,H & J FNDTN INC					2,380,000	1,202,200	1996	12,061	33333	IMX-1	150	
663 N KING ST	TRAN,CUONG H LIEU,HOA C					3,100				3466	BMX-3	200	CONSTRUCTION (BUILDING CONTRACTORS, SPECIALIZED TRADES) (Last update in 2000)
617 N KING ST	ISLAND-WEST INVESTMENT CORP	P.O. BOX 905			59349	3,073,800	3,707,600	1961	25720	40878	BMX-3	200	HOUSEHOLD DWELLING (Last update in 2000) Apartment (More than 2 units, shares common access to street) (Last update in 2000)
305 N NIMITZ HWY	WEINBERG,H & J FNDTN INC					2,430,800	1,830,700	1946	28678	44525	IMX-1	150	Commercial Building (Last update in 2000)
730 N KING ST	ST ELIZABETH'S EPISCOPAL CH	720 N KING ST	HONOLULU	HI	96817	2,903,600	274,500	1912		49925	BMX-3	200	Church, Shrine (Last update in 2000)

591 N KING ST	KINGSGATE PLAZA CO	KINGSGATE PLAZA CO	HONOLULU	HI	9682 6	3,487,600	4,445,800	199 1	12379	5125 2	BMX-3	2 0 0	Retail Complex (Shopping) (Last update in 2000) Limited Repair and Maintenance Facility (Service Station, Car Wash) (Last update in 2000)
	WEINBERG,H & J FNDTN INC					2,979,700	1,638,000	193 6		5271 1	IMX-1	1 5 0	Light Manufacturing, Processing and Fabrication Facility (Photo , publishing) (updated 2000)
551 DILLINGHAM BLVD	FONG/CHOY FAM LTD PTNRSH	1212 NUUANU AVE 3708	HONOLULU	HI	9681 7	706,200	379,800	196 8	2,500	5600	BMX-3	2 0 0	
681 N KING ST	MOLINA,TIMMY C TR	675 N KING ST # 200	HONOLULU	HI	9681 7	805,100	234,500	197 3	3,572	6194	BMX-3	2 0 0	FOOD AND LIQUOR (SUPERMARKET,GROCERY STORE, BAKERY, ETC.) (Last update in 2000)
525 KAAHII ST	525 KAAHII ST LTD PART NAKAKI,JUNE S TRUST NAKAKI,JUNE S TRUST ARAKAKI,MARIE M TRUST ARAKAKI,KRISTEN E ARAKAKI,AMBER M					791,400	284,000	196 8	2600	6408	IMX-1	1 5 0	CONSTRUCTION (BUILDING CONTRACTORS, SPECIALIZED TRADES) Light Manufacturing, Processing and Fabrication Facility (Photo , publishing) (updated 2000)
519 KAAHII ST	FOUR K PROPERTIES LLC	519 KAAHII ST	HONOLULU	HI	9681 7	791,400	247,900	196 8	3900	6408	IMX-1	1 5 0	FOOD PROCESSING OTHER THAN SUGAR & PINEAPPLE (FRUIT JUICE ETC.)
568 N KING ST	HAWAII PUBLIC HOUSING AUTHORITY					64,915,400	3,651,200	195 4		6466 54	A-2 MEDIUM DENSITY APARTMENT	1 5 0	
928 KAAMAHU PL	CHONG,ABRAHAM C K TRUST CHONG,EDYTH E L TR EST					892,000	0	196 9	7200	7223	IMX-1	1 5 0	Light Manufacturing, Processing and Fabrication Facility (Photo , publishing) CONSTRUCTION (BUILDING CONTRACTORS, SPECIALIZED TRADES)
606 N KING ST	FUJII FAMILY PARTNERSHIP		HONOLULU	HI	9682 0-0607	967,700	165,700	197 2	2400	7444	BMX-3	2 0 0	EATING AND DRINKING PLACE (Last update in 2000)
720 IWILEI RD	PAMCAH-UA LOCAL 675 PENSION FUND PAMCAH-UA LOCAL 675 ANNUITY FUND PAMCAH-UA LOCAL 675 HEALTH/WELFARE FUND	1580 MAKALOA ST #950	HONOLULU	HI	9681 4	4,590,800	4,140,600	191 3		7668 2	IMX-1	1 5 0	FOOD PROCESSING OTHER THAN SUGAR & PINEAPPLE (FRUIT JUICE ETC.) (Last update in 2000)
630 N KING ST	FUJII FAMILY PARTNERSHIP					1,008,800	248,400	196 1	3030	7760	BMX-3	2 0 0	FOOD AND LIQUOR (SUPERMARKET,GROCERY STORE, BAKERY, ETC.)
477 N KING ST	PFLEUGER GROUP LLC	478 N KING ST	HONOLULU	HI	9681 8	1,030,800	637,800			8810	BMX-4	2 0 0	
835 IWILEI RD	STATE OF HAWAII					1,162,500		198 7	288	8942	IMX-1	1 5 0	

620 DILLINGHAM BLVD	KO,KALVIN Y D KO,LINDA B Y	2711 PALI HWY	HONOLULU	HI	9681 7	1,135,200	586,400	1960	5335	9103	IMX-1	150	Limited Repair and Maintenance Facility (Service Station, Car Wash) (Last update in 2000) AUTOMOTIVE SERVICES (RENTAL, PARKING AND REPAIR) (Last update in 2000) STREET SETBACK YES--SEE DTS MAP PUC-9. VERIFY WITH TRB 768-8083
818 IWILEI RD	Too Many Owners												
424 SUMNER ST	Too Many Owners												
439 N NIMITZ HWY	WEINBERG,H & J FNDTN INC					1,564,300	4,860,800	1956		73312	IMX-1	150	
	WEINBERG,H & J FNDTN INC					1,839,100	644,900	1936		23464	IMX-1	150	
735 DILLINGHAM BLVD	WEINBERG,H & J FNDTN INC					3,724,200	1,184,100			60256	IMX-1	150	
	WEINBERG,H & J FNDTN INC					2,039,600				33168	IMX-1	150	
	WEINBERG,H & J FNDTN INC					1,014,700				11172			

Data from: City & County of Honolulu Department of Planning and Permitting, <http://gis.hicentral.com/>

## **Appendix B: Master Plans**



# Existing Land Use





# Iwilei Master Plan





**Density and Land Use**

1/4-mile radius (10 minute walk)

Beretania Park

Honolulu Community College

Dillingham Blvd.

Alakawa St.

N King St.

Kaahala Pl.

Nimitz Hwy.

N Beretania St.

Aala International Park

Aala Park

**Density and Land Use**

- High-Density Mixed Use (90 to 140 du/acre)
- Mid-to High-rise Mixed Use (55 to 90 du/acre)
- Low-rise Mixed Use (27 to 55 du/acre)

Honolulu Community  
College

- High-Density Mixed Use (90 to 140 du/acres)
- Mid- to High-rise Mixed Use (55 to 90 du/acres)
- Low-rise Mixed Use (27 to 55 du/acres)

● Mid- to High-rise Mixed Use (55 to 90 du/acres)

Low-rise Mixed Use (27 to 55 du/acres)

N. Beretania St.

Aala  
International  
Park



# Residential & Neighborhood Retail Corridor





# Intermodal Transportation System





**Pedestrian Walkways**

Beretania Park

Honolulu Community College

1/4-mile radius (10 minute walk)

Dillingham Blvd

Alakawa St

Transit Plaza (open air & pocket park)

Kaamahu Pl

N King St

Limu St

Aala International Park

Aala Park

Nimitz Hwy

Nimitz Hwy

N King St

N Beretania St

**Civic Spaces and Pedestrian Streetscape**

- Civic Spaces
- Pedestrian Streetscape
- Public Parks & Honolulu Community College

October 2009  
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