Report
June 2021

Existing Conditions Report

City & County of Honolulu
Honolulu Transportation Demand Management Plan

HNL Connect

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Department of Transportation Services

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Prepared by the City and County of Honolulu Department of Transportation Services, in cooperation with the O'ahu Metropolitan Planning Organization and the United States Department of Transportation.

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Contents

1 Introduction

Purpose

This report provides an overview of existing conditions of land use, transportation, and transportation demand management (TDM) in the City and County of Honolulu. It will serve as a reference document to inform the development of a TDM plan on the island. The wide range of transportation services and infrastructure, from the upcoming Honolulu Rail Transit to paratransit to rideshare, as well as the uniqueness of the land use patterns and demographics, point to a need to fully understand the current conditions before creating a long-range TDM plan.

TDM is defined as the application of strategies and policies to help people make their transportation decisions using infrastructure in place for transit, ridesharing, walking, biking, and telework in order to reduce or redistribute travel demand. At its most basic level, it is a program of information, encouragement, education and incentives provided by local or regional organizations to help people know about the variety of non-single occupancy vehicle (SOV) transportation options they have.

The TDM Plan will be the first of its kind on a regional scale. It will include legislative changes, enabling policies, a website, marketing support and education materials, and stakeholder engagement. Key objectives of the TDM Plan include developing targets, strategies and evaluation measures; reducing vehicle miles traveled (VMT); and reducing single-occupancy vehicle (SOV) mode share.

For the purposes of this report, Steer conducted a literature review of existing transportation plans as well as an analysis of demographic, travel behavior and land use patterns. Steer also looked at recent news articles regarding new transportation initiatives and has also conducted interviews with key stakeholders in the public and private sectors.

The organization of the report is as follows:

- Section 1, Introduction: introduces the purpose of the report and its key findings.
- Section 2, Social and economic characteristics: provides information about the social and economic characteristics of the residents, including population/density, age distribution, income, educational attainment, race/ethnicity, housing, and employment.
- Section 3, Land Use: provides an overview of land use patterns and future developments.

- Section 4, Transportation: provides an overview of the existing transportation services as well as future transportation projects, including the long-awaited Honolulu Rail Transit.
- Section 5, Travel Behavior and Transportation Demand Management: provides an overview of travel patterns pre- and post-COVID, any existing TDM programs and policies at the employer, local, and regional levels.
- Section 6, Conclusion: summarizes findings and provides next steps as well as a SWOT analysis.

It is important to note that, while Section 5 may be the only section that refers to specifically defined "Transportation Demand Management" programming in Honolulu, the topics explored in Sections 1 through 4 are just as crucial in identifying the types of programming and strategy that will ultimately be most successful in changing travel behavior of residents and visitors.

Key Findings

Through the Existing Conditions Review, three major conclusions will help shape the future of the TDM Plan and program in Honolulu:

1. The audience for a TDM program in Honolulu will need to consider both the traditional peak hour commuters traveling to large employment hubs (mostly government and private sector workers), as well as commuters who work non-traditional hours and travel throughout the island for work.
2. While no formal TDM program, plan, or policy exists currently across the island, there is a good deal of TDM implementation across the island already, such as the Commuter Benefits Program, a Vision Zero and Complete Streets policy, Safe Routes to School, and a Restricted Parking Zones (RPZ) pilot, which can help lay the groundwork for future programming.
3. Current TDM programming, however, does not make use of impact measurement or consistent monitoring, so it is difficult to determine the impact of the work being done currently. Future TDM programming will need to prioritize structures that require information and monitoring.

2 Social and Economic Characteristics

Demographics

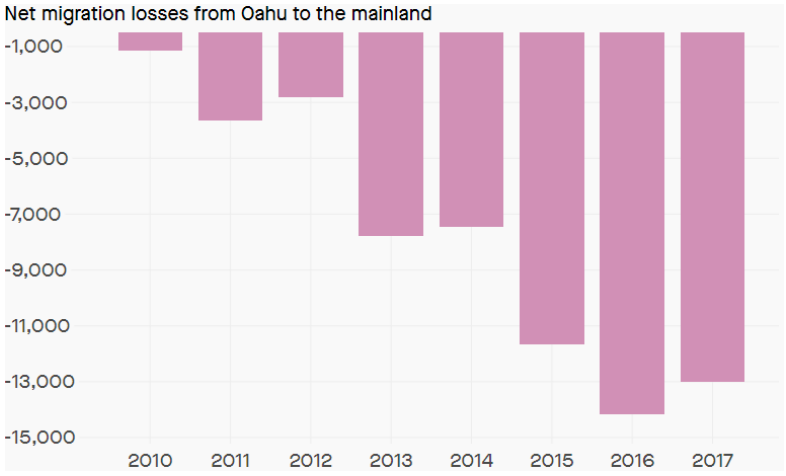
The narrative below details demographic information on Oahu'. It is important to consider demographics when developing TDM strategy and programming, as information about target audiences can help provide an understanding of travel barriers and motivations, and can help to best predict the types of strategies that might be most successful in changing travel behavior.

Population/Density

The population of Oahu is 980,080 according to 2019 Census estimates. Oahu's population comprises 69% of the state's entire population. The population is split evenly between male and female. There are 316,456 households in the US, with an average of 3 people per household.

While the population has grown steadily by a couple thousand every year, it has experienced a slight decline since 2016. From 2010 to 2018, Oahu lost nearly 7,500 more people annually to continental USA than it gained. Economists attribute this population decline to push factors such as Oahu's high cost of living and stagnant wages, and to pull factors such as better jobs and salaries.

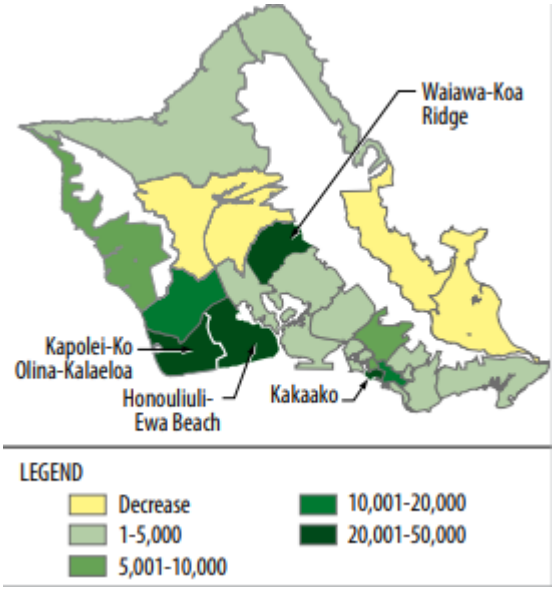
Figure 1. Net migration losses from Oahu to the mainland, 2010-2017



Source: The Atlas

Oahu has a population density of 1,636 people per square mile, making it the fourth most dense city in the country. Some areas of Oahu are expected to grow more than others; by 2035, the Kapolei-Ko Olina-Kalaeloa, Kakaako, Waiawa-Koa Ridge, and Honouliuli-Ewa Beach areas are expected to grow by over 20,000 residents, while parts of Central Oahu and the Windward Coast, including Kaneohe and Kailua, will see a projected decrease.

Figure 2. Population Growth 2007 to 2035



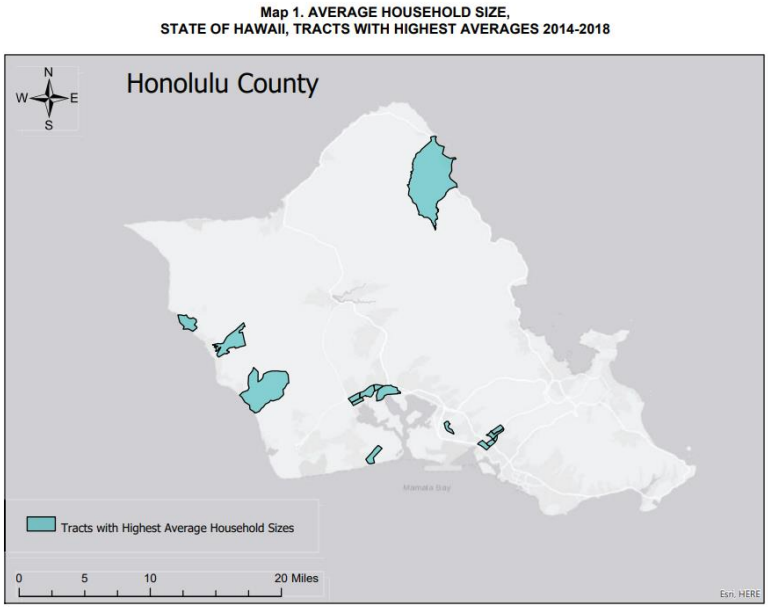
Source: OahuMPO Regional Transportation Plan 2035

Household size

Average household size in Honolulu is 3.05, slightly above the state average of 3.02 and higher than the national average of 2.53. Some census tracts on Oahu have significantly higher household sizes, seven of which have averages above 5. Error! Reference source not found. below shows the distribution of the census tracts with the highest average household size based on the 2018 American Community Survey, including the top five:

- August Aherns School: 5.97
- Gulick Avenue-Likelike: 5.85
- Managers Drive: 5.52
- Campbell High School: 5.40
- Kalihi Valley Park: 5.27

Figure 3. Census tracts with largest average household size

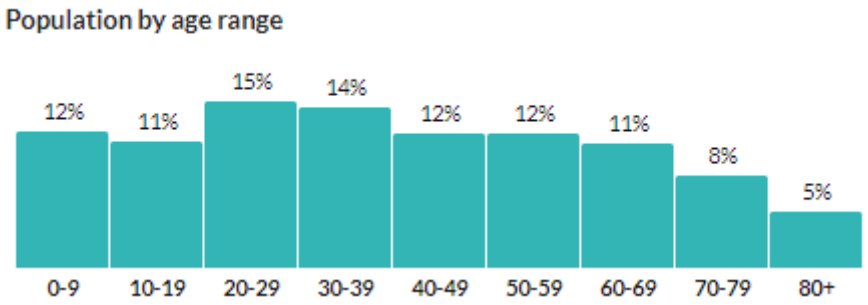


Source: Hawaii State Data Center, Highlights of the 2014-2018 American Community Survey 5-Year Data for Hawaii (2019)

Age distribution

The median age in Honolulu County is 38.4, roughly the same as the state of Hawai'i and the US. 61% of the population is between the ages of 18 and 64.

Figure 4. Population by age range, County of Honolulu



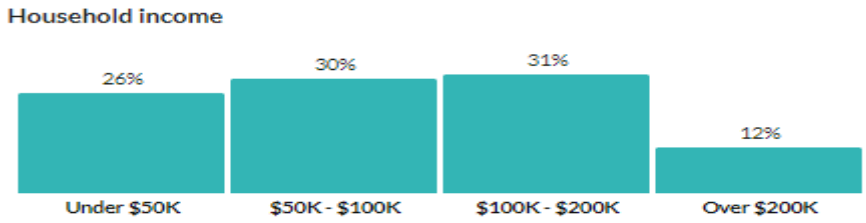
Source: Census Reporter

The State of Hawai'i has a rapidly aging population. Those over 65 comprised 7.9% of the state's population in 1980, 17.1% in 2016, and is projected to increase to 23.8% by 2045. This rapid increase in the aging population is expected to have a large impact on the island's transportation system and economy.

Income

The median household income in the county is $87,470 and the per capita income is $38,671. The breakdown of household income by income bracket is as follows:

Figure 5. Household income, County of Honolulu



Source: Census Reporter

While the median household income is relatively high, it is important to note that households on the island tend to be larger due to multiple generations living together. This results in a *lower* per capita income.

The island is highly stratified between rich and poor, with both the state's wealthiest neighborhoods and the highest number of census tracts where more than 30% of people live below the poverty line. Of the 17 census tracts in the state where 30% of residents or more live in poverty, 10 are on Oahu. The state poverty level is 11%.

Table 1. Highest median household incomes by census tract, 2018

Census Tract	Median household income
Portlock	$175,833
Waialae Prison	$157,448
Waialae Iki	$156,615

Source: Datausa.io

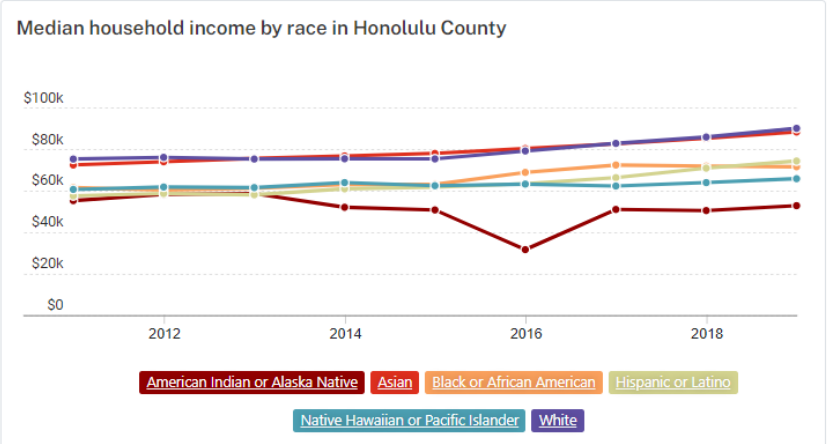
Table 2. Poorest census tracts in Oahu, 2018

Census Tract	Median household income
Chinatown	$22,300
Mayor Wright Housing	$29,201
Ahana Street	$29,526
Civic Center	$31,250
Waianae Kai	$33,370
Linapuni Street	$36,750
Hale Mohalu Hospital	$37,500
Aala	$37,989
Lower Pawaa	$38,125
Wahiawa Waena	$39,980

Source: Datausa.io

When disaggregating median household income by race in Honolulu County, Whites and Asians have the highest median income, at around $90,000. Native Hawaiians, Pacific Islanders and have the lowest average median household income at

Figure 6. Median household income by race



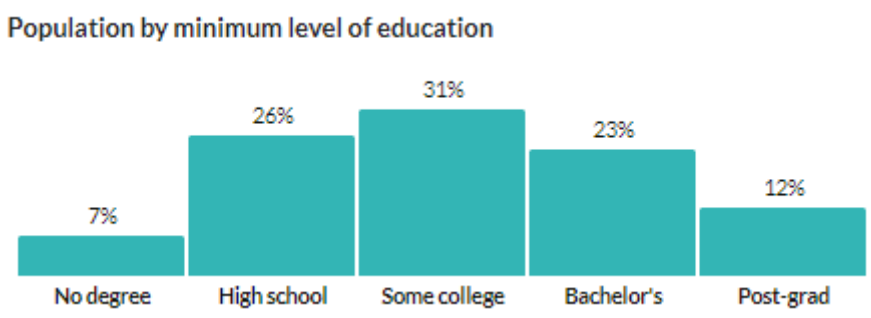
Source: US Census Bureau

Educational attainment

26% of the population graduated from high school, 31% attended some college. 23% of the population has a bachelor's degree, and 12% have a post-graduate degree. 7% have had no schooling.

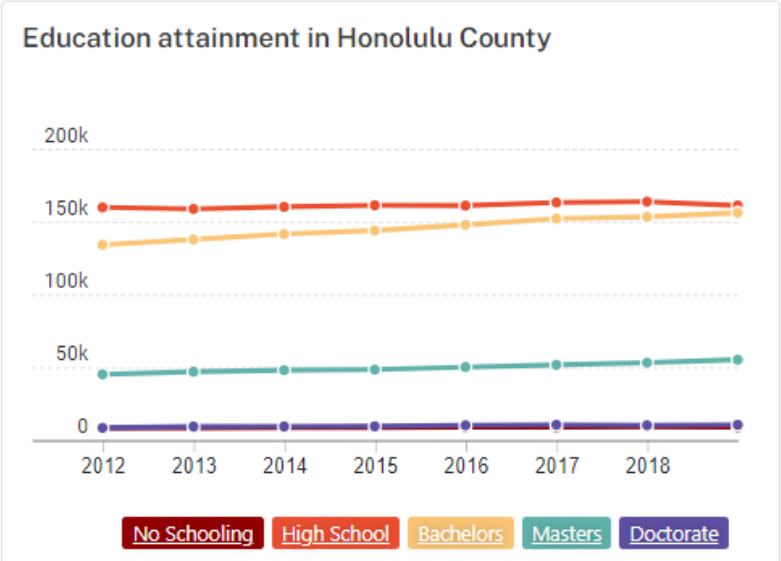
This breakdown has remained steady the past few years, with the absolute number of high school graduates slightly decreasing and the absolute number of master's degree and college graduates slightly increasing.

Figure 7. Population by minimum level of education



Source: Census Reporter

Figure 8. Education attainment in Honolulu County

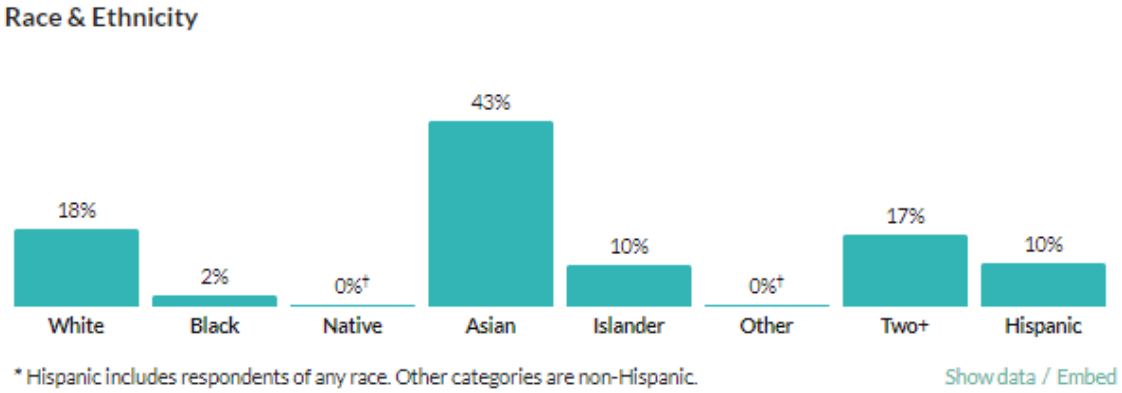


Source: US Census Bureau

Race/ethnicity

The island is one of the most ethnically and racially diverse places in the US, with a majority-minority population. 43% identify as Asian, 10% identify as Pacific Islander, and 17% identify as mixed-race.

Figure 9. Race and ethnicity in Honolulu County



Source: Census Reporter

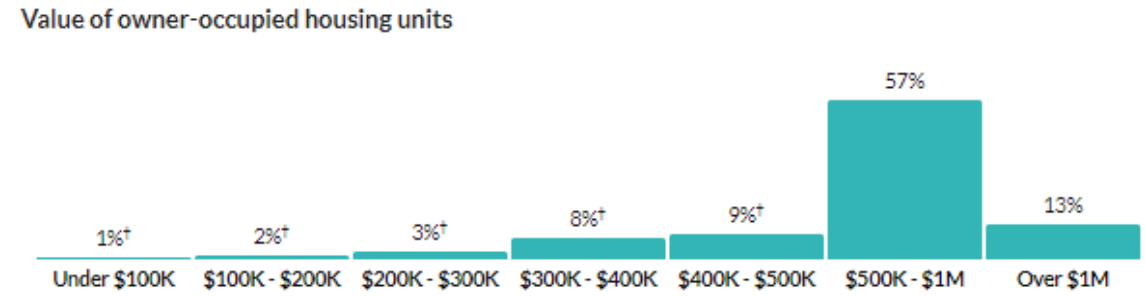
According to the 2010 census, the two largest Asian ethnic groups in the state are Filipino and Japanese. Filipinos make up 14.5% of the state's population, of whom 70% live on Oahu. Japanese make up 13.6% of the state's population. In Urban Honolulu, the largest ethnic groups are Japanese (20%), Filipino (13%), and Chinese (10%.).

Housing

Housing prices and characteristics

The median value of owner-occupied housing units is $739,700, about 10% higher than that of the state and more than double the median value in the US. 57% of owner-occupied housing units are valued between $500,000 and $1 million.

Figure 10. Value of owner-occupied housing units



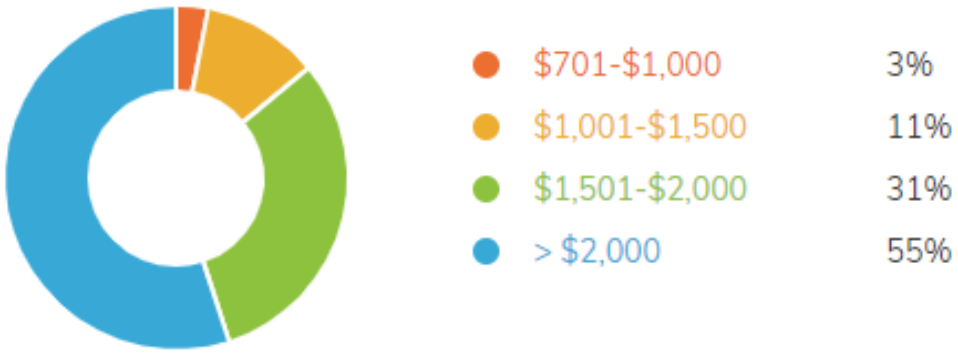
Source: Census Reporter

The median and average sale prices for both single family housing and condominiums have skyrocketed since 1985. The median sale prices for single family homes has increased by 423%, while the median sales price for condominiums grew by 384.4% in the past 15 years.

While many had expected the housing market to collapse during the pandemic of 2020, the island saw an increase in housing prices, due to low interest rates and mainland buyers who could work remotely. The median price for a single-family home on Oahu in the month of November rose to $877,500, while the median condominium price was $425,000. Single-family homes were on the market for a median of just 11 days (about 1 and a half weeks) that month.

The average monthly rent in Oahu throughout 2020 was $2,070, a 1% increase compared to the previous year. Over 85% of the apartments on the island have a rent of over $1,500.

Figure 11. Rent ranges in Oahu



Source: RentCafe

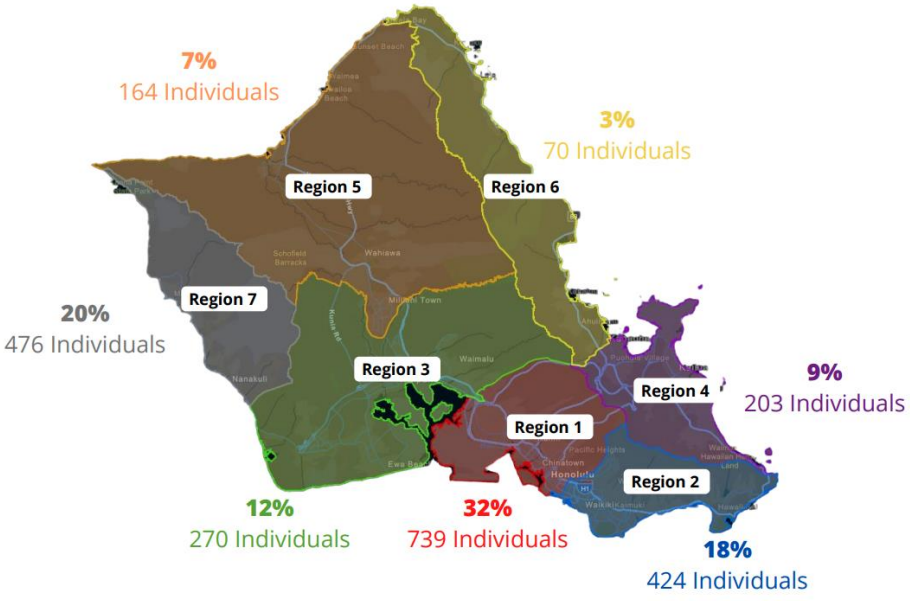
There are 354,719 housing units on the island, of which 89% are occupied. Of the occupied units, 57% are owner occupied and 43% are renter occupied. 55% of units are single-family units and 45% are multi-family units.

According to the state's Department of Business, Economic Development & Tourism, the forecasted demand of additional housing units on the island is 25,847 units during the 2015-2025 period. While the projected household growth rate of the county is 8% by 2025, which is low compared to other islands, most of the growth in households will come from groups aged 45 and older looking to buy seasonal and second homes.

Homelessness

Due to the high cost of living and stagnant wages, the island has a considerable number of residents experiencing homelessness. According to the Partners in Care Point-in-Time Count Report, there were 4,448 people experiencing homelessness on the night of January 22, 2020 (and this number is expected to have increased since the start of the pandemic.) The overall number has not changed drastically since 2019. The persons experiencing homelessness are scattered throughout the island, with Region 1 (Downtown Honolulu/Kalihi/Nu'uanu, etc) and Region 7 (Wai'anae Coast) having the largest percentage of individuals experiencing homelessness. Native Hawai'ians and Pacific Islanders are overrepresented by 210% in Oahu's homeless population; in other words, just over 1 in 2 individuals expressing homelessness on January 22, 2020 identified as Native Hawaiian and/or Pacific Islander. The most common self-reported causes of homelessness are inability to pay rent and job loss.

Figure 12. Percent of homeless individuals in Honolulu



Source: Partners in Care

Employment

A large and growing number of workers in Oahu are in jobs that pay hourly wages. As of 2019, 35% of the labor force is working full-time or part-time on hourly wages, similar to those seen in Washington (34.1%) and New York (32.9%). These workers are more likely to have fluctuations in income and less likely to receive benefits such as retirement or pension benefits. Wages have been stagnant due to the low number of workers outside of the labor force; before the pandemic, the unemployment rate was at 2.1%.

Figure 13. Labor status of Honolulu residents

Source: United for Alice

As of May 2019, the five largest occupation titles were Retail Salespersons, Fast Food and Counter Workers, Waiters & Waitresses, Registered Nurses, and Janitors & Cleaners excluding Maids & Housekeeping Cleaners. The top five occupational groups were as follows: Office and Administrative Support, Food Preparation and Serving Related, Transportation and Material Moving, Educational Instruction and Library, and Sales and Related.

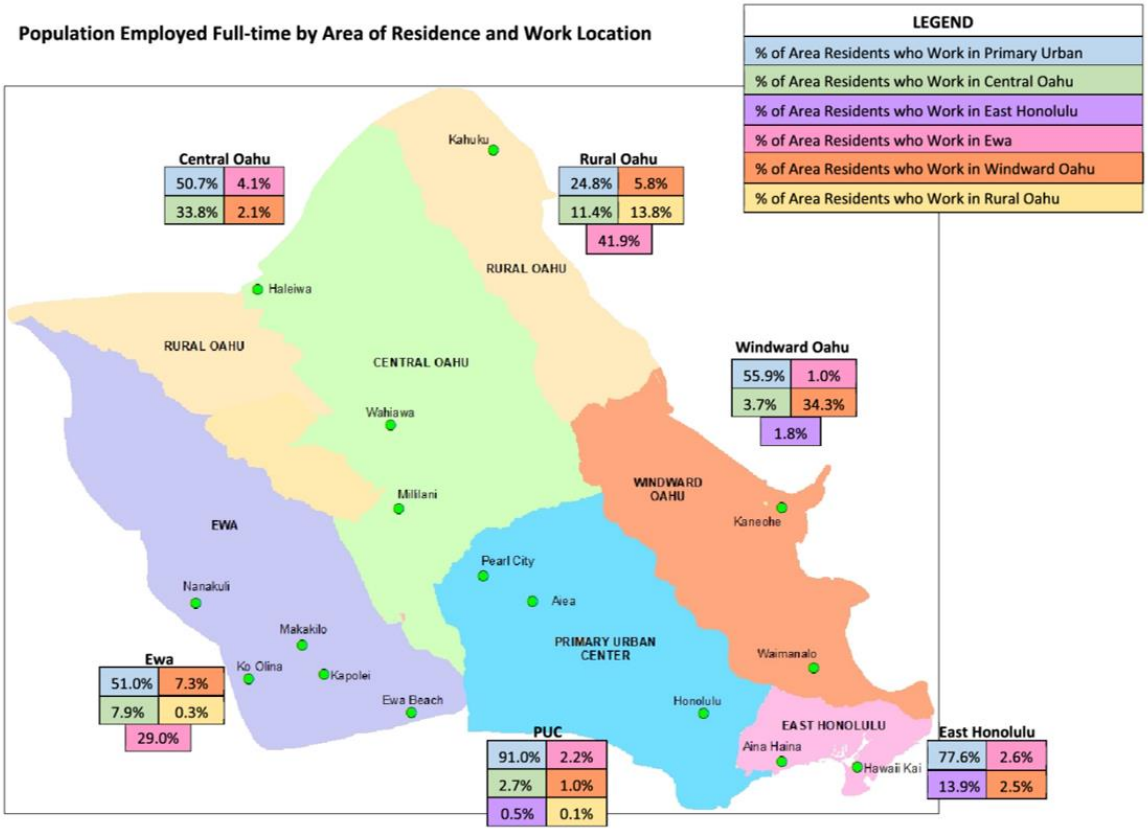
Several major companies have their headquarters in Oahu, such as Hawaiian Airlines, Aloha Air Cargo, First Hawaiian Bank, Bank of Hawaii and the Hawaiian Electric Company. Other major companies and employment centers include hospitals and health organizations (ex: The Queen's Medical Center, Hawaii Pacific Health), educational institutions (ex: Honolulu Community College, Kamehameha Schools, the University of Hawaii), the tourism industry (Kyo-Ya Hotels & Resorts), food services (Zippy's Restaurants), government and law enforcement (the U.S. government, the State of Hawaii, TheBus, Honolulu Police Department), real estate (Homes by Towne) and shipping (Matsons Shipping Honolulu.)

According to projections, the hospitality, service and tourism industries will remain Hawaii's top sectors for the years to come, even despite the pandemic. Recent efforts to expand and diversify Hawaii's economy to the technology and renewable energy sectors have been met with local opposition. Other areas of growth include the grocery business, which is projected to see 12% growth by 2029, the home health care business, with a predicted 50% growth by 2029, and air transportation jobs. However, these jobs pay low wages that are not expected to increase to match the high cost of living on the island.

In terms of work location, as of 2019 the largest percentage of employees across the island work in the Primary Urban Center (which spans Pearl City to Waikiki). As shown below in Error! Reference source not found., in almost all areas across the island, the l argest percentage of full-time working residents work in the Primary Urban Center. The only outlier is Rural Oahu, where 41.9% of full-time working residents work in the Ewa area.

Aside from the Primary Urban Center where 91% of full time working residents work locally, less than 35% of working residents work in the area they live.

Figure 14. Employment by residence and work location



Source: SMS Hawaii: Where O'ahu Reisdents Live and Work

Cost of Living

The rise in housing prices, stagnant wages, and the lack of economic diversification on the island has led to a very high cost of living. An article published by 24/7 Wall St in 2020 found that Honolulu is the 3rd most expensive city to live in, with a monthly cost of living of $9,632 for a family of four and $4,296 for a single adult. This would equal $115,584 and $51,552 a year, respectively. However, the cost of living is considerably higher than the monthly median family and individual incomes, which are $9,632 and $4,296 respectively.

The Housing +Transportation Index published by the Center for Neighborhood Technology also shows housing and transportation costs as a percentage of income across population, households, and neighborhoods on the island. It provides a view of affordability that combines housing and transportation costs and sets the benchmark at no more than 45% of household income. According to this Index, 70.6% of households on the island pay more than 45% of their household income on housing and transportation costs. 393 out of 561 neighborhoods are severely rent and transportation burdened. These include most neighborhoods in District 2, the southern portion of District 1 from Waianae to Ewa Beach, Schofield Barracks and Mililani in District 9, as well as most areas in the Leeward portion of the island. The Urban Core generally has the lowest percentage of income spent on both housing and transportation, with the exception of Kaimuki, Kaka'ako, Ala Moana and parts of Diamond Head.

The cost of living is also made especially high due to the cost of food and energy, according to Democrat & Chronicle. 85-90% of the state's food is imported, and the price of a kilowatt hour of power costs three times the national average. As such, many families have struggled to make ends meet on the island.

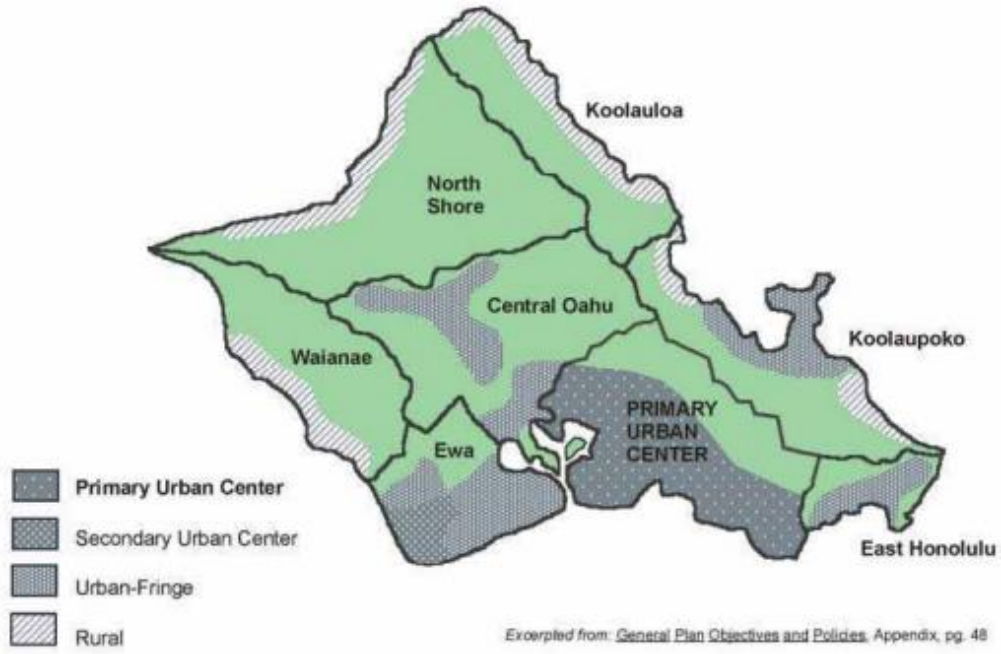
3 Land Use

The City and County of Honolulu was incorporated in 1907 and encompasses the entire island of Oahu (it also includes the unpopulated Northwestern Hawaiian Islands.) With a total land area of 600 square miles and 230 miles of shoreline, the city of Honolulu is both the largest city in the State and is the State capital.

Out of all the islands, Oahu has experienced the greatest recent population growth and development. There has been a general policy to concentrate development in key areas around the island, with protected growth in suburban and urban areas (e.g., Ewa and Koa Ridge in Central Oahu). Refer to Figure 15 for a map of the development patterns on the island. A summary of these development patterns is as follows:

- Urban core: extends from Wai'alae-Kāhala to Pearl City, including the financial center in downtown Honolulu, visitor destinations in Waikiki, and the state's commercial harbor and international airport.
- 2nd City in Kapolei: planned in the 1970s and partially executed, the plan was to create a "second city" in Kapolei with commercial and industrial zones. Supportive infrastructure has been built and government offices have been relocated. This area is the location of the largest portion of Oahu's population growth through greenfield suburban development.
- Suburban and rural communities: beyond the urban core are suburban communities, active farmlands, and natural and geological landmarks such as Ko'olau and Wai'anae Mountain Ranges and Diamond Head.

Figure 15. Development pattern on Oahu



Source: General Plan Update Presentation

Guidance Documents

General Plan

The City and County of Honolulu's General Plan sets forth the City's objectives and policies for the long-range development of the island. First adopted as an ordinance by the City Council in 1964, the document has been amended numerous times, most recently in 2017 following a comprehensive review of new trends and emerging issues and a robust community engagement process.

Through this process, several objectives for the physical development and urban design of the island emerged:

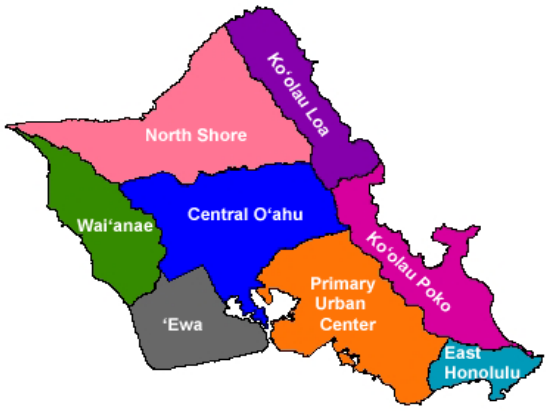
- To coordinate changes in the physical environment to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located;
- To plan and prepare for the long-term impacts of climate change;
- To develop the urban corridor stretching from Wai'alae-Kāhala to Pearl City as the island's primary urban center;
- To develop a secondary urban center in 'Ewa with its nucleus in the Kapolei area;
- To maintain those development characteristics in the urban-fringe and rural areas which make them desirable places to live;
- To create and maintain attractive, meaningful, and stimulating environments throughout Oahu; and
- To promote and enhance the social and physical character of Oahu's older towns and neighborhoods.

Development and Sustainable Communities Plans

The City and County have also created eight regional plans guiding land use approvals and infrastructure improvements and investment in those communities. Refer to Error! Reference source not found. for a map of the eight development plans.

- The 'Ewa Development Plan, the Primary Urban Center Development Plan, and the Central Oahu Sustainable Communities Plan account for most of the island's population growth and development activity.
- East Honolulu, Ko'olaupoko, Ko'olau Loa, North Shore, and Wai'anae focus on modest development activities to maintain the areas' rural character.

Figure 16. Development and Sustainable Communities Plans

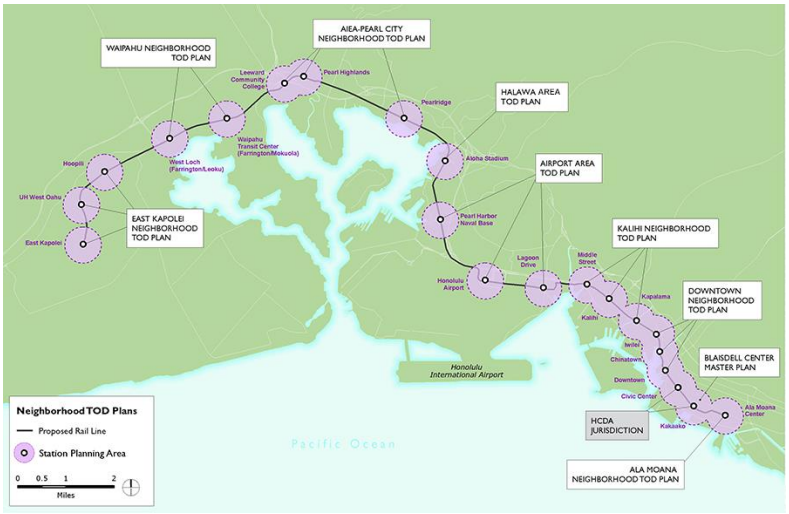


Source: City and County of Honolulu, Department of Planning & Permitting

Neighborhood Transit-Oriented Development Plans

There are currently eight TOD plan areas centered around Honolulu's 20-mile rail transit corridor, with the two in Kakaako under the jurisdiction of the Hawai'i Community Development Authority (HCDA) with their own TOD Plans. The plans are meant to provide regulations and financial incentives to encourage higher density development and enhance transit access and walkability near the transit stations. The plans cover one to three station areas—each addressing land use, circulation, urban design, housing, community facilities, parking, pedestrian amenities, historic and cultural enhancements, and infrastructure.

Figure 17. Neighborhood TOD Plans



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Source: City and County of Honolulu TOD Neighborhoods Website

The following tools and strategies are completed or in progress to realize the TOD projects:

Completed:

- Neighborhood TOD plans are completed for the station areas. The Waipahu, Aiea-Pearl City, and Kalihi Plans have been adopted by the City Council.
- Partnerships have been formed with state agencies to identify and prioritize the potential for TOD on state lands, including Mayor Wright Homes and the lands around Aloha Stadium.
- An island wide housing strategy has been developed to stimulate the production and retention of affordable and workforce housing, with a focus on rental housing and TOD areas.
- The City has identified pedestrian, bicycle, and transit access improvements around every station.

In Progress:

- Planning for several catalytic projects, including: a bus transfer station and mixed-use development at the Pearlridge station; transformation of Kapalama Canal and the surrounding area; infrastructure planning in Iwilei; and placemaking and connectivity in Chinatown and Waipahu. All projects will be developed through public-private partnerships.
- Evaluation of City properties in TOD areas for potential redevelopment and new affordable housing using “asset optimization” approach.
- Development of new TOD zoning and land use regulations for each area. These will require urban site design, active streetscapes, and usable open space.
- Development of new Complete Streets policies and standards.
- Evaluation of critical infrastructure to accommodate anticipated growth, including wastewater, water, streetscapes, utilities, broadband, and parks, as well as the funding mechanisms to achieve them.
- Development of financial toolkit to stimulate private development investments in priority TOD areas. Options include property tax and permit fee waivers, community facility districts, targeted state and federal funding, and other long-term funding mechanisms.
- The City is working with the Hawaii Interagency Council for TOD to support development on other State properties.
- Planning, design and interpretation of priority pedestrian, bikeway and transit access projects are underway in communities from East Kapolei to Ala Moana.
- An interdepartmental group is working to ensure seamless, safe connections between transit stations, bus stops, streets and sidewalks, and major activity nodes, including wayfinding signs and fare integration.

TOD Design Guidelines & Supporting Regulatory Mechanisms

Development planning with the City is designated and determined by the specifications and regulations outlined in the Land Use Ordinance (LUO). The LUO regulates land use in a manner such that is encourage orderly development in accordance with adopted land use policies, including the City's general plan, and development and sustainable communities plans, and, as may be appropriate, adopted neighborhood plans. Base limits for development projects (for example, density and height designations) are outlined in the LUO.

In relation to the construction of Honolulu's 20-mile rail transit corridor and following the adoption of each Neighborhood TOD Plan, the City is responsible for creating land use and zoning regulations that help to implement the development and urban design recommendations in each plan. These guidelines outline how the City enforces land use, which can shape the development of TDM measures in new developments.

An important regulatory change involves rezoning from single uses to mixed uses within ¼- to ½-mile of the rail stations. In addition to mixed-use zoning, properties in the TOD areas will be regulated by a new TOD Special District. Properties in the TOD areas will be regulated by a new TOD Special District within the City's Land Use Ordinance that specifies requirements on site layout and ground-floor building design. The goal of these development standards is to improve the pedestrian experience, business access, and connectivity around the rail stations, particularly along designated "key streets."The City's Design Guidelines for TOD Special Districts[1], published by the DPP in June 2018, provides guidelines by which developers can seek Special District Permits based on the scope and impact of development projects. The TOD Special District is designed to supplement or modify the underlying zoning district regulations to promote TOD, while providing opportunities for review and comment on major projects.

Examples of permitting within TOD Special Districts includes:

- Minor Special District Permits, for projects that have limited impact on the surrounding community, such as modifications to existing development not along "Key Streets" identified in the LUO, minor deviations from the development standards, or streetscape improvements. These may include modifications to parking stall supply, above-grade infrastructure improvements or streetscape improvements.
- Major Special District Permits, for projects that will have significant impact on the surrounding community, for example major modifications to projects along Key Streets, or projects seeking height and density bonuses through a Planned Development-Transit Permit.
- Planned Development-Transit Permits (also known as Interim PD-T), which allow for additional height, density, and flexibility to the development standards for "catalytic" projects. These projects will define the areas around them and should incorporate

[1] City and County of Honolulu Department of Planning and Permitting, TOD Special District Design Guidelines, June 2018

community benefits commensurate with the bonuses and flexibility being requested. Examples of community benefits include affordable housing, improved connectivity, and/or public open spaces, like parks and plazas. PD-T applications are reviewed by the DPP, and approved by City Council.

TDM Requirements for New Developments

There are no formal TDM Plan requirements for most projects on the island. The DPP typically imposes TDM measures for larger projects that require a discretionary permit, on the advice of the Traffic Review Branch (TRB), but projects that go straight to building permit, regardless of size, do not have a TDM plan unless the developers prepare one on their own accord. The DPP can require a Traffic Study as part of their permit application, which will often include specific recommendations to implement TDM strategies. These recommendations are then turned into specific conditions on their final permit.
Transportation

While Honolulu does not yet have an established TDM Plan or Program, their planning documents and transportation landscape incorporate many elements of TDM. Of note is the effort to make the island a more pedestrian and bicycle-friendly space, as evidenced by the recent Pedestrian and Bike Plans, as well as the state's goal to reduce transportation-related GHG emissions.

Local and statewide goals for transportation

Oahu Regional Transportation Plan (RTP) 2040 (2016)

Adopted by the OahuMPO, the RTP 2040 outlines transportation policies, goals, and objectives for the island. Based on current resources, projects, community input, and available funding, the document outlines strategies for Oahu to achieve an integrated, inter-modal surface transportation system that improves safety, mitigates congestion and increases mobility for the island's residents and visitors.

The following table summarizes the plan's projects to achieve these broad goals.

Table 3. Oahu Regional Transportation Plan projects and strategies

Project Type	Strategies
Congestion Mitigation and Alternatives	• Enhancement of Oahu's existing pedestrian and bicycle network • Implementation of ITS technologies to improve traffic flow • TDM projects to reduce demand and increase efficiency, such as managed lanes, park-and-ride lots, carpools and vanpools
Modernizing Projects	• Adding lanes • Increasing roadway capacity
Transit Projects	• Facility and system improvements for TheBus and The Handi-Van • Redirection of bus routes to serve as feeder bus routes to Honolulu Rail Transit • Honolulu Urban Bus Circulator System • Construction of transit centers
Operations, Maintenance, System Preservation and Safety	• Highway maintenance • Installing guardrails and other safety features

Hawaii Statewide Pedestrian Master Plan (2013)

The Hawaii Statewide Pedestrian Master Plan is a plan that focuses on pedestrian safety and mobility and provides guidance on supporting a multi-modal transportation system that prioritizes pedestrians. It gives an overview of the existing pedestrian environment, identifies areas of concern, and provides recommendations and implementation strategies.

It is accompanied by the Hawaii Pedestrian Toolbox (2013), which outlines concrete strategies for planning, design and operation of pedestrian facilities based on best practices around the world, adapted to Hawaii's unique context and characteristics.

The following table summarizes the Master Plan's goals and strategies.

Table 4. Hawaii Statewide Pedestrian Master Plan goals and strategies

Goals	Strategies
Improve pedestrian mobility and accessibility	• Encourage use of Hawaii Pedestrian Toolbox • Implement projects along state highways to enhance mobility and accessibility • Improve maintenance of pedestrian facilities
Improve pedestrian safety	• Increase driver and pedestrian knowledge of laws, legal requirements, rights and responsibilities • Use best practices for design and operation of all pedestrian crossings
Improve connectivity of pedestrian network	• Encourage pedestrian connectivity across jurisdictions • Support Safe Routes to School programs to encourage more students to walk to and from school
Promote environmental benefits of walking	• Broaden public awareness about the environmental benefits of pedestrian travel • Integrate pedestrian facility design with natural environment
Encourage walking to foster healthy lifestyles	• Support community-based events that encourage walking for daily exercise and socialization
Enhance communities and economic development by creating pedestrian-oriented areas and positive pedestrian experiences	• Encourage pedestrian infrastructure investment in high-density, pedestrian-oriented populations • Require development projects to include ped. infrastructure for appropriate land use and facility
Promote and support walking as an important transportation mode that reduces overall energy use	• Strengthen public awareness about the energy conservation benefits of walking • Encourage Smart Growth development with coordinated land use/transportation planning

Hawaii Statewide Transportation Plan (2045)

The Hawaii Statewide Transportation Plan (HSTP) is a document that outlines the framework for transportation planning decisions in the state of Hawai'i. It is coordinated in consultation with the planning, transportation and public works departments in each county, the Oahu Metropolitan Planning Organization (OahuMPO), and modal divisions of the Hawaii State Department of Transportation.

Updated, every 10 years, with the last HSTP completed in 2011, the state's Department of Transportation is in the process of updating the Plan for 2045.

The following table summarizes the plan's drafted goals and the strategies to achieve them.

Table 5. Hawaii Statewide Transportation Plan goals and strategies

Goal	Strategies
Safe and secure air, land, and water transportation systems	• Seek to eliminate transportation-related fatalities and serious injuries • Maintain cybersecurity and biosecurity and protect against other security threats to the transportation system • Maintain military transportation network connections
A high-quality, well-maintained multimodal transportation system	• Maintain the multimodal transportation system in a state of good repair • Optimize maintenance strategies and investments • Ensure infrastructure meets customer needs and expectations
Improved mobility and enhanced access to destinations for people and goods	• Provide an efficient and reliable multimodal transportation network for people and freight • Improve intermodal connectivity and options for people and freight • Support diverse modal options and improve multimodal connections within local communities
A transportation system that supports a vibrant and changing economy	• Enhance the efficiency and reliability of goods movement systems and infrastructure • Improve the movement of the state's workforce • Support statewide and local economic development • Improve efficiency and convenience of inter- and intra-state movements of Hawaii's tourists, people and goods
A resilient transportation system that anticipates and adapts to climate change and is responsive to storms, pandemics and other disruptions	• Reduce vulnerability and increase resiliency of land, air, and marine transportation systems to the impacts of climate change • Maintain secure and resilient supply chains • Improve emergency preparedness, response and evacuation • Protect the health of transportation system users during epidemics and pandemics
A transportation system that supports public health, equity and quality of life	• Increase access to high-quality mobility options for populations with limited access • Increase access to affordable transportation for populations with high transportation cost burdens • Reduce exposure to harmful impacts of the transportation system particularly within Environmental Justice communities • Provide equitable participation in transportation decision making that ensures community health, safety and culture are valued and supported in transportation infrastructure development and policy decisions

Goal	Strategies
Environment	• Improve and preserve the quality of air, water, land, and other natural resources • Reduce transportation-related impacts on natural, historic and cultural resources • Reduce transportation GHG emissions to support the statewide goal of carbon neutrality by 2045
Implement statewide planning process that correlates land use and transportation	• Incorporate new and evolving methods of public involvement, communication and social networking • Create and implement Integrated Sub-Regional Area Planning initiative that links strategic planning to project implementation for all modes through visioning process • Keep abreast of current and evolving programs and regulations that affect transportation in Hawaii • Seek wider application of geospatial technologies

Oahu Bike Plan

The Oahu Bike Plan was first drafted in 2012 and has since been updated in 2019 to include strategies related to the new rail project and to add a focus on low-stress bikeway facilities. The Plan identifies specific projects, policies, and programs that will expand bicycle ridership, provide a network of safe and comfortable bikeways for all users, and lead Oahu to become a first-class cycling destination.

The following table summarizes the plan's goals and strategies.

Table 6. Oahu Bike Plan recommendations and strategies

Recommendations	Strategies
Commit to Vision Zero	• Implement traffic calming measures • Identify and implement emerging and best practices • Develop collaborative interagency approach to transportation safety • Cooperate with HPD on effective enforcement
Develop seamless connections between bike and transit	• Provide safe bike access to train stations • Accommodate bikes on transit • Integrate bikeshare around transit stations • Provide secure bike parking
Expand encouragement and education efforts	• Support establishment of ongoing Open Streets events • Prioritize support for programs that serve marginalized populations • Increase City staff to oversee encouragement and education programs • Leverage City's network of community partners

Recommendations	Strategies
Establish comprehensive bikeway maintenance program	• Create maintenance and quick build team • Develop facility conditions inventory and prioritized maintenance schedule for all off-street shared use paths • Publicize 311 app and pothole reporting system • Establish Work Zone Accommodation Standards for bikeways, paths and sidewalks
Implement consistent signage and wayfinding program	• Prioritize signage on low-stress bikeways • Develop specialized treatments along iconic bikeway segments
Evaluate bicycle facilities and programs	• Collect, analyze and publish ridership data • Evaluate safety of new design treatments • Assess effectiveness and distribution of bicycle programs

Oahu Pedestrian Plan (2020 – present)

The Oahu Pedestrian Plan is an upcoming long-term action plan to create vibrant, safe, and accessible streets in support of healthy and livable communities. The Plan will involve inventorying existing pedestrian conditions, identifying pedestrian safety issues, proposing improvement projects and programs, and prioritizing improvements to facilitate walking and multimodal travel consistent with the City and County of Honolulu's Complete Streets Ordinance, as well as State and local transportation plans.

The City and County has solicited input from community members to shape this plan. The City and County has conducted public meetings and community events and has also added an interactive map for users to add their ideas by July 6th, 2020. Steer was provided an administrative draft of the 2020 Plan, which, as of the time of this publication, has not yet been released to the public.

The Plan has four goals it hopes to achieve: to make Oahu's pedestrian environment safe, comfortable, and clean; prioritizes modes of travel and infrastructure projects that preserve Oahu's natural environment and optimizes economic return on investment; to engage the greater community in creating and maintaining an active and context-sensitive pedestrian environment; and to focus investment in historically disenfranchised communities to create equitable walking conditions.

The following table shows the strategies and tools the City and County will use to achieve these goals.

Table 7. Pedestrian Plan tools and strategies

Objective	Tools + Strategies
Improve safety at signalized intersections	• Reduce crossing distance/exposure • Reduce pedestrian-motorist conflicts with signal phasing • Reduce speeds of turning vehicles • Maximize opportunities for walking in signal phase • Convert intersection to roundabout • Red light enforcement cameras • Street lighting at intersections
Improve safety at uncontrolled crossings	• Reduce crossing distance/exposure • Increase visibility of crossing • Reduce speeds of approaching motorists • Relocate or consolidate crossings • Provide adequate walkways • Provide frequent well-designed crossings • Implement lane reconfigurations • Implement low-traffic, low-speed neighborhood streets • Limit driveway exposure
Improve safety system wide	• Design and retrofit for target speeds • Reduce speed limits
Build out the walkway network	• Construct sidewalks to complete gaps in pedestrian priority network on major streets • Construct walkways with cost saving strategies to complete gaps in pedestrian priority network on non-major streets • Implement low-cost improvements to the ped environment
Provide clear sidewalks	• Require placement of utilities to preferred pedestrian zone width • Place bike parking, bus shelters and seating outside of the pedestrian zone
Upgrade walkways	• Widen sidewalks in high pedestrian traffic areas • Upgrade existing walkways to meet accessibility standards • Provide buffers to separate pedestrians from motorists
Enhance the pedestrian environment	• Provide protection from the elements • Provide bus shelters/seating
Pedestrian oriented environment	• Provide primary entries located directly from sidewalk • Orient sites to the sidewalk • Provide active and inviting facades and high pedestrian traffic streets • Shield parking, vehicular circulation areas, and utilities from the sidewalk • Provide seating in commercial areas • Promote development of neighborhood-sized schools

In addition, the document lists education, encouragement and enforcement pedestrian programs as strategies to promote walking. Of note is the City's suggestions for a TDM program managed by the City and County: "best practices, legislative recommendations and enabling policies, island-wide mode share targets, residential/employer commute trip reduction strategies and investments, community outreach and engagement, program website, program administration, marketing, educational materials, online reporting and webmap monitoring mechanisms.

Existing transportation services and infrastructure

TheBus

TheBus is Oahu's public bus network. Operated by Oahu Transit Services, a nonprofit, under a public-private partnership with the City and County of Honolulu, it has an average weekday ridership of about 199,960 (FY 2019.) It provides daily service on 110 routes that cover the entire island. A 2011 report from the Brookings Institution found that the island ranked first in the whole country for the share of working-age residents with access to transit, with 97% of working-age residents having access to transit.

According to TheBus Demographic and Fare Media Ridership Survey conducted in December 2018, 30% of surveyed riders have an annual household income of $74,999 or less, and 49% of riders do not have a driver's license. It also appears that full-time employees use the bus five das a week as their main mode of transportation to and from work: 56% of riders use TheBus for work, and 42% of riders ride the bus 5 times a week. These indicate that a high number of passengers rely on TheBus service for everyday usage and that TheBus is a critical lifeline for some of its users.

While it carries more passengers per revenue hour than its peers, despite operating fewer revenue hours and miles and a smaller fleet of available vehicles, it has still seen a steep decline in ridership. In FY 2018-2019, TheBus saw its second-lowest ridership in the past 25 years with 62.3 million rides. It is currently facing a $400 million shortfall that has been exacerbated by the sharp decrease in ridership during the pandemic. In order to stay compliant with the City's policy for fares to cover 25-30% of TheBus operational costs (it is important to note here that this is considered to be very high for an urban bus service; usually this percentage is reserved for high-passenger commuter rails), the City Council and Mayor Caldwell passed a bill increasing adult single rides fares to $3, monthly passes to $80 and annual passes to $880. These fare increases would take effect in July 2021.

TheBus has undergone several major changes to increase ridership and to improve the experience of existing riders. In 2019, it introduced the HOLO card, a smart card that allows riders to load cash and to tap while boarding. The new system caps fares so that riders will not have to pay more than the price of two fares on a single day, and allows riders to manage their card online or at retail locations. In 2020, the City's Department of Transportation Services awarded a contract to local firm Ulu HI-Tech to expand the card's use to the upcoming Honolulu Rail and Handi-Van.

TheBus has also worked with the City to designate bus-only lanes. On December 13, 2020, the City designated a bus-only lane on King Street from Dillingham Boulevard to Punchbowl Street, the state's busiest bus corridor serving 36 different TheBus routes coming from Leeward, Central Oahu and the North Shore.

Biki

Biki is Honolulu's large-scale bikeshare system. Launched in late June 2017, it has over 1,300 bikes at self-service "Biki Stops" throughout downtown Honolulu.

While established relatively recently compared to most other major cities in the US, the foundation for its arrival was laid as early as 2008. Bikeshare had first made its way to Hawaii as a pilot project in Kailua from 2011-2014, which offered two stations and 12 bikes. Later, in 2011, the State Department of Health formed the Hawaii Clean Energy Initiative working group and identified bikeshare in urban Honolulu as a strategy to decrease vehicle miles traveled. In 2014, the City Council approved Resolution 14-35 in support of bringing bikeshare to Honolulu as a public-private non-profit model. Subsequently, Bikeshare Hawaii was established as a 501c3 nonprofit.

Biki is operated as a public-private partnership, as was recommended by the City's 2014 Honolulu Bikeshare Organizational Study. Bikeshare Hawaii manages the day-to-day operations and programming of Biki and actively seeks additional partnerships and sponsorship for support. It contracts with Secure Bike Share LLC, a private operator that provides operations, customer support and system billing. Meanwhile, the City provides the vision for the program, hosts the majority of the docking stations, issues street use permits, and provides technical support for federal and state grants. It is supported by the City, the State, as well as by organizations such as Hawaii Pacific Health, All Nippon Airways, Hawaiian Electric, and others.

As of 2019, Biki has logged over 3 million rides by 121,270 unique riders to date; in 2018, it was the 6th most used bikeshare system in the nation. Oahu residents make up 24% of riders but take 64% of all trips. Roughly two-thirds of members are ages 18-39, and one-thirds of members have an annual household income of below $50,000. A recent survey has shown that the top three purposes for using Biki are fun/recreation, personal appointments, and dining.

As of April 29, 2021, Biki has seen a 70% drop in total rides due to the pandemic and has removed Biki stations to cut costs. It is possibly closing if they cannot receive financial assistance from the City and has sent an email blast to 44,000 customers asking them to write the Mayor and City Council in support of the program. This comes at the heels of a December 2020 independent audit that claimed the City lost out on $450,000 of revenue due to Biki's exemption from city permit and concession fees in using metered stalls and other spaces that previously generated revenue for the city. In response to this audit, Biki wrote on its website reiterating the structure of their partnership with the City, noting that the City hosts Biki stations their property free of charge "due to the benefit to the community and their customers, employees and tenants."

Other shared micromobility services

Aside from Biki, Ride Sharee started operations in October 2018 after being being allowed to operate by the City and County of Honolulu. Owned and operated by Neptune New Solutions LLC, a Honolulu-based for-profit company, it considers itself a competitor to Biki and has come into conflict with the city before over where to park the bikes. It is unclear whether this service is still operational, as sightings of the bikes are rare.

The island is a contested hotbed for e-scooters, which has caused friction between private operators and the City over regulations. In 2018, Lime launched 1000 e-scooters, drawing 3,500 rides in its first four days. However, the City immediately deemed them illegal, classifying them as mopeds that didn't have the required license plates, safety inspections and tags, and ordering the Honolulu Police Department to impound them. The growing interest in e-scooters and the demonstrated demand for them has prompted city and state officials to scramble to create regulations to manage them. The Hawaii State Legislature has introduced bills that would amend the definition of "moped" to exclude electric scooters and retain personal injury protection benefits for any individual sustaining injuries while using or operating an electric scooter. As of April 2021, the bill is in the hands of the House Finance Committee. In addition, the Honolulu City Council has passed two bills that would establish fees and areas for where companies can leave their shared rentals, paving the way for the inclusion of shared micromobility options on the island.

As city and state officials continue to consider regulations, new e-scooter companies continue to crop up. Go X has launched in Waikiki in early 2021, facing the same issues as Lime back in 2018. Go X's CEO claims that what they're doing is "completely legal," provided that the company partners only with businesses and ensures that bikes are only left on private property.

Paratransit Operations

TheHandi-Van, the paratransit service for people with disabilities, seniors, and Medicare recipients, is operated by Oahu Transit Services concurrently with TheBus. The service costs $35 for an annual pass and is generally available island wide, while 24-hour service is available in areas located within ¾ mile of TheBus routes 2 and 60. Average daily ridership was at 185,000 passengers just before the onset of the COVID-19 pandemic, with ridership recovery at 52% of pre-pandemic levels as of April 23, 2021.

Since 2011, demand has grown by approximately 3% per year above the projected demand rate calculated solely by population growth. It yields the highest per capita level of paratransit demand among large paratransit providers in the US. The most frequently used routes are those in the Urban Core and the West Side, areas with a high density of seniors, indicating that it is a well-used service. Given the aging population, this service will be needed more than ever in the years to come.

While service has increased by about 63% in the past twenty years to meet this demand, the operator has struggled to effectively manage demand, facing budget cuts and other shortfalls. The service's on-time performance is poor; a 2016 audit found that on-time

arrivals on TheHandi-van had fallen by 5%. In the past decade, at least three vans have caught on fire, and the city has struggled to replace its aging fleet. Riders have also raised concerns about the reservation system, which is conducted entirely over the phone and is down at times. Officials have expressed their frustration with the service's dispatch software, which has sent vehicles across the island to pick up different passengers, extending their trips by hours.

The City Council is now considering a bill to increase the fare by 25 cents to $2.25 starting next year.

Transportation Network Companies (TNCs)

Uber arrived in Oahu in 2013, followed shortly by Lyft in June 2014. They cover the entire island.

The trajectory of TNC or ride hailing services in Oahu has followed a similar course to that of rideshare in other major cities. Its arrival has been blamed for traffic congestion and declining transit ridership. In 2018, the Honolulu City Council approved a measure to limit prices that ride hailing services could charge during peak demand, effectively capping the fare even in times of increased demand. However, this bill was vetoed by Mayor Caldwell. Tensions between municipal officials, taxi companies, and rideshare companies surrounding their regulation still remain.

Publicly available data on TNC ridership is scant. A survey conducted by Anthology Research for *Hawaii Business* in the last quarter of 2017 found that 40% of local business leaders had used Uber or Lyft in the past two years. Those who responded that they used both taxi and TNCs overwhelmingly preferred TNCs, with 58% indicating that preference. The survey then polled the general public and found that 44% had used either Uber or Lyft. TNC usage is highest in urban Honolulu, among people under the age of 35, and among those earning over $100,000 a year. Those who stated that they preferred using TNCs cited the convenience of their apps, the fast pickups, the cost, the customer service, and the discounts and promotions.

In addition to Uber and Lyft, riders will now have a third option. Cecil Morton, the President and CEO of SpeediShuttle, a company that provides luxury airport shuttles throughout Hawaii, is starting Holoholo, another ridesharing app. It has a no-surge-pricing policy, making it competitive to Uber and Lyft, and wants to be a locally owned alternative that touts Hawaiian values and culture. Riders will be given an option to choose a green vehicle, and drivers will be rewarded for driving hybrid or electric vehicles by receiving a 5% greater share of a given ride's fee. As of May 2021, the app is recruiting drivers.

Taxi Services

There are many private taxi companies that operate in Oahu, such as Charley's Taxi, The Cab Hawaii, Hello Cab Hawaii, among others. Many of these are multi-generational family-owned companies whose presence is well-established on the island. Charley's Taxi has been operating on the island since 1938. It has established corporate partnerships with Disney, Hilton, Japan Airlines, Waikele Outlet Stores, and other major tourism

industry players; clients who use JTB, Japan's largest travel agency, can use a Charley's taxi for a flat rate.

The 2017 survey in *Hawaii Business* found that 44% of local business leaders had used a taxi within the past two years, and of the 24% of local business leaders who had used both TNCs and taxi, only 5% preferred taxi. 30% of the general public surveyed had used a taxi in within the past two years. Taxi usage is highest in urban Honolulu, and it is primarily used among individuals earning more than $100,000 a year. Those who preferred taxis over TNCs cited their convenience, their trust in the services, and that they are more regulated than Uber and Lyft.

Pedestrian infrastructure

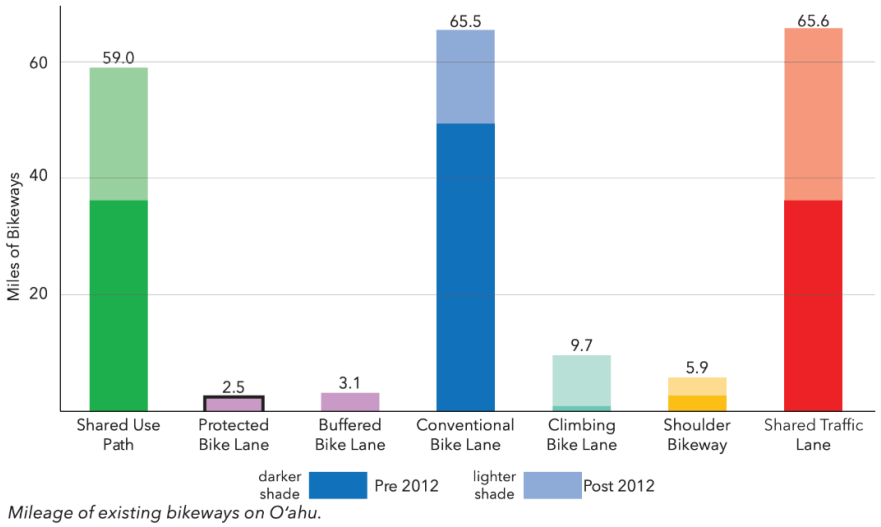
Oahu has a disparate sidewalk system that is well-developed in commercial and mixed-use areas. However, there are some critical gaps even in these high pedestrian demand areas. Rural communities are poorly served by pedestrian facilities and generally lack pedestrian facilities connecting residents to major destinations and transit. Residential areas are varied; newer suburban neighborhoods have good pedestrian facilities, while older residential areas, including even apartment areas, tend to lack complete pedestrian networks.

Due to the lack of adequate infrastructure island wide, Oahu has had the highest numbers of crashes of all islands involving pedestrians, with most of them occurring in the Primary Urban Center (PUC). The PUC has a relatively high percentage of elderly and tourist populations, who are often pedestrian-oriented. The central and western parts of Oahu have high percentages of youth under 17, as well as people without access to vehicles.

Bicycle infrastructure

Currently there are 211 miles of existing bikeways on the island that fall into three categories: shared use paths, conventional bike lanes, and shared roadways. According to the American Community Survey conducted in 2017, approximately 1.2% of Oahu commuters bike to work. Some areas in Oahu, such as Downtown Honolulu and Lā'ie, see upwards of 10% biking rates. Following the first Oahu Bike Plan in 2012, Oahu added 67 new miles of bikeways, a 47% increase in the island's bikeway network.

Figure 18. Mileage of existing bikeways on Oahu



Mileage of existing bikeways on O'ahu.

Private vehicle

Private vehicle is the most prevalent means of transportation on the island. While the majority of households (59%) own two or more cars, the remaining 41% own either one car or no cars. A majority of commuters (67%) report driving alone to get to work. The OahuMPO RTP 2040 states that the daily vehicle miles traveled (VMT) in 2012 was a total 13,709,049. It estimates that even with all projects implemented in the 2040 plan the island would see 16,544,144 VMT, while a no build 2040 would see 16,328,312 VMT. Daily vehicle hours traveled (VHT) totaled 427,619 in 2012; this number is expected to increase to 559,123 in 2040.

The island has seen a 31% increase in vehicles registered between 1995 and 2017 with a total of 792,000 vehicles registered in 2017. Since 1995, however, Oahu has only added 190 miles of roads to its streets and highway system. The increase in vehicles on the road has led to record levels of congestion on Oahu roads: the average Oahu driver in 2019 spent 64 hours in traffic annually, up from 53 hours annually in 2009. Additionally, a recent study published by the Ulupono Initiative highlights the cost of the vehicle economy in Hawai'i beyond the traditionally considered road maintenance and construction. They found that, when considering costs such as parking, emergency service use in response to vehicle accidents, and associated costs such as environmental impact and congestion, the total costs amount to roughly $14.3 billion annually on the island.

Parking

There are a variety of parking options on the island:

- Free on-street parking
- Metered on-street parking (price per hour higher in highly frequented areas)
- Off-street parking (employer, residential, hotel/resort, private and parking lots and garages)

The City has the authority to establish parking meter spaces or individual parking spaces in public off-street parking facilities. In facilities where monthly parking is authorized, the director can designate a certain amount of carpool parking spaces. As of 2021, the parking rates are as follows:

Table 8. Parking Costs

Parking Type	Rate
Smart meter in Honolulu urban core + Waikiki	$3/hour
Parking meter at Honolulu Zoo and Kapiolani Park	$1.50/hour
Parking meter outside urban core	$1.50/hour
Off-street city parking lots	$0.10 - $1.50/hour depending on facility

Some attendant parking facilities offer special rates for low-income residents, commercial tenants, and market unit residents. Many dining establishments offer parking validation or valet parking. Employers often subsidize the cost of parking for their employees. For example, the City and County offers monthly parking passes to employees for the cost of a monthly transit pass, which is currently $70 when market rate parking in the same district is $220, and $25/month parking is available a short walk from the Downtown offices.

A 2011 study on parking in the Urban Core, defined as the area bordered by River Street, Keeaumoku Street, Beretenia Street and Nimitz Highway/Ala Moana Boulevard, has found that there is an average of 13,000 vacant parking spaces during peak hours. This equates to roughly a 71% occupancy rate, indicating that there is a surplus of parking. Indeed, the study suggests that lack of parking space could potentially be an issue of perception; while streets had parking rates that exceeded 85% and sometimes even 100%, while some off-street parking lots in buildings lay empty.

There is a scarcity of parking, however, in select residential neighborhoods outside the Urban Core. This has prompted the City and County to create an ordinance to establish the procedure for creating Residential Parking Zones (RPZ.)

Originally piloted in Kalihi, one of the most congested neighborhoods where residents struggled to find parking, the RPZ pilot gives residents special permits to park on the street in their neighborhoods at certain times. The City may expand the RPZ program to become formalized passed it's pilot stage (as of April, 2021).

City officials are aware of the impact parking has on affordable housing and climate change. In late 2020, Honolulu City Council and former Mayor Caldwell signed into law Ordinance 20-041, a law that updates Honolulu's parking requirements. It removes the minimum parking requirement as part of each new development, which could potentially reduce costs for developers and prospective homeowners and renters and incentivize people to drive less. The Ulupono Initiative released a report in August 2020 detailing the high costs of parking; depending on location and type, the total cost (land and construction) can go from $22,500 to $57,000. In addition, the Hawaii State

Legislature enacted a package of incentives to electric vehicle (EV) users, including reserved parking spaces for EVs and free EV parking at state and county facilities, including meters. However, the State repealed parking benefits at state airports and most state and county parking lots and meters on June 30, 2020.

Despite these progressive parking policies, the governance and operations of City-owned parking assets is fragmented and uncoordinated. They are controlled by several different City departments and parking revenues do not go to a single dedicated fund, but rather scattered to a variety of funds. In addition, the City may be potentially be losing out on parking revenue due to lack of parking meter overtime enforcement by the Honolulu Police Department, as it does not retain any parking citations income, which goes directly to the State Judiciary.

Bicycle Parking

The Department of Transportation Services has a map of bike racks, both city-owned and non-city-owned, on its website. Most facilities are either in the urban core or in Kailua. The City has also opened up a new long-term parking shelter at the Kalihi Transit Center, which provides secure storage for 16 bicycles.

The City has responded to the increased bicycling activity by passing Ordinance 17-55 in 2017, which requires the provision of bicycle parking in new structures in Apartment, Apartment Mixed Use, Business and Business Mixed Use Zoning Districts. Ordinance 20-041 has added the required provision of bicycle parking in resort districts and all precincts of the Waikiki special district.

Carshare

There are a few carshare providers on the island. Hui Car Share has over 50 stations across Oahu with 130 active cars. Their stations are at the airport, Waikiki, Kaka'ako, Downtown Honolulu, Kaimuki and Kapahulu, Manoa and Makiki, Ala Moana, Central Oahu, Kapolei and the major hospitals.

Launched by Servco Pacific and Toyota Connect in 2018, it aims to provide cost savings and convenience to its users. While Hui initially worked with private landowners and parking lot operators to house their fleet, in 2019, Mayor Caldwell signed a bill that would reserve up to 160 public parking stalls for car-sharing vehicles only. Companies pay a price depending on location; at the city-owned lot at Smith and Beretania streets would cost $3,150 per space. The ordinance attracted some controversy, with opponents arguing that it takes away much-needed street parking in highly frequented areas.

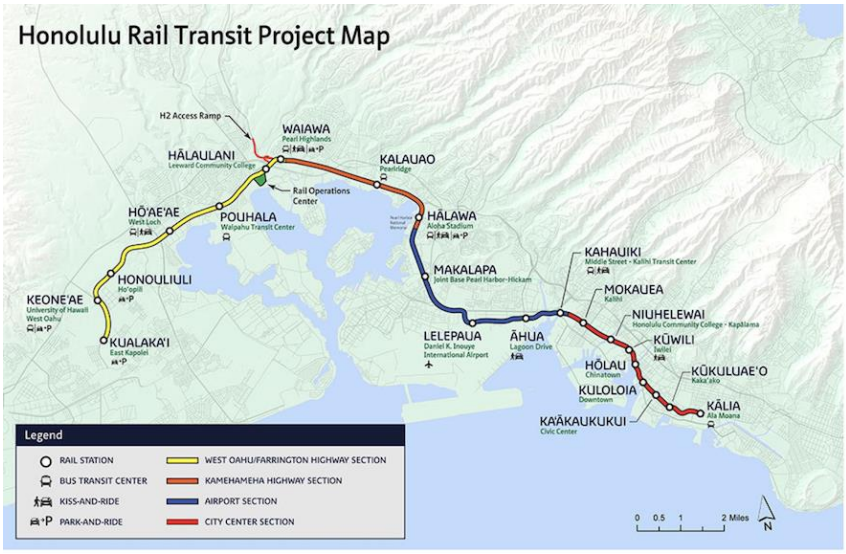
Additional carshare providers on the island include Enterprise CarShare and Zipcar. Enterprise has four locations in Waikiki, as well as at Hawaii Pacific University, the University of Hawaii at Manoa and Brigham Young University Hawaii. Zipcar is the cheapest option, but has only two locations, at the Alohilani Resort and the International Market Place.

Future transportation services and infrastructure

Honolulu Rail Transit

The Honolulu Rail Transit is a 20-mile-long light metro system under construction that will connect East Kapolei to Ala Moana, running through key areas of Downtown and the airport. It began construction in 2012 and was originally expected to open in three phases: Phase I, from East Kapolei to Aloha Stadium, in late 2021; Phase II, from Aloha Stadium to Middle Street, in 2022; and Phase III, from Middle Street to Ala Moana Center, is expected to open in late 2025. The new system is expected to relieve traffic congestion along the East-West corridor, take cars off the road, minimize dependence on imported oil, and create new jobs.

Figure 19. Honolulu Rail Transit Project map



Source: HART

The Rail Transit is a highly controversial project, due to its high cost, its questioned cost effectiveness, potential community displacement, continuous construction delays. Originally estimated to be a $4 billion project that would open to passengers in 2020 under a funding agreement with the Federal Transit Administration, the City is now estimating it to open in 2033 with a cost of $11 billion due to multiple cost overruns and most recently, the COVID-19 pandemic. The City asked the FTA for an extension on its $250 million grant and the FTA has extended the deadline to December 31, 2021.

The project is also being funded by a General Excise Tax surcharge paid by residents, some of whom do not believe that they will benefit directly from the project. Notably, the project is funded partially by the Transient Accommodation Tax on hotel transactions, another point of controversy.

There are also concerns about displacement of residents and businesses as a result of new developments surrounding the route. In order to ensure that growth that arises as a result of the delivery of the Rail Transit project creates neighborhoods where people can live, work, play and raise their families, the City has implemented its TOD program,

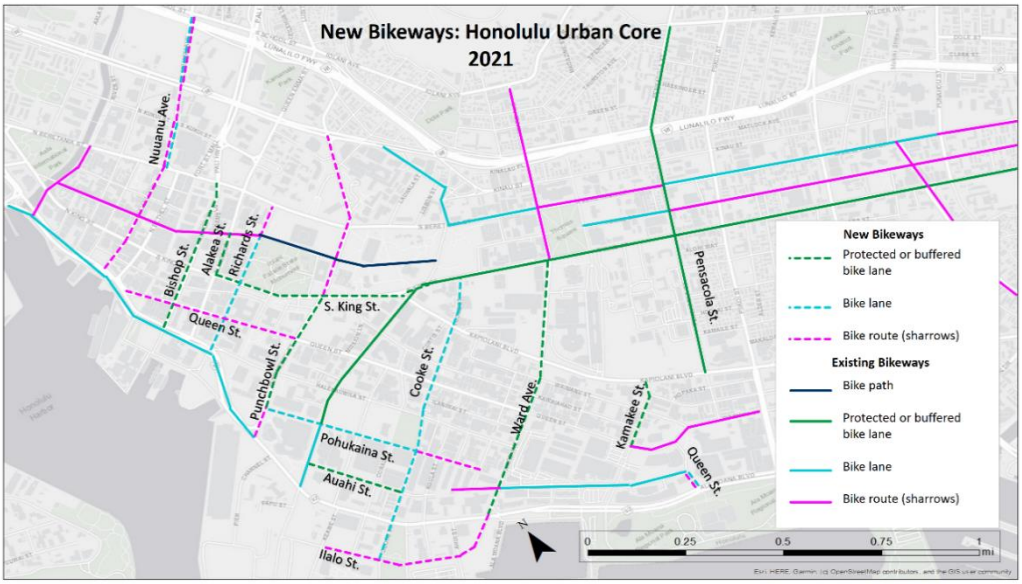
outlined in Chapter Error! Reference source not found., which seeks to incorporate a high l evel of design, creates the conditions for active transportation, and enables more green space safer streets and less noise and pollution. The preparation of Neighborhood TOD plans around 19 of the 21 stations areas under City jurisdiction address opportunities for new development and holistically plan for orderly growth and improved accessibility around the stations.

Bikeway and pedestrian infrastructure improvements

As part of the Complete Streets program, the City and County is in the process of planning, designing and constructing new bikeways and pedestrian infrastructure across the island in conjunction with road repaving projects. These include:

- Curb ramp improvements
- ADA bus stop improvements
- Bike lane extensions
- Pedestrian crossing improvements
- Tree beautification projects
- Quick build projects (as administered by the City and community groups)
- Sidewalk improvements
- Multimodal access improvements
- Quick Build projects
- Highway improvements
- Multi-use paths
- Intersection improvements

Figure 20. New bikeways in Honolulu Urban Core



Source: Honolulu Complete Streets

4 Travel behavior and TDM

Travel trends

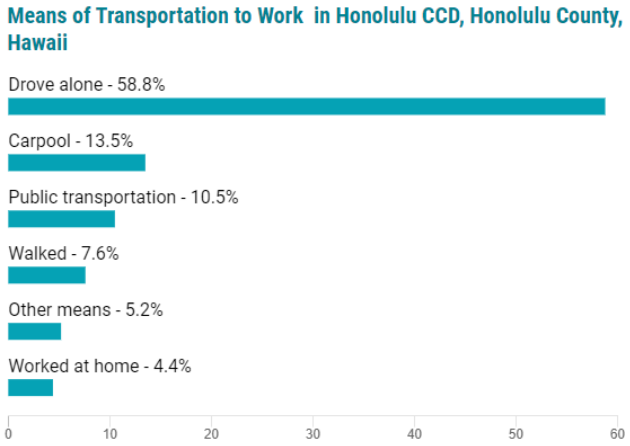
The island of Oahu is notorious, like many other cities in the world, for having too many cars and not enough space to sustainably support them. As a result of increasing density, tourism impacts, and fragmented public transportation, there is notable traffic in Honolulu and across the Island. In the 20 years leading up to 2020, the population of Oahu grew by 12% while car ownership increased by 30%.

As of 2019, the American Community Survey (ACS) reported a 58.8% drive alone rate among commuters, which is significantly lower than the national average of 75.9%, and more in line with rates in counties like Multnomah County, OR (including City of Portland) and King County, WA (including the City of Seattle), with 60.1% and 60.2% drive alone rates respectively. Additionally, INRIX, a company that provides location-based data and analytics, found that roughly 55% of all trips made in Honolulu were under three miles – easily replaceable with other travel modes.

Honolulu has a notably high percentage of employees who carpool to work, at 13.5%. As described in a 2014 article for *governing.com*, the former Oahu MPO Executive Director Brian Gibson speculates that high rates of carpooling in Honolulu and Hawaii overall is reflective of two main factors. First, the 'relative poverty' (the high cost of living in Honolulu compared to average income) experienced by workers in the City likely means commuters are cost-conscious. Sharing a ride provides those with access to a vehicle financial support toward gas and maintenance costs, while those who may not be able to afford their own vehicle can still travel to work as passengers. Additionally, Gibson points to the community-focused culture in Hawaii that both facilitates logistics of carpooling and reduces concern around riding with strangers.

Outside of driving alone and carpooling, Honolulu's commuters take public transportation (10.5%), walk (7.5%), telecommute (4.4%), or use other means, including bicycle (5.2%).

Figure 21. Means of transportation to work (ACS, 2019)



Source: American Community Survey

While traffic and vehicle miles traveled have momentarily subsided due to the Covid-19 pandemic, they have already reached 80% of pre-pandemic levels, according to the State Department of Transportation. Some industries may be able to sustain regular teleworking practices, the city's most prevalent industries require on-site support from employees. Those who might have considered alternative modes before may be hesitant to travel in enclosed spaces with others, and opt to drive alone if they have the ability. Additionally, Hawaii launched a program to attract remote workers and the subsequent influx of semi-permanent residents is likely to cause in influx on roadway demand, as many temporary visitors may find a car rental preferable to public transit for the needs of their trips, including non-work related travel.

As the City strives to stay on top of increasing car ownership and congested roadways, influencing behavior change and encouraging shift away from drive-alone travel through TDM will be crucial. However, rather than starting from scratch, the City can build off the current range of TDM programming and policy that exists today, implemented across the public and private sectors on both broad (up to statewide) and specific (site-based) scales.

School Commutes

Publicly accessible data on school commuting by mode on Oahu is limited. The Hawaii State Department of Education (DOE) provides public school bus services in neighborhoods across the state to ensure broad access to Hawaii's students. The DOE estimates that it serves approximately 15,000 student riders on Oahu per day, and a further 18,000 on neighbor islands, totaling 33,000 student riders of public school bus services per day. According to GreatSchools.org, there are approximately 180,800 students (PK-12 & Ungraded) within the Hawaii DOE school district. This data suggests that approximately 1 in 5 public school students (PK-12) commute by public school bus in Hawaii. The mode choice(s) of the remaining pool of students is unknown.

Statewide TDM

Hawai'i Department of Transportation (HDOT) designates rideshare programs as "the least expensive way to reduce rush hour traffic congestion." HDOT has a Transportation Demand Management Office housed within the Highways Division Traffic Branch, and provides a variety of programs and services aimed at encouraging shared rides.

Senate Bill 1401 – Complete Streets Policy and Principles

As of May 2021, the Hawaii State Legislature is considering SB 1401, which requires the Department of Transportation to report on the complete streets policy and principles, to establish standards relating to safe travel along state roadways, and to provide training for maintenance staff in complete street policies, principles and implementation procedures. It also requires counties to consider complete street policies when adopting or amending land use ordinances. Most importantly, it specifically requires that projects consider the following goals, which relate broadly to TDM: meet complete streets goals, reduce vehicle miles traveled, provide capacity to meet future mode share goals established by the State, and reduce carbon emissions and greenhouse gases to meet state climate and zero emissions clean economy goals.

The bill is in conference as of May 2021.

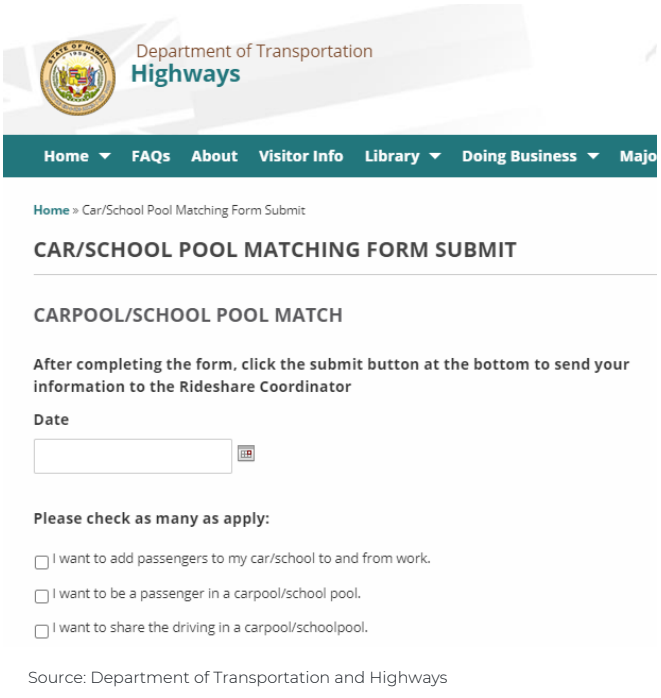
Carpool/School Pool Match

The state's Carpool/School Pool Match system allows users to enter the date they're interested in carpooling, whether they want to drive, be a passenger, or both, and requests information about home and work or school location and start/end times.

The Carpool/School Pool Matching Form also asks users how they typically get to school or work, which should allow HDOT to track percentage of interest from current single-occupancy drivers vs. those who typically use other modes.

However, HDOT does not provide any posted data that demonstrates outputs such as how many participants have used the site or been matched with carpool partners. As there is no way for users who fill out the form to log trips or confirm whether carpools have actually taken place, it is assumed that HDOT is not keeping track of outcome based data surrounding mode shift, trip reduction or VMT reduction achieved from the program.

Figure 22. Current Car/School Pool matching form



Source: Department of Transportation and Highways

Of note, in recent years technology platforms such as Scoop and Waze Carpool have supported more seamless processes to connect carpoolers that likely require less administrative staffing work. The State is working on launching an updated system, likely in Spring 2021.

Multi-Modal Travel Information

The HDOT "Rideshare" web page, provides multi-modal travel resources and information about TDM programs across the state, including:

- Qualified Transportation Fringe Benefit, which allows employers to provide a portion of their employees' paycheck before tax deductions to be used for alternative commuting.
- Transit resources such as TheBus, the Oahu Vanpool Incentive Program, and brochures/flyers on carpooling tips (though very out of date)
- Links to successful TDM programs such as the University of Hawaii at Manoa's Commuter Program.

HDOT also produces the HDOT Moves podcast, which touches on TDM-related topics such as "Public Transportation and Pandemics" and "A Governmental Perspective on Telework."

High Occupancy Vehicle (HOV) lanes

HDOT has restricted lanes along some of its highway corridors during peak commute/travel times. Portions of H-1, H-2, Nimitz Highway, H-201, and Kalanianaole Highway, all have lanes open to only vehicles with occupancy of two or more people, or vehicles with special permits, during those times.

Act 205 – Commuter Benefits Program

In 2015, the Hawai'i State Legislature introduced House Bill No. 1010, which gives counties within the state the permission to adopt ordinances that establish commuter benefits programs which consist of one or more of the following:

- Allowing employees to take advantage of pre-tax commute benefits for transit or vanpool travel
- Providing employees who don't drive alone with monthly incentives, up to the cost of traveling by transit or other alternative mode
- Direct transportation service.

Support for the bill was voiced by HDOT, the Hawaii Government Employees Association, the City and County of Honolulu Department of Transportation Services, Blue Planet Foundation, Ulupono Initiative, the Hawaii Energy Policy Forum at the University of Hawai'i at Manoa, and the Hawai'i Bicycling League, among others. The bill was signed into law in July 2015, making way for the potential for commuter benefits programs to be delivered in accordance with state law. However, there are no references to county-produced ordinances in Honolulu (or the other counties) online – either they have not been produced or not publicly accessible. However, the City and County of Honolulu has taken advantage of this for its own employees.

Safe Routes to School Program

Safe Routes to School (SRTS) is a national and international movement to encourage more children to walk and bicycle to and from school through programming, advocacy and education. It is seem as an effective TDM strategy as it reduces drop-off related VMT and engrains walking and biking habits in students that could last up to adulthood. SRTS is a Anyone can start an SRTS program and can apply for city and state infrastructure and non-infrastructure funds.

Hawaii Bicycle League has helped a couple of schools in Oahu develop their Safe Routes to School plans, including Kalihi Kai Elementary, Kailua Elementary, Kailua Intermediate and Waialua Elementary Schools. In Fiscal Year 2020, SRTS provided the following:

- Pedestrian and bike safety education at Ala Wai Elementary School for their Walk to School Day
- Walking field trip for Kindergarten classes at Ala Wai Elementary School to the McCully fire station
- 96 reflective children's vests to Pohakea Elementary School and Pearl City Elementary School
- Workshops at Wilson Elementary, Kapolei Middle School
- Blue Zones' efforts towards creating an SRTS Plan at Robert Louis Stevenson Middle School, which will be drafted sometime in 2021

Due to the pandemic, the program focus has shifted to creating support materials for education and addressing programmatic challenges on equity and engagement.

City and County of Honolulu TDM

Despite the lack of a comprehensive TDM policy or incentive and education program, the City and County of Honolulu undertakes coordinated efforts that support TDM programming across the island, including a vanpool incentive program and work with developers to require site-based programming aimed at changing travel behavior.

Vanpool Incentive Program

Years after the previously existing Vanpool Hawaii program was suspended, the City and County of Honolulu launched the Oahu Vanpool program in 2016. The program subsidizes the cost of monthly vanpool use for riders and drivers across the island. Vanpool riders and drivers can sign up for the incentive program and receive up to $500 for each vanpool. The program is operated by private vendors who contract with the City (right now this includes only Enterprise Rideshare), and the subsidies are provided by the City.

Figure 23. Oahu Vanpool Incentive Program banner

As of March 2021, the Vanpool program has 57 active vanpools. Its annual environmental impact include about 2.5 million commuters miles reduced, over 150,000 trips eliminated, and roughly 1.9 million lbs of CO2 emissions reduced. Its farebox recovery ratio is 118%, considerably higher than that of TheBus (27%.) Its contract with Enterprise is set to end in mid-May 2021. The City has plans to extend the contract, transition to a sustainable funding source, and potentially procure a new contract in the future.

New development project requirements

The City Department of Planning and Permitting (DPP) works with new developments to ensure projects can mitigate traffic and environmental impacts that their future sites may contribute to. This is often done through the creation of Traffic Management Plans (TMPs), which typically have a TDM component. Developers are required to submit these plans and have them approved by the City prior to receiving their certificate of occupancy.

While TDM is often a component of these plans, there are no guidelines in place for either developers or DPP staff approving TMPs related to the level of TDM programming or anticipated impact from required. Additionally, due to the timing of the TMP (prior to the Certificate of Occupancy rather than the initial building permit) the plans may not be approved/implemented before development. There is also a lack of formal criteria/measurement for reduction in SOV (single occupant vehicle) travel. Thus TMPs may be approved with TDM language that is vague, including “recommendations” for the site, rather than commitments. The City does undertake a one-year “post-TMP” follow up with developers, however they don’t have capacity to monitor regularly the impact of the TMP elements, nor, as is crucial with TDM programming in particular, whether they are actually being implemented.

Citywide and Area Partners

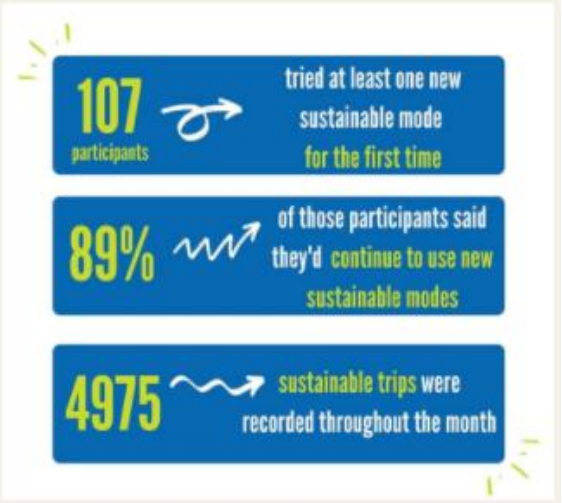
Beyond the publicly funded programs outlined above, TDM is also implemented in Honolulu through nonprofit and other public-private partnerships.

Blue Planet Foundation’s Oahu Commute Challenge

The Blue Planet Foundation is a nonprofit focused on transitioning Hawai’i to 100% clean energy and removing the state’s reliance on fossil fuels. They provide youth education, support for policy and community change, and manage large-scale marketing campaigns focused on promoting energy efficiency. Blue Planet Foundation powers and administers the Sustainable Transportation Coalition of Hawaii, (STCH) part of the U.S. Department of Energy Clean cities Program.

One major campaign administered by Blue Planet Foundation and STCH is the Oahu Commute Challenge, which held its inaugural event in 2020, working with employers and encouraging employees to log non-drive-alone commutes for a month in February. Employer teams competed for the most points (earned by logging commute and mid-day trips) and received prizes like Lyft credits or entrance into raffles for airline credit.

Figure 24. Oahu Commute Challenge statistics



Source: Blue Planet Foundation

Programs like this that require trip-logging over a short period of time provide the opportunity for useful data collection not always present in TDM programming. The 2020 Oahu commute challenge was able to solicit participation from 140 commuters, 107 of which indicated that they tried a new mode for the first time because of their participation. Most of the participants (89%) indicated that they would continue to use sustainable modes after the monthlong challenge was complete.

Love to Ride Hawaii Bike Challenge

Love to Ride, an online cycling community, has partnered with Ulupono Initiative, Biki, and other community partners to kickstart the Hawaii Bike Challenge as part of the national Bike Month Challenge for the month of May. Riders can start or a join a team to ride as much as they can during May and have a chance to win prizes, such as a two-night stay at the Queen Kapiolani Hotel, a Patagaonia backpack, a Maitai Catamaran sail for two, etc. As of May 3, 2021, 93 teams and 582 people have registered statewide.

Transportation Management Associations

Transportation Management Associations/Organizations (TMAs/TMOs) are typically public-private partnerships between local government and area developers and employers with a common goal of reducing congestion, improving air quality, and improving quality of life for commuters and other travelers.

Honolulu is home to the Waikiki TMA, which was established through a City Ordinance in 2017, creating the Waikiki TMA Special Improvement District. The TMA is structured to support projects such as RPZs, implementing flexible curb management strategies, and working with partners to fund other projects that support decongestion in the Waikiki area.

TMAs can take many different forms and responsibilities, and it is important that they be created to fit the unique needs of each of their audiences. Previously, a TMA also existed for the Leeward Coast area of Oahu; that organization was focused more specifically on programmatic TDM support such as the provision of carpool matching and a guaranteed ride home service. The Leeward Oahu TMA is no longer active.

Hawaii Bicycling League

Hawaii Bicycling League, a nonprofit that encourages people to ride bicycles through advocacy, education and events, offers a plethora of educational resources for adults who wish to commute by bike. These include free Learn to Ride workshops, Commuter Cycling 101 classes, the Commuter Mentor program, among others. The Adult BikeEd program is funded with support from the City, and over 2,600 residents participated in Adult BikeEd in FY 2020.

Biki Employer Plans

Biki offers employer plans for employers on the island. HDR was the first employer to offer a $15 monthly plan, which includes unlimited 30-minute rides, to its employees. It has covered the full cost of a monthly membership for all employees. Biki has also set up employer plans with Ulupono Initiative, American Savings Bank, Hawaii Pacific Health, Hawaiian Electric Industries, and Hawaii Medical Service Association.

TheBus Tax-Free Transit Benefit Program

Employers can offer a tax-free transit benefit program to their employees. Employers can distribute bus passes or transit voucher benefits to employees, which can be structured as either a low-cost fringe benefit program in which the employer provides the benefit, or as a voluntary pre-tax program in which the employee chooses to purchase transit benefits through pre-tax payroll deduction. Employers who opt to participate in this program can arrange for TheBus staff to meet with employees to introduce them to the program, help them with transit trip planning, design and analyze a survey analyzing commute needs, and train a designated staff person as the in-house coordinator.

As of April 22, 2019, 93 companies were participating in the Transit Benefit Program. These include Coldwell Banker Pacific, Doubletree Alana Hotel, Outrigger Enterprises Group, Queens Medical Center, the State of Hawaii, the U.S. Coast Guard, Verizon Wireless, Waikiki Beach Marriott Resort and Spa, Farmers Insurance of Hawaii, First Hawaii Bank, etc. City employees are now involved in the testing and roll-out of the HOLO card, with 103 City employees using the pre-tax HOLO monthly pass.

Site-based TDM programs

Either stemming from development requirements, a desire to support employees and other users, or an interest in supporting sustainable objectives, TDM is implemented across the island on a site-based level by universities and employers. Some of Honolulu's most active TDM programs are highlighted below:

University of Hawai'i at Manoa

Figure 25. University of Hawai'i at Manoa

The University of Hawai'i at Manoa was experiencing an increase in parking demand and challenges with congestion and subsequent access to campus. The University was not in a financial position to build more parking to accommodate single occupant vehicle access, and many students didn't own cars, so the University turned to TDM in order to alleviate congestion issues with a "people first" approach built on the foundation of access to education. The plan involved significant amounts of stakeholder outreach with students and faculty, as well as external stakeholders.

The university hired a consultant to develop a series of TDM strategies after gathering input from diverse stakeholders from campus and the city and county of Honolulu. The plan included a parking model, policy framework based on cost effectiveness, and a benchmark to provide for monitoring key indicators related to mobility and sustainability goals. Strategies in the plan included:

- A ranked list of investments to improve access and circulation
- Implementing a transportation fee over 3-5 years
- Existing conditions of access and parking management, and subsequent recommendations
- Local Transit, Shuttle, and Active transportation review and recommendations
- Strategies to coordinate transportation initiatives with neighboring communities
- Recommended phasing
- Implementation recommendations including partnerships, monitoring, and TDM staff roles

The University provides a discounted semester pass for students that provides unlimited TheBus rides, established by the Associated Students of the University of Hawai'i in 2009. Students pay a mandatory $20 fee that would grant all fee-paying students the pass for the semester. The proposal had overwhelming support from students, public transit authorities, advocates, and community groups. Now in its 12th year, the "Mandatory U-Pass" costs $50/semester for eligible students, while the "Opt-In U-Pass", available for Medical, Law and other grade students, costs $225/semester.

The University also provides the Rainbow Shuttle, a free service for both students and employees that provides access around the campus on routes that are not frequented by regular public transportation. A 2018 analysis conducted by Kimley Horn found that between August and December 2017, ridership is higher on routes that serve faculty and student housing as well as upper campus, while ridership is lower along longer off-campus loops to surrounding neighborhoods, in particular on routes that overlap with

TheBus. The Rainbow Shuttle has ceased operations since the beginning of the COVID-19 pandemic, and the University plans to decrease the number of shuttles when it returns to operations.

The TDM Plan fully outlines recommended metrics and measurement strategies and encourages regularly updating performance data metrics as to share real time information with partnering jurisdictions. Highlighted key performance metrics are outlined below:

- Modeshare KPI's as collected through annual Campus Transportation Survey
- Carshare parking supply as measured by Facility reported parking data
- Ratio of University population to parking supply
- TheBus Ridership as measured by Automatic Passenger Counts
- Revenue from parking re-allocated to TDM Programming

The University implemented various strategies and adopted the monitoring and evaluation plan starting with a survey. The plan was adopted in 2011 and in 2014 a series of strategies were underway. Notably, the University has implemented a low-cost car rental program which incentivizes students not to own a car. Access to vehicles on a short-term basis gives options to individuals who've chosen not to bring a car to campus, thus making even more viable commute modes such as TheBus, biking, walking, or carpooling. By exchanging the ownership of an under-used car for renting a car when needed, departments save money and free up parking spaces. The University promotes TDM through their Commuter Resources webpage which includes a full suite of alternative modes information, required paperwork for parking permits, policy overview, and special event information.

According to a 2011 campus transportation survey, 43% of affiliates drove alone to campus. 21% used TheBus/HandiVan, 11% biked, 8% carpooled, 7% walked, 5% were dropped off by car, 4% drove either a motorcycle, scooter, or moped; and 1% took the Rainbow Shuttle. However, campus mode share for beyond 2011 are unknown.

Hawaii Pacific University

While Hawaii Pacific University does not have a comprehensive TDM Plan like UH Manoa, it still offers TDM programs to encourage students and employees to consider sustainable commute options. HPU offers the HPU Greenride, a ridesharing system that helps students and employees find partners for carpooling, biking, busing and walking to HPU's campuses and for single trips. The website allows participants to log their commutes to realize emissions savings, cost savings, and health benefits of their transportation decisions.

The UPass is also available at Hawaii Pacific University.

5 Conclusions

Honolulu's unique landscape, environmental connection, and changing demographic conditions present a need for a reduction in vehicle trips and miles traveled in the coming years. Infrastructure improvements such as rail and additional freeway capacity, while beneficial, will not meet the demand on the roadways in Honolulu. In addition to those efforts, the City and County must see a systematic and sustained change in behavior among its residents and visitors away from drive-alone travel.

The words of Hawaii DOT Director for Highways, Ed Sniffen, as told to Civil Beat capture the essence of this issue: "Changing the culture — our car-centric view of Hawaii is the big thing. Making sure that we get to that point where we start seeing transportation differently matters."

In summary, there must be a culture shift before there is a behavior shift and a mode shift. Transportation Demand Management programs and incentives are typically much less costly than infrastructure investments, so provide lower-risk opportunities for agencies to reduce drive-alone travel.

Key Findings

As the City begins to develop its TDM program based on the current conditions outlined above, the following Key Findings from this desktop research effort to be influential:

1. The demographics, employment patterns and land use patterns on the island are unique show that the traditional large employer-focused TDM programs that work well elsewhere may not be as successful in Honolulu. Instead, the City will need to be creative in order to reach communities with much more varied travel schedules, habits, and motivations.
2. There are currently long-rage plans and legislation in place or underway that will create a solid base for a wider island-wide TDM strategy. These include the new biking and pedestrian plans, the growing biking culture, the creation of the RPZ's, as well as regulations for new developments.
3. However, these components make for a fragmented TDM landscape. There will need to be centralized coordination and promotion of TDM strategies.
4. There is also very little monitoring or success measurement taking place, so it is difficult to know how impactful these programs are in changing behavior or reducing vehicle miles traveled. Measurement must be a key element in any formal Honolulu TDM program.

SWOT Analysis

Strengths, Weaknesses, Opportunities and Threats that might impact increased TDM delivery or a unified program in the area. **Error! Reference source not found.** below o utlines the current landscape for TDM through the SWOT lens, as have been identified through desktop research and conversations with stakeholders. As is demonstrated in more detail in the table:

- **Strengths** revolve around Honolulu's environmentally conscious population and pre-established and recognized City programs with which TDM can partner.
- **Weaknesses** relate to the island's inherently difficult to reach populations with irregular work schedules and potentially less attunement to technology among older populations.
- **Opportunities** involve the Covid-19 pandemic's ability to encourage adoption of new travel behaviors, and an appetite among public agencies to support low-cost investment in reducing vehicle miles traveled.
- **Threats** include increasing rates of car ownership across the island and a need to support rather than restrict the business community.

Table 9. TDM in Honolulu SWOT Analysis

Strengths	Weaknesses
• Momentum and enthusiasm around sustainable transportation initiatives exists already. • The City has a strong rapport with the business community who generally supports environmental efforts and congestion reduction • Notably high rates of carpooling, indicating strong propensity for shift to other sustainable modes • Existing City/County plans and policies provide a base for TDM programming: – Vision Zero and Complete Streets commitments to improve active transportation infrastructure – Commuter Benefits Program (HB 1010) – Current RPZ pilot and upcoming program	• Transit Oriented Design lacking in areas of high density. • Enforcement toward property owners of transportation-related policy (i.e. curbside management, TMP upkeep) is light. • Significant amount of labor force works part-time or hourly, and therefore employer-sponsored transportation incentives may not reach majority of work force. • Public parking is heavily subsidized. Parking management is fragmented and decentralized, and therefore may be complicated to reform/restructure on a large scale.
Opportunities	**Threats**
• Post-pandemic travel patterns will change and with that, subsequent opportunities to create new, sustained travel habits • Micro-transit and on-demand transit could serve low-traffic and low-density areas in lieu of underperforming bus routes • Large private school populations provide potential targets for innovative TDM programming • Recognition of importance of environmental issues and protecting the island among the general public may strengthen TDM messaging if focused on environmental impacts	• Increasing rates of car ownership, infill housing, and persons per household increases roadway and parking demand • Lack of affordable housing means population may continue to spread out to areas with lesser access to multi-modal options • Covid-19-related budgetary constraints across the island may inhibit funding for both transit and TDM. • The City's desire to attract business and development may mean some key players are against any ordinance or requirement related to TDM. There is also no mechanism to monitor TDM plans associated with development, and these plans are limited to encouragement without financial incentives. • Complex planning and policy issues take significant time and commitment from stakeholders and can lead to loss of interest

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