



→ Hawai'i State Government Employee TDM Study

Travel Trends Analysis Technical Memo

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**HAWAII
STATE
ENERGY
OFFICE**

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INTRODUCTION

BACKGROUND

The Oahu Metropolitan Planning Organization (OahuMPO) and the Hawai'i State Energy Office (HSEO) are leading the State Government Employee Transportation Demand Management (TDM) Study, with consultant support from ICF. The study will produce recommendations that increase transportation choices for state government employees while improving the diversity and efficiency of the state's transportation systems. The study recommendations may also increase employee retention, assist with hiring, and allow the state government to lead the way on TDM and help meet state climate and energy goals.

The State of Hawai'i employs over 46,000 people statewide, with the majority of employees on O'ahu. Given that the State is such a large employer, there is a tremendous opportunity to influence travel behavior for a significant part of the population by providing more transportation options, incentives, support strategies, and benefits to reduce vehicle miles traveled and associated greenhouse gas emissions.

DOCUMENT PURPOSE

This document presents the findings of a travel trends analysis conducted under Task 1.2 to understand the commuting behaviors of state employees, utilizing commuter data, including home addresses, zip codes, and other relevant metrics, to identify gaps in current transportation services and accessibility issues. By leveraging data from the Inventory of Existing Conditions (Task 1.1) and advanced transportation data analysis tools, the analysis provides a comprehensive view of the current transportation landscape and highlights areas for improvement. This technical memorandum offers a detailed analysis of commuting patterns, including origin-destination pairs, commute schedules, and the availability of various travel modes, while highlighting gaps in transportation services and accessibility issues. It includes visualizations such as origin/destination maps and trip chain maps to illustrate commuting trends and challenges. It is a foundational Draft and Final Needs Assessment Report (Task 1.3) document. By ensuring that proposed strategies are grounded in a thorough understanding of current commuting trends and challenges, this memorandum plays a crucial role in shaping transportation policies and services for Hawai'i's state employees, ensuring a more efficient, equitable, and sustainable transportation system.

METHODOLOGY

This analysis leverages state employee commuter data, U.S. Census-level data, and survey responses from state employees to assess travel trends and transportation needs on O'ahu. Data collection from the Hawai'i Department of Human Resources (DHRD), public data sources, and specialized tools such as Replica and OpenStreetMap were used to map and analyze commuter behaviors and access to transportation options. The analytical framework compared state employee travel patterns with those of the general population, identifying gaps in service and potential areas for mode shift.

TRAVEL TRENDS ANALYSIS

STATE EMPLOYEES COMPARED TO O’AHU POPULATION

This analysis explores the trends identified from a survey conducted among state employees in May 2024, comparing them to the general population of O’ahu. By examining various metrics and demographic factors, we reveal both similarities and differences between these two groups. The study offers insights into the dynamics and characteristics that define the state workforce within the broader O’ahu community particularly in relation to Transportation Demand Management (TDM) strategies. Understanding the demographic composition of state employees relative to O’ahu’s residents helps pinpoint specific transportation needs, preferences, and challenges faced by this workforce.

AGE COMPARATIVE ANALYSIS

Figure 1 compares the age distribution on O’ahu and among state employee survey respondents. Table 1 shows the differences between these data sets.

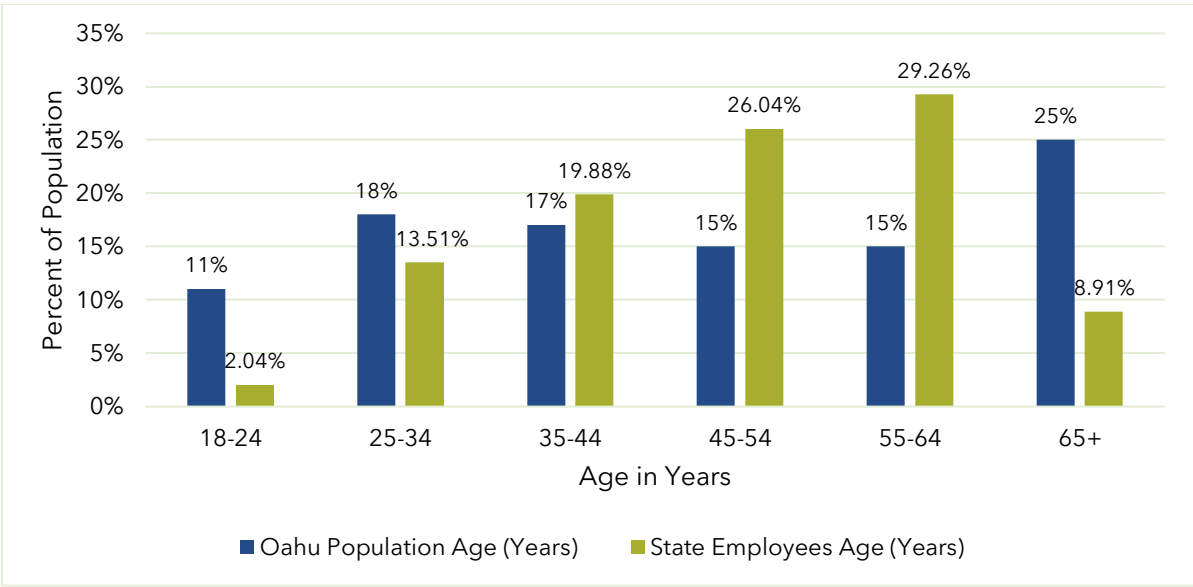


Figure 1. O’ahu and state employee age distribution¹.

Table 1 below presents the difference between the demographics of O’ahu's overall population and the State Employees who responded to the survey, using O’ahu as the baseline. For example, the percentage of State Employees aged 18-24 who responded to the survey is 8.96% below the baseline, indicating that there are fewer respondents in this age group compared to the general population of the island.

Table 1. State employee age differential.

	18-24 y/o	25-34 y/o	35-44 y/o	45-54 y/o	55-64 y/o	65+ y/o
State Employee Differential	-8.96%	-4.49%	-2.88%	+11.04%	+14.26%	-16.08%

¹ <https://censusreporter.org/profiles/05000US15003-honolulu-county-hi/>

Age Comparative Analysis Takeaways:

- Survey respondents have a significantly higher percentage of middle-aged individuals (especially in the 45-64 age range) than O‘ahu.
- O‘ahu has a more evenly distributed age profile across various age groups.
- Understanding these demographics can inform targeted community services and resource allocation. For instance, implementation strategies might need to focus on services for middle-aged and older employees.
- The peak in the 55-64 age group for state employees suggests potential implications for healthcare, transportation, and housing needs in that specific age range.

RACE/ETHNICITY COMPARATIVE ANALYSIS

Respondents to the state employee survey indicated their race/ethnicity on question 22 by selecting one of the following categories: American Indian or Alaska Native, Black or African American, Chamorro, Chinese, Filipino, Hispanic or Latino, Japanese, Korean, Native Hawaiian, Samoan, Tongan, Vietnamese, White, or Multiple Ethnicities/Other. To compare this data to O‘ahu as a whole, demographic data was pulled from the American Community Survey (ACS) 2022 5-Year Estimates Data Profiles, which provided more specific data than usual Census data, specifically with regards to different ethnic identities typically grouped under the “Asian” racial category. These two datasets are presented in Table 2.

The ACS’s method for gathering race/ethnicity differs somewhat from that of the state employee survey in that the ACS has the option for respondents to select multiple races/ethnicities when applicable, in addition to the option to select “Other.” Because the state employee survey only allowed respondents to select one option, respondents with multiple races/ethnicities may have opted to select one or another, even though Multiple Ethnicities/Other was an option, as opposed to checking multiple boxes had they been permitted to do so under the format of the survey.

To best compare the island’s population as a whole to state employee respondents, the figures in Table 2, Column D, represent those reporting as the corresponding row’s race/ethnicity alone, and the figure for all persons of Two or More Races is situated next to the Multiple Ethnicities/Other figure from the state employee survey. These differences between the demographic categorization methods used to attain statistics for the sample and the population reflect the complexity of racial self-identification, especially as the demographics and context of Hawai‘i differ significantly from those of most continental U.S. states. The lack of exact equivalency between sample and population figures precludes exact conclusions from being drawn; however, they do provide helpful context for the demographic breakdown of state employees. Also, collecting this data presents the opportunity to correlate respondent race/ethnicity with commuting habits, preferences, needs, and barriers.

In addition, the ACS treats Hispanic/Latino ethnicity as a separate question, asking respondents to indicate their national origin when checking this box. In contrast, the employee survey showed that Hispanic/Latino was in line with other races/ethnicities. As such, comparing the Hispanic/Latino numbers directly between the state employee survey and the ACS does not make sense. However, the ACS figures for the Hispanic/Latino population are still relevant for discussions of equitable access to employment, including physical access through transportation, so they are provided in Table 2 below.

Table 2. Race/ethnicity of survey respondents and O'ahu residents, respectively, as percentages of the group total.

Ethnicity, as categorized in the Survey	Survey Data %	Race-ethnicity, as categorized by ACS*	ACS 2022 5-year estimates, Honolulu County, % ²	Differential (survey respondents - ACS)**
American Indian or Alaska Native	0.37%	American Indian or Alaska Native	0.3%	+0.1
Black or African American	1.24%	Black or African American	2.5%	-1.3%
Chamorro	0.34%	Chamorro	0.3%	+/-0%
Chinese	10.57%	Chinese	5.3%	+5.3%
Filipino	15.69%	Filipino	14.8%	+0.9%
Hispanic or Latino	2.1%	N/A; see below.	–	–
Japanese	27.34%	Japanese	13.7%	+13.6%
Korean	2.12%	Korean	2.1%	+/-0%
Native Hawaiian	13.71%	Native Hawaiian	5.4%	+8.3%
Samoan	1.36%	Samoan	1.2%	+0.2%
Tongan	0.34%	N/A	–	–
N/A	–	Other Native Hawaiian and/or Other Pacific Islander (may include Tongan, Micronesian not identifying as Chamorro)	3.2%	–
Vietnamese	0.62%	Vietnamese	0.8%	-0.2%
N/A	–	Other Asian (May include Okinawan and	5.3%	–

² DP05: ACS Demographic and ... - Census Bureau Table

		some Pacific Islander ethnicities)		
White	11.65%	White	19.3%	-7.6%
Multiple Ethnicities/ Other	12.64%	Two or More Races	24.1%	-11.5%
N/A	–	Other	1.5%	–

*Figures listed are for the percent of those reporting as that race alone. Figures are also available for those reporting that “race alone or in combination with one or more other races,” which are not shown here. For example, the percentage of Honolulu County residents reporting as White alone is 19.3%, as listed in Table 2, Column D; the percentage of Honolulu County residents reporting as White alone or in combination with one or more other races is almost double, at 37.6% (not shown).

**Differential is calculated for race/ethnicity categories that are directly equivalent between the State employee survey and the ACS. Categories without direct equivalence are listed as N/A in the appropriate column, and values are marked blank. See below for a discussion on the limitations of directly comparing figures from these two sources.

Table 3. Hispanic/Latino ethnicity of O‘ahu residents as a percentage of the total population.

Hispanic/Latino Ethnicity, as collected by ACS	ACS 2022 5-year estimates, Honolulu County, % ³
Hispanic/Latino (of any race)	10.2%
Hispanic/Latino: Mexican	3.4%
Hispanic/Latino: Puerto Rican	3.4%
Hispanic or Latino: Cuban, Other Hispanic or Latino	3.4%
Not Hispanic or Latino	89.8%

Race/Ethnicity Comparative Analysis Takeaways:

- The State of Hawai‘i employs a relatively high number of individuals of Chinese, Japanese, and Native Hawaiian descent compared to their share of O‘ahu’s total population. Conversely, there are fewer White employees and significantly fewer employees identifying as Multiple Ethnicities/Other compared to the broader population.
- These trends align with the age demographics of state employees. For instance, Chinese and Japanese residents in Hawai‘i have median ages of 53 and 60, respectively, which is older than the state’s median age of 39.6. In contrast, the median age for those identifying as Two or

³ DP05: ACS Demographic and ... - Census Bureau Table

More Races is 27, reflecting a younger population that may not align with the age profile of most state employees.

- Hispanic/Latino representation among state employees (2.1%) is lower than in the general population of O‘ahu (10.2%). This disparity may be influenced by differences in how ethnicity data is collected and reported.
- About 16% of state employees identify as Filipino, slightly higher than the general O‘ahu population. While around half of those who speak Tagalog at home in Honolulu County report speaking English less than “very well,” it is unknown what English proficiency among state employees who speak Tagalog or other languages at home is.^{4 5} However, considering communications in Tagalog could still be beneficial, especially for outreach related to new transportation initiatives.
- A significant amount of state employees identify as Native Hawaiian and other Pacific Islander ethnicities. According to 2022 ACS 5-year estimate data, around 42% of Hawaii residents speaking Ilocano, Samoan, Hawaiian, or other Austronesian languages at home spoke English “less than very well.”⁶ Though it is unknown what the English proficiency rates of Native Hawaiian and other Pacific Islander state employees, communications in Ilocano, Samoan, and/or Hawaiian could be beneficial when promoting transportation initiatives.

⁴ [Non English Speaking Population in Hawaii April 2016.pdf](#). Page 8

⁵ [B16001: Language Spoken at Home by ... - Census Bureau Table](#)

⁶ [B16001: Language Spoken at Home by ... - Census Bureau Table](#)

GENDER COMPARATIVE ANALYSIS

Based on census data, the population on O‘ahu consists of 51% males and 49% females. State Employees who took the survey and responded to this optional question, were 32% males, 65% females, and 3% gender fluid or non-binary. Note, the O‘ahu census data does not include Trans, Gender Fluid, or Non-Binary statistical data.

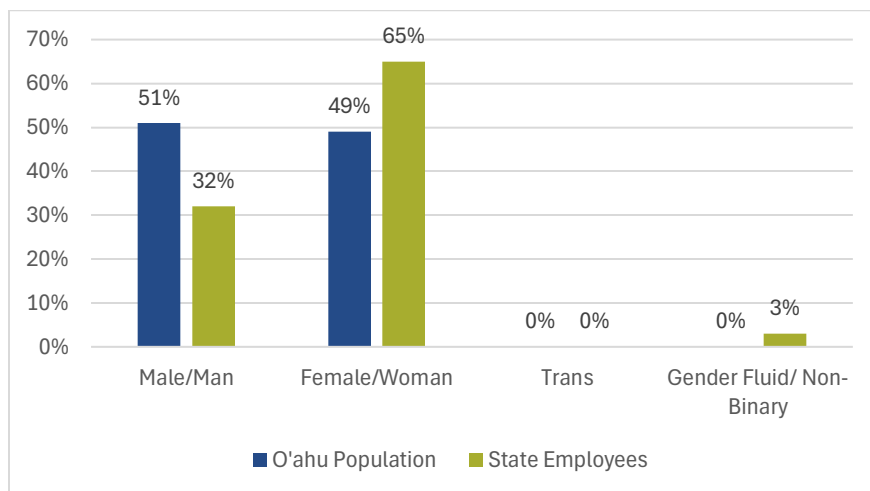


Figure 2. O‘ahu gender composition compared to survey responses from state employees⁷.

Table 4. State employee gender differential.

	Male	Female	Trans	Gender Fluid/ Non-Binary
State Employee Differential	-19.00%	+16.00%	N/A	N/A

Gender Comparative Analysis Takeaways:

- The significant difference in gender representation between the general population and state employees suggests that gender-related factors may be at play.
- Transportation policies should consider these disparities to ensure equitable access and support for male and female employees.
- More women responded to the survey than men. There may be more women than men working at the state, but more data would be required to draw that conclusion.
- According to one study “35% of men are uncomfortable with traveling with an unfamiliar driver, 55% of women reported feeling the same way. For pooled rides, the difference is even larger; while 58% of women reported being uncomfortable traveling with unfamiliar passengers, only 44% of men reportedly feel the same”.⁸

⁷ <https://censusreporter.org/profiles/05000US15003-honolulu-county-hi/>

⁸ <https://tomnet-utc.engineering.asu.edu/wp-content/uploads/sites/5/2023/03/TOMNET-Year-4-Project-Report-Khoeini-Willingness-to-Share-by-Gender.pdf>

AUTOMOBILE AVAILABILITY COMPARATIVE ANALYSIS

Figure 3 displays automobile ownership on O’ahu, compared to State Employee survey respondents on O’ahu. The data highlights differences in car ownership patterns, shedding light on potential transportation trends and needs within these distinct groups.

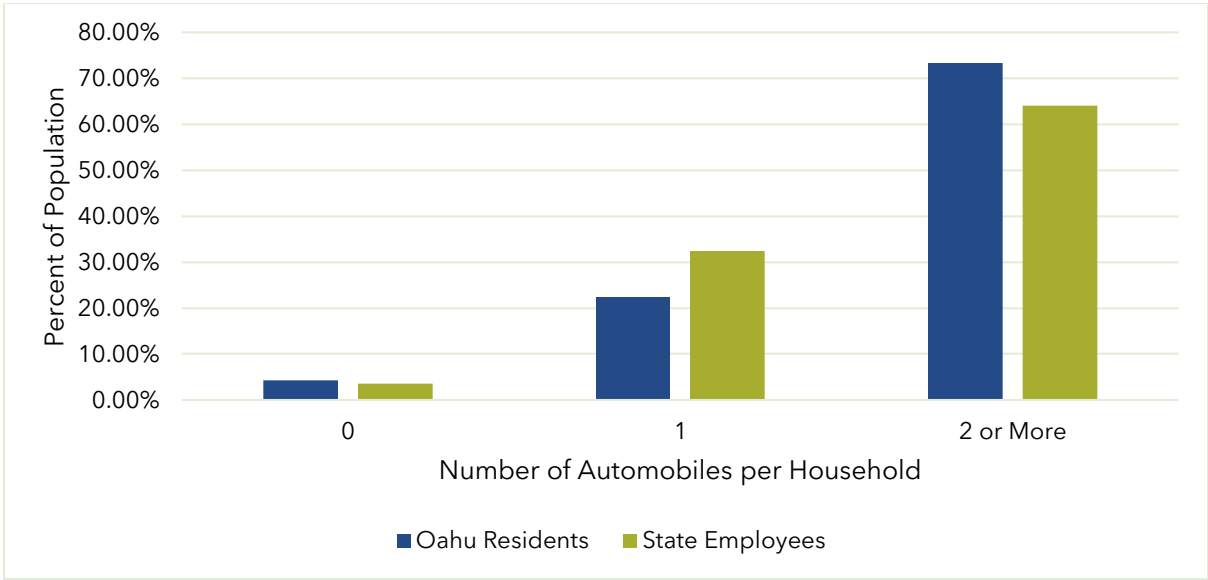


Figure 3. Automobile ownership comparison between O’ahu and state employees⁹.

Table 5. State employee automobile ownership differential.

	0 Automobiles	1 Automobile	2+ Automobiles
State Employee Differential	-0.73%	+10.06%	-9.28

Automobile Availability Comparative Analysis Takeaways:

- A higher percentage of State Employees own only one car (32.46%) than O’ahu residents (22.4%).
- Both groups have most households having two or more cars accessible, with O’ahu residents having a slightly higher percentage (73.34%) than State Employees (64.06%).
- Very few individuals in both groups do not own any cars; however, O’ahu has a marginally higher percentage of individuals without cars (4.21%) compared to State Employees (3.48%).
- The 4.21% of O’ahu residents and the 3.48% of state employees without automobiles may face challenges related to mobility, especially if they live in areas with limited public transportation and unsafe or non-existing walk and bike facilities. These households likely rely on public transit, biking, rolling, and/or walking.
- Since there is a significant number of state employees with only one car in their household, carpooling or ride-sharing programs may be an impactful strategy, as well as incentivizing walking, rolling, biking, and using transit.

⁹ <https://datausa.io/profile/geo/honolulu-county-hi#housing>

COMMUTE MODE COMPARATIVE ANALYSIS

This section compares travel modes of state employees to work to the overall O‘ahu population. This data comes from the American Community Survey and question 5 of the state employee survey, which asked: *What is your primary travel mode for commuting?*

Table 6 presents this data and suggests a strong preference for drive alone commuting, with public transportation and active commute modes being less used by both the O‘ahu population and state employees. State employees tend to drive alone more than the O‘ahu population, however they also tend to use transit more than the O‘ahu population.

Table 6. Comparison of O‘ahu population to the percent of state employees travel mode.

Travel Mode	Drive Alone	Carpool	Bus or Rail	Bike or Scooter	Walk or Roll	TNC (Uber, Lyft, Taxi)	Telework
O‘ahu Population ¹⁰	65%	14%	6%	1%	5%	N/A	7%
State Employees	69%	10%	11%	2%	3%	0%	1%
State Employee Differential (+/-)	+4%	-4%	+5%	+1%	-2%	NA	-6%

Commute Mode Comparative Analysis Takeaways:

- State employees have a higher tendency to drive alone to work (69%) compared to the general O‘ahu population (65%). This 4% differential highlights a stronger preference for single-occupancy vehicles among state employees.
- State employees use public transit (bus or rail) more frequently (11%) than the overall O‘ahu population (6%), indicating a 5% higher adoption of this mode among state workers. This suggests that while driving alone is still the dominant mode, a notable portion of state employees relies on public transit, and TDM strategies.
- Carpooling is less common among state employees (10%) compared to the broader population (14%), with a 4% lower participation rate.
- Both biking/scooter and walking/rolling are slightly more common among state employees, with a 1% higher rate for biking/scooter and a 2% lower rate for walking/rolling compared to the O‘ahu population. However, the overall participation in these modes remains low, suggesting limited adoption of active commuting.
- Telework is significantly less prevalent among state employees (1%) compared to the general O‘ahu population (7%), with a 6% differential.
- Teleworking is utilized by 1% of employees, reflecting a 72% change since the "Work Where You Live" survey during the height of the COVID-19 pandemic (Work Where You Live 2021).

¹⁰ <https://datausa.io/profile/geo/honolulu-county-hi#housing>

TRAVEL MODE DEMOGRAPHIC ANALYSIS

This section examines the travel mode preferences and patterns among government employees on the island of O‘ahu, compared to state employee trends like age and gender gathered via survey. State employees play a crucial role in the daily operations and services provided to residents, making their transportation habits essential to understanding broader traffic impacts.

TRAVEL MODES BY AGE

This section illustrates how the preference for different travel modes varies among various age groups. Figure 4 and Table 7 present the primary travel modes used by different age groups and the number of state employees who indicated their travel mode in the state employee survey.

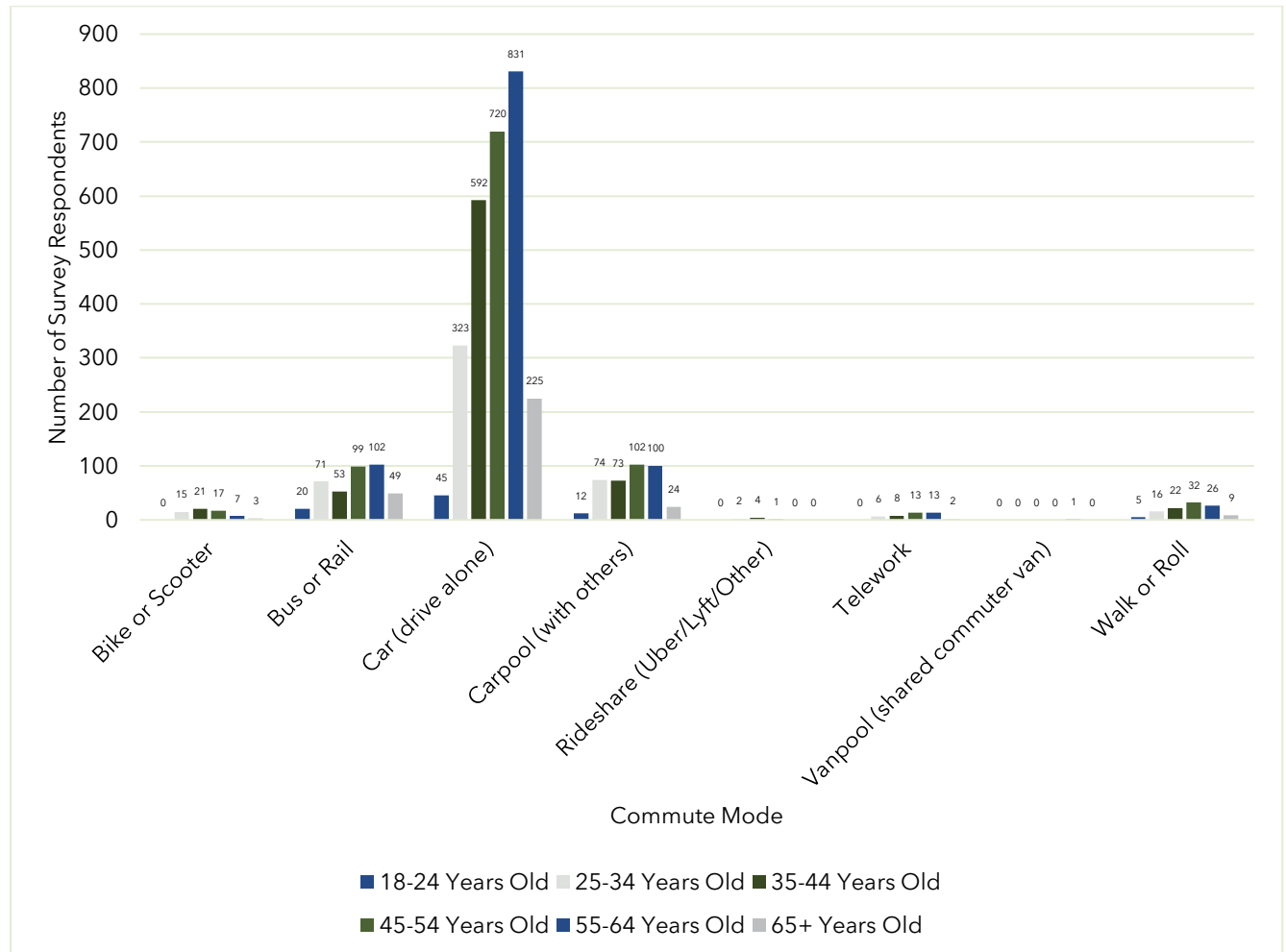


Figure 4. Number of state employees by travel mode.

Table 7. Distribution of travel mode within each age group.

Commute Mode	18-24 year olds	25-34 year olds	35-44 year olds	45-54 year olds	55-64 year olds	65+	Total Respondents
Car (drive-alone)	49.41%	60.25%	71.55%	68.73%	72.75%	66.98%	2,430
Carpool	14.12%	14.44%	9.96%	10.31%	9.37%	6.98%	365
Vanpool (shared commuter van)	0.00%	0.00%	0.00%	0.00%	0.10%	0.00%	1
Bus or Rail	23.53%	14.85%	7.54%	10.75%	9.76%	15.56%	393
Bike or Scooter	0.00%	3.14%	2.99%	1.85%	0.68%	0.95%	63
Walk or Roll	5.88%	3.35%	3.13%	3.47%	2.51%	2.86%	110
Rideshare	0.00%	0.42%	0.57%	0.11%	0.00%	0.00%	7
Telework	0.00%	1.26%	1.14%	1.30%	1.16%	0.63%	40

Travel Mode by Age Key Takeaways:

- Driving alone is the most prevalent commuting mode across all age groups, peaking in the 55-64 age group at 72.75%. Younger employees (18-24) are less likely to drive alone, with only 49.41% relying on this mode, indicating a potential openness to active and shared transportation options.
- Younger employees (18-24) are the most frequent users of public transit, with 23.53% utilizing bus and/or rail services. This preference declines with age, though there is a slight uptick in transit use among the 65+ group at 15.56%, possibly due to reduced driving capabilities.
- Carpooling shows some consistency across age groups, with participation ranging from 6.98% to 14.44%. However, it is more common among younger employees (18-24 and 25-34), suggesting an opportunity to promote carpooling further among other age groups.
- Modes such as biking, scootering, and walking have minimal usage across all age groups, with the highest walking rate (5.88%) observed in the 18-24 group. This indicates a potential area for growth, particularly through targeted programs.
- Teleworking is the least utilized mode, with usage slightly increasing among older employees. The low overall adoption suggests that there may be untapped potential for expanding telework options, particularly as part of broader transportation demand management strategies.

TRAVEL MODES BY RACE AND ETHNICITY

This analysis in Figure 5 Travel Modes by Race and Ethnicity. examines trends in commute modes across various ethnical backgrounds, based on responses to the survey. These findings illustrate the value in considering how ethnicity and culture may impact commuter choices, which can help inform targeted TDM strategies and planning methods. Figure 5 Travel Modes by Race and Ethnicity. presents the survey responses from all race and ethnicities and includes data labels for those 5% or greater to help identify the most significant trends across state employees. This data came from survey question 22 which asked *Which race or ethnicity best describes you? (Please choose only one.)*.

Race and Ethnicity by Travel Mode

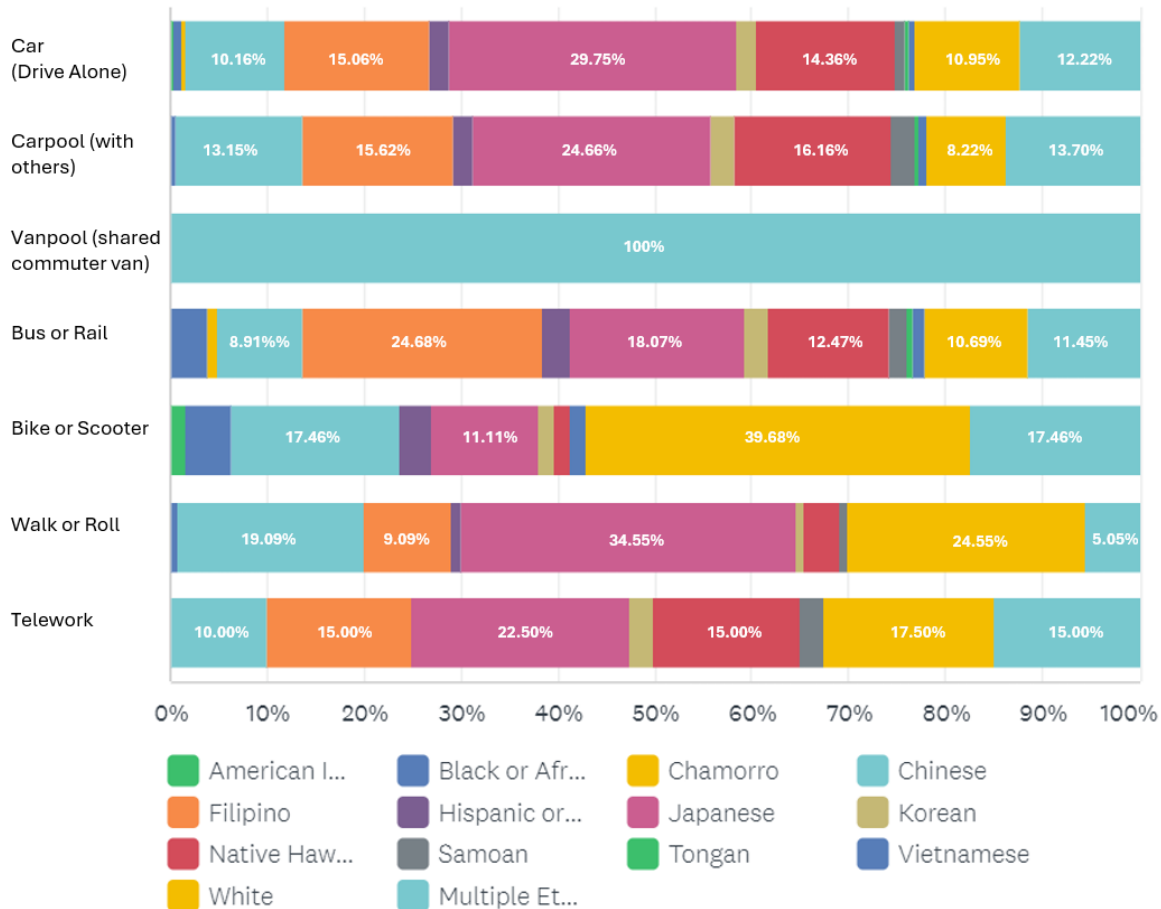


Figure 5 Travel Modes by Race and Ethnicity.

Travel Mode by Race and Ethnicity Key Takeaways:

- Car (Drive Alone): The drive-alone mode is most popular among Japanese (29.75%) and Filipino (15.06%) employees, indicating a strong preference for private vehicle use in these groups.
- Carpooling: Japanese employees have the highest carpool participation (24.66%), followed by Native Hawaiian (16.16%) and Chinese (13.70%) employees, suggesting cultural or economic factors influencing shared travel.

- Public Transit (Bus or Rail): Filipino employees are the largest group using public transit (24.68%), highlighting the importance of affordable and accessible transit options for this community.
- Active Transportation (Bike, Walk, Roll): Active modes like biking and walking are more popular among Native Hawaiian, White, and Multiple Ethnicities groups, suggesting that these communities may benefit most from infrastructure supporting active travel.
- Vanpool and Telework: The data shows limited use of vanpooling and telework across all ethnicities, with some interest from Chinese and Japanese employees, indicating potential areas for growth with targeted incentives.
- Cultural preferences related to transportation vary among different ethnic communities. Some may prefer carpooling, while others might rely more on public transit or active modes like walking and biking. Understanding these preferences allows for policies that respect cultural norms and encourage sustainable choices.

TRAVEL MODES BY GENDER

This analysis in Figure 6 examines gender differences in commute modes. These findings underscore the importance of considering gender differences in transportation planning to ensure equitable access and safety for all commuters, as well as the need to address socioeconomic and regional disparities that may influence these commuting choices. Note that 65% of survey respondents identified female/woman and 32% of survey respondents identified as male/man.

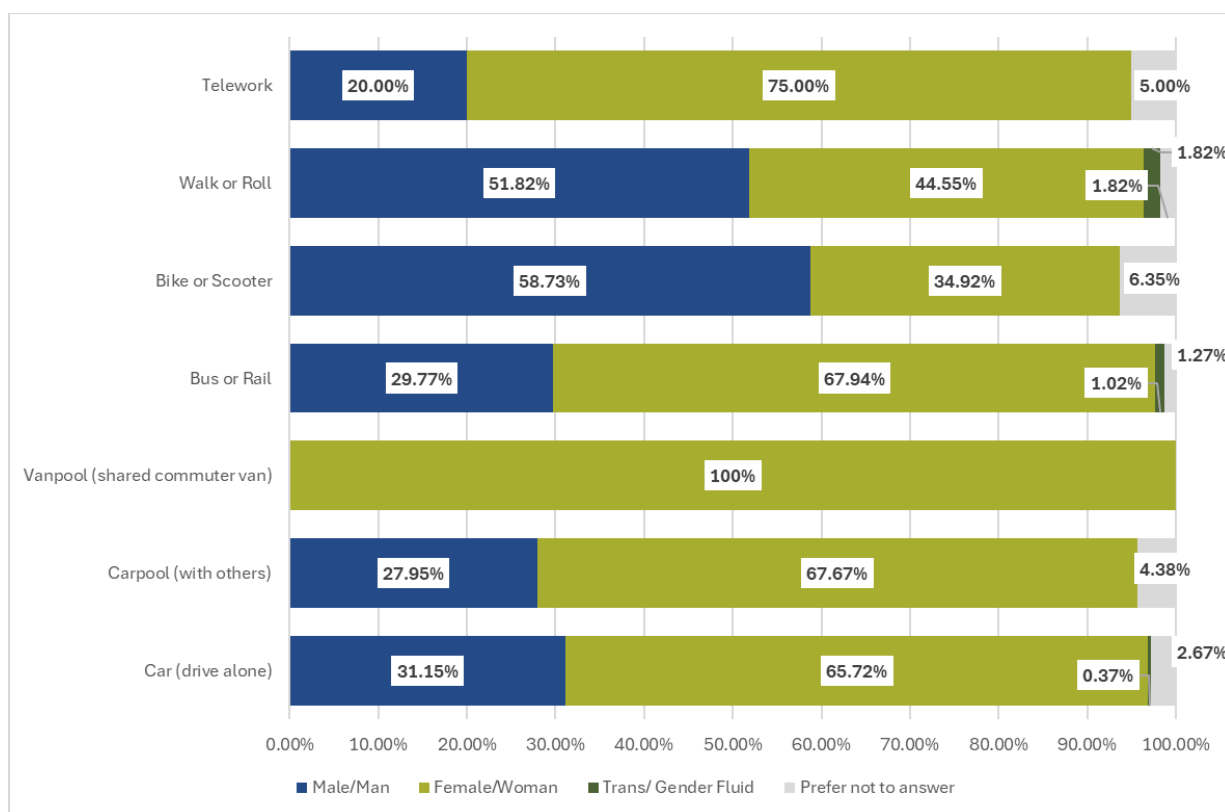


Figure 6. Gender composition by commute mode.

Travel Mode by Gender Key Takeaways:

- Women predominantly use car-based commute modes, and studies have shown the necessity for flexibility due to trip-chaining, as women often combine work commutes with other responsibilities like childcare, dropping children off at school, or running errands.¹¹
- Women (67.94%) also are more likely to use bus or rail compared to men (29.77%).
- Men show a 23.81% greater active transportation mode choice, like biking or scootering over female respondents.
- Trans/ Gender Fluid folks at 2.67% are more likely to drive alone. With 1.82% choosing to walk to roll and 1.27% taking bus or rail. Other commute modes were not selected.
- The data also indicates a significant number of women teleworking (75.00%), which could indicate the growing trend of flexible work arrangements that accommodate various household responsibilities.

¹¹ <https://www.itf-oecd.org/sites/default/files/gender-toolkit-context.pdf>

TRAVEL MODE BEHAVIORAL INSIGHTS

This section presents analysis of traveler behaviors and preferences across various travel modes. For context, Figure 7 mode share percentages were reported by state employees through the state employee survey.

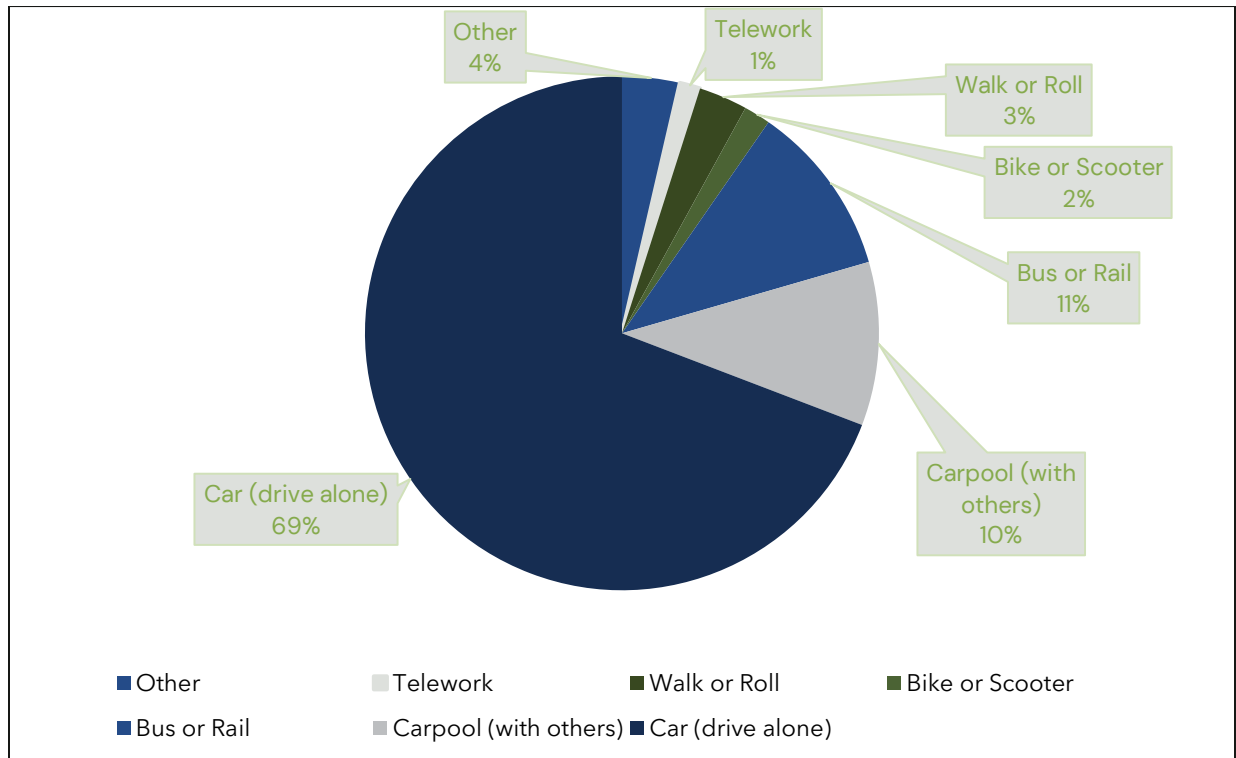


Figure 7. Commute mode reported by survey respondents.

COMMUTE DURATION: HOME TO WORK, BY TRAVEL MODE

Table 8 analyzes the length of state employee commute trips from home to work. The data is broken down into commute time intervals, ranging from 1-10 minutes to 120+ minutes.

Table 8. Commute from work to home by travel time (survey questions 5 and 11).

Commute Mode	1-10 Minutes	11-20 Minutes	21-30 Minutes	31-40 Minutes	41-50 Minutes	51-60 Minutes	61-70 Minutes	71-80 Minutes	81-90 Minutes	91-100 Minutes	101-110 Minutes	111-120 Minutes	120+ Minutes
Bike or Scooter	8	24	21	9	3	0	0	0	0	0	0	0	0
Bus or Rail	7	37	69	78	76	70	43	12	13	3	3	5	4
Car (drive-alone)	161	573	675	497	365	219	109	35	18	5	5	4	3
Carpool (with others)	10	68	97	83	56	44	19	13	6	2	0	2	0
Vanpool (shared commuter van)	0	0	0	1	0	0	0	0	0	0	0	0	0
Walk or Roll	29	50	26	9	5	0	0	0	0	0	0	0	0

Commute Time: (Home To Work) By Travel Mode Key Takeaways:

- Based on this data, driving alone is the most common commute mode for trips under 70 minutes, with its highest usage in the 21-30-minute range.
- Carpooling is most popular for mid-range commutes between 21-50 minutes, while bus or rail usage increases as commute times extend, peaking in the 31-40-minute range.
- Biking, scootering, and walking are primarily favored for shorter commutes under 30 minutes, with a sharp decline in usage for longer distances.
- These patterns suggest that as commute times increase, employees are more likely to consider shared travel modes, but less likely to consider active travel modes.

COMMUTE DURATION (WORK TO HOME) BY TRAVEL MODE

Table 9 analyzes the duration of state employee commute trips from home to work. The data is broken down into several commute time intervals, ranging from 1-10 minutes to 120+ minutes.

Table 9. Commute from work to home by travel time (survey questions 5 and 15).

Commute Mode	1-10 Minutes	11-20 Minutes	21-30 Minutes	31-40 Minutes	41-50 Minutes	51-60 Minutes	61-70 Minutes	71-80 Minutes	81-90 Minutes	91-100 Minutes	101-110 Minutes	111-120 Minutes	120+ Minutes	Total Respondents
Bike or Scooter	8	19	17	12	5	2	1	0	0	1	0	0	0	65
Bus or Rail	7	21	49	59	83	64	28	24	24	10	2	9	6	416
Car (drive-alone)	120	405	517	515	370	337	218	65	43	23	4	9	11	2,640
Carpool (with others)	7	43	76	75	57	64	32	16	12	8	1	1	4	396
Vanpool (shared commuter van)	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Walk or Roll	27	48	21	12	4	1	3	0	0	2	0	0	0	118

Commute Time: (Work To Home) By Travel Mode Key Takeaways:

- The data on commute times from work to home shows that driving alone remains the predominant mode of transportation across all time intervals, particularly for commutes up to 50 minutes. However, as commute times exceed 50 minutes, there is a noticeable shift toward carpooling and public transit, with these modes seeing increased usage in the 51-80-minute range.
- Biking or scootering and walking are primarily chosen for shorter commutes, with significant drop-offs as the travel time increases beyond 30 minutes. This pattern suggests that as commute times lengthen, employees are more likely to consider shared travel modes, but less likely to consider active travel modes, which is logical given the impracticality of active transportation trips longer than a 10-mile bike ride or 2 mile walk.
- This highlights an opportunity to support mode shift for longer commutes by enhancing the accessibility and appeal of carpooling and public transit options.

COMMUTE DISTANCE FROM HOME TO WORK

For context, Figure 8 shows the commute distances of state employees, categorized by the distance they commute.

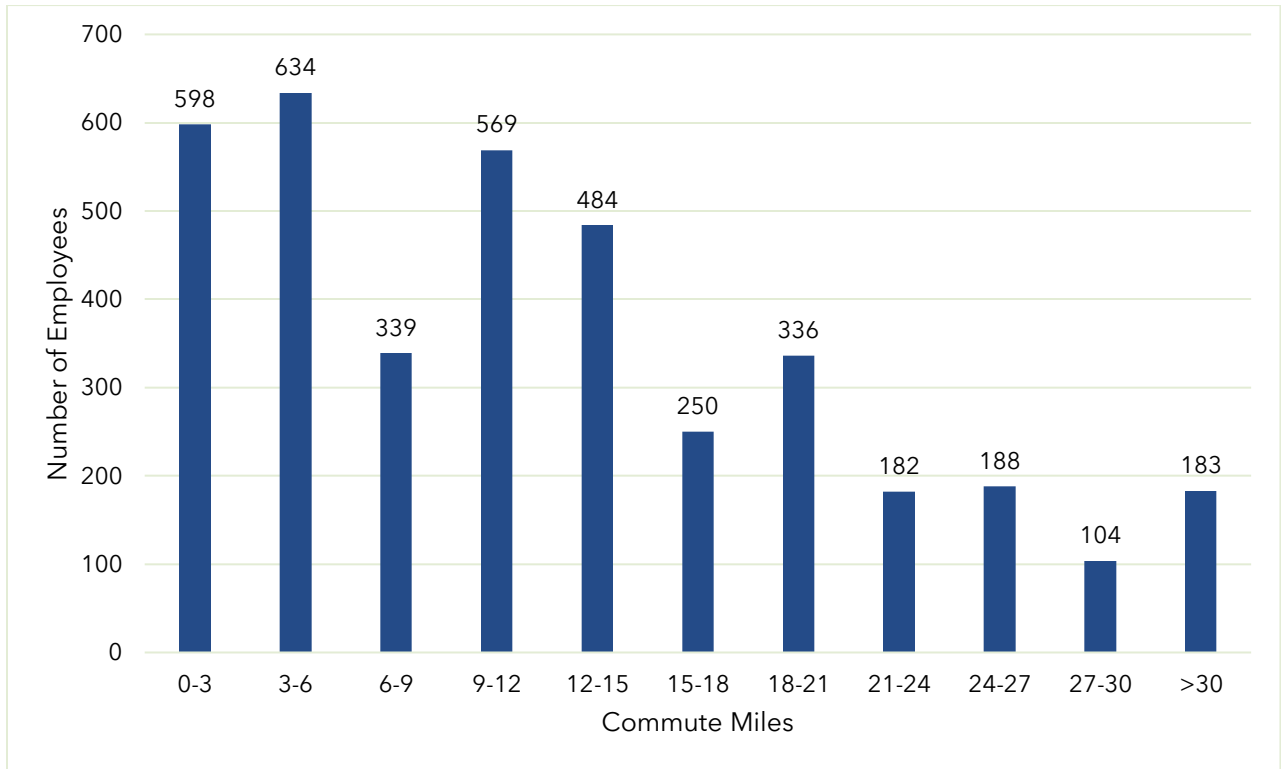


Figure 8. Commute distance reported by survey respondents.

COMMUTE DISTANCE: HOME TO WORK AND WORK TO HOME, BY TRAVEL MODE

This survey data aims to understand the commuting patterns and distances employees travel between their homes and workplaces. By collecting information on the total distance covered, the study can assess the impact of these trips on overall traffic congestion and carbon emissions.

Table 10. Commute from home to work by distance, by mode (survey questions 12 and 5).

Commute Mode	0-2 Miles	3-5 Miles	6-10 Miles	11-15 Miles	16-20 Miles	21-25 Miles	25-30 Miles	31-40 Miles	41-50 Miles	51+ Miles	Total Respondents*
Bike or Scooter	24	33	5	1	1						64
Bus or Rail	48	77	79	80	41	47	17	15	9	5	418
Car (drive-alone)	177	483	624	708	445	276	147	81	42	23	3006
Carpool (with others)	27	72	57	95	74	48	24	20	2	4	423
Vanpool (shared commuter van)			1								1
Walk or Roll	109	8	1	1							119

*Only respondents inputting a distance value, excluding 0 for all categories besides Walk or Roll, are included in this total. Respondents were asked to use a sliding scale to indicate their commute distance from home to work.

Table 11. Commute from work to home by distance, by mode (survey questions 16 and 5).

Commute Mode	0-2 Miles	3-5 Miles	6-10 Miles	11-15 Miles	16-20 Miles	21-25 Miles	25-30 Miles	31-40 Miles	41-50 Miles	51+ Miles	Total Respondents*
Bike or Scooter	20	35	7	1	2						65
Bus or Rail	47	68	82	79	46	49	16	14	6	7	414
Car (drive-alone)	152	420	602	669	445	317	177	110	52	31	2975
Carpool (with others)	21	66	64	78	79	58	29	16	4	4	419
Vanpool (shared commuter van)				1							1
Walk or Roll	101	14	1	2							118

*Only respondents inputting a distance value, excluding 0 for all categories besides Walk or Roll, are included in this total. Using a sliding scale, respondents were asked to indicate their commute distance from work to home.

Commute Distance by Travel Mode Key Takeaways:

Isolating each mode, distances traveled from home to work and work to home have very similar distributions, with the return leg of commutes being slightly farther across modes. This may be due to increased traffic in the evenings as opposed to the mornings causing commuters to resort to less direct routes, as well as commuters stopping to run errands or pick up children on their way back home.

- People walking or rolling to work traveled the least distance, as would be expected, rarely traveling more than 5 miles.
- Those using bikes or scooters had similarly shorter commutes, with more than 80% of bike or scooter commuter trips being within 5 miles, and all trips being under 20 miles.
- Focusing on >2 miles¹² as the maximum walkable/rollable radius and >5 miles¹³ as the average maximum radius for feasible bike and scooter trips could inform outreach programs to employees who live relatively close to their places of work.
- Bus and rail commute distances are similarly distributed to distances covered commuting alone in a car. However, bus and rail commutes tend to take longer than commutes done driving alone. This 10-20 minute difference in Point A-Point B time may be a significant knock

¹²

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3377942/#:~:text=Most%20walking%20trips%20were%20%3C2,walking%20trips%20lasted%20%3E20%20minutes.>

¹³ <https://roadbikebasics.com/how-far-is-too-far-to-bike-commute/>

against commuting using public transit in the transportation decision-making processes of State employees.

- Carpools covered a variety of distances, traveling slightly further than drive alone commuting car trips. Depending on the satisfaction of employees with their carpool situations and potential incentives for carpooling going forward, this indicates that carpooling is a feasible and attractive option for employees living very near and relatively far (30+ miles) away from their places of work alike.

NUMBER OF HOUSEHOLD VEHICLES

The data from Figure 9, based on responses to Survey Question 4, reveals the distribution of automobile ownership among 3,996 respondents:

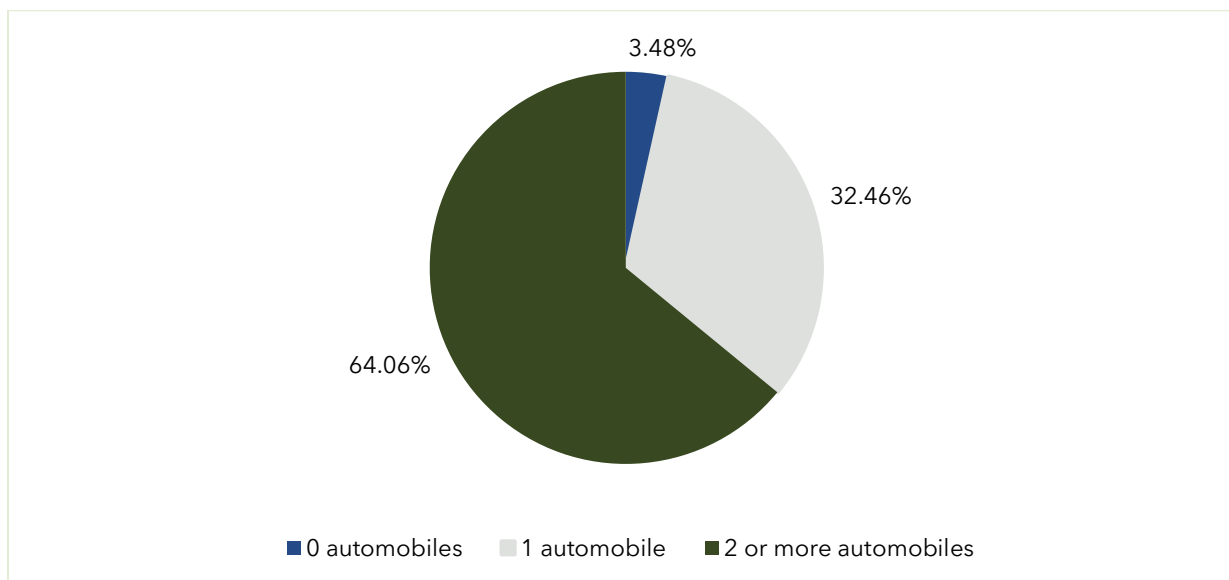


Figure 9. Number of automobiles per household of survey respondents.

Automobile Access Takeaways

- Most respondents (64.06%) own two or more automobiles, indicating a firm reliance on personal vehicles.
- Only a small fraction of respondents (3.48%) do not own an automobile, suggesting dependence on active and shared modes of transportation among this group.
- About one-third of the respondents (32.46%) own one automobile, potentially reflecting a more balanced reliance on personal vehicles versus other transportation options.

COSTS BY TRAVEL MODE

Table 12 provides a breakdown of the average and median monthly costs associated with various travel modes for state employees on O‘ahu. The data highlights significant cost differences across travel modes, offering insights into the financial implications of different commuting choices.

Table 12. Average and Median Monthly Cost by Travel Mode.

Travel Mode	Average	Median
Bike or Scooter	\$77.07	\$40.00
Walk or Roll	\$123.20	\$56.64
Bus or Rail	\$167.23	\$80.00
Telework	\$302.38	\$250.00
Car (drive-alone)	\$338.89	\$300.00
Carpool (with others)	\$364.96	\$300.00
Rideshare (Uber/Lyft/Other)	\$425.00	\$275.00

Costs by Travel Mode Takeaways:

- **Affordability of Active Modes:** Biking or scootering, along with walking or rolling, are the most affordable travel modes, making them cost-effective options for employees.
- **High Costs of Ridesharing and Car Travel:** Ridesharing (e.g., Uber, Lyft) and driving alone are the most expensive modes, with rideshare having the highest average cost at \$425.00.
- **Moderate Costs of Public Transit:** Bus or rail options offer a more moderate cost, balancing affordability with accessibility.

RANKING OF TRAVEL ATTRIBUTES

By analyzing the provided survey response data, we can identify several key factors influencing transportation choices for commuting to and from work.

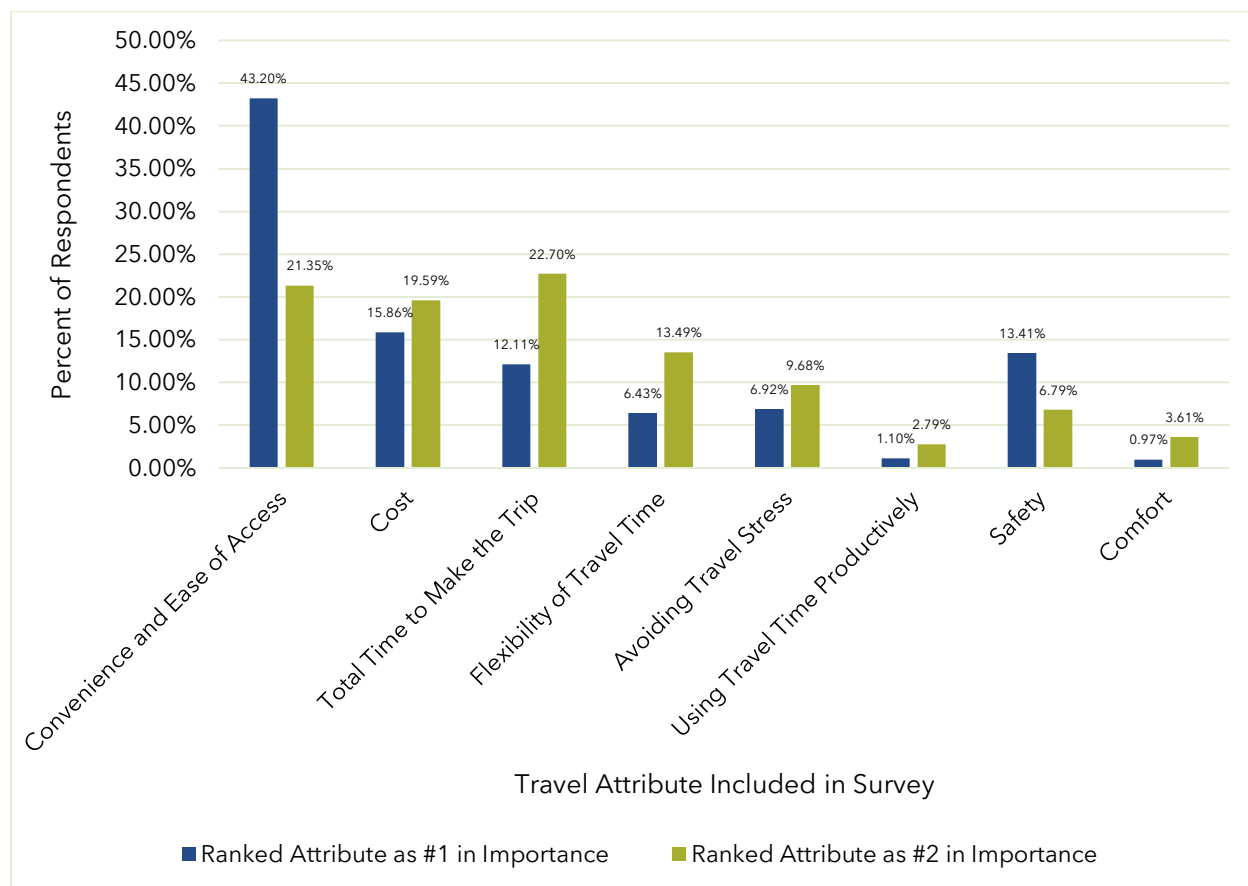


Figure 10. Percent of employees ranking each attribute as #1 and #2 in importance. Responses from state employee survey question 18.

To ascertain what drives employees' commuting decisions, the State employee survey asked respondents to rank the importance of the following 8 attributes when deciding what mode of transportation to use to commute: Convenience and Ease of Access, Cost, Total Time to Make the Trip, Flexibility of Travel Time, Avoiding Travel Stress, Using Travel Time Productively, Safety, and Comfort. Figure 10 shows the percentage of respondents ranking each attribute as most important (dark blue) or second most important (green).

Figure 10 shows a clear top 3 most important attributes for employees choosing their mode of commuting (though these results may be somewhat skewed by these appearing first in the survey):

- Convenience and Ease of Access:** Ranked first or second most important by 64.55% of respondents. Rather logically, commuters are most likely to use the most available mode(s) of transportation. Access to a personal vehicle is a prerequisite for driving alone to and from work and provides the ultimate convenience of a single modality, for its drawbacks. Similarly, those using public transit might have their decision shaped by lack of vehicle access or above-average proximity to reliable transit routes.
- Cost:** Ranked first or second most important by 35.45% of respondents. Affordability of different options was the second most important travel attribute for respondents, which may mean that they take nominal transit or vanpool prices into account when deciding to drive personal

vehicles or, conversely, that the costs of on-site parking added to the running cost of maintaining a car push State employees to use other methods.

- **Total Time to Make the Trip:** Ranked first or second most important by 34.81% of respondents. This attribute overlaps with others listed and is important to more than a third of responding State employees.

Outside of these top 3, Safety was notably ranked the #1 deciding factor or priority by 13.4% of respondents, while the ability to use travel time productively (i.e., by not having to operate a vehicle and thereby being able to work, read, or go on one's phone) and comfort were the least cited in respondent top-tuos. Establishing the importance of the overall sample of State employees as a baseline allows analysis by chosen travel mode to draw inferences on what motivates State employees to commute in specific ways.

RANKING OF TRAVEL ATTRIBUTES BY TRAVEL MODE

This section compares survey question 18, "Please rank the following travel attributes based on what is most important to you when deciding what type of transportation you use to get to and from work. Please rank the following travel attributes from 1-8, where 1 is most important and 8 is least important." and question 5, "What is your primary travel mode for commuting?"

Convenience and Ease of Access by Commute Mode

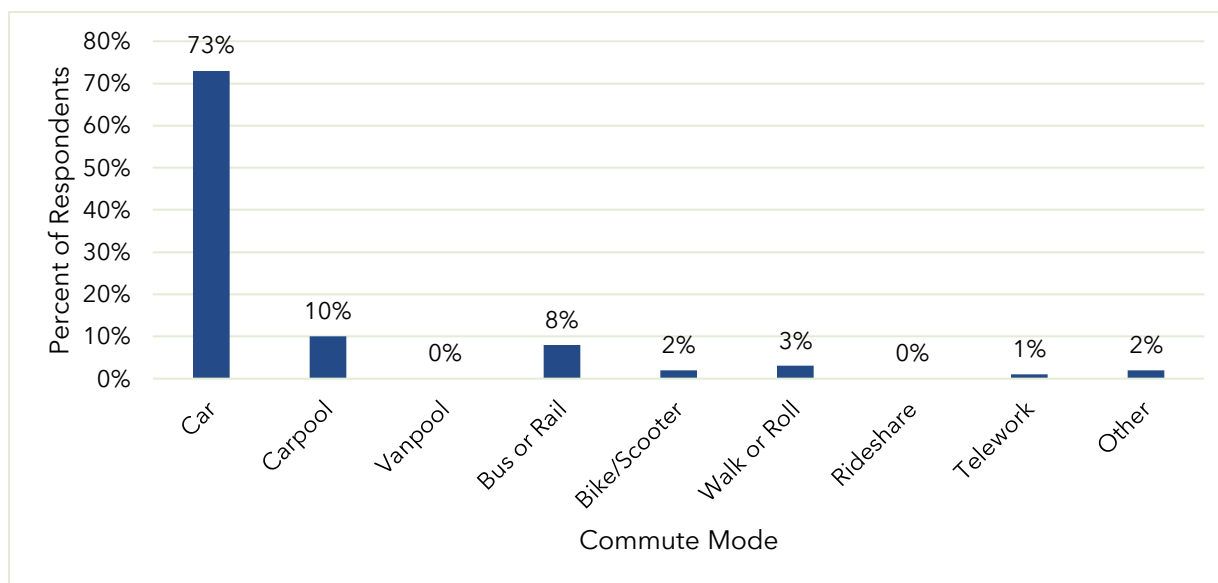


Figure 11. Survey respondents reported the importance of convenience and ease of access by commute mode.

Convenience and East of Access by Commute Mode Key Takeaways:

- The data reflects the primary modes of transportation used by a group of respondents. The majority, 73%, prefer using a car for convenience and ease of access, making it the dominant choice.
- Carpooling is the next most popular option at 10%, while public transportation (bus or rail) accounts for 8% of the choices.
- Active, shared, and more sustainable options like biking/scooter and walking/rolling are less common, with only 2% and 3% of respondents using them, respectively. Telework and other modes also represent a small fraction, at 1-2%.

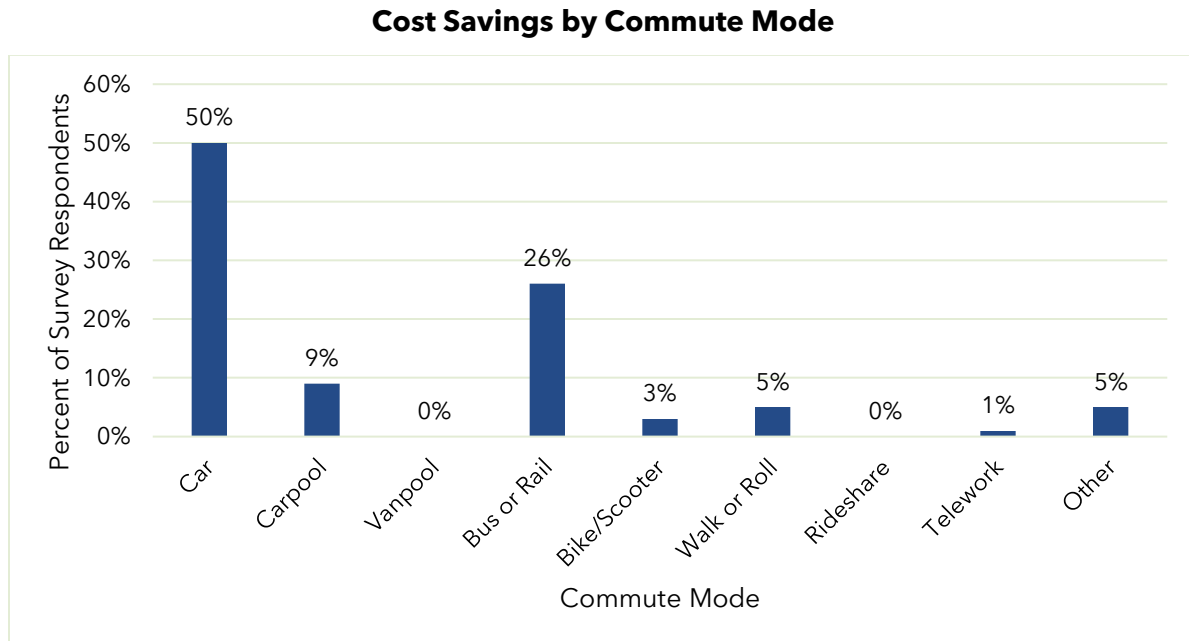


Figure 12. Importance of cost savings by commute mode reported by survey respondents.

Cost Savings by Commute Mode Key Takeaways:

- High Sensitivity to Cost Savings in Car Commuters (50%)
- Implication: Car commuters are highly sensitive to cost savings, making them a prime target for initiatives aimed at reducing car usage. TDM strategies could focus on incentivizing these commuters to switch to more cost-effective or sustainable modes, such as public transit, carpooling, or biking.
- Offering financial incentives could be effective. This could include providing more robust employer-sponsored transit passes, fare subsidies, or loyalty programs that reward frequent use.

Importance of Total Time to Make a Trip by Commute Mode

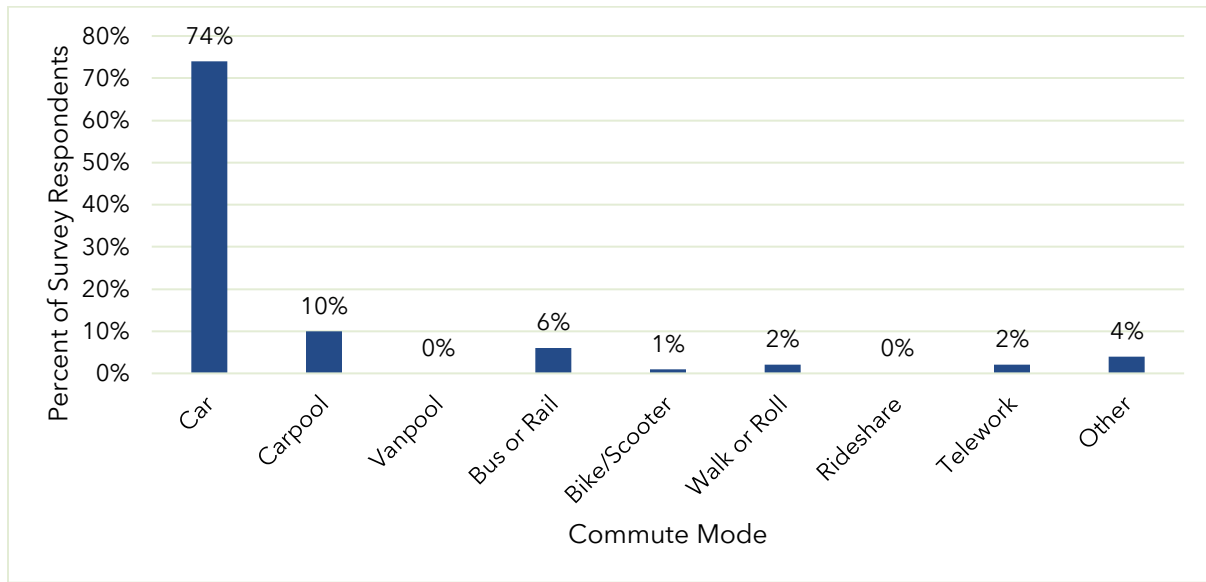


Figure 13. Survey respondents reported the importance of the time needed to make the trip by commute mode.

Importance of Total Time to Make a Trip by Commute Mode Key Takeaways:

- Most people use cars (74%) because they are a time-efficient option for commuting. Strategies could encourage carpooling and vanpooling to reduce drive alone trips, such as implementing incentives for shared rides.
- Creating priority parking facilities for carpoolers could reduce the number of drive-alone commuters, as it would increase the convenience of carpooling.

Importance of Flexibility of Travel Time and Location by Commute Mode

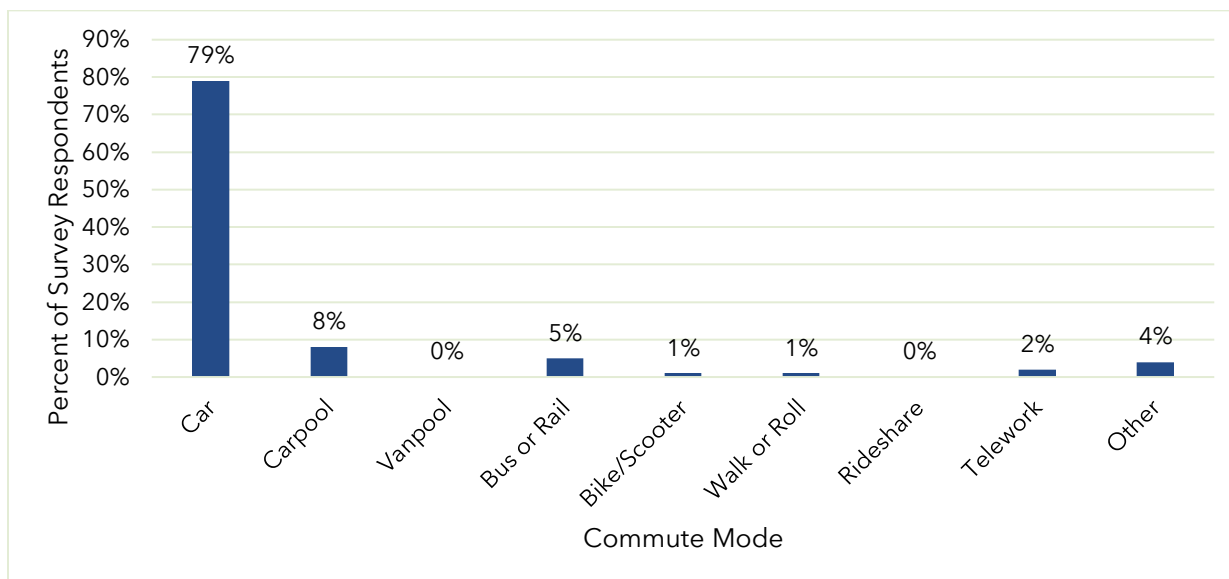


Figure 14. Importance of flexibility of travel time and location by commute mode reported by survey respondents.

Importance of Flexibility of Travel Time and Location by Commute Mode Key

Takeaways:

- Car users (79%) highly value flexibility in travel time and location, possibly due to the autonomy it provides. This allows drivers to adjust their schedules and routes according to their needs without being bound by a fixed timetable or having to consider the schedules of others.
- Flexibility is less important in carpooling (8%), likely because carpoolers coordinate with others, reducing individual flexibility. The need to synchronize with other passengers limits their ability to adjust travel times and routes.

Importance of Avoiding Travel Stress by Commute Mode

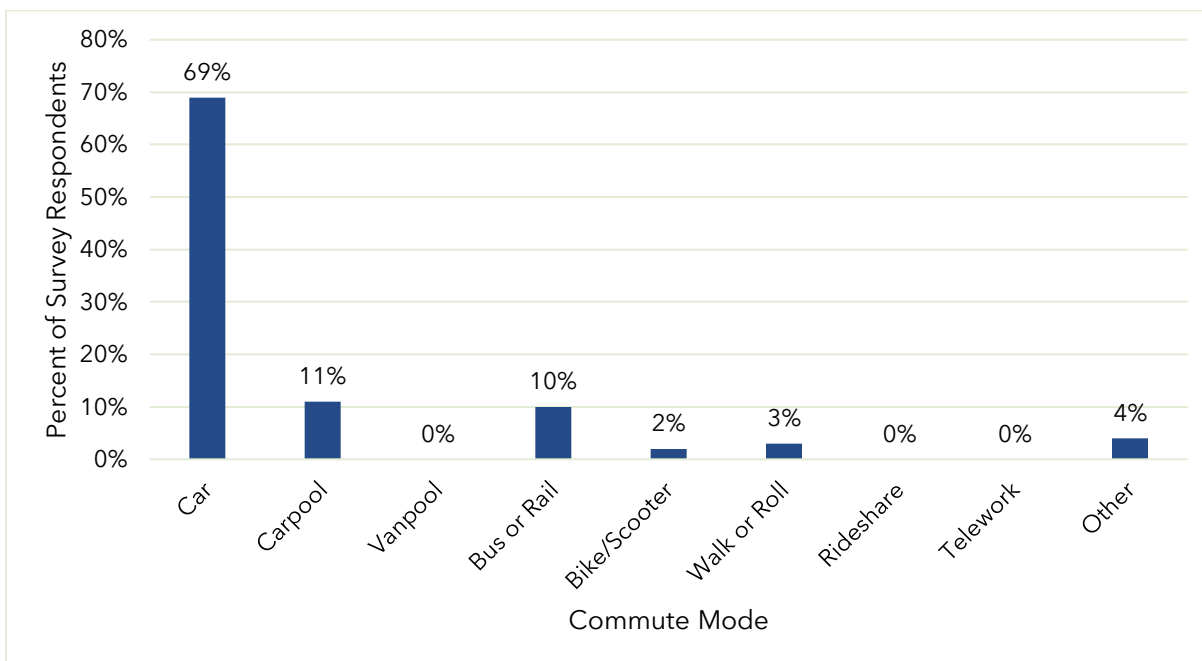


Figure 15. Importance of avoiding travel stress by commute mode reported by survey respondents.

Importance of Avoiding Travel Stress by Commute Mode Key Takeaways:

- Car (69%): Avoiding travel stress is most important for car users, likely due to the desire to control their environment and travel conditions, such as avoiding traffic or selecting a preferred route.
- Carpool (11%): Carpoolers also value stress avoidance, though to a lesser extent than solo car drivers. Sharing a ride with others may introduce some stress, such as coordinating schedules or managing interpersonal dynamics.

Importance of using travel time productively by commute mode

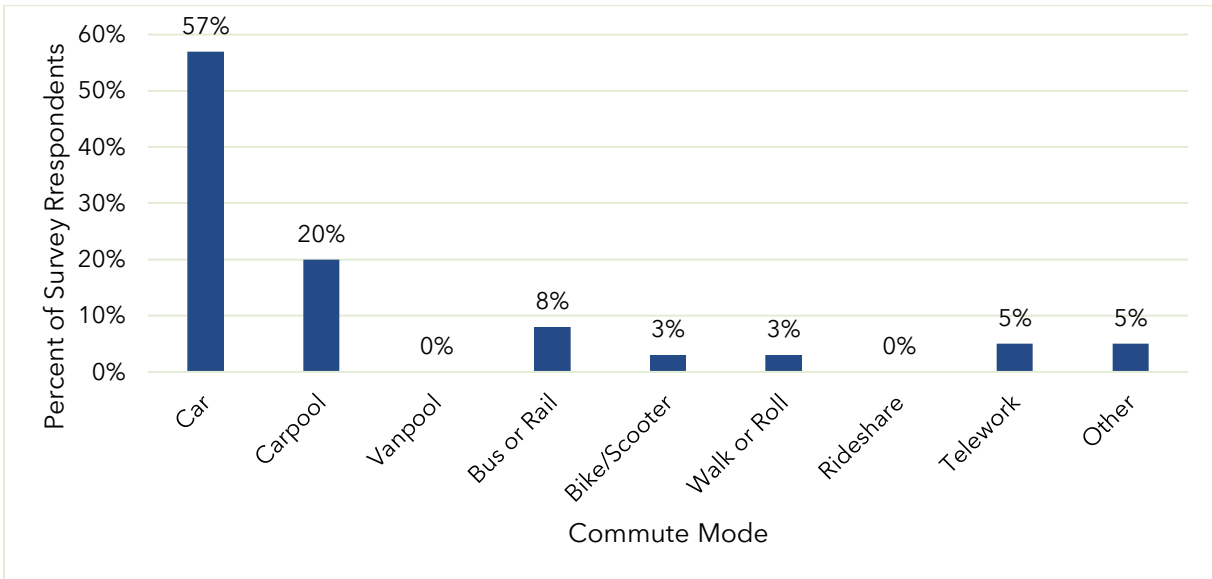


Figure 16. Importance of using travel time productively by commute mode reported by survey respondents.

Importance of Using Travel Time Productively by Commute Mode Key Takeaways:

- Car (57%): Most car users find using travel time productively important. This might include making phone calls, listening to podcasts or audiobooks, or planning their day.
- Carpool (20%): Carpoolers also value productive use of travel time, though to a lesser extent than solo car drivers. The presence of others in the vehicle may limit certain activities, but it can also provide opportunities for social interaction or collaborative work.

Importance of Safety by Commute Mode

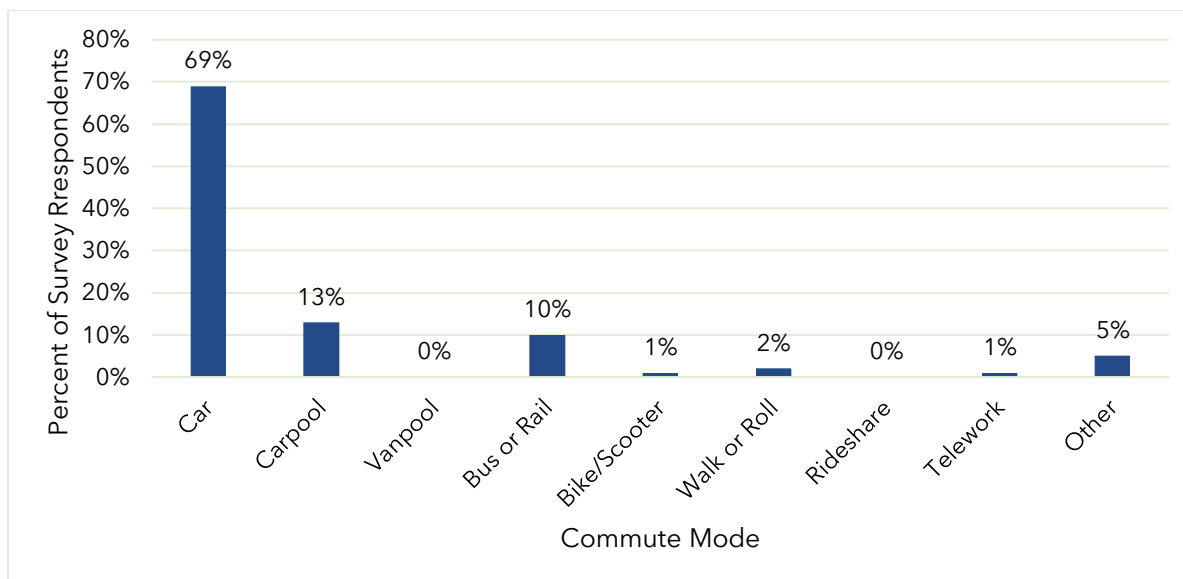


Figure 17. Importance of safety by commute mode reported by survey respondents.

Importance of Safety by Commute Mode Key Takeaways:

- Car (69%): Safety is a top concern for car users, possibly due to the potential risks associated with driving, including traffic crashes and road conditions. Drivers may prioritize control over safety measures, such as seatbelts, airbags, and defensive driving practices.
- Carpool (13%): Safety is also important in carpooling, though less so than solo driving. Passengers in a carpool rely on the driver's safety practices and the vehicle's condition. The lower percentage might reflect a shared sense of responsibility among passengers or trust in the driver.
- This ranking indicates that safety is critical for those who commute by car, likely due to drivers' direct control over their safety. Public transit, carpooling, and other modes see varying levels of concern, while telework and some shared modes are perceived as low risk in terms of safety.

Importance of comfort by commute mode

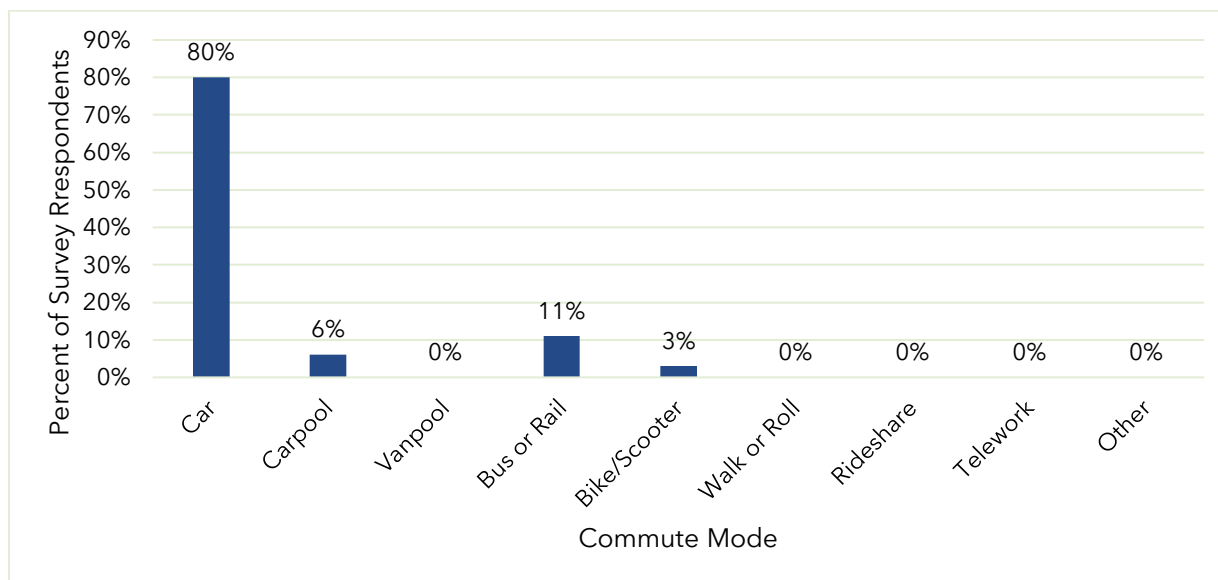


Figure 18. Importance of comfort by commute mode reported by survey respondents.

Importance of Comfort by Commute Mode Key Takeaways:

- Car (80%): Comfort is highly prioritized by those who commute by car. This is likely because cars offer personal space, climate control, and the ability to customize the environment, making them the most comfortable option for many commuters.
- Bus or Rail (11%): Comfort is also a consideration for those using public transit like buses or rail, though to a lesser extent. This could be related to the availability of seating, climate control, and the ability to relax or work during the commute.

POTENTIAL COMMUTER BENEFITS ANALYSIS

This section analyzes several services, incentives, and amenities that encourage employees to start or increase their use of active and shared commute modes, such as carpooling, riding the bus or rail, biking, or walking. In survey question 19, we asked respondents to select the top three services that would be the most influential in encouraging them to change their commuting behavior.

Table 13. Services that would encourage state employees to change travel behavior.

Potential Benefits/ Services	Percent of State Employees
Free or subsidized bus/ rail pass	61.54%
Free or subsidized vanpool fare	39.13%
Free priority reserved parking at work for carpools and vanpools	36.77%
Free emergency ride home/ride to the destination, for example, to pick up children	36.69%
Bike or walk commute subsidy	24.22%
Bicycle and micromobility amenities (Secure parking/ Access to lockers/showers/ Changing areas)	22.52%
List of people who live and work near you whom you could contact for carpooling or vanpooling	21.05%

The data reveals key insights into the most effective incentives for encouraging a shift toward sustainable transportation. 61.54% of respondents favor free or subsidized bus and rail passes, highlighting the strong appeal of reducing public transit costs. Similarly, 39.13% support free or subsidized vanpool fares, indicating that lowering the financial barriers associated with vanpooling could also promote its adoption. Safety and convenience are also crucial, with 36.69% of respondents interested in a free emergency ride home, addressing concerns about the reliability and flexibility of active and shared transportation modes. Additionally, 36.77% of respondents favor free priority reserved parking at work for carpools and vanpools, suggesting that such incentives could make shared rides more attractive by offering tangible benefits. Although not as popular, there is still notable interest in active transportation support, with 22.52% and 24.22% of respondents favoring bike or walk commuting subsidies and amenities like secure bike parking and access to showers. Furthermore, 21.05% of respondents are interested in having a list of potential carpool and vanpool partners, which could facilitate ride-sharing and build a community of commuters.

31.33% of respondents who selected "Other" and wrote in a response highlighted the importance of customizing and addressing unique needs and suggestions. To effectively promote sustainable transportation, the State Government could focus on cost reductions for public transit and vanpooling, provide safety nets like emergency rides, offer parking benefits for shared rides, support active transportation, facilitate carpooling connections, and remain flexible to accommodate diverse preferences. This multifaceted approach can make sustainable transportation options more appealing and practical for a broader audience.

Among the write-in responses, several key themes emerged that highlight additional needs and suggestions for encouraging sustainable transportation. Respondents emphasized the need for "access to and better bike lanes," pointing to infrastructure improvements as crucial for safer and more

convenient biking. There were calls for having a "bus route direct to work" and more opportunities for "telework," reflecting the desire for more straightforward and flexible commuting options. Some highlighted the importance of "public transportation that comes more frequently and more direct transport,"¹⁴ underscoring the need for more reliable and efficient public transit services. Flexible work arrangements were also a common theme, with respondents advocating for "flexible work hours" and noting that "greater flexibility of start times" could alleviate congestion, as some jobs could start later, reducing peak traffic. These insights point to a broader range of measures that can be implemented to support a shift toward sustainable commuting.

POTENTIAL COMMUTER BENEFITS BY MODE ANALYSIS

The analysis of potential commuter benefits by commute mode revealed a variety of services, incentives, and amenities that could influence employees to adopt active and shared commuting methods based on their current commute mode, including carpool, bus, rail, bike or scooter, walk, or roll to work. The survey highlighted the top three services that respondents felt would most encourage them to change their commuting habits. This section includes key takeaways followed by a series of charts that illustrate the potential commuter benefits that would be most preferred for each travel mode.

Potential Commuter Benefits By Mode Analysis Key Takeaways:

- **Financial Incentives are Key Drivers:** Across all commuting modes, financial incentives such as free or subsidized bus/rail passes and vanpool fares are consistently highlighted as top motivators for shifting commuting behavior. The data underscores the significant role that reducing the cost of public transit and vanpooling can play in encouraging employees to move away from drive alone commutes.
- **Convenience and Preferential Treatment Matter:** For carpoolers and vanpoolers, benefits like free priority reserved parking and emergency ride home services are crucial. These incentives address concerns related to convenience and unexpected situations, making active and shared commuting methods more attractive.
- **Active Transportation Preferences:** For those who bike, scooter, walk, or roll, there is a strong preference for subsidies and amenities that support active transportation. This group values financial support for biking or walking and related infrastructure, indicating that targeted investments in these areas could encourage greater adoption of these modes.
- **Public Transit Remains a Priority:** Even among those who primarily use active transportation, there is substantial support for subsidized public transit. This suggests that while active transportation is preferred for shorter distances, public transit remains an essential option for longer commutes or as a backup.
- **Mode-Specific Strategies Needed:** The analysis highlights that different commuter groups have distinct needs and preferences. Tailoring benefits to specific commute modes—whether it's financial incentives for transit users, reserved parking for carpoolers, or active transportation subsidies—can effectively encourage a shift away from drive alone commutes, aligning with the broader goals of promoting sustainable and diverse commuting options.

¹⁴ <https://www.apta.com/news-publications/public-transportation-facts/>

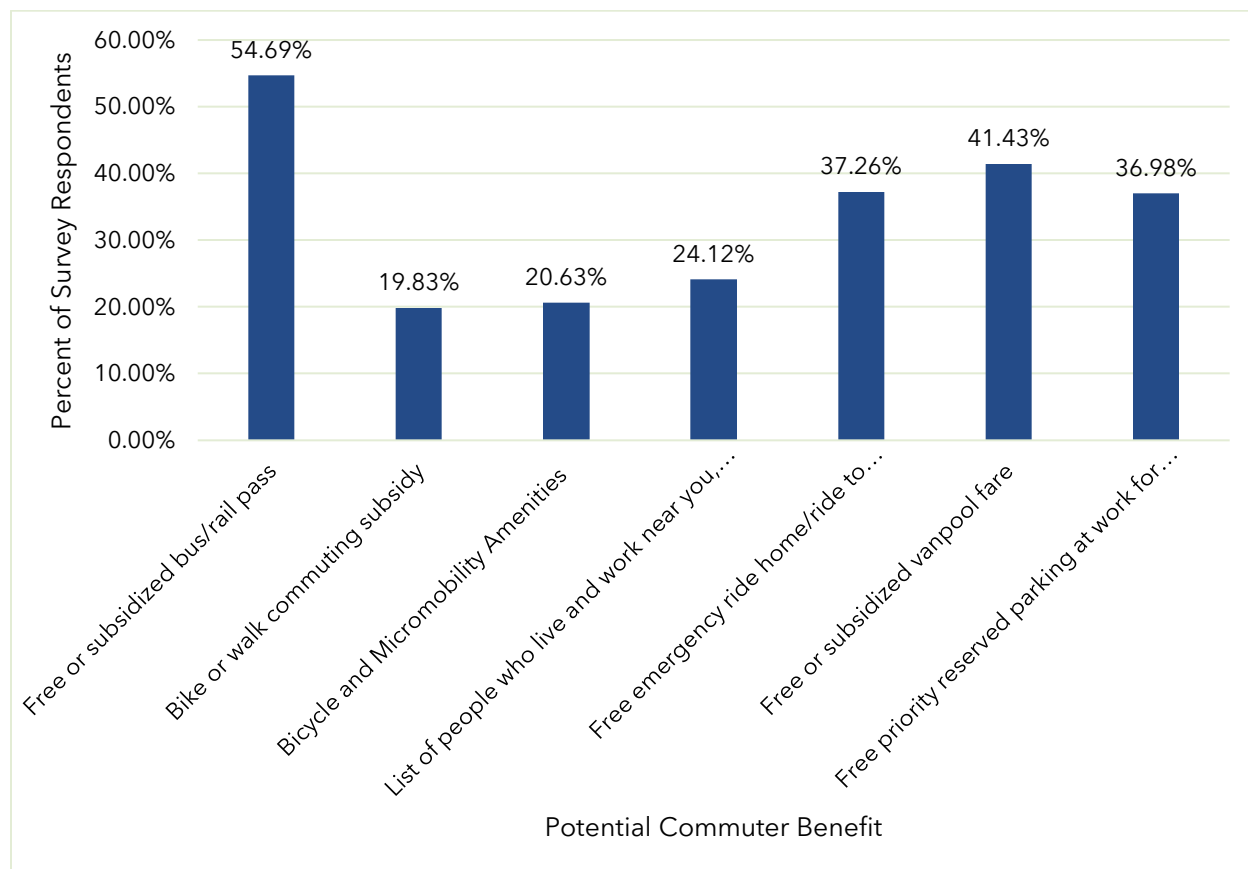
Potential Commuter Benefits by Commute Code for Car Drivers (drive alone)

Figure 19. Potential commuter benefits by commute mode for car drivers (drive alone).

- Figure 19 presents an analysis of the data indicating that the most influential potential commuter benefits by commute mode for car drivers (drive-alone) include *Free or subsidized bus/rail pass* (54.69%) and *vanpool fare* (41.43%), indicating that a prohibitive factor for using public transportation or a vanpool service versus driving alone may be cost.

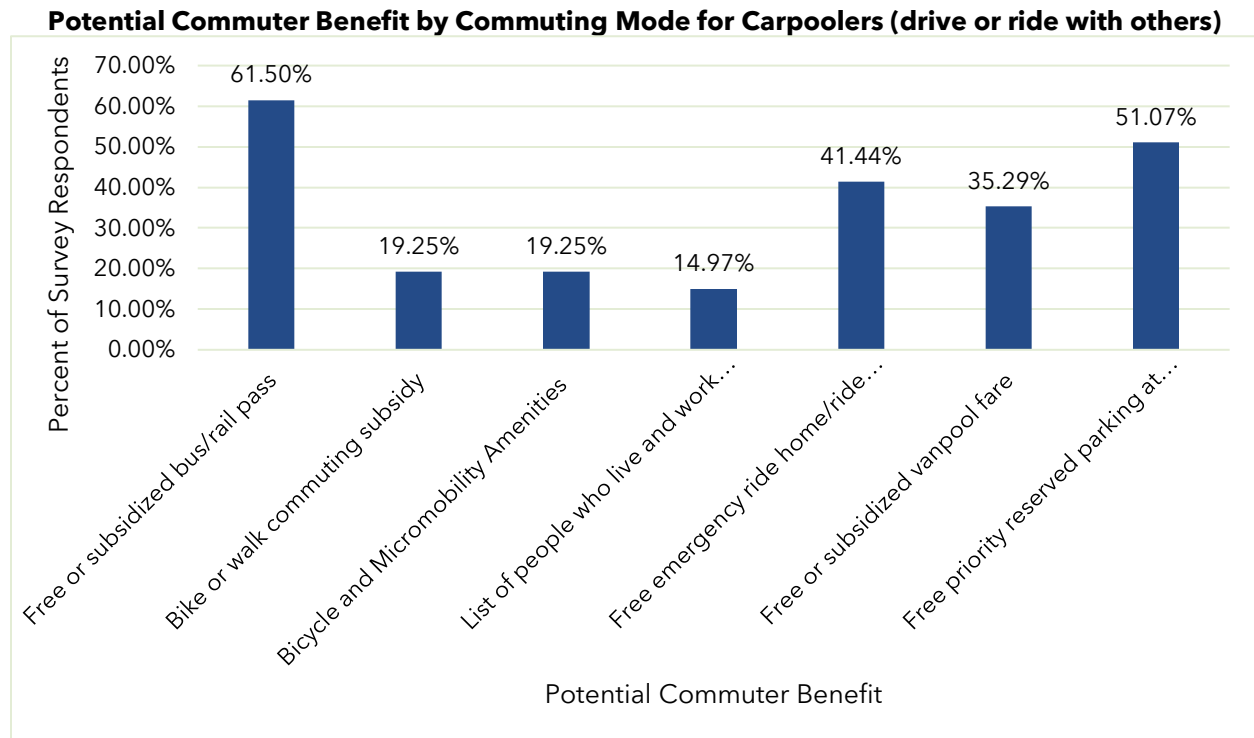


Figure 20. Potential commuter benefit by commuting mode for carpoolers (drive or ride with others).

- Figure 20 illustrates that a significant number of respondents (61.50%) would be encouraged to change their commuting habits if they received a free or subsidized bus or rail pass. This indicates that reducing the financial burden of public transportation can be a strong motivator for employees to switch from carpooling to using public transit.
- Free priority reserved parking for carpools and vanpools is also a major incentive, with (51.07%) of respondents indicating it would encourage them to carpool or use vanpools. This suggests that convenience and preferential treatment at work are important factors in making active and shared commuting methods more attractive.
- Offering a free emergency ride home or to another destination is seen as a significant benefit by (41.44%) of respondents. This service addresses the concern of unexpected situations and can provide peace of mind, making carpooling or vanpooling more appealing.

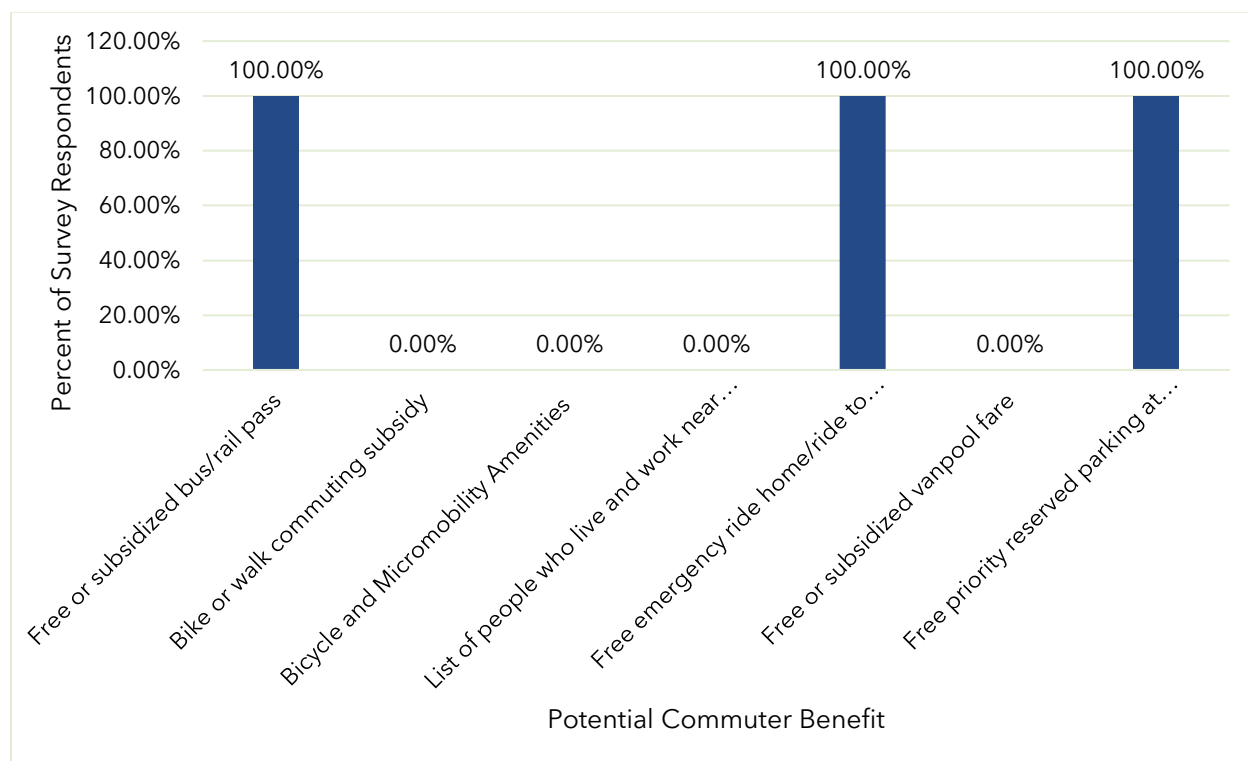
Potential Commuter Benefit by Commuting Mode for Vanpoolers (shared commuter van)

Figure 21. Potential commuter benefit by commuting mode for vanpoolers (shared commuter van).

- Figure 21 indicates that three responses were selected by participant who vanpool. This suggests that free or subsidized bus, rail, or vanpool fares are considered a top priority.
- This preference indicates a significant emphasis on financial incentives, in addition to the convenience of reserved parking at the workplace.

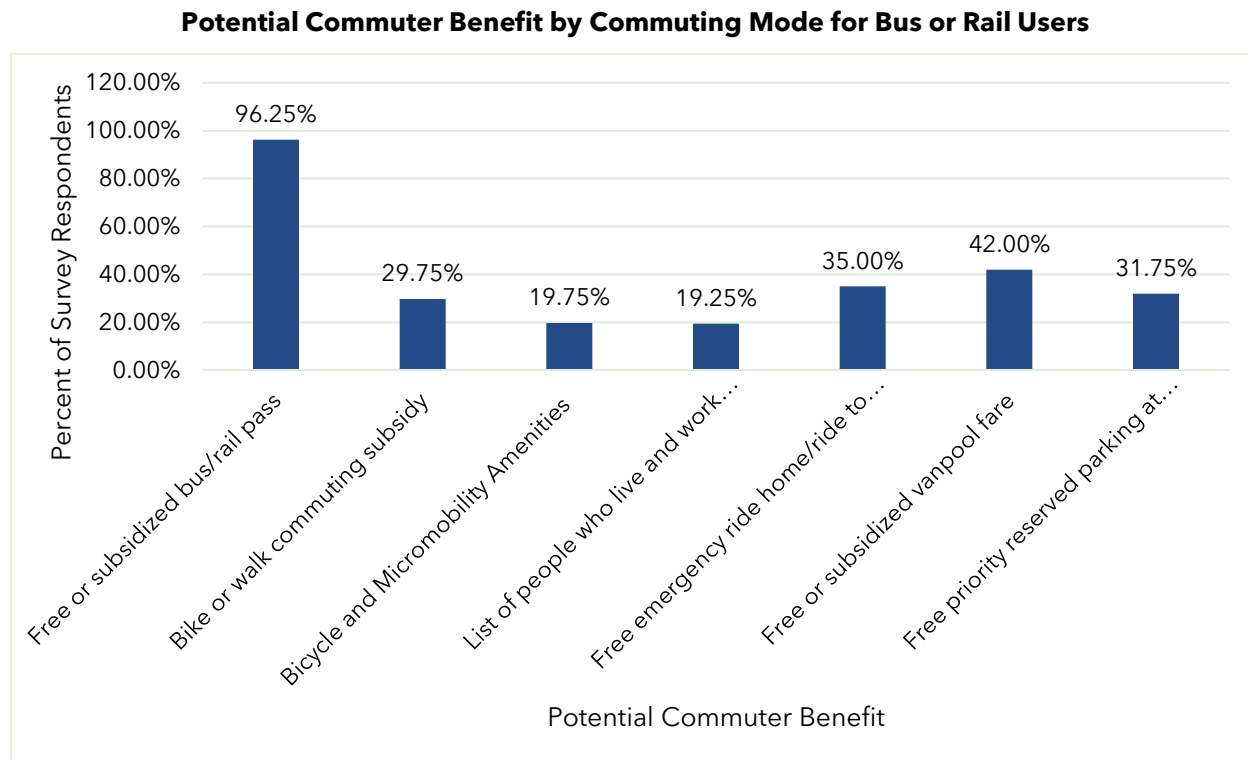


Figure 22. Potential commuter benefit by commuting mode for bus or rail users.

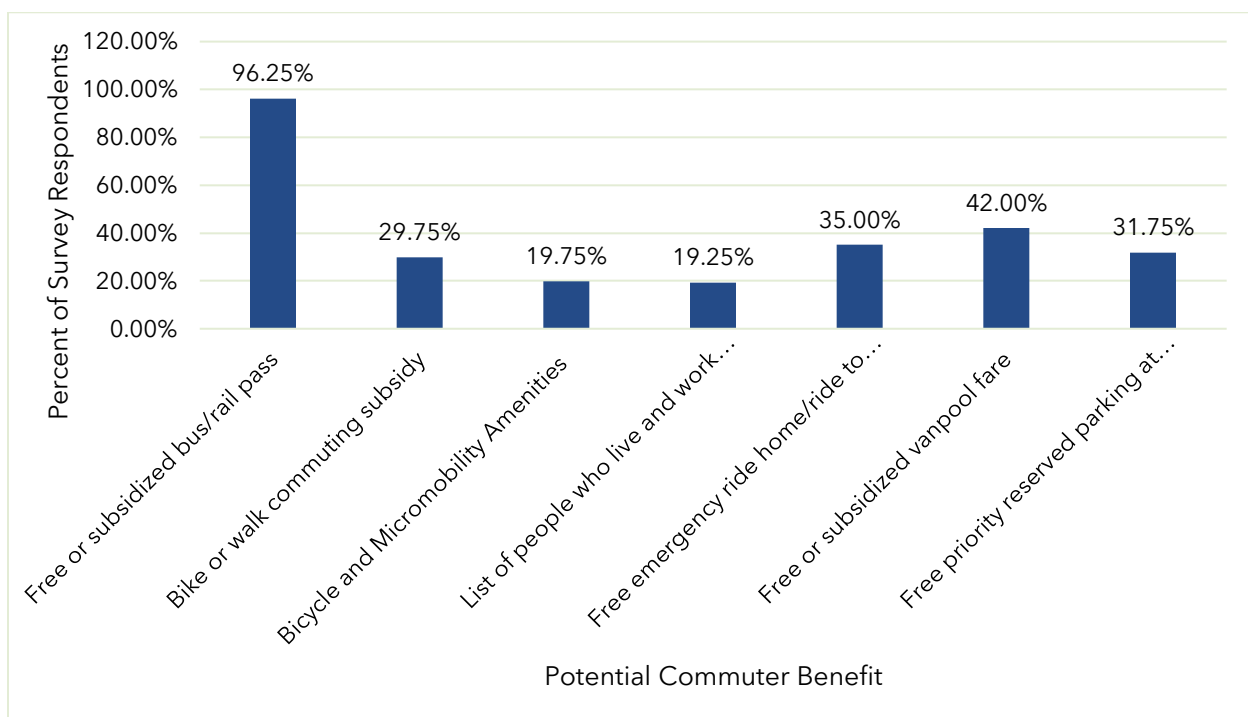


Figure 22 indicates that Free or Subsidized Bus/Rail Pass (96.25%) is the most favored potential benefit, with a high preference among respondents who are existing bus/rail users. It suggests that financial assistance for public transit is a critical factor in their commuting decisions.

- The high percentage indicates a strong demand for cost-effective transportation options. While other benefits such as emergency rides, vanpool subsidies, and reserved parking also hold value, they are secondary to the top priority of transit fare subsidies.

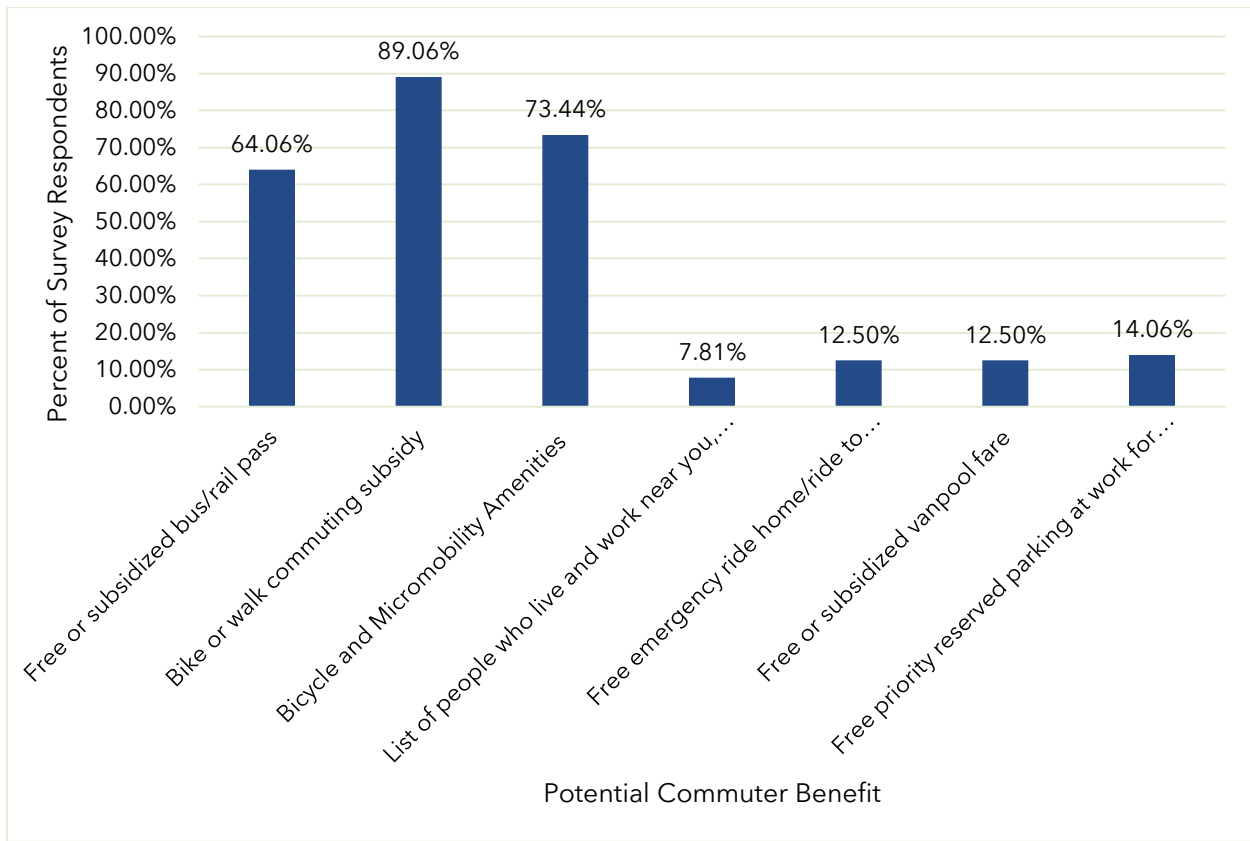
Potential Commuter Benefit by Commuting Mode for Bike or Scooter Users

Figure 23. Potential commuter benefit by commuting mode for bike or scooter users.

- Figure 23 illustrates that there is a strong preference for active transportation subsidies and bicycle/micromobility amenities. This indicates an interest in active transportation options, with funding and amenities available. While there is still a significant preference for a subsidized Bus/Rail Pass (64.06%), support for free or subsidized public transit has decreased relative to bike/walk subsidies and micromobility amenities.

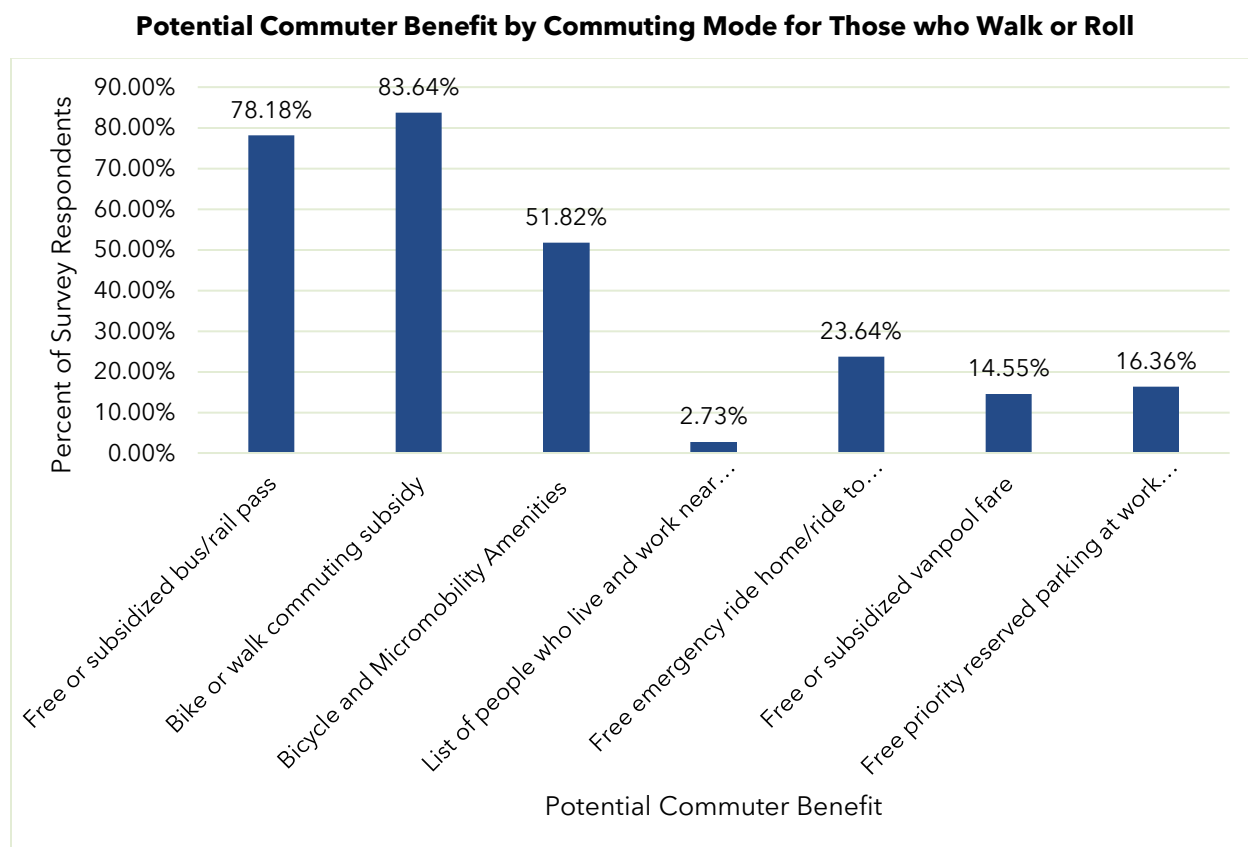


Figure 24. Potential commuter benefit by commuting mode for those who walk or roll.

- Figure 24 shows that the bike or walk commuting subsidy (83.64%) is the strongest preference among people who already walk or bike to work, indicating strong support for subsidies designed explicitly for biking, rolling, or walking. This suggests that financial incentives for active commuting are highly valued among those who use non-motorized forms of transportation.
- The number two option, Free or Subsidized Bus/Rail Pass (78.18%), also shows substantial support, though slightly less than bike/walk subsidies. It reflects that public transit remains important for those who may use it for walking or rolling.

ORIGIN AND DESTINATION ANALYSIS

This section presents the figures and tables relating to the origin and destination analysis. These focus on where people live on O‘ahu, where state employees begin and end their commute trips, and the top origin and destination pairs based on headcount based on origin zip code and destination worksites.

POPULATION DENSITY ON O‘AHU

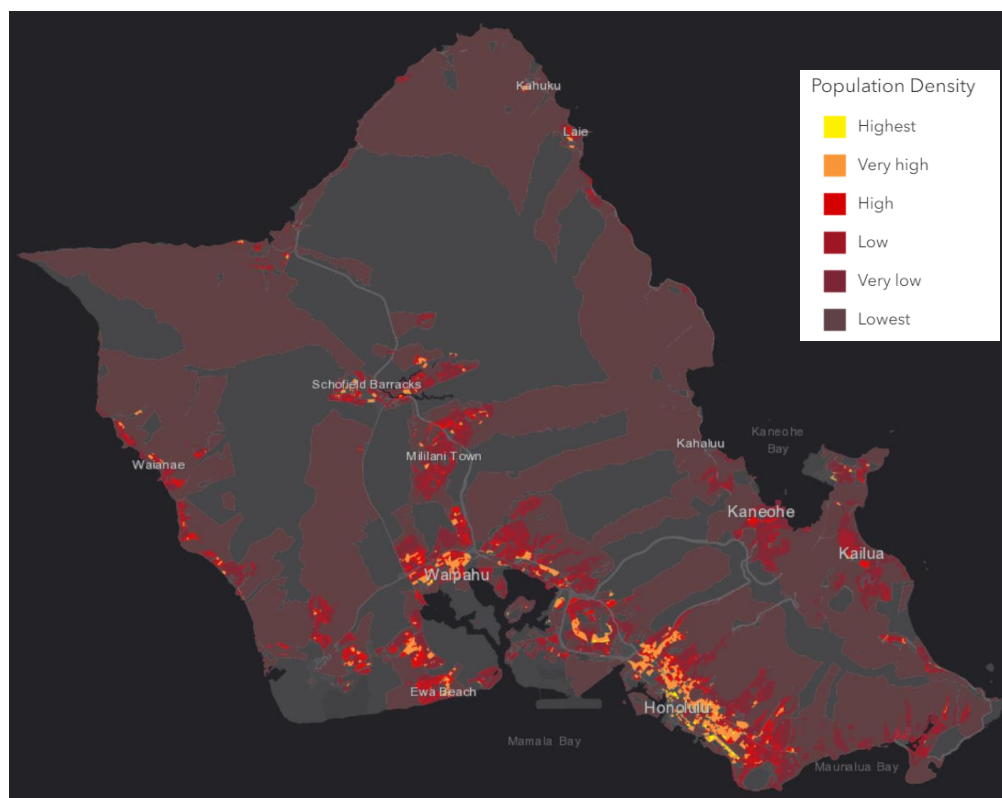


Figure 25. O‘ahu population density.

Figure 25 provides essential context for the origin-destination analysis of state employees. The highest population densities are concentrated in urban areas, particularly around Honolulu and other significant towns such as Kāne‘ohe, Kailua, and Waipahu. These densely populated regions align closely with the primary residential areas of state employees, as identified in the origin-destination analysis. Conversely, the more rural and mountainous regions, such as the North Shore and Ko‘olau Loa exhibit lower population densities and are less likely to be primary residential locations for state employees. This population distribution is crucial for understanding the commuting patterns of state employees, as it influences the demand for transportation services and infrastructure.

Population Density on O‘ahu Key Takeaways:

- **High Population Density Areas:** Urban centers like Honolulu, Kāne‘ohe, Kailua, and Waipahu are the most densely populated, corresponding with the primary residential locations for state employees.
- **Low Population Density Areas:** Rural and mountainous regions, including the North Shore and Ko‘olau Loa, have lower population densities and are less likely to house state employees.
- **Transportation Demand Implications:** The dense urban clusters suggest a higher demand for transportation solutions in these areas, aligning with the observed commuting trends of state employees.

STATE EMPLOYEE ORIGIN LOCATIONS

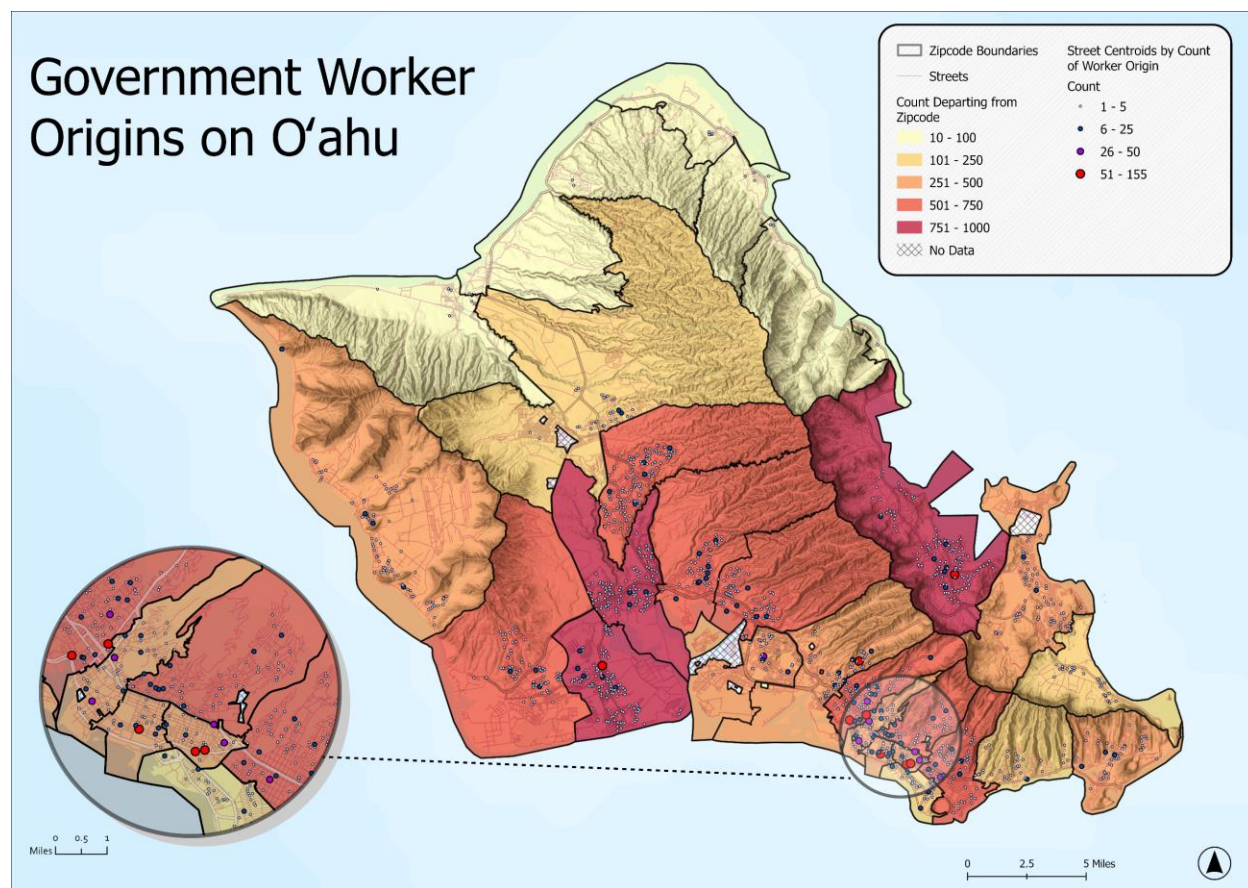


Figure 26. State employee origin locations and zip codes.

Figure 26 presents the Government Worker Origins on O'ahu map, which reveals that government workers are primarily concentrated in west, central, and windward O'ahu, urban Honolulu, with fewer residing on the North Shore and in Ko'olau Loa. Urban areas, especially near Honolulu, show a higher density of workers, while rural regions have a lower concentration. The inset provides a closer look at these urban clusters. This distribution highlights the need for targeted transportation demand management strategies to better serve areas with high concentrations of government workers, especially in densely populated urban zones.

State Employee Origin Locations Key Takeaways:

- West, central and windward O'ahu, especially around Honolulu, have the highest concentration of government workers.
- Rural and less populated regions of the island show significantly lower numbers of government workers.
- The urban-rural disparity suggests a need for enhanced transportation services in high-density areas.

STATE EMPLOYEE DESTINATION LOCATIONS

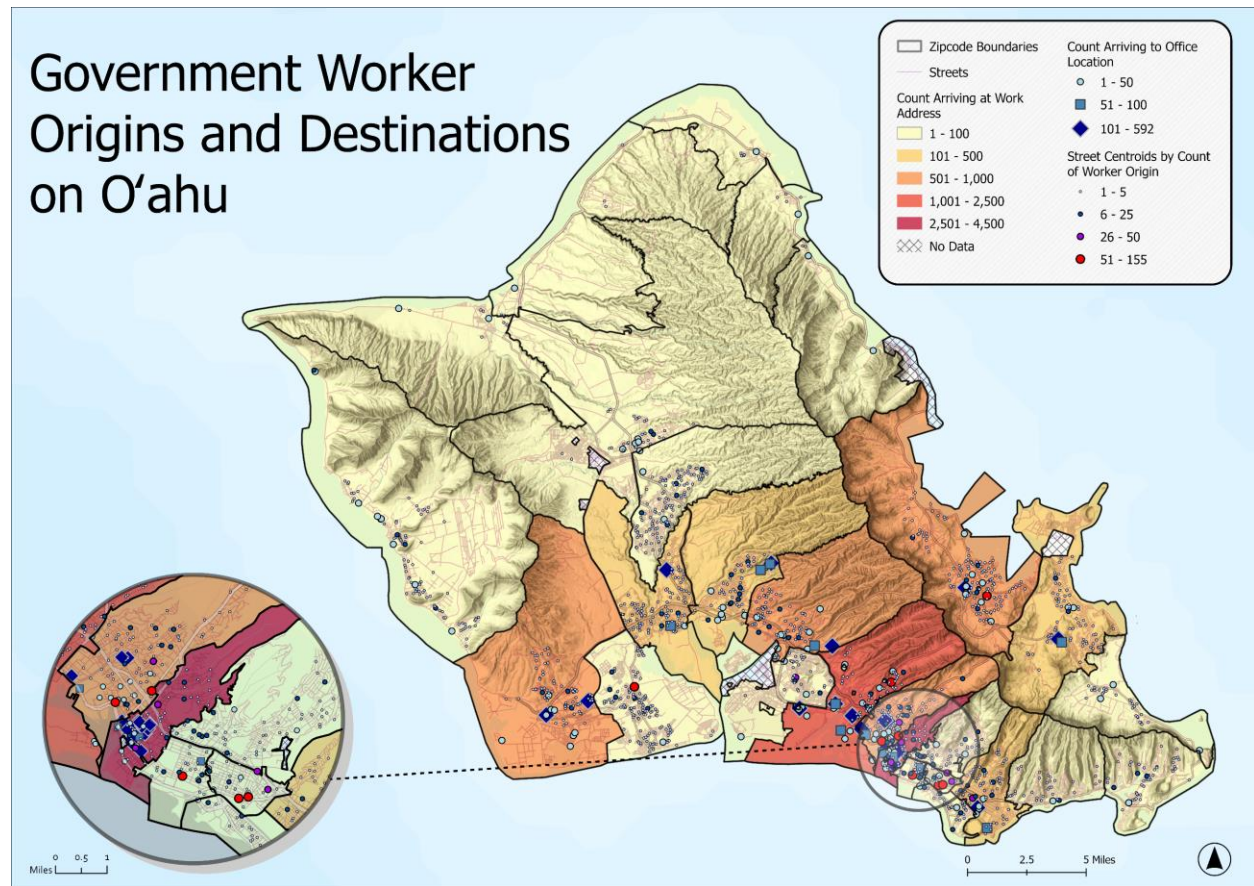


Figure 27. State employee destination zip codes and destination locations, with origin street centroids.

Figure 27 presents the Government Worker Origins and Destinations on O'ahu map, which shows both where government workers live and where they work, highlighting key commute patterns across the island. The map indicates that state employee workers are concentrated mainly in central and windward O'ahu, particularly around Honolulu, with their work destinations closely aligned with these residential areas. The inset provides a focused view of these patterns in urban regions. This distribution emphasizes the need for transportation demand management strategies that consider origin and destination data to optimize commute routes and improve accessibility for government workers.

State Employee Destination Locations Key Takeaways:

- Government workers tend to live and work in close proximity, particularly in urban Honolulu.
- High-density work destinations are primarily located in urban areas, mirroring the concentration of residential origins.
- The alignment of origins and destinations suggests opportunities for efficient transportation solutions that cater to these commuting patterns, particularly enhancing active and shared transportation modes.

ORIGIN AND DESTINATION ANALYSIS (COMBINED)

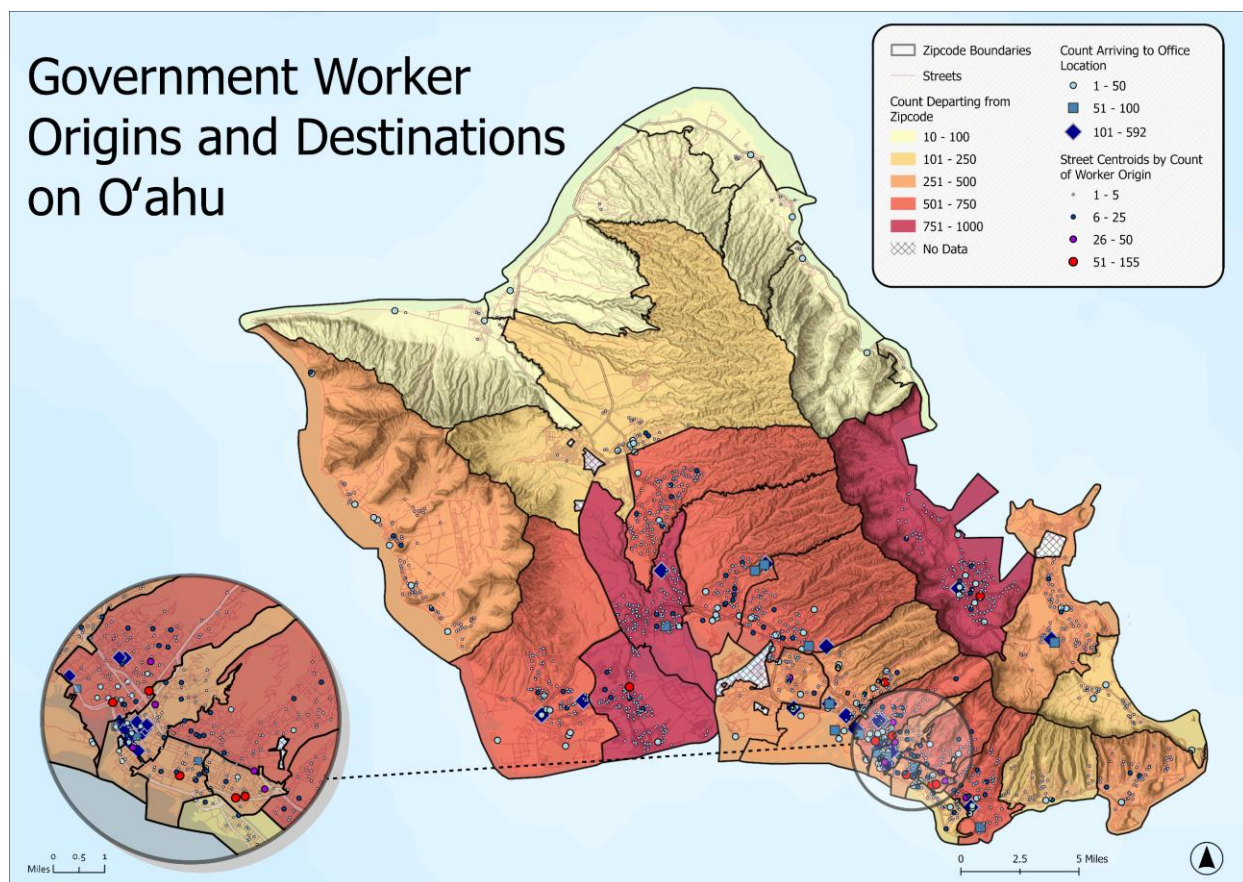


Figure 28. State employee origin zip codes and destination locations.

Figure 28 presents the Government Worker Origins and Destinations on O'ahu map, which illustrates where government workers live and where they work across the island, revealing the full scope of their commuting patterns. The map shows a strong concentration of origins and destinations in west, central, and windward O'ahu, particularly around Honolulu, with fewer workers living or working in the northern regions. The inset highlights these dense areas, emphasizing the close relationship between where government workers reside and where they are employed. This comprehensive view underscores the importance of coordinated transportation planning, considering both ends of the commute to enhance efficiency and accessibility.

Origin and Destination Analysis (Combined) Key Takeaways:

- West, central and windward O'ahu, especially near Honolulu, are the primary hubs for government workers' residential origins and work destinations.
- There is a significant overlap between where government workers live and work, particularly in urbanized regions.
- The combined data on origins and destinations suggests a strong case for focused transportation solutions in high-density areas to optimize commutes and improve service delivery.

STATE EMPLOYEE ORIGIN AND DESTINATION PAIRS

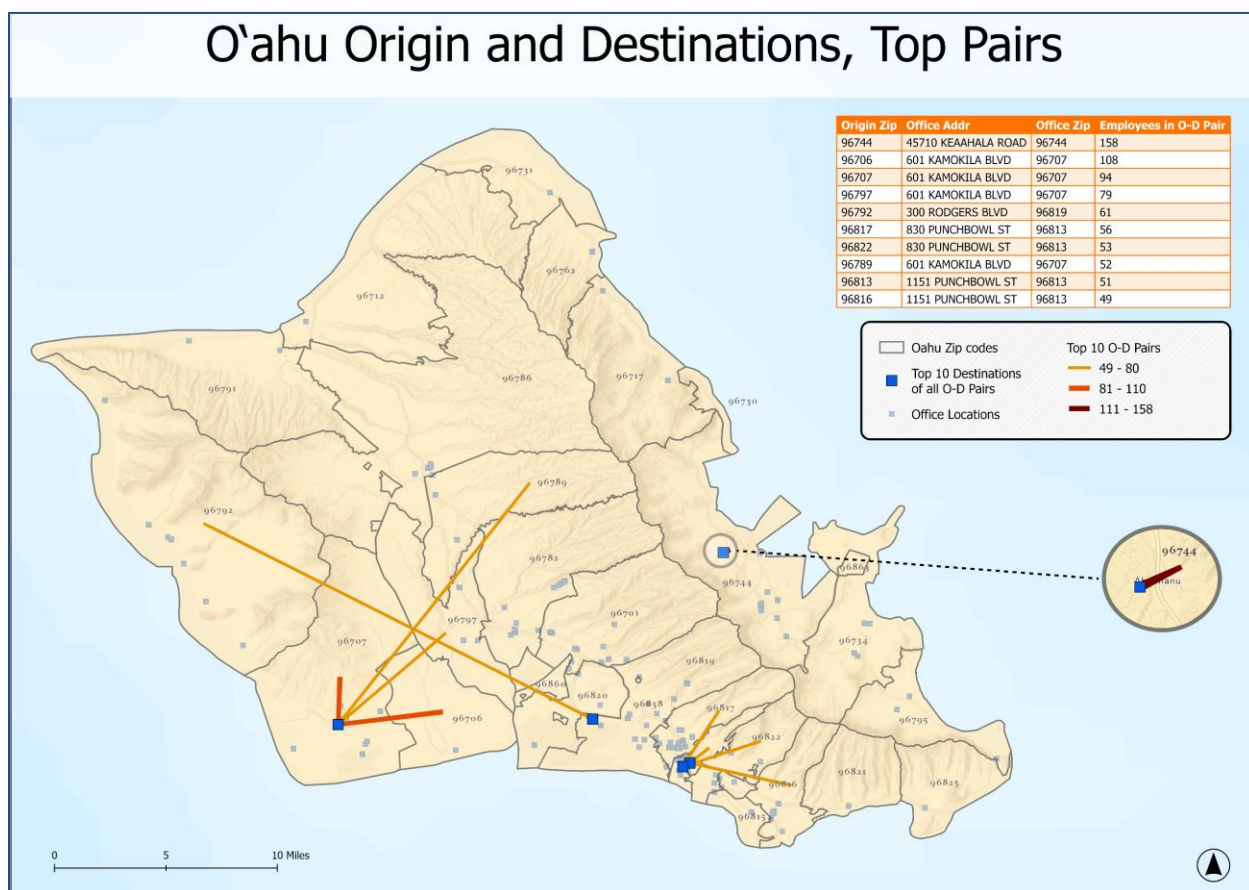


Figure 29. Top origin and destination pairs for state employees on O'ahu.

The O'ahu Origin and Destinations, Top Pairs map illustrates the most common commuting routes between where government workers live and their office locations. The map highlights the top ten origin-destination pairs, with the most frequent commutes concentrated between specific zip codes in west and O'ahu and west and urban Honolulu, and one instance on the windward side of O'ahu, particularly around major office locations in Honolulu. The connections are visualized with lines representing the volume of commuters, indicating the intensity of these commuting routes. This data is crucial for optimizing transportation services along these key corridors to improve efficiency and meet the needs of the highest number of commuters.

State Employee Origin and Destination Pairs Key Takeaways:

The most common commuting routes are concentrated in west and O'ahu, and west and urban Honolulu with major office locations in Honolulu as key destinations.

The top origin-destination pairs show significant commuter flows between a few specific zip codes, highlighting critical corridors for targeted transportation improvements.

These concentrated commuting patterns suggest opportunities to enhance transit services along these heavily used routes to better accommodate government workers' needs, and transportation benefits that could assist these commuters.

Table 14 presents the top state employee origin and destination pairs on O‘ahu. This provides a detailed look at the most common commuting routes among state employees on the island. The data highlights key origin-destination pairs, indicating significant commuter flows between residential and work locations. A complete version of this table with all origin and destination pairs for 10 employees or more can be found in Appendix A.

- The most frequent commute is from the 96744 zip code in Kāne‘ohe to the same zip code, with 158 employees working at 45-710 Kea‘ahala Road, suggesting a high level of local employment within that area.
- Other notable routes include commutes from various residential areas, particularly in Kāne‘ohe and Honolulu, to significant work addresses in Honolulu.

These findings emphasize the concentration of state employees commuting to a few central work locations, which could inform the prioritization of transportation resources and infrastructure improvements along these heavily traveled corridors, as well as transportation demand management strategies.

Table 14. Top State employee origin and destination pairs on O‘ahu.

Home Zip Code	Home City	Work Address	Work City	Work Zip Code	Count from (O) Home Zip Code to (D) Work Address
96744	KĀNE‘OHE	HAWAI‘I STATE HOSPITAL: 45-710 KEA‘AHALA ROAD	KĀNE‘OHE	96744	158
96797	WAIPAHU	AIRPORT: 300 RODGERS BLVD	HONOLULU	96819	72
96706	‘EWA BEACH	O‘AHU COMMUNITY CORRECTIONAL CENTER: 2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	60
96706	‘EWA BEACH	HAWAI‘I STATE HOSPITAL: 45-710 KEA‘AHALA ROAD	KĀNE‘OHE	96744	59
96792	WAI‘ANAE	AIRPORT: 300 RODGERS BLVD	HONOLULU	96819	58
96797	WAIPAHU	HAWAI‘I STATE HOSPITAL: 45-710 KEA‘AHALA ROAD	KĀNE‘OHE	96744	56
96706	‘EWA BEACH	HĀLAWA CORRECTIONAL FACILITY: 99-902 MOANALUA ROAD	‘AIEA	96701	50
96706	‘EWA BEACH	AIRPORT: 300 RODGERS BLVD	HONOLULU	96819	50
96744	KĀNE‘OHE	O‘AHU COMMUNITY CORRECTIONAL CENTER: 2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	42
96817	HONOLULU (KALIHI-PALAMA/LILIH A-KAPĀLAMA/NU ‘UANU)	PRINCESS RUTH KE‘ELIKŌLANI BUILDING: 830 PUNCHBOWL ST	HONOLULU	96813	42
96817	HONOLULU (KALIHI-PALAMA/LILIH A-	AIRPORT: 300 RODGERS BLVD	HONOLULU	96819	41

	KAPĀLAMA/NU 'UANU)				
96792	WAI'ANAE	HĀLAWA CORRECTIONAL FACILITY: 99-902 MOANALUA ROAD	'AIEA	96701	39
96819	HONOLULU (AIRPORT/MOA NALUA/KALIHI KAI/KALIHI VALLEY)	AIRPORT: 300 RODGERS BLVD	HONOLULU	96819	39
96797	WAIPAHU	O'AHU COMMUNITY CORRECTIONAL CENTER: 2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	38
96792	WAI'ANAE	O'AHU COMMUNITY CORRECTIONAL CENTER: 2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	38
96707	KAPOLEI	O'AHU COMMUNITY CORRECTIONAL CENTER: 2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	37
96707	KAPOLEI	HĀLAWA CORRECTIONAL FACILITY: 99-902 MOANALUA ROAD	'AIEA	96701	36

TRIP CHAIN ANALYSIS

This section presents an analysis of state employee commutes based on the number of stops along their commute. This analysis can help identify the greatest opportunities to encourage mode shift since those who make regular stops may need help to change their regular travel mode.

TRIP CHAIN SANKEY DIAGRAM

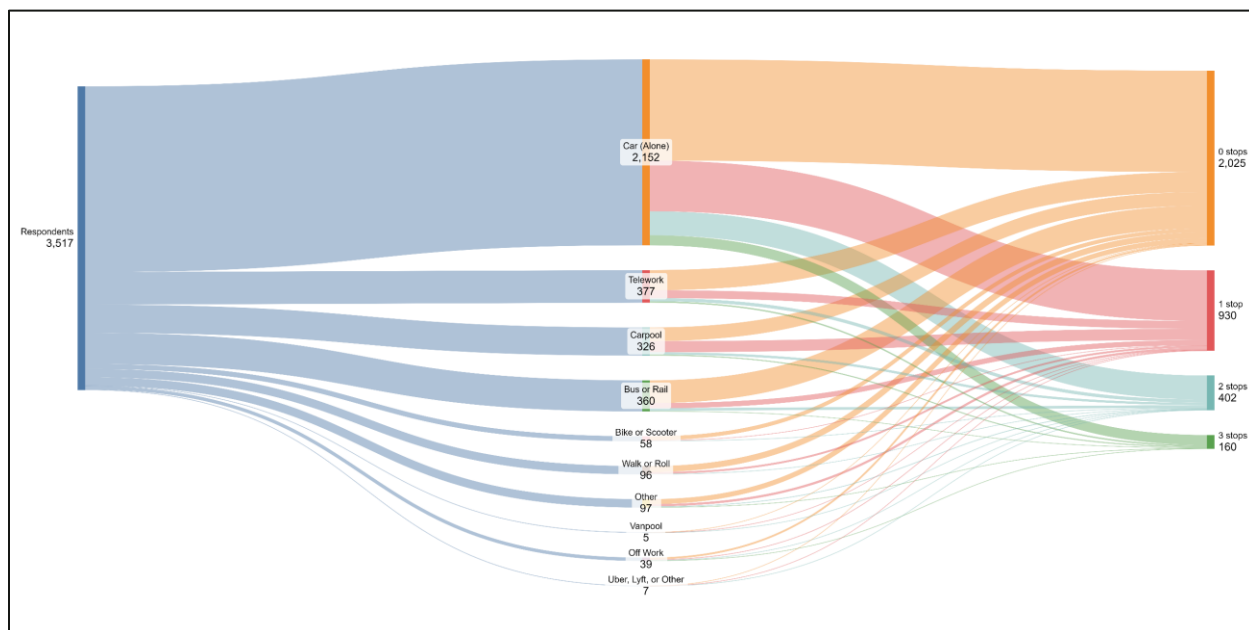


Figure 30. Trip Chain Sankey Diagram organized by travel mode.

Figure 30 presents a Sankey diagram that provides a high-level overview of commuting patterns among 3,517 survey respondents, showcasing the transportation modes' distribution and the number of stops made during commutes on O'ahu. The diagram highlights that most commuters travel alone by car, with 2,152 survey respondents using this mode, most of whom make zero stops during their commute. The diagram also reveals that as the number of stops increases, the number of respondents using active and shared modes decreases. More commuters engage in carpooling, bus or rail, or other forms of transportation for commutes involving zero stops.

Trip Chain Sankey Diagram Key Takeaways:

- **Dominance of Single-Occupancy Vehicles:** Most commuters travel alone by car, particularly those making zero stops, indicating a strong preference for single-occupancy vehicles.
- **Potential for Mode Shift with Multiple Stops:** As the number of stops increases, there's a noticeable shift away from single-occupancy vehicles towards carpooling, bus or rail, and other modes, suggesting that multi-stop commuters are more open to active and shared transportation options.
- **Opportunities for Encouraging Active and Shared Modes:** The data suggests opportunities to encourage the adoption of active and shared transportation modes, especially among commuters who currently drive alone but could potentially shift to carpooling or public transit with appropriate incentives or support.

TRIP CHAIN ORIGIN AND DESTINATION PAIRS (ZERO STOPS)

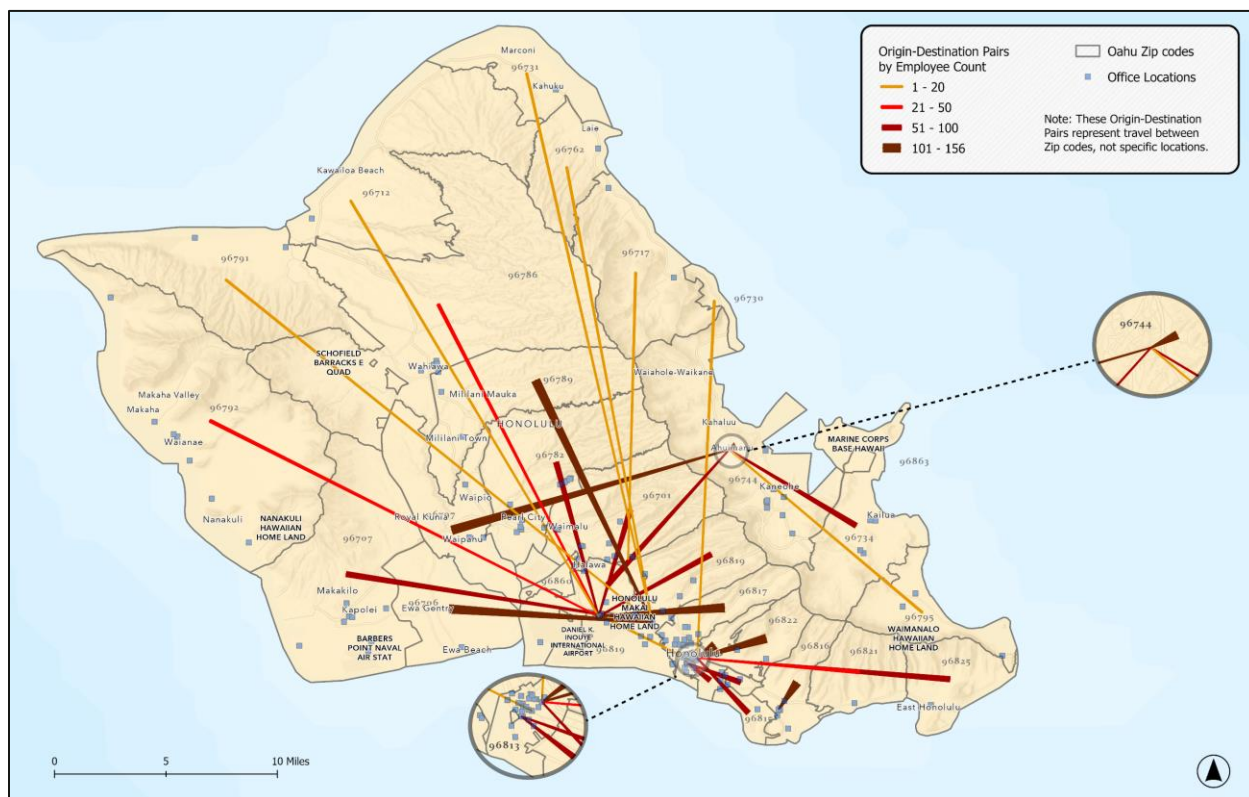


Figure 31. Trip chain origin and destination pairs (zero stops).

Figure 31 presents the trip-chaining origin-destination pairs for commuters with zero stops along their commute on O'ahu, highlighting key travel patterns that present significant opportunities for potential mode shift. The map reveals that a substantial number of direct commutes originate from various residential areas across the island, converging primarily in the urban center of Honolulu. The most heavily traveled routes are depicted by thicker lines, indicating higher employee counts. These direct, uninterrupted commutes suggest a strong potential for implementing transportation demand management strategies that incentivize active and shared transportation modes, such as carpooling, vanpooling, or public transit, to reduce the reliance on single-occupancy vehicles. According to the survey, 57.02% of state employees make zero stops on their route to work.

Trip Chain Origin and Destination Pairs (0 Stops) Key Takeaways:

- **High-Density Commutes to Honolulu:** The most frequent zero-stop commutes are directed towards Honolulu, indicating a concentrated demand for transportation services to this urban area.
- **Opportunities for Mode Shift:** The prevalence of direct commutes without stops along the way suggests a high potential for promoting active and shared transportation modes, such as carpooling or public transit, to reduce single-occupancy vehicle use.
- **Strategic Focus Areas:** Routes with the highest employee counts, as indicated by the thickest lines, should be prioritized for targeted interventions to encourage mode shift, improve overall transportation efficiency, and reduce congestion.

TRIP CHAIN ORIGIN AND DESTINATION PAIRS (ONE STOP)

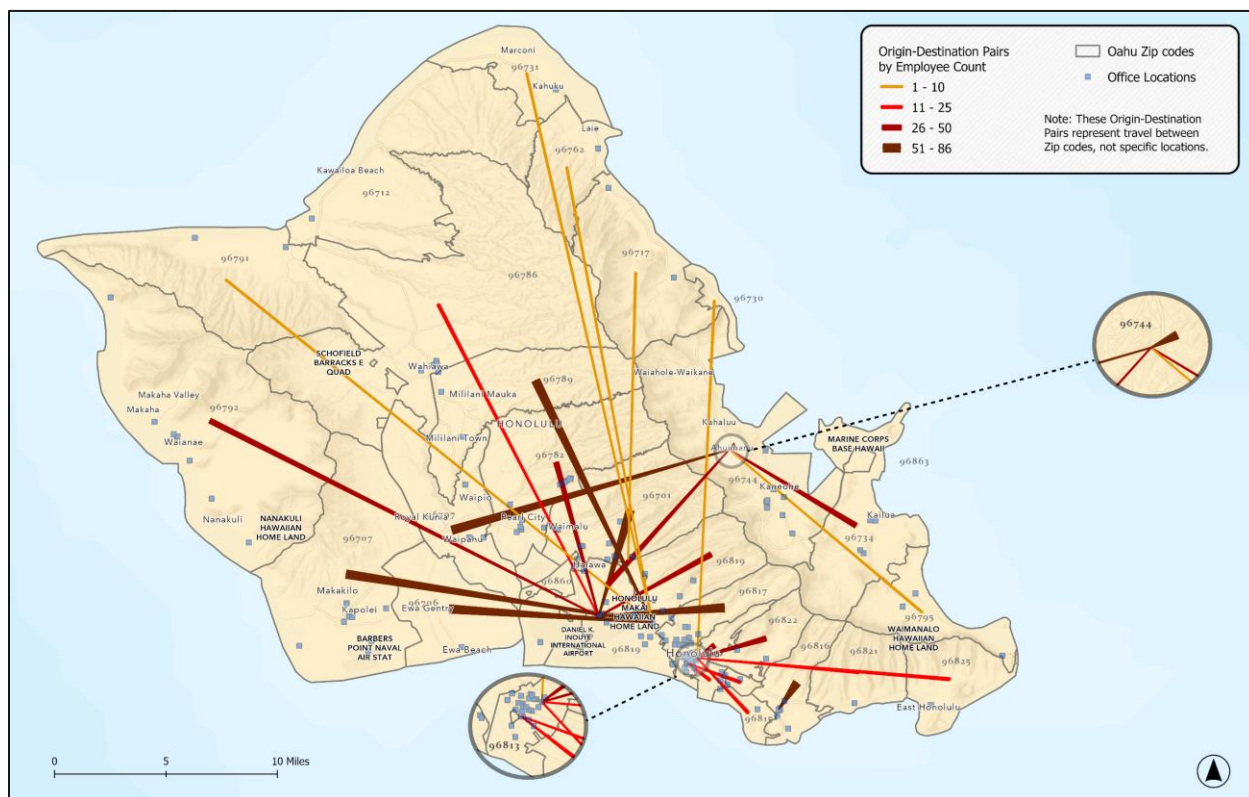


Figure 32. Trip chain origin and destination pairs (one stop).

Figure 32 presents origin-destination pairs for commuters with one stop along their trip on O‘ahu, revealing slightly different commuting patterns compared to the zero-stop scenario. While the core routes into Honolulu remain prominent, this map shows a broader distribution of commuting paths. It indicates that some employees are incorporating an additional stop, such as for school drop-offs, errands, or other activities, before reaching their final work destination. The most significant difference is the increased complexity in routes, particularly from residential areas further away from the urban center, such as Wai‘anae and the North Shore, where more varied paths are taken. This added complexity suggests different opportunities for mode shift, particularly in offering flexible or multi-modal transportation options that accommodate the diverse needs of these commuters. According to the survey, 24.65% of state employees make one stop on their route to work.

Trip Chain Origin and Destination Pairs (One Stop) Key Takeaways:

- **Increased Route Complexity:** Compared to zero-stop commutes, one-stop routes display more varied and complex patterns, particularly from areas farther from Honolulu, indicating more diverse commuting behaviors.
- **New Mode Shift Opportunities:** The presence of one-stop trips highlights the potential to develop flexible, multi-modal transportation solutions that can cater to the needs of commuters who make additional stops during their journey.
- **Broader Distribution of Commutes:** The broader spread of commuting routes with one stop suggests that transportation planning should consider these more complex travel patterns to serve state employees' diverse needs better.

TRIP CHAIN ORIGIN AND DESTINATION PAIRS (TWO STOPS)

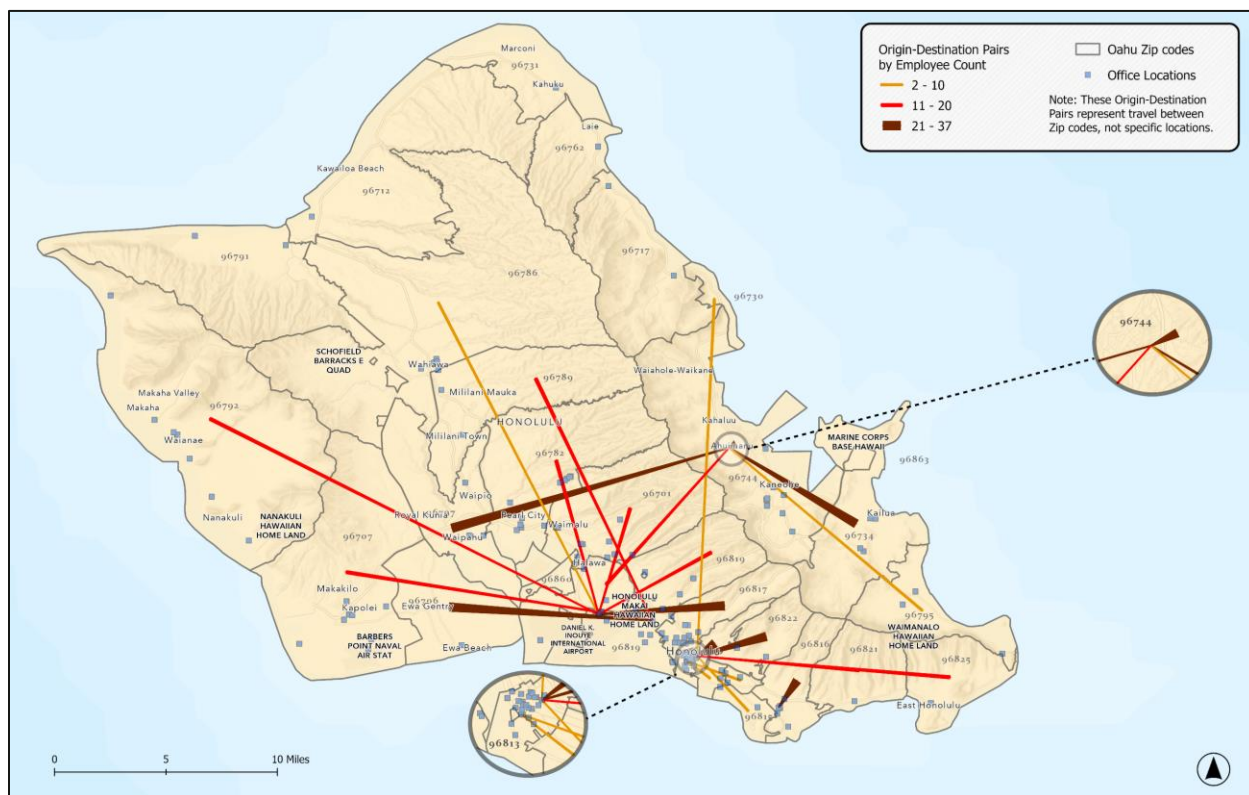


Figure 33. Trip chain origin and destination pairs (two stops).

Figure 33 presents origin-destination pairs for commuters with two stops along their trip on O‘ahu, revealing a more dispersed and complex commuting pattern compared to both zero-stop and one-stop scenarios. While the primary commuting routes to Honolulu remain evident, the overall density of these routes decreases, indicating fewer employees making two stops on their commute. The increased dispersion of these routes, particularly from outer residential areas like Wai‘anae and the North Shore, suggests that these commutes involve more varied and potentially longer journeys, possibly including school drop-offs, errands, or other intermediate stops. This scenario introduces unique challenges and opportunities for mode shift, particularly in developing personalized or flexible transportation options that accommodate these more complex travel needs. According to the survey, 10.66% of state employees make two stops on their route to work.

Trip Chain Origin and Destination Pairs (Two Stops) Key Takeaways:

- **Increased Dispersion and Complexity:** The two-stop commutes are more dispersed and complex, with fewer concentrated routes, reflecting a broader range of commuting behaviors and needs.
- **Lower Density of Two-Stop Routes:** The decrease in route density indicates that fewer employees engage in two-stop commutes, but those who do may require more tailored transportation solutions.
- **Potential for Specialized Transportation Solutions:** The varied and extended nature of these two-stop commutes highlights the need for specialized or flexible transportation options, such as dynamic routing or ride-sharing programs, to serve these employees' diverse needs better.

TRIP CHAIN ORIGIN AND DESTINATION PAIRS (THREE STOPS)

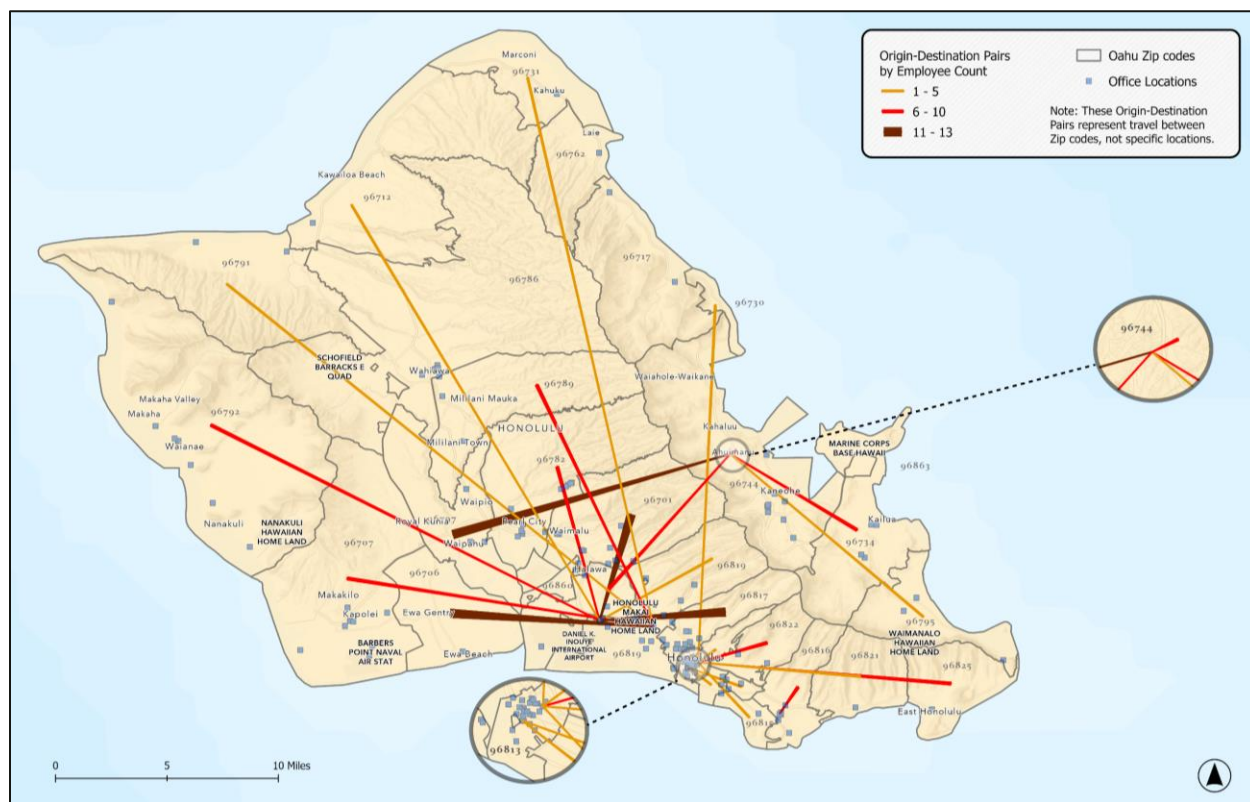


Figure 34. Trip chain origin and destination pairs (three stops).

Figure 34 presents origin-destination pairs for commuters with three stops along their trip on O‘ahu. The map shows the most dispersed and least concentrated commuting patterns compared to the previous scenarios. The routes are notably thinner and more widely spread, indicating that only a few employees engage in three-stop commutes. These commutes are primarily from residential areas farther from the urban Honolulu, such as Wai, the North Shore, and other outlying regions. The complexity of these routes suggests that these employees have highly individualized and varied commuting needs, likely incorporating multiple tasks or errands into their journey. This scenario presents unique challenges for transportation planning, emphasizing the need for highly flexible and possibly personalized transportation solutions. According to the survey, 4.30% of state employees make three stops on their route to work.

Trip Chain Origin and Destination Pairs (Three Stops) Key Takeaways:

- **Highly Dispersed Routes:** Three-stop commutes are the most dispersed, with very few employees following the same route, reflecting highly individualized commuting patterns.
- **Low Density of Commuters:** The thin and spread-out nature of these routes indicates that only a small number of employees make three stops during their commute, pointing to very specific and personal commuting needs.
- **Need for Highly Flexible Solutions:** The complex and varied nature of these commutes underscores the necessity for flexible, perhaps even personalized, transportation options that can accommodate these commuters' diverse and specific needs.

TRIP CHAIN TABLES BY COMMUTE MODE

The tables below (Table 15 and

Table 16) provide a detailed breakdown of primary travel modes commuters use on O‘ahu, categorized by the number of stops made during their journey from home to work. The data highlights that driving alone is the most common mode of transportation across all stop scenarios, with the highest counts observed in zero-stop and one-stop commutes. Carpooling, telework, and bus or rail are the next most frequently used modes, with their usage decreasing as the number of stops increases. As the number of stops increases to two or three, there is a noticeable decline in the use of all modes, reflecting the growing complexity and individualized nature of these commutes. Notably, very few commuters utilize vanpooling, bike or scooter, or walking/rolling as their primary mode, particularly as the number of stops increases, which may indicate barriers to using these modes for multi-stop commutes. According to the survey, 57.02% of state employees do not make any stops on their route from home to work, presenting the greatest opportunity for potential mode shift.

These insights suggest that most commuters prefer driving alone, especially simpler commutes with fewer stops. However, as the commute becomes more complex with additional stops, the reliance on single-occupancy vehicles remains high while adopting active and shared transportation modes like carpooling or public transit decreases. This data underscores the challenge of encouraging mode shift in more complex commuting scenarios and highlights the potential need for more tailored and flexible transportation solutions to accommodate multi-stop commuters.

Table 15. Trip chain table by commute mode (0 stops and 1 stop).

Primary Travel Mode	Stops from Home to Work	Count per Mode	Primary Travel Mode	Stops from Home to Work	Count per Mode
Bike or Scooter	0	45	Bike or Scooter	1	6
Bus or Rail	0	263	Bus or Rail	1	60
Car (drive-alone)	0	1172	Car (drive-alone)	1	586
Carpool (with others)	0	158	Carpool (with others)	1	129
Off Work	0	21	Off Work	1	8
Other (specify below)	0	57	Other (specify below)	1	26
Uber, Lyft, or Other	0	4	Uber, Lyft, or Other	1	1
Vanpool (shared commuter van)	0	3	Vanpool (shared commuter van)	1	1
Walk or Roll	0	69	Walk or Roll	1	22

Table 16. Trip chain table by commute code (2 stops and 3 stops).

Primary travel mode	Stops from Home to Work	Count per Mode	Primary travel mode	Stops from Home to Work	Count per Mode
Bike or Scooter	2	7	Bike or Scooter	3	0
Bus or Rail	2	30	Bus or Rail	3	7
Car (drive-alone)	2	278	Car (drive-alone)	3	116
Carpool (with others)	2	27	Carpool (with others)	3	12
Off Work	2	6	Off Work	3	4
Other (specify below)	2	9	Other (specify below)	3	5
Uber, Lyft, or Other	2	2	Uber, Lyft, or Other	3	0
Vanpool (shared commuter van)	2	1	Vanpool (shared Commuter van)	3	0
Walk or Roll	2	5	Walk or Roll	3	0

COMMUTE SHED ANALYSIS

This section presents an analysis of 21-30-minute commute sheds based on travel mode and an analysis of commuters using active travel modes living within 1 and 3 mile commute distances from their work destination. This includes figures showing the origin and destination pairs for commuters with a 21-30-minute commute that use transit, a table presenting the count of commuters by travel mode within a 21-30 minute commute shed, as well as the count of commuters by travel mode within a 21-30 minute commute shed based on origin zip code, and tables showing active travel mode usage for state employees living within 1 and 3 miles of their work destination, based on responses to the state employee survey. The 21-30 minute range was chosen for this commute shed analysis because this range was identified as the average trip duration and largest share of trip duration (24%) for all commuters on O'ahu. The 1- and 3-mile commute distances were selected to illustrate the current trends for active travel modes based on realistic distances that employees might bike, scooter, walk, or roll.

TRANSIT COMMUTE SHED FOR 21-30 MINUTE COMMUTES

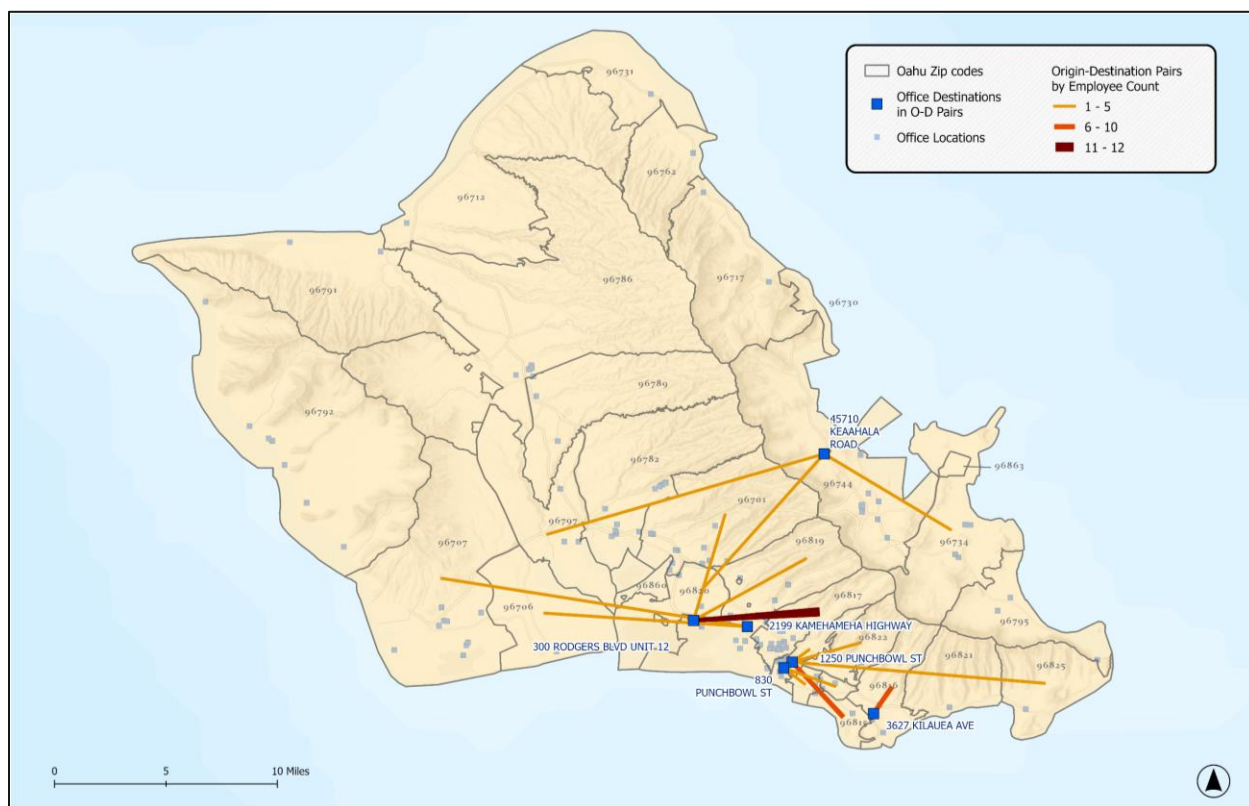


Figure 35. Transit commute shed for 21-30 minute commutes.

Figure 35 presents a map showing the 21-30-minute commute shed for transit commuters on O'ahu, showing the range within which transit users can travel to their workplaces within this time frame. The map highlights key origin-destination pairs, primarily concentrated around major office locations in Honolulu and other densely populated areas. The most prominent routes originate from residential areas within a 21-30-minute transit commute, emphasizing the accessibility of these locations via public transportation within this time window.

Transit Commute Shed Key Takeaways:

- **Concentration Around Major Employment Centers:** The commute shed is heavily focused on areas surrounding Honolulu, indicating that a 21–30-minute transit commute effectively serves employees working in urban Honolulu office locations.
- **Potential for Public Transit Optimization:** The consistent transit routes within this commute shed suggest opportunities to optimize and enhance public transportation services to further support and encourage transit use among commuters living within these accessible areas.
- **Limitations for Outlying Areas:** While the map shows strong coverage for urban Honolulu, outlying residential areas beyond the 30-minute mark may require additional transit options or active and shared modes to ensure efficient access to these employment centers.

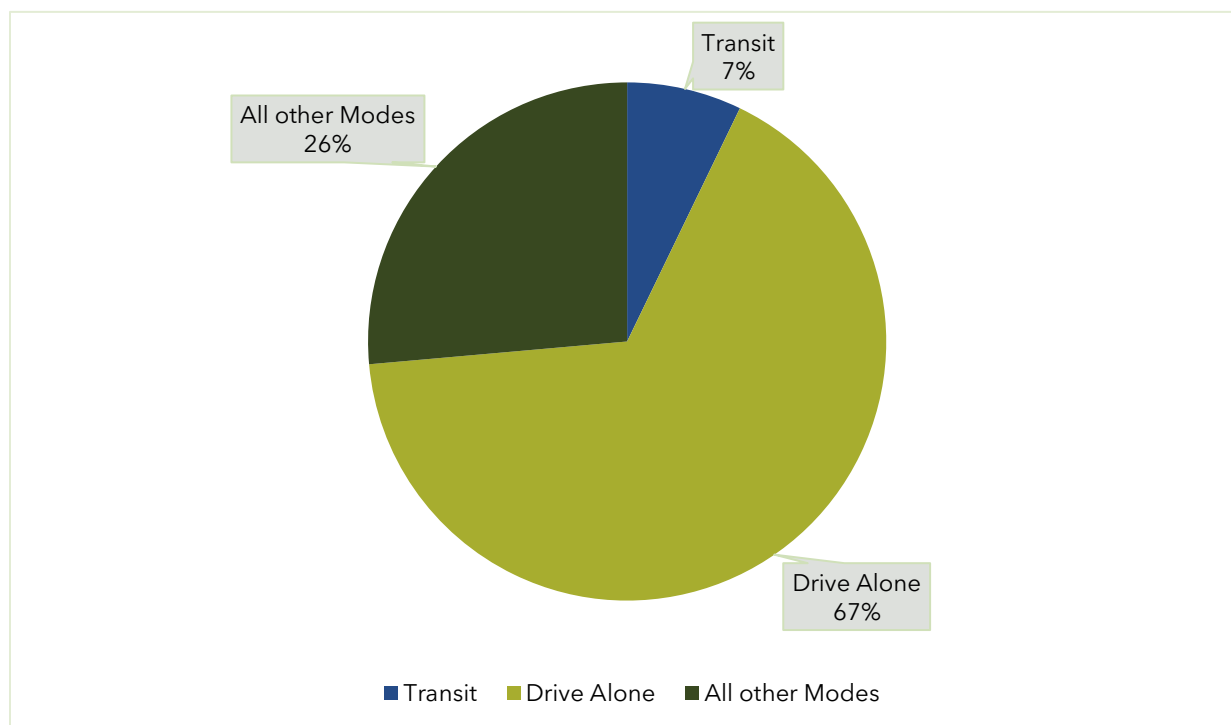
MODE SHARE FOR 21-30 MINUTE COMMUTE SHED

Figure 36. Number and Percentage of State Employees Within a 21-30-minute Commute Shed of their Work Destination.

Figure 36 illustrates the distribution of state employees within a 21–30-minute commute shed of their work destination, broken down by their primary mode of transportation. The chart reveals that a significant majority, 67%, of employees within this commute range drive alone to work. In contrast, only 7% of employees use public transit, highlighting a relatively low adoption of this mode despite being within a manageable commute time. The remaining 26% of employees utilize other modes of transportation, including carpooling, biking, walking, or other active and shared modes.

This data underscores the dominance of driving alone among state employees, even within a relatively short commute range, and suggests potential areas for intervention to promote more sustainable transportation options, particularly public transit.

ORIGIN ZIP CODE ANALYSIS FOR 21-30 MINUTE COMMUTE SHED

Table 17 presents data on state employees within a 21-30-minute commute shed, categorized by their origin, zip code, and primary mode of transportation. The data highlights the number of employees living in each zip code and breaks down their commute modes into three categories: transit, driving alone, and all modes combined, based on the survey to state employees. The tables reveal that, for most zip codes, driving alone is the predominant mode of transportation within this commute shed, significantly outnumbering those who use transit. The total number of employees who drive alone is consistently higher across nearly all zip codes, with transit usage remaining notably low.

This data underscores the challenges in shifting commuter behavior towards more sustainable modes, such as public transit, within this commute range. Despite the availability of transit options within a manageable 21-30-minute commute, the preference for driving alone remains strong, suggesting a need for targeted interventions to encourage mode shift and reduce single-occupancy vehicle use among state employees. The variation in commute modes across different zip codes also indicates that localized strategies might be necessary to address specific barriers to using public transit in these areas.

Table 17. State employees within a 21-30-minute commute shed, by origin zip code.

Origin Zip Code	Total Employees Living in this Zip Code	Count 21-30 min Transit	Count 21-30 min Drive Alone	Count 21-30 min All Modes
96706 ‘Ewa Beach	895	1	23	30
96744 Kāne‘ohe	884	1	50	56
96797 Waipahu	847	2	36	52
96817 Honolulu (Kalihi-Palama/Liliha-Kapālama/Nu‘uanu)	704	12	44	81
96789 Mililani	682	0	32	47
96816 Honolulu (Pālolo/Kaimukī/Wai‘alae-Kahala)	555	8	49	84
96707 Kapolei	545	1	11	15
96701 “Aiea	532	1	41	53
96822 Honolulu (Makiki/Mānoa)	531	4	32	58
96782 Pearl City	494	0	32	40

96792 Wai'anāe	468	0	7	10
96813 Honolulu (Downtown/Kaka'ako/Nu'uano)	461	3	22	45
96818 Honolulu (Āliamanu-Salt Lake/Pearl Harbor)	458	4	38	51
96819 Honolulu (Airport/Moanalua/Kalihi Kai/Kalihi Valley)	425	2	30	38
96734 Kailua	378	2	31	40
96825 Honolulu (Hawai'i Kai)	312	1	17	22
96826 Honolulu (McCully-Mō'ili'ili)	280	5	10	24
96814 Honolulu (Ala Moana)	268	4	17	29
96815 Honolulu (Waikīkī/Diamond Head-Kapahulu)	243	9	12	32

ACTIVE TRAVEL MODE COMMUTE SHED

The active travel mode commute shed analysis focuses on state employees living within 1 and 3 miles of their work destination and assesses their use of active modes of transportation, such as walking, rolling, biking, or scootering. Table 18 and Table 19 highlight the current usage patterns of these modes among survey respondents and identifies potential opportunities to encourage more active commuting.

Table 18. Active Travel Mode Usage For Survey Respondents Within a 1 Mile Commute Shed.

Survey Respondents With a Commute Distance of 1 Mile or Less	Walk or Roll	Bike or Scooter	All Active Modes Combined (walk or roll + bike or scooter)
153* *4.33% of all respondents	50.32% (77 respondents)	5.89% (9 respondents)	56.20% (86 respondents)

Active Travel Mode Commute Shed Key Takeaways (1 Mile Commute Shed):

- Among employees living within 1 mile of their workplace, 56.20% already use active modes, with 50.32% walking or rolling. This high usage indicates a strong preference for active commuting when the distance is short.
- 5.89% of respondents within this distance bike or scooter to work, suggesting that there may be room to increase biking through incentives and promoting bicycle resources, but it isn't a significant commuting trend among state employees within a 1-mile commute shed.

Table 19. Active Travel Mode Usage For Survey Respondents Within a 3 Mile Commute Shed.

Survey Respondents With a Commute Distance of 3 Miles or Less	Walk or Roll	Bike or Scooter	All Active Modes Combined (walk or roll + bike or scooter)
528* *14.92% of all respondents	20.45% (108 respondents)	6.25% (33 respondents)	26.70% (141 respondents)

Active Travel Mode Commute Shed Key Takeaways (3 Mile Commute Shed):

- For employees living within 3 miles, active mode usage drops to 26.70% (as compared to the 1 mile or less commute shed), with a nearly 30% decrease in walking or rolling. This decline suggests that distance might be a barrier to active commuting for state employees.
- With 6.25% biking or scootering (less than 1% increase from the 1-mile commute shed), strategies to boost active commuting for state employees living within the 3-mile commute shed may not be effective.
- Targeted incentives aimed at increasing active commuting might be most effective for employees with commutes of 1 mile or less, as there is a significantly greater percentage of commuters using active modes with 1 mile or less commute distance as compared to those within the 3 mile or less commute shed.

KEY FINDINGS

TRAVEL TRENDS INSIGHTS

The analysis of state employee travel patterns revealed several important insights into the commuting behaviors and preferences on O‘ahu. Most notably, there is a significant preference for driving alone, even within a manageable 21-30 minute commute shed, highlighting the need for cost-effective and efficient TDM strategies that can incentivize shifts in behavior. The data showed that a few employees rely on public transit, indicating limited flexibility for those needing to manage family obligations or other personal tasks en route. As a result, strategies such as promoting flexible transit options like the Holo card with hop-on-hop-off capabilities may help alleviate these challenges and encourage greater transit use. Moreover, identifying travel trends for each mode of transportation has provided actionable insights that can inform targeted policy recommendations.

Key findings include:

- **Home Addresses and Zip Codes:** A significant concentration of state employees resides in west, central, urban, and windward O‘ahu, particularly around Honolulu. This clustering suggests that transportation resources should be concentrated in these areas to maximize impact.
- **Commuter Origin and Destination Assessment:** Most commutes are concentrated between a few key origin and destination pairs, particularly in and around urban Honolulu. The data indicates that most state employees live relatively close to their workplaces, which presents opportunities for promoting active and public transportation options.
- **Drive Alone Commuter Trends:** The prevalence of drive-alone commutes underscores the convenience and flexibility valued by state employees. However, the high volume of drive-alone commuters with zero stops, highlights a segment of state employees that are ripe for mode shift.
- **Travel Mode Availability and Preferences:** Drive-alone remains dominant across most zip codes, with public transit and carpooling showing lower adoption. This preference highlights the need for strategies that make active and shared modes more attractive, such as enhanced service reliability, convenience, amenities, incentives, and cost-effectiveness.
- **Statistical Analysis of Commuter Data:** The analysis reveals a consistent preference for personal vehicle use across various demographics, though younger employees show a slightly higher propensity for using public transit. The data also indicates that commute time significantly influences mode choice, with longer commutes leading to higher use of public transit and carpooling.
- **Identification of Travel Trends and Patterns:** State employees who commute with multiple stops are less likely to adopt active and shared transportation modes, indicating that targeted, multi-modal focused TDM strategies could effectively reduce single-occupancy vehicle use for those who do not make any stops when commuting.

POTENTIAL CHALLENGES

The findings also underscore several challenges within the current transportation system, particularly the lack of access to active and shared modes of transportation for those who do not drive alone. The analysis revealed unmet needs, especially among those who are less likely to have access to a vehicle, pointing to the importance of creating more inclusive and accessible transportation options. These challenges highlight the critical need for strategic interventions that address these gaps and improve overall mobility for state employees.

The study identifies several challenges that could impact the effectiveness of proposed transportation strategies:

- **Unmet Needs in Current Active and Public Transportation Services:** The lack of frequent and reliable bus service, particularly outside of urban Honolulu, as well as significantly longer commutes made via transit relative to driving commutes, hinders the adoption of public transit options. Additionally, the low use of vanpool, walk, and bike/scooter options suggests potential barriers, such as safety concerns or lack of infrastructure and supportive amenities.
- **Vehicle Dependence:** The high reliance on personal vehicles, even within short commute distances, presents a significant challenge for promoting active and shared modes. Efforts will need to focus on incentivizing active modes and public transit.
- **Equity Considerations:** The disparity in transportation access and options among different demographic groups, particularly those living in less dense areas, requires targeted interventions to ensure equitable access to sustainable transportation.

OPPORTUNITIES

Building on the insights and challenges identified, several opportunities have emerged to enhance transportation planning and policy on O'ahu. The findings suggest a clear path for developing more efficient, flexible, and sustainable transportation solutions that better serve the needs of state employees. These opportunities will be pivotal in shaping the next steps and recommendations for the Transportation Demand Management Plan, ensuring that the proposed strategies are effective and responsive to state employees' unique commuting patterns and needs.

The findings present several opportunities for enhancing transportation services and policies:

- **Incentivizing Public Transit Options:** Increasing the frequency, reliability, and coverage of public transit could significantly reduce the reliance on personal vehicles, particularly for those within a 21-30 minute commute shed. Current trends show a willingness to use transit, even for commutes that originate outside of Honolulu. Providing a financial incentive for public transit can encourage employees to choose public transit over driving alone, given that total trip time is longer than driving, and bus/rail frequency and reliability is not always optimal.
- **Carpooling and Vanpooling Incentives:** Developing targeted incentives for carpooling and vanpooling, such as priority parking and financial subsidies, could encourage more employees to shift away from single-occupancy vehicle use.
- **Infrastructure Improvements:** Investing in infrastructure that supports active transportation, such as bike lanes and pedestrian paths, especially in areas with high concentrations of state employees, could encourage more sustainable commute choices.
- **Data-Driven Policy Making:** Leveraging the detailed origin and destination data can guide the allocation of resources and planning of services, ensuring that interventions are targeted where they can have the most impact.
- **Targeted Strategies Based on Origin and Destination Pairs:** Using the top origin and destination pairs presents an opportunity to prompt and implement TDM strategies at locations where they would be most effective. Shared modes will be most effective when there is paired origin and destination density, which this analysis provides.
- **Targeted Active Mode-Based TDM Strategies For Short Distance Commutes:** Targeted incentives aimed at increasing active commuting might be most effective for employees with commutes of 1 mile or less, as there is a significantly greater percentage of commuters using active modes with 1 mile or less commute distance as compared to those within the 3 mile or less commute shed.

APPENDIX

APPENDIX A

DETAILED TABLE OF ORIGIN AND DESTINATION PAIRS

Home Zip Code	Work Address	Work City	Work Zip Code	Count from (O) Home Zip Code to (D) Work Address
96744	45-710 KEA'AHALA ROAD	KĀNE'OHE	96744	158
96797	300 RODGERS BLVD	HONOLULU	96819	72
96706	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	60
96706	45-710 KEA'AHALA ROAD	KĀNE'OHE	96744	59
96792	300 RODGERS BLVD	HONOLULU	96819	58
96797	45-710 KEA'AHALA ROAD	KĀNE'OHE	96744	56
96706	99-902 MOANALUA ROAD	'AIEA	96701	50
96706	300 RODGERS BLVD	HONOLULU	96819	50
96744	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	42
96817	830 PUNCHBOWL ST	HONOLULU	96813	42
96817	300 RODGERS BLVD	HONOLULU	96819	41
96792	99-902 MOANALUA ROAD	'AIEA	96701	39
96819	300 RODGERS BLVD	HONOLULU	96819	39
96797	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	38
96792	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	38
96707	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	37
96707	99-902 MOANALUA ROAD	'AIEA	96701	36
96707	601 KAMOKILA BLVD	KAPOLEI	96707	36
96734	45-710 KEA'AHALA ROAD	KĀNE'OHE	96744	35
96707	45-710 KEA'AHALA ROAD	KĀNE'OHE	96744	35
96706	601 KAMOKILA BLVD	KAPOLEI	96707	35
96744	99-902 MOANALUA ROAD	'AIEA	96701	35
96818	300 RODGERS BLVD	HONOLULU	96819	34

96706	601 KAMOKILA BLVD	KAPOLEI	96707	34
96782	300 RODGERS BLVD	HONOLULU	96819	34
96701	300 RODGERS BLVD	HONOLULU	96819	34
96816	830 PUNCHBOWL ST	HONOLULU	96813	33
96822	830 PUNCHBOWL ST	HONOLULU	96813	33
96816	3627 KĪLAUEA AVE	HONOLULU	96816	33
96813	1151 PUNCHBOWL ST	HONOLULU	96813	32
96817	1250 PUNCHBOWL ST	HONOLULU	96813	31
96797	99-902 MOANALUA ROAD	‘AIEA	96701	31
96744	300 RODGERS BLVD	HONOLULU	96819	30
96706	830 PUNCHBOWL ST	HONOLULU	96813	30
96744	42-477 KALANIANA‘OLE HIGHWAY	KAILUA	96734	30
96818	45-710 KEA‘AHALA ROAD	KĀNE‘OHE	96744	29
96818	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	29
96813	830 PUNCHBOWL ST	HONOLULU	96813	29
96817	45-710 KEA‘AHALA ROAD	KĀNE‘OHE	96744	28
96819	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	28
96789	300 RODGERS BLVD	HONOLULU	96819	27
96817	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	26
96707	300 RODGERS BLVD	HONOLULU	96819	26
96822	335 MERCHANT ST	HONOLULU	96813	26
96789	830 PUNCHBOWL ST	HONOLULU	96813	26
96816	1151 PUNCHBOWL ST	HONOLULU	96813	26
96822	1250 PUNCHBOWL ST	HONOLULU	96813	26
96797	601 KAMOKILA BLVD	KAPOLEI	96707	26
96817	335 MERCHANT ST	HONOLULU	96813	25
96792	601 KAMOKILA BLVD	KAPOLEI	96707	25
96813	1250 PUNCHBOWL ST	HONOLULU	96813	25
96797	601 KAMOKILA BLVD	KAPOLEI	96707	25
96797	830 PUNCHBOWL ST	HONOLULU	96813	25
96701	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	25
96744	335 MERCHANT ST	HONOLULU	96813	25
96818	1250 PUNCHBOWL ST	HONOLULU	96813	24

96819	45-710 KEA'AHALA ROAD	KĀNE'OHE	96744	24
96707	601 KAMOKILA BLVD	KAPOLEI	96707	24
96706	830 PUNCHBOWL ST	HONOLULU	96813	24
96789	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	24
96816	1151 PUNCHBOWL ST	HONOLULU	96813	23
96813	425 QUEEN ST	HONOLULU	96813	22
96744	1151 PUNCHBOWL ST	HONOLULU	96813	22
96813	335 MERCHANT ST	HONOLULU	96813	22
96744	1151 PUNCHBOWL ST	HONOLULU	96813	22
96789	99-902 MOANALUA ROAD	'AIEA	96701	22
96822	1151 PUNCHBOWL ST	HONOLULU	96813	22
96701	45-710 KEA'AHALA ROAD	KĀNE'OHE	96744	21
96792	42-477 KALANIANA'OLE HIGHWAY	KAILUA	96734	21
96706	601 KAMOKILA BLVD	KAPOLEI	96707	21
96797	1151 PUNCHBOWL ST	HONOLULU	96813	21
96789	2827 WAIMANO HOME ROAD	PEARL CITY	96782	21
96818	830 PUNCHBOWL ST	HONOLULU	96813	21
96816	1250 PUNCHBOWL ST	HONOLULU	96813	20
96706	42-477 KALANIANA'OLE HIGHWAY	KAILUA	96734	20
96818	830 PUNCHBOWL ST	HONOLULU	96813	20
96701	335 MERCHANT ST	HONOLULU	96813	20
96707	830 PUNCHBOWL ST	HONOLULU	96813	20
96797	830 PUNCHBOWL ST	HONOLULU	96813	20
96822	830 PUNCHBOWL ST	HONOLULU	96813	20
96817	1151 PUNCHBOWL ST	HONOLULU	96813	20
96706	1177 ALAKEA ST	HONOLULU	96813	20
96797	1151 PUNCHBOWL ST	HONOLULU	96813	20
96782	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	20
96782	830 PUNCHBOWL ST	HONOLULU	96813	19
96817	1151 PUNCHBOWL ST	HONOLULU	96813	19
96797	1250 PUNCHBOWL ST	HONOLULU	96813	19
96789	335 MERCHANT ST	HONOLULU	96813	19
96797	1002 N SCHOOL ST	HONOLULU	96817	19

96813	1151 PUNCHBOWL ST	HONOLULU	96813	19
96816	869 PUNCHBOWL ST	HONOLULU	96813	19
96817	1010 RICHARDS ST	HONOLULU	96813	19
96826	830 PUNCHBOWL ST	HONOLULU	96813	19
96792	94-560 KAMEHAMEHA HIGHWAY	WAIPAHU	96797	18
96707	91-5420 KAPOLEI PARKWAY	KAPOLEI	96707	18
96789	1250 PUNCHBOWL ST	HONOLULU	96813	18
96789	94-560 KAMEHAMEHA HIGHWAY	WAIPAHU	96797	18
96822	300 RODGERS BLVD	HONOLULU	96819	18
96819	830 PUNCHBOWL ST	HONOLULU	96813	18
96792	91-5420 KAPOLEI PARKWAY	KAPOLEI	96707	18
96707	601 KAMOKILA BLVD	KAPOLEI	96707	18
96797	335 MERCHANT ST	HONOLULU	96813	17
96822	3627 KĪLAUEA AVE	HONOLULU	96816	17
96826	830 PUNCHBOWL ST	HONOLULU	96813	17
96816	425 QUEEN ST	HONOLULU	96813	17
96797	2201 WAIMANO HOME ROAD	PEARL CITY	96782	17
96782	335 MERCHANT ST	HONOLULU	96813	17
96818	99-902 MOANALUA ROAD	‘AIEA	96701	17
96744	1177 ALAKEA ST	HONOLULU	96813	17
96706	335 MERCHANT ST	HONOLULU	96813	17
96789	830 PUNCHBOWL ST	HONOLULU	96813	17
96701	830 PUNCHBOWL ST	HONOLULU	96813	17
96795	45-710 KEA‘AHALA ROAD	KĀNE‘OHE	96744	17
96822	1151 PUNCHBOWL ST	HONOLULU	96813	16
96701	99-902 MOANALUA ROAD	‘AIEA	96701	16
96826	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	16
96816	300 RODGERS BLVD	HONOLULU	96819	16
96706	601 KAMOKILA BLVD	KAPOLEI	96707	16
96825	830 PUNCHBOWL ST	HONOLULU	96813	16
96816	830 PUNCHBOWL ST	HONOLULU	96813	16
96792	45-710 KEA‘AHALA ROAD	KĀNE‘OHE	96744	16
96813	830 PUNCHBOWL ST	HONOLULU	96813	16

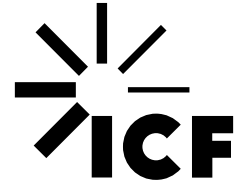
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96817	425 QUEEN ST	HONOLULU	96813	16
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96822	425 QUEEN ST	HONOLULU	96813	16
96789	601 KAMOKILA BLVD	KAPOLEI	96707	16
96744	1250 PUNCHBOWL ST	HONOLULU	96813	15
96706	1177 ALAKEA ST	HONOLULU	96813	15
96825	335 MERCHANT ST	HONOLULU	96813	15
96825	1250 PUNCHBOWL ST	HONOLULU	96813	15
96782	2827 WAIMANO HOME ROAD	PEARL CITY	96782	15
96789	869 PUNCHBOWL ST	HONOLULU	96813	15
96818	335 MERCHANT ST	HONOLULU	96813	15
96744	45-691 KEA'AHALA ROAD	KĀNE'OHE	96744	15
96734	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	15
96706	94-560 KAMEHAMEHA HIGHWAY	WAIPAHU	96797	15
96814	830 PUNCHBOWL ST	HONOLULU	96813	15
96706	727 KAKOI ST	HONOLULU	96819	15
96782	45-710 KEA'AHALA ROAD	KĀNE'OHE	96744	15
96744	830 PUNCHBOWL ST	HONOLULU	96813	15
96795	42-477 KALANIANA'OLE HIGHWAY	KAILUA	96734	15
96817	869 PUNCHBOWL ST	HONOLULU	96813	15
96825	1151 PUNCHBOWL ST	HONOLULU	96813	15
96744	830 PUNCHBOWL ST	HONOLULU	96813	14
96797	601 KAMOKILA BLVD	KAPOLEI	96707	14
96813	300 RODGERS BLVD	HONOLULU	96819	14
96706	91-5420 KAPOLEI PARKWAY	KAPOLEI	96707	14
96817	830 PUNCHBOWL ST	HONOLULU	96813	14
96786	300 RODGERS BLVD	HONOLULU	96819	14
96789	400 RODGERS BLVD	HONOLULU	96819	14
96816	335 MERCHANT ST	HONOLULU	96813	14
96792	1177 ALAKEA ST	HONOLULU	96813	14
96789	1151 PUNCHBOWL ST	HONOLULU	96813	14
96825	425 QUEEN ST	HONOLULU	96813	14
96706	2827 WAIMANO HOME ROAD	PEARL CITY	96782	14

96797	94-560 KAMEHAMEHA HIGHWAY	WAIPAHU	96797	14
96789	45-710 KEA'AHALA ROAD	KĀNE'OHE	96744	14
96706	94-275 MOKUOLA ST	WAIPAHU	96797	13
96782	601 KAMOKILA BLVD	KAPOLEI	96707	13
96813	201 MERCHANT ST	HONOLULU	96813	13
96814	1151 PUNCHBOWL ST	HONOLULU	96813	13
96792	86-120 FARRINGTON HIGHWAY	WAI'ANAE	96792	13
96701	1250 PUNCHBOWL ST	HONOLULU	96813	13
96819	1250 PUNCHBOWL ST	HONOLULU	96813	13
96707	1151 PUNCHBOWL ST	HONOLULU	96813	13
96817	465 S KING ST	HONOLULU	96813	13
96817	1390 MILLER ST	HONOLULU	96813	13
96789	2201 WAIMANO HOME ROAD	PEARL CITY	96782	13
96734	869 PUNCHBOWL ST	HONOLULU	96813	13
96817	478 S KING ST	HONOLULU	96813	13
96825	3627 KĪLAUEA AVE	HONOLULU	96816	13
96817	1177 ALAKEA ST	HONOLULU	96813	13
96819	335 MERCHANT ST	HONOLULU	96813	13
96817	99-902 MOANALUA ROAD	'AIEA	96701	13
96826	335 MERCHANT ST	HONOLULU	96813	13
96706	1151 PUNCHBOWL ST	HONOLULU	96813	13
96789	99-945 HĀLAWA VALLEY ST	'AIEA	96701	13
96744	869 PUNCHBOWL ST	HONOLULU	96813	13
96816	2199 KAMEHAMEHA HIGHWAY	HONOLULU	96819	13
96782	99-902 MOANALUA ROAD	'AIEA	96701	13
96817	1002 N SCHOOL ST	HONOLULU	96817	13
96701	869 PUNCHBOWL ST	HONOLULU	96813	12
96744	3627 KĪLAUEA AVE	HONOLULU	96816	12
96797	2725 WAIMANO HOME ROAD	PEARL CITY	96782	12
96822	201 MERCHANT ST	HONOLULU	96813	12
96792	89-070 FARRINGTON HIGHWAY	WAI'ANAE	96792	12
96789	601 KAMOKILA BLVD	KAPOLEI	96707	12
96782	1250 PUNCHBOWL ST	HONOLULU	96813	12

96814	1250 PUNCHBOWL ST	HONOLULU	96813	12
96814	1151 PUNCHBOWL ST	HONOLULU	96813	12
96795	99-902 MOANALUA ROAD	‘AIEA	96701	12
96816	250 S HOTEL ST	HONOLULU	96813	12
96789	425 QUEEN ST	HONOLULU	96813	12
96789	601 KAMOKILA BLVD	KAPOLEI	96707	12
96816	3949 DIAMOND HEAD ROAD	HONOLULU	96816	12
96744	45-513 LULUKU ROAD	KĀNE‘OHE	96744	12
96701	400 RODGERS BLVD	HONOLULU	96819	12
96821	1151 PUNCHBOWL ST	HONOLULU	96813	12
96797	400 RODGERS BLVD	HONOLULU	96819	12
96797	1010 RICHARDS ST	HONOLULU	96813	12
96814	830 PUNCHBOWL ST	HONOLULU	96813	12
96797	869 PUNCHBOWL ST	HONOLULU	96813	12
96814	335 MERCHANT ST	HONOLULU	96813	12
96797	601 KAMOKILA BLVD	KAPOLEI	96707	11
96701	1177 ALAKEA ST	HONOLULU	96813	11
96786	99-902 MOANALUA ROAD	‘AIEA	96701	11
96818	1010 RICHARDS ST	HONOLULU	96813	11
96786	830 PUNCHBOWL ST	HONOLULU	96813	11
96797	420 WAIAKAMILO ROAD	HONOLULU	96817	11
96815	830 PUNCHBOWL ST	HONOLULU	96813	11
96734	335 MERCHANT ST	HONOLULU	96813	11
96815	1250 PUNCHBOWL ST	HONOLULU	96813	11
96817	1130 N NIMITZ HIGHWAY	HONOLULU	96817	11
96744	3949 DIAMOND HEAD ROAD	HONOLULU	96816	11
96816	1700 LANAKILA AVE	HONOLULU	96817	11
96744	235 S BERETANIA ST	HONOLULU	96813	11
96744	42-470 KALANIANA‘OLE HIGHWAY	KAILUA	96734	11
96815	335 MERCHANT ST	HONOLULU	96813	11
96734	42-477 KALANIANA‘OLE HIGHWAY	KAILUA	96734	11
96792	601 KAMOKILA BLVD	KAPOLEI	96707	11

96817	420 WAIAKAMILO ROAD	HONOLULU	96817	11
96706	1151 PUNCHBOWL ST	HONOLULU	96813	11
96822	1700 LANAKILA AVE	HONOLULU	96817	11
96782	1151 PUNCHBOWL ST	HONOLULU	96813	11
96822	1010 RICHARDS ST	HONOLULU	96813	11
96819	830 PUNCHBOWL ST	HONOLULU	96813	11
96744	45-829 KAMEHAMEHA HIGHWAY	KĀNE‘OHE	96744	11
96706	3949 DIAMOND HD RD	HONOLULU	96816	10
96818	1151 PUNCHBOWL ST	HONOLULU	96813	10
96782	601 KAMOKILA BLVD	KAPOLEI	96707	10
96701	1010 RICHARDS ST	HONOLULU	96813	10
96734	99-902 MOANALUA ROAD	‘AIEA	96701	10
96706	91-1299 MIDWAY ROAD	KAPOLEI	96707	10
96815	235 S BERETANIA ST	HONOLULU	96813	10
96707	601 KAMOKILA BLVD	KAPOLEI	96707	10
96822	1390 MILLER ST	HONOLULU	96813	10
96782	869 PUNCHBOWL ST	HONOLULU	96813	10
96797	1177 ALAKEA ST	HONOLULU	96813	10
96825	1151 PUNCHBOWL ST	HONOLULU	96813	10
96707	400 RODGERS BLVD	HONOLULU	96819	10
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96789	601 KAMOKILA BLVD	KAPOLEI	96707	10
96786	601 KAMOKILA BLVD	KAPOLEI	96707	10
96706	1250 PUNCHBOWL ST	HONOLULU	96813	10
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96701	830 PUNCHBOWL ST	HONOLULU	96813	10
96744	1010 RICHARDS ST	HONOLULU	96813	10
96813	869 PUNCHBOWL ST	HONOLULU	96813	10
96701	601 KAMOKILA BLVD	KAPOLEI	96707	10
96826	1151 PUNCHBOWL ST	HONOLULU	96813	10
96701	3627 KĪLAUEA AVE	HONOLULU	96816	10
96792	42-470 KALANIANA‘OLE HIGHWAY	KAILUA	96734	10
96818	1151 PUNCHBOWL ST	HONOLULU	96813	10
96825	830 PUNCHBOWL ST	HONOLULU	96813	10
96797	1390 MILLER ST	HONOLULU	96813	10

96706	300 RODGERS BLVD	HONOLULU	96819	10
96744	2827 WAIMANO HOME ROAD	PEARL CITY	96782	10



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