Analysis of the 2022 Seattle Commute Survey in support of the Seattle Subarea Planning

Downtown, Northgate, First Hill / Capitol Hill

Lamis Ashour | PhD Candidate
Qing Shen | Professor

UNIVERSITY of WASHINGTON
DEPARTMENT OF URBAN DESIGN AND PLANNING
College of Built Environments

ACKNOWLEDGEMENT

This research was made possible by generous funding provided by the Office of Planning & Community Development (OPCD), City of Seattle. The analysis presented here is based on Seattle Commute Survey 2022, conducted in partnership with Commute Seattle and the Mobility Innovation Center at University of Washington. The research team would like to thank Jesse London, Erica Bush, and Tim Lehman for their leadership, guidance and significant contribution to the project.

Public agency partners and consultants have also contributed to the project by providing important data and feedback, including Seattle Department of Transportation (SDOT), Agency Landscape + Planning, SEVA Workshop, BAE Urban Economics, and Tahoma Peak Solutions.

Authors

Lamis Ashour, Ph.D. Candidate, Interdisciplinary Ph.D. Program in Urban Design and Planning, University of Washington

Dr. Qing Shen, (Principal Investigator), Professor, Department of Urban Design and Planning, University of Washington

Citation

Ashour, L., Shen, Q. (2024). *Analysis of the 2022 Seattle Commute Survey in support of the Seattle Subarea Planning..*

Copyright Information

GLOSSARY

CTR-affected employee: a full-time employee who begins their regular work day at an affected employer's worksite between six (6:00) a.m. and nine (9:00) a.m. (inclusive) on two (2) or more weekdays for at least twelve continuous months, who is not an independent contractor, and who is scheduled to be employed on a continuous basis for fifty-two weeks for an average of at least thirty-five hours per week.

CTR-affected employer: a private or public employer, including government agencies, that employs one hundred (100) or more affected employees at a single worksite.

Commute trips: trips made from an employee's residence to a worksite during the peak period of 6 a.m. to 9 a.m. on weekdays.

Commute mode: the type of transportation used by employees, such as public transit, drive-alone, or active modes.

Rideshare: this term is used in this report to refer to shared modes of transportation including carpool, vanpool, and employer shuttle.

Non-motorized transport (NMT): human powered transport, referring to walking, cycling, and variants such as wheelchair, scooter, and handcart use.

Origin / Destination (OD): OD represents movement through geographic space, from an origin (O) to a destination (D). OD datasets contain details of trips between two geographic points or, more commonly, zones.

TABLE OF CONTENTS

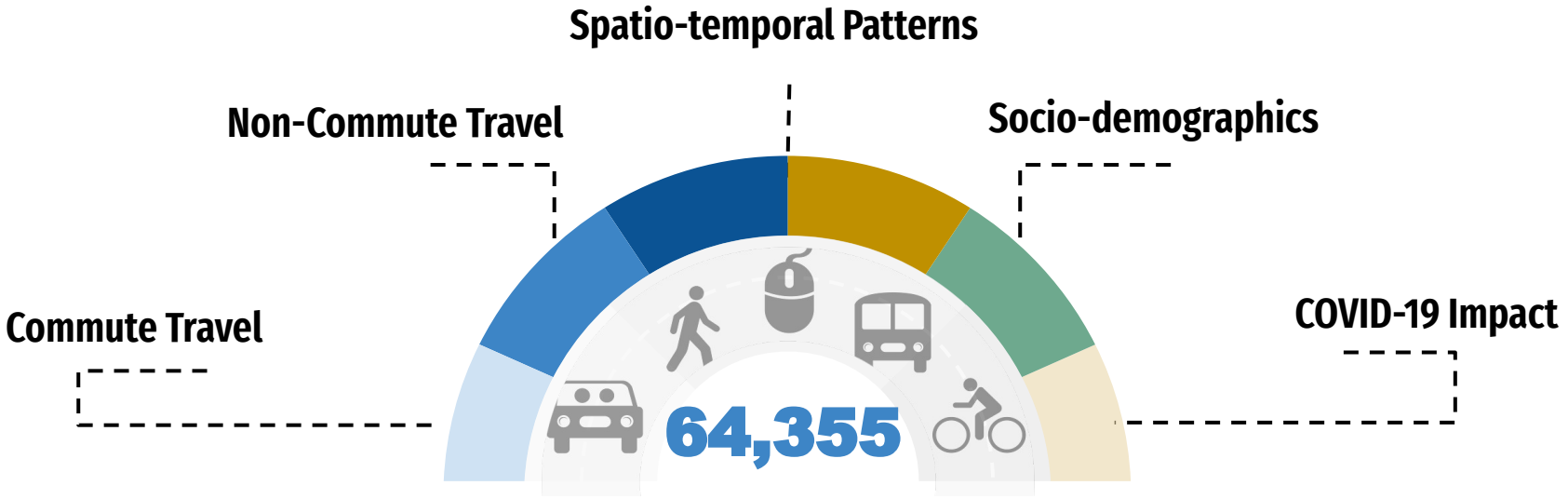
Page No.

Overview

The work presented in this report is aimed at providing data on, and analysis of, commuting and non commuting travel patterns and user characterestics in three subareas of Seattle: Downtown, Northgate, and First Hill / Capitol Hill. It highlights the transportation challenges that must be addressed in Seattle Subarea Planning (SSP). In Downtown, SSP targets revitalizing the area by increasing its appeal as a residential and commercial destination by enriching different modes of travel and addressing the lack of maintenance and investment in multimodal infrastructure to enhance street safety and appeal. In Northgate, SSP promotes initiatives such as breaking up superblocks, enhancing walkability, improving access to the light rail station, and reducing parking space. For First Hill/Capitol Hill, SSP focuses on increasing investment in shared public spaces, promoting a dense urban lifestyle with alternative transportation options.

Seattle Commute Survey 2022

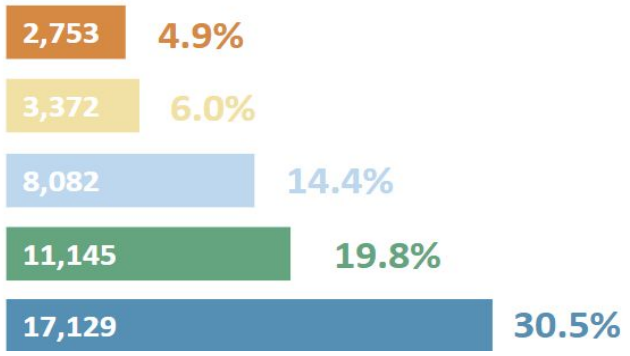
The analysis presented in this report builds upon the 2022 Seattle Commute Survey which aimed to understand commuter behaviors and preferences in the Seattle area, providing valuable insights for transportation planners regarding demographic patterns, employment dynamics, and housing locations. In collaboration with the Downtown Transportation Alliance, Commute Seattle partnered with the University of Washington's Mobility Innovation Center and the Department of Urban Design and Planning in designing and implementing the survey. The survey garnered 64,355 responses, revealing significant variations in commute patterns and mode choice for various trips types. The survey questions focused on the topics shown in the graphic below. Throughout this report, questions from the survey will be referenced by "Q" followed by the question number.



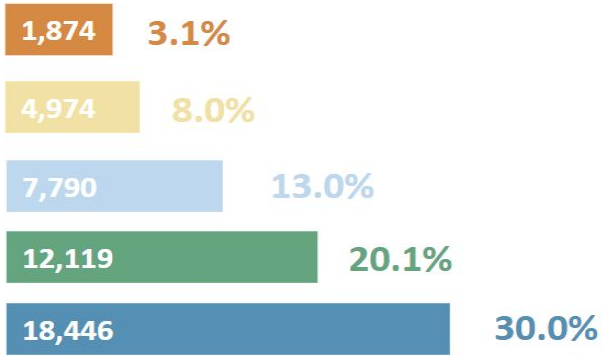
2022 Seattle Commute Survey

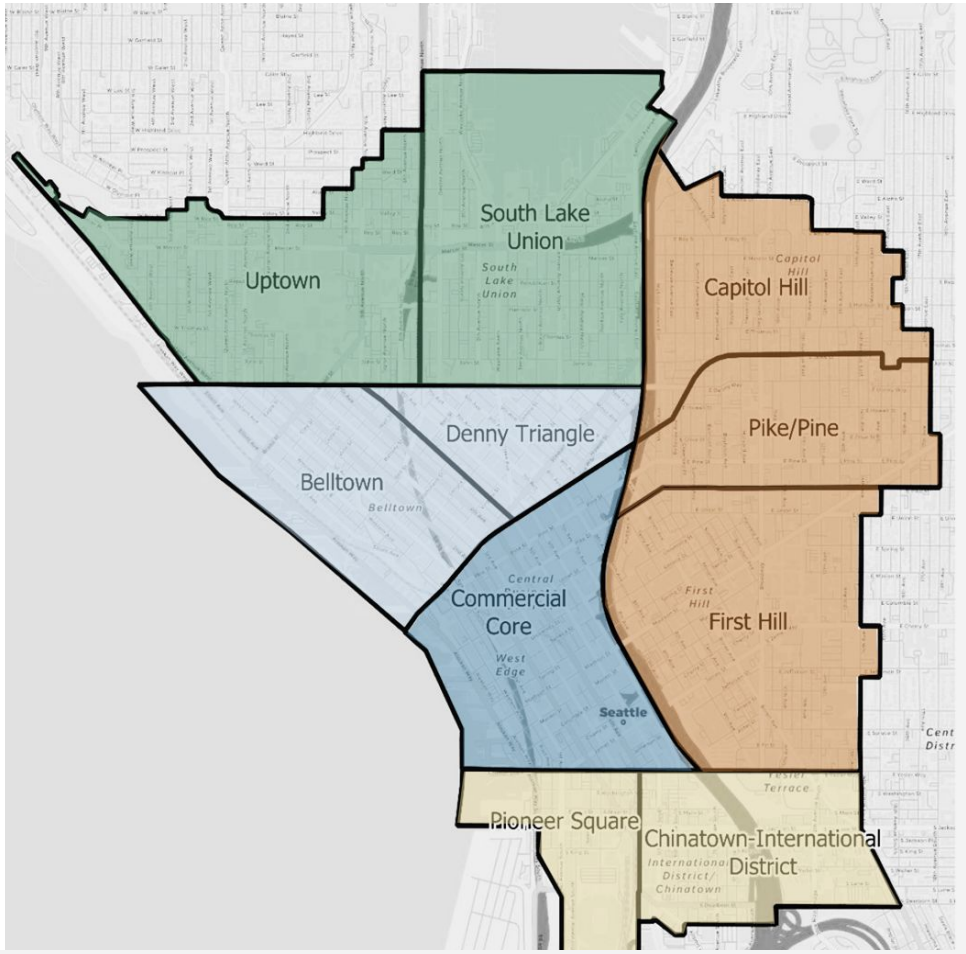
The Washington State Commute Trip Reduction (CTR) law requires worksites with 100 or more full-time employees who begin their shift between 6 and 9 a.m. on weekdays to conduct a biannual commute survey. The survey has mainly targeted CTR-affected worksites in the Center City area. The response volume of workers in each of the center city neighborhoods is shown in the graphs below.

% CTR Responses per Center City Neighborhood



% Survey Responses per Center City Neighborhood

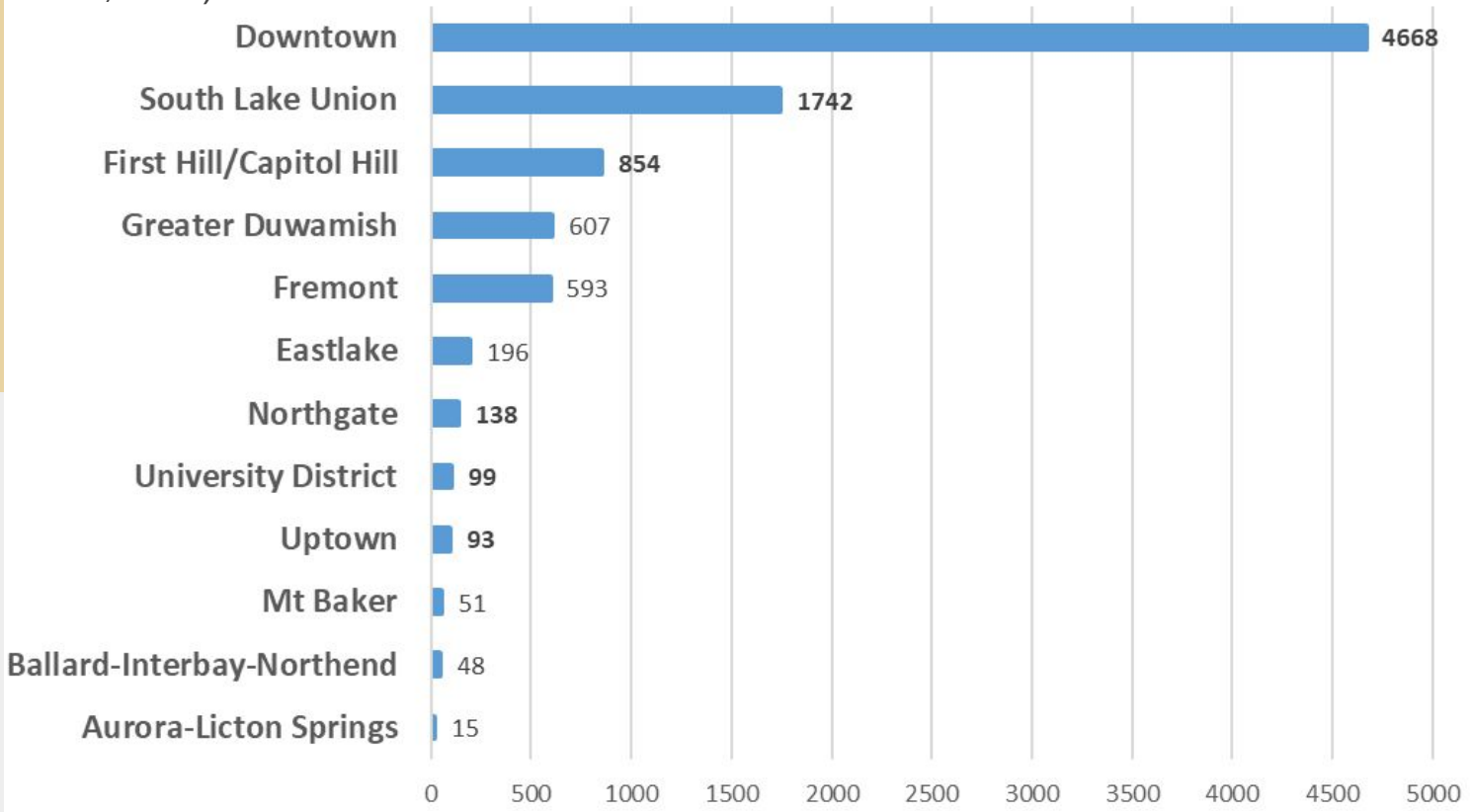


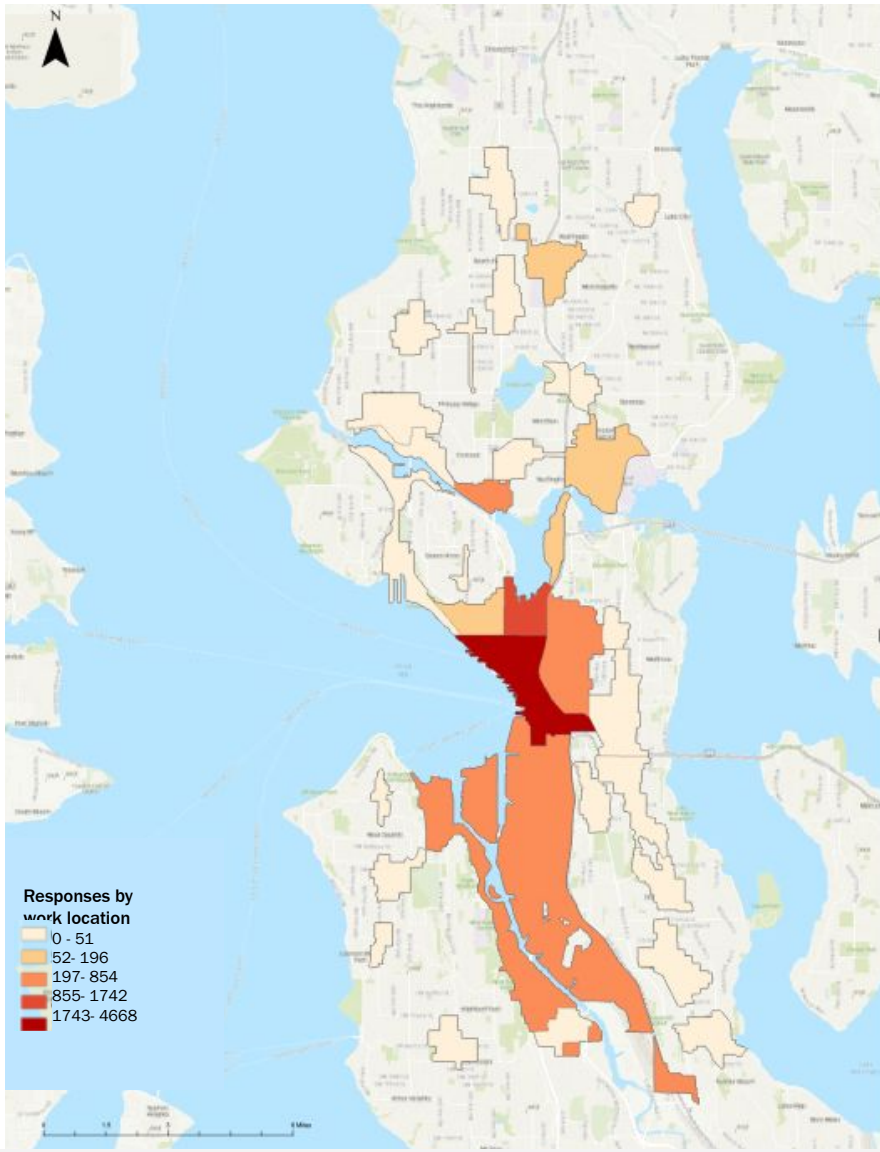


The map on this slide shows the neighborhoods which make up Seattle Center City (Downtown) area. Different colors denote for neighborhood designations within the survey geography boundaries. The graphs reflect the percentage of CTR responses (CTR-affected employers) in each designation from the CTR responses N (56,161); and the percentage of survey responses in each designation from total survey responses N (61,628)

Commute Survey Responses by Subarea | Workers

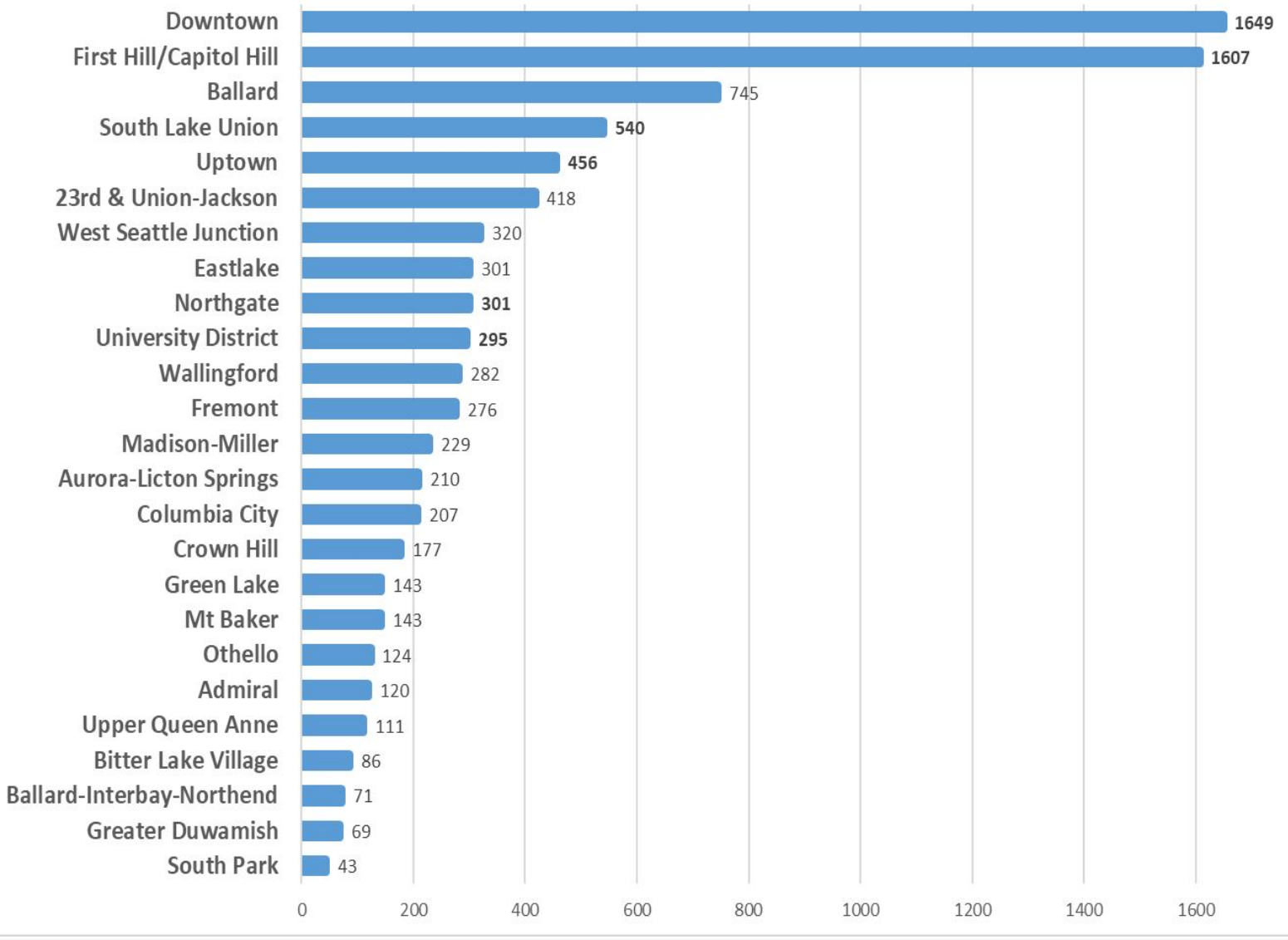
The number of respondents who work in selected subareas in Seattle are shown in the graph below. For this neighborhood planning project, we have excluded survey responses that were missing the home location of respondents. This resulted in a smaller sample size (n = 41,628).

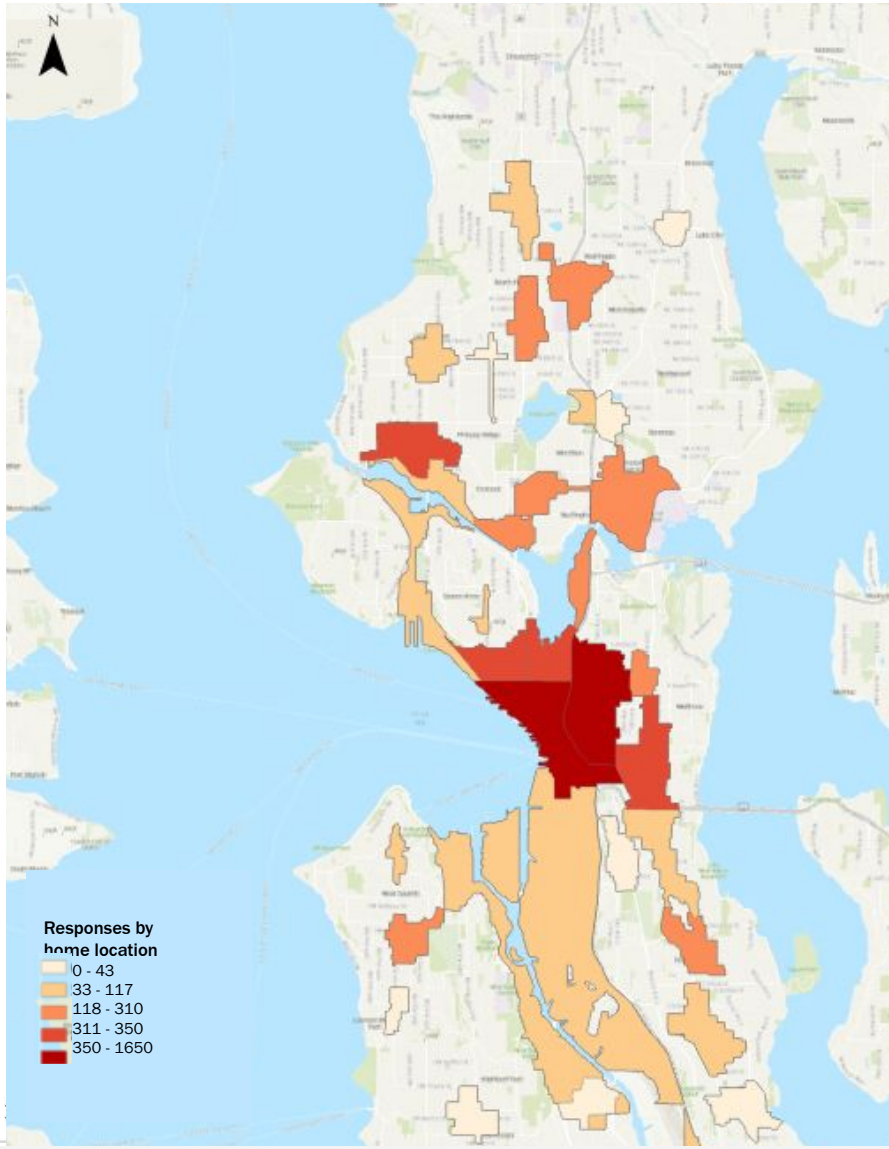




The map on this slide shows the neighborhoods which make up Selected Subareas for current and future analysis, as part of the Subarea Planning Project. Different colors denote for the number of responses in each area. The response rate reflects the number of respondents who work in each one of these areas. The sample excludes responses who did not specify an approximate home location in Question 41 (Q41) of the survey (n=41,628).

Commute Survey Responses by Subarea| Residents





The map on this page shows the neighborhoods which make up Selected Subareas for current and future analysis, as part of the Subarea Planning Project. Different colors denote for the number of responses in each area..
The response rate reflect the number of respondents who live in each one of these areas. The sample excludes responses who did not specify an approximate home location in Q41 of the survey N=(41,628)

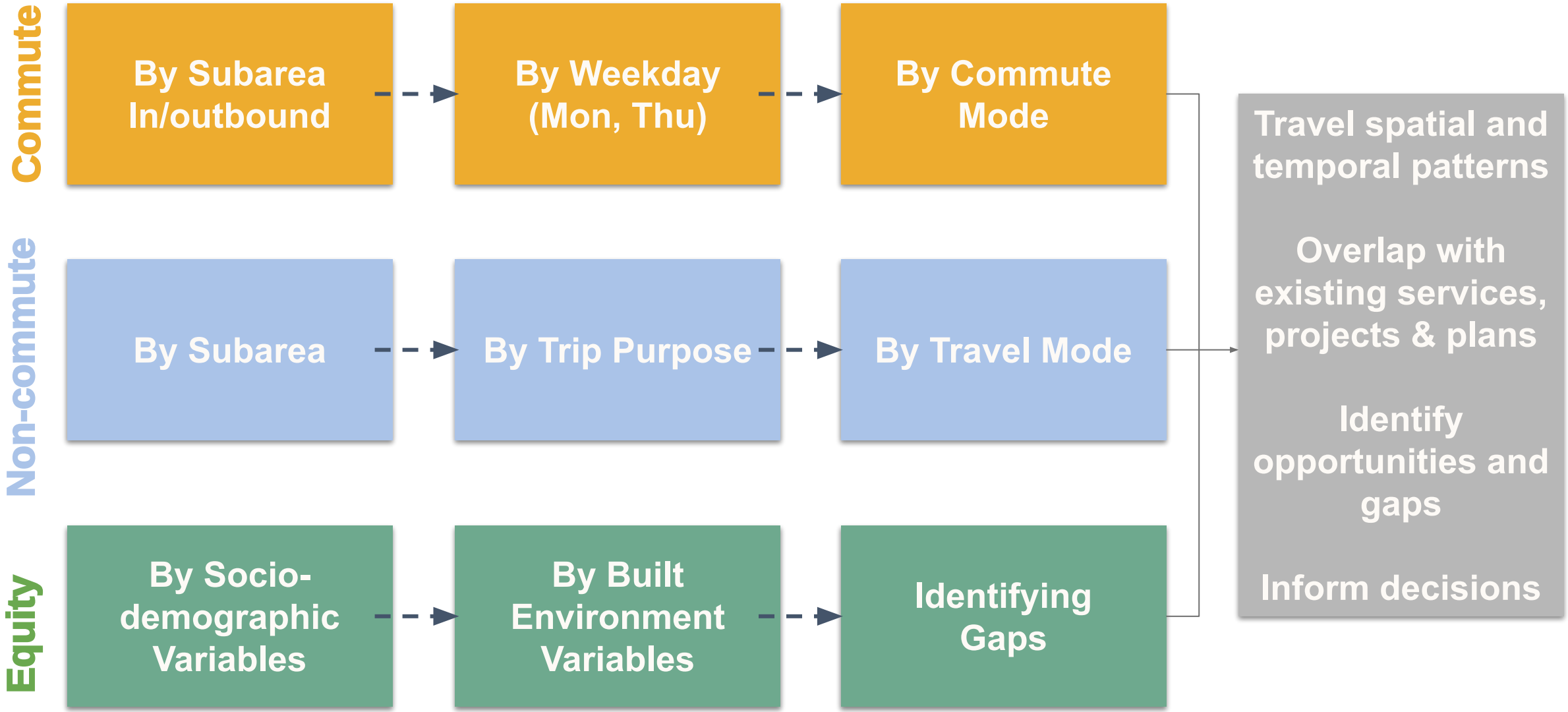
Selected Subareas
Background and Demographics

Selected Subareas| Objectives

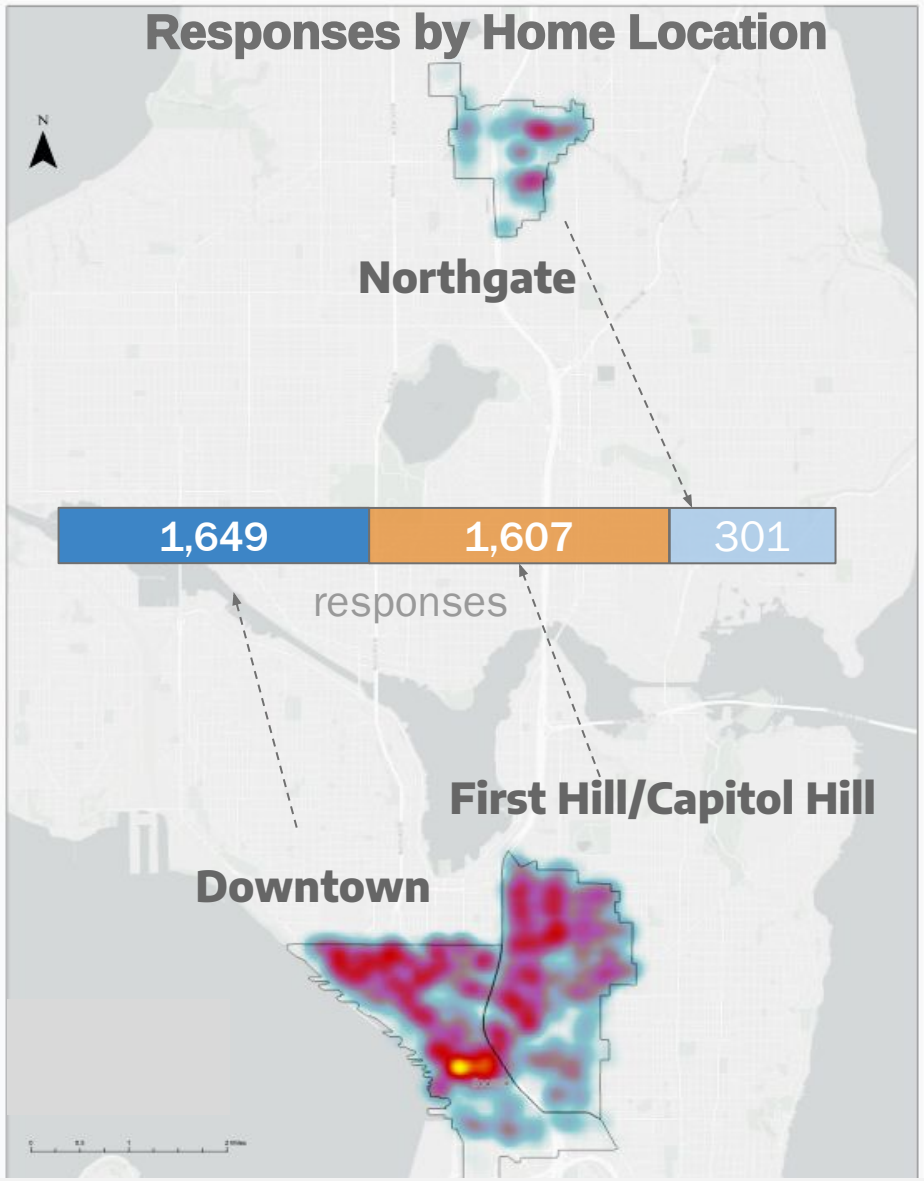
Using the Seattle Commute Survey data and other data sources, this research focuses on three main subareas to:

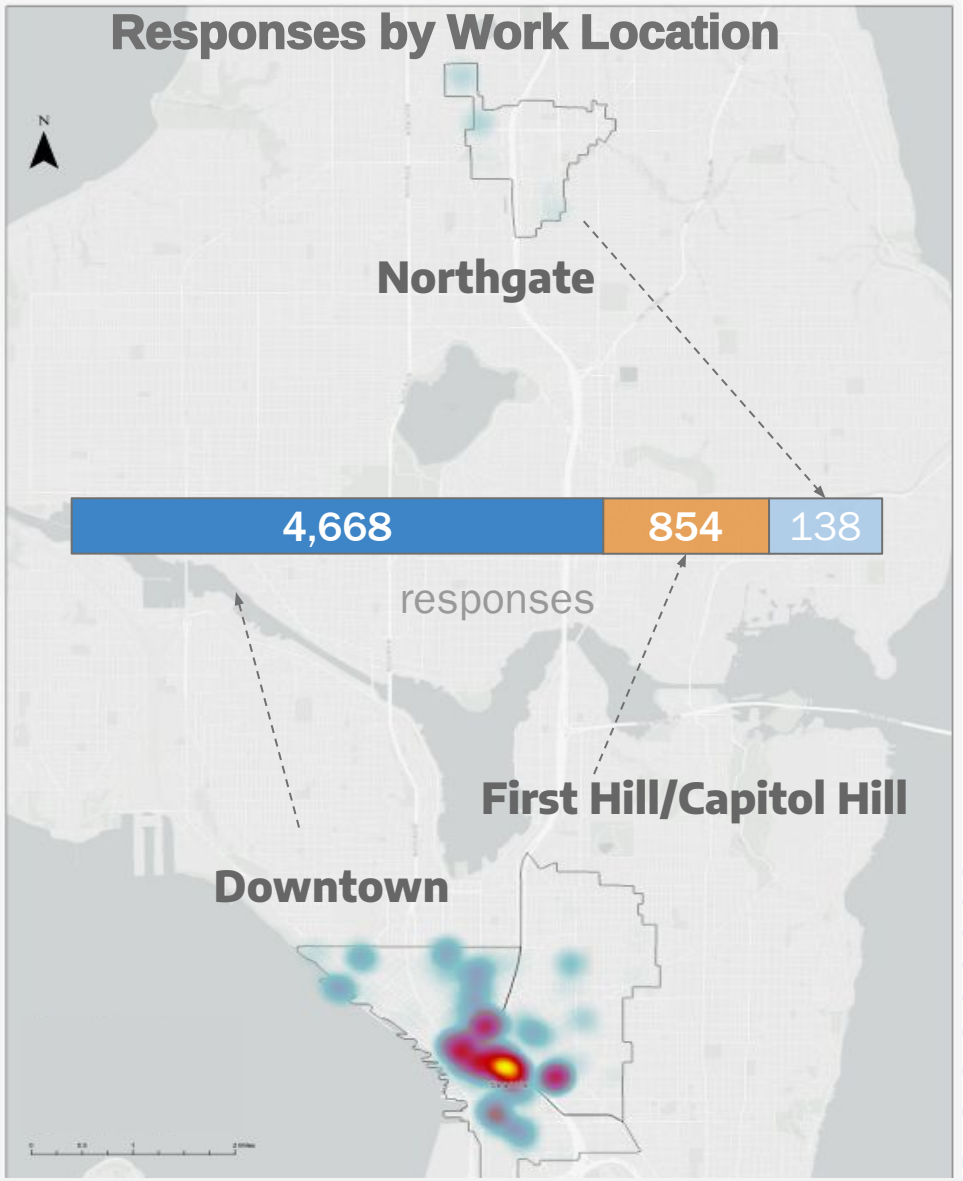
- Build a better understanding on mode split and mobility patterns in key subareas
- Formulate strategies to achieve mode split goals focusing on sustainable modes
- Inform and guide a context-sensitive multimodal design in the selected subareas
- Inform parking management goals and strategies in the selected subareas
- Recommend possible car-free streets and enhance shared and communal areas

Selected Subareas| Methodological Framework



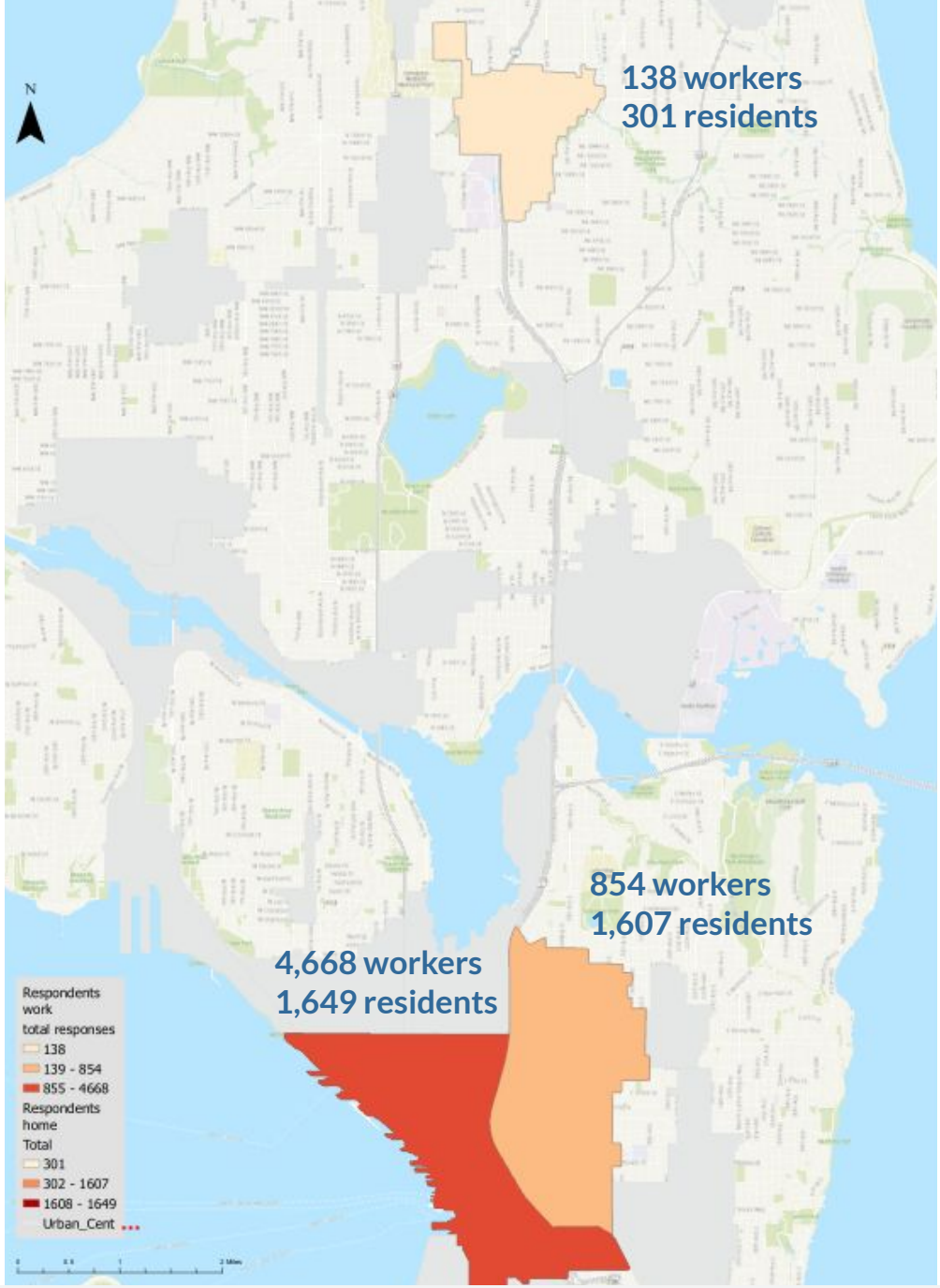
Selected Subareas| Survey Responses by home/work





The left map on this page shows the survey responses mapped by the home location of respondents, and presented as hotspots of respondents who live in the three subareas. Responses with no home location were excluded (N= 3,557)
The right map on this page shows the survey responses mapped by the work location of respondents, and presented as hotspots of respondents who work in the three subareas. Responses with no home location were excluded (N= 5,660)

Subarea Demographic Profile 2023



First Hill/Capitol Hill

51,997 Population
34.7 Median Age
1.4 Average Household Size
$87,894 Median Household Income

EDUCATION

3.0% No High School Diploma
7.7% High School Graduate
16.3% Some College/ Associate's Degree
72.9% Bachelor's/Grad/ Prof Degree

BUSINESS

2,538 Total Businesses
52,197 Total Employees

EMPLOYMENT

83.0% White Collar
5.0% Blue Collar
11.9% Services
5.1% Unemployment Rate

INCOME

$87,894
$85,375
$42,814

Downtown

45,796 Population
39.6 Median Age
1.5 Average Household Size
$116,019 Median Household Income

EDUCATION

6.0% No High School Diploma
8.9% High School Graduate
15.4% Some College/ Associate's Degree
69.7% Bachelor's/Grad/ Prof Degree

BUSINESS

8,005 Total Businesses
153,347 Total Employees

EMPLOYMENT

87.1% White Collar
4.7% Blue Collar
8.2% Services
4.3% Unemployment Rate

INCOME

$116,019
$106,235
$62,356

Northgate

8,322 Population
36.9 Median Age
1.8 Average Household Size
$60,998 Median Household Income

EDUCATION

5.2% No High School Diploma
14.0% High School Graduate
25.9% Some College/ Associate's Degree
54.9% Bachelor's/Grad/ Prof Degree

BUSINESS

724 Total Businesses
9,170 Total Employees

EMPLOYMENT

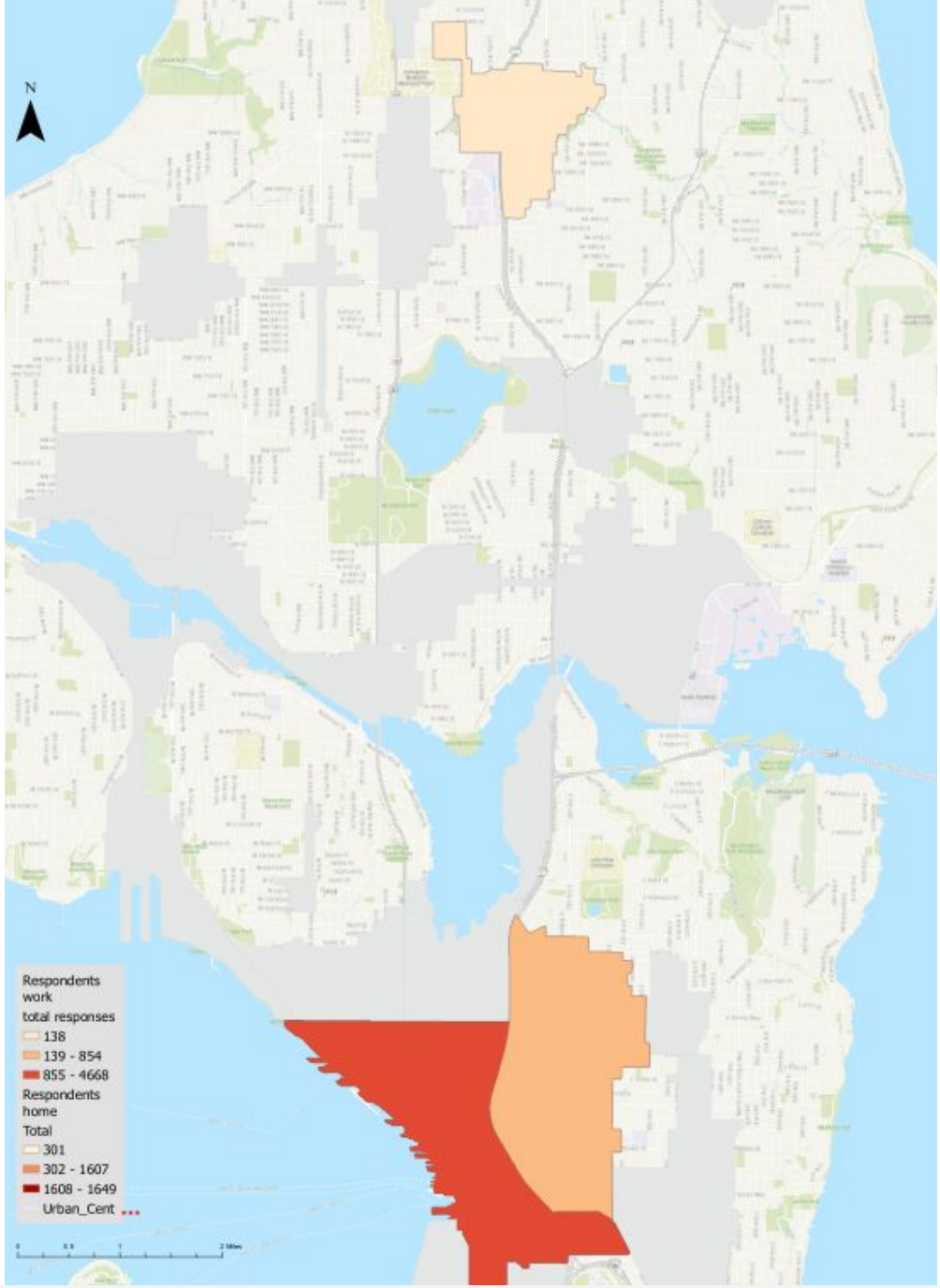
70.1% White Collar
12.2% Blue Collar
17.7% Services
3.8% Unemployment Rate

INCOME

$60,998
$45,605
$19,395

Data Source: Esri 2023 Updated Demographics use the boundaries from the 2020 U.S. Census Bureau data. https://doc.arcgis.com/en/esri-demographics/latest/regional-data/updated-demographics.htm

Subarea Commute Profile 2023



First Hill/Capitol Hill

WORKERS

32,621
ACS Workers Age 16+

22.3%
Drove Alone to Work

TRANSPORTATION TO WORK

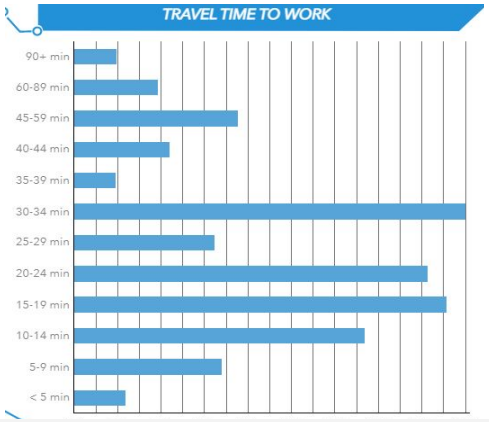
24.2%
Took Public Transportation

2.1%
Carpooled

28.3%
Walked to Work

3.0%
Bike to Work

TRAVEL TIME TO WORK



Downtown

WORKERS

26,124
ACS Workers Age 16+

17.4%
Drove Alone to Work

TRANSPORTATION TO WORK

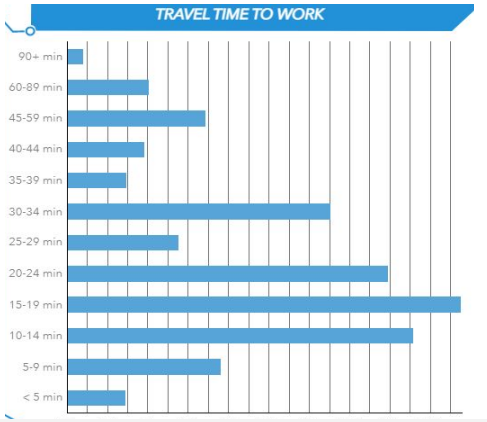
15.9%
Took Public Transportation

2.4%
Carpooled

35.9%
Walked to Work

0.9%
Bike to Work

TRAVEL TIME TO WORK



Northgate

WORKERS

4,412
ACS Workers Age 16+

45.8%
Drove Alone to Work

TRANSPORTATION TO WORK

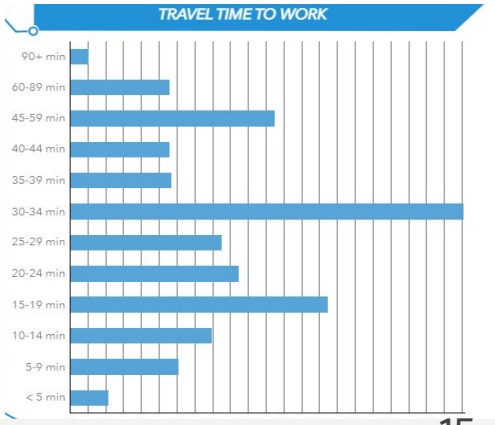
23.6%
Took Public Transportation

6.9%
Carpooled

4.8%
Walked to Work

1.7%
Bike to Work

TRAVEL TIME TO WORK



Data Source: American Community Survey (ACS) data accessed through Esri. https://doc.arcgis.com/en/esri-demographics/latest/regional-data/acs.htm

Subarea Dominant Tapestry Profile 2023

First Hill/Capitol Hill

27,332 households are *Metro Renters*

81.7% of households are in this segment

Metro Renters: *Uptown Individuals* LifeMode

Residents in this highly mobile and educated market live alone or with a roommate in older apartment buildings and condos located in the urban core of the city. Metro Renters is one of the fastest growing segments. The popularity of urban life continues to increase for consumers in their late twenties and thirties...

Well-educated consumers, many currently enrolled in college.

Shop at Trader Joes and Whole Foods for groceries - partial to organic foods. Prefer environmentally safe products.

Willing to take risks and work long hours to get to the top of their profession.

Very interested in the fine arts and strive to be sophisticated - value education and creativity.

Favorite websites are Facebook, Twitter, YouTube, and LinkedIn.

Downtown

17,003 households are *Metro Renters*

58.7% of households are in this segment

Metro Renters: *Uptown Individuals* LifeMode

Residents in this highly mobile and educated market live alone or with a roommate in older apartment buildings and condos located in the urban core of the city. Metro Renters is one of the fastest growing segments. The popularity of urban life continues to increase for consumers in their late twenties and thirties...

Well-educated consumers, many currently enrolled in college.

Shop at Trader Joes and Whole Foods for groceries - partial to organic foods. Prefer environmentally safe products.

Willing to take risks and work long hours to get to the top of their profession.

Very interested in the fine arts and strive to be sophisticated - value education and creativity.

Favorite websites are Facebook, Twitter, YouTube, and LinkedIn.

Northgate

1,577 households are *Social Security Set*

34.7% of households are in this segment

Social Security Set: *Senior Styles* LifeMode

Social Security Set is an older market located in metropolitan cities across the country. Over one-third of householders here are aged 65 or older and dependent on low, fixed incomes, primarily Social Security. In the aftermath of the Great Recession retirement is now a dream for many approaching the retirement age...

These aging consumers rely mostly on Social Security income but also depend on Supplemental Security Income and public assistance.

With fixed incomes, consumers remain price sensitive.

Many residents are dependent on Medicare and Medicaid for health care expenses.

Rather than eat out, residents prefer to have their meals at home, whether they order takeout or warm up a frozen dinner.

A trusted source of information, TV is an important part of their lives. They steer away from cell phones, computers.

Data Source: Esri Tapestry Segmentation 2023. https://doc.arcgis.com/en/esri-demographics/latest/regional-data/tapestry-segmentation.htm

Subarea Economic Development Profile 2023

First Hill/Capitol Hill

$735,022 ↑

Median Home Value

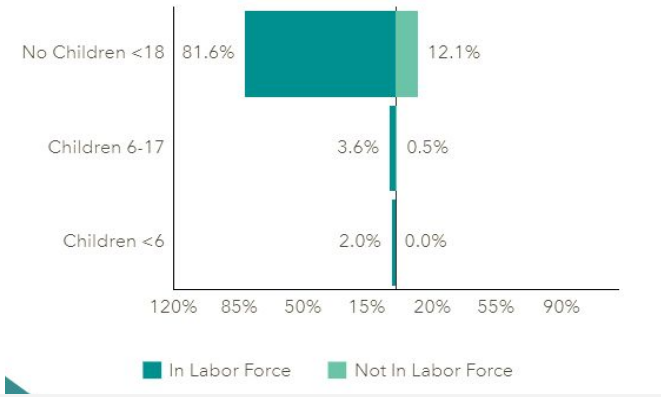
30% higher than **Washington** which is **$512,499**

$87,894	8.5%	50
Median Household Income	HHs on Food Stamps/SNAP	Housing Affordability Index

Age <18 **2,927** | Age 18-64 **41,714** | Age 65+ **7,355**

Total Pop	Pop Growth	Average HH Size	Median Net Worth
51,997	1.72%	1.44	$42,814

Working Status



Downtown

$917,523 ↑

Median Home Value

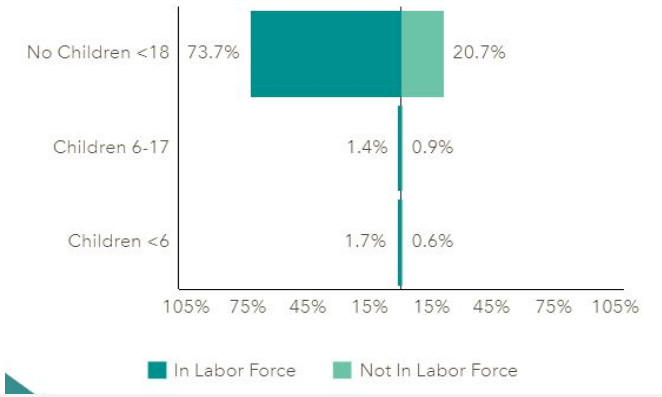
44% higher than **Washington** which is **$512,499**

$116,019	12.4%	52
Median Household Income	HHs on Food Stamps/SNAP	Housing Affordability Index

Age <18 **3,089** | Age 18-64 **34,678** | Age 65+ **8,029**

Total Pop	Pop Growth	Average HH Size	Median Net Worth
45,796	2.79%	1.47	$62,356

Working Status



Northgate

$652,855 ↑

Median Home Value

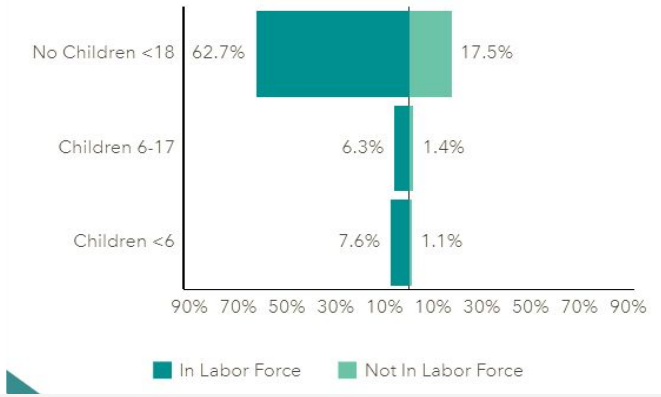
21% higher than **Washington** which is **$512,499**

$60,998	11.8%	38
Median Household Income	HHs on Food Stamps/SNAP	Housing Affordability Index

Age <18 **1,101** | Age 18-64 **5,795** | Age 65+ **1,426**

Total Pop	Pop Growth	Average HH Size	Median Net Worth
8,322	2.24%	1.78	$19,395

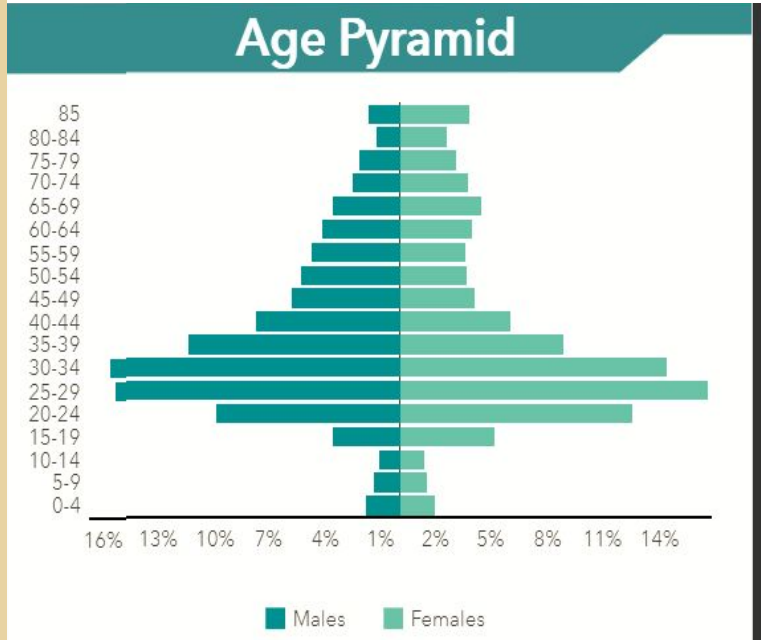
Working Status

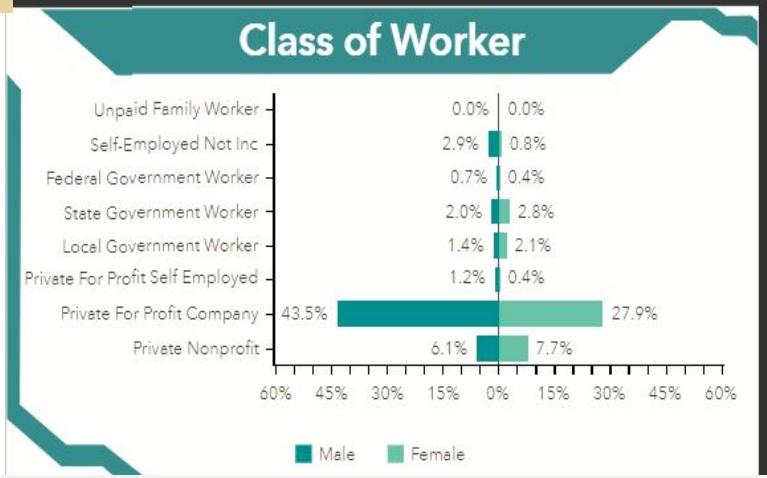


Data Source: This infographic contains data provided by ACS, Esri and Bureau of Labor Statistics. https://doc.arcgis.com/en/esri-demographics/latest/regional-data/updated-demographics.htm
Housing affordability index: https://www.awbinstitute.org/indicator/housing-affordability-index/

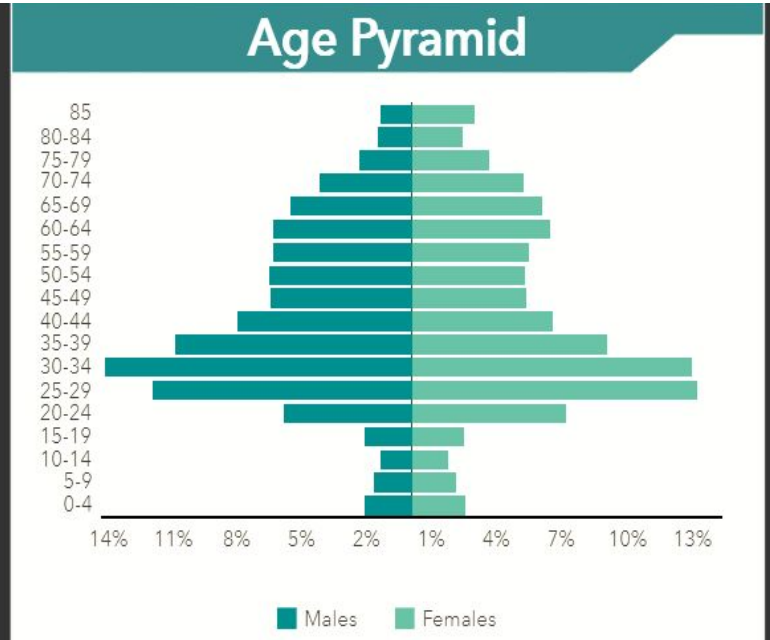
Subarea Employment Profile 2023

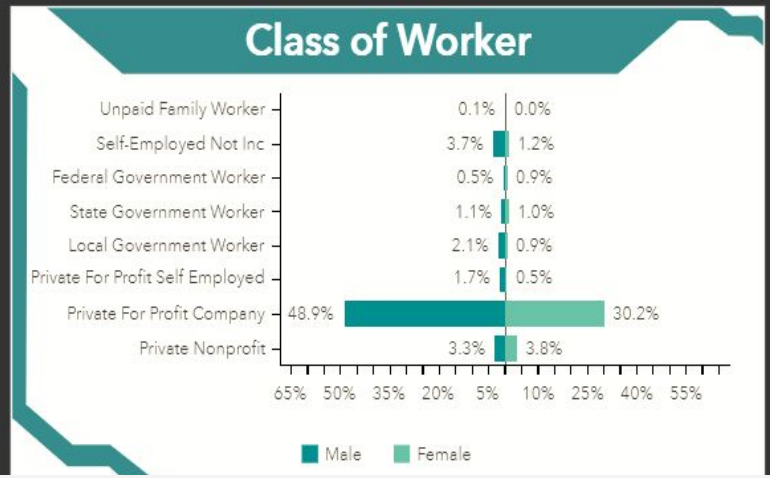
First Hill/Capitol Hill



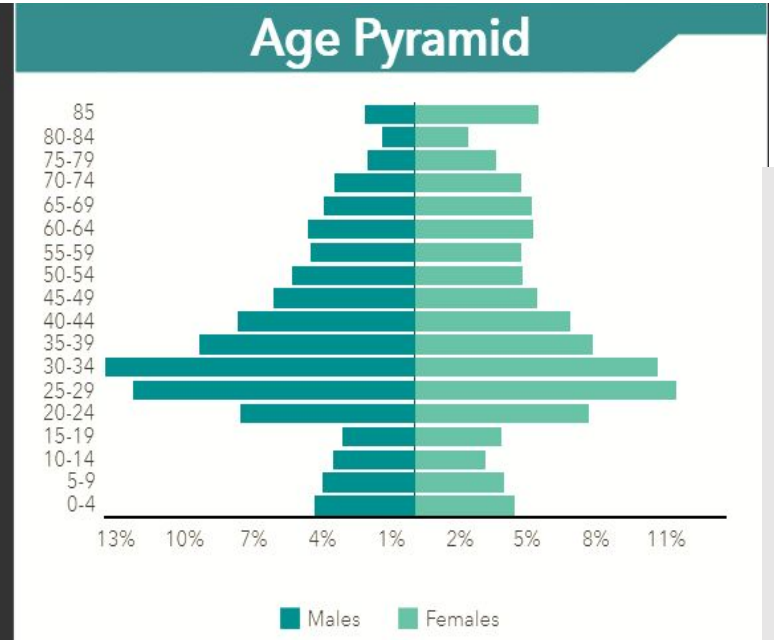


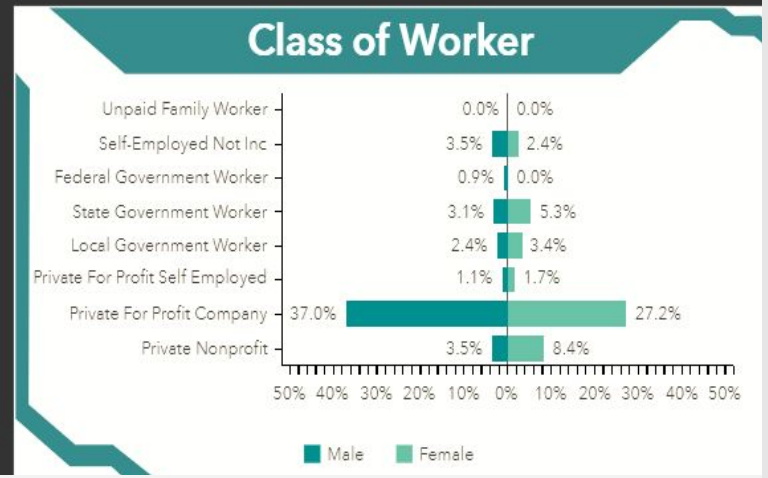
Downtown





Northgate

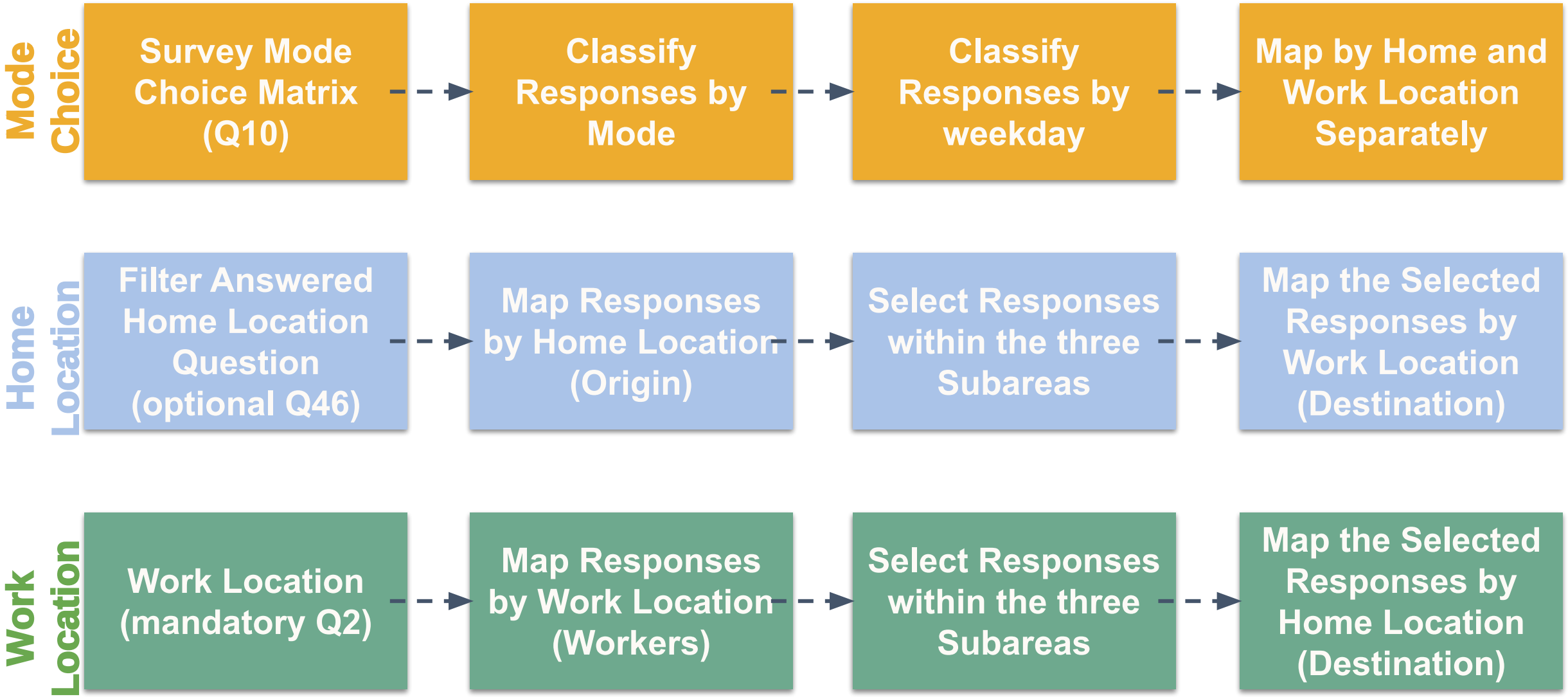




Data Source: Esri 2023 Updated Demographics use the boundaries from the 2020 U.S. Census Bureau data. https://doc.arcgis.com/en/esri-demographics/latest/regional-data/updated-demographics.htm

Subarea Commute Travel Survey Analysis

Commute Travel | Survey Questions and Analytical Approach



Survey Questions| Mode Choice

(Q10)

Currently, during a typical week, how do you get to work each day?

- *If you do not have a typical week, please report on last week.*
- *Please select the option you use for the LONGEST DISTANCE to get to work.*
- *Fill in ONLY ONE type of transportation per day.*
- *Fill in "Carpooled" only if at least one other person age 16 or older was in the vehicle.*

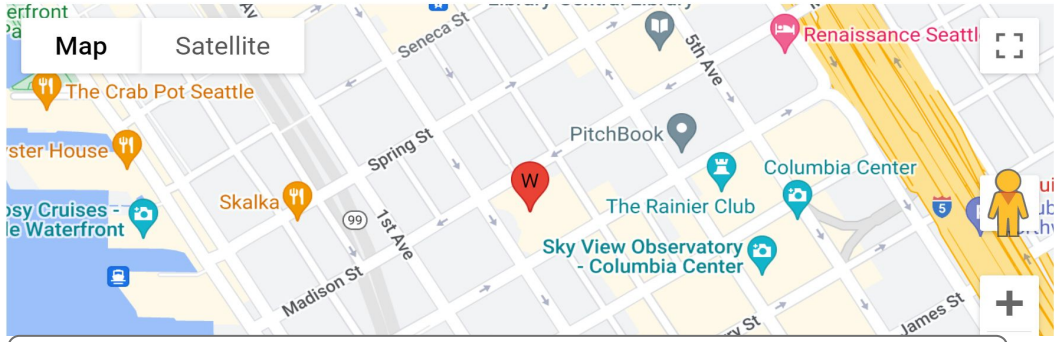
		Mon	Tues	Wed	Thu	Fri	Sat	Sun
Public transit	Public transit	○	○	○	○	○	○	○
	Ferry	○	○	○	○	○	○	○
Rideshare	Vanpool	○	○	○	○	○	○	○
	Carpool	○	○	○	○	○	○	○
	Employer shuttle	○	○	○	○	○	○	○
Ride Hailing	Uber/Lyft	○	○	○	○	○	○	○
	Taxi	○	○	○	○	○	○	○
Drive Alone	Drive alone	○	○	○	○	○	○	○
	Motorcycle	○	○	○	○	○	○	○
Bike/E-bike	E-bike/e-scooter	○	○	○	○	○	○	○
	Bike/scooter	○	○	○	○	○	○	○
	Walk	○	○	○	○	○	○	○
	Remote work	○	○	○	○	○	○	○
	Day off	○	○	○	○	○	○	○

Survey Questions| Work and Home Location (OD)

(Q2)

Please enter the full address of your worksite (e.g. 1800 9th Ave, Seattle, WA 98101)

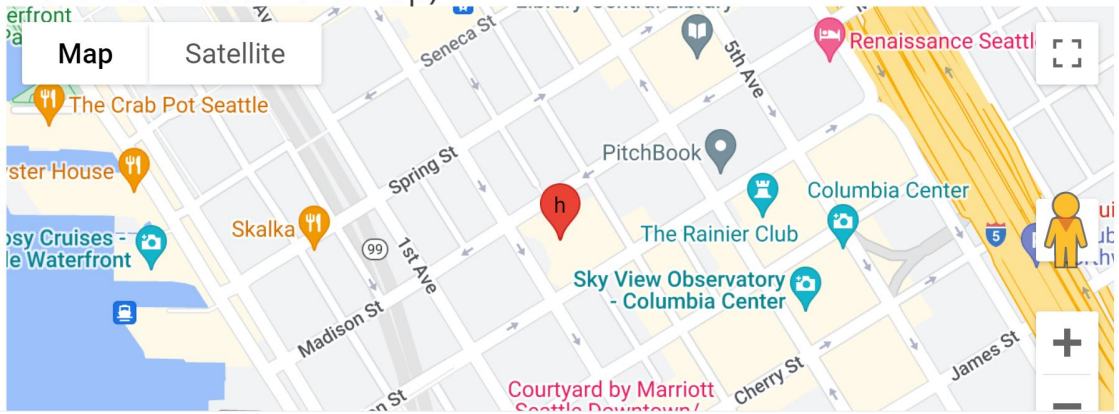
- If you work from home full-time, please enter your employer`s address
- Use the search box below the map to find your worksite



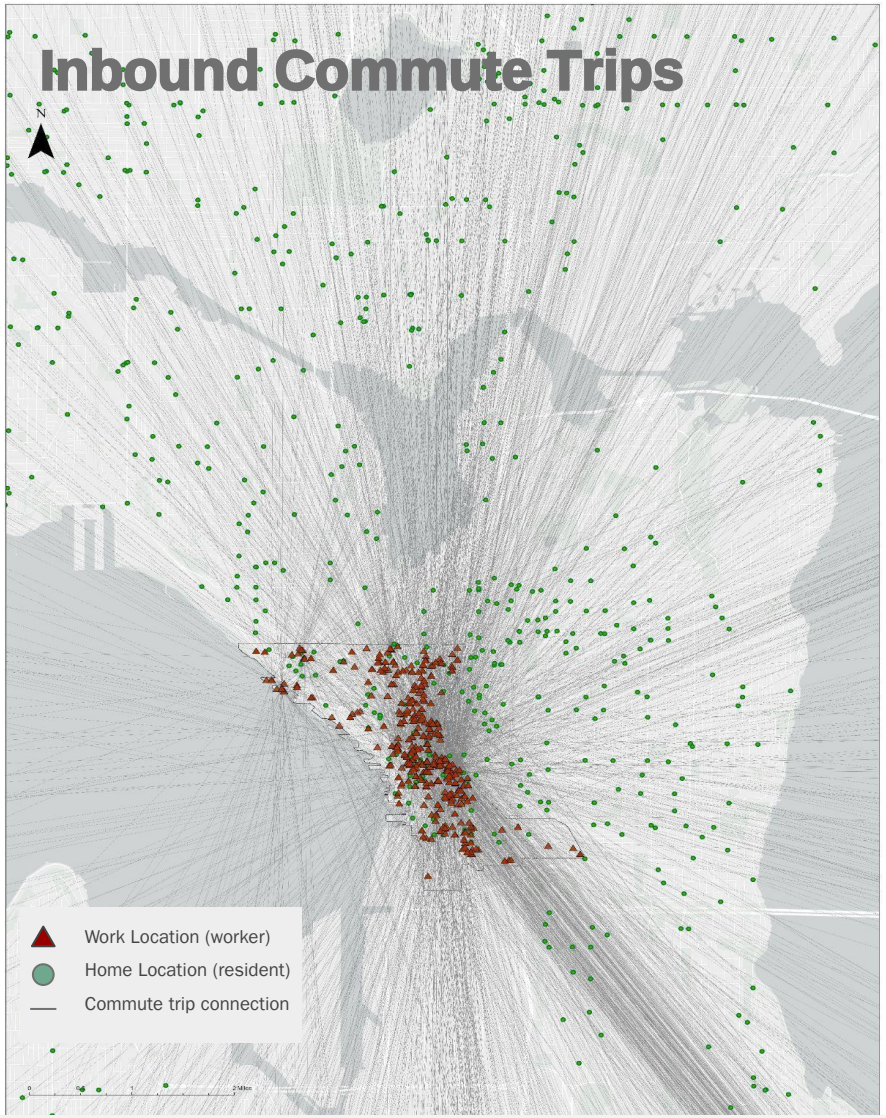
Worksite Address

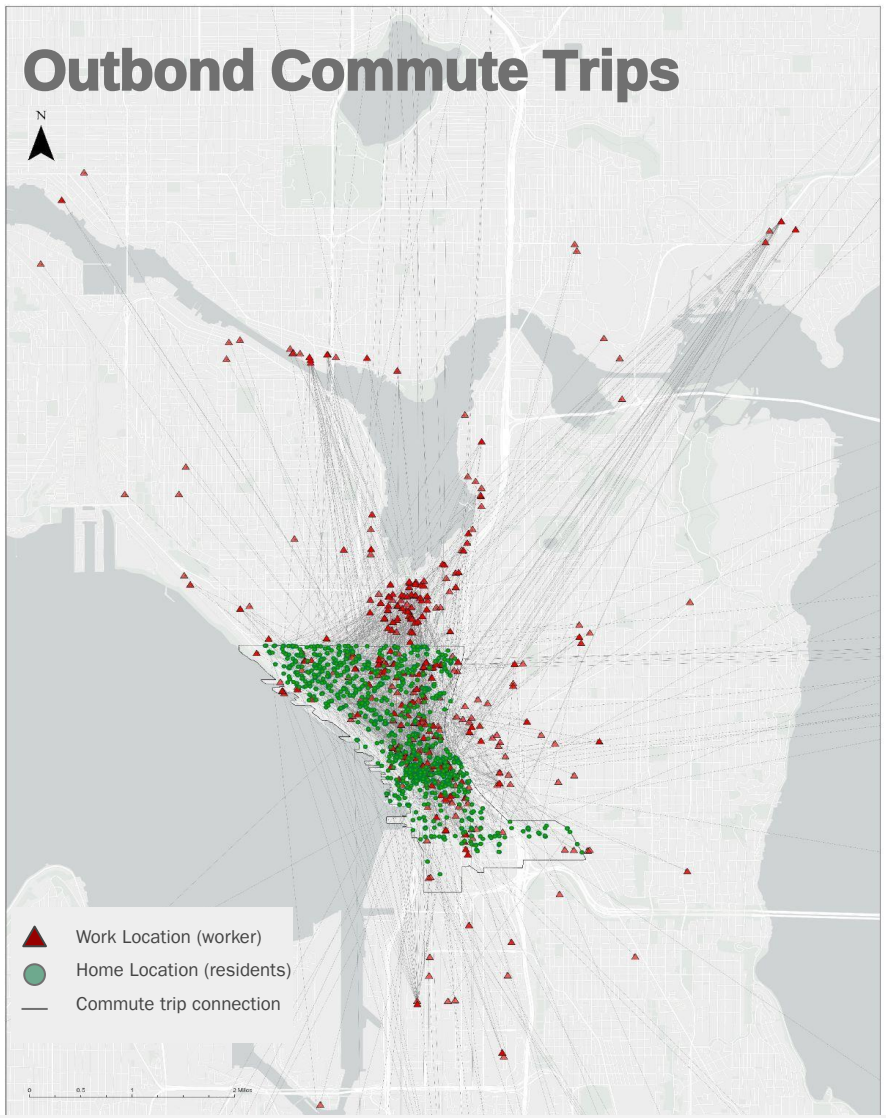
(Q46)

If you could, please point out the <u>nearest</u> intersection to your home. This information helps us understand how local services (e.g., parks, stores) influence travel decisions.
(Either point/click on the map using the red marker, or use the search box below the map)



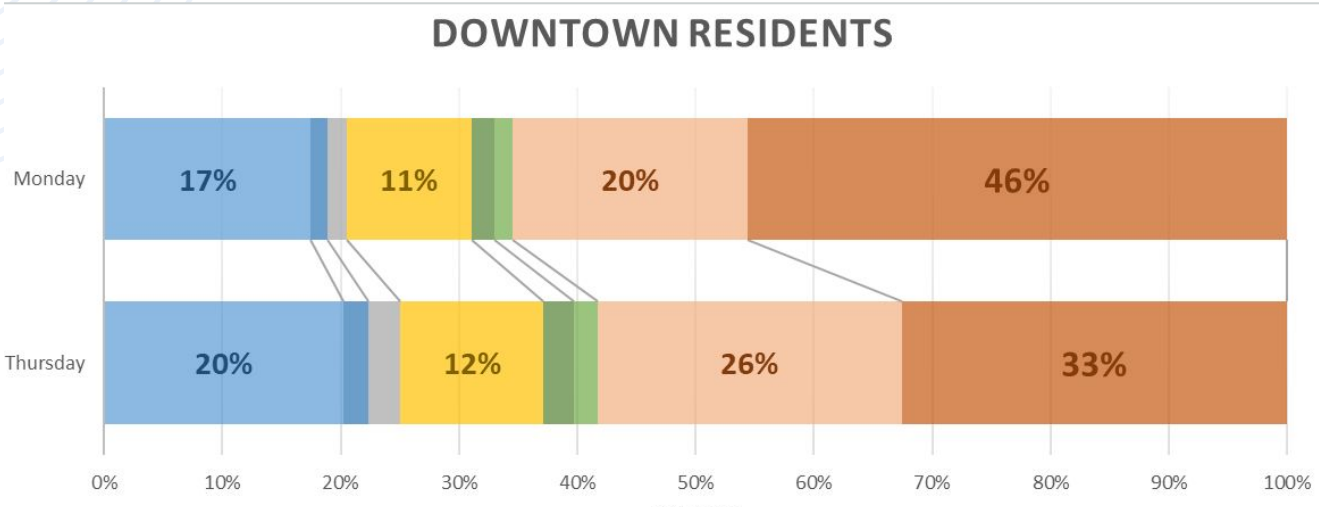
Downtown | Inbound vs. outbound commute trips

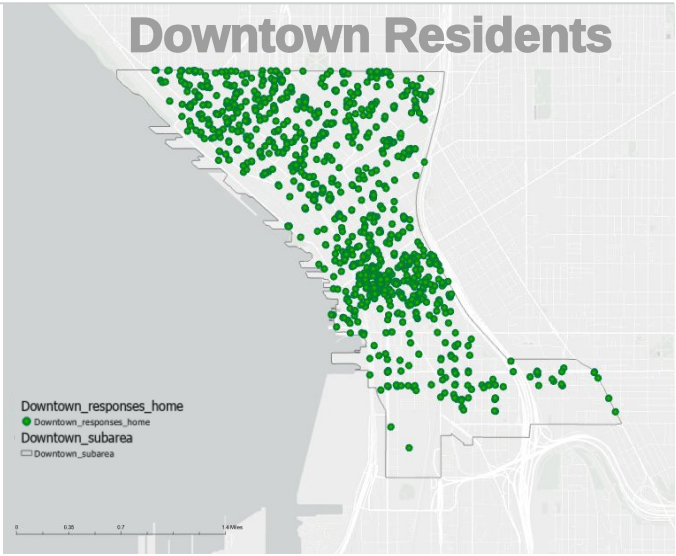


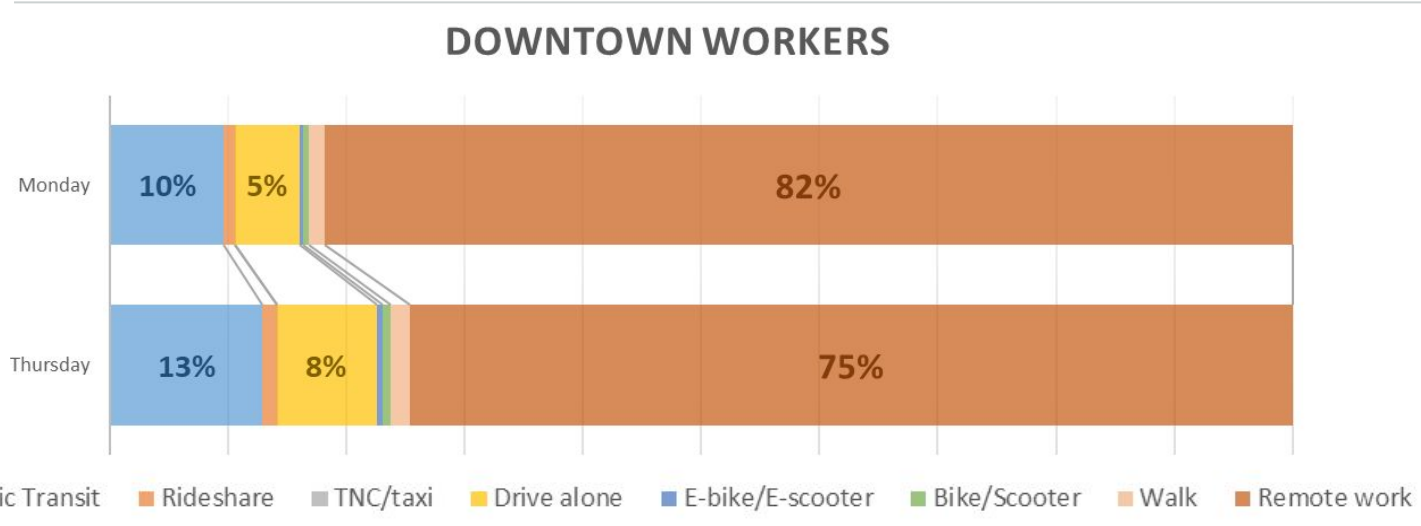


The map on the left shows the inbound commute trips for worksites in the Downtown areas (N=4,668),. The map on the right shows the outbound commute trips for Downtown residents (N=1,469). On both maps, the green dots represent the commuters home locations, the red triangle representing worksites and the grey lines represent the commute trip (connection) to show the volume of the trips and direction.

Downtown | Commute Mode Split Residents vs. Workers



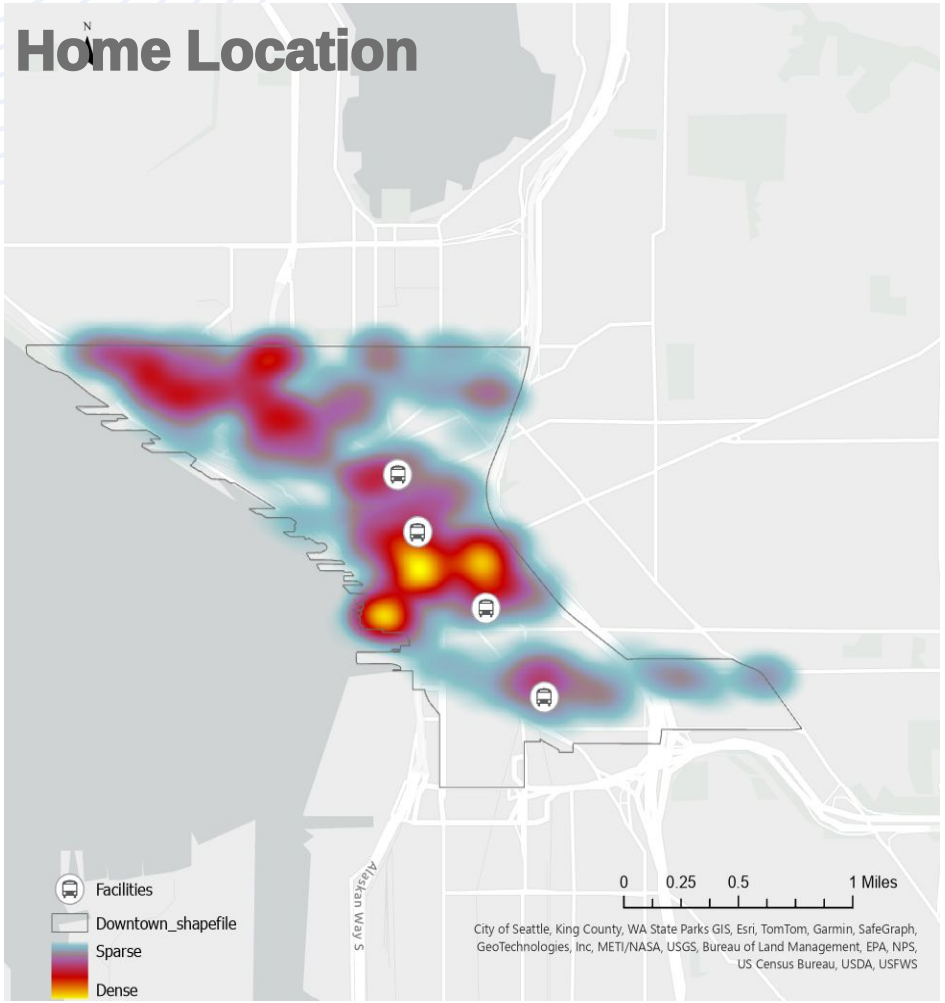


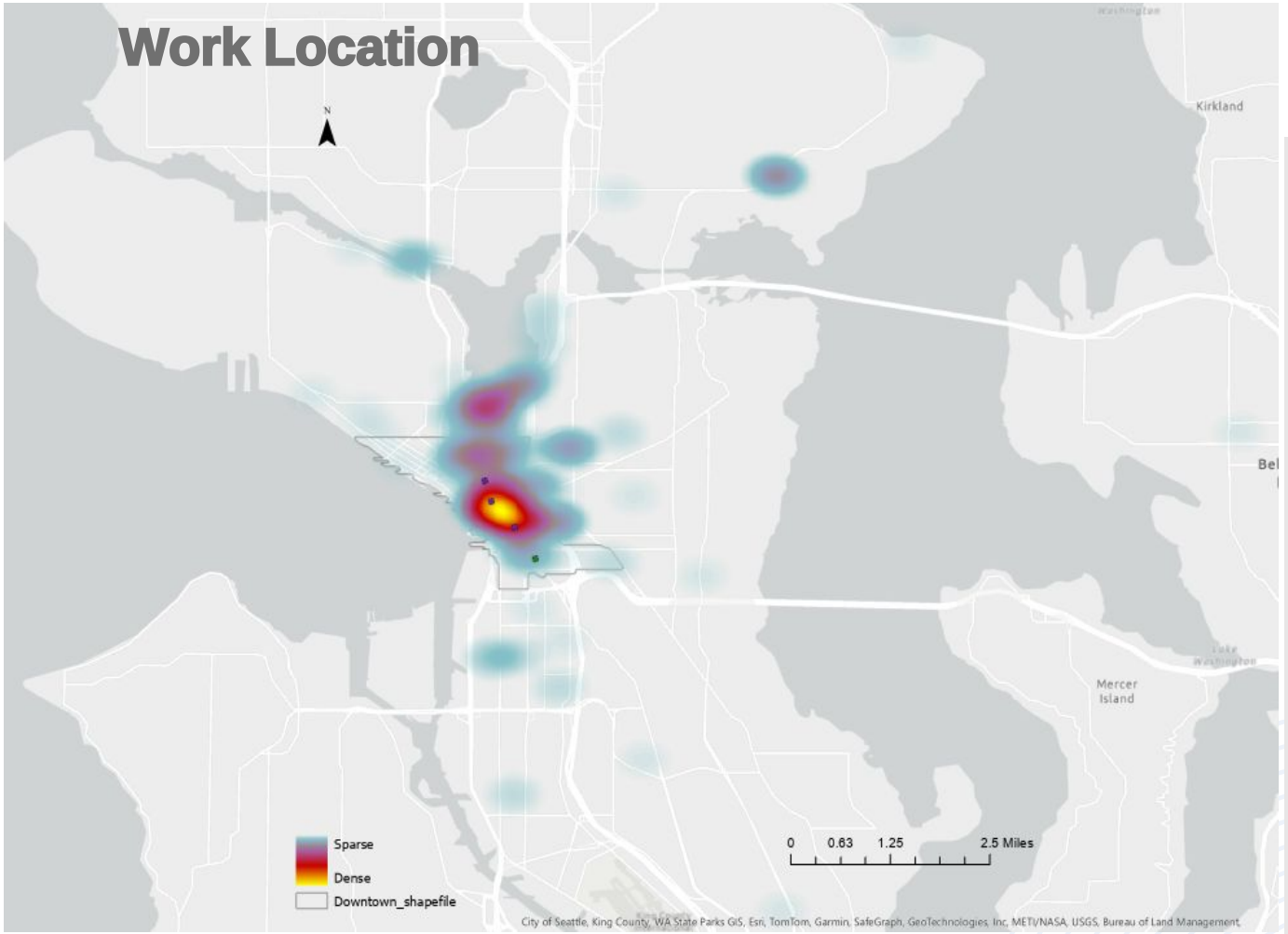


Q10: Currently, during a typical week, how do you get to work each day? (Monday, Tuesday, Wednesday, Thursday, Friday). The top graph shows the mode split for respondents whose home location is in Downtown (residents) N=1,469, and the bottom graph shows respondents whose work location is in Downtown area (workers)(N= 4,668).

** Public transit includes bus, light rail, and ferry; Drive alone includes car and motorcycle; Rideshare includes vanpool, carpool and employer shuttle; Other includes day off.

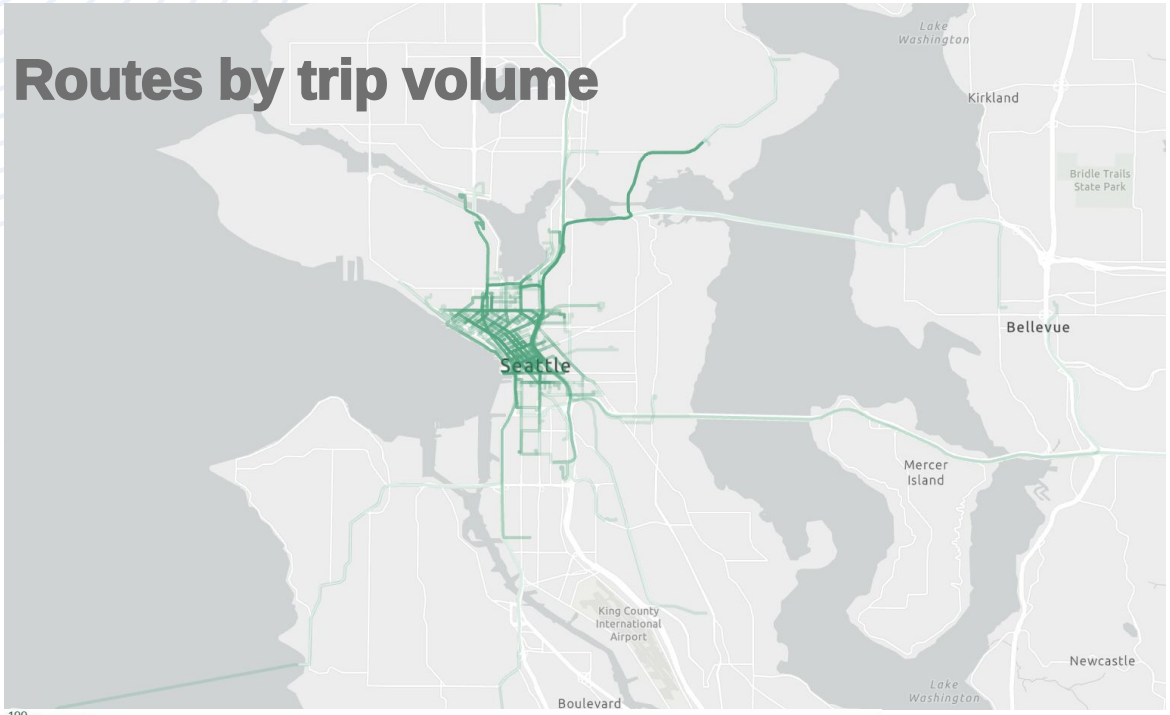
Downtown | Transit Commuters Home vs. Work Location

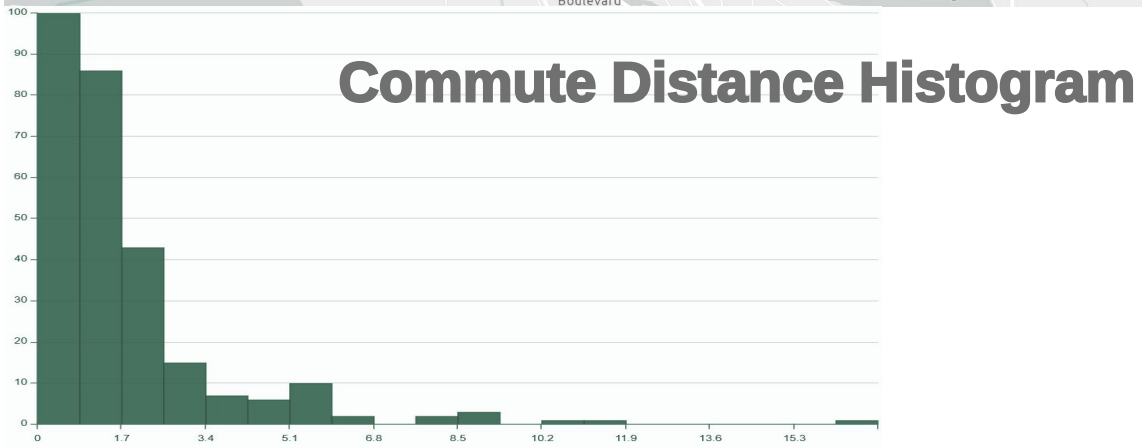


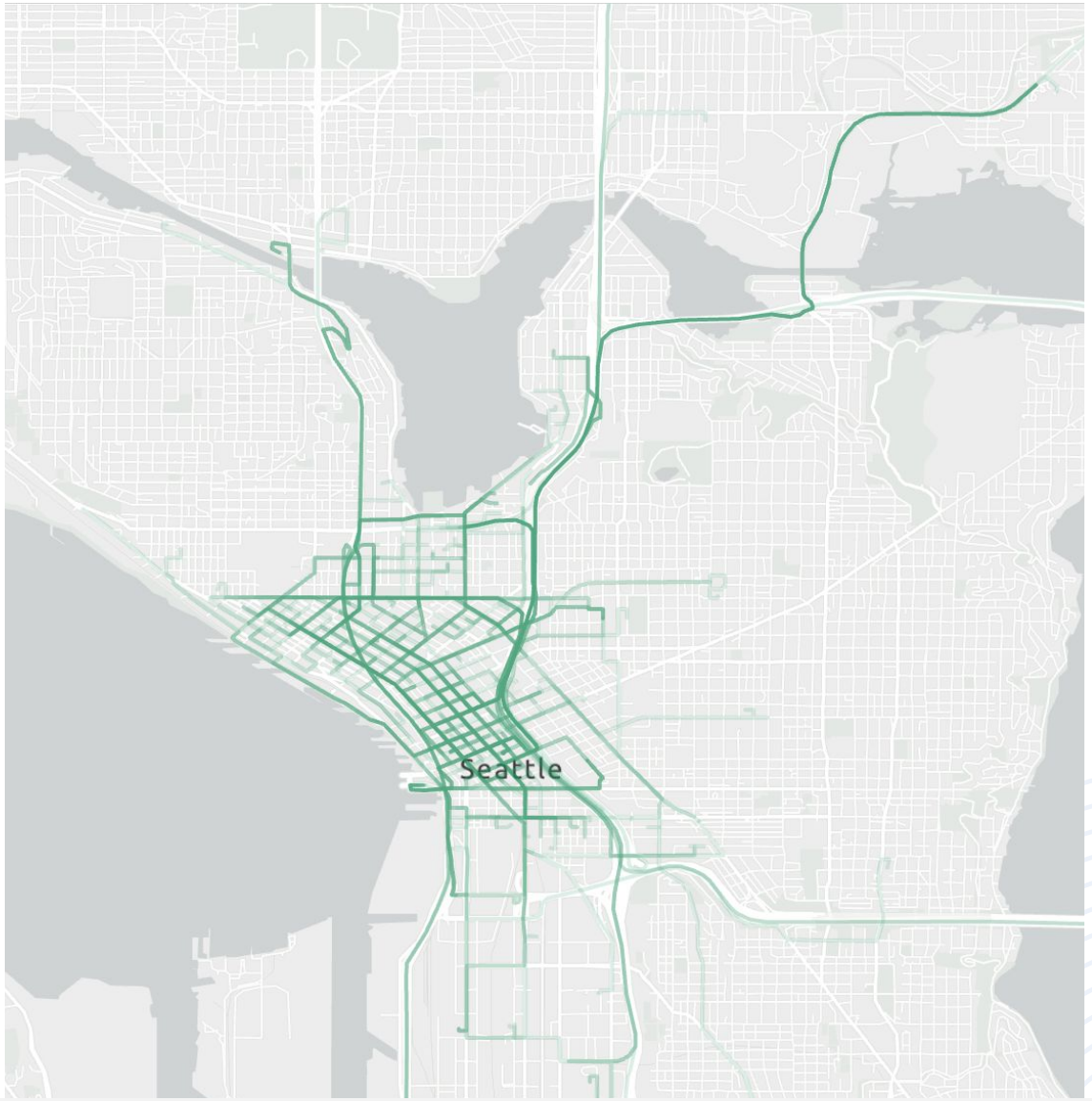


The map on the left shows the home locations of transit commuters who live in Downtown and the map on the right shows the work locations of transit commuters who live in Downtown (N=282). The maps represent the responses distribution as hotspots with warmer colors representing dense distribution and cooler colors representing sparse distribution.
**** The two maps are generated at different scales, because one is limited to the boundaries of the Downtown area**

Downtown | Transit Commute Routes and Trip Volume



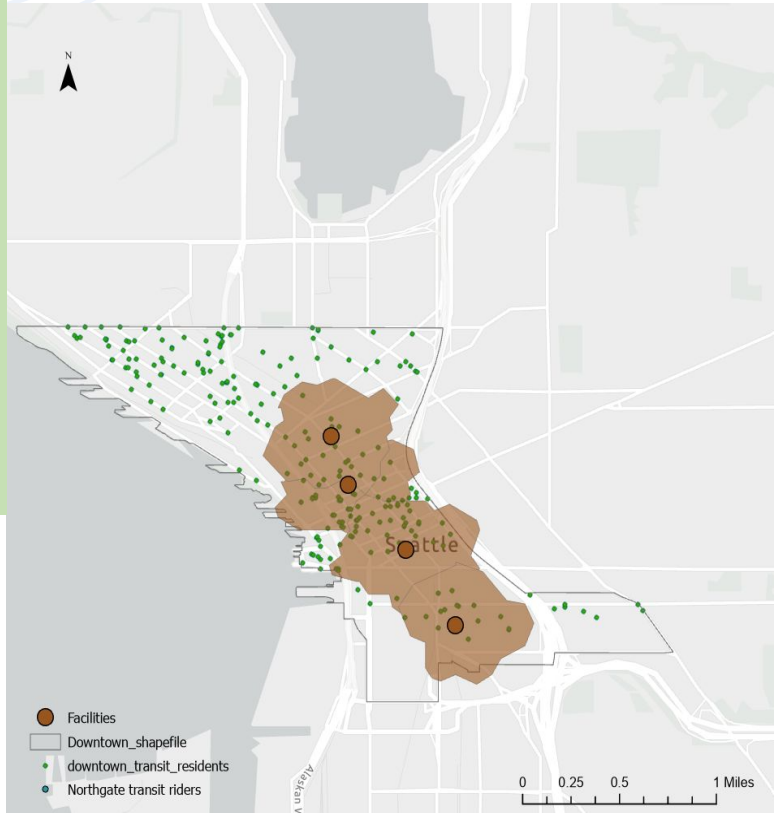




The maps on this page show the routes of transit commuters from their home locations to work. The routes were generated using ArcGIS proximity tools, using the mostly likely (shortest) route for every OD pair. Both maps show the same routes but cropped at different scales. The graphs show the distribution (histogram) of transit commute time and distance travelled, based on the shortest route and commute time (traffic).

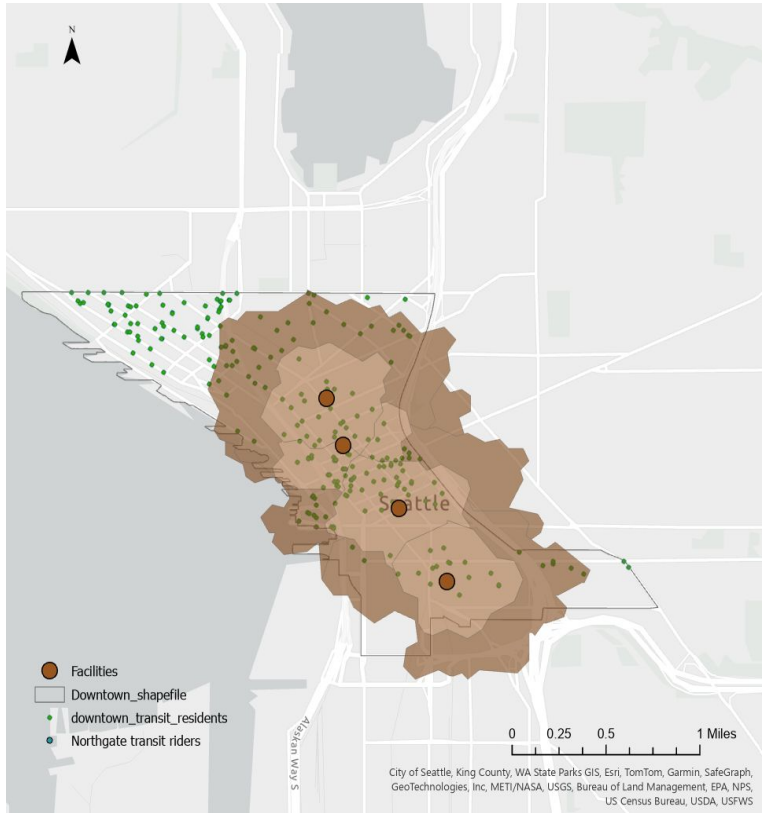
Downtown | Transit Commuters Access to Light Rail

5 Min Walkshed



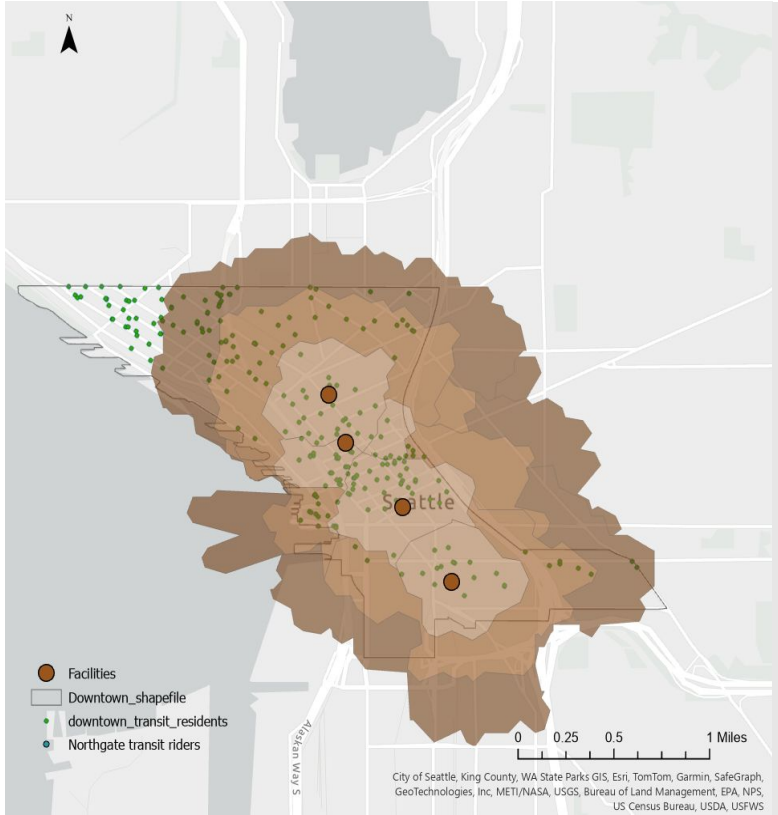
41% Transit Riders

10 Min Walkshed



72% Transit Riders

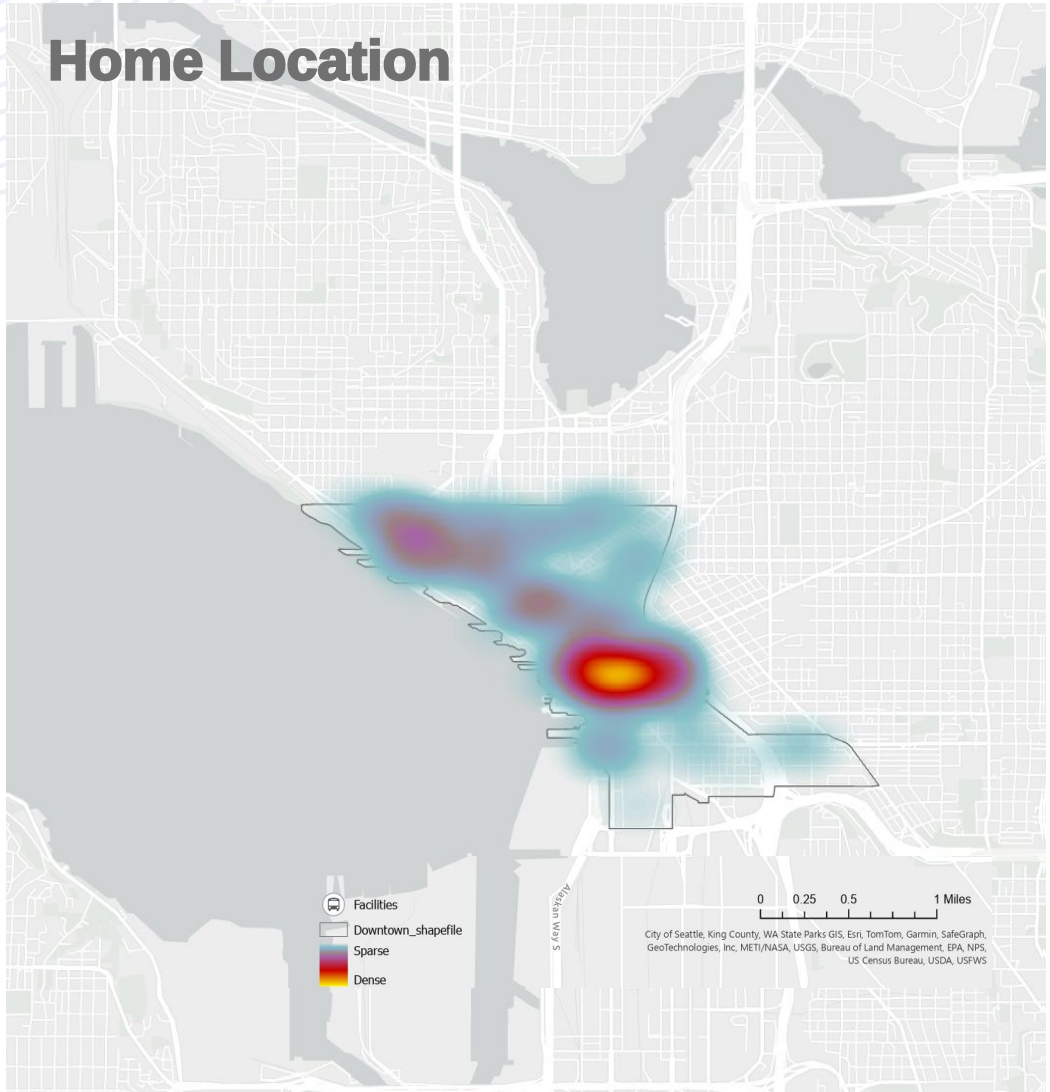
15 Min Walkshed

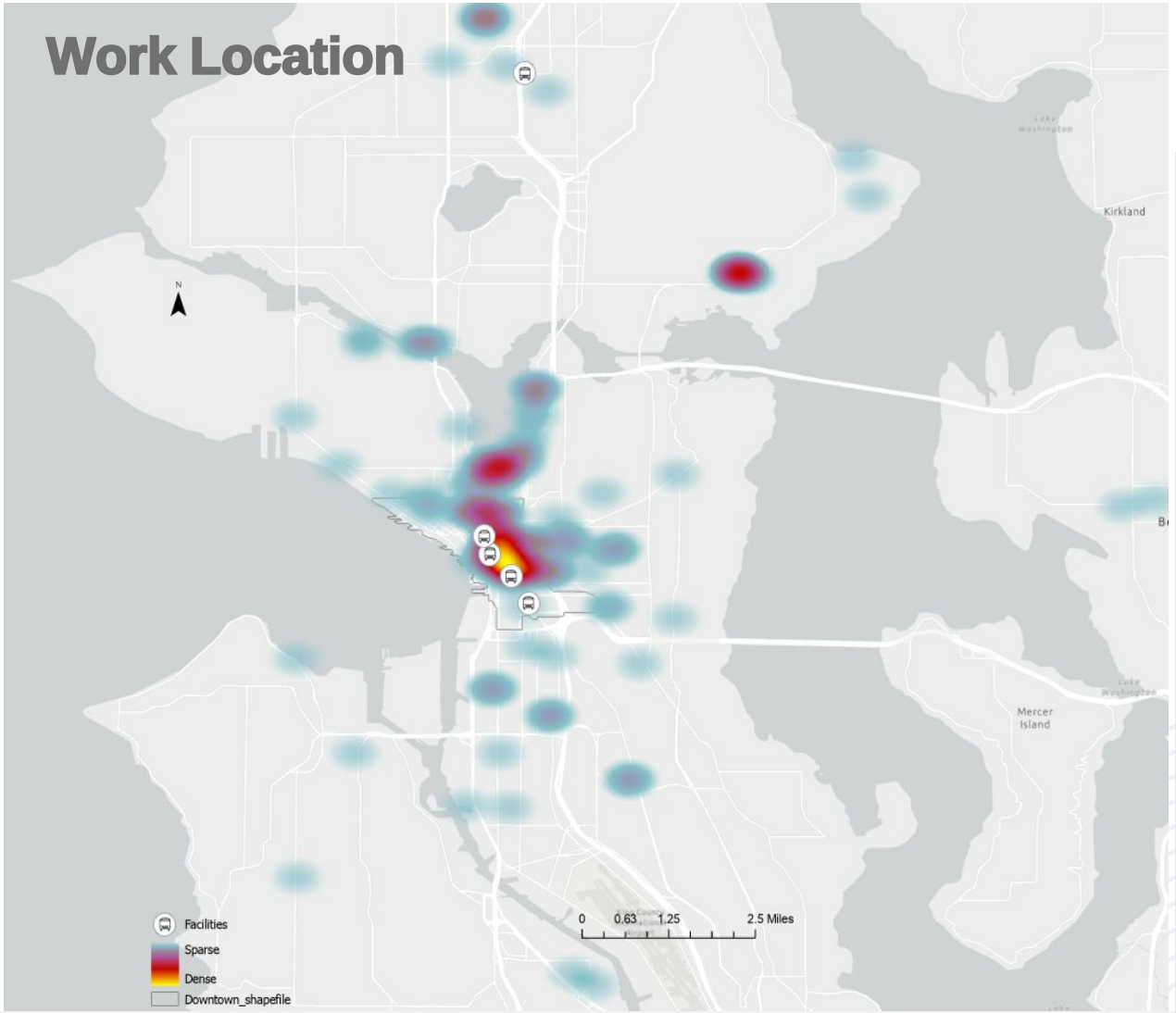


87% Transit Riders

The maps on this page show different walksheds for Downtown light rail stations, using the road network (regardless of sidewalk availability) and three consecutive walking durations (5 min, 10 min, and 15 min). The maps also show transit commuters whose home locations are within Downtown area (N=282), and the percentages of those who live within each walkshed. The walksheds were generated using ArcGIS service area tool, using existing roads, from each light rail station.

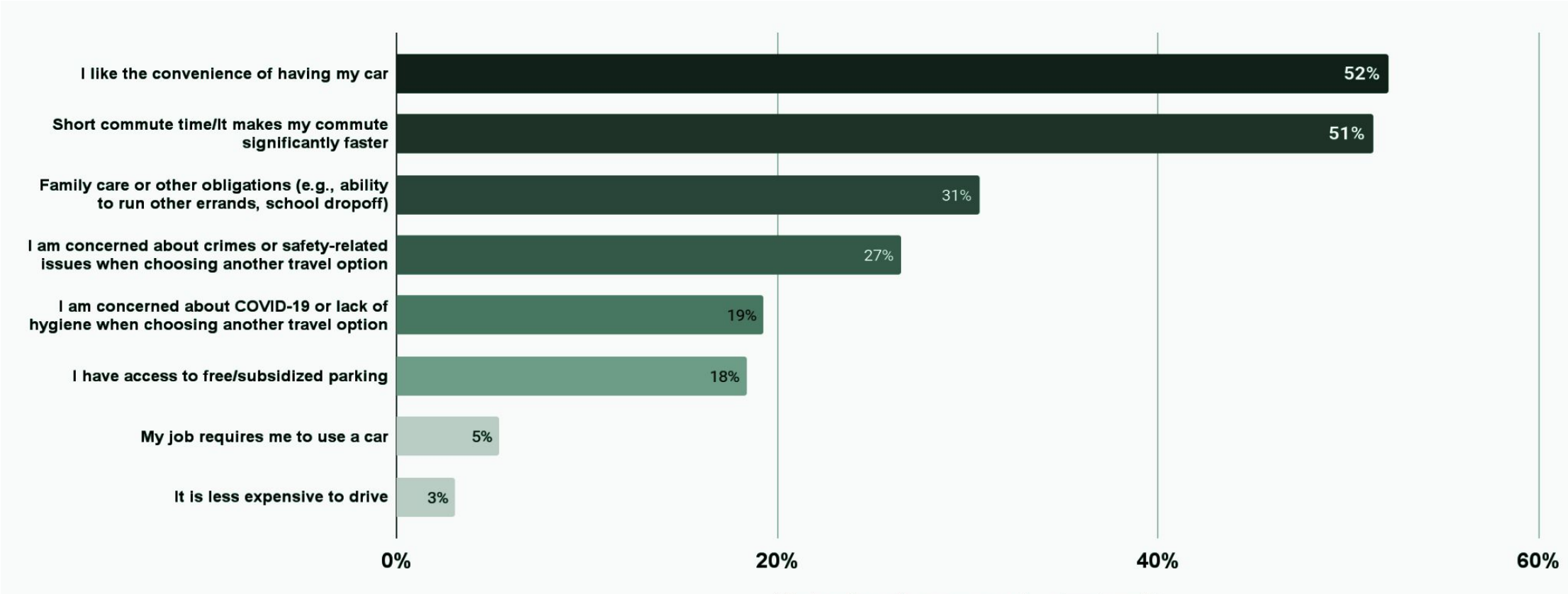
Downtown | Drive Alone Commuters Home vs. Work Location





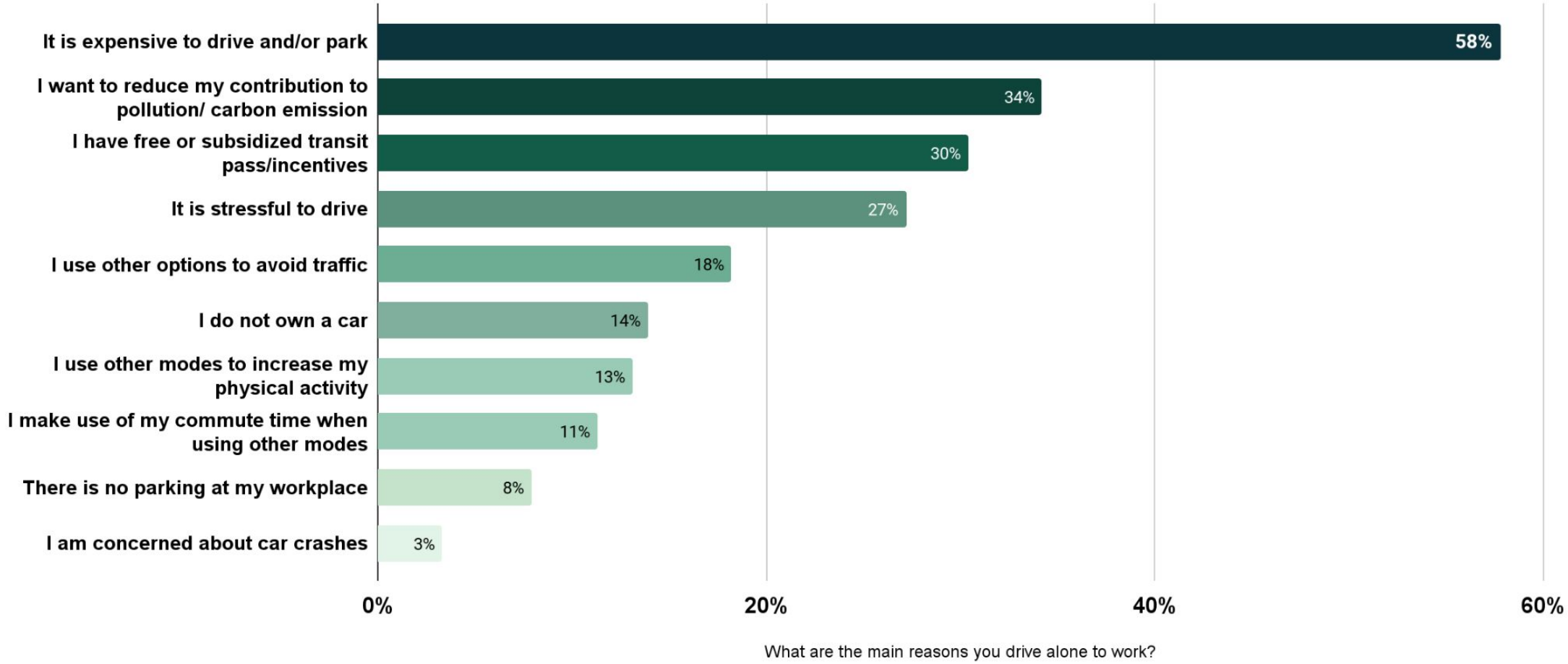
The map on the left shows the home locations of drive alone commuters who live in Downtown and the map on the right shows the work locations of drive alone commuters who live in Downtown (N=171). The maps represent the responses distribution as hotspots with warmer colors representing dense distribution and cooler colors representing sparse distribution.
**** The two maps are generated at different scales, because one is limited to the boundaries of the Downtown area**

Downtown | Reasons Why to Drive?



Q39: What are the main reasons you drive alone to work? Others (please specify). (N = 20,791). Respondents were allowed to select up to three factors hence the percentages don't add up to 100%.
*** This question was asked to respondents who indicated they drive alone to work for any of the weekdays only.

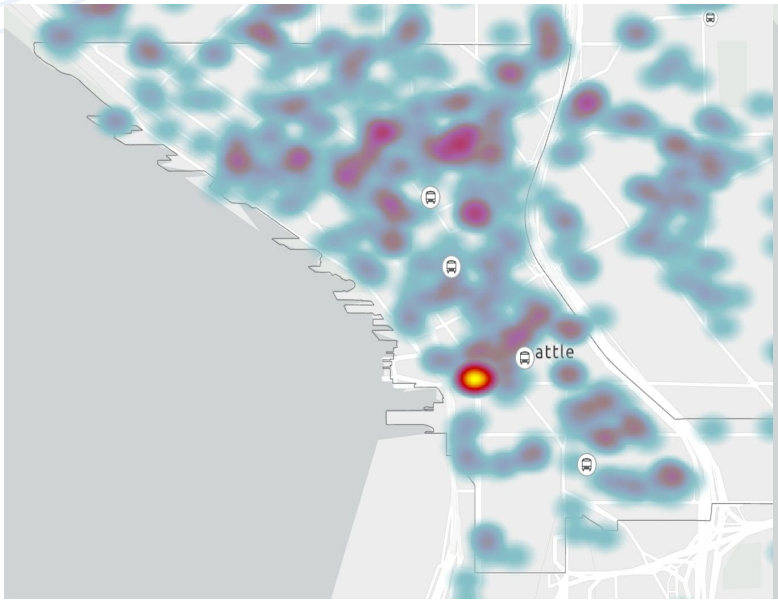
Downtown | Reasons Why NOT to Drive?



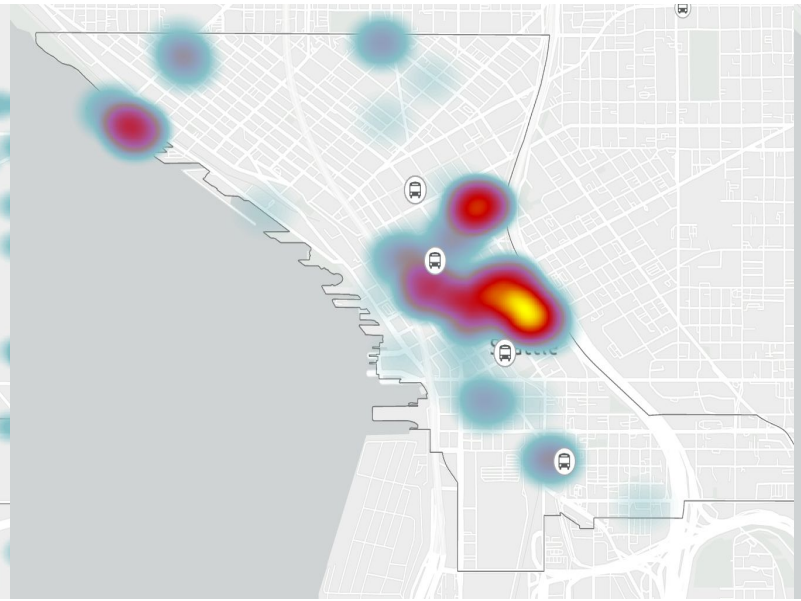
Q40: What are the main reasons you do not drive alone to work? Respondents were allowed to select up to three factors hence the percentages don't add up to 100%.
*** This question was asked to respondents who indicated they don't drive alone to work for any of the weekdays only.

Downtown | Public Garages and Parking Lots

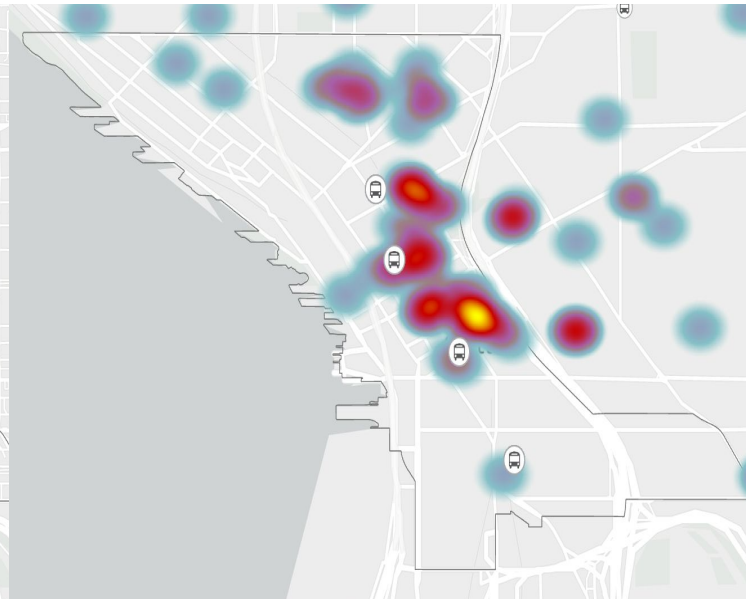
Public Parking Options in Downtown



Work Location of First Hill/ Downtown



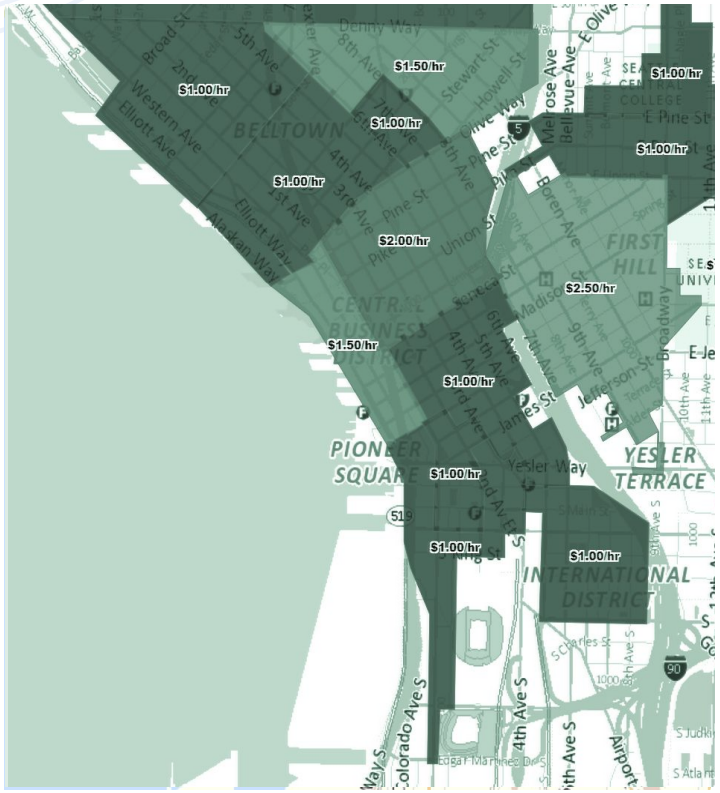
Work Location of First Hill/ Downtown



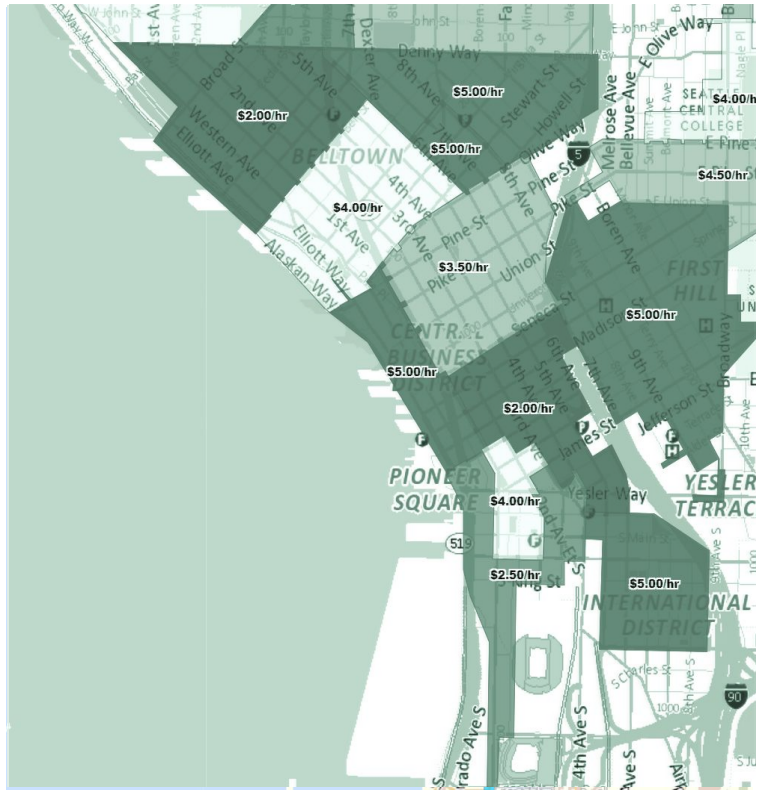
The map on the left shows the density of public parking options including garages and lots (N=700) and the map on the right shows the work locations of drive alone commuters who live in Downtown (N=171).
Data source: https://data-seattlecitygis.opendata.arcgis.com/datasets/SeattleCityGIS::public-garages-and-parking-lots/about

Downtown | Public Parking Rates

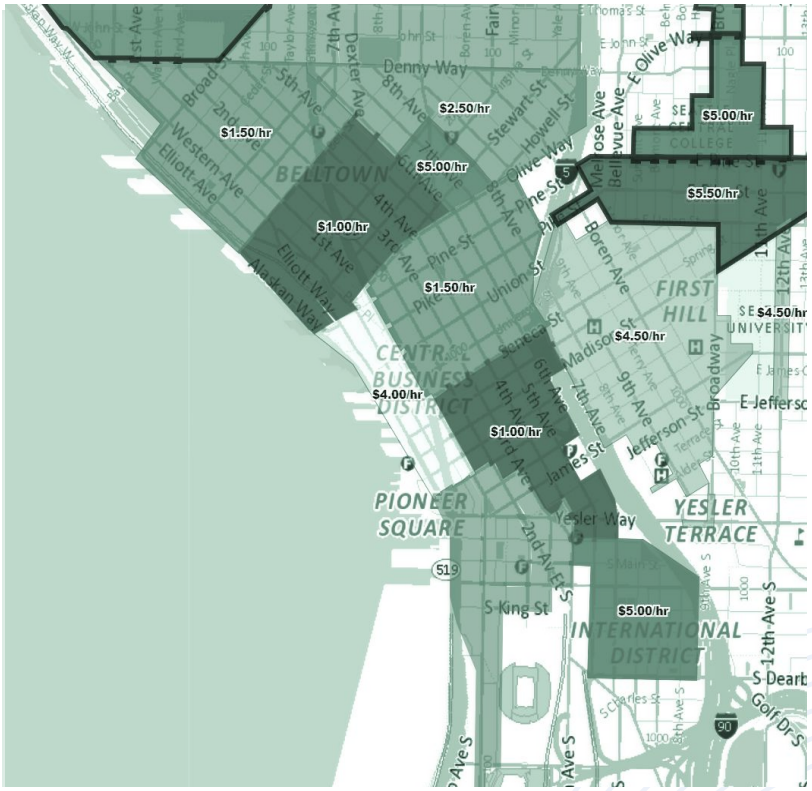
Morning Rates (8am - 11am)



Midday Rates (11am - 5pm)

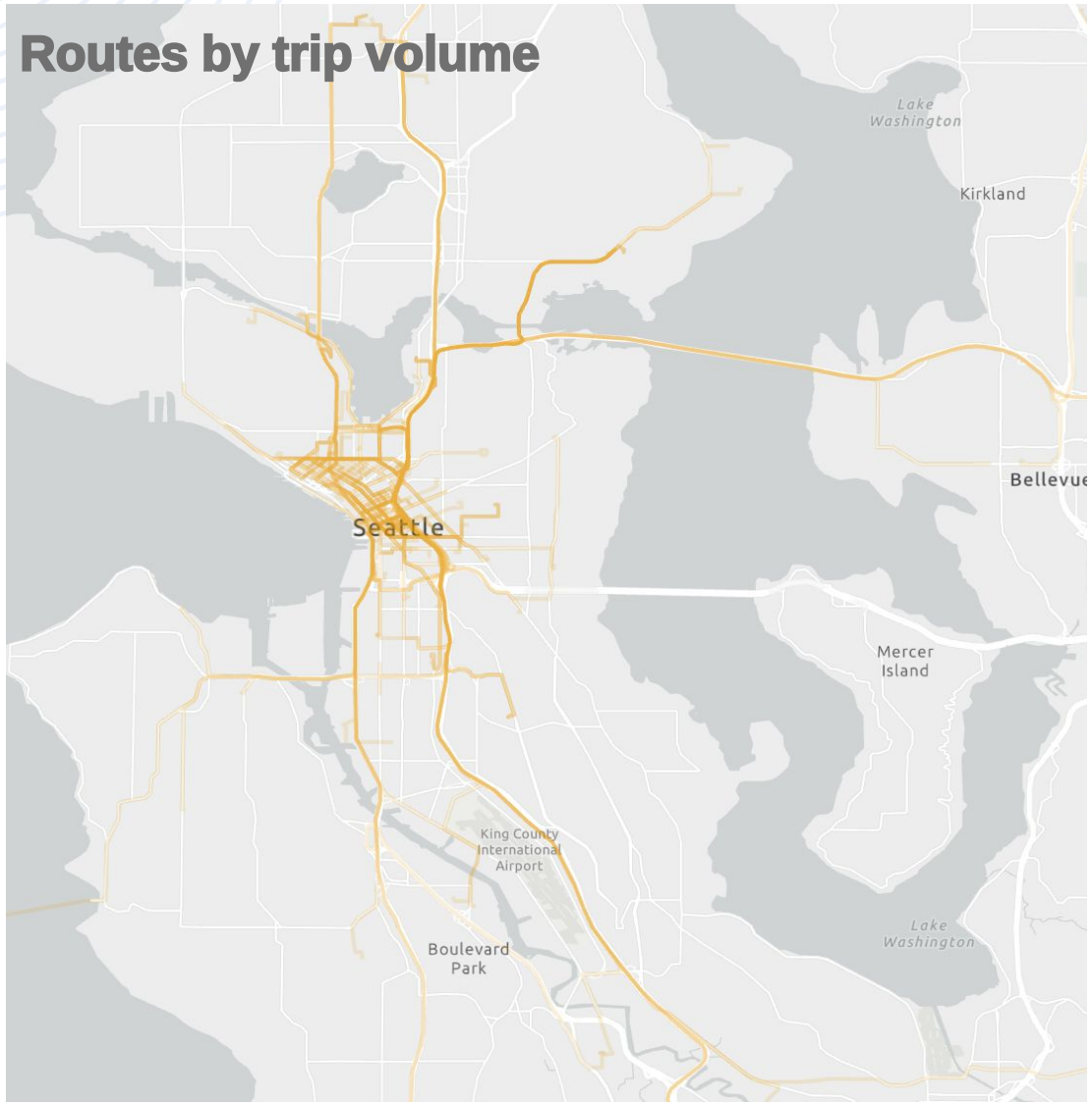


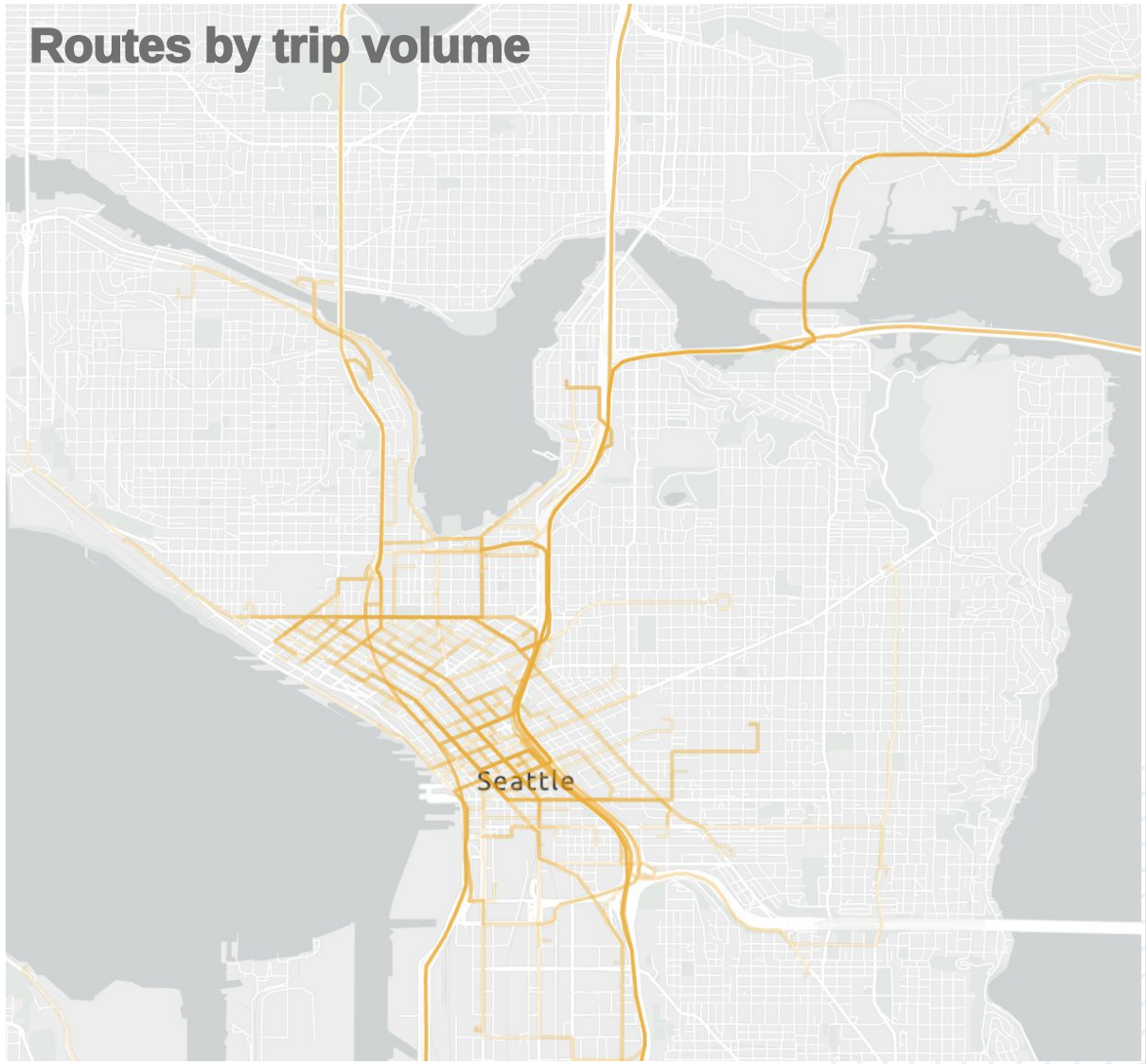
Evening Rates (5pm - 8pm)



The maps show the different rates of parking in different Downtown areas. Data source: Seattle Department of Transportation SDOT. https://data-seattlecitygis.opendata.arcgis.com/datasets/SeattleCityGIS::public-garages-and-parking-lots/about

Downtown | Drive Alone Commute Routes and Trip Volume

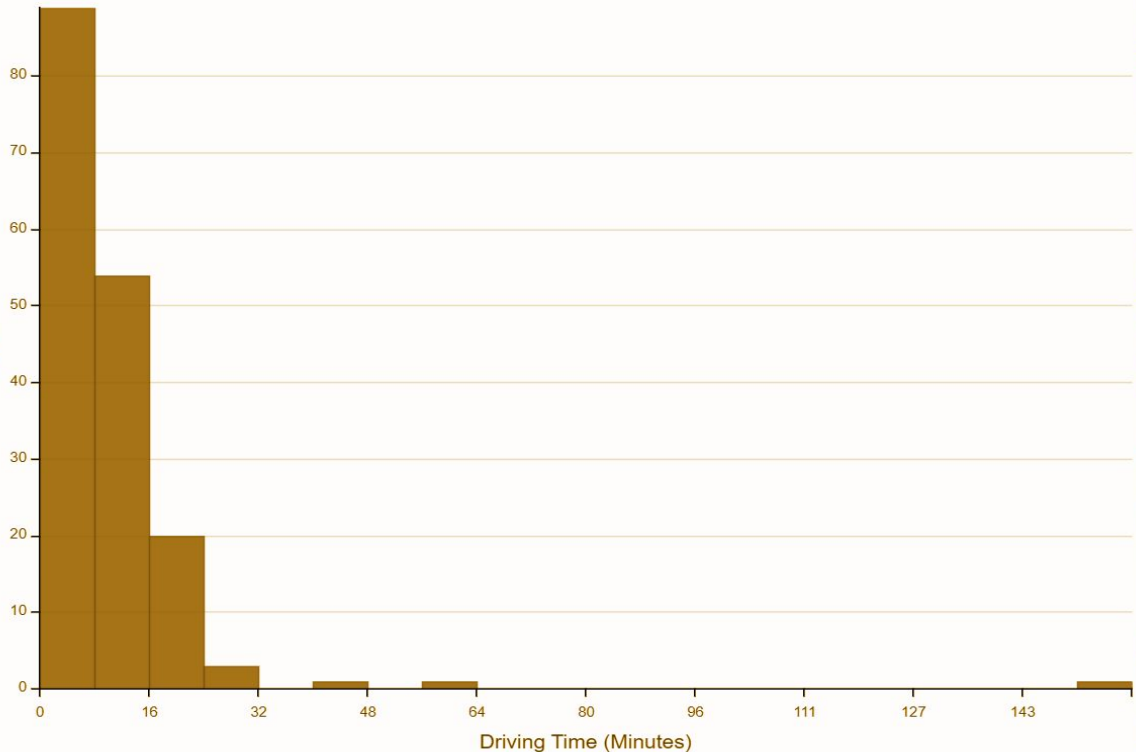




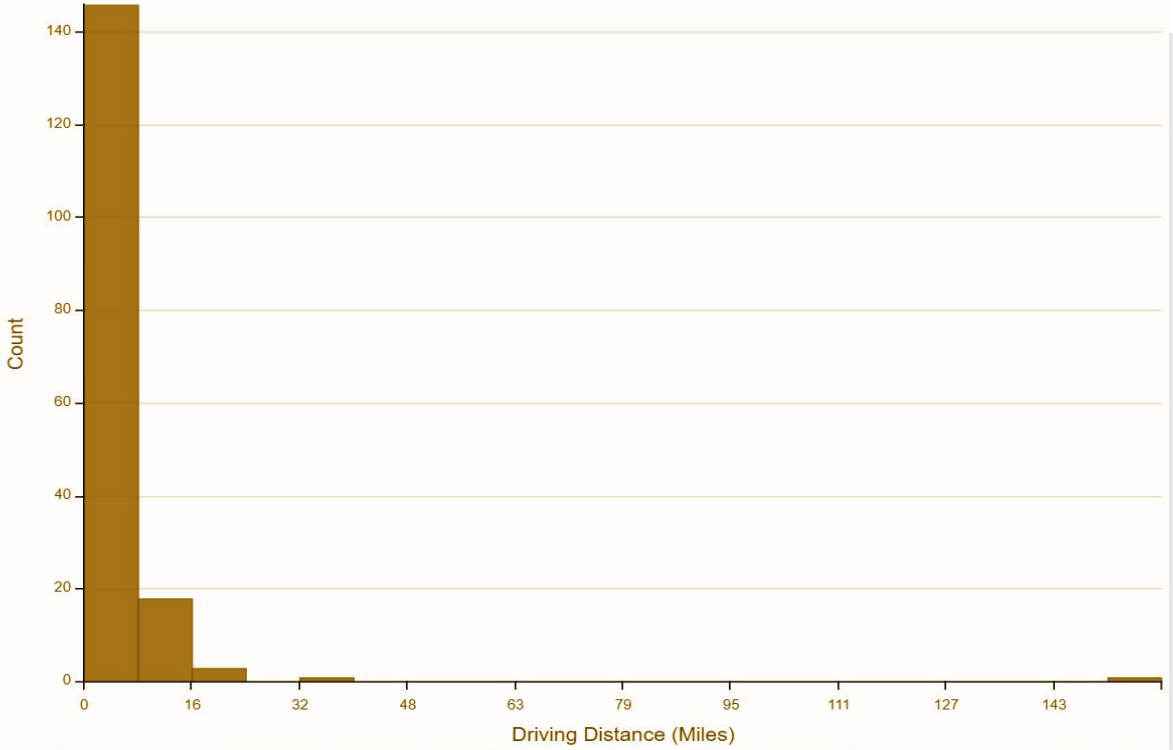
The maps on this page show the routes of drive alone commuters from their home locations to work. The routes were generated using ArcGIS proximity tools, using the mostly likely (shortest) route for every OD pair. Both maps show the same routes but cropped at different scales. The graphs show the distribution (histogram) of transit commute time and distance travelled, based on the shortest route and commute time (traffic).

Downtown | Drive Alone Commute Routes and Trip Volume

Commute Time Histogram

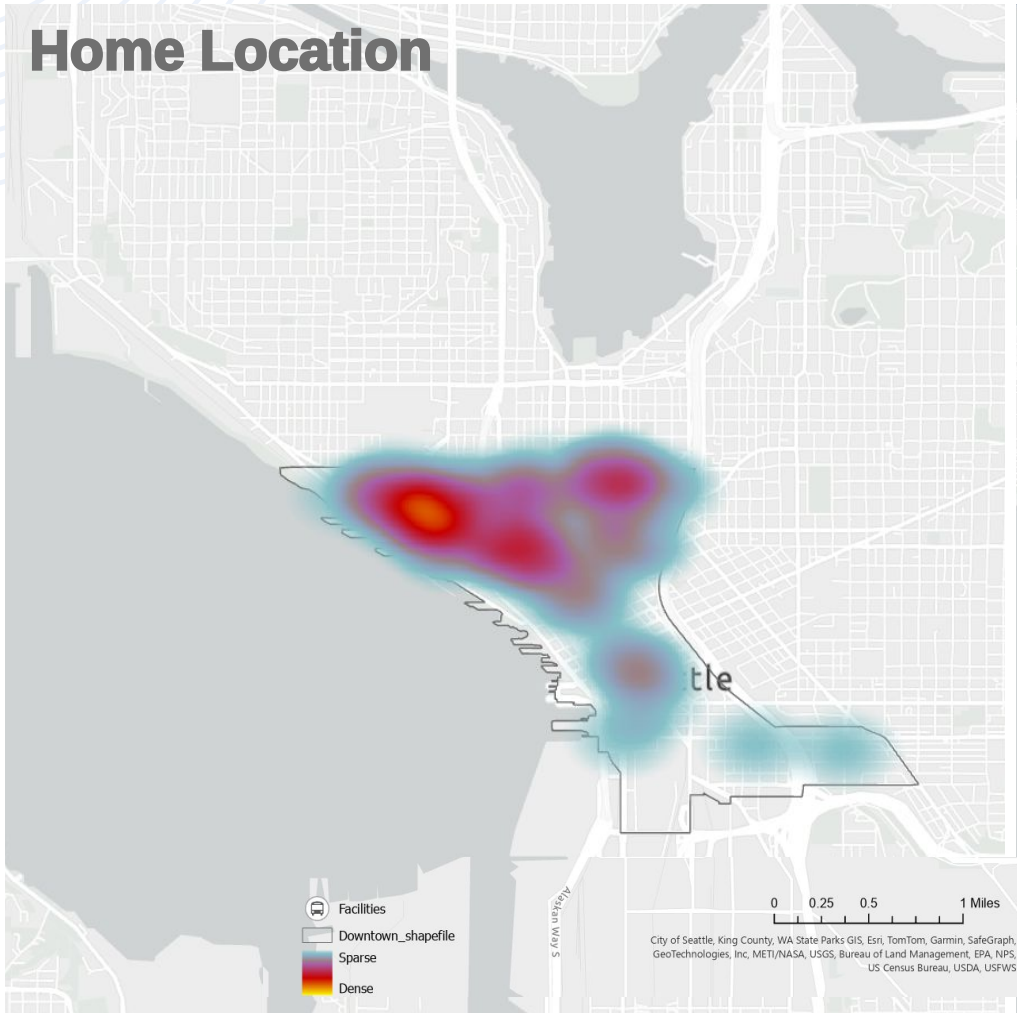


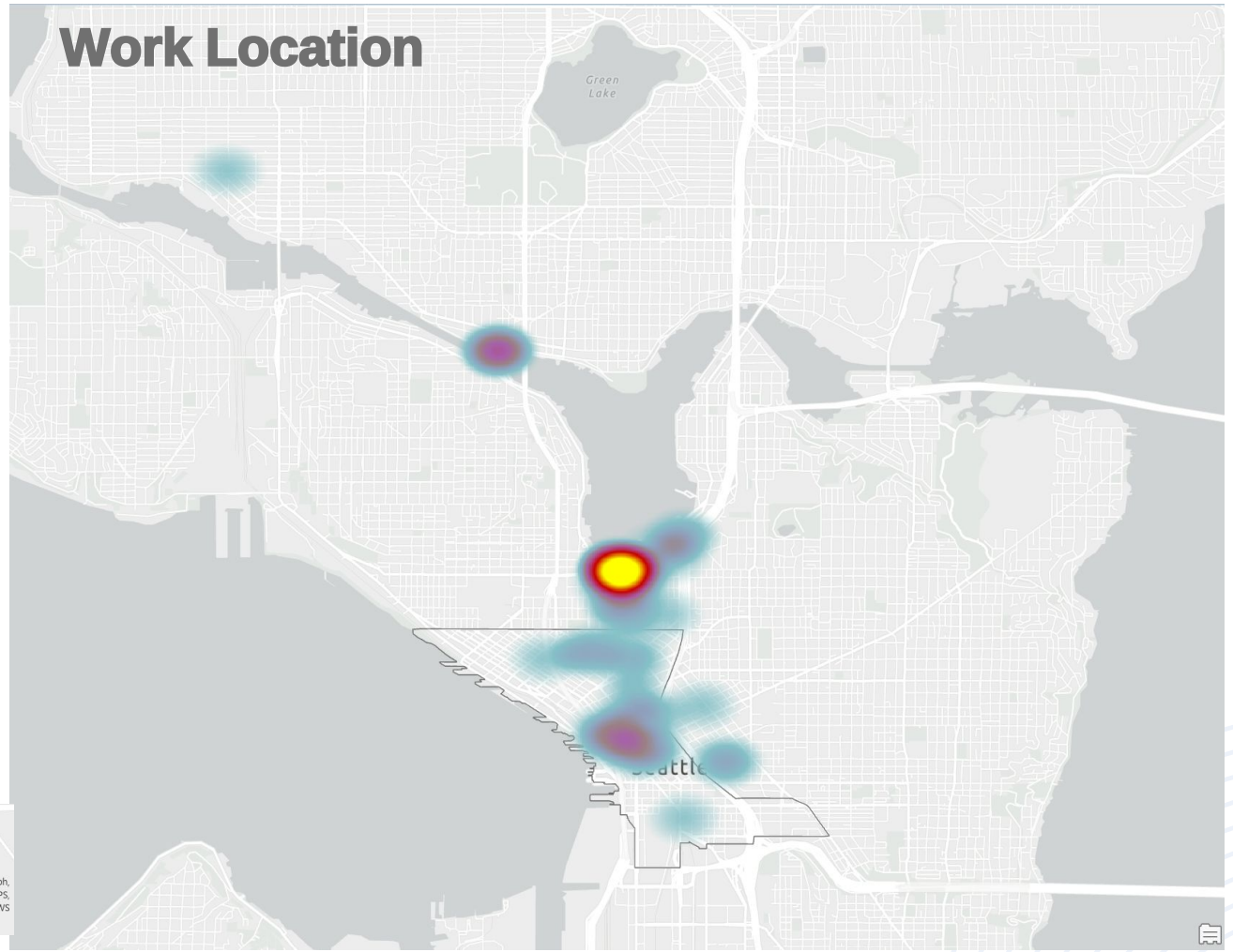
Commute Distance Histogram



The maps on this page show the routes of drive alone commuters from their home locations to work. The routes were generated using ArcGIS proximity tools, using the mostly likely (shortest) route for every OD pair. Both maps show the same routes but cropped at different scales. The graphs show the distribution (histogram) of transit commute time and distance travelled, based on the shortest route and commute time (traffic).

Downtown | Bike/e-bike Commuters Home vs. Work Location



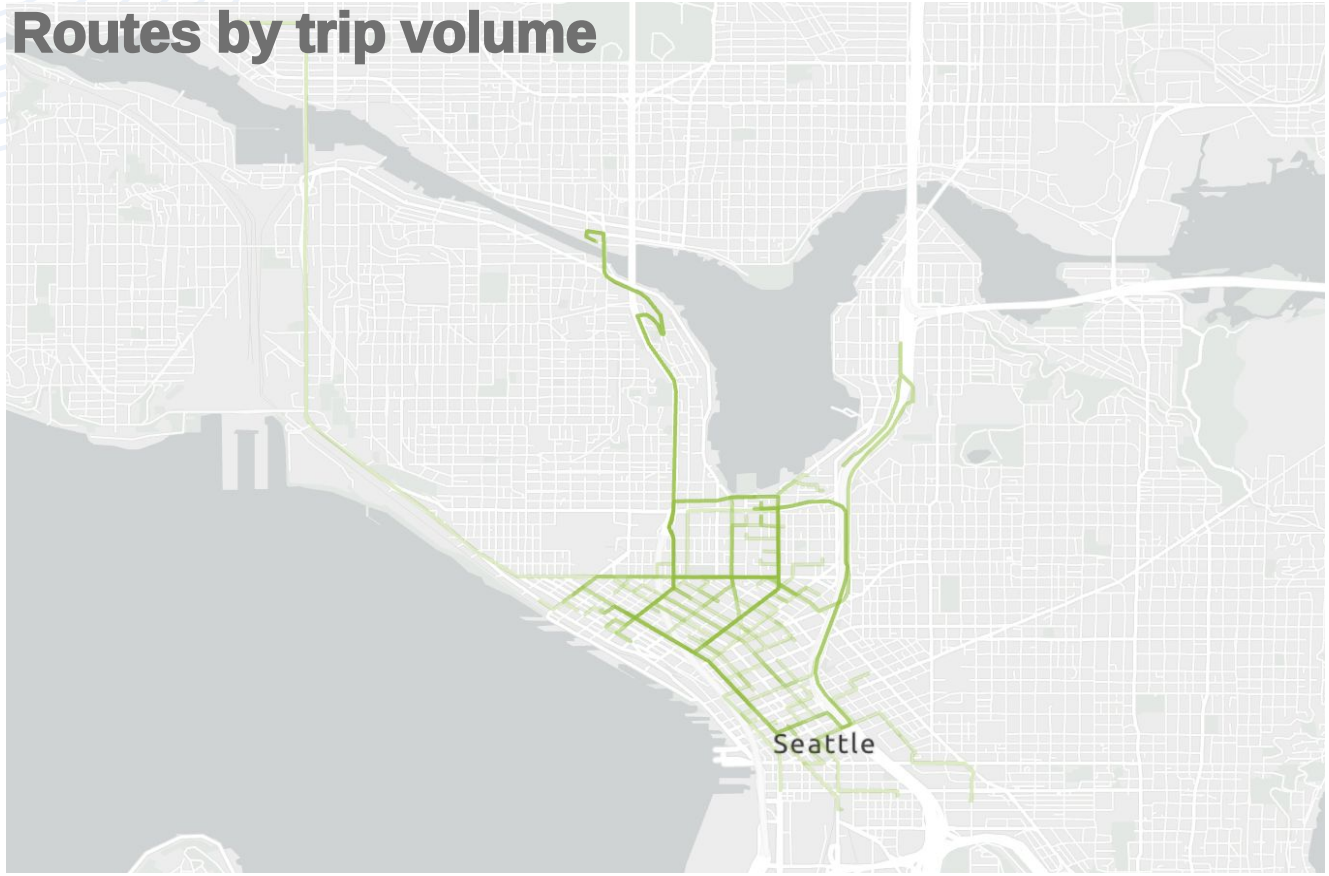


The map on the left shows the home locations of bike commuters who live in Downtown and the map on the right shows the work locations of bike commuters who live in Downtown (N=171). The maps represent the responses distribution as hotspots with warmer colors representing dense distribution and cooler colors representing sparse distribution.

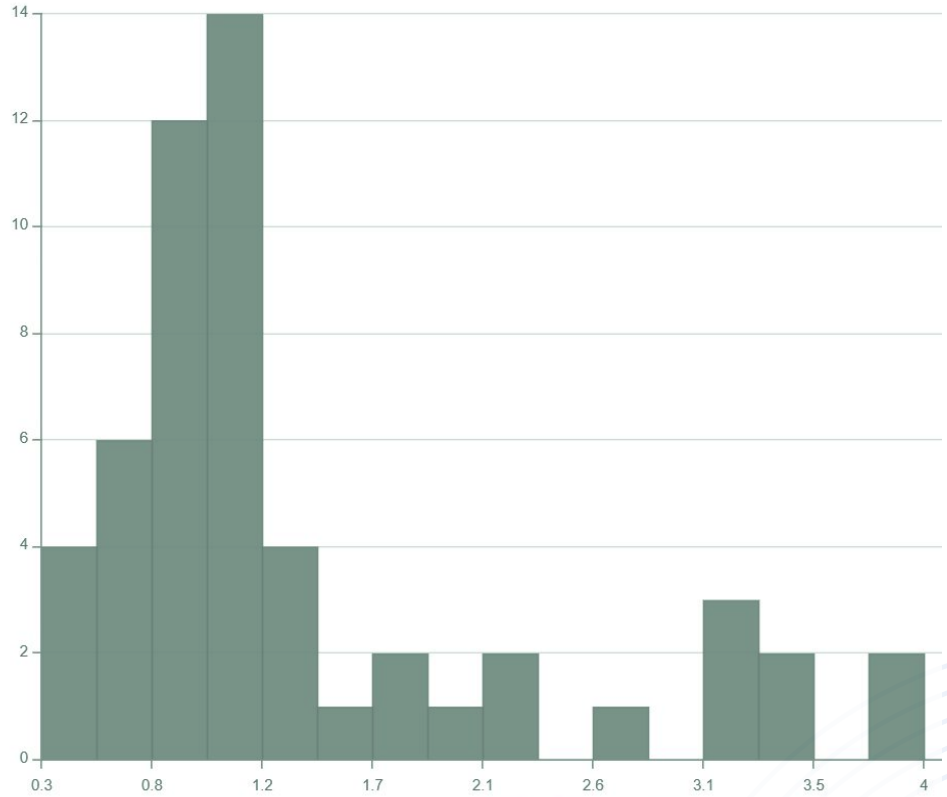
** The two maps are generated at different scales, because one is limited to the boundaries of the Downtown area

Downtown | Bike/e-bike Commute Routes and Trip Volume

Routes by trip volume

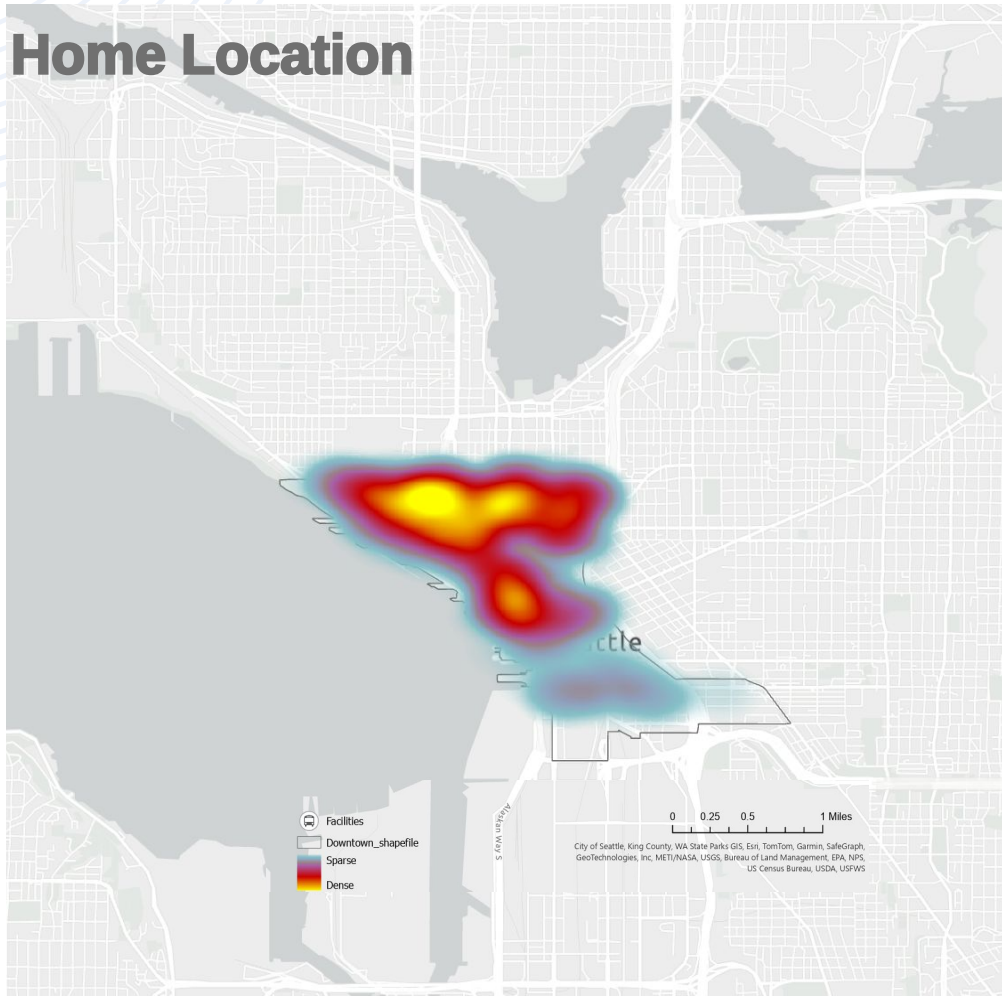


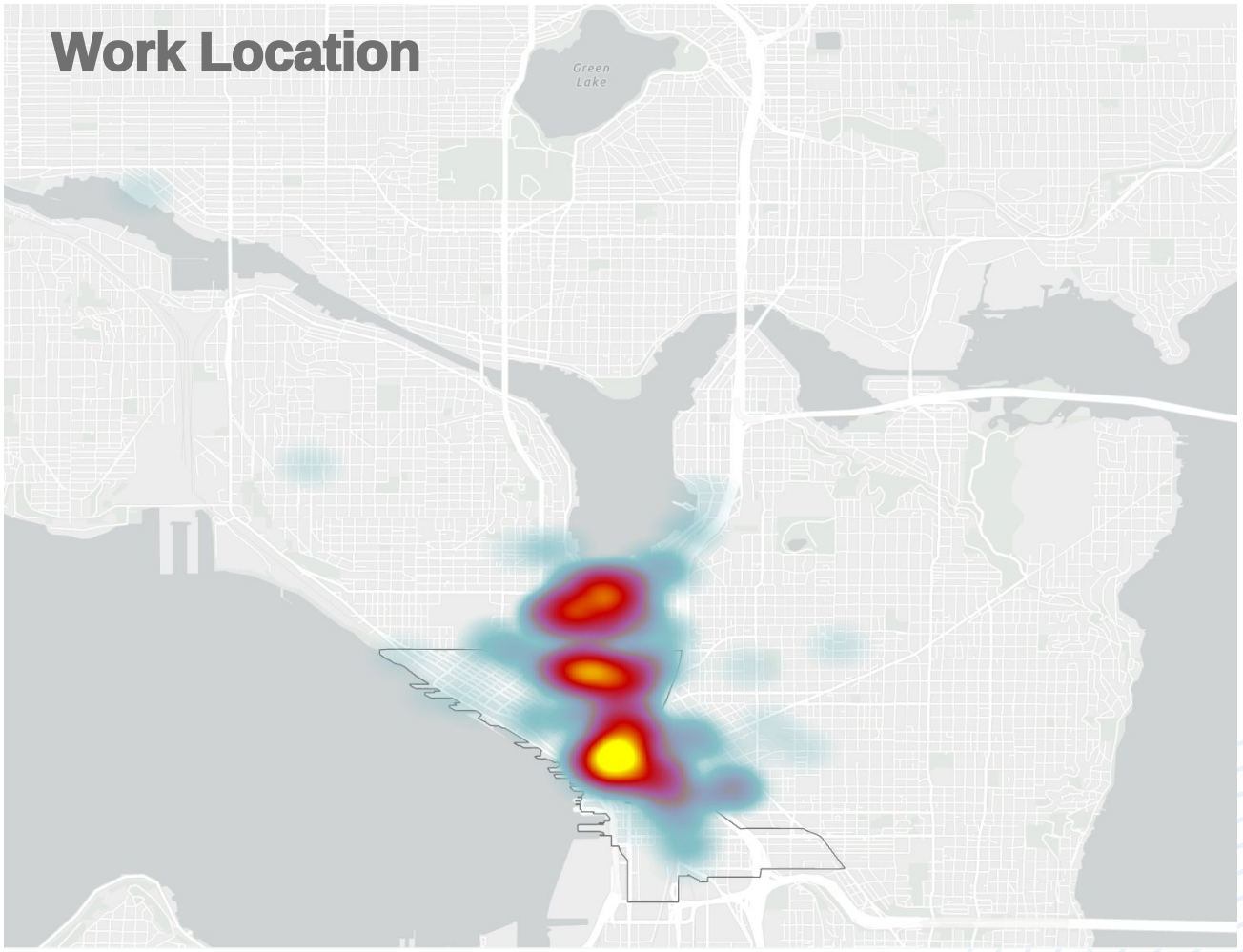
Commute Distance Histogram



The maps on this page show the routes of bike commuters from their home locations to work. The routes were generated using ArcGIS proximity tools, using the mostly likely (shortest) route for every OD pair. Both maps show the same routes but cropped at different scales. The graphs show the distribution (histogram) of transit commute time and distance travelled, based on the shortest route and commute time (traffic).

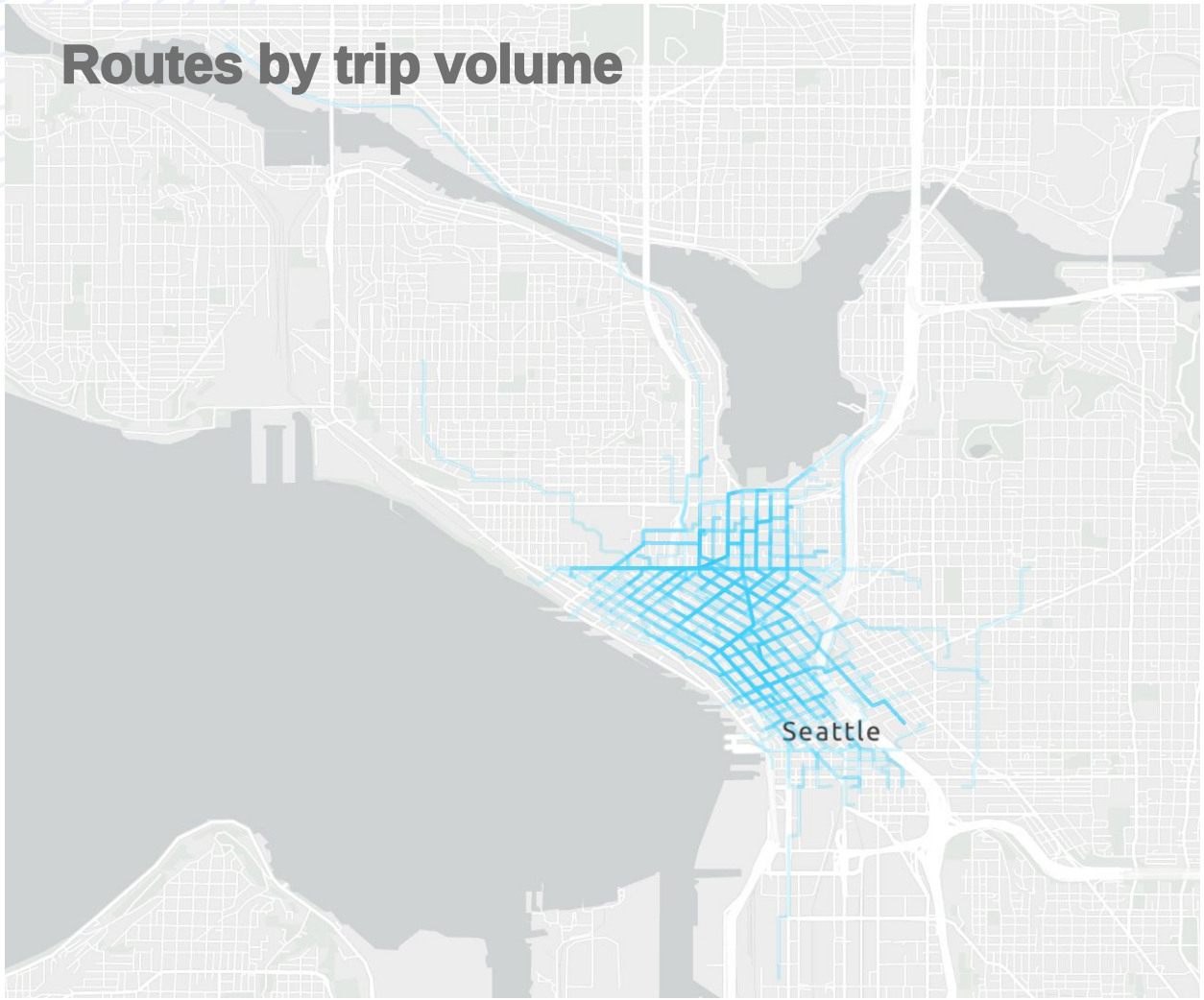
Downtown | Walk Commuters Home vs. Work Location



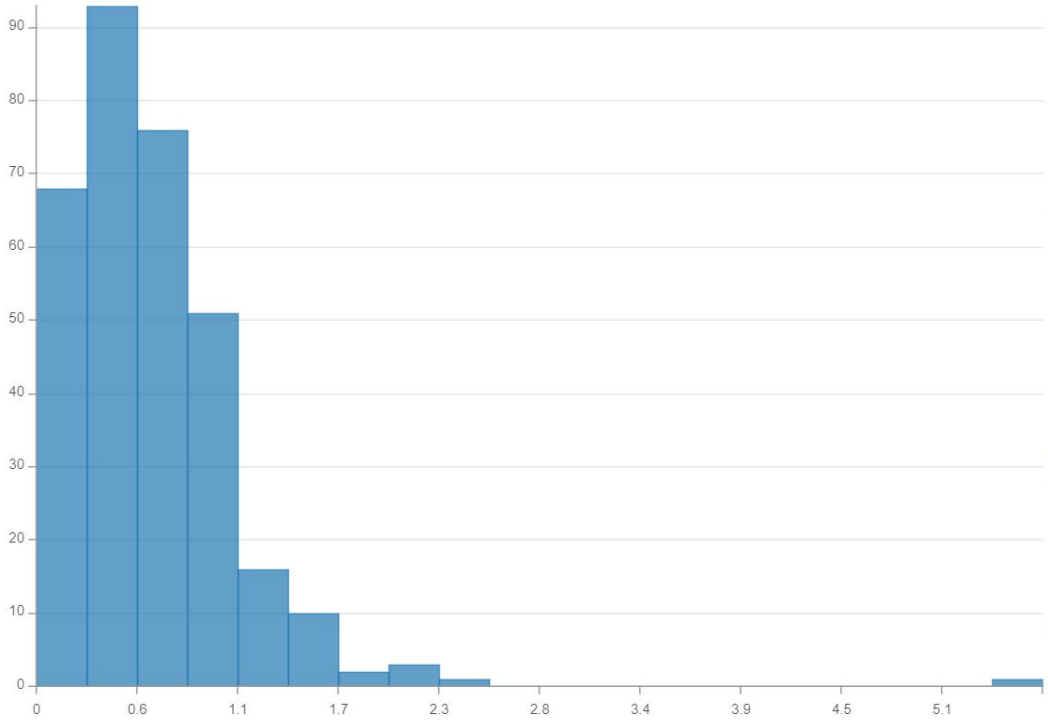


The map on the left shows the home locations of walking commuters who live in Downtown and the map on the right shows the work locations of walking commuters who live in Downtown (N=171). The maps represent the responses distribution as hotspots with warmer colors representing dense distribution and cooler colors representing sparse distribution.
** The two maps are generated at different scales, because one is limited to the boundaries of the Downtown area

Downtown | Walk Commute Routes and Trip Volume



Commute Distance Histogram

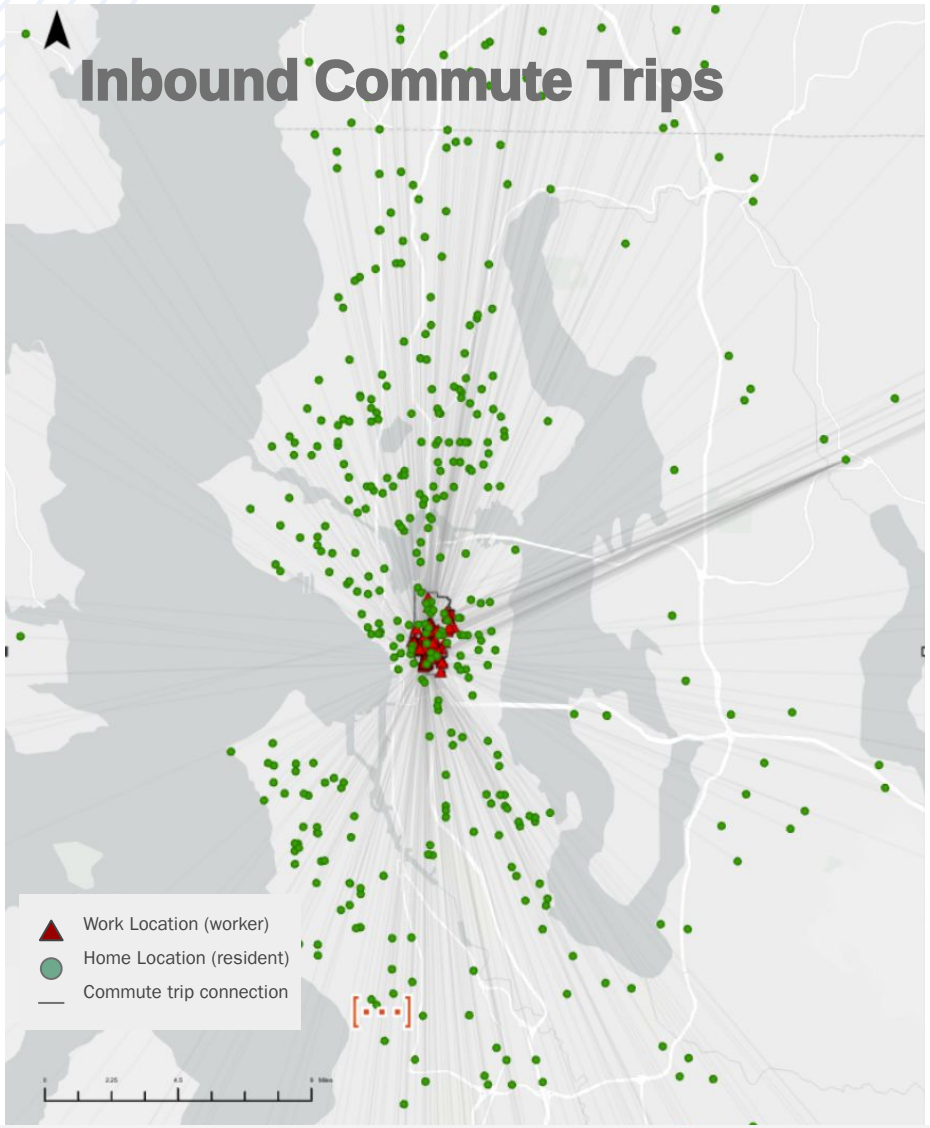


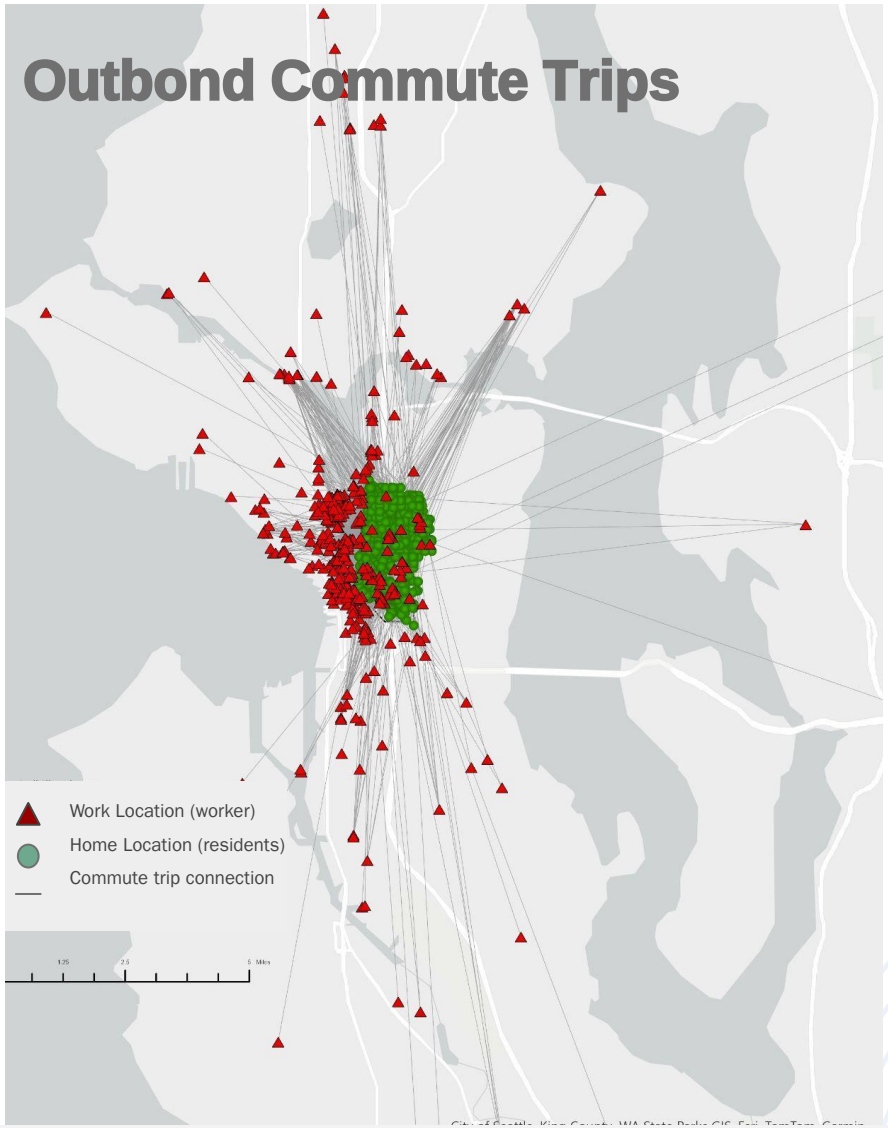
The maps on this page show the routes of walking commuters from their home locations to work. The routes were generated using ArcGIS proximity tools, using the mostly likely (shortest) route for every OD pair. Both maps show the same routes but cropped at different scales. The graphs show the distribution (histogram) of transit commute time and distance travelled, based on the shortest route and commute time (traffic).

DOWNTON SUMMARY

- There's a significant volume of trips to Downtown due to major businesses, but most Downtown workers telecommute especially on Mondays and Fridays.
- Downtown transit riders predominantly reside near central light rail stations, commuting to nearby worksites, particularly less than 2-miles commute, and to highly accessible areas using transit (e.g., South Lake Union).
- Despite living near light rail stations, most drive-alone commuters travel to accessible areas including other parts of Downtown, UW, Northgate (reachable by light rail), and South Lake Union.
- The majority of drive-alone commutes are under 16 minutes and shorter than 10 miles.
- Bike commuters primarily reside in northern Downtown, commuting to South Lake Union or Fremont, with few traveling more than 1.2 miles, potentially facilitated by the Burke Gilman Trail.
- Walk commuters, mainly from northern and central Downtown areas, have short commutes (less than 1.2 miles) to local destinations or close areas like South Lake Union.
- A significant proportion of Downtown transit riders live within a short walking distance from all light rail stations, promoting sustainable travel.
- The majority of drive alone commuters whose work location is within Downtown limits are 34 or younger, men and make less than 60,000 annually. 60% of these drivers indicated that the convenience of having their car is the main reason they drive and 33% drive for safety concerns.

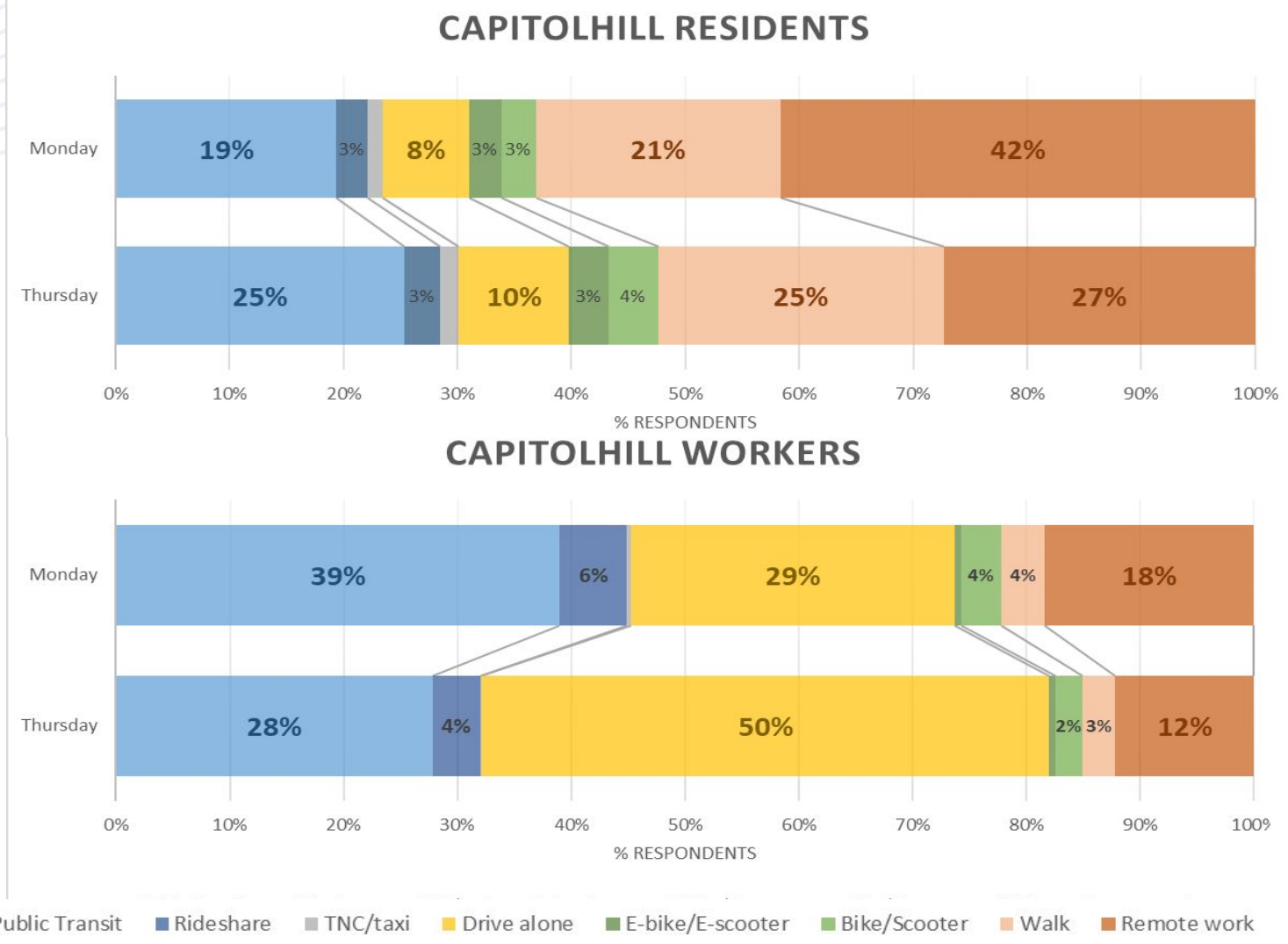
First Hill/Capitol Hill | Inbound vs. outbound commute trips

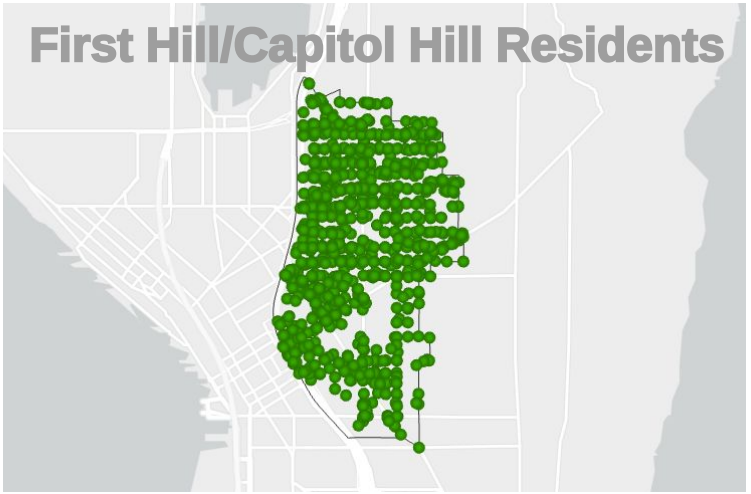


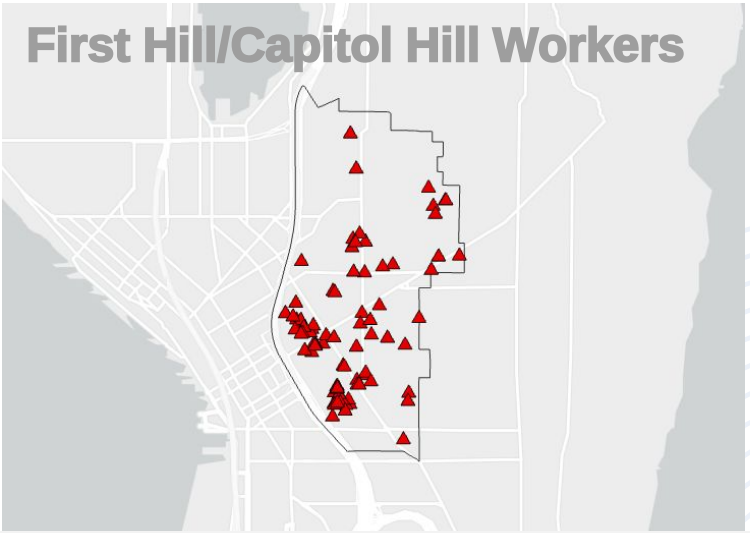


The map on the left shows the inbound commute trips for worksites in First Hill / Capitol Hill (N=1,607,. The map on the right shows the outbound commute trips for Downtown residents (N=854). On both maps, the green dots represent the commuters home locations, the red triangle representing worksites and the grey lines represent the commute trip (connection) to show the volume of the trips and direction.

First Hill/Capitol Hill | Mode Split by Day

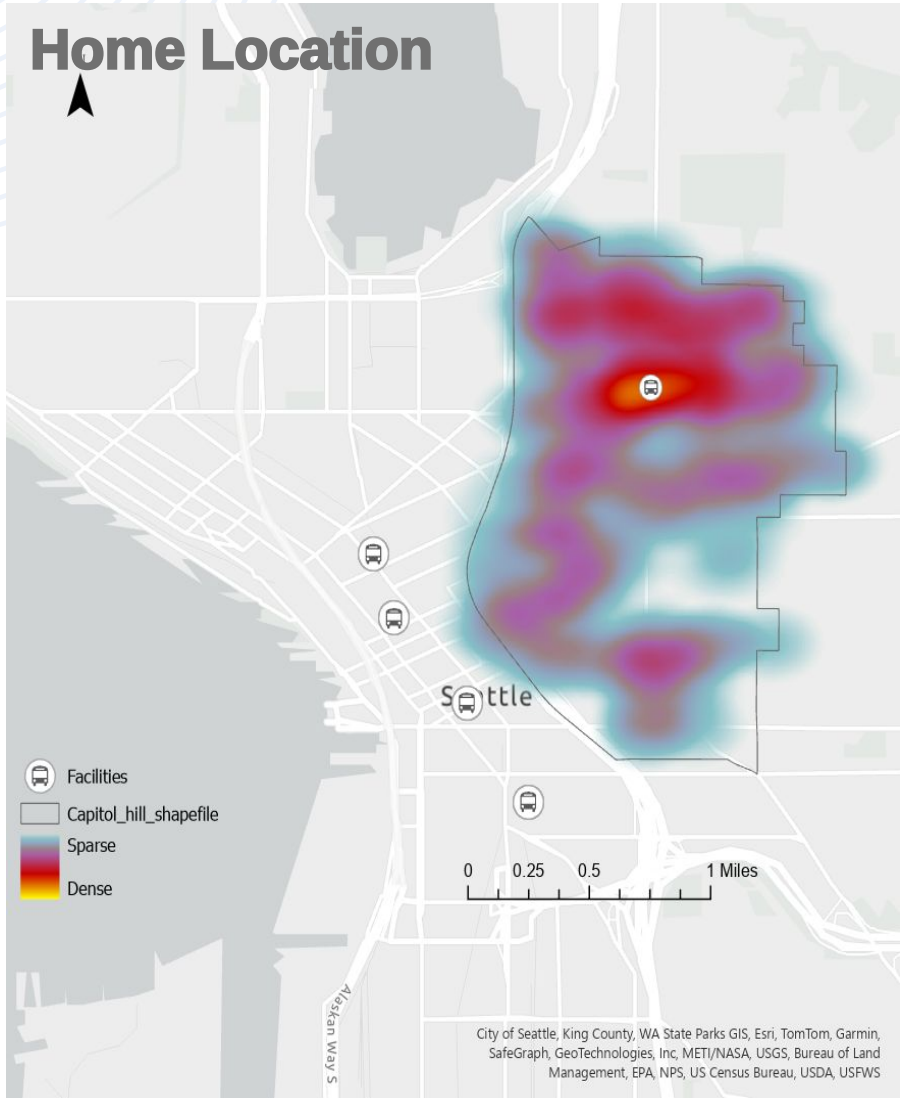


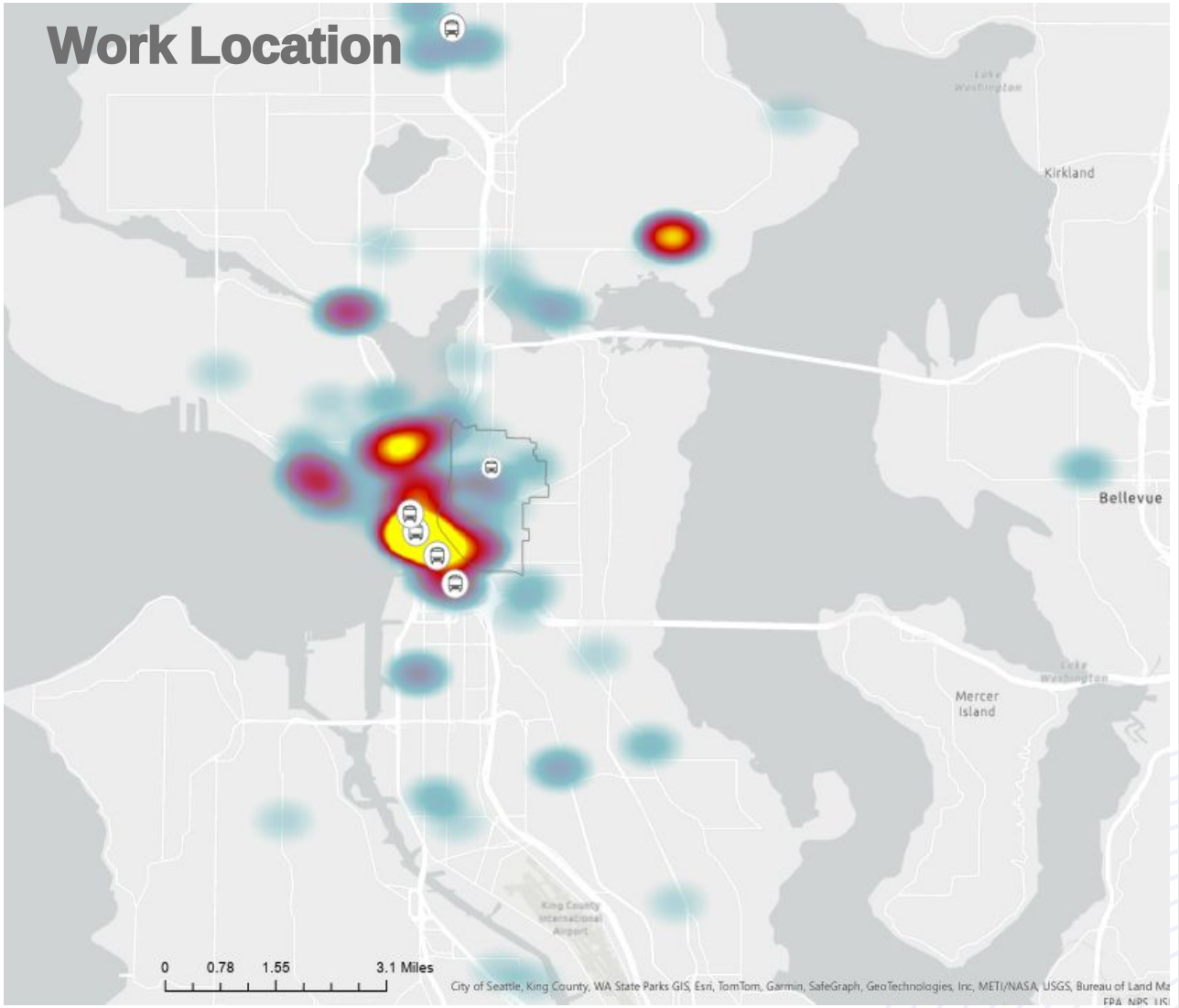




Q10: Currently, during a typical week, how do you get to work each day? (Monday, Tuesday, Wednesday, Thursday, Friday). The top graph shows the mode split for respondents whose home location is in First Hill / Capitol Hill (residents) N=1,607, and the bottom graph shows respondents whose work location is in Downtown area (workers)(N= 854).
** Public transit includes bus, light rail, and ferry; Drive alone includes motorcycle; Rideshare includes vanpool, carpool and employer shuttle; Other includes day off.

First Hill/Capitol Hill | Transit Commuters Home vs. Work Location

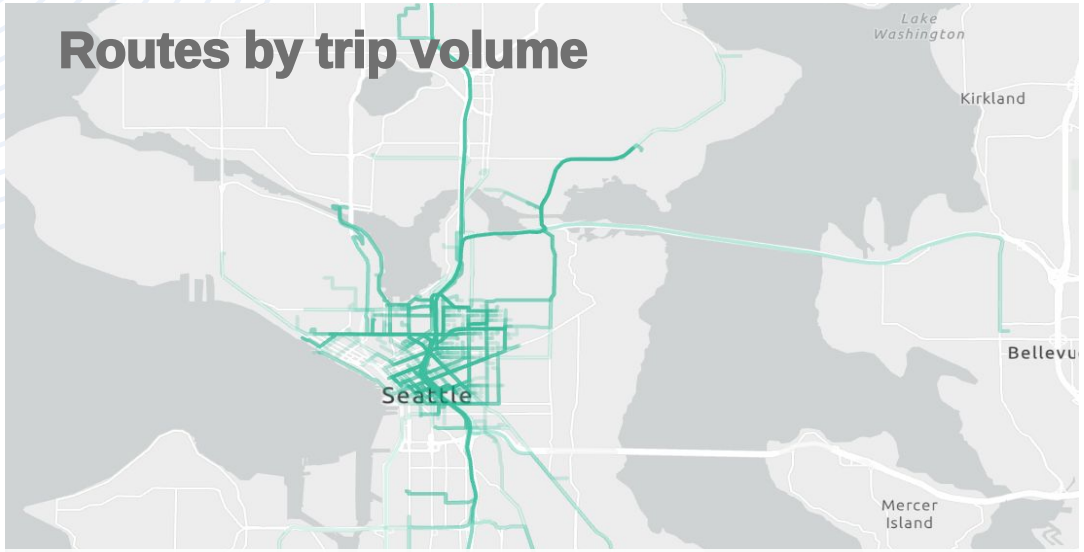


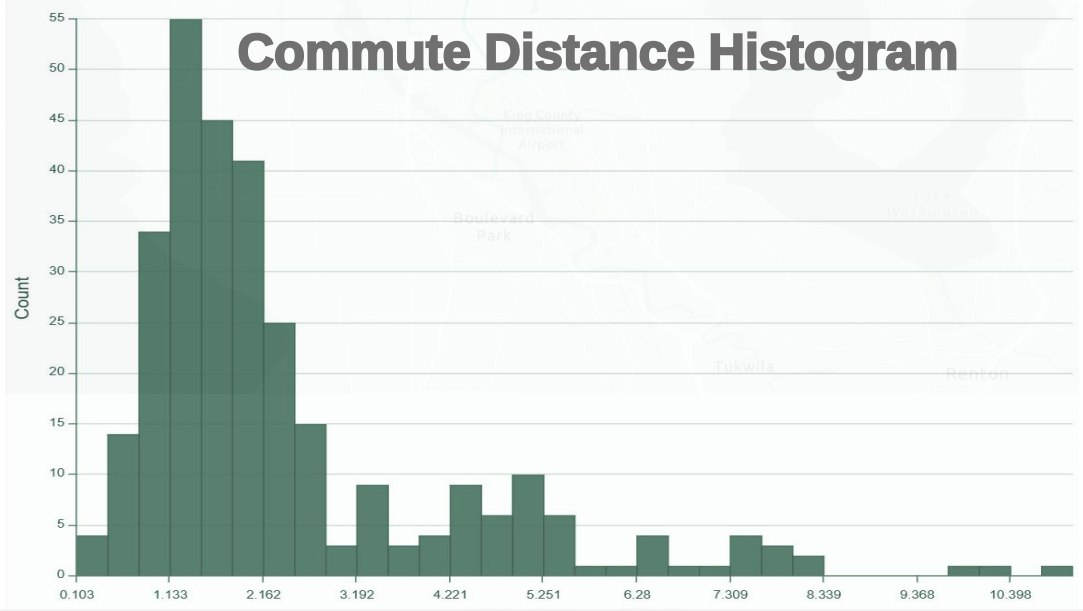


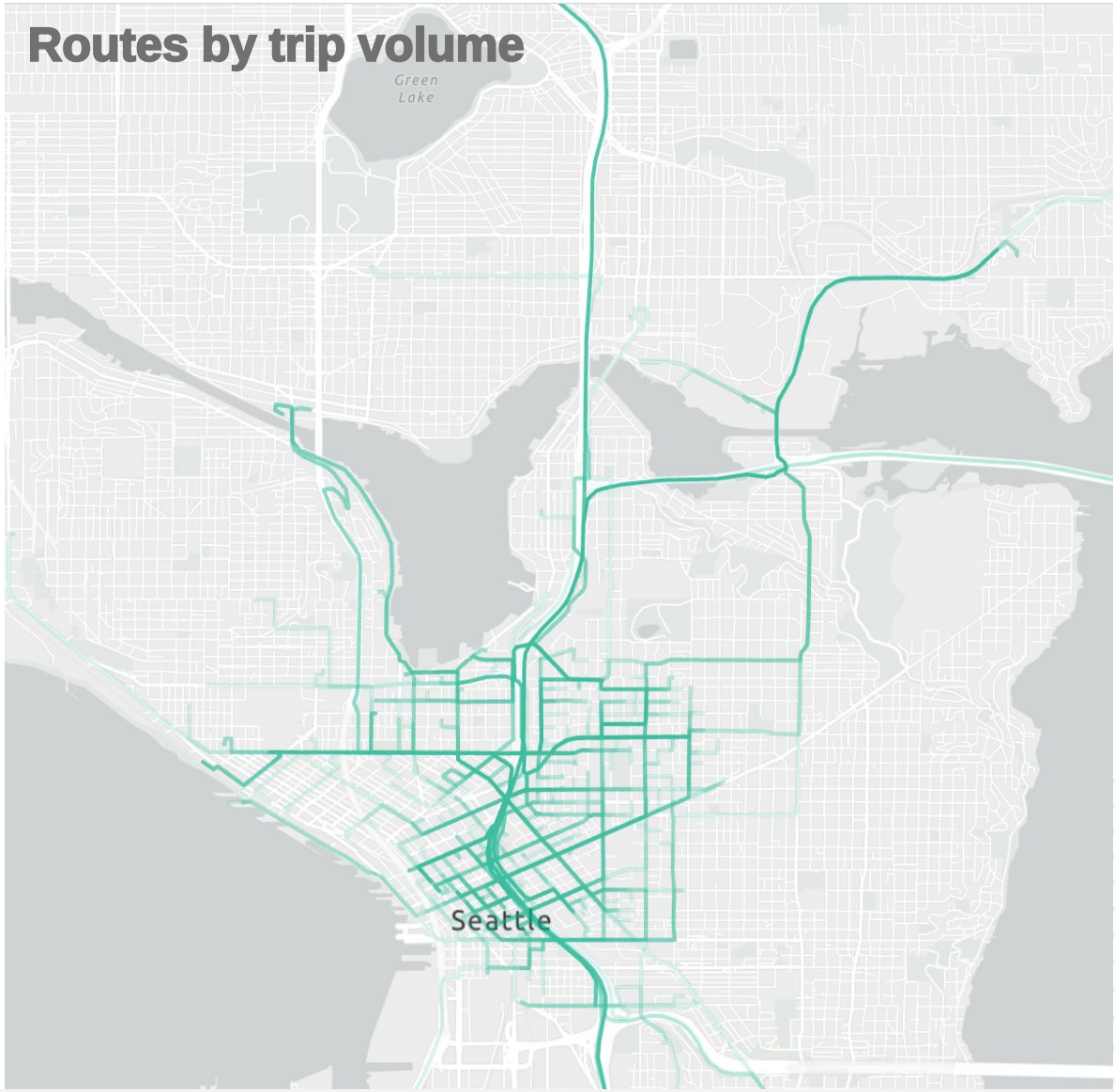
The map on the left shows the home locations of transit commuters who live in First Hill / Capitol Hill and the map on the right shows the work locations of transit commuters who live in Capitol Hill (N=282). The maps represent the responses distribution as hotspots with warmer colors representing dense distribution and cooler colors representing sparse distribution.
** The two maps are generated at different scales, because one is limited to the boundaries of the subarea

42

First Hill/Capitol Hill | Transit Commute Routes and Trip Volume



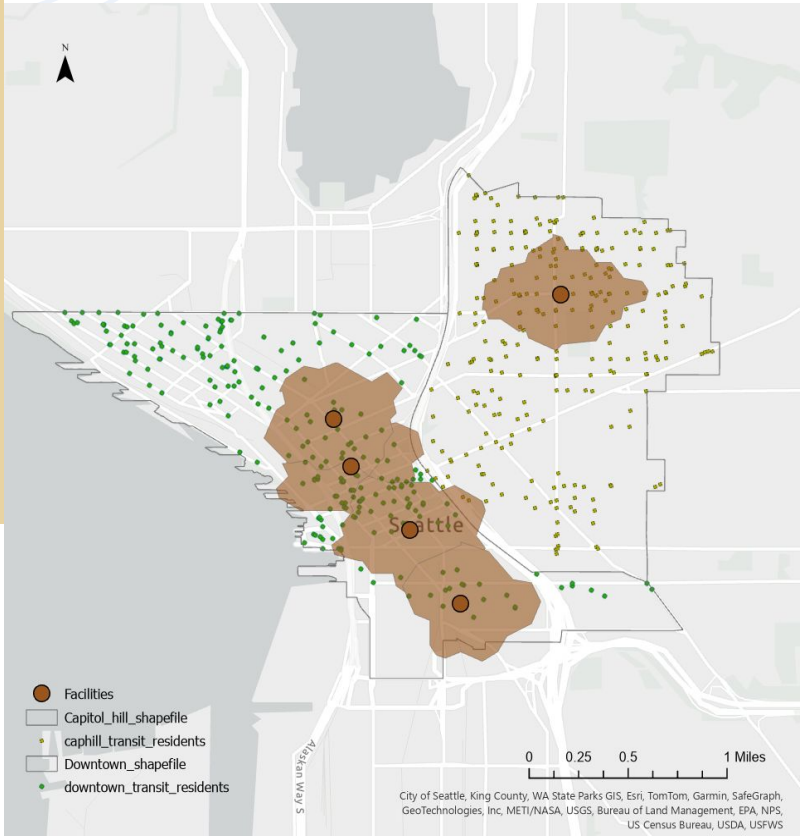




The maps on this page show the routes of transit commuters from their home locations to work. The routes were generated using ArcGIS proximity tools, using the mostly likely (shortest) route for every OD pair. Both maps show the same routes but cropped at different scales. The graphs show the distribution (histogram) of transit commute time and distance travelled, based on the shortest route and commute time (traffic).

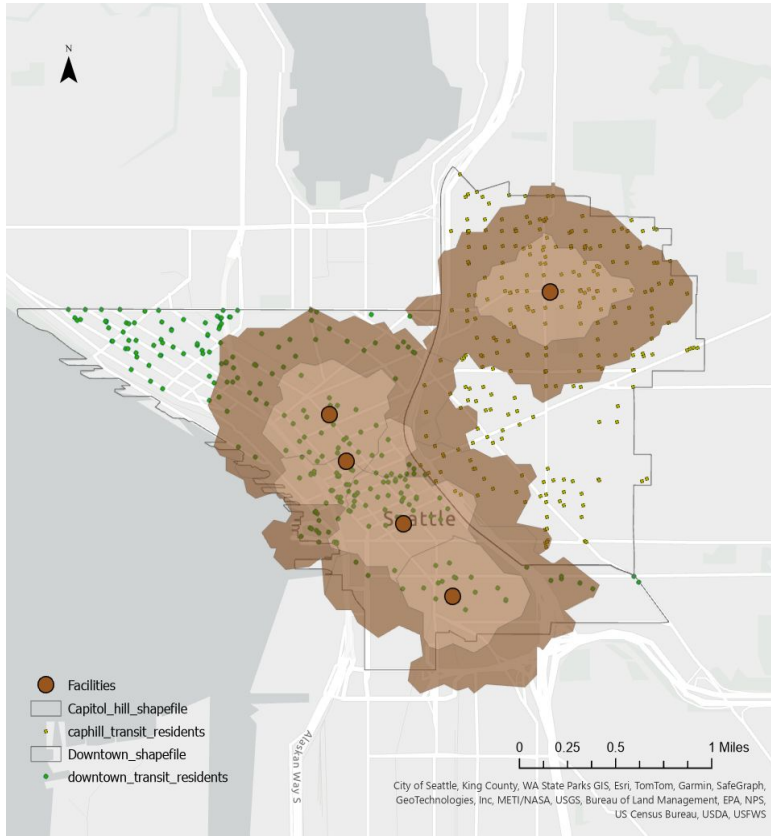
First Hill/Capitol Hill | Transit Commuters Access to Light Rail

5 Min Walkshed



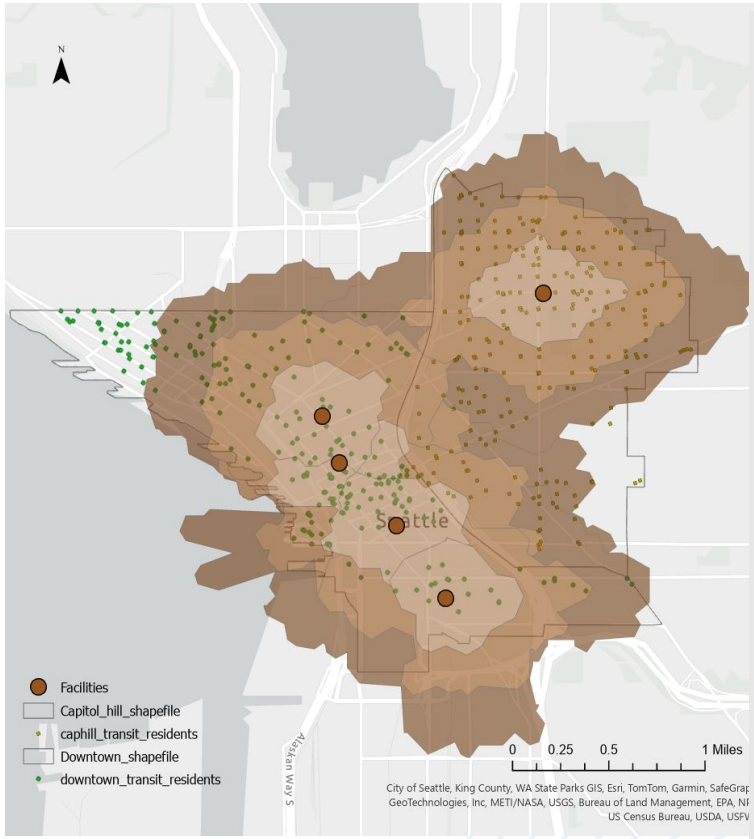
24% Transit Riders

10 Min Walkshed



45% Transit Riders

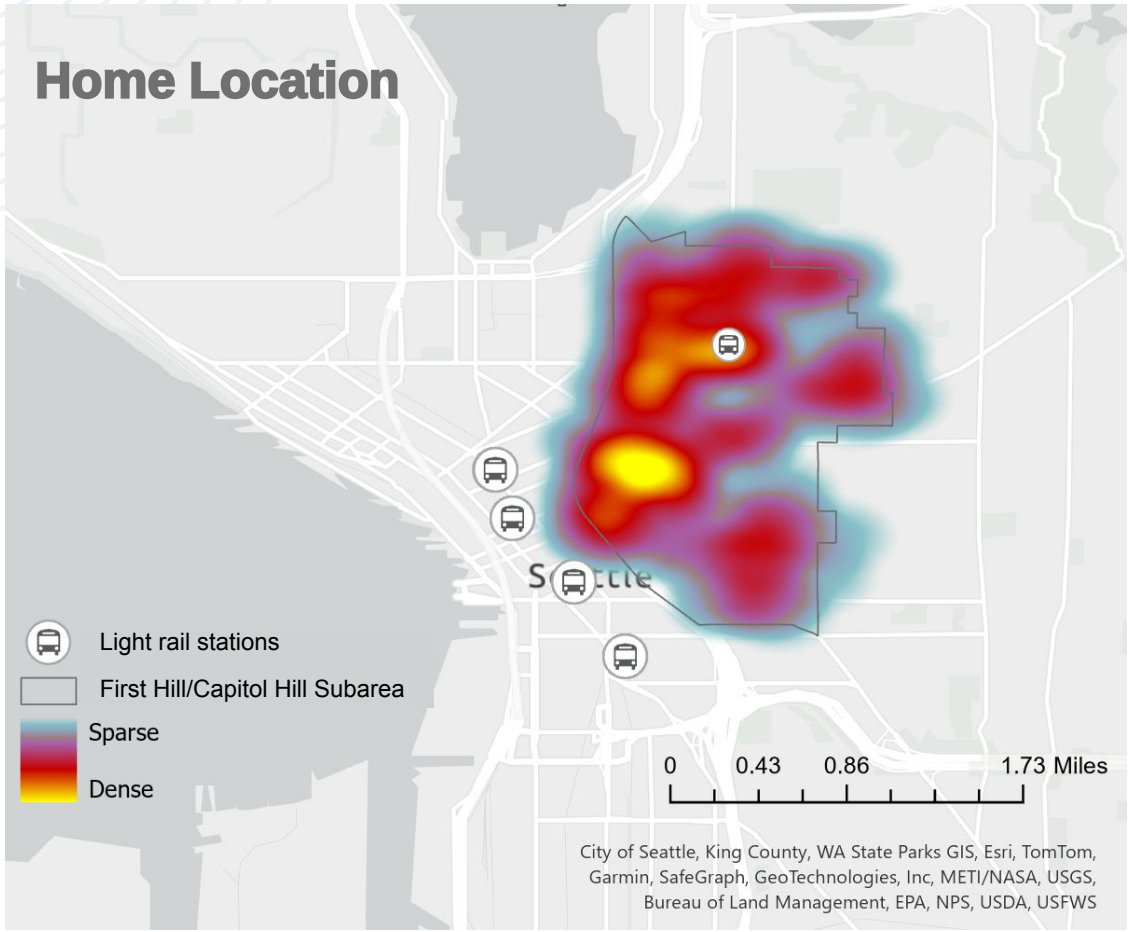
15 Min Walkshed

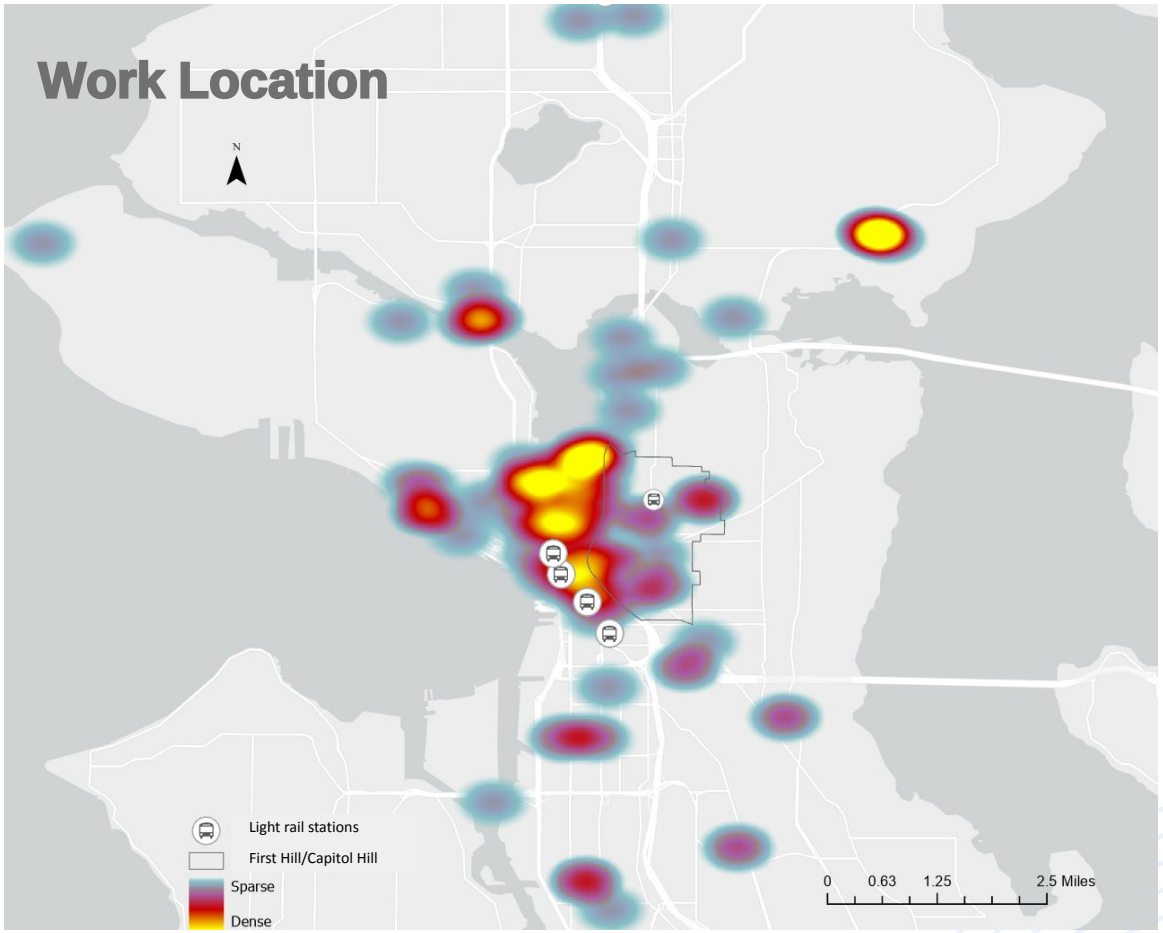


96% Transit Riders

The maps on this page show different walksheds for Downtown light rail stations, using the road network (regardless of sidewalk availability) and three consecutive walking durations (5 min, 10 min, and 15 min). The maps also show transit commuters whose home locations are within Downtown area (N=282), and the percentages of those who live within each walkshed. The walksheds were generated using ArcGIS service area tool, using existing roads, from each light rail station.
**** First Hill / First Hill/Capitol Hill percentage is calculated using walksheds from surrounding light rail stations in addition to Capitol Hill station.**

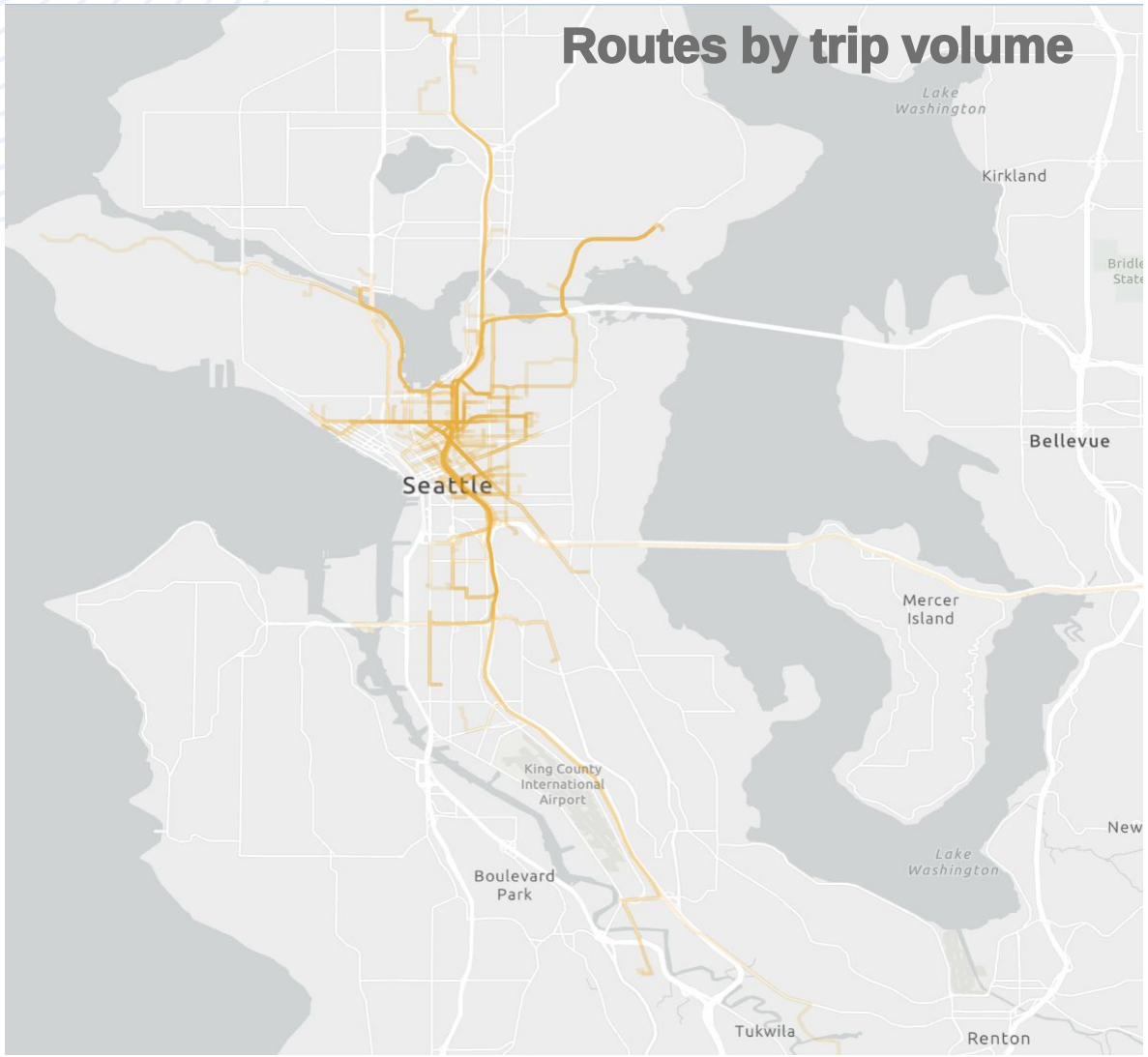
First Hill/Capitol Hill | Drive Alone Commuters Home vs. Work Location

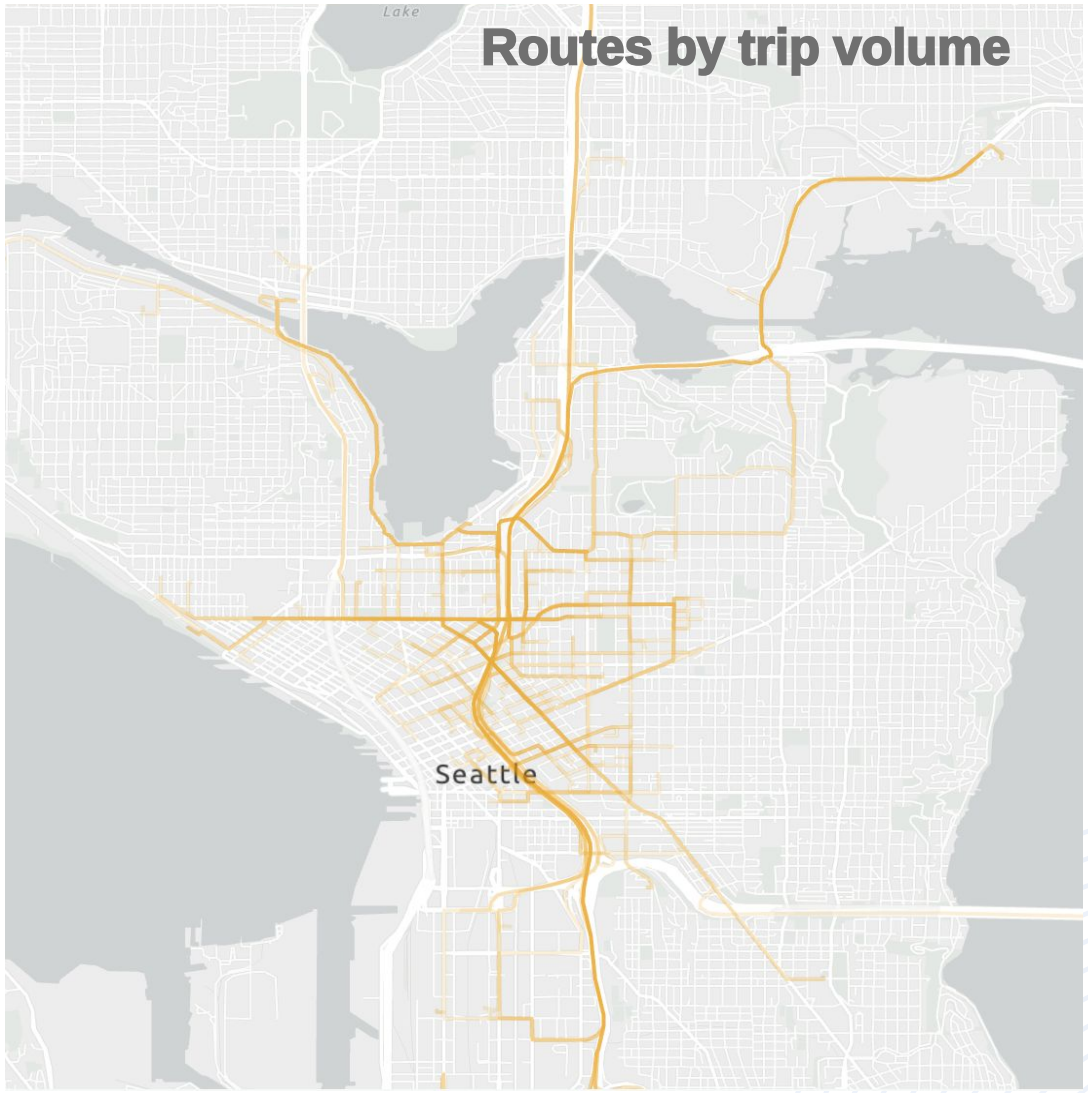




The map on the left shows the home locations of drive alone commuters who live in First Hill / Capitol Hill and the map on the right shows the work locations of drive alone commuters who work in First Hill/Capitol Hill (N=171). The maps represent the responses distribution as hotspots with warmer colors representing dense distribution and cooler colors representing sparse distribution.
**** The two maps are generated at different scales, because one is limited to the boundaries of Capitol Hill area**

First Hill/Capitol Hill | Drive Alone Commute Routes and Trip Volume

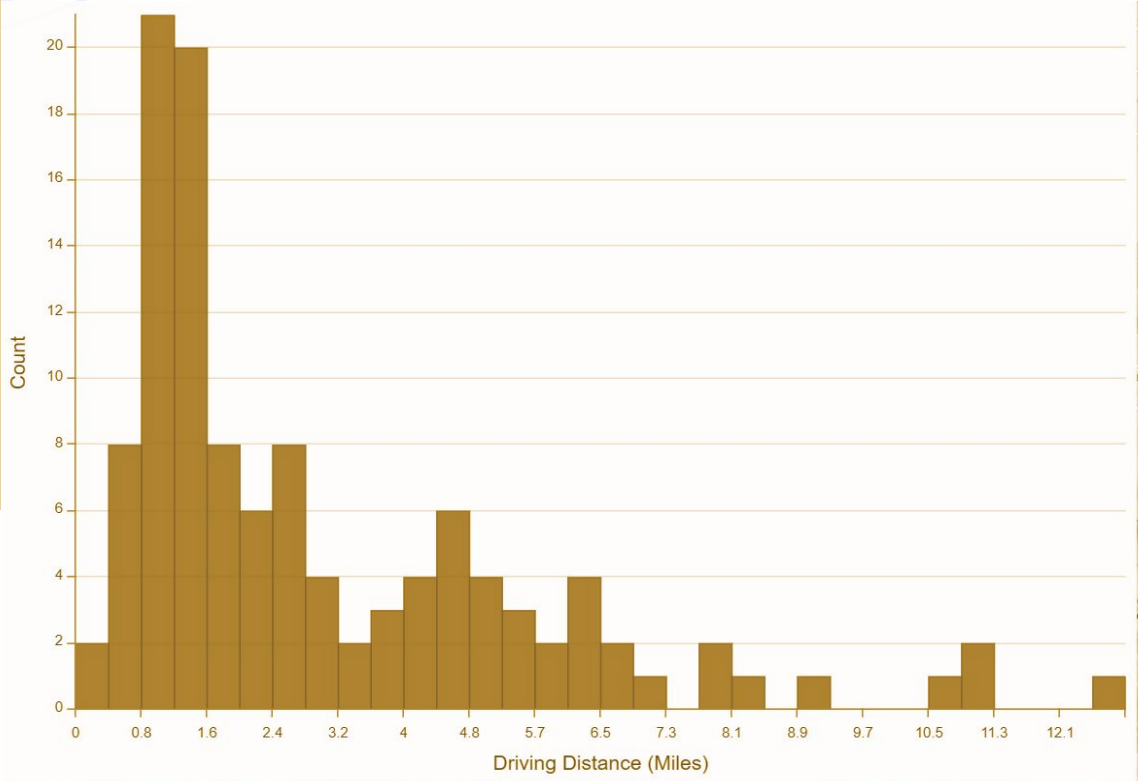




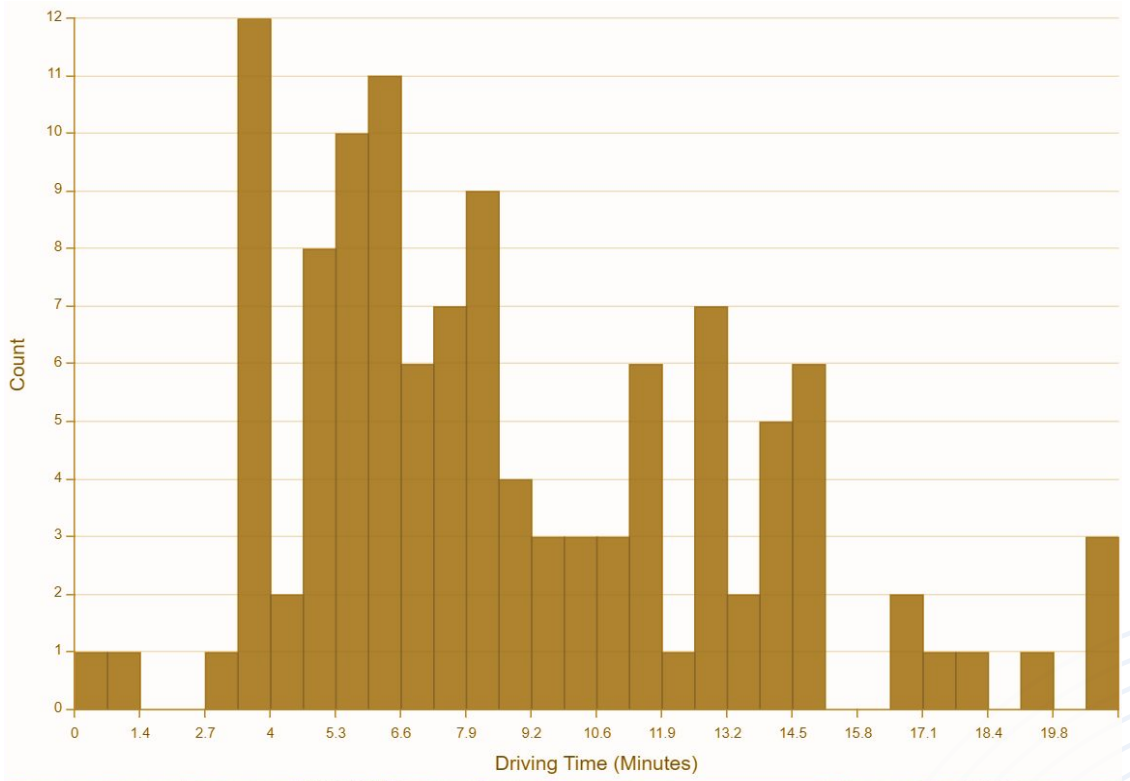
The graphs show the distribution (histogram) of transit commute time and distance travelled, based on the shortest route and commute time (traffic).

First Hill/Capitol Hill | Drive Alone Commute Routes and Trip Volume

Commute Distance Histogram



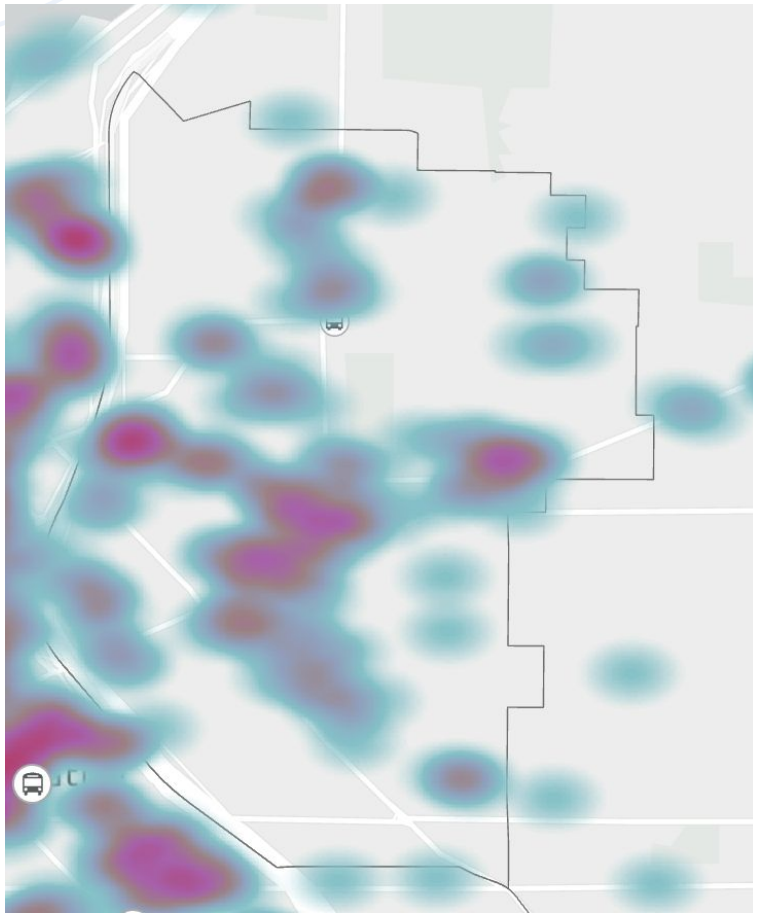
Commute Time Histogram



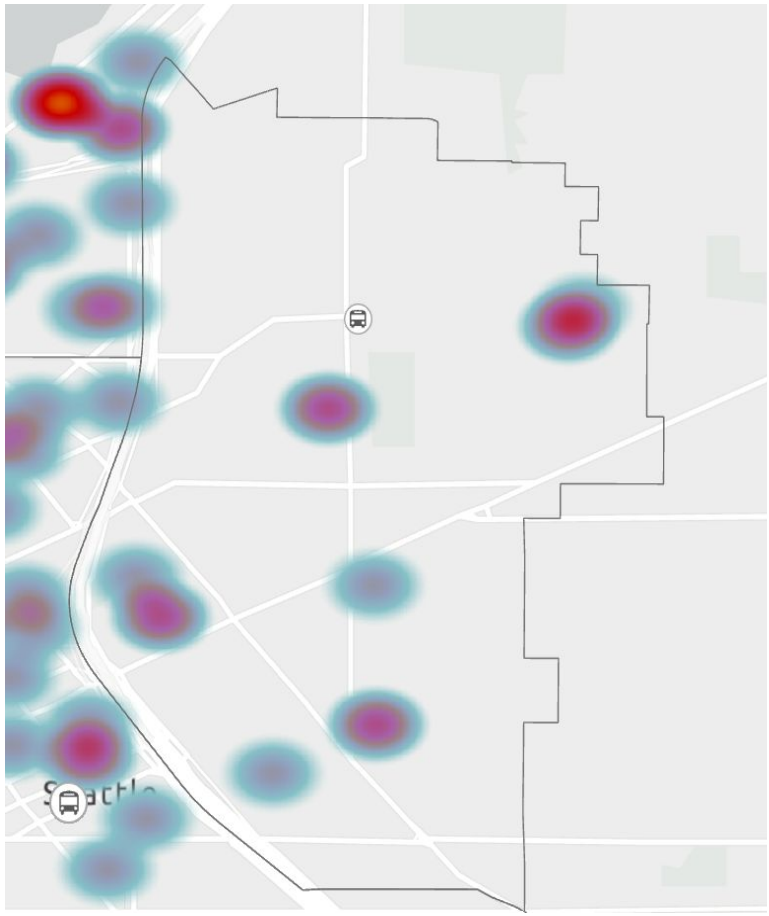
The maps on this page show the routes of drive alone commuters from their home locations to work. The routes were generated using ArcGIS proximity tools, using the mostly likely (shortest) route for every OD pair. Both maps show the same routes but cropped at different scales. The graphs show the distribution (histogram) of transit commute time and distance travelled, based on the shortest route and commute time (traffic).

First Hill/Capitol Hill | Public Garages and Parking Lots

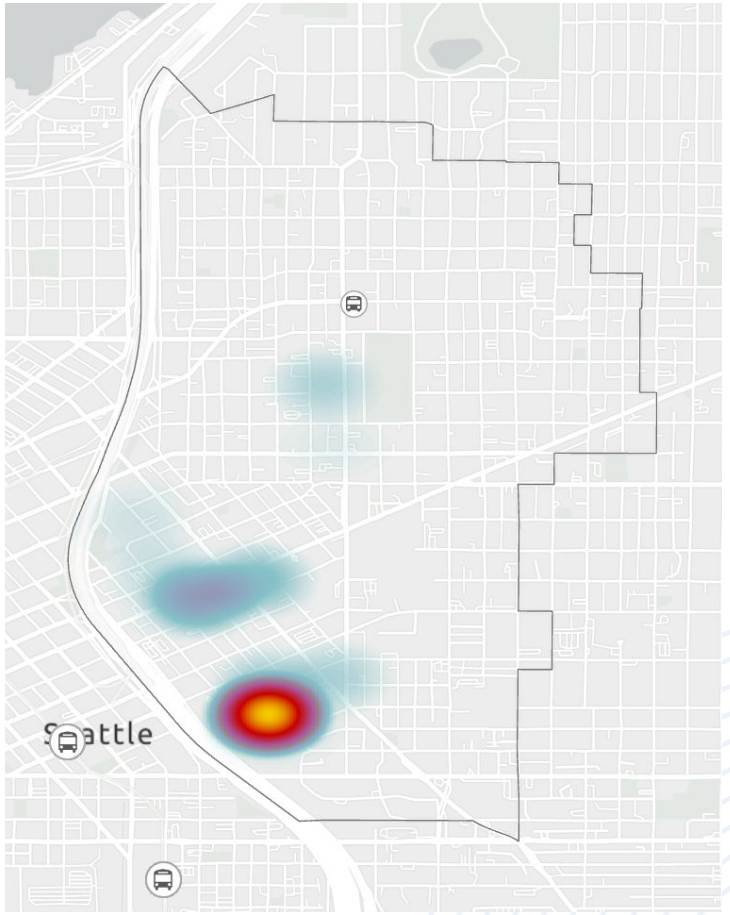
Public Parking Options in First Hill/ Capitol Hill



Work Location of First Hill/ Capitol Hill Resident Drivers



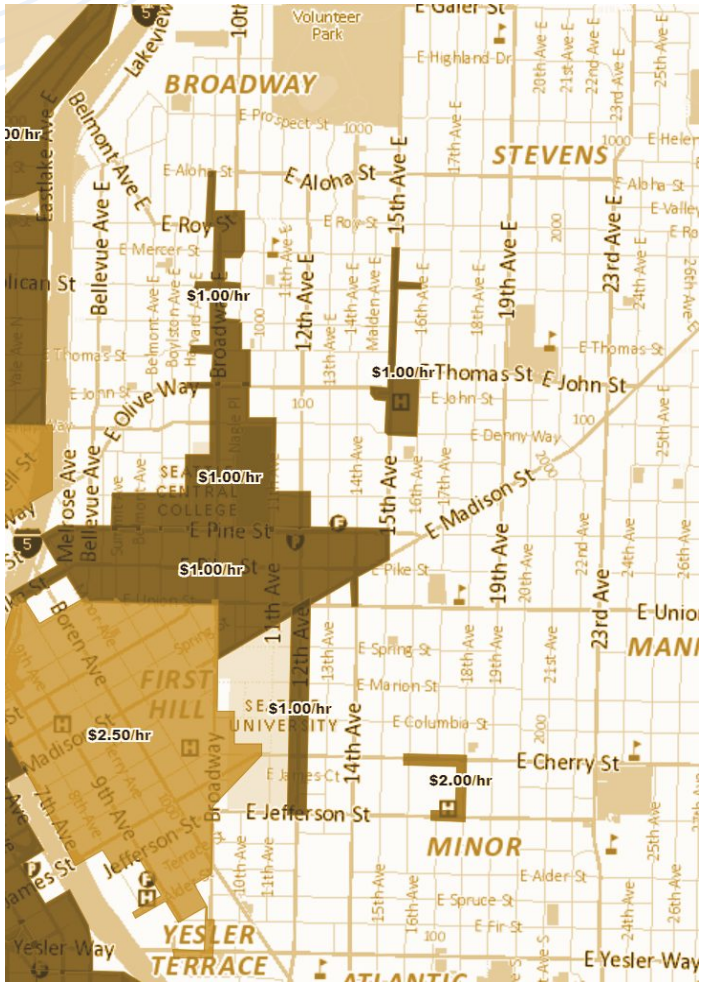
Work Location of First Hill/ Capitol Hill Worker Drivers



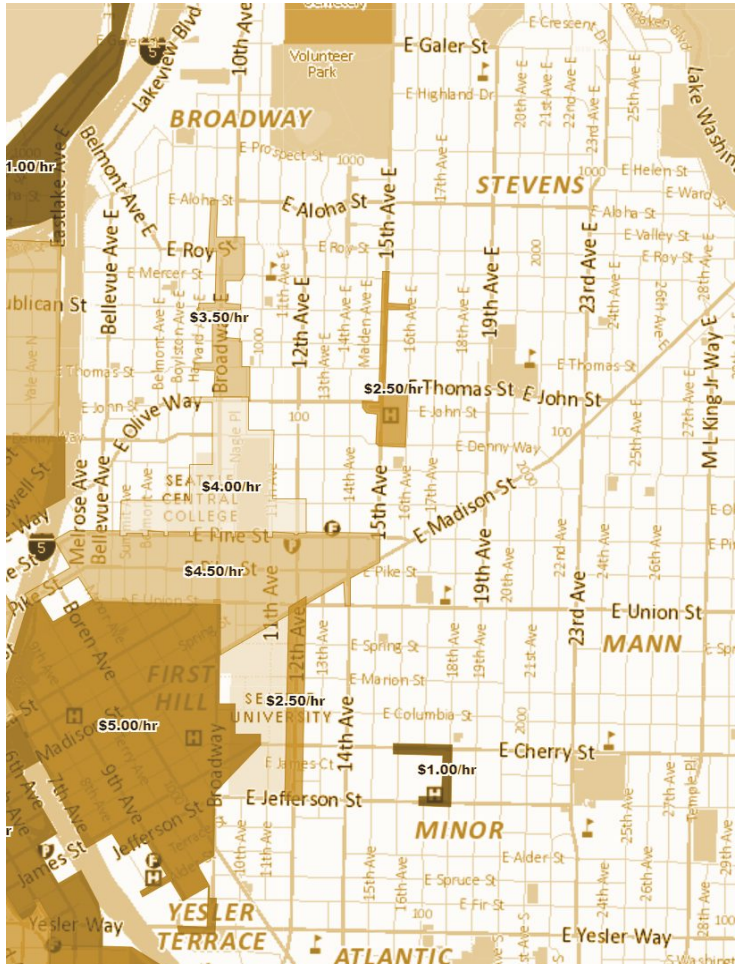
The map on the left shows the density of public parking options including garages and lots (N=700) and the map on the right shows the work locations of drive alone commuters who live in First Hill/Capitol Hill (N=171).
Data source: https://data-seattlecitygis.opendata.arcgis.com/datasets/SeattleCityGIS::public-garages-and-parking-lots/about

First Hill/Capitol Hill | Parking Rates

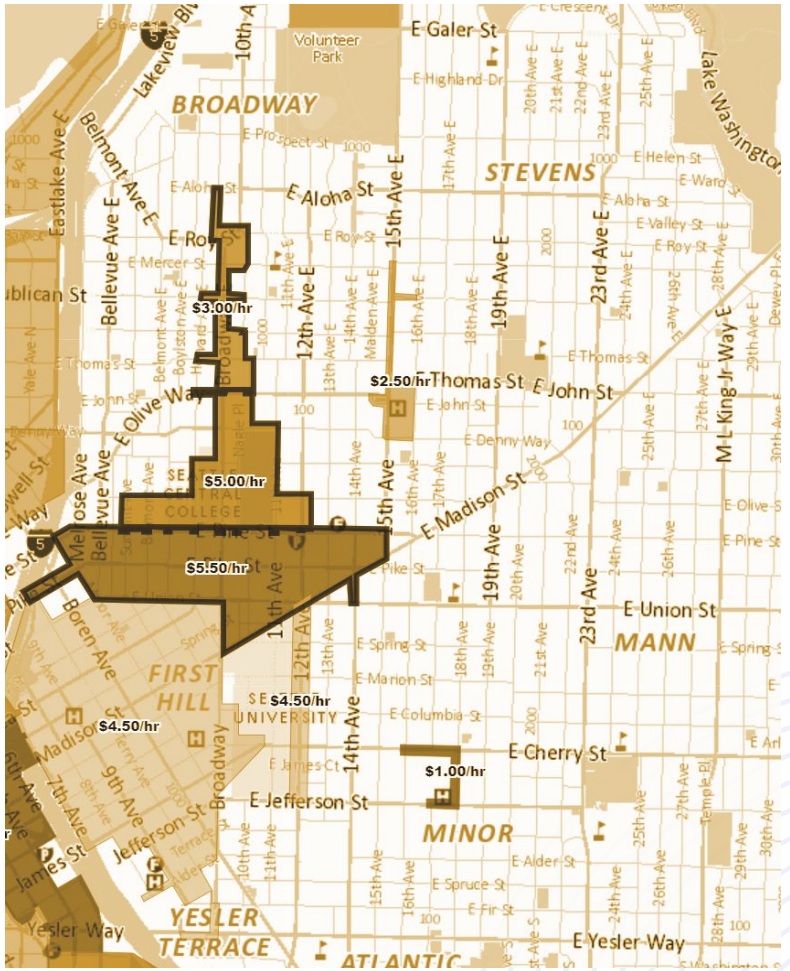
Morning Rates (8am - 11am)



Midday Rates (11am - 5pm)

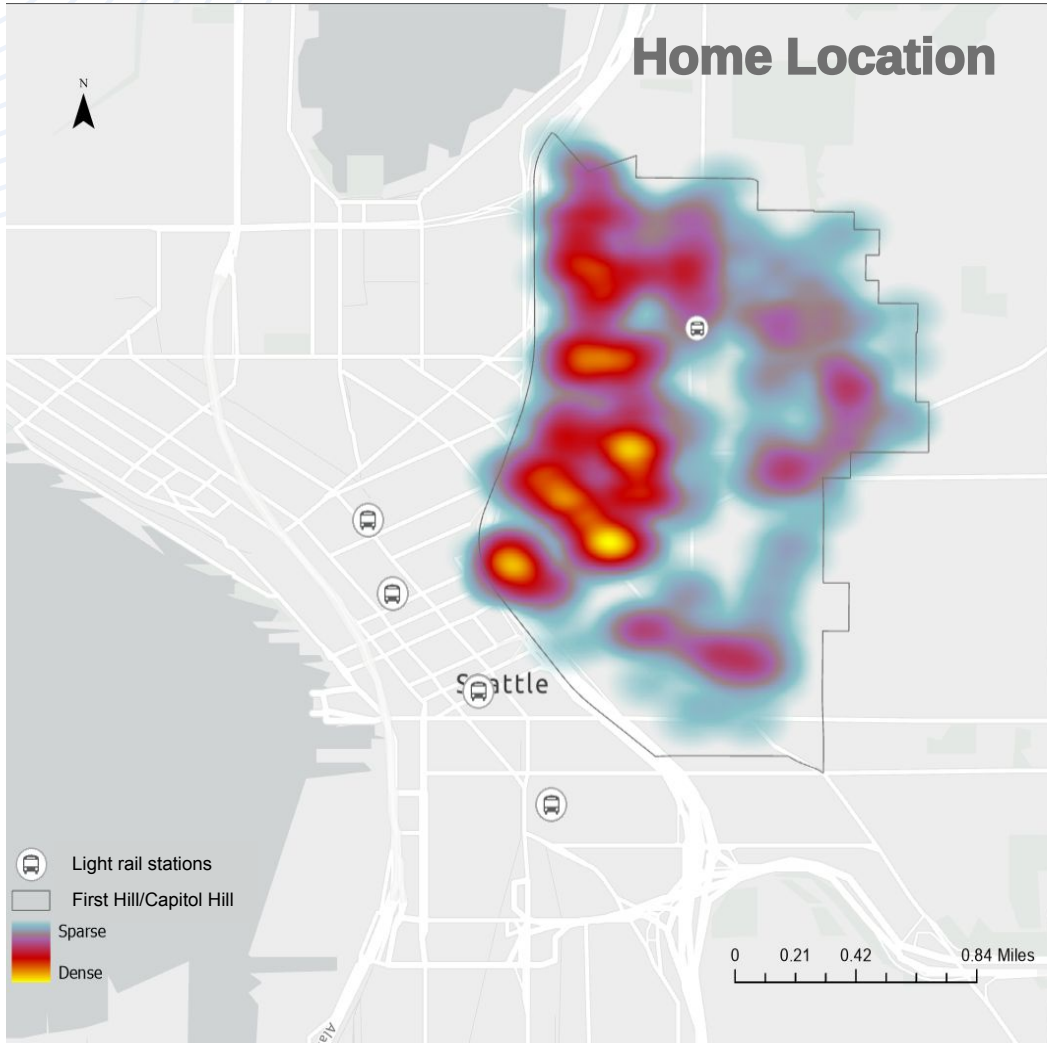


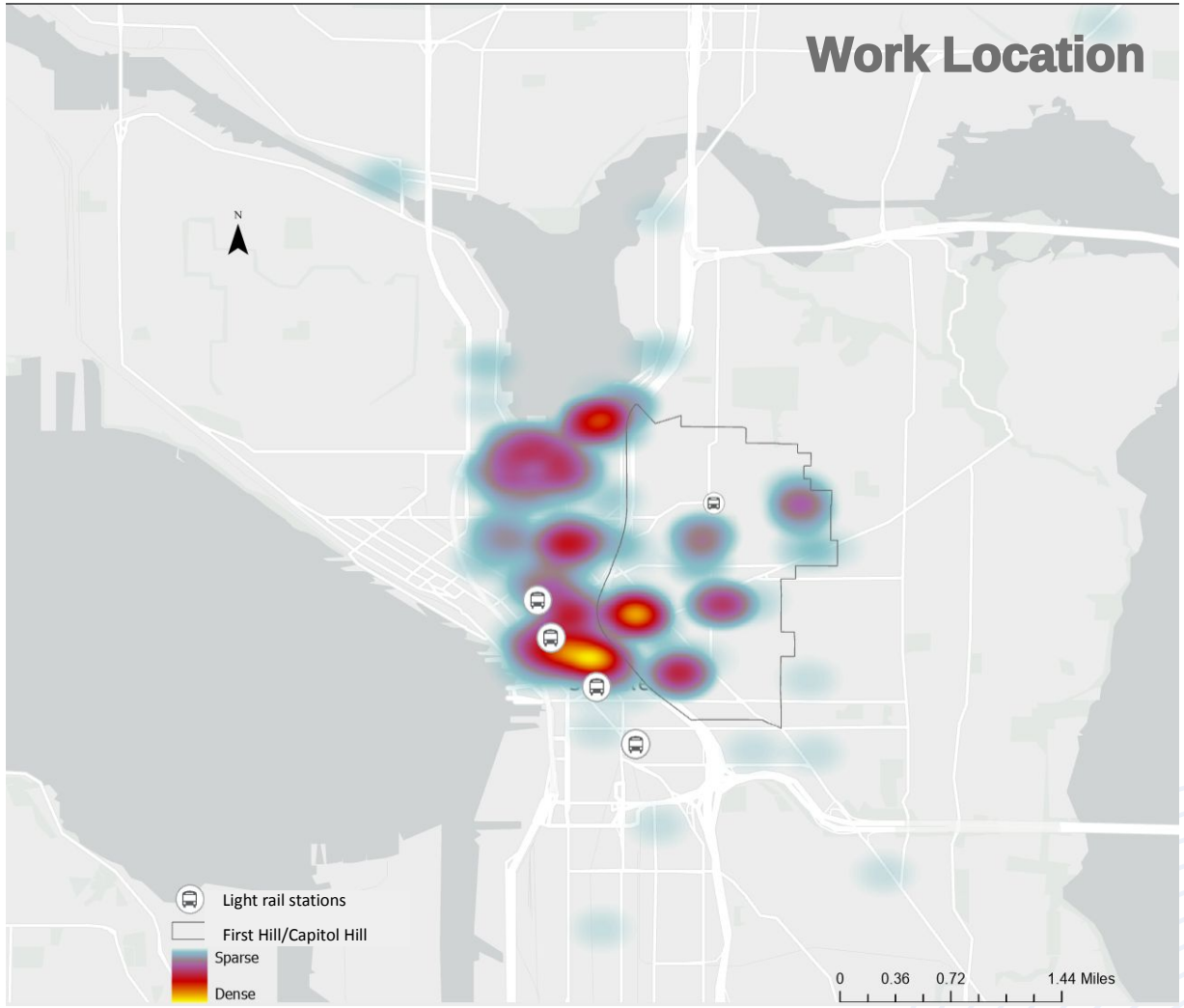
Evening Rates (5pm - 8pm)



The maps show the different rates of parking in different First Hill / Capitol Hill areas. Data source: Seattle Department of Transportation SDOT. https://data-seattlecitygis.opendata.arcgis.com/datasets/SeattleCityGIS::public-garages-and-parking-lots/about

First Hill/Capitol Hill | Walk Commuters Home vs. Work Location

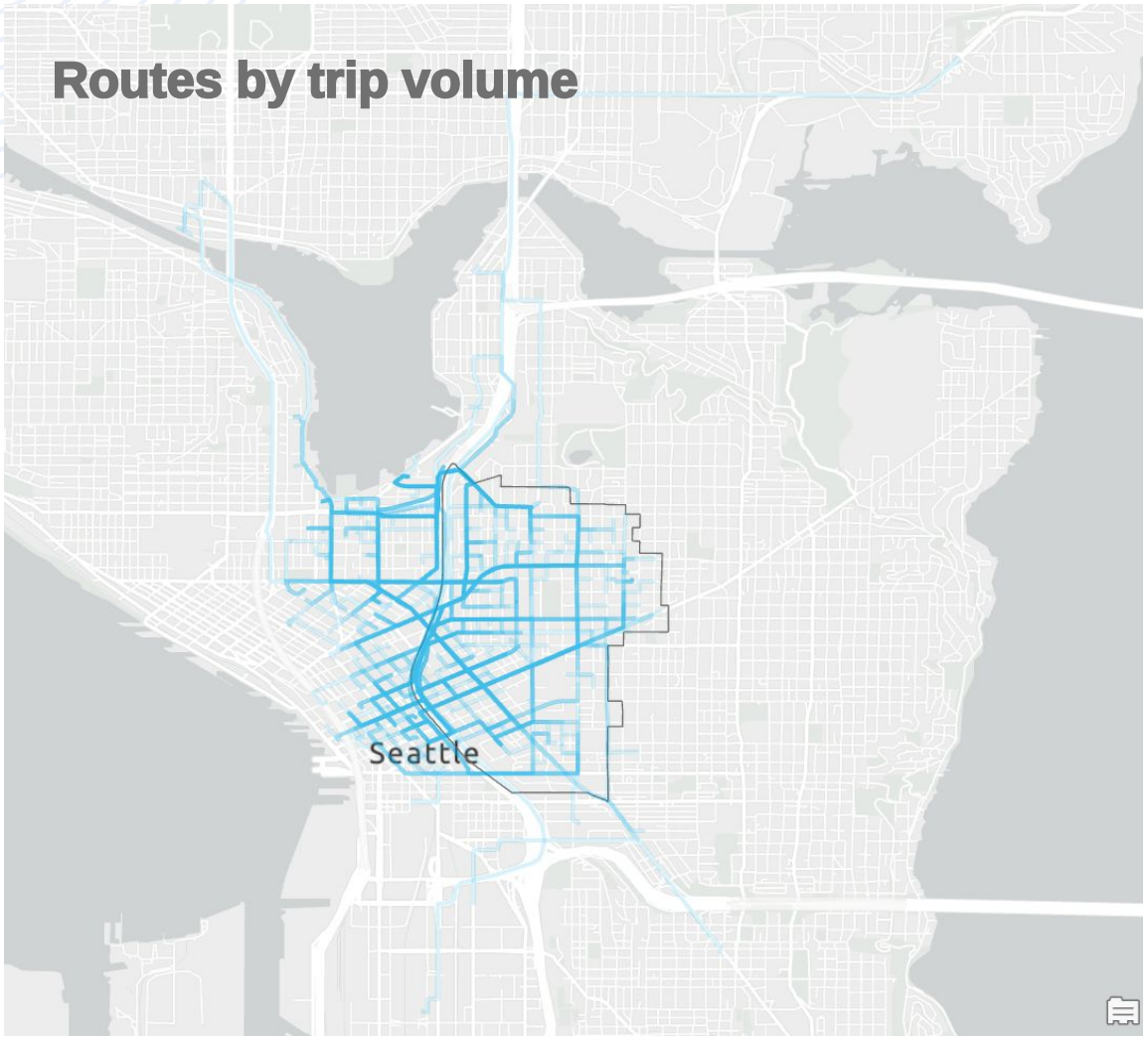




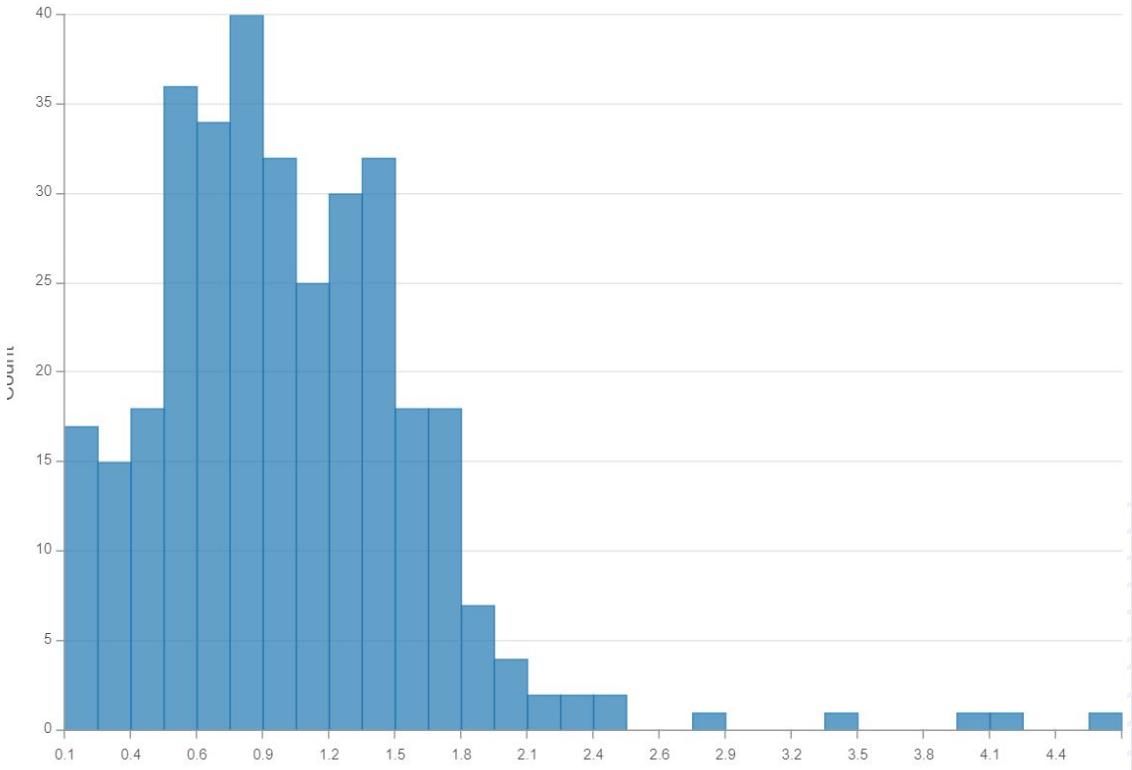
The map on the left shows the home locations of walking commuters who live in First Hill / Capitol Hill and the map on the right shows the work locations of walking commuters who work in Downtown (N=171). The maps represent the responses distribution as hotspots with warmer colors representing dense distribution and cooler colors representing sparse distribution.

** The two maps are generated at different scales, because one is limited to the boundaries of the First Hill / Capitol Hill area

First Hill/Capitol Hill | Walk Commute Routes and Trip Volume

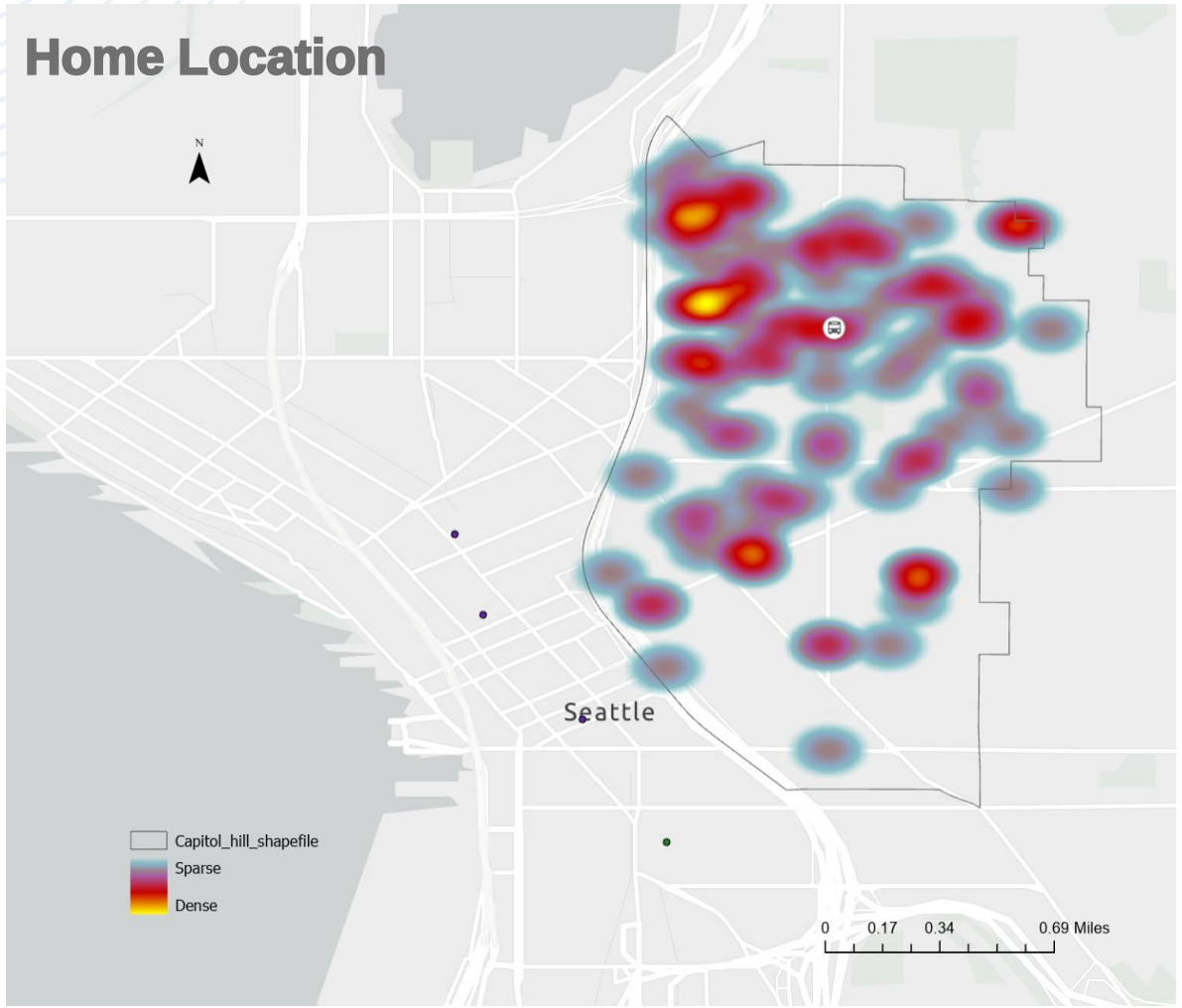


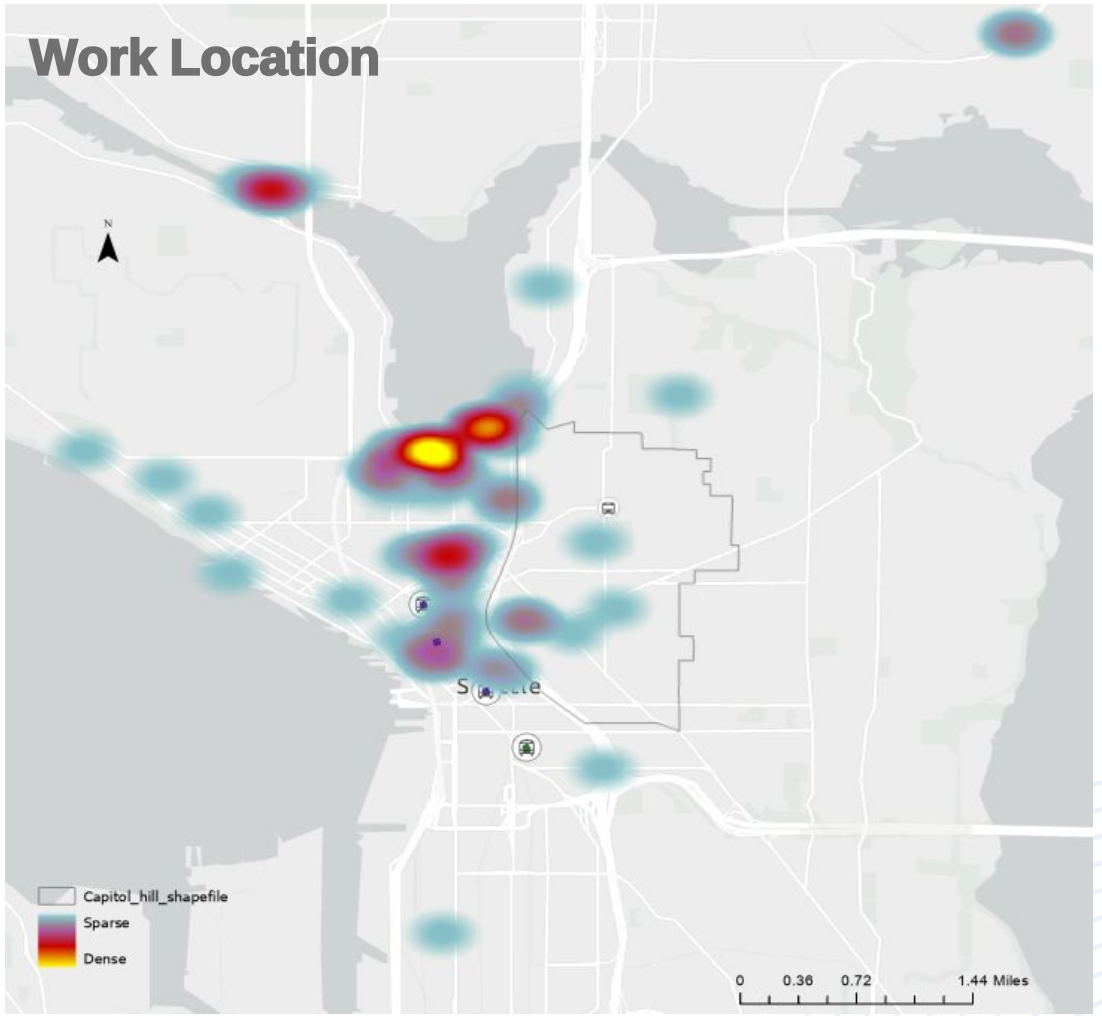
Commute Distance Histogram



The maps on this page show the routes of walking commuters from their home locations to work. The routes were generated using ArcGIS proximity tools, using the mostly likely (shortest) route for every OD pair. Both maps show the same routes but cropped at different scales. The graphs show the distribution (histogram) of transit commute time and distance travelled, based on the shortest route and commute time (traffic).

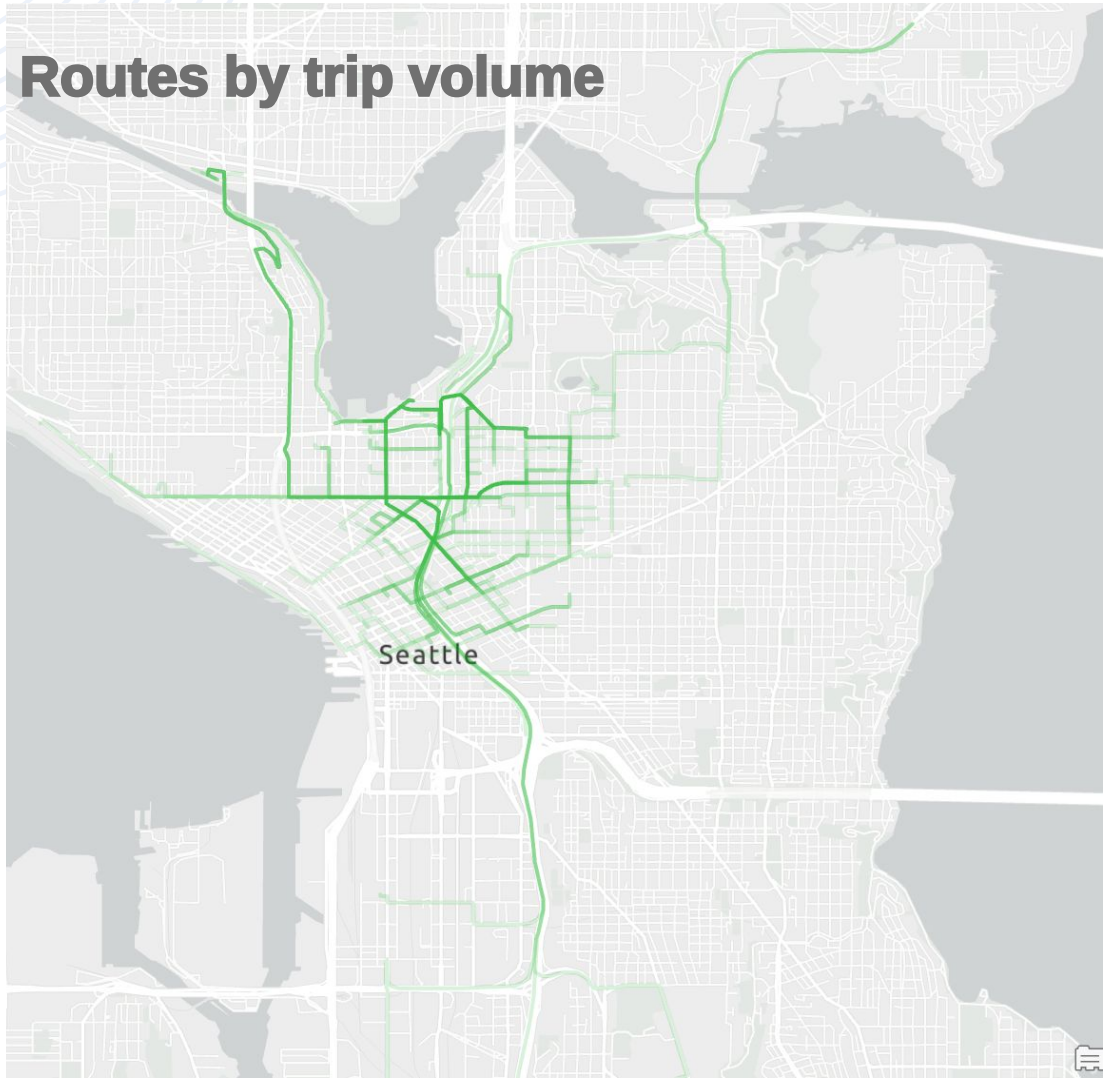
First Hill/Capitol Hill | Bike/e-bike Commuters Home vs. Work Location



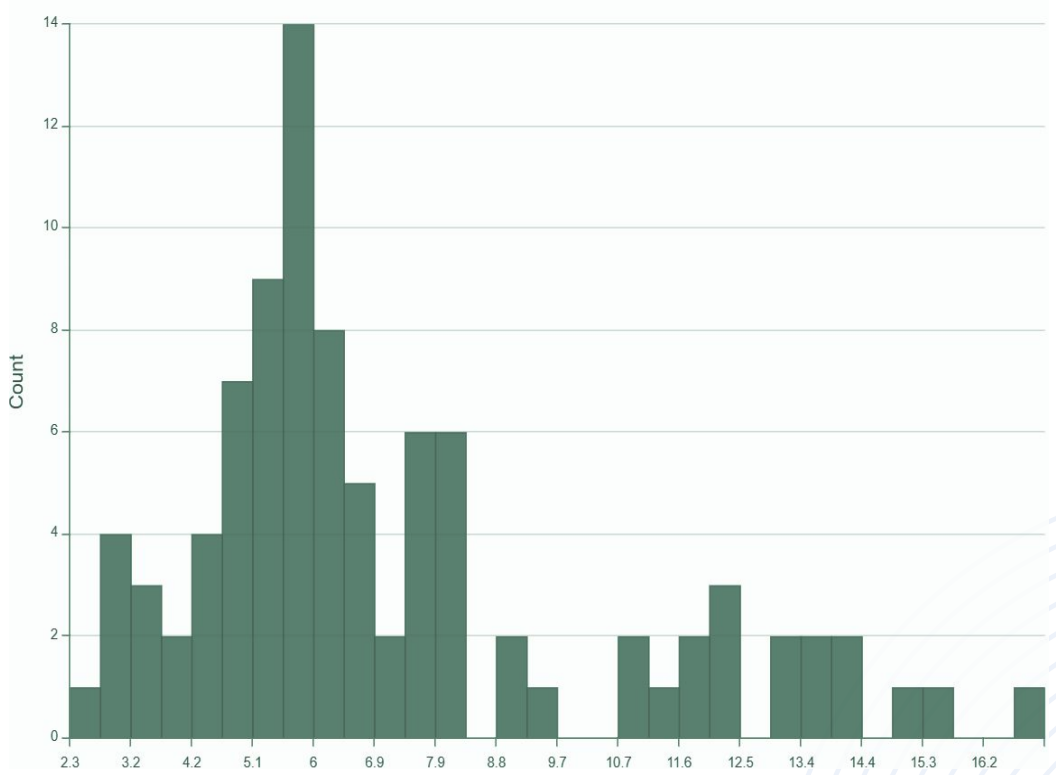


The map on the left shows the home locations of walking commuters who live in First Hill / Capitol Hill and the map on the right shows the work locations of walking commuters who work in First Hill / Capitol Hill (N=171). The maps represent the responses distribution as hotspots with warmer colors representing dense distribution and cooler colors representing sparse distribution.
** The two maps are generated at different scales, because one is limited to the boundaries of the First Hill / Capitol Hill area

First Hill/Capitol Hill | Bike/e-bike Commute Routes and Trip Volume



Commute Distance Histogram

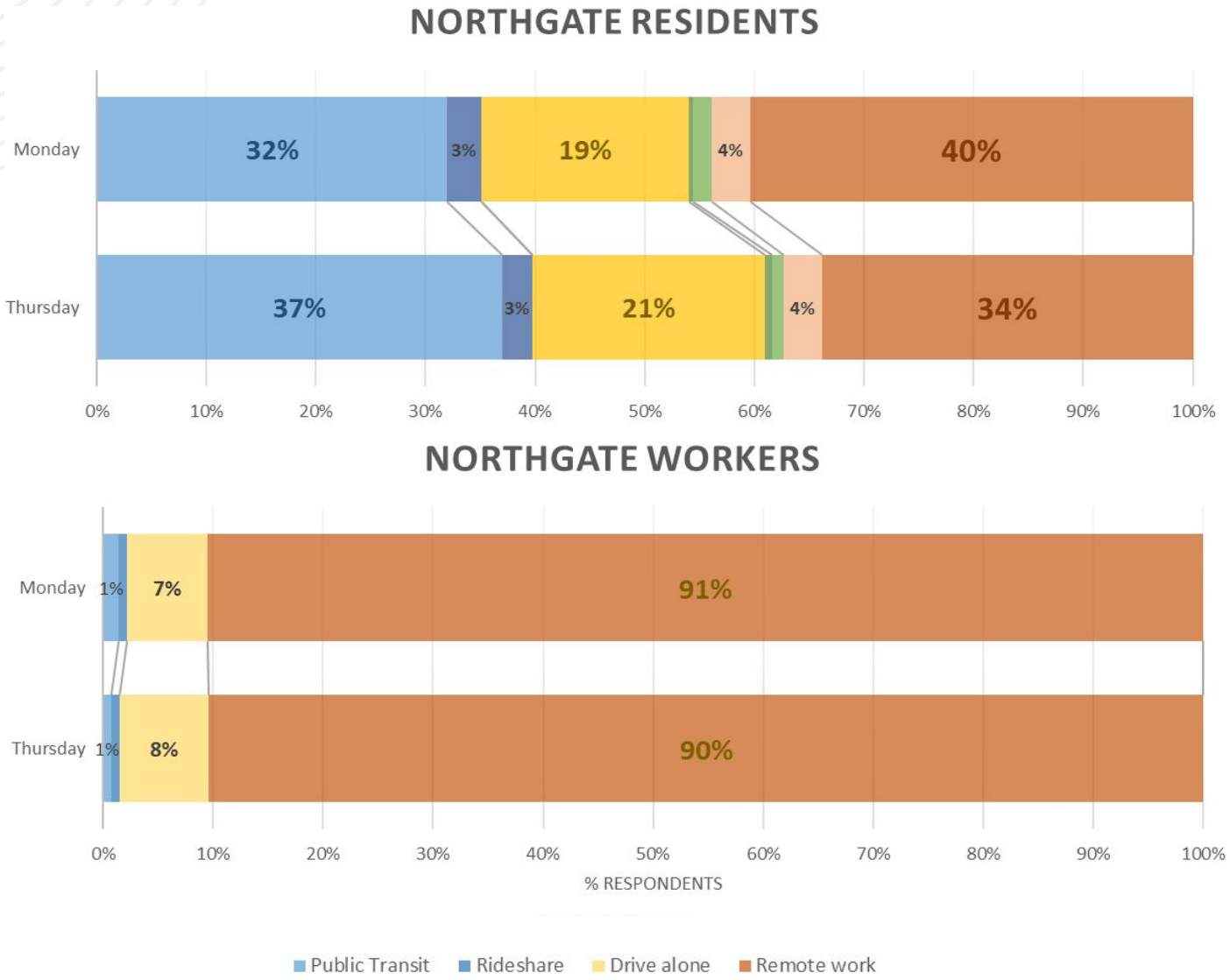


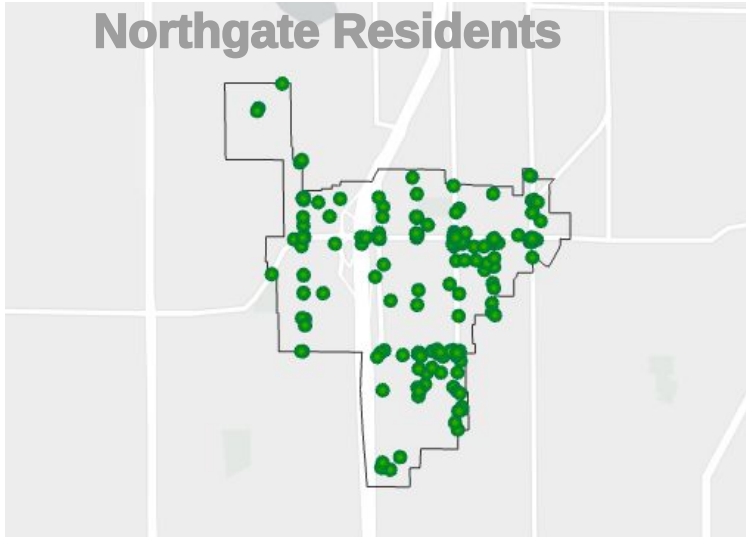
The map on the left shows the home locations of walking commuters who live in First Hill / Capitol Hill and the map on the right shows the work locations of walking commuters who work in First Hill / Capitol Hill (N=171). The maps represent the responses distribution as hotspots with warmer colors representing dense distribution and cooler colors representing sparse distribution.
** The two maps are generated at different scales, because one is limited to the boundaries of the First Hill / Capitol Hill area

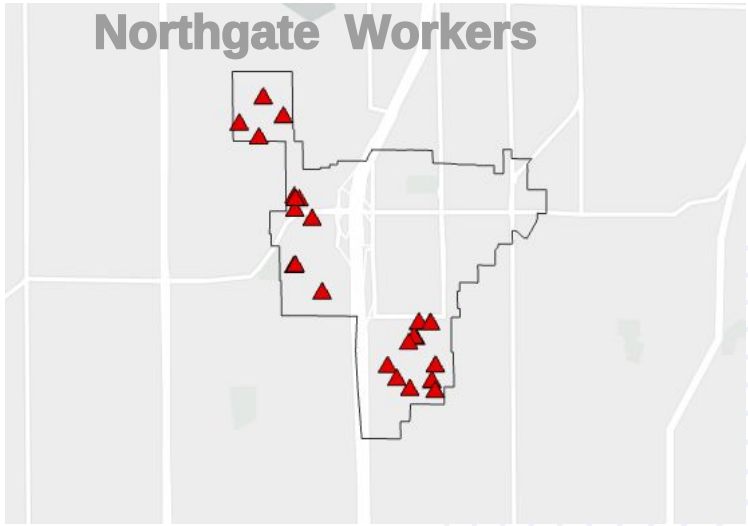
First Hill/Capitol Hill
SUMMARY

- Most First Hill / Capitol Hill workers commute by driving, contrasting with residents who predominantly work remotely or walk. This suggests proximity to transit stations for Capitol Hill residents, or the availability or lack thereof of parking may influence different commuting choices for residents and workers.
- Transit riders tend to reside near light rail stations, commuting to Downtown, South Lake Union, or the University of Washington. The majority commute short distances, indicating effective access to essential destinations via light rail.
- Only a small percentage of First Hill / Capitol Hill residents live within a 5-minute walk from the First Hill/Capitol Hill light rail station.
- While fewer First Hill / Capitol Hill residents drive alone to work, many drivers live near I-5 and Downtown, commuting to accessible areas like Downtown and the University of Washington, potentially competing with transit due to available parking.
- The majority of walk or bike commuters reside on the western side of First Hill / Capitol Hill, close to Downtown, commuting to nearby areas such as Pike/Pine and Belltown.

Northgate| Mode Split by Day



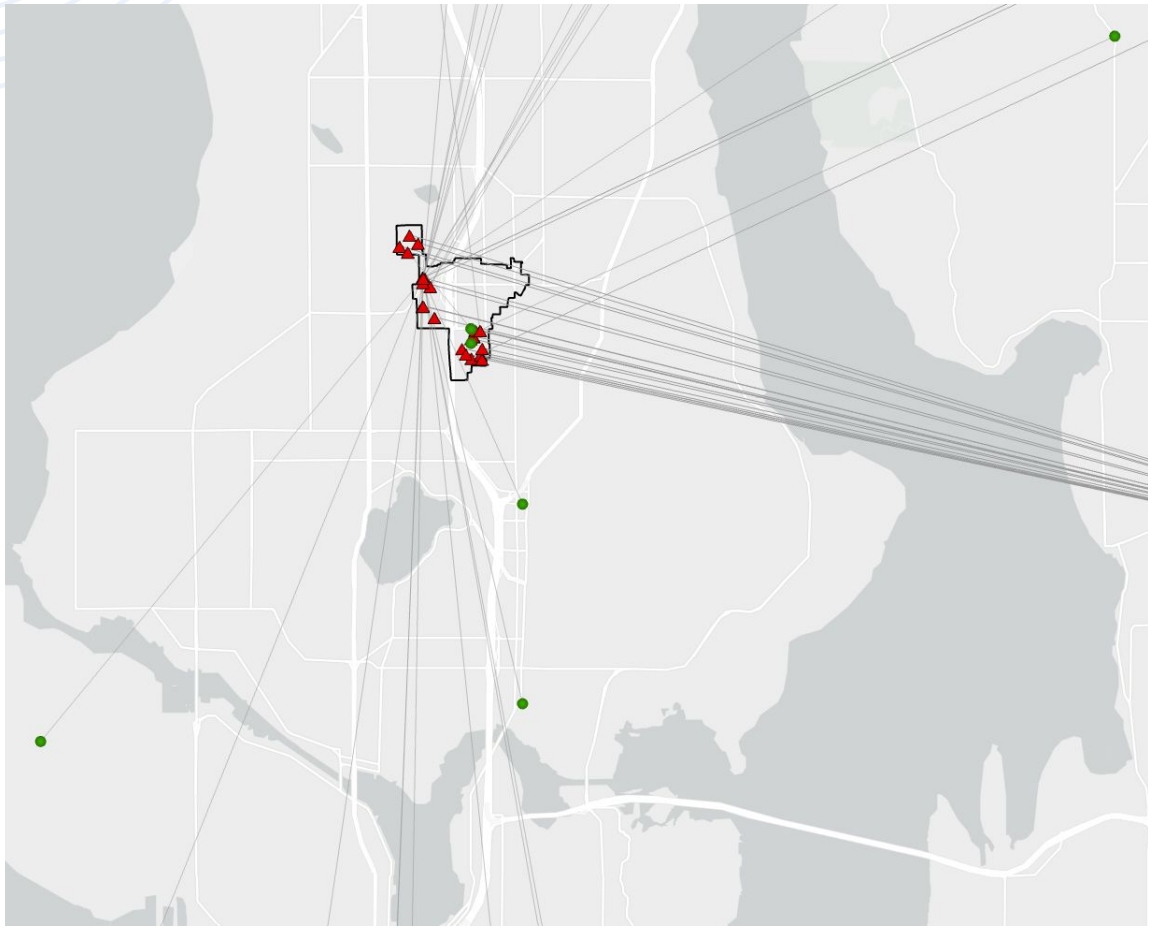




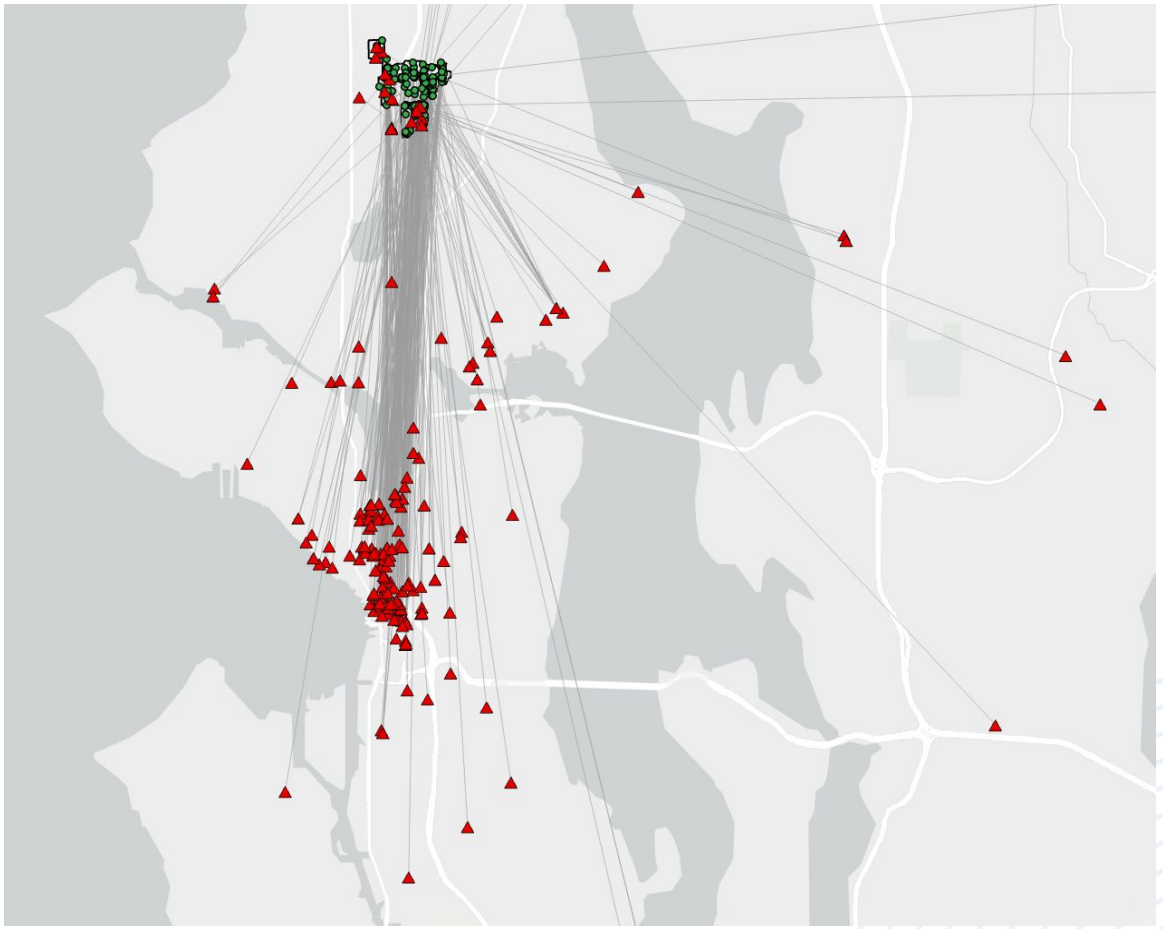
Q10: Currently, during a typical week, how do you get to work each day? (Monday, Tuesday, Wednesday, Thursday, Friday). The top graph shows the mode split for respondents whose home location is in Northgate (residents) N=301, and the bottom graph shows respondents whose work location is in Northgate area (workers)(N= 138). This small sample size, in comparison to other areas, in addition to the nature of CTR-survey distribution and targeted groups, may impact and skew the results for certain modes.
** Public transit includes bus, light rail, and ferry; Drive alone includes motorcycle; Rideshare includes vanpool, carpool and employer shuttle; Other includes day off.

Northgate| Transit Commuters Home vs. Work Location

Inbound Commute Trips

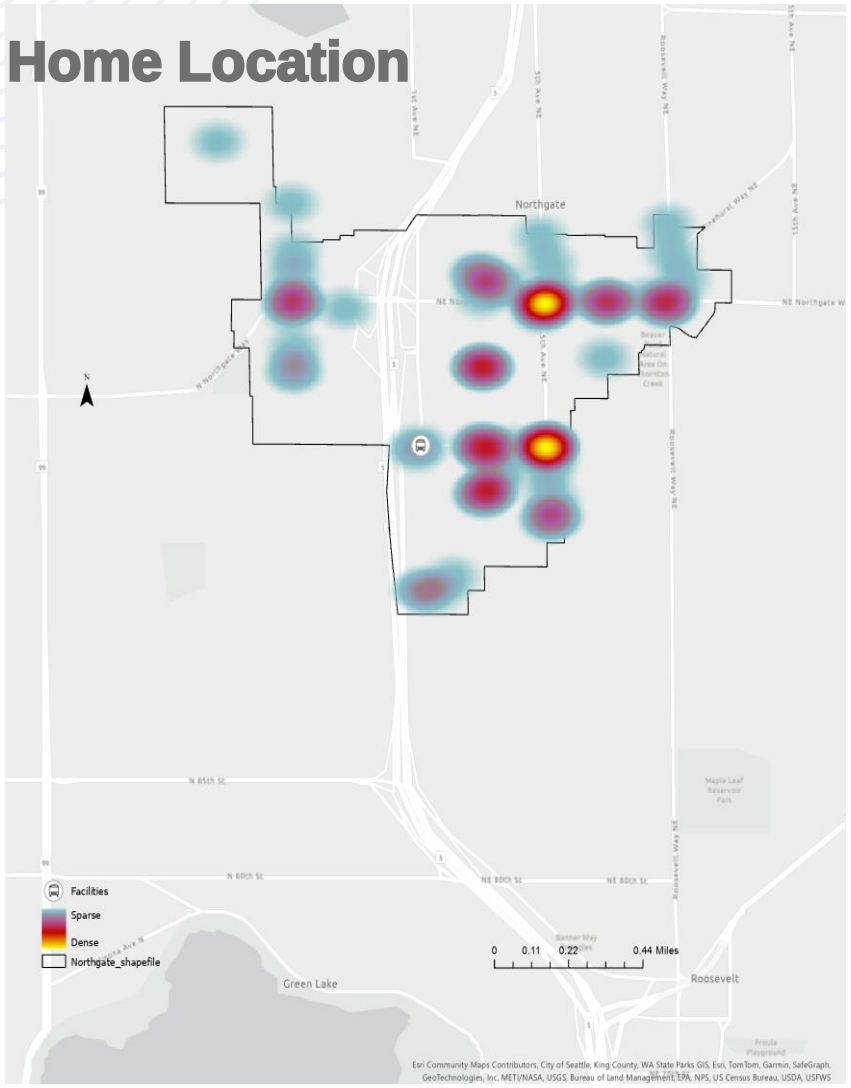


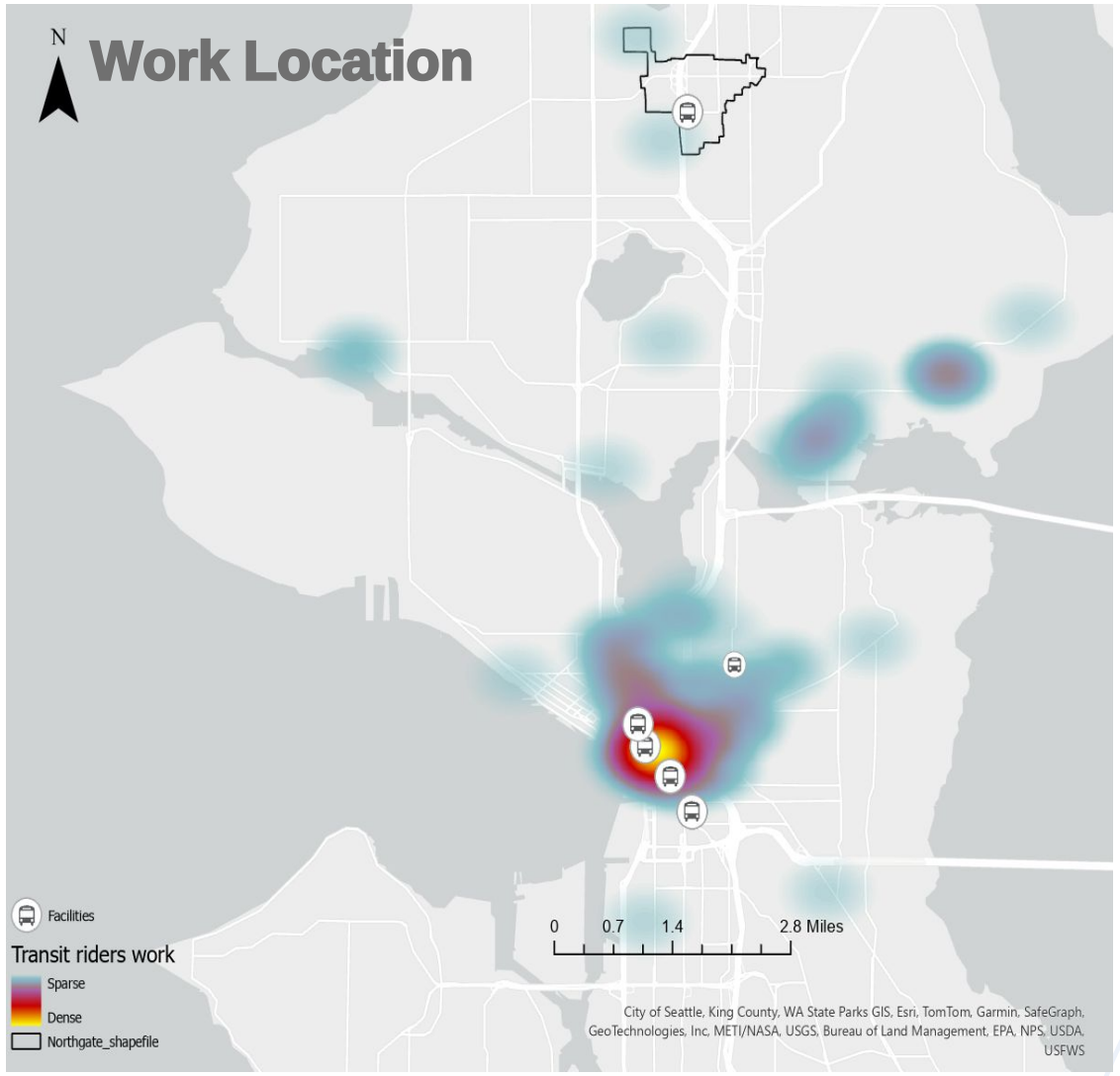
Outbond Commute Trips



The map on the left shows the inbound commute trips for worksites in Northgate (N=138),. The map on the right shows the outbound commute trips for Northgate residents (N=301). On both maps, the green dots represent the commuters home locations, the red triangle representing worksites and the grey lines represent the commute trip (connection) to show the volume of the trips and direction.

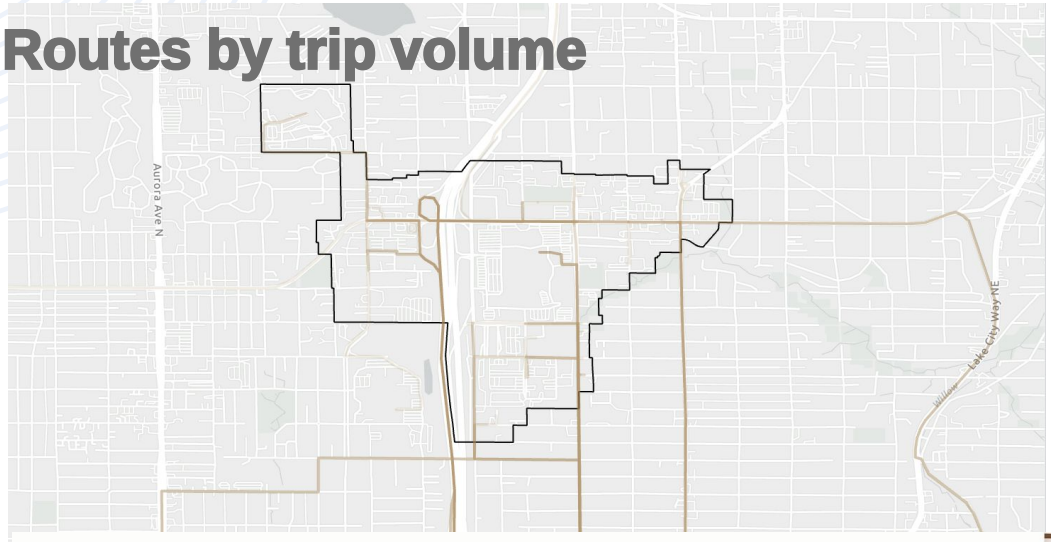
Northgate| Transit Commuters Home vs. Work Location

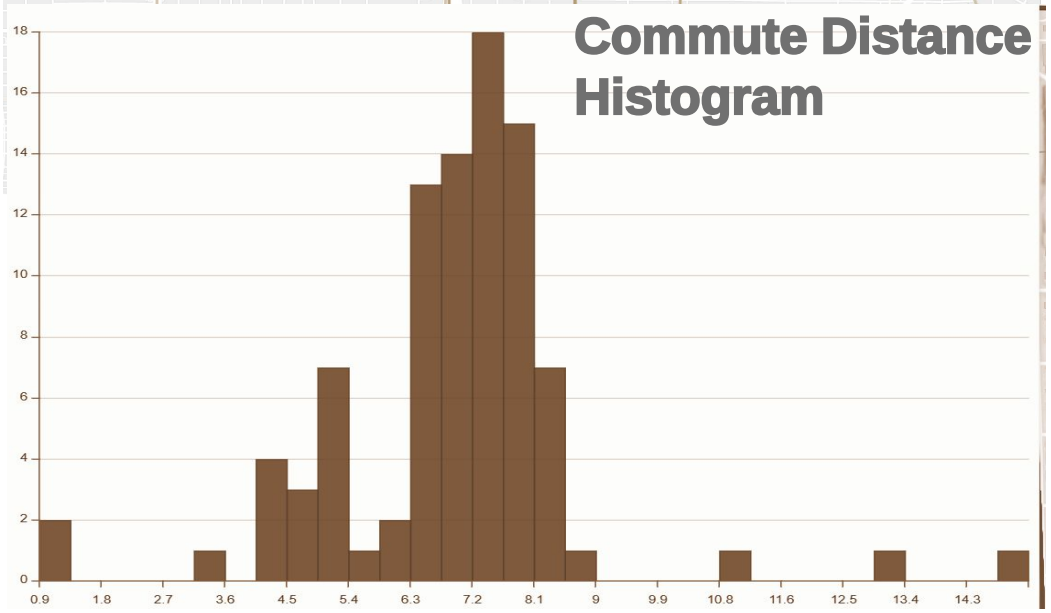


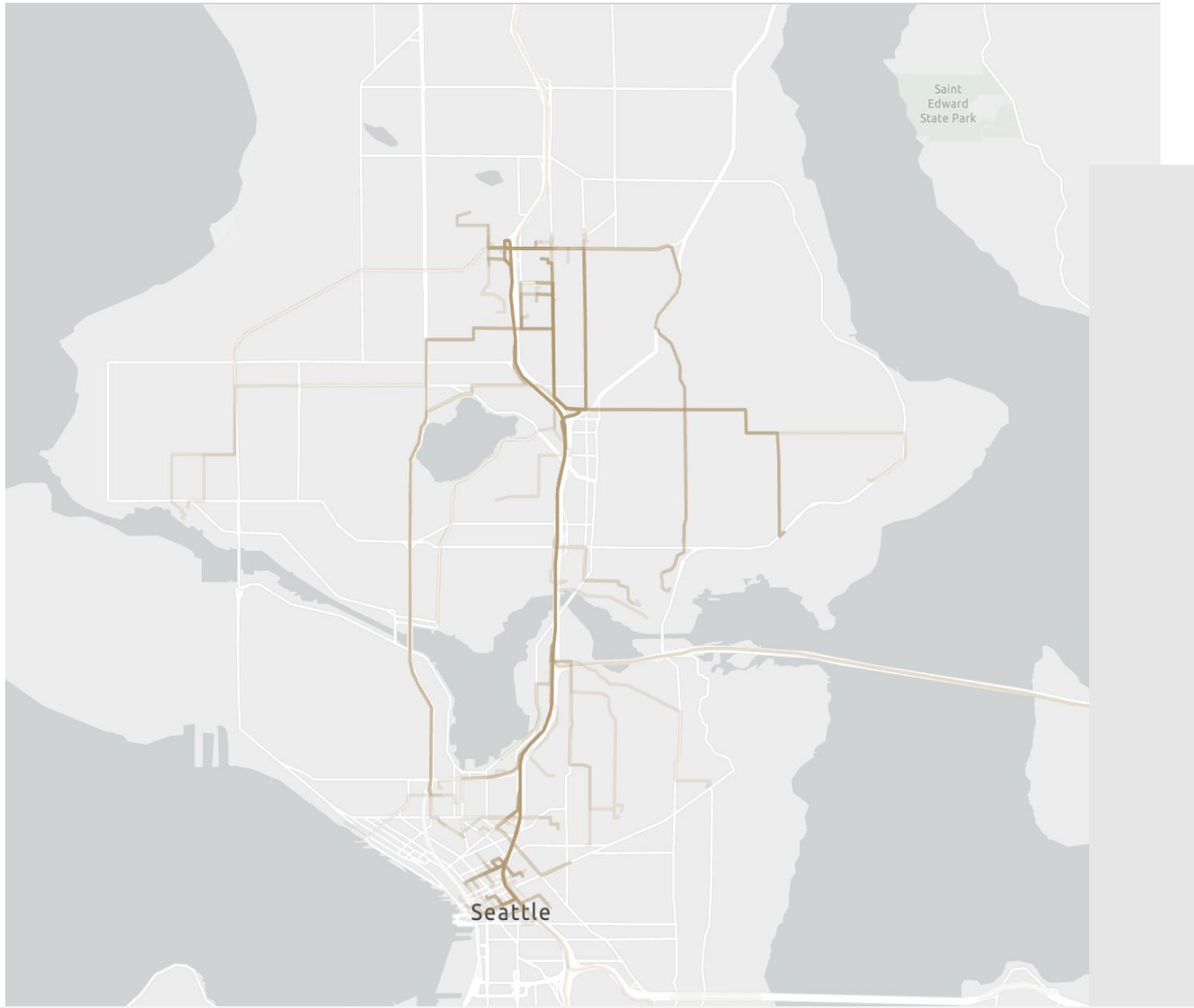


The map on the left shows the home locations of transit commuters who live in Northgate and the map on the right shows the work locations of transit commuters who live in Northgate (N=97). The maps represent the responses distribution as hotspots with warmer colors representing dense distribution and cooler colors representing sparse distribution.
**** The two maps are generated at different scales, because one is limited to the boundaries of the Northgate area**

Northgate| Transit Commute Routes and Trip Volume



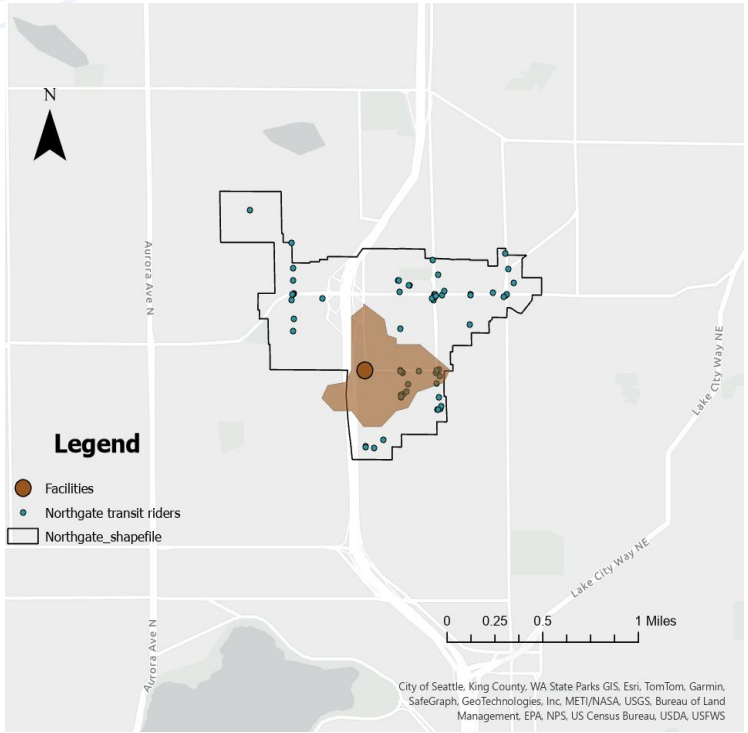




The maps on this page show the routes of transit commuters from their home locations to work. The routes were generated using ArcGIS proximity tools, using the mostly likely (shortest) route for every OD pair. Both maps show the same routes but cropped at different scales. The graphs show the distribution (histogram) of transit commute time and distance travelled, based on the shortest route and commute time (traffic).

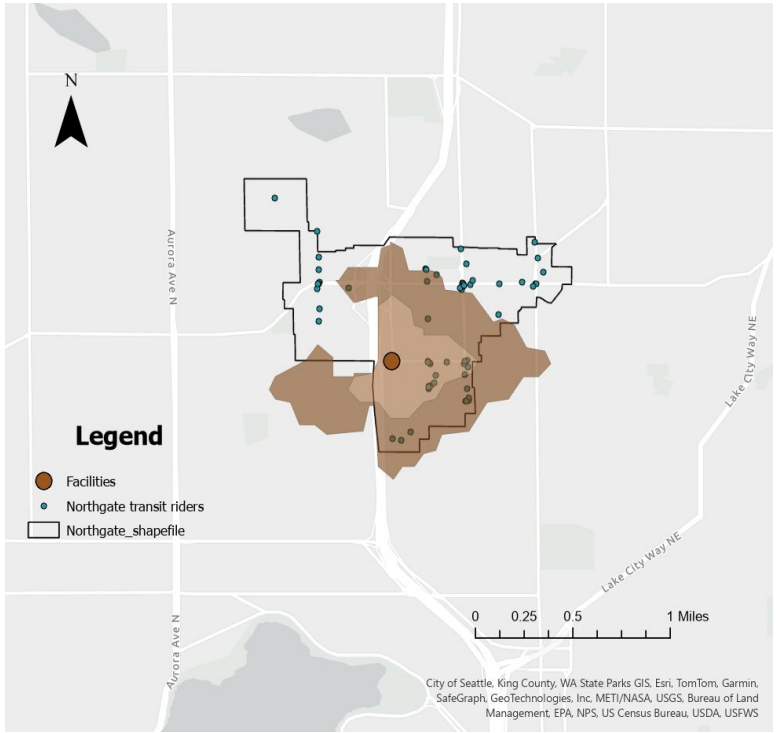
Northgate| Transit Commuters Access to Light Rail

5 Min Walkshed



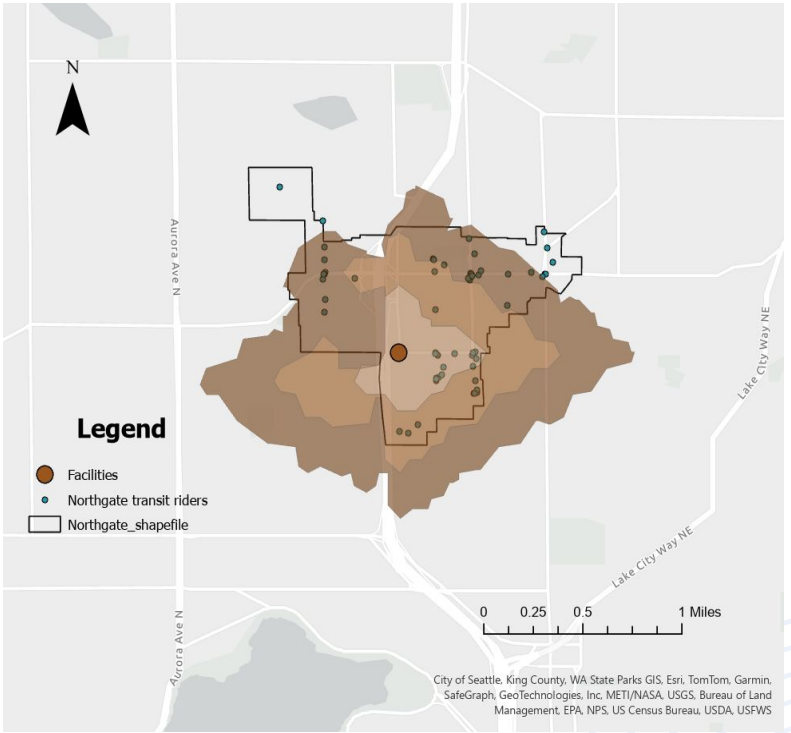
30% Transit Riders

10 Min Walkshed



61% Transit Riders

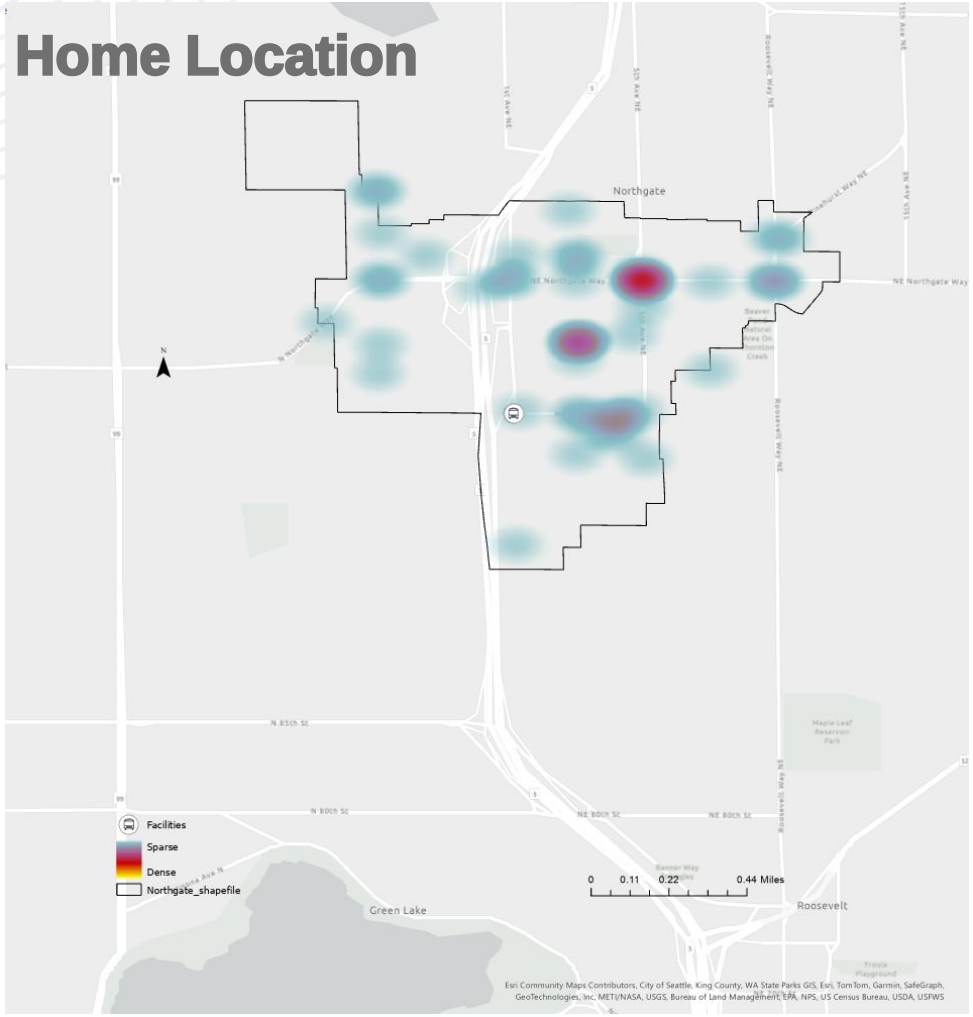
15 Min Walkshed

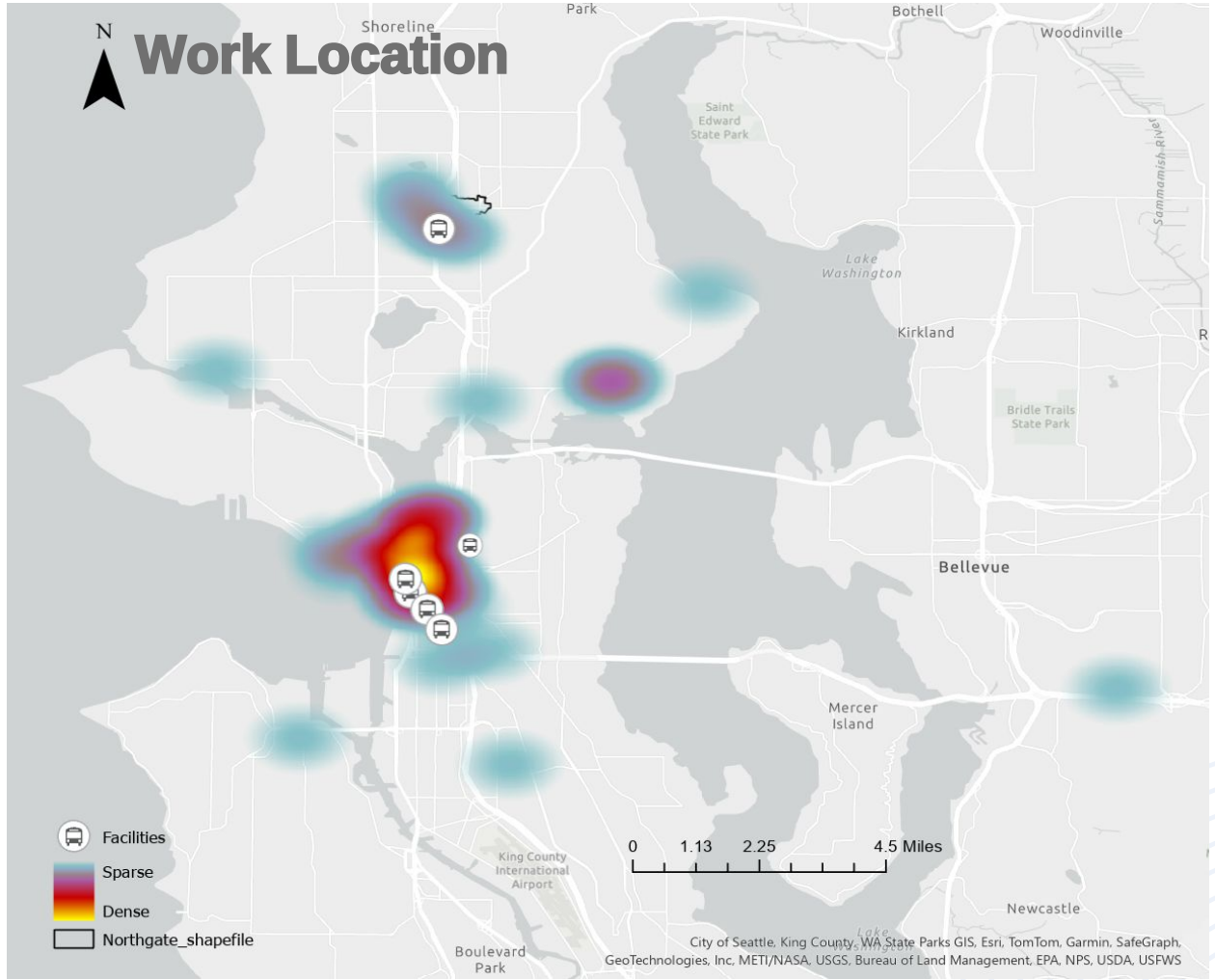


89% Transit Riders

The maps on this page show different walksheds for Northgate light rail station, using the road network (regardless of sidewalk availability) and three consecutive walking durations (5 min, 10 min, and 15 min). The maps also show transit commuters whose home locations are within Downtown area, and the percentages of those who live within each walkshed. The walksheds were generated using ArcGIS service area tool, using existing roads, from the light rail station.

Northgate| Drive Alone Commute Routes and Trip Volume

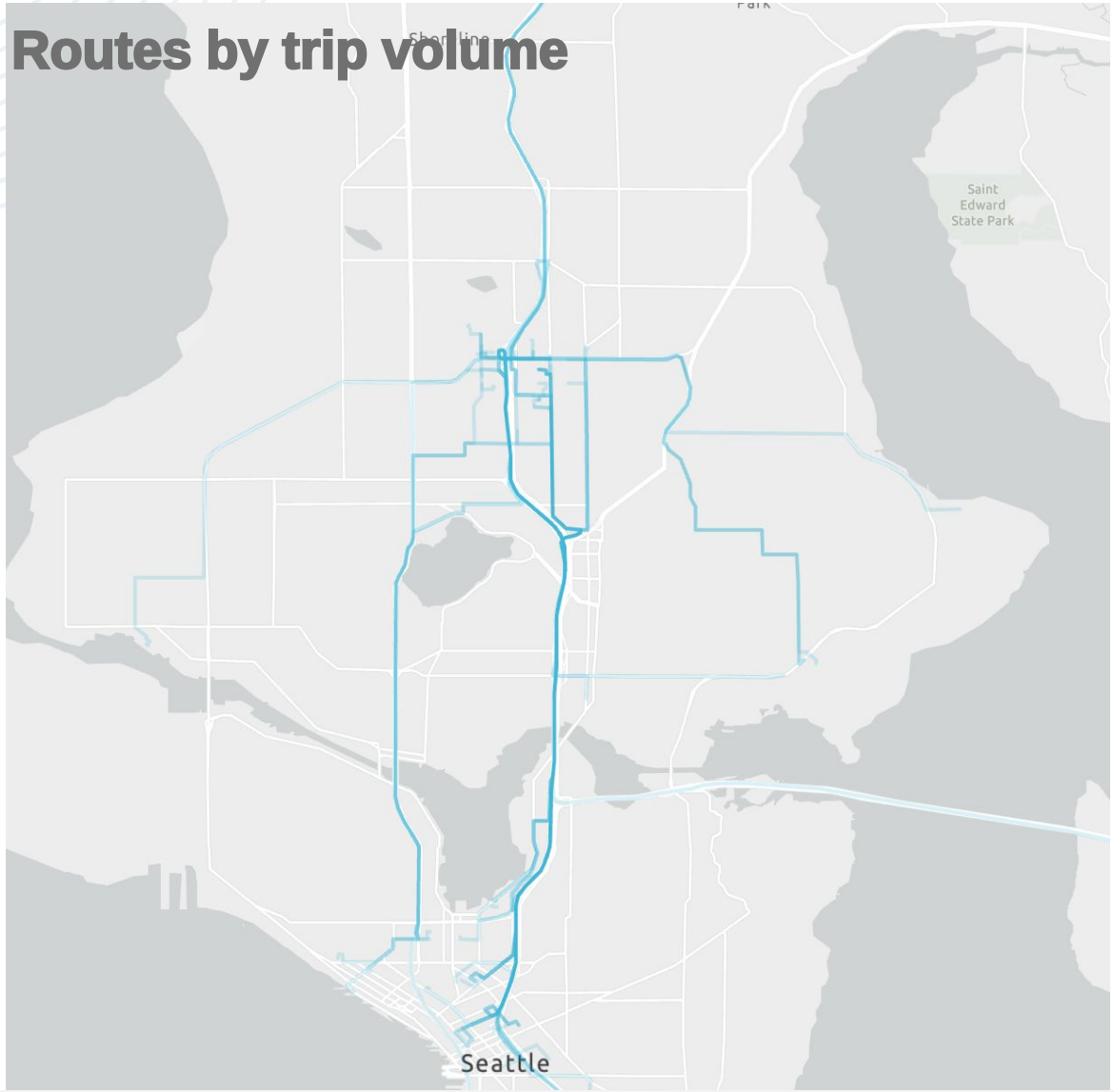


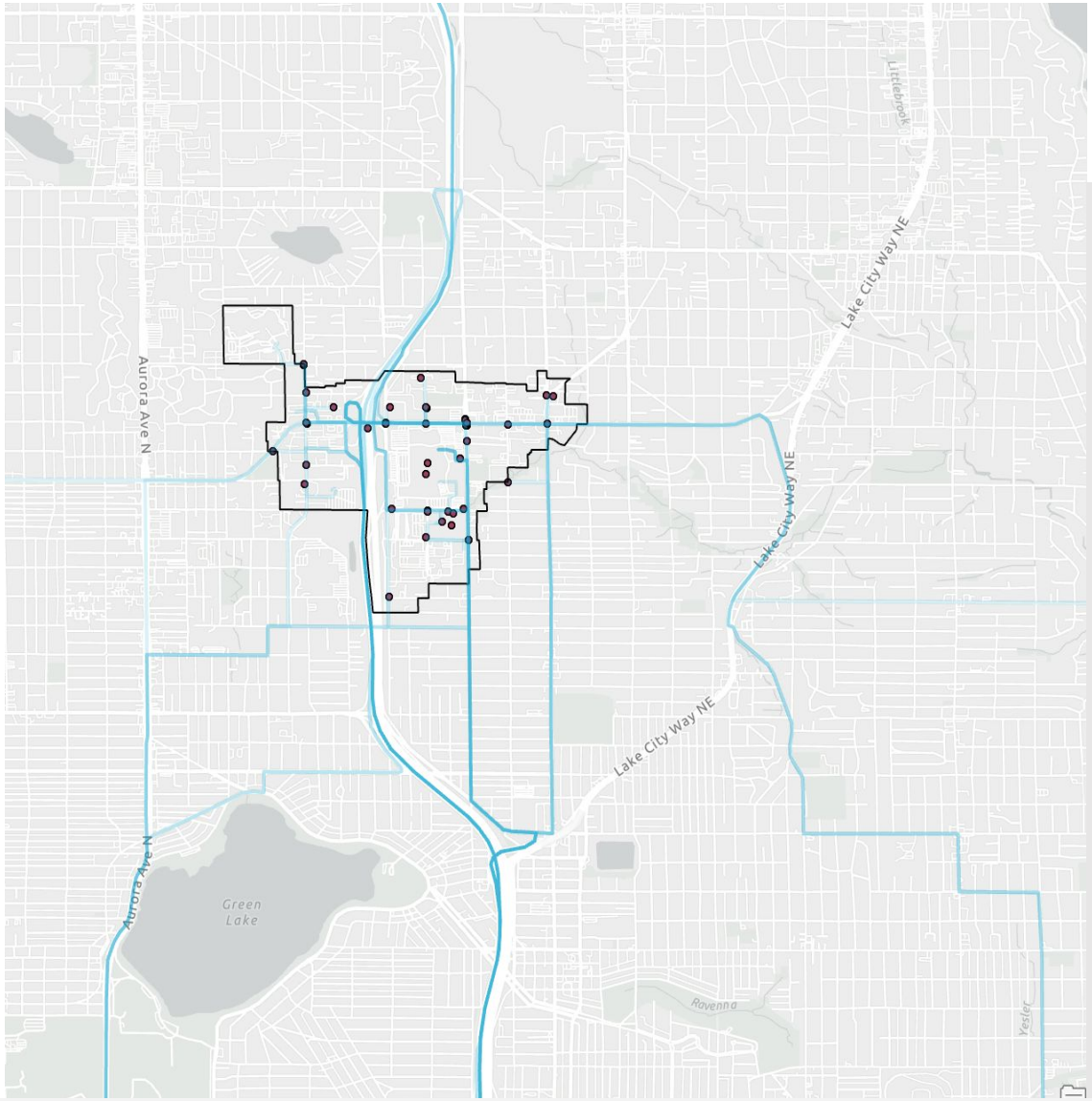


The map on the left shows the home locations of drive alone commuters who live in Northgate and the map on the right shows the work locations of drive alone commuters who work in Northgate (N=58). The maps represent the responses distribution as hotspots with warmer colors representing dense distribution and cooler colors representing sparse distribution.
**** The two maps are generated at different scales, because one is limited to the boundaries of Northgate area**

Northgate| Drive Alone Commute Routes and Trip Volume

Routes by trip volume

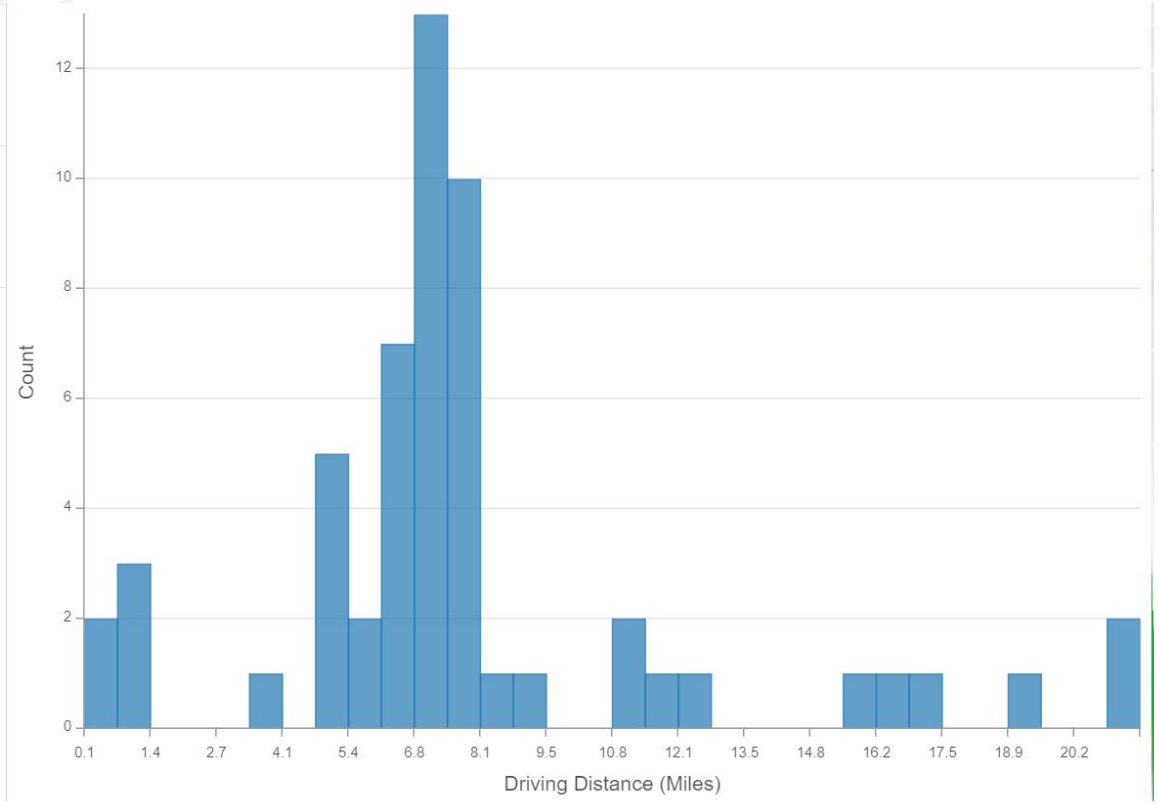




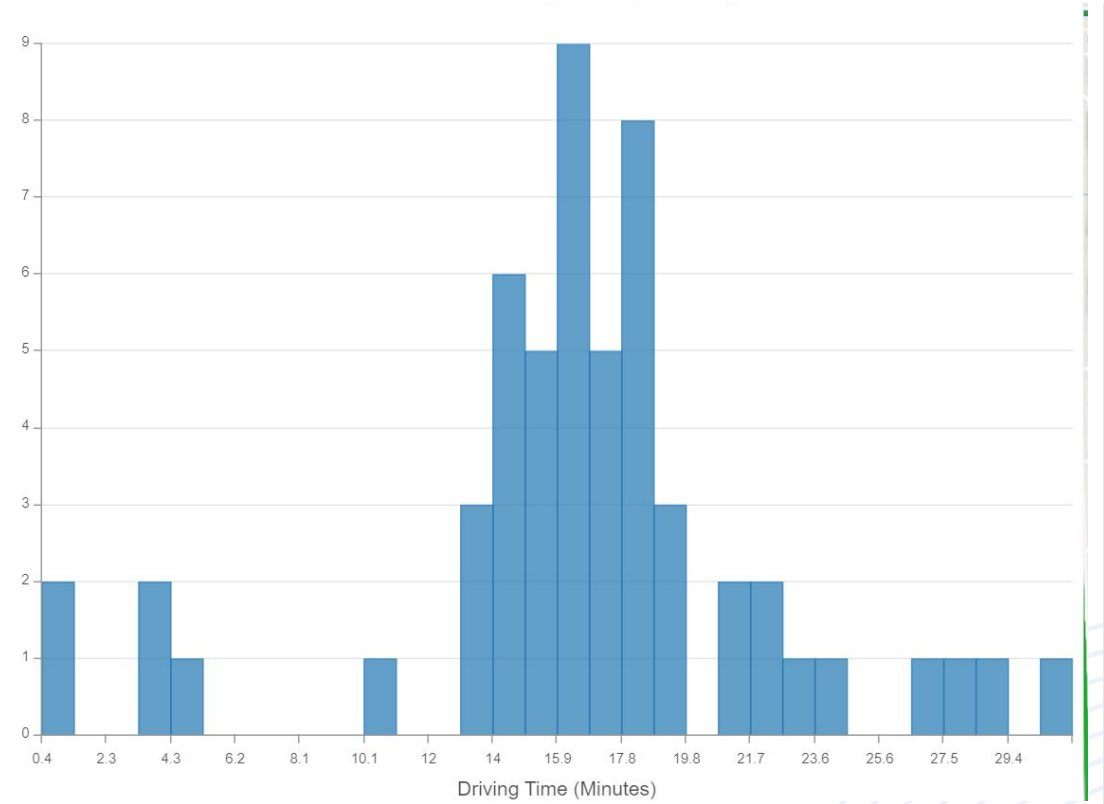
The maps on this page show the routes of drive alone commuters from their home locations to work. The routes were generated using ArcGIS proximity tools, using the mostly likely (shortest) route for every OD pair. Both maps show the same routes but cropped at different scales.

Northgate| Drive Alone Commute Routes and Trip Volume

Commute Distance Histogram



Commute Time Histogram



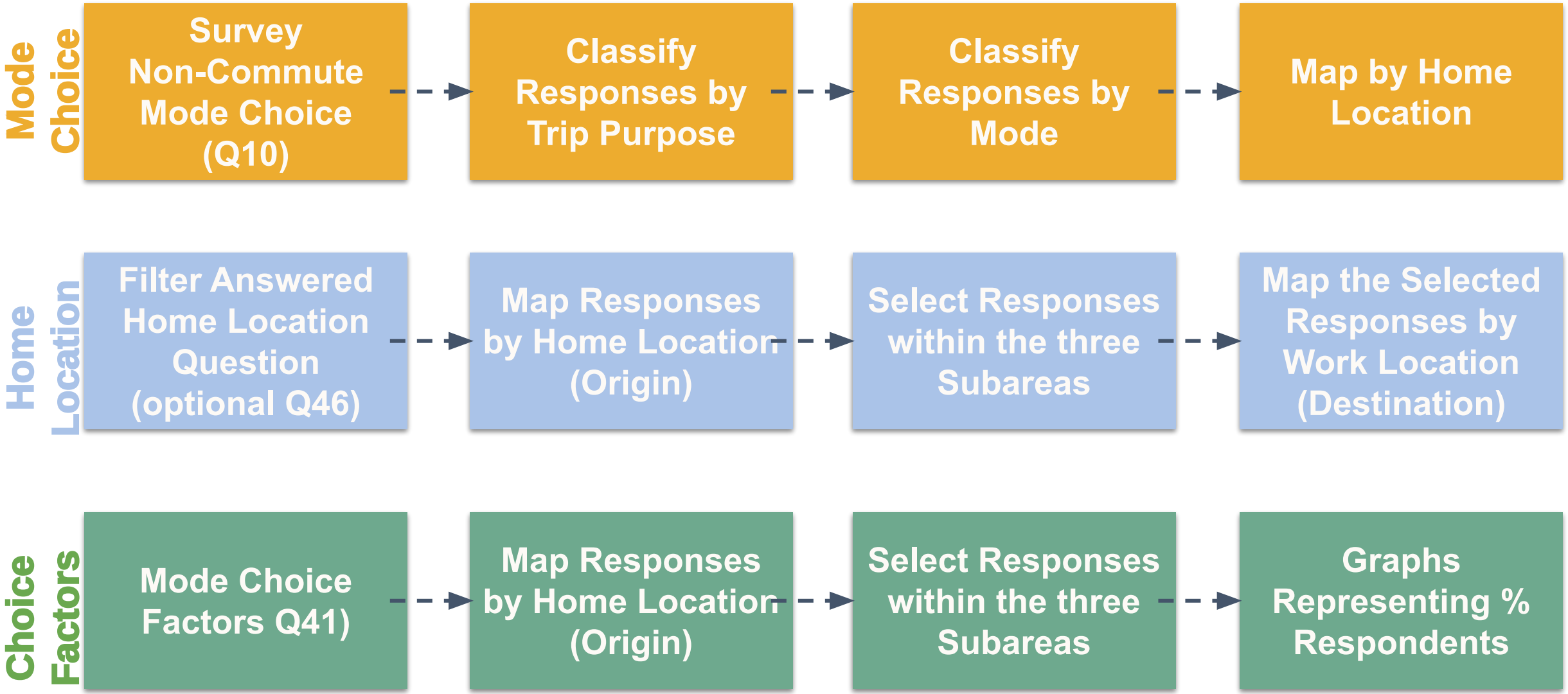
The graphs show the distribution (histogram) of transit commute time and distance travelled, based on the shortest route and commute time (traffic).

NORTHGATE SUMMARY

- A significant portion of Northgate workers telecommute, indicating potential shifts in transportation demand and commuting patterns.
- Northgate residents predominantly work in Downtown and center city areas, highlighting the importance of efficient transit connections between residential and employment hubs.
- Many transit riders reside near Northgate station and commute to Downtown, emphasizing the critical role of light rail in facilitating urban mobility.
- Approximately 30% of transit riders are within a 5-minute walk of the station, but those living west of the highway face longer walks, suggesting accessibility disparities.
- The majority of drivers live within a 15-minute walk of the light rail station. Improving station accessibility, especially for residents north of Northgate Mall and west of the highway, could incentivize light rail usage, particularly for commutes to the University of Washington and Downtown.

Non-Commute Travel
Survey Analysis

Non-Commute Travel | Survey Questions and Analytical Approach



Survey Questions| Mode Choice

(Q44)

What is the main mode you most frequently use for the following trips?

	Grocery shopping	School pickup/dropoff	Health/medical treatment	Leisure/ social	Fitness/ exercise	Other trips
Not applicable (NA)	○	○	○	○	○	○
Public transit — Public transit	○	○	○	○	○	○
Public transit — Ferry	○	○	○	○	○	○
Rideshare — Carpool	○	○	○	○	○	○
Rideshare — Uber/Lyft	○	○	○	○	○	○
Rideshare — Taxi	○	○	○	○	○	○
Drive Alone — Drive alone	○	○	○	○	○	○
Drive Alone — Motorcycle	○	○	○	○	○	○
Bike/E-bike — Bike/Scooter	○	○	○	○	○	○
Bike/E-bike — E-bike/e-scooter	○	○	○	○	○	○
Walk	○	○	○	○	○	○

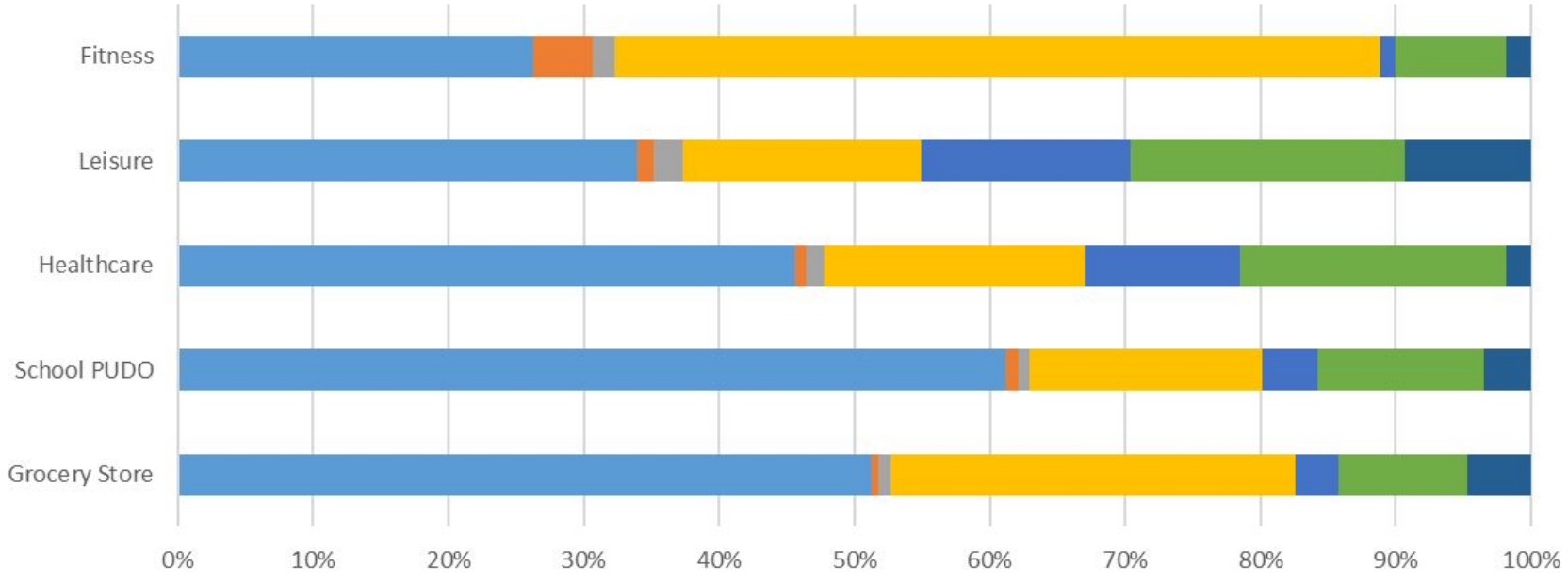
Survey Questions| Work and Home Location (OD)

(Q41)

Generally, what are the main considerations that affect your travel decisions?
(Select up to three boxes)

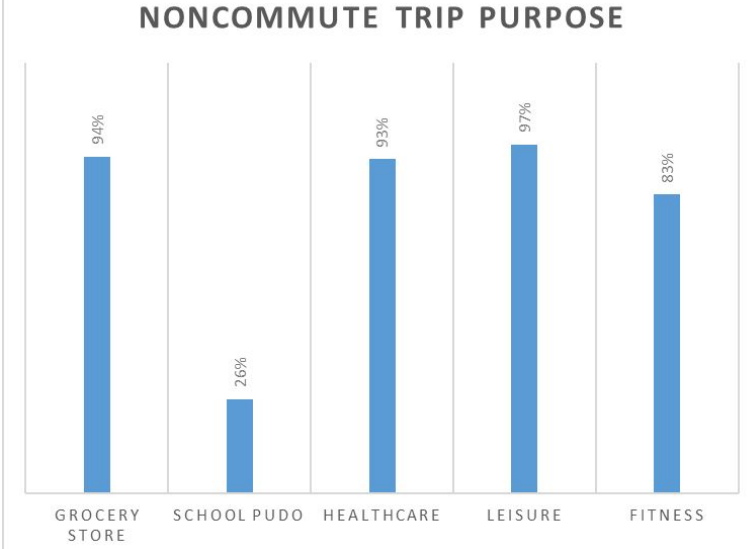
- [ ] Time/duration
- [ ] Cost/affordability
- [ ] Flexibility/convenience
- [ ] Comfort
- [ ] Environmental impact (e.g., reduce my contribution to CO2 emissions)
- [ ] Value of travel time (e.g., I make use of my travel time for other activities)
- [ ] Subsidies (e.g., my commute mode/option is subsidized)
- [ ] Safety (e.g., I feel safe from crimes using this mode)
- [ ] Protection from viral infections (e.g., the COVID-19 pandemic)
- [ ] Health/fitness (e.g., higher physical activity)
- [ ] Facilities (e.g., my worksite has sufficient facilities needed by this mode, e.g., parking)
- [ ] Habit (e.g., I developed a habit of using certain modes)
- [ ] Weather (e.g., climate plays a major role in my mode choice)
- [ ] Other (specify)

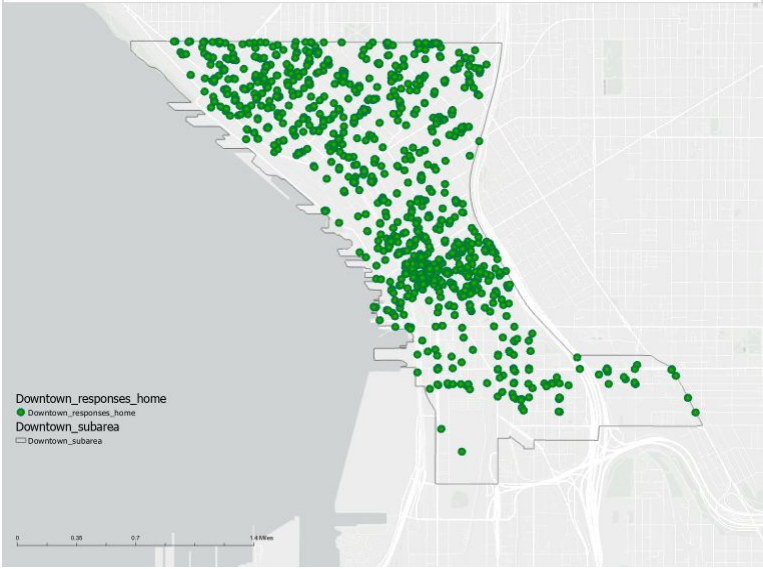
Downtown | Non-Commute Travel



	Grocery Store	School PUDO	Healthcare	Leisure	Fitness
Drive alone	783	213	682	526	346
Bike	9	3	11	20	58
Ebike	14	3	20	32	22
Walk	456	60	288	274	746
Uber	49	14	172	240	15
Transit	146	43	294	314	109
Carpool	72	12	27	145	24

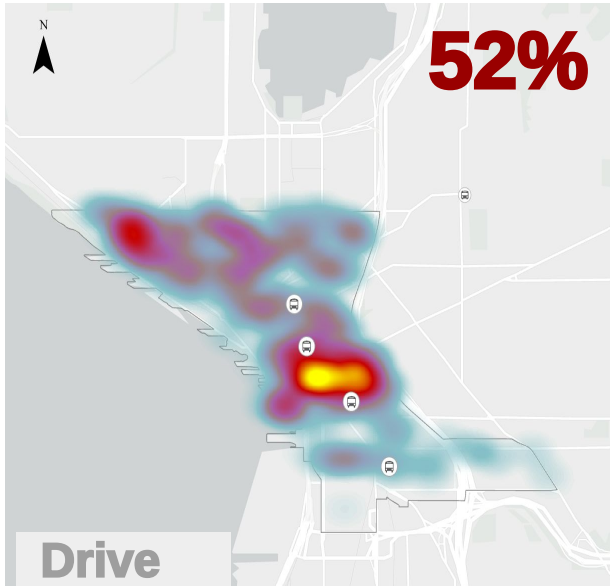
Drive alone Bike Ebike Walk TNC Transit Carpool

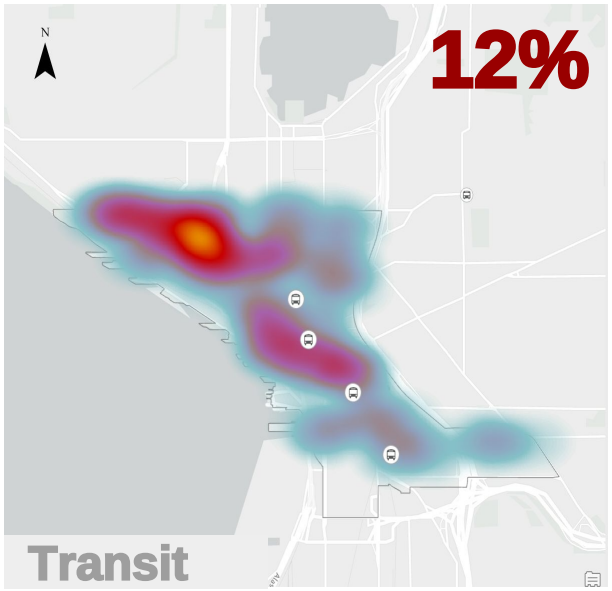


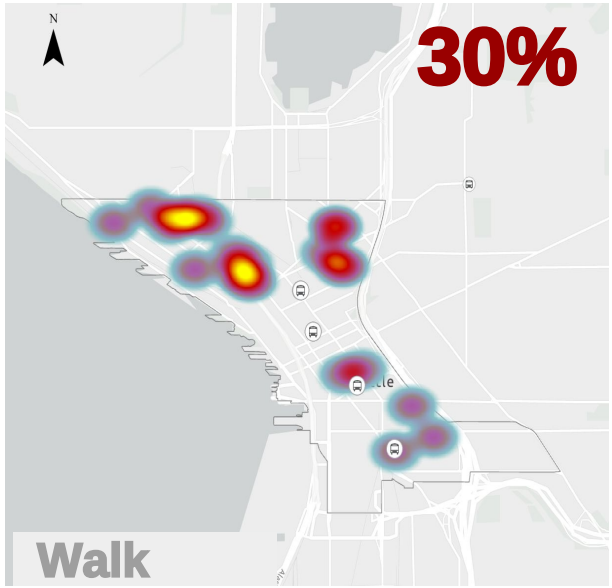


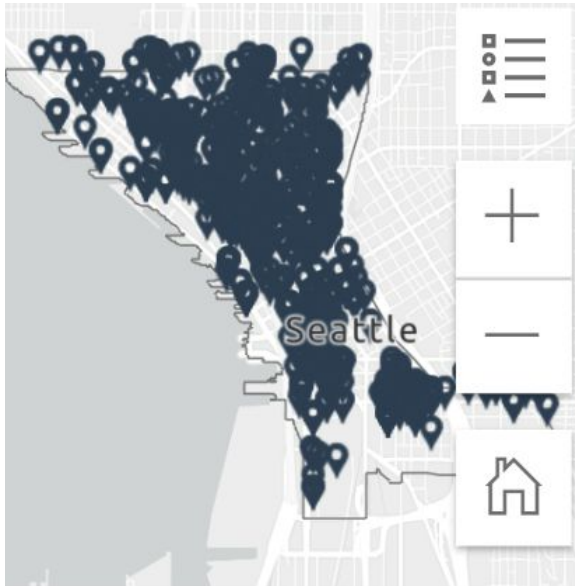
The graph in this page is based on the survey question " What is the main mode you most frequently use for the following trips? (Grocery shopping, School pickup/dropoff, Health/medical treatment, Leisure/social, Fitness/exercise, Other)". Respondents could leave any of the options empty/unanswered. The graph focuses on non-commute travel patterns for Downtown residents (N=1,645)

Downtown | Grocery Shopping by Mode



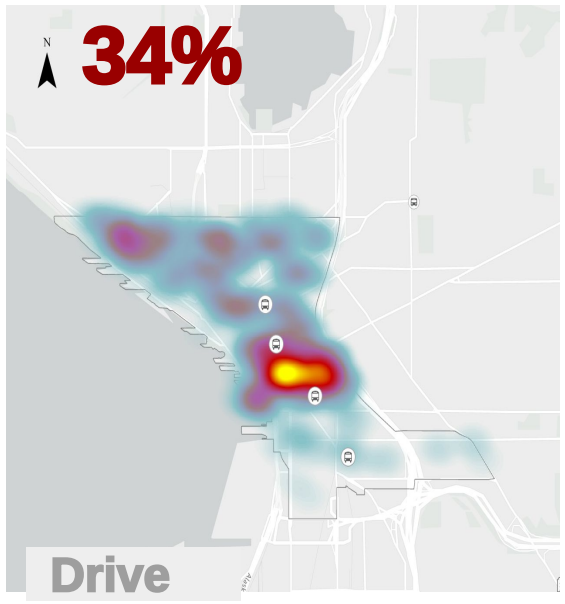


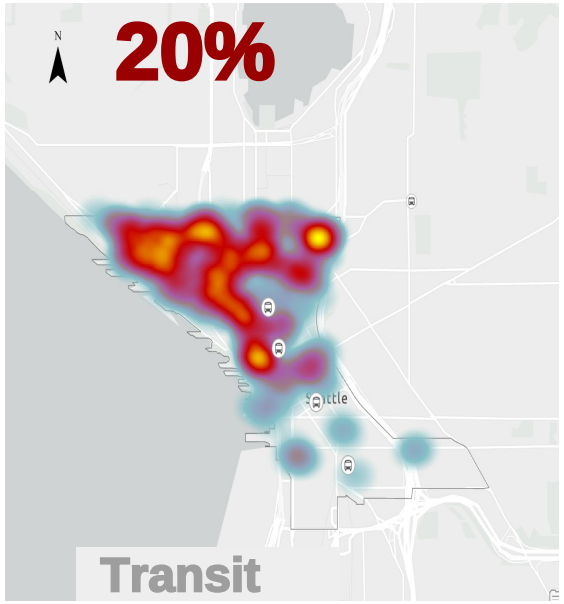


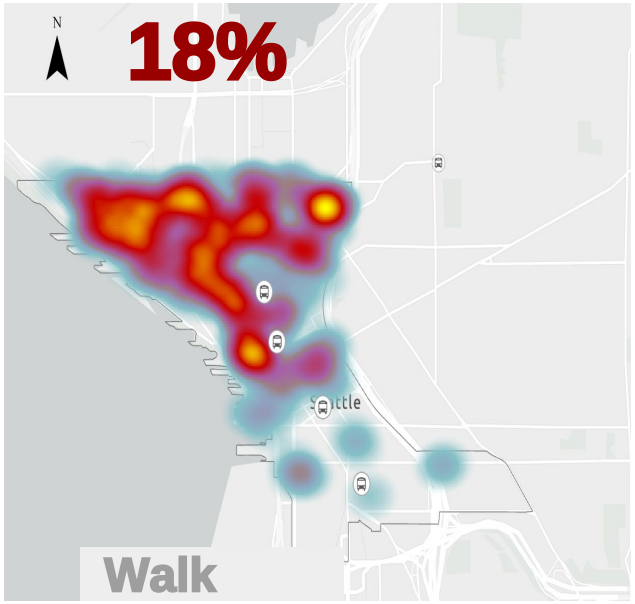


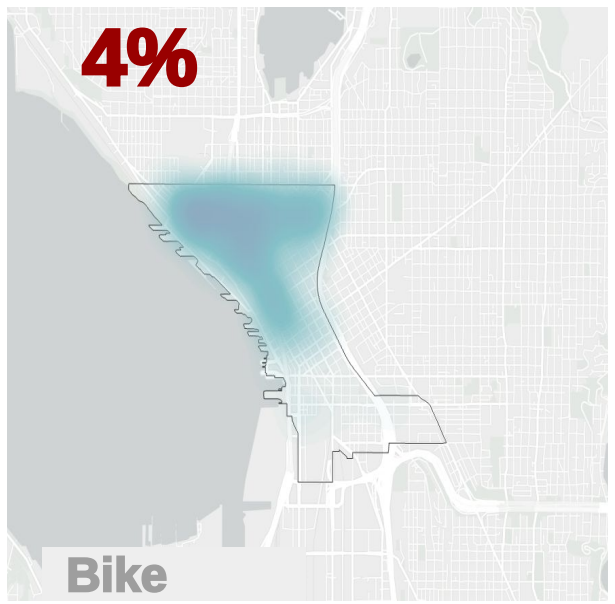
The maps on this page show the home locations of different modes used for grocery shopping, including drive alone, transit and walking, represented as hotspots (constant), showing both the volume and concentration of each mode user.
The map on the left shows the locations/density of grocery stores, restaurants and cafes. the map was generated using Esri Business Analytics.

Downtown | Leisure Trips by Mode



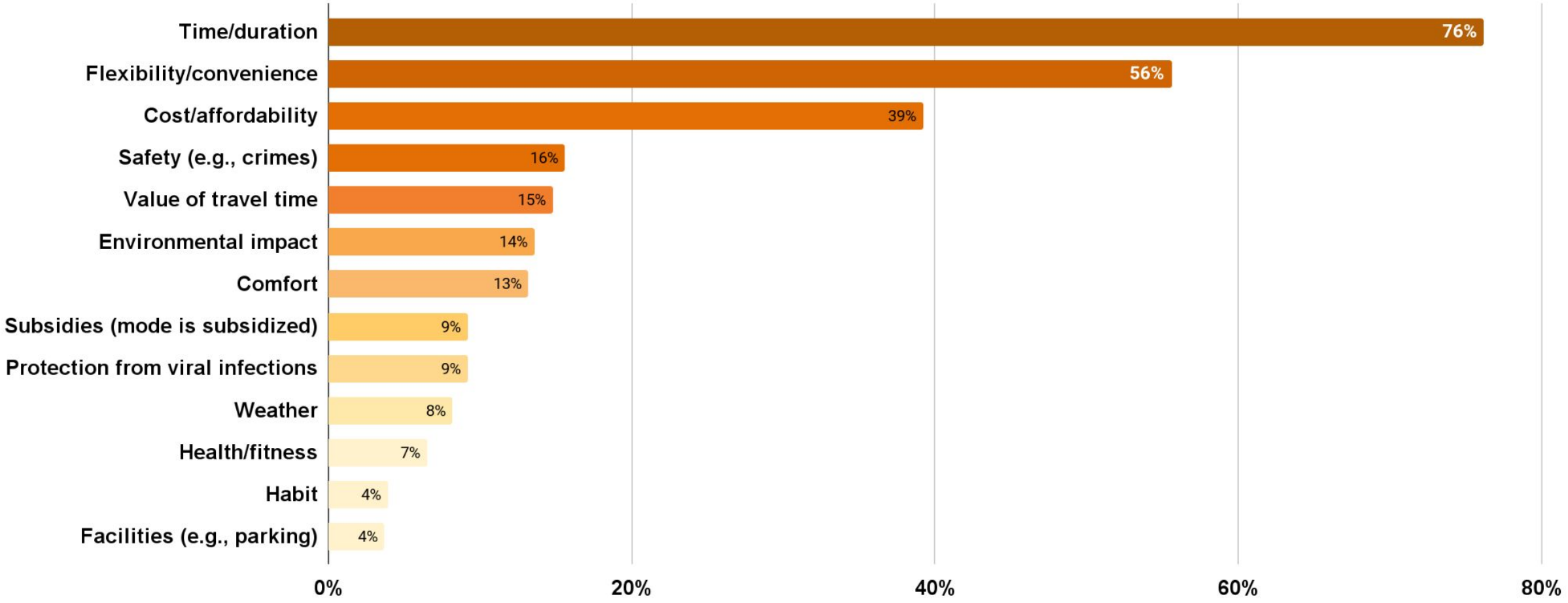






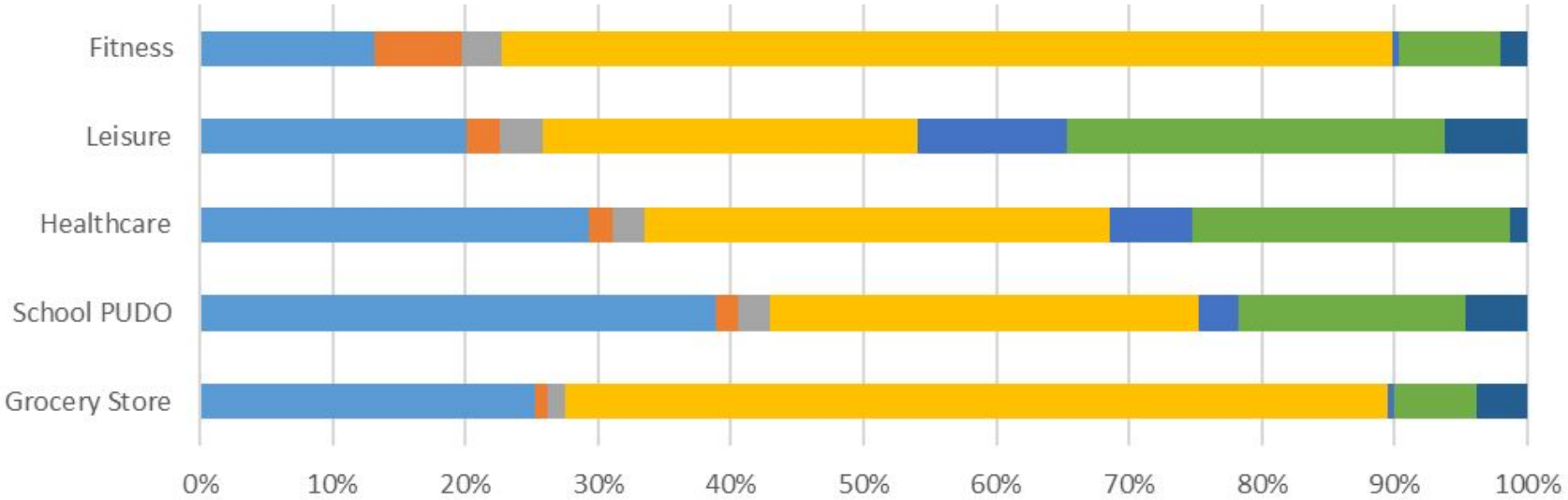
The maps on this page show the home locations of different modes used for leisure trips, including drive alone, transit and walking, represented as hotspots (constant), showing both the volume and concentration of each mode user.

Downtown | Mode Choice Factors



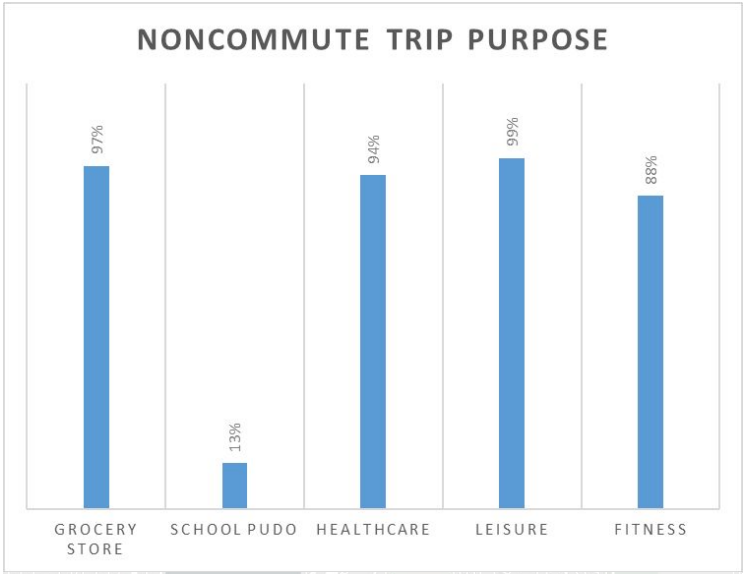
This graph is based on the question "Generally, what are the main considerations that affect your travel decisions?" Respondents were allowed to select up to three factors hence the percentages don't add up to 100%. (N = 1,607)

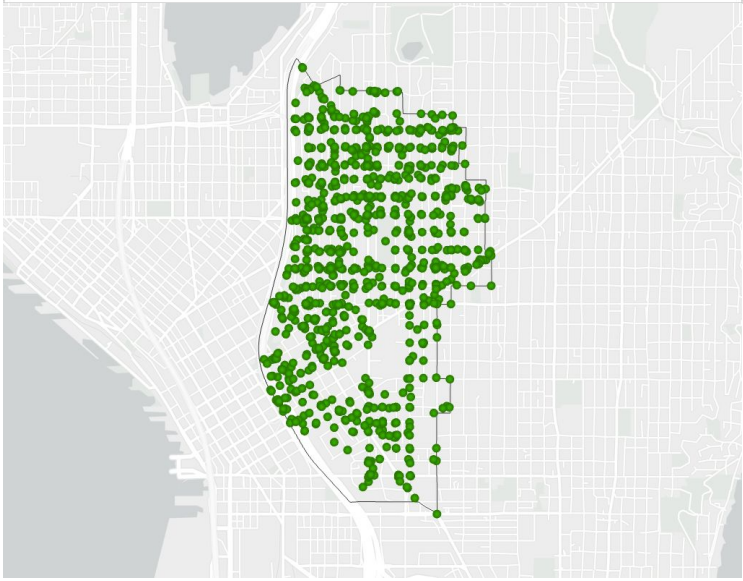
First Hill/Capitol Hill | Non-Commute Travel



	Grocery Store	School PUDO	Healthcare	Leisure	Fitness
Drive alone	388	66	438	313	184
Bike	15	3	27	40	92
Ebike	21	4	36	50	42
Walk	953	55	526	441	939
Uber	8	5	92	175	6
Transit	96	29	358	445	107
Carpool	58	8	20	97	29

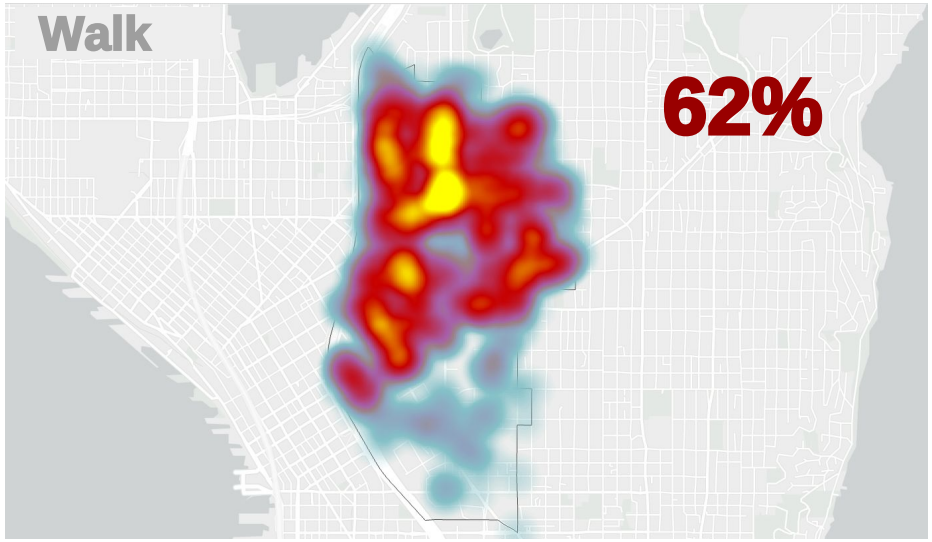
Drive alone Bike Ebike Walk TNC Transit Carpool

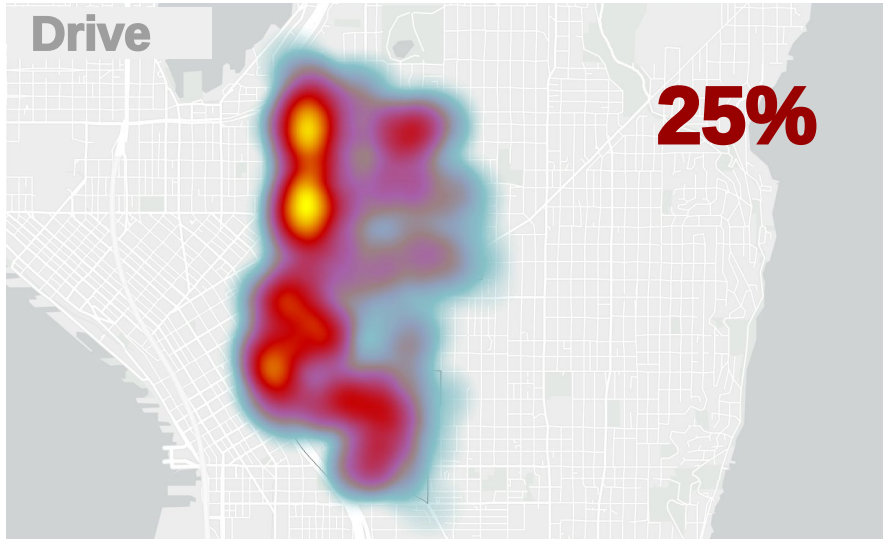


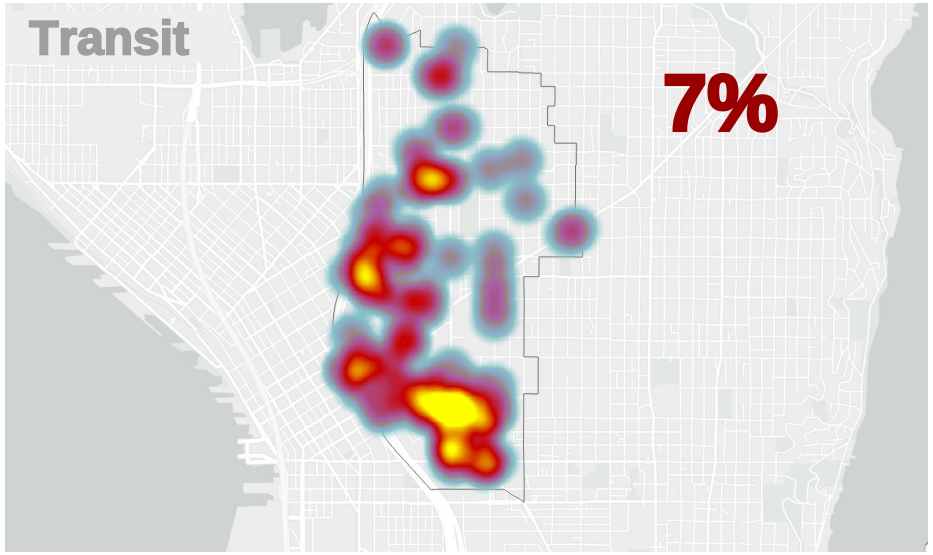


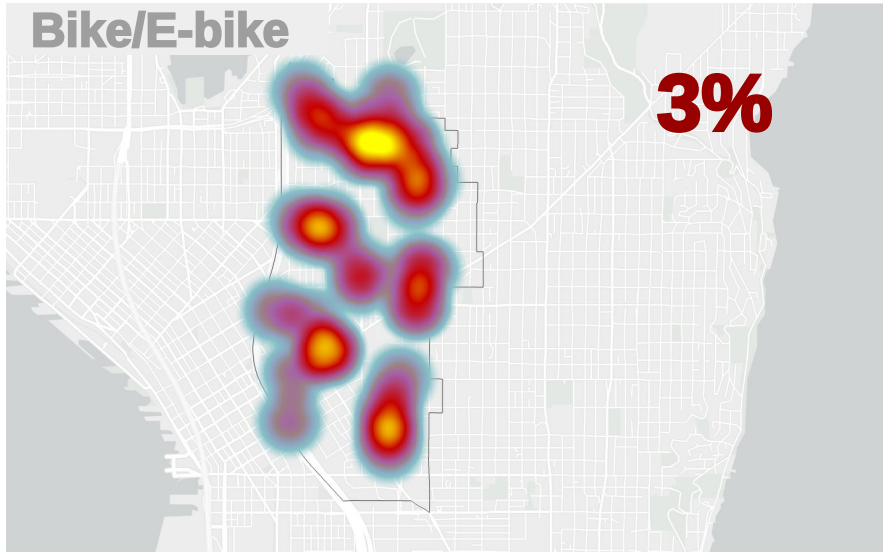
The graph in this page is based on the survey question " What is the main mode you most frequently use for the following trips? (Grocery shopping, School pickup/dropoff, Health/medical treatment, Leisure/social, Fitness/exercise, Other)". Respondents could leave any of the options empty/unanswered. (N=1,607)

First Hill/Capitol Hill | Grocery Shopping by Mode



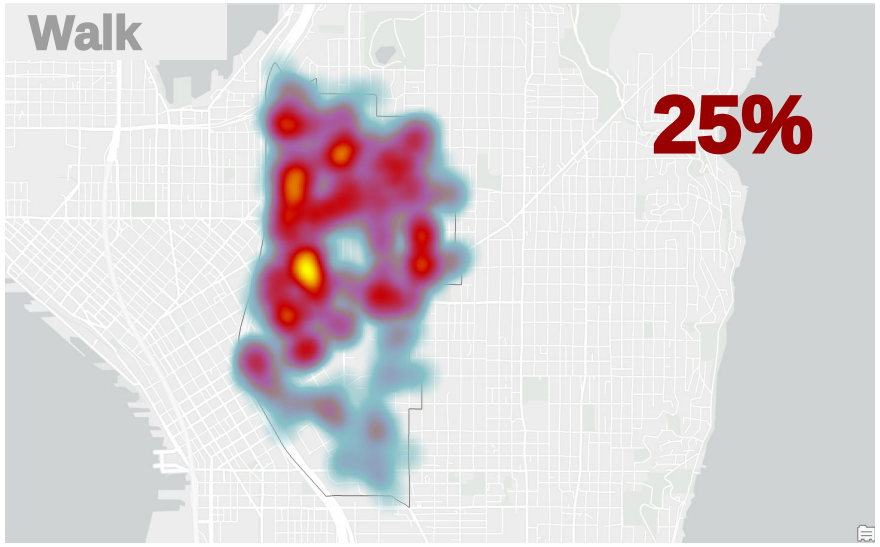


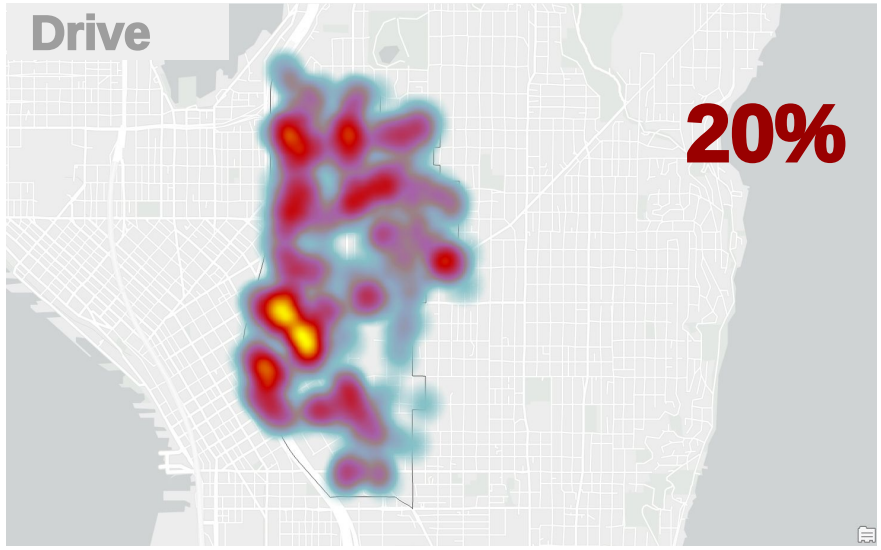


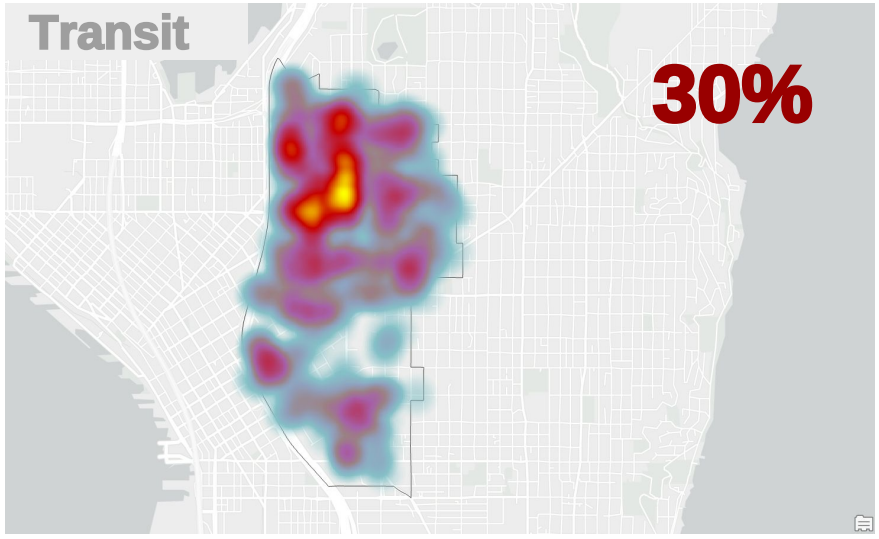


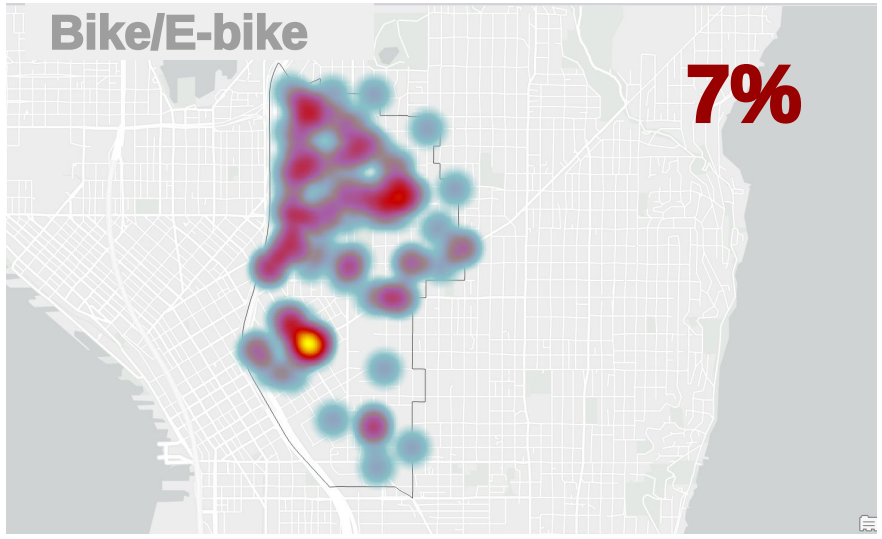
The maps on this page show the home locations of different modes used for grocery shopping, including drive alone, transit and walking, represented as hotspots (constant), showing both the volume and concentration of each mode user The map on the left shows the locations/density of grocery stores, restaurants and cafes. the map was generated using Esri Business Analytics..

First Hill/Capitol Hill | Leisure Trips by Mode



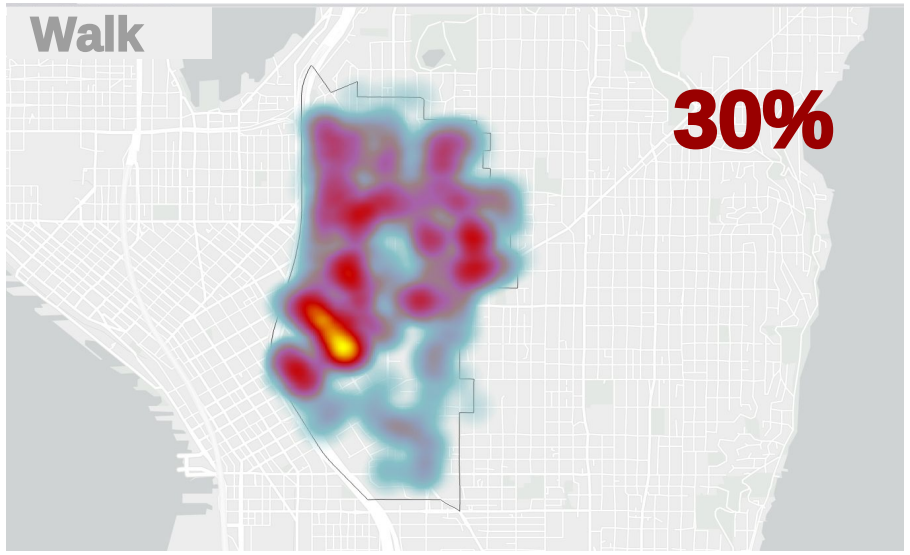


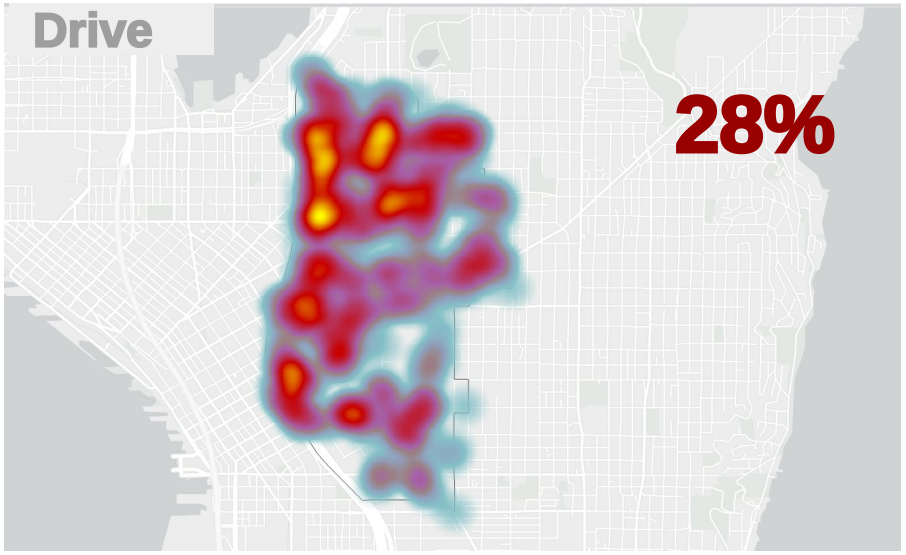


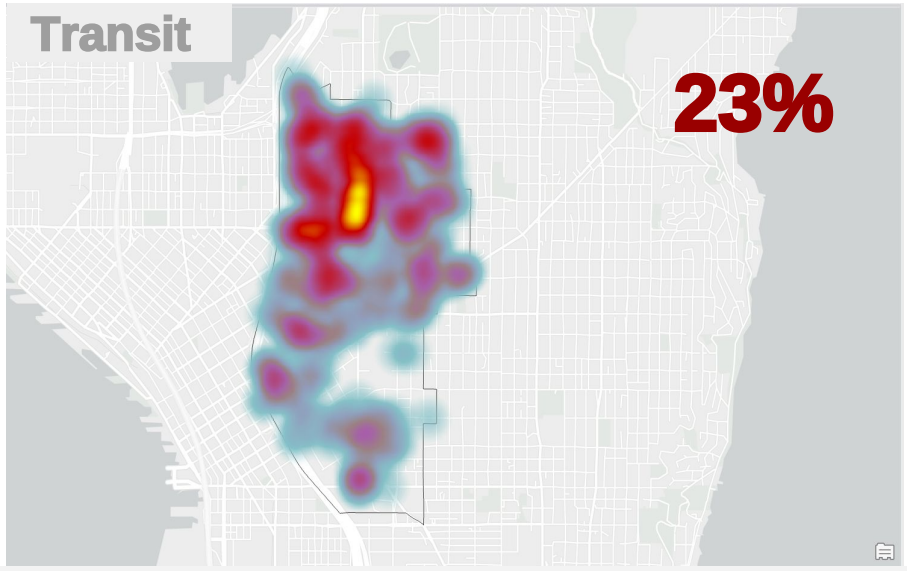


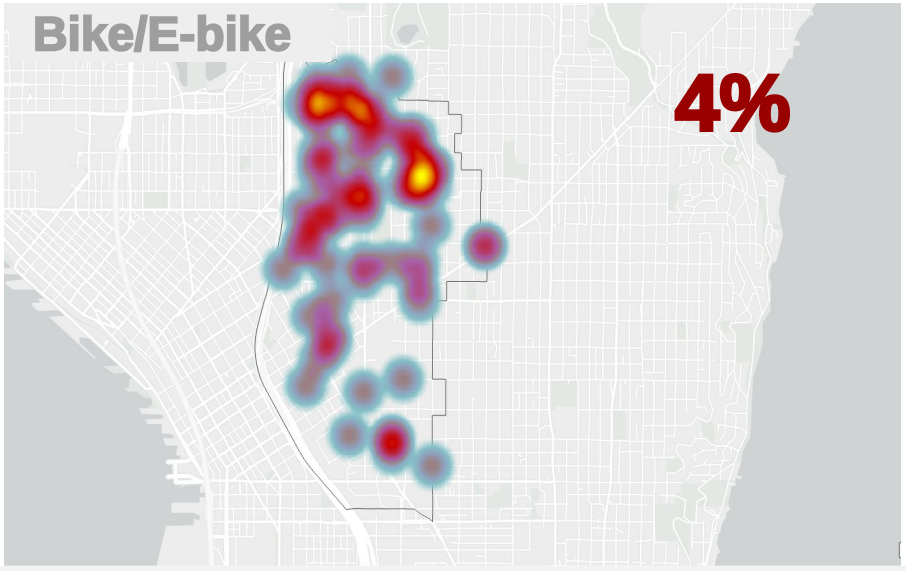
The maps on this page show the home locations of different modes used for grocery shopping, including drive alone, transit and walking, represented as hotspots (constant), showing both the volume and concentration of each mode user.

First Hill/Capitol Hill | Healthcare Trips by Mode



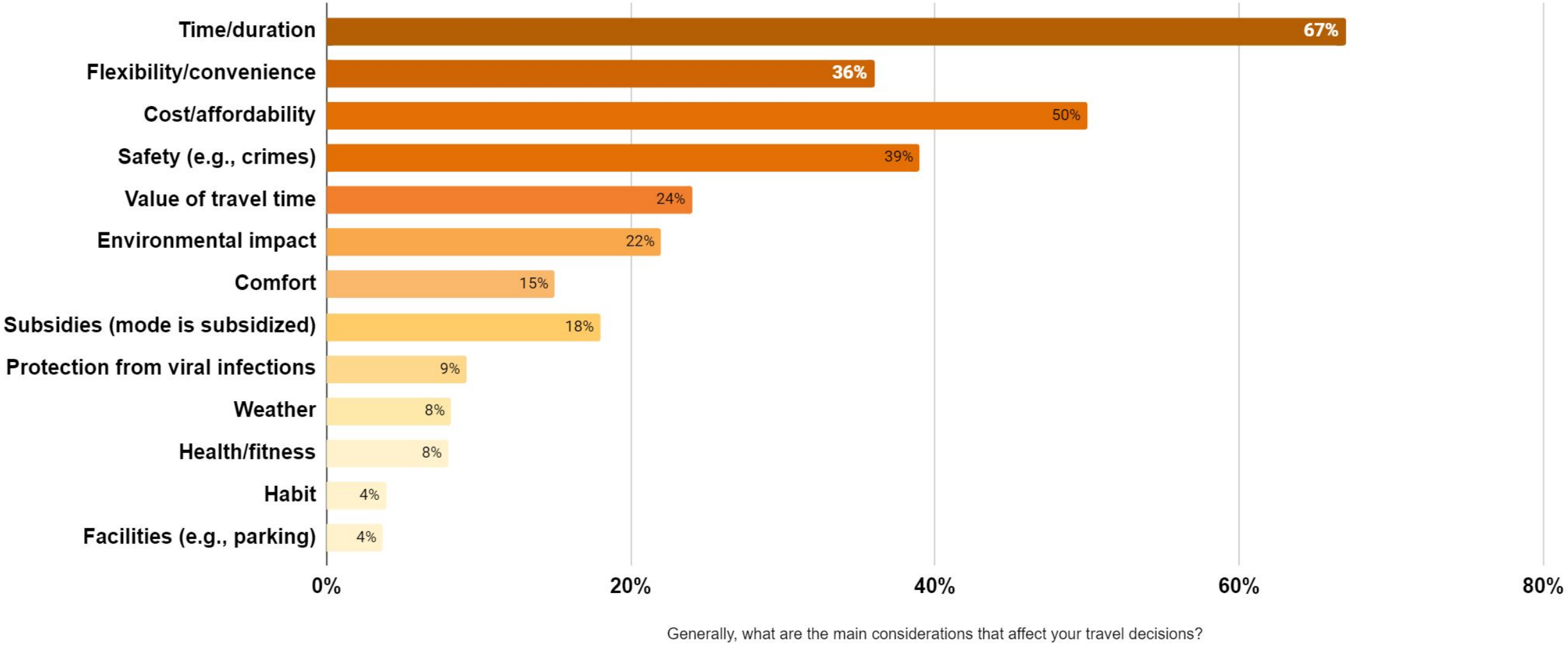






Q34: Which transportation mode did you most frequently use to commute to work before the pandemic (pre-March 2020)? This graph excludes modes identified as others. (N=1,604)

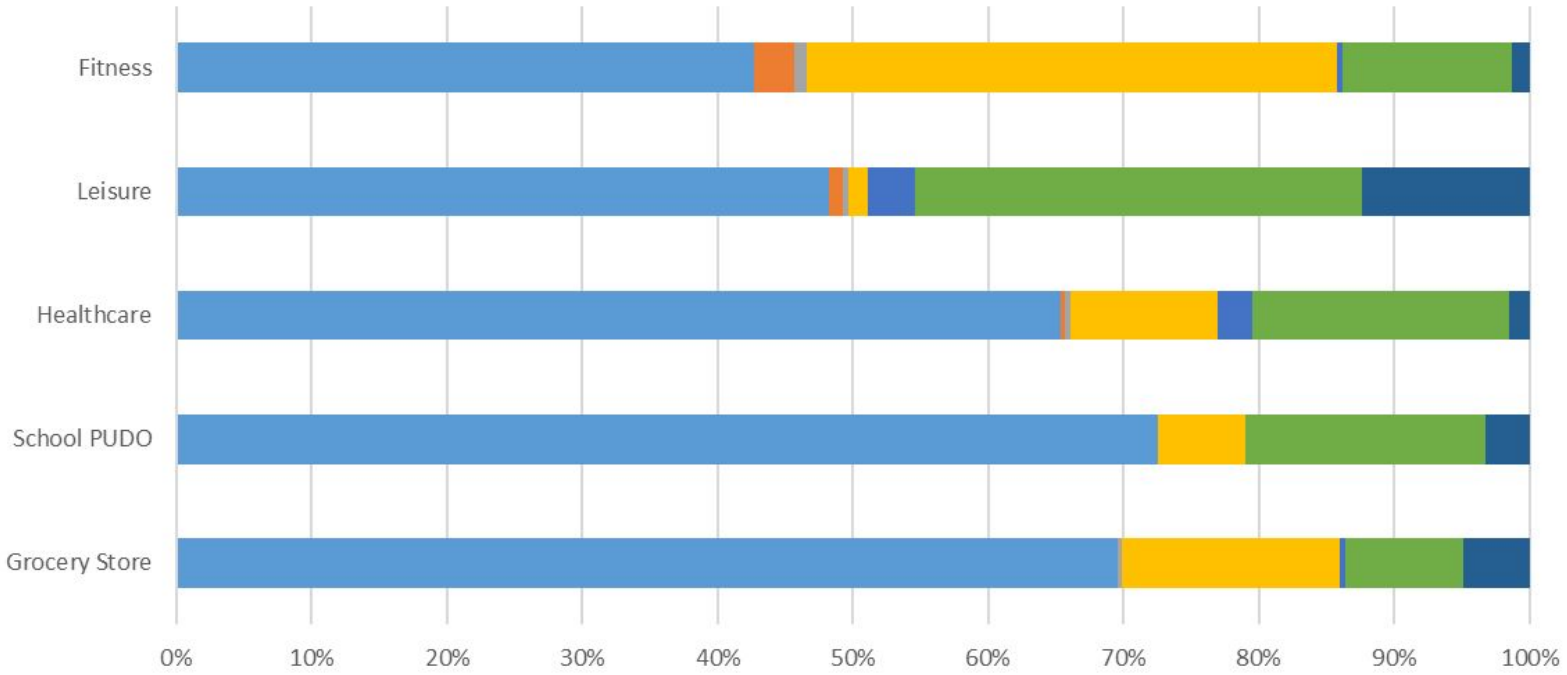
First Hill/Capitol Hill | Mode Choice Factors



This graph is based on the question "Generally, what are the main considerations that affect your travel decisions?" Respondents were allowed to select up to three factors hence the percentages don't add up to 100%. (N = 1,607)

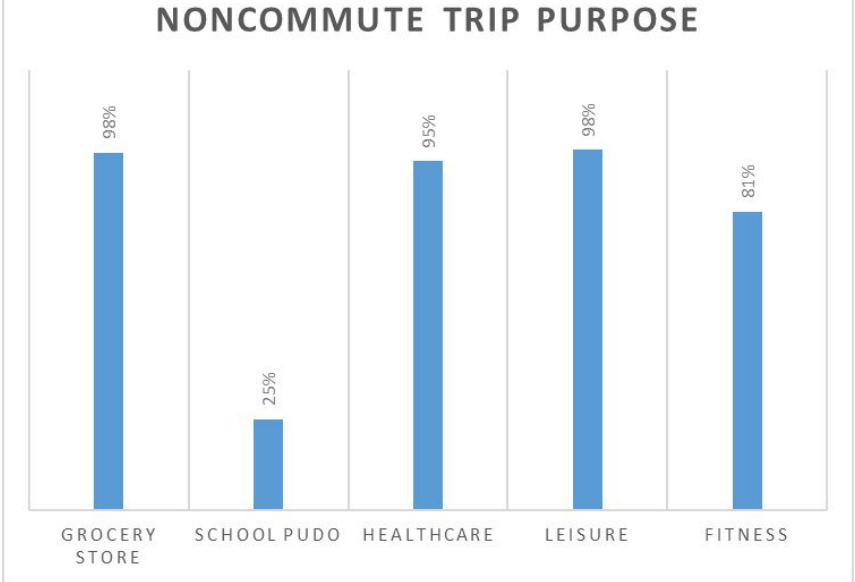
76

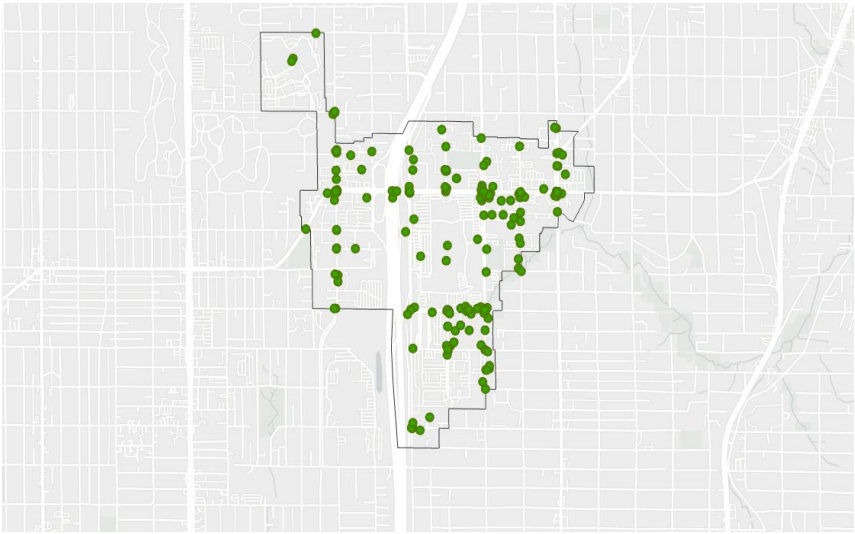
Northgate | Non-Commute Travel



	Grocery Store	School PUDO	Healthcare	Leisure	Fitness
Drive alone	199	45	179	136	99
Bike			1	3	7
Ebike	1		1	1	2
Walk	46	4	30	4	91
Uber	1		7	10	1
Transit	25	11	52	93	29
Carpool	14	2	4	35	3

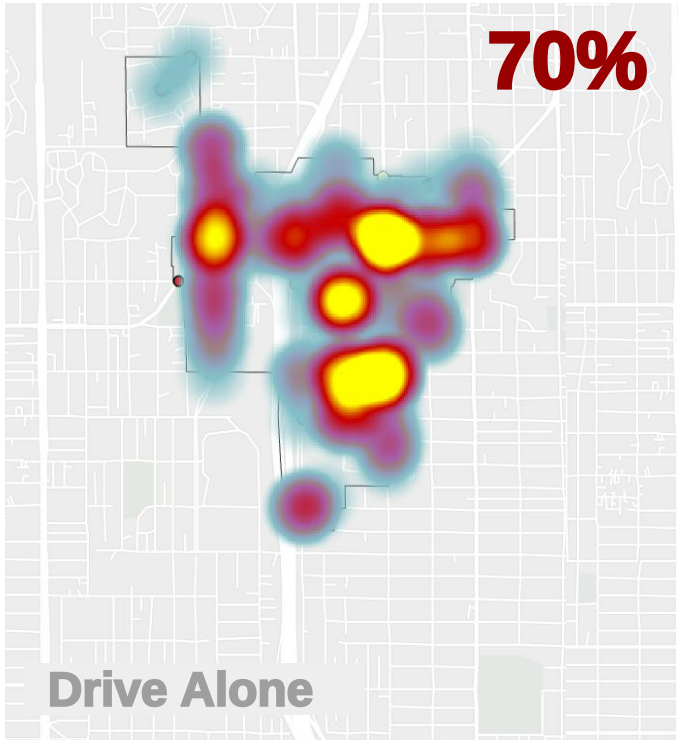
Drive alone Bike Ebike Walk TNC Transit Carpool

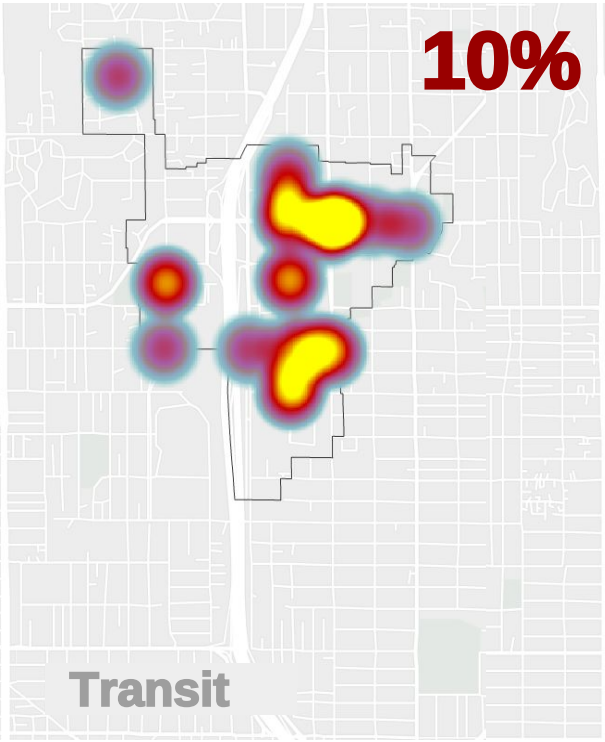


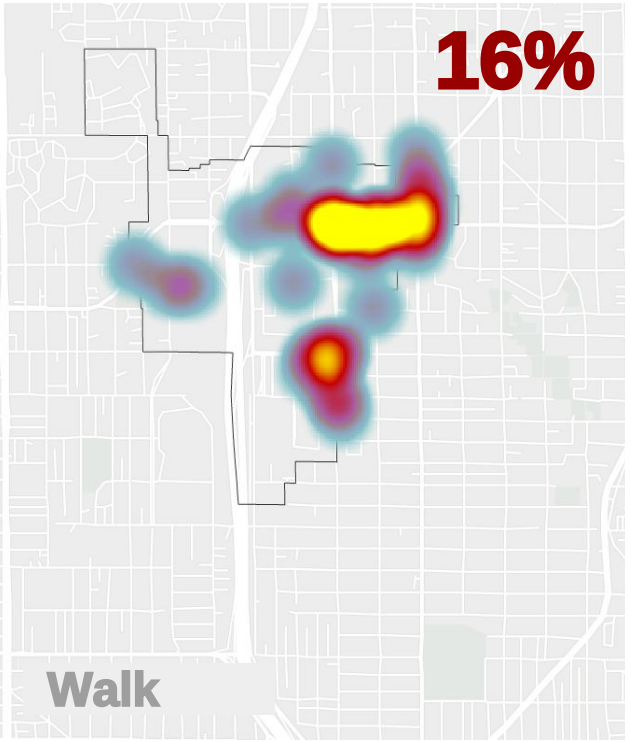


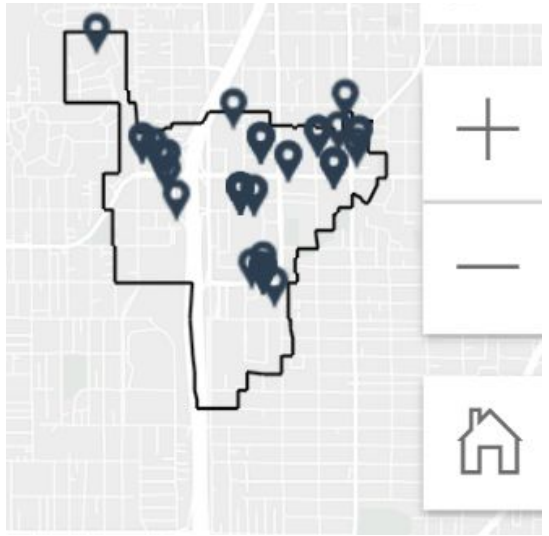
The graph in this page is based on the survey question " What is the main mode you most frequently use for the following trips? (Grocery shopping, School pickup/dropoff, Health/medical treatment, Leisure/social, Fitness/exercise, Other)". Respondents could leave any of the options empty/unanswered. (N=301)

Northgate | Grocery Shopping



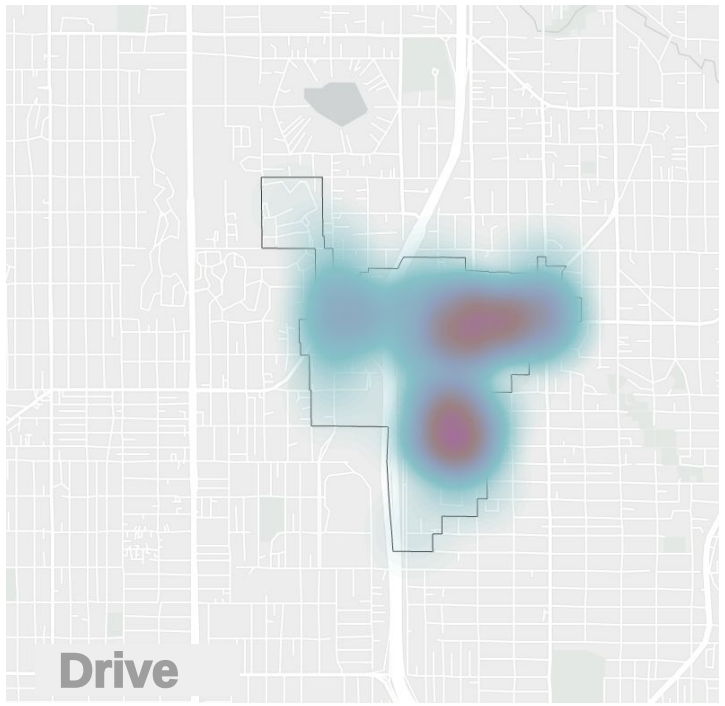


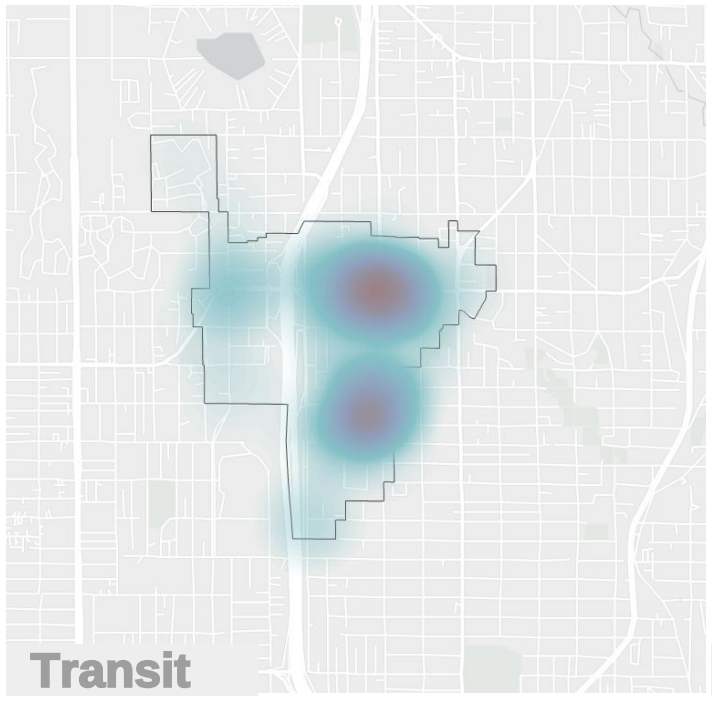


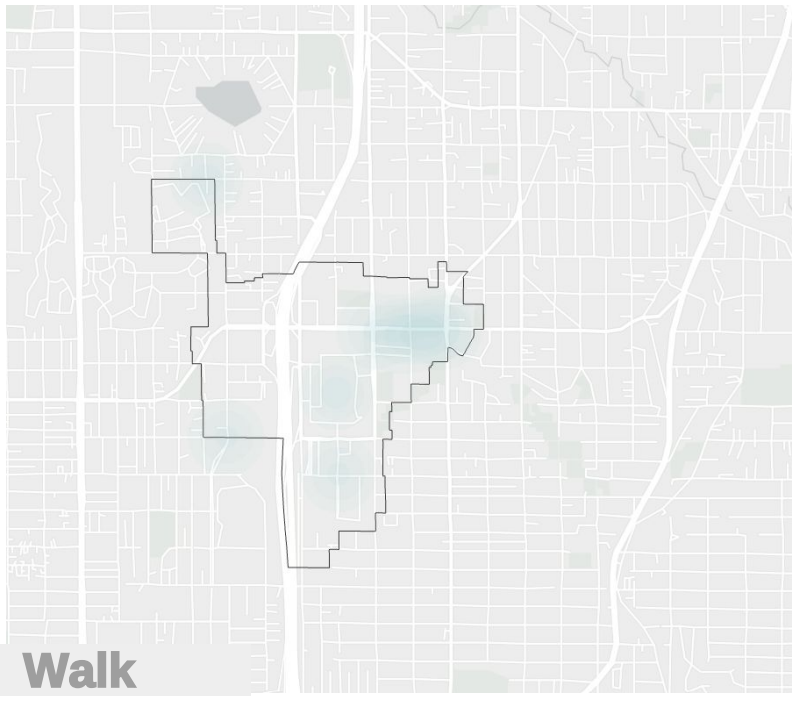


The maps on this page show the home locations of different modes used for grocery shopping, including drive alone, transit and walking, represented as hotspots (constant), showing both the volume and concentration of each mode user.
The map on the left shows the locations/density of grocery stores, restaurants and cafes. the map was generated using Esri Business Analytics.

Northgate | Leisure Travel

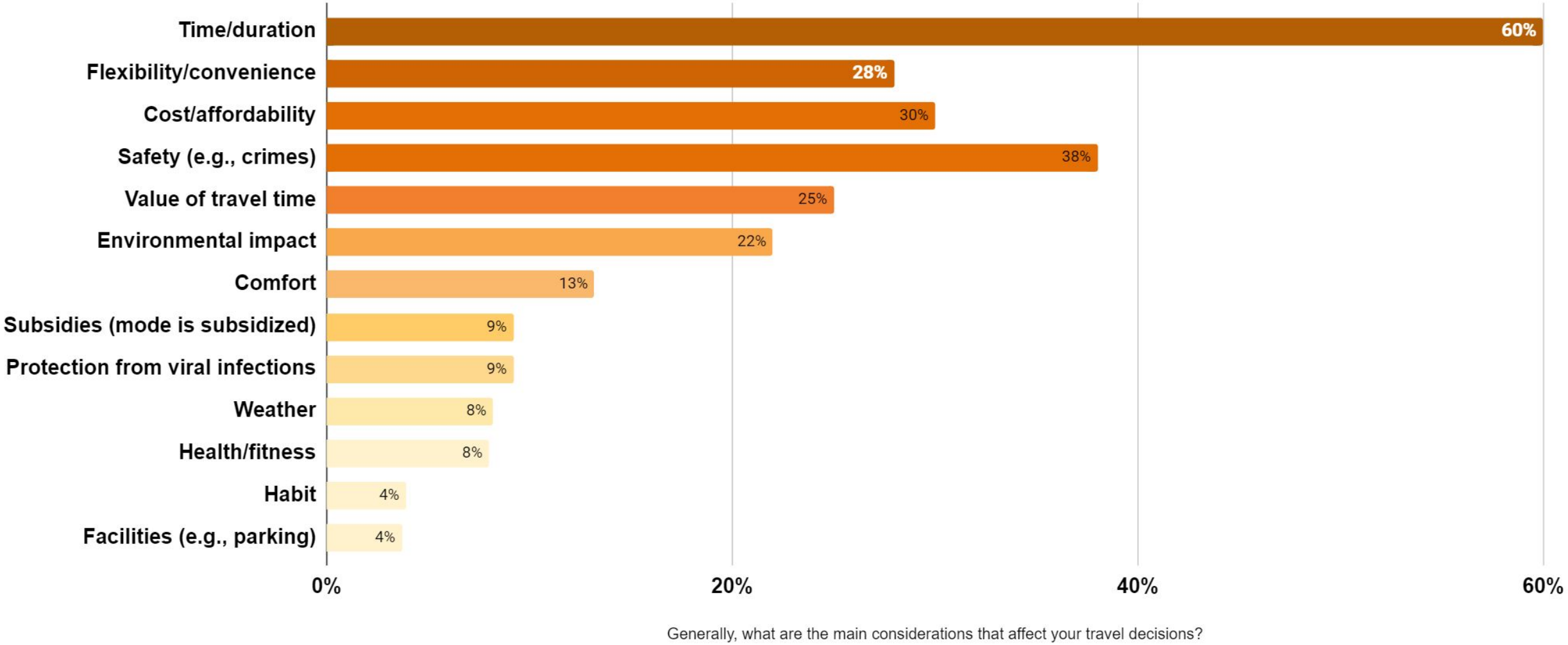






The maps on this page show the home locations of different modes used for travel to leisure activities, including drive alone, transit and walking, represented as hotspots (constant), showing both the volume and concentration of each mode user.

Northgate | Mode Choice Factors



This graph is based on the question "Generally, what are the main considerations that affect your travel decisions?" Respondents were allowed to select up to three factors hence the percentages don't add up to 100%. (N = 301)

NON-COMMUTE SUMMARY

Downtown Mobility Patterns:

- Despite ample grocery options, over 50% of Downtown residents opt to drive alone for shopping, highlighting the reliance on personal vehicles.
- More than 30% drive alone for various non-commute activities, indicating potential opportunities to promote alternative modes of transportation for local trips.
- Drivers in Downtown reside within walking distance of light rail stations, suggesting potential for mode shift with improved accessibility.
- Transit users and pedestrians, especially those shopping for groceries, are concentrated in Belltown and northern Downtown areas, indicating areas of high demand for transit and walkable infrastructure.

First Hill/Capitol Hill Mobility Patterns:

- First Hill/Capitol Hill residents exhibit high rates of walking for grocery shopping and fitness, emphasizing the importance of pedestrian-friendly environments and access to amenities.
- Mode choice factors such as time, cost, and safety influence transportation decisions, underscoring the need for safe and efficient pedestrian and transit infrastructure.

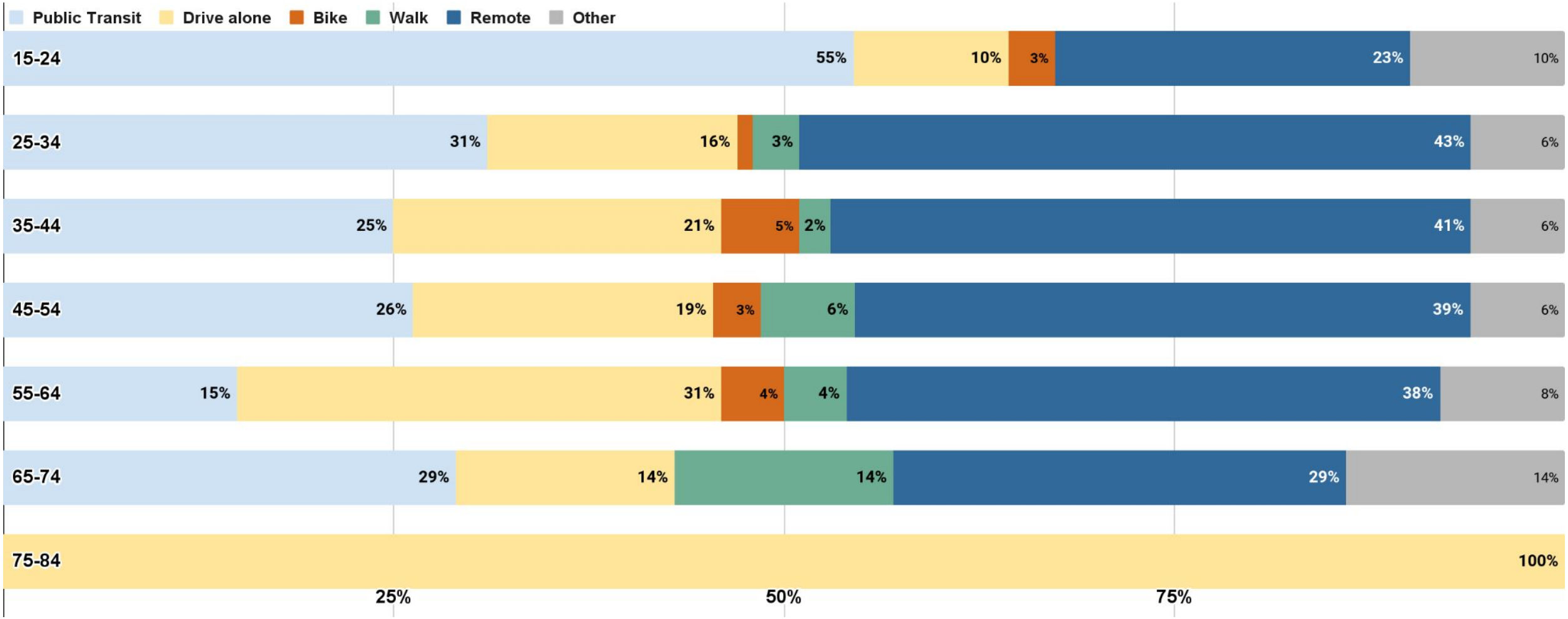
NON-COMMUTE SUMMARY

Northgate Travel Behavior:

- A significant portion of Northgate residents rely on driving for grocery shopping and other non-commute activities, indicating potential challenges in promoting alternative transportation modes.
- Proximity to major destinations like the Northgate Mall influences residents' choice of transportation mode, suggesting opportunities to enhance walkability and access to essential services.

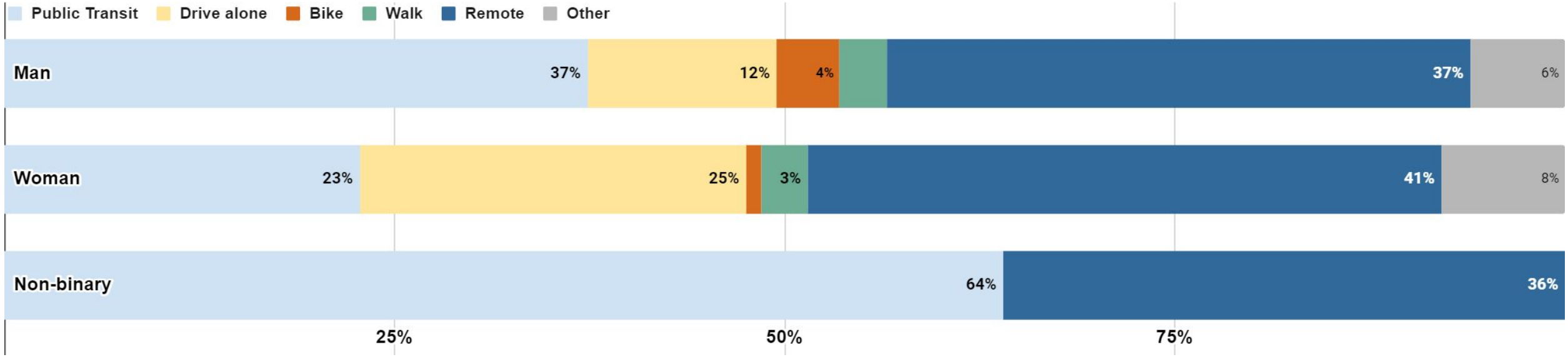
Equity Analysis

Northgate | Commute Mode Split by Age



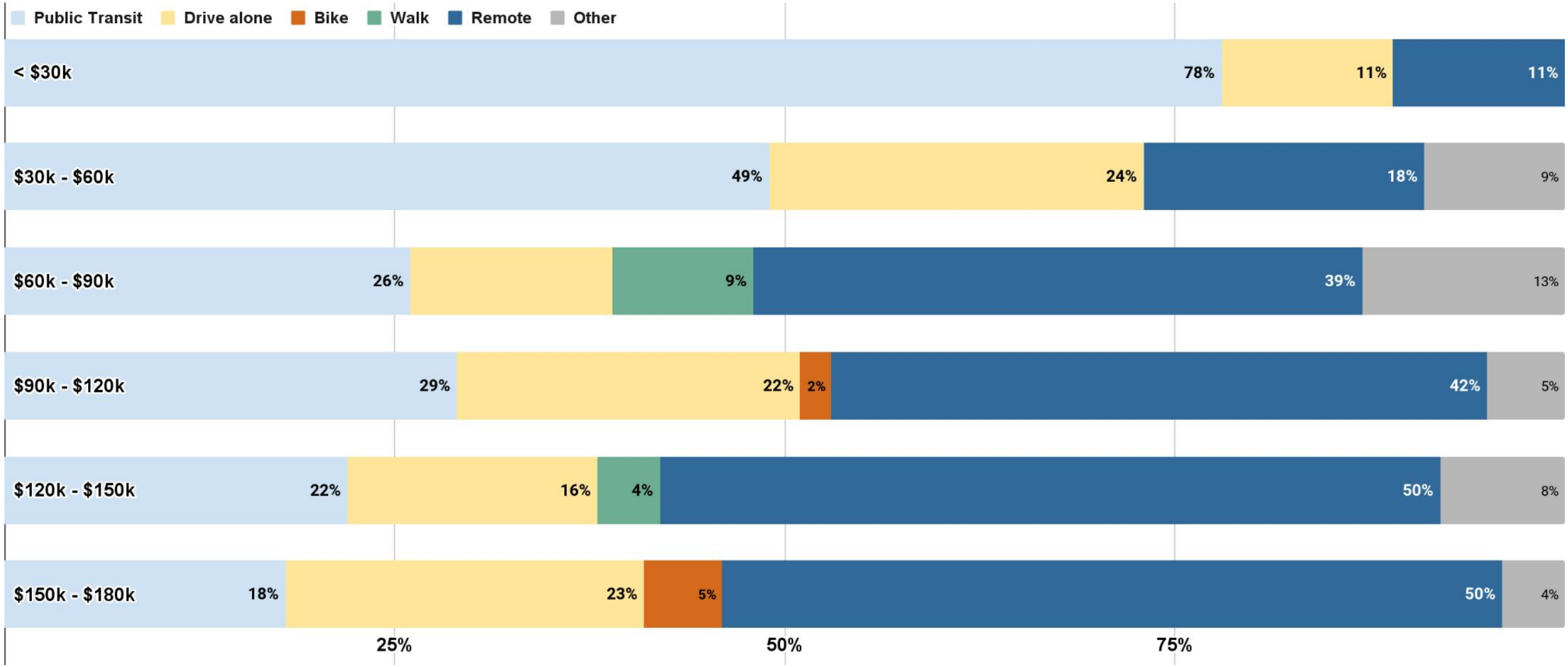
The graph shows the percentage of mode split for Northgate residents by age group (N=301)

Northgate | Commute Mode Split by Gender Identity



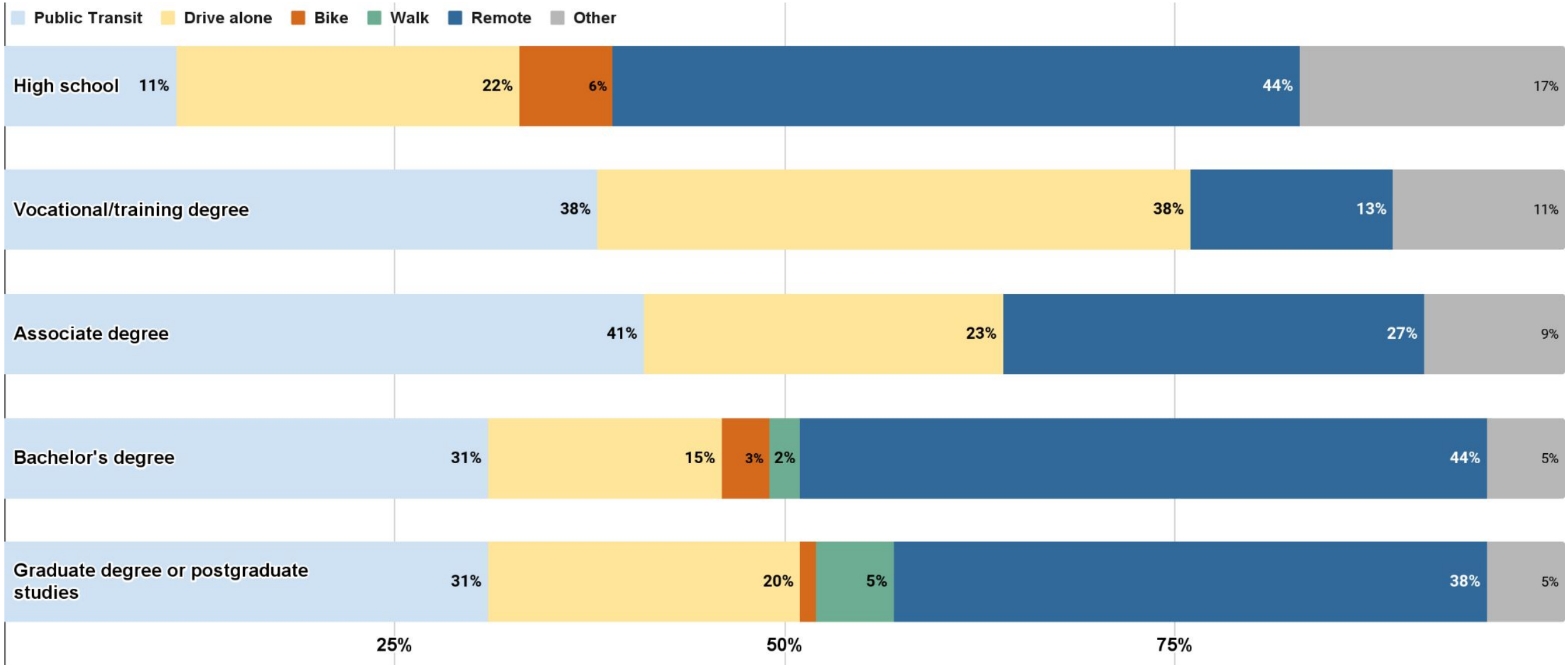
The graph shows the percentage of mode split for Northgate residents by gender identity (N=301)

Northgate | Commute Mode Split by Income



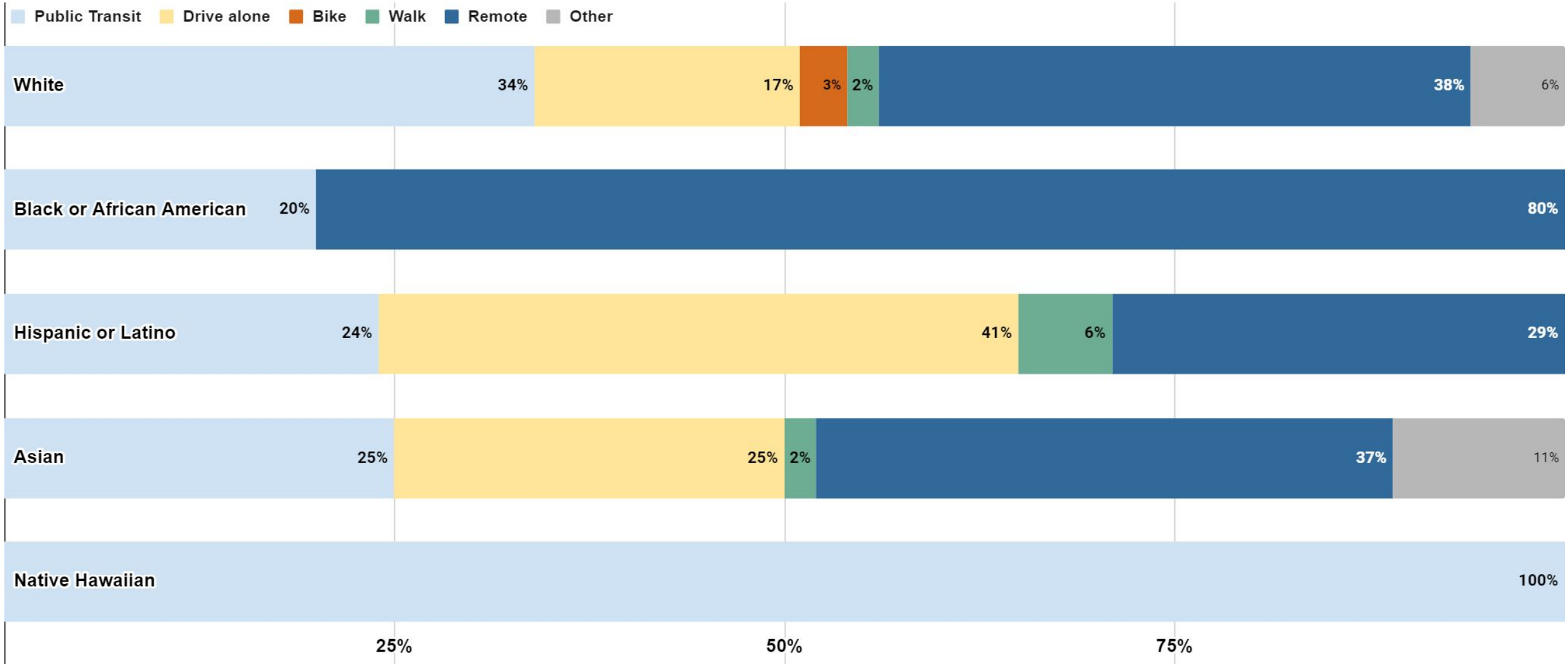
The graph shows the percentage of mode split for Northgate residents by income group (N=301)

Northgate | Commute Mode Split by Education



The graph shows the percentage of mode split for Northgate residents by education attainment (N=301)

Northgate | Commute Mode Split by Race/Ethnicity

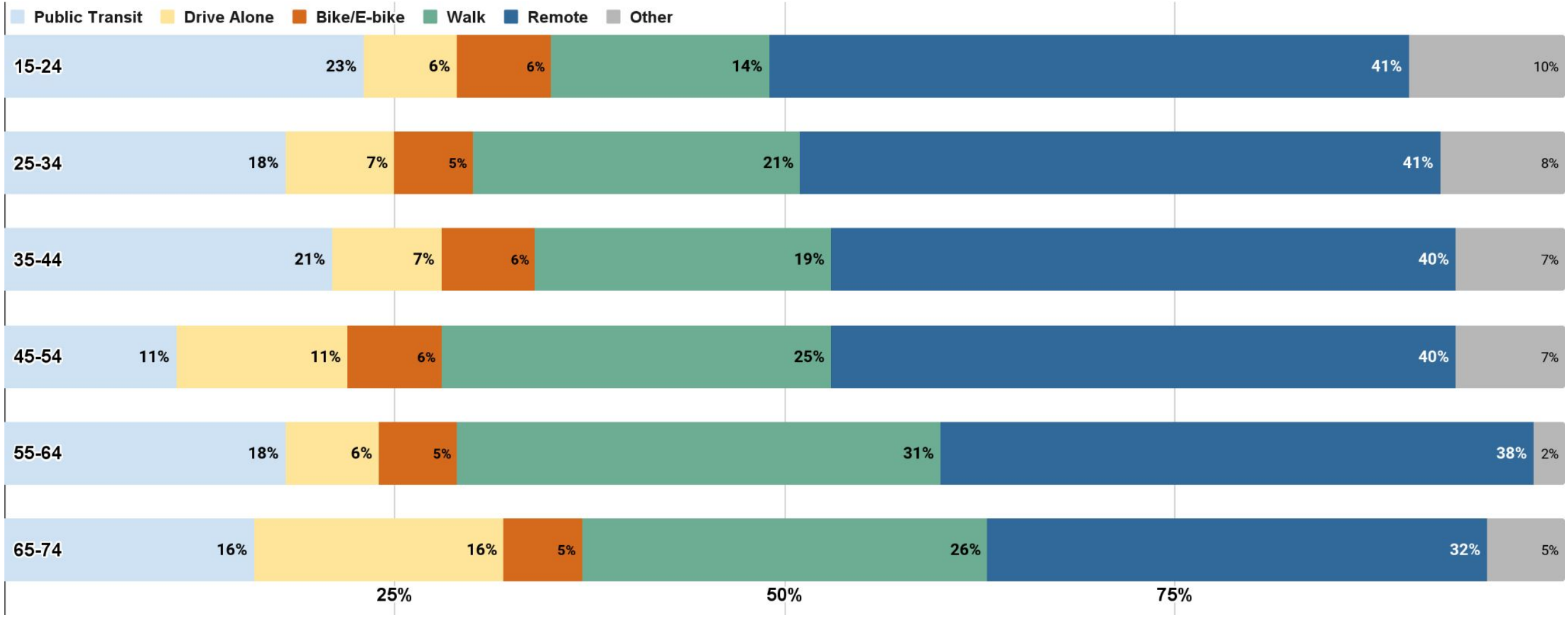


The graph shows the percentage of mode split for Northgate residents by race/ethnicity (N=301)

NORTHGATE SUMMARY

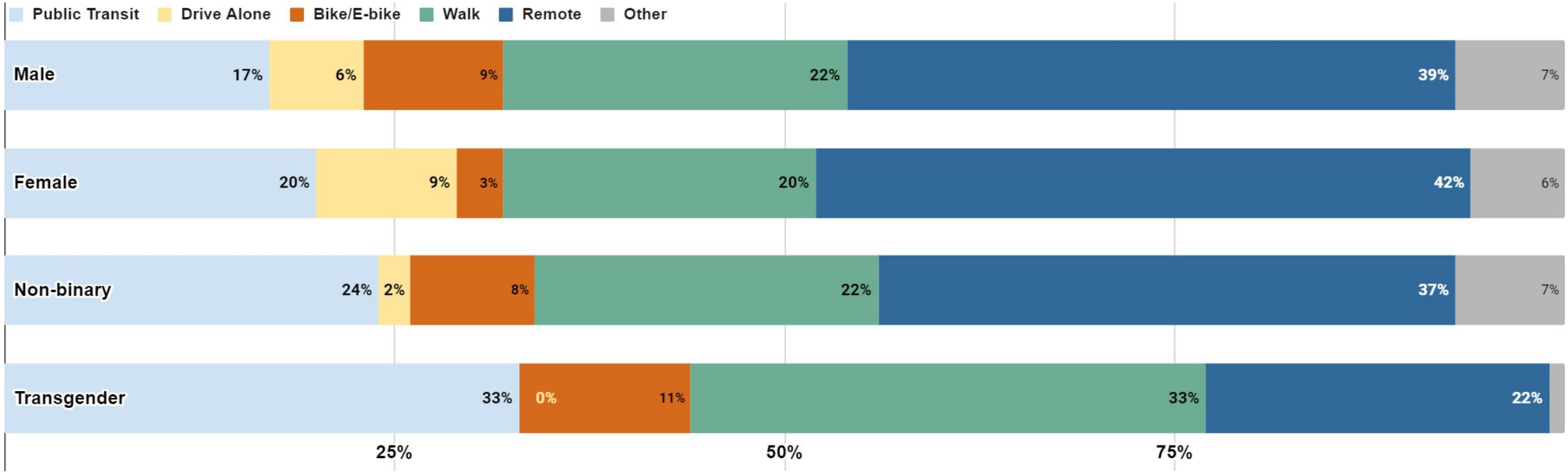
- Younger individuals (15-34) prefer transit, while those aged 35 and older are more inclined to drive.
- Men or non-binary individuals are more likely to use transit, whereas women prefer driving. Men are also more likely to bike.
- Lower-income earners (<$60k) favor transit, while those with higher incomes (> $150k) are more likely to bike. There's a positive correlation between income and remote work which indicates important equity implications of workers access to remote work.
- Individuals with bachelor's or graduate degrees are less likely to drive and more likely to work remotely.

First Hill/Capitol Hill | Commute Mode Split by Age



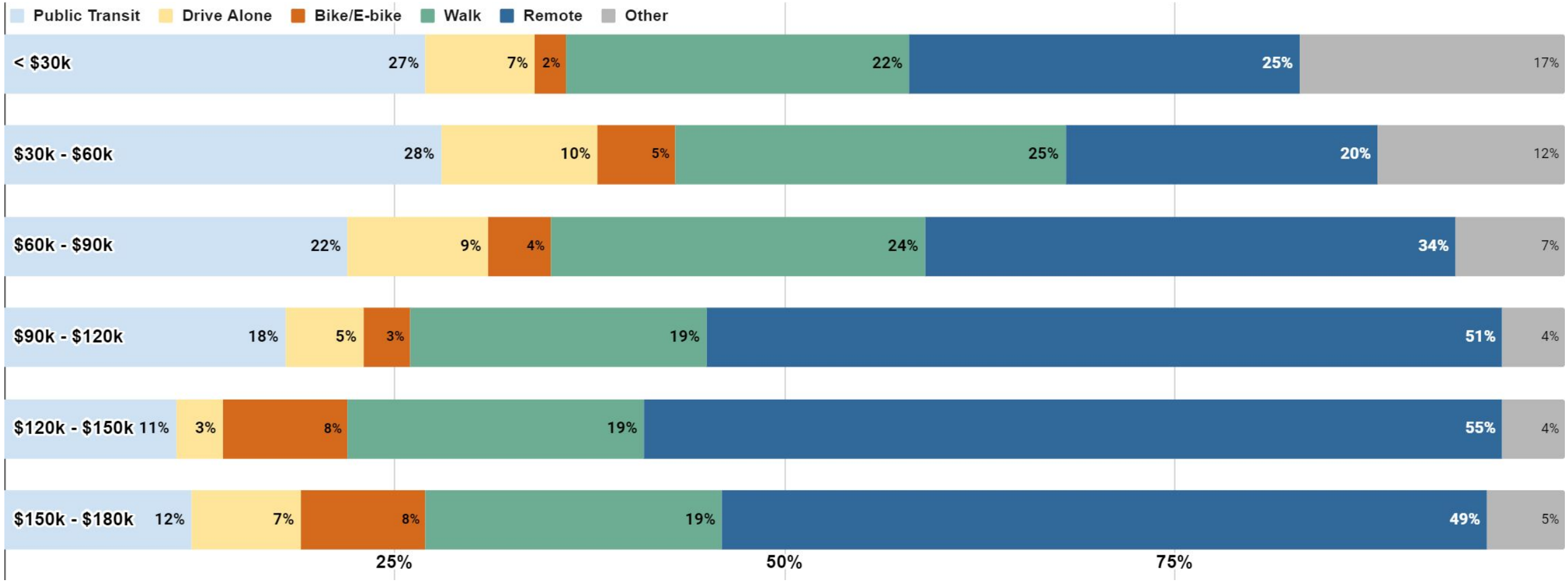
The graph shows the percentage of mode split for Capitol Hill residents by age group (N=1,607)

First Hill/Capitol Hill | Commute Mode Split by Gender Identity



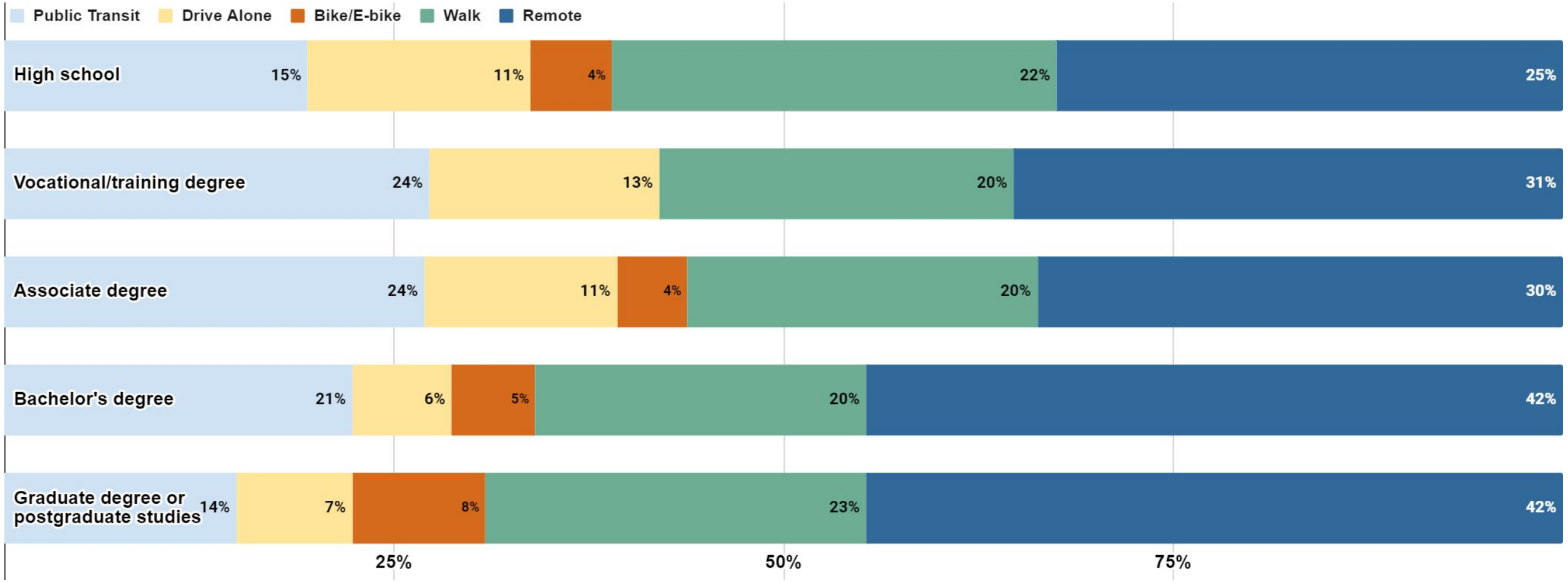
The graph shows the percentage of mode split for Capitol Hill residents by gender identity (N=1,607)

First Hill/Capitol Hill | Commute Mode Split by Income



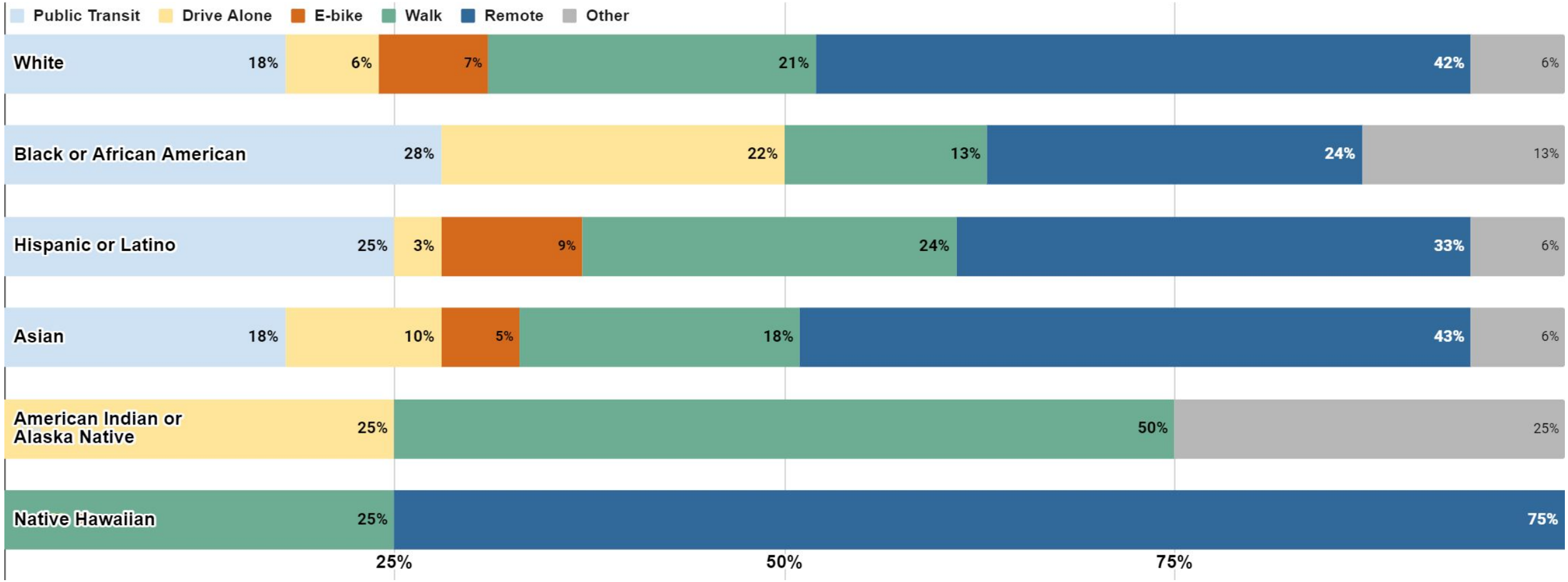
The graph shows the percentage of mode split for Capitol Hill residents by income group (N=1,607)

First Hill/Capitol Hill | Commute Mode Split by Education



The graph shows the percentage of mode split for Capitol Hill residents by educational attainment (N=1,607)

First Hill/Capitol Hill | Commute Mode Split by Race/Ethnicity

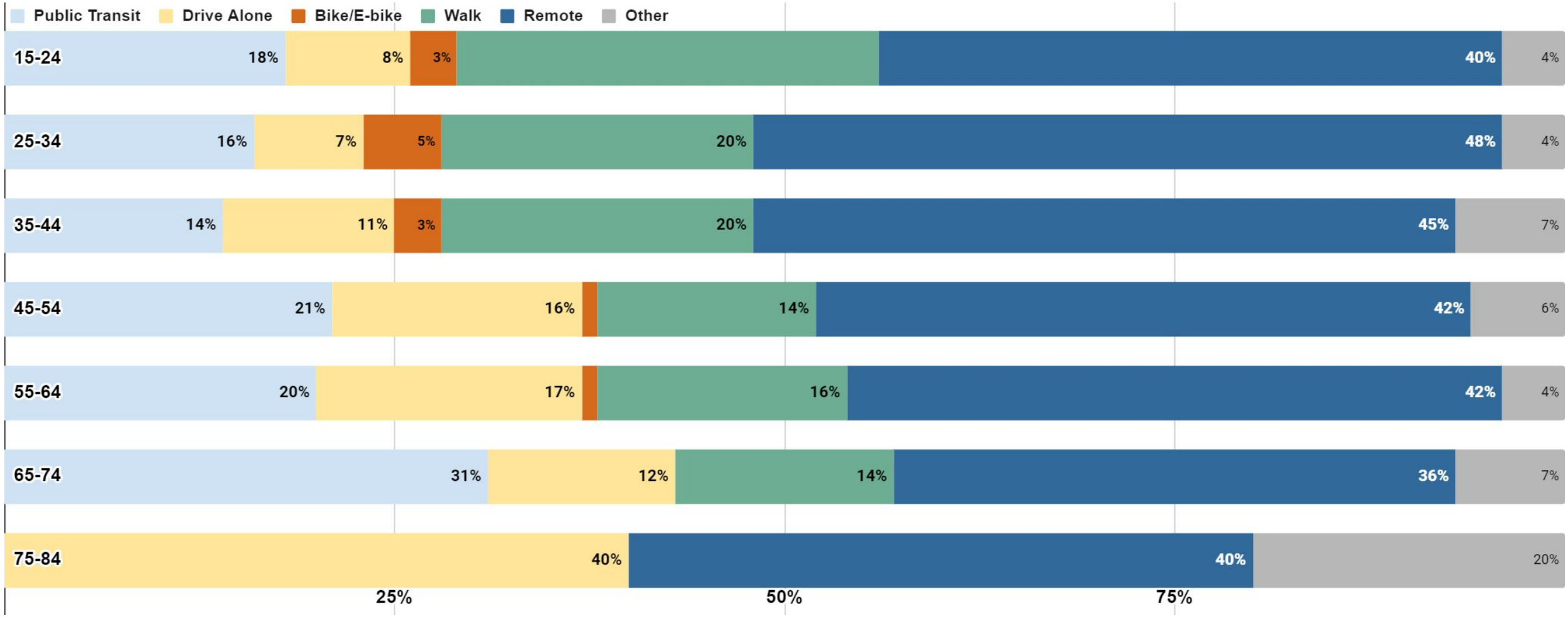


The graph shows the percentage of mode split for Capitol Hill residents by race (N=1,607)

FIRST HILL/ CAPITOL HILL
SUMMARY

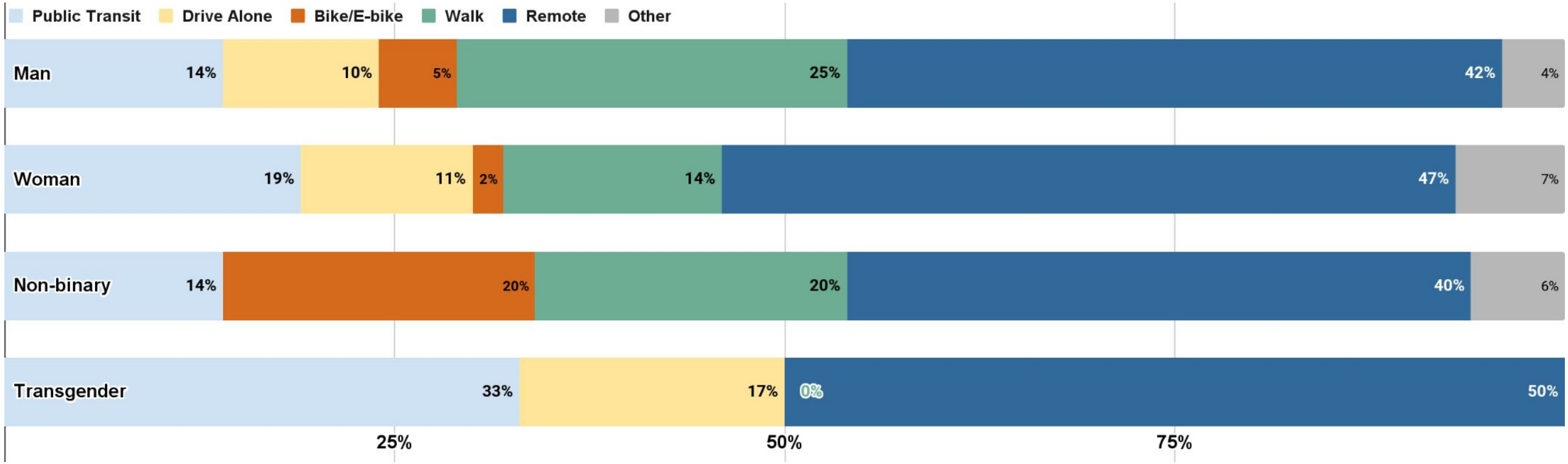
- Older individuals prefer walking, while those aged 45 or older are more likely to drive.
- LGBTQ+ individuals are more inclined to use transit, while women tend to drive more often.
- Lower-income earners (<$60k) prefer transit, while higher-income individuals are more likely to bike.
- Those with higher degrees opt for non-motorized transit (NMT) or remote work.
- Non-white individuals, especially Black individuals, are more likely to use transit or drive.

Downtown | Commute Mode Split by Age



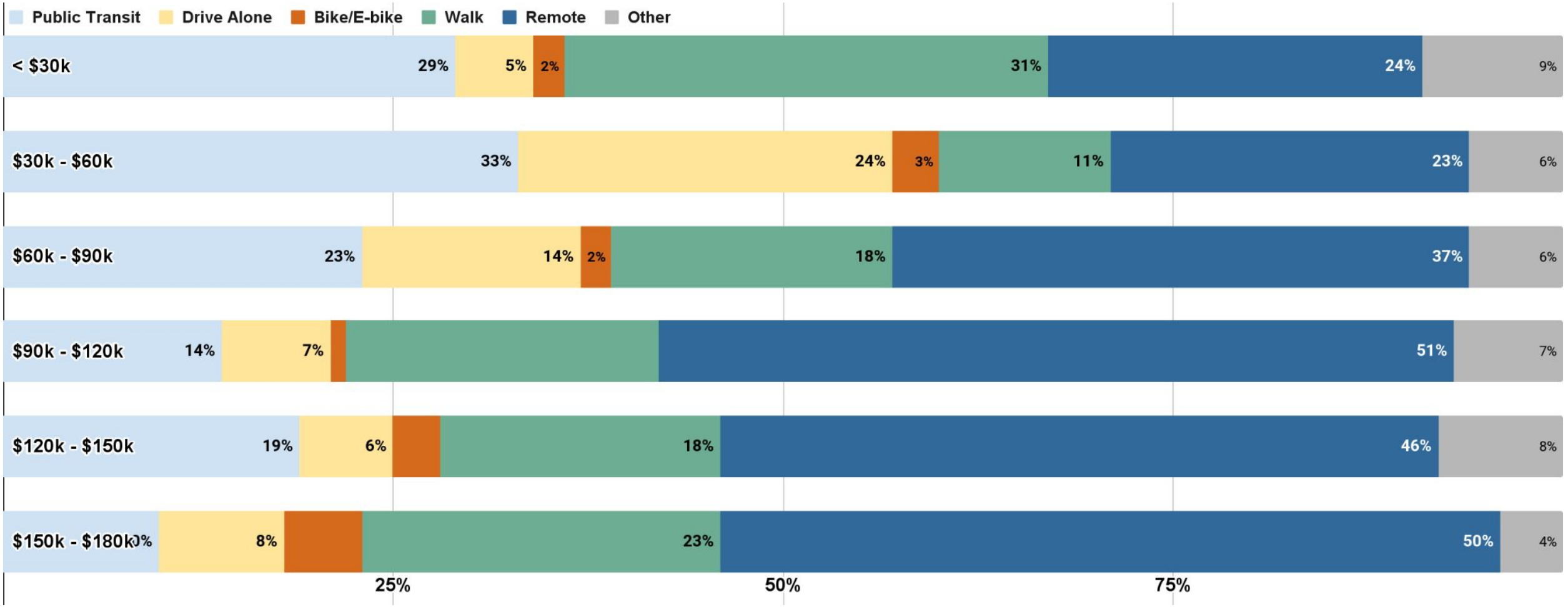
The graph shows the percentage of mode split for Downtown residents by age group (N=1,649)

Downtown | Commute Mode Split by Gender Identity



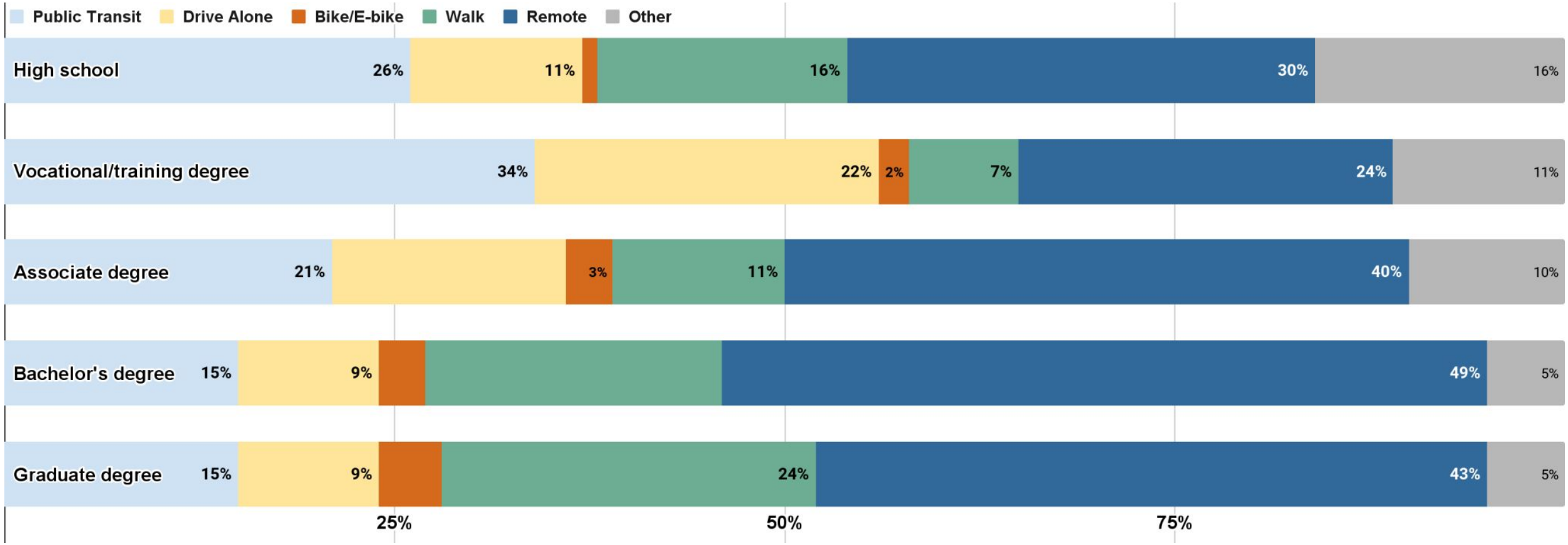
The graph shows the percentage of mode split for Downtown residents by gender identity (N=1,649)

Downtown | Commute Mode Split by Income



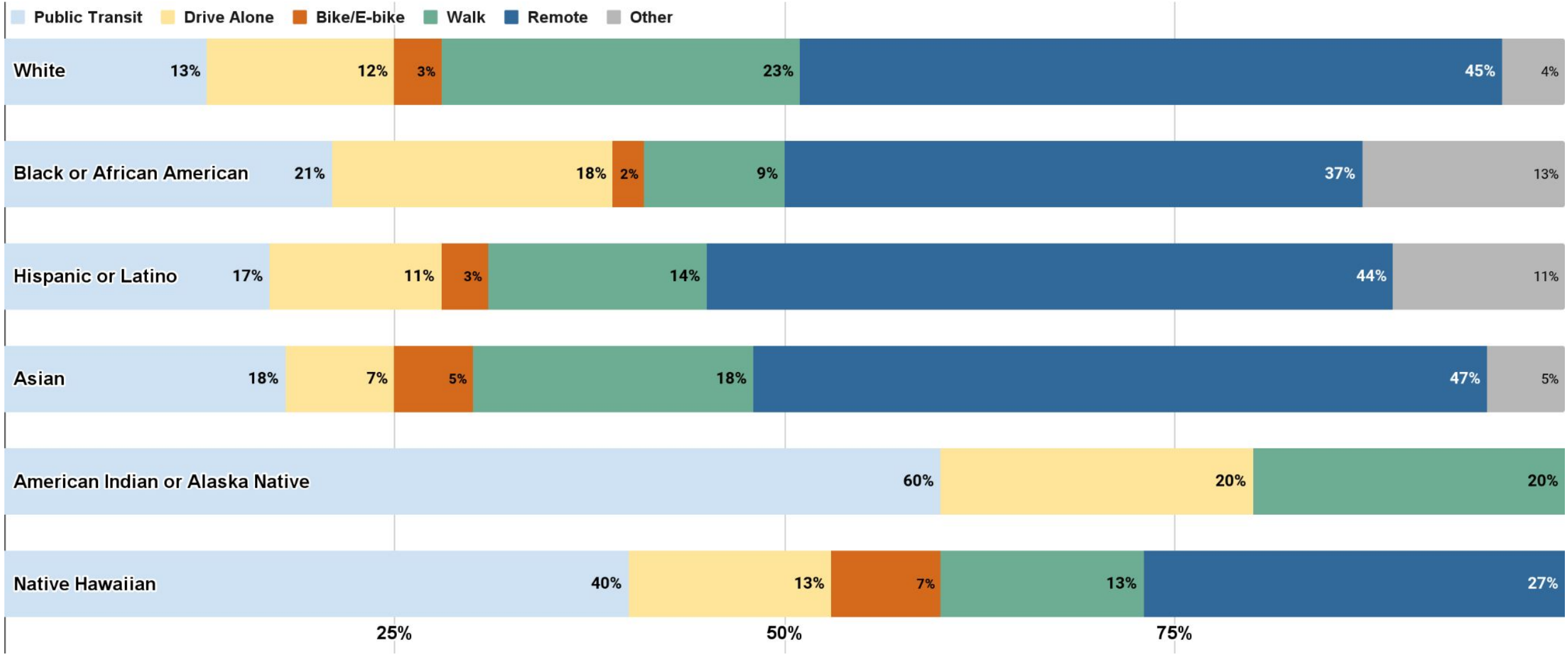
The graph shows the percentage of mode split for Downtown residents by income group (N=1,649)

Downtown | Commute Mode Split by Education



The graph shows the percentage of mode split for Downtown residents by educational attainment (N=1,649)

Downtown | Commute Mode Split by Race/Ethnicity



The graph shows the percentage of mode split for Downtown residents by race (N=1,649)

DOWNTON SUMMARY

- Commuters aged 45 and older prefer transit or driving over walking or biking.
- LGBTQ individuals and women are more inclined to use transit.
- Those earning less than $60k annually are more likely to use transit, while those with incomes below $30k prefer walking.
- Individuals with higher degrees tend to work remotely more often.
- Non-white individuals are more inclined to use transit and less likely to work remotely.

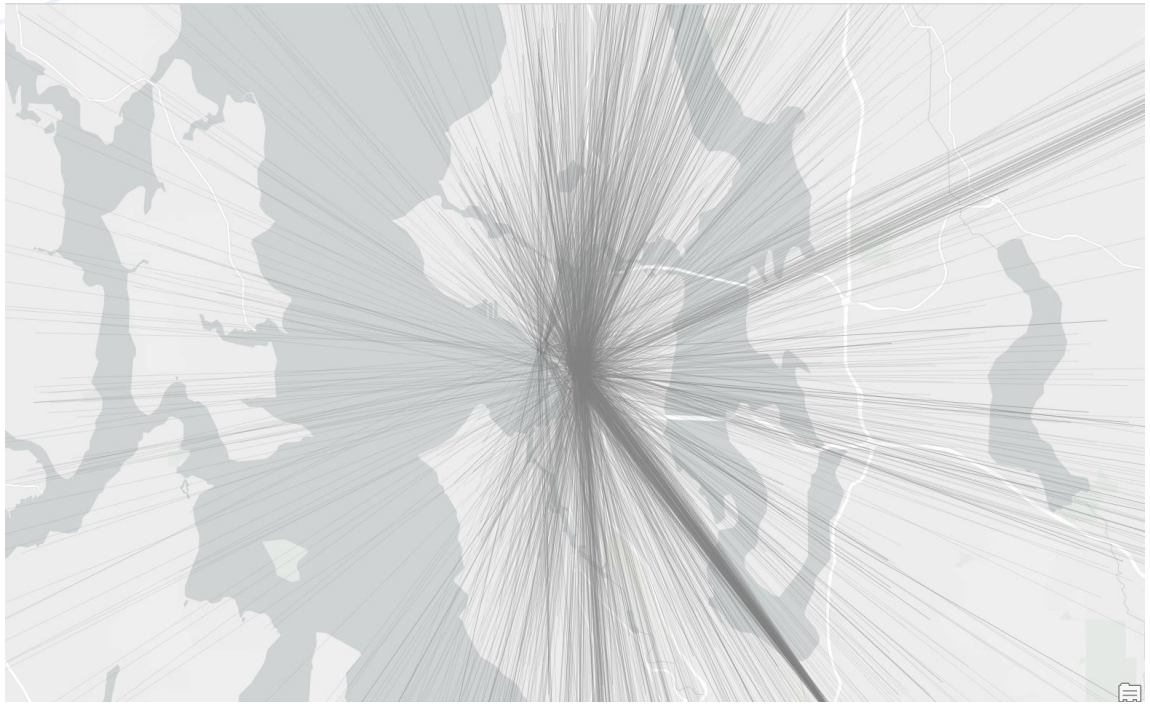
EQUITY ANALYSIS SUMMARY

- Variations in transportation infrastructure, such as the availability of public transit, bike lanes, and pedestrian-friendly pathways, can influence mode choice preferences.
- Age distribution, income levels, and educational attainment among residents in each area can impact their transportation preferences and abilities to access different modes of transport.
- Differences between the three subareas suggest that understanding these sociodemographic patterns in commute mode choice is crucial for designing equitable transportation policies.
- Policymakers should focus on providing diverse transit options catering to different age groups, income levels, gender identities, and educational backgrounds.
- Efforts should be made to ensure accessibility and affordability, particularly for marginalized communities, while promoting sustainable modes of transportation.

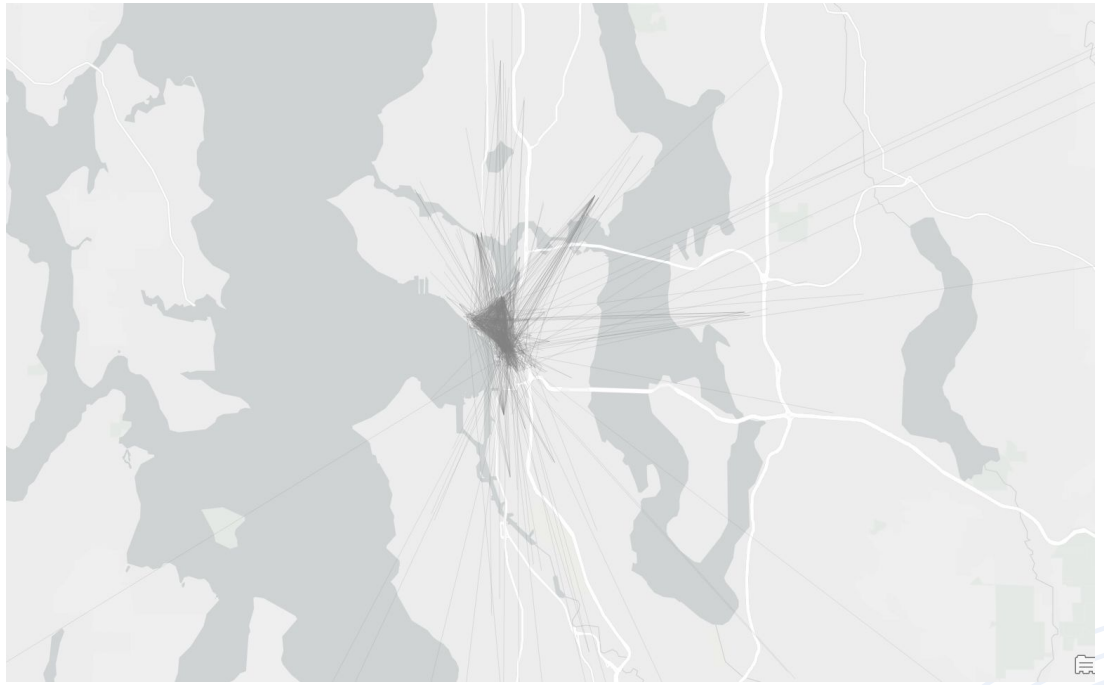
Thank you!

Downtown | Inbound vs. outbound commute trips

Inbound Commute Trips



Outbond Commute Trips

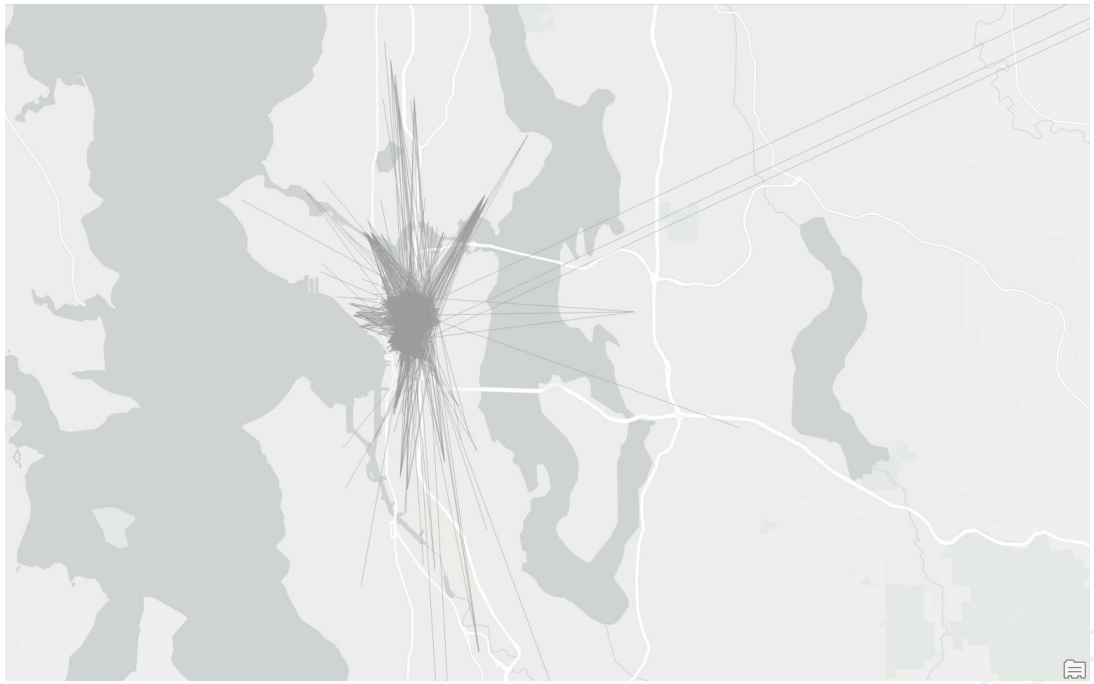


The map on the left shows the inbound commute trips for worksites in the Downtown areas (N=4,668),. The map on the right shows the outbound commute trips for Downtown residents (N=1,469). On both maps, the grey lines represent the commute trip (connection) to show the volume of the trips and direction.

Capitol Hill | Inbound vs. outbound commute trips

Inbound Commute Trips

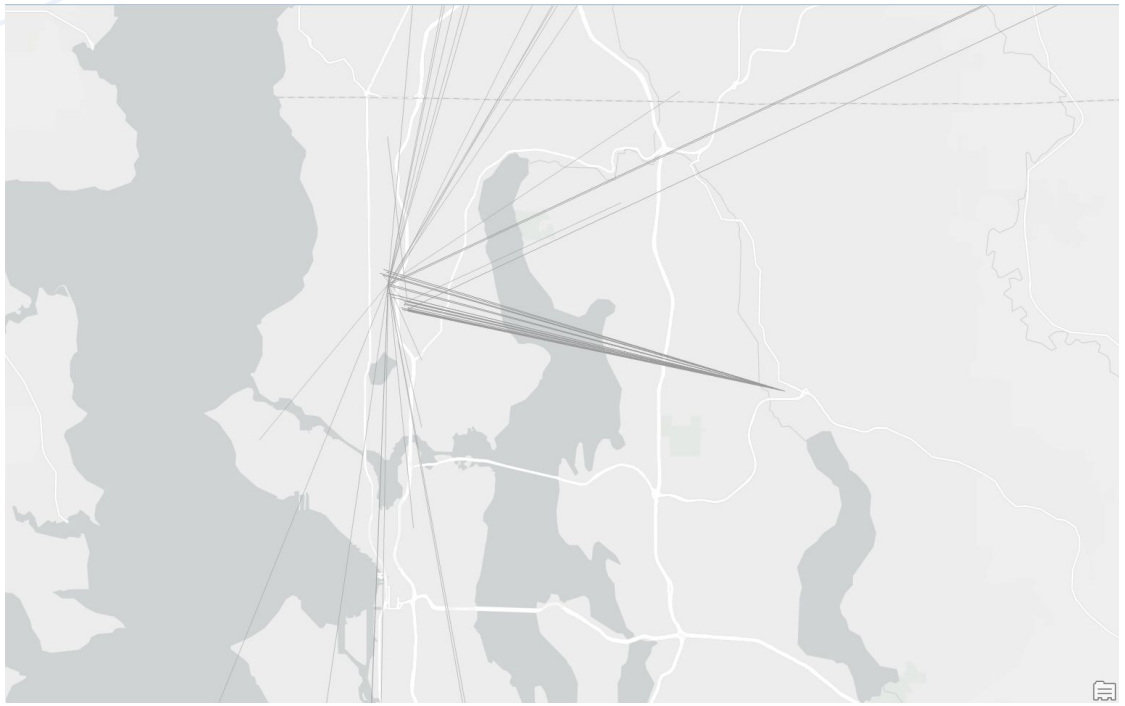
Outbond Commute Trips



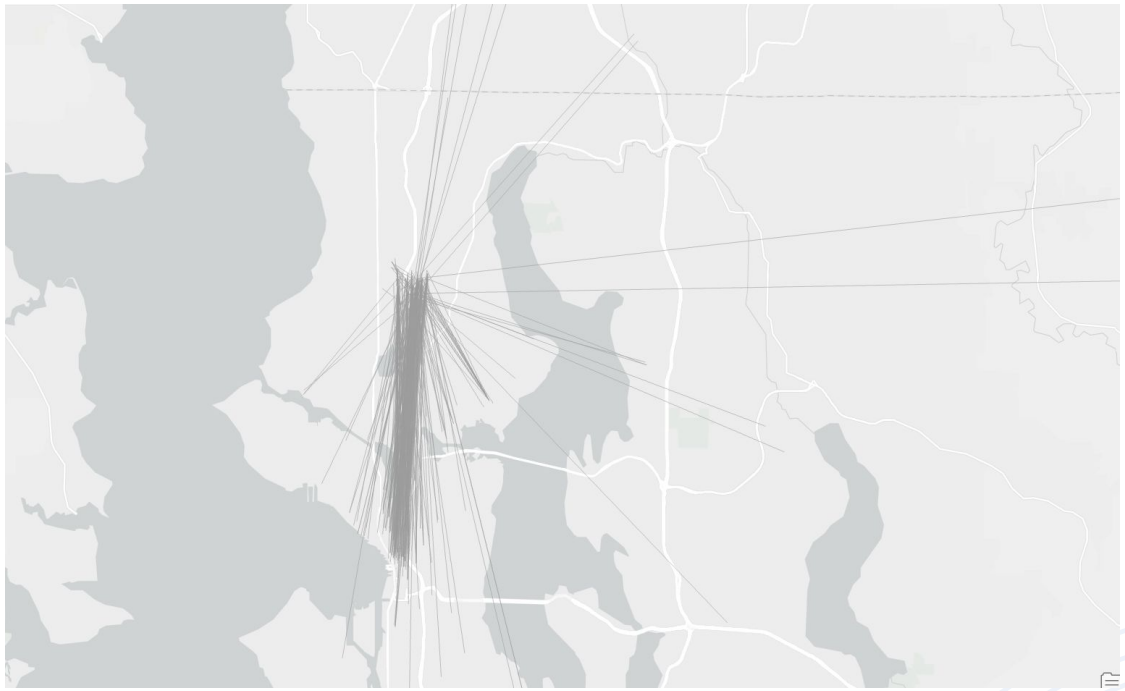
The map on the left shows the inbound commute trips for worksites in First Hill / Capitol Hill (N=1,607,. The map on the right shows the outbound commute trips for Downtown residents (N=854). On both maps, the grey lines represent the commute trip (connection) to show the volume of the trips and direction.

Northgate | Inbound vs. outbound commute trips

Inbound Commute Trips

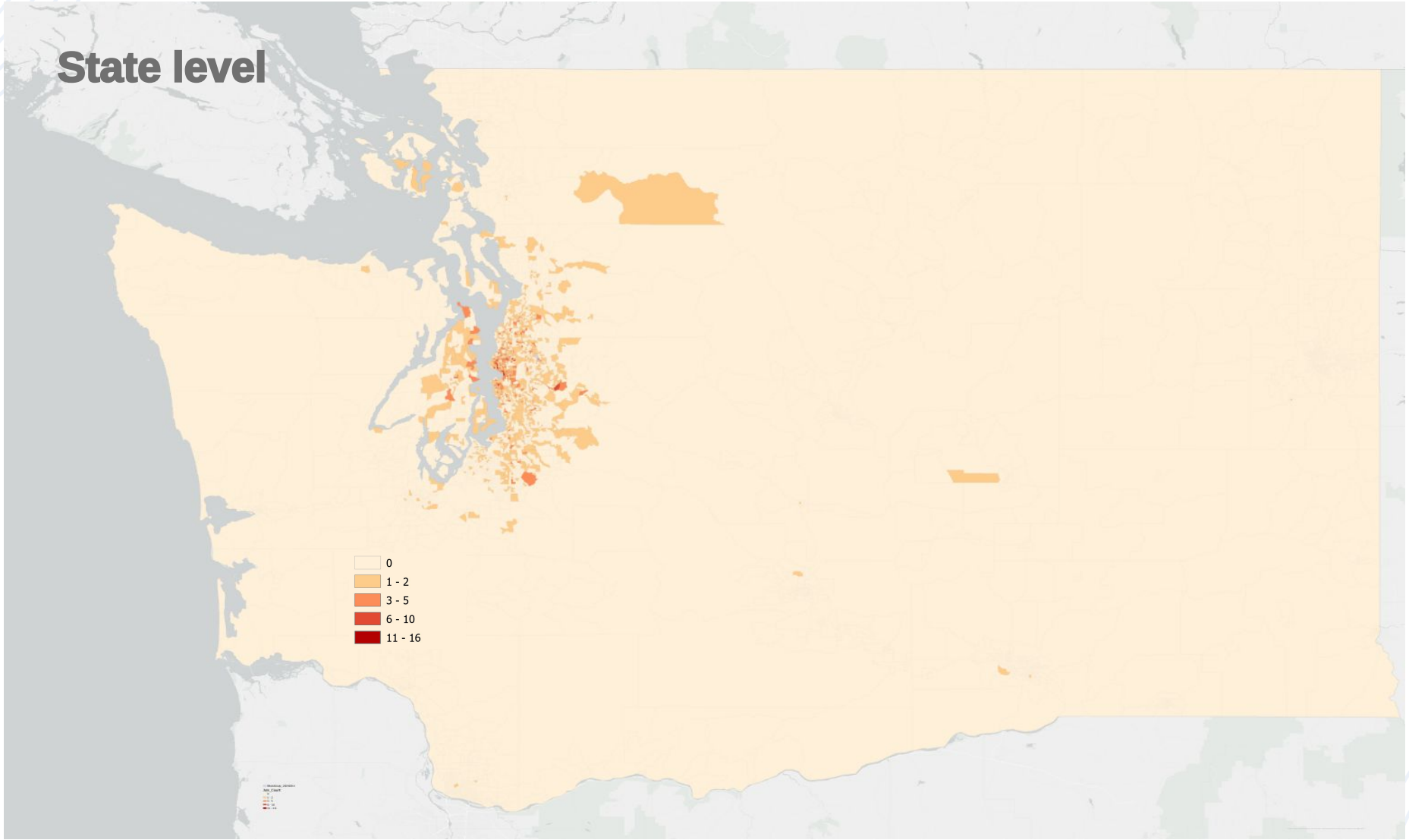


Outbond Commute Trips



The map on the left shows the inbound commute trips for worksites in Northgate (N=138),. The map on the right shows the outbound commute trips for Northgate residents (N=301). On both maps, the grey lines represent the commute trip (connection) to show the volume of the trips and direction.

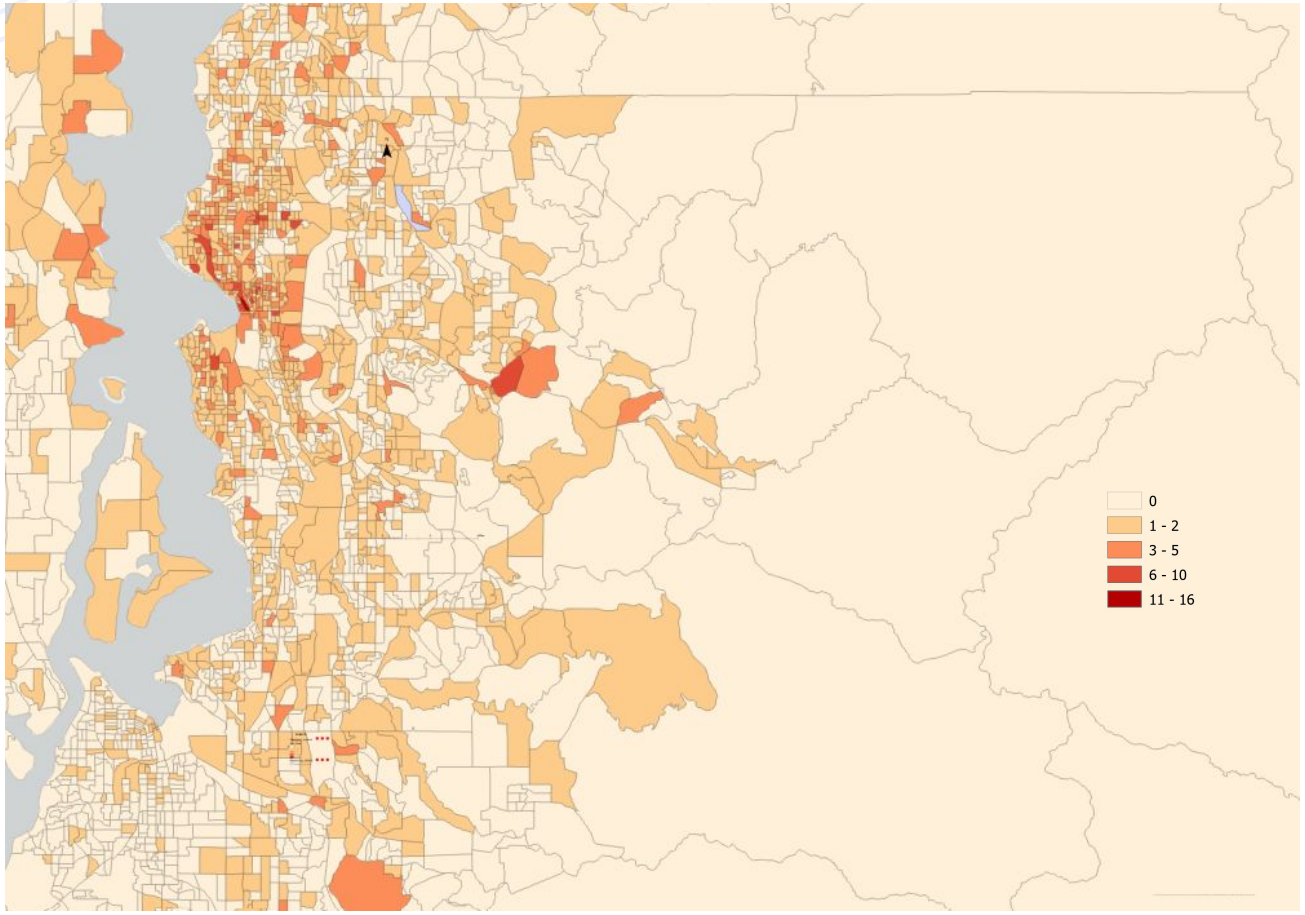
Downtown| Workers Home Location per Census Blockgroup



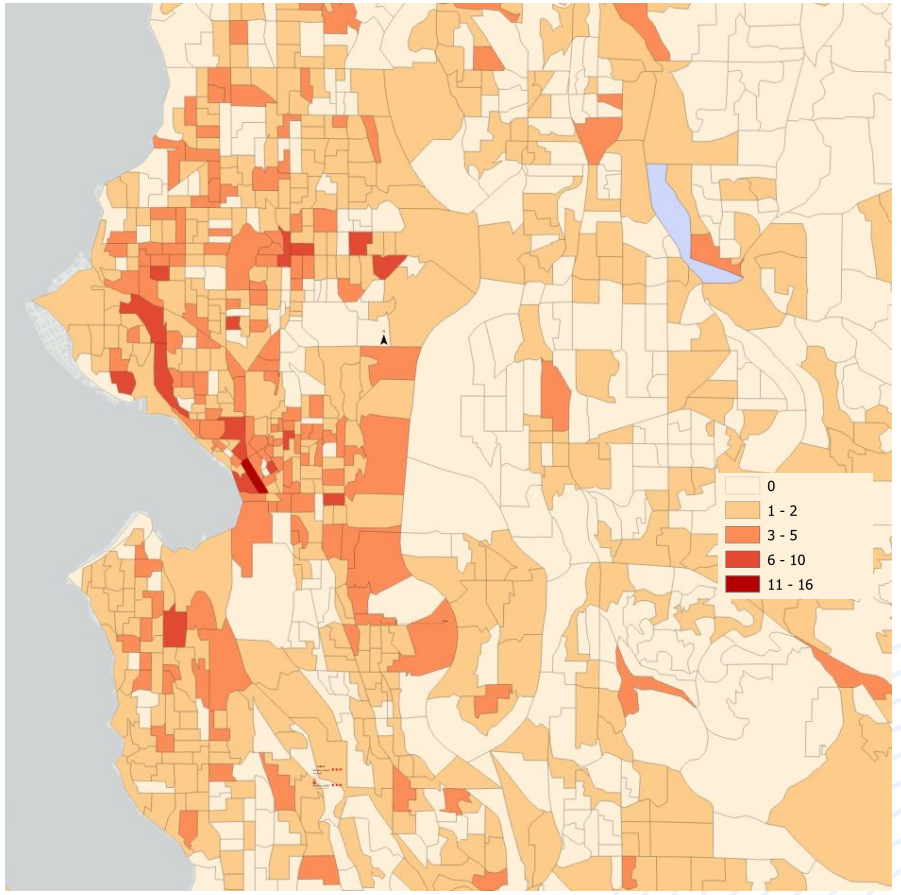
The map on this page shows the number of Downtown workers who live in each census blockgroup (N=4,668). The map was generated through a spatial join between census blockgroups 2020 and Downtown workers home location using ArcGIS pro.

Downtown| Workers Home Location per Census Blockgroup

King County

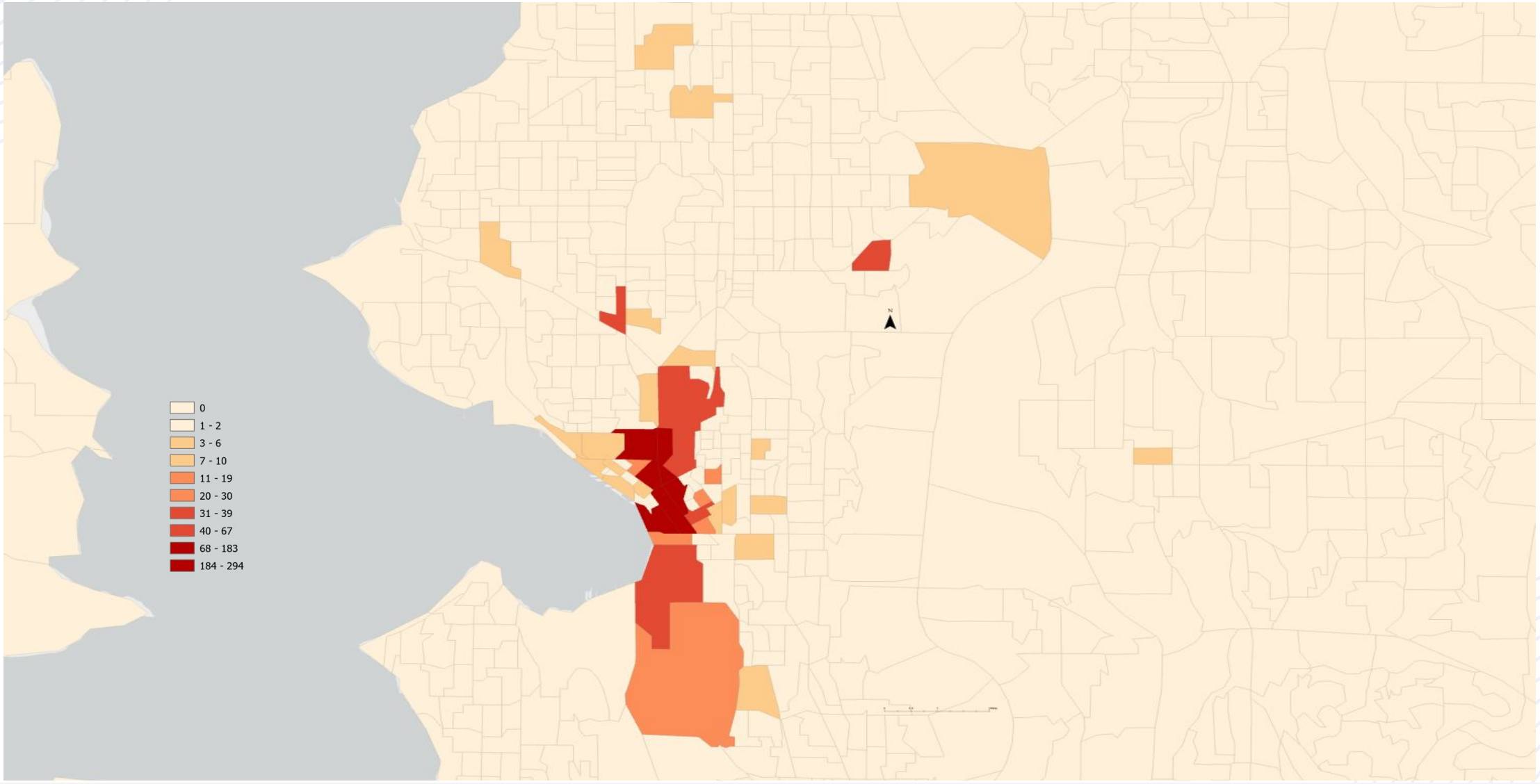


Seattle



The map on this page shows the number of Downtown workers who live in each census blockgroup (N=4,668). The map was generated through a spatial join between census blockgroups 2020 and Downtown workers home location using ArcGIS pro.

Downtown| Residents Work Location per Census Blockgroup



The map on this page shows the number of Downtown workers who live in each census blockgroup (N=4,668). The map was generated through a spatial join between census blockgroups 2020 and Downtown workers home location using ArcGIS pro.