

2024-2033 Bellevue Transportation Demand Management Plan

Table of Contents

Chapter 1: Introduction.....	2
Chapter 2: 2015-2023 TDM Plan Results.....	5
Chapter 3: Demographic Characteristics and Trends.....	15
Demographics Overview	15
Bellevue Employer Characteristics	17
Chapter 4: Survey and Market Research.....	23
2044 Comprehensive Plan Survey	23
City Budget Survey.....	25
Transportation Demand Management Attitudinal Research Study.....	26
Community Input Survey & Online Open House.....	28
TDM Literature Review Key Takeaways	31
Chapter 5: TDM Planning Landscape.....	33
Other City Plans	33
TDM Landscape in the Next Decade.....	39
Appendices	43
Appendix I: Literature Review	43
Appendix II: Community Input Survey Full Results	58
Appendix III: Bellevue Commute Trip Reduction Implementation Plan	73

Chapter 1: Introduction

Bellevue, Washington, is a growing city and major employment hub, with an additional 70,000 jobs expected by 2044. To accommodate this growth, ensure all residents and workers can experience the city from across the region and economic spectrum, and to advance the City's greenhouse gas emission reduction goals, the city needs a sustainable transportation system that supports busing, carpooling, vanpooling, walking and biking in addition to solo driving. Bellevue utilizes its transportation demand management program to encourage and incentivize these options and discourage solo driving where possible. Bellevue utilizes its transportation demand management program. Through this work, the TDM program aims to improve transportation system efficiency, equity and sustainability, while encouraging growth, discouraging solo driving where possible, and a vibrant future for all in Bellevue.

This introductory chapter defines TDM, discusses why it is important in Bellevue, and describes the layout of this 10-year TDM Plan.

What is TDM?

In the U.S., Transportation Demand Management arose as a response to the oil and energy crises of the 1970s, which created high gas prices and long lines at gas stations. It was apparent that the country was over-reliant on single-occupancy vehicles. By presenting alternatives, energy consumption and congestion could be reduced while also saving drivers money.¹ The Association of Commuter Transportation presently defines TDM as “the use of strategies to inform and encourage travelers to maximize the efficiency of our transportation systems leading to improved mobility, reduced congestion, and lower vehicle emissions.”²

Vision for the Bellevue TDM Plan:

A city in which travelers are aware of the full range of tools and resources available, allowing them to choose the transportation mode they most prefer for their convenience, time, and cost.

In Bellevue, the TDM program is focused on encouraging and facilitating non-drive-alone travel throughout the city. This is accomplished by the city working with employers, property managers, students and their families, other government organizations (such as transit agencies) and the public at large to provide

informational resources and incentives to encourage drive-alone alternatives. In doing so, Bellevue is working to create a more efficient, green, and safe transportation system that prioritizes environmental sustainability, and accessibility, mobility and livability for all as the city grows.

¹ Travel Demand Management. (2023). FHWA. Retrieved 30 March 2023, from https://ops.fhwa.dot.gov/aboutus/one_pagers/demand_mgmt.htm

² What is TDM?. (2023). Association for Commuter Transportation. Retrieved 30 March 2023, from <https://www.actweb.org/what-is-tdm/>

Bellevue’s first all-inclusive TDM Plan was written in 2015, and much has changed since then. The COVID-19 pandemic changed how people live, work, and commute; Sound Transit’s East Link light rail extension is under construction; many employers are rethinking in-office practices that have shaped our travel patterns for decades; and equity is increasingly a focal point of public agencies. Transportation and TDM are

understood in Bellevue and beyond to be integral components of land use planning and the built environment, rather than as an independent focus area.

[How Bellevue TDM works](#)

By facilitating environmentally sustainable choices, Bellevue’s TDM program creates ongoing change in city-wide transportation mode use. Based on community input for the 2015-2023 TDM Plan and observed trends, the factors that most directly influence a person’s travel choices are time, money, and convenience.

When Sound Transit opens the East Link light rail extension in 2025, daily ridership is expected to grow to 43,000-52,000 within a few years. Bellevue’s TDM

Goals of the Bellevue TDM Plan:

1. Increase non-drive-alone mode share through increased usage of drive-alone alternatives.
2. Relieve pressure on the transportation system, increasing system efficiency and access to places.
3. Preserve mobility and livability in Bellevue as the city grows.
4. Equalize access to all modes in Bellevue.
5. Help meet the Bellevue Environmental Stewardship targets of greenhouse gas emissions reductions.

program, through marketing and incentives, will ensure travelers are aware of the viability of this and other non-drive-alone options. Facilitating sustainable transportation choices can mean working with employers to provide transit and vanpool subsidies for workers; with property managers to offer bike amenities or preferential carpool parking; and with Bellevue commuters to incentivize them to log non-drive-alone trips with Choose Your Way Bellevue Rewards. By reaching workers and residents in these and other ways, Bellevue TDM facilitates more efficient, equitable and sustainable travel in the city through incremental mode shift.

[TDM Plan in Relationship to the Comprehensive Plan](#)

The Bellevue Comprehensive Plan guides growth and development in the city over 20 years and will be updated every 10 years moving forward. The current Comprehensive Plan was adopted in 2015, and the update through 2044 is slated for City Council adoption in June 2024. Included in the

Ongoing Program Components

In 2015, the Bellevue TDM Plan identified the following categories as key strategies for 2015-2023, which will be continued for 2024-2033:

- 1) Requirement-Based Programs, such as the state’s Commute Trip Reduction Program.
- 2) Product Subsidies and Discounts, such as transportation rebates and mini-grants.
- 3) Education and Assistance, such as commute consulting for employers and property managers and real-time travel assistance.
- 4) Incentives and Rewards, such as trip logging rewards.
- 5) Marketing and Promotions, such as the Choose Your Way Bellevue website.
- 6) Research, Planning, and Coordination, such as understanding the Bellevue TDM market and improved coordination with other city departments, WSDOT, and local transit agencies.

Comprehensive Plan's Transportation Element are TDM program policies and targets. As a supporting document, the 2024-2033 TDM Plan provides guidance for how the TDM program may achieve the policies and targets laid out in the Comprehensive Plan. A full discussion of the 2044 Comprehensive Plan, as well as its TDM policies and targets, can be found in Chapter 3 of this plan.

The TDM Plan is not adopted by City Council, but it is reviewed and endorsed by the Transportation Commission and shared with City Council upon finalization.

[How did we get here?](#)

The first Bellevue TDM Plan guided the program from 2015 through 2023. The 2015 Plan laid out six categories of focus for the TDM program. For the development of the 2024-2033 Plan, these categories were reviewed in conjunction with the results of several voluntary public surveys, ongoing TDM progress data, and an assessment of current TDM industry literature and best practices. The result is this updated TDM Plan, the purpose of which is to steer the TDM program for the next decade.

[Layout of the plan](#)

Subsequent chapters of this plan contain the background, framework, and strategy for the 2024-2033 TDM program. Chapter 2 evaluates TDM program performance under the 2015-2023 TDM Plan. Chapter 3 discusses selected demographic and population trends as they relate to TDM. Chapter 4 discusses other relevant City of Bellevue plans and a summary of transportation trends that may impact the next decade of TDM work. Chapter 5 summarizes city and TDM-specific research and survey results. Chapter 6 presents the TDM program's quantitative mode-share targets that align with Comprehensive Plan mode share targets to accommodate growth through 2044. Finally, Chapter 7 lays out the implementation strategy for the next ten years of TDM in Bellevue. This document serves as both a guide for Bellevue's TDM program and a source of information about the city's efforts and initiatives in TDM.

Chapter 2: 2015-2023 TDM Plan Results

The 2015-2023 Transportation Demand Management Plan was the city's first all-inclusive TDM plan to guide eight years of TDM work in Bellevue. This prior plan laid out six key strategies to achieve various TDM targets and goals. This chapter describes the Bellevue TDM program and the strategies from the 2015-2023 TDM Plan, and the mode share outcomes for this period.

Current Bellevue TDM Program and Strategies

The city has been engaged in TDM activities since the mid-1980s and TDM has a strong basis in the city's policy and longstanding practice. The program includes regulatory and non-regulatory components.

Key regulatory components are Transportation Management Programs required as a condition of development permitting for large buildings, primarily office; and Commute Trip Reduction (CTR) required through state law and city code. CTR requires larger employers, generally those with 100 or more employees, to have a commute trip reduction program for their employees and to conduct measurement and reporting related to the program's progress. Since the start of the CTR program in 1991, the drive-alone rate at CTR companies has decreased by nearly 19 percentage points.

Non-regulatory components of Bellevue TDM include marketing and promotion to individuals through the Choose Your Way Bellevue travel options brand and [website](#), including a trip logging and rewards program. In addition, Choose Your Way Bellevue Business Services assists and encourages employers and property managers to provide commute programs for employees at their worksites. In 2022, Bellevue launched the Choose Your Way Bellevue mobile app, making the information and tools on the website more convenient. A detailed description of the current TDM program activities can be found in the 2022 Progress Report in Appendix IV.

The strategies in the 2015-2023 TDM Plan guided the Bellevue TDM program through the eight years it was active and was used as a guide in developing this iteration of the TDM Plan for 2024-2033.³ The strategies and target audiences from the 2015-2023 plan are repeated below, along with activities that were implemented by Bellevue TDM program staff (shown in bold).

1. Requirement-Based Programs
 - a. **Commute Trip Reduction (Employers)**
 - b. **Commute Trip Reduction (Property Managers of buildings with Transportation Management Program)**
2. Product Subsidies and Discounts
 - a. **Transportation Benefit Rebates (Employers & Property Managers)**
 - b. **Transportation Mini-Grants (Employers & Property Managers)**
 - c. Emergency Ride Home (Workers and Residents)
3. Education and Assistance
 - a. **Commute Program Consulting Services (Employers & Property Managers)**
 - b. Program Expert Consulting Services (Employers & Property Managers)

³ The full 2015-2023 TDM Plan can be accessed [here](#).

- c. **Travel Information Assistance (Workers, Residents, and students via Employers & Property Managers)**
 - d. **Rideshare and Ridematch Promotion (All Audiences)**
 - e. **School Programs (K-12 Students & Parents)**
- 4. Incentives and Rewards
 - a. **Trip Logging and Rewards Program (Workers, Residents, and Students)**
 - b. Commute Challenge (Workers, Residents, and Students)
 - c. Parking Cashout (Employees via Employers)
- 5. Marketing and Promotions
 - a. TDM Strategy Marketing and Promotion (All Audiences)
 - b. **Maintenance and Promotion of ChooseYourWayBellevue.org (All Audiences)**
 - c. Carsharing Promotion (Employers & Individuals)
 - d. Recognition (Employers & Property Managers)
 - e. **Email Newsletter (All Audiences)**
- 6. Research, Planning and Coordination
 - a. **Research**
 - b. Enhanced Facilities/Amenities Coordination
 - c. **Internal and External Coordination**

Commute Trip Reduction

The Commute Trip Reduction program is cornerstone of how TDM is conducted in Bellevue and thus warrants special mention.

The 1991 state Commute Trip Reduction law was enacted to help reduce vehicle emissions and congestion. Commute Trip Reduction regulations, chapter 82.70 of the Revised Code of Washington and City Code 14.40, affect worksites of 100 or more full-time employees who begin their workdays between 6 and 9 a.m. CTR requires these worksites to develop and manage their own programs to reduce commute trips, and measure and report on those programs. If progress is not made, employers must change their programs. With city assistance, worksite employee transportation coordinators manage programs, as well as biennial employee surveys on commute mode and vehicle miles traveled and biennial reporting.

The state requires jurisdictions to develop local plans to guide their CTR programs. The most recent 2015-2019 Bellevue CTR Plan was adopted in 2015 and extended by Washington State Department of Transportation through 2025. The full text of the current Bellevue CTR Plan can be found in Appendix III.

The CTR Plan sets forth targets for commute non-drive-alone rate and vehicle miles traveled. However, employers are not penalized for failing to meet targets. Rather, they must show a “good-faith effort” toward conducting required activities such as having a CTR program, and measuring and reporting outcomes, to avoid civil penalties. As of December 2022, 61 Bellevue employers are engaged in the CTR program; approximately 56,900 employees work at these sites, accounting for roughly one-third of the employees in Bellevue. Analysis shows that CTR activities at these 61 large worksites are associated with a reduction of 3,100 vehicles from Bellevue roadways each day.

Outcomes

2015-2023 TDM Plan

The 2015-2023 TDM Plan set non-drive-alone mode share targets for citywide residents, citywide workers, and downtown workers. These targets were based on staying on track for reaching the Comprehensive Plan's 2035 targets. By 2023, the TDM plan set non-drive-alone mode share targets for citywide residents at 39.8%, citywide workers at 32.7%, and downtown workers at 46.2% (Fig. 2.1).

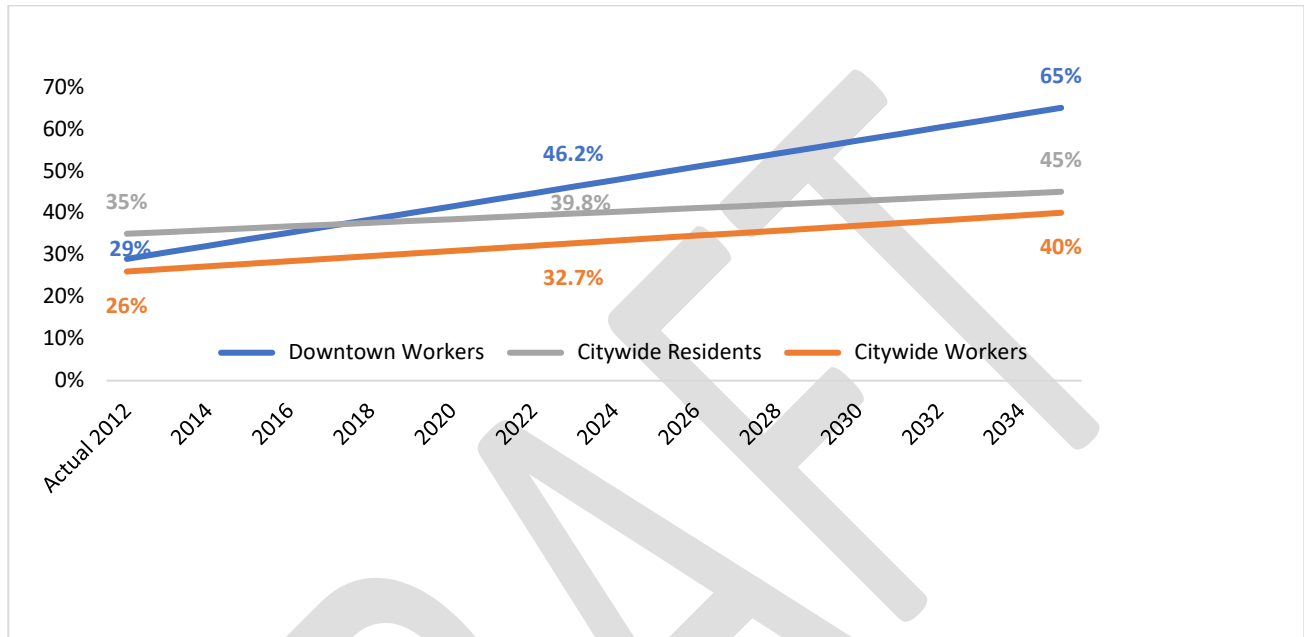


Figure 2.1. 2015-2023 TDM Plan's Figure 5-4 with TDM Plan and Comprehensive Plan non-drive-alone mode share targets.

In 2011-2015, Bellevue residents had a non-drive-alone rate of 34.1%. In 2017-2021 this had increased to 48.4%, concurrent with the ongoing implementation of TDM programs for individuals through the city's Choose Your Way Bellevue program, and also driven by an increase in work from home during the COVID-19 pandemic (Fig. 2.2).

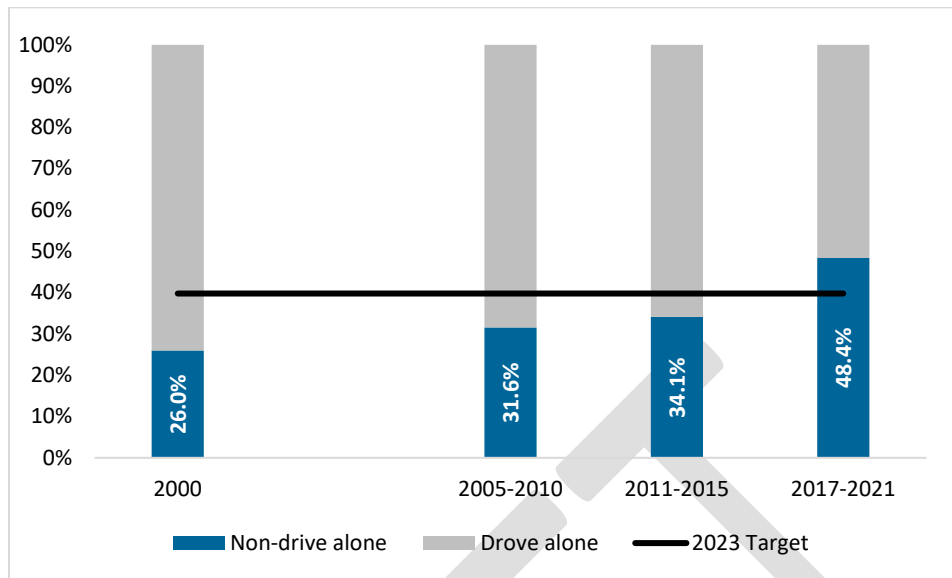


Figure 2.2. Non-drive-alone rate of Bellevue **residents** since 2000. In the years after the 2015-2023 TDM Plan was enacted, the non-drive-alone rate increased, 8.6 percentage points above the 2023 Target.

Source: Decennial Census (2000), ACS 5-Year Estimates (2005-2021).

In 2011-2015, the non-drive-alone rate was 26.6% for people working in Bellevue, compared to 34.3% in 2017-2021 (Fig. 2.3). This increase coincided with Commute Trip Reduction and other business TDM activities, as well as increased teleworking following COVID-19.

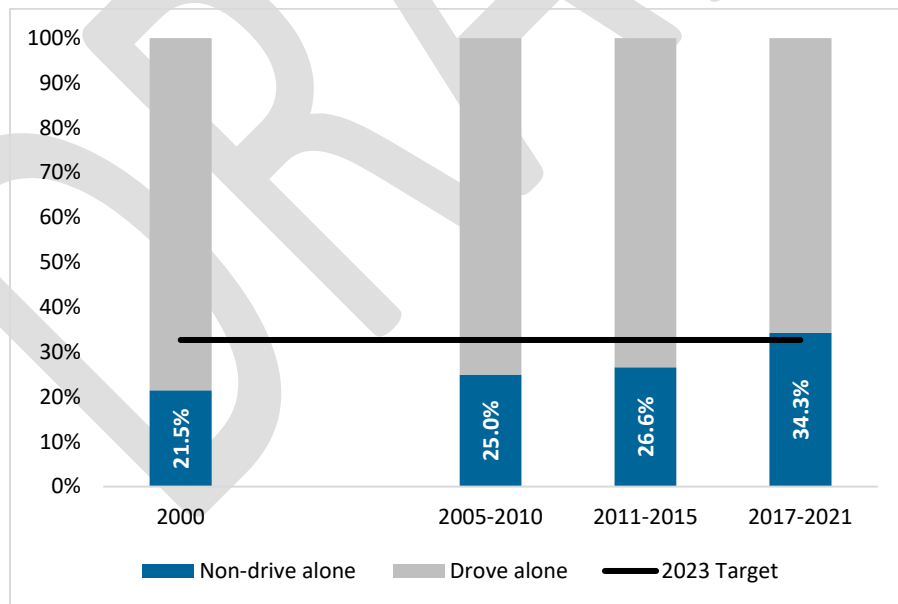


Figure 2.3. Non-drive-alone rate for **workers** in Bellevue. After the 2015-2023 TDM Plan was enacted, the non-drive-alone rate among workers in Bellevue increased to 1.6 percentage points above the 2023 Target.

Source: Decennial Census (2000), ACS 5-Year Estimates (2005-2021).

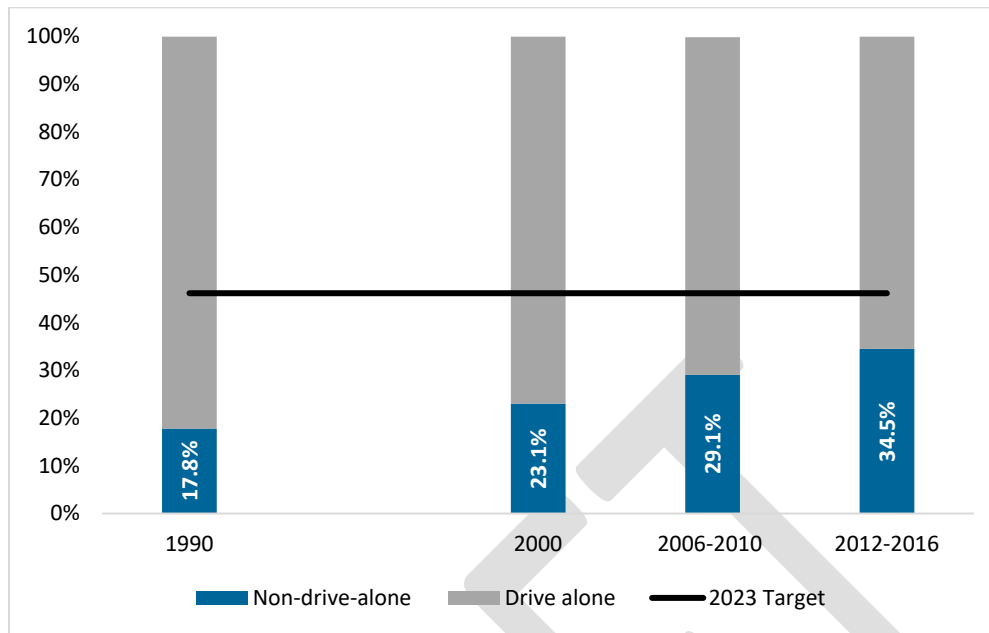


Figure 2.4: Non-drive-alone rate for **downtown workers** in Bellevue. The severe lag time on downtown mode share data availability makes it difficult to draw conclusions., but the non-drive-alone rate among downtown Bellevue workers has been steadily increasing since the 1990s.

Source: Decennial Census (1990 & 2000), ACS and Community Planning Transportation Package (2006-2010 & 1012-2016).

As of this writing, the most recent downtown worker data point of 34.5% non-drive-alone mode share is for 2012-2016, which is mostly prior to the start of the 2015-2023 TDM Plan. That figure contrasts with the 46.2% TDM Plan 2023 target. Mode share data for smaller geographies such as downtown Bellevue are provided by the Census Transportation Planning Package based on the U.S. Census American Community Survey, and typically are released following a three-year lag time following the final year of the data span. While this data point may be several years behind, the following section, [CTR Outcomes](#), has mode share data from CTR-affected employers including worksites in downtown Bellevue which provide an approximation of how the non-drive-alone rate may have changed for all workers in Downtown Bellevue.

TDM Activity Measurements

From March 2015 through December 2019, the TDM program team conducted consultations and engagement with 25 new employers and three property managers; direct outreach to approximately 757 individuals through Bike Month activities; and engendered an estimated reduction of 85 daily round-trip commutes through the dispersal of ORCA Passport Rebates and incentivized trip logging for non-drive-alone commuting.⁴ In 2022, 441 people logged a total of 72,489 trips through the “Return-to-Travel” rewards program in which those logging 25 days of non-drive-alone travel would receive a \$50 transportation-related gift card.

⁴ A discussion of the specifics of Bellevue TDM programs can be found current TDM Progress Report at www.ChooseYourWayBellevue.org/library.

CTR Outcomes

CTR in the 2015-2023 TDM Plan

As of the CTR survey cycle ending in mid-2021, the city nearly met its target of at least 4.28% of commute trips by non-drive-alone mode and has exceeded its target of no more than 9.4 vehicle miles traveled per person, one way (Figs 2.5 and 2.6). These targets were based on state guidelines for target setting jurisdictions. They originated in the city's 2015-2019 CTR Plan, which has been extended to 2025 and is attached in [Appendix III: Bellevue Commute Trip Reduction Implementation Plan](#), and were carried forward in the prior TDM Plan.

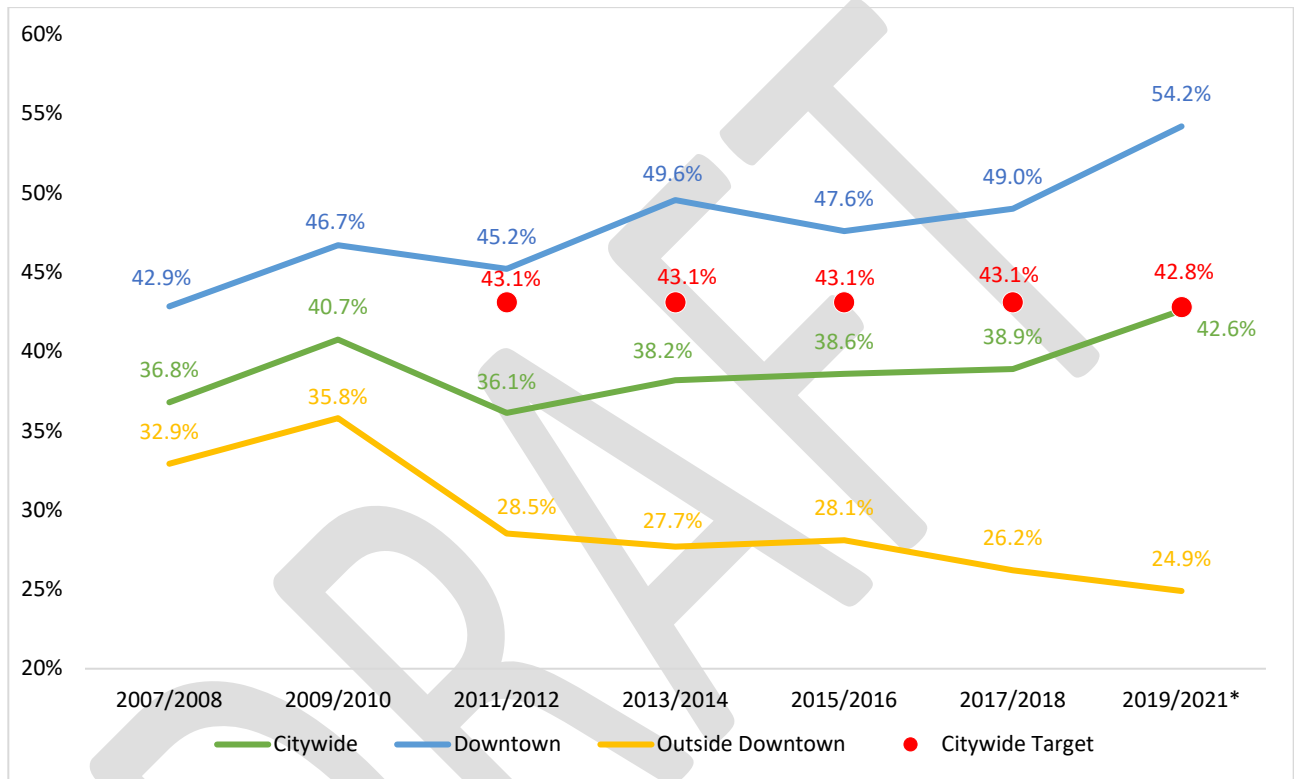


Figure 2.5: Drive-alone rate at Bellevue CTR worksites for the 2015-2023 TDM Plan period, with targets.

*Includes surveys completed in year shown or year prior. 2019-2020 survey period extended for six months into 2021 due to COVID-19. All but three worksites conducted their surveys prior to COVID-19 for the 2019-2021 cycle.

Source: CTR program data

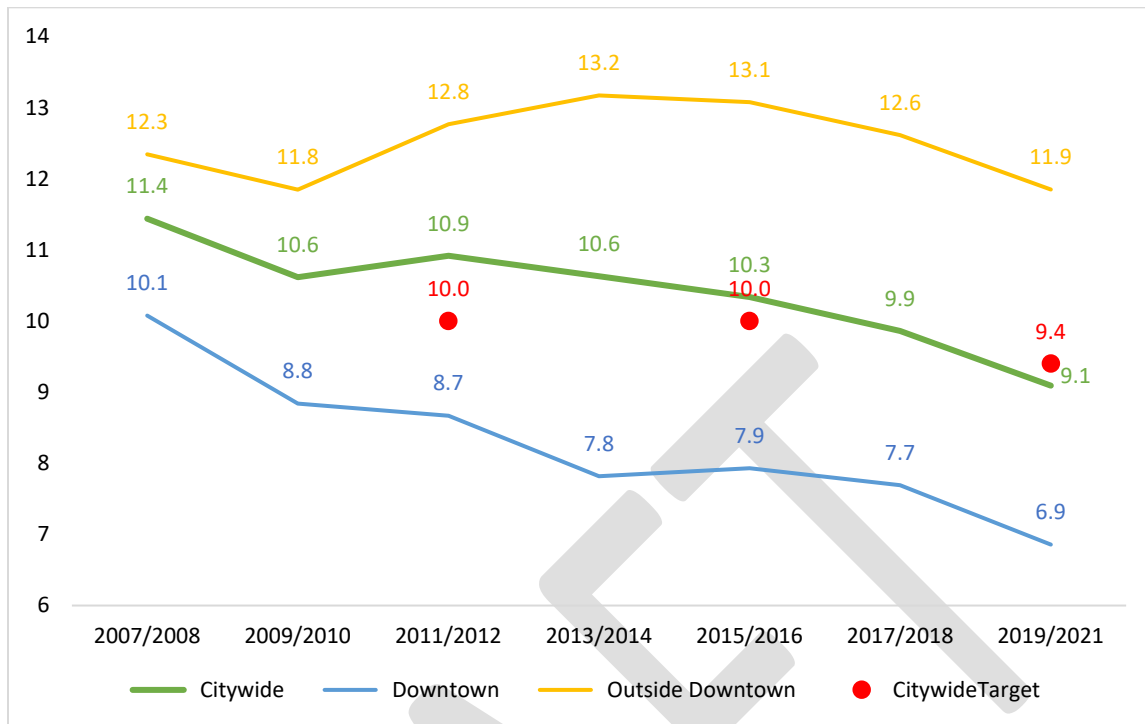


Figure 2.6: Average Vehicle Miles Traveled (VMT) per one-way commute trip to Bellevue worksites for 2015-2023 TDM Plan period, with targets.

Source: CTR Program Data.

Note: VMT data based on state methodology. VMT is calculated per person, not per vehicle; that is, a carpool with two people would be counted as half the distance as a single-occupant vehicle traveling the same distance. However, note that transit trips are not included in the calculation for VMT because of insufficient data (on transit vehicle occupancy at areas statewide where CTR regulations are in effect).

Historic CTR Program Results

At the time of the first CTR survey results taken in 1993/1994, the rate of drive-alone commuting in the U.S. was 74%, and the same figure was 73.8% in Washington, 70.9% at CTR worksites in Washington, and 74.3% at CTR worksites in Bellevue. 26 years later, at the time of the 2019/2021 CTR survey cycle, the average rate of drive-alone commuting in the U.S. increased by almost 2 percentage points. Washington state fared better with a drive-alone rate decrease of 2.9 percentage points. Furthermore, at CTR worksites in Bellevue, the drive-alone rate decreased by 16.9 percentage points (Fig. 2.7).^{5 6}

⁵ Most recent survey period extended for six months due to COVID-19. All but three worksites conducted their surveys prior to COVID-19 for the 2019-2021 cycle.

⁶ At the time of writing, 2021/2022 CTR survey data for Bellevue was not yet available. Nationally and within the state, the drive alone rate decreased significantly in 2021 and Washington CTR sites saw a 20.7 percentage point decrease in drive-alone rate.

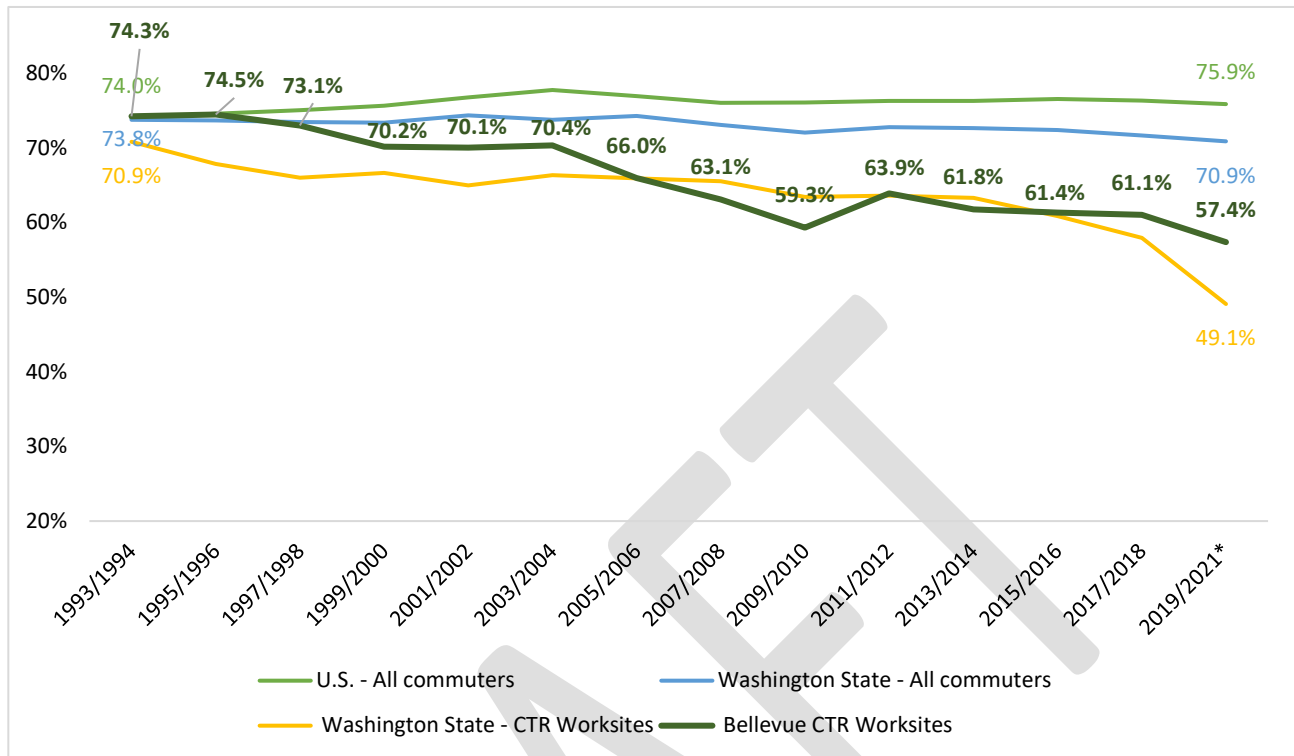


Figure 2.7 Drive-alone commute rate in the U.S., Washington, Washington CTR worksites, and Bellevue CTR worksites, 1993/1994-2019/2020. While the national and state rates have remained relatively constant since the early 90's, CTR worksites in Washington and Bellevue have seen faster declines in drive-alone commuting.

Sources: ACS 1-Year estimates, CTR Program Data.

Within Bellevue, the drive-alone rate at CTR sites is lower in the downtown area than outside downtown. From the start of CTR in the early 1990s, to the 2019/2021 survey, the drive-alone rate decreased by 18.7 percentage points citywide, with a reduction of 21.9 percentage points in Downtown Bellevue and a reduction of 6.1 points outside downtown (Fig. 2.8).

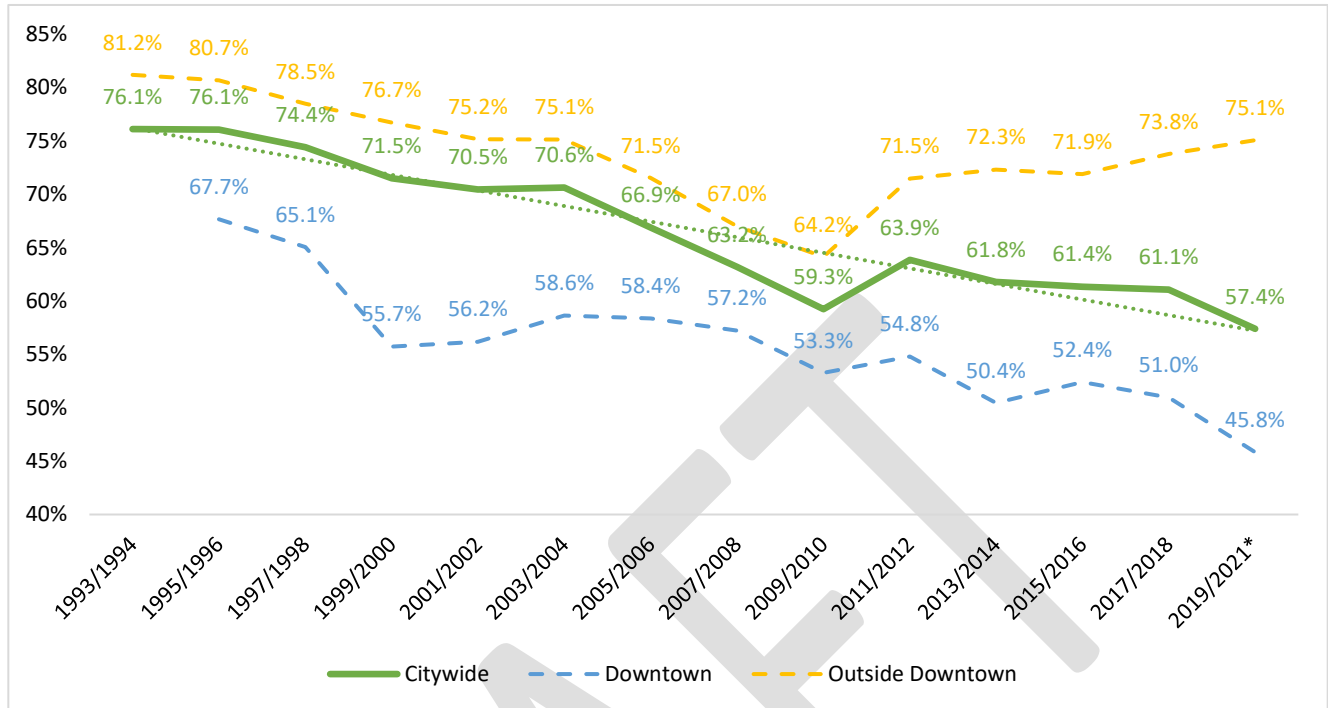


Figure 2.8: Drive-alone rate at CTR sites within Bellevue. The downtown area has a lower rate of drive-alone commuting than outside downtown.

Source: CTR program data

City Performance Benchmarks

The city has established benchmarks for monitoring results of the TDM program. These benchmarks are framed in reference to county and state indicators to help control for the influence of any external variables such as gas prices. Since 2016, the TDM program has published progress on these benchmarks in regular Progress Reports (Table 2.1). For the two drive-alone benchmarks in which Bellevue is compared to Washington, the city is exceeding expectations, including improvements over time since 2016. However, for benchmark 1, which compares the drive-alone rate at Bellevue CTR worksites to CTR worksites across King County, Bellevue is behind, and the gap has been widening since 2016, from 8.2 percentage points off the benchmark in 2016, to 25.1 percentage points behind in 2022. This gap is likely driven largely by Seattle, which weighs heavily in countywide job numbers and has a denser, more transit-rich environment that enables drive-alone alternatives.

Measure	Bellevue Target	2016	2018	2019	2022
1. Percent difference in drive-alone rate at Bellevue Commute Trip Reduction (CTR) worksites relative to all King County CTR worksites	At most 12% higher than King County	20.2% higher (2015/2016 CTR Survey)	28.3% higher (2017/2018 CTR Survey)	28.3% higher (2017/2018 CTR Survey)	37.1% higher (2019-mid-2021 CTR Survey)
2. Percent difference in drive-alone commute mode share for workers in Bellevue relative to all workers in Washington	At most 3% higher than Washington	1.2% higher (2011-2015 ACS ⁷)	0.2% lower (2013-2017 ACS)	0.2% lower (2014-2018 ACS)	2.9% lower (2017-2021 ACS)
3. Percent difference in drive-alone commute mode share for residents of Bellevue relative to all residents of Washington	At least 10% lower than Washington	10% lower (2011-2015 ACS)	10.6% lower (2013-2017 ACS)	12.3% lower (2014-2018 ACS)	23.8% lower (2017-2021 ACS)

Table 2.1: City Performance Benchmarks for the TDM Program.

⁷ U.S. Census American Community Survey

Chapter 3: Demographic Characteristics and Trends

This chapter serves as an overview of Bellevue worker and resident demographics, with a focus on relevant changes to the demographic composition of the community since the 2015-2023 TDM Plan was developed. Demographics discussed include resident demographics, as well as residential data and employer data. This chapter provides a broad overview of the demographic landscape in which Bellevue operates its TDM program.

Demographics Overview

Bellevue is the fifth largest city in Washington, with an estimated population of 152,600 as of 2021 and 155,031 employees, 54,944 of which are based in the city's Downtown area.⁸ By 2035, the city is anticipating population growth to more than 160,000 residents and an additional 70,000 workers by 2044.⁹ While Bellevue is the fifth most populous city in Washington, it is the 11th densest, with 4,559 people per square mile as of 2022. Of the five most populous cities in the state, only Seattle is denser.¹⁰

Population Characteristics¹¹

Bellevue is getting older, slightly more male, and higher-earning:

- In 2021, the median age in Bellevue was 38.5 years, compared to 37.4 in 2015.
- Bellevue's 2021 sex ratio was 107.2 males per 100 females. This has increased from 102.5:100 in 2015 and is notably higher than the national ratio of 98.1 males to 100 females.
- Residents aged 45-64 decreased from 26.4% to 25.6% from 2015, while those aged 20-44 and 19 and younger increased .4 percentage points, up to 38% and 22.3%, respectively.
- As of 2021, 34.2% of Bellevue households have an income of \$200,000 or more – up from 18.9% in 2015 and more than double the rate of high-earners nationally (9.8%) (Fig. 3.1).

⁸ U.S Census Bureau. (2023). 2021: ACS 1-Year Estimates Total Population. Retrieved from <https://data.census.gov/table?q=Population+Total&tid=ACSDT1Y2021.B01003>

⁹ City of Bellevue, WA. (2019). Population. Retrieved from <https://bellevuewa.gov/city-government/departments/community-development/data/demographic-data/population-trends>

¹⁰ Washington Office of Financial Management. (2023). Population Density. Retrieved from <https://ofm.wa.gov/washington-data-research/population-demographics/population-estimates/population-density>

¹¹ The trends discussed in this section use ACS 1-Year data unless otherwise specified. Point estimates are provided but due to sample limitations, none of the changes described are considered statistically significant.

- 2021 Bellevue median household income is \$144,0274, up from \$98,804 in 2015. The 2021 median household income in the Puget Sound region was \$92,900.¹²

Residential Land Use and Resident Demographics

- In 2021, 29.2% of Bellevue residential structures contained 20 or more units and 41.3% contained 5



Figure 3.1: City of Bellevue Household Income Distribution in 2021 dollars.

Source: American Community Survey 1-Year Estimates

40%, respectively in 2015.

- 73% of Bellevue jobs are within *frequent transit networks*, compared to 38% of the population. However, 71% of Multi-Family units are considered within Frequent Transit Networks (Table 3.1).¹³

People, Homes, & Jobs in Frequent Transit Networks	
Population	38%
Total Housing Units	44%
Multi-Family Units	71%
Single-Family Units	15%

¹² Central Puget Sound Demographic Profile. PSRC. (2023). Retrieved 18 May 2023, from https://www.psrc.org/sites/default/files/2022-02/psrc_demographic_profile_2021.pdf

¹³ Frequent Transit Networks are commonly defined as transit service every 15 minutes for most of the day.

Jobs	73%
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Table 3.1: Proportion of Bellevue homes, jobs, and people in Frequent Transit Networks, as calculated by King County’s Assessor’s Office. The proximity of jobs and multi-family units to transit represents an opportunity for TDM.

Source: *Commuting in Bellevue, City of Bellevue*¹⁴

- 8.3% of Bellevue housing units do not own a car – a 42% increase since 2015.
- Almost 17% of Bellevue residents speak English less than “very well.” Of those who speak an Asian or Pacific Island language, 43.4% speak English less than “very well.” Of Spanish speakers, 36.5% speak English less than “very well.”
- 45% of Bellevue households do not speak English at home, compared to 30% of King County households and 22% nationally. The 10 most common non-English languages spoken at home in Bellevue are Chinese, Spanish, Korean, Russian, Japanese, Vietnamese, Hindi, Telugu, Tamil, and Turkish.
- 90.8% of Bellevue households earning less than \$20,000 annually spend 30% or greater of their income on monthly housing costs, commonly accepted as the threshold for spending on housing.¹⁵ For those making \$50,000-\$74,999, the proportion spending 30% or more was 69.6% and 11.2% for households making \$75,000 or more.

Bellevue Employer Characteristics

Methodology Notes

The covered employment estimates in this section are provided by the Puget Sound Regional Council (PSRC) and are derived from the Quarterly Census of Employment and Wages (QCEW), administrative records submitted by employers to the Washington State Employment Security Department. The unit of measurement is jobs, rather than working persons or full-time employment (FTE) equivalents; part time and temporary positions are included. Locations are measured as separate reporting workplaces, rather than firms. “Covered employment” refers to positions covered by the Washington Unemployment Insurance Act, which exempts self-employed, proprietors and corporate officers, military personnel, and railroad workers, all of which are excluded from the dataset. Covered employment accounts for approximately 85-90% of all employment.

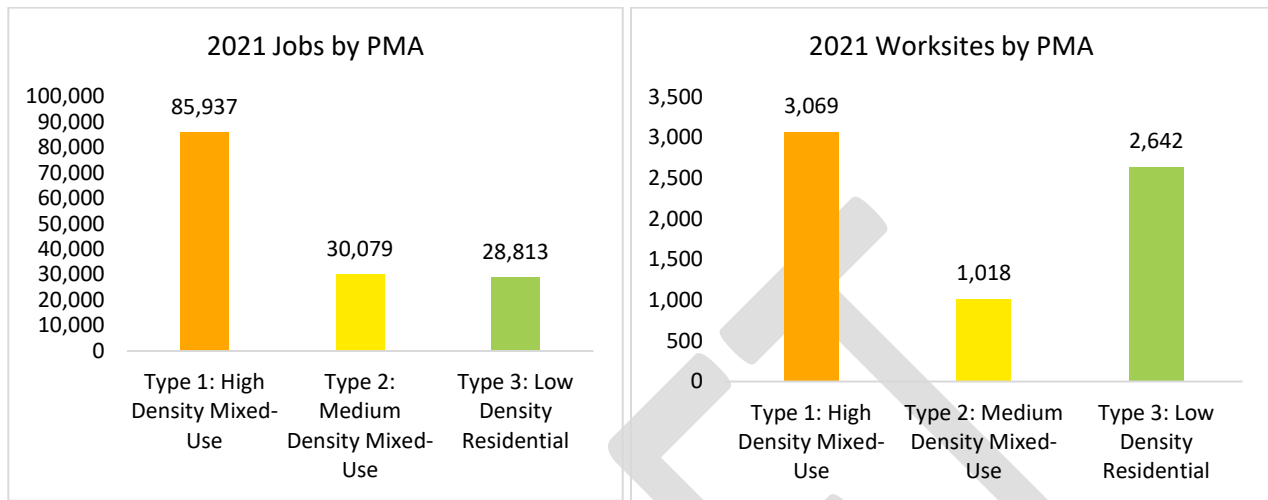
Employment by Location

Bellevue subdivides the city into Performance Management Areas (Fig. 3.4) for transportation planning and performance evaluation. PMAs are designed to reflect land use objectives and contain areas with similar connectivity, mobility options, topography, and development patterns. There are currently three types of PMAs: High-Density Mixed Use, Medium-Density Mixed Use and Low-Density Residential Neighborhoods;

¹⁴ Commuting in Bellevue. City of Bellevue. (2023). Retrieved 31 May 2023, from https://bellevuewa.gov/sites/default/files/media/pdf_document/2023/Commuting_in_Bellevue_01_12_22.pdf.

¹⁵ Sheehy, K. (2022, December 6). How Much Should I Spend on Rent? Retrieved from <https://www.nerdwallet.com/article/finance/money/how-much-should-i-spend-on-rent>

more details about the PMAs can be found in the city’s Mobility Implementation Plan. Data on how employment and business types are dispersed through Bellevue helps inform the TDM program to better understand how to reach the community.



Figures 3.2 and 3.3: Total jobs (left) and workplaces (right) by Bellevue Performance Management Area. The city’s high density PMAs have a higher density of employers and worksites than the residential neighborhoods. These areas of high employment are where TDM program work can be most effective. The significantly higher number of workplaces as compared to jobs in Type 3 indicates the prevalence of workplaces with few employees in this PMA type.

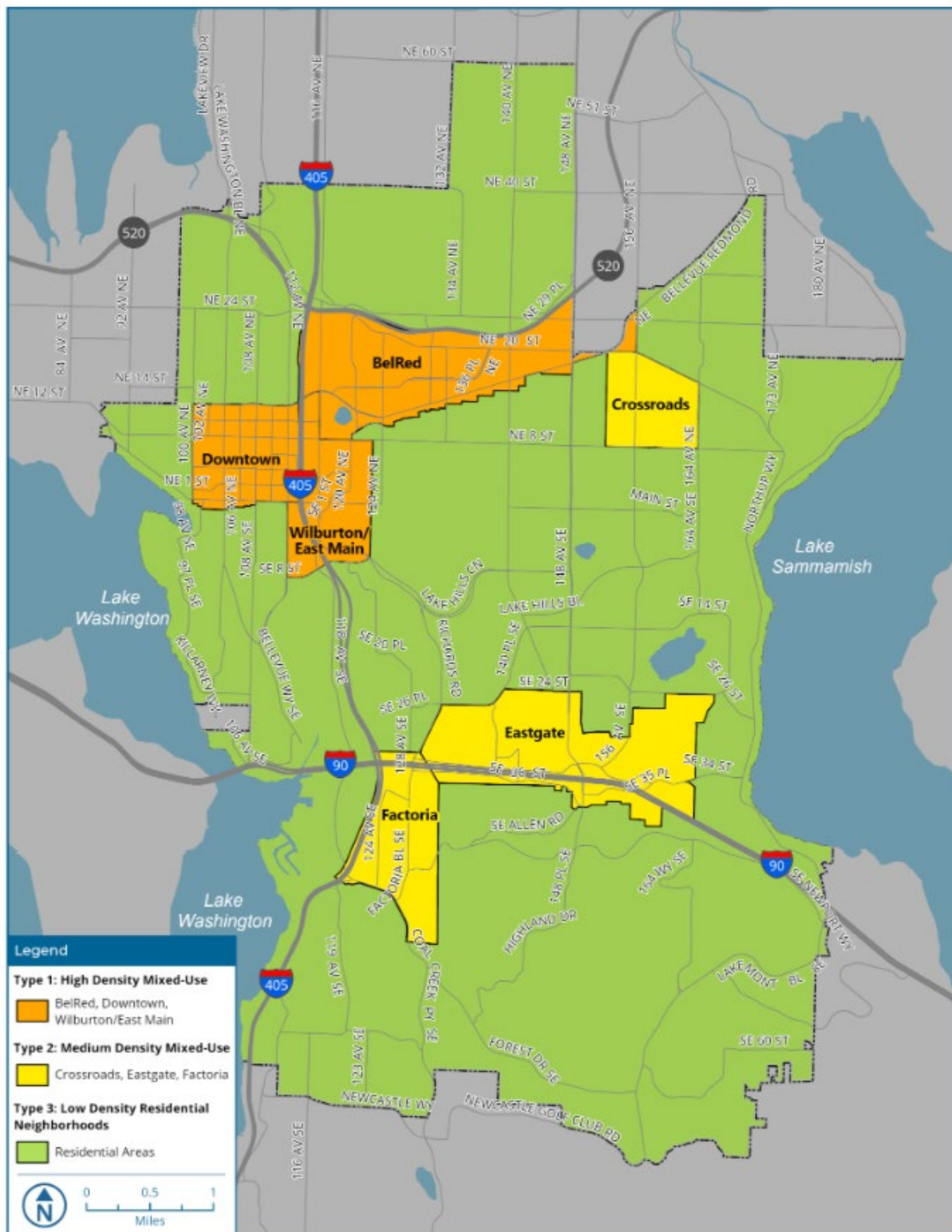


Figure 3.4: The city's Performance Management Areas, as defined in the Mobility Implementation Plan.

Employment by Business Sector

Understanding what types of jobs and employees are in each city PMA is additionally valuable information for the TDM program because effective TDM policies to facilitate sustainable transportation choices will vary between different types of workers (office workers and retail workers, for example). Puget Sound Regional Council data on employment by PMA and business sector is analyzed to better inform the TDM program's policy choices. Business sectors are provided in eight categories, based on North American Industry Classification System classifications: Construction/Resources,¹⁶ Manufacturing,¹⁷ Service & Accommodation,¹⁸ Government, Finance & Real Estate,¹⁹ Retail,²⁰ Wholesale Trade, Transportation, & Utilities,²¹ and Public Education.

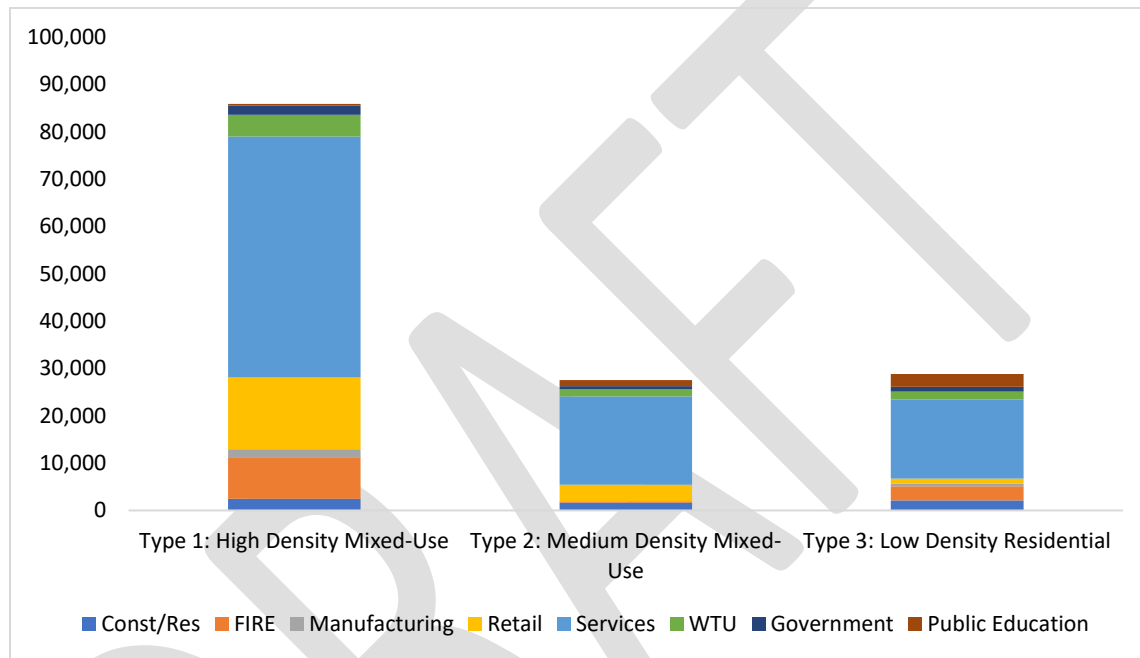


Figure 3.5: 2021 Jobs by Location and Business Sector. Service & Accommodation jobs are the most common in the city and each PMA.

¹⁶ Construction/Resources is defined by PSRC by NAICS codes 11, 21, and 23: Agriculture, Forestry, Fishing and Hunting, Mining, and Construction.

¹⁷ Manufacturing is defined by PSRC by NAICS codes 31, 32, and 33, all of which are "manufacturing."

¹⁸ Service & Accommodation is defined by PSRC by NAICS codes 51, 54, 55, 56, 61, 62, 71, 72, and 81: Information, Professional, Scientific and Technical Services, Management of Companies and Enterprises, Administrative and Support and Waste Management and Remediation Services, Educational services (private sector only), Health Care and Social Assistance, Arts, Entertainment and Recreation, Accommodation and Food Services, and Other Services (except Public Administration).

¹⁹ Finance & Real Estate is defined by PSRC by NAICS codes 52 and 53: Finance and Insurance and Real Estate and Rental and Leasing.

²⁰ Retail is defined by PSRC by NAICS codes 44 and 45, both of which are "retail trade."

²¹ Wholesale Trade, Transportation, & Utilities is defined by PSRC by NAICS codes 42, 48, and 49: Wholesale Trade and Transportation and Warehousing.

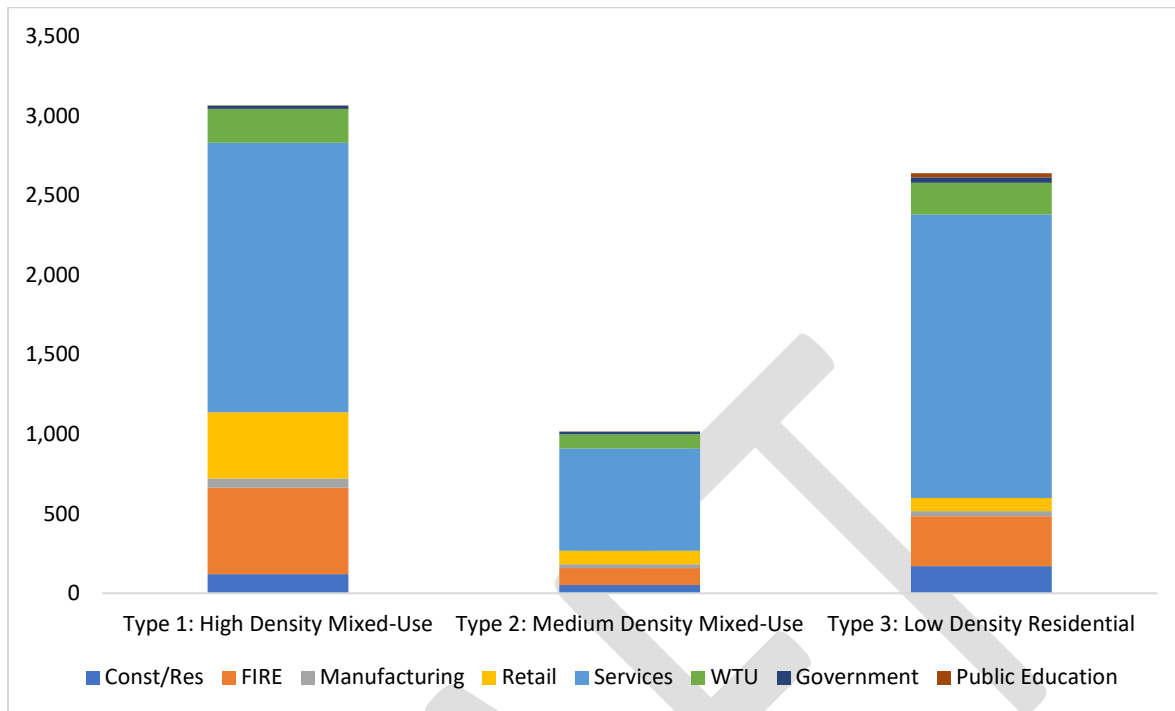


Figure 3.6: 2021 Workplaces by Location and Business Sector. The “Other MMAs” have a greater number of worksites than any individual MMA.

Employment by Business Size

Lastly, employment is reported by business size. Workplace sizes are categorized as 1-4 employees, 5-19 employees, 20-49 employees, 50-99 employees, and 100+ employees. These data help refine the TDM program’s approaches as effective strategies in areas with many large employers will differ from an PMA with fewer large employers and therefore more dispersed employment.

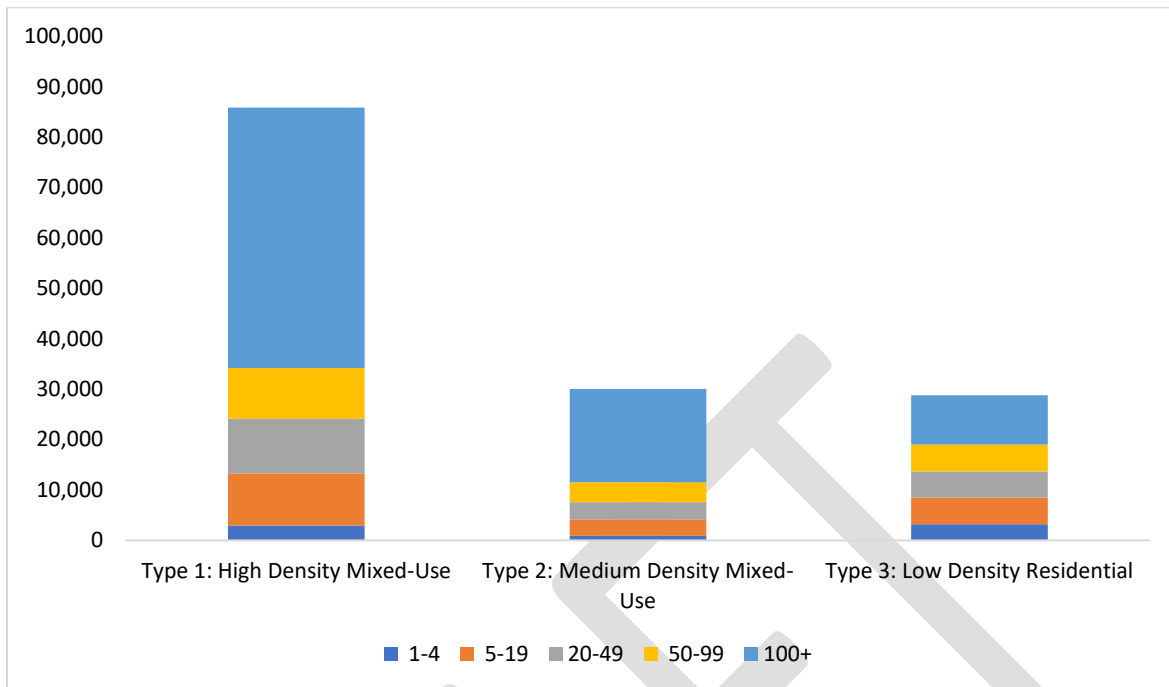


Figure 3.7: 2021 Jobs by Location and Business Size category.

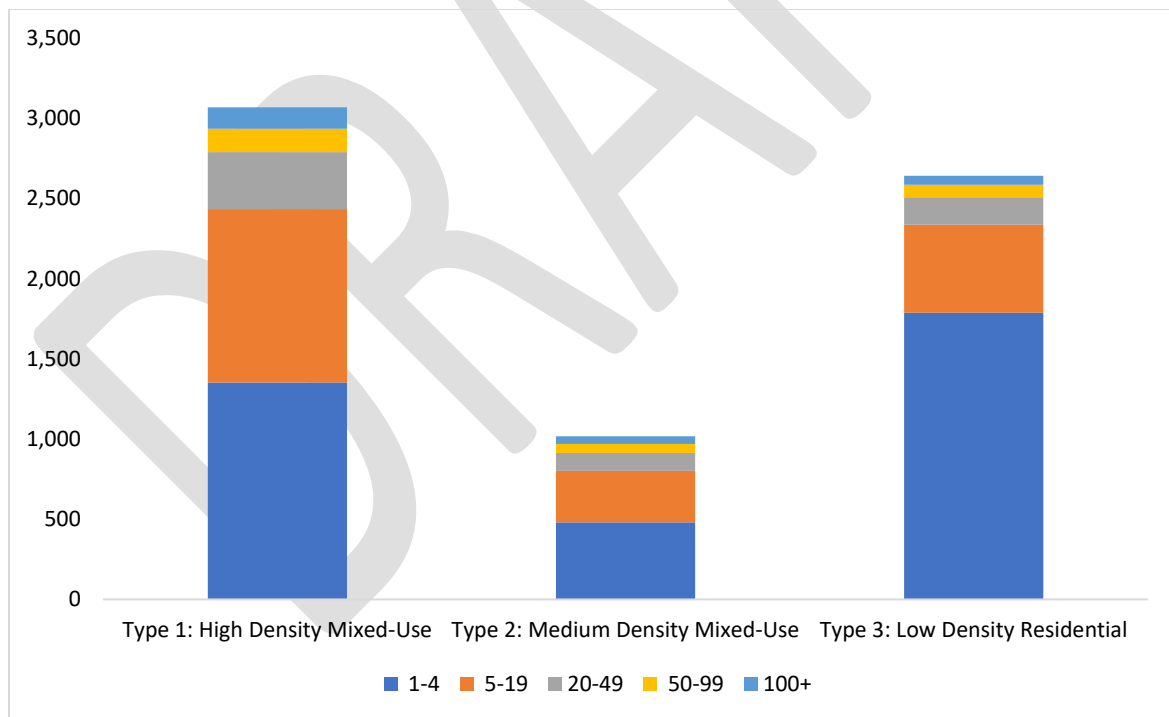


Figure 3.8: 2021 Workplaces by Location and Business Size Category.

Chapter 4: Survey and Market Research

This chapter of the 2024-2033 TDM Plan incorporates public opinion including transportation priorities from two citywide surveys, Bellevue traveler input on mode choices and reasons behind those choices, and input on the planning process for the TDM Plan. These sources provide insight into the transportation priorities of city residents and workers and illustrate attitudes regarding and barriers to using modes other than solo driving. This chapter also includes a review of nationwide TDM issues and best practices, and summarizes key takeaways from these efforts, organized by source.

2044 Comprehensive Plan Survey

As part of developing the Comprehensive Plan update for 2044, the city conducted a statistically valid survey of community preferences regarding growth and development in Bellevue over the next 20 years.²² This survey received 1,152 responses from a random sample of community members and included several TDM-relevant questions.

Public Transit

Respondents were asked about their public transit usage and, for those who infrequently use transit, their reasons for their preferences.

In the last 12 months, 53% of respondents indicated they had never used public transit, compared to 11% who said they use transit once a week or more and 7% who said they use transit 2-3 times per month (Fig. 4.1.)

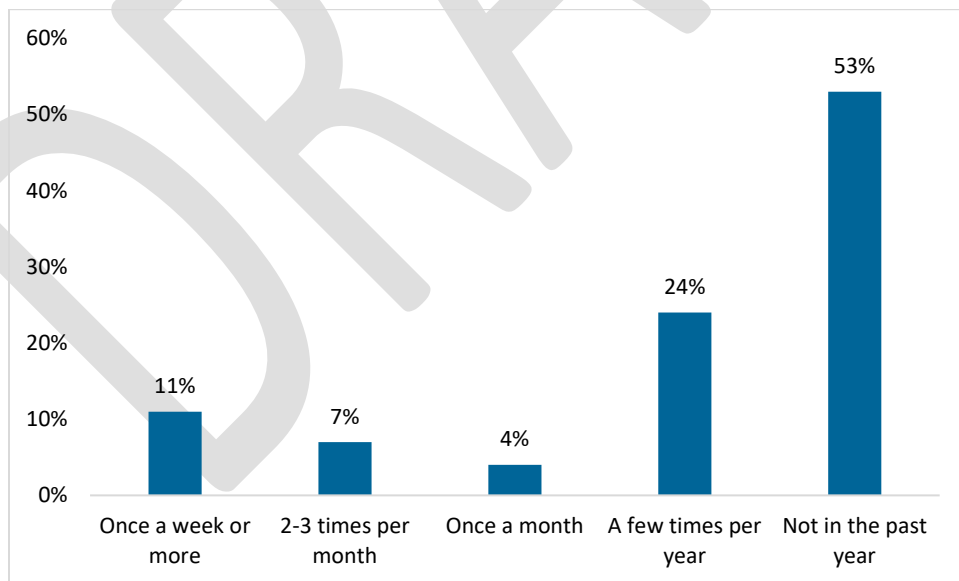


Figure 4.1: “In the past 12 months, how often have you used public transportation?” from the Bellevue Comprehensive Plan 2044.

²² The Bellevue Comprehensive Plan 2044 survey garnered 1,152 responses. The margin of error was calculated at +/- 2.8% at 95% confidence.

Source: Bellevue Comprehensive Plan 2044 Survey, Part 1 – Local Activities.

Of respondents who use public transit less than once a month, the most common reason was simply that they did not want to use public transit (46%). 11% indicated transit was not available in their neighborhood, 9% said “transit issues,” and 35% of respondents said “other (Fig. 4.2).”

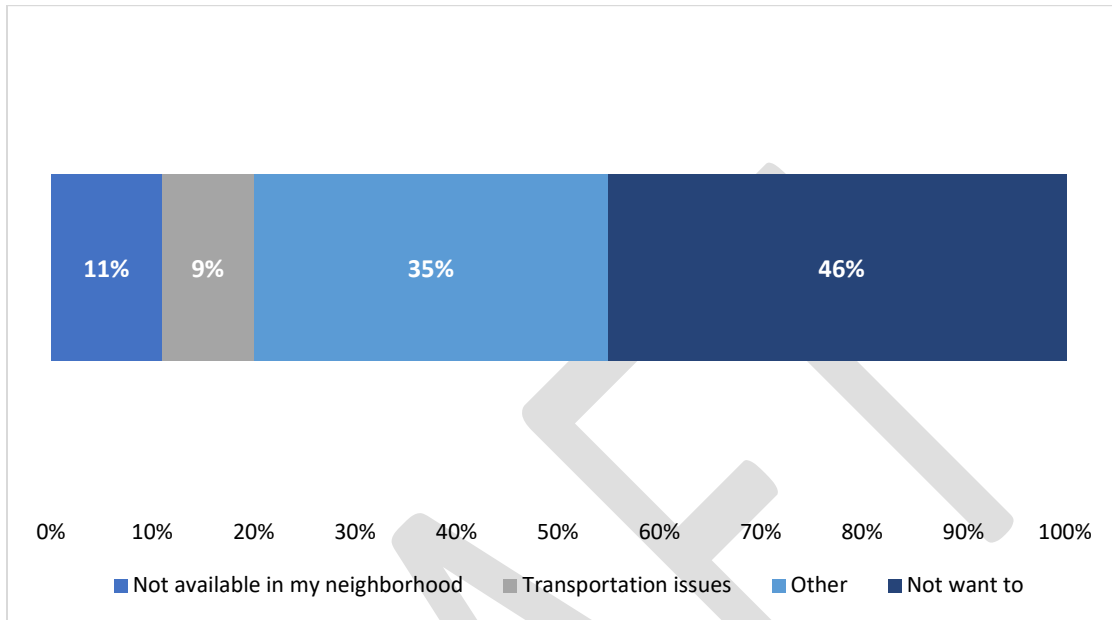


Figure 4.2: “Which of these statements best describes the reason you have rarely or never use public transit?”

Source: Bellevue Comprehensive Plan 2044 Survey, Part 1 – Local Activities.

Respondents who indicated “other” for their low transit usage were asked an open-ended follow up to specify their reasoning. The two most commonly referenced reasons were public transit being slow or inconvenient (61 mentions) and COVID concerns (58 mentions) (Fig. 4.3).

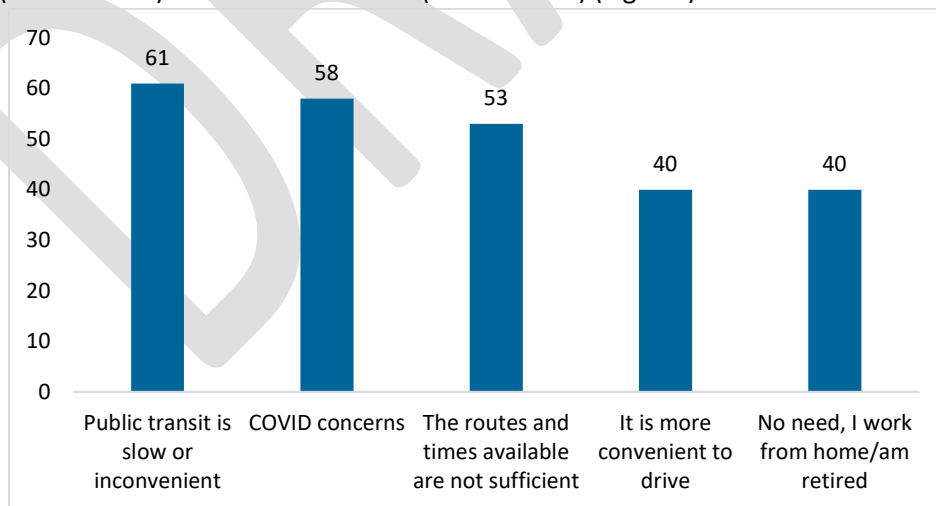


Figure 4.3: The top five “other” reasons to the question in Figure 4.2 from the Bellevue Comprehensive Plan 2044 survey.

Source: Bellevue Comprehensive Plan 2044 Survey, Part 1 – Local Activities.

Development Priorities

Respondents were asked their priorities for development in the city. For this question, priorities were assigned “utility scores” which show relative importance of each development area. The utility scores add up to 100 and show how much more important one priority is compared to another. For example, frequent bus service has a utility score of 7.3 and preserving and enhancing tree canopy has a score of 13.1; this indicates that Bellevue residents on average think the tree canopy is almost 80 percent more important than frequent bus service (Fig. 4.4).



Figure 4.4: Relative importance of 10 development priorities, ranked by utility score.

Source: Bellevue Comprehensive Plan 2044 Survey, Part 2 – Development Priorities.

City Budget Survey

The City of Bellevue conducts a Budget Survey every two years dating back to 1998 to discern community perceptions and priorities and inform the city’s biennial budget. The survey is designed to be statistically valid and was most recently completed in 2022.²³ Below are key highlights relating to TDM, including comparisons to the 2014 Budget Survey,²⁴ which was used in drafting the previous iteration of the TDM Plan in 2015.

Biggest Problem Facing Bellevue

In 2014, the most commonly identified issues in Bellevue were Traffic (39%) and Transportation (21%). In 2022, however, Traffic and Public Transportation were the 6th and 7th biggest problems, receiving 13% and 8% of responses, respectively. Notably, respondents with less than \$75,000 in income per year selected Traffic and Public Transportation higher than average, at 15% and 10%, respectively.²⁵

²³ The 2022 Budget Survey garnered 951 responses. The margin of error was calculated at +/- 3.13% at 95% confidence. The full survey results can be accessed [here](#).

²⁴ The 2014 Budget Survey results can be accessed [here](#).

²⁵ There were two income brackets identified in the survey: <\$75,000/year and \$75,000-\$200,000+.

Affordability/Cost of Living (26%), Safety/Crime (18%), Homelessness (18%), Growth/Congestion (18%), and Human/Social Services (13%) were selected as Bellevue’s top 5 biggest problems for 2022.

Priorities and Focus Areas

The 2022 City Budget Survey included questions on what the top focus areas and budgetary priorities for the city should be. “Reducing traffic problems in downtown Bellevue” was ranked as the 6th area in which Bellevue should focus to increase resident happiness. “Improving transportation and related services to ensure transportation is reliable and predictable” was ranked as the 3rd budget priority for 2022.

Transportation Prioritization

The Budget Survey specifically asks questions regarding how Bellevue residents prioritize transportation, specifically how to reduce transportation congestion. Support for both public transit and road widening have decreased since 2014, while support for alternatives to drive-alone transportation modes has remained roughly the same:

- In the 2022 survey, 80% of respondents agreed that the city should “work with regional agencies to improve transit service.” This is a decrease from 2014, when 90% of respondents supported improved transit service.
- In the 2022 survey, 78% of respondents agreed that the city should “encourage people to choose alternative transportation modes. This is up from 80% in 2014.
- In the 2022 survey, 55% of respondents agreed that Bellevue should “work with the state to widen highways” and 44% supported widening major city roads. This is down from 2014, when the Budget Survey showed 60% support for highway widening and 51% for widening city roads.

Despite some shifts in priorities and attitudes, the Budget Survey indicates support for the TDM program to improve traffic conditions in the city.

Transportation Demand Management Attitudinal Research Study

In 2017, TDM staff engaged a consultant to conduct qualitative research in the form of an Attitudinal Research Study. The purpose of the study was to assess Bellevue’s employer, property manager, worker, and resident markets to facilitate non-drive-alone modes of transportation for the TDM program. The study was conducted online with a total of 78 resident, employee, employer and property manager participants, and asked quantitative and open-ended questions to identify motivations and barriers to the use of non-drive-alone modes.

Table 4.1 lists the six key findings and recommendations from the study, for all audience segments. Many of the findings reference information barriers, as well as receptivity to information about non-drive-alone alternatives if provided in a clear manner. A key finding is that the options need to be convenient to motivate respondents to use them. Since this study was completed, the city has updated the Choose Your Way Bellevue travel options website and launched a Choose Your Way Bellevue informational mobile app.

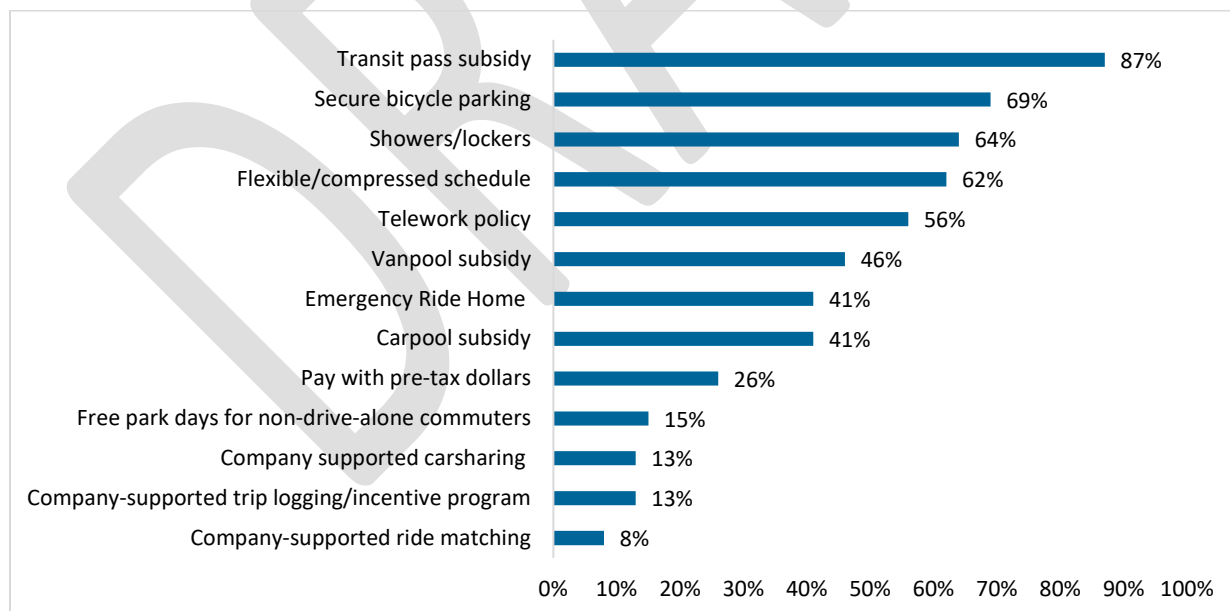
Key Finding	Recommendation
Awareness of non-drive-alone methods is low, but people are receptive to new information about commute alternatives.	Communicate with community & use technology to expand reach and provide convenient tools.

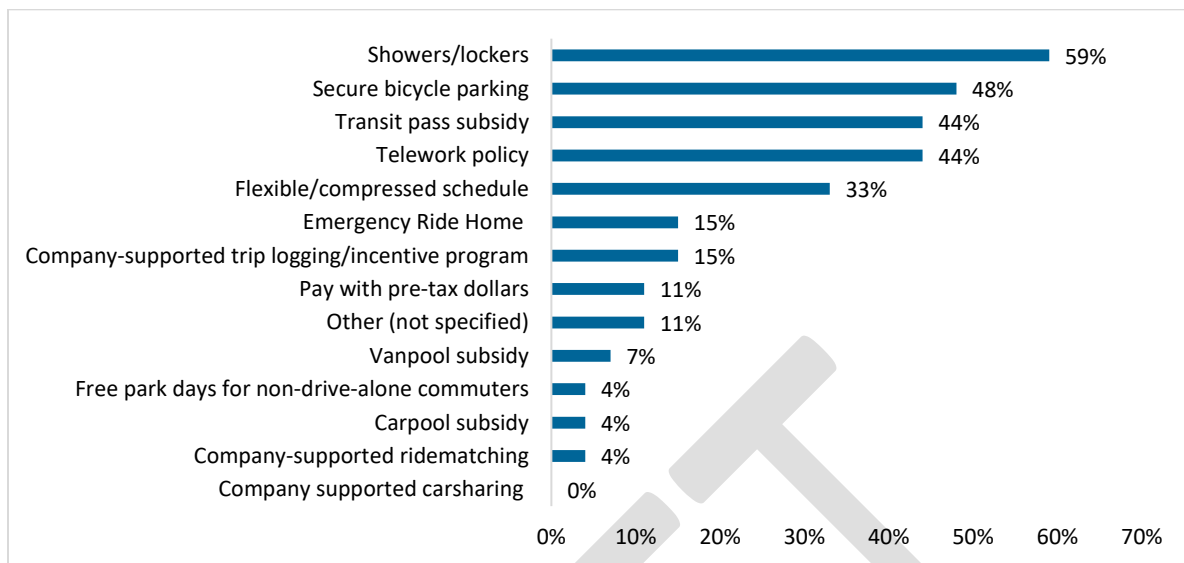
People are interested in non-drive-alone modes, but misperceptions persist.	Communicate with the public about trade-offs, provide incentives, and invest in customer-friendly tools.
The logistics of everyday use are key to getting public on board with non-drive-modes.	Technology can help overcome these logistical barriers along with transportation system improvements that also reduce costs of non-drive-alone travel.
Communication gaps lead to misunderstandings.	Communication can bridge the gap between stakeholders, and incentives can help change behavior.
Choose Your Way Bellevue walks a fine line between “informative resource” and “information overload”.	The site should be simplified and streamlined, bringing the most important information to the front.
The Choose Your Way Bellevue site is successful in turning motivated people to consider/adopt non-drive-alone travel.	To be more successful, the site should provide more knowledge, specifically with regard to savings, safety, and positive imagery.

Table 4.1: Key Findings and Recommendations

Source: City of Bellevue Transportation Demand Management Attitudinal Research Study, pg. 16-21

Employees in the study were asked about which commute benefits they have heard of and which, if any, their employer offers. Eighty seven percent of employee respondents had heard of transit pass subsidies, and 44 percent were aware of a transit subsidy being offered by their employer. This information is vital to the TDM program as a significant focus has been reaching out to and encouraging employers to offer these benefits to their employees (Figs. 4.5 and 4.6).





Figures 4.5 (top) & 4.6 (bottom): Percent of employees who have heard of given commute benefits and percent of employees who are offered these benefits. n = 39 (5.5) and 27 (5.6).

Source: City of Bellevue Transportation Demand Management Attitudinal Research Study, pg. 19-20

Community Input Survey & Online Open House

As for the development of this Plan, Bellevue TDM conducted public outreach through two sources: (1) a non-scientifically representative community input survey designed to garner quantitative data on how the Bellevue community moves around the city and how the TDM program can better assist them; and (2) open-ended feedback site through the city's "online open house" platform, Engaging Bellevue.

Community Input Survey

327 people responded to the Community Input Survey, consisting of 37 total questions, including questions on respondent demographics, commute and non-commute transportation modes, and what may motivate them to choose driving less. Employers and property managers were additionally isolated in the survey and asked specific questions relating to their employees and tenants, though only three employers and one property manager responded. The graphs below represent a small selection of relevant data points – more information can be found in Appendix II.

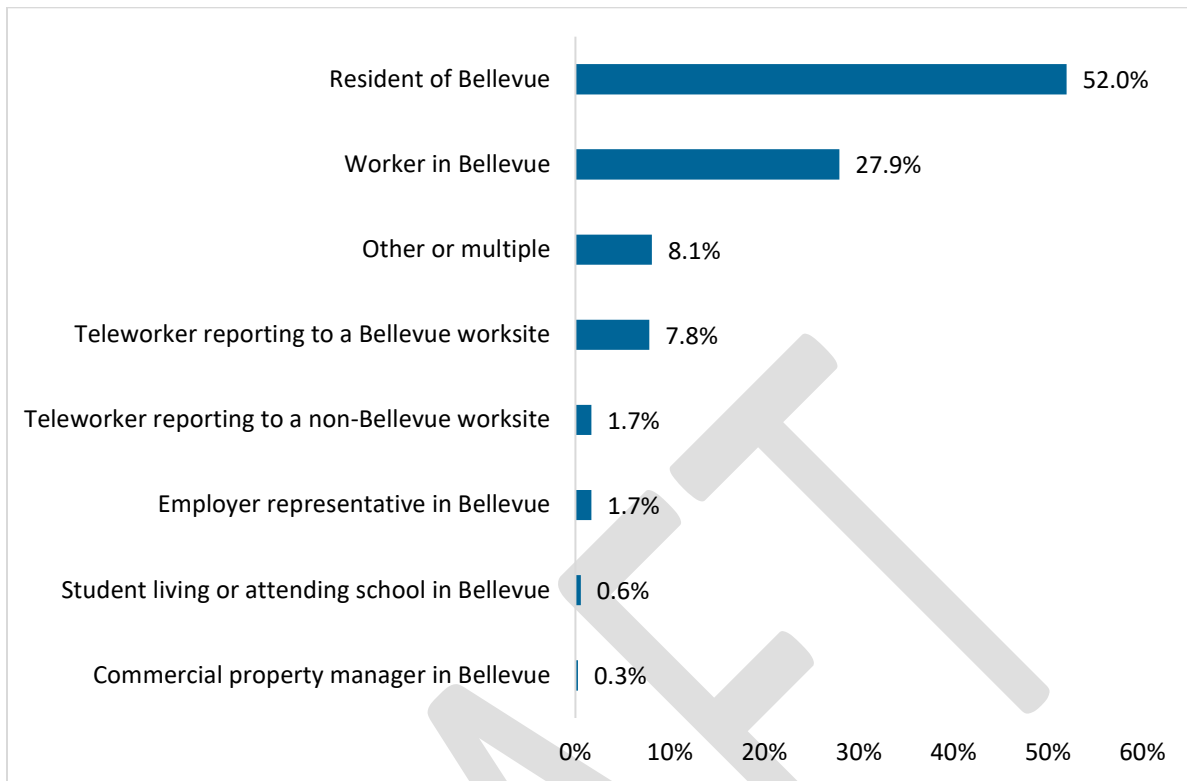


Figure 4.7: Respondent composition to the Community Input Survey. n = 358.

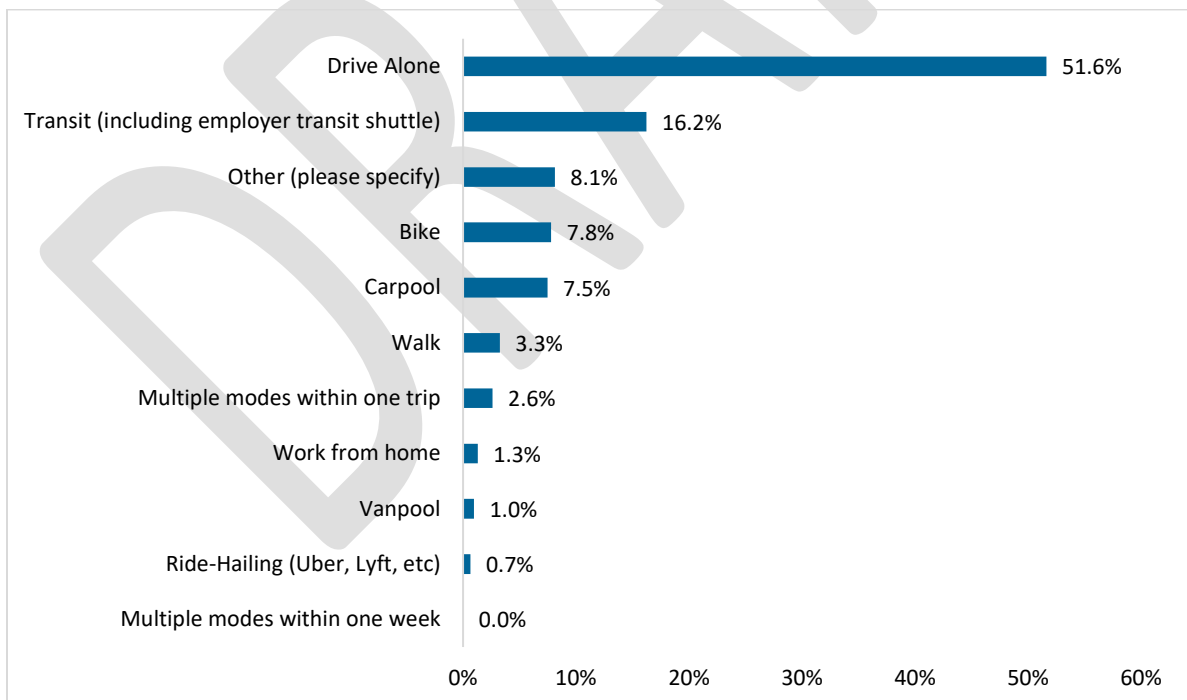


Figure 4.8: On days you don't work from home, what mode do you use most often for commuting to work or school? n = 308.

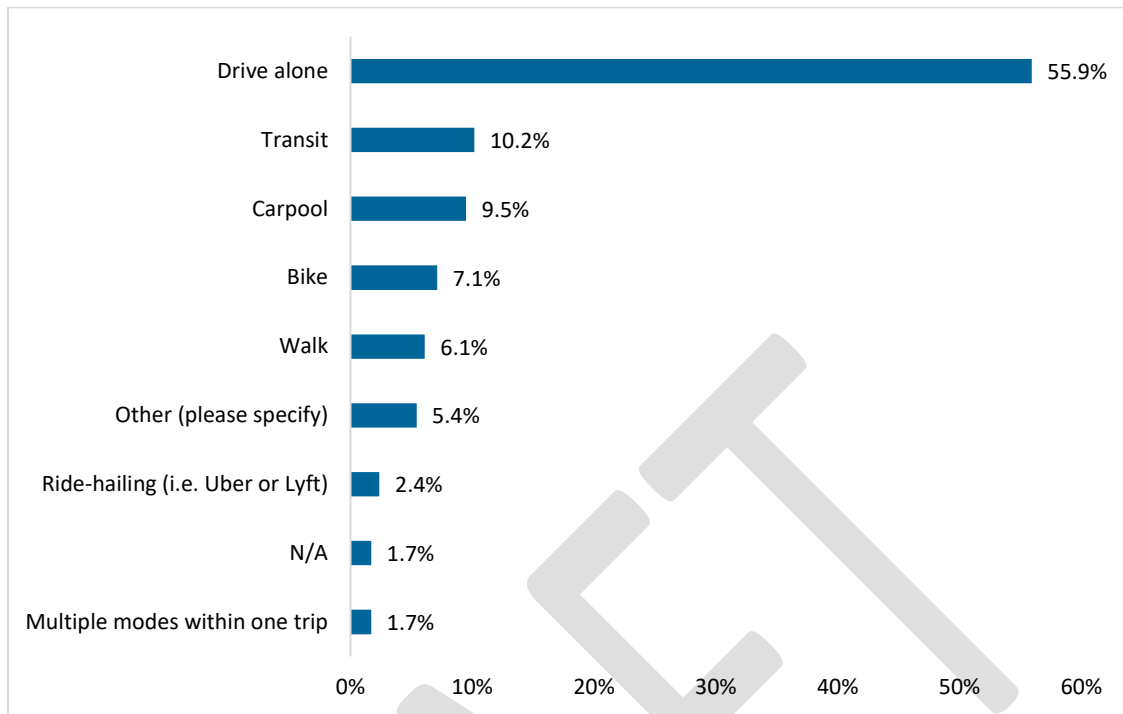


Figure 4.9: What mode do you use for non-commuting trips? n = 295.

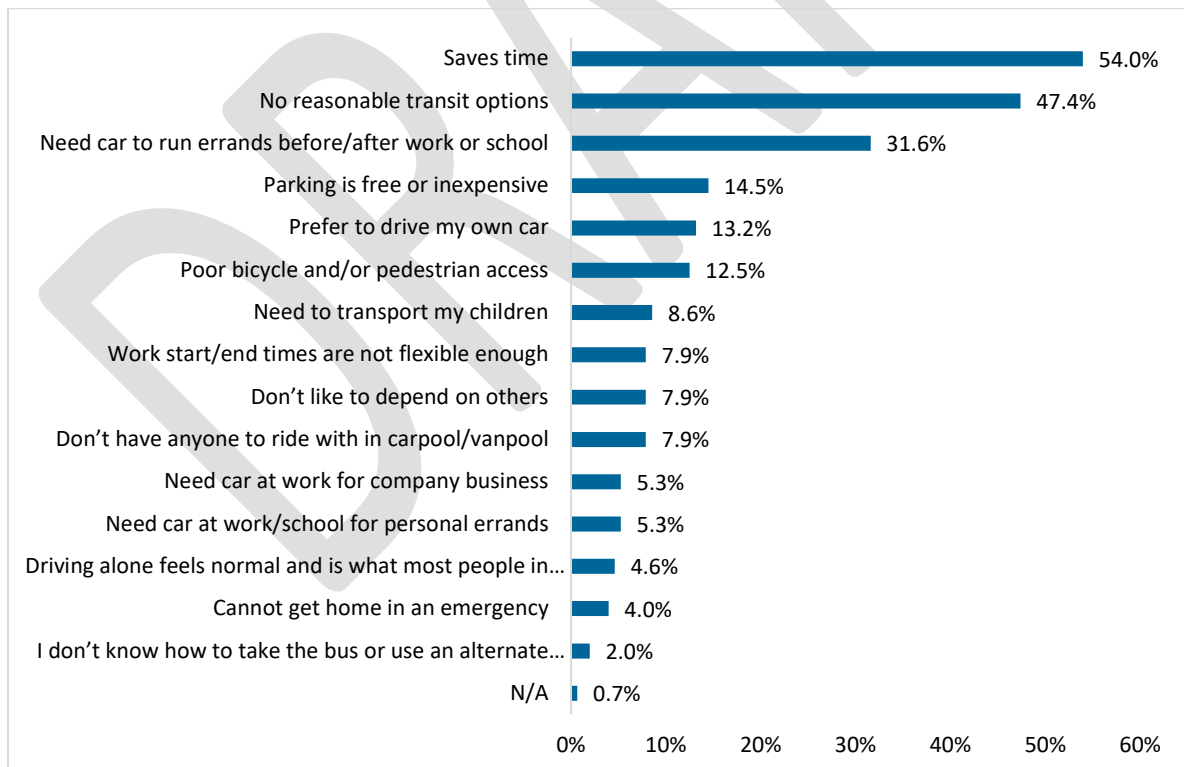


Figure 4.10: What are your main reasons for driving alone to work or school, on days you do? (Choose up to 3). n = 345.

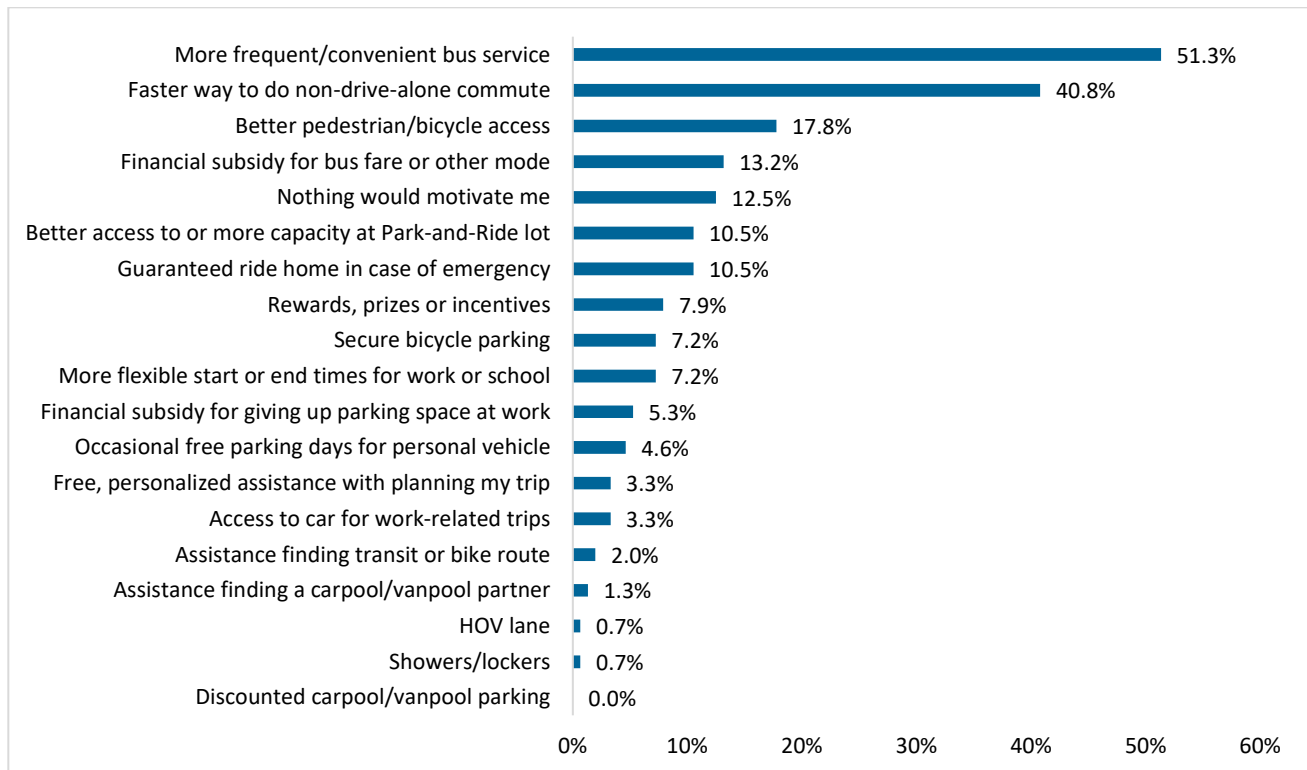


Figure 4.11: What would motivate you to use an alternative mode to driving alone to work or school? (Choose up to three). n = 304.

Engaging Bellevue

Through the Engaging Bellevue online open house, the city made 165 visitors aware of the TDM Plan Update. Audience members submitted three “ideas” and one piece of feedback regarding how that person moved around the city. The ideas were centered around the city improving pedestrian safety and comfort.²⁶

TDM Literature Review Key Takeaways

To inform the development of the 2024-2033 TDM Plan, TDM staff conducted a review of industry literature and articles to identify best-practice work being done in TDM and related fields. Focus areas include COVID-19, equity, active transportation, parking, housing and traffic safety. The full review can be found in Appendix I: Literature Review. Below are selected highlights most relevant to the 2024-2033 TDM Plan.

- Following a dramatic decrease in driving in 2020 due to the COVID-19 pandemic, vehicle miles traveled (VMT) has bounced back to above pre-pandemic levels. Transit usage has been slower to return and has been particularly lagging in Bellevue. This represents a significant challenge to the TDM program as the program works to reduce VMT against national trends.

²⁶ Engaging Bellevue will remain in place for the duration the TDM Plan update process through 2023.

- Counterintuitively, the literature suggests that teleworkers, and particularly hybrid workers, produce as many, and possibly more, transportation emissions than in-office workers. This is due to teleworkers taking more non-commute trips and not “trip-chaining” recreational or errand trips into their commutes, leading to an overall increase in VMT. Additionally, remote work allows teleworkers to live further from their worksite, creating longer commutes on in-office days. The TDM program currently does not count teleworking days as trip-reducing in the Choose Your Way Bellevue rewards program, but it is recommended that teleworking emissions research is closely monitored moving forward as this will play a major role in TDM and transportation policy moving forward.
- Transportation equity is a consideration across the TDM planning profession and is incorporated into nearly every aspect of planning and decision-making processes. How different demographics (income, race, gender, age, physical ability, etc.) are effected by and benefit from Bellevue’s transportation system should be considered in all planning and policy decisions.
- Car dependency is a driver of societal inequities – both in terms of rising transportation costs that disproportionately effect low-income households, and environmental justice concerns for low-income and communities of color that bear the burden of emissions. The TDM program’s work in reducing drive-alone trips and encouraging and incentivizing non-drive-alone modes is therefore a way to improve transportation equity, a factor that could be a focal point of the program moving forward. The city could research and explore specific ways to further transportation equity in Bellevue through the TDM program.
- Walking and biking are the transportation modes that generate the fewest CO₂ emissions. COVID-19 exacerbated walking and biking behavior generally along income lines, and those patterns are persisting – higher income people walk and bike more and lower income people walk and bike less frequently.
- E-bikes and other forms of shared micromobility lead to reduced vehicle emissions and have potential to reduce drive-alone trips. If the city were to take steps to allow shared micromobility in the future, promotion of this option by the TDM program could help maximize its impact.
- Parking remains the single most effective TDM tool, as parking cost and availability have a major impact on the drive-alone rate. Many cities both nationally and locally have removed parking minimum requirements for new development. The TDM program should continue work with employers and property managers on good practices for parking management.
- Housing and transportation costs together now make up over 50% of household spending nationally and are generally understood to be inversely correlated in urban areas: Housing costs increase as people live closer to downtown areas, but transportation costs decrease due to more available transit or walking/biking options. Many studies show that households that move further from downtown areas into the suburbs, either by choice or due to untenable housing costs, spend enough on increased transportation from car usage to offset housing savings. Increases in availability of transit and other non-drive alone modes can be a significant economic benefit, particularly to low-income households.

Chapter 5: TDM Planning Landscape

This TDM Plan builds on the 2015-2023 TDM plan; incorporates other TDM program sub-plans; and operates in the context of other city plans. Key to a robust TDM program for the next ten years is consideration of related Bellevue planning efforts and as well as the ever-changing environment of transportation in the city. This chapter discusses other key Bellevue plans and highlights several transportation trends that may significantly influence TDM in Bellevue over the next decade.

Other City Plans

Several other city plans are relevant to TDM and affect the TDM program and/or provide opportunities for coordination.

Comprehensive Plan

Bellevue's Comprehensive Plan captures the community's vision for the future and provides direction for city regulations and investments. The Comprehensive Plan supports TDM through its goals and policies, as well as mode share targets set for commute trips. The TDM section of the Transportation Element indicates that "through implementation of transportation demand management (TDM) strategies, the city helps people reduce the number of trips they take alone in a private vehicle and the vehicle miles they travel." The Transportation Element defines 157 policy objectives across 12 areas, from Transportation and Land Use to Neighborhood Protection. The Comprehensive Plan includes 12 TDM-specific policies, including the following:

TR-9: Coordinating with other Eastside jurisdictions, the private sector, and transit providers to develop and implement uniform or compatible TDM strategies that address the following factors:

1. Parking;
2. Services to facilitate and increase the use of transit, carpooling, vanpooling, walking, bicycling, and alternative work schedules;
3. Other demand management program elements, including marketing, outreach and incentives; and
4. Reporting, monitoring, and performance evaluation standards.

TR-10: Require large employers to implement a commute trip reduction program for employees, as mandated by the state Commute Trip Reduction law, and evaluate program effectiveness on a regular basis;

TR-11: Encourage employers to help reduce peak hour commute trips by facilitating employees' use of telework, flexible work hours, compressed work week schedules, and other scheduling options;

TR-14: Require new developments that place significant impacts on the transportation system to implement transportation management programs to reduce drive-alone commute trips to the site;

TR-15: Provide outreach and assistance to increase awareness of alternatives to driving alone for all types and purposes of trips; and

TR-16: Evaluate and facilitate car-sharing and bike sharing programs.

Comprehensive Plan Update:

As of this writing in 2023, the city is in the process of a major Comprehensive Plan update for the 2044 horizon year, anticipated to be completed and adopted by City Council in 2024. TDM staff are working with comprehensive planning staff on several components, including some text revisions of the TDM component and the updating of comprehensive mode share targets. The updated Comprehensive Plan is anticipated to include updated mode share targets for commute trips in 2044 for downtown (workers only) and citywide (workers and residents). Staff will have developed these targets in 2023 for the purpose of completing this 2024-2033 TDM Plan update prior to adoption of the updated Comprehensive Plan. This was feasible due to the identification of a preferred land use alternative in mid-2023 through an Environmental Impact Statement process. As with the current Comprehensive Plan targets, progress will be measured using U.S. Census American Community Survey data. These new targets, provided in Chapter 5 of this plan, are the basis for overall 2033 commute mode share targets for this TDM Plan.

Curb Management Plan

The city is working to create a Curb Management Plan that will provide a new, long-range vision for designating, maintaining and operating curbside areas – borders between streets and sidewalks – in Bellevue’s densest neighborhoods. The plan will allow for informed decisions on how curb spaces should be managed as the city continues to grow rapidly and competition for this urban space increases.

The CMP is expected to be published mid-2023 and will provide guidance on how to allocate Bellevue’s curb areas more effectively for new mobility options such as carpooling, vanpooling, ride-hailing, employer-operated shuttles, urban freight, electric vehicle charging stations, and micromobility, as well as parking, deliveries and on-street dining.

TDM is directly incorporated into the CMP both in a stand-alone section and as a relevant program referenced throughout. Curb management that prioritizes transit, employer shuttles, carpool/vanpool pickup and drop-off, and micromobility can help facilitate a reduction in drive-alone trips. The prioritization framework defined in the CMP can be used by the TDM program to better identify areas of opportunity for TDM programming throughout the city.

Smart Mobility Plan



Figure 5.1: A diagram from the Smart Mobility Plan illustrating the CommutePool concept, which aligns with TDM goals.

As the City of Bellevue continues to grow and thrive, the demands on the city's transportation system continue to grow as well. Bellevue's Smart Mobility Plan aspires to manage this growth through the use of technology to enhance and optimize the transportation system throughout the city.

The Smart Mobility Plan is a 2018 update to the 2004 Intelligent Transportation Systems Master Plan.²⁷ The Smart Mobility Plan covers six key initiatives: shared-use mobility, autonomous and connected vehicles, electric vehicles, real-time traveler information, data management, and traffic management. Most pertinent to TDM is the Smart Mobility Plan's focus on shared-use mobility – the Plan acknowledges that shared mobility is key to reducing vehicles on the road to mitigate congestion. The Smart Mobility Plan proposes a “CommutePool” program, an on-demand ride-hailing service for commuters to travel to their workplace using an app-based platform matching employees to optimal routes during peak commute times (Fig. 5.1).²⁸

The Smart Mobility Plan identifies real-time traveler information as a core component of building a smarter Bellevue. Real-time information has been a cornerstone of TDM, as greater access to information helps travelers make transportation choices that are better for them. The Smart Mobility Plan prioritizes the city providing better data, trip planning, and off-street parking guidance, all of which align with TDM goals.

Environmental Stewardship Plan


With the Sustainable Bellevue: Environmental Stewardship Plan, we commit to act boldly and aggressively to ensure Bellevue is a healthy, livable, sustainable, and prosperous “City in a Park” for decades to come.

The 2021-2025 Environmental Stewardship Plan was adopted by Bellevue City Council on December 14, 2020. The Stewardship Plan organizes the city's environmental efforts into six focus areas: climate change, energy, materials management and waste, mobility and land use, natural systems and municipal operations²⁹. The mobility and land use focus consists of many targets similar to those of the Bellevue TDM

²⁷ Intelligent Transportation Systems. ITS refers to a range of technologies that enhance mobility, safety, transportation productivity, and reduce negative environmental effects through strategies such as optimization of traffic signals and provision of real time information.

²⁹ Municipal operations refers to topics and targets that are included in the other five areas but specific to the City of Bellevue's operations.

program (Fig. 5.2). Within the municipal operations focus area, the Environmental Stewardship Plan also sets drive-alone targets for city employees of 40% by 2030 and 35% by 2040.³⁰



Mobility & Land Use Goal: Minimize the environmental impacts of transportation and development in Bellevue by focusing development in growth centers and providing all residents with access to a variety of mobility options.				
KPI	Progress	Targets	Strategies	Key Actions (2021-2025)
Resident drive alone rate (%)	63% 2014-18 avg	60% by 2030 45% by 2050	<ul style="list-style-type: none"> Expand mobility options. Convert and replace vehicles and equipment to electric and other low-carbon fuels. 	<ul style="list-style-type: none"> Mobility incentives for workers and residents Sustainable land use Telecommuting and flex-hours Mobility Implementation Plan EV infrastructure
Worker drive alone rate (%)	72% 2014-18 avg	65% by 2030 45% by 2050		
Electric vehicles (% of registered vehicles)	2% 2019	25% by 2030 100% by 2050		
Per-capita vehicle miles traveled (VMT) for Passenger Cars (Per-capita VMT, passenger cars)	7% since 2011	20% by 2030 50% by 2050		
Jobs located within 1/4 mile of a frequent transit stop (% of jobs)	73% 2019	75% by 2030 85% by 2050		
Housing located within 1/4 mile of a frequent transit stop (% of housing)	43% 2019	50% by 2030 65% by 2050		

Figure 5.2: Mobility & Land Use targets for 2030 and 2050 as defined in the Environmental Stewardship Plan. All but the Electric Vehicle target are shared or used as TDM goals.

The Environmental Stewardship Plan includes measures to improve efficiency of the transportation system through TDM actions. Its executive summary indicates that over the next ten years the city will “support commuting alternatives through transportation demand management and evaluate parking needs as commuting patterns change.” The Mobility and Land Use focus area includes “public transit, employee commuting, and how the city uses its land and open spaces,” and this focus area calls for improved land use and clean and efficient transportation systems. The “strategies and actions” for this focus area include continuation of the transportation demand management and Commute Trip Reduction programs, as well as for the city to study the impact of COVID-19 on future travel patterns and associated multimodal needs.

Diversity Advantage Initiative

Bellevue’s Diversity Advantage Initiative serves to support the City Council’s vision statement, which opens with: “Bellevue welcomes the world. Our diversity is our strength.”

The Diversity Advantage Initiative is guided by five principles:

- **Access:** Build an environment that values the abilities of all by proactively removing barriers and providing accommodations for full participation.
- **Equity:** Create a fair and just community where equality is the outcome, by recognizing and correcting historic and systemic inequity.
- **Inclusion:** Foster a welcoming city by providing a safe and gracious space where the entire community can engage in civic life.
- **Opportunity:** Share prosperity by connecting residents, schools, businesses, faith and nonprofits to work together for the common good.
- **Understanding Cultural Competency:** Produce equitable policies and practices, by developing skills and knowledge that facilitate effective interactions across diverse cultures.

³⁰ The 2019 city employee drive alone rate was 43%.

The Initiative lays out specific Cultural Competence Objectives, which include growing a “culturally competent economy” in Bellevue, attracting a diverse workforce, empowering entrepreneurs from diverse backgrounds, providing community services to facilitate growth, and making available culturally-specific goods and services. The TDM program in Bellevue shares these goals and objectives and plays a key role in equitably connecting people to desired destinations.

Mobility Implementation Plan

The Mobility Implementation Plan is a new long-range planning framework developed with input from the public and City Council approval. The purpose of the MIP is to ensure the various transportation plans are compatible with each other and with the city’s land use plan. It will help the city make decisions on project investments based on what people want in their transportation system and the quality of life they expect.

The MIP was adopted by the City Council in April 2022 and aims to align the city’s transportation investments with its land use vision. The MIP was developed to focus on multimodal travel in Bellevue and develop more applicable performance metrics for a city that increasingly moves around by walking, biking, transit, and other non-drive-alone modes. This vision for Bellevue is based on the “layered network” concept which considers the land use context of each mode as individual layers to describe the interconnected Bellevue transportation system (Fig. 5.3). The MIP additionally develops performance metrics for each layer, an ostensibly simple but innovative concept – until recently, transportation metrics in Bellevue were almost exclusively focused on car movement. This approach aligns with the TDM program’s goal of increasing uptake of non-drive-alone travel in Bellevue.

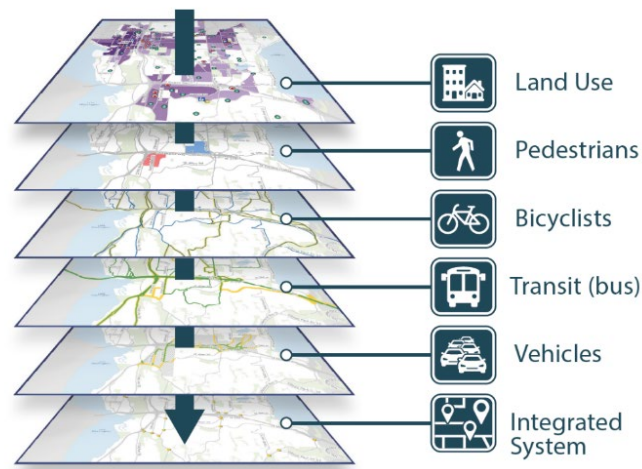


Figure 5.3: Bellevue’s Layered Network as described in the Mobility Implementation Plan

Multimodal Concurrency

As part of the Mobility Implementation Plan process, the city amended its Comprehensive Plan in December 2021 to align the new approach with the Washington State Growth Management Act, which requires “that transportation improvements or strategies to accommodate the impacts of development be made concurrent with the development.” This allows Bellevue to consider non-driving mode accommodation as an element of the transportation system that supports new development. The Multimodal Concurrency Code was adopted by Bellevue City Council on July 5, 2022, and an accompanying Implementation Guide was approved in September 2022.

The Implementation Guide lays out a strategy for how the city can determine whether the transportation system infrastructure creates adequate supply to meet increased demand from new growth and development. This calculation is done using “mobility units,” which are based on trips using any mode of travel, rather than just driving trips. This approach aligns the TDM program’s approach to mobility: A focus on person trips rather than vehicle trips, thus promoting efficiency of the transportation system as the city grows.

Pedestrian & Bicycle Implementation Initiative

The City Council envisions an accessible, well-connected network of pedestrian and bicycle facilities for Bellevue that (i) enhances livability, (ii) supports economic vitality, and (iii) serves the mobility needs of people of all ages and abilities.

The Pedestrian & Bicycle Implementation Initiative began in 2015 with a series of action-oriented efforts that advance project designs and programs initially laid out in the 2009 Pedestrian and Bicycle Transportation Plan. The PBII aims to meet or exceed the City’s 2019 biking and walking targets and achieve the city’s long-term vision of a walkable and bikeable Bellevue. Included in the PBII is a Bicycle Rapid Implementation Program that uses low-cost materials to quickly install bike-and pedestrian-friendly infrastructure improvements, as well as permanent infrastructure improvements projects. Included in the PBII’s ten Program Principles are calls to “coordinate with other efforts underway in Bellevue,” “identify partnership opportunities,” and “refine existing metrics.” These specific goals all directly relate to TDM activities in Bellevue, which can help and benefit from coordination with PBII efforts to increase walk and bike modal share in Bellevue.

Building further on prior bicycle planning initiatives, the city has started work in 2023 on the Bike Bellevue project, which is aimed at implementing bicycle network improvements in the city's urban core, including Downtown, Wilburton and BelRed.

Transit Master Plan

The Transit Master Plan envisions a public transportation network that serves a more diverse variety of people and trip purposes, and that is the mode of choice for an increasing number of people who live, work, shop, and play in Bellevue.

The Transit Master Plan was adopted in July 2014 and provides “a comprehensive look ahead at the system that will be required to meet Bellevue’s transit needs through 2030.” The Transit Master Plan identifies priorities needed to establish a “frequent transit network” that meets the needs of most workers and residents, in partnership with King Country Metro and Sound Transit.

Key to the Transit Master Plan vision are two components close to the heart of the TDM program: supporting Bellevue's growth and supporting mode choice. Much like the other plans discussed in this section, the Transit Master Plan is designed to meet the realities of the growing city by offering sustainable alternatives to driving to mitigate future congestion.

TDM Landscape in the Next Decade

COVID-19

Before looking ahead to trends that may impact the next ten years of transportation in Bellevue, it is important to take a brief look backward at the COVID-19 pandemic and the dramatic and ongoing effect it has had on transportation.

After a drop in driving in 2020, rates of driving nationwide have increased, but remain lower than pre-pandemic levels. The Federal Highway Administration estimates that cumulative VMT in 2022 was 3.17 trillion miles – 1% higher than 2021 but 3% below 2019 (Figure 5.4).

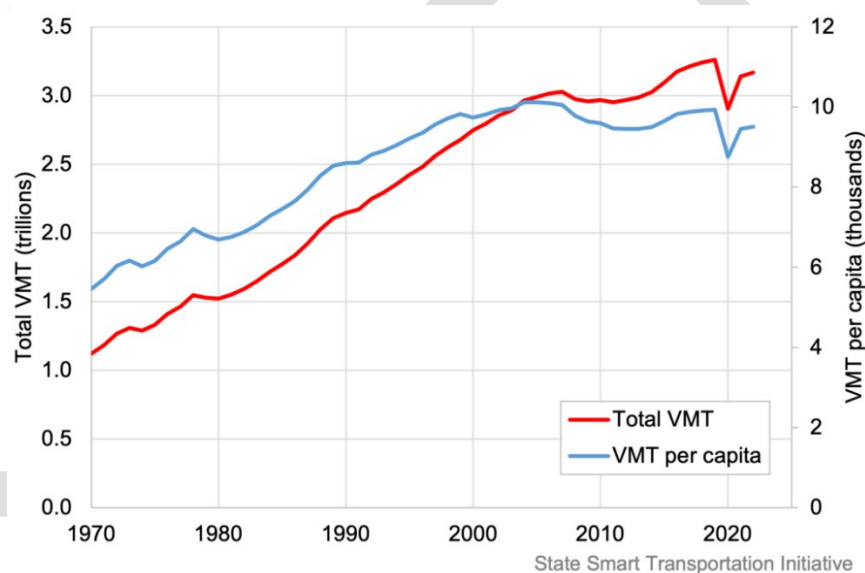


Figure 5.4: Total VMT in the U.S. dropped during the pandemic and has been on the rise since 2021, but not up to pre-pandemic levels.

Source: State Smart Transportation Initiative

The commute drive-alone rate for Bellevue residents decreased from 65.9% in 2011-2015 to 51.6% in 2017-2021. In the same time periods, the commute drive-alone rate for people working in Bellevue declined from 73.4% in 2011-2015 to 65.7% in 2017-2021. Both figures have been influenced in recent years by an increase in teleworking.³¹ (In the longer term, the commute drive-alone rate for Bellevue residents and workers has been trending downward since 1990, when it was 77.2% and 82.3%, respectively. See [Appendix IV: 2022 TDM Progress Report](#) for more information.

³¹ U.S. Census American Community Survey 5-Year Estimates.

Further, this change in commute pattern appears not to be spread evenly across workdays. While comparable data is not available for Bellevue, Commute Seattle’s annual 2022 Commute Survey of 64,000 workers in Seattle showed that Tuesdays, Wednesdays, and Thursdays have much lower rates of telework across Seattle compared to Mondays and Fridays (Figure 5.5).³²

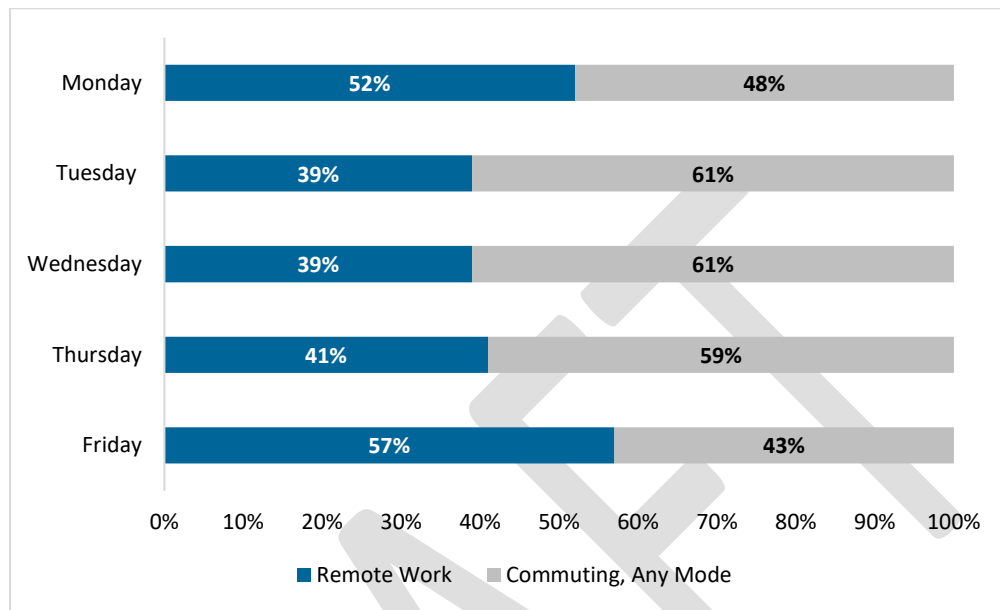


Figure 5.5: In 2022 in Seattle, Mondays (52%) and Fridays (57%) had a much higher remote rate than Tuesdays (39%), Wednesdays (39%) and Thursdays (41%).

Source: Adapted from Commute Seattle

While no such dataset exists for Bellevue in 2021 or 2022, it can be reasonably assumed that a similar pattern exists in Bellevue. Understanding and addressing this variability will be key for TDM work. As we emerge from the pandemic, the Bellevue TDM program and other comparable programs region-wide are focused on mitigating a bump in driving-alone commuting on in-office days that has been occurring as more workers return to the office.

The Commute Seattle report found that 75% of non-commute trips among Seattle-based respondents were made using drive-alone travel. This figure highlights another key challenge facing TDM in a post-COVID world: teleworking does not necessarily decrease vehicle emissions. Across the country, teleworkers tend to have more complex schedules, visiting more locations and thus increasing actual travel, even if commute travel is decreased.³³ Two driving forces behind this increase in travel for teleworkers may be that

³² Kirk Hovenkotter. 2022 Seattle Commute Survey Results. (2023). Retrieved 31 May 2023, from <https://www.commuteseattle.com/2022survey/>

³³ Rongxiang Su, et al. Unveiling daily activity pattern differences between telecommuters and commuters using human mobility motifs and sequence analysis. (2022). Retrieved 2 December 2022, from <https://www.sciencedirect.com/science/article/abs/pii/S0965856421000574>

teleworkers do not “trip-chain” by consolidating non-work trips into their commute and that the option to work remotely allows teleworkers to live farther from their workplace, lengthening their commute trips.³⁴

COVID-19 additionally led to an immediate decrease in transit ridership in Bellevue, which has not yet returned to pre-pandemic levels. From 2003 to 2016, the average daily number of boardings and alightings (“ons and offs”) increased from approximately 21,900 to 50,100. After a drop to 10,740 in fall 2020, the “ons and offs” increased to 17,097 in spring 2021.

Trends Affecting the Next Decade

To best prepare the TDM program for 2024-2033, several topics were identified for a review of how they may evolve and influence transportation in Bellevue during the 2024-2033 time period. This section should not be considered a definitive list of topics impacting transportation in Bellevue in the next decade, nor should it be a definitive answer to how these topics will evolve in the next decade. Regardless of any specific changes, it will be crucial for the TDM program to be aware of unfolding trends in transportation to adjust as needed. The selected topics below introduce each topic and raise key questions that TDM staff will need to be aware of in the coming decade.

The Future of Telework

COVID-19 dramatically changed how workers commute. This is particularly true in Bellevue which has an above average proportion of teleworkers. In 2019, 5.2% of Bellevue workers telecommuted, in 2021 this rose to 32%. Nationally, teleworking increased from 5.7% in 2019 to 17.9% in 2021.³⁵ Key questions include:

1. How “sticky” will telework be?
2. Will telework remain varied among weekdays?
3. What is the equilibrium of in-office days moving forward?

Office Spaces

The increase in telework and hybrid work has shifted markets for downtown office spaces nationally and is shifting how companies and property managers approach commercial buildings, particularly in downtown and transit-accessible areas. Key questions and trends include:

1. Will property managers re-evaluate how commercial buildings are used?
2. What physical changes will employers make to accommodate a hybrid workforce?

Transit Service

COVID-19 has led to changes in transit utilization and service that could impact the success of the TDM program and the strategies that will be most successful moving forward. The most commonly cited reasons for Bellevue residents and workers not utilizing public transit in the 2023 TDM Plan Community Input Survey is a lack of frequency and convenience. Key topics for exploration include:

1. Factors leading to the decline in ridership.
2. The proportion in commute trips represented in the ridership decline and what this means for the future.

³⁴ Reilly, P.J and Tawfik, A.M. (2022) Do Telecommuters Make Fewer Trips? An Analysis of Telecommuting Travel Behavior in Urban and Rural Communities in the USA | International Conference on Transportation and Development 2022. Retrieved 2 December 2022, from <https://ascelibrary.org/doi/10.1061/9780784484340.006>

³⁵ U.S. Census Bureau American Community Survey 1-Year Estimates, 2019 & 2021.

3. Additional variables such as operator shortages and other factors.

Housing Costs & Lengthening Commutes

From 2018 to 2022, average rental costs increased in the western U.S. by 21%.³⁶ In Bellevue, home ownership costs increased from just over \$800,000 in early 2019 to roughly \$1,400,000 in early 2023, (though the median sale price for homes in Bellevue declined by nearly 20% year over year from April 2022 to April 2023³⁷). These dramatic increases in housing costs push workers farther from central employment centers, where housing tends to be more expensive, into areas and towns farther away, thereby creating longer commute times for in-person and hybrid workers and reducing access to transit and the viability of other non-drive-alone modes. Housing costs are historically difficult to predict, but these recent trends suggest that the TDM program should consider the following topical areas in the coming decade:

1. Ongoing trends in commute length, especially for workers in Bellevue.
2. Which modes of transportation are commonly used by workers commuting into Bellevue from outlying areas.
3. Housing policy changes, at state- and city-wide level, with particular respect to the work of the Bellevue Department of Community Development and City Council.
4. Upcoming transportation improvements such as I-405 express toll lanes, I-405 bus rapid transit, and light rail extensions and how they can be leveraged to mitigate long commutes.

Emerging Transportation Technologies

A decade ago, technologies and services that define Bellevue's transportation system such as rapid expansion of ride-hailing services, real-time app-based transportation information, electric vehicles, shared micromobility, and more were barely in the public conscious or still years away. Similar technologies and services that will feel commonplace in 2033, at the horizon of this TDM Plan, may be unknown or in the early stages of prominence in 2024. The TDM program should acknowledge the technological changes that impact transportation in Bellevue, working with other city and regional teams to understand and leverage these changes.

³⁶ The western U.S. is defined here as Washington, Oregon, California, Nevada, Idaho, Montana, Wyoming, Utah, Colorado, Arizona and New Mexico. Katherine Schaeffer. Key facts about housing affordability in the U.S. (2023). Retrieved 18 May 2023, from <https://www.pewresearch.org/short-reads/2022/03/23/key-facts-about-housing-affordability-in-the-u-s/>

³⁷ Bellevue Housing Market. (2023). Retrieved 18 May 2023, from <https://www.redfin.com/city/1387/WA/Bellevue/housing-market#transportation>

Appendices

Appendix I: Literature Review

Introduction

This literature review is an update from the review that informed the 2015-2022 TDM Plan with the intent to inform the 2024-2033 TDM Plan on new TDM ideas and strategies. To that end, most cited works in this review have been written since 2015 to a) provide a modernized perspective and b) avoid significant overlap with the original work. The purpose of this review is to understand the framework in which we live and operate to better inform Bellevue TDM program strategies and planning.

TDM Overview & Best Practices

The purpose of this section is to provide a high-level overview of the current best practices in TDM planning. The concept of TDM originates from the 1970s as a desire to provide alternatives to single occupancy commuting in response to the 1973 oil crisis but today is recognized more broadly as “the desire to optimize transportation system performance for commute and non-commute trips and for recurring as well as non-recurring events.”³⁸ Reducing car usage has a litany of positive impacts³⁹ but with an increasing global and local focus on climate change, it is even more pressing – in order to reach the U.S. carbon reduction target, the country will need to stay within a “travel budget” of maximum vehicle miles travelled (VMT), regardless of electric vehicle adoption.⁴⁰

The New Transportation Demand Management: An Implementation Guide for City Officials provides the following building blocks of TDM that aim to change either individual or collective behavior:⁴¹

- 1) Pricing Measures
 - a) Parking charges as optional amenity
 - b) Parking Cash-outs
 - c) Congestion pricing
 - d) Discounts for high-occupancy or low-emission vehicles
- 2) Physical Measures
 - a) Constrained Parking Supply
 - b) Bike parking and amenities
 - c) Showers and changing facilities for active-mode use
 - d) Shared-vehicle stations or parking
 - e) Transit stops or amenity improvements
 - f) Active-mode network improvements
 - g) Telework spaces and amenities
- 3) Programs and Policies

³⁸ Travel Demand Management. (2022). Retrieved 30 November 2022, from https://ops.fhwa.dot.gov/aboutus/one_pagers/demand_mgmt.htm

³⁹ Handy, S. (2020). Reducing Car Dependence Has Economic, Environmental, and Social Benefits. UC Davis: National Center for Sustainable Transportation. <http://dx.doi.org/10.7922/G2J101FV> Retrieved from <https://escholarship.org/uc/item/7js9s5jk>

⁴⁰ Alarfaj, A.F. (2022). Decarbonizing US passenger vehicle transport under electrification and automation uncertainty has a travel budget. Retrieved 1 December 2022, from <https://iopscience.iop.org/article/10.1088/1748-9326/ab7c89>

⁴¹ Nelson Nygaard - *The New Transportation Demand Management: An Implementation Guide for City Officials* (2022). Retrieved 30 November 2022, from [The New Transportation Demand Management \(nelsonnygaard.com\)](https://www.nelsonnygaard.com/)

- a) Transit cost subsidies
 - b) Vanpool provisions or cost subsidies
 - c) Carpool/vanpool matching
 - d) Free shuttle services
 - e) Remote and flexible work policies
- 4) Promotional and Marketing Measures
- a) Engaging Transportation Management Associations or similar services
 - b) Providing TDM coordinator positions for employees, tenants, or residents
 - c) Web and mobile based information resources
 - d) Events, activities, and challenges

A similar effort from the University of Wisconsin-Madison collected TDM efforts from around the country and identified the following measures local government may use to reduce driving alone: affordable housing, bikeshare programs, carshare programs, connectivity and walkability, guaranteed ride home programs, multimodal wayfinding, neighborhood supportive services, parking management, preferential rideshare parking, residential area parking permits, real-time trip data, and unbundling parking costs from property costs.⁴² Closer to home, a review of Seattle's TDM efforts with developers from 1988-2015 found that incorporating TDM into permit review for new construction lasted the lifetime of the building. By using its regulatory authority, the city was able to incorporate physical TDM elements which had a positive impact on mode-shift.⁴³

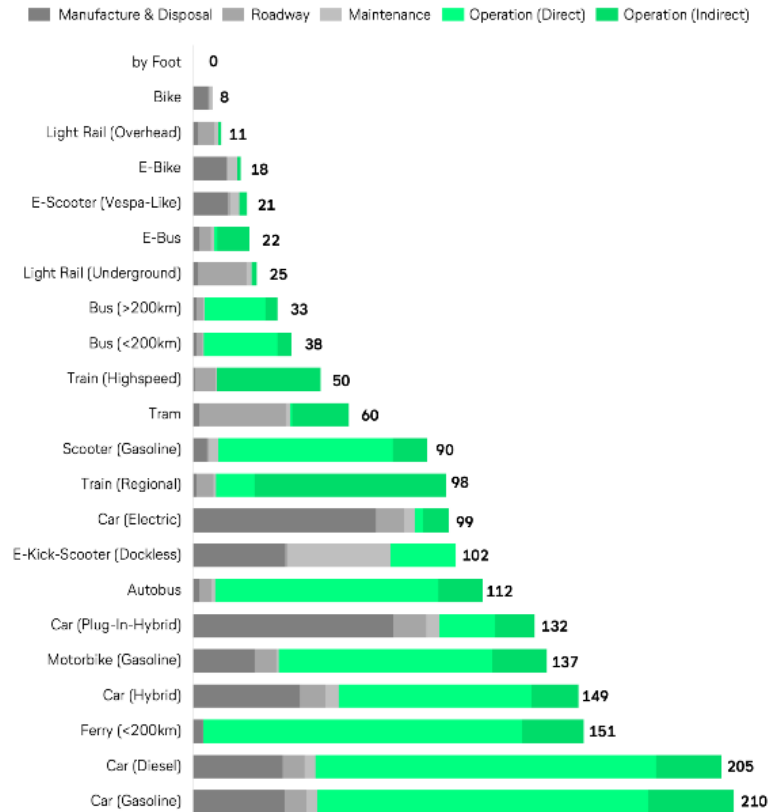
By understanding and employing these strategies, TDM managers and practitioners can work to decrease driving alone in Bellevue and throughout the country. The Bellevue TDM program currently utilizes most of these recommendations in some capacity; however, it is vitally important that the program studies and listens to best practice recommendations from other TDM efforts around the country and world.

⁴² Modernizing Mitigation (2022). Retrieved 30 November 2022, from <https://smartgrowthamerica.org/wp-content/uploads/2018/10/Modern-Mitigation-A-demand-centered-approach-compressed.pdf>. The findings of each measure mitigating VMT varied in magnitude and measurement across jurisdictions with different implementations.

⁴³ McKnight-Slottee, M., Bae, C.-H. C., & McCormack, E. (2022). Site-Specific Transportation Demand Management: Case of Seattle's Transportation Management Program, 1988–2015. *Transportation Research Record*, 2676(1), 573–583. <https://doi.org/10.1177/03611981211035765>

Ranking urban transport modes

Average carbon emissions by transport type (in gram per pkm)



Sources: Lufthansa Innovation Hub Analysis, TNMT.com, press and various research studies – see extra Airtable

Figure 1: Relative carbon emissions by urban transportation mode. Non-drive alone modes generate much fewer emissions than cars, highlighting the importance of TDM's role in emissions reduction.⁴⁴

COVID

Key Takeaways:

- Driving dropped dramatically in 2020 but bounced back to greater than pandemic levels.
- Transit usage nationwide is nearly back to pre-pandemic levels but is lagging in Bellevue.
- The large increase in teleworking due to the pandemic does not decrease transportation emissions.

The Impacts of COVID on Transportation Trends

There are two main COVID-created trends: the precipitous drop in travel in the first months of the pandemic and the subsequent dramatic rise back to pre-pandemic levels.

⁴⁴ The environmental impact of today's transport types. (2023). Retrieved 10 January 2023, from <http://tnmt.com/infographics/carbon-emissions-by-transport-type/>

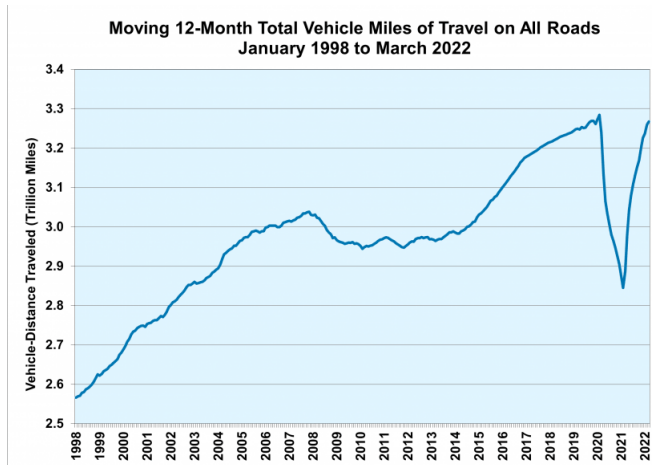


Figure 2: Vehicle Miles Travelled (VMT) dropped dramatically following COVID but quickly returned to pre-pandemic levels. Source: US. Office of Energy Efficiency & Renewable Energy

Nationwide, it's not just that driving has returned to pre-pandemic levels, but gas consumption in the 2022 fiscal year was higher than ever – 6.8 billion gallons more than the previous high in 2018.⁴⁵ The transportation analytics company INRIX's 2022 Global Traffic Scorecard estimated that 39% of urban areas in the U.S. had more congestion in 2022 than pre-pandemic.⁴⁶ This illustrates the unique challenge for transportation demand management efforts at present: averting the post-pandemic spike in driving alone. Largely driven by health and social distancing concerns, public transit usage also dropped nationwide; surveys have found that 50-75% of respondents reported using transit less since the pandemic.^{47,48} These trends held true in Bellevue: the average number of daily "on and offs" on busses in Bellevue dropped from 50,208 in Spring 2019 to 17,097 in Spring 2021.⁴⁹

Much of the data for transportation trends in Bellevue and Washington for 2021 and 2022 are currently being processed, so there are few specifics on trends in the area. Generally, the national data apply. Driving is up, transit usage is recovering, and telework is accounting for a much greater percentage of trips than ever. Entering 2020, Bellevue's drive-alone rate was declining faster than the national average, the challenge for TDM moving forward will be to encourage the use of other modes.

⁴⁵ U.S. Gasoline Use Hit All-Time High in FY 2022 – The Eno Center for Transportation. (2022). Retrieved 2 December 2022, from <https://www.enotrans.org/article/u-s-gasoline-use-hit-all-time-high-in-fy-2022/>

⁴⁶ Bellevue was not included individually in the analysis, but Seattle and Tacoma had 52% and 20% increases in congestion from 2021-2022, respectively. INRIX Global Traffic Scorecard. (2023). Retrieved 12 January 2023, from <https://inrix.com/scorecard/>

⁴⁷ Parker, M.E.G et al. Public transit use in the United States in the era of COVID-19: Transit riders' travel behavior in the COVID-19 impact and recovery period. (2022). Retrieved 2 December 2022, from <https://www.sciencedirect.com/science/article/pii/S0967070X21002067>

⁴⁸ COVID made many of us avoid public transport - what will it take to get us back on the bus? (2022). Retrieved 2 December 2022, from <https://www.weforum.org/agenda/2021/02/public-transport-covid-data/>

⁴⁹ Trends In Transit. (2022). Retrieved 2 December 2022, from <https://cobgis.maps.arcgis.com/apps/MapSeries/index.html?appid=fb49913dd0ca400e93c76cade71c45b0>. 2022 data are not yet available. At writing, Spring 2021 was the most recent period.

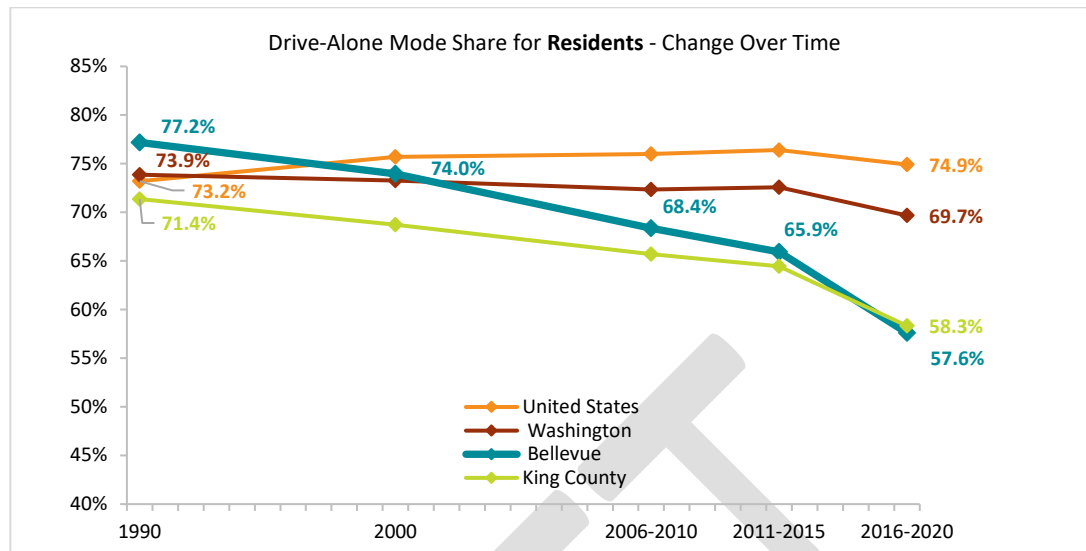


Figure 3: Bellevue and King County's drive alone mode share are decreasing faster than the national and state average from 1990-2020. Data

Sources: American Community Survey 2020 5-Year Data

Telework

The other massive shift in travel due to COVID was the large increase in teleworkers. Nationally, it has been estimated that between April 2020 and December 2020, telework accounted for more than 50% of paid working hours.⁵⁰ Looking forward, the National Bureau of Economic Research estimates that 20% of full workdays will be done at home, compared to 5% before COVID.⁵¹ Data are still being produced, but in the Washington state Commute Trip Reduction Survey, 3 large worksites have thus far reported commute data post-COVID. Together, these sites saw a 25 percentage-point increase in non-drive alone rate, driven by the prevalence of telework.⁵² Despite only accounting for 12% of workers at CTR-eligible Bellevue sites, the dramatic increase in telework decreased the city's drive-alone rate at CTR worksites by 5 percentage points.

Counterintuitively, the rise in teleworking does not mean a decrease in VMT or vehicle emissions. Generally, those who telework take more trips per day and travel longer distances than non-teleworkers.⁵³ Teleworkers tend to have more complex schedules, visiting more locations and thus increasing actual travel, even if commute travel is decreased.⁵⁴ A review of 39 papers on the climate impacts of teleworking corroborates this – the increases in non-work travel and home energy usage suggest economy-wide energy savings are modest at best but are likely to be negligible or even negative.⁵⁵ Two driving forces behind this

⁵⁰ Teleworking and lost work during the pandemic: new evidence from the CPS. (2022). Retrieved 2 December 2022, from <https://www.bls.gov/opub/mlr/2021/article/teleworking-and-lost-work-during-the-pandemic-new-evidence-from-the-cps.htm>

⁵¹ Why Working from Home Will Stick. (2022). Retrieved 2 December 2022, from <https://www.nber.org/papers/w28731>

⁵² This data is internal to the City of Bellevue.

⁵³ Reilly, P.J and Tawfik, A.M. (2022) Do Telecommuters Make Fewer Trips? An Analysis of Telecommuting Travel Behavior in Urban and Rural Communities in the USA | International Conference on Transportation and Development 2022. Retrieved 2 December 2022, from <https://ascelibrary.org/doi/10.1061/9780784484340.006>

⁵⁴ Rongxiang Su, et al. Unveiling daily activity pattern differences between telecommuters and commuters using human mobility motifs and sequence analysis. (2022). Retrieved 2 December 2022, from <https://www.sciencedirect.com/science/article/abs/pii/S0965856421000574>

⁵⁵ Hook, A et al. (2022). Retrieved 2 December 2022, from <https://iopscience.iop.org/article/10.1088/1748-9326/ab8a84/pdf>

increase in travel for teleworkers may be that teleworkers do not “trip-chain” by consolidating non-work trips into their commute and that the option to work remotely allows teleworkers to live farther from their workplace, lengthening their commute trips.⁵⁶

Addressing this challenge will be vitally important for Bellevue TDM moving forward. Currently, Bellevue TDM does not count teleworking “trips” towards its commute rewards program. The prevalence of teleworking may slowly decrease as the country moves out of the COVID pandemic, but it is unlikely that teleworking will fall dramatically.

Equity

Key Takeaways:

- “Equity” is a broad umbrella term referring to a wide array of marginalized groups (income, race, gender, age, physical ability, etc.) and a focus on equity should be integrated into all transportation, TDM Plan and policy decisions.
- Transportation touches and interfaces with many types of equity – this section is a broad overview, but subsequent sections of this review will discuss equity in greater detail.
- Car dependency exacerbates inequities. Bellevue’s TDM program should use this as a focal point of the program as providing non-driving alternatives is a method of addressing inequity.

“Equity” is a broad but useful framework for understanding the myriad of tangible effects that transportation can have on people’s lives. Generally, equity can be defined as “the distribution of impacts (benefits and costs) and whether that distribution is considered fair and appropriate.”⁵⁷ The Minnesota Department of Transportation has defined equitable transportation as consisting of three core components:⁵⁸

1. Transportation systems
 - a. Supporting multimodal options that are affordable, reliable, efficient, safe, and easy to use.
2. Quality transportation services
 - a. Accessible to all populations for reaching destinations independently
3. Transportation decision-making processes
 - a. Incorporating inclusive public engagement to reduce socioeconomic disparities experienced by underserved and underrepresented communities.

Similarly, the U.S. Department of Transportation’s *Equity Action Plan* highlights four equity actions as focal points for the department: wealth creation for disadvantaged small businesses, the power of community

⁵⁶ Reilly, P.J and Tawfik, A.M. (2022) Do Telecommuters Make Fewer Trips? An Analysis of Telecommuting Travel Behavior in Urban and Rural Communities in the USA | International Conference on Transportation and Development 2022. Retrieved 2 December 2022, from <https://ascelibrary.org/doi/10.1061/9780784484340.006>

⁵⁷ Litman, T. (2022) Evaluating Transportation Equity: Guidance For Incorporating Distributional Impacts in Transportation Planning Retrieved 7 December 2022, from https://nacto.org/wp-content/uploads/2015/07/2014_Litman_Evaluating-Transportation-Equity.pdf

⁵⁸ Minnesota Department of Transportation, (2022). Advancing Transportation Equity. Retrieved 7 December 2022, from https://www.dot.state.mn.us/planning/program/advancing-transportation-equity/pdf/Advancing_Equity_ResearchBrief_Final.pdf

through pre-grant civil rights review, interventions via targeted assistance, and expanding access to affordable transportation options.⁵⁹

Equity interfaces with nearly every aspect of transportation; this section hopes to provide a general overview of some of the most prominent ways in which transportation systems either address or perpetuate inequities. In subsequent sections of this review, equity will be brought up where relevant. For example, with respect to COVID, the decreases in public transit ridership were not equally distributed. Areas of the country with higher median household income, higher proportions of college degree holders, and higher employment rates were more likely to have reductions of public transit ridership during COVID.⁶⁰ Conversely, areas with greater poverty rates and Hispanic populations were more likely to report smaller reductions in transit ridership.⁶¹

The most conspicuous way in which transportation equity is present is in car ownership and usage among low-income households. Car ownership and usage is more prevalent among higher income individuals and, therefore, low-income individuals are more reliant upon public transit and other non-driving modes for transportation. According to Pew Research, nationally, Americans who are low-income, Black, Hispanic, or immigrants under 50 are “especially likely” to use public transportation on a regular basis.⁶²

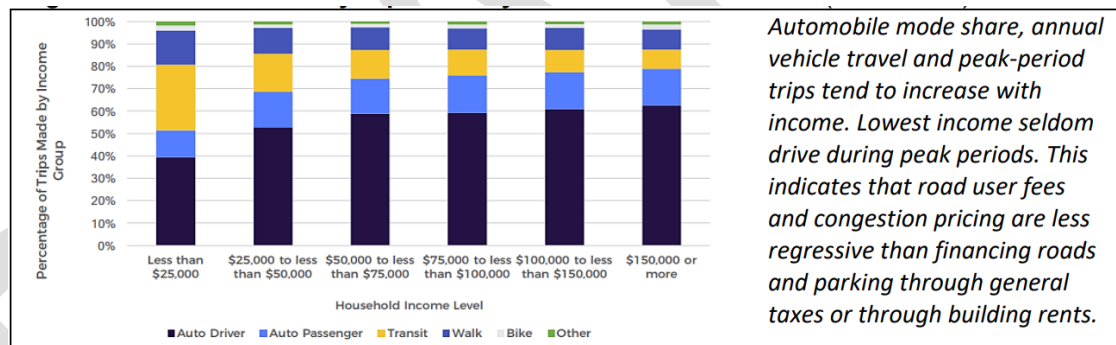


Figure 4: Low-income households are generally more reliant on non-driving modes of transportation.⁶³

In terms of TDM, the lesson is that the promotion and increased accessibility of non-driving modes is a method of decreasing societal inequities. A 2014 study of the varying impact of TDM strategies across groups found that low-income households gain the most when public transit is made more accessible via

⁵⁹ U.S. Department of Transportation. (2022). Equity Action Plan. Retrieved 7 December 2022, from https://www.transportation.gov/sites/dot.gov/files/2022-04/Equity_Action_Plan.pdf

⁶⁰ Qi, Y., Et al. (2021). Impacts of COVID-19 on public transit ridership. Retrieved 7 December 2022, from <https://www.sciencedirect.com/science/article/pii/S204604302100085X>

⁶¹ Ibid.

⁶² Anderson, Monica. (2022) Who relies on public transit in the U.S. Retrieved 7 December 2022, from <https://www.pewresearch.org/fact-tank/2016/04/07/who-relies-on-public-transit-in-the-u-s/>

⁶³ Litman, T. (2022) Evaluating Transportation Equity: Guidance For Incorporating Distributional Impacts in Transportation Planning Retrieved 7 December 2022, from https://nacto.org/wp-content/uploads/2015/07/2014_Litman_Evaluating-Transportation-Equity.pdf

lower fares and shorter travel times.⁶⁴ Conversely, it has also been found that greater household expenditure on private autos is positively correlated with income concentration in the richest 10% of the population.⁶⁵ “In a multi-modal community motorist can still drive...but an automobile-dependent community non-drivers are significantly disadvantaged,” indicating that a diverse and multi-faceted transportation system is the most vertically equitable across income, social class, and mobility need and ability.⁶⁶

This idea is being tested in King County Metro’s Free Youth Transit Pass program and other free or reduced fare programs throughout the country. The intent of the King County program is to improve access and provide economic opportunities to young people for whom transit fares can present financial barriers.⁶⁷ A similar pilot program is underway in Boston, spearheaded by Mayor Michelle Wu, who ran on a platform of free public transit in 2021. This program provides fully free bus service along three routes in three of Boston’s historically low-income and Black neighborhoods, with the purpose of lessening “riders’ financial burden at a time when economic vulnerability is at a historic high.”⁶⁸ In 2019, Kansas City was the first major U.S. city to adopt completely zero-fare transit within city limits but several other cities are undertaking studies to evaluate the efficacy of such policies, so it is plausible that other large cities will adopt zero-fare transit in the coming years.⁶⁹

These are just a small selection of the intersections between transportation and equitable outcomes. There is a dense literature regarding differing mobility needs, public health outcomes and vehicle emissions,⁷⁰ disparities in pedestrian fatalities,⁷¹ and senior citizens’ reliance on transit,⁷² to name a few. A more accessible transportation system in Bellevue creates more equitable outcome and continues to be a goal and guiding principle for TDM moving forward.

⁶⁴ Hasninea, S.M and Habib, K.N (2022). Transportation demand management (TDM) and social justice: A case study of differential impacts of TDM strategies on various income groups. Retrieved 7 December 2022, from <https://www.sciencedirect.com/science/article/abs/pii/S0967070X19303269>

⁶⁵ Valenzuela-Levi, N, 2018. Why do more unequal countries spend more on private vehicles? Evidence and implications for the future of cities. Retrieved 7 December 2022, from <https://www.sciencedirect.com/science/article/abs/pii/S2210670717312581?via%3Dihub>

⁶⁶ Litman, T. (2022) Evaluating Transportation Equity: Guidance For Incorporating Distributional Impacts in Transportation Planning Retrieved 7 December 2022, from https://nacto.org/wp-content/uploads/2015/07/2014_Litman_Evaluating-Transportation-Equity.pdf

⁶⁷ Free Youth Transit Passes Soon to Be Available Across King County - King County. (2022). Retrieved 7 December 2022, from <https://kingcounty.gov/council/mainnews/July/7-26-free-youth-passes.aspx>

⁶⁸ FREE ROUTE 23, 28, AND 29 BUS PROGRAM. (2022). Retrieved 7 December 2022, from <https://www.boston.gov/departments/transportation/free-route-23-28-and-29-bus-program>

⁶⁹ Pyzyk, K. (2022) Kansas City, MO to eliminate transit fares. Retrieved 9 December 2022, from <https://www.smartcitiesdive.com/news/kansas-city-mo-to-eliminate-transit-fares/568754/>

⁷⁰ Moura and Reichmuth, (2022) Inequitable Exposure to Air Pollution from Vehicles in the Northeast and Mid-Atlantic. Retrieved 9 December 2022, from <https://www.ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles>

⁷¹ Raifman and Choma, (2022) Disparities in Activity and Traffic Fatalities by Race/Ethnicity. Retrieved 9 December 2022, from [https://www.ajpmonline.org/article/S0749-3797\(22\)00155-6/fulltext](https://www.ajpmonline.org/article/S0749-3797(22)00155-6/fulltext)

⁷² Tenkanen, H. (2022) Accessibility and Essential Travel: Public Transport Reliance Among Senior Citizens During the COVID-19 Pandemic. Retrieved 9 December 2022, from <https://www.frontiersin.org/articles/10.3389/fdata.2022.867085/full?amp;amp>

Active Transportation

Key Takeaways

- Of the TDM options, walking and biking should be prioritized by Bellevue's TDM program as they generate the fewest carbon emissions and the most public health benefits.
- COVID-19 exacerbated walking and biking patterns along income lines.
- E-Bikes, e-scooters, and micromobility have great potential as TDM offerings as they have been shown to be effective catalysts of mode shift away from driving and have a lower carbon footprint than driving.
- There are many recent success stories of communities and governments increasing biking and e-biking viability. Bellevue TDM should closely monitor these programs and determine what is replicable in Bellevue.

Throughout the U.S., roughly 3% of workers commute by "active transportation," defined as walking or biking. In Washington, the proportion is 4.3%.⁷³ These numbers are significant because walking and biking drastically reduce GHG emissions relative to driving and have immense public health benefits: roughly one in four adults report no physical activity outside of their jobs and sedentary lifestyles contribute to the high obesity rate in the U.S.⁷⁴ Survey data from 2022 has shown that COVID-19 exacerbated walking and biking frequency in individuals: people who reported walking or biking prior to the pandemic had equal or greater rates during and after COVID.⁷⁵ However, these benefits are not equally distributed. The same study found that individuals from underprivileged groups such as low-income, older individuals, less educated, and minorities were less active prior to COVID and were less so during and after the pandemic. These trends that began during COVID were expected to continue into the future because the underlying reasons for the disparity in behavioral patterns was never resolved, specifically personal reasons such as a lack of free time, infrastructure reasons such as a lack of sidewalks, and reasons having to do with safety concerns.⁷⁷

Pedestrian safety continues to be a serious concern and is increasingly seen as an equity issue. Traffic fatalities hit a 16-year high in 2021, a 10.5% increase over 2020, with pedestrian fatalities increasing by 13% in the same time period.⁷⁸ These pedestrian fatalities are stratified across racial lines: Black Americans died at four times the rate of White Americans while biking and double the rate while walking.⁷⁹ Another report found that 30% of pedestrian traffic fatalities occur in the lowest income neighborhoods, despite these areas accounting for only 17% of the population.⁸⁰ These disparities are often attributed to infrastructure design – low-income neighborhoods often lack pedestrian safety infrastructure such as crosswalks and safe

⁷³ American Community Survey, 5-year estimate 2016-2020

⁷⁴ Brand, Christian. 2021. "The climate change mitigation impacts of active travel: Evidence from a longitudinal panel study in seven European cities." *Global Environmental Change*.

<https://www.sciencedirect.com/science/article/abs/pii/S0959378021000030?via%3Dihub>.

⁷⁵ Active Transportation | US Department of Transportation. (2022). Retrieved 14 December 2022, from <https://www.transportation.gov/mission/health/active-transportation>

⁷⁶ Qua, T. et al, 2022. The disparate impact of COVID-19 pandemic on walking and biking behaviors. Retrieved 14 December 2022, from <https://www.sciencedirect.com/science/article/pii/S1361920922003200?via%3Dihub>

⁷⁷ Ibid.

⁷⁸ NHTSA Media. NHTSA. (2022). Retrieved 14 December 2022, from <https://www.nhtsa.gov/press-releases/early-estimate-2021-traffic-fatalities>

⁷⁹ Raifman, M. and Choma, E, 2022. Disparities in Activity and Traffic Fatalities by Race/Ethnicity. Retrieved 14 December 2022, from [https://www.ajpmonline.org/article/S0749-3797\(22\)00155-6/fulltext](https://www.ajpmonline.org/article/S0749-3797(22)00155-6/fulltext)

⁸⁰ Smart Growth America, 2022. Dangerous By Design. Retrieved 14 December 2022, from <https://smartgrowthamerica.org/wp-content/uploads/2022/07/Dangerous-By-Design-2022-v3.pdf>

sidewalks, and the roads themselves, while having low speed limits, are not designed in a way that mitigates driving speed.⁸¹ Another study offers a slightly different explanation for why individuals from underserved groups walk and bike less: the reasons for the trip. Dumbaugh et al. (2022) propose that low-income individuals more often walk or bike out of necessity, due to a lack of car or viable alternatives, whereas higher-income individuals walk and bike more often for recreation, meaning they can avoid dangerous intersections or streets.⁸²

On a positive note, since 2014 there has been a rise in e-bike usage and bike incentive programs, and in shared micromobility. While the City of Bellevue does not allow e-scooters on public rights of way with speed limits greater than 25 miles per hour, shared micromobility⁸³ has proven to be one of the most resilient transportation modes, with trips nearly doubling between 2020 and 2021.⁸⁴ E-bike usage has been shown to enable non-drive alone modes for workers with longer commutes, those underserved by public transportation, and women who feel safer crossing streets (though high speed remains a concern).⁸⁷ A study from Portland, OR found that at a 15% person miles traveled (PMT) mode share of e-bikes, car mode share could be reduced by 7 percentage points, total daily car PMT could be reduced by 3.4 million miles, and total passenger transportation CO₂ emissions could be reduced by 12%.⁸⁸ On an individual level, the same study found an average reduction of 225kg CO₂ per year for an individual e-bike.⁸⁹ Other examples of recent success stories nationwide include:

- In 2015 Google implemented an e-bike lending program targeting drive-alone commuters. The program provided free e-bikes for 6 months as well as free maintenance and emergency pickups. At the end of 6 months the company incentivized participants to purchase their own bike and continue bike commuting. In total, the program was estimated to have tripled bike commute rates during the program period and, though ridership dipped after the program, bike commuting remained above baseline. The increase in bike commuting was attributed to decreases in drive-alone commuting and it was estimated that the program reduced 400,000 drive-alone commute miles.⁹⁰
- Across California, commuters and children going to school have begun “bikepooling” together to socially incentivize bike riding. In October 2021, the Civic Bicycle Commuting (CiBiC) pilot launched

⁸¹ Ibid.

⁸² Dumbaugh, E. Et al, 2022. Why do lower-income areas experience worse road safety outcomes? Examining the role of the built environment in Orange County, Florida. Retrieved 14 December 2022, from

<https://www.sciencedirect.com/science/article/pii/S2590198222001567?via%3Dihub>

⁸³ Shared Micromobility refers to Station-Based Bikes, Dockless Bikes, and E-Scooters.

⁸⁴ Ch. 11.48 Driving Rules | Bellevue City Code. (2023). Retrieved 5 April 2023, from <https://bellevue.municipal.codes/BCC/11.48.210>

⁸⁵ Shared Micromobility refers to Station-Based Bikes, Dockless Bikes, and E-Scooters.

⁸⁶ Shared Micromobility in the U.S. 2020-2021 | National Association of City Transportation Officials. (2023). Retrieved 5 January 2023, from <https://nacto.org/shared-micromobility-2020-2021/>

⁸⁷ Weinert, J. X., Ma, C., Yang, X., & Cherry, C. R. (2007). Electric Two-Wheelers in China: Effect on Travel Behavior, Mode Shift, and User Safety Perceptions in a Medium-Sized City. *Transportation Research Record*, 2038(1), 62–68. <https://doi.org/10.3141/2038-08>

⁸⁸ The 12% reduction in CO₂ emissions is inclusive of electricity generation needed for the bikes and car trips reduced by e-bike usage.

⁸⁹ Michael McQueen, John MacArthur, Christopher Cherry (2020). The E-Bike Potential: Estimating regional e-bike impacts on greenhouse gas emissions, *Transportation Research Part D: Transport and Environment*, <https://doi.org/10.1016/j.trd.2020.102482>.

⁹⁰ Fitch, D. Et al. 2022. Examining the Effects of a Bike and E-Bike Lending Program on Commuting Behavior . (2022). Retrieved 14 December 2022, from https://scholarworks.sjsu.edu/cgi/viewcontent.cgi?article=1387&context=mti_publications

in Los Angeles with the goal of getting previously driving commuters to bike together to work. A CiBiC survey found that 73% of respondents in the pilot's service area drive less than five miles to work – the program is intended to make biking these short trips convenient, fun and safe, even in a city like LA that is often not bike-friendly.⁹¹ Similarly, the “Bike Bus” has been gaining popularity in San Francisco with nearly 100 school-bound children and chaperones commuting to their school together.⁹² In 1969, 42% of American children travelled to school by foot or bike; in 2017 that had fallen to 10%.⁹³ The Bike Bus idea originated in Barcelona but caught on in San Francisco during COVID, though there are no current metrics regarding trips reduced.

- Some jurisdictions across the country are piloting rebate programs for e-bikes, most notably Denver, Colorado. In 2022 Denver offered \$400 rebates for e-bike purchase and \$500 for e-cargo bikes but had to pause the program until early 2023 after the program redeemed 4,401 vouchers, it's funding maximum.⁹⁴⁹⁵ In November 2022, the King County Council passed a budget provision for 2023-2024 requesting the Executive's office assess the feasibility of a similar program, based off the success in Denver.⁹⁶

Parking

Key Takeaways

- Parking pricing is arguably the most effective tool for TDM planners as parking availability and pricing have a direct and significant impact on driving mode share.
- Free and subsidized parking is extremely costly for cities nationwide and its impact on economic vitality, mode share and sustainable transportation goals must be understood by TDM planners.
- Many cities nationwide are removing parking minimums, including several locally.

Parking remains one of the most crucial issues in transportation planning, urban planning, and TDM. Much has been written about the many negative externalities created by free and subsidized parking in urban areas but, at its core, subsidized parking incentivizes run counter to the goal of TDM by valuing cars over people and issuing money that encourages more driving alone.⁹⁷ Nationwide, unpriced off-street parking costs \$127-374 billion in the U.S., the equivalent of a 8-21¢ subsidy per vehicle-mile.⁹⁸ At the center of this

⁹¹ For 2-Wheel Commuters in LA, 'Bikepooling' Brings Safety in Numbers. (2022). Retrieved 14 December 2022, from <https://www.bloomberg.com/news/articles/2022-08-23/can-car-crazy-la-make-room-for-bikepooling?srnd=citylab>

⁹² With Bike Buses, Kid Cyclists Dominate the Road. (2022). Retrieved 14 December 2022, from

<https://www.bloomberg.com/news/features/2022-02-10/kids-board-bike-trains-from-barcelona-to-san-francisco>

⁹³ Why, and How, Kids Should Walk or Bike to School. (2022). Retrieved 14 December 2022, from <https://nextcity.org/urbanist-news/why-and-how-kids-should-walk-or-bike-to-school>

⁹⁴ Denver e-bike rebate funds exhausted for 2022 | FOX31 Denver. (2022). Retrieved 14 December 2022, from <https://kdvr.com/news/local/denver-e-bike-rebate-funds-exhausted-for-2022/>

⁹⁵ Electric Bikes (E-Bikes). (2022). Retrieved 14 December 2022, from <https://www.denvergov.org/Government/Agencies-Departments-Offices/Agencies-Departments-Offices-Directory/Climate-Action-Sustainability-Resiliency/Sustainable-Transportation/Electric-Bikes-E-Bikes-Rebates#section-1>

⁹⁶ Ryan Packer. King County Council Pushes for E-Bike Rebate Program. (2022). Retrieved 14 December 2022, from <https://www.theurbanist.org/2022/11/18/king-county-council-pushes-for-e-bike-rebate-program/>

⁹⁷ Shoup, Donald. (1997). The High Cost of Free Parking. Journal of Planning Education and Research. 17. 3-20. This section will only touch on some of the impacts of parking. Donald Shoup's book and continued work is seminal to the field and any reader looking to learn more should strongly consider reading Dr. Shoup's work.

⁹⁸ Ibid.

issue is that most parking generation has been based off of peak parking demand; prior research has shown that at least half off all parking spaces were vacant for more than 40% of the time a shopping center is open for business.⁹⁹ Research from 2022 shows that across North America, for every dollar motorists spend on their vehicles, another dollar is spent on parking for its use.¹⁰⁰ By these overarching figures alone, it is clear how parking shapes the urban center in which TDM operates – the continued reliance on cars creates an artificially large market for parking which only encourages more car usage. Moreover, it must be understood that “free parking” has costs borne to residents through increased costs elsewhere. “Housing costs are typically 10-20% higher, weekly grocery and restaurant bills cost a few dollars more, and most employees are paid hundreds of dollars less each year to provide “free” parking.”¹⁰¹ TDM practitioners and planners must understand this and conversely utilize parking pricing and strategies to reduce car reliance and support non-driving modes.

Parking Type	Bellevue Cost	Bellevue North America Rank
2 Hour Off-Street Parking	\$9.02	24 th
Daily Off-Street Parking	\$17.35	29 th
Monthly Off-Street Parking	\$183.70	13 th

Table 1: Bellevue parking costs and rank among North American cities. Rankings listed high to low, with 1st representing the greatest cost of parking. While Bellevue has high off-street parking costs, the city is not in the top 50 in North American cities for On-Street parking costs.¹⁰²

The most pertinent connection between parking and TDM is in how parking accessibility affects mode choice. If the primary goal of TDM is to reduce driving and parking availability and pricing affects the rate of driving in a given area, then it is crucial for TDM managers to understand this relationship. The underpricing of parking increases driving and parking demand leading to increases in parking and congestion – the costs of this underpricing is borne by those who drive less, thereby subsidizing more frequent drivers.¹⁰³ As driving tends to increase with income, the underpricing of parking should be considered a regressive cost on lower-income people.¹⁰⁴ Much has been written on the relationship between parking and driving mode share, below are just a few relevant highlights:

- Models such as cost-recovery pricing or parking cash out have been shown to reduce drive-alone commuting by 10-30%.¹⁰⁵
- Research into employer commute benefits has shown that while non-driving benefits such as transit passes, or bike amenities leads to a decrease in the likelihood of employees driving,

⁹⁹ Ibid.

¹⁰⁰ Litman, Todd. (2022). Comprehensive Parking Supply, Cost and Pricing Analysis Retrieved 4 January 2023, from <https://www.vtpi.org/pscp.pdf>

¹⁰¹ Litman, Todd. (2022). Comprehensive Parking Supply, Cost and Pricing Analysis Retrieved 4 January 2023, from <https://www.vtpi.org/pscp.pdf>

¹⁰² Parkopedia 2019 Parking Index North America. Parkopedia. (2019). Retrieved 5 January 2023, from https://cdn2.hubspot.net/hubfs/5540406/Parkopedia_North-America-Parking-Index-2019_Final.pdf

¹⁰³ Litman, Todd. (2022). Comprehensive Parking Supply, Cost and Pricing Analysis Retrieved 4 January 2023, from <https://www.vtpi.org/pscp.pdf>

¹⁰⁴ Ibid.

¹⁰⁵ Shoup, Donald. (2005). Parking Cash Out. Retrieved 5 January 2023, from <http://shoup.bol.ucla.edu/Parking%20Cash%20Out%20Report.pdf>

including free car parking in commuter benefit packages with non-driving benefits offsets the mode shift effects of the benefits for non-drivers.¹⁰⁶

- A 2016 study found that an increase of 0.1 to 0.5 parking spaces per person was associated with a 30 percentage-point increase in driving mode share and moreover, that this linkage is causal. That is, parking provisions *cause* citywide car usage.¹⁰⁷
- The built environment of an urban area, including parking influences VMT. Constraining on-site residential parking to less than 1 space per dwelling unit accounts for a 10-23 percentage point decrease in VMT.¹⁰⁸
- Research into tradable parking permit schemes show that these systems are feasible and efficient. Additionally, an increased focus on environmental conscious improves effectiveness in encouraging mode shift to public transit.¹⁰⁹

Finally, it must be noted that some U.S. cities are beginning to abolish the minimum parking requirements that have contributed to the issues described above. In October and November 2022, four cities repealed parking mandates: Lexington, KY, Culver City, CA, Cambridge, MA, and Nashville, TN.¹¹⁰ Locally, Seattle has repealed parking minimum rules downtown and in urban centers, Tacoma has a “reduced parking area” in most of its downtown core area, and Portland has no parking requirements in the central city for any use.¹¹¹ In 2021, Bellevue City Council adopted Ordinance 6589 to lower minimum residential parking requirements in certain housing developments near frequent transit service.¹¹² A 2020 Washington State Bill (SB 2343) limits minimum residential spaces within a quarter mile of frequent transit stops.¹¹³ These changes represent a growing consensus around the undesirable impact that free, subsidized, or mandated parking has on urban areas and driving rates.

Housing

Key Takeaways

- Housing and transportation are inherently linked and represent over 50% of household spending nationwide.

¹⁰⁶ Hamre, Andrea & Buehler, Ralph. 2014. Commuter Mode Choice and Free Car Parking, Public Transportation Benefits, Showers/Lockers, and Bike Parking at Work: Evidence from the Washington, DC Region. *Journal of Public Transportation*, 17 (2): 67-91. <https://digitalcommons.usf.edu/jpt/vol17/iss2/4>

¹⁰⁷ McCahill, C. T., Garrick, N., Atkinson-Palombo, C., & Polinski, A. (2016). Effects of Parking Provision on Automobile Use in Cities: Inferring Causality. *Transportation Research Record*, 2543(1), 159–165. <https://doi.org/10.3141/2543-19>

¹⁰⁸ Currans, K.M., Abou-Zeid, G., McCahill, C. et al. (2022). Households with constrained off-street parking drive fewer miles. *Transportation*. <https://doi.org/10.1007/s11116-022-10306-8>

¹⁰⁹ Bao, Helen X.H and Ng, Joelle. (2022). Tradable parking permits as a transportation demand management strategy: A behavioural investigation. Retrieved 5 January 2023, from <https://www.sciencedirect.com/science/article/abs/pii/S0264275121003620>

¹¹⁰ Tony Jordan. What Comes Next After Abolishing Parking Mandates – Streetsblog USA. (2023). Retrieved 5 January 2023, from <https://usa.streetsblog.org/2022/11/28/what-comes-next-after-abolishing-parking-mandates/>

¹¹¹ Parking Reform Network. (2023). Retrieved 5 January 2023, from <https://parkingreform.org/resources/mandates-map/>

¹¹² Reduced Minimum Residential Parking Standards. (2023). Retrieved 5 January 2023, from <https://bellevuewa.gov/city-government/departments/development/codes-and-guidelines/code-amendments/recent-code-3>

¹¹³ Ibid.

- Housing and transportation costs are inversely correlated – households who spend more on housing to live closer to downtown areas spend less on transportation. Importantly, the research suggests that the savings on transportation spending generally offsets greater housing costs.
- Increases in transportation spending nationwide are largely due to spending on personal cars. Increased availability of transit and non-driving modes can economically benefit households, particularly low-income households.

The most simplistic explanation of the relationship between housing and transportation is that they are inversely correlated: denser housing means shorter trips and vice versa. Increasing housing costs drive employees away from downtown areas or dense employment centers thereby increasing commute distances.¹¹⁴ This is relevant in Bellevue where housing costs are relatively high and the population density is relatively low when compared to other cities.

Housing and transportation are often connected by researchers in terms of cost. Housing and transportation comprise the two biggest expenditure categories for U.S. households: as of 2021, housing and transportation together accounted for over 50% of household spending.¹¹⁵

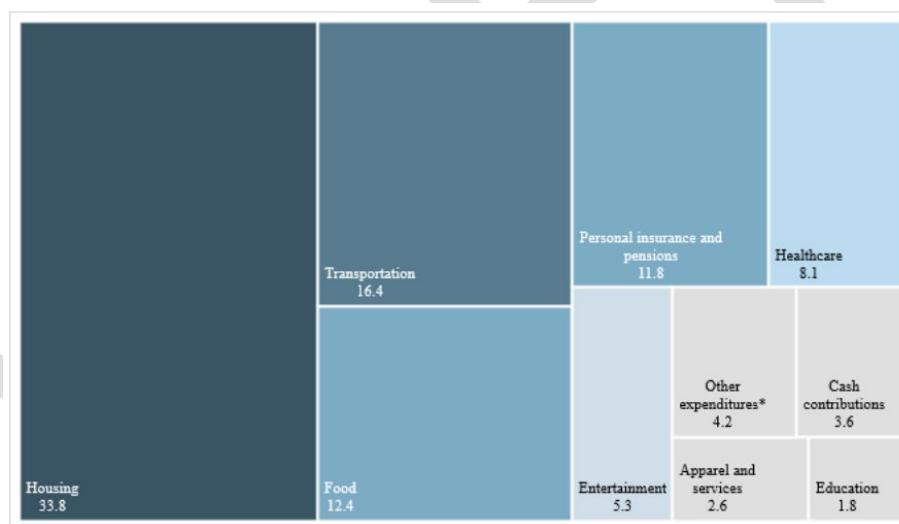


Figure 5: 2021 Consumer Expenditures. Housing and Transportation are the 2 largest categories, together accounting for just over 50% of annual household spending.¹¹⁶

Despite housing accounting for a larger portion of household spending, the literature is clear on one key point: households that move further from job centers to save on housing costs spend more on transportation, often enough to offset the savings on housing costs:

- A 2015 study on housing, transportation, and urban sprawl found that each 10% increase in metropolitan compactness (density) was associated with a 1.1% increase in housing costs and 3.5%

¹¹⁴ Szambelan, Sarah. (2019). Driving Change: Policies to expand on employer-based Mobility on Demand pilot programs and reduce drive-alone commuting in the Bay Area. Retrieved 5 January 2023, from https://www.jstor.org/stable/resrep26065?seq=10#metadata_info_tab_contents

¹¹⁵ Bureau of Labor Statistics. (2022) Consumer Expenditures – 2021. Retrieved 5 January 2023, from <https://www.bls.gov/news.release/pdf/cesan.pdf>

¹¹⁶ Ibid.

decrease in transportation costs relative to income. As density increased, households saved more on transportation than they spent on increased housing – creating an overall net decline in household spending.¹¹⁷

- An analysis of Location Efficiency (LE) across income levels found that households in location-efficient places spent less on transportation, enough to offset higher housing costs. These findings, however, did not extend very low-income households but still support the need for housing and transportation investments.¹¹⁸
- In California, households living in Transit-Oriented Developments (TODs) save an average of 18% annually on transportation expenditures when controlling for household demographics - \$1,232 per year. These savings can be attributed to the households owning fewer vehicles due to living in transit-friendly neighborhoods and having access to rail transit.¹¹⁹
- A 2014 Rutgers study showed four key findings: 1) the promotion of public transit in poorly served areas should be expected to reduce household transportation costs. 2) policies that deter auto use may also lower household transportation costs. 3) Households moving to older parts of cities should reduce transportation costs due to lower car ownership and mode shift to walking, biking, and transit. The study did not, however, indicate that new construction of compact neighborhoods would reduce housing and transportation costs. 4) Finally, 20th century increases in household transportation costs in the U.S. has in part been driven by increased preference for suburban living which increases household dependence on cars, and these car trips are increasingly no longer just commute trips.¹²⁰

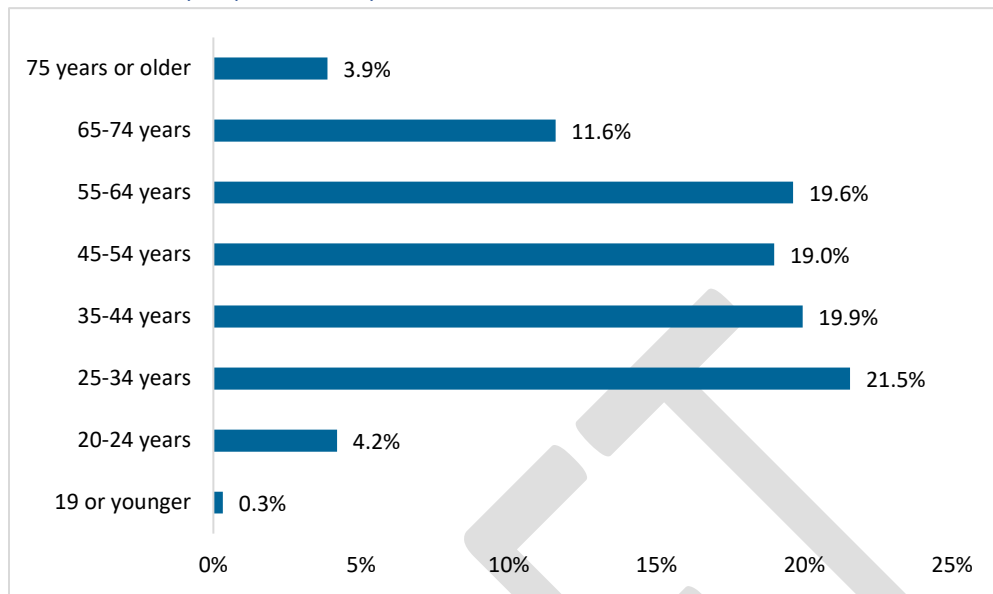
¹¹⁷ Hamidi, S., & Ewing, R. (2015). Is Sprawl Affordable for Americans?: Exploring the Association Between Housing and Transportation Affordability and Urban Sprawl. *Transportation Research Record*, 2500(1), 75–79. <https://doi.org/10.3141/2500-09>

¹¹⁸ Makarewicz, Carrie, Dantzler, Prentiss & Adkins, Arlie (2020) Another Look at Location Affordability: Understanding the Detailed Effects of Income and Urban Form on Housing and Transportation Expenditures, *Housing Policy Debate*. <https://doi.org/10.1080/10511482.2020.1792528>

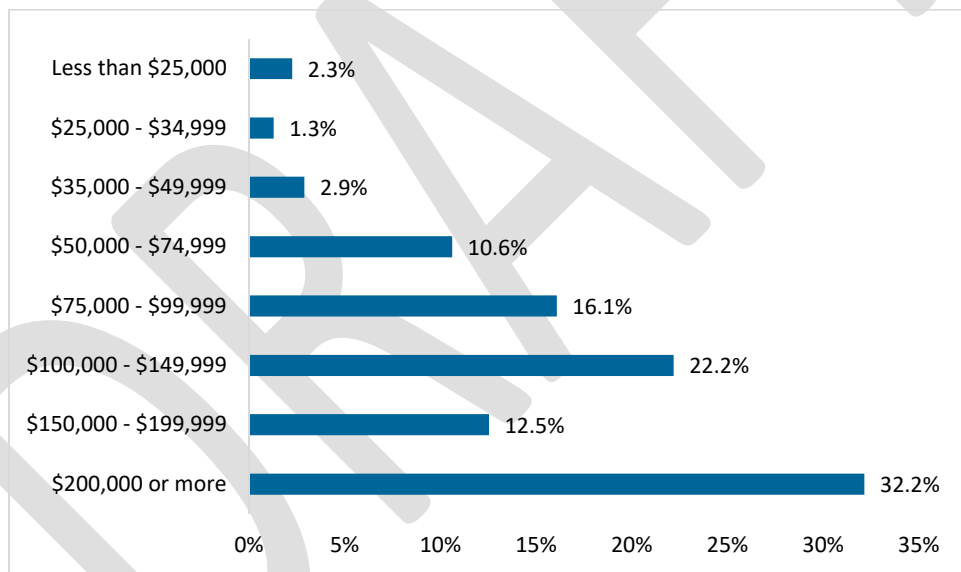
¹¹⁹ Hongwei Dong. (2022) "Can Californian Households Save Money on Transportation Costs by Living in Transit-Oriented Developments (TODs)?" *Mineta Transportation Institute Publications*. <https://doi.org/10.31979/mti.2022.2012>

¹²⁰ Devajyoti, D. (2015). "Relationship Between Households' Housing and Transportation Expenditures Examination from Lifestyle Perspective." *Transportation Research Record: Journal of the Transportation Research Board*, No. 2531, pp. 26-35. <https://journals.sagepub.com/doi/epdf/10.3141/2531-04>

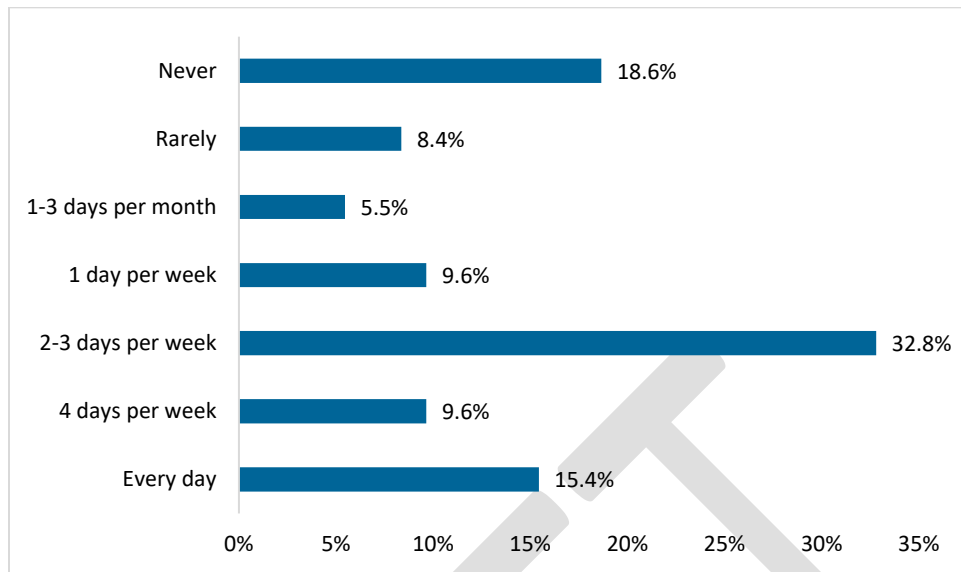
Appendix II: Community Input Survey Full Results



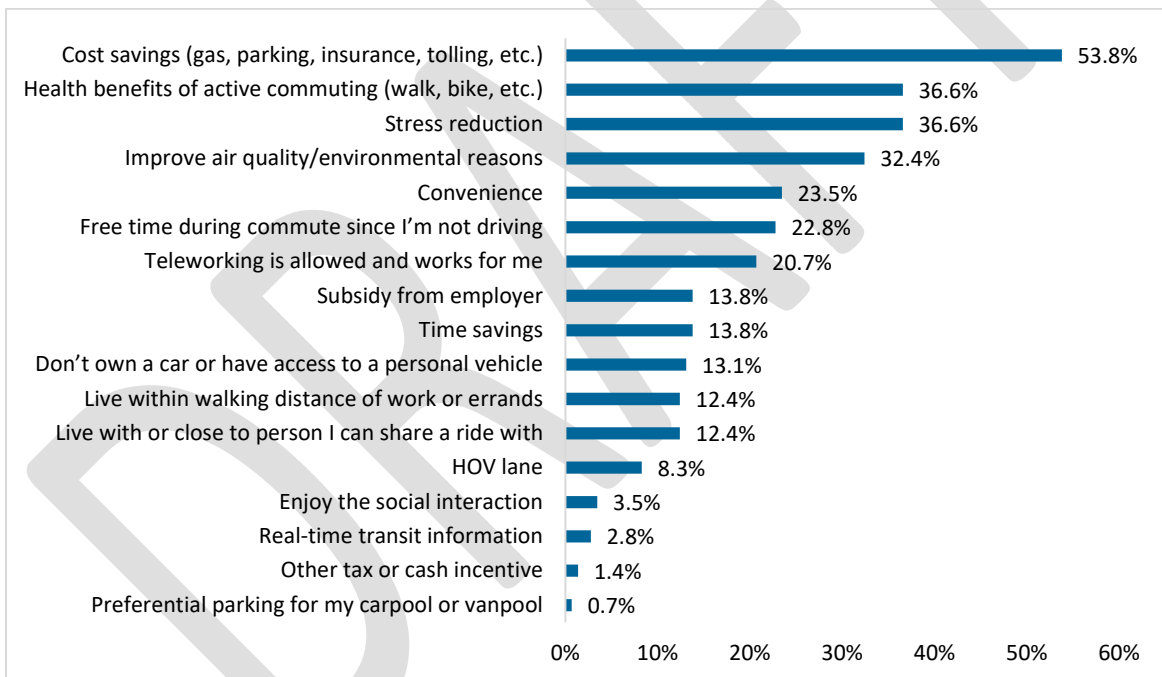
What is your age? n = 311



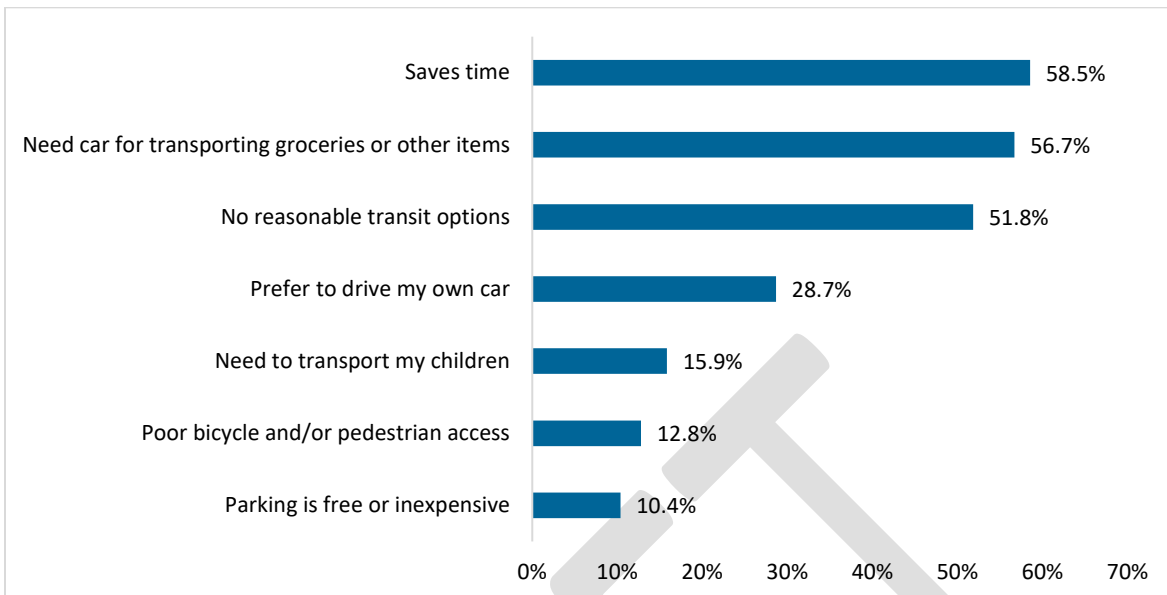
What is your approximate household income? n = 311



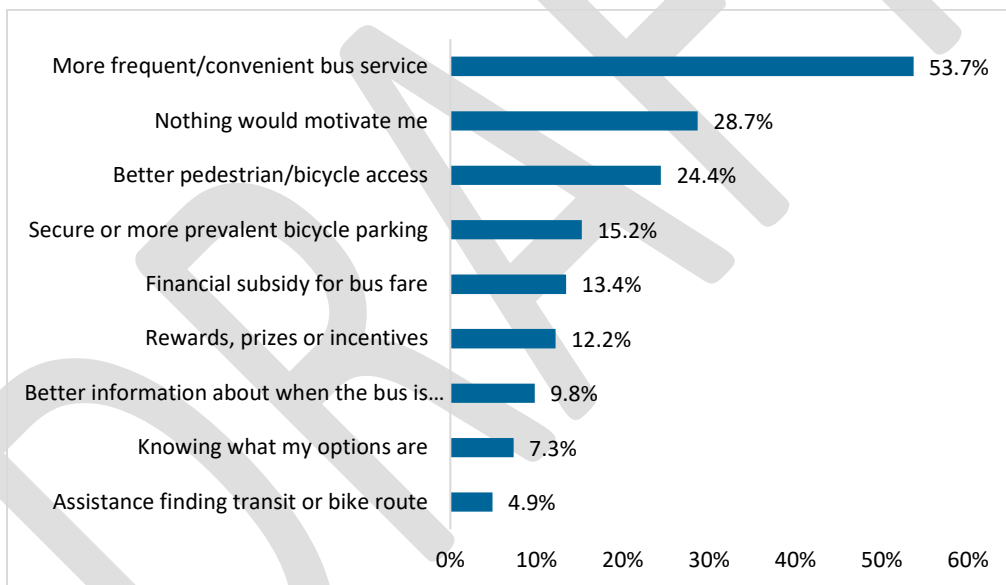
How often do you typically work from home? n = 311



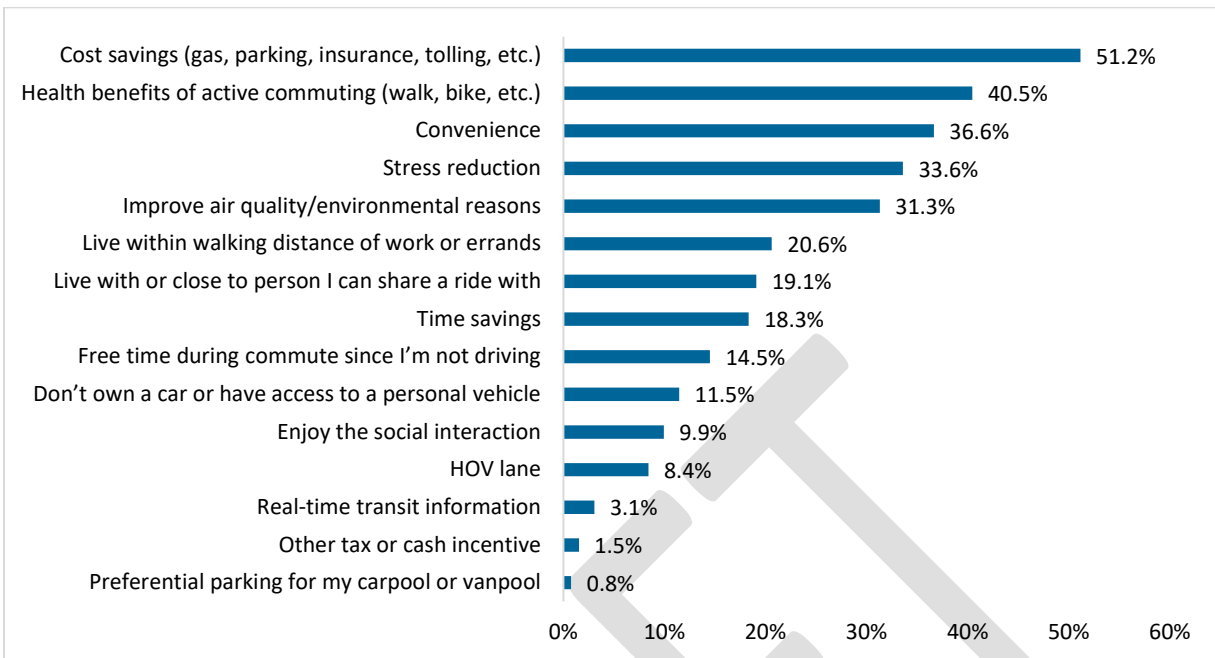
If you most often use a mode other than driving alone for commute trips, what motivates you to do so? (Choose up to five.) n = 145



What are your main reasons for driving alone for day-to-day non-commuting trips? (Choose up to 3). n = 163

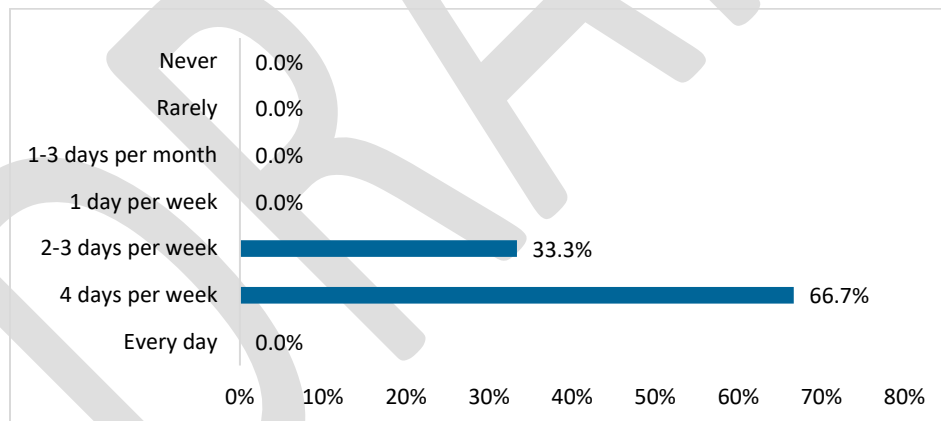


What would motivate you to use an alternative mode to driving alone for non-commuting trips? (Choose up to three.) n = 159

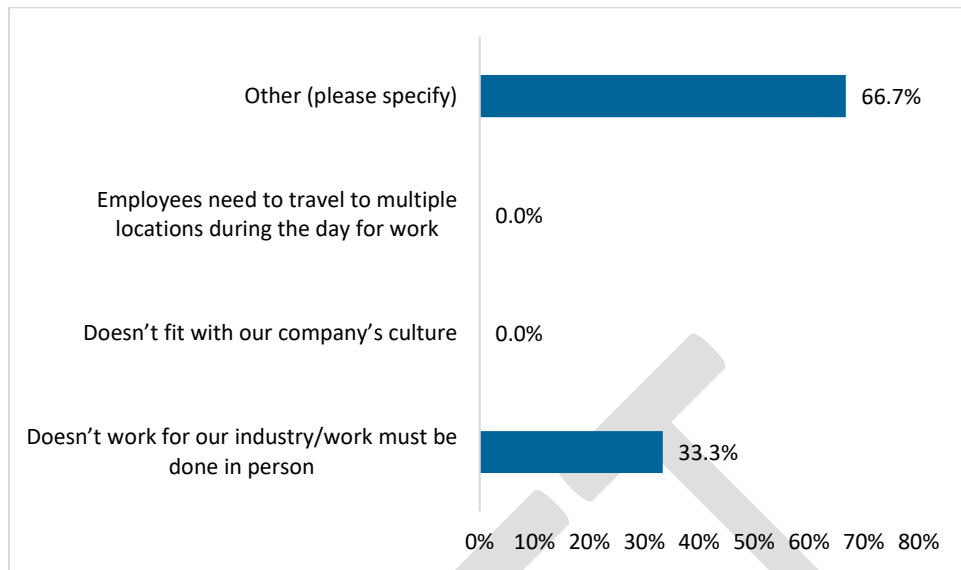


If you most often use a mode other than driving alone for non-commute trips, what motivates you to do so? (Choose up to five.) n = 127

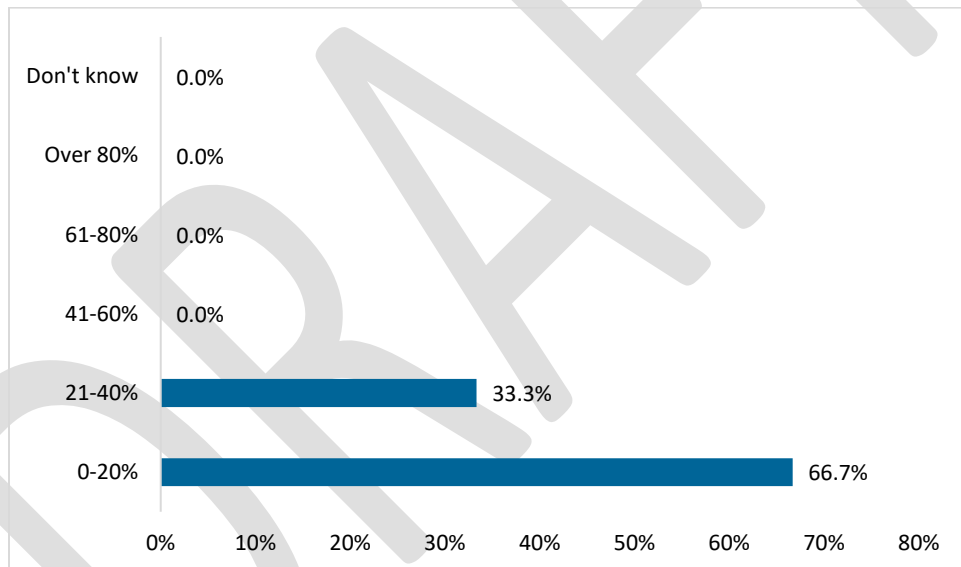
Employers



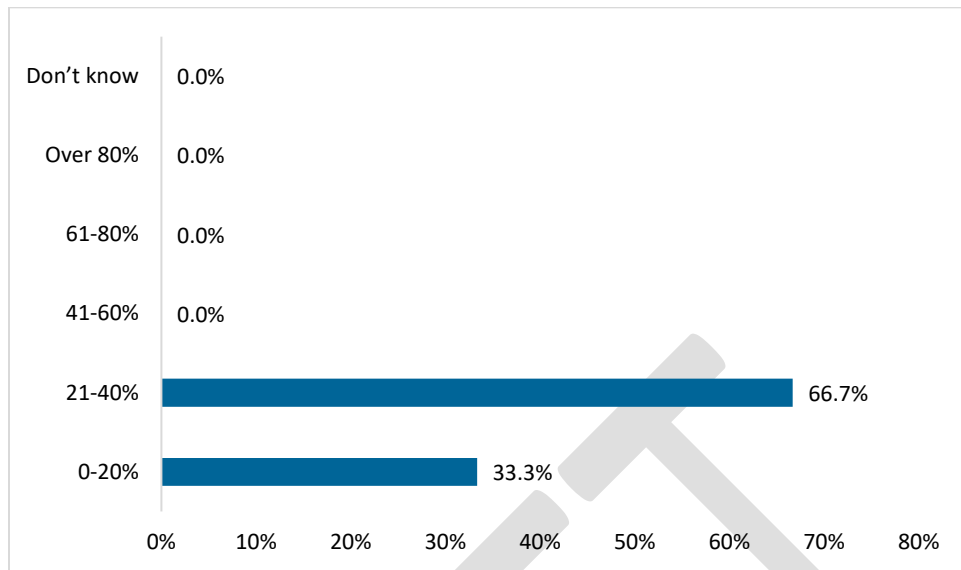
How often do your employees typically telework? n = 3



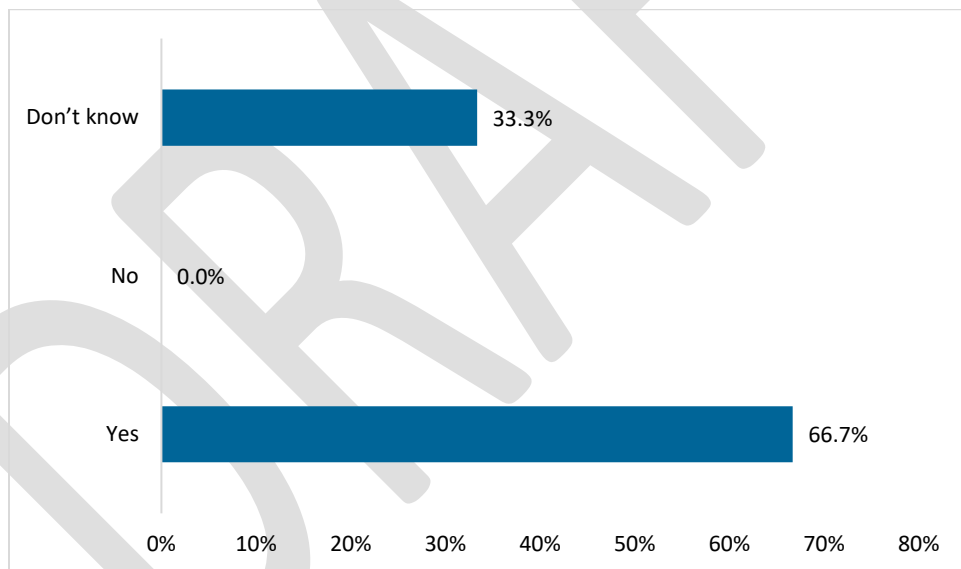
If your employees never telework, what is the reason? n = 3



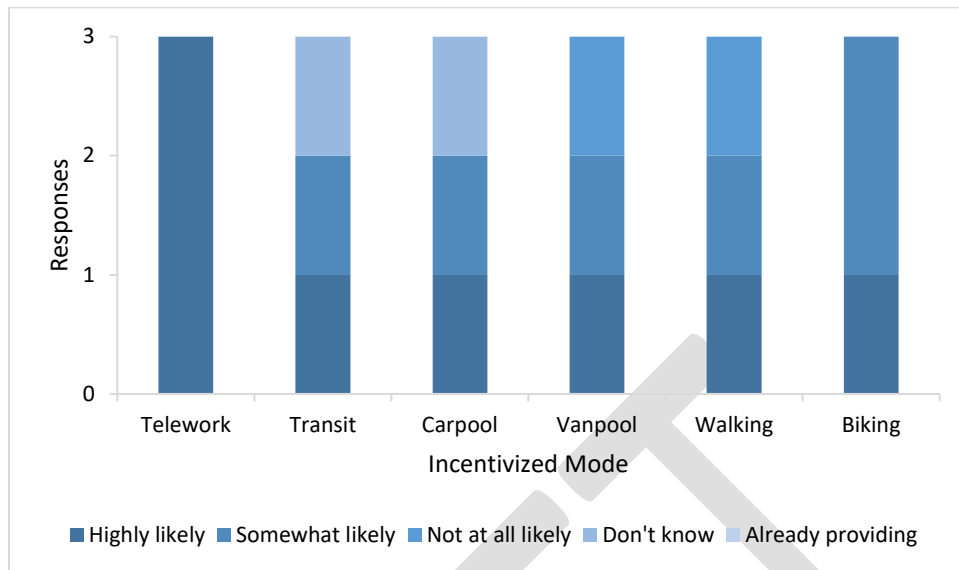
On days when they come into the office, what percentage of your employees do you estimate typically use a commute mode other than driving alone, such as transit, carpool, vanpool, walking, or biking? n = 3



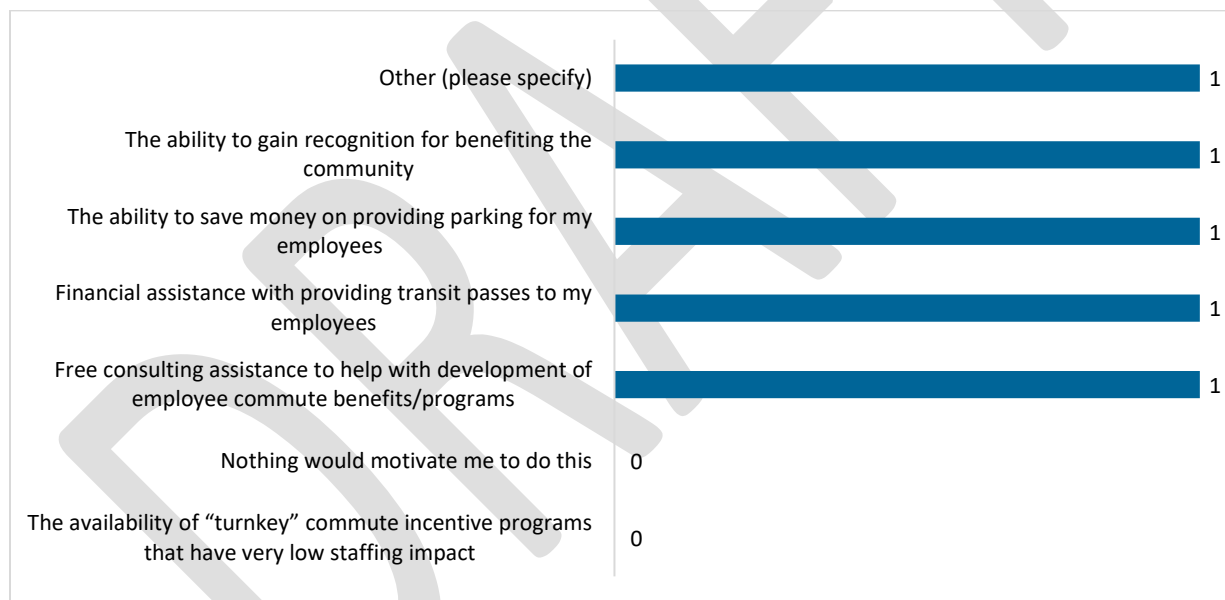
What percentage of your employees do you estimate would be interested in receiving information, assistance or financial incentives to help them try commute modes other than driving alone on days when they come into the office?
n = 3



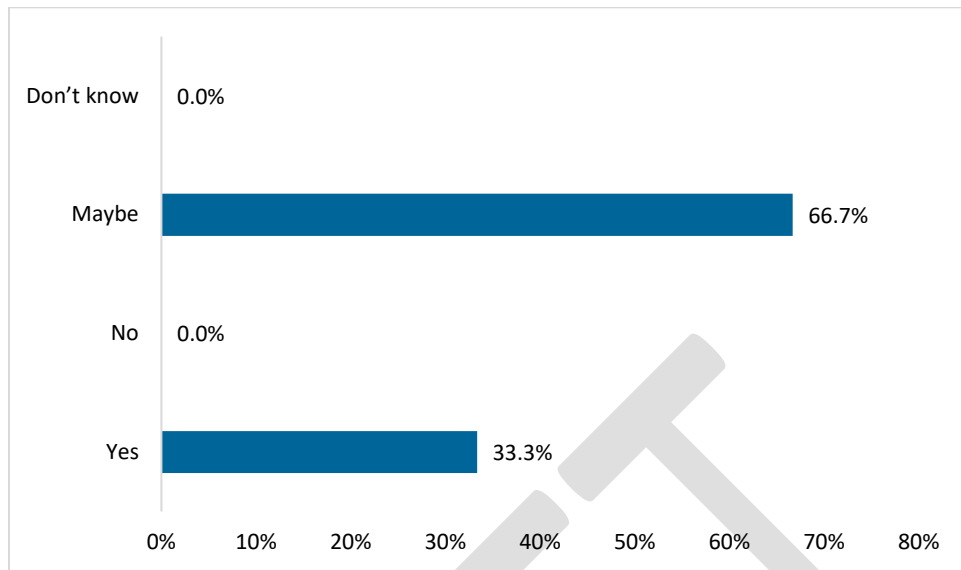
Do you think that increasing the feasibility of commuting by modes other than driving alone on days they come into the office would make your company more attractive to employees? n = 3



In general, how likely are you to provide, or continue to provide, a commute incentive program for in-office days to your employees in the next five years? n = 3



What would motivate you to provide or enhance a commute incentive program for your employees in the next five years, other than telework? (Choose up to three.) n = 3

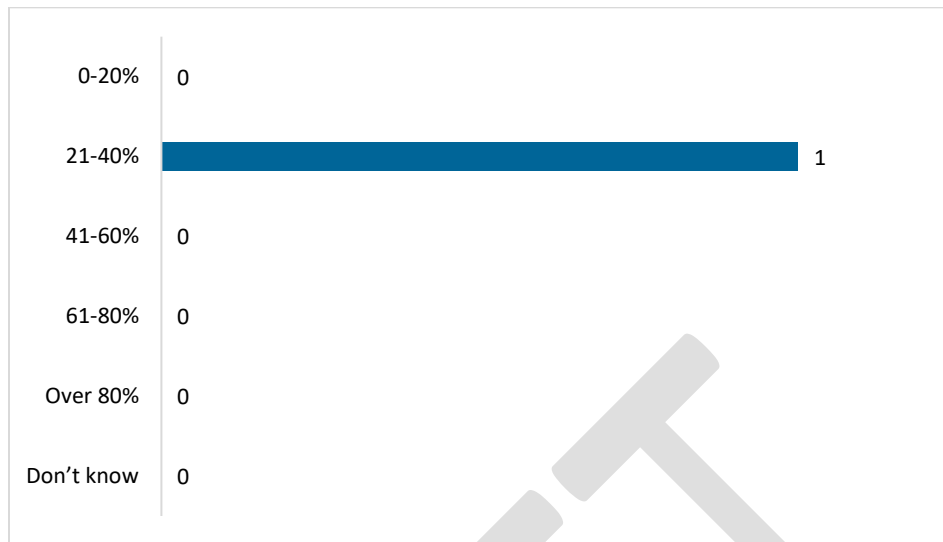


For in-office days, do you think that increasing the feasibility of commuting by modes other than driving alone would increase your attractiveness to employees? n = 3

Property Managers

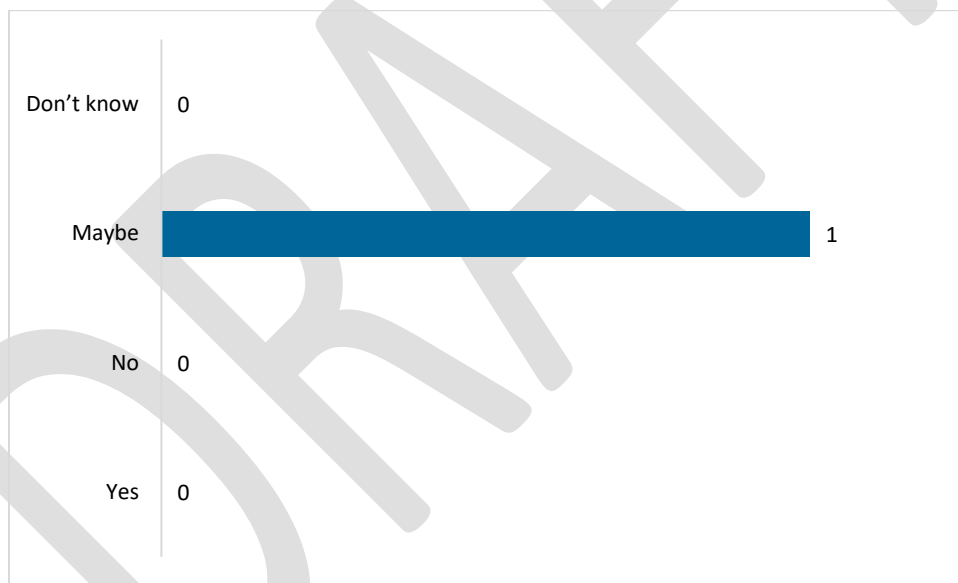


What percentage of your tenants or tenants' employees do you estimate typically use a commute mode other than driving alone on in-office days, such as transit, carpool, vanpool, walking, biking? n = 1

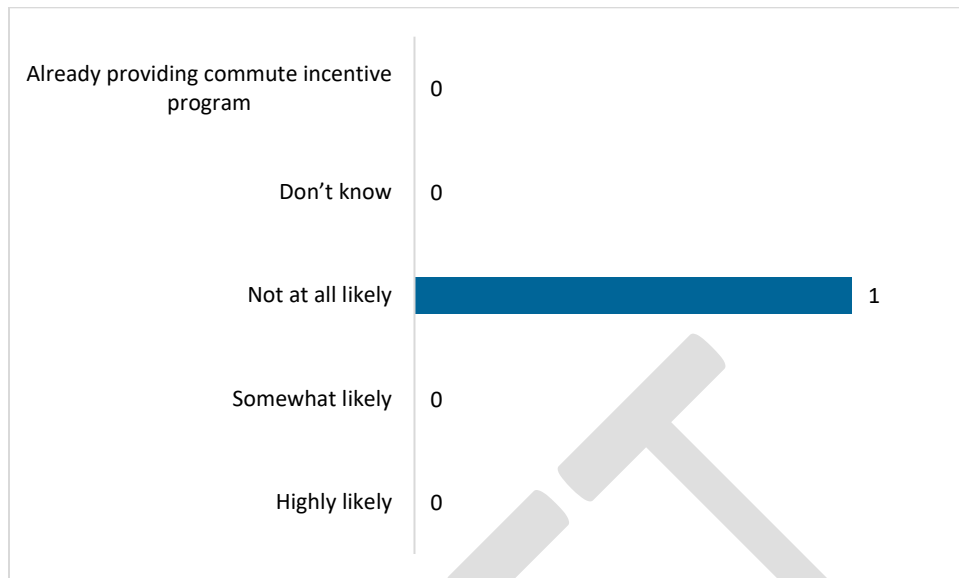


What percentage of your tenants or tenants' employees do you estimate would be interested in receiving information, assistance or financial incentives to help them try commuting by modes other than driving alone on in-office days? n =

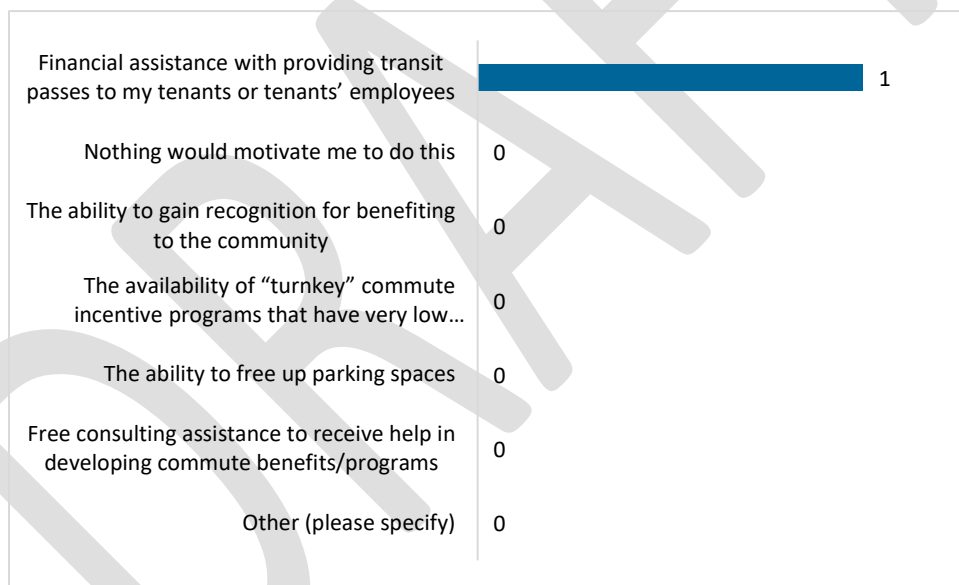
1



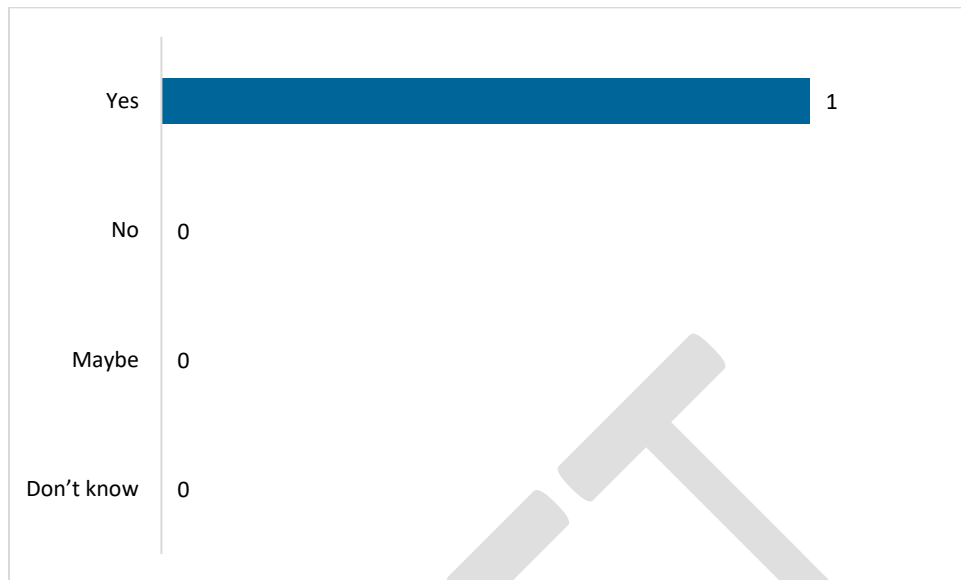
Do you think that increasing the feasibility of commuting or traveling by modes other than driving alone to/from your building on in-office days would make it more attractive to tenants? n = 1



In general, how likely are you to provide an in-office-day commute incentive program to your tenants or building employees in the next five years? n = 1

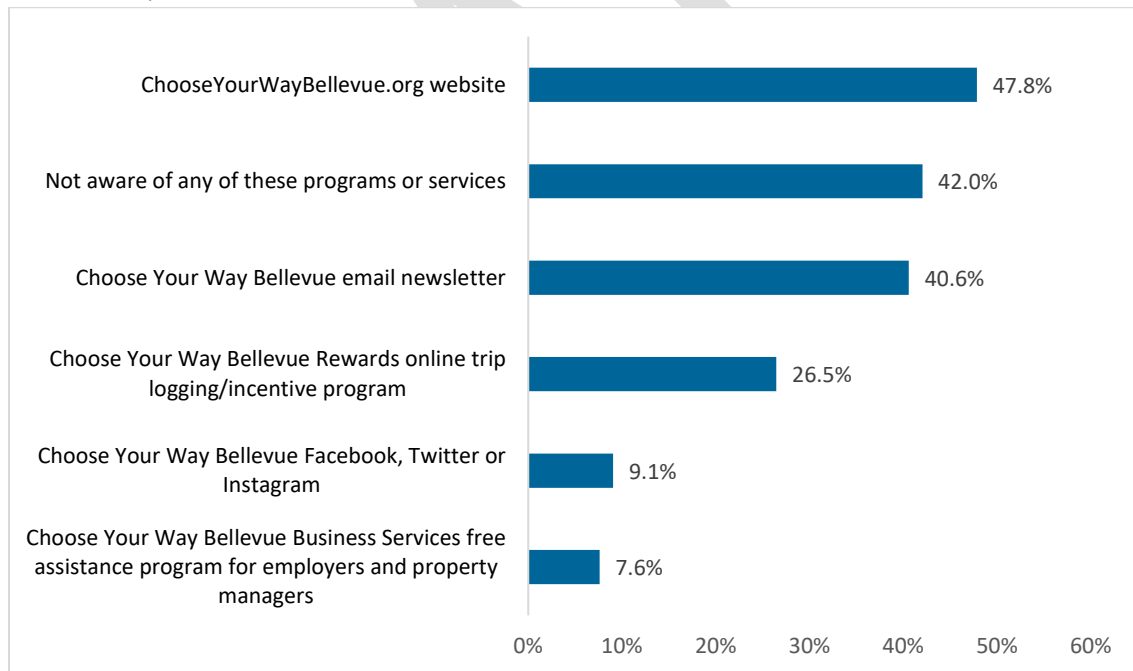


What would motivate you to provide or enhance an in-office-day commute incentive program for your tenants or building employees in the next five years? (Choose up to three.)

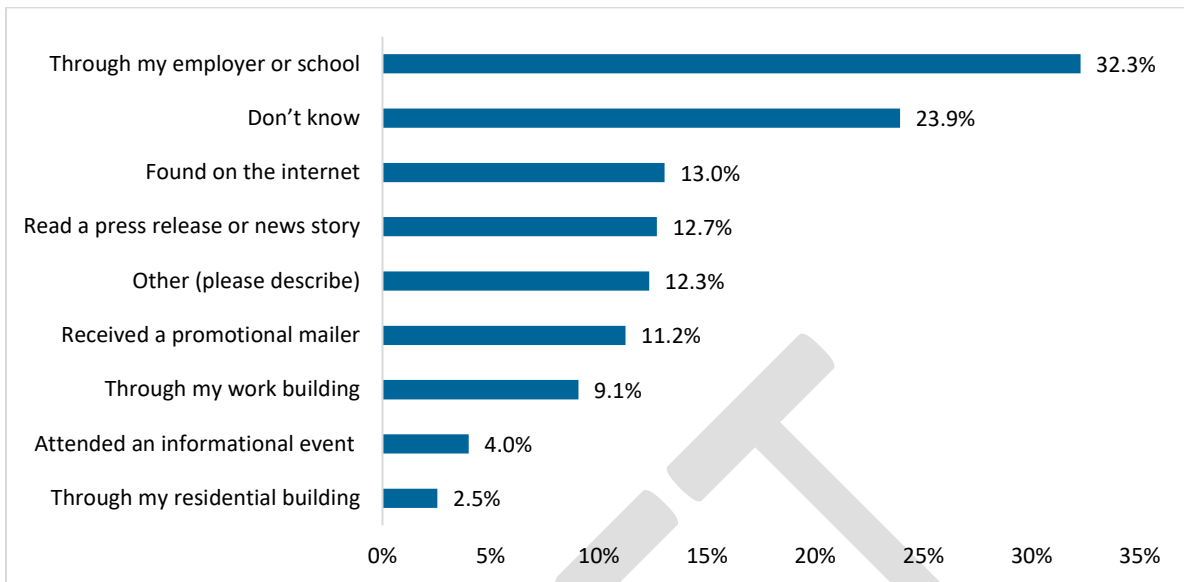


Do you think that increasing the feasibility of modes other than driving alone to/from your building would make it more attractive to tenants? n = 1

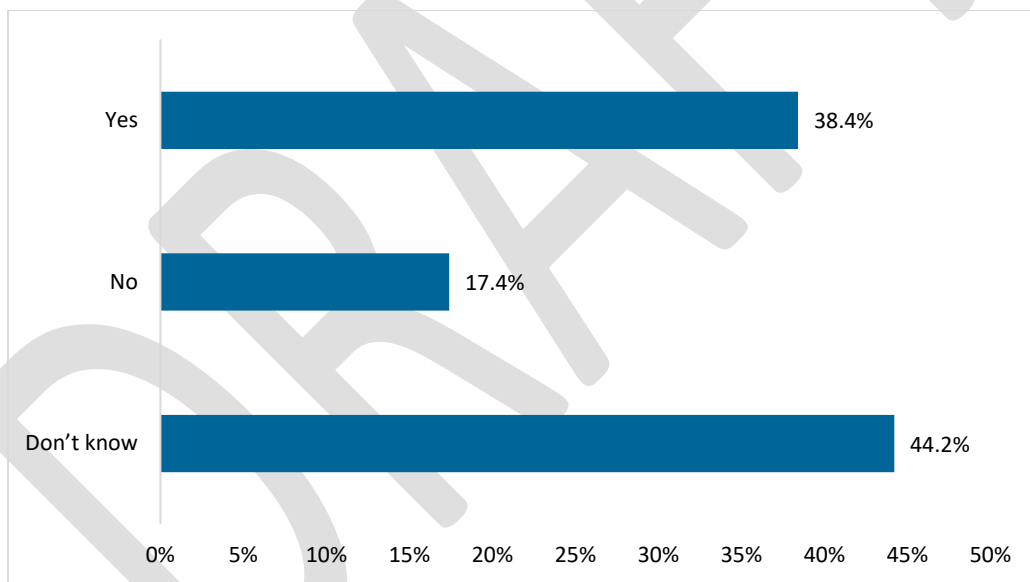
Choose Your Way Bellevue



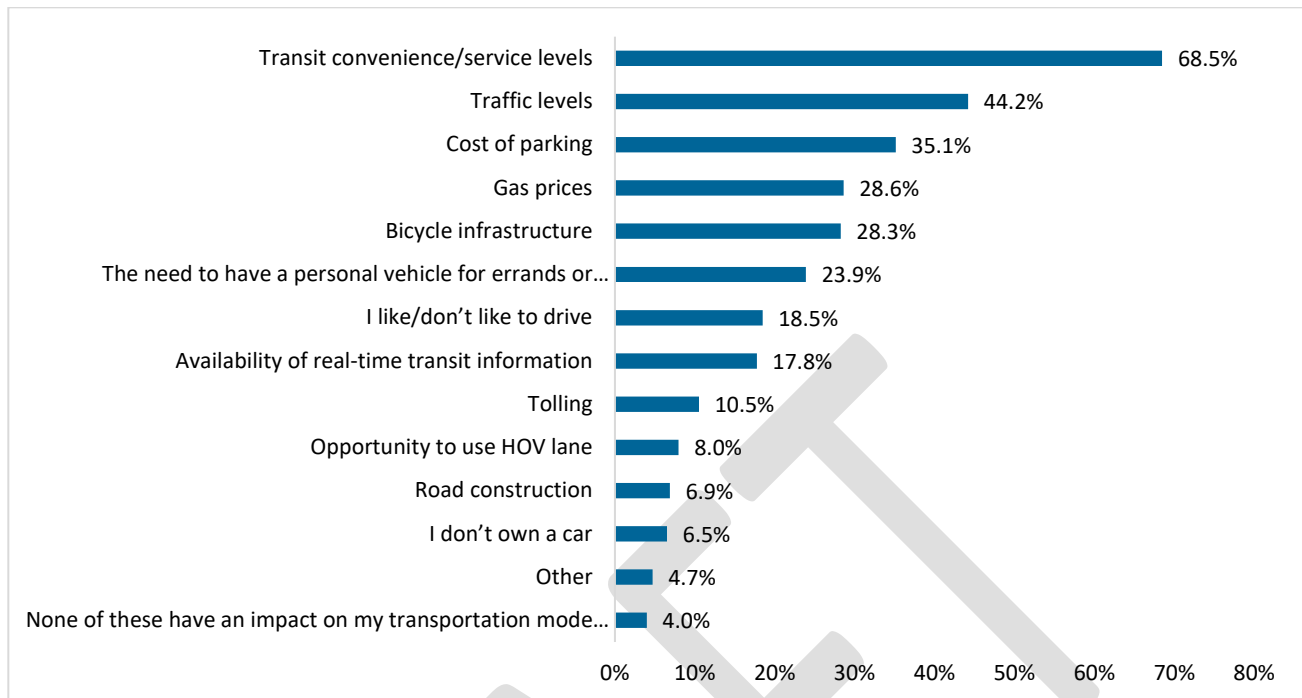
Before taking this survey, were you aware of any of the following Choose your Way Bellevue programs or services? (Choose all that apply.) n = 276



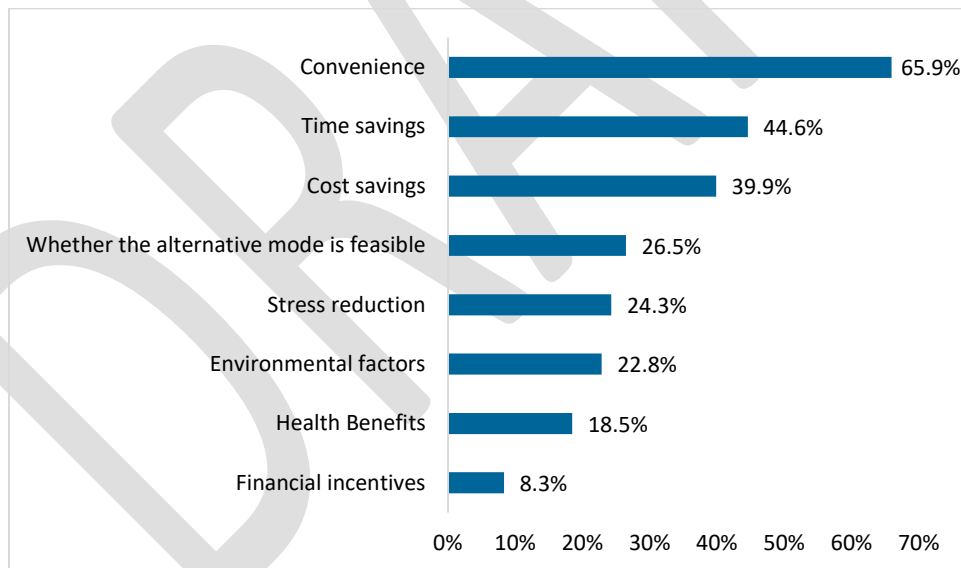
*How did you hear about the Choose Your Way Bellevue programs and services mentioned in the previous question?
(Choose all that apply.) n = 276*



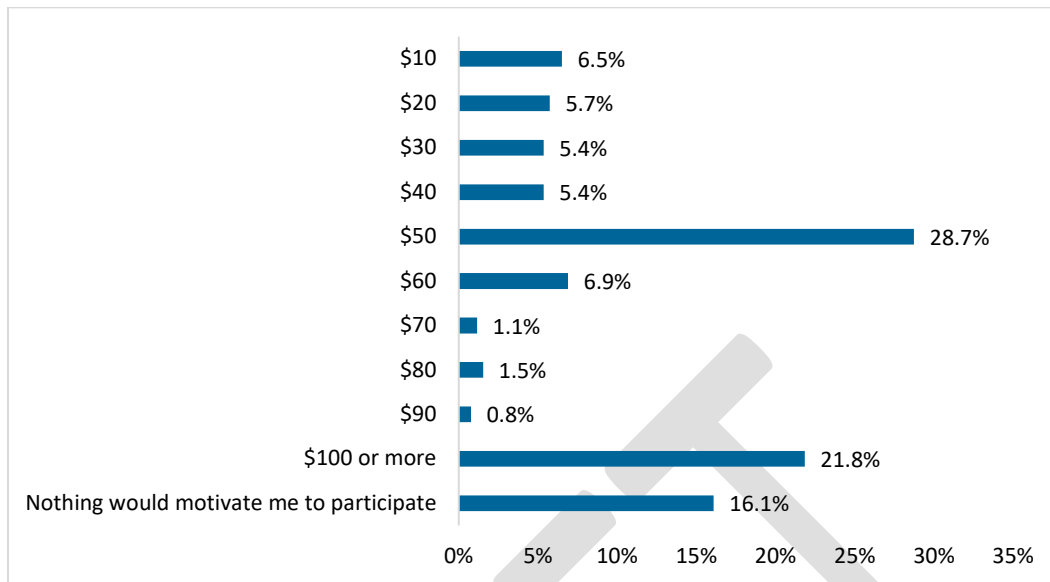
Are these programs or services useful to you? n = 276



Which of the following have the greatest impact on your transportation mode choice, or that of your employees/tenants? (Choose up to five.) n = 276

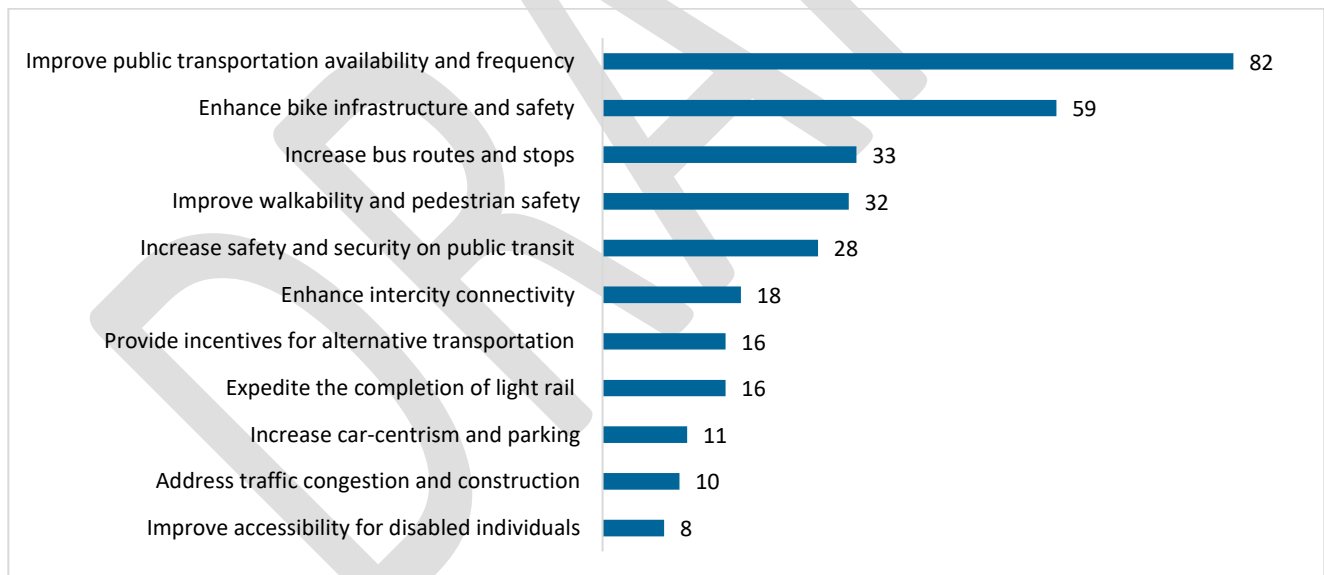


When choosing or considering a non-drive-alone transportation mode (other than telework), which factor(s) are most significant to you, or to your employees/tenants? (Choose up to three.) n = 275

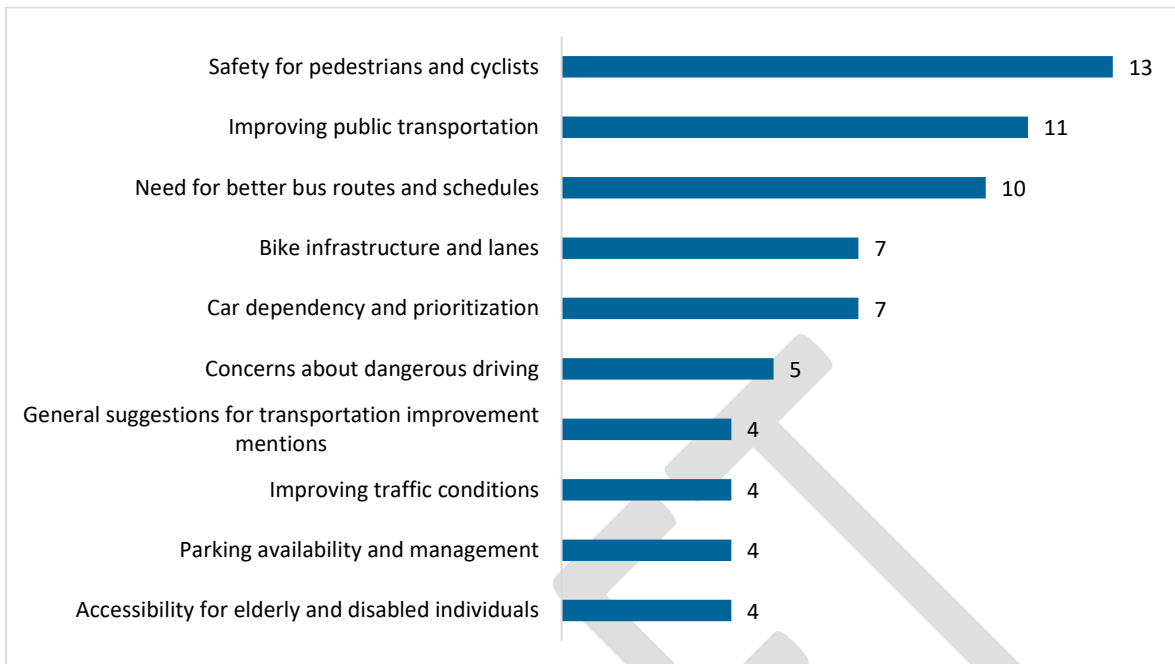


If offered a monthly financial incentive for trying a mode other than driving alone (other than telework), what is the minimum incentive amount that would motivate you, or your employees or tenants, to participate? n = 261

Open-Ended Questions



What do you think the city should do to increase the use of modes other than driving alone? Ten most frequently mentioned themes. n = 276



Do you have any additional comments or feedback? Ten most frequently mentioned themes. n = 114

Commute Trip Reduction Implementation Plan Update: 2015–2019

Jurisdiction: City of Bellevue

September 2015

Goals, targets and other performance measures

See Goal and Target Worksheet (attached).

Strategies

What specific steps and strategies will you implement to meet your goal? Please include (a) policies and regulations, (b) services and facilities, and (c) marketing and incentives.

(a) Policies and Regulations

The City will implement a Commute Trip Reduction (CTR) program based on its CTR ordinance and the state CTR law, through which affected employers are required to conduct certain activities at affected worksites. These include:

- Designating an employee transportation coordinator;
- Developing a trip reduction program and distributing information about it;
- Measuring employee commute trip reduction;
- Modifying programs as needed when not meeting goals/targets; and
- Reporting about their programs.

The City will take actions to support the program, based on the Comprehensive Plan's policy TR-10: "Require large employers to implement a commute trip reduction program for employees, as mandated by the state Commute Trip Reduction law, and evaluate program effectiveness on a regular basis.."

(b) Services and Facilities

City services for affected employers will comprise engaging trip reduction contractors to assist employers in meeting CTR program requirements and conducting marketing, incentive and education programs for their companies. Specific services include the following:

- Train all new employee transportation coordinators (ETCs) and new sites to ensure that they have an understanding of the requirements of the law, implementation strategies and their site's performance to date.
- Track and notify employers of legally required activities and provide technical assistance to all employers for legal compliance.
- Ensure ETCs meet their program information distribution requirements.

- Help ETCs become a major resource to their employees by providing them with up-to-date commute information, tools for communicating with employees, turn-key commuter promotions, and opportunities to attend employer network group meetings (typically held quarterly).
- Conduct special projects as needed to enhance program effectiveness.

Key facility investments that support pedestrian, bicycle and/or transit travel include the following projects in the funded 2015-2021 Capital Investment Program:

- PW-R-146, Northup Way Corridor Improvements (bike lane/sidewalk improvements)
- PW-R-159 & 181, East Link (light rail) Analysis and Development, and Memorandum of Understanding Commitments
- PW-R-162, NE 6th Street Extension – I-405 HOV Interchange to 120th Ave. NE (pre-design analysis)
- PW-R-176, Early Implementation of the Downtown Transportation Plan (including multimodal corridor analyses, pedestrian and bicycle facility improvements and transit passenger access enhancement projects)
- PW-R-177, Eastgate Subarea Plan Implementation - advance two key priorities: transit access to and through the Bellevue College campus and bicycle lanes on Eastgate Way
- PW-R-182, Downtown Transportation Plan/NE 6th Street Light Rail Station Enhanced Access
- PW-R-183 West Lake Sammamish Parkway, (Phase 2) – Extend pedestrian and bicycle facility enhancements on this important north-south corridor
- PW-R-184 Bellevue Way SE HOV Lane – 112th Ave SE ‘Y’ to I-90 (design)
- PW-R-185, Newport Way improvements, Somerset Blvd. to 150th Ave. SE, sidewalk and bicycle facility improvements
- Programmatic projects throughout the city: PW-W/B-56, Pedestrian & Bicycle Access Improvements; PW-W/B-76, Neighborhood Sidewalks; PW-W/B-49, Pedestrian Facility Compliance (ADA enhancements)
- PW-W/B-78 Mountains to Sound Greenway Trail (complete design of priority segments)
- PW-W/B-81, 108th/112th Aves NE – North City Limit to NE 12th St (ped/bike improvements, pre-design/analysis only)
- PW-W/B-82, SE 16th Street – 148th to 156th Aves SE (bike lanes and sidewalks, pre-design only)

In addition to these specific projects, the Pedestrian and Bicycle Implementation Initiative, launched by the City in spring 2015, provides a set of action-oriented efforts to advance additional non-motorized projects and programs identified by the 2009 Pedestrian and Bicycle Transportation Plan. The initiative includes principles to provide direction, as well as task elements supported by targeted public outreach and data-driven technical research and analysis, to advance the 2009 Plan.

(c) Marketing and Incentives

In order to support employer CTR efforts, the City will engage trip reduction contractors to assist affected employers and/or conduct the following marketing and incentive activities:

- Assist ETCs with marketing of commute programs
- Assist ETCs with marketing of turnkey and other programs such as Wheel Options and Bike to Work Month/Day, promotions of new transit service, construction avoidance, etc.
- Assist employers with employee events such as commuter fairs.
- Assist employers with creation of company commute option brochures.
- Post employer case studies on the City’s travel options website, www.ChooseYourWayBellevue.org.

- Encourage and assist ETCs in use of the RideshareOnline tool to develop company-wide networks and incentives through the system. Help ETCs promote employee use of the ride matching and trip logging functions, as well as participation through the system in active campaigns such as On The Move Bellevue (www.OnTheMoveBellevue.org) for which their employees are eligible.
- Encourage participation of CTR employers (especially those who have not been meeting performance targets) in new/enhanced TDM activities the City will be conducting with new CMAQ grant funds passed through from WSDOT. These may include:
 - rebates provided to employers for transit passes or other non-drive-alone transportation benefits purchased for their employees;
 - a turnkey RideshareOnline program through which staff run the program on behalf of employers;
 - employer mini-grants to fund employer campaigns and/or incentives to encourage participation; and
 - a new parking cash-out program, in which employees are subsidized for trying a new non-drive-alone mode for a period of time without giving up their parking space, and employers are encouraged to transfer the subsidy used for parking to a non-drive-alone mode for employees who are interested. These activities are anticipated to boost performance for worksites for which traditional CTR has not been wholly successful.
- Actively promote alternatives to drive-alone commuting at worksites targeted by location, corridor, industry or lack of progress toward goal.
- Promote travel options to employers/employees through the City's existing electronic travel options newsletters for employers and employees; social media platforms; and the www.ChooseYourWayBellevue.org website and www.OnTheMoveBellevue.org web page.

In addition, the City anticipates conducting research such as enhanced survey data analysis and/or focus groups with key representatives of CTR-affected employers to help identify barriers to (and catalysts for) performance success in increasing non-drive-alone travel and reducing vehicle miles traveled. This work may be funded outside of the state CTR grant.

Comprehensive planning & community goals

[Governor's Executive Order 14-04 Washington Carbon Reduction and Clean Energy Action](#) directs state agencies to assist local governments to update their comprehensive plans to produce travel and land-use patterns that maximize efficiency in movement of goods and people, and reduce greenhouse gas emissions.

How does trip reduction support the goals of your community and comprehensive plan, and vice versa? How will you further integrate trip reduction through the updating of your comprehensive plan (e.g., parking, land use)?

There are several recent and upcoming Comprehensive Plan and City Code updates that have been or will be coordinated with the City's CTR and GTEC plans.

(a) Downtown Planning Efforts:

- [Downtown Transportation Plan Update](#): This plan update launched in 2011 and has focused on updating the transportation portion of the [Downtown Subarea Plan](#) that was adopted in 2004. The plan update considered and incorporated forecasted growth in population and employment through 2030, and developed a multimodal strategy to accommodate both motorized and non-motorized transportation demand. The final [October 2013 Transportation Commission Recommendations](#) support commute trip reduction efforts with planned improvements in transit service as well as improvements for other non-drive-alone modes. Downtown Transportation Plan policies and projects will be integrated with the [Downtown Livability Initiative](#) (see below), to result in a full package of Comprehensive Plan Downtown Subarea Plan and land use code amendments for Council consideration in 2016.
- [Downtown Livability Initiative](#): This is a targeted review launched in 2012 of specific regulations that guide downtown development and land use activity. Objectives are to: better achieve the vision for downtown as a vibrant, mixed-use center; enhance the pedestrian environment; improve the area as a residential setting; enhance the identity and character of downtown neighborhoods; and incorporate elements from the Downtown Transportation Plan Update and the Sound Transit East Link light rail design work. One regulation area that was analyzed was the downtown parking code. In support of this analysis, City TDM staff produced the [2013 Downtown Commuter Parking Assessment Report](#), in which a consultant was engaged to develop recommendations on "right-sizing" the office parking supply to align with the City's downtown long-range vision and goals, including mode share goals identified in the Comprehensive Plan and existing Downtown Subarea Plan. Within its [2014 recommendations](#), the Downtown Livability Citizen Advisory Committee recommended follow-up work to "Conduct a comprehensive parking study to include items such as on-street parking, potential for public garages, and opportunities for coordinated management of the parking supply such as valet or shared use, etc." As of 2015, the City Council is in the process of reviewing the CAC's recommendations prior to providing direction on the next steps to implement the CAC's work, with code changes and design guidelines anticipated to be decided on by the Council in 2016.

These efforts continue to promote a dense, multimodal, walkable environment, making downtown a desirable place for employers to locate. In turn, employer CTR programs help increase transit ridership and use of non-drive-alone modes, making those modes more sustainable.

- (b) Citywide [Transit Master Plan](#): The City Council adopted the Bellevue Transit Master Plan in July 2014. The plan replaced the 2003 Transit Plan with a comprehensive 20-year look ahead to the type of transit system that will be required to meet Bellevue's transit needs through 2030. Although the City does not operate its own transit system, the Transit Master Plan can positively influence regional transit agencies so as to provide routes and levels of service that best address mobility needs in Bellevue. The plan envisions a public transportation system that serves a variety of populations and trip purposes and that is the mode of choice for an increasing number of people who live, work, shop and play in Bellevue. The enhancement of transit and the City's CTR program are mutually supportive of each other; as the CTR program helps to build the market for transit use, the plan will make this service more viable and assist employers with their trip reduction efforts.

(c) Citywide Comprehensive Plan Update: [Bellevue's Comprehensive Plan](#) captures the community's vision for the future and provides direction for City regulations and investments. The City Council adopted an update of the Comprehensive Plan in August 2015. TDM staff worked with Comprehensive Planning staff on several components of the updated plan, including minor text revisions of the [Transportation](#) chapter's TDM component and the updating of comprehensive mode share targets to complement other City goals and targets, including CTR. Updated 2035 mode share targets were developed for downtown (all workers) and citywide (all workers and residents), replacing the targets in the previous Comprehensive Plan that only captured workers in certain activity areas of the city. Progress toward the new targets is anticipated to be measured using U.S. Census American Community Survey data. In support of the targets, Policy TR-8 says to "Establish targets to increase the proportion of commute trips by modes other than driving alone (see Table TR-1). Periodically evaluate progress toward these targets and adjust programs and activities as needed to achieve them." Also included in the Comprehensive Plan is continued support for the CTR program in Policy TR-10, "Require large employers to implement a commute trip reduction program for employees, as mandated by the state Commute Trip Reduction law, and evaluate program effectiveness on a regular basis."

Land use and transportation conditions

How do existing and future anticipated land-use and transportation conditions affect CTR worksites?

Bellevue's Comprehensive Plan's [Land Use](#) chapter assigns growth primarily to dense activity centers, especially downtown. The City's land use policies are set up to accommodate this growth. Nearly 80% of Bellevue's 2012 jobs are located in the following three employment centers: Downtown, Bel-Red/SR 520; and Eastgate/Factoria.

Bellevue is the state's fifth largest city where about 134,000 people live and 140,000 people work. By 2035, Bellevue is anticipated to add 15,800 more housing units and 51,800 more jobs. Downtown Bellevue is a Puget Sound Regional Council-designated Regional Growth Center expected to accommodate about half of the city's housing and job growth. Most of the housing and job growth outside of downtown is expected to occur in other mixed commercial and residential centers, including Bel-Red, Eastgate and Wilburton. A small amount of growth is anticipated in other areas spread throughout the city through natural redevelopment and infill that is allowed under current zoning.

A principle highlighted in the Land Use chapter is that integrating housing and employment with a range of transportation options makes it easier to get around. Having shopping and recreation nearby encourages walking and biking, reducing congestion on the streets and supporting vibrant and healthy communities. Higher densities and a mix of uses encourage walking and transit use. Understanding future land uses also helps the city design and build transportation facilities that continue to work as the city grows.

In addition to the goals indicated above, the following [Transportation](#) chapter "Transportation and Land Use" policies further support commute trip reduction:

- Policy TR-1, “Integrate land use and transportation decisions to ensure that the transportation system supports the Comprehensive Plan land use vision”;
- Policy TR-3, “Direct transportation investments and service to support the Urban Centers growth strategies of the Countywide Planning Policies”; and
- Policy TR-8, “Incorporate transit-supportive and pedestrian-friendly design features in new development.”

These transportation and land use policies have shaped current conditions, and will continue to shape future conditions, to be more conducive for commute trip reduction, which in turn helps to maintain overall mobility in the city.

Financial plan

What are the anticipated funding sources and amounts for local trip reduction, including grants and local funding?

Bellevue’s primary source of CTR program funding will be the state CTR grant, which historically averages approximately \$205,000 per biennium. As per historic practice, Bellevue anticipates using these state funds on the traditional program elements directed by state CTR law and local CTR ordinance. In addition, the City anticipates continuing its historic practice of contributing approximately \$3,000 to 5,000 per biennium in additional local funding to be focused on special projects and enhanced activities beyond the traditional CTR program. These added resources will continue to be used for program enhancements such as additional reporting from the City’s CTR services contractor on worksite program elements; ETC conference registration fees; and specialized trip reduction campaigns, such as for Earth Day or Bike to Work Month/Day. For the 2015-2017 biennium, the special projects will likely be funded by the 2012 and/or 2014 CMAQ GTEC Expansion and Regional TDM grants passed through to the City by WSDOT. Research (such as focus groups) may be funded by a separate source other than the state CTR grant, in order to enhance and make the most of the City’s CTR program without taking away funding for ongoing program implementation.

GTEC report (if your jurisdiction has a designated GTEC)

Are you continuing to implement?

Optional: Describe the (a) strategies, (b) land use and transportation conditions, (c) population and employment demographics, and (d) financial plan, and how they differ from those in the CTR plan.

Introduction:

The City will continue to implement its Downtown Bellevue GTEC program. In Bellevue, GTEC activities have been extended citywide since 2014, and this is anticipated to continue through this plan period. However, downtown will continue to be an emphasis area for the City’s TDM program. Concentration of outreach and uptake of services, assistance, and program participation is anticipated to be greater in downtown than in other parts of the city, due to its dense land use and transit service that make non-drive-alone modes more viable. In addition, the Comprehensive Plan update adopted by the City Council in August 2015 includes a 2035 non-drive-alone commute mode share target of

65% for downtown, so the City will be tracking progress toward that target over time using U.S. Census American Community Survey data.

(a) Strategies:

Strategies are anticipated to be similar to, and build on, previous GTEC activities, are directed at multiple TDM audiences beyond CTR-affected employers. These audiences include employers (generally those with five or more employees), property managers, workers and residents. Activities are suited to these broader audiences and are anticipated include the following:

- *Employer/property manager activities.* Through the City's existing "Commute Advantage" brand for employers and property managers (information at <http://www.chooseyourwaybellevue.org/employers-advantage/>), activities may include:
 - Consulting services for commute benefit programs;
 - Assistance setting up rideshare/trip logging/incentive campaigns,
 - Expert consultant assistance with telework and parking management programs;
 - Mini-grants for RideshareOnline campaigns or minor capital projects such as bike parking/amenities;
 - Commute benefit rebates, especially for employer ORCA Passport programs;
 - Facilitation of guaranteed ride home programs; and/or
 - Parking cash-out, in which employers who have the ability to change the number of parking spaces they lease each month can sign up for a program in which the City covers the cost of employees trying an alternate commute mode for a term-limited time without yet giving up their parking space, after which such employees can elect to change to an alternate mode paid for by their employers.

Special outreach efforts are anticipated to be directed toward employers who are new to Downtown Bellevue.

- *Individual worker and resident activities.* These may include:
 - Continued implementation of On The Move Bellevue trip logging and incentive program, which includes a "Perks" program for local business discounts (information at www.OnTheMoveBellevue.org);
 - Continued provision of one-stop information about using non-drive-alone modes provided on www.ChooseYourWayBellevue.org;
 - Bicycle-specific promotion and information including bike maps and maps showing available bike racks and amenities, as well as promotion of Bike to Work Month and Day and, potentially, enhanced bicycle wayfinding;
 - Facilitation of parking needs to support non-drive-alone transportation, potentially to include carpool and vanpool parking facilitation with building managers; support for provision of additional carpool/vanpool parking; and/or park-and-ride lot information and/or maps.
 - Enhanced planning, implementation, promotion and/or information provision about real-time information, mobile apps, and other transportation-related technologies.

Special outreach efforts are anticipated to be directed toward new workers or residents to Downtown Bellevue. In addition, the City will conduct research, planning/administration and measurement efforts related to these strategies.

(b) Land use and transportation conditions:

As of 2015, there are 9,078,125 square feet of office space and 3,817,883 square feet of retail space in downtown. Traffic volumes along certain key arterials have remained relatively steady for the last

20 years, and only one intersection in downtown exceeds the City's adopted downtown level of service standard. Transit service is robust: in spring 2013 the Bellevue Transit Center served 17,772 daily boardings and alightings ("ons and offs"), or about 33 percent of citywide ons/offs. The non-drive-alone commute mode share for downtown workers is 29% (source: Census Transportation Planning Package, based on data from the 2006-2010 American Community Survey 5-year estimates for downtown census tracts 238.03 and 238.04).

(c) Population and employment demographics:

Downtown Bellevue is the densest urban center and functions as the commercial hub of the Eastside. From 2012 to 2035, downtown employment is estimated to grow from 44,800 to 76,800, a net addition of 32,000 jobs, or 71% over eighteen years. In 2012 there were 10,500 residents in downtown, and this figure is anticipated to grow to 20,500 by 2035, an increase of 95%. The significant level of anticipated growth calls for trip reduction activities directed not only at CTR worksites but also to small employers, property managers, workers, and residents, in order to retain overall mobility.

(d) Financial plan:

Activities in the Downtown Bellevue GTEC are anticipated to be funded primarily through the 2012 and/or 2014 CMAQ GTEC Expansion and Regional TDM grants passed through to the City by WSDOT. Local funds and staff resources are anticipated to supplement the grant funds, primarily focused on ongoing, fundamental TDM activities such as the Choose Your Way Bellevue website and monitoring and assisting large buildings that have Transportation Management Program requirements. In addition, CTR funds directed to assist downtown employers will contribute to downtown trip reduction efforts.

What specific policy, service changes and land-use steps will be accomplished during this period for the GTEC area?

As part of the [Downtown Transportation Plan Update](#), the City recently conducted travel demand forecasting based on expected demographic changes (see item (c) above). (These demographic changes are tied to anticipated land use changes that are consistent with the City's policy to accommodate significant growth within downtown.) This forecasting indicated that programmed roadway capacity projects in and around downtown are expected to provide an adequate vehicular level of service in 2030, while significant improvements are needed in pedestrian and bicycle facilities and transit service and facilities. Thus the plan update is not likely to include major roadway capacity projects but rather to embrace enhancements for modes other than driving alone. Enhancing these modes will provide synergy with GTEC trip reduction efforts. Funding in the City's adopted 2015-2021 Capital Investment Program will provide early implementation of Downtown Transportation Plan projects during this period (CIP PW-R-176). Crosswalk enhancements, new mid-block crossings, bicycle facilities, and transit passenger access amenities are planned, as well as improvement of access to new development and to the downtown light rail station planned to be adjacent to City Hall and the existing Bellevue Transit Center.

Land use changes will be guided by the City's [Downtown Livability Initiative](#). The Citizens' Advisory Committee for this project developed [recommendations](#) that will be considered by Council in 2016. Many of the recommendations relate to Design Guidelines changes to influence development to

create a functional, safe, aesthetically pleasing and vibrant downtown. The recommendations also include allowing increased building height and density in exchange for provision of exceptional amenities.

Regional transportation planning organization CTR plan review

☐ Recommended

☐ Not recommended

RTPO comments:

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DRAFT

Commute Trip Reduction Goals and Targets Worksheet: 2015–2019

September 2015

Jurisdiction: City of Bellevue

Goals, targets and other performance measures

State goals for the 2019/2020 survey period include an increase of non drive-alone travel (NDAT), and reductions of VMT and GHG. What are your percent targets for the 2019/2020 survey period?

	<u>2007-2008</u>	<u>Percent Change</u>	<u>2019-2020</u>
NDAT	36.8%	+16.3%	42.8%
VMT	11.4	-18%	9.4
GHG	11.4	-18%	9.4

Targets: Describe how targets were set for the goals.

NDAT:

The state's overarching state-level goal for NDAT (statewide) is to reach an absolute level of 40% non-drive-alone travel (NDAT) during this period.

At a statewide level, this is a six percentage point increase. Thus the state has directed jurisdictions choosing to utilize state goals and targets to increase their NDAT by six percentage points. The City of Bellevue has opted to utilize the state goals and targets as our own.

The state has provided a spreadsheet tool to help jurisdictions identify targets to match state targets. In this tool, the state calculated Bellevue's baseline NDAT as 36.8%, and target NDAT as six percentage points higher, or 42.8%. Thus these figures are shown above.

In terms of percent change, the NDAT increase translates to 16.3 percent (42.8% is 16.3% higher than 36.8%). Thus this is the figure identified above for "Percent Change."

VMT and GHG:

The state's overarching state-level goals for vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions are to reduce each by 18% by the 2019-2020 survey cycle.

The City of Bellevue has opted to utilize state targets as our own. Based on the state-level target of 18% reduction in VMT, the City is setting the same VMT reduction target of 18%. This would result in 9.4 VMT per person in the 2019-2020 survey cycle.

The state has opted to calculate the GHG target directly from VMT, and has directed jurisdictions to do the same. Thus the GHG target is 18%, or 9.4 VMT per person—the same as the VMT target.

Measurement: How will you measure progress toward your targets?

The City will measure progress toward the targets using the state-provided CTR survey instrument and surveying framework, as well as state-provided data processing services.

Other performance measures: What other types of TDM performance goals and targets has your jurisdiction established? What are you trying to accomplish? How will you measure progress toward those goals?

An update of Bellevue's [Comprehensive Plan](#) was adopted by City Council on August 3, 2015, with updated targets for percentage of commute trips by non-drive-alone mode. Specifically, the update includes 2035 commute non-drive-alone rate targets for downtown workers (65%), citywide workers (40%), and citywide residents (45%). These targets represent a change from previous Comprehensive Plan mode share targets, which comprised the percent of commute trips by drive-alone-mode for workers in five activity areas in the city, including downtown. The anticipated mechanism for measuring progress toward the updated targets is the U.S. Census American Community Survey. Since CTR workers are a subset of all city workers, CTR performance toward the targets will be monitored separately (and alongside) these Comprehensive Plan performance measures.

A 2015-2023 Bellevue TDM Plan is under development and anticipated for completion in late 2015. This plan will establish interim 2023 targets for the Comprehensive Plan's 2035 targets described above.



Transportation Demand Management Progress Report 2022

City of Bellevue

► Why do Transportation Demand Management in Bellevue?

Bellevue is the fifth largest city in Washington state, with an estimated 152,600 residents. Bellevue is also a major employment center – more than 155,000 people work in the city, and approximately 55,000 of them work downtown. Population and employment are both growing rapidly. Bellevue is planning for 70,000 additional jobs by 2044, bringing total employment to 228,800. Downtown will continue to be the major employment center and employment will grow similarly.

Keeping people mobile in the face of growth and changing workplaces requires a comprehensive approach. In addition to continued investment in streets, highways, and transit, it is important that we make efficient use of our existing roadways.

Transportation demand management, or TDM, means increasing transportation efficiency by improving the viability and attractiveness of modes other than driving alone. TDM focuses on moving people, not just vehicles. When travelers are able to get around Bellevue without adding vehicle traffic to the streets, everyone can move better.

► How TDM addresses transportation challenges

Existing city policies help create an environment in which alternatives to driving alone can be attractive to commuters and to everyone moving into and around Bellevue.

- City land use policies concentrate growth downtown and in other activity centers, encouraging development of dense, mixed-use centers. This allows many trips to be taken by foot and facilitates transit hubs.
- Significant investments in transit and other mobility options help support their use.

The TDM program enhances the effects of these policies by providing **information, assistance and incentives** to help increase the use of transit, carpooling, vanpooling, walking, biking, teleworking and avoiding trips through alternative work schedules. People who can use these modes are encouraged to do so through information and incentives; and people for whom driving is the most viable option benefit from less congested roadways.



► Commute Trip Reduction

The Commute Trip Reduction program has helped large employers (generally those with 100 or more employees) reduce drive-alone commute trips since 1993. In 2022, there were 61 Bellevue worksites affected by CTR regulations, employing 56,867 workers. Commute trips significantly affect congestion, and by working through employers, the city can reach more employees to reduce more vehicle trips. A voluntary 2014 survey found that most individuals who were aware of city trip reduction programs had heard about them through their employers.

3,100 Cars

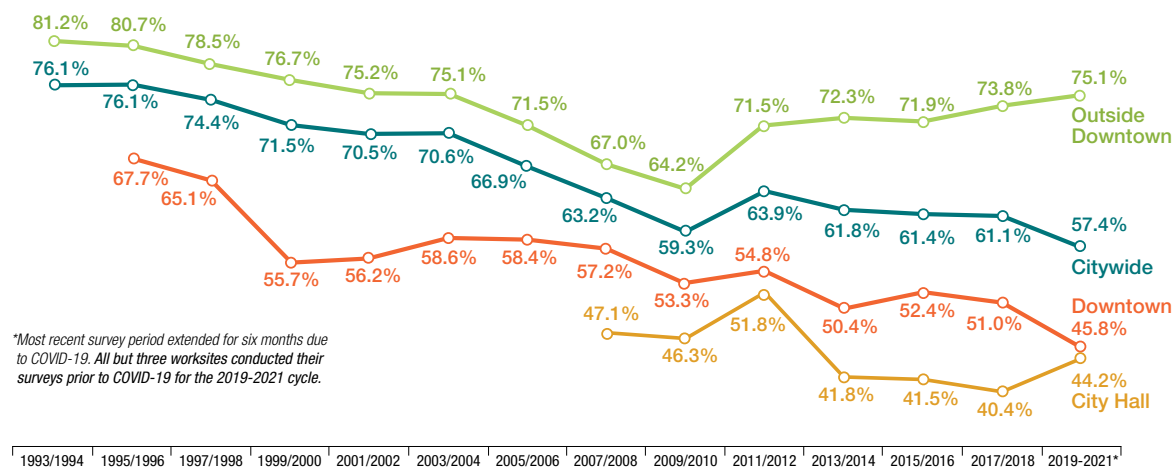


**Removed from the road
each day by CTR**

Through state law and city ordinance, the CTR program requires employers to provide transportation information and trip reduction programs for employees. Examples of CTR programs include subsidized transit passes, showers and lockers for bicycle commuters, and preferential carpool parking. The program also requires worksites to collect commute trip data, creating a valuable source of information to help improve transportation efficiency. With state funding support, the city provides information and assistance to employers to help them comply with the CTR law.

This approach produces results. CTR-affected employers recorded an 18.7 percentage point reduction in driving alone from 1993 to 2021, **representing approximately 3,100 vehicles removed from Bellevue roadways each day**. Among downtown employers, the rate of driving alone has decreased by approximately 21.8 percentage points.

Drive-Alone Rate at Large Bellevue Employers and City Hall 1993-2021



Source: Washington State CTR survey data

City of Bellevue Employee Commute Trip Reduction

The City of Bellevue leads by example with a robust trip reduction program for its own employees. At City Hall, along with parking fees for those driving alone, the city offers employees full subsidies for transit; subsidies for vanpooling; free or discounted parking for carpools and vanpools; and bicycle parking and showers. This results in a drive-alone rate lower than the downtown average.

► SchoolPool

For more information about the City's TDM program, contact:

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or

425-452-7896

For sources for this report, go to:

www.ChooseYourWayBellevue.org/library

Bellevue SchoolPool is a collaboration between City of Bellevue, King County Metro and the Bellevue School District. The program encourages families and students to explore sustainable transportation options for their commute to and from school in order to alleviate congestion at dropoff and pickup locations.

SchoolPool began in the fall of 2016 with exploration of alternatives to develop a program concept. Since 2017 the program has concentrated on week- or month-long campaigns in fall or spring, with the exception of a pandemic hiatus during the 2020-2021 school year. During each campaign, students at participating schools are invited to take part in activities organized by their school, which have included as trip calendaring, artwork, scavenger hunts and completion of bingo cards to learn about taking the bus, walking or biking to and from school.

The SchoolPool team also offers assistance to schools interested in helping parents find carpools, walk pools ("walking school buses"), bike pools ("bike trains"), and "bus buddies" for school buses or public transit. More information is at www.ChooseYourWayBellevue.org/schoolpool.

► Choose Your Way Bellevue Business Services

This program provides assistance to certain employers and property managers to help reduce commute trips to their worksites.

For employers not affected by the CTR program, CYWB Business Services offers consultations and other support such as mini-grants, employee transit pass rebates, workshops, and other resources to help them develop commute programs tailored to their worksites. This support continued during COVID-19, as well as tailored webinars about telework programs; transit during the pandemic; and return-to-office planning.

From 2007 through 2022, 330 employers engaged with the program through receiving consultation assistance, attending a workshop, or participating in a mini-grant or transit rebate program. This is roughly 8% of the target audience (approximately 4,000 employers with five or more employees). Prior analysis from 2016 indicates that 36 percent of the engaged employers have started or improved commute benefits for their employees.

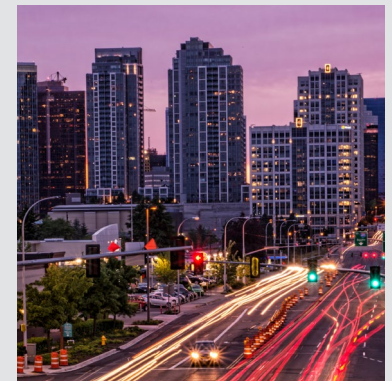
A significant proportion of Bellevue employees receive a free or heavily subsidized transit pass through their employers. Many employers provide other support such as carpool/vanpool subsidies, bicycle parking, and telework or alternative work schedules that also reduce commute trips.



Commercial & Office Property Managers

The city requires “Transportation Management Programs” at large real estate developments, obligating building managers to undertake measures to reduce drive-alone commute trips by employees working in the building. Specific requirements vary according to the size and land use of each affected building. Through TMPs, many building managers offer discounted or preferred carpool or vanpool parking, bicycle parking, and/or subsidies for non-drive-alone commuting. Building managers may also conduct other activities, such as facilitating ridesharing for carpools and performance measurement.

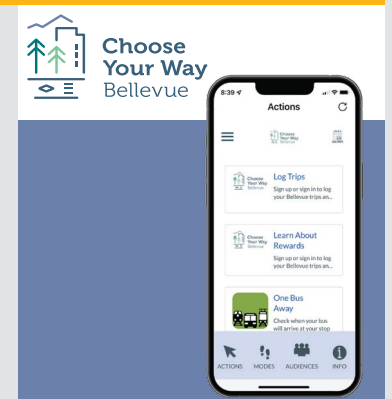
Since 2016, 12 property managers have also engaged with CYWB Business Services through the city’s offerings of free consultations and assistance with implementing building commute programs.



► Choose Your Way Bellevue Website

The Choose Your Way Bellevue website, www.ChooseYourWayBellevue.org, is a one-stop comprehensive travel options resource for Bellevue travelers including workers, residents, employers, property managers and students. Users can find information, maps and advice to help make use of alternative modes. Up-to-date transportation conditions, news, construction information and blog articles are also posted on the site. In 2022, Bellevue also launched the Choose Your Way Bellevue App – everything on the website with mobile convenience.

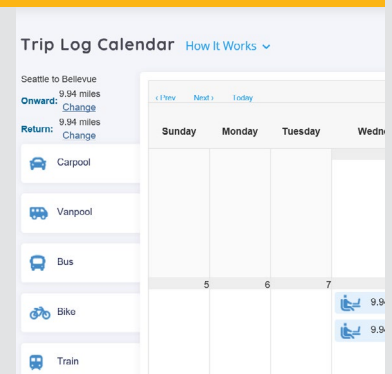
The website includes links to sign up for newsletters as well as CYWB Facebook, Twitter and Instagram content. Choose Your Way Bellevue had over 3,000 sessions on average per month in 2022, and the program newsletter is opened by 3,900 subscribers each month. Facebook, Twitter and Instagram accounts linked from the website provide dynamic information to help people get around Bellevue.



► Choose Your Way Bellevue Rewards

CYWB Rewards offers incentives to Bellevue workers, residents and college students who use modes other than driving alone. Users can log trips to receive rewards to help offset the cost of non-drive-alone modes, encouraging them to leave their cars at home.

In 2022, 2,097 people logged 5,463 non-drive-alone trips per month on average, comprising approximately 803,997 miles of travel by alternatives to driving alone. Compared to driving alone, Choose Your Way Bellevue users saved 30,897 gallons of gas and prevented over 605,760 pounds of CO2 from being released into the atmosphere. Although teleworking increased significantly during COVID (66% in 2021 versus 6% in 2019), teleworkers who participated in trip logging in 2021 showed an increase in drive-alone trips of 8.5% as of 2022 as they began returning to the office. The city is working to minimize shifts to driving alone following telework, and will continue to track this metric.



► Transit Ridership

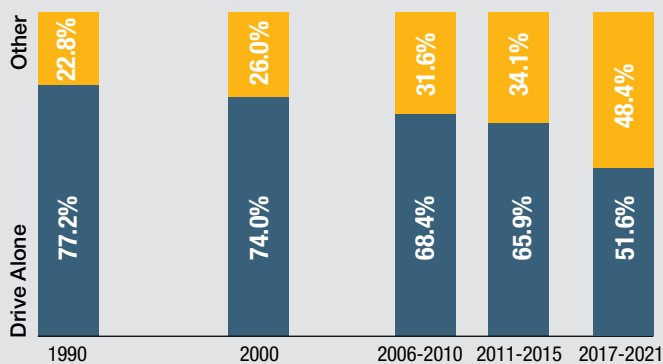
Transit usage is increasing in Bellevue after a significant decrease during COVID. From 2003 to 2016, the average daily number of boardings and alightings (“ons and offs”) increased from approximately 21,900 to 50,100. After a drop to 10,740 in fall 2020, the “ons and offs” increased to 17,097 in spring 2021. The city will continue to monitor transit ridership as the emergence from COVID continues.

Sound Transit East Link light rail is coming soon to Bellevue and the Eastside. Daily ridership is anticipated to be 43,000-52,000 by 2026.

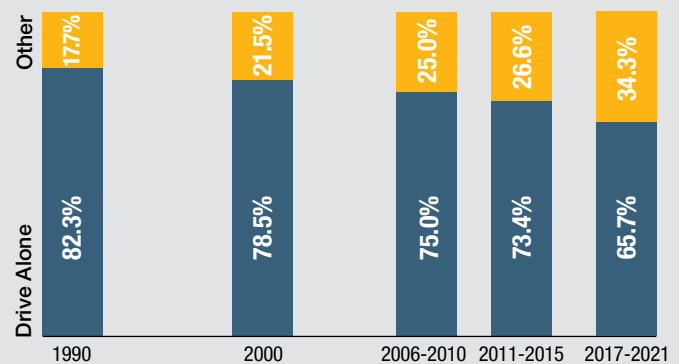


► U.S. Census American Community Survey: Means of Transportation to Work

The U.S. Census collects data and estimates of how people commute to work. In Bellevue, these estimates show that the rate of driving alone has decreased since 1990 for both residents and workers. For the most accurate and up-to-date estimates, the city uses values from the decennial census (for 1990, 2000 and 2010) and American Community Survey (ACS) estimates averaged over five years (for 2011-2015 and 2017-2021).



People living in Bellevue



People working in Bellevue

► City Performance Benchmarks

The city has established benchmarks for monitoring results of the TDM and Commute Trip Reduction programs. These benchmarks are framed in reference to county and state indicators to help control for the influence of external variables (like gas prices) and general changes over time.

Measure	Bellevue Target	Actual (estimate)	Report Period/Source
1. Percent difference in drive-alone rate at Bellevue Commute Trip Reduction (CTR) worksites relative to all King County CTR worksites	At most 12% higher than King County	37.1% higher (2019-mid-2021 CTR Survey)	Biennial CTR Survey
2. Percent difference in drive-alone commute mode share for workers in Bellevue relative to all workers in Washington	At most 3% higher than Washington	2.9% lower (2017-2021 ACS*)	Every five years U.S. Census ACS 5-year est.
3. Percent difference in drive-alone commute mode share for residents of Bellevue relative to all residents of Washington	At least 10% lower than Washington	23.8% lower (2017-2021 ACS*)	Every five years U.S. Census ACS 5-year est.