VMT Reduction Target & Strategies

Prepared for:
The City of Lake Forest Park

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Background

In 2024, the City of Lake Forest Park adopted its updated Comprehensive Plan, which serves as the guiding framework for achieving Lake Forest Park's vision for the future.[1] In 2025, Lake Forest Park will adopt a mandated Climate Element as an amendment to this plan. The Climate Element will concentrate on enhancing resilience to climate impacts and reducing greenhouse gas (GHG) emissions within the Lake Forest Park community. The Climate Element will also build on the recently adopted Climate Action Plan which identifies specific strategies and actions to address climate change across Lake Forest Park.[2]

The Climate Element includes a Greenhouse Gas Reduction Sub-element, which requires the City to measure and reduce per capita vehicle-miles-traveled (VMT) via policies, strategies, and specific reduction targets. The steps outlined by the Washington State Department of Commerce for conducting a VMT study include:[3]

1. Determine Project Scope and Geographic Scale
2. Acquire Relevant VMT Data
3. Determine Significant VMT Sources
   a. Conduct VMT Data Analysis
   b. Conduct Travel Market Assessment
4. Set Per Capita VMT Reduction Targets
5. Develop Measures and Implementation Plans to Achieve Targets
6. Integrate Measures into Comprehensive Plan
7. Evaluate Progress

This report outlines the approach Fehr & Peers used to complete these steps, including establishing the VMT inventory, analyzing travel markets, evaluating VMT reduction strategies, and developing near- and long-term reduction targets for the City of Lake Forest Park. The report concludes with a set of recommended policies for VMT reduction based on this analysis and actions that Lake Forest Park can take to implement these policies.

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[1] https://www.cityoflfp.gov/373/2024-Comprehensive-Plan-Update
[2] https://www.cityoflfp.gov/649/Climate-Action-Committee
[3] https://www.commerce.wa.gov/growth-management/climate-planning/

Inventory

The 2019, 2022, and 2023 inventories focus on VMT and GHG emissions from on-road transportation sources within Lake Forest Park's city limits. Fehr & Peers is supporting Cascadia's development of the community-level GHG emissions inventory by conducting the VMT analysis to help quantify how on-road travel contributes to overall emissions.

VMT

For the 2019, 2022, and 2023 VMT inventories (**Table 1**), Fehr & Peers used VMT estimates provided by the Puget Sound Regional Council (PSRC). PSRC generated link-level VMT for the City of Lake Forest Park using SoundCast, its regional activity-based model.[4] Passenger vehicle VMT for 2019, along with all medium and heavy truck VMT for 2019, 2022, and 2023, came directly from the PSRC model outputs. However, because the SoundCast model does not yet account for changes in travel behavior resulting from the COVID-19 pandemic, the project team adjusted the 2022 and 2023 passenger vehicle VMT estimates using a COVID adjustment factor.[5] To develop this factor, the team analyzed StreetLight data to identify the change in passenger vehicle travel for Lake Forest Park between 2019 (pre-COVID) and the post-COVID years of 2022 and 2023.[6] The change in VMT observed through the StreetLight data between 2022 and 2023 was applied to the PSRC model's 2019 passenger vehicle VMT to better reflect actual travel patterns during the pandemic recovery period. This approach ensures that the resulting VMT estimates for 2022 and 2023 more accurately capture post-pandemic conditions while still aligning with PSRC's recommendation to use regional travel demand model data. The approach is specifically tailored to Lake Forest Park and is replicable for future VMT inventory updates.

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[4] https://www.psrc.org/activity-based-travel-model-soundcast

[5] The 2022 and 2023 passenger vehicle VMT estimates from the PSRC SoundCast model were 58,561,000 and 58,564,600 prior to adjustment.

[6] StreetLight Data combines Location-Based Services (LBS) and Connected Vehicle Data (CVD) with machine learning algorithms to understand travel behavior across the country. Each month, StreetLight Data processes approximately 40 billion anonymized location records from smart phones and navigation devices in connected cars and trucks and uses machine learning to transform these records into aggregated and normalized route-based travel patterns. Vehicle trips are created from the location records by starting a trip once a device is traveling at a reasonable speed, snapping records to road network data to estimate the trip route, and establishing a trip end once the device stops moving. Data is validated using permanent traffic counters and embedded sensors, and normalized with multiple data sources, including parcel data, digital road network data, and census information to calculate vehicle volume estimates. https://www.streetlightdata.com/

Table 1: City of Lake Forest Park VMT Inventory

Source	2019	2022	2023
Passenger Vehicle[1]	58,551,000	55,761,000	56,142,000
Medium Truck[2]	1,809,000	1,851,000	1,866,000
Heavy Truck[3]	78,000	81,000	81,000
Total Annual VMT	**60,438,000**	**57,693,000**	**58,089,000**

Source: Fehr & Peers, 2025.
Notes: *PSRC provided VMT data for passenger vehicles, medium- and heavy-duty trucks.*
1. For passenger vehicles, a post-COVID adjustment factor was applied to PSRC VMT data for 2022 and 2023 based on StreetLight data. For 2019, VMT data is directly from the PSRC model.
2. For medium trucks, the VMT data is directly from the PSRC model.
3. For heavy trucks, the VMT data is directly from the PSRC model.

GHG Emissions

Fehr & Peers worked with Cascadia to develop GHG emissions estimates for 2019, 2022, and 2023 based on the updated VMT inventories (**Table 2**). The team used EPA emissions factors to estimate GHG emissions from all on-road transportation, and the team used vehicle registration data to reflect Lake Forest Park's distribution of passenger vehicle types, including passenger cars, light trucks, and electric vehicles (EV). For more information on the development of the GHG emissions inventory, see Cascadia's GHG Summary Memorandum.

Table 2: City of Lake Forest Park GHG Emissions Inventory

	2019	2022	2023
Total On-Road GHG Emissions (MTCO$_2$e)	**25,364**	**23,322**	**23,450**

Source: Fehr & Peers, 2025.

While passenger vehicle VMT increased between 2022 and 2023, emissions decreased slightly due to an increase in EV miles. Between 2019 and 2023, the number of vehicle trips per person increased, reflecting shifts in travel behavior after the COVID-19 pandemic, particularly with a greater reliance on private vehicles over shared modes like transit. Although average trip lengths decreased between 2019 and 2023 which resulted in a slight reduction in VMT, the rise in trip frequency suggests that Lake Forest Park is not yet on a clear path toward meaningful VMT reduction.

Travel Market Assessment

Travel Markets

A travel market assessment identifies which trip types could be most affected by VMT reduction strategies and projects. To identify the most effective strategies to reduce VMT and GHG emissions, Fehr & Peers conducted a travel market assessment to identify how people are currently traveling within Lake Forest Park and to destinations outside of the city. Fehr & Peers used StreetLight data to understand the origin-destination patterns of the following trip purposes:

- **Work Trips** – Trips made by residents and non-residents of Lake Forest Park to commute to and from employment, starting and/or ending in Lake Forest Park.
- **Non-Work Resident Trips** – Trips made by residents of Lake Forest Park for purposes other than work, such as visiting retail stores, accessing services, attending school, or other non-work-related activities, starting and/or ending in Lake Forest Park.
- **Non-Work Visitor Trips** – Trips made by non-residents of Lake Forest Park for purposes other than work, such as visiting retail centers like the Town Center, restaurants, services, or other non-work-related activities, starting and/or ending in Lake Forest Park.

For each of the trip purposes, Fehr & Peers summarized the estimated average weekday vehicle trips to/from/within Lake Forest Park in 2023.[7] Leveraging the origin-destination data for each block group, Fehr & Peers calculated total VMT by multiplying the average trip length by the average vehicle volume. **Figure 1** breaks out vehicle trips and VMT in Lake Forest Park based on their start and end location, where internal-internal (II) trips start and end in Lake Forest Park and internal-external/external-internal trips (IX/XI) either start or end in Lake Forest Park.

In Lake Forest Park, 87% of vehicle trips and over 90% of total VMT are IX/XI trips, indicating that the majority of travel involves people driving to or from destinations outside of the city.

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[7] From StreetLight data, an estimate of vehicle trips and trip lengths used Tuesday, Wednesday, and Thursday as representative of average weekday travel in 2023 for all census block groups in Lake Forest Park.

Figure 1: Average Daily Vehicle Trips and VMT (2023)

II: Internal-Internal Trips
XI/IX: Internal-External/External-Internal Trips

Trips ——— VMT
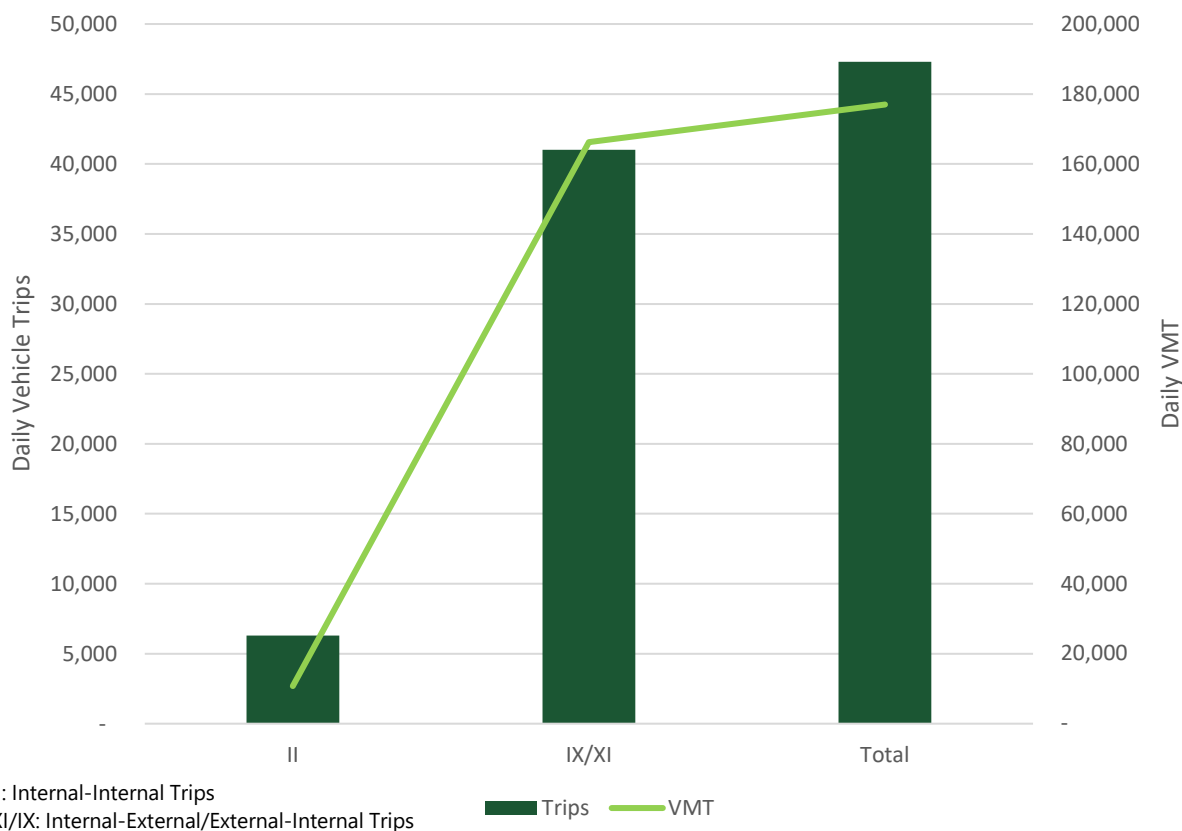
Source: Fehr & Peers, 2025.

Validation Data

The project team validated the observed travel market patterns from the StreetLight origin-destination data by referencing multiple datasets, including:

- American Community Survey (ACS) 2019 – 2023 Population and Household Estimates[8]
- Longitudinal Employer-Household Dynamics (LEHD) Data[9]
- Puget Sound Regional Council (PSRC) 2023 Household Travel Survey[10]

The team also used these datasets to understand the existing transportation profile in Lake Forest Park, as shown in **Table 3**.

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[8] https://data.census.gov/

[9] https://lehd.ces.census.gov/applications/help/onthemap.html#!what_is_onthemap

[10] https://www.psrc.org/our-work/household-travel-survey-program

Table 3: Lake Forest Park Transportation Profile

Metric	Area	Statistic	Source
Employee Travel Flows	Lake Forest Park	Less than 2% of the workforce lives and works in LFP. 98% of the workforce living in LFP works outside of LFP. 91% of the workforce working in LFP lives outside of LFP.	LEHD OnTheMap Employment Data (2022)
Vehicle Access	Lake Forest Park	98.5% of households have 1 or more vehicles	ACS (2019 – 2023) Population and Household Estimates
Vehicle Ownership Estimate	Lake Forest Park	10,400 vehicles	ACS (2019 – 2023) Population and Household Estimates
Commute to Work Mode Share	Lake Forest Park	61% by car 6% by transit 2% by walking 1% by bicycle 29% work from home	ACS (2019 – 2023) Population and Household Estimates
Daily Vehicle Trips Per Capita (2019 vs. 2023)	Lake Forest Park	3.4 vehicle trips per capita (2019) 3.5 vehicle trips per capita (2023)	StreetLight data
Daily Per Capita VMT (2019 vs. 2023)	Lake Forest Park	13.7 VMT per capita (2019) 13.4 VMT per capita (2023) ~4% reduction	StreetLight data
Electric Vehicle Rates (2019 vs. 2023)	King County	1% of all registered vehicles (2019) 4% of all registered vehicles (2023)	King County Vehicle Registration Data

Source: Fehr & Peers, 2025.

The sections below explain how the project team defined each travel market and applied the data sources listed above. The travel markets comprise of the totals shown in **Figure 1**.

Work Trips

Lake Forest Park has two unique components to the travel market for work trips: most residents who live in Lake Forest Park work elsewhere, and most employees who work in Lake Forest Park live elsewhere. Therefore, these two populations were kept separate for analysis, and added together for total work trips and VMT.

Fehr & Peers used employment data from LEHD OnTheMap to identify where residents of Lake Forest Park work and where employees of Lake Forest Park live. The project team used 2019–2023 ACS Population and Household Estimates to identify the percentage of commute trips made by vehicle. The PSRC Household Travel Survey provided a dataset to validate the estimated employee trips from the LEHD data.

Non-Work Resident and Non-Work Visitor Trips

The project team subtracted work trips from the total vehicle trips to isolate non-work trips made by residents and visitors. To analyze the split between these groups, the team used the PSRC Household Travel Survey to understand vehicle trip rates and trip lengths by purpose. According to the PSRC data, Lake Forest Park residents take approximately two non-work vehicle trips per day. The team multiplied this trip rate by the 2023 Lake Forest Park population to estimate the number of non-work resident trips and to distinguish them from the combined non-work trips made by both residents and visitors. By subtracting these from the total non-work trips, the project team identified the remaining trips as non-work visitor trips.

Key Takeaways

Figure 2 shows the total daily vehicle trips and associated VMT for all of the city's travel markets. Key takeaways include:

- **Across all travel markets, the majority of trips in Lake Forest Park are interjurisdictional.** Over 85% of all vehicle trips are IX/XI trips, making them the dominant contributor to total VMT.

- **Non-work resident trips are the most frequent trip type and the top contributor to overall VMT.** While most of these trips are IX/XI, they also account for the highest number of II trips and have overall shorter trip lengths, with about 30% of trips that are 2 miles or less and an additional 40% between 2 and 5 miles.

- **Work trips contribute disproportionately to overall VMT in Lake Forest Park**. The bulk of VMT from work trips comes from IX/XI trips between 3 and 18 miles. These longer, interjurisdictional commutes significantly increase the city's total on-road emissions footprint.

- **Non-work visitor trips occur in similar volumes to work trips but contribute far less to total VMT.** These trips are typically shorter in length compared to work trips, as employment centers are often located further away. In contrast, visitor trips usually originate from neighboring jurisdictions, with people traveling to destinations within Lake Forest Park, such as the Town Center.

The project team used the travel market results to evaluate how existing CAP strategies align with effective VMT reduction, quantify the expected VMT reductions from those strategies, inform the development of per capita VMT reduction targets, and guide the creation of additional strategies to help meet those targets.

Figure 2: Travel Market Summary
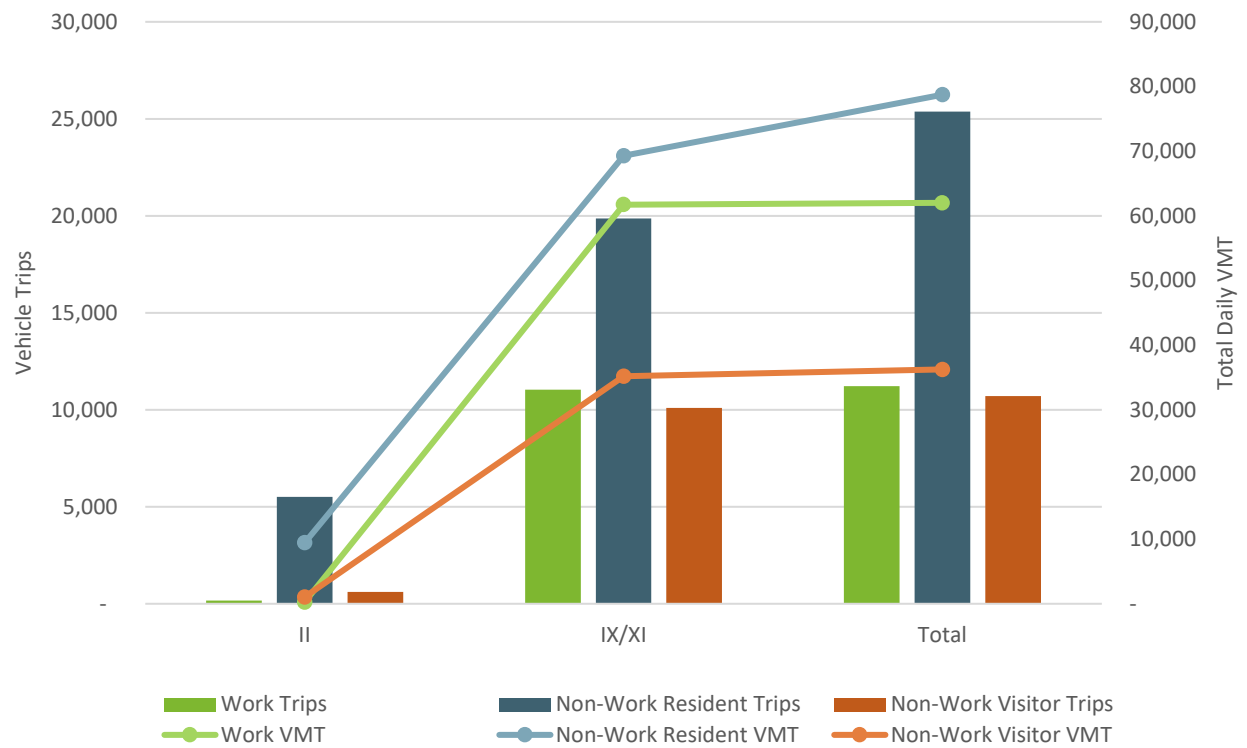
Source: Fehr & Peers, 2025.

VMT Reduction Strategies

The City's Climate Element builds on actions outlined in the CAP to identify transportation actions and policies that support the City's VMT and GHG emission reduction goals. Fehr & Peers analyzed the VMT reduction strategies previously adopted in the CAP and strategies identified by the Climate Policy Advisory Team (CPAT). Instead of proposing new strategies, the project team focused on these existing strategies because they were adopted with community input and reflect local priorities.[11] The analysis evaluated the effectiveness of these strategies and how well these strategies align with Lake Forest Park's travel markets. This approach reinforces community-supported implementation and ensures that the Climate Element is grounded in strategies that resonate with residents.

Consistent with Commerce guidance which requires jurisdictions to quantify the expected impact of their VMT reduction strategies to assess their efficacy,[12] this evaluation helps inform VMT per capita reduction targets and supports the development of actionable, locally appropriate policies to achieve these targets.

Understanding Total VMT vs. Per Capita VMT

In both the VMT inventory and the travel market assessment, the project team analyzed total VMT in Lake Forest Park. The VMT inventory measured total annual VMT for all vehicle types while the travel market assessment focused on total daily VMT for passenger vehicles. It is important to distinguish total VMT from per capita VMT, which is calculated by dividing the total VMT by the population of Lake Forest Park. Under HB 1181, **the effectiveness of VMT reduction strategies is evaluated based on their impact on per capita VMT, not total VMT**.[13]

The focus on per capita VMT aligns with the intent of HB 1181 to reduce greenhouse gas emissions from the transportation sector while accounting for population growth and land use patterns. By evaluating strategies based on their impact on per capita VMT, jurisdictions can better assess whether land use and transportation policies are effectively promoting more sustainable travel behaviors, such as reducing reliance on single-occupancy vehicles and encouraging transit, walking, and biking. This distinction matters because changes in total VMT do not necessarily reflect changes in travel behavior or emissions efficiency. For example, if total VMT increases but the population grows at a faster rate, per capita VMT could still decline, indicating a relative improvement in vehicle trips per person, even though overall vehicle travel is higher.

Previously Adopted Strategies

The 2024 CAP outlines strategies and actions to reduce VMT in Lake Forest Park, such as "Reduce Community Wide Driving" and "Improve First/Last Mile Access" as summarized in **Table 4**. While these

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[11] https://www.cityoflfp.gov/694/Climate-Policy-Advisory-Team

[12] https://deptofcommerce.app.box.com/s/fpg3h0lbwln2ctqjg7jg802h54ie19jx

[13] https://lawfilesext.leg.wa.gov/biennium/2023-24/Pdf/Bills/Session%20Laws/House/1181-S2.SL.pdf?q=20230912140957

strategies were developed prior to the travel market assessment, the assessment provides insight into how well the strategies align with local travel behavior as described on the following page.

Table 4: 2024 Climate Action Plan VMT Reduction Strategies

Strategy	Reference Code	Action
Reduce Community Wide Driving	TR 2.2	Encourage transit-oriented development
	TR 2.3	Develop a pedestrian and bicycle network
	TR 2.4	Secure bike storage
	TR 2.5	Expand capacity of the LFP Town Center to act as a mobility hub
	TR 2.7	Collaborate with the cities of Shoreline and Kenmore as they adopt shared-use electric bicycle or scooter programs
Improve "Last Mile/First Mile Access"	TR 3.1	Build transit-oriented development
	TR 3.2	Expand the Metro Flex on-demand transit service.
	TR 3.3	Support pedestrian infrastructure
	TR 3.5	Increase transit ridership through education and outreach

Source: Lake Forest Park Climate Action Plan, 2024.

How do existing VMT reduction strategies align with the travel market assessment?

1 in every 5 trips in LFP is less than 2 miles, therefore:
- ✓ Promoting active transportation, such as walking and biking, can reduce vehicle trips of 2 miles or less.
- ✓ Since many of these short trips in LFP start or end outside the city, collaboration with neighboring cities to expand micromobility options like e-scooters and bike-sharing is essential.

Over 80% of vehicle trips start or end outside the city, therefore:
- ✓ Promoting transit-oriented development shortens trip lengths, encourages shared mobility, and enhances transit and active transportation use.
- ✓ Strengthening transit, micromobility, and multimodal connections makes car-free trips in LFP more feasible.

Strategy Evaluation

Establishing a Baseline

To quantify the impact that VMT reduction strategies would have on reducing per capita VMT, Fehr & Peers first established **baseline**, **existing**, and **future baseline VMT forecasts** using the PSRC SoundCast model. Using the SoundCast model to generate these forecasts aligns with MPO guidance and adopted land use assumptions from the City's Comprehensive Plan, and it provides an estimate of future per capita VMT in Lake Forest Park before applying additional VMT reduction strategies.

- **Baseline (2019)** – baseline daily VMT
- **Existing (2023)** – current daily VMT
- **Future Baseline (2050)** – future daily VMT if Lake Forest Park takes no additional action beyond implementing the 2044 Comprehensive Plan. This forecast accounts for land use growth (an additional 870 households and 550 jobs by 2050), planned future transit service (such as Stride Bus Rapid Transit and light rail expansion), and a regional per-mile road usage charge (RUC).

Between 2019 and 2050, if no action is taken beyond implementing the comprehensive plan, the model projects that daily per capita VMT in Lake Forest Park will decrease 12% from 14.5 to 12.8.

Figure 3: Existing and Future Daily VMT in Lake Forest Park
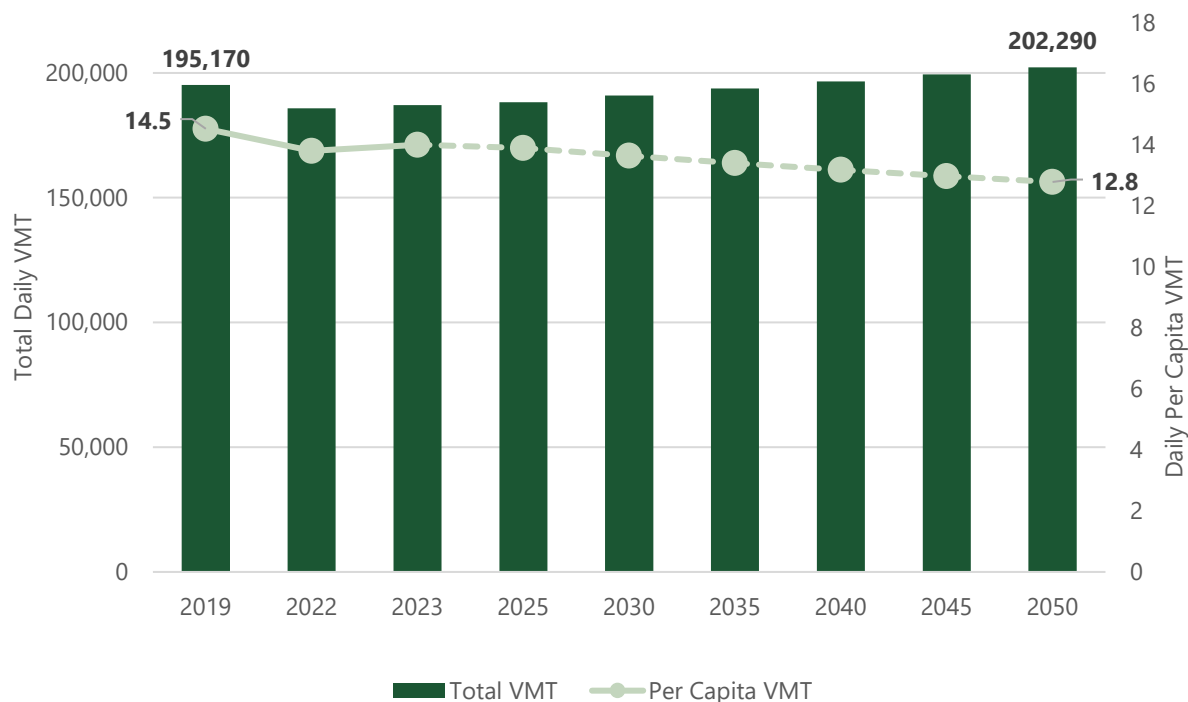
Source: Fehr & Peers, 2025.

Understanding Transit

As mentioned above, planned future transit service is a key element incorporated into future baseline estimates. Therefore, it is crucial to understand the current state of transit and how service will evolve in Lake Forest Park to accurately assess its impact on future baseline estimates.

Transit ridership has declined significantly since COVID-19. Between 2019 and 2024, systemwide ridership on King County Metro dropped by about 35%, while ridership in Lake Forest Park fell by approximately 50%.[14] Despite service changes such as the light rail extension to Lynnwood and the rerouting of Sound Transit Route 522 to the Roosevelt light rail station, the number of jobs accessible by transit (shown in **Table 5**) has remained consistent in Lake Forest Park.[15]

The project team used this ridership and access data to calibrate future mode share and VMT estimates in Lake Forest Park, ensuring that the projected impact of transit was not overstated.

Table 5: Jobs Accessible by Transit from Lake Forest Park Town Center (2019 vs. 2024)

Number of jobs accessible within travel shed of LFP Town Center	Transit Time (minutes)	Coverage (jobs) 2019	Coverage (jobs) 2024
	30	11,000	11,000
	45	59,000	61,000
	60	390,000	404,000

Source: Fehr & Peers, 2025.

In 2028, Sound Transit is planning to introduce the **Stride S3 Line**, a new bus rapid transit (BRT) service along SR-522 and Northeast 145th Street between Shoreline and Bothell.[16] The S3 Line will provide direct connections from Lake Forest Park Town Center to the Shoreline South/148th light rail station and the future Stride S2 Line, which will connect Lynnwood to Bellevue. This planned service is included in the 2050 future baseline forecast. Many of the VMT reduction strategies aim to provide safe, multimodal connections to this new transit service.

Analysis of VMT Reduction Strategies

The project team quantified the potential reduction in VMT from six strategies identified in the CAP, along with one additional strategy identified by the CPAT, as outlined in **Table 6** and described in the following text.

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[14] King County Metro, 2024.
[15] https://www.soundtransit.org/sites/default/files/documents/north-link-connection-phase-2-522-route-profile.pdf
[16] https://www.soundtransit.org/system-expansion/stride-s3-line

The project team evaluated strategies based on their suitability and feasibility for implementation in Lake Forest Park and used the travel market assessment to analyze the scale and impact of these strategies. Some strategies, such as constructing non-motorized infrastructure, can be directly implemented by the City, while strategies such as expanding Metro Flex service will require collaboration with outside agencies. Other strategies, such as encouraging more diverse land use in residential areas, are well suited to mitigate a specific travel market's VMT, such as non-work resident trips which contribute substantially to Lake Forest Park's VMT.

The analysis assumed that strategies will be implemented over a 25-year period, between 2025 and 2050. Some strategies, such as transit-oriented development, are expected to be implemented over many years as land use growth occurs and the City implements policies to streamline development. Other strategies have previously defined implementation timelines. These **VMT reduction strategies are interdependent**; therefore, their effectiveness often relies on complementary actions, and greater impact is achieved when strategies are implemented together rather than in isolation.

*Additional details on the strategy evaluation methodology and assumptions are provided in the **Appendix**.*

Table 6: Quantified VMT Reduction Strategies

Analyzed Strategies	Context and Assumptions
Encourage transit-oriented development (TOD)	The analysis of this strategy assumed that 50% of the 2024 Comprehensive Plan land use growth will be TOD, constructed between 2030 and 2050.
Encourage more diverse land uses in residential areas	The analysis of this strategy assumed continual growth between 2030 and 2050 in commercial development.
Construct high priority non-motorized projects identified in Safe Streets plans	These high priority projects are from the LFP Safe Streets Plan, LFP Safe Streets Town Connections Plan, and LFP Safe Highways Report. The analysis assumed that these projects would be built out incrementally over the next 25 years.
Secure bike storage[1]	The analysis of this strategy assumed its effectiveness would align with the construction timing of non-motorized infrastructure.
Collaborate with the cities of Shoreline and Kenmore as they adopt shared-use electric bicycle or scooter programs[1]	The analysis of this strategy assumed the adoption of a bicycle or scooter share program by 2035 and that the program would provide coverage citywide.
Expand the existing Metro Flex service area	The analysis of this strategy assumed that the Metro Flex service area would be expanded to include all of the city by 2030.

	The analysis of this strategy assumed that transit outreach programs would begin by 2030, aligning with the introduction of the Stride S3 Line.
Provide community education and outreach programs	

The project team quantified secure bike storage and the shared-use electric bike/scooter programs as key components of a mobility hub. While the CAP identifies the expansion of the Town Center as a mobility hub as another VMT reduction strategy, the impact of a mobility hub on VMT reduction depends on the integration of multiple strategies rather than being a quantifiable strategy on its own.

Land Use

The City of Lake Forest Park could reduce per capita VMT through land use policies that either lessen the need for drive-alone vehicle trips or shorten vehicle trip distances. Two strategies are considered in this analysis: transit-oriented development (TOD) to place homes, jobs, shops, and services within walking distance of transit, as well as encouraging some commercial development in residential areas, such as coffee shops and corner stores, reducing the length of retail and shopping trips for residents.

Transit-Oriented Development (TOD)

Given Lake Forest Park's size and primarily suburban residential character, most residents rely on personal vehicles for both work and non-work trips. TOD can help reduce VMT by shortening the distance to transit options and encouraging more residents to shift from driving to public transit. TOD also promotes walking and biking to transit stations. In Lake Forest Park, developing TOD would have the greatest impact on II, IX, and XI resident trips, influencing both work and non-work travel.

While the City cannot directly construct TOD, it can take steps to encourage it by incentivizing private development and enacting policies that support TOD goals. These actions include limiting parking requirements, promoting transit use, and enhancing multimodal connectivity to transit areas. The City can further foster TOD by increasing or eliminating density limits in areas well-served by transit and other essential services within the urban growth area, and by prioritizing infill development through zoning and permitting processes.[17]

Commercial Development in Residential Areas

Mixed-use development can help reduce VMT by integrating commercial uses into residential areas, specifically impacting non-work resident trips. When destinations such as shops and retail services are located closer to where people live, residents are more likely to walk or bike instead of drive, and those

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[17] New state legislation, HB 1491 (2025), requires cities to accommodate larger apartment buildings within a half-mile of light rail, commuter rail, and streetcar stations, and within a quarter-mile of BRT stops. To meet this requirement, cities must increase housing capacity near transit. They can choose to distribute this capacity evenly or focus it around transit nodes. Cities may exempt up to 25% of their BRT station areas from these rules, but only if they allow higher densities around the remaining stations. While HB 1491 does not mandate immediate zoning changes, its provisions must be reflected in the next comprehensive plan update. https://lawfilesext.leg.wa.gov/biennium/2025-26/Pdf/Bills/House%20Passed%20Legislature/1491-S3.PL.pdf?q=20250515140518

who do drive will typically take shorter trips. To support this shift, the City can encourage complementary land uses through zoning strategies that blend residential and commercial spaces, rather than relying solely on traditional, separated zoning. Expanding diverse commercial options within residential neighborhoods would most directly reduce non-work resident trips.

Construction of High Priority Non-Motorized Safe Streets Projects

Across the Lake Forest Park Safe Streets Plan, Safe Town Connections Plan, and Safe Highways Report, 35 projects have been identified to improve biking and walking safety in Lake Forest Park.[18,19,20] These projects focus on enhancing safe connections to key destinations—such as parks, schools, trails, and retail areas—while addressing locations with frequent conflicts between pedestrians, bicyclists, and motorists, and improving access to transit. The reports categorize the projects as Tier 1 (highest priority) or Tier 2 (lower priority) based on factors such as feasibility, cost, professional judgment, effectiveness in enhancing the active transportation environment, and the degree to which they improve access to transit and community amenities. To advance these projects, Lake Forest Park will need to secure funding from appropriate sources.

Implementing the highest-priority projects would influence both resident work and non-work trips, with the greatest impact expected for II trips whereas impact on IX/XI trips is anticipated to be more limited as these longer trips typically require multimodal connections to be viable.

Mobility Hub

The CAP identifies the expansion of the Town Center as a mobility hub as a key VMT reduction strategy. A successful mobility hub depends on the integration of multiple strategies. Mobility hubs serve as community anchors, bringing together a range of transportation options, such as public transit, bikeshare or scooter-share, and carshare, to provide alternatives to private vehicle use. For this analysis, the project team quantified the VMT reduction potential of two specific mobility hub components that were also identified in the CAP: secure bike storage and a shared-use bike or e-scooter program that connects to similar services in neighboring jurisdictions.

While these two strategies offer measurable benefits, **they represent only part of a broader set of elements needed for an effective mobility hub**. Additional enhancements like wayfinding signage, and real-time transit arrival information also play a vital role in encouraging transit use and reducing VMT.[21] These components **can be implemented incrementally**, allowing communities to build out mobility hubs in stages rather than relying on a single large capital investment. However, many of these elements are difficult to quantify due to inconsistent data, limited research, and the lack of standardized methodologies for evaluating their impact. As a result, this analysis includes only the VMT reduction potential of secure bike storage and shared micromobility, which alone may have limited effectiveness without these

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[18] http://www.yourlakeforestpark.com/about-safestreets.html
[19] http://www.yourlakeforestpark.com/uploads/1/1/5/5/115517941/safestreetstowncenter_finalreport_040518.pdf
[20] http://www.yourlakeforestpark.com/library-safehighways.html
[21] Sound Transit plans to install real-time arrival signage, known as Passenger Information Management Systems (PIMS), at Stride BRT stations. https://www.theurbanist.org/2023/05/23/sound-transit-plans-real-time-arrival-soft-launch-for-light-rail/

complementary strategies. The estimates presented therefore reflect only a portion of the full potential VMT reduction impact of a fully built-out mobility hub.

Secure Bike Storage

Secure bike storage at mobility hubs is an effective VMT reduction strategy because it makes biking a more viable and attractive option for the first or last leg of a trip, especially when combined with transit. Access to safe and convenient bike storage at transit stations or key destinations reduces reliance on personal vehicles, supports multimodal travel, and extends the reach of transit, especially impacting resident work trips.

Shared-Use Electric Bike or Scooter Program

Adopting a shared-use electric bicycle or scooter program that connects to adjacent jurisdictions is an effective VMT reduction strategy because it can provide a convenient, low-effort alternative for short trips, provides first- and last-mile connectivity, extends the reach of the transit network, and encourages regional travel without cars, especially when paired with other mobility hub supportive strategies.

Currently, neighboring cities such as Seattle, Shoreline, and Bothell operate shared-use bike and scooter programs. With these strategies already in place or planned nearby, coordination between Lake Forest Park and its neighboring jurisdictions will be essential to ensure seamless connectivity and to maximize regional impact. A well-integrated program would impact all trips in Lake Forest Park.

Expansion of Metro Flex Service Area

Metro Flex is an on-demand neighborhood transit service provided by King County Metro. In September 2024, Metro Flex expanded service to the Northshore area, which includes north Kenmore, Lake Forest Park, Mountlake Terrace, and Brier.[22] The current service area in Lake Forest Park begins west of Ballinger Way. Expanding Metro Flex to cover the entire city would primarily impact non-work resident trips by providing all residents with an additional transportation option beyond driving, particularly in neighborhoods not currently served by fixed-route transit. It would also improve access to the Mountlake Terrace Link light rail station, enhancing connections to the regional transit network. To expand this service area, the City would need to coordinate with King County Metro.

Community Education and Outreach Programs

In the CAP, Lake Forest Park identified education and outreach as a key strategy to increase transit ridership. Community-focused programs that offer tailored information, incentives, and support can significantly influence travel behavior by encouraging more residents to choose transit. To implement this strategy, the City would need to partner with a third-party organization, such as a community-based group, to effectively reach target populations and manage outreach events. Equipping residents with the knowledge and tools to confidently use transit will help reduce per capita VMT, especially with the launch of the S3 Stride BRT line in 2028.

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[22] https://kingcountymetro.blog/2024/09/19/local-on-demand-metro-flex-service-now-serving-the-northshore-area/

Impact of Analyzed VMT Reduction Strategies

Between 2019 and 2050, the PSRC model projects a per capita VMT reduction of 12% if no action is taken beyond what was outlined in the Comprehensive Plan. Implementing the evaluated strategies could achieve an additional 2.7% reduction, lowering daily per capita VMT to 12.4 by 2050, compared to 12.8 under the no action Baseline, as shown in **Figure 4**.

Figure 4: Projected Impact of Analyzed VMT Reduction Strategies on Daily Per Capita VMT
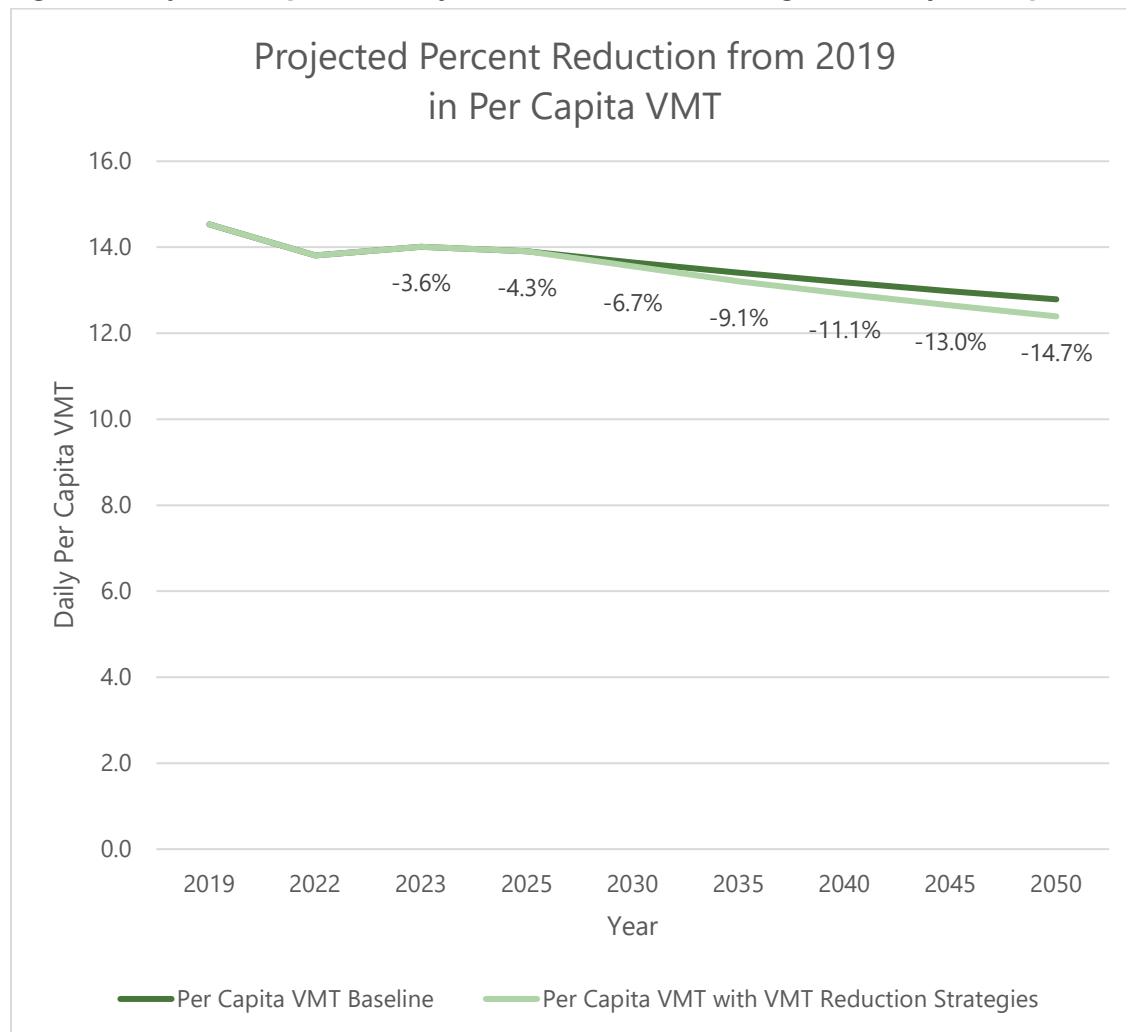
Source: Fehr & Peers, 2025.

Figure 5 illustrates how each analyzed strategy contributes to the 2.7% reduction. These strategies, in addition to all other non-VMT GHG reduction strategies, will be reflected in the wedge analysis conducted by Cascadia.

Figure 5: Relative Impact of Analyzed VMT Reduction Strategies on Projected VMT Reduction
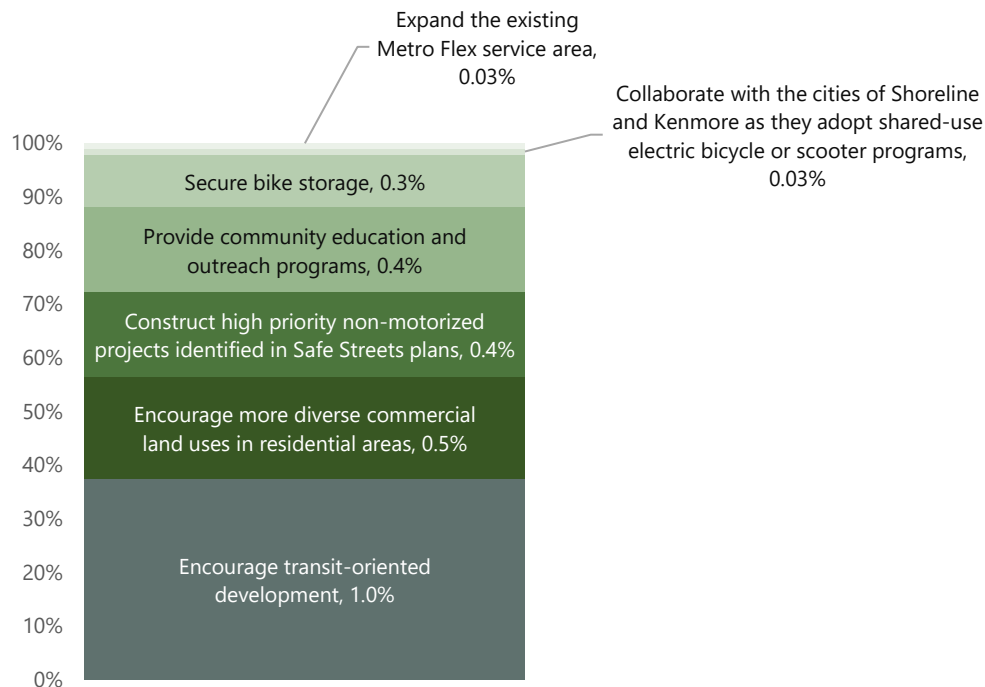
Source: Fehr & Peers, 2025.

Strategies with the most potential to reduce VMT include land use strategies (i.e. encouraging transit-oriented development and encouraging more diverse commercial land uses in residential areas) and constructing the highest priority bicycle and pedestrian projects from the Safe Streets plans. The VMT reduction percentages presented for each strategy represent the maximum potential impact if that strategy were implemented fully and in coordination with complementary efforts. As noted previously, these analyzed strategies are **interdependent**. Their effectiveness diminishes when implemented in isolation as each one supports the others. For example, implementing a shared e-scooter or e-bike program alongside secure bike storage is part of a broader strategy to create a mobility hub. Mobility hubs are powerful tools for reducing car dependence because they integrate multiple travel options into one accessible location, making it easier for people to connect modes. However, key components must be in place for mobility hubs to succeed. Without a strong active transportation network connecting residents to the hub, or without effective and convenient transit options that take people where they need to go, the overall impact of the hub is significantly reduced.

Recommended Policies & Implementation

Based on the analysis results and recognizing the interdependence of strategies and the need for complementary actions, **Table 7** outlines the VMT reduction policies that the project team recommends be included in the Climate Element and near-term actions that Lake Forest Park can take to implement these policies.

These policies reflect the strategies analyzed in **Table 6,** as well as additional and supporting actions that would strengthen their effectiveness. Each policy aligns with the intent of the CAP strategies by either expanding on existing efforts to reduce VMT or introducing feasible, complementary actions that can amplify the overall impact of existing efforts. For example, the analysis assumes that the Safe Streets Projects will achieve only 50% of the potential VMT reduction associated with a complete active transportation network, based on the portion of the population living within proximity. To fully realize these benefits, Lake Forest Park would need to implement a citywide active transportation network that ensures safe, connected routes for people of all ages and abilities.

Table 7: Recommended VMT Reduction Policies for Climate Element

Goal	Policy	Implementation Action
Reduce driving and enhance alternative transportation options.	Collaborate with King County Metro on providing creative mobility options, such as Metro Flex or vanpool services, to support more accessible and reliable transit, prioritizing services to areas with underserved populations, particularly seniors, people with disabilities, and household with low income.	Coordinate with King County Metro to discuss options for expanding the service area.
	Prioritize, develop, and maintain mobility hubs in the Town Center and other transportation-efficient locations, especially near overburdened communities that lack sustainable transportation options.	Conduct a site feasibility study to identify near-term mobility hub strategies and apply for grant funding to support development.
	Support expansion of bicycle rack and locker capacity at appropriate transit stops, mobility hubs, and park & rides in a manner that meets Community Protection through Environmental Design guidelines.	Identify options for bike storage at the Town Center and near planned Stride BRT stations.
	Collaborate with the cities of Shoreline and Kenmore to provide a streamlined, connected shared-use electric bicycle or scooter program that provides micromobility options across the neighboring cities.	Coordinate with Shoreline to align with their micromobility permit program by adopting similar vendor requirements and operating rules. Work with Kenmore to develop a regional framework that ensures consistency and user-friendly access across city boundaries.
	Create and implement outreach and education initiatives and materials that inform the community about transit travel options.	Identify and partner with a third-party organization, such as a community-based group, to effectively reach target populations and manage outreach events.

	Expand Lake Forest Park's "Safe Routes to School Program" participation, including an education and encouragement component, and continue to apply for local, state, and federal grants to enhance safe routes to schools.	Collaborate with the school districts and PTAs to assess current participation, identify safety improvements, and submit grant applications.
	Develop a connected and complete multimodal network that prioritizes access to key destinations through Lake Forest Park—including the Town Center, transit stations, parks, and trails—that provides safe access and bicycle storage for all ages and abilities. Implement the Safe Streets and Town Center Connections Plans to ensure safe, efficient, and direct pedestrian and bicycle access to the Town Center and transit stations.	Identify potential funding sources, such as transportation impact fees, to construct Safe Streets Plans.
Promote development that advances climate planning, resilience, and greenhouse gas emissions reduction.	Foster transit-oriented development by increasing density in areas well-served by transit and prioritize infill development through the zoning and permitting process.	Streamline the permitting process for transit-oriented development by establishing a fast-track review pathway, updating permit checklists to support higher-density housing, and reducing discretionary review for qualifying infill projects near transit.
	Implement complimentary, mixed land use versus traditional zoning, such as locating businesses, parks, and schools in residential neighborhoods to promote cycling and walking and reducing driving.	Develop and adopt code amendments that enable flexible zoning overlays and incentivize community-serving uses within residential zones.
	Reduce parking minimums near transit-oriented development to encourage sustainable transportation choices, reduce development costs, and improve housing affordability.	Amend zoning code to establish reduced or no minimum parking requirements in proximity to major transit corridors or hubs. Conduct parking utilization studies to support changes.

Source: Fehr & Peers, 2025.
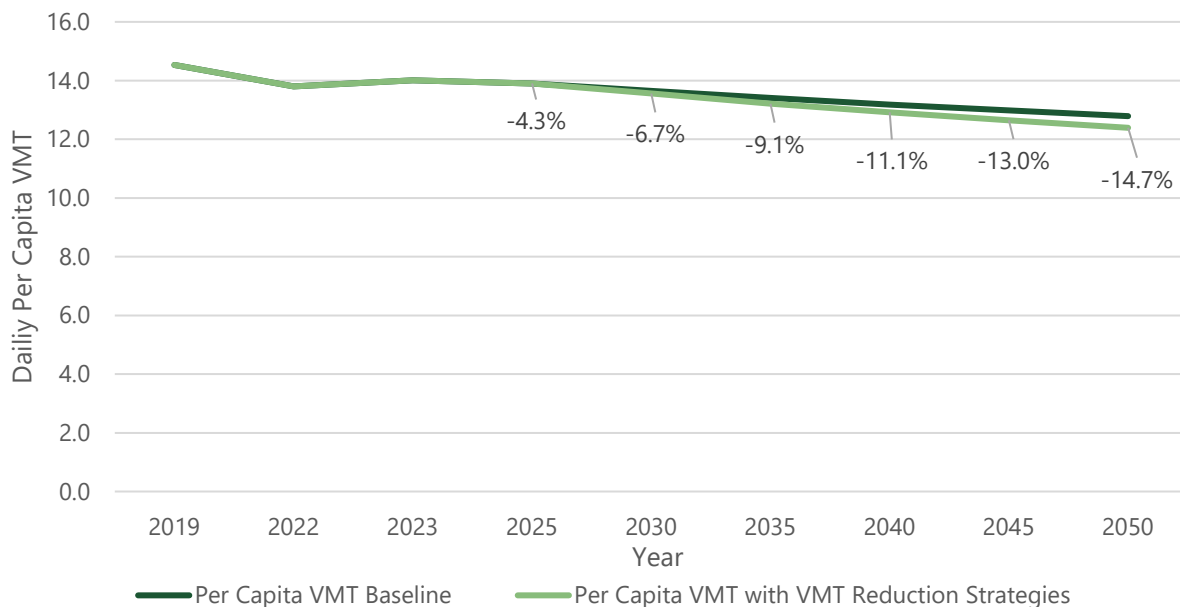
VMT Reduction Targets

According to guidance from Commerce and WSDOT, VMT reduction targets should focus on **per capita VMT**.[23,24] Jurisdictions are encouraged to set both **near-term** (5-year) and **long-term** (10+ year) targets aligned with planning horizons. Additionally, they must monitor progress every five years, tracking both per capita VMT and the implementation of VMT reduction strategies and policies.

Lake Forest Park's VMT reduction targets differ from the statewide process because WSDOT has acknowledged the need to update statewide targets and plans to work with MPOs to establish regional targets, a process that has not yet occurred. In the absence of regional guidance, Lake Forest Park is setting its own targets based on what is feasible given the strategies and policies identified and analyzed in this project. The project team selected 2019 as the base year because it aligns with Cascadia's approach to setting GHG reduction targets and reflects pre-COVID travel behavior.

Based on the potential percent reduction in per capita VMT from the analyzed strategies (**Figure 6**), Fehr & Peers recommends the following VMT reduction targets. These targets are considered both feasible to implement and achievable given the strategies evaluated.

- **Near-term target**: 7% reduction in daily per capita VMT by 2030.
- **Long-term target**: 15% reduction in daily per capita VMT by 2050.

Figure 6: Projected Percent Reduction of Daily Per Capita VMT from 2019

Source: Fehr & Peers, 2025.

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[23] https://www.commerce.wa.gov/growth-management/climate-planning/
[24] https://wsdot.wa.gov/sites/default/files/2023-06/VMT-Targets-Final-Report-June2023.pdf

Travel in 2050

If Lake Forest Park achieves its goal of a 15% reduction in per capita VMT by 2050, daily travel patterns in Lake Forest Park would look different. **Figure 7** illustrates examples of how some community members travel today and how those trips might change by 2050.

Figure 7: Example of Lake Forest Park Travel Patterns Now and in the Future
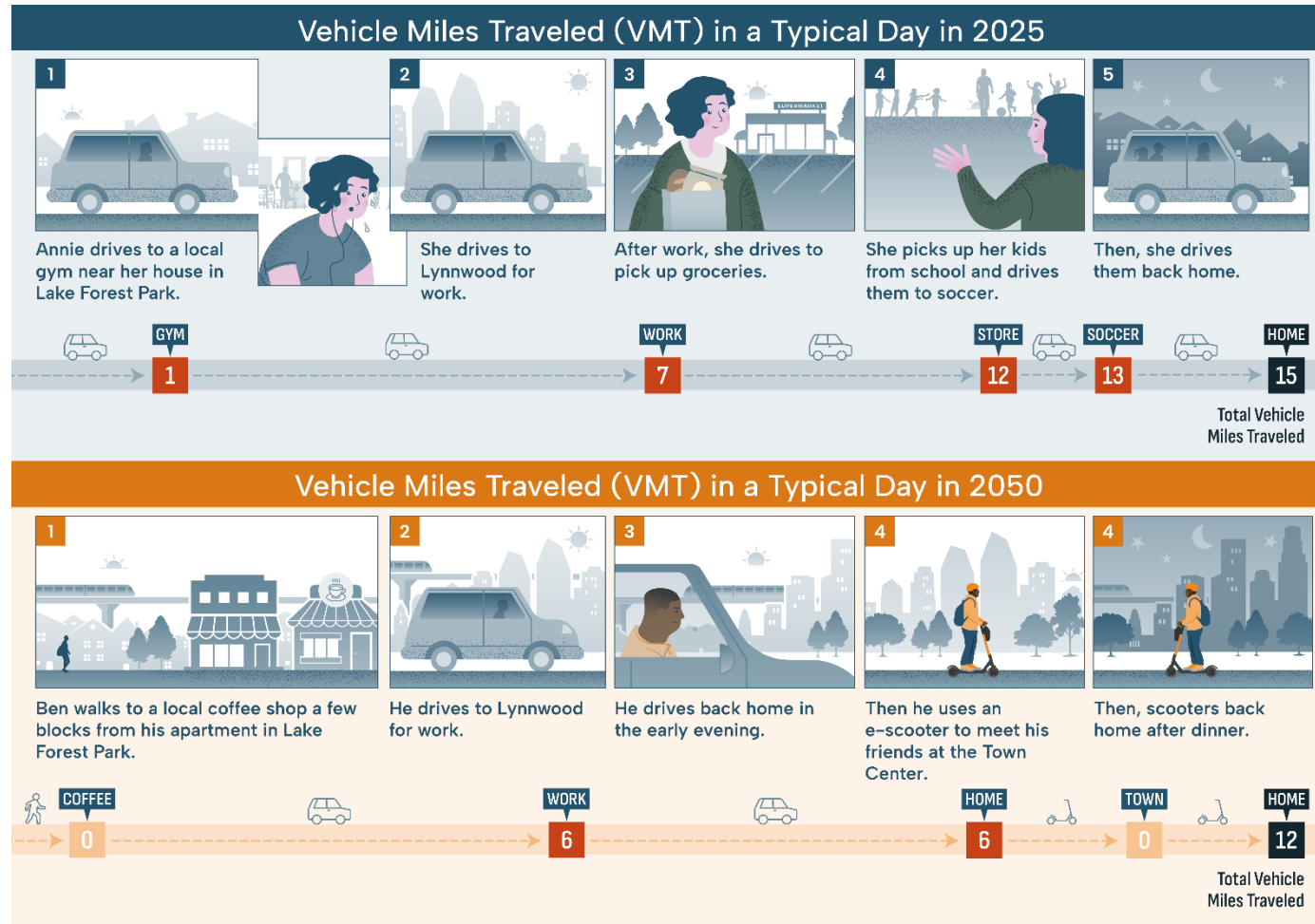
Source: Fehr & Peers, 2025

Appendix: Strategy Evaluation Methodology

This appendix documents the methodology used to evaluate the potential VMT reduction impact of each strategy in **Table 6**.

The following **assumptions** are consistent across all VMT reduction calculations for all strategies:

- The population is projected to grow by 0.6% annually between 2023 and 2050, increasing from 13,356 in 2023 to 15,818 by 2050, aligning with land use growth assumed in the 2024 Comprehensive Plan
- Total daily VMT is projected to increase with population growth, reaching an estimated 202,290 in 2050. This estimate is based on the PSRC SoundCast model and reflects the land use assumptions in the 2024 Comprehensive Plan.
- The travel market analysis provides the basis for how residents, employees, and visitors contribute to existing VMT in Lake Forest Park. As described in the travel market summary, trips in each travel market are split into the following categories:
    - Internal-Internal (II): trips that start and end in Lake Forest Park
    - External-Internal (XI): trips that start elsewhere and end in Lake Forest Park
    - Internal-External (IX): trips that start in Lake Forest Park and end elsewhere

The methodology used to calculate the VMT reduction from each strategy are described below.

VMT Reduction Strategies

Table 8: Estimated Per Capita VMT Reduction from Analyzed Strategies Compared to Baseline

	2019	2023	2025	2030	2035	2040	2045	2050
Population	13,430	13,356	13,538	13,994	14,450	14,906	15,362	15,818
Daily Baseline VMT	195,170	187,140	188,220	190,960	193,730	196,540	199,390	202,290
Baseline VMT per Capita	14.5	14.0	13.9	13.6	13.4	13.2	13.0	12.8
Future Baseline VMT per Capita Reduction		-3.6%	-4.3%	-6.1%	-7.7%	-9.3%	-10.7%	-12.0%
VMT Reduction Strategies								
Daily VMT with Reduction Strategies	*195,170*	*187,140*	*188,220*	*189,748*	*190,893*	*192,574*	*194,297*	*196,015*
VMT per Capita with Reduction Strategies	*14.5*	*14.0*	*13.9*	*13.6*	*13.2*	*12.9*	*12.6*	*12.4*
Estimated VMT per Capita Reduction		***-3.6%***	***-4.3%***	***-6.7%***	***-9.1%***	***-11.1%***	***-13.0%***	***-14.7%***

Source: Fehr & Peers, 2025.

Implementing all of the strategies in **Table 6** could reduce VMT by up to 5% for trips that begin or end in Lake Forest Park. When including pass-through trips, this translates to an estimated 2.7% reduction in total per capita VMT within the city (**Table 8**).

The project team estimated VMT reductions using research-based quantification methods from a variety of sources, including the California Air Pollution Control Officers Association's (CAPCOA) *2021 Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity.*[25] To support these calculations, the team used TDM+, incorporating input data such as trip length, population, and travel mode share.[26]

For strategies not directly aligned with a CAPCOA measure, the project team applied alternative analysis methods described later in this section. The team calculated the percent VMT reduction within the specific

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[25] https://www.airquality.org/ClimateChange/Documents/Handbook Public Draft 2021-Aug.pdf

[26] TDM+ is a quick response, excel-based tool developed by Fehr & Peers to assist in calculating VMT reductions from the strategies presented in the 2021 CAPCOA Report *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*. Its interface is designed to allow the user to update the inputs for each measure based on the specific attributes of a project or plan, as well as to pre-populate certain default values based on the project location.

travel markets affected by each strategy, then calculated how each would contribute to the overall VMT reduction across all trips.

Table 9 summarizes the analysis methods, time horizons, and affected travel markets for each strategy. The narrative that follows provides detailed descriptions of the analysis for each strategy, including the assumptions made by the project team.

Table 9: Summary of Analysis Methods and Time Horizons for VMT Reduction Strategies

Strategy	Analysis Method	Travel Market	Time Horizon(s)[1]
Encourage transit-oriented development	CAPCOA strategy T-3, adjusted based on VMT attributed to land use growth and percentage growth assumed to be TOD	II/IX/XI Non-Work & Work Resident Trips	2030 – 2050
Encourage more diverse land uses in residential areas	Estimate of percentage of retail trips shifted to short distance	II/IX/XI Non-Work Resident Trips	2030 – 2050
Construct high priority non-motorized projects identified in Safe Streets plans	CAPCOA strategy T-18, adjusted for timing of assumed buildout of projects	II/IX/XI Non-Work & Work Resident Trips	2035 – 2050
Secure bike storage	CAPCOA strategy T-10	II/IX/XI Work Resident Trips	2035 – 2050
Collaborate with the cities of Shoreline and Kenmore as they adopt shared-use electric bicycle or scooter programs	CAPCOA strategy T-22-B	All trips	2035
Expand the existing Metro Flex service area	On-demand ridership estimate using observed productivity data from King County Metro	II/IX/XI Non-Work Resident Trips	2030
Provide community education and outreach programs	CAPCOA strategy T-23	II/IX/XI Non-Work & Work Resident Trips	2030 – 2035

Source: Fehr & Peers, 2025.
1. The VMT reduction analysis covers the period from 2023 to 2050 and is divided into five-year intervals (2025, 2030, 2035, 2040, 2045, and 2050). The "time horizon" for each strategy refers to the year or years when the strategy is expected to be implemented. Some strategies have a single time horizon while others span multiple time horizons if implementation occurs in phases over time.

Land Use

Transit-Oriented Development (TOD)

For the analysis of this strategy, the project team used CAPCOA strategy T-3 adjusted for the VMT attributed to land use growth and the assumption that 50% of new growth would be TOD between 2030 - 2050.[27]

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[27] City staff confirmed that a 50% allocation is reasonable.

TOD could lead to a **2.7% reduction in VMT for non-work and work resident trips** and a **1.9% reduction in VMT for all trips** in Lake Forest Park.

Commercial Development in Residential Areas

For the analysis of this strategy, the project team assumed that 25% of non-work resident trips are retail trips, and that between 2030 and 2050, a portion of those trips will progressively shift to shorter distances—reaching up to 25% by 2050. [28] Assuming shorter-distance trips are one-quarter the length of a typical non-work resident trip,[29] commercial development in residential areas could lead to **a 2.5% reduction in VMT for non-work resident trips** and a **1.0% reduction in total VMT for all trips** in Lake Forest Park.

Construction of High Priority Non-Motorized Safe Streets Projects

For this analysis, the project team assumed a phased implementation schedule: 25% of projects built by 2035, 50% by 2040, 75% by 2045, and full buildout by 2050.[30] Given the location of the Tier 1 projects, the team estimated that approximately 50% of Lake Forest Park residents live within the catchment area.[31] Additionally, the analysis assumed that mode shift for IX/XI trips would be about half that of II trips.[32]

Constructing these higher tier projects could lead to a **1.8% reduction in VMT for non-work and work resident trips** and a **0.8% reduction VMT for all trips** in Lake Forest Park.

Mobility Hub

The project team analyzed two strategies as part of the broader mobility hub approach. While additional strategies may support mobility hub goals, there is limited research and established methodology to quantify their impact. Therefore, the VMT reduction analysis focused only on strategies identified in the CAP that are either included in the CAPCOA Handbook or supported by comparable levels of evidence.

Secure Bike Storage

For this strategy, the project team applied CAPCOA Strategy T-10 and assumed its effectiveness would align with the phased buildout of high-priority bicycle infrastructure projects. Since secure bicycle storage,

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[28] From PSRC Household Travel Survey.

[29] An assumed 75% reduction in vehicle trip length also accounts for a shift to non-auto modes.

[30] Given the need to secure funding and complete pre-construction activities, the project team assumed that implementation would not begin until at least five years into the analysis period. After that, buildout was assumed to progress steadily, with a consistent share of projects completed in each subsequent five-year period until full buildout.

[31] Project locations are centered around the Town Center.

[32] Because IX/XI trips would use the active transportation network to connect to transit, it is assumed that the number of IX/XI trips making this mode shift would be 50% of II trips. This assumption is based on CAPCOA guidance and the finding that approximately half of new transit trips typically replace vehicle trips, as referenced in Handy, L. and S. Boarnet (2013), Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions. Available at: https://ww2.arb.ca.gov/sites/default/files/2020-06/Impacts_of_Transit_Service_Strategies_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emissions_Policy_Brief.pdf. Accessed May 2025.

a key component of a mobility hub strategy, would have limited impact without a connected bicycle network, the strategy's benefits are expected to be realized only as that network is developed.

Secure bike storage at mobility hubs could lead to a **1.9% reduction in VMT for work resident trips** and a **0.5% reduction in VMT for all trips** in Lake Forest Park.

Shared-Use Electric Bike or Scooter Program

For this strategy, the project team applied CAPCOA strategy T-22-B and calculated that adopting a shared-use electric bicycle or scooter program could lead to a **0.06% reduction in VMT for all trips** in Lake Forest Park.

Expansion of Metro Flex Service Area

For this analysis, the project team opted not to use CAPCOA Strategy T-25, which estimates VMT reductions from expanding transit service hours or coverage. This decision was based on the strategy's underlying research, which primarily focuses on fixed-route buses and passenger rail services, making its direct application to microtransit potentially less transferable. Instead, the team used a ridership-based approach to estimate the impact of expanding Metro Flex service. This method relied on observed productivity data from King County Metro, assuming 2.6 passengers per revenue hour to calculate daily incremental trips.[33,34] The analysis further assumed that 50% of these trips would be new transit trips replacing non-work vehicle trips by residents.[35]

Expanding the Metro Flex service area could lead to **a 0.1% reduction in VMT for non-work resident trips** and a **0.05% reduction in VMT for all trips** in Lake Forest Park.

Community Education and Outreach Programs

For this analysis, the project team applied CAPCOA strategy T-23, adjusting the assumptions to reflect 50% implementation by 2030 and full implementation by 2035,[36] with the strategy expected to reach 50% of Lake Forest Park's households.[37]

This strategy could lead to a **1.1% reduction in VMT for non-work and work resident trips** and a **0.8% reduction in VMT for all trips** in Lake Forest Park.

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[33] https://cdn.kingcounty.gov/-/media/king-county/depts/metro/documents/about/data-and-reports/2024/2024-system-evaluation.pdf?rev=4c1b3fab720049ea8c28079e50a3dca2&hash=9A675590F1479A11010C4AB8C018156D

[34] The rate of 2.6 passengers per revenue hour is based on observed performance data from the Sammamish Metro Flex service area, which has similar service characteristics.

[35] This assumption is based on CAPCOA guidance and the finding that approximately half of new transit trips typically replace vehicle trips, as referenced in Handy, L. and S. Boarnet (2013), *Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions*. Available at: https://ww2.arb.ca.gov/sites/default/files/2020-06/Impacts_of_Transit_Service_Strategies_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emissions_Policy_Brief.pdf. Accessed May 2025.

[36] Assumed rollout of this program to begin alongside the introduction of the S3 Stride Line in 2028 and continue for about a 5-year period.

[37] Based on current demographics, approximately 50% of households in Lake Forest Park include at least one person between the ages of 18 and 65, which is the primary demographic targeted by this type of program.