Driving Down Vehicle Miles Traveled in Washington

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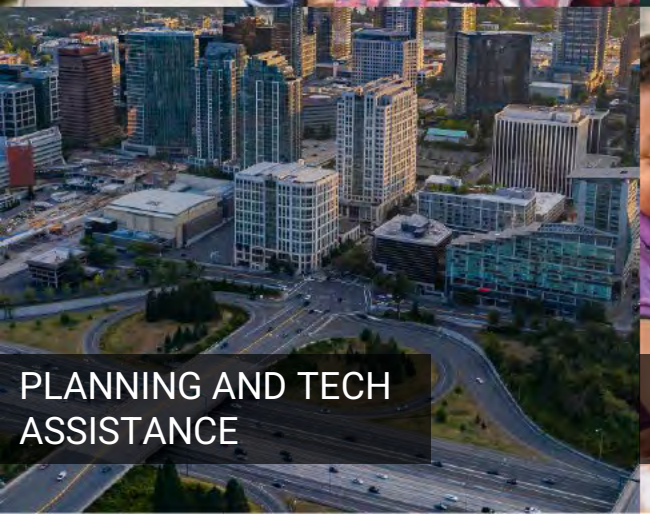
Driving Down Vehicle Miles Traveled in Washington

04/24/2025 — 2025 APWA WASHINGTON CONFERENCE

Washington State Department of Commerce

v1.4

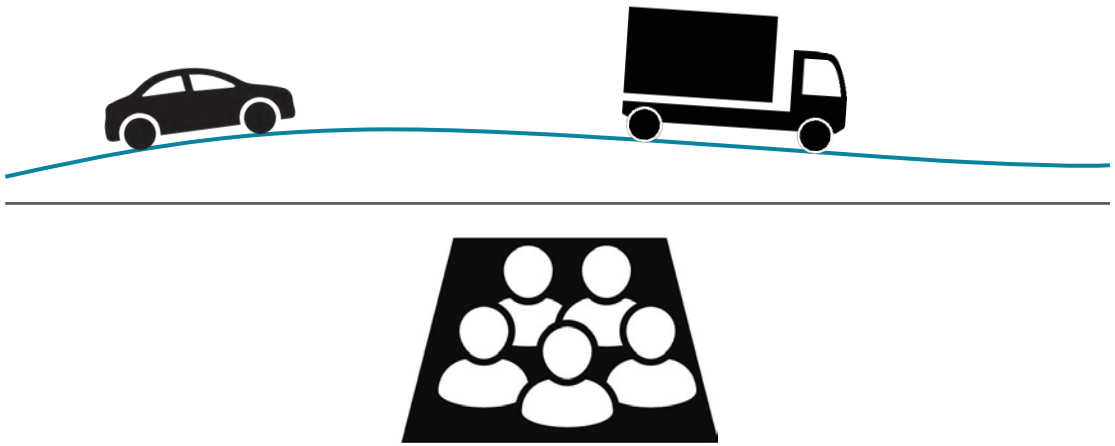
We strengthen communities



Presentation at a Glance

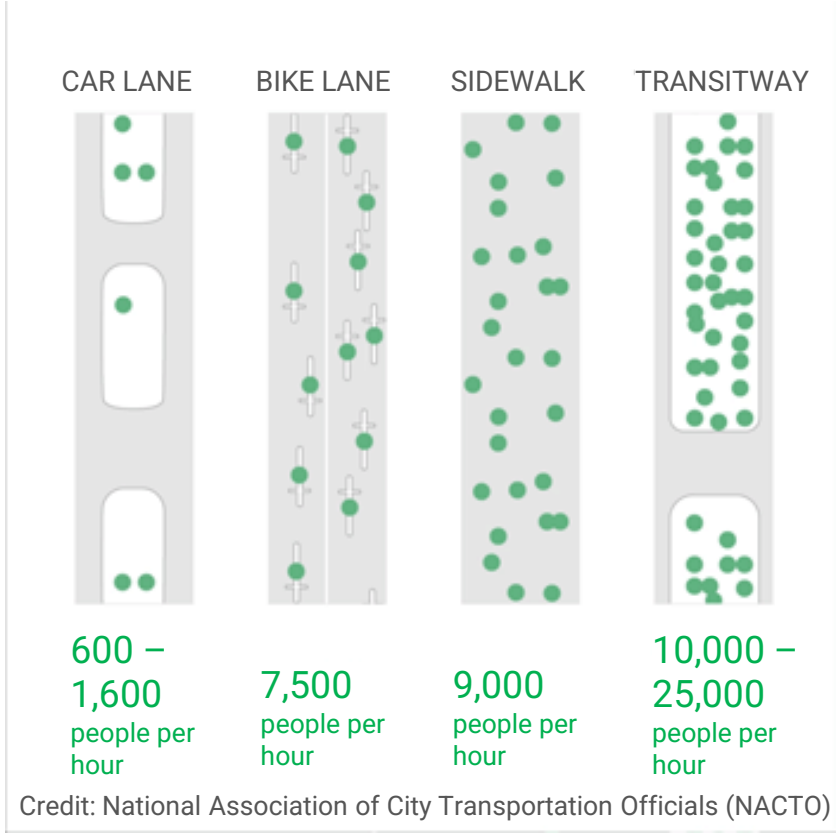
- What is Per Capita Vehicle Miles Travelled (VMT) and why should we care?
- Where are we in terms of reducing per capita VMT?
- Per capita VMT Reduction Requirements and Planning Guidance
- Available VMT Data
- Key Resources

What is Per capita VMT?



"Per capita vehicle miles traveled" means the number of miles traveled using cars and light trucks in a calendar year divided by the number of residents in Washington. (RCW 36.70A.030)

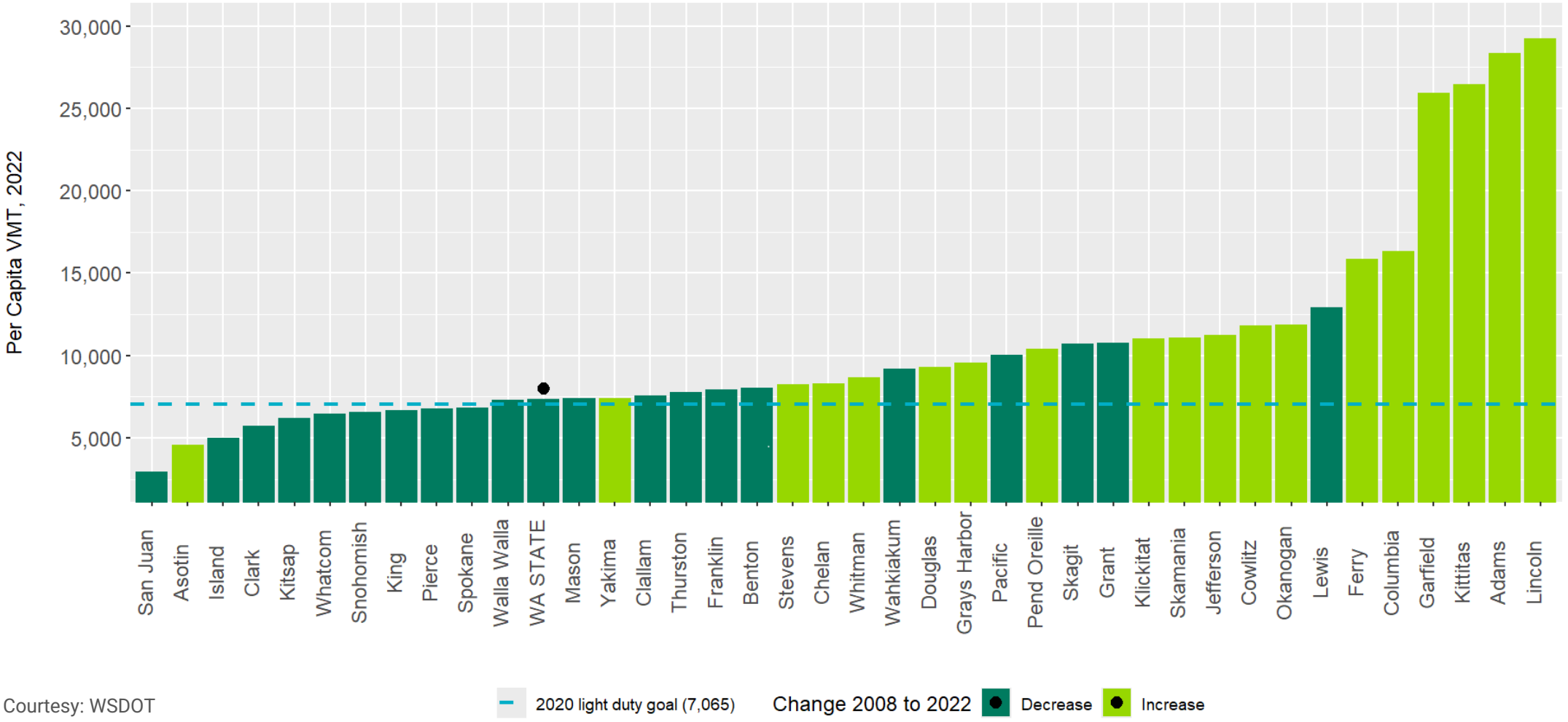
Per capita VMT – Why should we care?



Credit: National Association of City Transportation Officials (NACTO)

- Accommodating more cars requires space
- Reducing inefficiencies due to congestion
- Addressing greenhouse gas emissions
- Improving safety
- Enhancing health and equity

Per Capita VMT – Where are we now?



Courtesy: WSDOT

Requirements

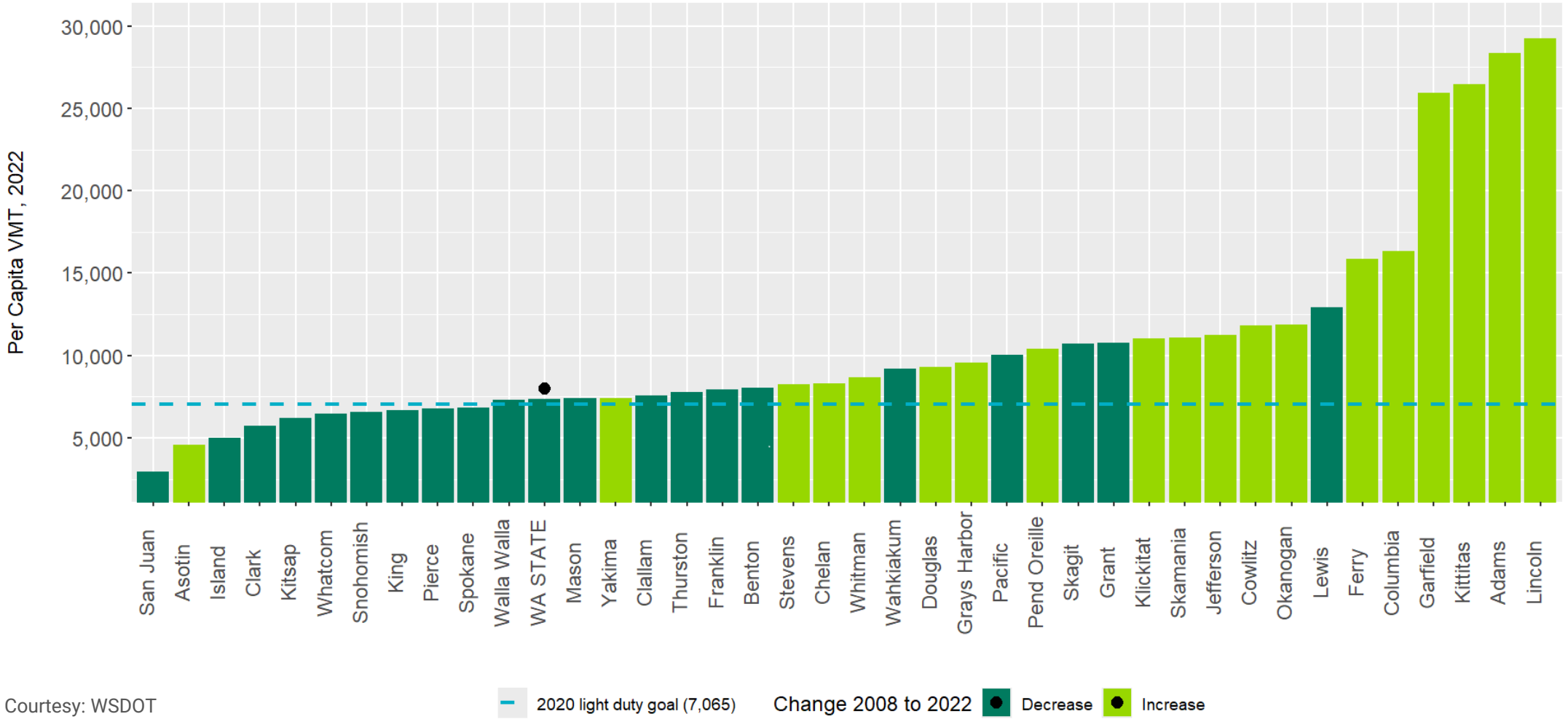
HB 1181 Requirements

Changes to Growth Management Act (GMA) require:

- Climate Resilience Sub-element: mandatory for jurisdictions fully planning under the GMA and encouraged for others
- Greenhouse Gas Emissions Reduction Sub-element: mandatory for 11 counties and their cities with population over 6,000.
- Changes to land-use [RCW 36.70A.070 Sec.1] and transportation elements [RCW 36.70A.070 Sec. 6] and their applicability [HB1181 Sec 4]

Both Sub-elements Required	Year Due
Benton	2026
Clark	2025
Franklin	2026
King	2029
Kitsap	2029
Pierce	2029
Skagit	2025
Snohomish	2029
Spokane	2026
Thurston	2025
Whatcom	2025
Counties & cities over 6,000 pop.	

Per Capita VMT – Where are we now?

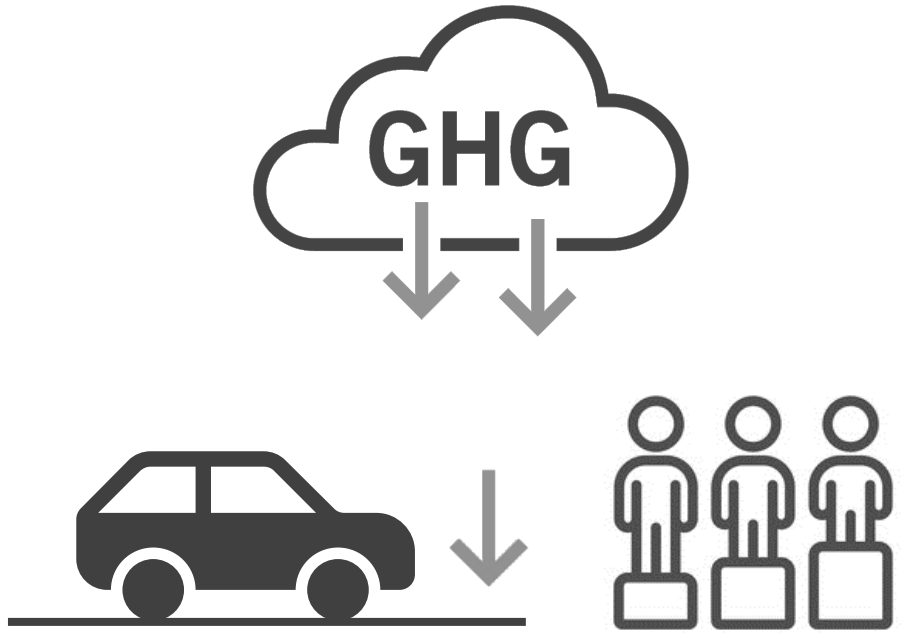


Courtesy: WSDOT

Greenhouse Gas Reduction Sub-element

Minimum Requirements:

- Reduce GHG emissions generated by transportation and land use
- Reduce per capita Vehicle Miles Traveled
- Prioritize reductions that benefit overburdened communities to maximize the co-benefits of reduced air pollution and environmental justice



Implementation Progress

Five-year progress report [RCW 36.70A.130(9)(a)]

- Mandatory for jurisdictions required to develop GHG emissions reduction subelement
- Report progress toward **GHG and VMT reduction actions**
- Identify actions where jurisdiction has not made progress
- Plan to implement identified lagging actions within the next two years

Planning Guidance & Resources

Pathways for GHG Sub-element

PATHWAY 1
Emissions Estimate:
1. Gather Information
2. Develop Emissions Estimates
3. Evaluate Sources
4. Set **Targets**[1]
5. Develop Measures
6. Integrate Measures
7. **Evaluate Progress**[2] (where possible)

PATHWAY 2
VMT Study:
1. Determine Scope & Scale
2. Acquire VMT Data
3. Evaluate Sources
4. Set **Targets**[1]
5. Develop Measures
6. Integrate Measures
7. **Evaluate Progress**[2]

PATHWAY 3
GHG Inventory:
1. Determine Scope & Scale
2. Collect Data as per Methodology
3. Evaluate Sources
4. Set **Targets**[1]
5. Develop Measures
6. Integrate Measures
7. **Evaluate Progress**[2]

[1] **Targets**: With 2022 as baseline year, set targets to achieve net zero emissions by 2050 as per the statewide target
[2] **Progress**: Valuation should be conducted at least every 5 years to report progress

Available VMT Data

- Highway Performance Monitoring System (HPMS)
  - Federal data
  - Total VMT provided
  - Based on route ownership
  - Pass through travel included
  - Data available at county & city level
  - Data available at city level for 2022
  - Available through WSDOT, Annual mileage and travel information

- StreetLight
  - Big data
  - Per capita VMT provided
  - Based on origin & destination
  - Pass through travel not included
  - Data available at Block Group level
  - Data available for 2019
  - Available through VMT+ | Providing VMT Per Capita Estimates

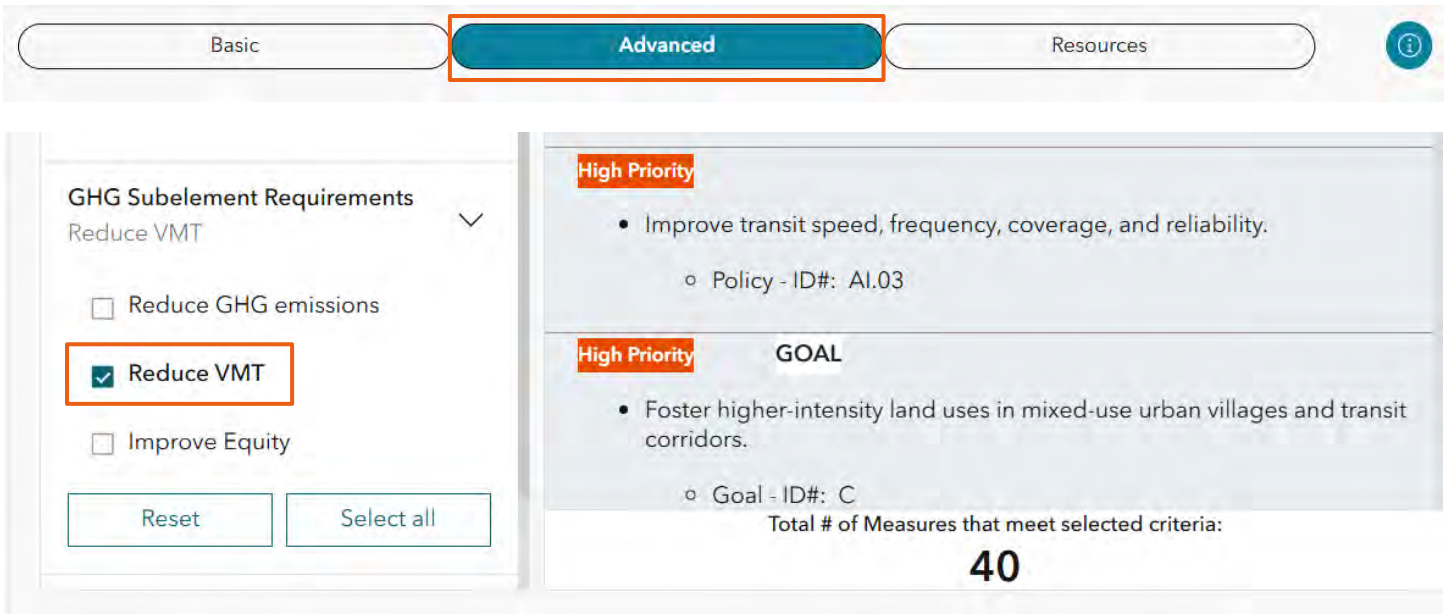
VMT Reduction Targets &Guidance

- Adopted statewide VMT reduction targets (RCW 47.01.440 Sec 1a)
- State's support related to per capita VMT reduction planning:
  - WSDOT guidance for per capita VMT reduction planning: Vehicle Miles Traveled (VMT) Targets - Final Report, June 2023
  - WSDOT is working with Regional Transportation Planning Organizations (RTPOs) to build their capacity for helping local jurisdictions with per capita VMT reduction planning

Measures to Reduce Per Capita VMT

- Demonstration of Climate Policy Explorer

  Climate Policy Explorer (arcgis.com)

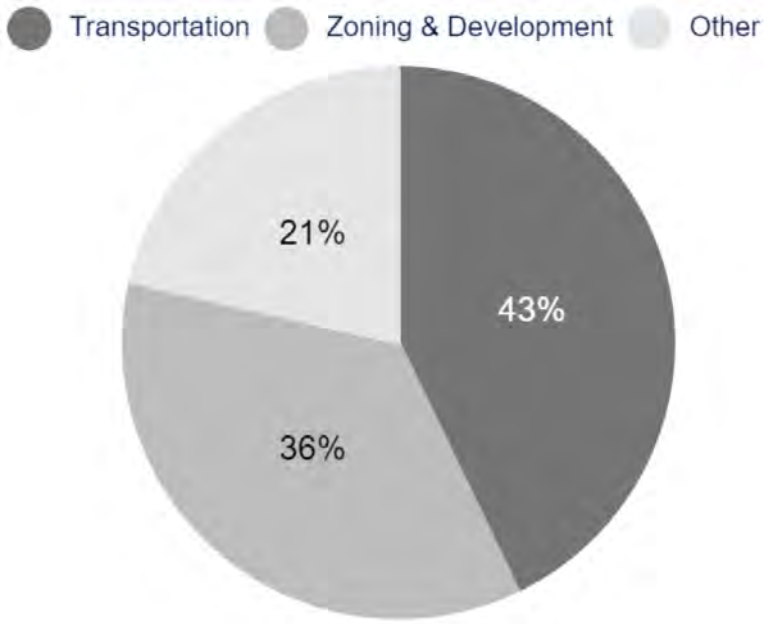


SCAN for
Climate Policy Explorer

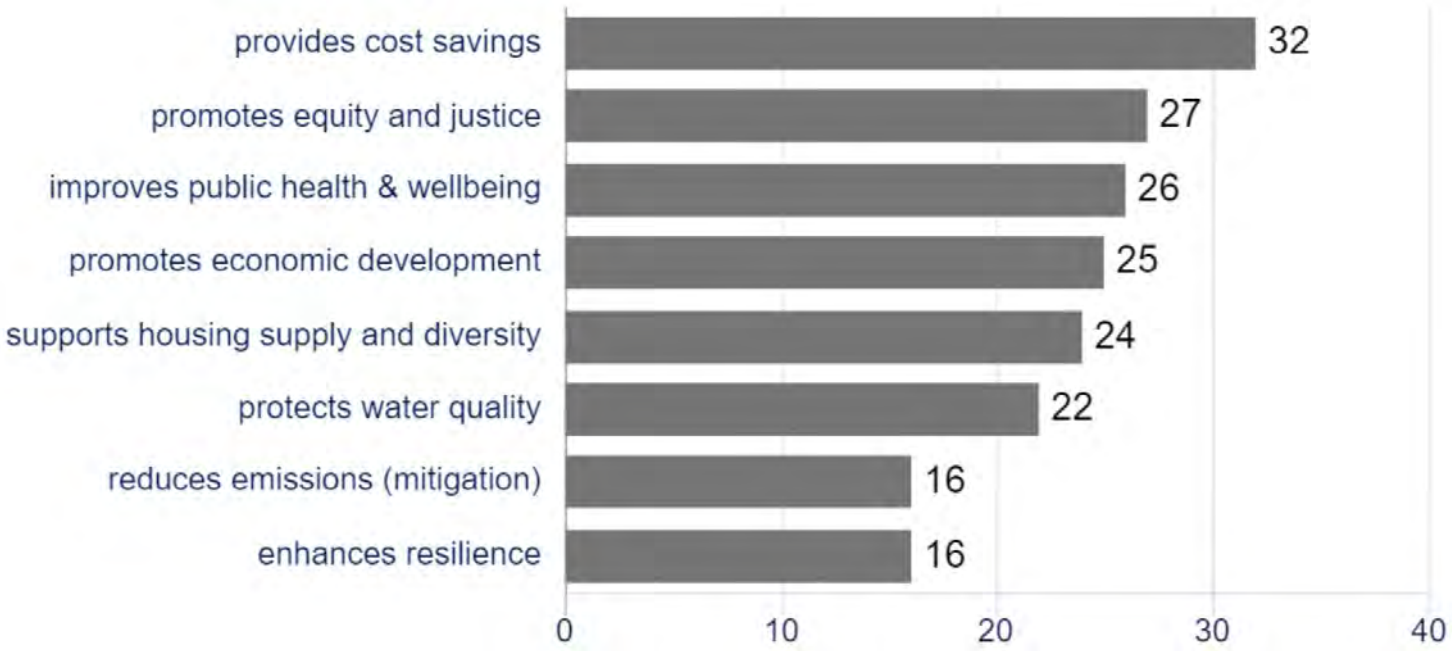
Measures to Reduce Per Capita VMT

40 measures that satisfy per capita VMT reduction requirement

VMT reduction **measures** by **sector**



Co-benefits provided by VMT reduction measures



Guidance for Implementation Progress

Commerce's guidance for implementation progress

- Work in Progress
  - Contact Mary Reinbold [mary.reinbold@commerce.wa.gov]
- Progress Tracking Metrics in Climate Policy Explorer **(updates will be available soon)**
- Washington Local Emissions Estimator (WaLEE) **(December, 2025)**

Thank you!

Climate & Ecosystem Section
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Washington State Department of Commerce

www.commerce.wa.gov

SCAN for **Climate Program Website**

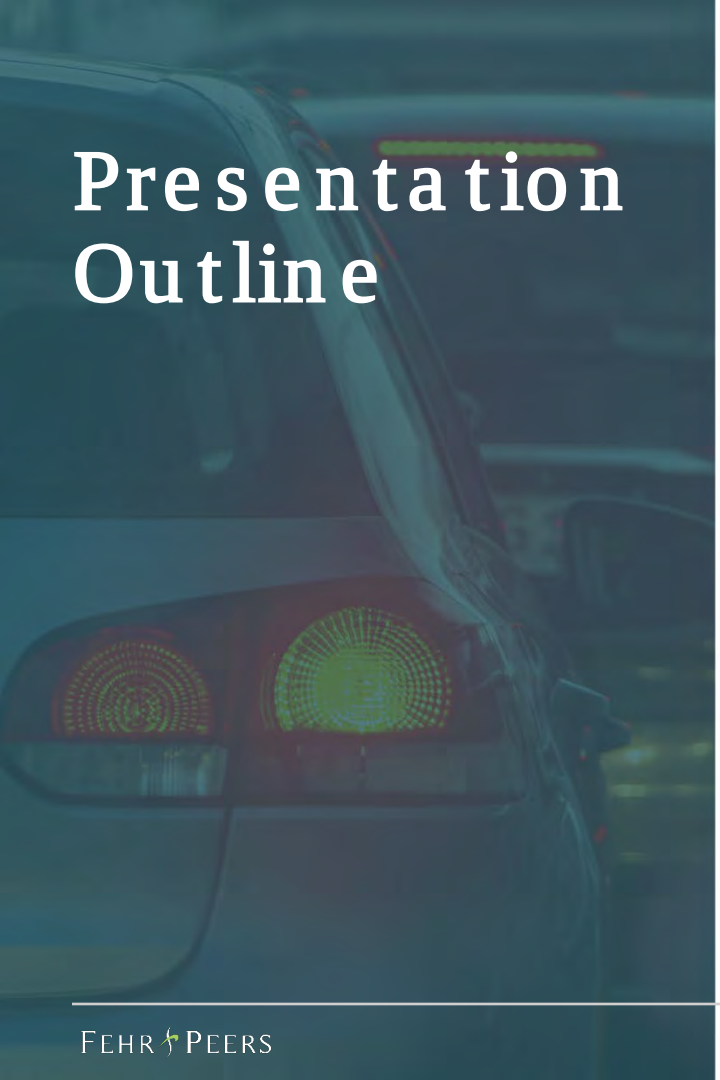
FUNDED BY WASHINGTON'S CLIMATE COMMITMENT ACT

Driving Down Vehicle Miles Traveled in Washington

FEHR PEERS

Marissa Milam
Senior Transportation Planner

April 24, 2025

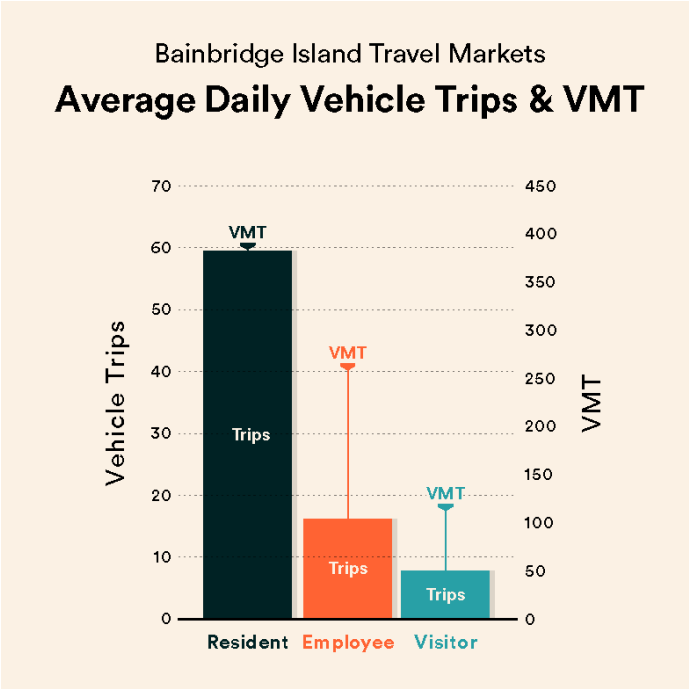


Presentation Outline

- How to identify effective VMT reduction strategies
- Technical tools and their applicability for VMT reduction analysis
- Broader lessons learned in VMT analysis

Travel Markets for VMT Reduction

- Need to determine current VMT, and which VMT the City has control over
- Leveraged multiple data sources to create travel markets to identify share of vehicle trips and VMT
- Use travel markets to effectively analyze VMT reduction strategies



Choosing VMT Reduction Strategies

How to Evaluate Strategies

Questions to address:

- What are the impacts of existing state/ federal policies?
- Who do the strategies impact?
- How extensive do the strategies extend geographically?
- How much investment is needed to achieve the reduction targets?
- What is the timescale, phasing, and implementation considerations of each strategy?
- What is the balance between the cost efficiency of a strategy versus the scale of reduction a strategy can provide?
- What direct or indirect control do cities and other agencies have with each of the strategies?

Tools and Resources

Data, tools, and analytical procedures to analyze VMT

Existing data for baselining travel behavior and developing quick response tools

- VMT+ Dataset
- Big Data
- HPMS WSDOT data
- Household travel surveys
- Census data

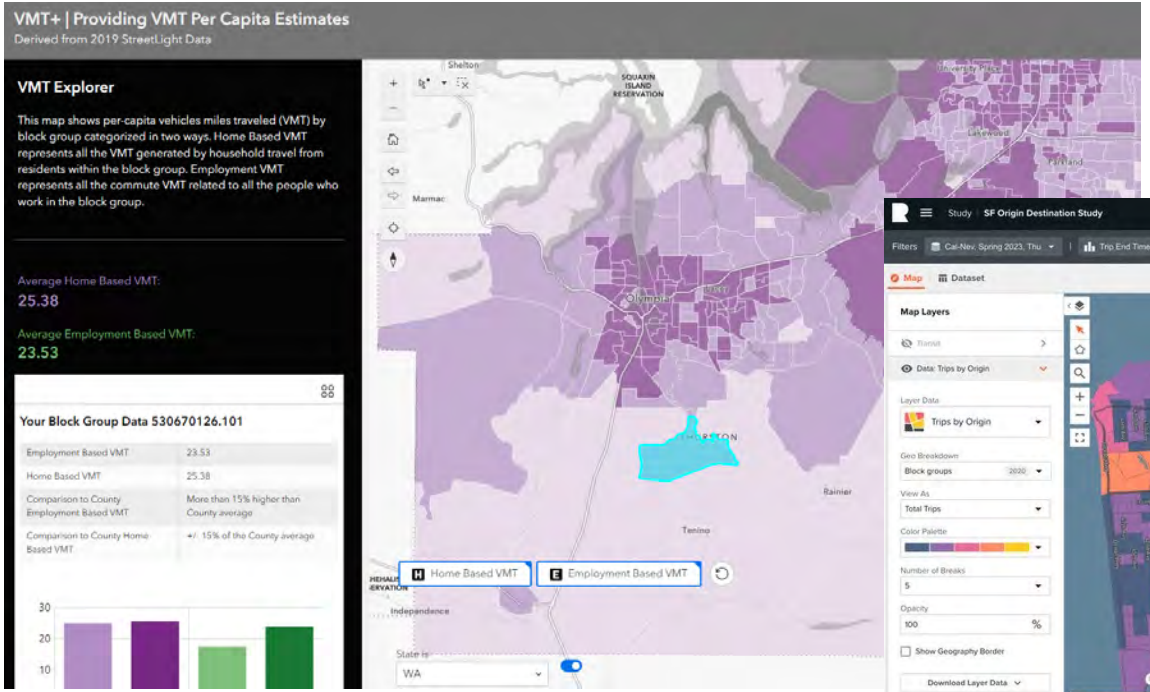
Travel demand model modifications and post processors

- Develop existing and future VMT forecasts
- Test regional VMT reduction strategies
- Evaluate impact of travel behavior changes on VMT
- Develop transportation GHG emissions inventories

Tools to evaluate/ develop VMT mitigation strategies

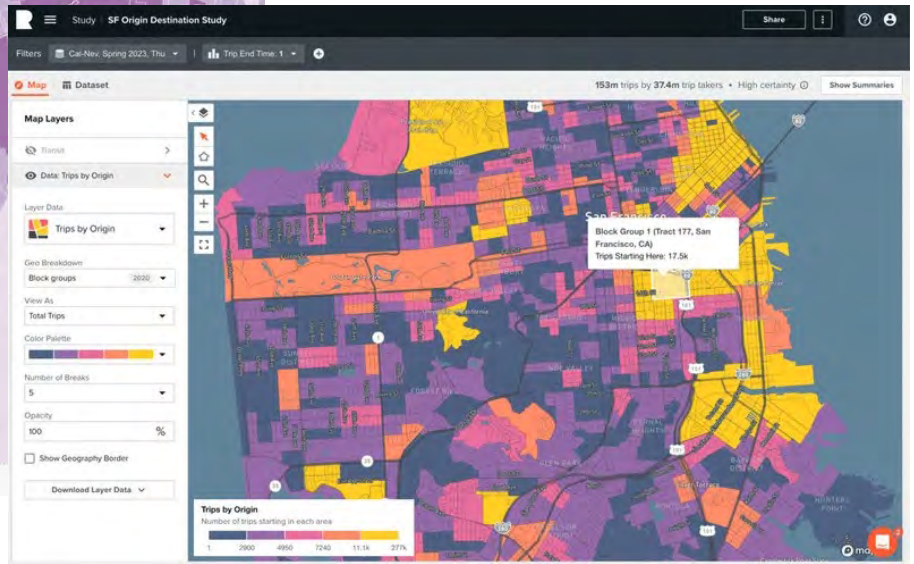
- Commerce Climate Policy Explorer
- CAPCOA
- TDM+
- National research and resources

Big Data



StreetLight VMT+ Data

Replica Places Model



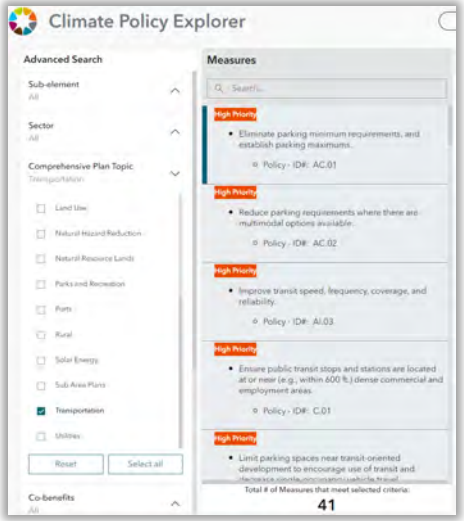
Travel Model Tools

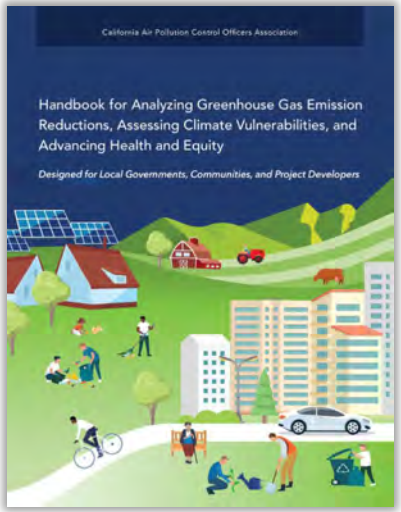
Method		Analysis Application	Approach	Formula	Trip Types Included[4]	Full Accounting?		Source
						Trip Length	Trips	
Boundary[1]		Air Quality	Estimates/forecasts VMT for a specific boundary area like the City of Elk Grove	Volume x Distance (for all model links in the boundary)	II IX XI XX	Does not account for entire trip length	Includes all trips on the network (including commercial vehicle trips)	Assigned model roadway network
OD[2]	VMT Generated by project	GHG	Estimates/forecasts VMT based on all trips that have one end in a project location	Trips x Trip Length	II IX XI	Fully accounts for entire trip length within SACOG region	Includes trips with one leg at the project location, excludes intermediate stops	Model origin-destination trip matrix
	RTAC[3]	GHG (alternative methodology)	Estimates/forecasts VMT based on all trips that have one end in a project location	Trips x Trip Length	II 50% IX 50% XI	Fully accounts for entire II trip length within SACOG region but attributes on half of IX-XI to project	Includes trips with one leg at the project location, excludes intermediate stops	Model origin-destination trip matrix
	Tour-Based (VMT efficiency)	Transportation (SB 743)	Estimates/forecasts VMT based on tours generated by a project, more details on *"VMT Efficiency"* tab	Trips x Trip Length	II IX XI	Fully accounts for entire trip length including trips outside of SACOG region	Includes intermediate stops, more details on "VMT Efficiency" tab	DAYSIM travel diary

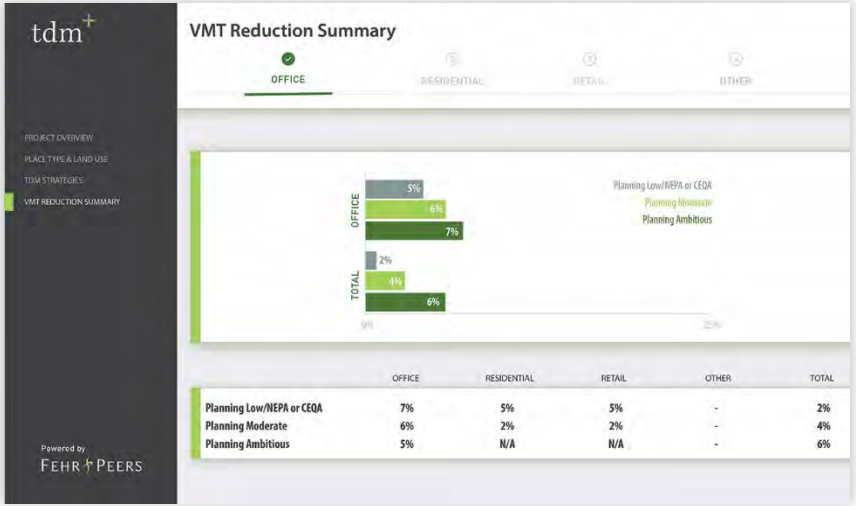
(1) Boundary method includes commercial vehicle trips
(2) "OD" = Origin-Destination based VMT
(3) RTAC = Regional Targets Advisory Committee
(4) Trip types inluded:
II – Internal to Internal Trips
IX – Internal to External Trips
XI – External to Internal Trips
XX – External to External (Through) Trips

Example:

Tools for VMT reduction strategies







Different tools available for:

- Policy and strategy identification vs. analysis
- Type of VMT reduction
  - Project vs. community scale
  - Land use context

Broader Lessons Learned

- Leverage multiple data sources to understand current travel behavior
  - Travel models
  - Census/ LEHD
  - "Big Data" (e.g., StreetLight)
  - Travel surveys
- Strategies: direct jurisdictional control vs. partnerships
- Iterative modeling process
- Near-term focus on multimodal improvements

Broader Lessons Learned

King County

Scenarios Tested to Meet Reduction Targets

Scenario	Inputs/Assumptions: Regional Transit Service	Inputs/Assumptions: % of Growth Allocated to Urban + Transit-oriented Suburban Areas**	Inputs/Assumptions: Equitable Vehicle Pricing Amounts	VMT Per Capita (% Reduction from 2017) Target: 33-37% Reduction by 2040
Vision 2050 (Scaled to 2040)	METRO CONNECTS	85%	$0.13/mile	11% Reduction
Combined Scenario	1-1.5× METRO CONNECTS	Same as Land Use Scenario	$0.40-0.60/mile	33% Reduction

** Urban: Large proportion of City of Seattle near transit
Transit-oriented suburban: Areas near planned high-frequency transit within the County

Multimodal Improvements

All Ages & Abilities Bike Facilities are ...

Safe

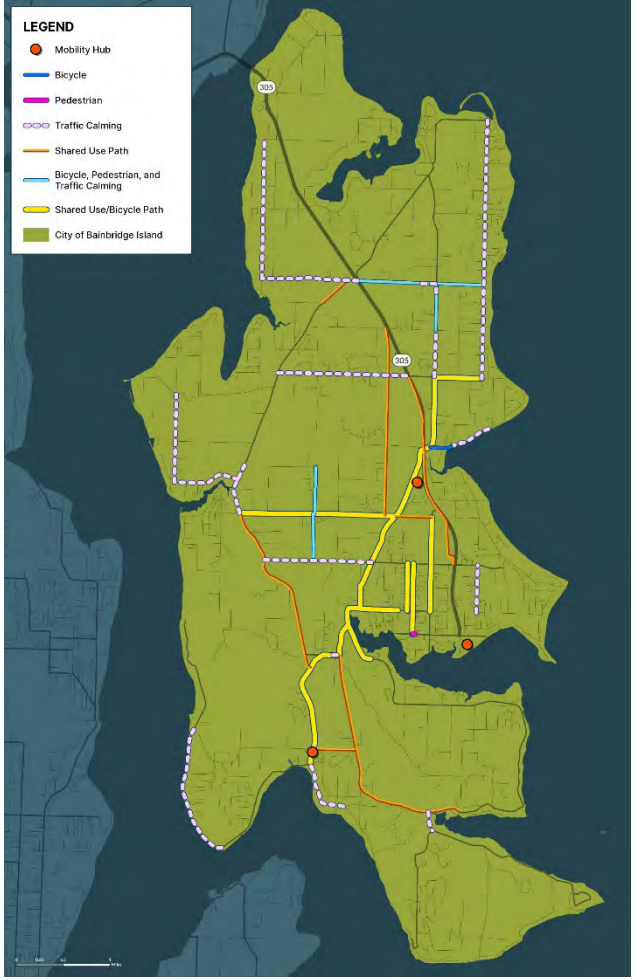
More people will bicycle when they have safe places to ride, and more riders mean safer streets. Among seven NACTO cities that grew the lane mileage of their bikeway networks 50% between 2007–2014, ridership more than doubled while risk of death and serious injury to people biking was halved.[6] Better bicycle facilities are directly correlated with increased safety for people walking and driving as well. Data from New York City showed that adding protected bike lanes to streets reduced injury crashes for all road users by 40% over four years.[7]

Comfortable

Bikeways that provide comfortable, low-stress bicycling conditions can achieve widespread growth in mode share. Among adults in the US, only 6–10% of people generally feel comfortable riding in mixed traffic or painted bike lanes.[8] However, nearly two-thirds of the adult population may be interested in riding more often, given better places to ride, and as many as 81% of those would ride in protected bike lanes.[9] Bikeways that eliminate stress will attract traditionally under-represented bicyclists, including women, children, and seniors.

Equitable

High-quality bikeways expand opportunities to ride and encourage safe riding. Poor or inadequate infrastructure—which has disproportionately impacted low-income communities and communities of color—forces people bicycling to choose between feeling safe and following the rules of the road, and induces wrong-way and sidewalk riding. Where street design provides safe places to ride and manages motor vehicle driver behavior, unsafe bicycling decisions disappear,[11] making ordinary riding safe and legal and reaching more riders.



Thank you!

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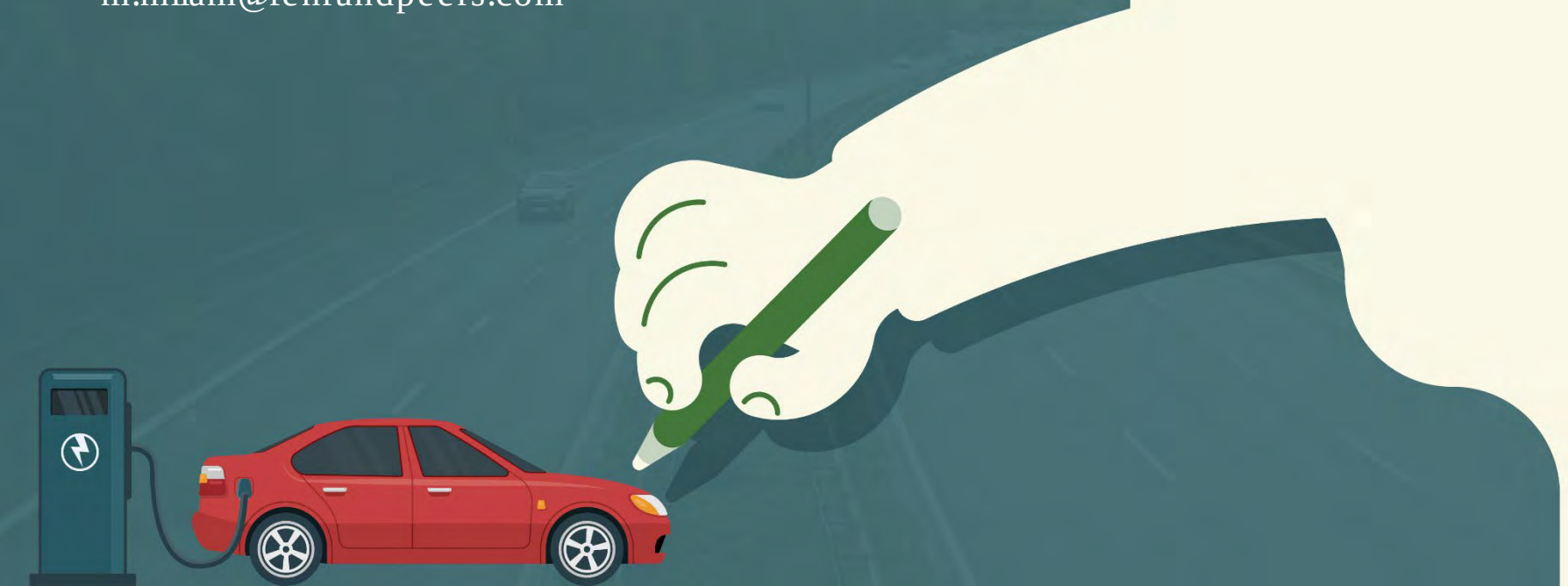
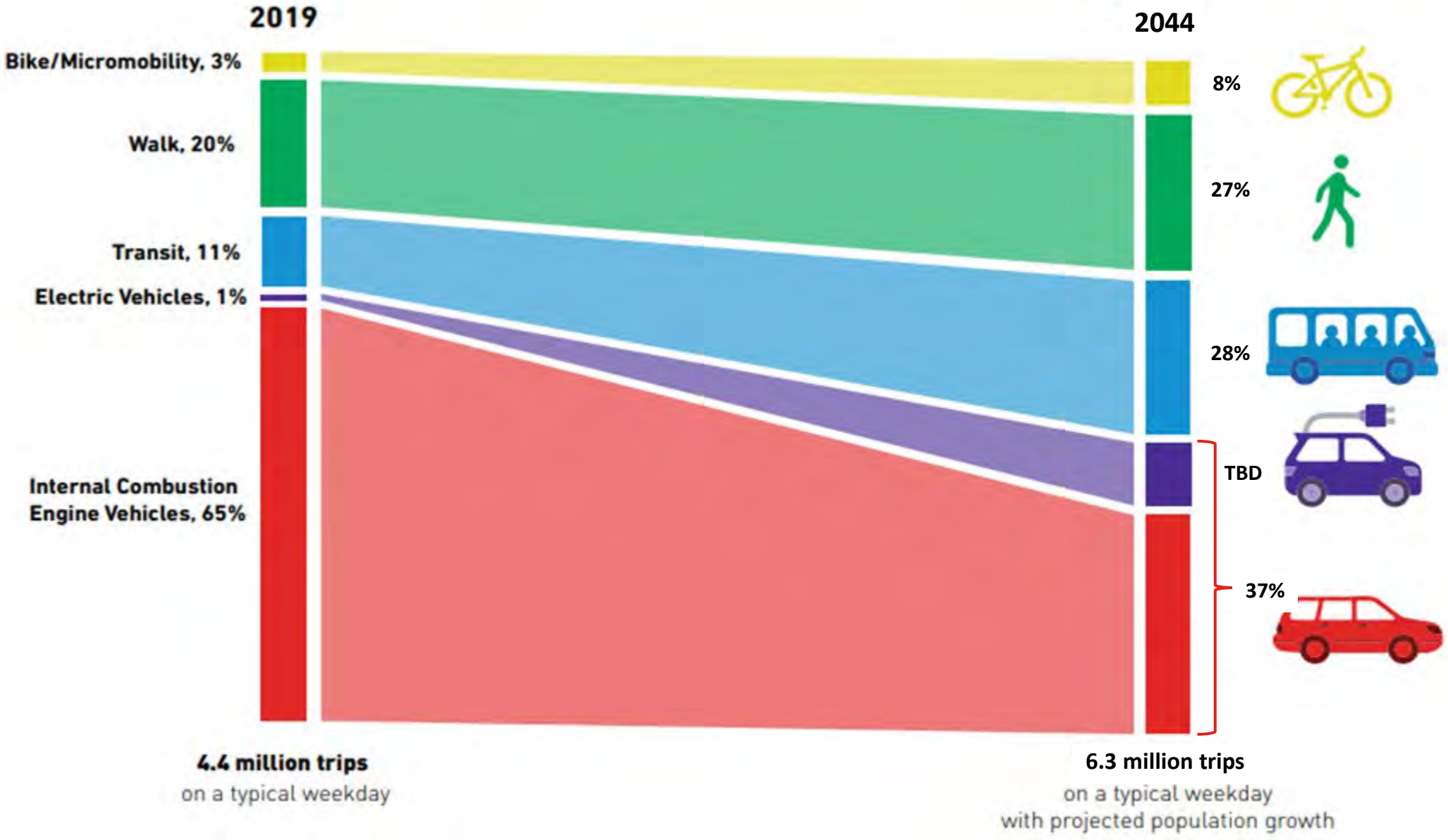


Seattle Core Emissions Sources

Strategies to Reduce VMT

Land Use Coordination	Pricing	Improve Options	Encouragement Programs
Compact, mixed-use, walkable communities organized around high-capacity transit (-30+%)	Roadway pricing (e.g., tolls, RUC, cordon) (-10%)	Transit service and capital investments (-15%)	CTR/TDM (-3%)
Off-street parking regulations (>>>)	Parking pricing, incentives (-30%)	Walking (-6%) and bicycling (-1%) infrastructure	Safe routes to school
Alternative mode investments		Shared mobility services	Encouragement programs (-4%)
VMT development fees		Tele-everything	Open streets events

2044 Mode Split Targets



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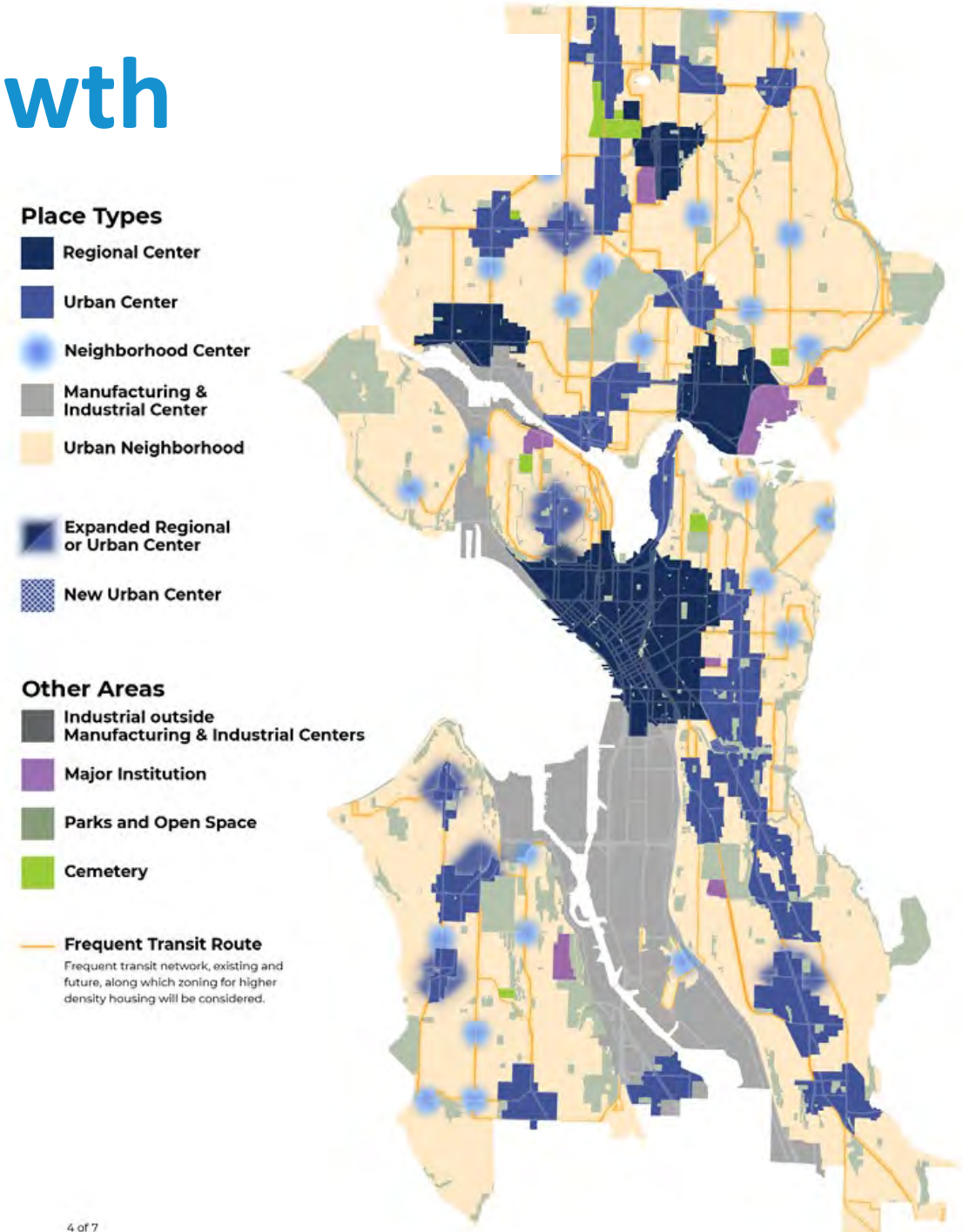
Land Use Coordination: Growth Strategy

Urban Center

Link Light Rail

Neighborhood Center

RapidRide bus rapid transit



Pricing

Existing Pricing Strategies

- Gas tax
- Car tab fees
- Off-street parking taxes and on-street rates

Potential Parking Pricing Strategies

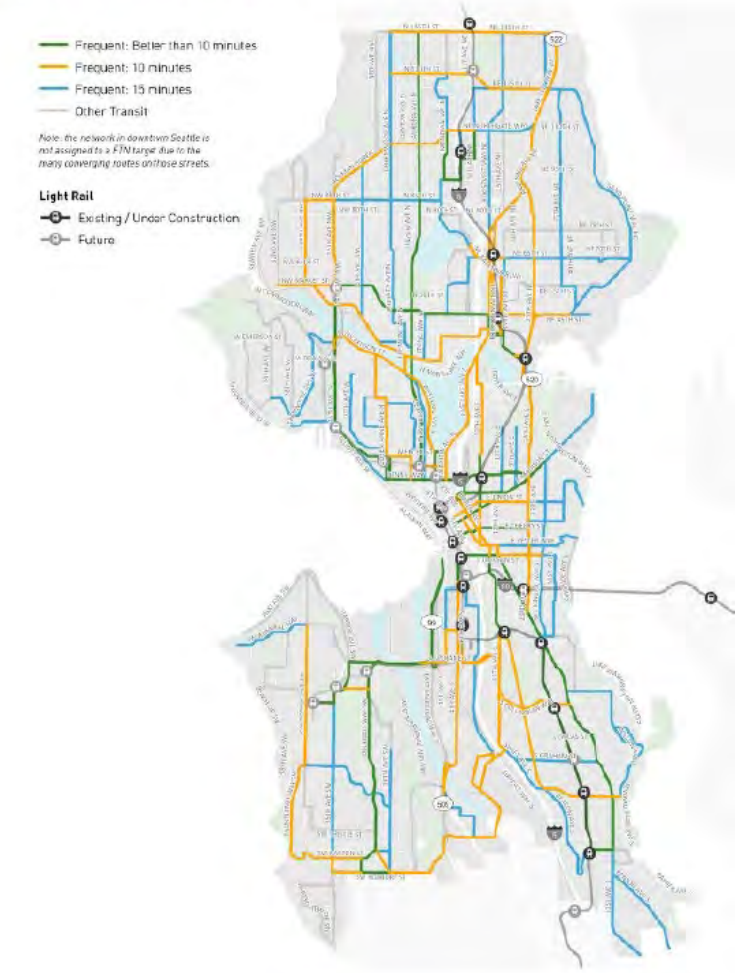
- Untapped parking tax
- Expand on-street, paid parking areas

Other/regional strategies?

- Roadway user charge (per mile)
- Expanded tolling

Improve Options: Transit Service

Figure 4: Frequent Transit Network Targets



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Improve Options: Transit Capital

Figure 5: Transit Capital Investment Corridors

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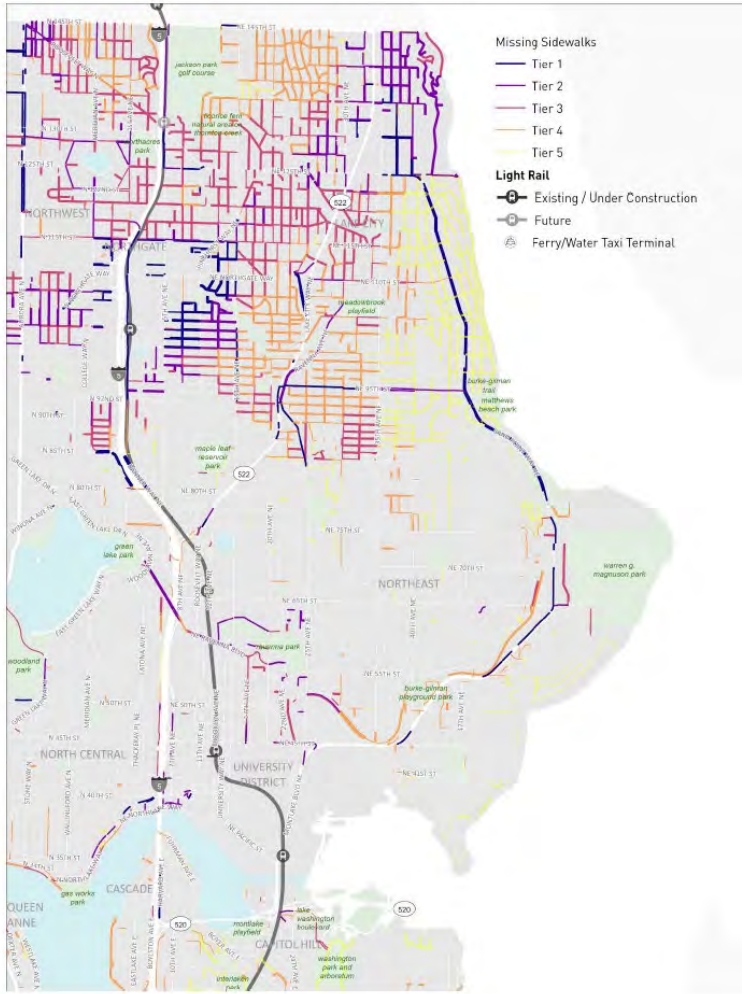
Improve Options: Walking

Figure 5: Missing Sidewalks Priority Investment Network (Northeast)



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Improve Options: Walking

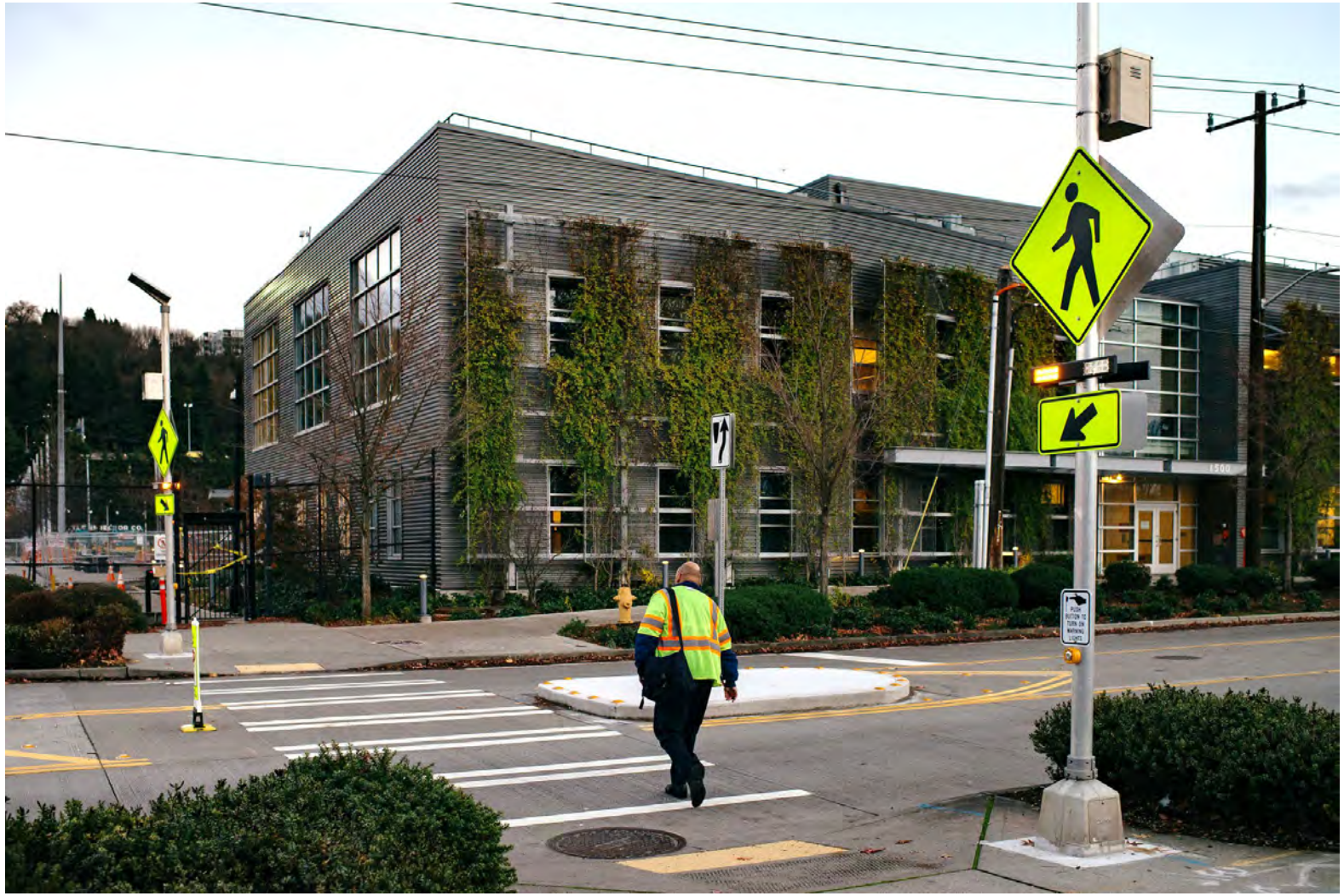
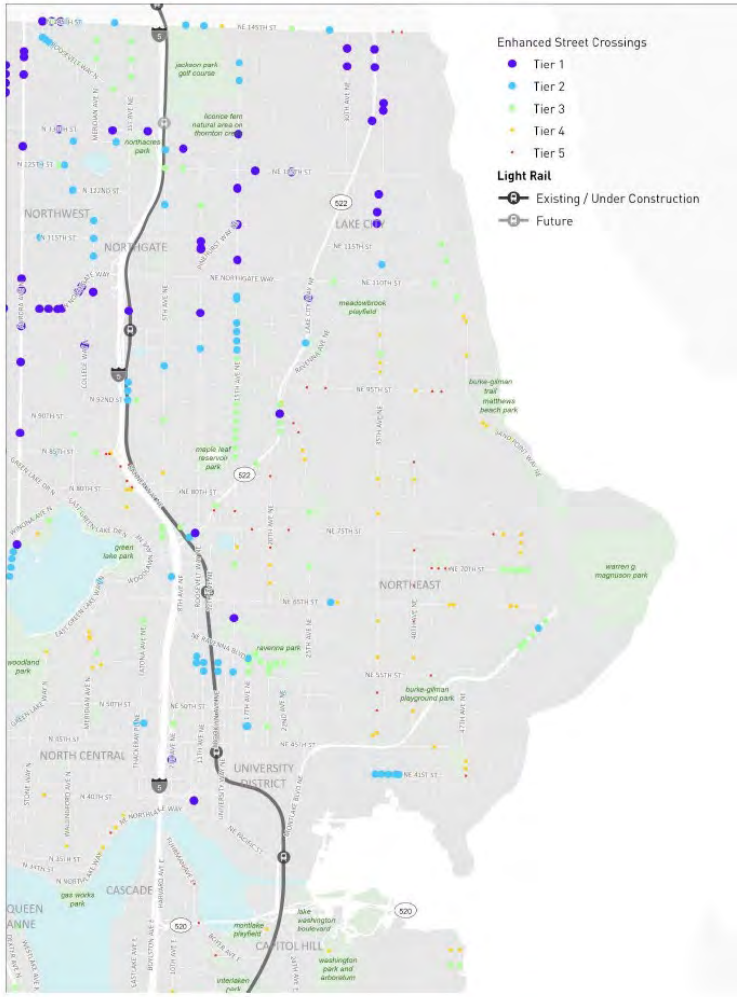


Figure 18: Enhanced Street Crossings Priority Investment Network (Northeast)



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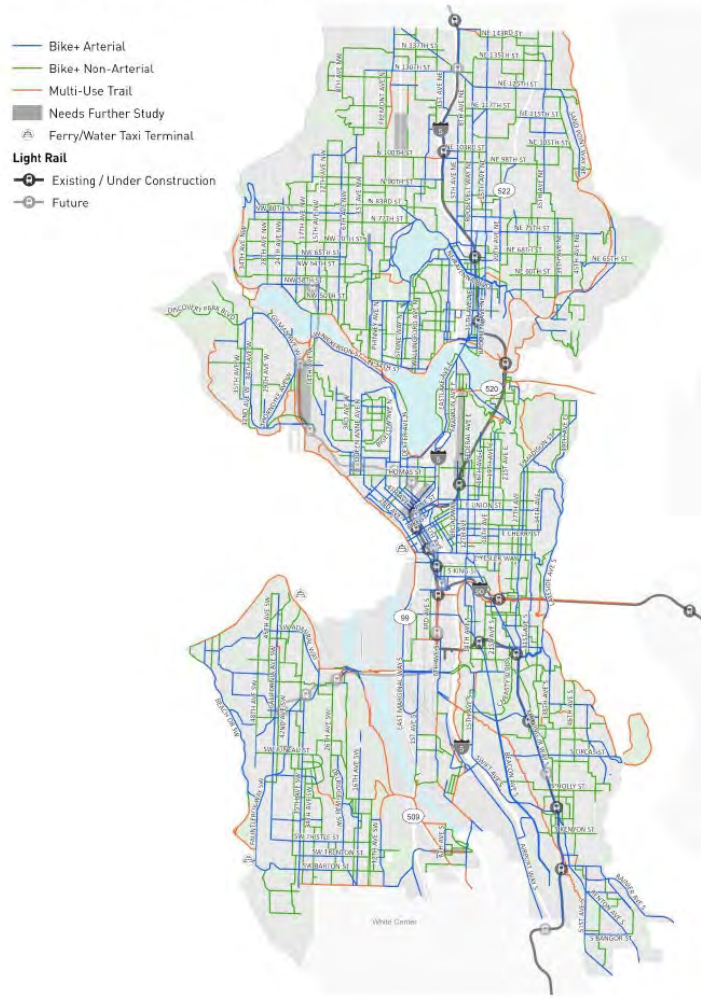
Improve Options: Bicycling

Figure 12: Future Bicycle and E-Mobility Network Vision



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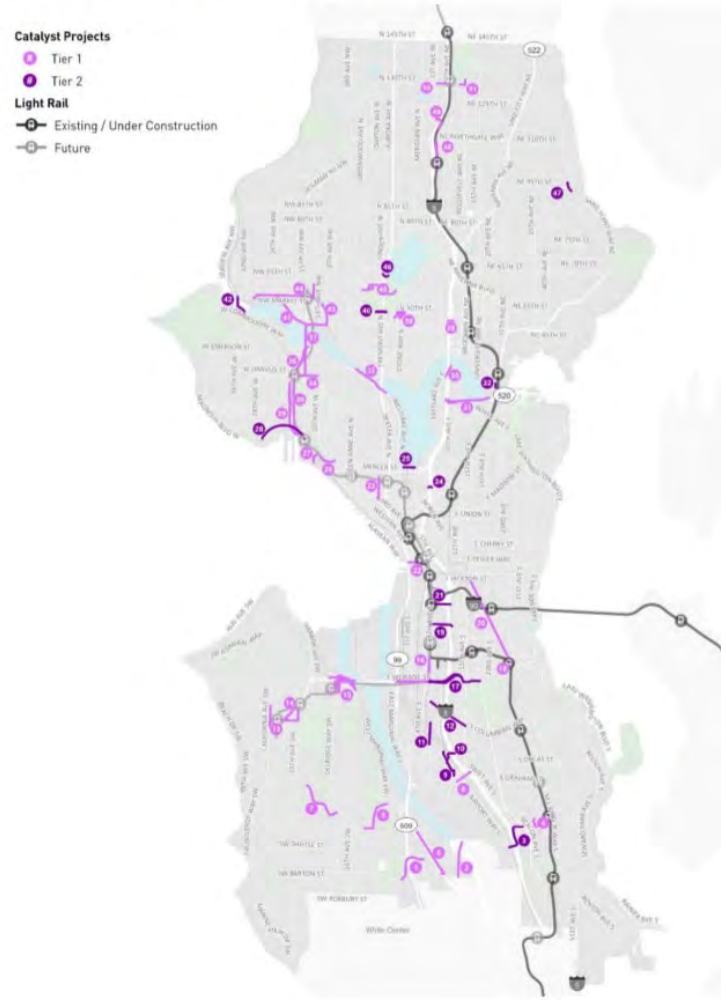
Improve Options: Bicycling

Figure 13: Bicycle and E-Mobility Catalyst Projects



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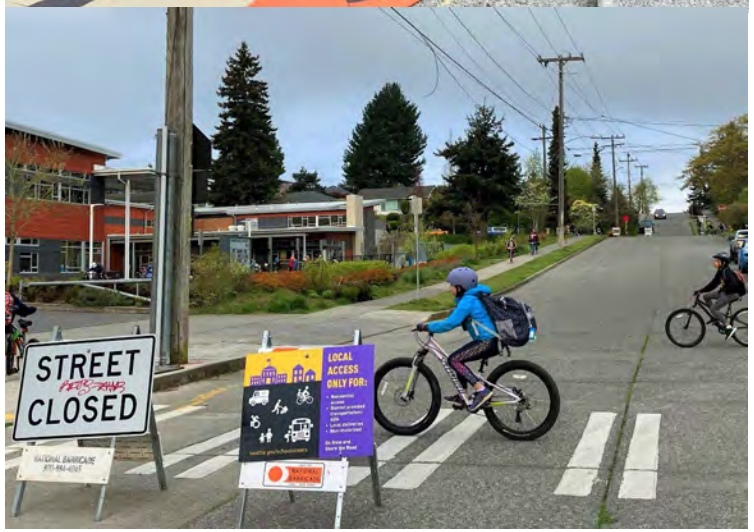
Encouragement Programs



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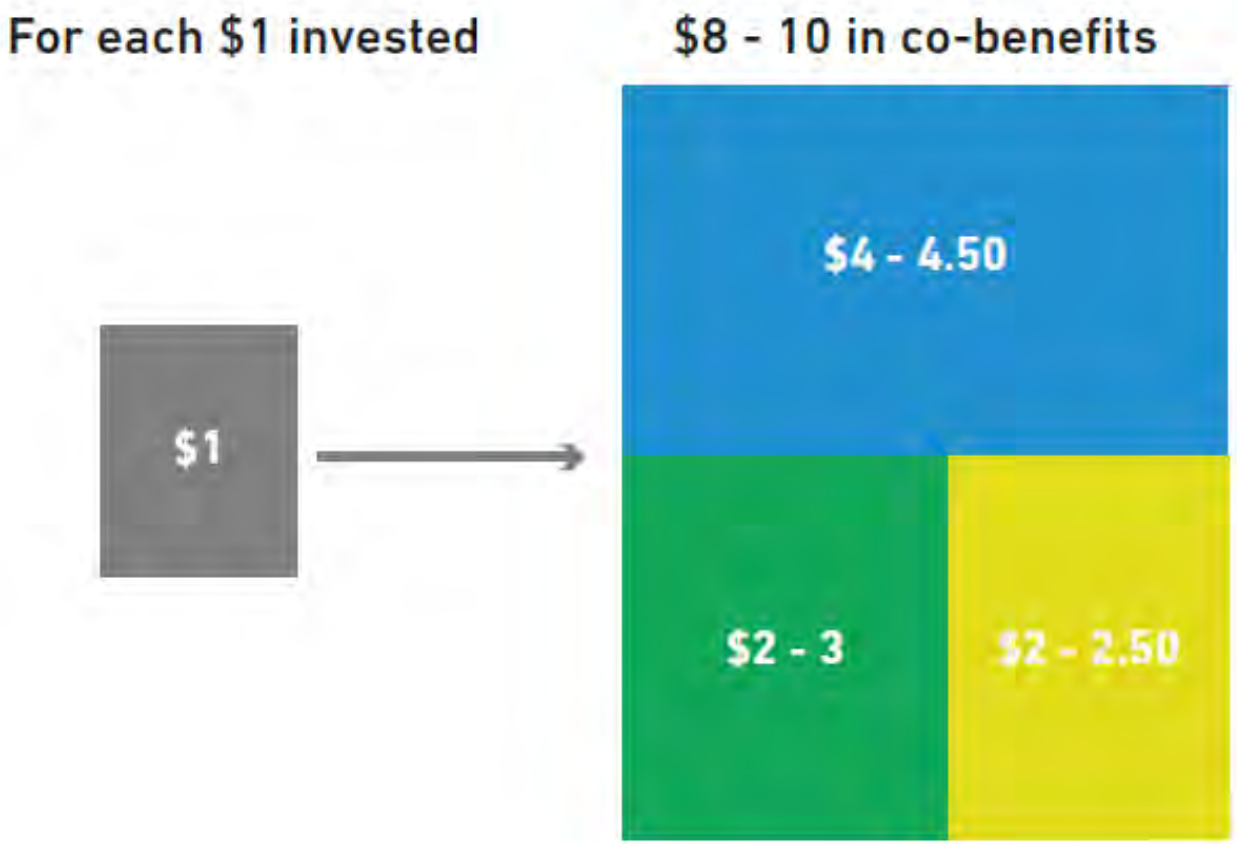
Carbon Reduction Co-Benefits



Safety - Less driving and safer streets lead to fewer crashes, injuries, and deaths.

Health - Shifts to walking, biking, and active modes enable increased physical activity and health savings. Reductions in driving and increasing electrification reduce harmful air pollution.

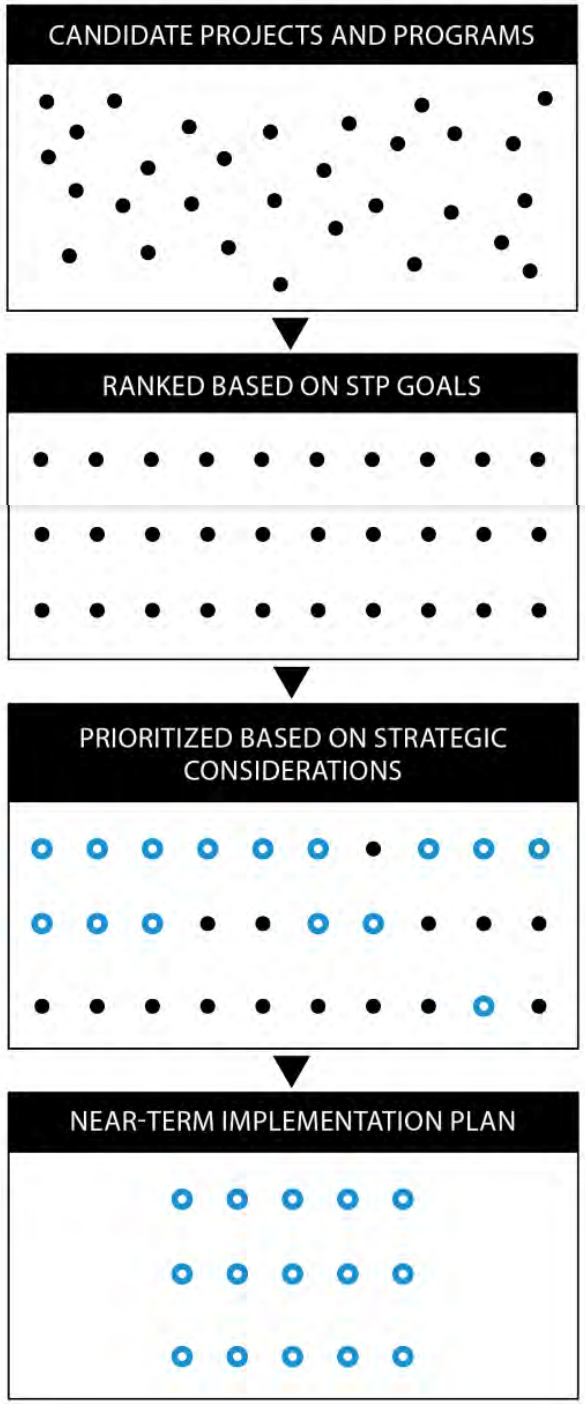
Neighborhood Economic Benefits - By driving less, households reduce their transportation costs and have more money to support local businesses and economies. Investments in walking, biking, and transit increase foot traffic and street-level activity.

Co-benefits are based on the estimated reduction in vehicle miles traveled from CCI of Transportation's Benefit-Cost Analysis Guidance for Discretionary Grant Programs

Seattle Department of Transportation

VMT as a Prioritization Tool

- VMT reduction potential is our Sustainability measure
- Used for both projects and programs



Drawn From:
- STP Networks
- Community input
- Other plans and programs
- Vision Zero
- Sound Transit 3
- Climate Change Response Framework
- Transportation Equity Framework

Quantitative Assessment of:
- Safety
- Equity
- Sustainability
- Mobility & Economic Vitality
- Livability
- Maintenance & Modernization

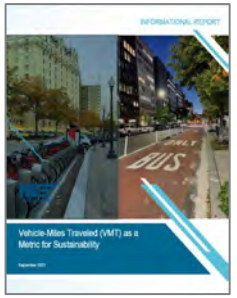
Qualitative Assessment of:
- Legal requirements
- Grant fitness
- Leveraging opportunities
- Existing commitments
- Community support
- Timing of related or partner investments
- Emergent needs

Aligned with Available Funding:
- Prioritized set of projects
- Prioritized set of program activites
- Updated every ~4 years

Learn More

- Are Vehicle Travel Reduction Targets Justified?: Why and How to Reduce Excessive Automobile Travel
  - Todd Litman, Victoria Transport Policy Institute (2023)

- Vehicle-Miles Traveled as a Metric for Sustainability
  - ITE Informational Report (2023)



- Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity
  - California Air Pollution Control Officers Association (2021)

- Climate Change Response Framework
  - City of Seattle (2023)

Key Resources

- Climate Planning
  - Climate Planning Website (Commerce)
- Information Resources
  - Intermediate Planning Guidance (Commerce)
  - Climate Policy Explorer (Commerce)
  - Vehicle Miles Traveled (VMT) Targets - Final Report, June 2023 (WSDOT)
  - Annual mileage and travel information (WSDOT)
    - Contact Heath Bright at WSDOT (BRIGHTH@wsdot.wa.gov) for HPMS VMT data
  - VMT+ | Providing VMT Per Capita Estimates (Fehr & Peers)
  - TDM+ Quick Response Tool (Fehr & Peers)
  - CAPCOA GHG Reduction Handbook (California Air Pollution Control Officers Association)
  - GHG Emissions Inventory for 11 fastest growing counties (Commerce)
    - Available June 2025

Thank you!

Questions?

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