

Growing pains: **It's time to invest in a resilient transportation system**

ROGER MILLAR
SECRETARY OF TRANSPORTATION

ASCE Spokane Banquet

Jan. 9, 2025

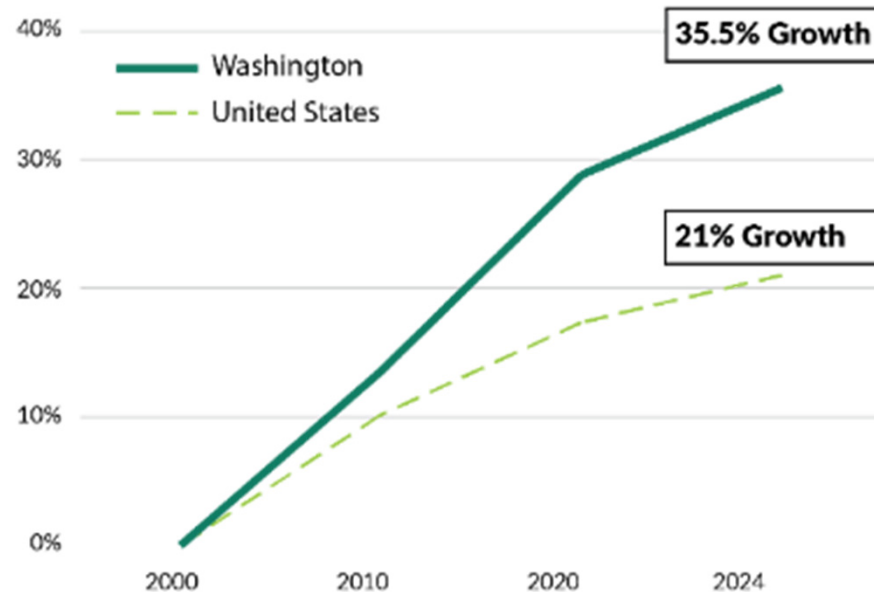
**Washington is growing, and
that's great!**

Washington's growing economy

- #1 best state economy (Wallethub)
- #2 best state for business (CNBC)
- Top 5 best states to work (Oxfam)
- Top 10 best states in the nation (US News and World Reports)
- Top 5 best states for investments in sustainable and equitable transportation (National Resources Development Council)
- Among the few states that rank both as top state for business *and* for workers
- Wages in Washington have grown by 22% since 2013 — double the national rate.
- Washington's annual GDP grew 54%, from \$524 billion in 2013 to \$807 billion in 2023.

Washington 21st century growth

Population growth 2000 to 2024

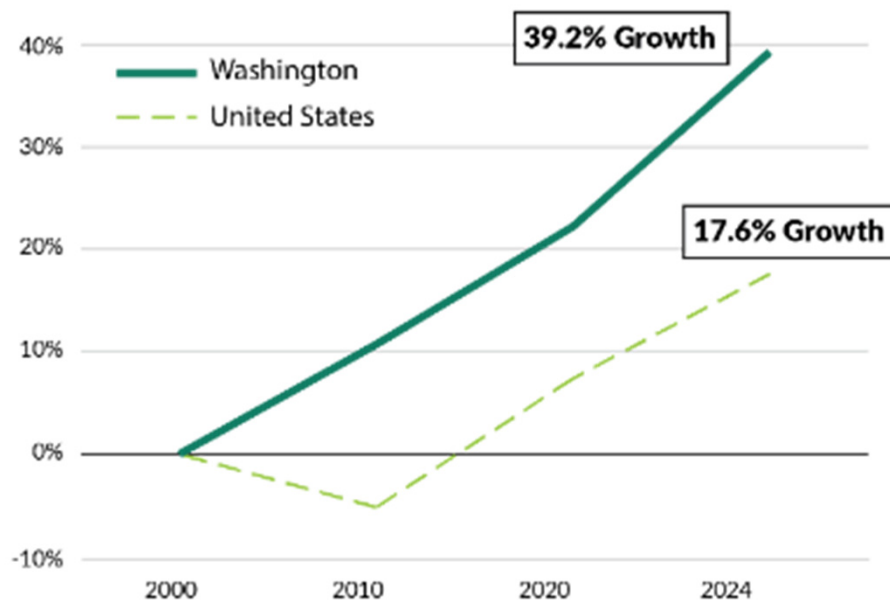


Washington: 5.9 million to 8 million
United States: 282.4 million to 341.8 million

Sources: Washington: Washington Office of Financial Management.
National: U.S. Census Bureau and Macro Trends.

Washington employment growth

Employment growth 2000 to 2024



Washington: 2.8 million to 3.9 million (projected)
United States: 136.9 million to 161 million

Sources: Washington: Washington Department of Employment Security and U.S. Bureau of Labor Statistics.
National: U.S. Bureau of Labor Statistics.

Investment in new capacity

Transportation funding post-1999

I-695 fundamentally changed how we fund transportation

- Restricted car tabs to \$30, eliminating the motor vehicle excise tax
- Subsequent funding packages helped address new and expanded systems
- Focused on delivering earmarked lists of specific improvement projects
- Less emphasis and certainty on routine maintenance, safety and preservation work

Nickel

- 2003
- 158 projects
- 5 cent gas tax
- \$3.9 billion
- 92% complete
- Under investment in maintenance and preservation

**IT'S YOUR NICKEL.
WATCH IT WORK.**



Mukilteo ferry terminal



Salmon Creek I-5/I-205 interchange



SR 20 Fredonia to I-5



SR 522/Snohomish River Bridge widening



Palouse River and Coulee City freight railroad purchase

Transportation Partnership Program (TPA)

2005
TRANSPORTATION
PARTNERSHIP
PROJECTS

- 2005
- 274 projects
- 9.5 cent gas tax
- \$7.05 billion
- 88% complete
- Under investment in maintenance and preservation



I-5 Portland Ave to Port of Tacoma Road HOV



Wenatchee hybrid-electric conversion



I-405 Express Toll Lanes



I-90 improvements/ wildlife crossing



SR 26/West Othello passing lanes

Connecting Washington



- 2015
- 158 projects
- 11.9 cents gas tax
- \$16 billion
- Over 16 years:
 - \$1.5 B for preservation
 - \$100 M for maintenance
- Under investment in maintenance, operations and preservation
- 52% complete



North Spokane Corridor



Snoqualmie Pass



Railroad landslide mitigation, Snohomish County



New Berkeley Street interchange, Lakewood



US 195 passing lanes

Move Ahead Washington



- 2022
- 119 projects
- CCA, IIJA, license plate fees
- \$17 billion
- Over 16 years:
 - \$1.5 B for preservation
 - \$800 M for maintenance
- Under investment in maintenance, operations and preservation



Portage Bay Bridge and Roanoke Lid project

Bicycle education and helmet fitting



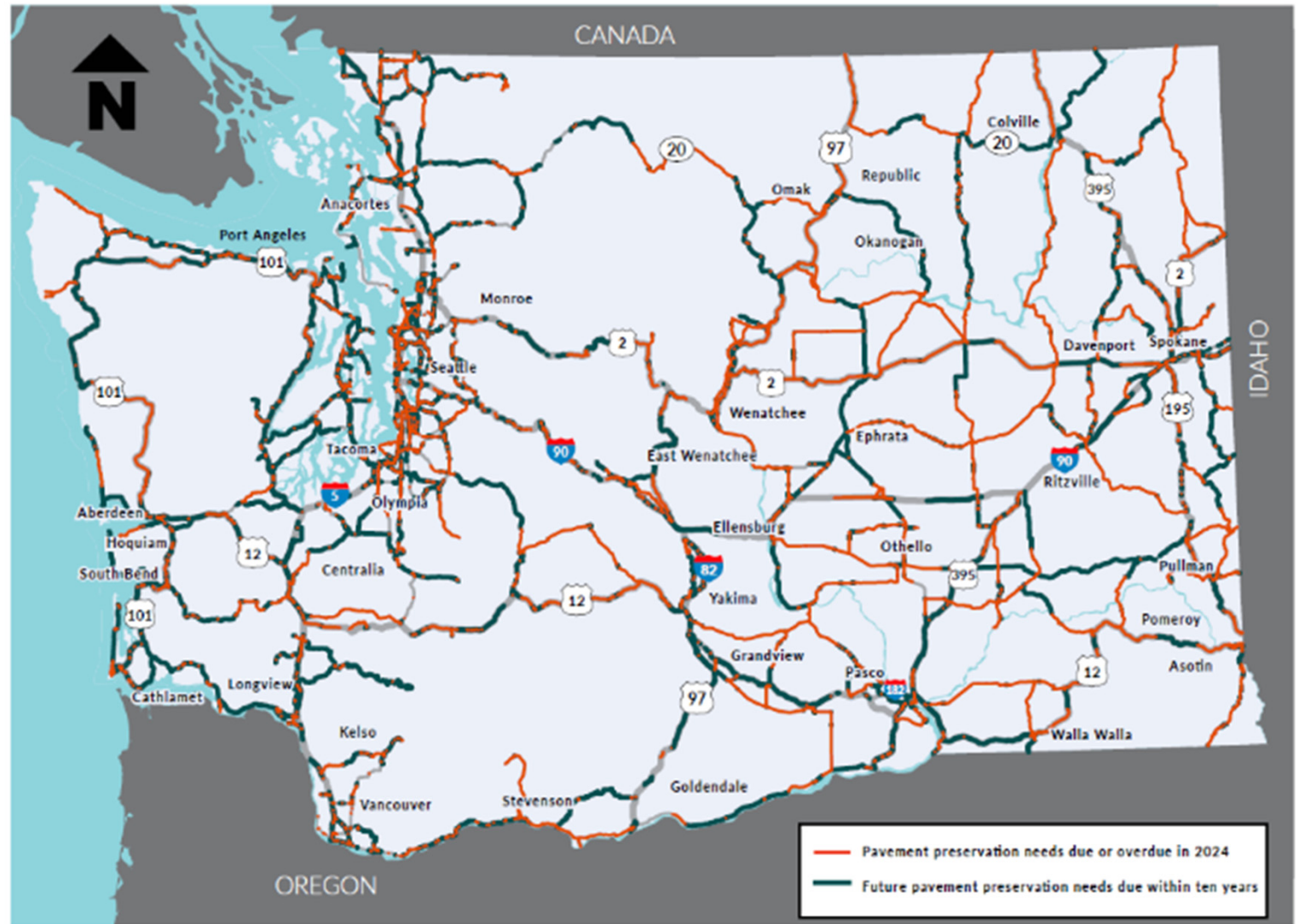
Youth ride free on all transit



Funding for 4 of 5 new hybrid-electric ferries

Growing pains

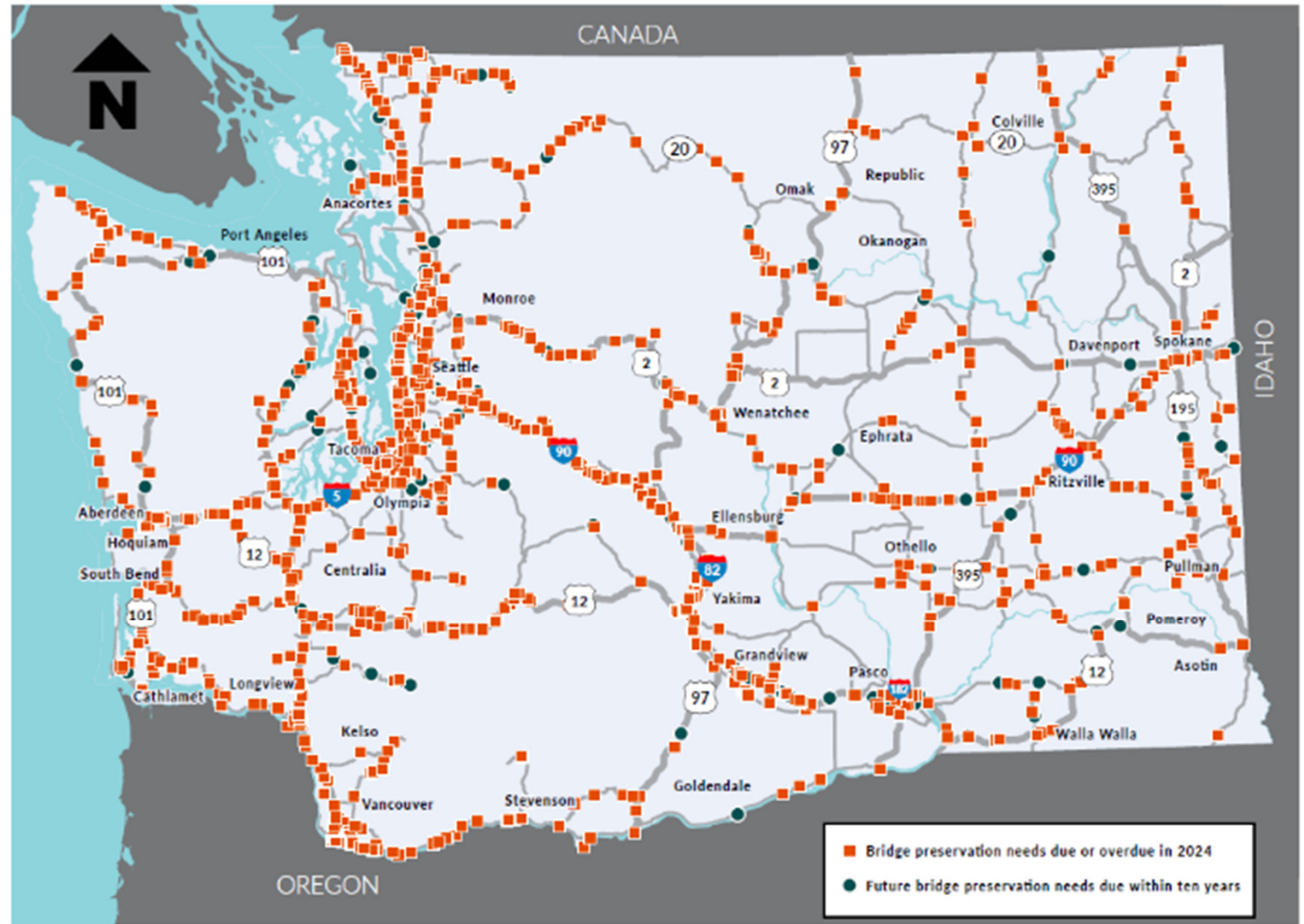
State highway pavement needs



Pavement conditions



State bridge preservation needs



Bridge conditions



Ferries State of Good Repair:

Aging vessel fleet

- 2019 Long Range Plan called for 26 vessels to:
 - provide reliable 19-vessel service
 - allow time for scheduled maintenance, inspections, preservation work and emergency repairs
- Fleet is now at 21 vessels, operating at a 15-boat service level
- WSF plans for a 60-year service life on vessels
 - Of the 21 vessels, 11 are more than 40 years old
 - 5 vessels over 50 years old, including the *Tillikum* which is 65 years old
 - All 11 of those vessels are scheduled to be retired by 2040

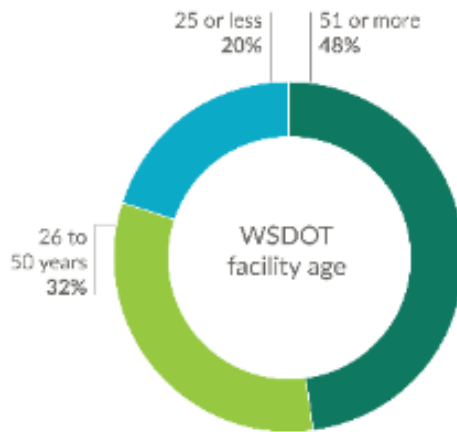
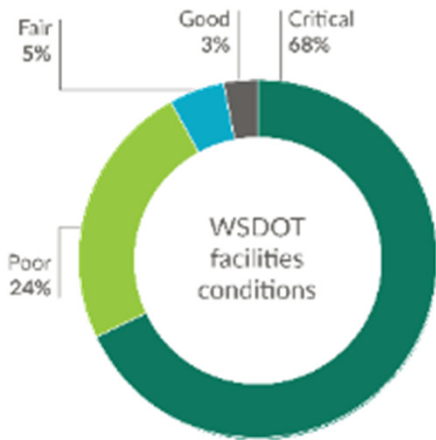


Kaleetan was built in 1967.



Tillikum was built in 1959.

Aging facilities statewide



Asbestos concerns in Berne section shed



Flooding in Shuksan shed due to aging boiler failure

Concerns include:

- Asbestos
- Safety
- Emergency closures
- Outdated/inefficient systems
- Failing to meet pollution discharge and clean building standards
- Hiring/retention



Corson admin building closed November 2024 due to asbestos - 120 staff displaced

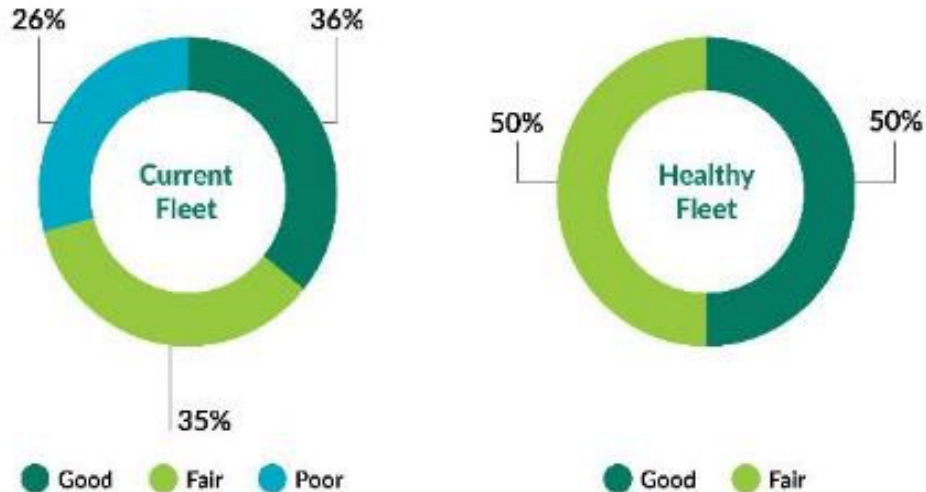


Modern trucks don't fit into outdated repair sheds

Fleet condition challenges

Transportation Equipment Fund

WSDOT Fleet Conditions*



*Formally called the Transportation Equipment Fund



Critical funding needs

- Staffing Challenges
- Operations & Maintenance
- Safety
- Preservation
- Fish Passage
- Ferries

Staffing challenges

WSDOT staffing challenges

Several challenges filling key positions in this very competitive environment to deliver our largest capital program ever.

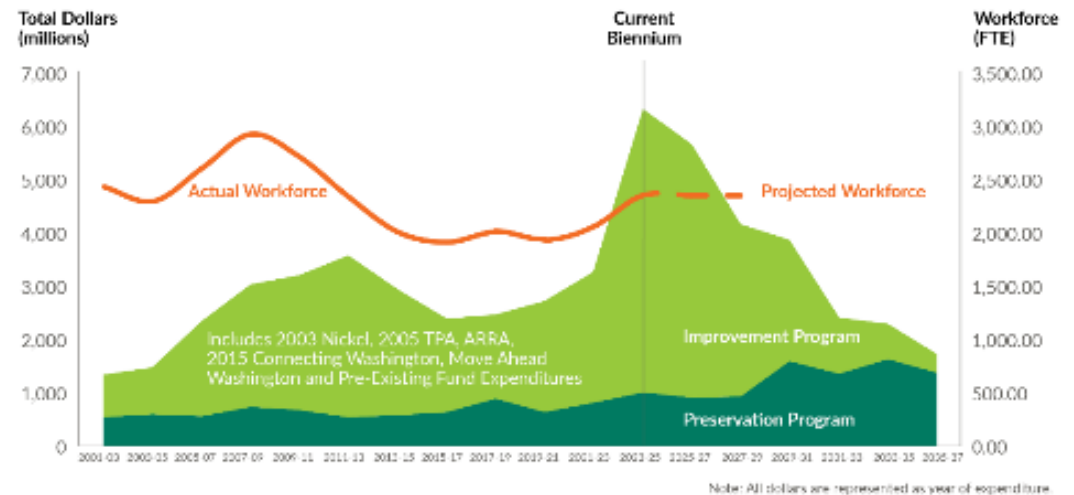
WSDOT salaries lag behind the market:

- Average WA state staff: **~19% behind**
- WSDOT civil engineers: **~26% behind** in an increasingly competitive environment

We've exceeded 2019 staffing levels *but* with Move Ahead Washington to deliver we will need more staff than in 2019.

2023-2025 Budget As Passed Legislature - Highway Construction Program Program Expenditures and Workforce Projection

Includes the Improvement and Preservation Programs with the exception of expenditures reimbursed by Sound Transit.



Operations & Maintenance

Maintenance Accountability Process

2024 statewide activity level targets

- Missed Target Compared to Funding Level
- State of Good Repair Funding Needed

Note: * Pavement and bridge asset conditions of WSDOT owned highway lane miles in fair or better condition (pavement) and percentage of WSDOT owned bridges in fair or better condition by bridge deck area. Pavement data lags one year behind indication (i.e., 2023 column corresponds to 2022 data). Pavement is part of an integrated approach using Washington State Pavement Management System condition rating, which takes into account all maintenance and preservation work completed and/or needed.

Maintenance Activity	State of Good Repair	2023-25 Legislative Funding Level	2023 Delivered LOS
Group - 1 Roadway Maintenance and Operations			
1A1 Pavement Patch	90%	90%	92%
1A3 Shoulder Maintenance	C	D	D
1A4 Sweeping and Cleaning	A	C	D
Group - 2 Drainage Maintenance and Slope Repair			
2A1 Ditch Maintenance	B	B	B
2A2 Culvert Maintenance	C	F	F
2A3 Catch Basin and Inlet Maintenance	A	A	A
2A4 Stormwater Facility Maintenance	A	A	A
2A5 Slope Repair	B	F	F
Group - 3 Roadside and Vegetation Management			
3A1 Roadside Cleanup	C	F	F
3A2 Noxious Weed Control	B	C	D
3A3 Nuisance Vegetation Control	C	D	D
3A4 Vegetation Obstruction Control	C	D	D
3A5 Landscape Maintenance	C	D	D
Group - 4 Bridge and Urban Tunnel Maintenance and Operations			
4A1 Bridge Deck Repair	90%	90%	93%
4A2 Structural Bridge Repair	90%	90%	93%
4A3 Bridge Cleaning	B	B	B
4B1 Special Bridge and Ferry Operation	A	A	A
4B3 Urban Tunnel Systems Operation	B	B	B

Maintenance Accountability Process

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Maintenance Activity	State of Good Repair	2023-25 Legislative Funding Level	2023 Delivered LOS
Group - 5 Snow and Ice Control Operations			
5B1 Snow and Ice Control Operations	A	B	B
Group - 6 Traffic Control Maintenance and Operations			
6A1 Pavement Striping Maintenance	B	C	C
6A2 Raised/Recessed Pavement Marker Maintenance	C	C	C
6A3 Pavement Marking Maintenance	C	D	D
6A4 Regulatory Sign Maintenance	C	D	D
6A5 Guide Sign Maintenance	C	D	C
6A6 Guidepost Maintenance	C	F	F
6A7 Barrier Maintenance	B	B	B
6B1 Traffic Signal Systems	C	C	C
6B2 Highway Lighting Systems	B	B	C
6B3 Intelligent Transportation Systems	A	A	A
Group - 7 Rest Area Operations			
7B1 Rest Area Operation	B	B	B

Operations & Maintenance funding risks

- Slower response during winter storms and emergencies
- Prolonged road/pass closures
- Delayed
 - guardrail repairs
 - pothole patching
 - lane striping
 - litter/graffiti work
- Rough road signs
- Less resilient systems
- Increased costs maintaining outdated equipment
- Safety concerns/legal
- Legal liabilities



Operations & Maintenance need

Current 2025-27 funding: \$650 million

Additional need: \$350 million each biennium

Operations & Maintenance is vital to a functioning state highway infrastructure with more than:

- 18,800 lane miles
- 3,300 bridges
- 1,100 traffic signal systems

Also manages:

- safety rest areas
- mountain passes
- emergency response for disasters and traffic incidents

Program faces **significant unfunded needs** due to damaged assets, changing regulations and increased responsibilities without corresponding funding.

Safety

Annual cost of inaction to Washingtonians



- * Safety source: 2023 crash cost in 2023 dollars. Societal costs of crashes calculated using methods described in Crash Cost for Highway Safety Analysis (FHWA SA-17-071), Chapter 6, Federal Highway Administration, Office of Safety, 2018. Economic cost components include: medical care, emergency services, market productivity, household productivity, legal costs, insurance administrative costs, workplace costs, property damage and congestion.
- ** State of Good Repair source: ASCE 2021 Infrastructure Report Card; estimated at \$695 for every Washington driver and adjusted for inflation to 2024 dollars.
- *** Congestion cost source: Texas Transportation Institute's 2023 Urban Mobility Report, which provides the latest information for the 2022 calendar year; based on value of travel delay and excess fuel consumption statewide. 2022 congestion cost was \$4.5 billion; 2021 congestion cost was \$3.2 billion.
- **** Greenhouse gas source: Washington State Department of Ecology's 2019 GHG transportation sector GHG inventory and applying updated social cost of CO2 values from the EPA's 2023 Report on the Social Cost of Greenhouse Gases. (This estimate is higher than previous years due to updated methodology determining the social costs of greenhouse gases).

Safety needs

10-year need: \$2.37 billion

2025-27 need: \$475 million

Crashes on Washington roadways have escalated to the highest levels since 1990.

In 2023 we saw:

- 810 fatalities
- 3,413 serious injuries

Without significant intervention, fatal and serious crashes will continue to rise.

Washington state can mitigate this crisis by directing more resources for safety to:

- state highways in population centers
- rural areas
- work zones

Safety - rural needs



- \$150 million per biennium for rural safety:
 - new guardrail/barriers
 - speed management
 - enhanced striping/delineation
 - intersection improvements

Safety - city needs



SR 7,
Spanaway



SR 99 at 320th ,
Federal Way

- \$300 million per biennium for:
 - reduced speeds
 - safe access to, from and along the road
 - eliminate active transportation system gaps
 - improve active transportation crossing opportunities
 - enhance intermodal connections around public transportation and schools.

Safety - work zones



Work zone speed cameras coming early 2025

- \$25 million per biennium for work zone safety enhancements for workers and travelers, including:
 - technology innovation
 - enhanced enforcement

Preservation

Investments needed for a State of Good Repair 2024

Asset category	Replacement value	Average annual need	Current budget annual average spending	Average annual funding shortfall
Highways (includes delivering Complete Streets with preservation funds)	\$148 billion	\$1.52 billion	\$540 million	\$980 million
Multimodal (i.e. Aviation, Public Transportation, Rail)	\$1 billion	\$140 million	\$60 million	\$80 million
Intra-Agency (i.e. IT, Facilities, Fleet, Real Estate)	\$84 billion	\$220 million	\$90 million	\$130 million
Ferries	\$6 billion	\$610 million	\$360 million	\$250 million
TOTAL	\$239 billion	\$2.49 billion	\$1.05 billion	\$1.44 billion

Notes: Figures in millions of dollars, rounded to the nearest \$5M.

State of Good Repair funding need is Preservation and Maintenance funding numbers combined.

It is assumed that approximately 50% of the additional Highways Preservation dollars provided by Move Ahead Washington, excluding the funding provided for Highway Maintenance, will be needed to implement the Complete Streets proposal in conjunction with those projects.

The funding numbers above (excluding Replacement Value) represent 10-year annual averages.

Growing preservation backlog

The state's transportation infrastructure is the backbone of our economy and way of life, but our past investments are not being preserved.

- Decades of underfunding preservation have put the health of our existing system in jeopardy and compromised our ability to achieve all policy goals - including safety.
- Spare service life from investment in the 1990s is gone.
- Even with additional funding it will take time to address the preservation backlog of what has deteriorated.

Preservation needs



Preservation funding needs

10-year need: \$3 billion

Current 2025-27 funding: \$900 million

Additional biennial need: \$600 million

- Pavement and bridges across the state are showing effects of 20 years of underfunding
- Current investment is 40% of what is needed for state of good repair
- Public is noticing the results:
 - More emergency repairs and closures (Tacoma Narrows Bridge, Carbon River Bridge)
 - Reduced speed limits
 - Rougher roads

Fish passage

Fish passage program

- Federal court injunction requires WSDOT fix fish barrier culverts.
- Deadline: address 90% of blocked habitat in injunction area by 2030
- Projects under contract get us to ~70%
- As of June 2024, 146 barriers have been corrected, improving access to 50% of blocked habitat
- Roughly 300 more need correction to restore access to the 90% requirement
 - Work is ongoing but more funding required



Chum salmon return to Chico Creek, October 2024

Fish passage program funding

\$5 billion additional funding need

Existing program funding - \$3.95 billion

Additional funds needed:

- Increased costs/new estimates - \$3.5 billion
- Addressing 75 newly identified barriers - \$500 million
- Structurally failing culverts - \$1 billion

There's a long-term need for more funding to address deferred culverts to open the remaining 10% of blocked habitat and newly identified barriers, including those at the end of their useful life.

Ferries

Ferries staffing challenges

- International shortage of mariners.
- Real challenge is USCG-credentialed deck and engine crew (not entry-level posts)
- Significant wave of retirements on horizon

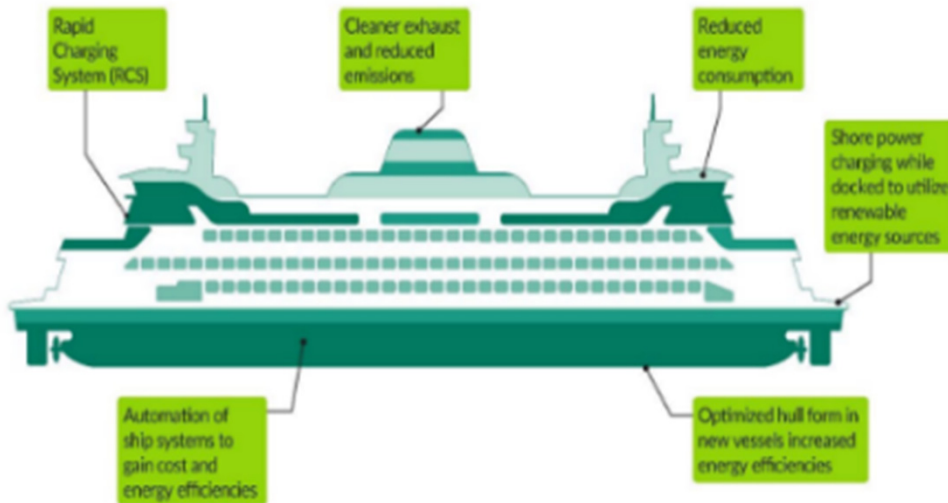
WSF initiatives:

- Innovative training to advance entry-level crew
(USCG requirements mean this still takes years to accomplish)
- Strategic partnerships with Maritime High School, Seattle Maritime Academy, MITAGS and Core Plus Maritime to recruit young applicants.

Continued support of these initiatives is essential to ensuring the demands of the future - including expanding fleet from 21 to 26 vessels - while maintaining reliable service for customers.



Rebuilding ferries fleet to improve reliability



Estimated cost: \$6.1 billion

Funded: \$1.68 billion

- 5 new vessels, 3 hybrid conversions, 5 terminals electrified

Unfunded: \$4.61 billion

- 11 new vessels, 3 hybrid conversions, 11 terminals electrified

Vast majority of the costs - 80% - are direct vessel construction costs, not electrification.

- Any additional hybrid/electrical costs compensated by:
 - Reduced energy and maintenance costs
 - Increased reliability
 - Reduced emissions
 - Access to clean energy funding sources

Grow fleet from 21 to 26 vessels:

- Build **16 new hybrid-electric vessels**
- Convert **6 existing vessels**
- Retire **13 diesel vessels**
- Electrify **16 terminals**

Restoring ferry service

Overall additional need: \$5.25 to \$5.5 billion

Addressing WSF's unfunded needs is crucial for meeting environmental goals and preserving critical infrastructure

- Focus is on sustaining efficient operations
- Transitioning to hybrid-electric power by 2040 for emission reduction, resiliency and cost savings

Terminal and vessel preservation needs steadily increasing, posing risks to service

Modernizing fleet operations technology is a priority

Despite a 40% increase in funding over the past four years, additional staffing is needed, particularly in:

- Operations
- Vessels
- Finance
- Administration
- Planning

We need a new paradigm

Washington growth 1999-2024

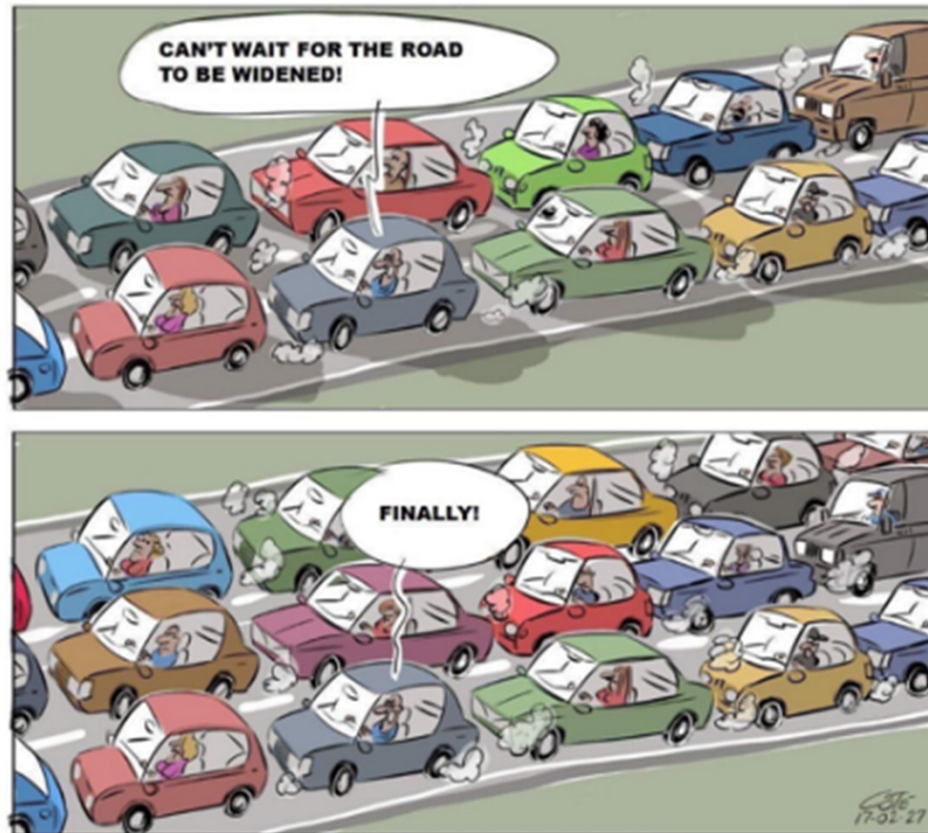
35.5%
POPULATION
GROWTH

39.2%
EMPLOYMENT
GROWTH

&

2.5%
STATEWIDE
PAVEMENT
INCREASE

“Solving” congestion



Cartoon via @Brent Toderian on Twitter

“Solving” congestion

If we could add enough lane miles - what would it look like?

Total additional interstate miles needed to drive posted speed limit at all times:

- 451 lane miles at an estimated cost of \$161 billion
- Depending on timing and percent bonded, would require a \$3.30 to \$3.50 gas tax increase



Greater Puget Sound area

(Olympia to Marysville/Seattle to Issaquah)

- 385 new lane miles
- Maximum of four additional lanes in each direction in select locations within the Central Puget Sound



Vancouver area

- 38 new lane miles



Spokane area

- 28 new lane miles

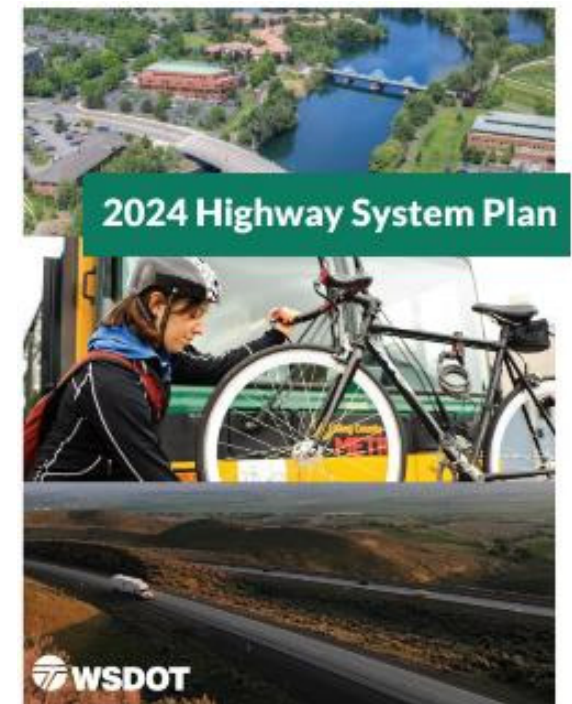
Highway System Plan - a place to start

20-year investment recommendation:

1. First, **address preservation and maintenance needs.**
2. Then, **invest \$2 into safety and efficiency programs for every \$1 in capacity expansion projects** with any remaining funds.

Recommendations based on:

- Legislatively directed goals in RCW
- Public input about their highway priorities
- Current conditions
- State funding realities



<https://wsdot.wa.gov/construction-planning/statewide-plans/highway-system-plan>

Land use and transportation

We need to integrate land use and transportation decision making in ways we haven't before:

- Affordable housing with safe, convenient transportation choices
- Make it safe and easy to shift short trips to walk/bike
- Telecommunity
- New partnerships:
 - Cities/Counties
 - Developers/Realtors
 - Investors
 - Advocates



Land use impact on VMT

Focusing on land use has the greatest potential of reducing vehicle miles traveled

VMT management strategies and potential average impact (● = 5%)

Strategy	Potential VMT impact
Land use	●●●●●●●●●●●●○○○○○○○○○○○○
Constrained highway spending	●○○○○○○○○○○○○○○○○○○○○○○○○
Transit enhancements	●●○○○○○○○○○○○○○○○○○○○○○○○○
Bike and pedestrian enhancements	●○○○○○○○○○○○○○○○○○○○○○○○○○○
Commuter benefits	●●○○○○○○○○○○○○○○○○○○○○○○○○
Parking policy	●●●●○○○○○○○○○○○○○○○○○○○○○○
Road pricing	●●●●●○○○○○○○○○○○○○○○○○○○○○○
Broadband and remote access	●○○○○○○○○○○○○○○○○○○○○○○○○○○

State Smart Transportation Initiative / Smart Growth America recommendations

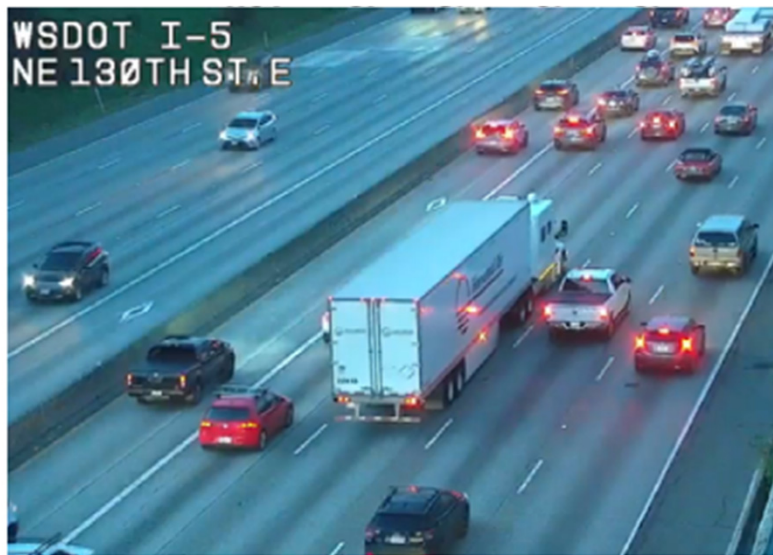
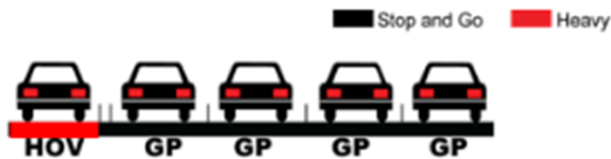
Get more out of what we have

- Transportation Systems Management and Operations
- Transportation Demand Management
- Intelligent Transportation Systems
 - Automated vehicles/Advanced driver assistance systems
 - Mobility on demand/Mobility as a Service
 - Advanced air mobility



I-5 HOV and I-405 ETL peak hour performance

Northbound I-5 (Northeast 130th St)
Daily Volume: 104,000



Wednesday, Nov. 8, 2023, 4:50 p.m.

Northbound I-405 (north of Northeast 85th St)
Daily Volume: 108,000

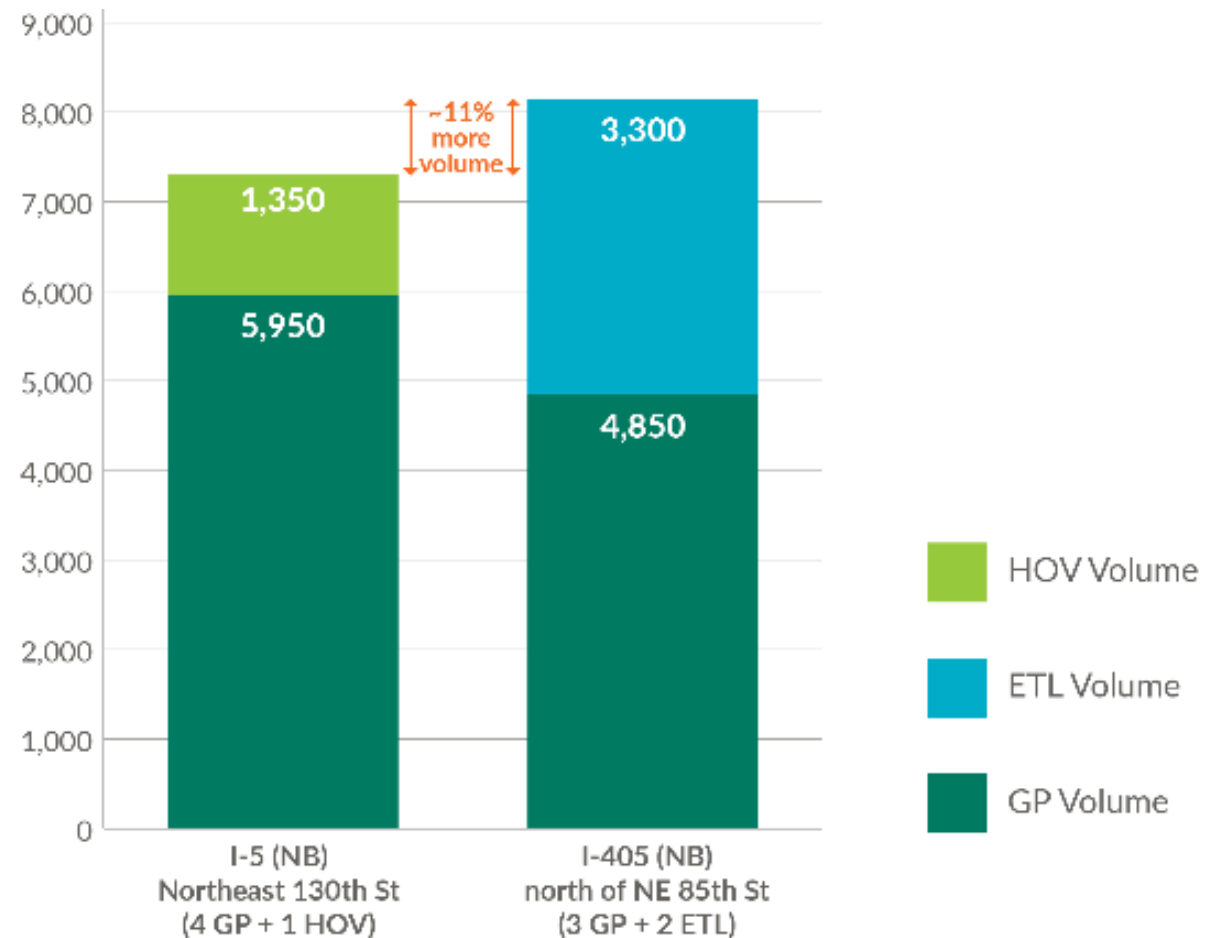


Wednesday, Nov. 8, 2023, 4:45 p.m.

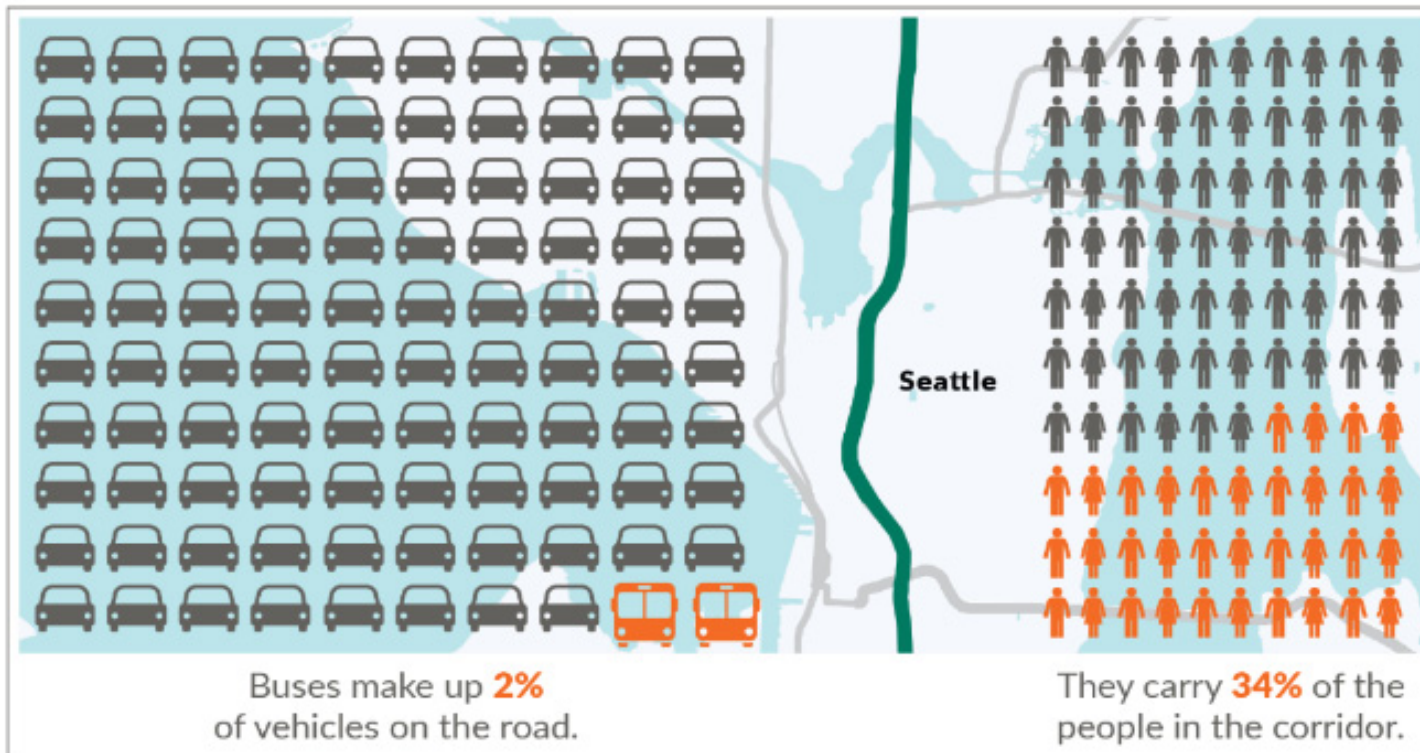
I-405 system versus I-5

- Same number of total lanes
- I-405 has higher speeds in all lanes
- I-405 has higher throughput per lane
- I-405 has higher throughput across all lanes
- I-405 benefits have been sustainable since 2015

Peak Hour Volumes



Traffic Demand Management and hidden capacity



- At least 25% of residents don't or can't drive.
- Buses contribute added capacity on the I-5 southbound morning commute into Seattle.

Active Transportation

- Award-winning state Active Transportation plan
- Identifying gaps and needs
- Technical assistance to communities
- Safe Routes to School program
- School-based bicycle safety programs
- Pedestrian and bicycle programs
- Complete Streets
- E-bike rebates and lending library



Public Transportation

- Provides primary connections to:
 - Work
 - School
 - Health care
 - Shopping
- More efficient movement of people
- Affordable travel option
- Environmentally friendly
- Supports multiple modes (van pools, park and ride lots, bike racks)



Intercity rail and bus

Travel Washington Intercity Bus Amtrak Cascades Passenger Rail

- Connecting rural or smaller communities to major transportation hubs
- Filling in gaps in public transportation network
- Reducing highway congestion and greenhouse gas emissions
- Making travel more accessible, reliable and convenient
- Expanding travel options for everyone



In conclusion

- Washington has become a great place to live, work and do business.
- We've expanded transportation capacity and added to our infrastructure.
- Now, we desperately need to invest in the existing transportation infrastructure that has been neglected.
- We need a new paradigm to:
 - Fully fund maintenance, operations and preservation
 - Do more with what we have
 - Improve safety
 - Increase access and mobility for all

Questions?

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