

Maintaining a resilient transportation system in a rapidly changing world

ROGER MILLAR, SECRETARY OF TRANSPORTATION HOUSE TRANSPORTATION COMMITTEE
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RCW <u>47.04.280</u> Transportation system policy goals

- <u>Preservation</u>: To maintain, preserve, and extend the life and utility of prior investments in transportation systems and services, including the state ferry system;
- <u>Safety</u>: To provide for and improve the safety and security of transportation customers and the transportation system;
- Stewardship: To continuously improve the quality, effectiveness, resilience, and efficiency of the transportation system;
- Mobility: To improve the predictable movement of goods and people throughout Washington state, including congestion relief and improved freight mobility;
- **Economic vitality:** To promote and develop transportation systems that stimulate, support, and enhance the movement of people and goods to ensure a prosperous economy; and
- **Environment:** To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment.

Section 2 of the RCW lists **Preservation** and **Safety** as priorities among the policy goals



RCW <u>47.01.078</u> Transportation system policy goals—Duties

To support achievement of the policy goals described in RCW <u>47.04.280</u>, the department shall:

- Maintain an inventory of the condition of structures and corridors in most urgent need of retrofit or rehabilitation
- Develop long-term financing tools that reliably provide ongoing maintenance and preservation of the transportation infrastructure
- Balance system safety and convenience through all phases of a project to accommodate all users
 of the transportation system to safely, reliably, and efficiently provide mobility to people and goods
- Develop strategies to gradually reduce the per capita vehicle miles traveled based on consideration of a range of reduction methods
- Consider efficiency tools, including high occupancy vehicle and high occupancy toll lanes, corridor-specific and systemwide pricing strategies, active traffic management, commute trip reduction, and other demand management tools
- Promote integrated multimodal planning
- Consider engineers and architects to design environmentally sustainable, context-sensitive transportation systems

WSDOT Strategic Plan

Our Strategic Plan provides the vision, mission and values that guide the work of the agency. The important work of the agency is focused in three key areas:

- Resilience
- Workforce Development
- Diversity, Equity & Inclusion



Resilience

Resilience is the ability to prepare for, and adapt to, changing conditions and withstand and recover rapidly from disruptions.

A resilient transportation system is:

- Safe
- Sound
- Smart









We need resilient transportation systems

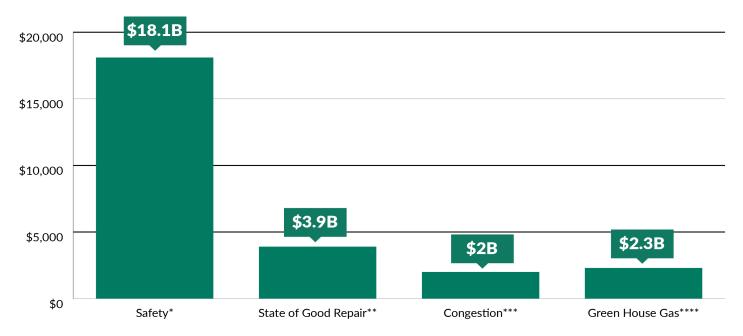
- Climate change wildfires, flooding, excessive heat, sea-level rise, extreme storm events are already impacting our transportation systems
- Other natural and human made disasters –
 earthquakes, infrastructure failure, cybersecurity threats
- Demographic change making our transportation system accessible to everyone; addressing how transportation systems keep up with growing and changing populations
- Economic change transportation systems support vibrant local economies and the changes we're seeing (telework; increased deliveries) and must keep pace with the effects of economic downturns







Annual cost of inaction to Washingtonians



^{*} Safety source: 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, 2021. Economic cost components include: medical care, emergency services, market productivity, household productivity, legal costs, insurance administrative costs, workplace costs, property damage and congestion.

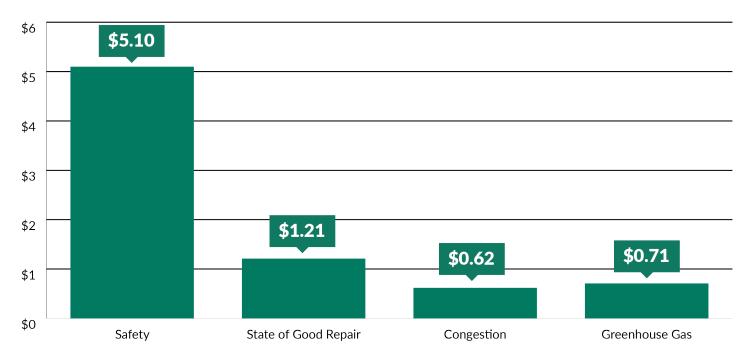
^{****} Source: Washington State Department of Ecology 2018 GHG Inventory.



^{**} State of Good Repair source: ASCE 2021 Infrastructure Report Card; estimated at \$659 for every Washington driver.

^{***} Congestion cost source: Texas Transportation Institute's 2021 Urban Mobility Report; based on value of travel delay and excess fuel consumption statewide. 2019 congestion cost was \$4.8 billion; 2020 cost includes the first year of the pandemic with a significant drop in travel.

Annual cost to Washingtonians (gas tax equivalent)



Source: Based on June 2022 Transportation Revenue Forecast Council, page 11-20 (Net for Distribution for FY 2023). https://ofm.wa.gov/sites/default/files/public/budget/info/transpo/June2022VolumnII.pdf



Target Zero goals and realities

- Many names but the same goal: increased safety and zero deaths
- We're not making the progress we need to reach this goal
- We're seeing increased speeding, reckless and impaired driving on roadways and in work zones





Toward Zero Deaths National Strategy on Highway Safety





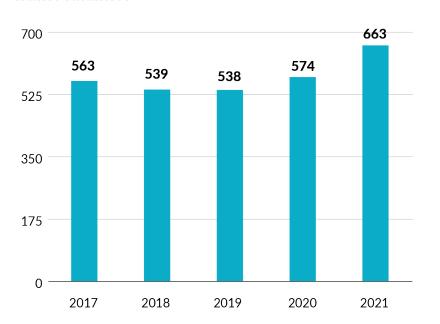
APPROACH

Zero is our goal. A Safe System is how we get there.

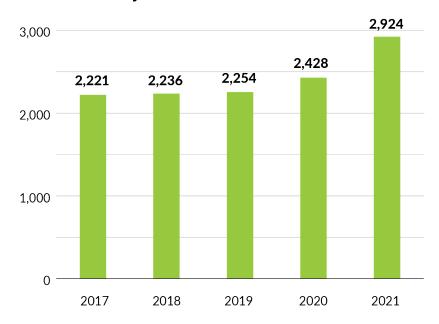


Moving in the wrong direction





Traffic serious injuries

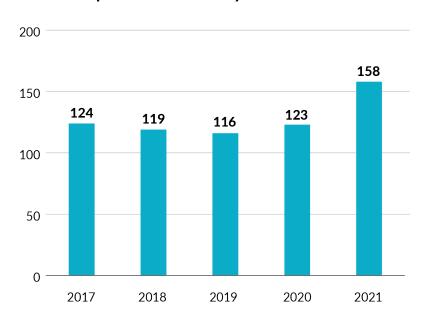


Data source: WSDOT Crash Data and Reporting Office; the Coded Fatal Crash System (CFC), Washington Traffic Safety Commission.

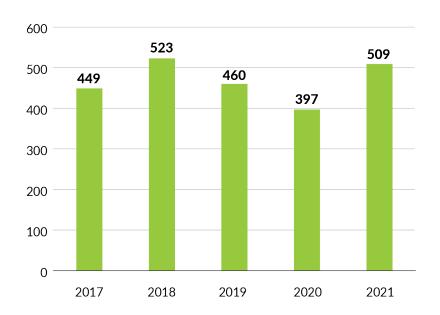


Pedestrian/bicyclist fatalities & serious injuries

Combined pedestrian and bicyclist fatalities



Combined pedestrian and bicyclist serious injuries



Data source: WSDOT Transportation Data, GIS and Modeling Office.

Notes: Some numbers have changed since previous data reports due to updates within the Coded Fatality Files and WSDOT Engineering Crash Datamart. 1. Pedestrians include people in wheelchairs and those using small rideable devices such as skateboards and scooters, in addition to those walking. 2. Data for 2021 is preliminary.

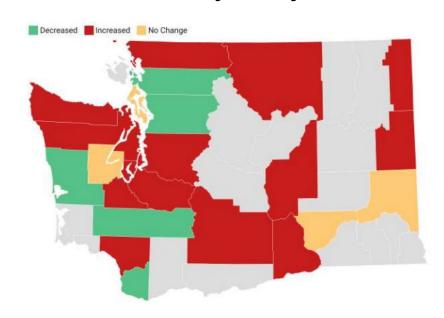


A statewide concern

Fatal crashes by county 2020 to 2021

Decreased Increased No Change

Walk/roll fatalities by county 2020 to 2021



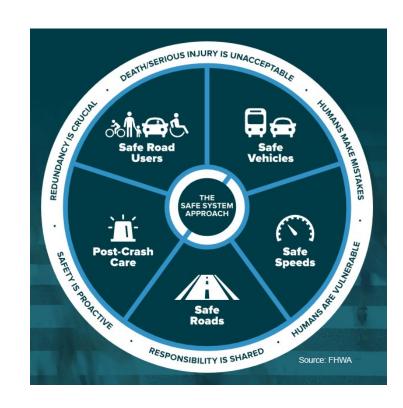
Source: Washington Traffic Safety Commission: http://wtsc.wa.gov/wp-content/uploads/dlm_uploads/2022/06/11_State-of-the-State-June-2022.pdf

Counties in gray had no reported fatalities



Multi-pronged safety approach

- Design
 - Safe Systems approach
 - Speed versus safety
 - Complete Streets
- Using technology to protect all users
 - Intelligent Transportation Systems
 - Automated speed cameras
- Work zone safety
 - Seeing higher risks on roadways
 - Needed changes to improve safety
 - Safety improvements will mean more congestion or delays around projects
 - Working with Union, State Legislature and Industry group on suggestions



Complete Streets

Complete Streets is a requirement in Washington state law (RCW 47.24)

Designed to "improve the safety, mobility, and accessibility of state highways ... with all users in mind, including pedestrians, bicyclists, and public transportation users"

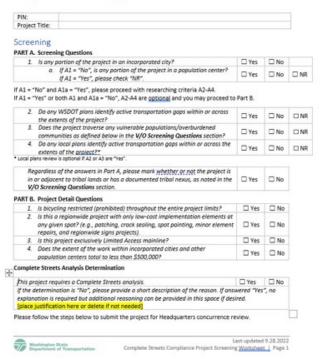
Applies to state transportation projects \$500,000 or more that start design on or after July 1, 2022



Complete Streets screening

- Screening of all projects over \$500,000
- Focus on projects in:
 - Incorporated cities,
 - Other population centers where active transportation gaps have been identified in WSDOT or local plans
 - Areas where projects touch overburdened communities
- About 430 projects screened statewide (with design start dates between 2022 and 2028)
- Complete Streets applies to some portion of ~47% of projects

Complete Streets Project Screening Worksheet





Investment needed for State of Good Repair

Delivering Complete Streets w/ highway preservation dollars

Asset category	Replacement value	Average annual need	Current plan annual average spending (including MAW)	Average annual funding shortfall
Highways	\$123,425	\$1,055	\$705	\$350
Deliver Complete Streets with Preservation	N/A	\$210	\$70	\$140
Multimodal (i.e. Aviation, Public Transportation, Rail)	\$685	\$115	\$60	\$55
Intra-Agency (i.e. IT, Facilities, Fleet, Real Estate)	\$70,245	\$185	\$80	\$105
Ferries	\$5,325	\$510	\$330	\$180
TOTAL	\$199,680	\$2,075	\$1,245	\$830

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.



Preservation needs continue

Move Ahead Washington was a great down payment on our repair needs as we identify future funding for remaining and ongoing needs.

- 3,490 lane miles of pavement are due for preservation, another 6,000 are past due, and 1,390 lane miles are in poor condition; currently paving 920 lane miles per year
- 16 bridges need replacement, 36 more need major rehabilitation; 4 are being replaced
- 50 steel bridges are due for painting, 57 are past due; 3 are being painted
- 87 concrete bridge decks are due for repair, and 72 more are past due; 24 decks are being resurfaced
- WSDOT's ferry vessels experienced 539 days of unscheduled maintenance in FY22 which is a slight increase from 516 in FY21
- 25% of the Palouse River and Coulee City (PCC) is in poor condition; 80% of the system is operated at 10 MPH or less *
- 42% of WSDOT-owned buildings are more than 50 years old; 44% are in poor condition.* Concerns include asbestos, failing to meet pollution discharge and clean building standards, outdated and inefficient systems.



All figures as of 2022, unless otherwise noted; *2021 figures



Graffiti and litter removal needs continue

Despite good gains, the removal/cleaning needs continue as more litter and graffiti appear each day

Litter/debris roadway/rights of way removal Jan-Dec 2022

- 1,402 tons total
 - 509 tons by WSDOT crews
 - 427 tons by Adopt-a-Highway/Ecology Youth Corps/Corrections crews
 - 466 tons litter cleared from or near encampments

Graffiti removal costs - Jan-Dec 2022

- Statewide total: \$639,765 graffiti removal only*
 - Northwest Region total: \$345,400 graffiti removal only*
 - Includes greater Seattle area: \$220,100 graffiti removal*

We've collected enough litter
this year to fill Lumen Field to
a depth of 15 feet.

15 foot tall
pile of trash

That's 1,060 TONS of roadside litter!





^{*}Does not include sign vandalism costs which in some regions may be mostly graffiti removal but are tracked together with all sign repair costs.

Northwest Region and Seattle second half of December amounts estimated based on average costs

Revive I-5 and other preservation work

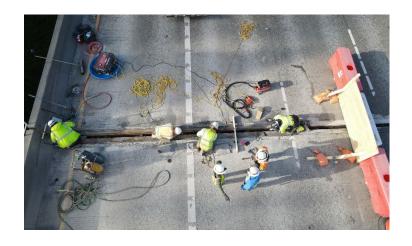
2021-2022: Work reviving sections of aging I-5 wrapped up this fall between I-90 and Spokane Street

63 expansion joints replaced, 1.25-mile of paving

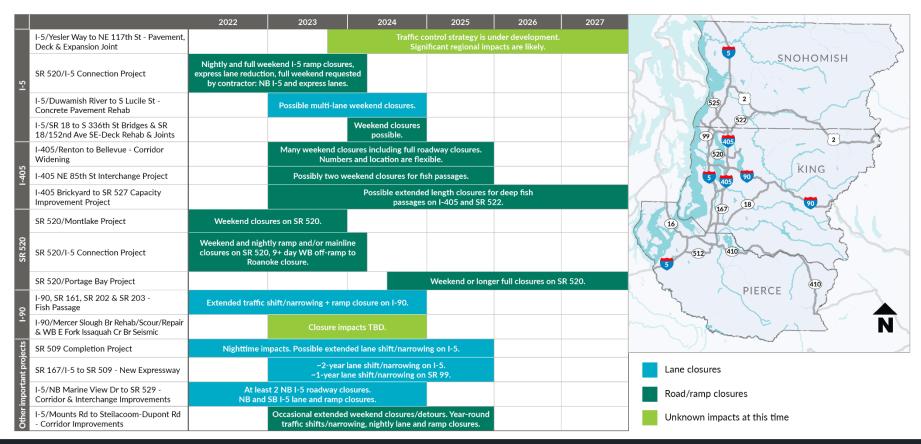
Spring 2023: Replacing panels, other repairs on NB & SB I-5 between South Seattle and Tukwila

Late 2023/ early 2024: One of the largest preservation projects in agency history

- Multi-year work on 8 miles between the city center and the Northgate area north of downtown
- Replacing expansion joints and concrete down to the supporting soil & repaving other sections, including the Lake Washington Ship Canal Bridge
- Tremendous traffic impacts on the region coordination already underway

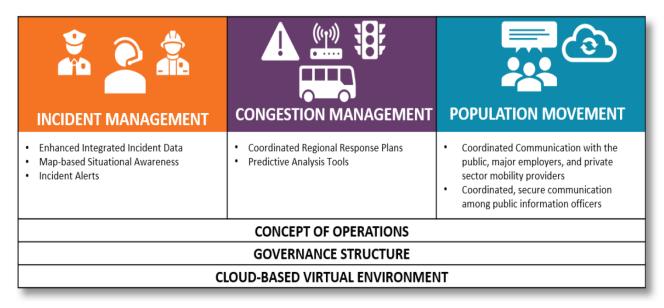


Major Central Puget Sound projects: 2023-2027





Virtual Coordination Center



- Web-based tool allows real-time interagency information sharing and collaboration during major incidents
- Seattle Area pilot and evaluation phase October 2022-September 2023
- Potential future expansion to other regions within Washington



"Solving" congestion

If we could add enough lanes to build our way out of congestion — what would that look like?

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

- 451 lane miles at an estimated cost of \$115 billion
- Depending on timing and percent bonded, would require a \$2.20 to \$2.50 gas tax increase



Greater Puget Sound area

(Olympia to Marysville/Seattle to Issaguah)

- 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





Cartoon via @Brent Toderian on Twitter

"Solving" congestion assumptions

High-level analysis for the interstate system:

- Assumes no induced demand
- No growth in demand
- Does not address increased capacity needed on other state routes or local roads
- May not address costs or timing of full environmental impacts
- No additional transit or alternative modal options
- Current year costs (in 2017)

Getting 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



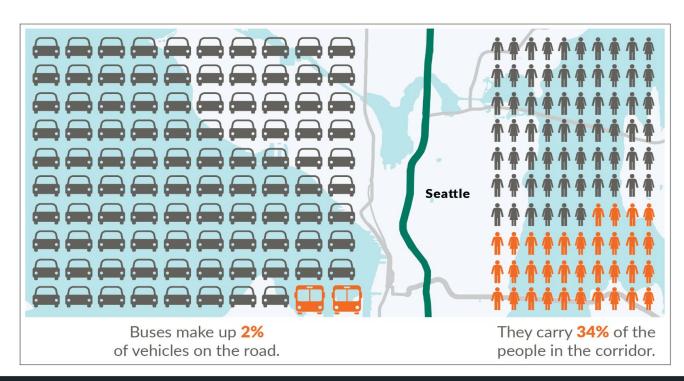








Traffic Demand Management and hidden capacity



Buses contribute added capacity on the I-5 southbound morning commute into Seattle.

System expansion: Neighborhood

- Complete Streets
- Multimodal options for all, including trails, bicycle lanes, crosswalks
- Local jurisdiction preservation needs









System expansion: Regional

- Transit options and connections
- Active Transportation
- Moving more people and goods; not more vehicles









System expansion: Multi-regional

- I-5 Study, including seismic investments request
- Exploring ultra high speed ground transportation
- Commercial Aviation Coordinating Commission studying airport capacity needs

We need the resources to link these efforts at scale and study the entire mega-region need, rather than separate, siloed studies.









Land use and transportation

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

- Affordable housing and 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	•00000000000000000000000000000000000000		
Transit enhancements	••0000000000000000000000000000000000000		
Bike and pedestrian enhancements	•00000000000000000000000000000000000000		
Commuter benefits	••0000000000000000000000000000000000000		
Parking policy	••••00000000000000000000000000000000000		
Road pricing	•••••0000000000000000000000000000000000		
Broadband and remote access	•00000000000000000		

State Smart Transportation Initiative / Smart Growth America recommendations



Zoning drives transportation needs

With so much land reserved for low density housing:

- People cannot afford to live near the activities they wish to participate in, so they live further away and are often forced to drive as opposed to riding transit, walking or bicycling.
- This is not equitable and creates more traffic and more pollution.
- DOTs are then asked to solve a land-use problem after the fact through the transportation system.

Single-family land

Acreage in single-family

Apartment vacancy

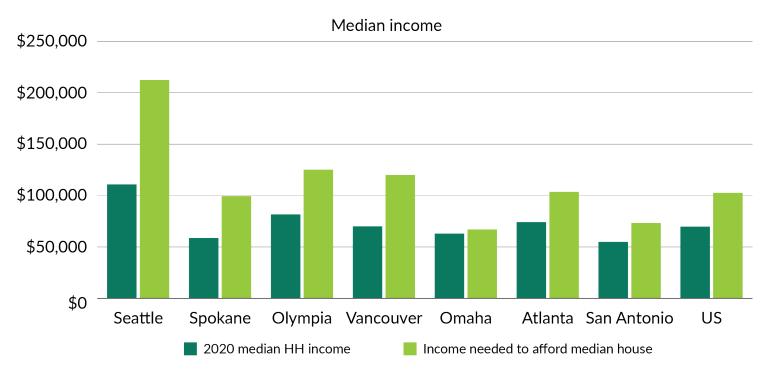
Olympia	Seattle	Spokane	Vancouver
53%	65%*	60%	41%
6,816	36,608	26,688	13,764
2.6%	4.3%	3.4%	2.7%

Sources: Washington Center for Real Estate Research; US Census; city GIS data

* Seattle percentage based on 2021 numbers; changes in zoning categories no longer list single family housing as its own category



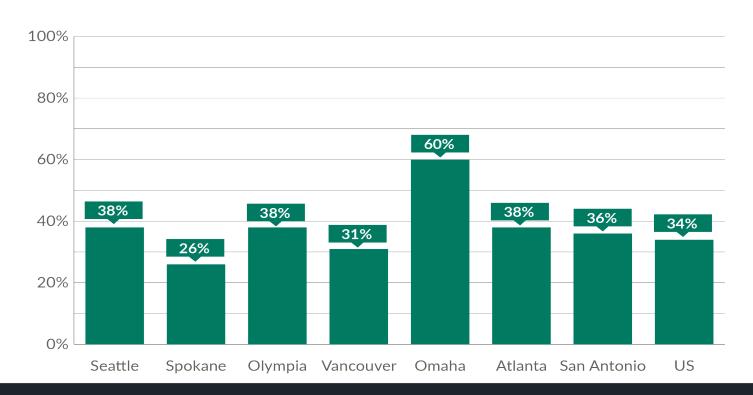
Housing is not affordable



Sources: Washington Center for Real Estate Research, US Census; city GIS data Median house includes single family and multifamily



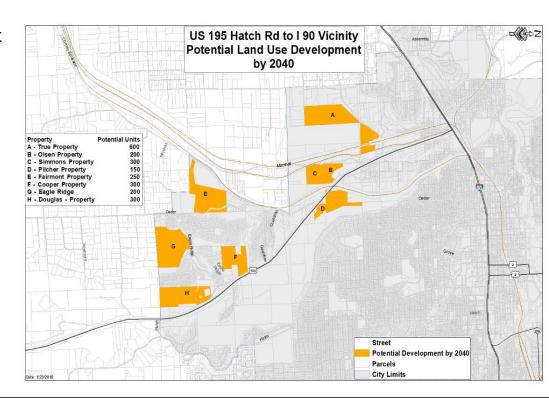
Percent of population able to afford median priced home





Land use - Spokane US 195

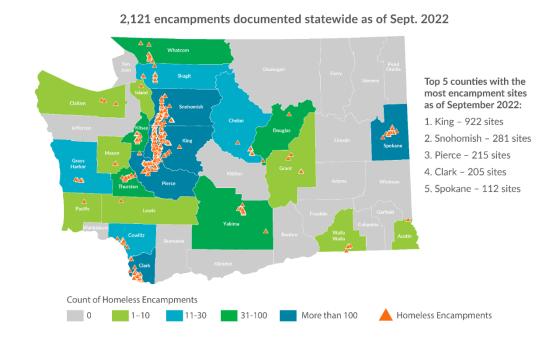
- City annexed rural land in 1981 but did not install promised arterial streets
- After development and more housing proposed – nearly \$500 million in safety improvement were requested (compared to roughly \$40 million cost if arterial work had been done when promised)
- WSDOT used possible median closure if any more development was approved to gain a seat at the land use table
- Partnering with land use groups created reasonable build-out plan
- Could have been avoided and would have been cheaper – if involved upfront in land use





Encampments on rights of way

- A national challenge, including in WA
- WSDOT works with local leaders on encampments throughout the state
- Partnerships are crucial to deliver the needed social services and outreach
- Overarching need is more housing - and more affordable housing



Counts are not a census, but rather total number of sites marked at any time since 2015 – they may not all be active



Right of Way Safety Initiative

- Partnership with WSDOT, Commerce,
 WSP, local leaders and non-profits
- New funding specifically to address housing shortages
- Offering shelter/housing to people before clearing an area
 - Intensive outreach
 - Better long-term results
- Clearing, cleaning and modifying sites
- This takes time but seeing improved chance of ending cycle of homelessness

- Focused on 5 counties:
 - King, Pierce, Snohomish,
 Spokane and Thurston
- 13 sites cleared or in progress
 - Outreach may include assistance services, trash removal, etc., until housing is available
- 225 people accepted offered housing
 - Of that 225, 212 94 percent remain housed as of end of the year



Workforce Development

Be an employer of choice by hiring, training and retaining skilled workers to meet Washington's transportation needs.

- Employee engagement
- Modern work environment
- Talent development
- Talent pipelines
- Workforce analysis and growth







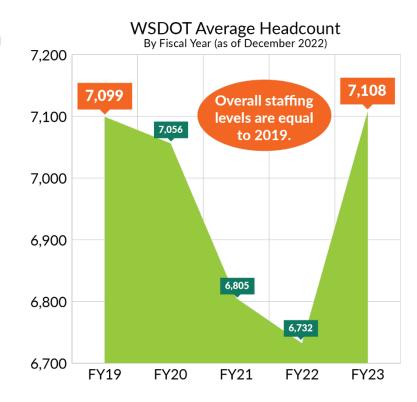


Workforce challenges

WSDOT is a very large and complex organization with nearly 7,000 positions and specialized operations.

- Several challenges when filling key positions in this very competitive environment.
- In the last year, three most difficult areas to fill:
 - Operational positions at Washington State Ferries
 - Positions supporting Winter Operations
 - Specialized engineering, particularly at the PE, SE credentialed mid-career personnel.

Back to 2019 levels *but* with Move Ahead Washington to deliver we will need more staff than in 2019.



Construction workforce challenges

Statewide supply and demand forecast

- Statewide demand for construction workers is projected at about 283,000 workers per year on average between 2022 and 2026
- Projected average state annual gap: 13,000 workers or 5% of average annual construction supply
- Projected *gap of more than 1,000 workers <u>each</u>* between 2022 and 2026:
 - Construction laborers
 - Carpenters
 - Supervisors



Source: Statewide WSDOT Construction Workforce Analysis 2022 Update



What are driving these shortages?

National shortage of workers

- 1.7 jobs available for every unemployed worker in the US
- If every unemployed worker woke up to tomorrow and filled an open position, we'd still have a major gap in workers

Aging workforce starting to retire

By 2025 20% of our staff eligible for full retirement; 40% eligible for a reduced benefit

Global shortage of Maritime workers

- Ferry systems and maritime industries around the world have shortages
- Takes several years to properly credential and train Ferry workers for higher level positions

High demand for CDL holders and mechanics

- Increase of home deliveries driving <u>national</u> DOT shortages for these positions
- Private salaries/signing bonuses make states uncompetitive

https://www.bls.gov/news.release/pdf/jolts.pdf https://wsdot.wa.gov/sites/default/files/2022-03/WSF-COVID19-ServiceRestorationPlan.pdf



Compensation lags below market rate

The state's compensation lags below the overall market – even when factoring in state retirement benefits and health care.

The largest gaps are:

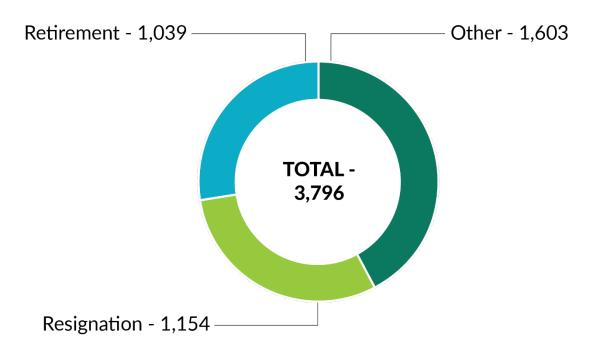
- Highway Maintenance Workers responsible for plowing the roads and maintaining our roadways: more than 13% below market rate.
- Civil Engineers who design, inspect and construct our roadways: more than 26% below market rates.
- Ferry workers rates range considerably by job type but: some are more than 26% below market rates.







Planning for what we can't control



FISCAL YEARS 2019-2022

Other: examples include end of appointment (often non-perm), disability separation, death, job abandonment, probation, etc.



What we are doing - staff

- Assessing turnover and advocating for salary increases as allowable under state guidelines
- Focusing on what we <u>can</u> control by being an employer of choice
 - Telework and flexible schedules
 - Work-life balance
 - Recognizing and honoring the importance of public service
- Focusing on more training for all staff
 - Example: Designing a program for staff seeking a CDL recruit with requirements in mind to allow them to complete our training within a year
- High school to Highways program path to work in trades/maintenance







WSF retirement challenges

Washington State Ferries workforce is especially fragile due to aging workforce and certification/promotion requirements:

- Entry level ferries employee: Over 4 years of work experience and over 1 year of training to become licensed deck offer
- Licensed deck officer: More than a year's worth of training and work experience to test for captain's license
- Entry level engine room employee: more than 180 days of sea time and 3 years training to become a vessel engineer



Ferries - Coast Guard requirements

- The Coast Guard requires certain minimum numbers of positions for vessels to sail:
 - Licensed deck officers
 - Engineers
 - Unlicensed deck
 - Engine staff
- The crew numbers and training requirements vary by vessel
- Retirements make it more difficult to meet the Coast Guard requirements, leading to missed sailings and other schedule disruptions







Ferries - workforce stabilization progress

Since the 2022 session we have:

- Hired 233 new employees, 202 of those who are fleet personnel
- Had over 50 employees currently participating in a training program that leads to potential promotions
- Created 6 new training programs tailored to the needs of new and existing staff and are exploring/developing 2 more training programs

We've also

- Developed talent pipeline programs with union partners
- Offered training for unlicensed employees to obtain licensure (still have work in coming years to ensure we can staff vessels)
- Partnered with maritime training programs, particularly for people from underrepresented communities

We will:

Maintain ongoing efforts due to continued wave of retirements







Ferries - need for workforce efforts continues

With this continued substantial investment in our workforce and the cooperation of our labor partners, we anticipate that **by mid-2023 we will have restored the vast majority of our sailing schedules to pre-pandemic levels** (dependent on the number of employees that complete LDO training in spring 2023.)

To sustain this, we must continue to focus on:

- Filling key positions in the fleet such as Licensed Deck Officers to reliably increase service
- Maintaining stabilization/promotion efforts to address continued waves of retirements







Diversity, Equity & Inclusion

Striving to advance our culture of belonging and access so that all feel included, supported, valued, and safe.

- Embed DEI throughout the employee experience
- Grow the agency Diversity Advisory Groups
- Develop guidelines and decision-making centered on our values
- Strive to be a trusted partner and understand needs of our communities
- Create good policy and sound, equitable investment strategies
- Continue enhancing contracting opportunities for under-represented businesses









DEI efforts

- Diversity, Equity and Inclusion workplan implementation underway, work is in alignment with the Governor's <u>Executive Order 22-04: Implementing the Washington State</u> <u>Pro-Equity Anti-Racism (PEAR) Plan & Playbook</u>
- WSDOT <u>Anti-Racism Policy and DEI Planning Executive</u>
 Order
- WSDOT <u>Diversity</u>, <u>Equity</u>, <u>& Inclusion Plan</u>
- Completed an <u>Equity Study</u> (Right of Way/Condemnation, Construction Investments, Employee Recruitment and Hiring, Distribution of Benefits literature review)
- Baking equity into every part of decision-making process on design, projects, programs
- Safe and Welcoming Worksite Pilot Program to address and reduce hostile work environments on agency construction worksites

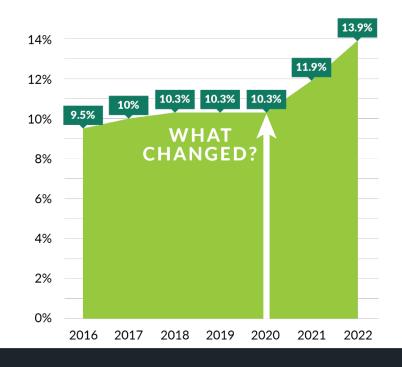




Workforce demographic efforts

People of Color percentages of total WSDOT staff

- Greater emphasis on Diversity, Equity and Inclusion
- Competitive recruitments
- Scrutinizing qualifications
- Increased outreach
- All-virtual interviews
- More diverse interview panels





Roadmap to equity in contracts

DBE Federal Payments for FFY22

(Oct. 1, 2021, through Sept. 30, 2022) by demographic:

- 16.3% in total or \$83 million
 - 6% Non-Minority Women
 - 3.9% Hispanic American
 - 2.8% Asian American
 - 1.9% Native American
 - 1.2% African American
 - Other less than 0.4%

State Participation SFY22

(July 1, 2021, through June 30, 2022) by demographic:

- 11.3% or \$60 million in total minority and women's business enterprise participation [separate and distinct from the DBE numbers]
 - 3.8% Non-Minority Women
 - 3% Hispanic American
 - 2.5% Asian American
 - 1.3% Native American
 - 0.6% African American



What are we doing - mentoring

- Highway Construction and Maritime Trades Scholarships
 - On-the-Job Training Support Services
 Program
 - Pre-Apprenticeship Support Services
 Program, also called PASS
 - Career Opportunity Maritime Preparation and Support Services (COMPASS)
 - Helping to bring women and people of color into construction and maritime industries
- USDOT leaders studying WSDOT PASS program successes for broader use







PASS mentoring, assistance

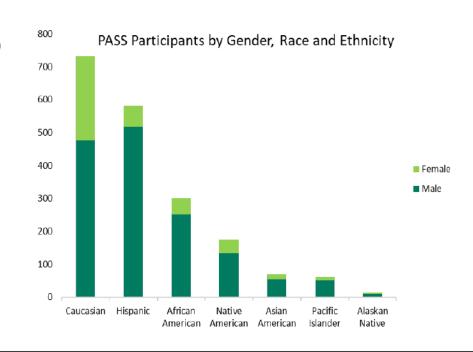
Pre-Apprenticeship Support Services (PASS)

Grown from \$750,000 to \$3 million dollars annually. (It is part of overall \$8 million funding.)

Since 2015, the PASS program has served **2,056 people**

PASS participants FY 2017 to current:

- 35% Caucasian
- 28% Hispanic
- 14% African American
- 8% Native America
- all others at 5% or less



HEAL Act

Incorporating Environmental Justice into all decision making

WSDOT actions:

- ✓ Community Engagement Plan aligned with HEAL Act (Draft awaiting Environmental Justice Council guidance)
- ✓ Public-facing Environmental Justice webpage: https://wsdot.wa.gov/about/environmental-justice
- ✓ Planning/Scoping Community Engagement Needs Assessment
- ✓ Updated Environmental Justice Assessment process (Draft)
- ✓ Collaborating with HEAL Act agencies and the Environmental Justice Council
- ✓ Building and sustaining transparent relationships with Environmental Justice organizations



Conclusion

We must:

- Emphasize resilience in all parts of the agency
- Focus on safe systems investment
- Align state land use, housing and transportation policy
- Adapt transportation investment to the "new normal"
- Accommodate all people and modes
- Fund robust recruiting and retention efforts including training
- Continue to mentor potential staff, including those from underrepresented populations
- Bring women and people of color into construction and maritime industries
- Enhance contracting opportunities for under-represented businesses



Questions?

Roger Millar, PE, FASCE, FAICP

Secretary of Transportation 360-705-7054

roger.millar@wsdot.wa.gov

