

TRANSPORTATION MATTERS

MOVING WASHINGTON FORWARD

ROGER MILLAR, SECRETARY OF TRANSPORTATION House Transportation Committee January 17, 2019

Overview

- Transportation Matters
- WSDOT Overview
- Workforce Development
- Inclusion
- Practical Solutions
- The Next 10 Years





Transportation Matters

Economy

- Washington is one of the most trade-centric states in the nation
 - Gross business income for freight-dependent industry is \$595 billion (2017)
 - 1 in 3 Washington jobs is directly or indirectly related to international trade
- Geography and commute patterns our state's unique geography restricts our transportation corridors

Transportation Matters

Quality of life

- Climate Change
- Affordable housing
- Public health
- Access to nature, recreation







Transportation Matters

Social equity – access to opportunity

- Percentage of family income spent on transportation highest for the least well off*
 - Upper third: 8.2%, Middle third: 11.2%, Lower third 15.7%**
- Approximately 20% of Washingtonians don't hold a driver's license
- Transit investments provide access to opportunity
- More than 85% of people who use transit walk or ride a bike at the beginning or end of their trip
- <u>Active transportation</u> (biking, walking, skateboards, etc.) serves as fundamental, lowcost transportation for people who can't afford a vehicle, can't or don't drive







*Source: Pew Charitable Trusts, "Household Expenditures and Income" March 30, 2016

^{**} Data does not include use of public transportation or tolls



Future Trends

- Resilience
- Alternative Energy
- Technology
- Governance/Financing











WSDOT Overview

Our Vision

Washington travelers have a safe, sustainable and integrated multimodal transportation system.

Our Mission

We provide safe, reliable and costeffective transportation options to improve communities and economic vitality for people and businesses.

Our values

Safety, Engagement, Innovation, Integrity, Leadership and Sustainability

Our Strategic Plan Goals

Inclusion, Practical Solutions and Workforce Development

Overview of the state's connected, multimodal system

THE STATE'S TRANSPORTATION NETWORK IS A CONNECTED SYSTEM THAT MUST SERVE MANY MODES AND USERS



18,712
Highway lane miles
307
HOV lane miles



3,322 state-owned bridges



Ferries

24.5 million
passengers per year



32 Transit systems



16 WSDOT-operated airports



125
miles dedicated bike lanes
400
miles of sidewalk within/adjacent
to WSDOT right-of-way



333

800,000
annual passengers
298
miles WSDOT-owned shortline freight railroad

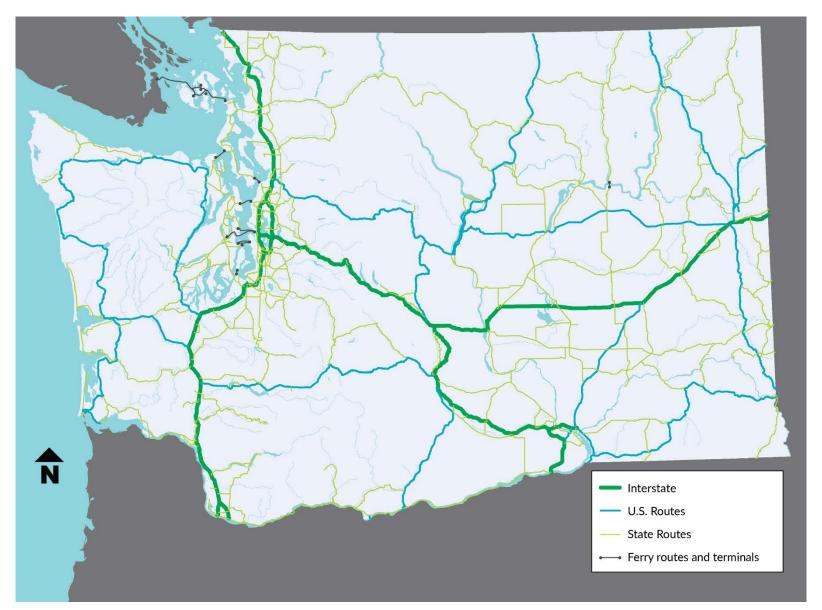
Asset Management - All WSDOT

(Millions of dollars)	Replacement Value	10-year Average Spending	10-year Future Annual Avg. Spending	10-year Annual Additional Needs	10-year Budget, Plus Needs Annual Avg.
Highways	\$109,390	\$330	\$335	\$330	\$665
Multimodal (i.e. Aviation, Public Transportation, Rail)	\$600	\$15	\$20	\$90	\$110
Intra-Agency (i.e. IT, Facilities, Fleet, Real Estate)	\$66,480	\$55	\$70	\$55	\$125
Ferries	\$4,940	\$110	\$125	\$215	\$340
TOTAL	\$181,410	\$510	\$550	\$690	\$1,240

Key areas of responsibility - WSDOT Regions



Key areas of responsibility - Highway system



Key areas of responsibility - Ferry Routes

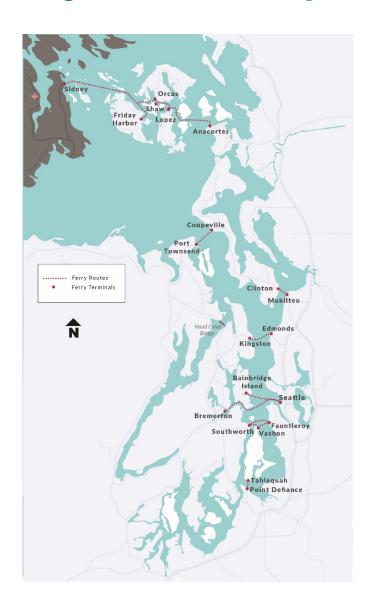


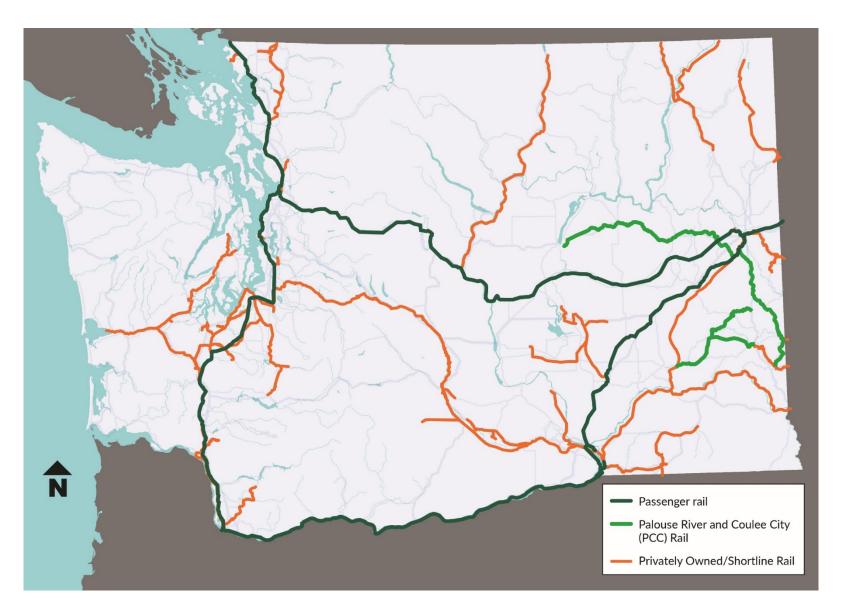




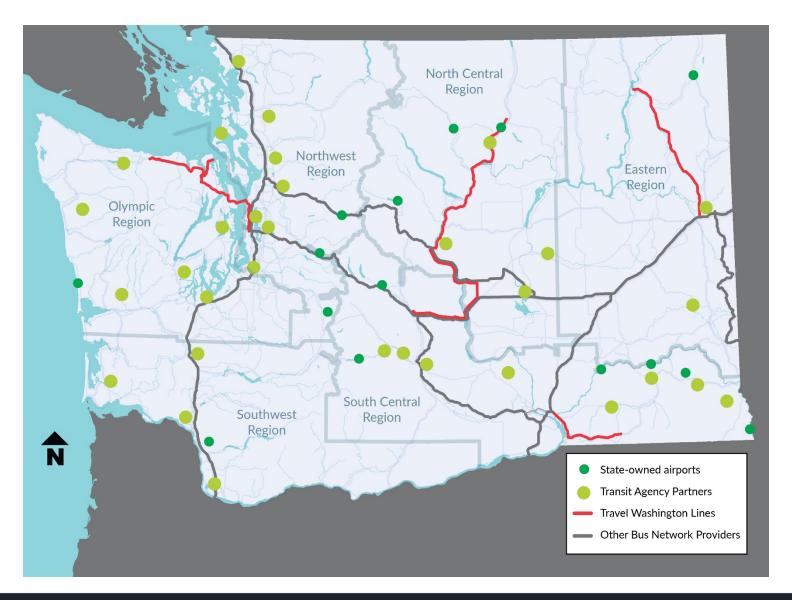
Photo credit: Alvin Kroon, arkppp@gmail.com



Key areas of responsibility - Rail lines/partners



Key areas of responsibility - Transit and Aviation



Key areas of responsibility - MPOs/RTPOs

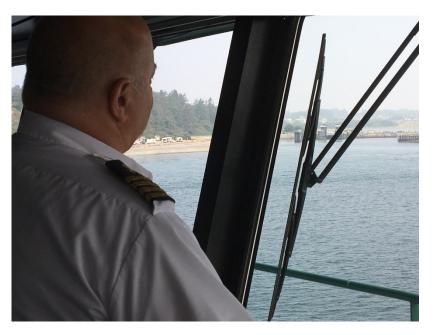


Workforce **Development**

WSDOT Workforce

Total number of employees: 7,137 Eligible to retire within the next five years (does not include employees who might leave for better compensation):

- Maintenance 31% of 1,842 total
- Engineers 41% of 2,085 total
- Washington State Ferries
 - Masters, Staff Masters 74% of 69 total
 - Licensed vessel engineers 50% of 108 total





Workforce Development

Compensation

- Evaluate our job classification system to maintain competitive compensation within government
- Advocate for increased compensation for job classifications meeting criteria in RCW 41.06

Recruitment and Retention Strategies

- Employer of choice
- Work hours and environment
- Infant at work

- Interns
- Apprentices
- DOC initiative







Inclusion

Projects and programs

- Outreach and engagement
- Cultural competency

Delivery

- WSDOT workforce
- Construction industry workforce
 - Apprenticeship program
 - Pre-Apprenticeship Support
 Services (PASS)
- DBE Community
 - Road map
 - Mentor protégé





Results

- More than 200 WSDOT employees completed Community Engagement Training
 - 280 managers, supervisors trained for retaining, hiring diverse workforce
- Projects completed in 2018 achieved 18.6% apprenticeship utilization rate, above the required 15%
 - For the 703,708 apprenticeship hours worked:
 28% minority male, 12% white female, 4% minority female
- 86 companies, 30 mentors participating in Mentor-protégé program
- PASS program funding:
 - \$1.5 M in 2017-19 biennium
 - Governor's budget added \$500,000 to the program in 2019-21





Practical Solutions

PROGRAM DELIVERY

NICKEL

91% ON OR | 87% UNDER BUDGET

VALUE OF INVESTMENT \$9.7 BILLION CONNECTING WASHINGTON

PROJECTS COMPLETED

100% ON OR | 89° UNDER BUDGET |

WSDOT Awards in 2018

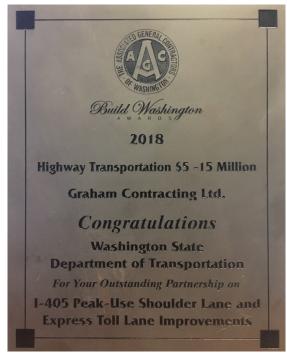
- American Association of Motor Vehicle Administrators
 - Excellence in Government Partnership: US 12 Low Road Intersection Reconfiguration
- American Council of Engineering Companies of Washington
 - Silver Award: Tacoma Amtrak Cascades Station
- American Public Works Association
 - 2018 Project of the Year \$25M to \$75M category: I-5 NW LaCenter Road Interchange
- American Society of Civil Engineers
 - Outstanding Civil Engineering Achievement, Merit Award: SR 520 Program
- Associated General Contractors
 - Partnership for Excellence in Contract Administration Eastern Wash. less than \$3M: US 97 Blewett Pass Culvert Replacements
 - Partnership for Excellence in Contract Administration Eastern Wash \$3M \$10M: US 395 Deer Park
 - Partnership for Excellence in Contract Administration Eastern Wash. Greater than \$10M: I-90, Snowshed to Keechelus Dam, Phase 1C Replace Snowshed
 - Partnership for Excellence in Contract Administration Western Wash. Less than \$3M: US 101 D St. to Waster Street Paving and ADA
 - Partnership for Excellence in Contract Administration Western Wash. \$3M \$10M: SR 518 EB Off-ramp to Des Moines Memorial Drive
 - Partnership for Excellence in Contract Administration Western Wash. Greater than \$10M: I-5 NB S 260th St to Duwamish River Bridge
 - Partnership for Excellence in Contract Administration Statewide Design-Build Less than \$30M: US 12
 Wildcat Creek Bridge Replacement
 - Partnership for Excellence in Contract Administration Statewide Design-Build Greater than \$30M: I-5 NB MLK Way to NE Ravenna Bridge
- Conference of Minority Transportation Officials (COMTO)
 - Industry Leader Award
- International Federation of Civil Engineers
 - Outstanding Civil Engineering Achievement Merit Award: SR 520 Program
- International Road Federation
 - Award of Merit: SR 520 Program



WSDOT Awards in 2018 (continued)

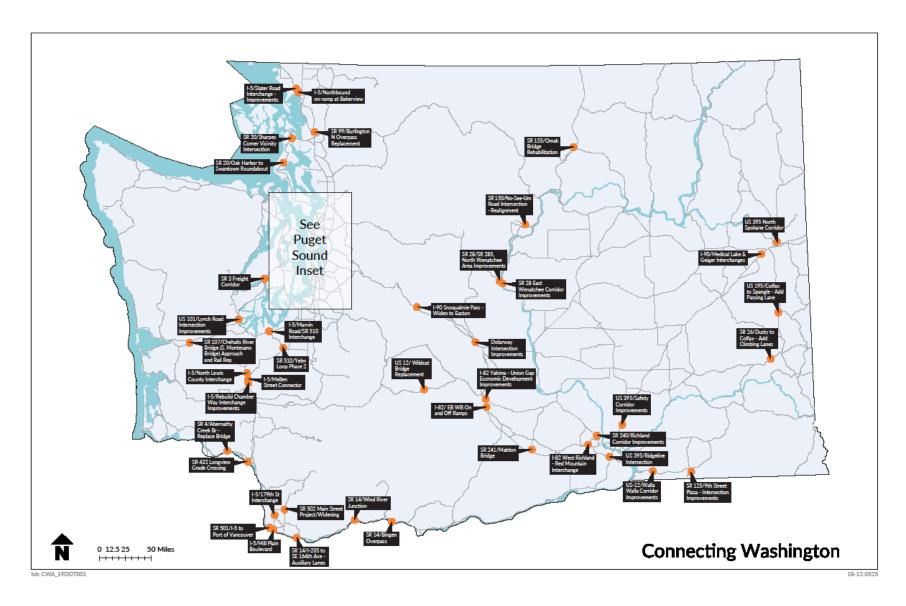
- MarCom Awards (Association of Marketing and Communication Professionals)
 - Platinum Award: "No Distractions" Work Zone Safety video
- National Association of Minority Contractors
 - Agency Champion Award
- Pre-Cast/Prestressed Concrete Institute
 - Robert J. Lyman Award: Alaskan Way Viaduct Replacement Program
- Public Relations Society of America
 - Totem Award: "Stay Back from the Tracks" campaign
- Tabor 100
 - Crystal Eagle Award: Office of Equal Opportunity Director Earl Key
- TransComm (AASHTO Transportation Communication)
 - Graphic Design Display; Social Media Best Use of Social Media in a Campaign; Website/Technology
- Washington Asphalt Paving Association
 - Carl Minor Award Best Overall WSDOT Paving Project; 1st
 Place Paving Project West: SR 20 & SR 525 Bob Galbreath
 Rd. to Holbrook Rd
 - 1st Place Paving Project East; Smoothness Award East: US 2 Deer Rd to Colbert Corridor
 - Smoothness Award West; and Merit Award: I-5 NB So. 260th to Duwamish River Bridge
 - Merit Awards: SR 150, SR 270, SR 304
- Washington Aggregate & Concrete Association
 - Excellence in Concrete Construction: I-5 Mill Plain to NE 18th
- Woodwork
 - Wood Design Excellence: Tacoma Amtrak Cascades Station





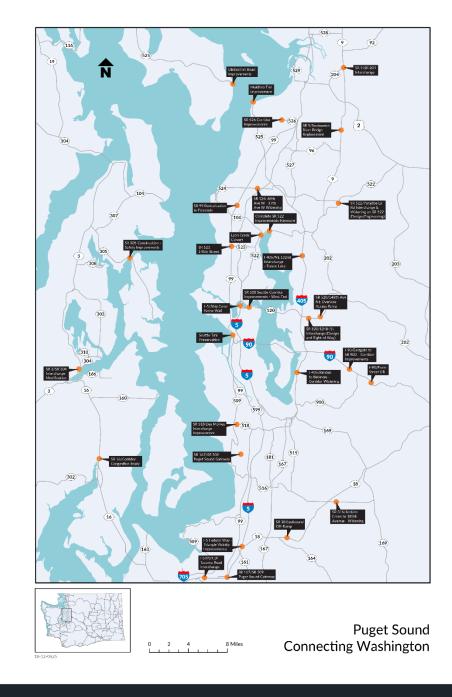


Connecting Washington



Connecting Washington

Connecting Washington projects in the Puget Sound region



Connecting Washington Investments

Multimodal - \$1.3 billion, includes:

- Regional Mobility Grant program supports local efforts to improve transit mobility \$200 million
- Transit-related grant projects park and ride lots, transit facilities, new buses \$111 million
- Rural Mobility Grant program public transportation improvements in small cities and rural areas -\$110 million
- Commute Trip Reduction program sustains a tax credit to businesses with employer-based commuter programs - \$41 million

Active Transportation

- Safe Routes to School Grants projects intended to increase walking and biking to school \$56 million
- Pedestrian and Safety Grants projects that support statewide local agencies' efforts to improve conditions for people who walk or ride bicycle - \$75 million











Fire suppression pipe on Ship Canal bridge in Seattle.

State of Good Repair

Maintenance and preservation needs

- Big assets/liabilities
 - Interstate/major highway bridges and pavement
 - Washington State Ferries vessels and docks
 - Amtrak Cascades
 - Palouse River and Coulee City
 (PCC) Rail System

State of Good Repair

Programmatic responses

- Pavement
- <u>Structures</u>
- Drainage systems
- Intelligent
 Transportation
 Systems (ITS)
- <u>Unstable Slopes</u>
- Facilities
- Fleet













State of Good Repair

Right-of-way management

- Vegetation
- <u>Trash</u>
- Encampments
- Rest areas



















Safety

Target Zero

- Distracted driving
- Impaired driving

Programs

- Infrastructure investment
- Incident response
- Positive Train Control
- Electronic enforcement
- Active Transportation

TSMO within WSDOT

Transportation Systems Management & Operations (TSMO)

Managing safety and capacity as an asset

PLANNING, PARTNERING, AND POLICY DEVELOPMENT

ITS IMPROVEMENTS

TRAVEL DEMAND MANAGEMENT COOPERATIVE AUTOMATED TRANSPORTATION TRADITIONAL TRAFFIC OPERATIONS

Land Use Planning

Utilization of Regional Trails, Sidewalks, and Roadway Network

Policy Implementation

Agreement Development

Data Sharing

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System and Corridor Planning

- Multi-Modal
- Corridor Sketch Maintenance
- Joint Planning
- State Facility Action Plan

Integrated Scoping

Community Engagement

Road Weather Information Systems

Ramp Metering

Traffic Incident Management/IRT

Wrong-way Driver Notifications

Regionwide Communications

Work Zone Management

Adaptive Signals

Intersection Conflict and Trail Crossing Warning Systems

Weigh in Motion

Online Truck Permitting

Multi-Modal Development

- Transit Ferries
- Bicycle Freight
- Pedestrian Rail

Commute Trip Reduction

Managed Lanes

- High Occupancy Vehicle
- Tolled
- Multi-Modal
 Shoulder Driving

High Occupancy Tolling/ Express Toll Lanes

Land Use Development

Integrated Multi-Modal Traveler Information and Fare Collection Systems

Traffic Signal
Communications to
Vehicles

Truck Platooning

Autonomous Truck Mounted Attenuators

Work Zone Warning and Management

Tolling Vehicle
Occupancy Detection

Rest Area Truck Parking Applications

Winter Operations and Rural Traveler Information

Pedestrian in Crosswalk Warning

Access Management

Signal Operations/ Optimization

Safety Analysis/ Countermeasures

Signage & Striping

Speed Management

Minor Geometric Modifications

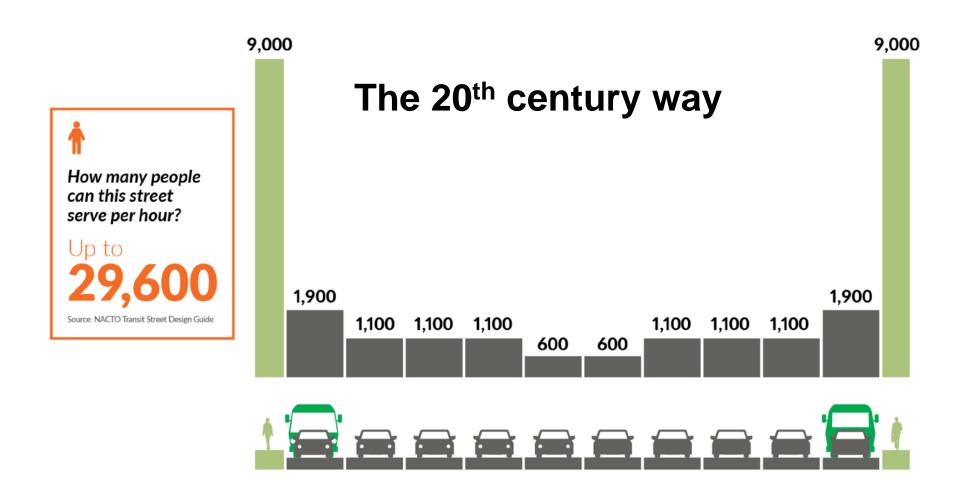
- Channelization
- Pedestrian Island
- Compact
 Roundabouts

Multi-Modal System Enhancement

At-Grade Rail Crossings

CORRIDOR AND SYSTEM MANAGEMENT

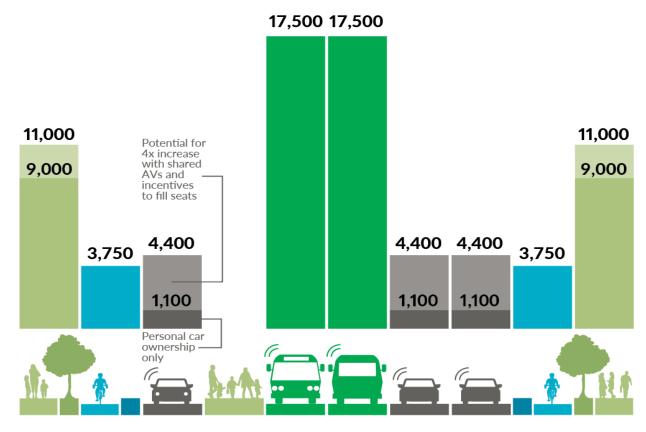
Do our old standards meet today's demands?



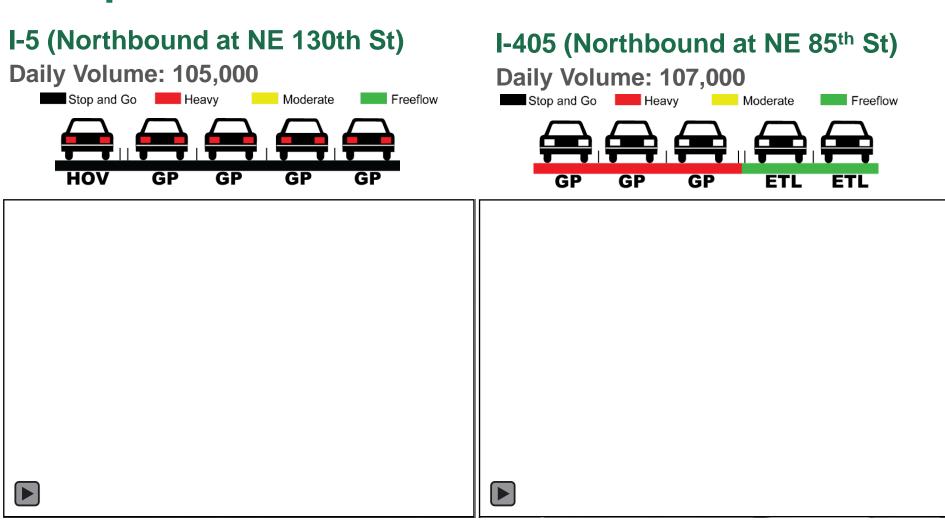
A new way to look at our transportation system

If we manage the asphalt and concrete, we can move more people





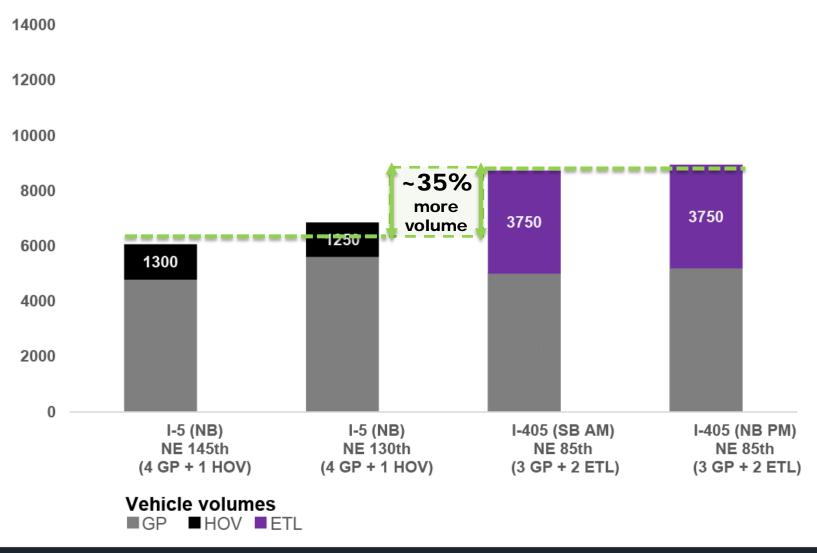
I-5 and I-405 peak hour performance comparison



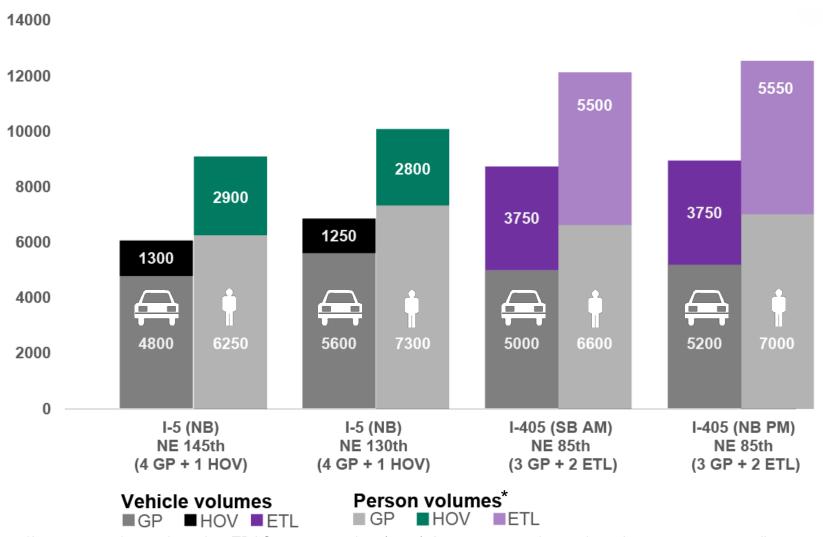
Tuesday, July 12, 2017 4:50 p.m.

Tuesday, July 25, 2017 4:30 p.m.

I-405 section with dual express toll lanes moves more vehicles than five-lane I-5 sections with similar daily traffic volumes



Comparison of volumes moved in five-lane sections of I-405 and I-5 with similar daily traffic



^{*}I-5 person estimates based on TRAC occupancy data (2012). I-405 person estimates based on occupancy sampling (2017). Transit ridership not included in person estimates.



Transportation System Management and Operations

Current investments

- <u>Transportation Management Centers</u> (TMCs)
- Ramp meters
- Express Toll Lane / High Occupancy Toll (HOT)
- High Occupancy Vehicle (HOV)
- Active Traffic Management
- Traffic Cameras
- Variable Message Signs (VMS)
- WSF Reservation System

Proposed Investments

- Safety and System Operations
- Cooperative Automated Transportation

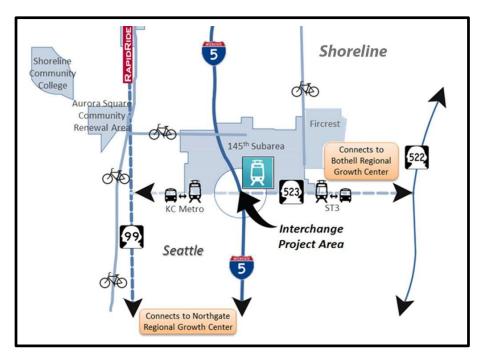






Transportation Demand Management

- Commute Trip Reduction
- Mode Shift
- Off system investment
- Land Use





Smart capacity investment – Highway examples

- North Spokane Corridor
- Puget Sound Gateway





Washington State Ferries

- Need to increase fleet size to maintain reliable service, allow for maintenance and repair of existing vessels
- Demand is increasing:
 - Ridership expected to grow more than 30% – from 24.5 million riders in 2017 to approximately 32.5 million in 2040
 - Walk on passenger ridership expected to increase by 45%, vehicle ridership by 21%









Amtrak Cascades

- One year since derailment near DuPont
- Will return to Point Defiance Bypass in 2019, following release of NTSB recommendations
 - Outreach to communities started, more planned
 - Four daily round trips planned to start
 - Grow service to six round trips daily

Ultra-High Speed Ground Transportation Study

- Business Case Analysis
 - Looking at high-speed connections between Portland and Vancouver, BC, with possible travel times of about an hour between each city
 - Study to be completed July 2019: looks at alignments, station stops, potential ridership, costs, financing options, governance
- Next steps



Active Transportation

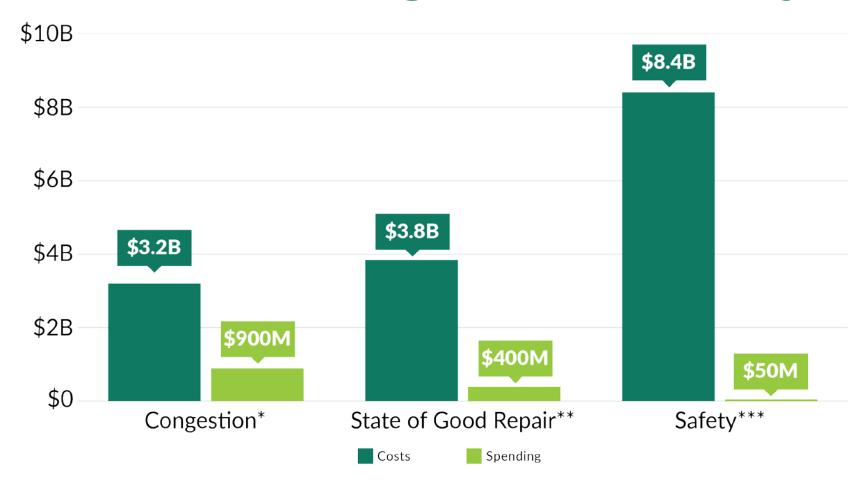
- Washington travelers walked or biked an estimated 1.16 billion miles in 2017
- 2017 Annual Bicyclist & Pedestrian Count tallied 560,768 active transportation users
- At 53 permanent counters around the state:
 1.3 million trips counted in 2017
 - 20 more permanent counters planned for 2019
- More than 300,000 people crossed Lake Washington via SR 520 Trail in 2018
- Record number of Pedestrian and Bicycle Program and Safe Routes to School grant requests received in 2018:
 - 255 applications totaling \$187.4 million
 - Anticipate \$41 million available in 2019-21 from all funding sources, including federal and state
- Factoring active transportation into projects and program earlier in the process for costeffective connections







Cost to Washington's economy



^{*} Congestion cost source: Texas Transportation Institute's 2015 Urban Mobility Scorecard; based on value of travel delay and excess fuel consumption for the area from Everett to Tacoma.

^{**} State of Good Repair source: ASCE 2017 Infrastructure Report Card; estimated at \$656 for every Washington driver

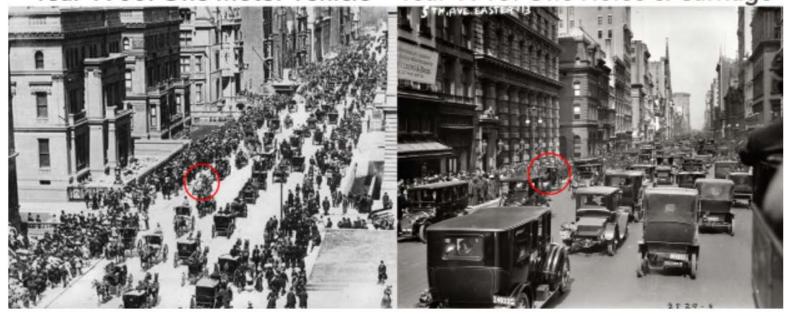
^{**} Safety source: Based on 2013 National Highway Traffic Safety Administration values for preventing fatal and serious injuries. Economic cost components include: medical care, emergency services, market productivity, household productivity, legal costs, insurance administrative costs, workplace costs, property damage and congestion.



The Next 10 Years

Easter Parades in New York City

Year 1900: One Motor Vehicle Year 1913: One Horse & Carriage







Resilience

- \$3.1 billion <u>fish passage</u> obligation
- \$6.9 billion system preservation need
 - Highways and bridges
 - Ferries
 - Train sets
 - Facilities and equipment
- \$1.5 billion <u>bridge retrofit</u> need
- \$1 billion safety and system operation program
- Significant projects
 - I-5 Columbia River Bridge
 - US 2 Trestle
 - SR 18
 - Complete I-405/SR-167 Master Plan
 - I-5 System Partnership
- None of this is funded





Alternative energy

- EV charging stations
- Ferry conversion, new vessels
- Fleet conversion
- Clean transit 278 electric buses in Washington
 - WSDOT working with local partners to obtain federal grants to replace diesel with alternative fuel vehicles
- <u>E-bikes</u>, E-scooters

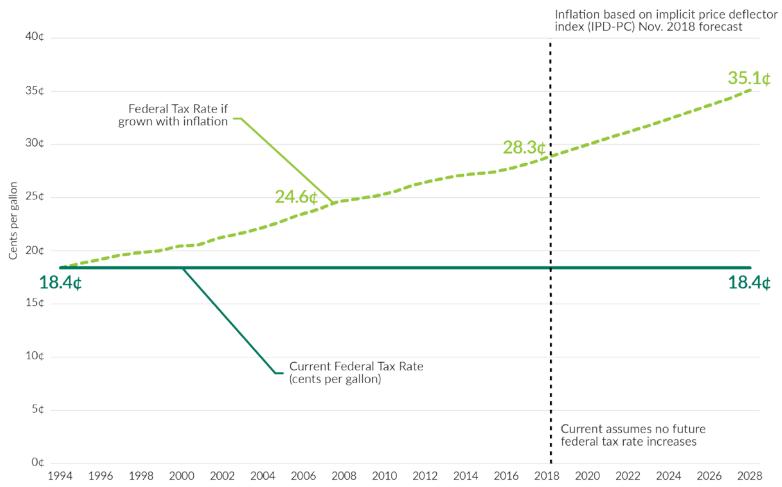
Technology

- Cooperative Automated <u>Transportation</u>
- Mobility on Demand
- Transportation System Management and Operations

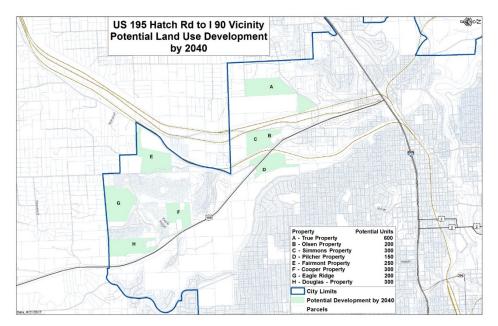


Governance/Financing

Federal Tax Rate if Grown with Inflation since FY 1994 (Cents per gallon)







Governance/Financing

 Growth Management Act and State Transportation Facilities



1999 plans for infrastructure build-out

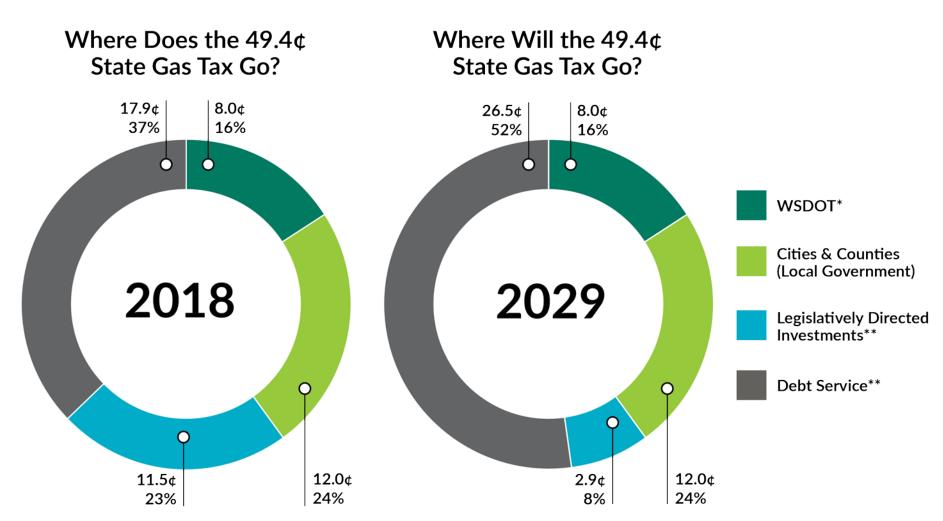




Future of the funding

- Road User Charge
- Congestion pricing
- <u>Tolling</u>
- Other?

Available Funding

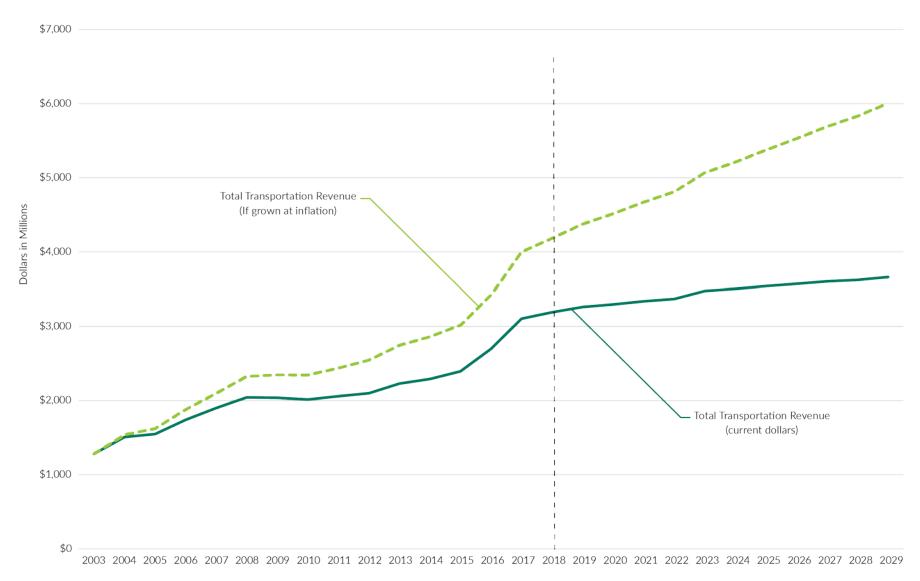


^{*} Includes operations, maintenance, preservation and safety improvements.

^{**}Includes funding for projects specified in the 2003 Nickel, 2005 Transportation Partnership, and 2015 Connecting Washington acts, as well as funding to pay off bonds funded by pre-2003 fuel tax.



Total Transportation Revenues - Current and Grown at Inflation (\$millions)



Source: Transportation Revenue Forecast Council, June 2018 quarterly forecast



Practical Solutions - Aligning our investments with our values

Integrated Multimodal Investment Strategy

- 20-year strategy developed over next five years
- Ensure legislative policy goals shape investment decisions through a transparent performance framework, aligned with regional and local partners
- Improve project quality and most effective use of limited funds
- Provide priority basis and long-term vision for the state transportation system serving people, goods, and services





Practical Solutions - Aligning our investments with our values

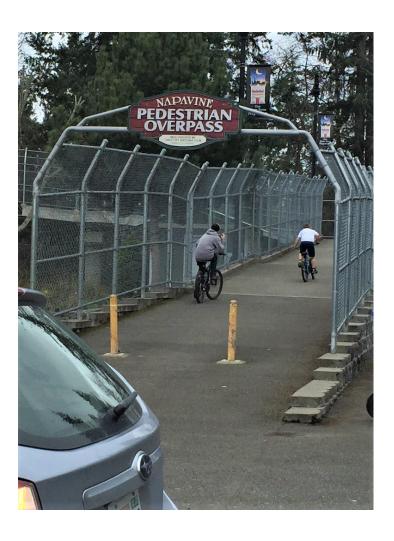
Metropolitan Planning Organization /Regional Transportation Planning Organization (MPO/RTPO) partnership for strategy development

- Greater consistency between state and regional plans
- Shared priorities for investment
- Clear, consistent, repeatable processes for state input into regional plans
- Share data and plans for state facilities with local significance
- Other partners
 - Federal agencies
 - Tribal governments
 - Other state agencies
 - Business community
 - Labor community
 - Freight community
 - Development community
 - Environmental community
 - Other interests: Accessibility, walking, bicycling and more



Conclusion

- Transportation matters
- WSDOT delivers
- Workforce is a huge issue
- Inclusion makes us better
- Delivering today's programs
- Moving Washington forward in a congested world



Questions?

Roger Millar, PE, FASCE, FAICP

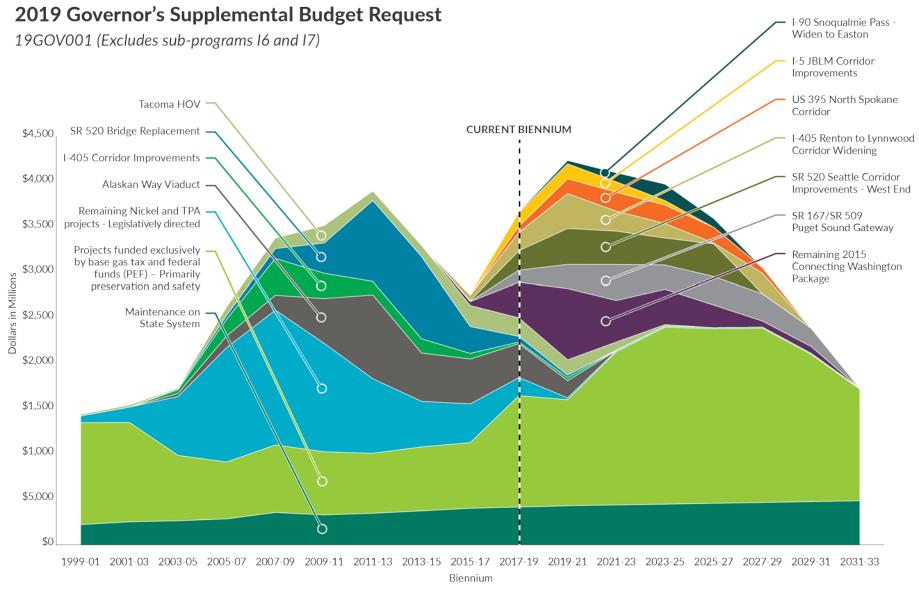
Secretary of Transportation
Washington State Department of Transportation
360-705-7054

MillarR@wsdot.wa.gov

Appendices

- WSDOT Maintenance and Highway Construction Program "Cascades" chart
- "Solving Congestion"
- Highlights 2018 accomplishments
- WSDOT Aviation Division

WSDOT Highway Maintenance and Construction Programs with Revenue Packages



"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 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







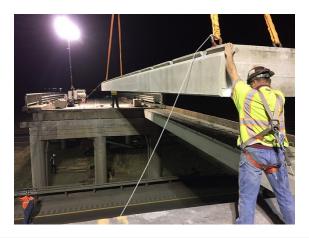
"Solving" Congestion Assumptions

High-level analysis for the interstate system:

- Assumes no induced demand
- No growth in demand
- Does not address increased capacity needed for unrestricted travel on non-interstate connections (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

Eastern Region – Headquartered in Spokane

- Completed repairs on the Danekas Road bridge over Interstate 90 in Ritzville, one week ahead of schedule
 - Bridge damaged by over height load
- Built three new roundabouts on US 395 at Deer Park
- Continuing public engagement for North Spokane Corridor – seeking input to identify public places along corridor and Children of the Sun trail



North Central Region – Headquartered in Wenatchee

- US 97 Blewett Pass culverts
 - Replaced two undersized culverts prone to clogging and roadway washouts
 - Replaced a culvert on Swauk
 Creek that was a barrier to fish
- SR 26 Bridge deck replacement near Othello
 - Key route to WSU closed for nine weeks to replace rapidly deteriorating bridge deck



Northwest Region – Headquartered in Seattle

- Replaced concrete panels and 37
 expansion joints on northbound I-5
 from MLK to Ravenna in Seattle as
 part of #Revive I-5
- Installed a 60 foot buried bridge on SR 92 at the Little Pilchuck Creek near Lake Stevens, opening up 30 miles of habitat for fish
- Built new roundabouts on SR 20 at Sharpes Corner and the SR 20 Spur in Anacortes, including a bike and pedestrian trail



Olympic Region – Headquartered in Tumwater

- Down to final two of 17 <u>Tacoma/Pierce</u> <u>County HOV Program</u> projects:
 - Built new northbound bridge over Puyallup River, widened I-5 for HOV, rebuilt McKinley Ave. bridge and replaced concrete
 - Final project, Southbound HOV starts in February 2019
- Started work on JBLM I-5 congestion relief; opened new auxillary lane northbound



South Central Region – Headquartered in Yakima

- I-90 Snoqualmie Pass East
 - Finishing Hyak to Keechelus Dam and Keechelus Dam to Stampede Pass projects: widened I-90 from 4 to 6 lanes, rebuilt and added new bridges, improved habitat connections
- Replaced 82-year-old Wildcat Creek
 Bridge on US 12 near Naches



Southwest Region – Headquartered in Vancouver

- I-5 Chamber Way bridge replaced the damaged 1958 bridge with a wider, taller overpass; improves access for people who walk and bike
- I-5 resurfaced from E. Fork Lewis River bridge to Kelso
- Improved safety on SR 500 at intersections with NE Falk/NE 42nd Ave. and NE 54th Ave/NE Stapleton



Alaskan Way Viaduct Replacement program

- Completed tunnel roadway and extensive testing of 90 tunnel systems
- Finished weather-sensitive paving work needed for tunnel opening
- Conducted SR 99 tunnel full-scale exercise, involving 23 agencies and partners, to prepare for tunnel emergency response
- Awarded contract to Kiewit Infrastructure West to remove the viaduct after tunnel opens
 - Moved Alaskan Way out from below the viaduct, expanded street to two lanes each direction, created 250 new parking spots





SR 520 Corridor

- Selected design-build contractor for next phase of reconstruction: Montlake Project
 - Includes West Approach Bridge, Montlake Boulevard interchange and lid, "land bridge" over SR 520 for people who walk and bike
- Counted more than 284,000 people crossing Lake Washington on the SR 520 Trail (as of November 2018)
- Completed the 22-acre wetland restoration project at Union Bay Natural Area



Interstate 405 / SR 167 Direct Connector

- Building a new flyover ramp, connecting the SR 167 HOT lane to the HOV lanes on I-405 in Renton
 - Installed a new culvert under SR 167 to improve fish passage through the area
 - Project is at 90 percent completion



Washington State Ferries

- Began construction to replace the seismically vulnerable Colman Dock
 - Moved entrance for all vehicles south to neighboring pier
 - Began demo on part of terminal and replacing dock for new terminal building
- Poured foundation for new <u>Mukilteo</u> <u>Multimodal Terminal</u> building
- Welcomed new M/V Suquamish to the fleet



Passenger Rail

- Completed final testing of positive train control (PTC) on the entire Amtrak Cascades corridor in Washington
- All three elements of PTC are operational:
 - Onboard equipment on trains
 - Wayside equipment along tracks
 - Back-office computer system administered by BNSF
- PTC system activated on Amtrak Cascades corridor fall 2018







WSDOT Aviation Division

- Major areas of responsibility for Aviation Division:
 - Advancement of Aeronautics
 - Aircraft Registration
 - Airport Aid Grants Program
 - Airport Land Use Planning and Support
 - Aviation Emergency Services
 - Aviation System Planning
 - Management of WA State Airports (16)
 - Addressing Emerging Aviation Issues (Unmanned/Autonomous Aircraft Systems, Urban Air Mobility, Electric Aircraft)
- Registered aircraft in Washington state 6,596 (2018)
- 134 public use airports
 - Airport-related activities contributes \$51 billion in total annual economic impact (source: 2012 Aviation Economic Impact Study, 2019 update study underway)
- 16 WSDOT operated airports