STATE OF WASHINGTON

2018 BIENNIAL TRANSPORTATION ATTAINMENT REPORT

WASHINGTON'S TRANSPORTATION SYSTEM: GOALS, OBJECTIVES AND PERFORMANCE MEASURES

COMPILED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

OCTOBER 2018

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Message from the Office of Financial Management

Dear Governor, Legislators and Interested Readers,

I am pleased to comment on the 2018 Biennial Transportation Attainment Report on the state's transportation system, which was prepared by the Washington State Department of Transportation (WSDOT). This report is a concise summary of the goals and measures established in RCW 47.04.280 to monitor the progress in providing the people of our state with the best possible value for their transportation system dollars. The Office of Financial Management is committed to collaborating with WSDOT and other transportation agencies to further refine performance measures and related objectives to ensure that the state continues to attain maximum value for its transportation investments.

The performance measure data in this report tells the story of a transportation system that supports a growing economy while facing significant challenges. The data shows that continued investment in our transportation infrastructure has boosted the state's performance in many areas. It also shows where additional analysis and potential investment may be needed.

Where things are improving:

- Fewer passenger injuries on Washington's ferries.
- Fewer structurally deficient bridges by deck area.
- Higher Amtrak and ferry ridership.
- More ferry passengers satisfied with the system.
- 14 more fish passage culverts corrected in 2017, bringing the total to 75 since 2013.
- More freight tonnage transported by water.
- Higher rate of transit use, resulting in less personal vehicle usage.
- Slightly less time that ferry vessels are out of service.

Where challenges remain:

- Less pavement in Washington that is listed in fair or better condition on the National Highway System.
- Rising traffic, pedestrian and bicyclist fatalities.
- More demand on Washington's transportation system as a result of population growth.
- More weekday delay on the central Puget Sound region's major urban highways.
- Fewer survey respondents rated the statewide transportation system average or better.

In closing, the state reiterates its focus on maintaining the safety of our citizens on Washington roadways, managing rising congestion in our more densely populated areas, improving the reliability of our ferry fleet, reducing the man-made causes of climate change, improving fish passage, and keeping up with preservation and maintenance needs for our bridges and roads.

We look forward to working with you, the public and our transportation partners to attain Washington's transportation goals.

Sincerely,

David Schumacher
Director

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Executive Summary

This 2018 Biennial Transportation Attainment Report has been compiled by the Washington State Department of Transportation at the request of the Washington State Joint Legislative Transportation Committee. Where possible, performance measures are presented that encompass five or more years of data.

Where things are improving since the 2016 Biennial Transportation Attainment Report:

- Reduced passenger injuries on Washington state ferries.
- Reduced the amount of structurally deficient bridges by deck area.
- Increased Amtrak and Ferry ridership.
- Increased number of ferry passengers satisfied with the system.
- Corrected 14 more fish passage culverts in 2017, bringing the total to 75 since 2013.
- Transported more freight tonnage by water.
- Increased transit use resulting in more personal vehicle usage avoided.
- Slightly decreased the time that ferry vessels are out of service.

Where challenges remain:

- Decreased Washington state's amount of pavement in fair or better condition on the National Highway System.
- Rising traffic, pedestrian and bicyclist fatalities.
- Increasing demand on Washington state's transportation system as a result of population growth.
- Increased annual weekday delay on the central Puget Sound region's major urban highways.
- Fewer survey respondents rated the statewide transportation system average or better.

New to this report:

- Overall diesel emissions have declined, however some populations remain at greater risk for adverse health effects.
- Agriculture is a year-round activity in Washington state, despite the percentage of county roads that restrict freight movement during winter and early spring months.
- The cost of transportation and housing outpaced growth in income for Washingtonians.

The Transportation Attainment Report was compiled using data and information from these contributors:

- Washington State Department of Transportation
- Washington State Office of Financial Management
- Washington Traffic Safety Commission
- Washington State Department of Health
- Washington State Department of Licensing
- Washington State Department of Ecology
- Washington State Transportation Center
- County Road Administrative Board
- Washington State Transportation Commission
- Washington State Agriculture & Food Processing Economic/Fiscal Impact Study

Purpose of the Transportation Attainment Report

Washington state's transportation attainment report provides a high-level assessment of the state's progress in achieving its transportation goals, using key performance measures and data.

Statewide transportation goals

In 2007, the Washington State Legislature amended RCW 47.04.280, establishing five statewide transportation policy goals used to guide the planning, operation, performance of and investment in the state's transportation system. A sixth goal was added by the Legislature in 2010. They are not listed in priority order.

- *Safety*: To provide for and improve the safety and security of transportation customers and the transportation system;
- *Preservation*: To maintain, preserve and extend the life and utility of prior investments in transportation systems and services;
- *Mobility* (Congestion Relief): To improve the predictable movement of goods and people throughout Washington state, including congestion relief and improved freight mobility (underlined text was added by the Legislature in 2014);
- *Environment*: To enhance Washington state's quality of life through transportation investments that promote energy conservation, enhance healthy communities and protect the environment;
- *Stewardship*: To continuously improve the quality, effectiveness and efficiency of the transportation system; and
- *Economic Vitality*: To promote and develop transportation systems that stimulate, support and enhance the movement of people and goods to ensure a prosperous economy. (This goal was added by the Legislature in 2010.)

Biennial transportation progress reports

The purpose of these reports is to assess progress on the statewide transportation goals and the performance of the transportation system. Rather than report on agency-specific performance, the focus is on overall system performance. Most of the objectives and measures were developed with input from transportation agencies, stakeholders and the Legislature in 2008, and are updated herein. This report provides a high-level indicator for each measure to allow for a quick assessment of progress. Many of the measures and supporting data are being used to make investment decisions, develop strategies and programs, promote accountability and transparency, and provide for stronger internal management through organizational performance assessments and improvement. Measures may evolve as progress is made in assessing the performance of the multifaceted components of Washington state's transportation system.

A note about reporting periods

This report provides the latest available data. Unless otherwise stated, data is reported for the calendar year (CY) which is January through December. In some cases, the state's fiscal year (FY), which runs July through June, is the basis for reporting. In others, the federal fiscal year (FFY) is used, which runs October through September.

Washington State Transportation System - Just the Facts

Pressure on the transportation system comes from a number of sources including, but not limited to, population increases, job creation, new housing units constructed, and the increased numbers of vehicles and drivers. The following data helps put into context what some of these pressures mean.

Washington state's population reached approximately 7.3 million in 2017, experiencing 6.2% growth from 2013. Population has increased by 50.2% since 1990.
Population forecasts from the Office of Financial Management predict an additional 328,000 Washington state residents by the year 2020 and another 1.2 million residents by the year 2030.

Washington state added an estimated 136,000 housing units from 2013 through 2017.
In 2017, there were about 3,083,000 housing units in Washington state, an increase of 4.6% from 2,947,000 in 2013.

Non-farm employment in Washington state has grown from 3.5 million workers in June 2013 to 3.7 million workers in June 2017, representing a 5.6% increase.
Employment has recovered from lows during the recession in 2008 and 2009. There has been steady growth in the number of people working since 2011. The unemployment rate in Washington in June 2013 was 6.8%; in June 2017 it was 4.5%. Employment has significant impacts on commute rates and road congestion at peak travel times, transit usage, ferry ridership, port activity, train and airport boardings, and vehicle miles traveled (VMT) on state roads. Average travel time to work was 26.7 minutes in 2016, up 4.7% from 25.5 minutes in 2011.

Vehicle ownership has grown faster than the state population.
In 1990, there were 4.9 million vehicles registered in Washington state compared to 7.9 million vehicles registered in December 2017. This represents an increase of more than 3 million vehicles, or 61%. There are more registered vehicles than there are licensed drivers; in December 2017, there were approximately 5.8 million issued driver licenses in Washington state.

The number of licensed drivers in Washington state grew by 9.0% between December 2013 and December 2017.
Between December 2013 and December 2017, the number of licensed drivers in Washington state grew at an average rate of approximately 120,000 additional drivers each year, representing a 9.0% total increase. Total VMT per person increased by about 139 miles from 8,332 miles in 2014 to 8,471 in 2016.

2017 Key Transportation Facts

On the ground	
5.8 million licensed drivers	1.5 million lane miles of roads treated for snow and ice control (FY 2017)
4.8 million registered passenger vehicles	7,410 bridges statewide (FY 2018)
7.9 million total registered vehicles	307.4 miles of HOV freeway lanes complete
61.4 billion vehicle miles traveled	364 park-and-ride lots with 59,600 spaces
3.6 billion gallons of fuel consumed (FY 2017)	31 transit systems
20.5 miles per gallon fuel economy on average (2016)	222.9 million transit passenger trips (2016)
10,586 miles traveled per licensed driver on average	3,066 vanpools in operation per month on average
18,712 state highway lane miles	9.3 million vanpool passenger trips
4,038 interstate freeway lane miles	728,000 state-supported Amtrak Cascades passenger trips
78,732 county road lane miles	3,056 miles of freight rail line (2016)
35,829 city road lane miles	121.2 million tons of rail freight (2016)
42.3% of vehicles miles traveled on county and city roads	287 million tons of freight carried by truck (2016)
56.2% of vehicle miles traveled on state highways	$127 billion of cargo passing through ports
In the air	
16 state-managed airports (9 owned by state)	1.68 million tons of air cargo (2016)
136 public use airports	21.9 million passenger boardings at SeaTac Airport (2016)
On the water	
24.5 million passengers and 10.6 million vehicles carried on state ferries	75 port districts
22 state ferries, largest auto-ferry system in the nation	3.6 million 20-foot container equivalent units through Seattle and Tacoma ports
20 state ferry terminals	122.9 million tons of waterborne freight tonnage (2016)
10 state ferry routes	450 daily state ferry sailings

Sources: Washington State Office of Financial Management; Washington State Department of Licensing; Washington State Department of Transportation; Washington State Department of Ecology; Results Washington; U.S. Department of Transportation; U.S. Department of Commerce. Data is for 2017 unless otherwise noted.

Statewide Transportation Goals, Objectives and Performance Measures

Summary of progress and five-year trend through 2017

Goal 1- SAFETY

To provide for and improve the safety and security of transportation customers and the transportation system.

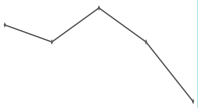
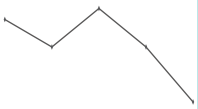
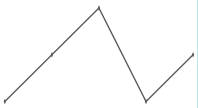
Measure	*Objective*	*Status*	*Progress*	*Desired trend*	*Five-year trend*
Measure 1.1 Traffic fatalities Number and rate of traffic fatalities per 100 million Vehicle Miles Traveled (VMT)	Reduce roadway fatalities	Traffic fatalities numbered 565 (preliminary) in 2017, a 29.6% increase from 436 fatalities in 2013.	–	↓	
	Reduce the rate of traffic fatalities per 100 million VMT	The rate of traffic fatalities per 100 million VMT was 0.92 (preliminary) in 2017, a 19.5% increase from 0.77 in 2013.	–	↓	
Measure 1.2 Collision reduction Number of collisions and percentage resulting in serious or fatal injuries	Reduce number of collisions	Traffic collisions numbered 121,053 (preliminary) in 2017, an 21.3% increase from 99,762 2013.	–	↓	
	Reduce severity of collisions	Serious injuries resulting from traffic collisions numbered 2224 (preliminary) in 2017, a 16.0% increase from 1917 in 2013.	–	↓	
Measure 1.3 Pedestrian & bicyclist fatalities Reduce pedestrian and bicyclist fatalities	Reduce the rate of pedestrian fatalities per 100,000 population	The rate of pedestrian fatalities was 1.49 in 2017 (preliminary), an 21.7% increase from 1.22 in 2016 and a 105% increase from 0.73 in 2013.	–	↓	
	Reduce the rate of bicyclist fatalities per 100,000 population	The rate of bicyclist fatalities was 0.18 in 2017 (preliminary), a 24.9% decrease from 0.24 in 2016 22.4% increase from 0.15 in 2013.	–	↓	
Measure 1.4 Ferry passenger injuries Number of passenger injuries per one million passengers	Reduce passenger injuries	The ferries passenger injury rate was 0.41 in fiscal year (FY) 2018, a 2.0% decrease from a rate of 0.42 in FY2016.	✓	↓	
Measure 1.5 Facial recognition license suspensions & record cancellations Number of identity theft complaints	Reduce fraudulent driver's licenses and records	Identity theft complaints numbered 7,360 in 2017, an increase of 55.3% since 2013.	–	↓	

Data source: WSDOT Office of Strategic Assessment and Performance Analysis.

Notes: ✓ = Performance is moving in a favorable direction based on the five-year trend. – = Performance is not moving in a favorable direction based on the five-year trend.

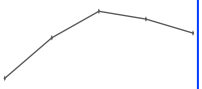
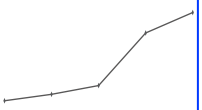
Goal 2- PRESERVATION

To maintain, preserve and extend the life and utility of prior investments in transportation systems and services.

Measure	*Objective*	*Status*	*Progress*	*Desired trend*	*Five-year trend*
Measure 2.1 Pavement Percent of National Highway System pavement in Washington state in fair or better condition	Extend the useful life of pavement	92.6% of NHS pavement was in fair or better condition in 2016, down from 93.3% in 2015 and 93.5% in 2012.	–	↑	
Measure 2.2 Bridges Percent of state bridges in poor condition	Keep bridges safe and open to traffic	6.6% of bridges by deck area statewide were in poor condition in FY2018, down from 7.6% in FY2017 and 8.1% in FY2014.	✓	↓	
Measure 2.3 Ferry terminals Percent of state ferry terminal systems in fair or better condition	Extend the useful life ferry terminals	88% of ferry terminal systems were in fair or better condition in 2016, up from 87% in both 2015 and 2012.	✓	↑	

Goal 3 - MOBILITY (ADDRESSING CONGESTION)

To improve the predictable movement of goods and people throughout the state, including congestion relief and improved freight mobility.

Measure	*Objective*	*Status*	*Progress*	*Desired trend*	*Five-year trend*
Measure 3.1 Annual hours of delay per traveler Annual hours of delay per traveler on major corridors statewide and central Puget Sound areas	Reduce congestion on urban highways and arterials statewide	Delay in the central Puget Sound region reached 8.3 million hours in 2017, increasing 46.0% from 5.7 million hours in 2013.	–	↓	
Measure 3.2 Avoided annual Vehicle Miles Traveled (VMT) Vehicle miles avoided due to public transportation use	Reduce congestion by making systems more efficient	Nearly 845 million vehicle miles were avoided in 2016 (latest available data) due to public transit use, up from 816 million vehicle miles in 2012.	✓	↑	
Measure 3.3 Tolling operations Annual toll trips in Washington state	Improve traffic flow through tolling operations	Tolling transactions totaled 50.1 million in FY2017, an increase of 43.1% from 35 million transactions in FY2013.	✓	↑	
Measure 3.4 High occupancy vehicle (HOV) lanes Usage of Seattle-area network of HOV lanes in Person Miles Traveled	Improve performance of HOV lanes	Average weekday Person Miles Traveled on the central Puget Sound region HOV network increased 26.3% from 2012 through 2016.	✓	↑	

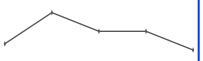
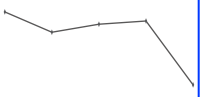
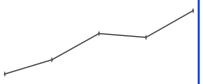
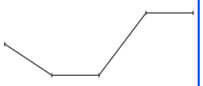
Data source: WSDOT Office of Strategic Assessment and Performance Analysis.

Notes: ✓ = Performance is moving in a favorable direction based on the five-year trend. – = Performance is not moving in a favorable direction based on the five-year trend.

Continued on page 12

Goal 3 - MOBILITY (ADDRESSING CONGESTION) *continued from page 9*

To improve the predictable movement of goods and people throughout the state, including congestion relief and improved freight mobility.

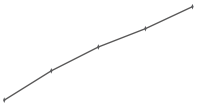
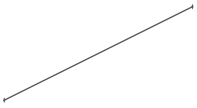
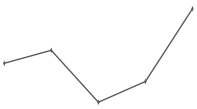
Measure	*Objective*	*Status*	*Progress*	*Desired trend*	*Five-year trend*
Measure 3.5 Drive-alone rate Percentage of commute trips taken while driving alone	Reduce percentage of commuters who drive alone to work	The drive-alone rate decreased 0.1 percentage point from 72.2% in 2012 to 72.1% in 2016.	✓	↓	
Measure 3.6 Ferries Ridership and percent of trips on time for Washington State Ferries	Increase ridership	Ferries ridership reached 24.6 million in FY2018, increasing 7.9% from FY2014.	✓	↑	
	Increase percentage of on-time trips	Ferries annual on-time performance was 91.3% in FY2018, a decrease from 95.5% in FY2014.	–	↑	
Measure 3.7 Passenger rail Ridership and percent of trips on time for Washington state sponsored Amtrak Cascades train service	Increase ridership	Amtrak Cascades ridership increased of 4.9% from 694,000 in 2013 to 728,000 in 2017.	✓	↑	
	Increase percentage of on-time trips	Amtrak Cascades on-time trips decreased from a yearly average of 77.6% in 2013 to 50.3% in 2017.	–	↑	
Measure 3.8 Transit Transit ridership in Washington state.	Increase ridership across the state	Statewide transit ridership increased by 6.4% from 209.6 million riders in 2012 to 222.9 million riders in 2016 (not including some rural ridership).	✓	↑	
Measure 3.9 Walking or biking Percentage of commute trips taken walking or biking	Promote walking and biking to improve public health	Walking as a percent of all commute modes increased from 3.6% in 2012 to 3.7% in 2016.	✓	↑	

Data source: WSDOT Office of Strategic Assessment and Performance Analysis.

Notes: ✓ = Performance is moving in a favorable direction based on the five-year trend. – = Performance is not moving in a favorable direction based on the five-year trend.

Goal 4 - ENVIRONMENT

To enhance Washington state's quality of life through transportation investments that promote energy conservation, enhance healthy communities and protect the environment.

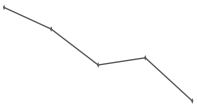
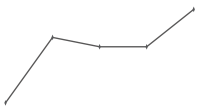
Measure	*Objective*	*Status*	*Progress*	*Desired trend*	*Five-year trend*
Measure 4.1 Fish passage Number of culverts fixed and miles of stream habitat with improved access	Increase number of culverts fixed	14 culverts were corrected in 2017; 75 total culverts were corrected from 2013 through 2017.	✓	↑	
	Increase number of potential miles of habitat with improved access	Access to approximately 1,042 miles of potential fish habitat has been improved by WSDOT to date (2017), increasing from about 960 in 2015.	✓	↑	
Measure 4.2 Stormwater runoff quality Amount of sediment removed from bodies of water Note: This is a new measure. Trend shown is for two years.	Improve water quality by managing stormwater runoff	WSDOT removed 4,347.5 cubic yards of sediment from bodies of water in 2017, an increase of 1,794.5 cubic yards from 2016.	✓	↓	
Measure 4.3 Greenhouse gases Tons of greenhouse gases produced statewide	Reduce greenhouse gas emissions caused by transportation	Transportation greenhouse gas emissions have increased by 5% from 2011 to 44 million metric tons of carbon dioxide in 2015.	–	↓	
Measure 4.4 Diesel emissions Tons of diesel particulate emissions produced statewide Note: The trend shown represents data from 2005, 2008, 2011, 2014 and 2016 due to data availability issues.	Reduce the impacts of diesel emissions on vulnerable populations	Diesel particulate emissions decreased by 40% from 2011 to 4,100 annual tons in 2016, which is on track to meet the 2020 target of 3,500 annual tons.	✓	↓	

Data source: WSDOT Office of Strategic Assessment and Performance Analysis.

Notes: ✓ = Performance is moving in a favorable direction based on the five-year trend. – = Performance is not moving in a favorable direction based on the five-year trend.

Goal 5- STEWARDSHIP

To continuously improve the quality, effectiveness and efficiency of the transportation system.

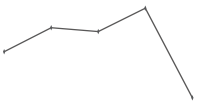
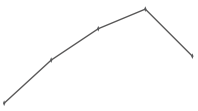
Measure	*Objective*	*Status*	*Progress*	*Desired trend*	*Five-year trend*
Measure 5.1 Capital project delivery Percent of 2003 Nickel and 2005 Transportation Partnership Account revenue packages' capital projects completed on time and on budget (based on last legislatively approved list)	Deliver 90% of Nickel and TPA projects on time	87% of Nickel and TPA projects are considered completed on time at the end of FY2018, the same as at the end of FY2016.	–	↑	
	Deliver 90% of Nickel and TPA projects on budget	91% of Nickel and TPA projects are considered completed on budget at the end of FY2018, the same as at the end of FY2016.	✓	↑	
Measure 5.2 Ferry terminal capital projects Ferry terminal capital projects completed on time	Deliver 90% of ferry terminal capital projects on time	75% of ferry terminal capital projects were completed on time in FY2017, down from 100% in FY2016.	–	↑	
Measure 5.3 Ferry vessels' weeks out of service Time that ferry vessels are out of service	Limit out-of-service time for ferry vessels	Each vessel averaged 9.3 weeks out-of-service in FY2017, down 2% from 9.5 weeks in FY2016.	✓	↓	
Measure 5.4 Rail capital project delivery Nickel and TPA rail projects completed on time and on budget	Deliver 90% of rail capital projects both on time and on budget	100% of Nickel and TPA rail projects since 2006 have been completed both on time and on budget.	✓	↑	
Measure 5.5 Grade transportation system Survey local, regional and statewide customers	Measure public perception about condition and needs of the statewide transportation system	59% of survey respondents rated statewide transportation systems average or better in 2017, compared to 65% in 2015.	–	↑	
	Measure public perception about condition and needs of their local transportation system	55% of survey respondents rated local transportation systems average or better in 2017, compared to 57% in 2015.	–	↑	
Measure 5.6 Passenger satisfaction – ferry system Survey ferry system passengers	Measure passenger satisfaction with the ferry system	77% of survey respondents are "satisfied" or "very satisfied" with the ferry system in 2017, up from 73% in 2016 (2013 data is unavailable and not represented on the graph).	✓	↑	

Data source: WSDOT Office of Strategic Assessment and Performance Analysis.

Notes: ✓ = Performance is moving in a favorable direction based on the five-year trend. – = Performance is not moving in a favorable direction based on the five-year trend.

Goal 6- ECONOMIC VITALITY

To promote and develop transportation systems that stimulate, support, and enhance the movement of people and goods to ensure a prosperous economy.

Measure	*Objective*	*Status*	*Progress*	*Desired trend*	*Five-year trend*
Measure 6.1 Jobs created Number of jobs created or sustained by transportation projects (projected)	Create and sustain jobs through investments in transportation	WSDOT capital expenditures are projected to create approximately 2,680 jobs at the peak in 2021, an increase from 1,320 jobs in 2018.	✓	↑	
Measure 6.2 Freight Amount of freight cargo moving in, out and within Washington state by truck, air, water or rail	Enhance transportation systems to facilitate movement of freight	Freight exports and imports in Washington totaled $126,556 billion in value, an increase of 2.7% overall since 2012.	✓	↑	
Measure 6.3 Agricultural freight Percentage of county roads in Washington that fail to meet all-season requirements	Reduce seasonal road restrictions to facilitate agricultural freight movement	40% of county roads in Washington were considered inadequate in 2017, increasing slightly from 38% in 2013	–	↓	
Measure 6.4 Transportation spending New measure under development	New measure under development	New measure under development	–		

Data source: WSDOT Office of Strategic Assessment and Performance Analysis.
Notes: ✓ = Performance is moving in a favorable direction based on the five-year trend. – = Performance is not moving in a favorable direction based on the five-year trend.

MEASURE 1.1

SAFETY

To provide for and improve the safety and security of transportation customers and the transportation system.

Objective: Reduce roadway fatalities

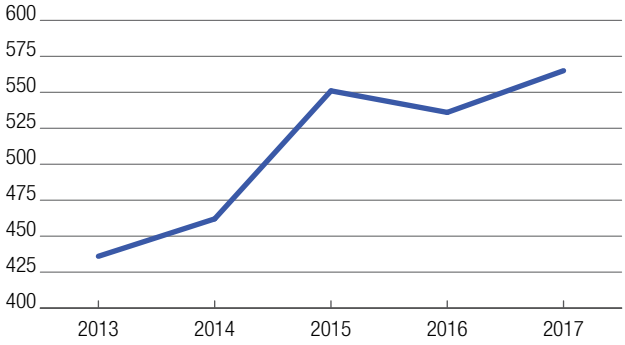
Traffic-related fatalities in Washington state increased in 2017.

Trend analysis

Between 2015 and 2017, the number of traffic fatalities increased 2.5% from 551 to 565. Between 2013 and 2017, the rate of fatalities per 100 million Vehicle Miles Traveled (VMT) increased from 0.77 to 0.92, up 19%. The fatality rate in Washington state continues to trend below the national average of 1.17 per 100 million VMT in 2017.

Washington state traffic fatalities increase in 2017

2013 through 2017[1]

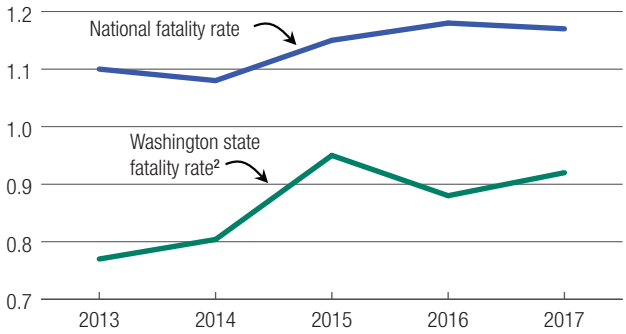


Data source: Washington State Fatality Analysis Reporting System.

Note: **1** Data for 2017 is considered preliminary until January 1, 2019.

The rate of traffic fatalities increases in Washington state

2013 through 2017[1]; Fatalities per 100 million Vehicle Miles Traveled



Data sources: National Highway Traffic Safety Administration and Washington State Fatality Analysis Reporting System.

Notes: **1** Data for 2017 is considered preliminary until January 1, 2019.

Washington state's "Target Zero" goal is to reduce traffic fatalities and serious injuries to zero by 2030. Target Zero contains three levels of priority factors based on the percentage of traffic fatalities associated with each emphasis area. Priority Level One contains the emphasis areas involved in 30% or more of traffic fatalities or serious injuries and includes impairment, speeding, lane departures, young drivers and intersections. Priority Level Two contains emphasis areas involved in at least 10% of traffic fatalities or serious injuries, including distracted driving, unrestrained occupants, unlicensed drivers, motorcyclists, pedestrians and older drivers. Priority Level Three emphasis areas are associated with less than 10% of fatalities or serious injuries and include drowsy driving, heavy trucks and bicyclists. The table below shows the Target Zero emphasis areas and the number of cumulative fatalities and serious injuries associated with each emphasis area. More than one emphasis area is commonly involved in fatalities and serious injuries; therefore, a single fatality or serious injury may be represented in multiple emphasis areas within the table.

Over half of traffic fatalities in Washington state involved impairment from 2015 through 2017

2015 through 2017; Cumulative traffic fatalities and serious injuries; A fatality or serious injury may be represented in multiple emphasis areas

Emphasis Areas		Fatalities		Serious Injuries	
		Number	Percent of Total	Number	Percent of Total
Priority		1,652		6,541	
Level	***High Risk Behavior***				
1[1]	Impairment Involved	929	56.2%	1,214	18.6%
1	Speeding Involved	483	29.2%	1,579	24.1%
2[2]	Distraction Involved	482	29.2%	1,937	29.6%
2	Unrestrained Motor Vehicle Occupants	313	18.9%	1,033	15.8%
2	Unlicensed Driver Involved	297	18.0%	5	0.1%
3[3]	Drowsy Driver Involved	44	2.7%	236	3.6%
	Crash Type				
1	Lane Departure	763	46.2%	2,458	37.6%
1	Intersection Related	368	22.3%	2,261	34.6%
	Road Users				
1	Young Drivers 16-25 Involved	512	31.0%	2,240	34.2%
2	Motorcyclists	231	14.0%	1,170	17.9%
2	Pedestrians	283	17.1%	1,009	15.4%
2	Older Drivers 70+ Involved	224	13.6%	599	9.2%
3	Heavy Truck Involved	177	10.7%	440	6.7%
3	Bicyclists	44	2.7%	326	5.0%
	Other Monitored Emphasis Areas				
	Wildlife Involved	8	0.5%	53	0.8%
	Work Zone	18	1.1%	70	1.1%
	Vehicle-Train	12	0.7%	4	0.1%
	School Bus-Involved	4	0.2%	17	0.3%

Data source: Washington Traffic Safety Commission, Target Zero and WSDOT Transportation Data, GIS & Modeling Office.

Notes: More than one emphasis area is commonly involved in fatalities and serious injuries; therefore, each fatality and serious injury tallied in the totals at the top may be represented in multiple emphasis areas shown in the table. The 2016 Target Zero Plan (Washington state's Strategic Highway Safety Plan) identified priority levels for each of the emphasis areas in the plan. The priority levels are based on the percentage of traffic fatalities and serious injuries from 2012 to 2014 associated with each emphasis area. **1** Priority Level One emphasis areas were involved in at least 30% of fatalities or serious injuries. **2** Priority Level Two emphasis areas were involved in at least 10% of fatalities or serious injuries. **3** Priority Level Three emphasis areas were involved in less than 10% of fatalities and serious injuries.

Lead agency: Washington Traffic Safety Commission

For more information, see:

- *Gray Notebook* 70, Highway Systems Safety Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Jun18.pdf#page=11
- NHTSA Traffic Safety Facts, May 2018: https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812542
- Quarterly Target Zero Data: http://wtsc.wa.gov/research-data/quarterly-target-zero-data/
- Target Zero website: http://targetzero.com/

SAFETY

To provide for and improve the safety and security of transportation customers and the transportation system.

Objective: Reduce the number and severity of roadway collisions

Collisions decrease and serious injuries increase on public roads statewide. Seat belt use increases in Washington state.

Trend analysis

The number of traffic related collisions in the state decreased 1.1% from 122,387 in 2016 to 121,053 in 2017—the first year since 2011 that the number of collisions decreased. The number of traffic related serious injuries increased 0.3% from 2,217 in 2016 to 2,224 in 2017. The number of serious injuries has increased steadily since 2013, when Washington observed a 10-year low of 1,917 serious injuries.

The state's seat belt use rate increased slightly from 94.5% in 2013 to 94.8% in 2017, and continued to remain well above the national average of 89.7%. In 2010, 97.6% of Washington state drivers wore their seat belts, the highest rate in state history and the highest in the United States. Since then, seat belt usage has dropped 2.8 percentage points and Washington state is now second among the states, trailing Oregon.

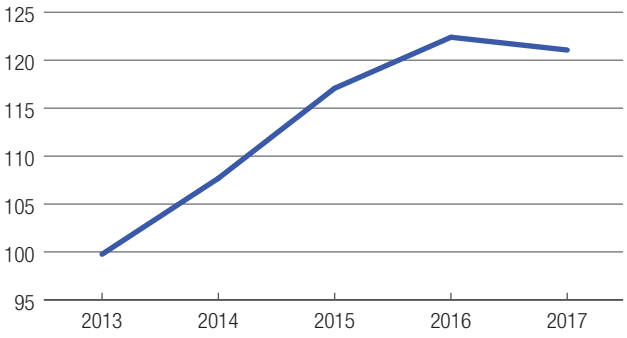
Lead agency: Washington Traffic Safety Commission

For more information, see:

- *Gray Notebook* 70, Highway Systems Safety Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Jun18.pdf#page=11
- WSDOT Crash Data Portal: https://remoteapps.wsdot.wa.gov/highwaysafety/collision/data/portal/public/
- Quarterly Target Zero Data: http://wtsc.wa.gov/research-data/quarterly-target-zero-data/
- NHTSA Traffic Safety Facts, June 2018: https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812546

Traffic related collisions decrease for first time since 2011

2013 through 2017[1]; Collisions in thousands

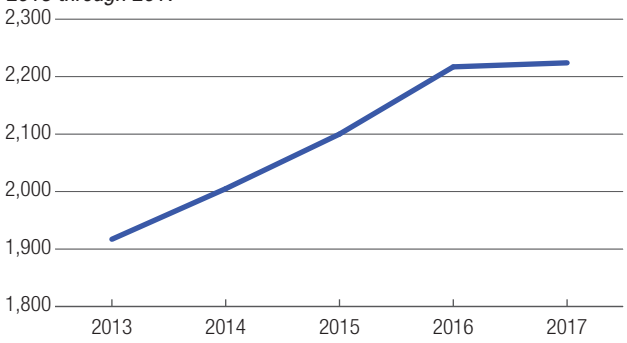


Data source: WSDOT Transportation Data, GIS & Modeling Office.

Note: **1** Data for 2017 is considered preliminary until January 1, 2019.

Traffic related serious injuries increase slightly in 2017 after steady increase from 2013 to 2016

2013 through 2017[1]

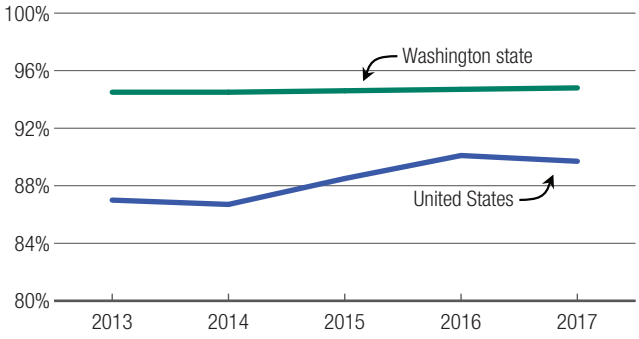


Data source: Washington Traffic Safety Commission.

Note: **1** Data for 2017 is considered preliminary until January 1, 2019.

Seat belt use in Washington state remains higher than the national average

2013 through 2017



Data source: National Highway Traffic Safety Administration.

MEASURE 1.3

SAFETY

To provide for and improve the safety and security of transportation customers and the transportation system.

Objective: Reduce pedestrian and bicyclist fatalities

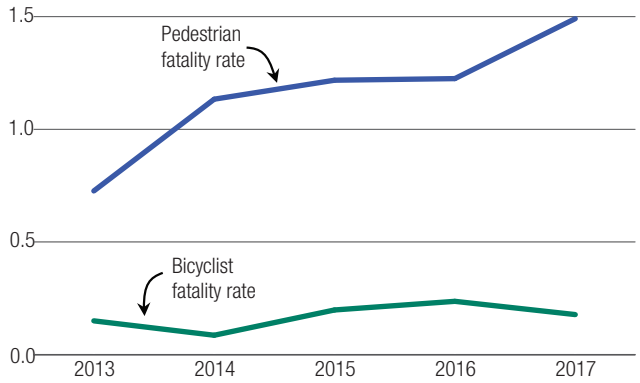
Preliminary data shows a total of 122 pedestrian and bicyclist fatalities in Washington state in 2017. There has been a general increase in the combined number of pedestrian and bicyclist fatalities from 2013 through 2017 with an annual average of 94.2 fatalities in the five-year period.

Trend analysis

There were 109 pedestrian fatalities and 13 bicyclist fatalities in Washington state in 2017 (data from the Washington state Fatality Accident Reporting System [FARS] is considered preliminary until January 1, 2019). This is 21 (23.9%) more pedestrian fatalities and four (23.5%) fewer bicyclist fatalities than in 2016.

Washington state's pedestrian fatality rate increases in 2017

2013 through 2017[1]; Fatality rates per 100,000 population



Data source: Washington State Fatality Analysis Reporting System.

Note: **1** Data for 2017 is considered preliminary until January 1, 2019.

Pedestrian and bicyclist fatalities are monitored as part of the Target Zero program. To meet the Target Zero goal for pedestrians and bicyclists, WSDOT is focusing on three aspects of exposure.

- Volume exposure: The more pedestrians, bicyclists, and vehicle traffic exists there is a higher likelihood of conflicts between modes. Where there are more conflicts there is higher potential for crashes. From 2013 to 2017, half of all pedestrian fatalities (50%) and nearly half of all bicyclist fatalities (45%) in Washington state happened on city streets (where the prevalence of pedestrians and bicyclists tends to be higher); most serious injuries (63% of pedestrian serious injuries and 70% of bicyclist serious injuries) also happened on city streets.

- Speed and severity exposure: Crashes between people walking or bicycling and people in vehicles expose people walking or biking to potential injury because the vehicles are much larger and heavier than the person. Additionally, the potential for injury increases as speed increases. The 2013 to 2017 FARS data for Washington state show the following pedestrian and bicyclist fatality percentage splits by posted speed – 16% at 25 mph or less, 46% at 30-35 mph, 14% at 40-45 mph, and 23% at 50 mph and above for pedestrians, and 6% at 25 mph or less, 35% at 30-35 mph, 25% at 40-45 mph, and 33% at 50 mph and above for bicyclists. These percentages reflect a mix of the severity exposure and the volume exposure as discussed above.

- Exposure to event: Numerous factors may increase the exposure to events. For example, a driver not seeing a pedestrian or bicyclist due to lower light conditions or inadequate headlights; the time that a pedestrian or bicyclist may be exposed to a conflict (time to cross a street); time to react (higher driving speed makes it more difficult for the pedestrian or bicyclist to judge the speed of the vehicle and for the driver to see and react to a bicyclist or pedestrian); crossing at unexpected locations (more difficult for the driver to perceive, react and determine what action to take); or driver and pedestrian behaviors that reduce judgment capabilities (drugs and alcohol, for example). More than half (52%) of pedestrian fatalities and 64% of serious injuries occurred while the pedestrian was crossing

the road; similarly, 61% of bicyclist fatalities and 50% of serious injuries occurred while the bicyclist was riding on the roadway. Pedestrian fatalities occurred more often (59% of the time) when it was dark, at dawn or at dusk, while most bicyclist fatalities (71%) occurred during daylight hours.

While less prominent, the two behavioral factors most often contributing to pedestrian fatalities were driver distraction (35%) and pedestrian impairment (48%). Bicyclist impairment was a contributing factor in 42% of bicyclist fatalities. Driver failure to yield was a contributing factor in 10% of pedestrian fatalities and 18% of pedestrian serious injuries, pedestrian failure to yield was a contributing factor in 14% of pedestrian fatalities and 15% of pedestrian serious injuries, and bicyclist failure to yield was a contributing factor in 18% of bicyclist fatalities and 12% of bicyclist serious injuries.

Lead agency: Washington Traffic Safety Commission

For more information, see:

- *Gray Notebook* 69, Active Transportation Annual Safety Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Mar18.pdf#page=11
- Washington Traffic Safety Commission's Quarterly Target Zero Database: http://wtsc.wa.gov/research-data/quarterly-target-zero-data/
- Results Washington Goal 2, Pedestrian and Bicyclist Safety Report: https://data.results.wa.gov/reports/G2-3-2-c-Pedestrian-and-Bicyclist-Safety

MEASURE 1.4

SAFETY

To provide for and improve the safety and security of transportation customers and the transportation system.

Objective: Reduce passenger injuries on Washington State Ferries

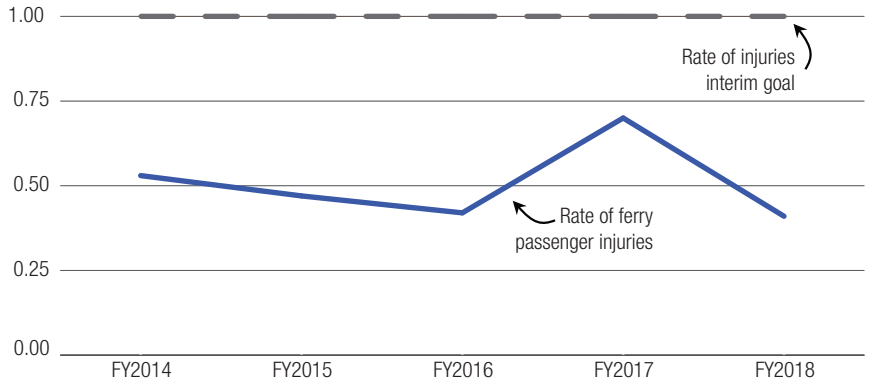
Passenger injuries on Washington State Ferries remain low.

Trend analysis

In fiscal year (FY) 2018, 24.6 million passengers rode the WSDOT Ferries system. WSDOT Ferries Division has set an ultimate goal of zero passenger injuries and an interim goal of having fewer than one injury per million passengers. In FY2018, WSDOT Ferries met the goal with a rate of 0.41 injuries per million passengers (a total of 10 passenger injuries). The agency has achieved its goal for all five fiscal years represented in the graph below.

Washington State Ferry passenger injuries decrease in fiscal year 2018

Fiscal year 2014 through fiscal year 2018; Passenger injuries per one million passengers



Data source: WSDOT Ferries Division.

Note: In 2015, WSDOT Ferries revised its passenger injuries measure to be injuries per one million passengers as it is more intuitive than injuries per one million passenger miles.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 70, Ferries Quarterly Update: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Jun18.pdf#page=29

SAFETY

To provide for and improve the safety and security of transportation customers and the transportation system.

Objective: Reduce fraudulent driver's licenses and records

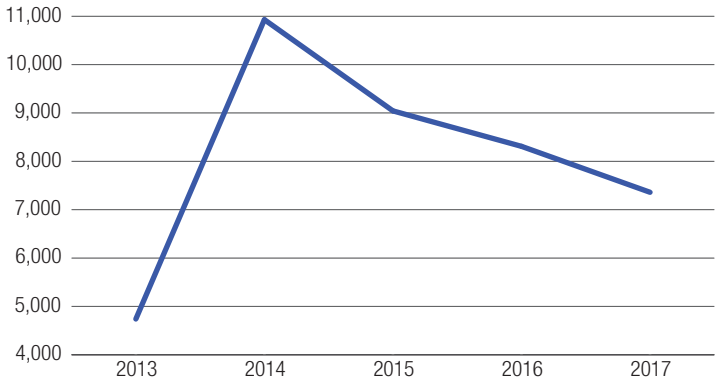
Washington state's fraud and identity theft rates show a net increase from 2013 through 2017.

Trend analysis

Washington state ranked 25th in the nation among states for fraud complaints in 2017, improving from 14th in 2013. A 1st place ranking equates to the highest amount of complaints per 100,000 population while a 50th place ranking equates to the lowest amount of complaints per 100,000 population. For every 100,000 residents in Washington state, there were 521 fraud complaints in 2017 compared to 464 in 2013. Washington state ranked 16th among states for identity theft complaints in 2017, worsening from 23rd in 2013. For every 100,000 residents there were 99 identity theft complaints in 2017, compared to 68 in 2013. The number and rate of identity theft complaints have decreased steadily after a sharp rise in 2014.

Identity theft complaints in Washington show net increase since 2013 despite steady decrease from 2014 through 2017

2013 through 2017



Data source: Federal Trade Commission.

Note: Does not include complaints provided by the Office of Attorney General.

State legislation passed in 2011 gave the Department of Licensing (DOL) authority to use a facial recognition system for driver's license and ID card applicants to check for multiple or fraudulent identities by comparing their photographic image to all other images in the database. The department implemented one-to-one facial matching in all offices in 2014. This one-to-one comparison helped to ensure that the person in the office applying for a license or ID card matches the last photo on file for that person's record. In 2017, the use of facial recognition by the DOL resulted in an additional 98 driver license suspensions and the cancellation of 81 fraudulent records and the associated cards.

The REAL ID Act, passed by Congress in 2005, aims to improve security of driver's licenses and personal identification cards. The Department of Homeland Security (DHS) has determined minimum document requirements and issuance standards for federal recognition. Governor Inslee signed a law in 2017 to bring Washington into compliance with the REAL ID Act. The legislation repealed statutes prohibiting agencies from becoming REAL ID-compliant and it provided DOL the authority to mark non-compliant documents with a distinguishing mark beginning July 1, 2018. The final REAL ID requirements will be implemented with the September 2018 launch of DRIVES R2, Washington state's modernized driver licensing system. DOL will then submit an application to DHS for REAL ID compliance.

Lead agency: Washington State Department of Licensing

For more information, see:

- Federal Trade Commission Consumer Sentinel Network Reports: https://www.ftc.gov/enforcement/consumer-sentinel-network/reports

PRESERVATION

To maintain, preserve and extend the life and utility of prior investments in transportation systems and services.

Objective: Extend the useful life of pavement on the National Highway System

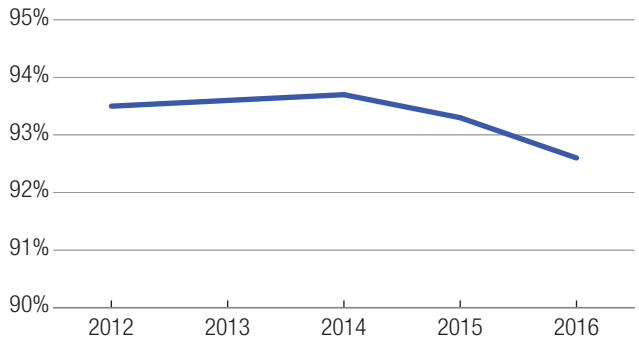
Washington state consistently maintained more than 90% of its state and local highway pavement on the National Highway System in fair or better condition between 2012 and 2016.

Trend analysis

Washington state consistently maintained more than 90% of National Highway System (NHS) state and local highway pavement in fair or better condition between 2012 and 2016. The NHS is a network of strategic highways in the United States. It includes both state and local highways as well as roads serving major airports, ports, rail and/or truck terminals and other strategic facilities. Washington state's NHS network consists of 14,789 lane miles of pavement, of which 77% is state-owned roadway and 23% is owned by local agencies. In 2016, 92.6% of NHS pavement in Washington was in fair or better condition—a drop of 0.7% from 2015 (see graph at right). County-owned road conditions were 96% fair or better condition in 2017, improving from 95% in 2014. Statewide data on the condition of city-owned pavement is no longer available.

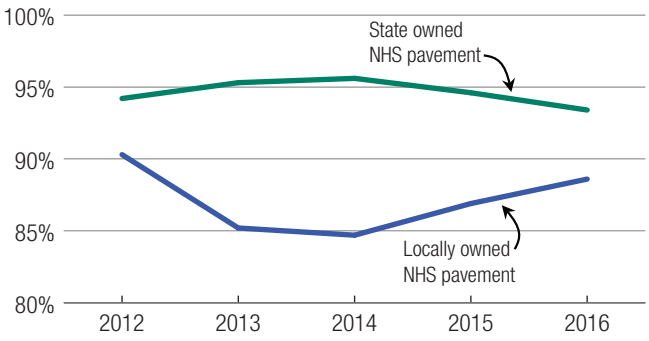
According to Federal Highway Administration 2016 reports, the state owns 7,071 miles of roadway, counties own 39,226 miles, towns and municipalities own 17,029 miles, federal agencies owns 8,640 miles, and other jurisdictions own 8,426 miles for a total of 80,392 miles of roadway in Washington state. These reports also show that 60% of Vehicle Miles Traveled (VMT) occur on interstate highways, freeways and principal arterials and 72% of VMT occur in urban areas.

Percent of all Washington state NHS pavement in fair or better condition declines slightly in 2015 and 2016
2012 through 2016



Data source: WSDOT Capital Program Development and Management.

Percent of state owned NHS pavement in fair or better condition declines in 2015 and 2016
2012 through 2016



Data source: WSDOT Capital Program Development and Management.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 68, Pavement Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Dec17.pdf#page=16
- Results Washington Pavement Report: https://data.results.wa.gov/reports/G2-3-1-b-Pavement-Conditions
- FHWA Highway Statistics 2016: https://www.fhwa.dot.gov/policyinformation/statistics/2016/

PRESERVATION

To maintain, preserve and extend the life and utility of prior investments in transportation systems and services.

Objective: Keep bridges safe and open to traffic

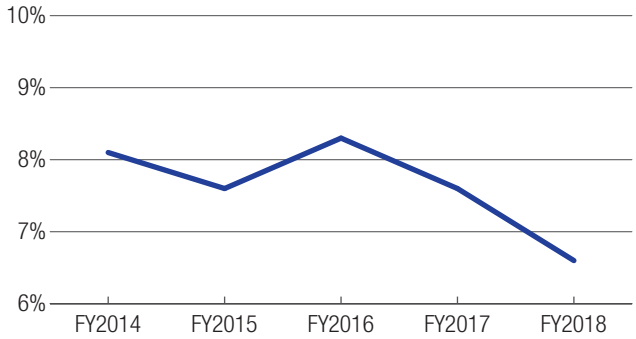
In fiscal year (FY) 2018, 6.6% of all Washington state bridges by deck area were in poor condition, an improvement from 7.6% in FY2017 and 8.3% in FY2016.

Trend analysis

In FY2018, 6.6% of Washington state (state owned and locally owned) bridges by deck area were in poor condition, an improvement from 7.6% in FY2017 and 8.3% in FY2016. Measuring bridge conditions by deck area factors in the size of the bridge, providing a more comprehensive view of system-wide bridge conditions than reporting the number of bridges in each condition rating category.

Percentage of Washington state bridges in poor condition weighted by deck area decreases in FY2017 and FY2018

Fiscal Years (July 1 through June 30) 2014 through 2018



Data source: WSDOT Bridge and Structures Office and WSDOT Local Programs Office.

By number of bridges, 4.8% of all bridges in Washington state (including those owned by tribes and by the federal government) were considered to be in poor condition in 2017, according to the Federal Highway Administration's (FHWA) National Bridge Inventory. This is just over half the national average. A bridge that is in poor condition is not unsafe or in need of replacement; this rating generally indicates that one or more of the bridge's components requires either repair or preservation. Washington state had 399 bridges in poor condition in 2017—a slight increase from 392 in 2016 and 385 in 2015.

In FY2018, WSDOT local agencies in Washington state reported the condition of 7,410 bridges to FHWA, which sets structural condition standards. The process of determining a bridge's condition rating includes evaluating its superstructure, deck, substructure and structural adequacy.

Washington state is ranked 10th in lowest percentage of bridges in poor condition[1]

2017; Comparison includes the 50 states, the District of Columbia and Puerto Rico[2]

Rank	State	Number of Bridges	Number Structurally Deficient	Percentage
1	Texas	53,869[1]	847	1.6%
10	Washington	8,233[1]	399	4.9%
52	Rhode Island	778[1]	181	23.3%
	National Total	**615,002**	**54,560**	**8.9%**

Data source: FHWA National Bridge Inventory.

Note: 1 Includes all bridges in a state, district or territory, including those owned by tribes and by the federal government. 2 The Federal Highway Administration treats the District of Columbia and the Commonwealth of Puerto Rico as States for highway and bridge reporting purposes (using the Highway Performance Monitoring System or HPMS). Other United States Territories (Guam, the Commonwealth of the Northern Marianas, American Samoa and the Virgin Islands of the United States) are required to annually report limited HPMS summary data only, and are not included in many FHWA reports.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 70, Bridge Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Jun18.pdf#page=16
- FHWA National Bridge Inventory: https://www.fhwa.dot.gov/bridge/nbi.cfm

PRESERVATION

To maintain, preserve and extend the life and utility of prior investments in transportation systems and services.

Objective: Extend the useful life of ferry terminals and vessels

In calendar year 2016, 88% of ferry terminal systems were in fair or better condition, a decrease from 89% in calendar year 2014. In fiscal year (FY) 2017, 89% of ferry vessel systems were not in need of replacement.

Trend analysis

During the past five years, the average ferry terminal condition rating has consistently been between 87% and 89%. In fiscal year 2017 (July 2016 through June 2017), 89% of WSDOT ferry vessel systems were not in need of replacement.

Terminal and vessel condition data are a composite of several ferry system elements, as shown in the table below. Each system category has multiple components. For example, vehicle transfer spans include mechanical systems, electrical systems and structural parts. A "poor or worse" rating does not mean that ferry vessels or terminals are unsafe, but indicates where additional investments need to be made.

Ferry terminal systems in good or fair condition remains high

Calendar years 2012 through 2016

Year	Good or fair condition
2012	87%
2013	88%
2014	89%
2015	87%
2016	88%

Data source: WSDOT Ferries Division.

Washington state's average ferry terminal systems rated "poor or worse" decrease to 12% in 2016

Calendar years 2012 through 2016 inspection results

System	2012	2013	2014	2015	2016
Landing aids	24%	23%	22%	20%	18%
Vehicle transfer spans	13%	11%	11%	11%	12%
Overhead loading systems	9%	11%	11%	20%	20%
Trestle and bulkheads	7%	9%	7%	14%	6%
Pavement	14%	10%	10%	15%	14%
Buildings	0%	0%	0%	1%	1%
Passenger-only facilities	13%	13%	21%	21%	21%
Total Average	**13%**	**12%**	**11%**	**13%**	**12%**

Data source: WSDOT Ferries Division.

Notes: The condition categories do not indicate whether systems are safe or unsafe, but rather how closely their condition should be monitored prior to spending funds on preservation.

Percentage of WSDOT ferry vessel systems that do not currently need replacement holds steady from FY2016 to FY2017

Calendar year 2012 through fiscal year 2017; Percent of ferry vessel systems in Condition Rating 1 or 2

Types of Ferry Vessel Systems	CY2012	FY2014[1]	FY2015	FY2016	FY2017
Communication, navigation, lifesaving	92%	93%	94%	86%	90%
Mechanical, electrical	94%	92%	91%	90%	89%
Piping	83%	79%	80%	77%	84%
Propulsion	86%	82%	79%	82%	85%
Security	100%	100%	100%	100%	81%
Steel structures	99%	99%	99%	92%	92%
Structural preservation (paint)	99%	98%	98%	98%	94%
Passenger and crew spaces	100%	100%	100%	98%	97%
Total Average	**93%**	**91%**	**92%**	**89%**	**89%**

Data source: WSDOT Ferries Division.

Notes: Systems included in Condition Rating 1 do not currently need to be replaced; those in Condition Rating 2 should be monitored for replacement within the current or ensuing biennium; those in Condition Rating 3 are past due for replacement. CY = calendar year (January through December); FY = fiscal year (July through June). **1** Reporting period changed from CY to FY at this time, leading to the absence of a distinct 2013 rating. The FY2014 data include July through December 2013.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 67, Asset Management: Ferries Vessels & Terminals Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Sep17.pdf#page=15

MOBILITY

To improve the predictable movement of goods and people throughout the state, including congestion relief and improved freight mobility.

Objective: Reduce congestion on urban highways and arterials

Commuter delay has been increasing in the Seattle metropolitan region.

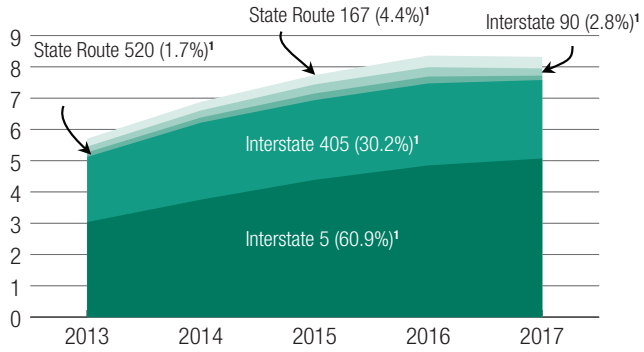
Trend analysis

According to data from WSDOT's *Corridor Capacity Report*, annual weekday delay on major urban highways (Interstate 5, I-405, I-90, State Route 520 and SR 167) in King and Snohomish counties grew 46.0% from 5.7 million vehicle hours of delay in 2013 to 8.3 million in 2017. This increase can be attributed to growing employment during the period.

The major urban highway with the most delay each year was I-5. In 2017, I-5 experienced 5.1 million vehicle hours of delay during weekdays or 60.9% of all delay on the major urban highways. Since 2013, it has had more delay than the other four monitored highways combined (see graph).

Major urban freeways in the central Puget Sound region see delay increases

2013 through 2017; Weekday delay in millions of vechicle hours (and percent of total delay) by major urban highway



Data source: WSDOT Office of Strategic Assessment and Performance Analysis.

Notes: Central Puget Sound includes King and Snohomish counties. **1** Numbers in parens are for 2017.

Statewide vehicle miles traveled (VMT) on all Washington state roads reached a new high of 61.4 billion miles in 2017, an increase of 7.4% from 2013 (57.2 billion). Similarly, state highway-only VMT reached a new high at 34.6 billion miles, an increase of 9.4% from 2013 (31.6 billion).

WSDOT uses the maximum throughput travel time index (MT^3I), which compares the average travel time at a commute's 5-minute peak to its travel time at maximum throughput speed, as a measure of system efficiency. This index normalizes route length to allow performance comparisons between commutes.

Thirteen of the 88 commutes that WSDOT monitors for the *Corridor Capacity Report* had an MT^3I of two or greater in 2017. An index value of two means it took twice as long on average to drive the length of a commute than at peak efficiency speeds. The highest index was 4.35 on the I-5 southbound morning commute in Vancouver between SR 500 and the state line on the I-5 bridge. This means it took over four times longer to drive the commute during the peak of the morning rush than the highway's most efficient speed (8.5 minutes average versus 1.9 minutes at maximum throughput speed).

Vehicle miles traveled on Washington state highways outpaces growth on all roads in 2017 compared to 2013

2013 through 2017; Population in thousands

	Total Vehicle Miles Traveled (billions)		Vehicle Miles Traveled per person	
Year (population)	State highways	All public roads	State highways	All public roads
2013 (6,882)	31.649	57.211	4,599	8,313
2014 (6,968)	32.177	58.060	4,618	8,332
2015 (7,061)	33.335	59.653	4,721	8,448
2016 (7,183)	34.227	60.851	4,765	8,471
2017 (7,310)	34.627	61.420	4,737	8,402
Δ 2017 vs. 2013	2.978	4.209	138	89
%Δ 2017 vs. 2013	9.41%	7.36%	3.00%	1.07%

Data sources: WSDOT Multimodal Planning Division and Washington State Office of Financial Management.

INRIX's *2017 U.S. Traffic Hotspots* is a national report that compares commute performance across U.S. cities. It showed results similar to those presented in WSDOT's *2017 Corridor Capacity Report* for the central Puget Sound region. INRIX uses slightly different measures and methods than WSDOT to determine delay and rank corridors. The following is the only corridor in Washington state that is listed in INRIX's top 25 "Traffic Hotspots" in the country during commute times:

- #20 – I-5 southbound at Pike St to 128th St/Exit 186

Most commutes with the highest maximum throughput travel time indexes are in central Puget Sound
2017; Commutes ranked by MT³I

Rank	Commute	MT³I
1	I-5 (SR 500 interchange to I-5 bridge [Oregon]) AM	4.35
2	I-405 Tukwila to Bellevue AM	2.61
3	I-5 Federal Way to Tacoma PM	2.56
4	I-405 Bellevue to Tukwila PM	2.46
5	I-205 (SR 500 interchange to Glenn Jackson Bridge [Oregon]) AM	2.36
6	I-405 Lynnwood to Bellevue AM	2.36
7	SR 520/I-405 Redmond to Bellevue PM	2.35
8	I-5 SeaTac to Seattle AM	2.25
9	I-405/SR 520/I-5 Bellevue to Seattle PM	2.24
10	I-5 Federal Way to Seattle AM	2.22

Data source: WSDOT Office of Strategic Assessment and Performance Analysis.
Note: 1 MT³I is the Maximum Throughput Travel Time Index, which compares the actual average travel time for each commute at its 5-minute peak to its ideal travel time at maximum throughput speed, as a measure of system efficiency.

Lead agency: Washington State Department of Transportation

For more information, see:

- WSDOT's *Corridor Capacity Report*: http://www.wsdot.wa.gov/Accountability/Congestion/
- INRIX's *U.S. Traffic Hotspot 2017*: http://www2.inrix.com/us-traffic-hotspot-study-2017
- United States Census Bureau, *American Community Survey*: https://www.census.gov/programs-surveys/acs/

MOBILITY

To improve the predictable movement of goods and people throughout the state, including congestion relief and improved freight mobility.

Objective: Reduce congestion by making systems more efficient

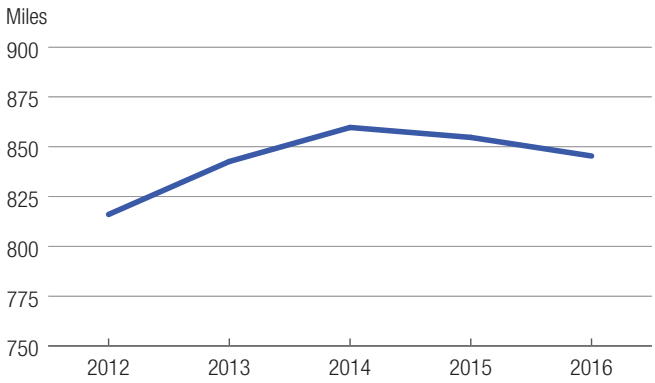
Statewide public transportation helped travelers avoid 845 million vehicle miles on Washington state's roads in 2016. WSDOT's intelligent transportation system assets, which improve travel efficiency increased by 599 devices from 2013 to 2017.

Trend analysis

Public transportation services help manage demand on transportation systems and improve experience for all travelers—especially when the demand on the transportation system is on the rise due, in part to a robust economy and increasing population. Washington has seen a 5.9% increase in statewide population from roughly 6.8 million in 2012 to 7.2 million in 2016. Public transportation services around the state have prevented 845.4 million vehicle miles traveled in personal automobiles in 2016. This is a 3.6% increase compared to 816.0 million vehicle miles avoided due to transit use in 2012. Vehicle miles avoided by transit use are the approximate number of miles that were not traveled in a single occupant vehicle due to people taking transit instead.

Vehicle miles avoided due to transit use saw a net increase from 2012 to 2016 in Washington state

2012 through 2016; Vehicle miles avoided in millions



Data source: National Transit Database and WSDOT Office of Strategic Assessment and Performance Analysis.
Note: The graph shows the most recent years for which data is available.

Similarly, between 2012 and 2016, the central Puget Sound region experienced a 9.4% increase in the number of vehicle miles avoided due to transit use. Transit systems in the central Puget Sound region include Community Transit, Everett Transit, King County Metro Transit, Pierce Transit, and Sound Transit (See transit map on p. 41 for central Puget Sound region transit systems). The population of the central Puget Sound region increased by 5.7% from 3.5 million in 2012 to 3.7 million in 2016.

Although the five-year period saw a net increase in statewide transit usage, vehicle miles avoided due to transit decreased by 1.7% between 2014 and 2016. However, central Puget Sound region transit systems saw a 1.9% increase over the same period. The increase in transit miles avoided were from Sound Transit, which accounted for 241 million miles in 2016.

WSDOT also uses smart technology to improve operational efficiency in its transportation systems. WSDOT's intelligent transportation system inventory, which supports this operational efficiency on state highways, grew by 599 devices from 2,380 in 2013 to 2,979 in 2017. Significant improvements in the system were made in the areas of metered ramps (35% increase), closed circuit television cameras (34% increase), traffic data stations (22% increase), and variable message signs (21% increase).

WSDOT increases its inventory of Intelligent Transportation Systems devices
2013 through 2017; Number of devices or sites

Device Type	2013	2014	2015	2016	2017	Approximate cost per device
Closed circuit television cameras	933	1,087	1,146	1,212	1,247	$15,000 - $30,000
Variable message signs	279	306	319	327	338	$100,000 - $250,000
Highway advisory radio transmitters	86	86	86	85	86	$50,000
Road/weather information systems	109	111	113	113	114	$25,000 - $50,000
Metered ramps	150	189	190	199	202	$10,000 - $20,000
Traffic data stations	767	840	899	932	933	$10,000 - $20,000
Smarter highway gantries[1]	56	56	59	59	59	$650,000 - $900,000
Total Devices	**2,380**	**2,675**	**2,812**	**2,927**	**2,979**	

Data source: WSDOT Traffic Operations Office.
Note: **1** Smarter highway gantries are bridge-like overhead structures with platforms that support equipment like variable speed limit signs.

Lead agency: Washington State Department of Transportation

For more information, see:

- WSDOT's *Corridor Capacity Report*: http://www.wsdot.wa.gov/Accountability/Congestion/
- WSDOT's Traveler Information website: http://www.wsdot.wa.gov/traffic
- Federal transit administration NTD data: https://www.transit.dot.gov/ntd/ntd-data

MOBILITY

To improve the predictable movement of goods and people throughout the state, including congestion relief and improved freight mobility.

Objective: Manage traffic and fund improvement projects through tolling operations

Tolling continues to provide benefits to all road users including more reliable options for those who pay to get to their destination and making general purpose lanes less congested.

Trend analysis

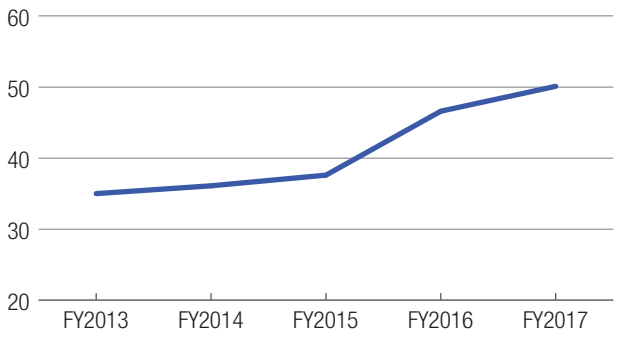
Tolling transactions increased 43.1% in fiscal year (FY) 2017 (July 2016 through June 2017) compared to FY2013 (the first *Toll Division Annual Report* published by WSDOT) from 35.0 million transactions to 50.1 million on the state's tolled facilities.

During FY2017, WSDOT's toll facilities included the SR 520 bridge between Seattle and Bellevue, the eastbound SR 16 Tacoma Narrows Bridge between Gig Harbor and Tacoma, the SR 167 high occupancy toll (HOT) lanes between Auburn and Renton, and the Interstate 405 express toll lanes (ETLs) between Lynnwood and Bellevue.

WSDOT collected $191.9 million in toll revenue in FY2017, a 66.6% increase from the $115.2 million collected in FY2013. In FY2017, while a portion of the revenue was used to cover multiple costs WSDOT incurred to collect and administer tolls such as customer service, bank card fees and toll equipment operations and maintenance, 74% of tolling revenue collected on the SR 520 bridge, 82% from the Tacoma Narrows Bridge, 63% from the SR 167 HOT lanes and 66% from the I-405 ETL went to dedicated funds that support ongoing preservation, financial obligations and respective corridor improvements.

Annual toll trips in Washington state increase each year

Fiscal years 2013 through 2017; Tolled trips in millions

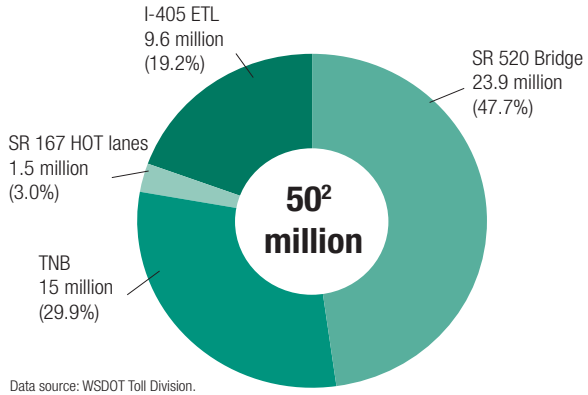


Data source: WSDOT Toll Division.

Note: Fiscal year is from July 1 through June 30 of the following year.

Transactions from WSDOT tolling facilities

Fiscal year 2017 (July through June); Transactions[1] in millions



Data source: WSDOT Toll Division.

Note: **1** "Toll transaction" means a record of activity created by the toll collection system as a result of a vehicle traveling through a tolling point. **2** Some numbers do not add to 100% due to rounding.

WSDOT had approximately 763,000 active *Good To Go!* accounts in FY2017. *Good To Go!* is WSDOT's all-electronic system for administering tolls. Seventy-nine percent of toll transactions are paid by drivers using *Good To Go!*. In 2017, WSDOT launched a new version of *Good To Go!* which features an updated user interface design, a different overall look and a host of improvements to help customers better navigate the *Good To Go!* system. The new site makes it easier for customers to modify their accounts and make payments.

State Route 520 bridge:

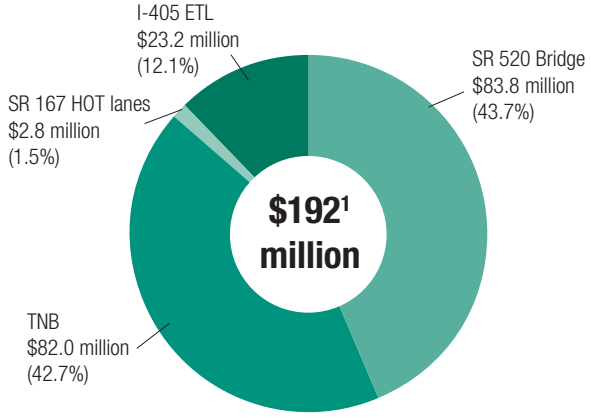
State Route 520 toll transactions increased on the SR 520 bridge to 23.9 million in FY2017, up 15.2% from 22.0 million in FY2015. Revenue increased 30.9% from approximately 64.0 million in FY2015 to 83.8 million in FY2017. The average weekday traffic volume on the SR 520 bridge during FY2017 was 79,000 tolled trips, up 6.8% from 74,000 in FY2015. The number of daily vanpools crossing the SR 520 bridge rose to 398 in FY2017 up from 238 in FY2015. Average weekday transit ridership in FY2017 was approximately 23,000 riders, the same as in FY2015.

Tacoma Narrows Bridge

The number of transactions on the Tacoma Narrows Bridge increased 4.2% from approximately 14.4 million in FY2015 to 15.0 million in FY2017. Revenue increased 20.2% from approximately $68.2 million in FY2015 to $82.0 million in FY2017. On average, 44,000 vehicles crossed the eastbound Tacoma Narrows Bridge each weekday in FY2017.

Revenue from WSDOT tolling facilities

Fiscal year 2017 (July through June); Revenue in millions



Data source: WSDOT Toll Division.

Note: **1** Some numbers do not add to 100% due to rounding.

State Route 167 high occupancy toll lanes

In FY2017, the SR 167 HOT lanes continued to provide travel time savings to all road users. Weekday peak-hour drivers saved an average of seven minutes in both the northbound HOT lane and in the southbound HOT lane. The number of transactions on the SR 167 HOT lanes increased 25.0% from approximately 1.2 million in FY2015 to 1.5 million in FY2017. Revenue increased 64.7% from approximately $1.7 million in FY2015 to $2.8 million in FY2017. The SR 167 HOT lanes continued to provide travel times savings to all road users. Weekday peak-hour drivers saved an average of seven minutes in both the northbound HOT lane and in the southbound HOT lane.

WSDOT opened six new miles of HOT lanes on southbound SR 167 in December 2016, ahead of schedule and on budget. The new lanes are designed to help manage congestion around the SR 18 interchange. Southbound drivers can now use the HOT lanes for 14 continuous miles between the cities of Renton and Pacific. Due to persistent back-ups at the SR 18 interchange, southbound travelers reached 45 mph only 84% of the time during peak periods. Severe congestion at the SR 167/I-405 interchange also affected northbound speeds, which reached 45 mph 74% of the time during peak periods.

I-405 express toll lanes

The number of transactions on the I-405 express toll lanes increased 46.8% from approximately 7.5 million in FY2016 to 9.6 million in FY2017. Revenue increased 64.7% from approximately $15.8 million in FY2016 to $23.2 million in FY2017 (This comparison is between FY2016 and FY2017 because the I-405 express toll lanes opened in October 2015). Overall, the I-405 corridor (between Lynnwood and Bellevue) had an average of 19% more person-throughput than before tolling began. Since ETL opened in October 2015, they generally provide faster, more reliable trips each weekday for an average of more than 7,700 bus riders and 53,000 commuter vehicles, which includes 37,500 toll paying vehicles and 15,500 toll-exempt carpools and motorcycles. Additionally, ETL users saved an average of 12 minutes during peak commute times between Bellevue and Lynnwood compared to traffic in the general purpose lanes, and paid an average toll of $2.82. Between April 2017 and September 2017, vehicles in the ETL maintained speeds of 45 mph or faster 85% of the time during peak periods. The HOV lanes (that were replaced by the ETL) maintained speeds of 45 mph or faster 56% of the time during a similar time period in 2015. Speeds were 45 mph or faster 90% of the time in all ETL sections except the southbound single-lane ETL section between Lynnwood and Bothell.

Lead agency: Washington State Department of Transportation

For more information, see:

- Tolling Annual Report, fiscal year 2017: https://www.wsdot.wa.gov/Tolling/publications.htm
- *Gray Notebook* 68, Tolling Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Dec17.pdf#page=42

MOBILITY

To improve the predictable movement of goods and people throughout the state, including congestion relief and improved freight mobility.

Objective: Improve performance of high occupancy vehicle lanes

High occupancy vehicle lanes continue to provide system benefits, moving more people faster and more reliably than adjacent single occupant vehicle lanes.

Trend analysis

High occupancy vehicle (HOV) lanes are reserved for carpools, vanpools, buses, motorcycles or any vehicle carrying multiple people (2+ or 3+ depending on the facility). The central Puget Sound region freeway network includes a system of HOV lanes designed to provide faster and more reliable travel options. It also enhances the efficient operation of the freeway network by moving more people in fewer vehicles, compared to adjacent general purpose (GP) lanes.

About 244 of the planned 369 lane-miles of the Puget Sound region freeway HOV network have been completed. Roughly 7.7 million person miles were traveled on the Puget Sound region HOV network on an average weekday in 2016. That is 42.0% of all person miles traveled (PMT) on the main highway corridors in the region (I-5, I-405, I-90, SR 520 and SR 167). The corridor with the most daily PMT on HOV lanes in 2016 was I-5, at 3.9 million. PMT on Seattle area HOV lanes grew 26.3% between 2012 and 2016. The corridor with the greatest growth in PMT on its HOV facilities was SR 520, which experienced 86.4% growth between 2012 and 2016.

Puget Sound region high occupancy vehicle network reaches 7.7 million person miles traveled each weekday

2012 and 2016; Average weekday person miles traveled in thousands

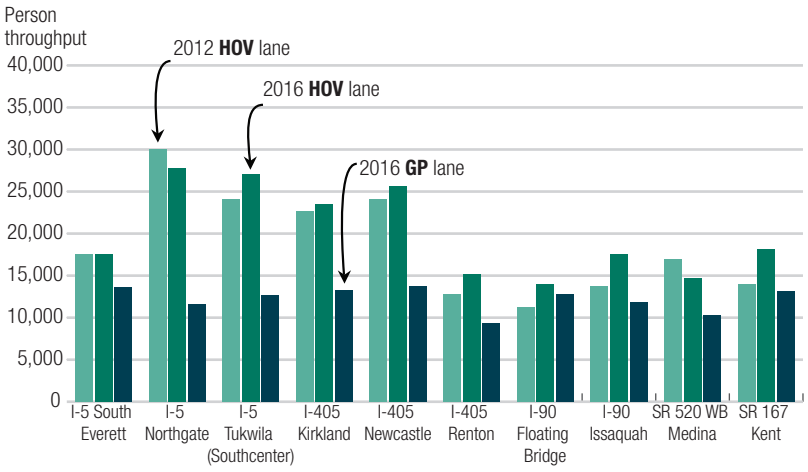
Highway	2012	2016	% change
Interstate 5	3,268	3,919	19.9%
Interstate 405	1,711	2,087	21.9%
Interstate 90	381	530	39.1%
State Route 520	358	667	86.4%
State Route 167	371	485	30.8%
Total	**6,091**	**7,690**	**26.3%**

Data source: WSDOT Office of Strategic Assessment and Performance Analysis.

The graph at right shows the number of people moved by HOV lanes at 10 locations around central Puget Sound in 2012 and 2016 as well as GP lane performance for 2016. The Northgate area on I-5 north of downtown Seattle is a heavily traveled freeway corridor served by a number of transit routes. This location has consistently shown HOV lane travel time benefits and significant usage over the last several years. In 2016, during the average morning peak period, the southbound I-5 HOV lane at Northgate carried more than 48% (15,450) of all travelers toward downtown Seattle in 23% (4,200) of the vehicles.

Person throughput[1] in Washington state higher in HOV[2] than in GP[3] lanes

2012 and 2016; Average daily person throughput volumes for morning and evening peak periods (combined) in number of people



Data source: Washington State Transportation Center.

Note: **1** Person volume estimates are based on most recent available transit ridership and vehicle occupancy data. The GP lane volumes are the estimated person volumes for the average GP lane at each location. **2** A High Occupancy Vehicle (HOV) carries a driver and one or more passengers. **3** General purpose (GP) lanes are those available for use by the public without any restrictions or tolls.

Across all the monitoring locations, an average of 39% of the people used HOV lanes on freeway corridors during the peak periods. These values have been generally consistent from year to year.

Of the 42 HOV trips WSDOT monitors in the *Corridor Capacity Report*, 31 had reliable (95th percentile) travel times, more than two minutes faster than the adjacent GP trip in 2016 (driving times of peak congestion), while the other 11 trips showed no significant travel time difference (less than two minutes) between the GP and HOV route options. Overall, the 2016 HOV travel time results are similar to those seen in previous years. The reliable travel times (95th percentile) were faster by more than two minutes on 37 of the 42 HOV trips relative to their GP counterparts in 2015. The other five trips showed little or no difference in reliable travel times.

The performance and reliability standard for freeway HOV lanes that was adopted by WSDOT and the Puget Sound Regional Council in 1991 states that travelers in the HOV lane should be able to maintain an average speed of at least 45 mph 90% of the time during the peak hour of travel. This standard was developed prior to significant growth in regional traffic. Two of the 12 monitored HOV peak-direction corridors met the state performance standard in 2016 (one in the morning and one in the evening), compared to five corridors that met the standard in 2012. This does not include the new I-405 express toll lanes (ETLs) which have a different performance metric as mandated by the Legislature (measured for the entire peak period versus only the peak hour). See measure 3.3 on p. 32 to learn more about these tolled lanes.

Even when overall system performance is reduced due to congestion, HOV lanes continue to provide better speed and reliability compared to adjacent GP lanes. During the off-peak times of day, all HOV corridors generally meet the standard.

High occupancy vehicle lane speed and reliability performance on major central Puget Sound corridors
2012 through 2016; Goal is to maintain 45 mph or better for 90% of peak hour; Percent of peak hour goal was met

Commute routes	2012	2013	2014	2015	**2016**	Commute routes	2012	2013	2014	2015	**2016**
Morning commutes						**Evening commutes**					
I-5, Everett to Seattle SB	54%	42%	28%	26%	**19%**	I-5, Seattle to Everett NB	68%	66%	46%	36%	**21%**
I-5, Federal Way to Seattle NB	51%	43%	30%	18%	**18%**	I-5, Seattle to Federal Way SB	63%	53%	40%	32%	**21%**
I-405, Tukwila to Bellevue NB	93%	65%	35%	26%	**24%**	I-405, Bellevue to Tukwila SB	43%	41%	26%	21%	**18%**
I-90, Issaquah to Seattle WB	100%	100%	98%	98%	**97%**	I-90, Seattle to Issaquah EB	100%	99%	100%	99%	**97%**
SR 520, Redmond to Bellevue WB	51%	50%	44%	63%	**61%**	SR 520, Redmond to Bellevue WB	54%	52%	52%	73%	**71%**
SR 167, Auburn to Renton NB[1]	96%	94%	86%	66%	**45%**	SR 167, Renton to Auburn SB[1]	98%	98%	98%	95%	**87%**

Data source: Washington State Transportation Center.
Notes: The above HOV reliability performance standards are based on the peak hour, when average travel time is slowest. To meet the standard, a speed of 45 mph must be maintained for 90% of the peak hour. Numbers represent the percentage of the peak hour when speeds are faster than 45 mph. The Washington State Transportation Center analyzes performance data for all complete segments of HOV lanes that have a loop detector. In some cases, like southbound SR 167, data cannot be analyzed for the very beginning and ends of the lanes because there are no detectors at these locations. I-405 commutes between Lynnwood and Bellevue are no longer listed above, as they now have different legislatively mandated speed and reliability performance measures per RCW 47.56.880. For performance information, see www.wsdot.wa.gov/tolling/405/library.htm. **1** High occupancy toll lanes replaced regular HOV lanes May 3, 2008.

Lead agency: Washington State Department of Transportation

For more information, see:

- WSDOT *Corridor Capacity Report*: http://www.wsdot.wa.gov/Accountability/Congestion/

MOBILITY

To improve the predictable movement of goods and people throughout the state, including congestion relief and improved freight mobility.

Objective: Reduce percentage of commuters who drive alone to work

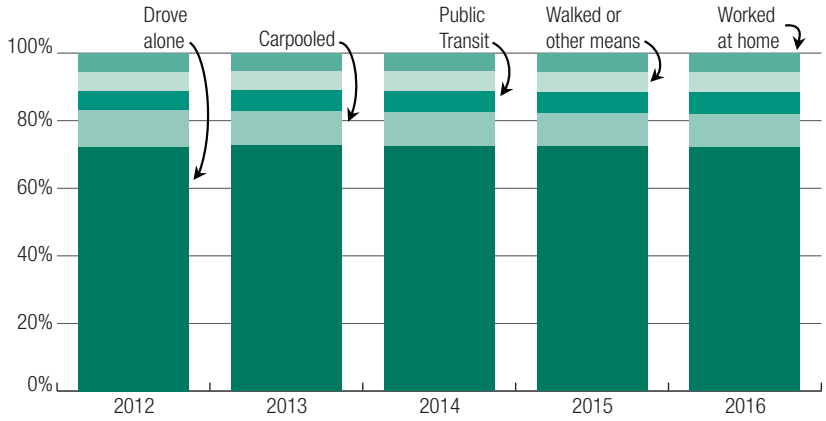
As the number of Washington commuters has increased to an all-time high, the percent who drive alone as a primary commuting method remains fairly steady.

Trend analysis

Of the approximately 3.5 million workers age 16 or older in Washington state, 72.1%, or more than 2.5 million, commuted by driving alone to work in 2016. This represents a slight decrease of 0.1 percentage points, from 72.2% in 2012. The total number of workers in the state increased about 8.8% from 3.2 million in 2012 to 3.5 million in 2016, and the number of drive-alone commuters increased by approximately 197,000, but the percentage of commuters driving alone to work remained steady. In the five-year period from 2012 through 2016, rates for all commuting modes have held relatively steady (see graph below).

Daily commute modes remain steady in Washington state

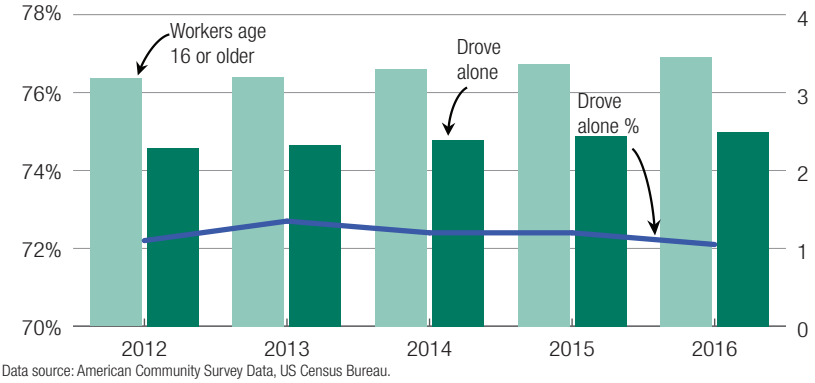
2012 through 2016; Percentage of commuting workers 16 years of age and older



Data source: American Community Survey Data, US Census Bureau.
Note: "Walked or other means" other means include bicycle, taxi, motorcycle and more.

Washington state's workers age 16 or older and drive alone commuters population increase but percentage of commuters ratio remain steady

2012 through 2016; Percent of daily drive-alone commuters, population of workers age 16 or older and drive alone commuters

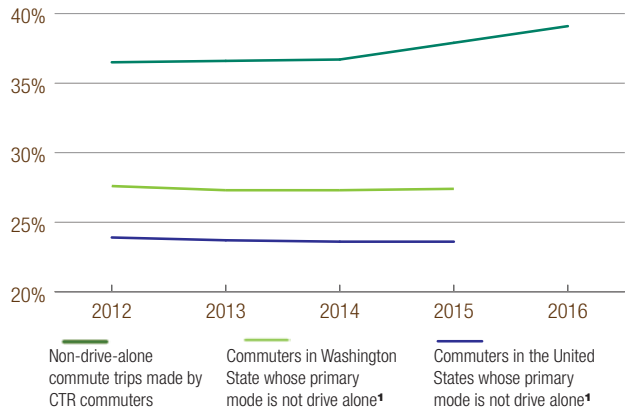


Data source: American Community Survey Data, US Census Bureau.

Alternative commute methods include carpooling (9.9% or about 342,000 commuters in 2016), using public transportation (6.4% or about 221,000 commuters in 2016), and walking or using other means (5.8% or about 200,000 commuters in 2016). Working from home is also considered an alternative commute method; in 2016, 5.9% of the workforce, or about 204,000 workers, worked from home. The Washington State Commute Trip Reduction (CTR) program efficiently gets people to work and helps employers thrive by bringing businesses, policymakers, transit agencies, transportation planners and other community leaders together to develop and implement solutions that are good for Washington's economy, environment and transportation system.

Commuters in CTR program significantly increased use of alternative transportation modes

2012 through 2016; Percentage of non-drive-alone commute trips made by CTR commuters



Data source: WSDOT analysis of CTR survey and American Community Survey Data, US Census Bureau.
Note: **1** 2016 data is not available.

CTR commuters increased their use of non-drive alone choices:

- Approximately five hundred thousand employees at more than 1,000 CTR affected worksites increased their non-drive-alone trip rate from 36.5% in 2012 to 39.1% in 2016. This is 43% higher than the state average and 66% higher than the national average (see chart on right).
- They left about 22,400 cars at home every weekday, instead opting to commute by bus, vanpool, train, walking, biking or teleworking.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 60, Trip Reduction Biennial Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/Dec15.pdf
- Washington State Commute Trip Reduction Board: http://ctrboard.ning.com/
- United States Census Bureau, American Community Survey: https://www.census.gov/programs-surveys/acs/

MOBILITY

To improve the predictable movement of goods and people throughout the state, including congestion relief and improved freight mobility.

Objective: Increase ridership and on-time performance of Washington State Ferries

Washington State Ferries ridership was 24.6 million in fiscal year (FY) 2018, up 7.9% since FY2014, while 91.3% of sailings were on time in FY2018, down 4.2% from FY2014.

Trend analysis

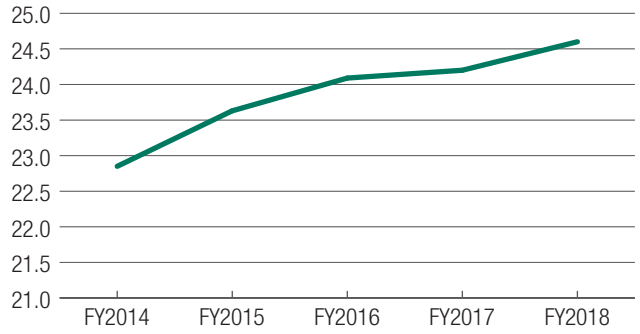
Washington State Ferries ridership increased by 7.9% from approximately 22.8 million in FY2014 to 24.6 million in FY2018. In both FY2017 and FY2018, actual ridership was higher than projected.

Annual on-time performance for Ferries declined from 95.5% in FY2014 to 91.3% in FY2018. WSDOT's on-time performance goal of 95% was exceeded in FY2014 but missed for FY2015 through FY2018. The summer quarter (July through September) has historically been the weakest on-time performing season, averaging a 90.6% rate during the last five fiscal years. This is typically due to greater numbers of trips and riders.

In addition to ridership levels and on-time performance, WSDOT also tracks Ferries' trip reliability, which tracks the number of net missed trips in relation to the number of scheduled trips (if a trip is canceled but then rescheduled, it is not counted in the net missed trip calculation). In FY2018 trip reliability was 98.9% and missed the agency's goal of 99%.

Washington State Ferries ridership increases 7.9% since 2014

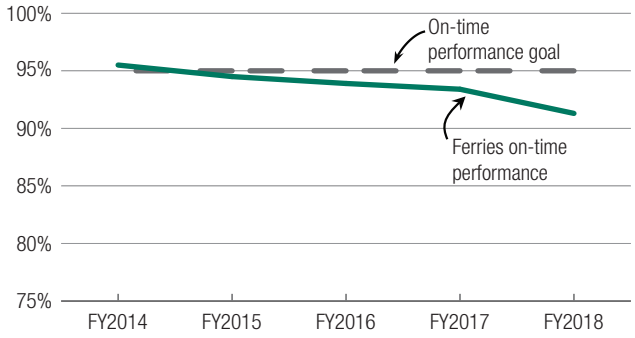
Fiscal years 2014 through 2018; Ridership in millions



Data source: WSDOT Ferries Division.

Washington State Ferries on-time performance decreases significantly between fiscal years 2014 and 2018

Fiscal years 2014 through 2018; Annual on-time performance



Data source: WSDOT Ferries Division.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 69, Ferries Quarterly Update: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Dec17.pdf#page=20

MOBILITY

To improve the predictable movement of goods and people throughout the state, including congestion relief and improved freight mobility.

Objective: Increase in ridership and on-time performance on the Amtrak Cascades line

Ridership on Washington routes increased 4.9% between 2013 and 2017. On-time performance decreased from 77.6% to 50.3% between 2013 and 2017.

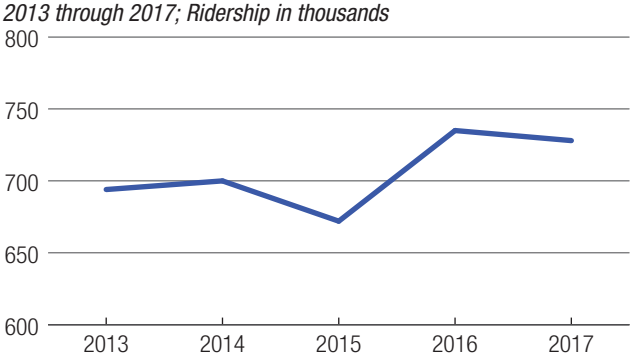
Trend analysis

Ridership on the Washington Amtrak Cascades routes increased by 4.9% from approximately 694,000 in 2013 to 728,000 in 2017. This includes a slight decrease between 2016 (735,000) and 2017. While Amtrak Cascades operates in Washington, Oregon, and British Columbia; the performance data reported here only apply to Amtrak Cascades segments operating between Vancouver, British Columbia and Portland, Oregon. Points south of Portland are reported by the Oregon Department of Transportation.

Annual on-time performance for Amtrak Cascades showed a decrease from 77.6% in 2013 to 50.3% in 2017. WSDOT's on-time performance goal of 80% has not been met for any of the past five years (2013 through 2017). Several factors caused delays in 2017, including slow speed restrictions due to track conditions, landslides, and train interference. Historically, the winter quarter (January through March) has been the weakest season for on-time performance; it averaged 63.2% during the last five years due to the seasonal severe landslides and freight train volume fluctuations.

Washington state's Amtrak Cascades ridership decreases slightly between 2016 and 2017

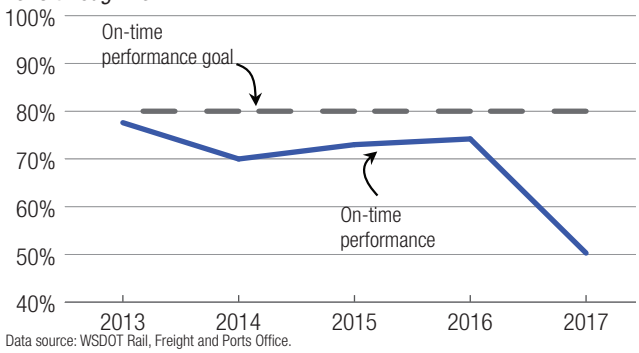
2013 through 2017; Ridership in thousands



Data source: WSDOT Rail, Freight and Ports Office.

Washington state's Amtrak Cascades on-time performance decreases significantly between 2016 and 2017

2013 through 2017



Data source: WSDOT Rail, Freight and Ports Office.

Note: A train is considered on time if it is within 10 minutes of trains operating the Vancouver, British Columbia to Seattle segment and Seattle to Portland segment; or 15 minutes of scheduled arrival times for trains operating the Vancouver, British Columbia to Portland segment.

Lead agency: Washington State Department of Transportation

For more information, see:

- WSDOT's *Corridor Capacity Report*: http://www.wsdot.wa.gov/accountability/congestion/
- WSDOT's *Amtrak Cascades Performance Reports*: https://www.wsdot.wa.gov/Rail/PerformanceReports.htm

MOBILITY

To improve the predictable movement of goods and people throughout the state, including congestion relief and improved freight mobility.

Objective: Increase ridership on public transit

Statewide transit ridership increased 6.4% between 2012 and 2016. King, Pierce, Snohomish and Kitsap counties (Puget Sound region) transit ridership increased 10.6% during the same period.

Trend analysis

Transit routes statewide have increased annual ridership from 209.6 million in 2012 to 222.9 million in 2016, an increase of more than 13.3 million passenger trips or approximately 6.4%. Transit service availability, economic activity and employment are the largest factors in determining ridership.

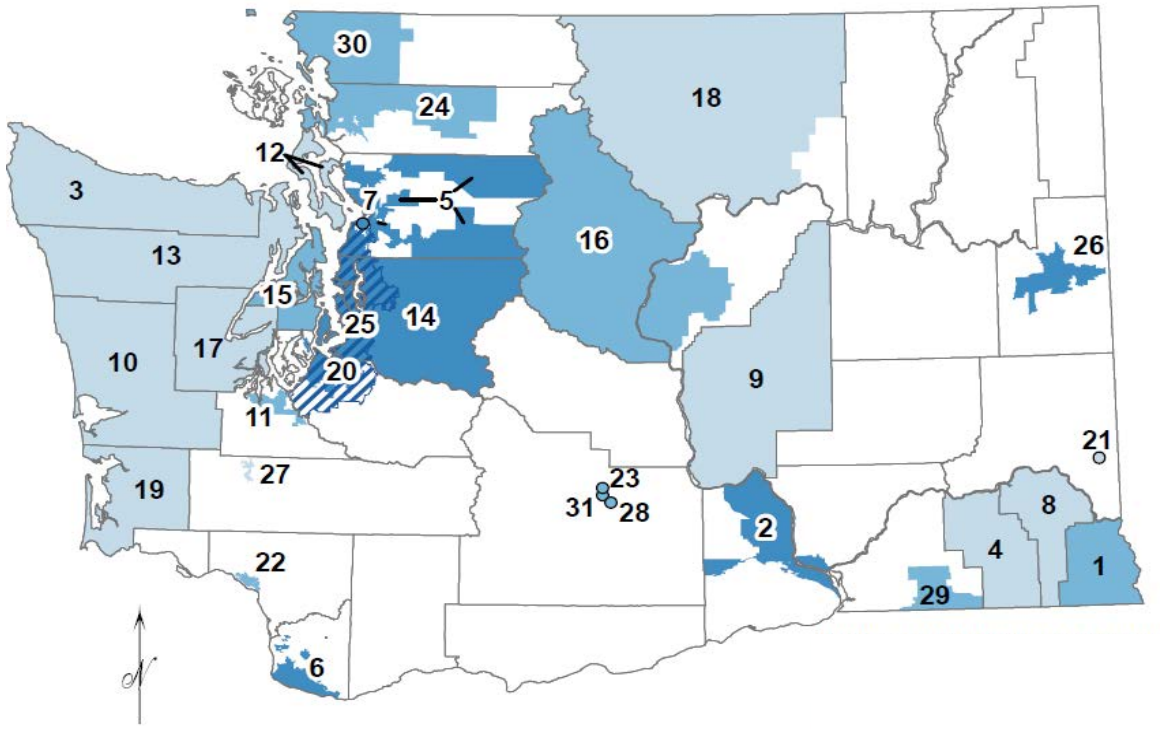
In King, Pierce, Snohomish and Kitsap counties (Puget Sound region) ridership grew by 18.3 million passengers per year or about 10.6%. Outside of the these counties, annual ridership decreased by roughly 5.0 million passengers, a 13.5% decline. Some providers experienced substantial growth such as Sound Transit, Link Transit and Community Transit. Refer to the table below for individual transit agency ridership.

Overall annual transit ridership in Washington state increased 6.4% from 2012 through 2016
2012 through 2016; Ridership[1] and percent change by transit agency

Transit Agency[2]	City/Area Served	2012	2013	2014	2015	2016	Percent change 2012–2016
Ben Franklin Transit	Benton City, Kennewick, Pasco, Prosser, Richland	4,288,337	3,739,665	3,768,628	3,569,274	3,252,079	-24.2%
City of Seattle - Seattle Center Monorail[3]	Downtown Seattle	2,106,846	2,092,673	2,162,624	2,292,953	2,243,329	6.5%
Community Transit[3]	Snohomish County	8,898,726	8,908,123	9,617,653	9,847,864	10,057,823	13.0%
C-TRAN	Vancouver	6,671,482	6,260,280	6,129,770	5,925,718	5,690,963	-14.7%
Everett Transit[3]	Everett	2,285,985	2,004,062	1,971,113	1,944,871	1,948,785	-14.8%
Intercity Transit	Lacey, Olympia, Tumwater	5,311,853	5,195,668	5,214,193	4,968,530	4,716,229	-11.2%
King Country Metro[3]	Seattle, King County	118,832,876	122,088,688	124,327,703	125,365,899	125,912,043	6.0%
Kitsap Transit[3]	Bremerton, Kitsap County	3,127,462	3,194,048	3,050,885	3,014,953	2,772,206	-11.4%
Link Transit	Wenatchee, Chelan County, Douglas County	861,913	890,632	987,371	1,010,404	981,913	13.9%
Pierce Transit[3]	Tacoma, Pierce County	11,457,120	11,275,545	11,137,927	9,953,496	9,416,795	-17.8%
RiverCities Transit	Kelso, Longview	381,018	359,742	392,741	428,238	397,206	4.2%
Skagit Transit	Skagit County	817,374	881,611	964,668	940,453	813,039	-0.5%
Sound Transit[3]	Central Puget Sound	25,737,571	27,296,465	29,581,321	30,816,447	38,420,089	49.3%
Spokane Transit Authority	Spokane	11,281,774	11,328,306	11,570,765	11,035,314	10,454,822	-7.3%
Whatcom Transit Authority	Bellingham	5,944,191	5,741,153	5,999,498	4,999,005	4,756,312	-20.0%
Yakima Transit	Yakima	1,617,344	1,344,572	1,226,312	1,190,276	1,106,641	-31.6%
Total Transit Ridership		**209,621,872**	**212,601,233**	**218,103,172**	**217,303,695**	**222,940,274**	**6.4%**

Data source: National Transit Database.
Notes: **1** Modes of transit included in ridership levels are bus, light rail, trolley bus and vanpools. Ridership is measured in number of unlinked passenger trips, which counts the number of passenger boardings on each mode of transit. For example, if one person takes a bus to the train station and takes the train to work, it is counted as two unlinked passenger trips (one bus boarding and one train boarding). **2** Washington state has 31 transit agencies that provide public transportation services. Transit agencies receiving federal grants from the Federal Transit Administration (FTA) are required to report data to the FTA on an annual basis for all modes of transit provided, including bus, light rail, trolley bus, and vanpool. Agencies that operate 30 or fewer transit vehicles can submit a Small Systems Waiver for reduced reporting requirements. Agencies that do not receive federal grants may choose to voluntarily report data to the FTA. **3** Transit providers in King, Pierce, Snohomish and Kitsap counties (Puget Sound region)

Washington state's public transit authorities



Source: WSDOT Public Transportation Division.
Note: Boundaries established by the Washington State Department of Revenue are not necessarily consistent with transit service areas. The Whitman County UTBA is not included because no transportation services are provided within the boundary.

Transit Classification

- Urban
- Small Urban
- Rural
- Regional District
- City

1 Asotin County PTBA
2 Ben Franklin Transit
3 Clallam Transit System
4 Columbia County Public Transportation
5 Community Transit
6 C-TRAN
7 Everett Transit
8 Garfield County Public Transportation
9 Grant Transit Authority
10 Grays Harbor Transportation Authority
11 Intercity Transit
12 Island Transit
13 Jefferson Transit Authority
14 King County Metro
15 Kitsap Transit
16 Link Transit
17 Mason County Transportation Authority
18 Okanogan County Transit Authority
19 Pacific Transit
20 Pierce Transit
21 Pullman Transit
22 RiverCities Transit
23 Selah Transit
24 Skagit Transit
25 Sound Transit
26 Spokane Transit Authority
27 Twin Transit
28 Union Gap Transit
29 Valley Transit
30 Whatcom Transportation Authority
31 Yakima Transit

Data source: WSDOT Public Transportation Division.

Lead agency: Washington State Department of Transportation

For more information, see:

- Washington State Public Transportation Plan (pdf): http://bit.ly/wapublictranplan2016

MOBILITY

To improve the predictable movement of goods and people throughout the state, including congestion relief and improved freight mobility.

Objective: Promote walking and biking to improve public health

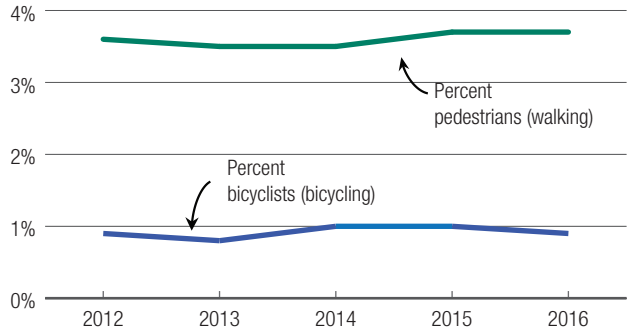
Rates of bicycling and walking to work remain steady.

Trend analysis

The percentage of commuters walking or bicycling to work has remained relatively steady between 2012 and 2016 (3.6% to 3.7% for walking and 0.9% to 0.9% for bicycling). The actual number of commuters using these modes grew by 11.2% between 2012 and 2016 from about 143,200 to 159,200 according to the American Community Survey. The total number of workers statewide grew by 8.8% during the same period from roughly 3.2 million to 3.5 million.

Walking and bicycling to work in Washington state remain a small percentage of total commute trips

2012 through 2016; Percent of pedestrian and bicyclist commuters

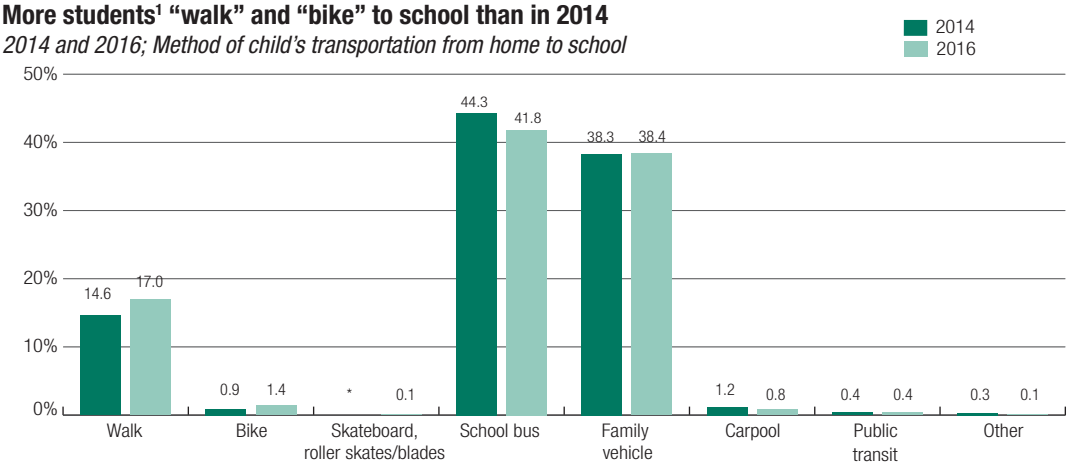


Data source: American Community Survey Data, US Census Bureau.

WSDOT is working with the Washington State Department of Health to collect information about how students travel to and from school on a daily basis. WSDOT uses the collected information to help plan and prioritize Safe Routes to School investments. The Washington State Student Travel Survey Report 2016 was conducted from February through April 2016. This report identifies how students in kindergarten through 8th grade travel to and from school, and specific barriers to walking, biking or riding the school bus. Two hundred forty-two schools, representing 69 school districts in Washington state participated in the survey. See chart below for travel to and from school results. Full results can be found in the Washington State Student Travel Survey Report 2016.

More students[1] "walk" and "bike" to school than in 2014

2014 and 2016; Method of child's transportation from home to school



Data source: American Community Survey Data, US Census Bureau.

Note: 1 Students are in kindergarten through 8th grade.* Less than .1 respondents chose "Skateboard, roller skates/blades" in 2014.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 69, Active Transportation: Annual Safety Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Mar18.pdf#page=11
- United States Census Bureau, American Community Survey: https://www.census.gov/programs-surveys/acs/

ENVIRONMENT

To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities and protect the environment.

Objective: Increase the number of culverts fixed and potential miles of habitat gained by WSDOT

WSDOT corrected 75 culverts from 2013 through 2017, improving access to approximately 458 miles of potential fish habitat.

Trend analysis

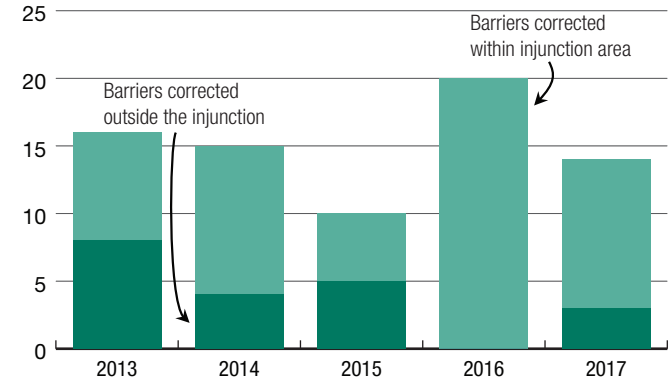
Between 2013 and 2017, WSDOT corrected 75 fish passage barriers located where highways intersect streams. This improved access to 458 miles of potential fish habitat. The 2017 WSDOT Fish Passage Inventory identified 1,977 fish passage barriers associated with 3,710 WSDOT highway and right of way water crossings. Of that total, 1,513 were identified as "barriers with significant habitat gain", blocking at least 200 linear meters of potential habitat. WSDOT started working collaboratively with the Washington Department of Fish and Wildlife in 1991 to systematically identify and correct fish passage barriers that occur where highways intersect streams. Since 1991, WSDOT has corrected 330 barriers restoring access to approximately 1,042 miles of potential fish habitat.

In June 2018, the U.S. Supreme Court voted 4-4 to uphold the 2013 federal court injunction issued in March 2013 that requires WSDOT to remove state-owned barriers to fish passage for 90% of blocked habitat in the case area (see map at right). WSDOT has corrected 55 barriers applicable to the injunction. These corrections improved access to about 215 miles (17.5%) of blocked habitat in the case area. WSDOT needs to correct roughly 450 barriers and restore fish access to 1,000 miles of potential fish habitat to meet the injunction's requirements. The number of barrier corrections and miles necessary can change as information about culverts is updated and the agency completes corrections.

Lead agency: Washington State Department of Transportation

WSDOT corrected 55 fish passage barriers subject to the federal injunction and 75 total

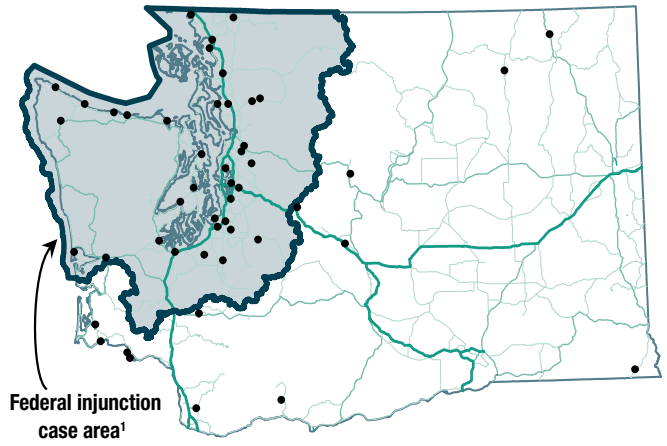
2013 through 2017



Data source: WSDOT Environmental Services Office.

WSDOT corrected 75 fish passage barriers between 2013 and 2017, improving access to 458 miles of potential upstream habitat for fish

2013 through 2017



Data source: WSDOT Environmental Services Office.
Note: Some fish passage sites corrected multiple barriers. 1 Not all projects completed in the federal injunction case area were applicable to the injunction.

For more information, see:

- *Gray Notebook* 70, Fish Passage Barriers Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Jun18.pdf#page=32
- WSDOT Fish Passage Performance Report: https://www.wsdot.wa.gov/sites/default/files/2018/08/09/Env-StrRest-FishPassageAnnualReport.pdf

ENVIRONMENT

To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities and protect the environment.

Objective: Improve water quality by managing stormwater runoff

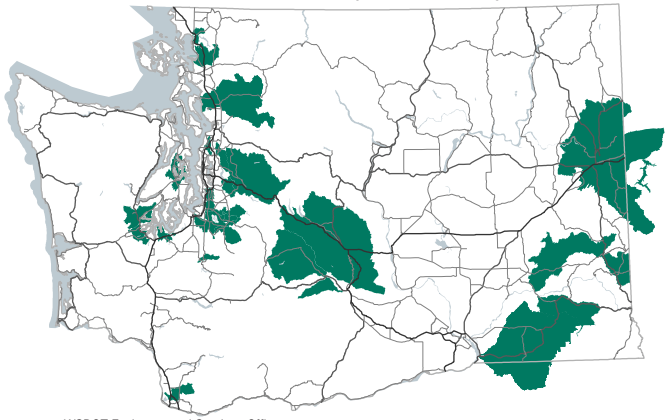
WSDOT continues to maintain compliance with its stormwater permits and is mapping its entire stormwater conveyance system. In 2017, the agency inspected 98% of its stormwater facilities and documented and removed 4,347.5 cubic yards of sediment from WSDOT catch basins and stormwater facilities.

Trend analysis

WSDOT inspected 98% of its stormwater facilities in both FY2016 and FY2017, exceeding the 95% requirement set in the agency's municipal stormwater permit, which covers stormwater discharges from paved surfaces in Washington. The agency maintained an inventory of existing and newly constructed stormwater outfalls and discharge points. Additionally, the agency is mapping the entire stormwater conveyance system along state highways within its municipal stormwater permit coverage area. In FY2017, WSDOT mapped 99.1 centerline miles of highways, exceeding the 79.5-mile requirement set by WSDOT and approved by the Department of Ecology in April 2016. WSDOT constructed 151 new stormwater treatment and flow facilities during FY2016 and 129 during FY2017, including 71 and 127 in areas covered by the permit, respectively.

WSDOT's 2014 municipal stormwater permit includes 28 areas with Total Maximum Daily Load requirements

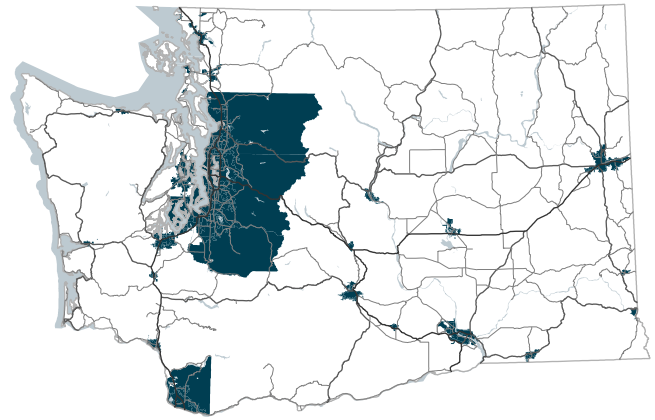
TMDL areas[1] included in the 2014 municipal stormwater permit



Data source: WSDOT Environmental Services Office.

Areas covered under WSDOT's municipal stormwater permit

2014 Municipal stormwater permit



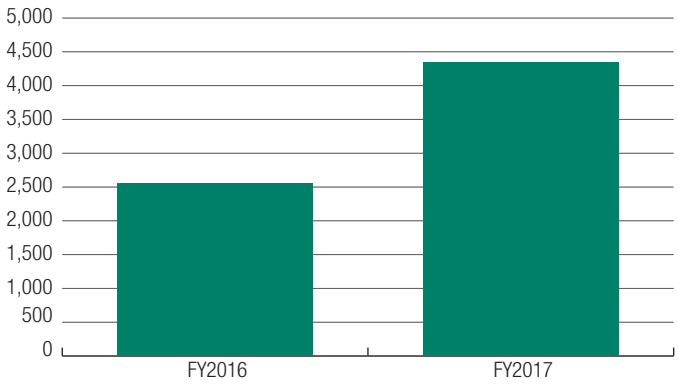
Data source: WSDOT Environmental Services Office.

WSDOT operates and maintains more than 7,000 miles of highway. When rest areas, ferry terminal holding lots, and park and ride lots are included, the agency manages over 40,000 acres of paved surfaces. Stormwater runoff from these facilities can contribute to water quality problems. To minimize the negative effects of stormwater runoff, WSDOT uses stormwater management facilities that prevent or reduce pollution in runoff and control runoff flows. WSDOT's National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit covers stormwater discharges from facilities owned or operated by WSDOT such as highways, ferry terminals and rest areas. Permit coverage includes the shaded areas shown on the map ab.The permit also covers stormwater discharges to any body of water in Washington state for which there is a Total Maximum Daily Load approved by the Environmental Protection Agency (shown on the map at left) and includes specifc actions for WSDOT stormwater discharges. The current permit went into effect April 5, 2014 and expires April 5, 2019.

WSDOT removed 2,553.0 cubic yards of sediment from catch basins and stormwater facilities during FY2016 and 4,347.5 cubic yards during FY2017. WSDOT began tracking how much sediment it removes from its facilities along highways across the state in July 2015. Removing sediment before it enters rivers, lakes and other bodies of water allows WSDOT to reduce pollutants, protect important habitats and maintain water quality. Once removed, WSDOT tests the sediment to determine pollutant levels and can dispose of it or use it as fill based on the results.

WSDOT prevents sediment from reaching bodies of water

Fiscal years 2016 and 2017, sediment measured in cubic yards



Data source: WSDOT Environmental Services Office.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 67, Water Quality Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Sep17.pdf#page=35
- Department of Ecology WSDOT Municipal Stormwater Permit: https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/WA-Department-of-Transportation-Municipal-Stor-(1)

ENVIRONMENT

To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities and protect the environment.

Objective: Reduce greenhouse emissions caused by transportation

Transportation-related greenhouse gas emissions in Washington are trending upward and remain above the statutory goal of 37.5 million metric tons per year by 2020.

Trend analysis

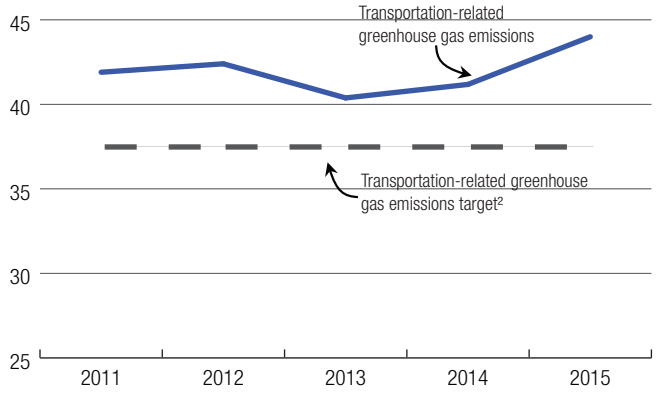
Transportation-related greenhouse gas emissions have been trending upward following the 2008 economic recession due to strong growth in economic activity, lower comparative fuel prices and increased vehicle miles traveled. Washington State is not projected to meet the statutory goal of 37.5 million metric tons (MMt) of carbon dioxide released per year by the 2020 target. This goal of 37.5 MMt per year is to bring the statewide greenhouse gas emissions from transportation to 1990 levels.

Washington adopted a number of initiatives and policies to work toward this goal, including policies that encourage the development, introduction and use of biofuels through a Renewable Fuels Standard and new clean car standards that will reduce greenhouse gas emissions by an estimated 34% by 2025.

Beginning in 2017, Governor Jay Inslee committed to the Washington State Electric Fleets Initiative to accelerate acquisition of EVs and ensure at least 20% of annual state passenger vehicle purchases are EVs. The state has been successful thus far, with Zero Emission vehicles comprising almost 30% of new purchases since the announcement. Governor Inslee continues to prioritize EV adoption and efforts to meet the Results Washington goal of 50,000 EVs on the road by 2020 through the authorization of sales and use of tax credits to encourage EV purchase and the EV Action Plan to expand electric vehicle infrastructure.

Transportation-related greenhouse gas emissions fail to meet target

2011 through 2015[1]; Levels in million metric tons of carbon dioxide

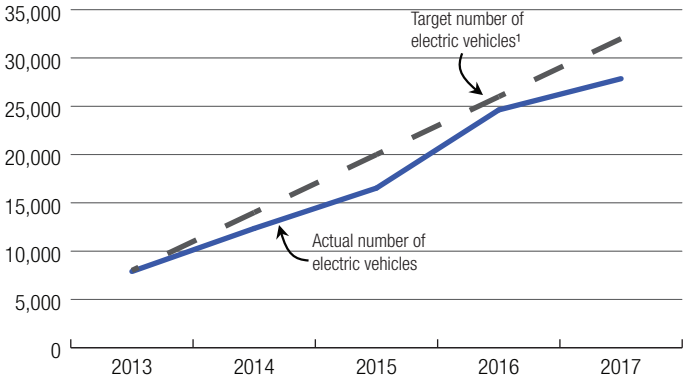


Data source: Washington State Department of Ecology

Note: 1 Data shown is latest available. 2 Results Washington December 2020 target.

The number of registered electric vehicles in Washington state continues to increase

2013 through 2017



Data source: Washington State Department of Licensing.

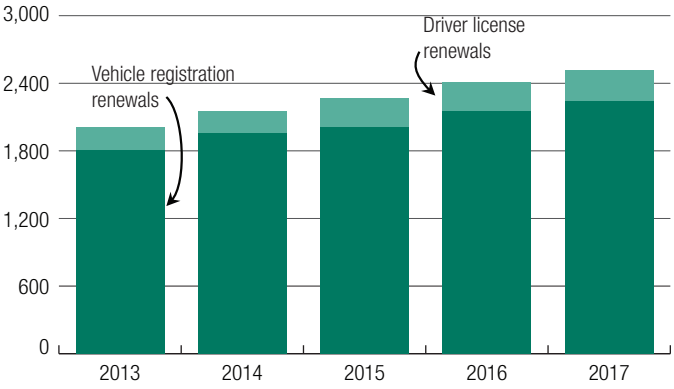
Note: The number of electric vehicles registered in 2017 is out of 4.7 million total registered passenger vehicles. 1 Target number of electric vehicles is based on statutory goal of 50,000 EVs by 2020.

For overall passenger vehicle registrations, 1.7% of the 235,880 new vehicle registrations in Washington in 2017 were electric vehicles. The total number of electric vehicles in Washington has been increasing since 2013 and reached 27,858 in 2017, which is equivalent to 0.6% of all registered passenger vehicles in Washington state, as seen in the graph above.

The Legislature requires state agencies to report their emissions and develop strategies to meet reductions. For example, since 2008, the Department of Licensing has expanded online and mail services to reduce the need to travel to a licensing office. These online options resulted in:

Online transactions for drivers license and vehicle registration renewals increases steadily in Washington state

2013 through 2017; Transactions in thousands



Data source: Washington State Department of Licensing

- Avoidance of more than 3 million trips in 2017, a 51% increase in trips avoided since 2011;
- Avoidance of 33 million miles of travel and saved 1.6 million gallons of gasoline;
- Reduction of more than 30 million pounds of carbon dioxide; and
- Savings to customers of $4.7 million in 2017 through lower fuel costs.

The number of transactions completed online has been steadily increasing since 2013, as seen in the graph at above. Online transactions accounted for 35.3% of total drivers license and vehicle registration renewals in 2017.

Lead agencies: Washington State Department of Ecology and Department of Licensing

For more information, see:

- Results Washington, Goal 3: Sustainable energy & a clean environment: https://www.results.wa.gov/goals-progress/goals/sustainable-energy-clean-environment/goal-map
- Report to the Legislature on Washington Greenhouse Gas Emissions Inventory 2010-2013: https://fortress.wa.gov/ecy/publications/documents/1602025.pdf
- Environmental Protection Agency, Air Quality Index Report: https://www.epa.gov/outdoor-air-quality-data

MEASURE 4.4

New measure

ENVIRONMENT

To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities and protect the environment.

Objective: Reduce the impacts of diesel emissions on vulnerable populations

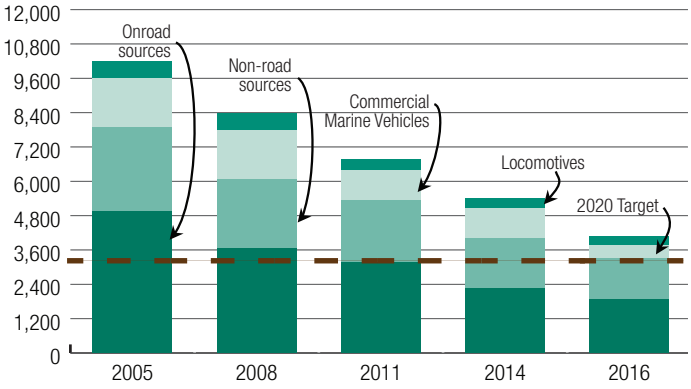
Overall diesel emissions have declined, however some populations remain at greater risk for adverse health effects.

Trend analysis

Washington state is on track to meet the state target of achieving diesel particulate emissions of 3,500 annual tons by 2020, which would represent an overall reduction of 66% from 2005, following Washington state's launch of the Clean Diesel Program by the Washington State Department of Ecology in 2003. Between 2011 and 2016, emissions went down about 40%, as shown in the graph at right.

Washington state works to reduce diesel exhaust emissions and improve health outcomes statewide

2005 through 2016; Diesel Particulate Matter (PM)10[1] emissions (tons)



Data source: Washington State Department of Ecology, Air Quality Program.
Note: Commercial marine vehicles and locomotives were not updated in each of the selected years during this time period. 1 PM10 refers to inhalable particles that are less than or equal to 10 micrometers in diameter.

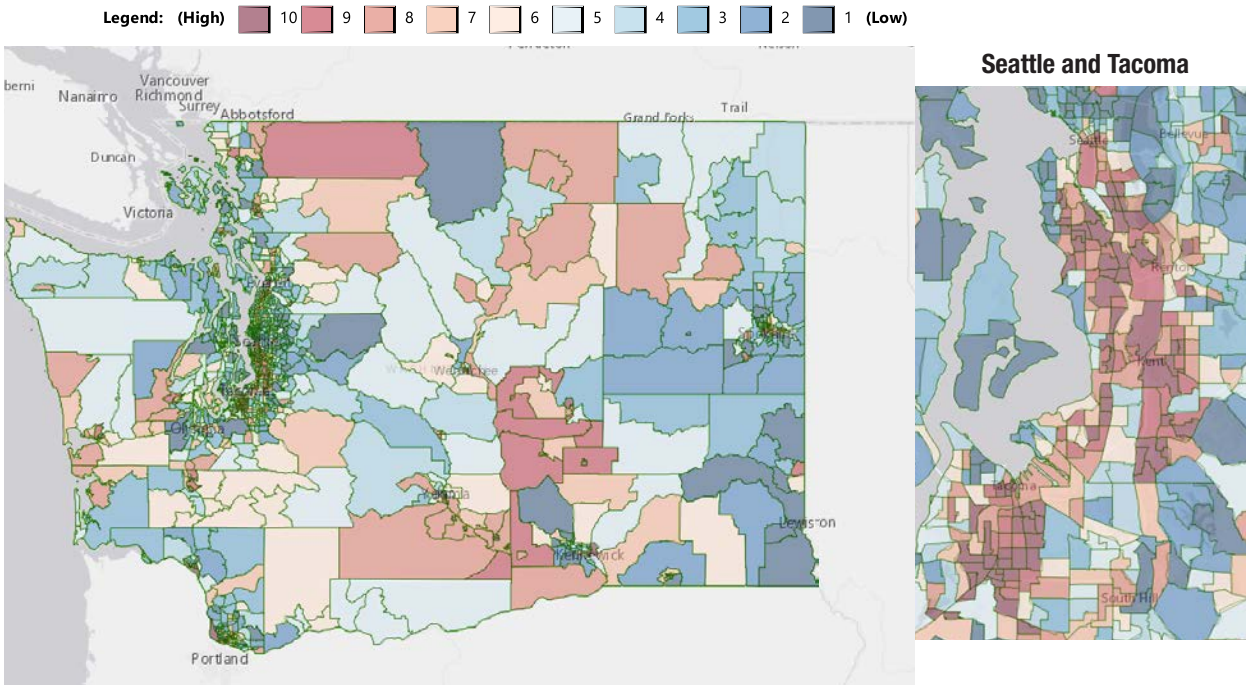
The reduction in diesel emissions across the state represents clear progress toward improving health. However, like diesel emissions, social and economic health determinants are not distributed evenly across Washington and some populations are at greater risk of adverse health effects compared to others with the same exposures. A health determinant index established by the Washington State Department of Health incorporates five social and economic indicators to identify at risk populations. The map on the top of page 49 illustrates by census tract those areas where populations are at greater risk of adverse health effects. The following factors are used to define disproportionately affected populations for diesel emission reduction efforts:

- Population living in poverty: population living below 185% of Federal Poverty Level (%)
- Unaffordable housing: spending more than 30% of household income on housing
- Unemployed: population 16 years and older in the workforce and registered as unemployed (%)
- Limited English: population five years and older that doesn't speak English very well (%)
- No high school diploma: people who have not received a high school diploma or GED by age 25 (%)

Diesel exhaust is a carcinogen and is Washington state's highest-risk toxic air pollutant. The Clean Diesel Program has focused efforts on installing retrofit emissions and idle reduction technology controls on diesel engines and scrapping and replacing old, high-polluting diesel vehicles and engines with newer, cleaner ones. Recent projects at the Ports of Seattle and Tacoma are surrounded by census tracks with high health determinant ranks. Greater public health gains can be made by prioritizing efforts where diesel emissions are high and where there are populations at greater risk, including populations that are more socially and economically vulnerable than others.

Washington state census tracts show populations more socially and economically vulnerable to health impacts by diesel emissions

2016; By U.S. Census Tract



Data source: Washington Tracking Network, Washington State Department of Health.

Lead agencies: Washington State Department of Ecology and Department of Health

For more information, see:

- Washington Department of Health. "Washington State Health Assessment 2018" DOH Pub 78945. March 2018: www.doh.wa.gov/healthassessment

STEWARDSHIP

To continuously improve the quality, effectiveness and efficiency of the transportation system.

Objective: Deliver 90% of Nickel and Transportation Partnership Act projects both on time and on budget

WSDOT's delivery of the Nickel and Transportation Partnership Act (TPA) revenue package projects continues to be on budget but narrowly misses the on time target.

Trend analysis

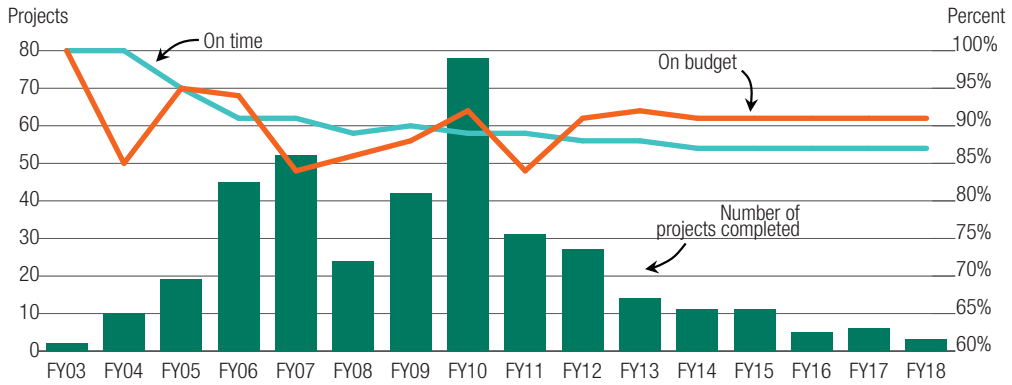
There are 421 projects on the combined Nickel and TPA construction project list. As of June 2018, 380 projects have been completed with 87% on time and 91% on budget.

Combined Nickel & Transportation Partnership Account Status of projects to date; 2003 through June 30, 2018; Dollars in millions	Number of Projects	Value of Program[1]
Subtotal of completed construction projects[2]	380	$9,689.8
Non-construction projects that have been completed or otherwise removed from Nickel/TPA lists[3, 4]	5	$74.4
Projects included in the current transportation budget but not yet complete	19	$5,916.0
Projects that have been deferred indefinitely or deleted and removed from Nickel/TPA lists[3, 4]	13	$499.2
Projects now funded by Connecting Washington and removed from Nickel/TPA lists	4	$101.7
Total number of projects[5] in improvement and preservation budget	421	$16,281.2

Data source: WSDOT Capital Program Development and Management.
Notes: Numbers have been rounded. **1** Dollars in millions. **2** Cumulative projects completed from July 1, 2003, to June 30, 2018. **3** Non-construction projects include commitments for engineering and right of way work. **4** Projects that have been deferred indefinitely or deleted include projects that have no funding available, projects that have been halted by the Legislature and those for which other entities (e.g., cities and counties) are now serving as the lead agency. **5** The project total has been updated to show "unbundled" projects which may have been previously reported in programmatic construction groupings (such as Roadside Safety Improvements or Bridge Seismic Retrofit). See Gray Notebook 38, p. 55 for more details.

WSDOT completes 380 Nickel and TPA projects out of 421

Fiscal year 2003 through fiscal year 2018



Data source: WSDOT Capital Program Development and Management Office.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook 70*, Capital Project Delivery Programs: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Jun18.pdf#page=45

STEWARDSHIP

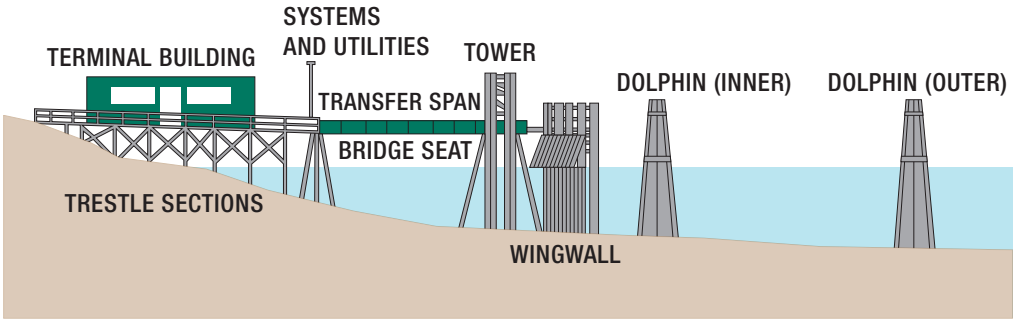
To continuously improve the quality, effectiveness and efficiency of the transportation system.

Objective: Deliver 90% of ferry terminal projects on time

WSDOT Ferries Division completed 75% of its terminal capital projects on time in fiscal year (FY) 2017.

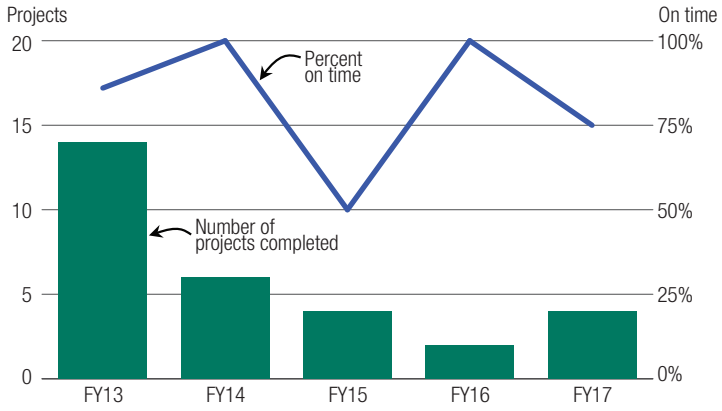
Trend analysis

Ferry terminal projects range from building rehabilitation for compliance with the Americans with Disabilities Act to the replacement of landing aids such as wingwalls and dolphins (see graphic below). In FY2017, 75% of ferry terminal projects were completed on time, down from 100% of projects completed on time in FY2016. WSDOT completed four ferry terminal projects in FY2017, a 100% increase compared to two in FY2016.



Three of four ferry terminal projects in Washington state completed on time in fiscal year 2017

FY2013 through FY2017; Projects completed and percent on time annually



Data source: WSDOT Ferries Division.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 67, Ferries Terminals and Vessels Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Sep17.pdf#page=15
- WSDOT Ferries Division FY2016 Performance Report: http://www.wsdot.wa.gov/publications/fulltext/LegReports/15-17/FY2016WSFPerformanceMeasuresReport.pdf

STEWARDSHIP

To continuously improve the quality, effectiveness and efficiency of the transportation system.

Objective: Limit out-of-service time for ferry vessels

Vessel out-of-service time not correlated with vessel age.

Trend analysis

Ferry vessels spent an average of 9.3 weeks per vessel in out-of-service status during fiscal year (FY) 2017. Washington State Ferries has a goal for average out-of-service time of eight weeks or less per year.

The two Jumbo class vessels, which have an average age of 45.5 years, had the highest average at 17.7 weeks out of service in FY2017. The Evergreen State class vessels, which had the highest average age of 59 years, had the lowest average at three weeks out of service in FY2017. The average age of all ferry vessels during FY2017 was 30 years.

Out-of-service time per Washington state ferry vessel averaged 9.3 weeks in FY2017

Fiscal years 2012 through 2017; Average weeks out of service per vessel by class

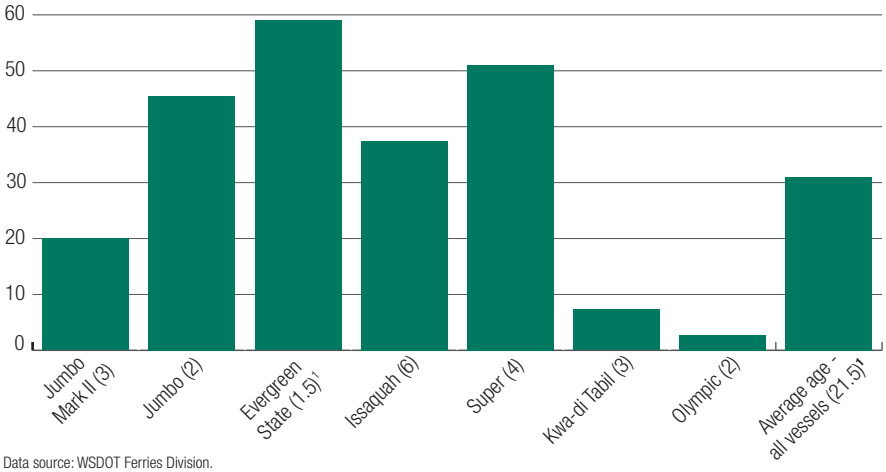
Vessel class *(number of vessels)*[1]	FY2012[2]	FY2013[2]	FY2014[2]	FY2015[3]	FY2016[3]	FY2017[4]
Jumbo Mark II *(3)*	6.7	3.2	5.9	16.8	14.9	6.0
Jumbo *(2)*	7.1	21.9	4.1	3.8	5.6	17.7
Evergreen State *(1.5)*[4]	12.6	10.0	15.1	15.3	2.6	3.0
Issaquah *(6)*	6.1	4.0	7.6	8.5	5.1	9.3
Super *(4)*	8.4	8.3	5.9	5.5	18.2	11.8
Kwa-di Tabil *(3)*	3.4	6.0	9.8	8.6	7.0	8.3
Olympic *(2)*	0	0	0	5.1	11.4	7.1
All Vessels (21.5)	**7.8**	**7.5**	**8.1**	**9.4**	**9.5**	**9.3**

Data source: WSDOT Ferries Division.

Notes: WSDOT Ferries Division has a goal for average out of service time of eight weeks or less per year. 1 The number of vessels reflect the fleet at the end of FY2016. 2 These calculations are based on 21 vessels in the Ferries system at the time. 3 These calculations are based on 22 vessels in the Ferries system at the time. 4 The M/V *Klahowya* was removed from service in the middle of FY2017, so calculations for FY2017 are based on 21.5 active vessels.

The average age of all Washington State Ferries vessels is 30 years

Fiscal year 2017; Average age in years per vessel by class



Data source: WSDOT Ferries Division.

Note: The number of vessels in each ferry class is listed in parens next to the class name. **1** The M/V *Klahowya* was removed from service in the middle of FY2017, so it was counted as 0.5 vessels.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 67, Ferries Terminals and Vessels Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Sep17.pdf#page=15
- WSDOT Ferries Division FY2016 Performance Report: http://www.wsdot.wa.gov/publications/fulltext/LegReports/15-17/FY2016WSFPerformanceMeasuresReport.pdf

STEWARDSHIP

To continuously improve the quality, effectiveness and efficiency of the transportation system.

Objective: Deliver 90% of rail capital projects both on time and on budget

WSDOT's capital delivery program for rail-related projects delivers all Nickel and TPA projects both on time and on budget.

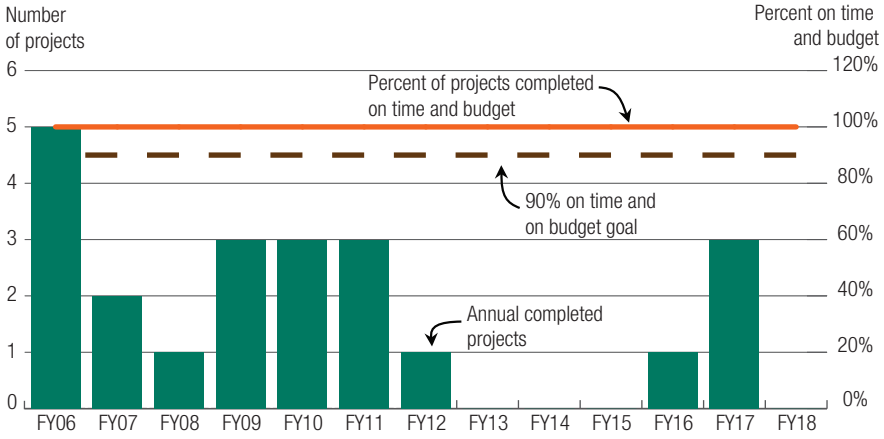
Trend analysis

From fiscal year (FY) 2006 through FY2018, 22 rail projects on the combined Nickel and TPA construction project list have been completed, with 100% completed on time and 100% completed on budget. A project is considered "on time" if it is operationally complete within the quarter planned in the last approved project schedule. A project is considered "on budget" if the costs are within 5% of the last approved project budget.

These projects are within the Legislative Evaluation and Accountability Program project list, and WSDOT reports on their status on a quarterly basis. As of June 2018, 100% of these projects were advertised early or on time.

Twenty-two Nickel and TPA rail projects completed in Washington state

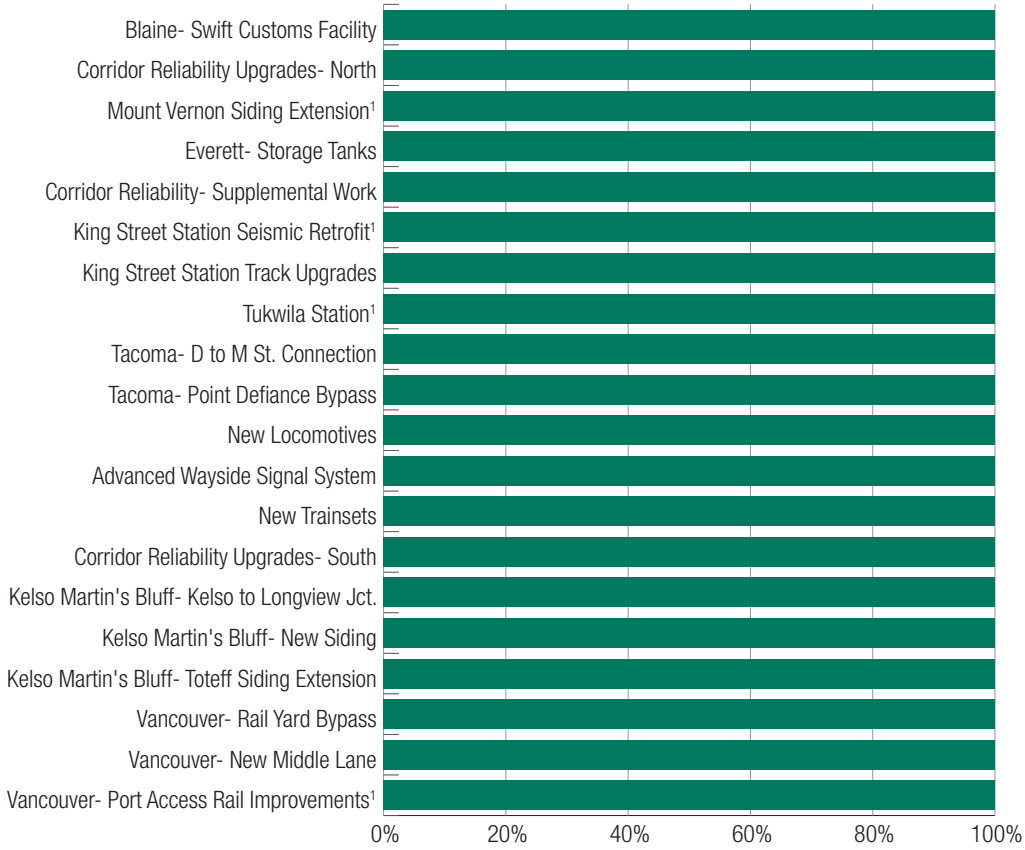
Fiscal years 2006 through 2018; Annual projects completed; Percent completed on time and budget



Data source: WSDOT Capital Program Development and Management Office.

In addition to the Nickel and TPA projects, WSDOT delivered 20 rail projects that were federally funded. More than 96% of the funding for these projects came from the American Recovery and Reinvestment Act (ARRA). All 20 projects are completed as of June 2018.

WSDOT completes all capital improvement high-speed rail projects
As of June 2018; Percentage of construction completed



Data source: WSDOT Rail, Freight and Ports Division.
Note: The majority of these projects are funded through the American Recovery and Reinvestment Act. 1 ARRA related projects with non-ARRA funding sources.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 68, Rail Quarterly Update: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Dec17.pdf#page=35
- *Gray Notebook* 66, Current Legislative Evaluation & Accountability Program (LEAP) Update: http://wsdot.wa.gov/publications/fulltext/graynotebook/Jun17.pdf#page=52

STEWARDSHIP

To continuously improve the quality, effectiveness and efficiency of the transportation system.

Objective: Measure public perception about the condition and needs of the transportation system

Fifty-nine percent of respondents gave statewide transportation systems a grade of "C" or better grade and 55% of respondents gave their local system a "C" or better in 2017.

Trend analysis

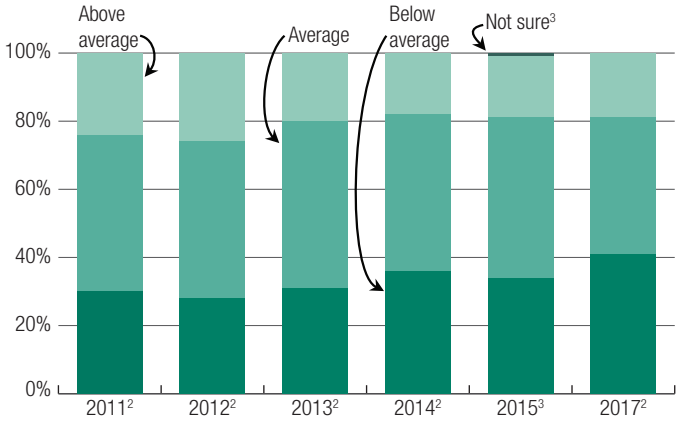
Washington State Traffic Commission's (WSTC) Voice of Washington State (VOWS) survey was administered in January 2017. The 7,327 respondents, on average, gave the statewide transportation system an overall grade of "C-" (1.62 out of 4.0).

Results were tallied by regional transportation planning organization jurisdictions. Respondents in the Benton-Franklin and Palouse areas gave the statewide system the highest average ratings of "above average" ("B") or "excellent" ("A"). Respondents in the Puget Sound area, southwest Washington (including Longview-Kelso) and Skagit areas gave the state transportation system the lowest overall ratings of "below average" ("D") or "failing" ("F").

In 2017, the average grade respondents gave for their local transportation systems was a "D+" (1.58 out of 4.0). Regions that rated their local transportation systems the highest included the Whatcom and Thurston areas which gave the highest average grades of "above average"("B") or "excellent" ("A"). Regions that rated their local transportation systems the lowest included the southwest Washington (including Longview-Kelso), north central Washington (including Chelan, Douglas and Okanogan) and Spokane areas which gave the lowest overall ratings of "below average" ("D") or "failing" ("F").

The statewide transportation system receives an increased "below average" rating in 2017 compared to 2015

2011 through 2015, and 2017[1]

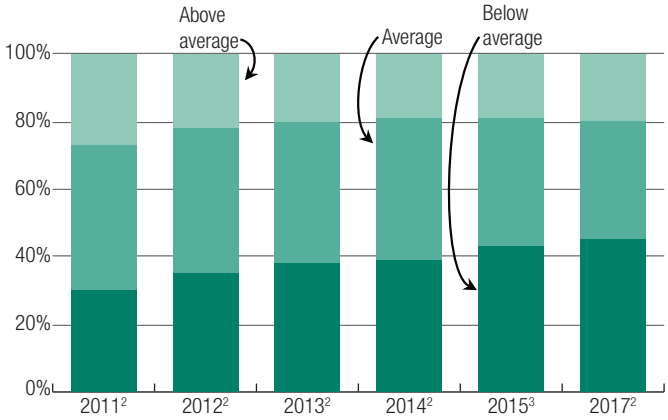


Data source: Washington State Transportation Commission and WSDOT Multimodal Planning Division.

Note: 1 No data was available for 2016. 2 The data for 2011 through 2014 and for 2017 was collected from the Washington State Transportation Commission's Voice of Washington Transportation Survey. 3 The data for 2015 was collected from a survey conducted by the WSDOT Planning Office using the VOWS web panel and similar questions to the VOWS Survey. This was the only survey to offer a "not sure" response.

Local transportation systems in Washington state rated "above average" by 20% of survey participants in 2017

2011 through 2015, and 2017[1]



Data source: Washington State Transportation Commission and WSDOT Multimodal Planning Division.

Note: 1 No data was available for 2016. 2 The data for 2011 through 2014 and for 2017 was collected from the Washington State Transportation Commission's Voice of Washington Transportation Survey. 3 The data for 2015 was collected from a survey conducted by the WSDOT Planning Office using the VOWS web panel and similar questions to the VOWS Survey.

The 2017 WSTC Voice of Washington State surveys (VOWS) asked respondents to give various investment categories a score from 1-5, with 5 being very important. In the 2017 VOWS survey, 89% of respondents ranked "Maintaining and repairing existing roads, highways and bridges" as a 4 or 5, representing an "important" or "very important" statewide investment. This was 34 percentage points higher than the second-ranked activity, "Expanding public transit services like buses, vanpools, and dial-a-ride." "Improving regional airports" was the lowest ranked activity with 23% of respondents choosing a 4 or 5.

Percent of Washington state respondents ranking investment highlights as important

2011, 2013; and 2017, Voice of Washington State Transportation Survey; Percent of respondents ranking investment as important[1]

Investment	2011	2013	2017
Maintaining and repairing existing roads, highways, and bridges	85%	84%	89%
Expanding public transit services like buses, vanpools, and dial-a-ride	51%	49%	55%
Widening and building more roads and highways	51%	40%	51%
Making sure rural roads and mountain remain passes open year round	44%	34%	44%
Operating and maintaining Washington state's ferry system	46%	40%	43%
Increasing law enforcement and public safety efforts on our state highways	37%	29%	40%
Building or improving sidewalks	30%	27%	40%
Building bike lanes	40%	23%	25%
Improving regional airports	23%	13%	23%
Adding or increasing intercity passenger rail service	55%	46%	n/a
Minimizing weather closures of roads and highways from snow and flooding	n/a	33%	n/a
Improving roads and infrastructure at shipping ports to move freight and goods	38%	31%	n/a

Data source: Washington State Transportation Commission.

Note: Data for all years that this question was asked in a Voice of Washington Survey are represented in the table. An entry of "n/a" means that response was not an option. 1 Respondents were asked to rank categories 1-5 or "not sure". A score of 4-5 was considered "important."

Lead agency: Washington State Transportation Commission

For more information, see:

- Washington State Transportation Commission's 2017 Statewide VOWS Transportation Survey: http://wstc.wa.gov/StatewideTransportationSystem/documents/2016_17_StatewideVOWSTelephone_FinalReport_001.pdf
- WSDOT Planning Office's WTP 2035 Survey: http://www.wsdot.wa.gov/NR/rdonlyres/BAED6B85-D53B-4197-9702-E0F8165959E2/0/WTPVOWSFinalJuly2015.pdf
- Information on regional transportation planning organizations: http://www.wsdot.wa.gov/planning/Regional/Default.htm

STEWARDSHIP

To continuously improve the quality, effectiveness and efficiency of the transportation system.

Objective: Measure passenger satisfaction with the Washington state ferry system

In 2017, 77% of ferry riders were satisfied or very satisfied with the service provided by Washington State Ferries.

Washington State Ferries continues to receive a high overall satisfaction rating system-wide
2012, 2014, 2015, 2016 and 2017; FROG survey responses by percentage

Year	Very Satisfied	Satisfied	Dissatisfied	Don't Know/No Opinion/Neutral
2017	37%	40%	15%	8%
2016	36%	37%	17%	10%
2015	33%	40%	17%	10%
2014	35%	39%	17%	9%
2012	29%	38%	17%	16%

Data source: Washington State Transportation Commission.
Notes: The Washington State Ferry Rider's Opinion Group (FROG) is not conducted each year. The results of the last five surveys are represented in this table.

Trend analysis

Since 2008, the Transportation Commission has been conducting a survey of ferry riders to help inform policy and financing decisions. In 2010, a targeted effort was made to assess the opinions of frequent ferry riders, and the Ferry Riders' Opinion Group (FROG) was created. FROG is an online community where ferry users weigh in on ferry issues through surveys and quick polls. Overall, 77% of ferry riders were satisfied or very satisfied with Washington State Ferries' service in 2017, a 4% improvement from 2016.

Satisfaction Factors

The following aspects of WSDOT Ferries services had the highest satisfaction rates among ferry riders in the 2017 FROG survey:

- Ferry riders are most satisfied with the friendliness and helpfulness of unloading crews and vessel crews. In general, ferry vessel crew members are seen as polite, helpful and competent by ferry riders. Unloading crews provide clear directions.
- Passengers find toll booth staff friendly and generally find purchasing tickets easy.
- Passenger seating areas are clean.

Passengers using the Southworth, Vashon, and Fauntleroy terminals showed the most satisfaction with the friendliness and helpfulness of unloading crews. Passengers from the Edmonds and Kingston terminals showed the most satisfaction with the friendliness of toll booth staff. Passengers riding ferries from the Mukilteo and Clinton terminals showed the most satisfaction with the cleanliness of the passenger seating areas.

Dissatisfaction Factors

- Adequate parking near terminals is lacking and needs improvement.
- Terminal bathroom cleanliness needs improvement.
- Creating and maintaining comfortable terminals needs improvement.

Passengers using the Mukilteo, Bainbridge, and Seattle terminals showed the most dissatisfaction with adequate parking in 2017. Bathroom cleanliness had an unsatisfactory rating at the Seattle terminal. Passengers found the Seattle, Bainbridge and Kingston terminals to be the most uncomfortable.

Ferry riders on the Fauntleroy/Vashon and Anacortes/San Juan Islands routes express the highest levels of overall dissatisfaction of all Washington State Ferries routes in 2017

2012, 2014, 2015, 2016 and 2017; Percentage of "dissatisfied" responses in the FROG survey by route

Ferry Route	2012	2014	2015	2016	2017
Seattle/Bainbridge	13%	12%	13%	16%	11%
Seattle/Bremerton	19%	13%	15%	15%	18%
Edmonds/Kingston	16%	13%	19%	14%	12%
Fauntleroy/Vashon	17%	27%	29%	39%	23%
Fauntleroy/Southworth	32%	22%	19%	25%	17%
Southworth/Vashon	12%	23%	0%	22%	0%
Point Defiance/Tahlequah	18%	15%	14%	25%	10%
Mukilteo/Clinton	16%	15%	16%	10%	15%
Port Townsend/Coupeville	28%	20%	16%	17%	16%
Anacortes/San Juan Islands	33%	48%	29%	23%	21%
San Juan—Interisland	N/A	48%	27%	35%	15%

Data source: Washington State Transportation Commission.

Notes: The Washington State Ferry Rider's Opinion Group (FROG) is not conducted each year. The results of the last five surveys are represented in this table.

Lead agency: Washington State Transportation Commission

For more information, see:

- *Gray Notebook* 69, Ferries Quarterly Update: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Mar18.pdf#page=20
- *Gray Notebook* 67, Ferries Vessel and Terminal Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Sep17.pdf#page=15
- Washington State Transportation Commission, WSF Winter Ferry Performance FROG Survey Reports: http://wstc.wa.gov/StudiesSurveys/documents/2017_WSFWinterPerformanceSurvey_ReportFinal.pdf

ECONOMIC VITALITY

To promote and develop transportation systems that stimulate, support and enhance the movement of people and goods to ensure a prosperous economy.

Objective: Create and sustain jobs through investments in transportation

Jobs created through current investments in transportation capital expenditures are projected to peak in 2021.

Trend analysis

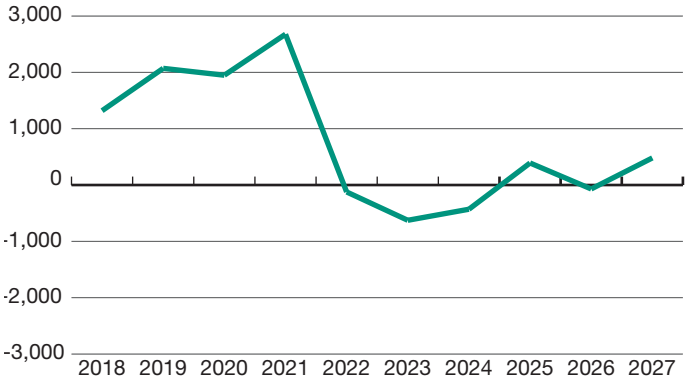
WSDOT's capital expenditures are projected to create about 1,320 jobs in 2018. Job growth due to WSDOT capital expenditures is projected to peak in 2021, with approximately 2,680 jobs expected to be created. These projections account for projects that are funded by current legislative packages. The declining employment levels projected following 2021 represent the completion of the Nickel, Transportation Partnership Account and Connecting Washington funding packages.

Based on a 10-year average from 2018 through 2027, over half (59.3%) of the projected job growth is anticipated to be a result of highway expenditures. Expenditures on ferries are expected to provide the next-largest job growth with 29.0%, followed by rail expenditures (6.7%) and facilities expenditures (5.0%).

These job estimates represent the projected employment levels for Nickel and Transportation Partnership Account gas tax funded projects, as well as expected job growth due to the 2015 Connecting Washington (CW) funding package. The job creation estimates shown in the graph above include effects due to tax increases that are included in the CW funding package. These estimates were generated using the Regional Economic Models, Inc. (REMI) TranSight tool for future transportation economic benefit analysis. Previous editions of the Attainment Report generated estimates using the Office of Financial Management's economic model. This change was made to improve accuracy in the projections.

Jobs created from WSDOT capital expenditures projected to peak in 2021

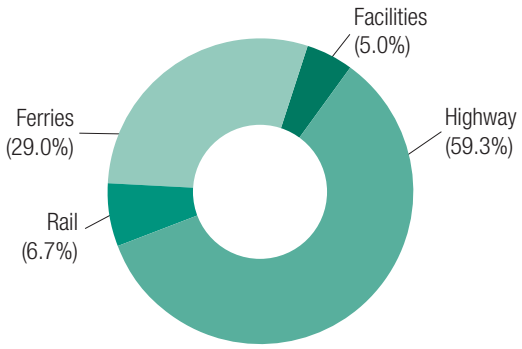
2018 through 2027; Projected change in job numbers



Data source: WSDOT Office of Budget and Financial Analysis.
Note: Includes effects due to tax increases in the Connecting Washington funding package, which are projected to continue after construction is complete.

Over half of projected job growth is due to highway expenditures

By type of expenditure; Ten year average 2018 through 2027



Data source: WSDOT Office of Budget and Financial Analysis.

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 69, Transportation and the Economy Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Mar18.pdf#page=29

ECONOMIC VITALITY

To promote and develop transportation systems that stimulate, support and enhance the movement of people and goods to ensure a prosperous economy.

Objective: Enhance transportation systems to facilitate movement of freight

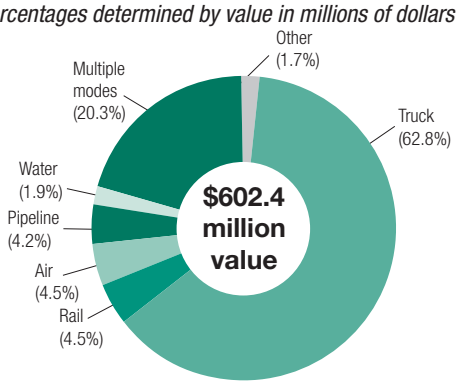
Washington state was the second most freight-dependent state in the U.S. in 2016, with total imports and exports valued at $126.6 billion.

Trend analysis

On a per capita basis, Washington was the second most trade-dependent state in the nation in 2016, following only Michigan. Total imports and exports in 2016 were valued at $126.6 billion, down 11.3% from $142.7 billion in 2014, when Washington was the third most trade-dependent state behind Texas and Louisiana. Between 2015 and 2016, gross business income for freight-dependent sectors in Washington increased by 3.2%, going from $547.6 billion to $565.3 billion. Trade dependency is measured by the portion of the state's economy that relies on importing and exporting activities. According to the Federal Highway Administration's Freight Analysis Framework Version 4 (FAF[4]) for 2016, the majority (62.8%) of freight in Washington state is moved by truck.

Most freight by value is moved by truck in Washington state

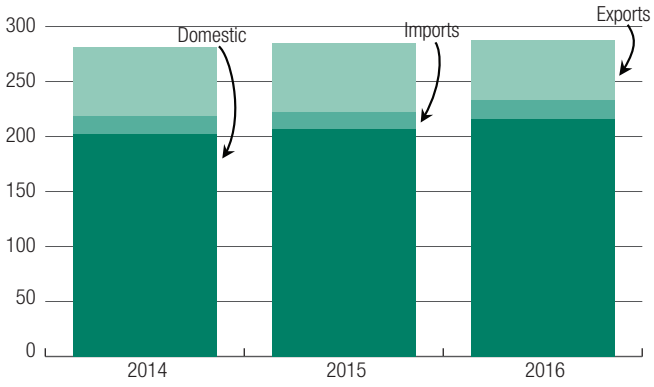
2016; Percentages determined by value in millions of dollars



Data source: Freight Analysis Framework Data Version 4, Federal Highway Administration.

More than two-thirds of truck freight in Washington state are shipments of domestic goods

2014 through 2016; Tons in millions



Data source: Freight Analysis Framework Data, Federal Highway Administration.

Washington air freight, truck freight and marine freight all increased in volume since 2014. Air freight had the largest change, with a 10.0% increase from 2014 to 2016. Marine freight increased by 3.1% and rail decreased by .5% over the same time period. Truck freight increased by 2.5% from 2014 to 2016.

Truck freight: In 2016, trucks moved approximately 287 million tons of freight, up 2.5% from approximately 281 million tons in 2014. From 2014 to 2016, truck freight increased in the domestic and import categories, while decreasing in export freight. The largest percentage increase was in domestic freight, which rose 6.7% from 2014 levels. Import freight increased by 6.5% and export freight decreased by 12.3%. Interstate 5 (I-5) near Tacoma (milepost 131) reported 21,086 trucks per day in 2016, the highest daily truck traffic in the state. This was also the location of the largest increase in truck traffic volumes at an increase of 5,293 trucks, or a 34.0% increase in traffic.

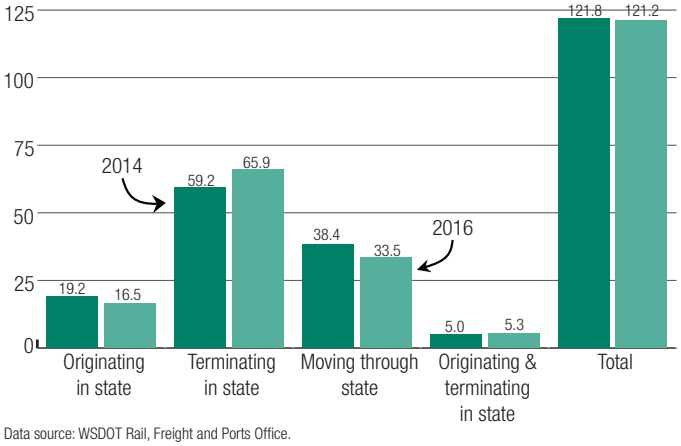
Rail freight: Railroads carried 121.2 million tons of cargo in 2016, down slightly from 121.8 million tons in 2014. Over half (54.4% or 65.9 million tons) of all freight tonnage moved by rail in Washington state terminates in-state. This represents an increase from 48.6% (59.2 million tons) in 2014. Rail freight moving through the state, which accounted for 27.6% of total freight rail tonnage and 33.5 million tons, decreased by 3.9% from 2014 levels.

Freight rail shipments of farm products increased by 22.3% (7.7 million tons) from 2014 to 2016, primarily due to increases in soybean and corn shipments. Farm products remained the largest group of commodities transported by rail in 2016, representing 35.2% of shipments. Hazardous materials shipments were the second-largest commodity group in 2016 due to a 38.5% (7.4 million ton) decrease in coal transported by rail. This decrease was largely due to a decrease in Montana coal shipments to British Columbia that travel through Washington.

Water freight: Washington state's total waterborne freight activity in 2016 was 122.9 million tons, which is an increase of 3.1% (3.6 million tons) from 119.3 million tons in 2014. In 2016, 69.4% of waterborne freight was international, followed by 22.6% domestic and 8.0% intrastate (remaining in Washington).

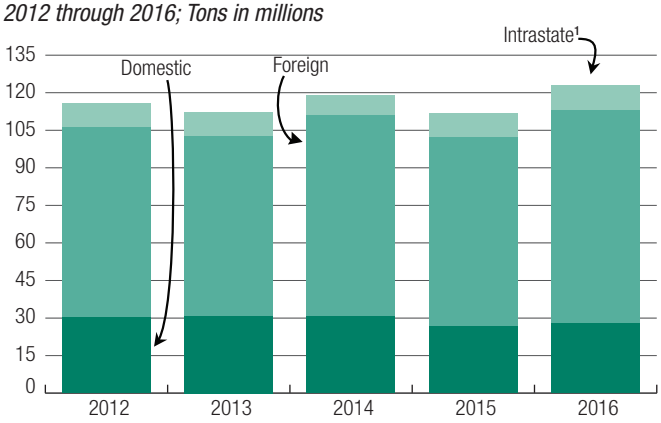
Air freight: Washington state airports handled 1.68 million tons of cargo in 2016, measured in plane plus cargo weight and reported by the Federal Aviation Administration. This represents a 7.6% increase from 2015 air cargo levels and a 10.0% total increase from 2014 air cargo levels. Seattle-Tacoma International Airport (Sea-Tac) continues to handle the majority of all air cargo in the state, with 55.9% of the statewide total. Sea-Tac handled 939,458 tons of cargo (including plane weight) in 2016, a 19.3% increase from 2014. Sea-Tac was the 20th ranked airport in terms of air cargo volume in North America, providing daily, non-stop service to 90 domestic and 25 international destinations.

Rail freight remains stable from 2014 to 2016
2014 and 2016; Tons in millions



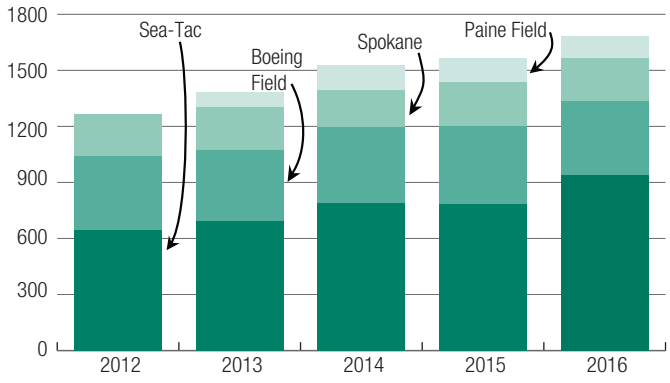
Data source: WSDOT Rail, Freight and Ports Office.

Waterborne freight tonnage increases in Washington state
2012 through 2016; Tons in millions



Data source: US Army Corps of Engineers - Navigation Data Center and WSDOT Rail, Freight and Ports Office.
Note: 1 Intrastate freight is a subset of domestic freight, but is shown separately for clarity.

Washington state total landed air cargo tonnage continues to rise
2012 through 2016; Tons in thousands



Data source: Federal Aviation Administration

Lead agency: Washington State Department of Transportation

For more information, see:

- *Gray Notebook* 66, Freight Semi-Annual Report: http://wsdot.wa.gov/publications/fulltext/graynotebook/Jun17.pdf#page=39

MEASURE 6.3

New measure

ECONOMIC VITALITY

To promote and develop transportation systems that stimulate, support and enhance the movement of people and goods to ensure a prosperous economy.

Objective: Reduce seasonal road restrictions to facilitate agricultural freight movement

Agriculture has increasingly become a year-round activity in Washington state, despite the percentage of county roads that restrict freight movement during winter and early spring months remaining constant.

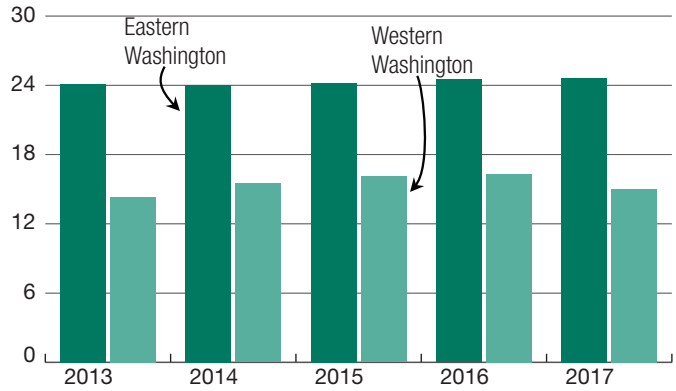
Trend analysis

Despite the growing importance of the ability to ship agricultural products year-round, the mileage and percentage of county Freight and Goods Transportation System (FGTS) roads that have seasonal weight restrictions and fail to meet all-season criteria has remained steady from 2013 to 2017.

The county FGTS is made-up of 12,637 centerline miles of arterial, collector and local access roads. Of the 39,170 total system centerline miles of county roads, 32.2% are classified as FGTS; nearly 88% of these routes are in rural areas. Eastern Washington has 8,111 miles of FGTS roads and there are another 4,526 miles of county roads in Western Washington. Twenty-five percent of the all-purpose roads in Eastern Washington and 15% of roads in Western Washington are inadequate for winter and spring use. Maintenance and reconstruction costs are growing beyond available resources.

All-season roads in Eastern and Western Washington considered inadequate

2013 through 2017; By percentage



Data source: County Road Administration Board.

Notes: Figures shown are a percentage of 39,170 total county centerline miles in 2017.

Transportation infrastructure is critical to getting agriculture products to market. Agriculture employed more than 96,000 people in Washington in 2015, about 85 percent of whom work in eastern Washington. Washington firms and farmers use the freight transportation system to ship fruit, grain, vegetables, and livestock from the farm to warehouses and processing plants, and across the country and around the world. As agricultural activities increasingly move from a seasonal schedule to being economically important year-round, accessible transportation becomes more vital. For example, 36% of wheat in Washington is moved during the months from December to March. This movement requires the use of well-maintained country roads, especially in the Eastern portion of the state. The state's freight transportation system must function at all jurisdictional levels from international, national, to state and locals.

Lead agency: County Road Administration Board.

For more information, see:

- Washington Employment Security Department: 2015 Agricultural Workforce Report.
- Washington Agriculture Economic and Fiscal Impact Study: http://www.pnwer.org/uploads/2/3/2/9/23295822/cai.wa_farm_bureau_agriculture_&_food_processing_economic_and_fiscal_impact_study_2015_0121_(1).pdf

New measure

ECONOMIC VITALITY

To promote and develop transportation systems that stimulate, support and enhance the movement of people and goods to ensure a prosperous economy.

Objective: Increase transportation and housing affordability for Washingtonians

In Washington state and nationally, affordability in housing and transportation is declining.

Trend analysis

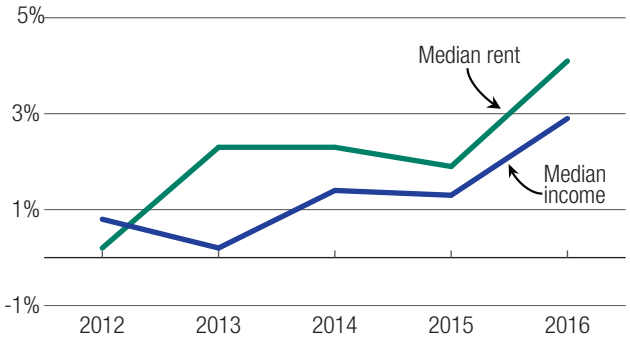
The costs of transportation and housing represent major determinants of affordability in Washington state. Families who pay 30 percent or more of their income for housing are considered cost burdened and may have difficulty affording other necessities. From 2012 to 2016, the median household rent in Washington increased by 11.0% (to $1,056) while the median household income increased by 5.9% overall. This relationship is shown in the graph at right.

A household's second-largest expenditure is typically transportation, which is given an affordability goal of 15 percent of household income. These two measures of affordability are linked because transportation expenditure is a function of the area in which a household is located. As households choose to relocate further from city centers in order to avoid increasing housing costs, they face increasing transportation costs due to commuting and daily activities.

In Washington, households spend 23% of income on transportation services on average and 52% on combined housing and transportation costs. These numbers show the tradeoffs between housing affordability and transportation expenditure.

Median household rent increasing more quickly than median household income in Washington state

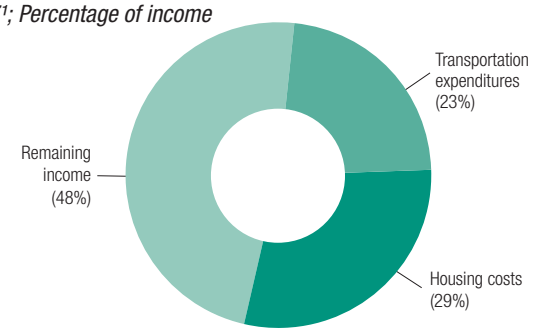
2012 through 2016; Percent change



Data source: American Community Survey.

Washington households spend 52% of income on combined housing and transportation costs

2017[1]; Percentage of income



Data source: Center for Neighborhood Technology.
Notes: Percentages based on average median income. 1 Dataset contains data from sources with various publication dates, updated in 2017.

Lead agency: Department of Health.

For more information, see:

- Center for Neighborhood Technology, Housing and Transportation Affordability Index: https://htaindex.cnt.org/.
- American Community Survey: https://www.census.gov/programs-surveys/acs/.
- Washington State Department of Commerce Affordable Housing Advisory Board: https://www.commerce.wa.gov/about-us/boards-and-commissions/affordable-housing-advisory-board/.