

The Gray Notebook

WSDOT's quarterly performance report on transportation systems, programs, and department management
Quarter ending June 30, 2015 • Published August 2015

Lynn Peterson, Secretary of Transportation



Connecting the Puget Sound



WSDOT puts performance strategies into action
to preserve ferry terminals and vessels

p. 23

Making bridge preservation a high priority

WSDOT working hard to keep structures safe for travelers statewide

p. 15



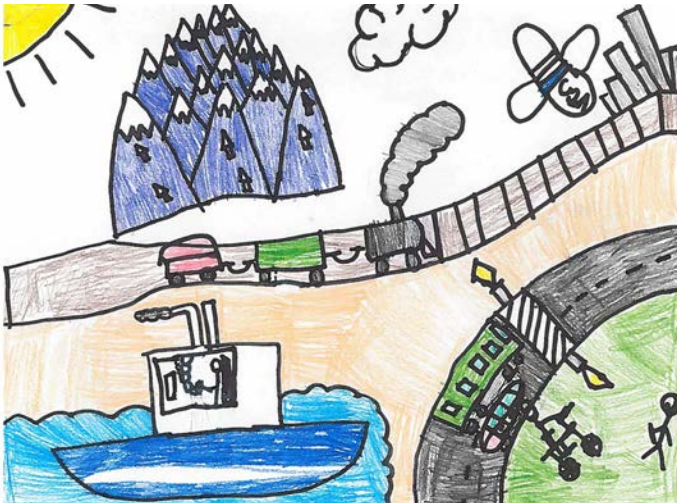
Go fish

WSDOT improves fish passage by removing barriers
from creeks and streams throughout the state

p. 37

As part of Take our Daughters and Sons to Work Day, children and grandchildren (ages 7 through 18) of WSDOT employees were invited to participate in an art contest with the theme of "Telling Washington's Transportation Story." Fifteen-year-old Madisyn Carey took first place in the contest. Her artwork is featured on the cover of this *Gray Notebook*. She is pictured at right with her dad Scott, Environmental Compliance Lead for Construction and Maintenance/Operations at WSDOT headquarters in Olympia. Madisyn, a sophomore at Tenino High School, is a cheerleader who enjoys arts and crafts and has aspirations of becoming a nurse.

Artist Josephine Harwood, a second grader at First Presbyterian Church School in Spokane, envisioned "Transportation Around Me" as she skillfully drew, then colored multiple modes of transportation to take second place in the contest, pictured below.



Seven-year-old Josephine Harwood, daughter of WSDOT Statewide Traffic Operations Engineer Monica Harwood, won second prize with her comprehensive and colorful look at multimodal transportation in Washington state.

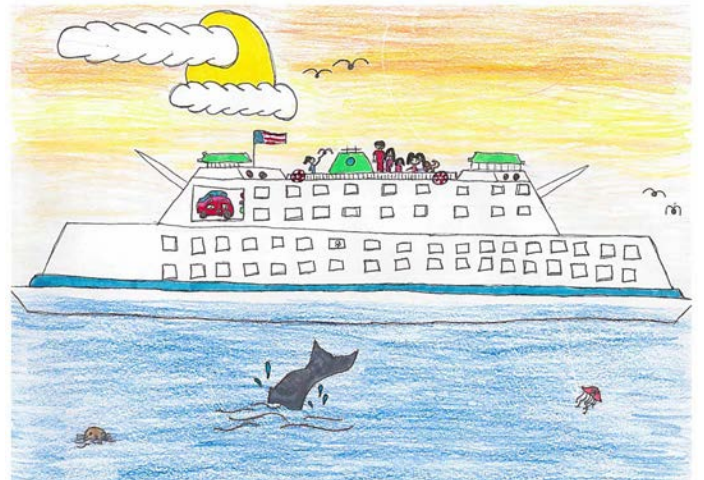
Third place winner, 9-year-old Bella Tomko's art is featured at right. Her detailed drawing of a Washington State Ferry on a beautiful sunset cruise is complete with cars, happy passengers and sea life.

In addition to first, second and third prizes, 17 young artists from around the state were awarded honorable mentions. In addition to the artwork featured here and sprinkled throughout the pages of this *Gray Notebook*, readers can

learn more about the contest on [pp. 61-62](#) and view the art at www.wsdot.wa.gov/accountability/ArtContestWinners.



Madisyn Carey, pictured here with her dad Scott, drew the winning artwork featured on the cover of this *Gray Notebook*.



Third place winner, 9-year-old Bella Tomko (daughter of Ferries Administrative Training Program Specialist Andrew Tomko) told Washington's transportation story by drawing a tribute to WSDOT Ferries.

Honorable mentions

John Mason (age 14)
Josiah A. Mason (12)
Jayme Bacon (12)
Jacob Bacon (11)
Sydney Wells (11)
Hannah Williamson (11)
Kaito Yan (11)
Delaney Kelley (10)

Justin Mason (10)
Anna Schmidt (9)
Abigail Williamson (9)
Victoria S. Clark (8)
Jake Mason (8)
Haylee Suarez (7.5)
Penny DeBlume Berger (7)
Hayden Hahn (7)
Rylan Holmberg (7)

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PERFORMANCE HIGHLIGHTS reported for the quarter ending June 30, 2015

92.1% OF WSDOT BRIDGES BY DECK AREA



9

fish passage barriers corrected by WSDOT in 2014 restored fish access to 24 miles of potential upstream habitat

2,630 hours

of WSDOT staff time saved by using **general environmental permits** to streamline maintenance activities

30 days

average reduction in time it takes WSDOT to get **local program projects** through the FHWA environmental process

28.8%

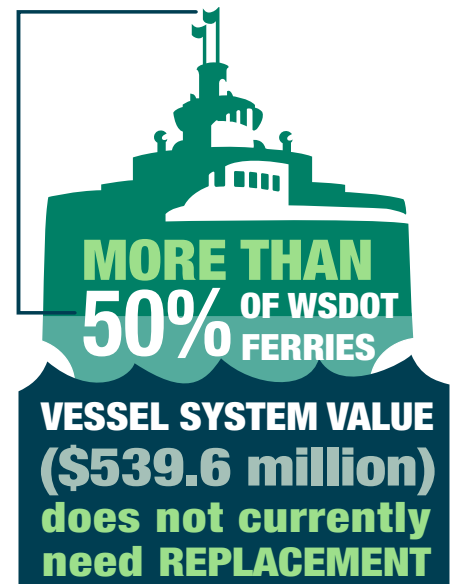
reduction in **traffic fatalities** on all public roadways in Washington since 2005, down from 649 to 462 in 2014

\$30.8 million

awarded to **Disadvantaged Business Enterprise** firms from October 2014 to March 2015

3.3%

increase in the **number of freight trucks** crossing the Canadian border from 2013 to 2014



Index offers quick access to *Gray Notebook* subjects

Gray Notebook 58 readers wanting to find out how bridge conditions have changed since 2013, or how much less freight commercial trucks hauled in 2014 compared to 2010 will have to do some digging. The *Gray Notebook* subject index ensures they won't have to dig very deep.

The online subject index (<http://bit.ly/GNBsubjectindex>) features the past four years of *Gray Notebook* articles ranging from aviation to workforce levels and training, and all points in between. The subject index provides readers opportunities to follow particular topics of interest within each article, allowing those who might be interested in ferries farebox revenues and what on time performance was for sailings between Edmonds and Kingston to find both — quickly and easily.

For more historical WSDOT information and data, readers can visit the online archives (<http://bit.ly/GNBarchives>), which provide instant access to every *Gray Notebook* published from 2001 to present. The editions are broken out by year, edition number and quarter published and include links to the *Gray Notebook Lite*, a quarterly highlights folio of selected performance topics from the *Gray Notebook*.

Mapping out *Gray Notebook* 58

The online version of *Gray Notebook* 58 (<http://bit.ly/GNB58June15>) features links to interactive maps that showcase WSDOT's work around the state and provide readers more details and data to help tell the agency's performance story.

Take a tour of the maps:

- Ferry routes <http://bit.ly/GNBferriesmap>
- Rail project performance <http://bit.ly/GNBraillmap>
- Fish passage <http://www.wsdot.wa.gov/Projects/FishPassage/>

WSDOT participating in state and federal performance reporting plans

WSDOT is an active participant in Results Washington ([p. 7](#)), Gov. Inslee's plan to build a working Washington, and serves as the lead agency for Goal 2: Prosperous Economy. For more information, visit data.results.wa.gov/economy. At the same time, WSDOT is working on future federal

transportation reporting requirements. For more information, see Moving Ahead for Progress in the 21st Century (MAP-21) in [Gray Notebook 49, p. vii](#), and in this issue on [p. 6](#). The agency's strategic plan (Results WSDOT), Results Washington and MAP-21 play a critical role in guiding WSDOT's future performance reporting. Results WSDOT aligns with Results Washington while supporting the 10 agency-wide reforms being implemented by Transportation Secretary Lynn Peterson (see [pp. 10-11](#)).

Gray Notebook credits

Dozens of people collaborate on the *Gray Notebook* each quarter to ensure the best publication possible goes out to readers. The *Gray Notebook* is developed and produced by the small team at WSDOT's Office of Strategic Assessment and Performance Analysis (OSAPA), and articles feature bylines indicating key contributors from other programs. The *Gray Notebook* and *Gray Notebook Lite* are printed in-house by Ronnie Jackson, Trudi Phillips, Talon Randazzo, Larry Shibley, Oma Venable and Deb Webb. OSAPA's Linda Pasta coordinates distribution. WSDOT's graphics team of Jinger Hendricks, Diana Lessard, Fauziya Mohamedali, Erica Mulherin and Steve Riddle provide creative help and assist with graphics, while WSDOT communicators typically take the photographs featured throughout each edition.

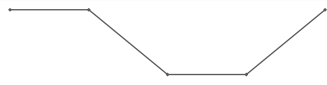
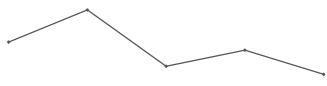
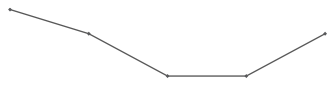

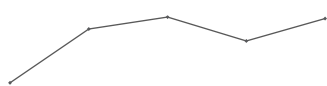
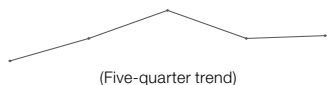


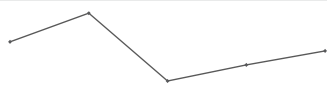

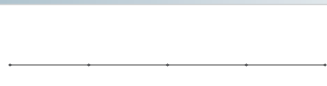
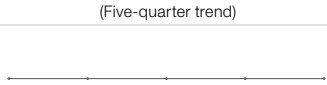
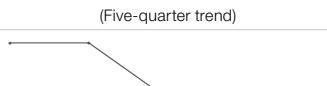
Statewide transportation policy goals

Laws enacted in 2007 established policy goals for transportation agencies in Washington (RCW 47.04.280). The six statewide transportation policy goals are:

- **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, including congestion relief and improved freight mobility;
- **Environment:** To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment;
- **Economic Vitality:** To promote and develop transportation systems that stimulate, support, and enhance the movement of people and goods to ensure a prosperous economy; and
- **Stewardship:** To continuously improve the quality, effectiveness, and efficiency of the transportation system.

Statewide Transportation Policy Goals

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Statewide policy goal/ WSDOT performance measure	Previous period	Current period	Goal	Goal met	Five-year trend (unless noted)	Desired trend
Safety						
Rate of traffic fatalities per 100 million vehicle miles traveled (VMT) statewide (Annual measure: calendar years 2013 & 2014)	0.77	0.80 ¹	Below 1.00	✓		↓
Rate of recordable incidents for every 100 full-time WSDOT workers (Annual measure: calendar years 2013 & 2014)	5.7	5.4	Below 5.0	—		↓
Preservation						
Percentage of state highway pavement in fair or better condition by vehicle miles traveled (Annual measure: calendar years 2012 & 2013)	91.9%	92.6%	Above 90.0%	✓		↑
Percentage of state bridges in fair or better condition by bridge deck area (Annual measure: fiscal years 2014 & 2015)	91.8%	92.1%	Above 90.0%	✓		↑
Mobility (Congestion Relief)						
Highways: Annual (weekday) vehicle hours of delay statewide at maximum throughput speeds ² (Annual measure: calendar years 2012 & 2013)	30.9 million	32.4 million	N/A	N/A		↓
Highways: Average incident clearance times for all Incident Response program responses (Calendar quarterly measure: Q1 2015 & Q2 2015)	12.2 minutes	12.3 minutes	N/A	N/A	 (Five-quarter trend)	↓
Ferries: Percentage of trips departing on time ³ (Fiscal quarterly measure: year to year Q4 FY2014 & Q4 FY2015)	95.8%	94.2%	Above 95%	—		↑
Rail: Amtrak Cascades on time performance (Annual measure: calendar years 2013 & 2014)	77.3%	70.0%	Above 80%	—		↑
Environment						
Number of WSDOT stormwater management facilities constructed (Annual measure: fiscal years 2013 & 2014)	169	189	N/A	N/A		Not applicable
Cumulative number of WSDOT fish passage improvement projects constructed (Annual measure: calendar years 2013 & 2014)	282 ⁴	291	N/A	N/A		↑
Stewardship						
Cumulative number of Nickel and TPA projects completed, and percentage on time ⁵ (Calendar quarterly measure: Q1 2015 & Q2 2015, trendline for percentage on time)	366/ 87%	366/ 87%	More than 90% on time	—	 (Five-quarter trend)	↑
Cumulative number of Nickel and TPA projects completed and percentage on budget ⁵ (Calendar quarterly measure: Q1 2015 & Q2 2015, trendline for percentage on budget)	366/ 91%	366/ 91%	More than 90% on budget	✓	 (Five-quarter trend)	↑
Variance of total project costs compared to budget expectations ⁵ (Calendar quarterly measure: Q1 2015 & Q2 2015)	under budget by 1.9%	under budget by 1.9%	On or under budget	✓	 (Five-quarter trend)	Not applicable

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

Notes: N/A = not available; goal has not been set. Dash (—) = goal was not met in the reporting period. For the Economic Vitality Policy Goal, see [p. 7](#) for "Goal 2: Prosperous Economy" measures. 1 Data considered preliminary until January 2016. 2 Compares actual travel time to travel time associated with "maximum throughput" (defined as 70 to 85 percent of the posted speeds), where the greatest number of vehicles occupy the highway at the same time. 3 WSDOT Ferries' "on time" departures include any trip recorded by automated tracking as leaving the terminal within 10 minutes of scheduled time. 4 Data from 2013 does not match previous editions as numbers were updated. 5 Budget and schedule expectations are defined in the last approved State Transportation Budget. See [p. 47](#) for more information.

MAP-21 federal performance reporting requirements

MAP-21 goals by program area	Federal threshold/benchmark ¹	MAP-21 target ²	WSDOT penalty ³ Yes/No	Date draft rule was released	Existing WSDOT performance measures for this program area
Highway Safety Improvement Program					Federal Register Vol. 79, No. 60
Rate of traffic fatalities per 100 million vehicle miles traveled (VMT) on all public roads	No	TBD ⁴	Yes	3/11/14	Traffic fatality rates using the NHTSA ⁵ methodology, see Gray Notebook 58, p. 12
Rate of serious traffic injuries per 100 VMT on all public roads	No	TBD	Yes	3/11/14	Serious injury rates using the NHTSA ⁵ methodology, see Gray Notebook 58, p. 12
Number of traffic fatalities on all public roads	No	TBD	Yes	3/11/14	Traffic fatalities using the NHTSA ⁵ methodology, see Gray Notebook 58, p. 12
Number of serious traffic injuries on all public roads	No	TBD	Yes	3/11/14	Serious injuries using the NHTSA ⁵ methodology, see Gray Notebook 58, p. 12
Rate of per capita traffic fatalities for drivers and pedestrians 65 years of age or older	No	TBD	No	Guidance provided 10/1/2012	Traffic fatalities for pedestrians 65 years of age or older. See Gray Notebook 48, p. 8 for MAP-21 implications. The rate of traffic fatalities for older pedestrians is part of Washington's Target Zero ⁶ campaign.
Rate of fatalities on high-risk rural roads	No	TBD	Yes	Guidance provided 10/1/2012	Traffic fatality rates on high-risk rural roads as part of Washington state's Target Zero campaign
Highway-railway crossing fatalities	No	TBD	No	Guidance provided 2/22/2013	Fatalities at highway-railway crossings
National Highway Performance Program					Federal Register Vol. 80, No. 2
National Highway System and interstate pavement in good and poor conditions	% of interstate pavement in poor condition not to exceed 5%	TBD	Yes	1/5/15	See Gray Notebook 56, p. 7 for an update on MAP-21 implications for pavement. On February 20, 2015, the Asset Management Plan draft rule was released which is linked to pavement and bridge performance measures.
National Highway System bridges classified in good and poor conditions	% of deck area on SD ⁷ bridges not to exceed 10%	TBD	Yes	1/5/15	Several measures of bridge condition including good/fair/poor condition rating and structural deficiency (SD) rating, see Gray Notebook 58, p. 15
Combined Draft Rule - anticipated in near future (measures to be determined through federal rule making)					
- System Performance (Congestion)					
Measures TBD	No	TBD	No		The 2014 Corridor Capacity Report details highway travel times and reliability trends in Washington state
- National Freight Movement Program					
Measures TBD	No	TBD	No		WSDOT's freight mobility plan will address trucking, rail and marine freight. See Gray Notebook 58, p. 44 for review of MAP-21 freight implications.
- Congestion Mitigation and Air Quality Program					
Measures TBD	No	TBD	No		The 2014 Corridor Capacity Report details highway travel times and congestion trends in Washington state
Measures for on-road mobile source emissions TBD	No	TBD	No		No existing performance measure

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

Notes: 1 Minimum threshold or benchmark to be established by the U.S. Department of Transportation, Secretary of Transportation. 2 Performance targets to be set for each performance measure by WSDOT in coordination with Metropolitan Planning Organizations (MPOs) statewide. 3 Penalties apply for some measures if WSDOT or the MPO does not attain the target within a given time frame. Penalties apply only to WSDOT and include minimum allocations of federal funding toward programs to progress toward the desired target. 4 TBD = To be determined. 5 NHTSA = National Highway Traffic Safety Administration. 6 State strategic highway safety plan. 7 SD = structurally deficient.

Results Washington, the state's performance management system, outlines Gov. Jay Inslee's priorities. This strategic framework sets the state's vision and mission, as well as the foundational expectations for state agencies to achieve goals collaboratively. Results Washington has five focus areas: World Class Education; Prosperous Economy; Sustainable Energy and a Clean Environment; Healthy and Safe Communities; and Efficient, Effective and Accountable Government. For more information, visit <http://www.results.wa.gov/>.

Results Washington measures by goal area ¹	Previous period	Current period	On target ²	Current trend	Desired trend
Annual measures for which WSDOT is the lead agency					
Goal 2: Prosperous Economy					
Based on current funding levels, maintain the percent of Washington infrastructure assets in satisfactory condition at 2013 baseline levels through 2020 <small>(2013 baseline data)</small>	N/A	87%	N/A	N/A	↑
Based on current funding levels, control the percent of state and local bridges ³ in poor condition from increasing over 10% by 2017 <small>(Fiscal years 2014 & 2015)</small>	9.3%	8.8%	Yes	↓	↓
Based on current funding levels, control the percent of state and local pavements ³ in poor condition from increasing over 10% by 2017 <small>(2012 & 2013)</small>	6.0%	6.0%	Yes	↔	↓
Based on current funding levels, control the percent of ferry terminal systems that are past due for replacement from increasing over 6% by 2020 <small>(Fiscal years 2014 & 2015)</small>	6.0%	3.7%	Yes	↓	↓
Based on current funding levels, control the percent of ferry vessel systems that are past due for replacement from increasing over 10% by 2020 <small>(Fiscal years 2014 & 2015)</small>	6.8%	8.3%	No	↑	↓
Maintain percentage of transit fleet that exceeds the Federal Transit Administration's minimum useful life at 25% or below through 2020 <small>(2013 & 2014)</small>	25.4%	27.8%	No	↑	↓
Increase the percentage of Washingtonians using alternative transportation commute methods to 33% by 2015 <small>(2012 & 2013)</small>	27.7%	27.3%	No	↓	↑
Ensure travel and freight reliability (impacted by economic growth) on strategic corridors does not deteriorate beyond 5% from 2012 levels through 2017 <small>(2012 & 2013)</small>	0.0% ⁴	1.7%	Yes	↑	↓
Operate strategic corridors at 90% efficiency or higher through 2017 <small>(2012 & 2013)</small>	96.1%	95.2%	Yes	↓	↑
Reduce the number of pedestrian and bicyclist fatalities on public roadways from 84 in 2012 to zero in 2030 <small>(2013 & 2014)</small>	61	84 ⁶	No	↑	↓
Annual measures for which WSDOT is not the lead agency, but has an interest					
Goal 2: Prosperous Economy					
Increase state agency and educational institution utilization of state-certified small businesses in public works and other contracting and procurement by 2017 to: Minority-owned businesses, 10%; Women-owned businesses, 6%; Veteran-owned businesses, 5%	Measure is under development. Expected to report in September 2015				
Goal 3: Sustainable Energy and a Clean Environment					
Reduce transportation related greenhouse gas emissions from 44.9 million metric tons/year (projected 2020) to 37.5 million metric tons/year (1990) by 2020 <small>(2011 & 2012)</small>	41.9	42.4	No	↑	↓
Reduce the average emissions of greenhouse gases for each vehicle mile traveled in Washington by 25% from 1.15 pounds in 2010 to 0.85 pounds by 2020 <small>(2011 & 2012)</small>	1.13	1.11 ⁷	No ⁷	↓	↓
Increase the average miles traveled per gallon of fuel for Washington's overall passenger and light duty truck fleet (private and public) from 19.2 mpg in 2010 to 23 mpg in 2020 <small>(2011 & 2012)</small>	19.3	19.5	No	↑	↑
Increase the number of plug-in electric vehicles registered in Washington from approximately 8,000 in 2013 to 50,000 by 2020 <small>(2013 & 2014)</small>	7,896	12,351	No	↑	↑
Increase miles of stream habitat opened from 350 to 450 (per year) by 2016 <small>(2013 & 2014)</small>	572	529	Yes	↓	↑
Increase number of fish passage barriers corrected per year from 375 to 500 by 2016 <small>(2013 & 2014)</small>	431	423	No	↓	↑
Goal 4: Healthy and Safe Communities					
Decrease number of traffic-related fatalities on all roads from 454 in 2011 to zero in 2030 <small>(2013 & 2014)</small>	436	462 ⁸	Yes	↑	↓

Data source: WSDOT Office of Strategic Assessment and Performance Analysis, Results Washington's Open Performance Program.

Notes: 1 In addition to the measures listed in the table, WSDOT contributes performance information that will be combined and reported with data from all state agencies in Goal 5: Efficient, Effective and Accountable Government. 2 "On target" is defined as currently meeting the goal or making enough progress to meet the goal by the target date. Some measures may be trending in the desired direction but are not on track to meet the target. 3 This measure only includes assets on the National Highway System. 4 The previous period was 2012 and is the baseline for this measure. 6 Data is preliminary and has been updated from what was reported in *Gray Notebook* 56. 7 Data has been corrected from *Gray Notebook* 57. 8 Data is preliminary until January 2016. This number has been updated from 43 in *Gray Notebook* 57 to 462.

In January 2015, WSDOT released its initial progress report for Results WSDOT, the agency's strategic plan.

The plan directs WSDOT's work with partners and communities; emphasizes multimodal integration, strategic investments and technology; and focuses on how the agency makes investments and delivers projects with limited resources. To date, all strategies are on track to achieve their desired results. For a copy of Results WSDOT or to see the Strategic Plan Progress Report Executive Summary, go to <http://bit.ly/ResultsWSDOTStrategicPlan>.



Implementation plans define the actions and deliverables needed to achieve WSDOT's goals from 2014 through 2017. Results WSDOT is based on the six goals listed in the table below, which are supported by strategies and tasks. Select *Gray Notebook* (GNB) articles, indicated by a box with a goal logo, show how the plan's goals are being implemented.

WSDOT continues to improve performance and accountability by implementing its 10 reforms. The reforms will put into action common-sense changes that foster efficient, effective and accountable government. See [pp. 10-11](#) for information on WSDOT's reforms.

Results WSDOT sets agency direction 2014 through 2017 Strategic Plan

Recent *Gray Notebook* articles linked to goals



Goal 1: STRATEGIC INVESTMENTS

Effectively manage system assets and multimodal investments on corridors to enhance economic vitality

- Bridges: [GNB 58, pp. 15-22](#)
- Capital facilities: [GNB 55, pp. 2-5](#)
- Ferries preservation: [GNB 58, pp. 23-28](#)
- Highway maintenance: [GNB 56, pp. 14-15](#)
- Pavement conditions: [GNB 56, pp. 5-13](#)



Goal 2: MODAL INTEGRATION

Optimize existing system capacity through better interconnectivity of all transportation modes

- Aviation: [GNB 55, pp. 6-8](#)
- Ferries: [GNB 58, pp. 29-30](#)
- Highway system safety: [GNB 58, pp. 12-14](#)
- Rail: Amtrak Cascades: [GNB 58, pp. 33-34](#)
- Trip reduction: [GNB 51, pp. 16-18](#)
- Trucks, goods and freight: [GNB 58, pp. 41-44](#)



Goal 3: ENVIRONMENTAL STEWARDSHIP

Promote sustainable practices to reduce greenhouse gas emissions and protect natural habitat and water quality

- Air quality: [GNB 53, pp. 15-16](#)
- Endangered Species Act documentation: [GNB 55, pp. 20-21](#)
- Environmental compliance: [GNB 56, pp. 24-25](#)
- Fish passage barriers: [GNB 58, pp. 37-38](#)
- General permitting: [GNB 58, p. 40](#)
- Water quality: [GNB 55, pp. 17-19](#)
- Wetlands preservation: [GNB 57, pp. 21-23](#)



Goal 4: ORGANIZATIONAL STRENGTH

Support a culture of multi-disciplinary teams, innovation and people development through training, continuous improvement and Lean efforts

- Lean: [GNB 58, p. 45](#)
- Worker safety and health: [GNB 57, p. 8](#)
- Workforce levels and training: [GNB 57, p. 30](#)



Goal 5: COMMUNITY ENGAGEMENT

Strengthen partnerships to increase credibility, drive priorities and inform decision making

- Bicyclist and pedestrian safety: [GNB 56, pp. 1-4](#)
- Local programs: [GNB 58, p. 39](#)



Goal 6: SMART TECHNOLOGY

Improve information system efficiency to users and enhance service delivery by expanding the use of technology

- Commercial Vehicle Information Systems and Networks: [GNB 57, p. 25](#)
- Tolling: [GNB 56, pp. 30-31](#)
- Travel information: [GNB 57, p. 15](#)

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

New Revenue Package: Connecting Washington Special Report

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Notable results

- *The 16-year funding package phases in an 11.9 cent fuel tax over two years to help fund \$16 billion in transportation investments*
- *The bulk of the funding package, \$9.7 billion, will be used to support state and local road projects throughout Washington*

WSDOT implementing \$16 billion funding package

In June 2015, the Washington State Legislature and Gov. Jay Inslee approved the \$16 billion Connecting Washington transportation package to improve public safety, reduce congestion and maintain infrastructure. The package will be funded in part by an 11.9 cent fuel tax that will be phased in over the next two years. A 7.0 cent increase occurred on August 1, 2015, and will be followed by a 4.9 cent fuel tax increase on July 1, 2016. There are increases to vehicle weight fees in the new revenue package which support both multimodal and transportation projects.

Connecting Washington funds new projects while completing several projects that WSDOT started under the last two transportation revenue packages. WSDOT has completed 366 of 421 projects funded through the 2003 Nickel and 2005 Transportation Partnership Account (TPA) programs. To date, 87 percent of these projects have been completed on time and 91 percent are on budget.

Connecting Washington supports multimodal efforts throughout state

The 16-year Connecting Washington transportation package also funds \$1.3 billion in non-highway projects. WSDOT will work with local partners to build bicycle paths, pedestrian walkways, and support rail and transit through grants and programs designed to offer multimodal options to commuters.

The funding package provides \$602 million for ferries projects ranging from construction of a fourth Olympic Class vessel to terminal construction and preservation.

WSDOT's six-year plan details upcoming transportation projects

WSDOT has updated its current six-year transportation plan based on the legislative direction included in the 2015-2017 transportation budget and accompanying legislative project list. WSDOT will use the existing plan as the base

Select Connecting Washington project highlights

Project	Cost
SR 167/SR 509 Gateway	\$1.875 billion
SR 520 "Rest of the West"	\$1.6 billion
I-405 Lynnwood to Tukwila Corridor improvements	\$1.3 billion
US 395 North Spokane Corridor	\$879 million
I-5/JBLM Corridor Improvements	\$494.4 million
I-90 Snoqualmie Pass	\$426.4 million
Fish Passage Barrier replacement	\$300 million
SR 9 Snohomish County Corridor improvements	\$211.6 million
I-82 improvements in Yakima area and Yakima to Oregon	\$127.2 million
I-5 Mill Plain Blvd.	\$98.7 million
SR 28/285 Wenatchee area improvements	\$81.5 million
Whatcom and Skagit County improvements	\$76.1 million
I-90 Western Washington improvements	\$75.5 million
I-90 Spokane Corridor improvements	\$53 million

Data source: Legislative Evaluation and Accountability Program.

Note: JBLM = Joint Base Lewis-McChord.

and add projected funds in the Connecting Washington and other transportation accounts where the Legislature did not identify specific project investments. WSDOT prioritizes these projects based on the following criteria:

- Low-cost projects that deliver high return on capital investment and have short delivery schedules;
- Moderate to higher-cost projects that provide additional benefits for both highways and local roads; and
- Highest-cost projects that deliver long-term solutions and corridor-wide benefits.

Funding contributes toward preservation needs statewide

Connecting Washington also addresses \$1.4 billion in state highway maintenance, operations and preservation needs, supporting WSDOT's ongoing work to preserve bridges and roads throughout the state. The new revenue investment reduces the rate at which the backlog of pavement in poor condition will grow, improves bridges and contributes funds to ongoing maintenance and traffic operations.

Contributors include Kris Rietmann and Joe Irwin

In 2013, WSDOT began a transformation, initiating 10 reforms to implement common-sense changes that foster efficient, effective and accountable government. These reforms support both Results Washington, Gov. Jay Inslee's mission for the state (see [p. 7](#)), as well as Results WSDOT, the agency's strategic plan (see [p. 8](#)). Some of the reforms can only be implemented with action from the Legislature. Expectations and performance measures for the reforms are incorporated into Results WSDOT and reported in the *Gray Notebook*.

WSDOT adopts 10 reforms for efficient, effective, accountable government

Proposed to the Washington State Legislature in November 2013

Reform

How WSDOT is achieving it

Progress

Develop a team committed to expedited project delivery

Reform I: Ensure efficiency and accuracy through strong management direction

Developing a strategic plan that will serve as a roadmap for WSDOT. It will identify specific outcome measures and leading indicators to support each of the agency's goals.

Secretary Lynn Peterson released Result's WSDOT's "Moving Washington Forward" initial progress report in January 2015. WSDOT's Strategic Plan places an emphasis on greater community involvement and partnerships, agency efficiency and innovation, and a multimodal approach to transportation system capacity. The report highlights the plan and provides a summary of progress on the plan's 23 strategies and the tasks identified to implement the plan. All strategies are on track to achieve their desired results.

See Results WSDOT: Setting WSDOT's Direction on [p. 8](#)

Reform II: Reward innovation in cost-effective design and construction management

Evaluating options for rewarding innovation in design and construction incentives; developing a contractual approach to allow alternate technical concepts (ATCs) during bidding; and evaluating concepts to allow contractor-led value engineering and constructability reviews.

WSDOT has developed draft specifications regarding ATC use with design-bid-build jobs. Implementation of an ATC process to be applied against select design-bid-build projects will require a change in current law. WSDOT is working with its partners to develop a concept to allow the agency to develop and implement a process that allows for the use of ATCs. It could be used in the future for a potential agency legislation request.

Reform III: Develop workforce

Making a development plan and exploring cost-effective ways to address: Workforce Development – staff training in best industry practices; Leadership Development and Succession Planning – preparing high-potential employees for future executive-level positions; retraining talent within the agency; and, Internship Programs – actively recruit interns for entry-level engineering positions.

WSDOT's Develop Workforce reform team has identified important components of organizational and individual development. They include management training options from entry- to executive-level. As a result, WSDOT sent four individuals to the 2014 American Association of State Highway Transportation Officials (AASHTO) National Transportation Institute at Indiana University. The extensive two-week, graduate-level training provided fundamentals as well as more sophisticated leadership concepts and practices. WSDOT also sent 42 managers to the 2015 AASHTO National Transportation Management Conference. The conference introduced participants to the tools, techniques and best practices needed for effectively leading people and projects. WSDOT has also trained nearly 300 entry-level management employees who are new to their supervisory roles.

Reform IV: Increase opportunities for disadvantaged business enterprise (DBE)

Taking actions to maximize disadvantaged business enterprise participation in WSDOT projects, identifying areas and processes where reform is necessary.

A DBE Executive Committee was formed in December 2013 to complete 38 tasks to increase and broaden DBE participation on WSDOT and local agency contracts. The majority of these tasks have been completed. WSDOT will continue to monitor and improve the DBE Program. WSDOT is committed to continuing to partner with the community to maximize opportunities for DBE firms.

See FHWA Disadvantaged Business Enterprise Semi-Annual Report on [p. 46](#)

Implement programs that save money and mitigate risk

Reform V: Implement Practical Design

Implementing a new approach to developing projects that targets transportation solutions for the lowest cost; assesses all components of project design at its earliest stages; and engages local stakeholders in defining scope to ensure their input is given at the right stage of project design.

WSDOT submitted *Practical Planning and Design Leads to Low Cost Transportation Solutions*, a report to Gov. Inslee and the Legislature, in June 2015. New design guidance was developed to support these practical solutions principles: design criteria will be chosen in a manner that recognizes different transportation and land use contexts; designs will be developed to achieve the needed performance for the least cost; and projects will use the practical design approach to right-size design solutions. The new guidance will be implemented through a significant revision of the WSDOT Design Manual to be published in summer 2015, and through development and delivery of new Practical Solutions training in the 2015-2017 biennium.

Continued on [p. 11](#)

WSDOT adopts 10 Reforms for efficient, effective, accountable government

Reform

How WSDOT is achieving it

Progress

Implement programs that save money and mitigate risk (continued)

Reform VI: Strengthen quality assurance protocols for increased accountability

Creating an independent audit verification program; streamlining quality assurance guidance utilizing Lean principles; and creating a position for a quality assurance manager to assure WSDOT's quality assurance program is being effectively implemented.

The Secretary of Transportation hired the Director of Quality Assurance and Transportation System Safety in March 2015. This position has oversight responsibility across WSDOT and all associated quality assurance, enterprise risk management and transportation system safety functions. Current quality assurance focus includes evaluation of WSDOT quality assurance processes used in project development and delivery. Reviews of functional processes and instructional manuals are occurring to identify potential quality gaps in procedures and policies. The division is also assessing enterprise risks to WSDOT strategic objectives.

Reform VII: Expand and strengthen construction contracting methods and protocols

Implementing a thorough risk analysis protocol for choosing the appropriate contracting method for WSDOT projects; obtain authority for WSDOT to utilize additional contracting methods — in particular, general contractor/construction management (GCCM) method.

Proposed GCCM implementation requires a change in current law. Working with industry partners from the Association of General Contractors (and the American Council of Engineering Companies), WSDOT is developing selection criteria, a contract template and draft legislation required to successfully implement GCCM on highway projects. The agency is working with these same partners to develop a risk-based protocol for selecting the appropriate contracting method overall (i.e. design-bid-build, design-build or GCCM). WSDOT, in conjunction with its industry partners, plans to request GCCM-enabling legislation in 2016. WSDOT is also pursuing GCCM, utilizing authorization under the Capital Projects Advisory Review Board, for the Colman Ferry Dock upgrade.

Reform VIII: Implement vessel construction and maintenance improvements suggested by State Auditor's Office (SAO) and develop cost-effective protocols to staff every scheduled ferry sailing

Strengthening five leading practices identified in a SAO audit and actively preparing to recruit for 81 positions to staff up to the appropriate level.

Of 15 "leading practices in ferry construction" listed in a SAO report, WSDOT Ferries (Ferries) was found to have used eight practices effectively. Five practices were identified as in use, but the report found that use could be strengthened (these are items that Ferries strengthened during construction of the Olympic Class vessels). Two of the leading practices were not being used, according to the report. They include, "Design is complete and reviewed before construction begins" and "Use an independent owner's representative." Construction of the Olympic Class vessels was started after design was completed and reviewed. Regarding the recommendation on using an owner's representative, a follow-up study of this construction model concluded that it would raise the cost of vessel construction by \$900,000 to \$1.6 million with no benefit to the state. By way of context, the two Olympic Class vessels have approximately 1 percent in change orders. Ferries' efforts to address staffing challenges include hiring eight Able Bodied Seamen (A/B) and accelerating the annual summer hiring process for Ordinary Seamen resulting in 59 entry-level deckhands. To increase the number of A/Bs, Ferries has continued a paid-training program for current employees, resulting in 32 qualified A/Bs. To increase the fully-qualified pool of Masters, Mates and Pilots (MMP) personnel, Ferries recruited four Port Captain Interns, recruited six Inland Boatman's Union employees who completed MMP Training Program and signed a Memorandum of Agreement to utilize partially-qualified mates to fill 2nd Mate positions. Ferries also continued its 2nd Mate orientation and training program. Ferries initiated a paid-training program to enable personnel to obtain a Mates and 1st Class Pilot's License. These efforts are expected to mitigate Ferries' critical deck officer shortage. These training initiatives will also increase the ranks of marine employees qualified to fill positions needed for reliable service.

Establish cost-effective and efficiency measures to improve performance

Reform IX: Lean, more cost-effective operations

Removing duplicative tasks or unnecessary steps; training appropriate management staff in Lean management with a goal of identifying areas where cost savings can be gained and work can be done more efficiently.

WSDOT has initiated 64 Lean projects since 2012 to improve the effectiveness of processes and better meet customers' needs. Thirty-five projects are being tracked and WSDOT has completed 29 projects that are now in "maintenance" phase. WSDOT established a centralized Lean Office in September 2014 that actively champions the agency's Lean efforts and culture of continuous improvement. WSDOT's Lean Office trains and equips employees and leaders in their roles and needed skills. It also promotes consistent application of Lean across WSDOT by providing standard processes, materials and tools. The agency currently has 56 WSDOT Lean practitioners, with at least one Lean representative designated for every WSDOT region and division. More than 870 employees have received introductory Lean training since January 2015.

Reform X: Streamline tolling operations, costs and efficiencies

Reducing overhead and eliminating duplicative tasks to make tolling operations more efficient and cost effective; implementing Lean practices, reviewing contracting methods, improving toll collection efficiency and evaluating toll-facility planning.

The Toll Division negotiated with one vendor for efficiencies and cost reductions. Four Lean initiatives are actively underway, and 20 Lean initiatives have been completed. A joint Lean event between Toll Division and the Department of Licensing (DOL) resulted in cost savings equivalent to one full-time equivalent (FTE) at DOL in the first quarter of 2015.

Data sources: WSDOT Reforms and their Status, July 2015; Office of Strategic Assessment and Performance Analysis; Construction Office; Human Resources and Safety Office; Office of Equal Opportunity; Engineering Policy and Innovations Office; Torts, Claims and Records Management; Ferries Division; Lean Process Improvement Office; Toll Division Lean Program.

Notable results

- Washington continues to see long-term reductions in traffic fatalities, down from 649 in 2005 to 462 in 2014
- Driver impairment was a contributing factor in 49% of all traffic fatalities from 2010 to 2014
- Washington's traffic fatality rate is below the federal threshold, with 0.80 fatalities per 100 million vehicle miles traveled in 2014
- Serious injuries on Washington public roads decreased 30% between 2005 and 2014

Fatalities, serious injuries see long-term reductions

There were 462 traffic fatalities on all Washington state public roads in 2014. Although this is up 6 percent from the 436 recorded in 2013, the number of fatalities has trended downward from the 649 fatalities recorded in 2005. Serious injuries on all public roads also increased slightly from 1,914 in 2013 to 2,010 in 2014 (5 percent), but have decreased overall since the 2,867 recorded in 2005. Traffic fatalities and serious injuries on state highways only also show long-term reductions (see graphs at right).

Although the number of traffic fatalities and serious injuries has trended downward since 2005, the rate of decrease has leveled out across most highway safety performance areas defined in the state's strategic highway safety plan (see [p. 13](#) for details). WSDOT has developed and begun implementing strategies to further reduce traffic fatalities and serious injuries (see [p. 14](#) for more information).

Traffic fatality rates remain below national levels, federal benchmark

Traffic fatality rates are commonly expressed as the number of fatalities per 100 million vehicle miles traveled (VMT). Although WSDOT tracks crash rates for federal reporting requirements ([p. 6](#)), it manages highway safety performance using crash frequency (the number of crashes per year) as it is a more quantifiable approach.

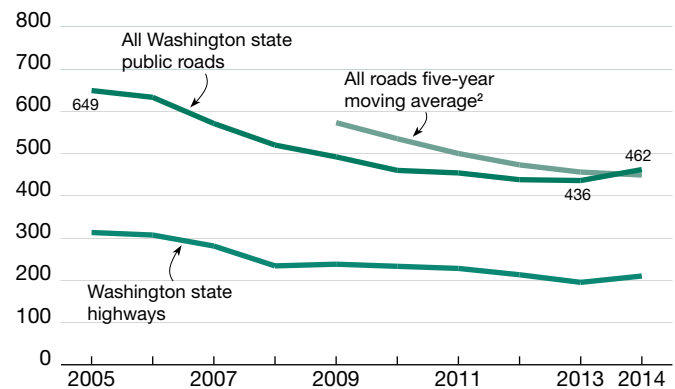
In 2014, the rate of fatalities was 0.66 fatalities per 100 million VMT for Washington state highways and 0.80 fatalities per 100 million VMT for Washington state public roads. Both rates increased slightly (5 and 4 percent, respectively) along with a 2 percent increase in total vehicle miles traveled.

The fatality rate in Washington state has experienced long-term reductions since 1980. From 2010 to 2014,

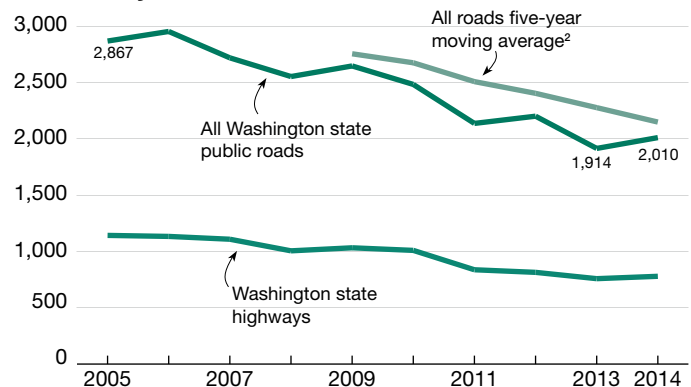
Washington traffic fatalities, serious injuries continue to trend downward

2005 through 2014¹; Number of fatalities or serious injuries

Traffic fatalities



Serious injuries³



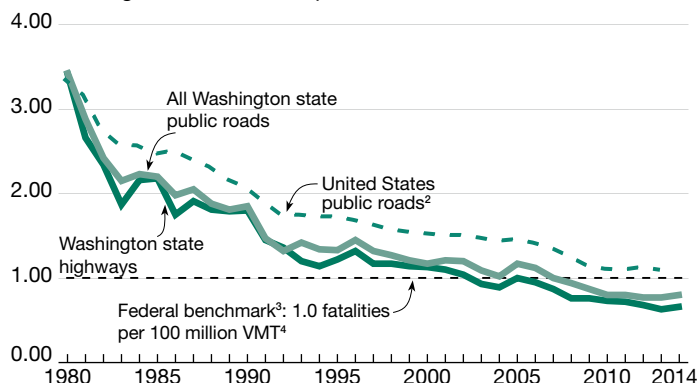
Data sources: Fatality Analysis Reporting System (FARS), WSDOT Transportation Data and Geographic Information Systems Office.

Notes: 1 FARS data for 2014 is preliminary and may change until January 2016. 2 A five-year moving average reflects five years of change at a time. Because it is more resistant to short-term fluctuations in data, the five-year moving average is effective at highlighting long-term trends. The graphs above show the average of 2005-2009 (the first five years) through 2010-2014 (the most recent five years). 3 Serious injuries are defined as any injury other than a fatal injury that prevents a person from walking, driving or continuing normal activities at the time of the crash.

WSDOT tracking changes in Target Zero crash factors

Traffic fatality rates for Washington state lower than national average and federal benchmark

1980 through 2014¹; fatalities per 100 million vehicle miles traveled



Data sources: U.S. Fatality Analysis Reporting System (FARS) Encyclopedia; Washington Traffic Safety Commission - FARS; WSDOT Transportation Data and Geographic Information Systems Office.

Notes: 1 FARS data for 2014 is preliminary and may change until January 2016. 2 2014 data not yet available. 3 Federal benchmark established in 2008. 4 Vehicle miles traveled.

the fatality rate for state highways dropped 10 percent, from 0.73 to 0.66 fatalities per 100 million VMT.

Washington state's fatality rate continues to be below both the 2013 national average of 1.10 fatalities per 100 million VMT and the 2008 federal benchmark of 1.0, a goal Washington met one year early in 2007.

The 2014 national fatality rate is not yet available.

Washington targets zero traffic deaths, serious injuries by 2030

Washington's Strategic Highway Safety Plan, "Target Zero," represents the state's vision for zero traffic fatalities and serious injuries on all public roads by 2030. The strategic plan establishes three levels of highway safety priorities based on contributing factors in fatal and serious injury crashes. Priority Level One (see table at right) includes the factors associated with the largest number of fatalities and serious injuries in the state. Tracking fatalities and serious injuries contributes to Gov. Jay Inslee's statewide goals for reducing the number of traffic related fatalities as part of his Results Washington efforts in Goal 4: Healthy and Safe Communities (see [p. 7](#)). For more information on Target Zero, visit <http://www.TargetZero.com>.

Priority Level One factors accounted for 2,252 traffic fatalities and 10,742 serious injuries from 2010 to 2014. Of the 2,252 Priority Level One fatalities, 49 percent involved an alcohol and/or drug impaired driver. Run-off-the-road and speeding were each contributing factors in approximately 40 percent of the

WSDOT tracks traffic fatalities, serious injuries to look at highway system safety

The risk of traffic fatality and serious injury to roadway users is related to exposure and contributing factors to crashes. Exposure is represented by traffic volume and can vary by mode; for instance, the number of vehicles on a highway or pedestrians crossing a road. Both increased miles traveled and increasing traffic volumes result in more exposure. Contributing factors include roadway, vehicle and environmental factors, as well as driving, biking and walking behaviors.

The number of crashes and their contributing factors tend to vary randomly, with some years seeing an increase from the trend line and others a decrease. Roadway modifications are not always able to address these random variations. For instance, it is difficult to predict where a distracted driver is going to leave the roadway. WSDOT closely monitors crash trends and their specific contributing factors to determine if trends are developing or if they are part of year-to-year variations. When crashes are determined to be related to a contributing factor, WSDOT selects potential countermeasures through a priority process (see [p. 14](#) for more information on WSDOT's safety approach).

Washington State Target Zero — Priority Level One 2010 to 2014; Number of fatality and serious injury crashes

Year	2010	2011	2012	2013	2014 ¹
Alcohol and/or drug impaired driver-involved					
Fatalities	240	199	206	225	228
Serious injuries ²	470	479	501	412	375
Run-off-the-road³					
Fatalities	200	188	158	189	170
Serious injuries	675	627	612	577	558
Speeding-involved					
Fatalities	176	169	162	184	160
Serious injuries	688	586	579	524	520
Young driver; age 16 to 25					
Fatalities	164	146	126	150	147
Serious injuries	941	803	738	661	661
Distracted driver-involved					
Fatalities	134	131	121	120	126
Serious injuries	293	251	212	495 ⁴	580 ⁴
Intersection-related³					
Fatalities	105	89	75	92	108
Serious injuries	867	757	751	669	704

Data sources: Washington State Traffic Safety Commission - Fatality Analysis Reporting System (FARS); WSDOT Transportation Data and Geographic Information Systems Office.

Notes: A seventh factor, traffic data systems, is not included in the table but is considered a Level One priority because better data is needed to analyze crashes. Data for factors should not be added together as a crash may involve more than one contributing factor. 1 2014 fatality data is preliminary. 2 Not consistently confirmed by toxicology. 3 WSDOT crash data is source for both injury categories. 4 Distracted driving coding was modified in 2013.

WSDOT adopting Sustainable Safety for highways

fatalities, and intersection-related factors contributed to approximately 21 percent of the fatalities.

Fatalities, serious injuries decreasing for Priority Level One factors overall

For Priority Level One factors, traffic fatalities decreased on average 7 percent for each factor from 2010 to 2014. From 2013 to 2014, impaired driver-involved, distracted driver-involved and intersection-related fatalities increased slightly while the remaining factors decreased. For impaired driver-involved only, drinking- and alcohol-related fatalities decreased, while drug- and marijuana-positive fatalities increased 19 and 58 percent, respectively.

Serious injuries decreased 2 percent on average for each Priority Level One factor from 2010 to 2014. An analysis of the contributing factors shows long-term decreases except for distracted driver-involved, which increased 98 percent between 2010 and 2014. This increase may be partially due to a modification to distracted driver-involved reporting and coding in 2013.

WSDOT addresses highway safety with new strategies

WSDOT has revised its safety program by instituting the Sustainable Highway Safety Program (Sustainable Safety), a more integrated and analytic multimodal approach. Sustainable Safety continues to evolve from a reactive approach, where safety enhancements are applied to areas with a history of crashes, to a more proactive risk-based approach in which WSDOT predicts and analyzes crash locations by evaluating the factors contributing to crashes.

Sustainable Safety is an engineering approach to develop highway safety projects focused on reducing crashes and the efficient use of resources. In line with its commitment to practical design, which focuses on projects providing the most benefit to the larger transportation system, WSDOT is implementing Sustainable Safety by:

- Managing the Highway Safety Program as a single collaborative unit;
- Identifying crash risks using the “5th E” (Evaluation for risk) approach;
- Developing solutions based on a location’s unique characteristics, instead of using predetermined criteria;
- Selecting safety measures based on predicted outcomes and cost-benefit ratio; and,

WSDOT’s “5th E” of safety

Highway system safety programs usually look at the “4 E’s” (Engineering, Enforcement, Education and Emergency medical services) in addressing safety performance. WSDOT has defined a “5th E” as the Evaluation, analysis and diagnosis of crashes and their contributing factors. This approach allows WSDOT to better target “root causes” to lower crash potential, moving beyond standard solutions based on predetermined design criteria such as traffic volume and roadway type. By targeting contributing factors, WSDOT is able to better direct decision making and produce more focused and cost effective solutions.

- Using low-cost measures when possible, and pursuing the greatest reduction in crashes with the lowest cost.
- With a combination of engineering expertise and advanced analytical tools, WSDOT can focus on the contributing factors of crashes and generate targeted solutions.

WSDOT’s transportation safety efforts focus on multimodal integration

In alignment with Results WSDOT, the agency’s strategic plan, WSDOT is also integrating all modes of transportation, ranging from ferries and rail to aviation, in a comprehensive, collaborative effort to enhance safety and reduce risk. In March 2015, WSDOT created a Modal Safety Executive Committee to identify multimodal safety risks, prioritize agency resources, manage safety policies and improve systemic, statewide risk reduction strategies. This committee’s work expands the agency’s safety focus to include both individual travel modes, such as a person driving to work, and the intersection between modes. For example, a commuter who bikes to a bus stop and takes public transit to work. By taking an all-inclusive safety approach, WSDOT is able to exchange ideas, tools and techniques that improve multimodal risk reduction.

Contributors include the Modal Safety Executive Committee, Multimodal Safety Working Group, Dan Davis and Zoe Zadworny



Strategic Plan Goal 2: MODAL INTEGRATION

Strategy 2.1 (Multimodal Safety): Align multimodal safety policy-making across the agency.

In support of this strategy, WSDOT created a Modal Safety Executive Committee tasked with integrating safety and risk reduction into all modes of transportation.

Notable results

- In 2015, 92.1% of WSDOT bridges measured by deck area are in fair or better condition, a slight increase from 91.8% in 2014
- Of the 3,288 state-owned bridges, 120 have weight restrictions in FY2015, a decrease from 137 weight restricted bridges in FY2014
- Washington state is meeting the MAP-21 and Results Washington goals of having less than 10% of bridges in poor condition
- For the 2015-2017 biennium, 44 preservation projects on state-owned bridges are scheduled to begin construction

Bridge conditions improve slightly from previous year













As of June 2015, 92.1 percent of the state-owned bridges weighted by deck area were in fair or better structural condition. This is an increase from 91.8 percent in fair or better condition in June 2014. Bridge conditions have improved since 2010, when 90.4 percent of bridges by deck area were in fair or better condition. Measuring bridge conditions by deck area incorporates bridge size and is a more comprehensive measure than counting the number of bridges in certain conditions.

WSDOT is shifting its focus to bridge conditions weighted by deck area in order to align with Moving Ahead for Progress in the 21st Century (MAP-21) and Results Washington. Both of these programs set a goal of having no more than 10 percent of bridges measured by deck area be in poor condition, which Washington state met in 2014 and is on track to meet in 2015 (see box on [p. 16](#) for more information).

WSDOT has reduced the square footage of structurally deficient deck area by using innovative strategies, best management practices and past investments from the Nickel and Transportation Partnership Account programs.

Majority of WSDOT's bridges by deck area are in fair or better condition, meeting performance goals
Number of bridges and percent of bridges by deck area by condition category; Deck area in millions of square feet

STRUCTURAL CONDITION

		2010	2014	2015	Trend
GOOD/VERY GOOD¹ Bridges in good condition range from those with no problems to those having some minor deterioration of structural elements.	Bridge deck area	15.6	18.5	19.2	
	Percent of deck area	30.2%	34.8%	36.0%	
	Number of bridges²	1,419	1,591	1,628	
FAIR¹ Primary structural elements are sound; may have minor section loss, deterioration, cracking, spalling or scour. This is the most cost-effective time to rehabilitate before the underlying structure is damaged.	Bridge deck area	31.0	30.4	29.9	
	Percent of deck area	60.2%	57.0%	56.1%	
	Number of bridges²	1,620	1,554	1,522	
GOOD/VERY GOOD & FAIR TOTALS: Goal = 90% or more deck area in fair or better condition	Bridge deck area	46.6	48.9	49.1	
	Percent of deck area	90.4%	91.8%	92.1%	
	Number of bridges²	3,039	3,145	3,150	
POOR A bridge in poor condition has advanced deficiencies such as section loss, deterioration, scour, or seriously affected structural components, and may have weight restrictions. A bridge in poor condition is still safe for travel.	Bridge deck area	4.9	4.4	4.2	
	Percent of deck area	9.6%	8.2%	7.9%	
	Number of bridges²	145	141	138	

Data source: WSDOT Bridge and Structures Office.

Notes: The above data only includes state-owned bridges.¹ The definition of good and fair condition was revised to comply with the definitions in the proposed Moving Ahead for Progress in the 21st Century (MAP-21) regulations. This revision shifted a higher percentage of bridges to fair condition (56.1 percent in 2015 compared to 11.7 percent in 2014) and a smaller percentage of bridges in good condition (36 percent in 2015 compared to 80.1 percent in 2014). All numbers shown in the table above are based on the revised "out-to-out" calculation method (which includes curbs and rails on the bridge) instead of the bridge width curb-to-curb. ² WSDOT is phasing out this measure because the Results Washington and MAP-21 bridge performance measures focus on conditions by deck area.

Local bridge conditions hold steady from previous year

Limited resources have made it challenging to manage the entire WSDOT bridge network to lowest life cycle cost. Lowest life cycle cost methodology uses proven preservation actions to extend the useful life and minimize maintenance costs over the entire life of an asset. This cost effective method ensures that assets are kept in good or fair condition, helping to maintain safety and useful life.

By number of bridges, 3,150 of the 3,288 state-owned bridges are in fair or better condition in 2015, while 138 are in poor condition (structurally deficient). During fiscal year (FY) 2015 (July 2014 through June 2015), 25 state-owned bridges deteriorated to a poor condition state, and 28 bridges were repaired/preserved, transitioning them from poor to good condition.

A bridge's condition is upgraded from poor condition when either region maintenance crews or contractors working on WSDOT projects have completed the necessary work to repair, or in some cases replace, a bridge element or the entire bridge. Bridges are considered as being in poor condition when bridge inspectors find new deterioration or damage affecting primary structural members. Bridges in poor condition are still safe for travel.

Most local agency bridges in fair or better condition in Washington

There are more than 7,300 bridges across Washington on city streets, county roads and state highways. Of these, more than 4,000 are locally owned and support an average of 10 million crossings per day. Approximately 93 percent of Washington's local bridges by deck area were considered to be in fair or better condition in FY2015, holding steady from FY2014. Keeping these bridges in good repair is necessary to defer much larger replacement costs in the future.

The Bridge Replacement Advisory Committee program, which is comprised of members from cities and counties,

Local agency bridges remain in good condition

Local agency bridge conditions for fiscal year 2015

Condition	Number of bridges	Deck area (millions of square feet)	Percent of deck area
Fair or better	3,842	16.6	93%
Good	3,285	14.3	80%
Fair	557	2.3	13%
Poor	196	1.2	7%
Total	4,038	17.8	100%

Data source: WSDOT Local Programs Office.

awarded 32 projects to local agencies in 2014. The intent of this program is to preserve and improve the conditions of city and county bridges that are physically deteriorated or structurally deficient through bridge replacements, bridge rehabilitation, and preventative maintenance (such as scour repair, paint for steel structures, seismic retrofit, deck overlays and joint replacement).

Cities and counties have similar roles and responsibilities to WSDOT in managing local bridges. Federal funding along with state and local funding sources continue to help local agencies build new or maintain existing bridges.

A closer look at MAP-21, Results Washington and GASB bridge condition requirements

The federal Moving Ahead for Progress in the 21st Century (MAP-21) legislation establishes performance targets that states have no more than 10 percent of bridge deck area classified as structurally deficient on the NHS. States failing to meet this target for three consecutive years must devote a portion of National Highway Performance Program funds to improve bridge conditions. Results Washington (see [p. 22](#)) also sets a target of no more than 10 percent of NHS bridge deck area classified as structurally deficient (poor condition).

The state is also required to follow Generally Accepted Accounting Principles, which include rules set by the Governmental Accounting Standards Board (GASB). This board governs the financial reporting of infrastructure assets, and requires WSDOT to maintain an up-to-date inventory of assets and to document condition assessments. For the purpose of GASB reporting, WSDOT has a bridge condition goal of 90 percent of state-owned bridge deck area in fair or better condition.

Bridge condition reporting requirements

Condition targets by performance reporting system

Performance reporting system	Target	Which bridges are included?
Moving Ahead for Progress in the 21st Century (MAP-21) (see p. 6)	≤10% of deck area on structurally deficient (poor condition) bridges	All NHS bridges (state- and locally-owned)
Results Washington (see p. 22)	≤10% of deck area on structurally deficient (poor condition) bridges	All NHS bridges (state- and locally-owned)
Governmental Accounting Standards Board (GASB)	≥90% of bridge deck area in fair or better condition	All state-owned bridges (NHS and non-NHS)

Data source: WSDOT Office of Strategic Assessment and Performance Analysis.
Note: NHS = National Highway System.

WSDOT manages 138 state bridges in poor condition

Structurally deficient bridges in Washington state

As of June 2015; Percent of bridges and deck area considered structurally deficient (SD); Deck area in millions of square feet

	National Highway System		Statewide	
	Deck area ¹	Number of bridges	Deck area ¹	Number of bridges
State-owned	44.2	2,255	53.4	3,288
Amount SD (%)	3.9 (8.8%)	95 (4.2%)	4.2 (7.9%)	138 (4.2%)
Locally-owned²	4.6	195	17.8	4,038
Amount SD (%)	0.4 (8.3%)	21 (10.8%)	1.2 (6.8%)	196 (4.9%)
Total	48.8	2,450	71.2	7,326
Amount SD (%)	4.3 (8.8%)	116 (4.7%)	5.4 (7.6%)	334 (4.6%)

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

Notes: Structurally deficient is equal to the state's poor condition rating.

1 Measuring bridge conditions by deck area provides a more comprehensive measure than by number of bridges because it factors in bridge size. 2 Bridges owned by counties and cities.

Nearly 8 percent of bridges by deck area deficient statewide

Structurally deficient bridges represented 7.6 percent (5.4 million square feet) of the total 71.2 million square feet of bridges in Washington as of June 2015. By number of bridges, 334 of the 7,326 total bridges in the state were considered structurally deficient. A bridge is considered structurally deficient if it has a defined amount of deterioration in the deck, superstructure (everything above the supporting structure, such as the roadway beams and girders), and/or substructure. A bridge with a rating of four or lower on a scale of one to nine is rated as structurally deficient and is also rated as poor by WSDOT (see table in [Gray Notebook 50, p. 14](#)).

Of the 334 state and local structurally deficient bridges in Washington as of June 2015, 138 were state-owned bridges managed by WSDOT, a slight decrease from 141 in 2014. WSDOT's 138 structurally deficient bridges account for 4.2 million square feet of deck area, which is 7.9 percent of the bridge deck area owned by WSDOT and 5.9 percent of all (state and local) bridge deck area in Washington.

The total deck area of structurally deficient bridges on the National Highway System (NHS) in Washington increased from 4.0 million in 2014 to 4.3 million in 2015. The NHS is a network of strategic highways within the United States, and includes both state and local highways and roads serving major airports, ports, rail and/or truck terminals, pipeline terminals and other transport facilities (see [Gray Notebook 54, p. 6](#)). Washington's



The State Route (SR) 520 Albert D. Rosellini bridge is WSDOT's longest structurally deficient bridge, totaling 7,518 feet long. This bridge, along with the SR 99 Alaskan Way Viaduct and Interstate 90 bridges (the next largest structurally deficient bridges in the state) are currently being replaced and scheduled to be completed in 2017. Together, these bridges account for 2 percent of the state-owned deck area in Washington.

NHS includes 2,450 bridges, 2,255 (92 percent) of which are managed by WSDOT. The remaining 195 (8 percent) are managed by cities and counties.

Deterioration of the bridge decks is the reason for more than half (84) of the 138 bridges in poor condition. These bridges are repaired by WSDOT maintenance crews on an as-needed basis until funding is available to fully address deck issues. Then WSDOT rehabilitates, or in some cases replaces, their concrete or asphalt decks (see [p. 20](#) for a map of preservation projects scheduled for construction in the 2015-2017 biennium).

WSDOT has 17 fewer load restricted and posted bridges

A total of 120 state-owned bridges were load posted or restricted in FY2015, down from 137 in FY2014. Nearly half (58 out of 120) of WSDOT's load posted or restricted bridges are on the NHS, and slightly more than one-fifth (26 out of 120) were considered structurally deficient in FY2015. In addition, there were 167 locally-owned bridges that were load restricted in FY2015 (10 of which were on the NHS), an increase from 159 in FY2014.

WSDOT performs load rating evaluations to verify whether bridges can safely carry the weight of trucks using them. Bridges are designed to carry the standard truck weight load when they are built. If load rating evaluation results show the structure cannot safely carry certain loads, WSDOT implements weight restrictions to reduce the risk of damage:

- A bridge may first be "load restricted," making it illegal for any overloaded truck to use the bridge.

Number of load posted and restricted bridges declines

WSDOT has 120 load restricted or load posted bridges
Fiscal years (July through June), 2012-2015; Number of bridges with weight restrictions



Data source: WSDOT Bridge and Structures Office.

Notes: A bridge may first be "load restricted," making it illegal for any over-loaded truck to use the bridge. As the condition worsens, the bridge's capacity to carry heavy loads decreases and the bridge is "load posted." This limits the allowable weight of trucks below typical legal weights.

- As the condition worsens, the bridge's capacity to carry heavy loads decreases and the bridge is "load posted." This limits the allowable weight of trucks below typical legal weights.

A quarter of posted and restricted bridges are along freight corridors

Of WSDOT's 120 load posted and load restricted bridges, one quarter (30 bridges) are on T-1 or T-2 freight corridors. Most of these are load restricted bridges, which affect large loads that are over legal weight limits. Trucking companies must obtain a special permit to haul loads that are over the legal limit. When a bridge is load restricted, trucks can be equipped with special trailers to distribute the weight or drivers can take alternate routes. Most bridge restrictions impact the movement of large equipment.

Trucking companies that use alternate routes must factor the cost of transporting their freight as part of their operating costs. Increases in these transportation costs will eventually be transferred to consumers.

As of June 2015, there were no load posted bridges on T-1 freight corridors (routes carrying more than 10 million annual tons), and two load posted bridges on T-2 freight corridors (routes carrying four to 10 million annual tons). Bridges with load postings below the legal weight limit can impact routine freight movement, such as garbage trucks or trucks delivering goods to grocery stores. An online map of load restricted and load posted bridges in Washington state is available at <http://www.wsdot.wa.gov/commercialVehicle/Restrictions/Default.aspx>.

WSDOT's online bridge clearance trip planner helps trucks travel safely and efficiently

WSDOT recently developed a Bridge Vertical Clearance Trip Planner, an application intended to help the public identify bridges with restricted vertical clearances on state highways. This tool allows users to enter their vehicle height and locate bridges on state routes that will not clear their load. More information can be accessed at <http://www.wsdot.wa.gov/Bridge/Structures/BVCTP.htm>.

Washington's inventory of bridge structures continues to expand

The state-owned bridge inventory that WSDOT manages included 3,849 structures as of June 2015, with 53.4 million square feet of deck area. WSDOT has added 15 vehicular bridges (plus another five bridge structures) to its inventory since June 2014, primarily due to new bridges being built.

In addition to the 3,849 state-owned bridges, there were 5,848 locally-owned bridges in Washington state in FY2015, an increase of 69 structures from the previous fiscal year. Vehicular bridges longer than 20 feet account for 69 percent of the local bridge inventory, and total 17.8 million square feet of deck area.

Washington bridge inventory grows by 89 structures

Fiscal years 2014 and 2015; Inventory of state and local bridges

	State		Local	
	2014	2015	2014	2015
Vehicular bridges longer than 20 feet	3,093	3,108	4,001	4,038
Average age (years)	44	45	43	43
Structures less than 20 feet long	402	410	1,405	1,409
Culverts longer than 20 feet	131	124	-	-
Pedestrian structures	76	79	226	252
Ferry terminal structures	68	68	8	9
Tunnels and lids	43	44	2	2
Border bridges				
Maintained by border state ¹	6	6	1	1
Maintained by Washington ²	5	5	-	-
Railroad bridges	5	5	136	137
Total bridge structures³	3,829	3,849	5,779	5,848

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

Notes: 1 WSDOT funds 50 percent of the preservation for 11 border bridges. Six of these bridges are maintained by the border state (five with Oregon and one with Idaho). 2 Four of these bridges are shared with Oregon and one with Idaho. 3 Inventory totals do not equal the total number of state and local bridges on p. 17 because inventory includes miscellaneous structures that the Federal Highway Administration (FHWA) does not require to be inspected. FHWA requires states to report on conditions for all vehicular bridges longer than 20 feet (including ferry terminal structures and culverts longer than 20 feet), which are the 3,288 state-owned and 4,038 locally-owned bridges.

Inspection program helps maintain bridge performance

Nearly 10 percent of state-owned bridges are 75 years or older

The average age of WSDOT's 3,108 vehicular bridges is 45 years. WSDOT has 310 bridges that are 75 years old or older, and have 3.1 million square feet of total deck area. The estimated total project cost to replace these bridges is nearly \$2.3 billion. WSDOT has another 196 bridges that are between 65 and 74 years old, which have 2.3 million square feet of total deck area and an estimated total project cost to replace of nearly \$1.7 billion. The average age of a locally-owned vehicular bridge longer than 20 feet in Washington is 43 years; 492 vehicular bridges are older than 74 years.

WSDOT conducts 2,106 bridge inspections in FY2015

WSDOT performed 2,106 bridge inspections in FY2015, more than three-quarters (1,599) of which were routine inspections. WSDOT manages bridges through inspection, maintenance, rehabilitation and replacement. These are essential aspects of bridge management to determine their current condition, identify deficiencies, extend their service life, and maintain bridge safety.

While the majority of WSDOT's bridges are inspected on a two-year cycle as mandated by the Federal Highway Administration (FHWA), there are 110 bridges with specific watch items that require them to be inspected annually. Currently, a total of 537 concrete bridges that are in good condition and meet defined FHWA criteria are inspected on a four-year cycle. WSDOT performs federally required inspections on all state-owned bridges as outlined in the National Bridge Inspection Standards to determine bridge conditions, and preservation and maintenance needs.

Local agencies performed 2,412 bridge inspections in FY2015. The vast majority (2,325) of these inspections

WSDOT performs 2,106 bridge inspections July 2014 through June 2015; Number of inspections by type

Type of inspection	Number
WSDOT routine bridge inspections	1,599
WSDOT under bridge inspection truck (UBIT) bridge inspections	238
Special bridge inspections	76
WSDOT local agency inspections	58
Underwater bridge inspections	51
Mechanical and electrical inspections	48
WSDOT routine ferry terminal inspections	26
Fracture critical ferry terminal inspections	10
Total WSDOT bridge inspections	2,106

Data source: WSDOT Bridge and Structures Office.
Note: The inspections shown in the table above are for the state-owned bridges listed on p. 15. The Federal Highway Administration (FHWA) requires inspections on vehicular bridges longer than 20 feet. WSDOT performs inspections on all structures included in the inventory, but only reports on the inspections required by FHWA.

were routine. In addition, they performed 68 inspections on fracture critical structures (bridges that contain support pieces or members that are under tension, where failure would likely cause a portion of or the entire bridge to collapse), and 19 underwater inspections. Local agencies follow the same federal guidance for inspections as the state. Even though most local governments inspect their own bridges, WSDOT conducts field reviews and provides training and technical assistance to Washington cities and counties for inspecting bridges on local roads.

Bridge engineers also perform specialized work to determine the condition of selected bridge elements (such as fracture critical members and mechanical elements on movable bridges), along with the routine inspections.

Maintenance plans \$25.4 million in bridge repairs during biennium

WSDOT employs various strategies to extend the service life of its assets, while minimizing life cycle costs. These strategies include performing day-to-day maintenance repairs as well as preservation work to ensure bridge assets do not deteriorate to a condition that is beyond repair. Bridge maintenance work is mainly performed by WSDOT crews and is often completed within a matter of days.

Hundreds of maintenance repairs are needed on bridges throughout the highway system each year. During the 2015-2017 biennium, crews plan to perform \$25.4 million in structural bridge repairs, which include a combination of



An inspector ascends the superstructure of the SR 433 Lewis and Clark Bridge, 340 feet above the Columbia River. The bridge forms a mile-long link between Longview, Washington, and Rainier, Oregon.

WSDOT preserves bridges with innovative strategies

Priority 1 (highest priority) through Priority 3 (lowest priority) repairs. About 42 percent of the bridge maintenance funding (\$10.7 million) is allotted for Priority 1 repairs, while the rest will be used for deck maintenance, bridge cleaning, and the operation of movable and floating bridges.

In FY2015, 28 percent of Priority 1 repairs were completed, a decrease from 54 percent completed in the previous fiscal year. A number of factors contributed to this decrease, primarily the focus on bridge deck repairs and deck cleaning, which removed resources from structural repairs. In addition, the cost of the repair and time required to complete the work which can vary widely across repairs.

WSDOT uses cost-effective strategies to preserve bridges

Through the use of strategic asset management, timely bridge maintenance and preservation, WSDOT can extend the service life of bridges. Bridge preservation strategies WSDOT uses include repairing concrete bridge

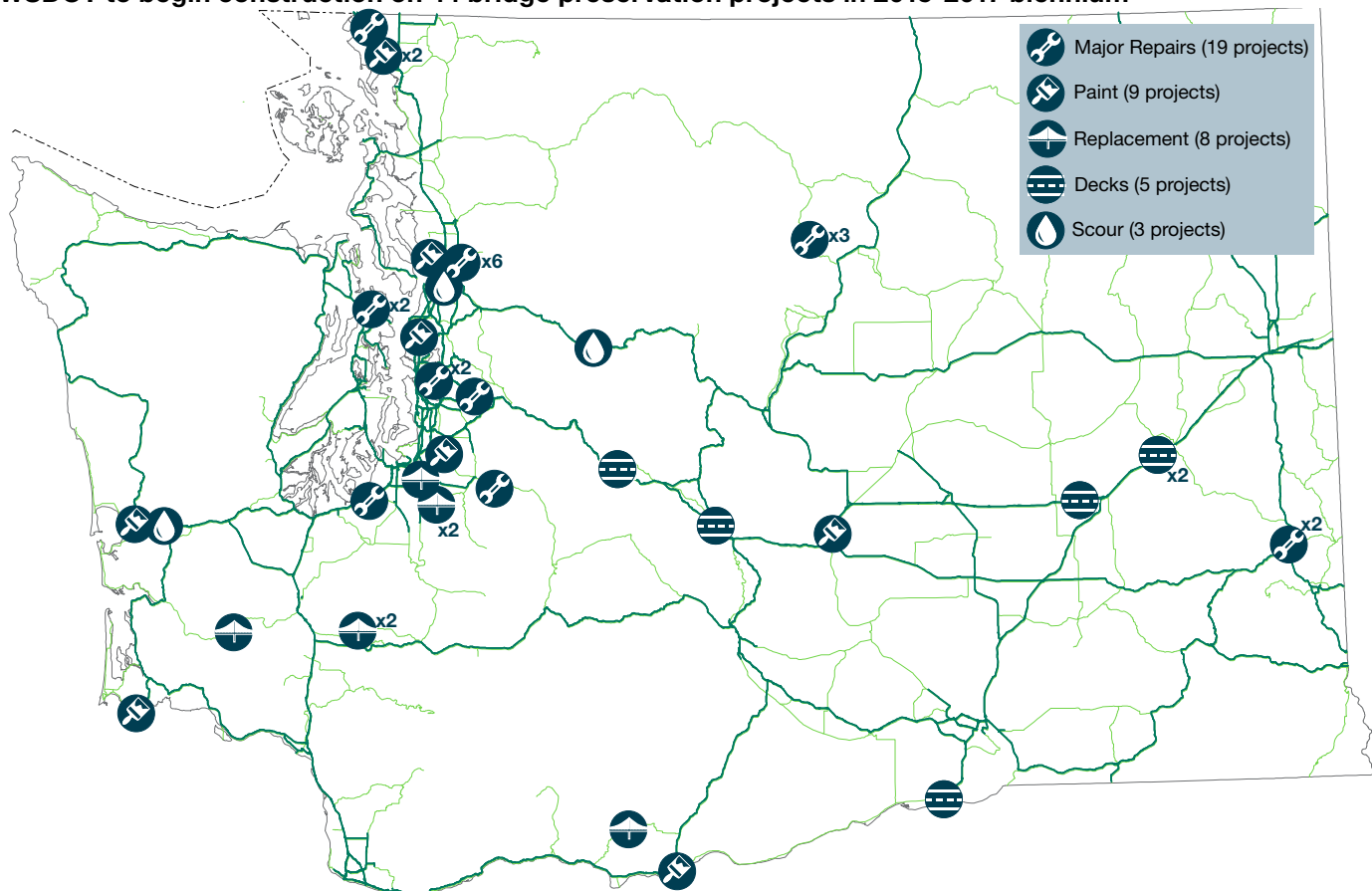
decks, repainting steel bridges, replacing deteriorated bridge elements, and rehabilitating or replacing bridges.

In contrast to maintenance repairs, WSDOT hires private sector contractors to perform preservation work. A bridge is considered for replacement when the problem causing the structural deficiency may reduce the load-carrying capacity of the bridge, and the cost of rehabilitation is more than 60 percent of the replacement cost.

WSDOT has been utilizing the tools of practical design to strategically preserve bridges. Following WSDOT Secretary, Lynn Peterson's direction in August 2014, the agency implemented a practical design program to reduce costs by making project decisions that focus on the specific problem the project is intended to address. This approach seeks lower cost solutions that produce the best return on investment for specific performance criteria.

For example, while many states simply replace bridge decks when they deteriorate, WSDOT repairs

WSDOT to begin construction on 44 bridge preservation projects in 2015-2017 biennium



There are 44 state-owned bridge preservation projects scheduled to go to construction in the 2015-2017 biennium. Major repairs are the most common type of bridge preservation project, followed by steel bridge painting and replacement/rehabilitation. Of the 44 projects shown above, 35 are for bridges on the National Highway System (NHS) and 25 are for bridges currently classified as structurally deficient (18 projects are on bridges that are both structurally deficient and on the NHS).

WSDOT plans four concrete overlay projects along I-90

decks and applies a concrete overlay. This is a more cost-effective option to extend the bridge’s life.

Strategy: Repairing concrete bridge decks extends service life

WSDOT plans to complete four concrete overlay projects in the 2015-2017 biennium on I-90. In addition, WSDOT maintenance crews plan to spend \$2.9 million for bridge deck repairs. The current six-year preservation funding plan includes \$84.1 million for concrete bridge deck rehabilitation and overlay (\$36 million of which is for addressing asphalt on bridges in roadway paving projects).

The majority of state-owned bridges have reinforced concrete decks. The primary goal of WSDOT’s comprehensive bridge deck program is economically repairing and overlaying concrete bridge deck to prolong their lifespan and avoid expensive deck replacements.

Once the reinforcing steel in concrete bridge decks starts to corrode (for example, due to winter weather or the use of deicing salt), this causes the concrete to “spall” (pothole) and deteriorate. WSDOT maintenance crews repair spalled areas annually, but these repairs are considered to be temporary and typically last one to three years. Once the total area of repairs and/or patching exceed 2 percent of the total deck area, the bridge is added to the list of future needs and is classified as structurally deficient. Bridge deck overlay projects are prioritized based on the total square footage of deterioration and the type of freight route on which the bridge is located. Bridges on the most vital freight routes get higher priority.

When funding becomes available, WSDOT hires contractors to perform deck repairs and add a protective overlay (normally a 1.5-inch thick layer of modified concrete). A full bridge deck rehabilitation and concrete overlay extends the bridge’s service life by at least

25 to 30 years and is more cost-effective for bridge decks that have repeated deterioration, yet is less expensive than replacing the entire deck or bridge.

As a result of WSDOT utilizing modified concrete overlays as a bridge deck preservation strategy, very few total deck replacements have been necessary (14 bridges since the 1960s). There are 165 bridges with modified concrete overlays that have provided more than 25 years of service. WSDOT has replaced 13 modified concrete overlays to date (800,000 square feet) and has identified another 30 (1.1 million square feet) that will need to be replaced during the next eight to 10 years.

Strategy: Repainting steel bridges maintains fair or good condition

WSDOT plans to complete repainting projects on eight steel bridges by the end of the 2015-2017 biennium, with a total estimated biennial cost of \$31 million. These bridges include the State Route (SR) 99 George Washington Aurora Avenue Bridge in Seattle, two steel trusses on I-5 over the Nooksack River near Ferndale, the U.S. 101



Crews will repaint all of the steel on the truss of the SR 18 Green River (Neeley) Bridge near Auburn in summer 2015. This will protect the steel for another 20 years and help preserve the bridge’s structural integrity.

WSDOT needs \$771 million¹ to fully fund its 10-year steel bridge painting plan
Fiscal years (FY) 2015 through 2025; Planned projects and spending for 2015-2017 biennium; Dollars in millions

Painting needs	Number of bridges	Cost to repaint
Currently due or past due	99	\$394
Due for painting ²	25	\$188
Past due for painting ³	74	\$206
Planned for 2015-2017 biennium	8	\$38
Due within the next 10 years	49	\$290
Border bridges	3	\$49
10-year total need	159	\$771

Data source: WSDOT Bridge and Structures Office.
Notes: 1 Number has been updated since the 2015 Unfunded Priorities List was provided to the Legislature in February. 2 A steel bridge is classified as “due” for painting if it has exposed steel on between 2 and 5 percent of the structure. 3 A steel bridge is classified as “past due” for painting if it has exposed steel more than 5 percent of the structure.

Twenty five bridge decks are past due for repair

As of June 2015; Dollars in millions

Bridge deck needs	Number of bridges	Cost to repair
Past due ¹	25	\$25.7
Due ²	46	\$45.1
Due within the next 10-years	21	\$71.5
Total 10-year needs	92	\$142.3

Data source: WSDOT Bridge and Structures Office.
Notes: 1 Bridges with more than 5 percent of their deck area patched or spalled are classified as “past due.” 2 Bridge decks with 2 to 5 percent of their deck area patched or spalled are classified as “due.”

Five WSDOT bridges under contract for replacement

Hoquiam River bridge in Hoquiam, the SR 18 Green River bridge near Auburn and the I-90 Columbia River bridge near Vantage. In addition, WSDOT will share the cost of repainting two bridges over the Columbia River with Oregon (U.S. 101 Astoria and U.S. 97 Biggs Rapids).

A protective paint coating on steel bridges is essential for preventing corrosion, extending their service life and keeping them in fair or better condition. Bridges are prioritized for repainting based on the amount of corrosion and the route on which they are located, with bridges on primary freight routes given top priority. Steel truss bridges should be repainted every 20 to 25 years on average and newer steel girder bridges should be painted approximately every 40 years. Bridge painting is a major repair project with significant costs due to the complexity of safety, environmental regulations and containment system requirements. On average, a steel truss bridge is considered in poor condition if it has been past due for painting for at least five years, or 10 years for steel girder bridges.

Strategy: Replacing deteriorated bridge elements to extend bridge life

WSDOT has three projects underway which will replace deteriorated bridge elements. This work includes replacing a maintenance traveler under the westbound Tacoma Narrows Bridge, replacing anchor cables on the two I-90 floating bridges across Lake Washington and on the west half of the SR 104 Hood Canal Bridge, and replacing expansion joints on six I-5 bridges between Everett and Marysville. In addition, WSDOT plans to go to contract on five additional repair projects between July 2015 and June 2017.

Bridge rehabilitation projects address specific elements such as expansion joint replacement, concrete column repair, and anchor cable replacements on floating bridges.

Strategy: Rehabilitating or replacing structurally deficient bridges

Currently, there are 18 state-owned bridges that are structurally deficient and require replacement; five of these are currently under contract. In addition, there are 29 bridges that are structurally deficient that have been identified as needing rehabilitation (a major preservation repair) with two requiring bridge deck replacement.

Bridges that have reached the end of their service life will require rehabilitation or replacement. Rehabilitation is considered before replacement.

Generally, if rehabilitation is 60 percent or more of the replacement cost then replacement is chosen.

WSDOT has a \$23.4 million budget for bridge replacement and rehabilitation projects for the 2015-2017 biennium. There are four active contracts on four bridge projects that have a budget of \$9.1 million. In addition, six projects will begin design and three will go to construction in the 2015-2017 biennium.

Contributors include Rico Baroga, Roman Peralta, Bruce Thill, DeWayne Wilson, Anna Zaharris and Alison Wallingford



Anna Schmidt, the 9-year-old daughter of Northwest Region IT Applications Specialist David Schmidt, shows the Tacoma Narrows Bridge, an honorable mention from a recent art contest held by WSDOT's Office of Strategic Assessment and Performance Analysis.

Results Washington Leading Indicator



Based on current funding levels, control the percent of state and local bridges in poor condition from increasing over 10 percent by 2017.

Status: On plan (green)

Strategies:

1. Replacing deteriorated bridge elements -

WSDOT performs major preservation repairs by addressing specific bridge elements to improve a bridge with a low condition rating. The most common types of repairs include floating bridge anchor cable replacement, expansion joint replacement and concrete column repair.

2. Repainting steel bridges -

A protective paint coating on a steel bridge is essential to prevent corrosion, extend the bridge's service life and keep the bridge in fair or better condition. Continuing to keep up with painting can prevent the number of bridges in poor condition from increasing.

3. Repairing concrete bridge decks -

WSDOT is working to reduce the number of bridges classified as structurally deficient by addressing bridges with the highest benefits and the most cost savings. One strategy to do so is to repair and rehabilitate concrete bridge decks to extend their service life.

Percent of bridges on the NHS that are structurally deficient (by deck area)	
State-owned	8.8%
Locally-owned	8.3%
Combined	8.8%

Notable results

- The percent of ferries vessel systems not needing replacement improved from 51% in FY2014 to 56% in FY2015
- WSDOT had 88.6% of its ferry terminal systems in fair or better condition in 2014
- The total value of vessel systems needing replacement increased from \$66.2 million in FY2014 to \$88.3 million in FY2015
- Of WSDOT Ferries' 177 landing aid systems, 39 (22.1%) were in poor or substandard condition in 2014

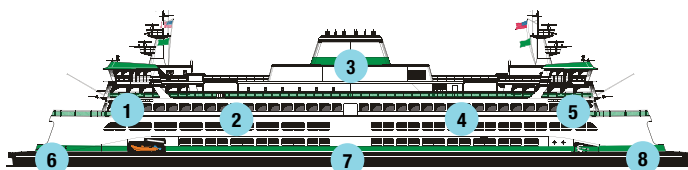
Vessel systems' conditions improve in fiscal year 2015

The addition of the new Motor/Vessel (M/V) *Samish* helped improve the overall condition of systems on WSDOT Ferries' 24-vessel fleet in fiscal year (FY) 2015 compared to FY2014. WSDOT uses a risk assessment guide to help rate the condition of its vessel systems at the end of each fiscal year, which runs from July 1 through June 30. WSDOT assigns each system a

Condition Rating of 1, 2 or 3 depending on the likelihood of failure and the impact a failure would have on ferry service (see risk assessment matrix on [p. 24](#)).

The number of vessel systems included in Condition Rating 1 (systems not needing replacement) increased 5 percent from 51 percent in FY2014 to 56 percent in FY2015. This increase was due in part to the addition of the new 144-vehicle Olympic Class M/V *Samish*, which includes 83 new vessel systems and was brought into service in mid-June of 2015.

Number of WSDOT ferry vessel systems that do not currently need replacement increases 5 percent Fiscal years 2014 and 2015; Results by type of vessel system



	Types of ferry vessel systems	Number of systems	Percent of systems in Condition Ratings ¹		
			1	2	3
1	Communications, navigation, lifesaving systems	656	74%	20%	6%
2	Piping systems	162	39%	41%	20%
3	Structural preservation (paint)	209	64%	34%	2%
4	Passenger and crew spaces	71	55%	45%	0%
5	Security systems	109	77%	23%	0%
6	Steel structures	186	65%	34%	2%
7	Mechanical/electrical systems	345	52%	39%	9%
8	Propulsion systems	297	13%	66%	21%
	Total/average FY2015	2,035	56%	36%	9%
	Total/average FY2014	1,867	51%	40%	9%

Data source: WSDOT Ferries.

Notes: Percentages may not add to 100 due to rounding. 1 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.

The improvement also reflects the benefits of the \$39.6 million in preservation funds spent in the 2013-2015 biennium, which supported projects ranging from painting the M/V *Tillikum*, M/V *Cathlamet* and M/V *Kaleetan* to repairing the M/V *Yakima*'s propulsion system and replacing steel on the hull and auto deck of the M/V *Klahowya*.

The number of vessel systems in Condition Rating 2 (approaching the need for replacement) decreased 4 percent, from 40 percent to 36 percent, and the number of systems in Condition Rating 3 (overdue for replacement) remained at 9 percent at the end of both FY2014 and FY2015.

The FY2015 Condition Category ratings not only include the M/V *Samish*, but 80 vessel systems on the 61-year-old M/V *Evergreen State*, whose retirement in FY2015 was delayed to provide replacement support for the fleet. The M/V *Evergreen State* was not included in FY2014 ratings because it was scheduled for replacement in that fiscal year. Multiple emergency mechanical problems over the last two years have made different vessels unavailable for service for extended periods. As a result, WSDOT kept the M/V *Evergreen State* in service well past its scheduled retirement date to help minimize service disruptions to the system.

Ferries addresses critical needs first on vessel systems

WSDOT risk assessment matrix helps prioritize ferry vessel preservation

Based on the likelihood of the system failing combined with the likely consequences of the system's failure

Percent of life cycle remaining (Probability of failure factor)	Consequence of failure factor				
	Minimal impact: does not affect sailing	Marginal impact: less than 24 hours to repair	Moderate impact: one or more days to repair	Critical impact: one or more weeks to repair	Catastrophic: long-term, unscheduled impacts to sailings during repairs
Beyond life cycle (nearly certain to fail)	Condition Rating 2:		Condition Rating 3:		
0% - 9% (likely to fail)	System is approaching the		System is overdue for replacement		
10% - 24% (failure possible)	point at which replacement should occur in the		current or ensuing biennia		
25% - 49% (unlikely to fail)	Condition Rating 1:				
50% - 100% (very unlikely to fail)	System does not currently need replacement				

Data source: WSDOT Ferries.

Propulsion, piping systems have high percentage of past due items

Propulsion and piping systems had the highest percentage of items that were past due for replacement in FY2015, with 21 and 20 percent, respectively, in Condition Rating 3. This is similar to FY2014 when 21 percent of piping systems and 19 percent of propulsion systems were past due for replacement.

Ferries weights systems that are critical to service more heavily than those that do not immediately impact travel. For example, major mechanical and electrical systems are a higher priority because repairs can result in removing the vessel from service, which can result in trip cancellations or delays in service if no suitable spare vessel is available.

Due to this high consequence of failure and to ensure continued service, these systems are elevated to Condition Rating 3 earlier in their life cycle than other, less critical systems. This can result in ferries having more critical systems (like propulsion and piping systems) in Condition Rating 3. The systems with the very highest consequence of failure can become Condition Rating 3 while still having 24 percent of their life cycle remaining.

Systems like passenger and crew spaces are less critical because the probability of disrupting service is low, even as they pass the end of their useful life.

Applying dollar values to systems tells ferries condition impacts

When weighted by the total dollar value of the vessel systems, Condition Rating 1 items made up 50.9 percent (\$539.6 million) of the total in FY2015, an increase of \$58.2 million from FY2014. A significant percent of this increase was due to the addition of the M/V *Samish*.

More than 91 percent of total value of ferries vessel systems are not currently in need of replacement

Fiscal year 2015; Percent of total dollar value

Condition Rating 1, 50.9%

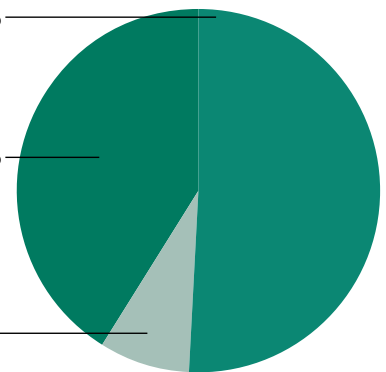
\$539.6 million of system value does not currently need replacement

Condition Rating 2, 40.7%

\$431.7 million of system value is approaching the point at which replacement should occur in the current or the ensuing biennium

Condition Rating 3, 8.3%¹

\$88.3 million of system value is overdue for replacement



Data source: WSDOT Ferries.

Notes: The 61-year-old M/V *Evergreen State*'s inventory items were not included in the fiscal year (FY) 2014 dollar values but are included in the FY2015 dollar values; the recently completed M/V *Tokitae* was added to inventory in FY2014 and the new M/V *Samish* was added to inventory in FY2015. ¹ Measure used for Results Washington. Percentages may not add to 100 due to rounding.

Condition Rating 2 items were 40.7 percent (\$431.7 million), an increase of \$4.7 million from FY2014. The end of FY2015 dollar value of items in Condition Category 3 was \$88.3 million, marking a 33 percent (\$22.1 million) increase from FY2014 in the dollar amount of items that are overdue for replacement. Approximately half of the \$22.1 million increase was associated with the Condition Category 3 items on the M/V *Evergreen State* that were added back into the total item list.

WSDOT regularly monitors the dollar value of its systems in Condition Rating 3 to determine whether ongoing efforts to reduce the number of past due systems are succeeding. Negotiating or planning for extended or extra shipyard periods and reprioritizing work during future established shipyard visits are ways to reduce the

Terminal systems conditions improve slightly in 2014

number of Condition Category 3 items. With the total vessel systems valued at approximately \$1.06 billion in FY2015, the valuations indicate the vast majority (\$971.3 million of items included in Condition Ratings 1 and 2) do not currently require replacement.

Super, Evergreen State class vessel systems have higher percentage of systems needing replacement *Fiscal year 2015; Inspection results by vessel*

Vessel classes and vessels	Number of vessel systems	Year built or rebuilt	Percent of systems in Condition Ratings ¹		
			1	2	3

Jumbo Mark II Class

M/V Tacoma	97	1998	51%	44%	5%
M/V Wenatchee	97	1998	53%	45%	2%
M/V Puyallup	97	1999	53%	42%	5%

Jumbo Class

M/V Spokane	90	1972	54%	40%	6%
M/V Walla Walla	90	1973	56%	38%	7%

Super Class

M/V Hyak	90	1967	37%	41%	22%
M/V Kaleetan	90	1967	50%	40%	10%
M/V Yakima	89	1967	48%	45%	7%
M/V Elwha	92	1967	35%	43%	22%

Olympic Class

M/V Tokitae	83	2014	90%	10%	0%
M/V Samish	83	2015	90%	10%	0%

Issaquah Class

M/V Issaquah	81	1979	49%	44%	6%
M/V Kitsap	82	1980	60%	37%	4%
M/V Kittitas	83	1980	52%	45%	4%
M/V Cathlamet	83	1981	59%	35%	6%
M/V Chelan	88	1981	57%	35%	8%
M/V Sealth	82	1982	46%	44%	10%

Evergreen State Class

M/V Evergreen State	80	1954	31%	41%	28%
M/V Klahowya	81	1958	40%	47%	14%
M/V Tillikum	81	1959	41%	48%	11%

Kwa-di Tabil Class

M/V Chetzemoka	81	2010	85%	12%	2%
M/V Salish	81	2011	90%	10%	0%
M/V Kennewick	81	2012	90%	10%	0%

Hiyu Class

M/V Hiyu	53	1967	25%	38%	38%
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Fleet wide	2,035	Avg. 1983	56%	36%	9%
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Data source: WSDOT Ferries.

Notes: M/V = Motor/Vessel. 1 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. Percentages may not add to 100 due to rounding.

Terminal preservation work leads to condition improvements

Approximately 88.6 percent of WSDOT Ferries terminal systems — which assist in the safe, efficient movement of people and vehicles to and from ferry vessels — were in fair or better condition at the end of calendar year 2014. This is an improvement of 0.3 percent over the 88.3 percent that were in fair or better condition in 2013. WSDOT also reduced the number of systems in the poor or substandard condition category by 0.3 percent, from 11.6 percent in 2013 to 11.3 percent in 2014.

Terminal system ratings are based on inspections that are mandated by state law to occur at least once every three years. Increases to system condition ratings occur after preservation work has been completed under the capital program, or after maintenance work is finished under

WSDOT Ferries terminal systems in good or fair condition hold fairly steady from 2013 to 2014

Calendar year 2014; Inspection results by terminal

Terminal	Number of systems	Good or fair (70-100)	Poor or substandard (0-69)	Not rated
Anacortes	82	85.4%	14.6%	0.0%
Bainbridge Island	52	96.2%	3.8%	0.0%
Bremerton	45	86.7%	13.3%	0.0%
Clinton	42	100.0%	0.0%	0.0%
Coupeville	17	70.6%	29.4%	0.0%
Eagle Harbor Maintenance facility	76	69.7%	28.9%	1.3%
Edmonds ¹	35	97.1%	2.9%	0.0%
Fauntleroy ¹	24	91.7%	8.3%	0.0%
Friday Harbor ¹	35	94.3%	5.7%	0.0%
Kingston	56	96.4%	3.6%	0.0%
Lopez Island	18	88.9%	11.1%	0.0%
Mukilteo	23	87.0%	13.0%	0.0%
Orcas Island	20	100.0%	0.0%	0.0%
Point Defiance	19	84.2%	15.8%	0.0%
Port Townsend	27	88.9%	11.1%	0.0%
Seattle	83	85.5%	14.5%	0.0%
Shaw Island	17	94.1%	5.9%	0.0%
Southworth	25	100.0%	0.0%	0.0%
Tahlequah	18	94.4%	5.6%	0.0%
Vashon	39	84.6%	15.4%	0.0%
Total/average 2014	753	88.6%	11.3%	0.1%
Total/average 2013	752	88.3%	11.6%	0.1%

Data source: WSDOT Ferries.

Notes: 1 Number of systems and related data were transposed for Edmonds, Fauntleroy and Friday Harbor in *Gray Notebook* 54. See [Gray Notebook 49, p. 13](#) for a description of the ratings.

Ferries focuses on replacing aging landing aid systems

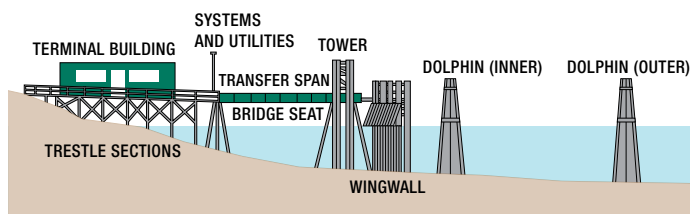
the Ferries operating program. Decreases to the rating occur after normal use or weather conditions degrade an asset to a lower level of functionality or safety.

Systematic inspections may not always happen during the year work occurs on an asset, so minor work to a system, terminal or individual asset ratings may not be reflected in the reporting period the work was accomplished.

Landing aids rank highest in the poor or substandard condition category

Landing aid systems had the highest percent (22.1 percent) of inventory items with a poor or substandard condition rating at the end of 2014, which is a slight improvement (0.5 percent) from the end of 2013 (22.6 percent).

Landing aids (wingwalls and dolphins) help guide vessels to the docks. Many of the older systems are constructed of creosote-soaked wood pilings and have deteriorated in saltwater over the decades. WSDOT continues to make replacing its aging creosote landing aids a priority. The



Structural system conditions of WSDOT Ferries terminals see slight overall improvement in 2014

Calendar years 2013-2014; Inspection results by category

Type of facility or system	Number of systems	Good or fair (70-100)	Poor or substandard (0-69)	Not rated
Buildings	136	99.3%	0.0%	0.7%
Landing aids ¹	177	78.0%	22.1%	0.0%
Overhead loading systems	66	89.4%	10.6%	0.0%
Passenger-only ferry facilities	14	78.6%	21.4%	0.0%
Pavement	80	90.1%	10.1%	0.0%
Trestles and bulkheads	70	92.8%	7.2%	0.0%
Vehicle transfer spans	210	89.0%	11.0%	0.0%
Total/average 2014	753	88.6%	11.3%	0.1%
Total/average 2013	752	88.3%	11.6%	0.1%

Data source: WSDOT Ferries.

Notes: Percentages may not add to 100 due to rounding. 1 Landing aids ensure the ferry vessels are aligned correctly at the terminals, and include wingwalls and dolphins. 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. See [Gray Notebook 49, p. 13](#) for a description of the ratings.

agency has replaced two-thirds of its creosote timber dolphins and four-fifths of its creosote wingwalls to date.

WSDOT replaced a floating creosote dolphin at Point Defiance and fixed two creosote dolphins at Kingston in 2014, helping the ratings of landing aids while removing creosote from the environmentally-sensitive waters of the Puget Sound. WSDOT will replace three more creosote landing aids in the 2015-2017 biennium.

Passenger-only ferry facilities' conditions had the largest increase of systems (8.1 percent) in poor or substandard condition, going from 13.3 percent in 2013 to 21.4 percent in 2014. Lowering the rating for a floating dock at Eagle Harbor that no longer supports passenger-only service was the reason for the increase. There are 14 total passenger-only facility assets in the system, and changes to one item can result in high percentage changes overall.

Ferries uses life cycle costs to prioritize preservation spending

WSDOT invested \$56.3 million in vessels and terminals in the 2013-2015 biennium in an effort to reduce the number of systems in the preservation backlog.

Ferries uses a life cycle cost model (LCCM) to estimate its future terminal and vessel preservation needs per Legislative mandate. Ferries uses this model to develop its budget request for preservation funding to address the backlog of maintenance and repair projects.

The preservation backlog is measured as a Preservation Needs Percentage (PNP), which is the percent of the value of terminal or vessel systems needing replacement defined as systems beyond their useful life by the LCCM. It differs from the vessels' condition categories and terminals' condition ratings because it only tracks whether a system is or is not past its originally planned year of replacement based on its life cycle. WSDOT makes adjustments as needed to the life cycle of terminals by comparing an item's condition to historical information of a similar item in similar condition.

Baselines for the backlog are determined at the beginning of each biennium. WSDOT makes projections to estimate what the backlog will be at the end of the biennium, taking into consideration the value of systems coming due for replacement during the biennium. Calculations are also done to determine the backlog at the end of the biennium to review whether the legislatively authorized

Ferries works to address terminal preservation backlog

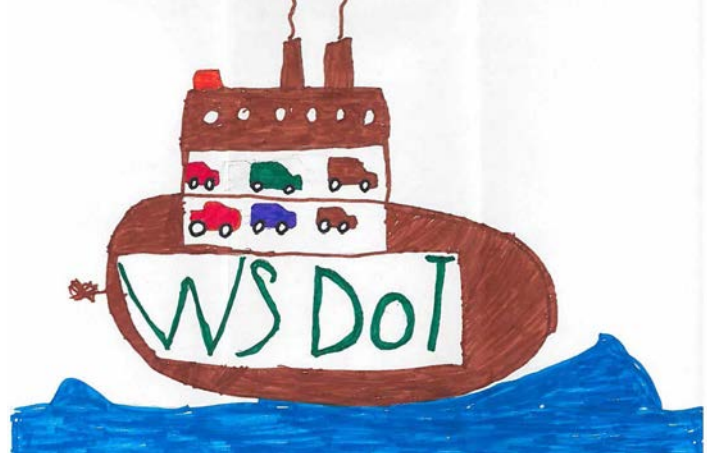
biennial plan was successfully implemented. To reduce the backlog of preservation needs over the biennium, the value of systems preserved must exceed the value of systems coming due for replacement during the biennium. WSDOT measures success in delivering the Ferries terminal preservation budget by comparing the target percent of the value of terminal assets beyond their condition-based life cycle at the end of the biennium to the actual percent of value achieved.

Ferries terminal preservation backlog increases in 2013-2015 biennium

Using the terminal life cycle cost model preservation plan, the preservation backlog of the value of systems past due for replacement would have increased 2.4 percent from 12.2 percent at the beginning of the 2013-2015 biennium (July 2013) to 14.6 percent at the end of the biennium (June 2015) if no preservation inventory items were addressed.

WSDOT budgeted \$35.3 million to support the terminal preservation plan, reducing the value from 14.6 percent of the backlog to 13.5 percent (0.1 percent lower than was planned). During the course of the biennium, terminals completed six planned projects that were past due and part of the backlog, including replacing a floating dolphin at Point Defiance, upgrading the terminal building at Bainbridge Island and replacing wingwalls at one of Bremerton's vessel slips.

Terminal preservation slightly exceeded its budgeted preservation target at a significantly lower cost than was budgeted in 2013-2015. The biennial preservation budget was \$35.3 million but actual spending was \$17 million. The lower spending was due to savings on



Eight-year-old Jake Mason (son of Eastern Region Maintenance Technician Jeff Mason), created this drawing of a Washington State Ferry.

completed projects, efficiencies from combining projects, using innovative designs to meet the project needs at lower costs, and eliminating risk reserves at appropriate times in the schedule of a project. Other factors that resulted in WSDOT Ferries spending less than planned during the 2013-2015 biennium included under-spending and not needing to use the risk reserve on the Seattle terminal design and the Seattle overhead loading and transfer span projects. Some of the risk reserve dollars will support these projects as needed in the 2015-2017 biennium.

Ferries vessel preservation work aims to reduce current backlog of needs

The 2013-2015 biennium vessel preservation plan projected to reduce the backlog of needed preservation work from 24.6 percent at the beginning of the 2013-2015 biennium (July 2013) to 20.6 percent at the end of the biennium (June 2015). If no vessel systems due for replacement were renewed in the biennium, the vessel preservation backlog was projected to rise to 28.1 percent.

WSDOT Ferries Division comparison provides different views of preservation backlog

2013-2015 biennium; Dollars in millions; Based on life cycle cost model and Preservation Needs Percentage

Backlog status	Condition-based vessel needs	Condition-based terminal needs	Economic-based terminal needs
Original backlog at beginning of biennium	24.6%	12.2%	4.4%
Additions to backlog during the biennium	3.5%	2.4%	0.4%
Total backlog prior to preservation investments	28.1%	14.6%	4.8%
Projected impact of planned preservation investments	7.5%	1.0%	1.1%
End of biennium backlog based on preservation plan	20.6%	13.6%	3.7%
Preservation spending as of June 2014 (percent of biennial budget)	\$39.3 million of \$77.1 million (50.1%)	\$17.0 million of \$35.3 million (48%)	\$17.0 million of \$35.3 million (48%)
Actual backlog as of June 2015	26.1%	13.5%	3.7%¹

Data source: WSDOT Ferries.

Notes: 1 WSDOT Ferries economic-based model was fine-tuned in FY2015, while inspection and maintenance efforts were updated. As a result, the information above is not directly comparable to that provided for FY2014 in *Gray Notebook* 54. Measure is also used for Results Washington.

Vessels and terminals meet Results Washington goals

At the end of the biennium, the vessel preservation backlog was at 26.1 percent, 5.5 percent higher than the plan, and 1.5 percent higher than the beginning of the biennium. This increase shows that a higher value of systems came due during the biennium than were renewed, putting the plan below where it was at the start of the biennium.

Fiscal year 2015 was challenging for the vessel preservation program. In July 2014, the M/V *Tacoma*'s propulsion system went down, keeping the vessel out of service until April 2015. The M/V *Yakima* was also out of service for an extended period for repairs to one of its drive motors. Having two of the larger vessels out of service forced the cancellation of two drydock periods and required WSDOT to shuffle other planned work to maintain service. Emergency repairs on the M/V *Wenatchee*, M/V *Kaleetan*, M/V *Kitsap* and M/V *Puyallup* also required vessel service and preservation work to be revised.

These events impacted WSDOT's ability to deliver the preservation planned for the biennium. Even so, eight large preservation projects were completed, allowing WSDOT to keep up with the majority of the preservation need. WSDOT budgeted \$77.1 million to support the 2013-2015 vessel preservation plan. Through June 2015, WSDOT spent \$39.3 million or 50.1 percent of the plan to preserve vessel systems during the 2013-2015 biennium.

Ferries reviews terminal preservation needs using newer economic model

WSDOT is developing an asset management model with economic inputs to screen which preservation items fiscally make sense to replace. While the standard condition-based preservation backlog is dependent on when items are past their life cycles, the economic model's backlog are items whose maintenance cost, risks, and financial impacts of failure are higher than the cost of replacement.

The economic model was recalibrated and fine-tuned in FY2015. At the same time, inspection and maintenance efforts were updated. These updates changed the backlog and baseline percentages associated with the 2013-2015 reporting period, and as a result, they are not comparable to those reported at the end of FY2014. Even so, baseline data for the beginning of the 2013-2015 biennium (July 2013) represent the existing models assumptions applied to the project plan and conditions that existed at the beginning of the biennium. The economic model's Preservation Needs Percentage at

the beginning of the 2013-2015 biennium (July 2013) was 4.4 percent, and would have increased to 4.8 percent by the end of the biennium (June 2015) if no preservation work was completed. However, completed preservation projects during the biennium lowered the economic PNP by 1.1 percent, ending the biennium at 3.7 percent.

Contributors include Jean Baker, John Bernhard, Tim Browning, Tom Castor, Jim Hasselbalch, Nicole McIntosh, Mehrdad Moini, Sio Ng, Kynan Patterson, Manny Quinteiro and Joe Irwin

Results Washington Leading Indicator



Based on current funding levels, control the percent of ferry vessel systems that are past due for replacement from increasing to over 10 percent by 2020.

Status: On plan (green) — 8.3 percent as of June 30, 2015
Strategies:

- 1. Maintain vessel systems** - Focus capital program preservation and operating program maintenance resources on vessel systems designated to maintain vessel reliability and apply cost benefit analysis based on the Life Cycle Cost Model to determine how long other systems should be operated beyond their life cycles.
- 2. Efficient, effective use of resources** - Integrate capital program preservation and operating program maintenance planning and contracting to achieve the most effective and efficient use of resources.
- 3. Use flexible planning to achieve goals** - Minimize loss of preservation and maintenance opportunities by maintaining highly flexible project planning and execution that facilitates adjusting the biennial preservation and maintenance work plans to react to changes in vessel and shipyard availability.
- 4. Keep policy makers in the loop** - Inform policy makers about the strategic resource situation by applying the Life Cycle Cost Model to establish preservation performance objectives and program delivery.

Results Washington Leading Indicator



Based on current funding levels, control the percent of ferry terminal systems that are past due for replacement from increasing to over 6 percent by 2020.

Status: On plan (green) — 3.7 percent as of June 30, 2015
Strategies:

- 1. Reprioritize projects as needed** - Use economic based life cycle model to prioritize projects to match available capital budget.
- 2. Extend the useful life of systems** - Increase maintenance actions to extend the useful life on systems targeted for deferral by the economic model
- 3. Reduce reliability risks** - Target preservation dollars to reduce risk to degradation of service reliability.
- 4. Review asset conditions** - Periodically review system asset conditions and adjusted years of replacement, then compare results to planned budget amounts in future biennia to confirm program sizing.

Notable results

- *Ferries ridership was 6.25 million for the fourth quarter of fiscal year (FY) 2015, a 4.7% increase over the same quarter in FY2014*

- *Farebox revenues were \$47.7 million — the highest ever for the fourth quarter (April through June)*

Ferries ridership increase largest in seven years

WSDOT Ferries (Ferries) ridership was approximately 6.25 million during the fourth quarter of fiscal year (FY) 2015 (April through June 2015). This is approximately 382,400 (6.5 percent) higher than Ferries had projected for the quarter and 281,500 (4.7 percent) more than the fourth quarter in FY2014.

Compared to the same quarter in previous fiscal years (July 1 through June 30), the ridership increase is the largest WSDOT has experienced in seven years. It is also the first time Ferries has broken the six million rider mark for the fourth quarter since 2007.

Ferries make 99.4 percent of trips to exceed annual reliability goal

There were 40,959 regularly scheduled trips during the fourth quarter of FY2015. Ferries made 99.4 percent (40,729) of them, exceeding its annual reliability performance goal of 99 percent (see table on [p. 30](#)).

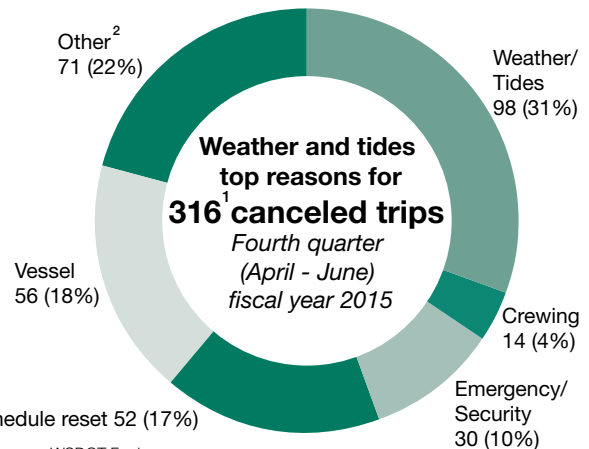
Ferries canceled 316 trips and was able to replace 86 of them, resulting in 230 net missed trips for the fourth quarter of FY2015. This was 24 more net trips missed compared to the fourth quarter of FY2014.

Tides and weather were the primary reasons for cancellations during the quarter, totaling 98 (31 percent).

A weekend closure of the Coupeville terminal for a planned repair to a transfer span was responsible for 47 cancellations. Those cancellations combined with 19 miscellaneous cancellations made up most of the 71 (22 percent) cancellations in the other category.

Vessel-related issues

The online version of this article features an interactive map with a more in-depth quarterly look at Ferries ridership, reliability and on time performance information. Visit bit.ly/GNBferriesmap.



Data source: WSDOT Ferries.

Notes: Fiscal years run from July 1 through June 30. Percentages may not add to 100 due to rounding. 1 Ferries replaced 86 of the 316 canceled trips, for a total of 230 missed trips. 2 "Other" includes events like disabled vehicles, issues at terminals, environmental reasons or non-ferries related incidents that can impact operations.

comprised 56 (18 percent) cancellations. The Motor/Vessel (M/V) *Issaquah* had three separate engine-related problems that accounted for 27 cancellations. The M/V *Elwha* missed 11 sailings due to propulsion control issues. The remaining 18 vessel cancellations were spread across six boats with the M/V *Tokitae* accounting for seven due to a loss of propulsion.

Ferries on time performance decreases during the quarter

System-wide on time performance for WSDOT Ferries was 1.6 percentage points lower than the same quarter in FY2014, decreasing from 95.8 percent to 94.2 percent for the fourth quarter of FY2015. The quarterly rate is below Ferries' annual on time performance goal of 95 percent.

On average, 26 out of 448 daily trips did not leave the terminal within 10 minutes of the scheduled departure time in the fourth quarter of FY2015. This is an increase from the average of 18 daily trips that were late during this period last year. Ferries experienced decreases in on time performance, ranging from a 0.3 percent drop on the

Fourth quarter farebox revenues jump by 6 percent

San Juan Domestic and Edmonds – Kingston runs to a 4.9 percent decline on the Seattle – Bainbridge Island run.

The system-wide drop is directly related to the higher traffic volumes experienced during the fourth quarter of FY2015. The M/V *Puyallup* experienced engine problems that restricted its speed on the Seattle – Bainbridge route and made it difficult to maintain its on time performance during high traffic periods on the system's busiest route. This was the cause for the 4.9 percent drop in the route's on time performance as compared to the fourth quarter of FY2014.

Ferries farebox revenues hit all time high for spring quarter

Ferries farebox revenues followed ridership numbers and continued their upward trend, coming in at \$47.7 million for the fourth quarter of FY2015, the highest yet for the spring quarter (April through June).

Farebox revenues were \$2.1 million (4.5 percent) more than the fourth quarter of FY2014, and \$2.6 million (5.8 percent) more than revenue projections based on the state's June 2014 economic and population growth forecasts.

Rider complaints increase due to reservations system

Ferries received a total of 473 complaints and 29 compliments from the 6.25 million riders it served during the fourth quarter of FY2015. This was an increase from the 328 complaints and a decrease from the 39 compliments from the same quarter in FY2014.

The largest increase in complaints was in the reservations category, which increased from 11 to 150 compared to the same quarter in FY2014. The reservations system for the San Juan Domestic route was implemented in January 2015, and has successfully reduced vehicle wait times and spread demand.

The majority of complaints during the quarter focused on lack of available space, reservation rules and the reservations process. Ferries is continuing its public outreach plan and making refinements to the system based on customer input and ridership demands. The largest decrease in complaints was in the employee behavior category, which dropped from 69 in the fourth quarter of FY2014 to 53 in the fourth quarter of FY2015.

Contributors include Matt Hanbey, Kynan Patterson and Joe Irwin

Ferries' on time performance and trip reliability decrease slightly for fourth quarter of fiscal year 2015

April through June FY2014 and FY2015; Annual on time goal = 95 percent; Annual reliability goal = 99 percent

Route	On time performance (fourth quarter)				Trip reliability (fourth quarter)			
	FY2014	FY2015	Status	Trend	FY2014	FY2015	Status	Trend
San Juan Domestic	90.3%	90.0%	-0.3%	↓	99.7%	99.7%	0.0%	↔
Anacortes/Friday Harbor – Sidney, B.C.	91.6%	89.2%	-2.4%	↓	99.1%	97.2%	-1.9%	↓
Edmonds – Kingston	99.3%	99.0%	-0.3%	↓	99.9%	100.0%	+0.1%	↑
Fauntleroy – Vashon – Southworth	94.0%	92.1%	-1.9%	↓	99.4%	99.5%	+0.1%	↑
Port Townsend – Coupeville	96.7%	93.7%	-3.0%	↓	96.6%	94.2%	-2.4%	↓
Mukilteo – Clinton	99.1%	97.8%	-1.3%	↓	99.7%	99.8%	+0.1%	↑
Point Defiance – Tahlequah	99.7%	98.8%	-0.9%	↓	99.8%	99.7%	-0.1%	↓
Seattle – Bainbridge Island	94.7%	89.8%	-4.9%	↓	99.8%	99.8%	0.0%	↔
Seattle – Bremerton	98.5%	97.6%	-0.9%	↓	99.7%	100.0%	+0.3%	↑
Total system	95.8%	94.2%	-1.6%	↓	99.5%	99.4%	-0.1%	↓

Data source: WSDOT Ferries.

Note: FY = fiscal year (July 1 through June 30). A trip is considered delayed when a vessel leaves the terminal more than 10 minutes later than the scheduled departure time. Ferries operates 10 routes but combines the Anacortes – Friday Harbor route with the San Juan Interisland route as the San Juan Domestic for on time performance and service reliability. Due to unique fare collection methods in the San Juan Islands, and similar origin and destination legs on both routes, some statistics cannot be separated between the two routes.

Notable results

- *WSDOT teams responded to 12,552 incidents during the second quarter of 2015, providing an estimated \$19.3 million in economic benefits*
- *WSDOT responded to 4.6% fewer incidents than during the same quarter last year*
- *Average incident clearance time increased 54 seconds from the same quarter last year*

Incident Response teams help at 12,552 incidents

WSDOT's Incident Response (IR) teams assisted at 12,552 incidents during the second quarter (April through June) of 2015. This averages to a WSDOT team responding to an incident scene roughly every 10 minutes during the quarter. The agency responded to 601 fewer incidents — about a 4.6 percent decrease — during the second quarter of 2015 than during the same period in 2014.

WSDOT teams cleared incidents in an average of 12 minutes and 18 seconds. This is 54 seconds slower than the average incident clearance time for the same quarter last year which was the fastest clearance time achieved since 2001. This increase is likely due to a higher proportion of incidents which blocked at least one lane (27 percent this quarter compared to 21.5 percent last year) and a 15.9 percent increase in incidents lasting more than 90 minutes.

WSDOT's goal is to clear incidents as quickly and safely as possible to reduce incident-induced delay and the chance for secondary incidents to occur. Secondary incidents are incidents that happen in congestion resulting from another incident and may be caused by distracted driving, unexpected slowdowns, or debris



The mission of WSDOT's Incident Response program is to clear traffic incidents safely and quickly, minimizing congestion and the risk of secondary incidents. The statewide program has a biennial budget of \$9 million, funding about 47 full-time equivalent positions (approximately 80 trained drivers) and 62 dedicated vehicles. Teams are on-call 24/7 and actively patrol 493 centerline miles (about 32 percent of all urban centerline miles) of highway on major corridors around the state such as I-5 or I-205 during peak traffic hours.

WSDOT sees fewer incident responses compared to last year; clearance times increase

Second quarter (April through June) 2014 and 2015

2015 - Q2 **12,552** incident responses **12.3**-minute average incident clearance time

2014 - Q2 **13,153** incident responses **11.4**-minute average incident clearance time

incident responses **4.6%** ↓ decreased **clearance time** **7.9%** ↑ increased

Data source: Washington Incident Tracking System.

Notes: Data above only account for incidents to which an IR unit responded. IR data reported for the current quarter (Q2 2015) are considered preliminary. In the previous quarter (Q1 2015), WSDOT responded to 11,076 incidents, clearing them in an average of 12.2 minutes. These numbers have been confirmed and are now finalized.

in the roadway. The IR teams help alert drivers about incidents and clear the roadway to reduce the likelihood of new incidents. A table summarizing the IR program's performance and benefits for the quarter is on [p. 32](#).

WSDOT's assistance at incident scenes provided an estimated \$19.3 million in economic benefits during the second quarter of 2015 by reducing the impacts of incidents on drivers. These benefits are provided in two ways. First, by clearing incidents quickly, WSDOT reduces the time and fuel motorists waste in incident-induced traffic delay. About \$10.9 million of IR's economic benefits for the quarter is from reduced traffic delay. Second, by proactively managing traffic at incident scenes, WSDOT helps prevent secondary incidents.

About \$8.4 million of IR's economic benefit results from preventing an estimated 2,387 secondary incidents and resulting delay. This figure is based on Federal Highway Administration data that there are 20 percent more secondary incidents on the system due to primary incidents. Based on WSDOT's budget for IR (see box at left), every \$1 spent on the program this quarter provided drivers roughly \$17 in economic benefit.

WSDOT responds to more long-lasting incidents

WSDOT's Incident Response prevents \$19.3 million in delay and secondary incidents

April through June 2015; Incidents by duration; Times in minutes; Costs and benefits in millions of dollars

Incident duration	Number of incidents ¹	Percent blocking ²	Average roadway clearance time ³ (blocking only)	Average roadway clearance time ³ (all incidents)	Average incident clearance time ⁴ (all incidents)	Cost of incident-induced delay	Economic benefits from IR program ⁵
Less than 15 min.	9,820	19.1%	4.5	0.8	4.9	\$12.3	\$5.7
Between 15 and 90 min.	2,572	53.9%	24.3	13.3	29.6	\$21.6	\$9.5
Over 90 min.	160	84.4%	174.3	149.1	185.4	\$9.8	\$4.1
Total	12,552	27.0%	20.1	5.3	12.3	\$43.8	\$19.3
Percent change from second quarter 2014	↓ 4.6%	↑ 5.5%	↑ 9.9%	↑ 39.5%	↑ 7.9%	↑ 6.9%	↑ 5.0%

Data source: Washington Incident Tracking System.

Notes: Some numbers do not add up due to rounding. 1 Teams were unable to locate 615 of the 12,552 incidents. Because an IR team attempted to respond, these incidents are included in the total incident count, but are not factored into other performance measures. 2 An incident is considered blocking when it shuts down one or more lanes of travel. 3 Roadway clearance time is the time between the IR team's first awareness of an incident (when a call comes in or the incident is spotted by a patrolling IR unit) and when all lanes are available for traffic flow. 4 Incident clearance time is the time between an IR team's first awareness of an incident and when the last responder has left the scene. 5 Estimated economic benefits include benefits from delay reduction and prevented secondary incidents. See [WSDOT's Handbook for Corridor Capacity Evaluation, pp. 40-42](#), for WSDOT's methods to calculate IR benefits.

WSDOT teams' proactive work reduces incident-related delay

Incident-induced traffic delay on state highways cost motorists an estimated \$43.8 million in wasted time and fuel during the second quarter of 2015. This is about \$2.8 million more than in the same quarter of 2014. Without WSDOT's assistance, this economic impact would have been roughly \$63.1 million (\$19.3 million in prevented delay and secondary incidents plus \$43.8 million in actual delay).

For more information on how WSDOT calculates these figures and all IR performance metrics see [WSDOT's Handbook for Corridor Capacity Evaluation, pp. 40-42](#).

WSDOT teams respond to 160 over-90-minute incidents

WSDOT Incident Response units provided assistance at the scene of 160 incidents that lasted more than 90 minutes during the first quarter of 2015. This is 22 more incidents — roughly 16 percent — than the same quarter in 2014. While these over-90-minute incidents accounted for 1.3 percent of all incidents, they resulted in 22.5 percent of incident-related delay costs.

Twelve of the 160 over-90-minute incidents took six hours or more to clear (referred to as extraordinary incidents). This is three more extraordinary incidents than the same quarter in 2014. The 12 extraordinary incidents took an average of eight hours and 28 minutes to clear, accounting for about 4.8 percent of all incident-induced delay costs for the quarter.

WSDOT crews cleared over-90-minute incidents in about three hours and five minutes on average. This is 12 minutes slower than the same quarter in 2014. The higher number of extraordinary incidents likely contributed to this increase in clearance times.

Excluding the 12 extraordinary incidents, WSDOT's average clearance time for over-90-minute incidents would have been two hours and 39 minutes. Performance data reported in this article is from WSDOT's Washington Incident Tracking System, which tracks incidents to which a WSDOT IR team responded.

Contributors include Vince Fairhurst, Ida van Schalkwyk, Bradley Bobbitt and Sreenath Gangula

Customer feedback: Incident Response teams provide quick assistance in second quarter 2015

WSDOT IR teams give comment cards to drivers they help. Below are samples of the comments received from drivers WSDOT assisted during the second quarter of 2015:

- I was honestly surprised at how quickly [Incident Response] were at the scene and fixed the problem. Very nicely done. Thank you.
- Jim was incredible. He just happened to be behind us, saw the incident and came to the rescue.
- Everything is perfect 100 percent. [Incident Response] stopped one minute after my tire blew and Jan had me going in less than 10 minutes. Thank you so much!

Notable results

- *One-third of Amtrak Cascades passengers getting on or off trains in fiscal year 2015 did so at the Seattle or Tacoma stations*
- *Seven federally funded rail projects are complete, one is in design and 12 others are under construction as of June 30, 2015*

Passengers use stations 1.52 million times in FY2015

Approximately 1.52 million passengers got on or off trains at one of the 18 Amtrak Cascades stations in fiscal year (FY) 2015 (July 2014 through June 2015). Nearly 56 percent of these passengers used one of the 12 stations in Washington state. Washington stations saw passenger usage decrease less than 1 percent between FY2014 and FY2015. The overall corridor from Vancouver, British Columbia (B.C.), to Eugene, Oregon, experienced a 2.6 percent decrease, primarily due to ongoing construction projects and schedule changes.

Passenger use at each station is measured by “on-offs” that determine the number of riders who get on or off trains at a given station. For example, someone who rides Amtrak Cascades from Olympia to Seattle is counted as one passenger using the Olympia station (where they board the train), and as one passenger using the Seattle station (where they get off the train).

In FY2015, 836,000 (55 percent of total station users) passengers got on or off Amtrak Cascades trains

Amtrak Cascades serves 18 stations

Amtrak Cascades is a 467-mile-long intercity rail service linking 18 stations from Vancouver, B.C., to Eugene, Oregon. The stations are owned by various entities including city governments, local transit agencies and Amtrak. Many stations also serve commuter trains, light rail, buses and pedestrian facilities, which provide multimodal connections for travelers.

The operation of the Amtrak Cascades is jointly funded by WSDOT and the Oregon Department of Transportation (ODOT). WSDOT funds four daily round trips between Seattle and Portland and two daily round trips between Seattle and Vancouver, B.C. ODOT funds two daily round trips between Eugene and Portland.

at King Street Station in Seattle or Union Station in Portland. Although these two stations collectively served 25,000 fewer passengers in FY2015 than FY2014, they continue to serve the largest number of Amtrak Cascades passengers. The Vancouver, B.C., station experienced the largest total increase in ridership between the fiscal years, with 5,000 more passengers served.

Total number of passengers getting on or off trains¹ at Amtrak Cascades stations declines 2.6 percent Fiscal year (July through June), 2014 and 2015

Station ²	FY2014	FY2015	Trend
Vancouver, B.C.	150,000	155,000	+3.3%
Bellingham	55,000	53,000	-3.6%
Mount Vernon	18,000	19,000	+5.6%
Stanwood	5,000	5,000	-
Everett	24,000	23,000	-4.2%
Edmonds	22,000	22,000	-
Seattle	441,000	439,000	-0.5%
Tukwila	28,000	29,000	+3.6%
Tacoma	92,000	89,000	-3.3%
Olympia	50,000	49,000	-2.0%
Centralia	21,000	20,000	-4.8%
Kelso	25,000	26,000	+4.0%
Vancouver, Wash.	73,000	72,000	-1.4%
Portland	420,000	397,000	-5.5%
Oregon City	13,000	13,000	-
Salem	42,000	39,000	-7.1%
Albany	22,000	19,000	-13.6%
Eugene	60,000	51,000	-15.0%
Total³	1,561,000	1,520,000	-2.6%

Data source: WSDOT Rail Division.

Notes: 1 Measures the number of passengers moving through stations by counting the number of riders that get on or off the train at each station (rounded to nearest 1,000). 2 The stations are owned by various entities, primarily city governments and local transit agencies. WSDOT owns one station (Stanwood) and Amtrak owns two stations (Edmonds and Tacoma). 3 Includes RailPlus passengers, riders whose origin or destination was unknown, and passengers who deferred their trip to another day. These accounted for 28,000 passengers in FY2014 and 20,000 passengers in FY2015.

Twelve federally funded rail projects under construction

Vancouver projects improve reliability, reduce congestion

WSDOT is improving passenger train reliability and travel times with a trio of projects in Vancouver as part of the 20-project, high-speed rail program in Washington. The three Vancouver projects, funded by the American Recovery and Reinvestment Act, total \$65.4 million and build off earlier state-funded work to ease passenger and freight rail congestion at both the Port of Vancouver and the busy BNSF Rail Yard, reducing delays for Amtrak Cascades trains.

The *Vancouver — New Middle Lead* project, completed in March 2015, added 1,300 feet of new lead track to eliminate a major freight rail chokepoint at the busy Vancouver rail yard. This allows Amtrak Cascades passenger trains to more easily pass through the area. The project also added active warning devices to improve safety at an at-grade crossing at West 11th Street in Vancouver.



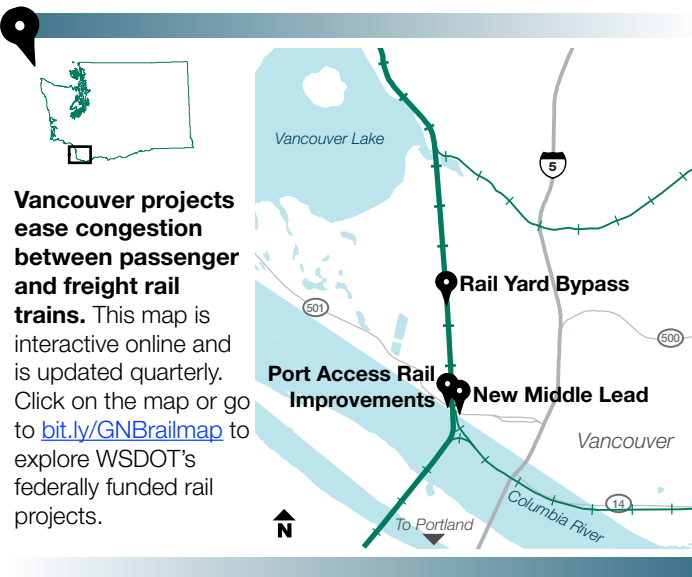
The first BNSF train moves through the new rail trench at the Port of Vancouver in July 2015. (Photo courtesy of Port of Vancouver USA and BNSF Railway)

The *Vancouver — Rail Yard Bypass* project is still under construction, and is scheduled to be completed in 2016. This project will improve reliability for Amtrak Cascades passengers by separating passenger and freight rail traffic. The project includes constructing a 12,500-foot freight rail bypass on the eastern side of BNSF's Vancouver rail yard, relocating the existing train turntable and moving mechanical and storage buildings.

WSDOT continues to make progress on its 20 federally funded rail projects

As of June 30, 2015, WSDOT had 12 passenger rail projects in construction, one in the design phase and seven projects completed. The remaining project will start construction this year. Work includes purchasing new locomotives, adding tracks to handle increased train traffic, and upgrading tracks, signals and stations. More than 96 percent (\$767 million) of federal funding for these projects is from the American Recovery and Reinvestment Act of 2009.

Passengers are expected to benefit from two additional daily round trips between Seattle and Portland, with an anticipated travel time reduction of 10 minutes when the program is scheduled to be complete in 2017. In addition, WSDOT, Amtrak and BNSF are committed to achieving an average of 88 percent on time performance for trains traveling from Portland to Seattle and Seattle to Vancouver, B.C. To view the interactive map of the federally funded rail projects visit <http://bit.ly/GNBrailmap>.



Vancouver projects ease congestion between passenger and freight rail trains. This map is interactive online and is updated quarterly. Click on the map or go to bit.ly/GNBrailmap to explore WSDOT's federally funded rail projects.

The *Vancouver — Port Access Rail Improvements* project, also completed in March, provides a new primary route for rail traffic entering and exiting the Port of Vancouver facility. This reduces passenger-freight congestion and allows trains to efficiently move through the facility at higher speeds by separating the east-west trains from the north-south trains. This project removed some buildings, added new track, and constructed a rail trench along the Columbia River to provide a second train route across the river (see photo at top right).

Contributors include Jason Biggs, Chris Dunster, Teresa Graham, Barbara LaBoe, Janet Matkin, David Smelser and Erica Bramlet

Notable results

- *Puget Sound region travel times increased on 11 out of the 18 routes evaluated, while traffic volumes changes were mixed*
- *Some I-5 and I-405 commutes experienced travel time increases of up to six minutes, while SR 167 saw modest increases*

Puget Sound region travel times on the rise

Puget Sound region travel trends observed during the second half of 2014 show that the corridor travel times trended up while the traffic volume changes were mixed depending on the corridor and location. The increases in travel times on Puget Sound region freeways come at a time of growth in region's economy.

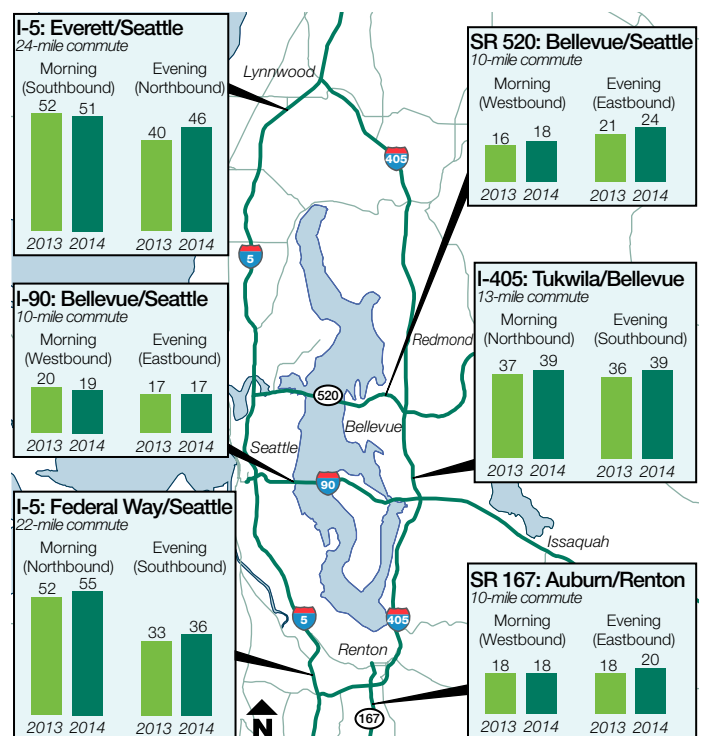
This semi-annual travel time trends analysis looks at traffic conditions in the central Puget Sound region for July through December 2014, relative to the same time period in 2013. Key observations include:

Travel times: Peak period (Monday through Friday, 5-10 a.m. and 2-8 p.m.) travel times increased on 11 of the 18 commute routes. Out of the remaining seven commutes routes, three saw travel time improvements while four remained unchanged. The largest travel time increases from 2013 to 2014 occurred on the north-south corridors of I-5 and I-405, continuing the trend observed in the first half of 2014. The cross-lake afternoon trip from Seattle to Bellevue via SR 520 saw largest improvement of two minutes.

Traffic volumes: Between 2013 and 2014, 14 out of the 18 commute routes showed minor changes (changes of 2 percent or less) in traffic volumes (number of vehicles passing a location), during peak periods. The remaining four commute routes experienced variations in traffic volumes, ranging from a 3 percent decrease to a 4 percent increase.

Economy: Employment levels increased by 3 percent between December 2013 and December 2014 in the Seattle-Bellevue-Everett metropolitan area, indicating continued economic growth.

A list of 18 monitored Puget Sound region commutes during the second half of 2014 can be accessed at http://bit.ly/GNB58_TravelTimes.



Data sources: WSDOT Northwest Region and the Washington State Transportation Center (TRAC). Notes: Travel times are for single occupant vehicles in minutes. Data is for the second half of 2013 and 2014 (July through December). Peak periods are 5-10 a.m. and 2-8 p.m.

Cross Lake traffic volumes mixed

Between 2013 and 2014, travel times along SR 520 and I-90 commute routes remained unchanged (fluctuating by two minutes or less) on seven of the eight cross-lake commute routes while traffic volumes increased on six of the eight commutes by up to 4 percent depending on the direction of travel and the time of day.

SR 520 corridor (2014 vs. 2013): Travel times on SR 520 are on the rise – meaning it took more time to cross the bridge in 2014 compared to 2013 on three out of four commutes between Bellevue and Seattle. The SR 520 morning commute, between the cities, took roughly two minutes longer to cross Lake Washington. However, during the afternoon, commute travel time changes are subject to direction of travel. Travel time improved on the

Travel times escalate on I-5 and I-405 during peak hours

eastbound direction roughly by two minutes while the westbound commute saw a three minute increase.

All four of these commutes saw an increase in traffic volumes ranging from 2 to 4 percent during peak commute hours. Similarly, daily volumes on these routes increased by 3 percent in both directions.

I-90 corridor (2014 vs. 2013): Travel times on I-90 (between Bellevue and Seattle) were unchanged on three out of four commutes while the westbound morning commute from Bellevue into Seattle improved by one minute into Seattle. Peak period traffic volumes during morning commutes increased by 1 percent while afternoon commutes saw a reduction of up to 2 percent in both directions of travel.

North-south corridors experience longer travel times in 2014

Between 2013 and 2014, travel times along the north-south (I-5, I-405, SR 167) commute routes increased on eight out of 10 commute routes ranging between two minutes and six minutes. Of the remaining two commutes, the morning commute from Auburn to Renton remained unchanged while the Everett to Seattle morning commute saw a one minute improvement in travel time.

I-5 corridor (2014 vs. 2013): Changes in peak period travel times on I-5 were more substantial during afternoon commutes compared to morning. Morning commute travel times on I-5 increased by three minutes from Federal Way to Seattle while Everett to Seattle saw a one minute improvement. Afternoon commute travel times on I-5 from Seattle to Everett increased by six minutes while Seattle to Federal Way increased by three minutes.

While three out of four monitored I-5 commutes saw increases in travel times, traffic volumes on the I-5 corridor either remained unchanged or decreased. Between 2013 and 2014, I-5 morning commutes saw no change in peak period traffic volumes while afternoon commutes saw a reduction of 2 percent. Significant increases in afternoon travel times paired with lower traffic volumes shows that the I-5 corridor demand is exceeding available capacity.

I-405 corridor (2014 vs. 2013): During the morning and afternoon peak periods, travel times on I-405 commutes increased by up to four minutes. The Everett to Bellevue morning commute saw a four minute increase in travel time despite a 1 percent decrease in traffic volume.

On the other hand, the Bellevue to Everett afternoon commute saw a four minute increase in travel times along with a 2 percent increase in traffic volume.

The morning commute between Tukwila to Bellevue saw a two minute increase in travel times while the traffic volume decreased by 2 percent. Similarly, the Bellevue to Tukwila afternoon commute saw a three minute increases in travel times, while peak period traffic volume decreased by 3 percent. This shows that I-405 is experiencing congested traffic conditions during peak periods.

SR 167 corridor (2014 vs. 2013): Changes in peak period travel times on SR 167 (between Auburn and Renton) were relatively small to non-existent. The morning commute from Auburn to Renton saw no change in travel time while traffic volume was up by 1 percent. Afternoon commute travel time from Renton to Auburn increased by two minutes while traffic volume remained unchanged.

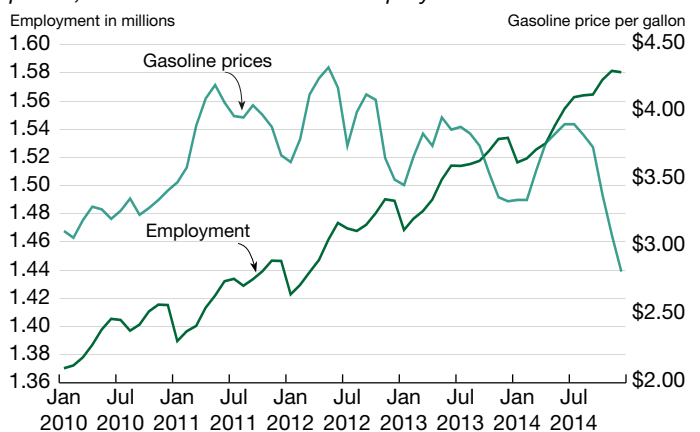
Regional employment improves

Economic activity continued to grow in the Puget Sound region in the second half of 2014. Regional employment grew during the second half of 2014, continuing a trend that began during 2011; employment in the Seattle-Bellevue-Everett metropolitan division increased by 3 percent year over year from the end of 2013 (1,533,900) to the end of 2014 (1,580,500). Large changes in gasoline prices can influence travel volumes statewide. The average Washington gas price during December 2014 was \$2.83 compared to \$3.35 in December 2013.

Contributors include John Ishimaru, Mark Hallenbeck, Trevor Skelton and Sreenath Gangula

Employment grows, gas prices drop at end of 2014

January 2010 through December 2014; Washington state gas prices; Seattle-Bellevue-Everett employment



Data sources: Bureau of Labor Statistics - Local Area Unemployment Statistics; US Department of Energy - Energy Information Administration.

Note: Gas prices are reported in 2014 dollars.

Notable results

- WSDOT corrected nine fish passage barriers in 2014, restoring fish access to 24 miles of potential upstream habitat

- WSDOT has corrected 14 barriers applicable to the federal culvert injunction, restoring access to 2.4% of blocked habitat

WSDOT making progress to meet culvert injunction

WSDOT has corrected 14 fish passage barriers applicable to the federal culvert injunction since it was issued in May 2013 (see [Gray Notebook 52, pp. 23-24](#)). These corrections have restored access to 27.7 miles of previously blocked habitat or about 2.4 percent of blocked habitat in the injunction case area (see map below). Eight of the barriers were corrected by projects completed in 2014.

A fish passage project is applicable to the injunction if it corrects a culvert that is a documented barrier to salmon and/or steelhead in the case area. However, WSDOT is required to bring any culvert within a project's footprint up to current design code. Some fish passage projects are not applicable to the injunction because they are either not correcting a barrier culvert or outside the case area.

WSDOT needs to correct approximately 450 additional barriers within the case area by 2030 in order to comply

with the injunction's requirement to restore fish access to 90 percent of the blocked habitat within the case area. This means WSDOT will need to correct 30 barriers each year until 2030. There are currently about 980 culverts on WSDOT's injunction fish barrier list, but this figure can change as the list is continually updated.

WSDOT hits 1,000 miles of habitat reopened to fish statewide

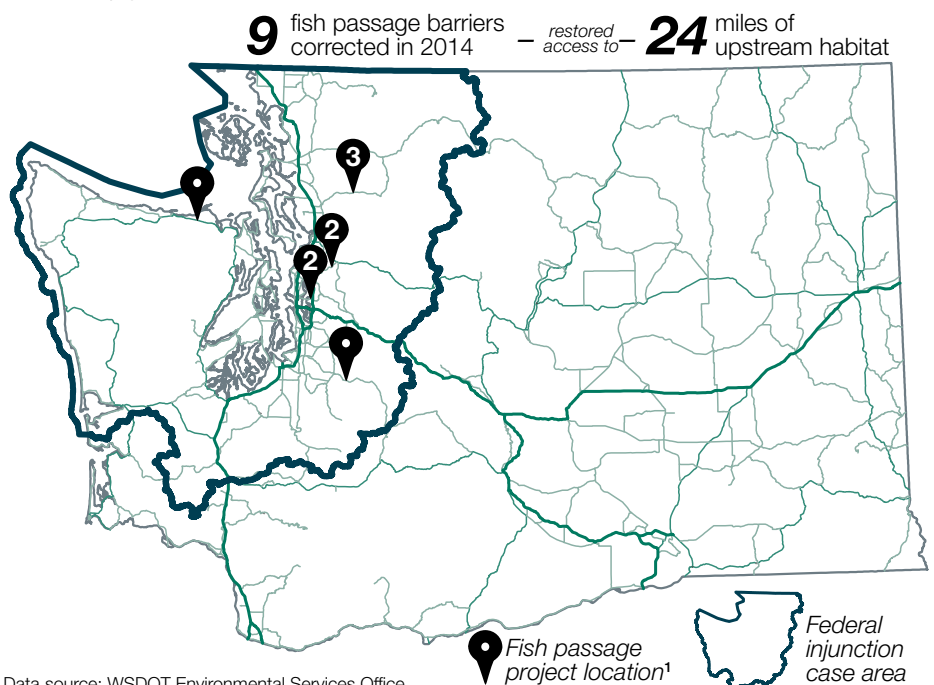
WSDOT corrected nine fish passage barriers statewide in 2014. These projects restored access to 24 miles of potential upstream habitat. In addition to the eight projects applicable to the federal injunction, one project corrected a barrier which was not a culvert. Also, three transportation projects fixed or upgraded culverts that did not have documented barriers. Finally, WSDOT completed a project to temporarily improve fish access to 22 miles of habitat on Chico Creek while the agency awaits funds to build a permanent fix at the site.

Public can explore WSDOT's fish passage work in online map

WSDOT launched a newly designed fish passage website and online map in 2014. The web page provides information on WSDOT's fish passage program, annual progress reports, information on the federal culvert injunction, and staff contacts.

The interactive online map has information such as barrier type, potential habitat gain and photos for all documented WSDOT-owned barriers and completed fish passage projects around the state.

The map is updated annually. Go to <http://www.wsdot.wa.gov/Projects/FishPassage/> to explore the content.



Data source: WSDOT Environmental Services Office.

Notes: Eight projects completed in 2014 were applicable to the federal injunction. 1 Markers with numbers represent the site of multiple fish passage projects, all others represent one project.

WSDOT works with partners to speed up project review

WSDOT has corrected 291 fish passage barriers to date, restoring access to approximately 1,000 miles of potential habitat statewide. WSDOT has been working with the Washington State Department of Fish and Wildlife (Fish and Wildlife) since 1991 to identify and correct fish passage barriers that occur where highways intersect streams. Correcting fish passage barriers also contributes to Gov. Jay Inslee's statewide goals for recovering Pacific salmon as part of his performance management system for the state, Results Washington (see [p. 7](#)).

WSDOT corrects barriers with bridges or culverts that are designed to provide conditions closer to those of a natural stream within the footprint of transportation projects, as stand-alone projects for high-priority barriers, or as part of maintenance activities when limited work is needed.

Legislature increases funding for fish passage work in 2015-2017 biennium

During the 2015 session, the Legislature authorized \$400 million in funding for fish barrier removal projects during the next 15 years. This includes \$100 million from current funding sources plus \$300 million in new funding. This will allow WSDOT to complete roughly 100 fish barrier removal projects within the injunction area by 2030, which will restore access to 40-45 percent of potential habitat within the injunction area. This is about half of the habitat required by the injunction and less than a quarter of the needed projects. WSDOT anticipates correcting additional fish passage barriers that fall within the footprint of other transportation improvement projects recently funded by the Connecting Washington transportation package.

WSDOT expedites environmental review for fish passage projects

WSDOT completed Endangered Species Act (ESA) compliance consultations with federal agencies for seven of the fish passage projects constructed in 2014 using an expedited process called programmatic consultation. The other six were part of the emergency project to re-open State Route (SR) 530 after a major landslide.

WSDOT has agreements with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS) which fast track ESA compliance consultations

for projects that fit certain criteria. Fish passage projects submitted to NMFS in 2014 using WSDOT's programmatic consultation were typically completed the same day; the longest took two days. The average review time for projects not using the programmatic consultation was 301 days in 2014. This time savings allows WSDOT to allocate resources to design and submit more fish passage projects for ESA consultation each year. See [Gray Notebook 55, p. 20](#) for more information on ESA compliance and programmatic consultations.

WSDOT repairs culverts on State Route 530 after major landslide

WSDOT completed six fish passage projects at stream crossings that were impacted by the major landslide on SR 530 in 2014. Three of the six culverts were applicable to the federal culvert injunction. WSDOT worked with representatives from the Tulalip and Stillaguamish tribes, NMFS and Fish and Wildlife to determine the appropriate culvert sizing for fish passage as part of the overall repair efforts after the landslide.

Because the streams and landscape are still recovering, WSDOT does not know what the potential habitat gains will be. Coho salmon, steelhead, bull trout and resident trout used the streams before the landslide and those species are expected to return once the habitat recovers.

Contributors include Susan Cierebiej and Bradley Bobbitt



WSDOT repaired this culvert along with five others along State Route (SR) 530 after a landslide in March of 2014. These repairs, part of WSDOT's overall effort to repair SR 530 after the landslide, corrected three documented fish passage barriers.

Environmental Approval of Local Agency Projects Special Report

58

Notable results

- The percent of local agency projects getting WSDOT environmental approval increased from 68% in FY2012 to 91% in FY2015
- A May 2015 agreement with the FHWA allows WSDOT to expedite the environmental permit process by 30 days on average

WSDOT receives more project approval authority

Total local agency projects receiving WSDOT environmental approval increased 23 percent, from 68 percent (117 of 172) to 91 percent (193 of 212) between fiscal year (FY) 2012 and FY2015. Approving environmental documentation in-house allows WSDOT to streamline local agency projects for entities like cities and counties, expediting the Federal Highway Administration's (FHWA) environmental review and approval process by approximately 30 days.

WSDOT and the FHWA signed a new agreement in May 2015 granting WSDOT the authority to approve environmental documentation for 99 percent of the local agency projects it receives. The remaining 1 percent of projects do not meet the agreement's criteria or may involve unusual circumstances that require federal input.

Each year, WSDOT receives environmental documentation for approximately 200 local agency transportation projects from partners, including all cities, counties, public ports and tribes in Washington that get funding from the FHWA.

Through its past and recent agreements with FHWA, WSDOT is able to streamline and approve documentation for projects that won't adversely impact the environment.

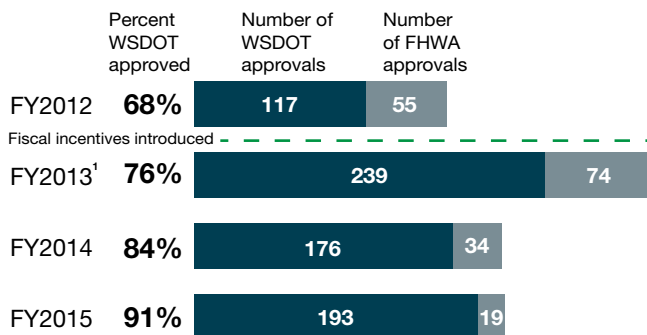
The Anderson Island Ferry Landing Dolphin Replacement in Pierce County and the Hamblen Elementary Safe Routes to Schools Project in Spokane are recent examples of projects that benefited from the approval process. WSDOT was able to assist these projects by obtaining all of the required federal environmental approvals so construction funding could be authorized quicker.

On the Anderson Island project, WSDOT coordinated Endangered Species Act (ESA) consultation with both the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to ensure that the project minimized potential impacts on ESA-listed marine mammals, salmon, steelhead and bull trout. For the Safe Routes project, WSDOT coordinated consultations with the Department of Archaeology and Historic Preservation and the Colville and Spokane tribes to ensure cultural resources would not be adversely affected.

Contributors include Jason Greer, Bill Leonard and Joe Irwin

Percent of local agency projects getting WSDOT environmental approval steadily increasing

Fiscal years (FY) 2012 through 2015



Data source: WSDOT Local Programs.

Notes: FHWA = Federal Highway Administration. Method for tracking these projects changed from FY2011 to FY2012, making FY2012 the baseline year for data. 1 In FY2013, WSDOT created new fiscal incentives to deliver projects in a more timely manner, resulting in a spike in the number of projects.

How WSDOT partners with local agencies

In an effort to streamline its environmental approval process, WSDOT relies on a four-person team to review and approve environmental documentation for local agency projects that receive FHWA funding. The team guides local agencies through the environmental approval process by:

- Determining the level of documentation required, and if work can be completed in-house by WSDOT
- Deciding if specialized environmental reports are needed
- Coordinating with regulatory agencies and tribes to reduce review times
- Issuing the final National Environmental Policy Act approval for projects

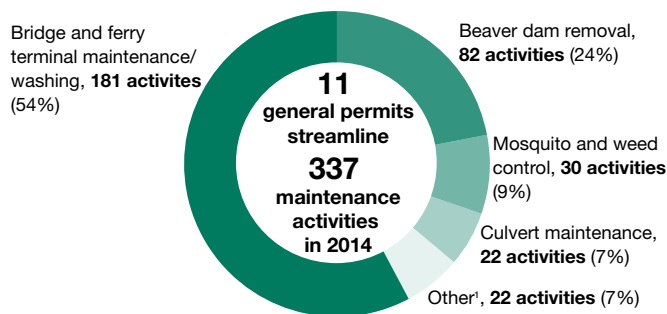
Notable results

- WSDOT saved approximately 2,630 hours of staff time in 2014 by using general permits to streamline maintenance activities
- In 2014, WSDOT used the National Pollution Discharge Elimination System permit for 32 bridge, ferry terminal washing activities

Permits help expedite WSDOT maintenance work

WSDOT saved an estimated 2,630 hours of staff time in 2014 by using seven different general permits issued by the Washington State Department of Fish and Wildlife and four from the Washington State Department of Ecology (Ecology). Each activity conducted under general permits has specific provisions WSDOT maintenance staff or contractors must implement to protect surrounding sensitive environments. Not having to apply for individual permits for each activity helps expedite the delivery of transportation projects and maintenance activities, while assuring the agency continues to maintain its high environmental standards.

WSDOT saved four hours for every activity conducted under 10 of the general permits used in 2014, and 40 hours for every activity conducted under the Bridge and Ferry Terminal Washing National Pollution Discharge Elimination System (NPDES) permit, issued by Ecology. The NPDES permit allows WSDOT to discharge wash water if permit conditions are met.



Data source: WSDOT Environmental Services Office.

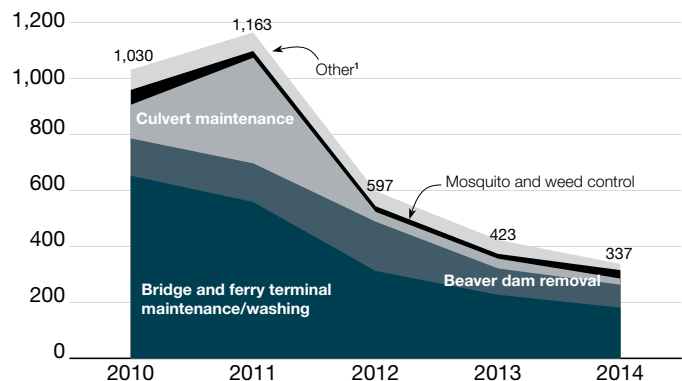
Notes: In 2014, WSDOT used two permits for bridge and ferry terminal maintenance/washing, one for beaver dam removal, three for mosquito and weed control, one for culvert maintenance and four for other maintenance activities. Categories were split out by permit-granting agency in previous years. Percentages do not add to 100 percent due to rounding. 1 "Other" includes channelized stream maintenance, removing and relocating debris from bridge piers or footings, geotechnical test boring in fresh waters, and removing and replacing piles in marine waters.

In 2014, WSDOT used the NPDES permit for 32 activities compared to 29 in 2013, saving 1,280 hours of staff time. (*Gray Notebook 54* should have noted 1,160 staff hours saved from the NPDES permit in 2013).

General permit usage fluctuates depending on maintenance needs

Use of general permits is dependent on the maintenance needs in any particular year and the amount of dedicated funding to complete the work. Although bridge and ferry terminal maintenance and washing permit use has

WSDOT's five-year general permit activity trend
Calendar years 2010 through 2014; Number of permits



Data source: WSDOT Environmental Services Office.

Note: 1 "Other" includes channelized stream maintenance, removing and relocating debris from bridge piers or footings, geotechnical test boring in fresh waters, and removing and replacing piles in marine waters.

declined overall in recent years due to less work in and over water, this is the most used of all general permit types; comprising 181 of 337 activities (54 percent) in 2014 (see chart at left). Bridge and ferry terminal structure maintenance and washing activities covered by these general permits include cleaning, painting and replacing worn out components or deck overlays. For additional information on bridge maintenance refer to [p. 15](#), and for ferries preservation refer to [p. 23](#).

Contributors include Tanya Johnson, Eric Wolin and Erica Bramlet

Notable results

- The number of trucks crossing the Canadian border into Washington grew 3.3% in 2014, continuing an upward trend since 2009
- Interstate 5 near Tacoma had the highest observed daily truck volumes in Washington state in 2014
- Air cargo shipments in Washington state increased 9.7% between 2012 and 2013, the most recent year for which data is available
- Waterborne freight shipments in Washington state decreased 3% between 2012 and 2013

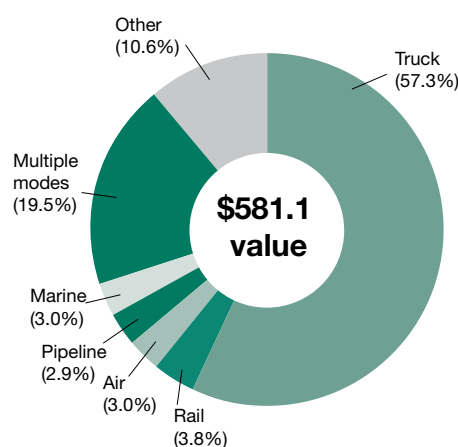
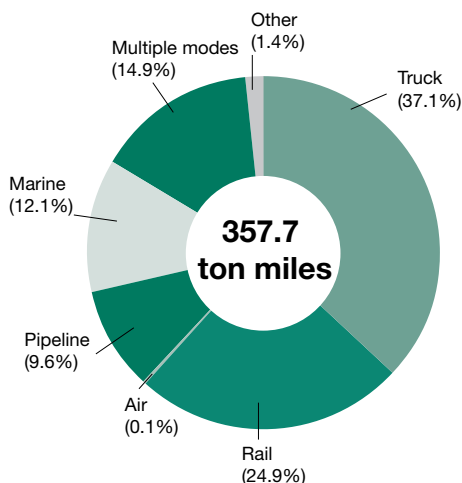
Trade dependence grows; more trucks on roads

On a per capita basis, Washington is the third most trade-dependent state in the nation (behind Louisiana and Texas) with total imports and exports valued at \$142.7 billion and gross business income for freight-dependent industry sectors valued at \$547.6 billion in 2014. This is up from its fourth-place position. This is due to import/export value and important because WSDOT supports freight systems and freight-dependent industries by directly managing the state's highway system, ferry system, a short line railroad and several freight rail programs.

Keeping freight moving contributes to Gov. Jay Inslee's statewide goals for improving travel and freight reliability on strategic corridors, part of his performance management

efforts ([see Results Washington, p. 7](#)). The majority of freight in Washington is moved by truck, whether measured by tonnage or value. When measured in ton miles (a unit of freight transportation representing a ton of freight moved one mile), in 2012 (the most recent year for which data is available) trucks moved 37 percent of freight into, out of, within, and through Washington. This is due to the relative short distance of truck trips compared to other modes. By value, trucks move 57 percent of freight. Trucks also support first- and last-mile movements for freight moved on rail, marine, pipeline and air-freight systems. Rail, marine and pipeline systems typically carry heavier bulk freight of lower value (such as grain) greater distances; trucks, aircraft, and containerized freight generally is of higher value (such as machinery and electronics).

Most freight moves by truck or rail in Washington state 2012¹; Percentages determined by ton miles² and value in millions



Data source: Freight Analysis Framework Data, Federal Highway Administration (FHWA).

Notes: Percentages may not add to 100 due to rounding. 1 The most recent year for which data is available. 2 A unit of freight transportation representing a ton of freight moved one mile.

WSDOT also provides policy analysis and planning coordination for the state's interests in freight transportation systems. The state's multimodal freight system extends beyond the network of highways and local roads, mainline and short line railroads, and navigable waterways, to include the rail terminals, ports, air cargo facilities, weigh stations, border crossings and other infrastructure involved in the movement of commerce.

Truck border crossings continue to trend upward

South Sound has highest truck traffic

South Puget Sound saw estimated average daily truck volumes of 12,249 on Interstate 5 (I-5) near Olympia (milepost 106), 15,226 near Tacoma (milepost 131), and 13,537 near Fife (milepost 136) in 2014. The site near Tacoma had the highest observed daily truck traffic in Washington state. On I-90, average daily truck volumes were 6,275 near North Bend (milepost 33) and 3,413 near Vantage (milepost 136). Average daily truck volumes on State Route 18 were 5,064 near Auburn (milepost 5) and 3,689 near Snoqualmie (milepost 27). An increase in truck traffic is due to a growing economy and is related to a reduction in container port activity in Portland, Ore.

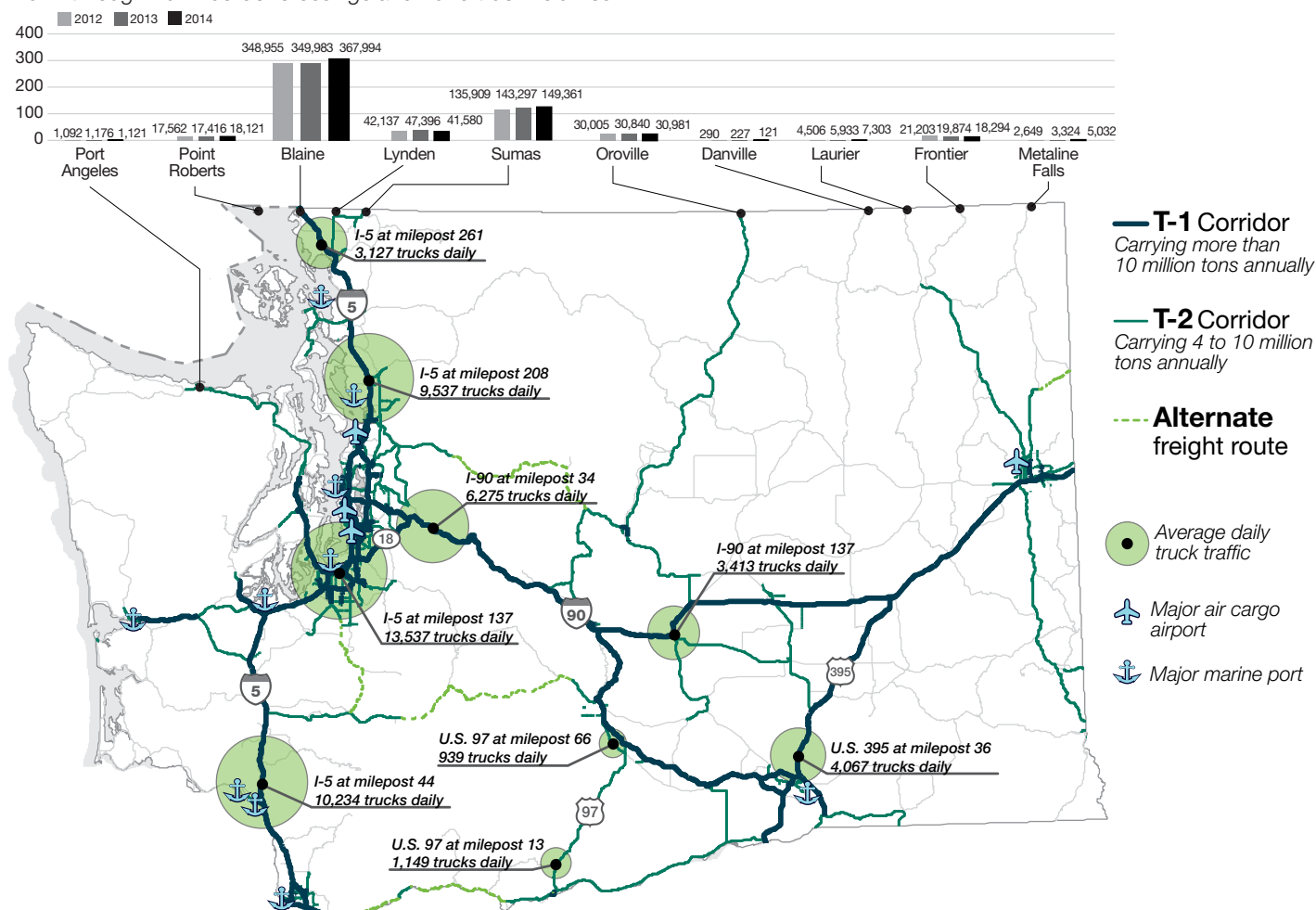
The 2014 average annual daily truck volume data is not comparable to previous years due to a change in the collection process. WSDOT updated the traffic counting equipment in 2013 to improve accuracy.

Number of trucks entering state from Canada up 3.3 percent

The total number of trucks entering Washington from Canada increased 3.3 percent, from 619,466 total truck crossings in 2013 to 639,908 total truck crossings in 2014. This continues the upward trend observed since 2009, with moderate annual increases. Since 2009, the annual number of trucks entering Washington from Canada has increased 14.5 percent.

The high volume border crossings of Blaine and Sumas carry more than 80 percent of total truck border crossings entering Washington from Canada. The border crossing in Blaine consistently has the most traffic. In 2014, 367,994 trucks entered Washington from Canada at the Blaine border crossing. The Sumas border crossing, with the second highest number of southbound truck crossings, saw 149,361 trucks entering Washington in 2014.

Trucks entering Washington from Canada and truck volumes on state roadways continue upward trends 2012 through 2014 border crossings and 2013 truck volumes

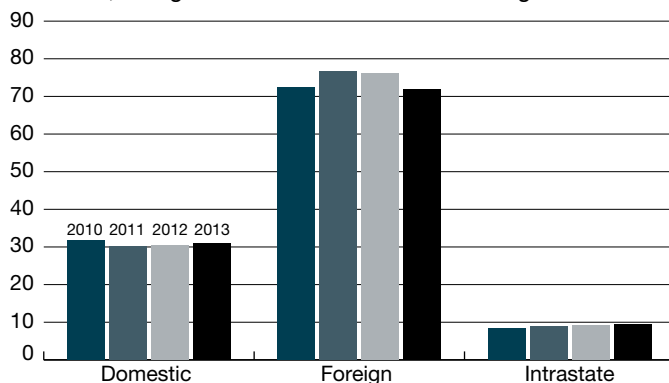


Waterborne freight activity down 3 percent in 2013

Washington's waterborne freight activity, measured in total tonnage, was 112.2 million tons in 2013 (the most recent year for which waterborne freight data is available). This was a 3 percent decrease from 2012 levels, when 115.6 million tons of waterborne freight shipped in Washington. Waterborne freight is categorized as foreign, domestic or intrastate depending on both the origin and destination. In 2013, 64 percent of waterborne freight was foreign, 27 percent was domestic, and the remaining 9 percent stayed within Washington state.

Waterborne freight activity in Washington continues to closely mirror national trends. The drop in marine freight tonnage is due to a decrease in foreign waterborne freight. This is influenced by a variety of factors, including: the U.S. dollar exchange rate, grain prices, shipping line consolidation and competition from Canadian and southwest U.S. ports.

Two-thirds of state's waterborne freight is foreign
2010 through 2013; Waterborne tonnage in millions of tons;
Domestic, foreign and intrastate waterborne freight



Data source: U.S. Army Corps of Engineers, Navigation Data Center.

WSDOT works to designate Salish Sea as part of highways program

In 2015, WSDOT began working with the United States Maritime Administration to designate the Salish Sea as part of America's Marine Highway Program. This is intended to lead to the development and expansion of marine services and to facilitate their integration into the U.S. surface transportation system. The Pacific Ocean and the Columbia-Snake River System are currently recognized as part of the program.

The Pacific Ocean is used to move waterborne freight to and from overseas markets along the U.S. west coast,

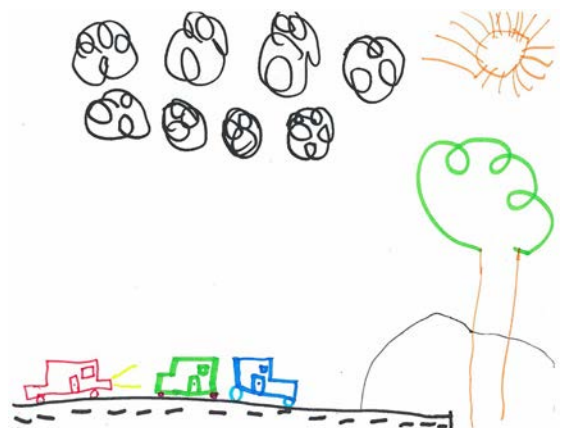
including Alaska. The Salish Sea is composed of three large bodies of water (the Strait of Juan de Fuca, the Strait of Georgia, and Puget Sound), as well as several smaller bodies of water (such as Elliott Bay, Commencement Bay, Bellingham Bay, Hood Canal, Haro Strait and Rosario Strait) that are connecting channels and adjoining waters. Ports on the Puget Sound principally function as gateways for containerized commerce between North America and the rest of the world. The Columbia-Snake River System plays a critical role in the supply chain of agricultural commodities and other products between eastern Washington and seaports on the coast.

Delay, reliability measures studied as WSDOT preps to track performance

WSDOT is researching freight performance measures on truck delay and reliability on the Interstate Highway System. This research will enable WSDOT to track truck travel time, delay and reliability on Truck Freight Economic Corridors, which move the majority of freight in Washington state and are essential to the state's economic competitiveness.

WSDOT is working with stakeholders to update the designation of Truck Freight Economic Corridors. Projects identified on these corridors address performance needs for trucking, from pavement and bridge preservation to mobility. The update will be complete in 2015.

As illustrated on the map on [p. 42](#), highway corridors carrying more than 10 million tons of freight per year are designated as T-1 and those carrying four to 10 million tons per year T-2 freight corridors. For a complete definition of the criteria used to classify Truck Freight Economic Corridors, see <http://www.wsdot.wa.gov/Freight/EconCorridors.htm>.



Seven-year-old artist Hayden Hahn, whose entry in the "Telling Washington's Transportation Story" art contest is pictured above, is the granddaughter of WSDOT Assistant Secretary for Strategic, Enterprise and Employee Services Katy Taylor.

Washington airports handle 1.38 million tons of cargo

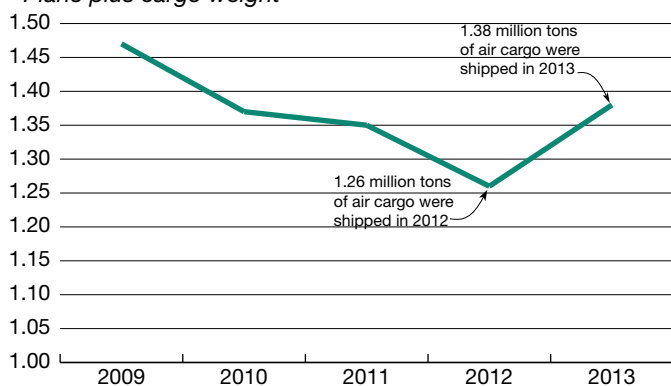
Washington airports handled 1.38 million tons of air cargo in 2013, measured in plane plus cargo weight as reported by the Federal Aviation Administration (FAA). This represents a 9.7 percent increase from 2012 air cargo levels of 1.26 million tons, and is the highest annual tonnage reported since 2009.

This is primarily due to a 3 percent increase in total air cargo tonnage for three major airports, Sea-Tac, Boeing Field and Spokane International, as well as the newly included tonnage from Paine Field airport in Snohomish County, which just met FAA's reporting threshold, moving more than 100 million pounds (50,000 tons) of cargo annually in 2013. In 2013, Sea-Tac handled more than 50 percent of all air freight in Washington state.

Few airports track and report on actual air cargo weight in freighter and passenger planes. In 2014, Sea-Tac handled 327,240 tons of cargo, up 12 percent from 292,709 in 2013. Sea-Tac Airport ranks 19th in terms of air cargo volume in North America, providing daily, non-stop service to 77 domestic and 19 international destinations and accounting for \$13.6 billion in international commodity trade. The top commodities that Sea-Tac moved in 2014 were machinery, electrical machinery and fruit (cherries).

High-value and time-sensitive goods often move through airports, which play a key role in supporting manufacturing, agriculture and service sectors in the state.

Total Washington air cargo tonnage increases
2009 through 2013; Tonnage measured in millions;
Plane plus cargo weight



Data source: Federal Aviation Administration.

Supply chain data collection underway

As reported in [Gray Notebook 54, p. 30](#), WSDOT was awarded a competitive federal grant to support innovative local freight data collection in 2014. The agency is investigating how key state supply chains may respond to different policies aimed at reducing freight emissions and their impacts on the state freight system. Additionally, the research is investigating truck trip characteristics in the Seattle area. The research, which is being conducted by the University of Washington and Washington State University, is on schedule to be completed by March 2016.

Plan identifies performance measures

WSDOT completed its Freight Mobility Plan in October 2014 which will guide state and federal policies and investments in the multimodal freight system. The plan complies with the federal Moving Ahead for Progress in the 21st Century (MAP-21) Act guidance for state freight plans, as well as state requirements. Truck-related performance measures are focused on Truck Freight Economic Corridors. See the full version of the freight plan at <http://www.wsdot.wa.gov/Freight/freightmobilityplan>.

Short line rail inventory and needs assessment is complete

During its 2014 session, the Washington State Legislature directed WSDOT to develop an inventory of short line rail system infrastructure (state-owned and private) to support a data-driven approach to identifying system needs. The study, now complete, provides a framework for a data-based evaluation of the condition and capital needs of the entire short line rail system within the state.

The performance goal identified in the study is focused on system capacity and operational efficiency. The goal is for the system to be capable of handling 286,000-pound rail cars. The industry now uses these larger railcars to reduce capital, fuel and other costs, and to generate economic savings. To maintain compatibility with Class I lines, many short lines must be upgraded to handle the larger cars. Class I railroads are large, national railroad companies. More than 55 percent (740 miles) of the short line rail system in the state has not yet been upgraded to meet this current standard.

For the full version of the assessment, see <http://www.wsdot.wa.gov/freight/publications.htm>.

Contributors include Matthew Pahs, Wenjuan Zhao and Yvette Wixson

Notable results

- WSDOT launched eight new Lean process improvement projects during the second quarter of 2015, with 64 projects agency-wide

- WSDOT used Lean methods to streamline production of the monthly project Watch List, posting it online 84% (27 business days) faster

WSDOT's Lean trainings and projects on the rise

WSDOT trained 10 additional employees as Lean practitioners in May 2015, better enabling them to facilitate improvement projects, provide introductory Lean training and disseminate information to other WSDOT employees. During the second quarter of 2015 (April through June), WSDOT's practitioners provided basic training to 613 WSDOT employees. More than 870 employees have received introductory Lean training since January 2015.

WSDOT's Lean practitioners continue to support agency improvement projects. New projects include efforts such as expediting the replacement of downed roadside signs and streamlining how requests for developing graphics for external use are managed. Since WSDOT first began tracking agency Lean projects in 2012, the total number of Lean projects has steadily increased to 64, including eight new projects launched during the second quarter of 2015.

WSDOT's Watch List publishing faster online using Lean tools

WSDOT's Capital Program Development and Management (CPDM) team improved its process for producing the online monthly project Watch List, accelerating the publication time by 84 percent from an average of 32 business days in 2014 to the target of within five business days of month's end in March 2015. The Watch List has met the target of five business days for the past four months.



Strategic Plan Goal 4:

ORGANIZATIONAL STRENGTH

Strategy 4.1 (Workforce): Implement various strategies that foster a safe, capable, engaged and valued workforce.

To date, WSDOT has trained 56 Lean practitioners, surpassing its goal of 50 by September 2015. These practitioners serve as points of contact to support Lean efforts within their division or region.

Number of WSDOT Lean projects steadily increasing July 2013 through June 2015¹; Phase by calendar quarter²

Project Phase	Sep 2013	Dec 2013	Mar 2014	Jun 2014	Sep 2014	Dec 2014	Mar 2015	Jun 2015
New projects	3	2	13	5	1	6	14	8
Total projects	15	17	30	35	36	42	56	64

Data source: WSDOT Lean Process Improvement Office.

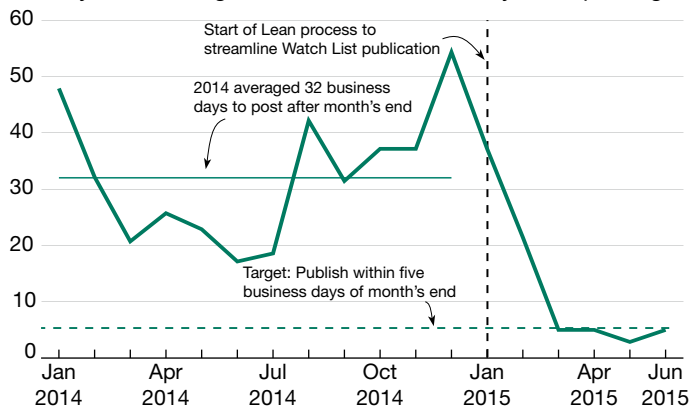
Notes: 1 Lean projects first tracked in quarter ending September 2012. 2 Calendar quarters are January - March (Mar), April - June (Jun), July - September (Sep) and October - December (Dec).

WSDOT's Watch List provides updates on project performance, reporting issues that may impact a project's schedule, budget or scope. As part of the Lean effort to enhance the reporting process, WSDOT's CPDM team defined the roles needed to produce the Watch List, assigning responsibilities to minimize extra research and streamline reviews. The team established deadlines for the report and created a visual management board that provided a snapshot of the progress toward publication. These efforts increased the transparency of the publication process and streamlined report production. As a result, the public can access the Watch List closer to month's end, providing more timely reporting of project issues.

Contributors include Jean Denslow, Mitzi Frick, Linda Kneeland, Anna St. Martin and Zoe Zadworny

WSDOT's online Watch List publication time drops following Lean process improvements

January 2014 through June 2015; Business days until posting



Data source: WSDOT Capital Program Development and Management.

Notable results

- *In the first half of Federal Fiscal Year (FFY) 2015, fewer DBEs received commitments than in the first half of FFY2014*

- *WSDOT is at 10.8% in DBE awards and commitments at the mid-year mark, slightly below the overall goal*

Fewer projects and DBE commitments awarded

WSDOT awarded \$30.8 million to 88 Disadvantaged Business Enterprise (DBE) firms in the first half of federal fiscal year (FFY) 2015 (October 2014 through March 2015), as shown in the graph, middle right. Both the total dollars committed and the number of DBEs awarded commitments were down from the same period last year, with 93 in the first half of FFY2014 and 88 in the first half of FFY2015. A contributing factor is a decrease in projects awarded.

WSDOT makes progress toward goal

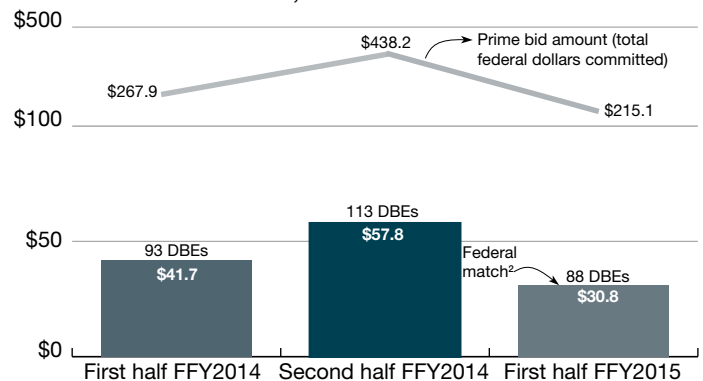
WSDOT attained 10.8 percent in awards and commitments for the first half of FFY2015, 0.8 percentage points below the 11.6 overall DBE goal. As shown in the graph at lower right, WSDOT attained 7.9 percent in utilization for completed contracts (completions) for the first half of FFY2015, 3.7 percentage points below the 11.6 overall DBE goal. WSDOT has until the end of the federal fiscal year (September 30) to meet the overall goal. If WSDOT fails to meet the goal, it must submit to FHWA a shortfall analysis (noting the reasons WSDOT did not meet the overall DBE goal) and corrective action plan (the steps WSDOT would take to improve the DBE program to meet the overall DBE goal the next year).

WSDOT instituted reforms to improve DBE performance in 2013. A number of factors contributed to missing the target in the first half of this year. Multiple design-build projects, such as the Alaskan Way Viaduct, previously increased DBE participation, but can no longer be counted due to federal reporting changes. WSDOT disallowed \$1.5 million in participation for a DBE contractor who did not follow program requirements. Another contributing factor is that WSDOT recently closed multiple large and lengthy construction projects (worth more than \$20 million and five years duration) that were initiated before agency reforms and had lower (less than 8 percent) DBE goals. In an effort

toward continuous improvement, WSDOT recently adopted a new methodology that allows the agency to set higher individual project goals in order to meet the overall federal DBE goal. See [Gray Notebook 57, p 29](#) for information on how this work supports the agency's strategic plan.

Contributors include Jackie Bayne, Kara Larsen, Olga Peterman and Yvette Wixson

WSDOT's commitments to DBE firms decreases Comparing first half¹ federal fiscal year (FFY) 2015 to both halves FFY2014; Dollars in millions

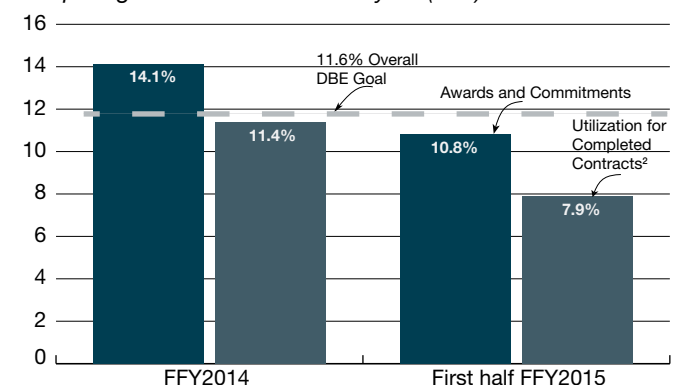


Data source: WSDOT Office of Equal Opportunity.

Notes: 1 October through March. 2 Only that portion of the contract that is federally funded counts toward participation. For example, if a contract is 90 percent federally funded, only 90 percent of the DBE participation can be counted toward the federal goal.

WSDOT FHWA Disadvantaged Business Enterprise program misses goal in first half of fiscal year

Comparing first half¹ federal fiscal year (FFY) 2015 to FFY2014



Data source: WSDOT Office of Equal Opportunity.

Notes: 1 October through March. 2 Utilization for completed contracts refers to those complete in the federal fiscal year.

Notable results

- *WSDOT did not complete any new Nickel and TPA projects during the quarter, but so far has completed 366 of 421 projects*

- *WSDOT removed 13 projects from the Watch List this quarter, reducing the total number of projects remaining on the list to five*

WSDOT completes SR 520 pontoon construction work

WSDOT did not complete any new Nickel or Transportation Partnership Account (TPA) projects in the eighth quarter (April through June 2015) of the 2013-2015 biennium. However, A TPA project, which was completed in March 2015 and not entered as complete in the project tracking system, has been added to the operationally complete list this quarter. The project constructed 33 pontoons in Grays Harbor County for the State Route 520 bridge across Lake Washington as part of a larger mega-project, and is not counted in Nickel and TPA cumulative totals.

WSDOT completed 21 projects in the 2013-2015 biennium (July 2013 through June 2015). Of these, 71 percent were on time and 86 percent were on budget. Combined, the 21 projects' current cost at completion is about \$514 million, which is approximately 7.5 percent less than the baseline estimate of \$555.7 million.

WSDOT budgeted \$2.92 billion for Nickel and TPA projects in the 2013-2015 biennium, and had actual expenditures of \$2.13 billion. The \$793 million difference, which was not spent during the biennium, was largely due to delays on the SR 99 Alaska Way Viaduct Replacement Project and the SR 520 Bridge Replacement and HOV Program.

WSDOT completes 366 Nickel and TPA projects July 2003 through June 2015; Dollars in millions

Project status	Number of projects	Baseline cost at completion
Projects completed in earlier biennia that are <i>not</i> included in the current transportation budget	131	\$732.9
Projects completed that <i>are</i> included in the current transportation budget	235	\$5,434.1
Completed projects subtotal:	366	\$6,167.0
Projects included in the current transportation budget that are not yet complete	55	\$10,090.2
Total:	421	\$16,257.2

Data source: WSDOT Capital Program Development and Management.
Note: Numbers have been rounded.

366 of 421 projects complete
87% on time
91% on budget

— Goal for Nickel and TPA is 90%—

Data source: WSDOT Capital Program Development and Management.

Notes: Projects complete are cumulative since July 2003. A project is "on time" if it is operationally complete within the quarter planned in the last approved schedule, and "on budget" if the costs are within 5 percent of the last approved budget. The goal for both measures is 90 percent or higher. The cumulative percentages of projects on time and on budget does not fluctuate often due to the increasing total number of completed projects.

A total of 366 of 421 Nickel and TPA projects have been completed since July 2003, with 87 percent on time and 91 percent on budget. Projects are considered on time if they are completed within the quarter planned in the last legislatively approved schedule and on budget if the costs are within 5 percent of the last legislatively approved budget. The current cost at completion for the 366 projects is \$6.05 billion, about \$118 million less than the \$6.17 billion baseline cost at completion originally projected by WSDOT.

Nickel, TPA funding falling short of original projections

Fuel tax collections show that the revenue forecasts from 2003 and 2005, which were used to determine the project lists, did not anticipate the economic recession in projecting future growth in fuel tax revenues. The 2003 Nickel and 2005 TPA gas taxes that fund projects are based on a fixed tax rate per gallon and do not change with the price of fuel. As a result, reduced gasoline and diesel consumption leads to reduced tax revenue.

The 2003 Nickel transportation package was originally a 10-year plan, with revenues forecasted to total \$1.9 billion from 2003 through 2013. Fuel tax revenues collected during this period came in short of the original March 2003 projections. Four Nickel projects have been deferred indefinitely while other projects have continued past the original 10-year period. Fuel tax funding from the 2005 TPA package is also coming up short of the original March 2005 projections. The original projection for the TPA account was \$4.9 billion over a 16-year period from 2005 through 2021.

Continued on [p. 48](#)

TPA revenue shortfall defers nine projects indefinitely

Continued from [p. 47](#)

The current projections through 2021 are estimated to be \$4 billion, roughly \$1 billion less (19.5 percent) than the original 2005 projection. This revenue shortfall has caused nine TPA projects to be deferred indefinitely.

Nickel and TPA gas tax revenues are used to pay the debt on the bonds sold to finance the planned projects.

Once all the bonds are sold, revenues collected will be used to pay the debt. In the 2014 supplemental budget, Nickel bonds are projected to be sold through the 2015-2017 biennium and TPA bonds are expected to be sold through 2023.

Beige Page contributors include Mike Ellis, Mitzi Frick, Penny Haeger, Heather Jones, Claudia Lindahl, Tony Peterman, Charles Rosalin, Theresa Scott, Dean Walker, Joe Irwin and Zoe Zadworny

Highway construction performance summary shows about \$10.1 billion in projects remain to be completed

Current Legislative Evaluation and Accountability Program (LEAP) as of June 30, 2015; Dollars in millions

Combined Nickel and TPA programs		Number of projects	Value of program
Subtotal of completed projects		366	\$6,167.0
<i>Projects completed in earlier biennia that are not included in the current transportation budget</i>		131	\$732.9
<i>Projects completed that are included in the current transportation budget</i>		235	\$5,434.1
Projects included in the current transportation budget but not yet complete		55	\$10,090.2
Total number of projects¹ in improvement and preservation budget		421	\$16,257.2²
Schedule and budget summary Nickel & TPA combined: Results of completed projects in the current Legislative Transportation Budget and prior budgets.			
	Completed in 2013-2015 biennium budget	Total in current legislative budget	Cumulative program
Number of projects completed	21	235	366
Percent completed early or on time	71%	85%	87%
Percent completed under or on budget	86%	93%	91%
Baseline cost at completion	\$555.7	\$5,434.1	\$6,167.0
Current cost at completion	\$514.0	\$5,318.3	\$6,048.9
Percent of total program over or under budget	7.5% under	2.1% under	1.9% under
Advertisement record: Results of projects entering into the construction phase or under construction, detailed on pp. 53-54 .			
			Combined Nickel & TPA
Total current number of projects in construction phase as of June 30, 2015			18
Percent advertised early or on time			72%
Total number of projects advertised for construction in 2013-2015 biennium to date (July 1, 2013 through June 30, 2015)			12
Percent advertised early or on time			50%
Projects to be advertised: Results of projects now being advertised for construction or planned to be advertised.			
			Combined Nickel & TPA
Total projects being advertised for construction bids (July 1 through December 31, 2015)			2
Percent on-target for advertisement on schedule or early			50%
Budget status for the 2013-2015 biennium:			
			WSDOT biennial budget
Budget amount for 2013-2015 biennium			\$2,922.6
Actual expenditures in 2013-2015 biennium to date (July 1, 2013 through June 30, 2015)			\$2,129.8
<i>Total 2003 Transportation Funding Package (Nickel) expenditures</i>			\$234.4
<i>Total 2005 Transportation Partnership Account (TPA) expenditures</i>			\$770.3
<i>Total Pre-existing Funds (PEF) expenditures³</i>			\$1,125.1

Data source: WSDOT Capital Program Development and Management.

Notes: Numbers have been rounded. 1 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 Bridges Seismic Retrofit). See [Gray Notebook 38, p. 55](#) for more details. 2 Cumulative projects completed from July 1, 2003 to June 30, 2015. 3 For full details of the Pre-existing Funds program, see [pp. 58-59](#).

No new Nickel, TPA projects complete this quarter

WSDOT did not complete any new Legislative Evaluation and Accountability Program (LEAP) rail or WSDOT Ferries' projects completed this quarter. WSDOT has used the 2003 and 2005 funding packages to complete 18 rail projects and 22 ferries projects since 2003. Approximately \$524.2 million in ferries projects were funded by the Nickel,

TPA and multimodal accounts. The multimodal account funded approximately \$103.3 million in rail projects. WSDOT advertised four multimodal account rail projects, with awards amounting to \$158 million. An additional new \$123 million ferry vessel, funded with Nickel cash and bond proceeds, is also currently under construction.

WSDOT finishes 18 rail construction projects since 2003

Current Legislative Evaluation and Accountability Program (LEAP)
as of June 30, 2015; Dollars in millions

	2003 Nickel Package	2005 TPA Package	Combined Nickel & TPA
Schedule, scope, and budget summary: Completed projects			
Cumulative to date (July 1, 2003 through June 30, 2015)	11	7	18
Percent completed early or on time ¹	100%	100%	100%
Percent completed within scope ¹	100%	100%	100%
Percent completed under or on budget ¹	100%	100%	100%
Baseline cost at completion	\$62.4	\$41.0	\$103.3
Current cost at completion	\$62.4	\$41.0	\$103.3
Percent of total program on or under budget ¹	100%	100%	100%
Advertisement record: Projects under construction or entering construction phase			
Cumulative to date (July 1, 2003 through June 30, 2015)	2	2	4
Total advertised	2	2	4
Percent advertised early or on time	100%	100%	100%
Total award amounts to date	\$130.9	\$27.1	\$158.0

Data source: WSDOT Capital Program Development and Management.

Notes: Numbers may not total 100 percent due to rounding. The rail projects are primarily delivered through master agreements with BNSF, which administers construction activities on the projects. The data above is unchanged from the previous quarter because no additional rail projects were completed. 1 Rail projects are commitments delivered by BNSF, Sound Transit, ports and operators. Master agreements between WSDOT and lead agencies become the documents that govern the delivery of the project including budget, scope and schedule. The administrative process allows for amendments enabling the projects to be delivered within the parameters of the new amended agreement (on time, and on budget).

WSDOT finishes 22 ferries construction projects since 2003

Current Legislative Evaluation and Accountability Program (LEAP)
as of June 30, 2015; Dollars in millions

	2003 Nickel Package	2005 TPA Package	Combined Nickel & TPA
Schedule, scope, and budget summary: Completed projects ¹			
Cumulative to date (July 1, 2003 through June 30, 2015)	12	10	22
Percent completed early or on time ²	100%	100%	100%
Percent completed within scope ²	100%	100%	100%
Percent completed under or on budget ²	100%	100%	100%
Baseline cost at completion	\$180.7	\$343.5	\$524.2
Current cost at completion	\$180.7	\$343.5	\$524.2
Percent of total program on or under budget ²	100%	100%	100%
Advertisement record: Projects under construction or entering construction phase			
Cumulative to date (July 1, 2003 through June 30, 2015)	1	0	1
Percent advertised early or on time ²	100%	N/A	100%
Total award amounts to date	\$123.0	\$0	\$123.0

Data source: WSDOT Capital Program Development and Management.

Notes: Numbers may not total 100 percent due to rounding. 1 Ferries completed projects record includes two 144-car vessels: the Motor/Vessel (M/V) *Samish*, which started service in June 2015, and the M/V *Tokitae*, which started service in June 2014. It also includes three 64-car vessels: the M/V *Chetzemoka*, which started service in November 2010, the M/V *Salish*, which started service in July 2011, and the M/V *Kennewick*, which started service in February 2012. 2 The Legislature funds Ferries' projects at a grouped-project or Budget Identification Number (BIN) level for terminals and vessels; however, the delivery of construction projects requires that each of these BIN groups be broken into sub-projects with specific scopes, budgets and schedules. The list of sub-projects is updated as the project progresses into the design phase and the budget and schedule are better defined. This process enables WSDOT to deliver the projects within the updated budget amounts and milestones (on time and on budget).

WSDOT completes pontoons for SR 520 floating bridge

WSDOT did not complete any Nickel or Transportation Partnership Account (TPA) projects in the eighth quarter of the 2013-2015 biennium (April through June 2015). However, a TPA project, which was completed in March 2015 and not entered as complete in the project tracking system, was not reported earlier and has been added to the operationally complete list this quarter. The State Route (SR) 520 Pontoon Construction project is part of a larger mega-project that is not yet complete. As a result, the pontoon project is not counted in Nickel and TPA cumulative totals.

SR 520 Pontoon Construction (TPA) Grays Harbor County

This TPA project addressed concerns for the potential failure of the SR 520 Evergreen Point floating bridge across Lake Washington by building 33 pontoons in a casting facility in Aberdeen. The pontoons will be used as part of the larger SR 520 Bridge Replacement and High Occupancy Vehicle (HOV) project.

Project benefits: The new pontoons will support a wider, more wind-resistant floating bridge with more lanes, wider shoulders and a bicycle/pedestrian path, improving bridge reliability and safety.

Budget performance: The project was completed for \$536.7 million, on target with the last legislatively approved budget of \$536.7 million. The project was completed for approximately \$525 million more than the original 2007 budget of \$12.1 million. However, this budget only funded the preliminary engineering and right of way work used to inform pontoon design.

Schedule performance: The project was completed in March 2015, two months earlier than the last legislatively approved schedule and about 20 months later than the original schedule of June 2013.

Highlights/challenges: The original budget, for pontoon design only, was augmented in 2009 with full funding for pontoon construction, covering project aspects such as moorage, construction of a casting basin facility in Aberdeen and environmental mitigation. Project completion was delayed by almost one year from July 2014 to May 2015 to repair spalling and



Tugboats tow one of the pontoons for the SR 520 floating bridge replacement from the casting basin in Aberdeen to Lake Washington.

cracking on pontoons, conduct a review to assess probable causes of the cracking and make changes to the construction of future pontoons. Change orders associated with pontoon spalling and cracking increased the project cost by approximately \$70 million.

Construction bids for the project were all less than the engineer's estimate. For the pontoon construction design-build contract, the accepted bid was 39 percent below the engineer's estimate.

Contributors include Mike Ellis, Mitzi Frick, Penny Haeger, Theresa Scott, Joe Irwin and Zoe Zadworny

Measuring operationally complete projects

Delivery performance of completed projects is measured against the last legislatively approved schedules and budgets in accordance with criteria established by the Legislature. For this quarter, it is the 2014 transportation budget. In addition to the projects' last approved budgets and schedules, original legislative budgets and schedules are included to show changes that may have occurred during design and construction phases.

Projects are "on time" if they are operationally complete within the quarter planned in the last approved schedule, and "on budget" if the costs are within 5 percent of the last approved budget.

Nickel and TPA budgets and schedules reset whenever changes are made in the last approved legislative budget. For information on previously completed Nickel and TPA projects, visit <http://www.wsdot.wa.gov/projects/completed>.

WSDOT removes 13 projects from Watch List

WSDOT added 11 projects to its Watch List and removed 13 this quarter (April through June 2015). As of June 30, there were five projects remaining on the Watch List.

WSDOT maintains the Watch List to deliver on the agency's commitment to "No Surprises" reporting and continuously monitors its projects' performance to ensure issues affecting schedule or budget are brought to the attention of executives, legislators and the public. The Watch List provides information on issues that currently affect projects, and those that have the potential to impact the schedules and budgets of projects. The Watch List helps WSDOT track these projects, providing status reports, explaining the factors affecting delivery and what the

agency is doing to address them. Projects are removed from the Watch List when these issues are resolved.

WSDOT's Watch List projects that have been reprioritized, deferred or delayed due to funding constraints are listed separately. This quarter there were no Watch List projects with funding constraint issues. See [Gray Notebook 51, p. 40](#), for a list of common issues that might move a project to the Watch List. To read more about the Watch List items, visit http://www.wsdot.wa.gov/Projects/Reports/ProjectDeliveryReports_Archive.htm.

Future editions of the *Gray Notebook* will also report Watch List issues for projects funded by the Connecting Washington transportation package. For an overview of the new revenue package, see [p. 9](#).

WSDOT's Watch List projects with schedule or budget concerns

Quarter ending June 30, 2015

Project (County)	Date added	Date removed	Watch List issue
SR 92/Pilchuck River – Chronic Environmental Deficiency (Snohomish) ¹	Jun-2015		Project advertisement was delayed to spring 2016 to allow additional time to attain environmental permits and address right of way issues. The advertisement may be further delayed if there are environmental design changes.
SR 524/Yew Way – Railroad Crossing Improvements (Snohomish) ¹	Jun-2015		Right of way issues delayed the project schedule. Project advertisement was delayed to fall 2015.
I-5/Birch Bay Lynden Rd. Bridge – Bridge Repair (Whatcom) ¹	May-2015	May-2015	The bridge was damaged by an over-height load. Repair costs have been estimated, and the project has been removed from the Watch List.
I-90/Stampede Pass Interchange – Bridge Repair (Kittitas) ¹	May-2015	May-2015	The bridge was damaged by an over-height load. Repair costs have been estimated, and the project has been removed from the Watch List.
SR 532/Davis Slough Bridge Replacement – Widening for Flood Prevention (Island, Snohomish) ¹	May-2015	May-2015	The project operationally complete date has been delayed to spring 2016 due to unfavorable weather and construction delays. The project has been removed from the Watch List.
I-90/Yakima Bridge East of Cle Elum Westbound – Deck Rehabilitation (Kittitas) ¹	Apr-2015	Apr-2015	The advertisement date has been delayed past the end of the 2013-2015 biennium because bridge deck deterioration was worse than anticipated. The project has been removed from the Watch List. ²
I-90/Front Street Bridge – Girder Replacement (King) ¹	Apr-2015	Apr-2015	Work is needed to replace a bridge girder struck by a truck. WSDOT is seeking funds, and the project has been removed from the Watch List.
US 101/Hoquiam River – Simpson Ave. Bridge – Bridge Painting (Grays Harbor) ^{1,3}	Apr-2015	Apr-2015	Increasing project costs resulted in bids that were higher than the engineer's estimate. WSDOT reviewed the contractor's bid items and awarded the project. The project has been removed from the Watch List.
US 101/South of Mansfield Rd. to West of Shore Rd. – Paving (Clallam) ¹	Apr-2015	Apr-2015	The project cost has increased due to paving at multiple locations and a materials cost increase. WSDOT is continuing with the construction contract and the project has been removed from the Watch List.
SR 302/North of East Victor Rd. – Culvert Replacement (Mason) ¹	Apr-2015		The schedule has been delayed by one year to allow WSDOT time to acquire environmental permits and a permanent construction easement.
SR 410/White River Bridge – Bridge Elements Repair (King, Pierce) ¹	Apr-2015	Apr-2015	Work is needed to repair a damaged overhead bridge support structure. WSDOT is seeking funds, and the project has been removed from the Watch List.
SR 161/24th St. East to Jovita – Add Lanes (Pierce)	Sep-2014		This project was completed in August 2014 and is facing a potential cost increase pending a claim from the contractor.
US 101/North of Salmon Creek Bridge – Stabilize Slope (Grays Harbor)	May-2014	Apr-2015	Ongoing landslide movement on the side slope threatens to close US 101. The project went to advertisement and has been removed from the Watch List.
US 12/0.8 miles West of Chapman Rd. – Erosion Protection (Lewis)	Apr-2014	Apr-2015	The project had faced schedule delays due to right of way issues. The project went to advertisement and has been removed from the Watch List.

Table continued on [p. 52](#)

Five projects remain on WSDOT's Watch List

Table continued from [p. 51](#)

Project (County)	Date added	Date removed	Watch List issue
I-90/Easton Hill Vicinity to Kachess River Bridge Eastbound – Replace/Rehabilitate Concrete (Kittitas)	Apr-2014	May-2015	Design refinements delayed the project schedule. WSDOT changed the pavement rehabilitation method and the project is scheduled for re-advertisement in June 2015. The project has been removed from the Watch List.
SR 99/South King St. Vicinity to Roy St. – Viaduct Replacement (King)	Dec-2013		The tunnel boring machine requires more extensive repairs than anticipated, and a revised schedule is being prepared.
SR 20/Race Rd. to Jacobs Rd. – Safety Improvements – Phase 2 (Island)	Dec-2013	May-2015	The project schedule was delayed due to difficulties with environmental permits and right of way acquisition. Project advertisement has been scheduled for fall 2015, and the project has been removed from the Watch List.
SR 3/Belfair Area – Widening and Safety Improvements (Mason)	Feb-2013	May-2015	Following schedule delays due to utility relocations, the project went to advertisement and the contract has been awarded. The project has been removed from the Watch List.

Data sources: WSDOT Capital Program Development and Management, WSDOT Regions.

Notes: 1 Projects have been added to the Watch List during the current quarter. 2 Biennia serve as tracking mechanisms for Nickel and TPA projects. Projects may be removed from the Watch List when they are delayed into future biennia because this affects WSDOT's ability to accurately estimate schedule, scope and budget. 3 This project was previously removed from the Watch List but has been added again due to emerging issues.

Special Report: WSDOT scheduled to open new express tolling lanes on Interstate 405 in fall 2015

WSDOT is helping address congestion on Interstate 405 (I-405) by opening 17 miles of express toll lanes between Lynnwood and Bellevue in September 2015.

WSDOT awarded the \$155.5 million design-build contract to Flatiron Construction in 2012 to add one lane in both directions to portions of I-405 between Northeast 6th Street in Bellevue and State Route (SR) 522 in Bothell and prepare the roadway for express toll lanes.

The project will construct a two-lane express toll lane system between Northeast 6th and SR 522 and a single lane system between SR 522 and I-5.

This work includes installing 21 dynamic toll rate signs, cutting in 485 traffic counting loops, installing 1.25 million lineal feet of stripes, paving 200,000 tons of asphalt, adding two new transit shoulders on southbound I-405, and constructing or modifying eight noise walls. In addition to widening I-405, the project constructs a new braided ramp system between the Northeast 160th Street and SR 522 interchanges in Bothell.

This new system will improve traffic flow by separating vehicles traveling onto SR 522 from northbound I-405, and vehicles traveling onto northbound I-405 from Northeast 160th Street, eliminating the weaving in the general purpose lanes and providing more efficient access to and from I-405. I-405 express toll lanes let

drivers choose to travel faster by paying a toll. Transit, vanpools, carpools and motorcycles will all be able to use the lanes for free with a Good To Go! pass. Carpools will need to meet occupancy requirements and have a Good To Go! Flex Pass set to HOV mode to travel free.

Toll rates adjust depending on real-time traffic conditions and drivers will pay the rate they see upon entering the lanes. WSDOT is implementing express tolling lanes because the current I-405 HOV lanes are at capacity during peak periods and the new lanes will help manage demand. Express tolling lanes will help drivers in King and Snohomish counties by:

- Operating efficiently: Express toll lanes move more people and offer a more reliable trip.
- Managing demand: Because toll rates adjust electronically according to traffic levels, dynamic tolling effectively manages the volume of vehicles and increases performance for all lanes in the corridor.
- Reducing congestion: Express toll lanes improve speed and reliability for carpoolers, motorcycles, transit, and drivers who choose to pay a toll by using dynamic pricing to keep the lanes operating at peak efficiency.

WSDOT's long-term vision includes a 40-mile express toll lane system between SR 167 at the Pierce/King County line and the I-405/I-5 interchange in Lynnwood. King County's population is expected to increase 33 percent by 2040, and WSDOT is planning to expand the express toll lane program to best meet the long-term demands in the corridor.

Contributors include Ethan Bergerson, Maggie Humphreys and Joe Irwin

WSDOT continues progress on Nickel and TPA projects

Eighteen WSDOT projects in construction phase as of June 30, 2015

Nickel and Transportation Partnership Account (TPA) projects; Costs estimated at completion; Dollars in millions

Project description Cumulative to date (County)	Fund Type	On time advertised	Ad date	Contractor	Operationally complete date	Award amount
I-5 Concrete Rehabilitation Program (King) Multiple contractors continue to work on this project.	Nickel	√	Jul-2009	Multiple contractors	May-2023	\$9.8
SR 99/Alaskan Way Viaduct – Replacement (King) This project replaces an aging viaduct with a new viaduct on the south end and adds a tunnel in downtown Seattle. WSDOT is funding or leading 30 contracts or projects as part of the viaduct replacement effort. Active Nickel/TPA projects are shown below:						
• SR 99/South King Street Vicinity to Roy Street – Viaduct Replacement	Nickel/TPA	√	May-2010	Seattle Tunnel Partners	TBD	\$1,089.7
			Oct-2013	Guy F. Atkinson Construction	TBD	\$41.6
This subproject has several contract components; the bored tunnel, north and south access connections and associated work. The tunnel boring machine is undergoing repairs. The schedule for this project changes frequently and WSDOT cannot verify the contractor's schedule at this time.						
US 395/North Spokane Corridor (NSC) – Design and Right of Way – New Alignment (Spokane)	Nickel/TPA					
The US 395/North Spokane Corridor project is ongoing and several phases still require funding.						
I-5/Mellen Street Interchange to Grand Mound Interchange – Add Lanes (Thurston, Lewis)	TPA					
• I-5/Mellen Street to Blakeslee Junction – Add Lanes, Interchange Improvements	TPA	√	Mar-2012	Cascade Bridge	Dec-2015	\$21.6
The operationally complete date was delayed due to schedule adjustments needed for complex traffic revisions, demolitions, repairs and painting of nearby bridges.						
• I-5/Mellen Street Interchange – Interchange Improvements	TPA	√	Combined with project above for construction efficiencies.			
SR 502/I-5 to Battle Ground – Add Lanes – Stage 2 (Clark)	TPA	√	Jan-2014	Rotschy	Oct-2016	\$27.5
SR 162/Puyallup River Bridge – Replace Bridge (Pierce)	TPA	Late	Nov-2014	Selby Bridge Company	Nov-2015	\$5.5
Advertisement was delayed to address environmental permitting issues and complete a National Historic Preservation Act compliance process for the existing bridge.						
SR 6/Rock Creek Bridge East – Replace Bridge (Lewis)	TPA	Late	Dec-2013	Scarsella Bros.	Sep-2015	\$6.9
Advertisement was delayed to address permitting issues with several agencies.						
SR 6/Rock Creek Bridge West – Replace Bridge (Lewis)	TPA	Late	Dec-2013	Scarsella Bros.	Sep-2015	\$4.7
Advertisement was delayed to address permitting issues with several agencies and right of way design changes.						
I-90/Concrete Rehabilitation						
• I-90/Oakes Avenue Interchange to Peoh Road Bridge Vicinity Westbound – Replace/Rehabilitate Concrete (Kittitas)	Nickel	√	Mar-2015	Midmountain Contractors	Nov-2016	\$10.6
I-405/Kirkland Vicinity, Stage 2 – Widening (Snohomish, King)	Nickel/TPA					
• I-405/SR 520 to SR 522 – Widening Stage 2	Nickel	Early	Nov-2010	Gary Merlino Construction	Dec-2015	\$10.7
SR 520/Bridge Replacement and HOV (King)						
• SR 520/I-5 to Medina – Evergreen Point Floating Bridge and Landings	TPA	√	Dec-2010	Kiewit-General, A Joint Venture	Apr-2016	\$586.6
I-205/Mill Plain Interchange to Northeast 18th Street – Build Interchange – Stage 2 (Clark)	TPA	Late	Aug-2014	Cascade Bridge	Dec-2016	\$24.3
Advertisement was delayed to address practical design changes to the project.						
SR 3/Belfair Area – Widening and Safety Improvements (Mason)	TPA	Late	Apr-2015	Ceccanti	Nov-2016	\$10.3
Advertisement was delayed due to revised project limits, which affected right of way acquisition.						
SR 522/Lyon Creek – Fish Passage (Skagit)	TPA	√	May-2015	Local Agency Project	Sep-2015	\$1.6

Table continued on [p. 54](#)

WSDOT continues progress on Nickel and TPA projects, *continued*

Project description Cumulative to date (County)	Fund type	On time advertised	Ad date	Contractor	Operationally complete date	Award amount
SR 167/8th St. East Vicinity to South 277th St. Vicinity – Southbound Managed Lane (King, Pierce)	TPA	√	Aug-2014	Guy F. Atkinson Construction	Jun-2017	\$53.9
SR 167/SR 18 Interchange West-North Ramp North-East Ramp Overcrossing – Seismic Retrofit (Pierce)	TPA	√		Combined with project above for efficiencies.		
I-5/Tacoma HOV Improvements (Pierce)	Nickel/TPA					
• I-5/M Street to Portland Avenue – Add HOV Lanes	Nickel	√	Mar-2014	Mid-Mountain Contractors	Feb-2017	\$1.7
I-90/Snoqualmie Pass East – Hyak to Keechelus Dam – Corridor Improvement (Kittitas)	TPA					
• I-90/Snowshed to Keechelus Dam Phase 1C – Replace Snowshed and Add Lanes	TPA	Late	Apr-2011	Guy F. Atkinson Construction	Oct-2017	\$177.1

Advertisement was delayed to address fire and safety issues with the original snowshed design, resulting in long-term savings.

Data source: WSDOT Capital Program Development and Management.



As part of WSDOT's Take our Daughters and Sons to Work Day, the children and grandchildren of WSDOT employees used their artistic talents to "Tell Washington's Transportation Story." Pictured here is the work of three honorable mention winners (with their WSDOT parent/grandparent in parentheses): above left, 10-year-old Justin Mason (Eastern Region Maintenance Technician Jeff Mason); below left, 10-year-old Delaney Kelley (Tort Claims Investigator Scott Britain, HQ); and above, 9-year-old Abigail Williamson (Material Laboratory IT Manager Colleen Reynolds and ELG IT Application Development Manager Bill Reynolds).

WSDOT finishes 15 of 21 Nickel, TPA projects on time

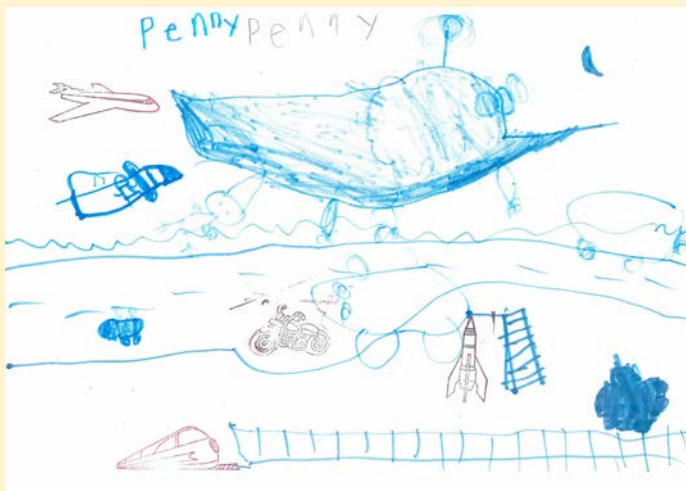
Biennial summary: 21 projects completed in 2013-2015 biennium

Nickel and Transportation Partnership Account (TPA) projects; Costs estimated at completion; Dollars in millions

Cumulative to date	Fund type	On time advertised	On time completed	Within scope	Baseline estimated cost	Current estimated cost	On-budget completed
Current quarter reporting on capital project delivery							
2013-2015 biennium summary¹ This information was updated quarterly throughout the biennium.	6 Nickel 15 TPA	16 on time 5 late	15 on time 6 late	21	\$555.7	\$514.0	18 on budget 3 over budget
Earlier reporting on capital project delivery							
2011-2013 biennium summary See Gray Notebook 50, p. 31 .	5 Nickel 36 ¹ TPA	31 ¹ on time 10 late	32 ¹ on time 9 late	41 ¹	\$1,485.5 ¹	\$1,459.6 ¹	37 ¹ on budget 4 over budget
2009-2011 biennium summary² See Gray Notebook 42, p. 45 .	16 Nickel 74 TPA	73 on time 17 late	80 on time 10 late	90	\$1,641.6	\$1,597.0	85 on budget 5 over budget
2007-2009 biennium summary See Gray Notebook 34, p. 58 .	42 Nickel 69 TPA	91 on time 20 late	96 on time 15 late	111	\$1,685.7	\$1,685.2	102 on budget 9 over budget
2005-2007 biennium summary See Gray Notebook 26, p. 5 .	52 Nickel 24 TPA	71 on time 5 late	68 on time 8 late	76	\$673.9	\$668.8	67 on budget 9 over budget
2003-2005 biennium summary See Gray Notebook 19, p. 5 .	27 Nickel	25 on time 2 late	27 on time 0 late	27	\$124.6	\$124.4	25 on budget 2 over budget

Data source: WSDOT Capital Program Development and Management.

Notes: 1 The number of projects has been updated since *Gray Notebook 51* to reflect the addition of a completed project that was reported after the biennium. 2 In *Gray Notebooks* published before the 2009-2011 biennium, WSDOT used a project count of 391 combined Nickel and TPA projects for project completion data. In conjunction with the 2009-2011 biennium wrap-up, the tables were reorganized to present the completed information for the current project count of 421. In the revised count, several projects that were developed as part of larger programs, like bridge, rail, and roadside safety, were included in the new count though they had been completed earlier. Dollar amounts are rounded up. Prior *Gray Notebooks* may be accessed at http://www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm.



As part of Take our Daughters and Sons to Work Day, the children and grandchildren of WSDOT employees used their artistic talents to "Tell Washington's Transportation Story." Pictured at left is the work of 7-year-old Penny DeBlume Berger (granddaughter of State Route 99 Transportation Engineer Susan Bagley) and at right, that of 11-year-old Jacob Bacon (grandson of South Central Region Maintenance Supervisor Mike Krahenbuhl).

WSDOT delivers 129 Nickel projects since 2003

The performance summaries below and those on [p. 57](#) provide status reports on WSDOT's delivery of the Nickel and Transportation Partnership Account (TPA) programs compared to the original legislative funding packages presented in the 2003 and 2005 Legislative Evaluation and Accountability Program (LEAP) lists.

The Legislature has approved changes to these funding packages and assigned funds to different projects since these two funding packages were created. As a result, the data listed below and on the next page show the original LEAP, which differs from the current legislative budgets on [pp. 48-49](#).

The 2003 and 2005 tables feature budget items including pre-construction and environmental studies that were in the original funding packages. The original LEAP tables do not include projects that cities, counties and tribes collaborate on with WSDOT to complete.

These tables show the total number of projects and the percentage of projects that are complete, underway, scheduled to start, or affected by a legislatively approved change of project scope. They also give budget updates showing original planned budgets and the current plan or actual expenditure, breaking out programs by category: highways, ferries and rail.

WSDOT project delivery and budget update: Original 2003 Transportation Funding Package (Nickel) As of June 30, 2015; Dollars in millions

Project delivery update	Total program		Highways		Ferries		Rail	
	Number of projects	Percent of total	Number of projects	Percent of program	Number of projects	Percent of program	Number of projects	Percent of program
Project number and phase	156		127		5		24	
Completed projects	129	83%	113	89%	2	40%	14	58%
Total projects underway	14	9%	11	9%	2	40%	1	4%
<i>In pre-construction phase</i>	4		3		1		0	
<i>In construction phase</i>	10		8		1		1	
Projects starting in the future	1	1%	0	0%	0	0%	1	4%
Projects deferred or deleted from program	12	8%	3	2%	1	20%	8	33%
<i>Number of legislatively-approved scope changes</i>	20		18		0		2	
<i>Pre-construction starts within six months</i>	0		0		0		0	
<i>Construction starts within six months</i>	0		0		0		0	

Data source: WSDOT Capital Program Development and Management.

Notes: Totals do not include projects that cities, counties and tribes collaborate on with WSDOT to complete. Percents may not add to 100 due to rounding.

Project budget update	Total program		Highways		Ferries		Rail	
	Budget	Percent of total	Budget	Percent of program	Budget	Percent of program	Budget	Percent of program
Total original legislative planned budget	\$3,887.5		\$3,380.1		\$297.9		\$209.5	
Original plan, 2003 through 2011-2013 biennium	\$3,887.5	100%	\$3,380.1	100%	\$297.9	100%	\$209.5	100%
Actual expenditures, 2003 through 2011-2013 biennium	\$3,700.8	95%	\$3,297.7	98%	\$271.6	91%	\$131.5	63%
Original plan through 2013-2015 biennium	\$3,887.5	100%	\$3,380.1	100%	\$297.9	100%	\$209.5	100%
Current plan through 2013-2015 biennium	\$4,143.3	107% ¹	\$3,546.6	105% ¹	\$462.4	155% ¹	\$134.3	64%
Actual expenditures, 2003 through June 30, 2015	\$4,087.7	105% ¹	\$3,532.1	104% ¹	\$422.8	142% ¹	\$132.8	63%

Data source: WSDOT Capital Program Development and Management.

Notes: 1 The Legislature added funds for construction of a second 144-vehicle ferry for WSDOT Ferries and for highway construction during the first quarter (July through September) of the 2013-2015 biennium. These funds put Ferries above its original funding level and will result in continued over-performance by this program. Expenditures are Nickel funds only. Totals do not include projects that cities, counties and tribes collaborate on with WSDOT to complete.

WSDOT completes 193 TPA projects since 2005

WSDOT project delivery and budget update: Original 2005 Transportation Partnership Account (TPA)

As of June 30, 2015; Dollars in millions

	Total program		Highways		Ferries		Rail	
Project delivery update	Number of projects	Percent of total	Number of projects	Percent of program	Number of projects	Percent of program	Number of projects	Percent of program
Project number and phase	248		229		4		15	
Completed projects	193	78%	184	80%	1	25%	8	53%
Total projects underway	35	14%	31	14%	0		3	20%
<i>In pre-construction phase</i>	10		9		0		1	
<i>In construction phase</i>	24		22		0		2	
Projects starting in the future	6	2%	2	1%	1	25%	3	20%
Projects deferred or deleted from program	15	6%	12	5%	2	50%	1	7%
<i>Number of legislatively-approved scope changes</i>	23		23		0		0	
<i>Pre-construction starts within six months</i>	2		2		0		0	
<i>Construction starts within six months</i>	0		0		0		0	

Data source: WSDOT Capital Program Development and Management.

Notes: Totals do not include projects that cities, counties and tribes collaborate on with WSDOT to complete. Percents may not add to 100 due to rounding. Since the Transportation Partnership Account (TPA) program was passed in 2005, the Legislature has approved changes to WSDOT Ferries Division's construction program so that the current budget does not match the original budget. Among the changes, TPA funding was provided for the 64-car ferries. For definitions about terminology used in Original LEAP, see [Gray Notebook 53, p. 40](#).

	Total program		Highways		Ferries		Rail	
Project budget update	Budget	Percent of total	Budget	Percent of program	Budget	Percent of program	Budget	Percent of program
Total original legislative planned budget	\$6,982.1		\$6,678.5		\$185.4		\$118.3	
Original plan, 2005 through 2011-2013 biennium	\$4,084.8	59%	\$3,886.3	58%	\$87.7	47%	\$110.9	94%
Actual expenditures, 2005 through 2011-2013 biennium	\$3,804.3	54%	\$3,656.2	55%	\$77.0	42%	\$71.1	60%
Original plan through 2013-2015 biennium	\$5,641.4	81%	\$5,386.8	81%	\$136.3	74%	\$118.3	100%
Current plan through 2013-2015 biennium	\$4,649.6	67%	\$4,491.1	67%	\$79.8	43%	\$78.7	67%
Actual expenditures, 2005 through June 30, 2015	\$4,586.7	66%	\$4,436.4	66%	\$77.1	42%	\$73.2	62%

Data source: WSDOT Capital Program Development and Management.

Notes: Expenditures are TPA funds only. Totals do not include projects that cities, counties and tribes collaborate on with WSDOT to complete.

WSDOT reporting change orders costing \$500,000 or more online

During the quarter ending June 30, 2015, WSDOT approved six change orders costing \$500,000 or more. These change orders totaled approximately \$19.6 million with the majority — \$10.1 million — addressing quantity and pricing adjustments for a wall re-design for the Interstate 90 – Snoqualmie Pass East corridor improvements project, as well as schedule-related impacts associated with additional contract working days.

After an extensive review, which can involve subject matter experts, contract specialists, and other outside stakeholders, WSDOT must sometimes change its engineers' original plans and specifications in order to complete projects. When this occurs, WSDOT issues a formal modification (or change order) to the contract, containing a description of the change and details about how or if the contractor may be compensated for it. Each month, WSDOT posts all change orders estimated to cost \$500,000 or more online at <http://bit.ly/WSDOTchangeorders>.



WSDOT advertises 26 Pre-existing Funds projects

WSDOT advertised 26 of 33 Pre-existing Funds (PEF) projects in the eighth quarter of the 2013-2015 biennium (April through June 2015).

Of the 26 advertised projects, 11 were on time, three were late, and 12 were due to unexpected, emergent events, like slope stabilization work on US 101 near the Salmon Creek Bridge. One project was advertised in an earlier quarter, five projects were deferred to a future biennium and one was deleted. See [pp. 53-54](#) for this quarter's advertisements, and [Gray Notebook 51, p. 38](#), for full definitions of PEF terms.

The current cost to complete the 26 PEF projects advertised during the quarter was approximately \$58.7 million, about \$4.4 million (7 percent) less than the original value of \$63.1 million. The decrease for the quarter is largely the result of roadway preservation projects costing less than planned. Since the beginning

Cost to complete WSDOT's project advertisements indicates expenses lower than engineer's estimates 2013-2015 biennium (July 2013 through June 2015); Quarter ending June 30, 2015; Dollars in millions

	Number of projects	Original value	Current cost to complete
Total PEF advertisements planned 2013-2015 biennium	258	\$574.5	\$383.2
Planned advertisements through June 30, 2015	258	\$574.5	\$383.2
Actual advertisements through June 30, 2015	264	\$552.9	\$473.3

Data source: WSDOT Capital Program Development and Management.

WSDOT completes 63 percent of Pre-existing Funds project advertisements on time for biennium 2013-2015 biennium (July 2013 through June 2015)

Project status	Quarter ¹	Cumulative ²
Projects advanced ³	0	11
Projects advertised on time	11	166
Emergent projects advertised	12	48
Late projects advertised	3	39
Total projects advertised	26	264
Projects advertised early ⁴	1	12
Projects delayed within the biennium	0	54
Projects deferred out of the biennium	5	23
Projects deleted	1	7

Data source: WSDOT Capital Program Development and Management.

Notes: 1 The quarter refers to April through June 2015. 2 Cumulative refers to July 2013 through June 2015. 3 Advanced includes projects that were moved up from future quarters. 4 Early includes projects from the quarter that were advertised in an earlier quarter.

of the 2013-2015 biennium there have been 264 project advertisements, six more than was originally planned. The current cost to complete them is approximately \$473.3 million, about \$79.6 million (14 percent) less than the original value of \$552.9 million.

The current estimated cost to complete the 258 planned advertisements is \$383.2 million, about \$191.3 million (33 percent) less than the original value of \$574.5 million. This reduction is due to WSDOT deferring projects out of the 2013-2015 biennium, and tackling less expensive, but often more pressing projects first.

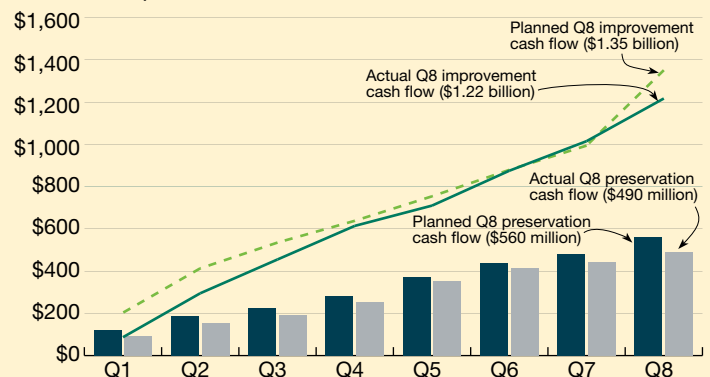
Improvement and preservation cash flows lower than projected

WSDOT planned to have \$1.35 billion in improvement program cash flow through the eighth and final quarter of the 2013-2015 biennium, but had \$1.22 billion instead. This is approximately a 10 percent decrease from estimates given at the beginning of the biennium. The improvement program funds projects that optimize highway capacity, enhance safety, and reduce the environmental impact of construction projects.

WSDOT planned to have \$560 million in the preservation program cash flow through the eighth quarter of the 2013-2015 biennium, but had \$490 million (approximately 13 percent less). The preservation program includes pavement, bridges and other projects that maintain the structural integrity of the existing highway system.

Contributors include Dean Walker and Joe Irwin

Pre-existing Funds preservation and improvement actual cash flow come in lower than planned levels 2013-2015 biennium; Quarter ending June 30, 2015; Planned vs. actual expenditures



Data source: WSDOT Capital Program Development and Management.

Note: Q8 refers to the eighth quarter (April through June 2015) of the 2013-2015 biennium (July 2013 through June 2015).

WSDOT advertises 12 emergent PEF projects

Eleven Pre-existing Funds projects on time during quarter

April through June 2015

On Time (11)

SR 504/1.3 Miles East of SR 505 – Chronic Environmental Deficiency	US 12/0.8 Miles West of Chapman Rd. – Erosion Protection
US 195/Excelsior Rd. to Jct. I-90 – Southbound Lanes – Dowel Bar Retrofit	US 195/Excelsior Rd. to Jct. I-90 – Southbound Lanes – Portland Cement Concrete Pavement Rehabilitation
I-5/Union, Steamboat and Ebey Slough Bridges – Special Bridge Repair	US 195/Plaza Rd. to Cornwall Rd. – Paving
SR 99 Northbound/Gibson Rd. Vicinity to Airport Rd. Vicinity – Pedestrian Connectivity	SR 25/China Bend North Railroad Crossing – Safety Improvement
SR 272/Palouse East Railroad Crossing – Safety Improvement	SR 27/Palouse and Garfield Railroad Crossing – Safety Improvement
SR 902/Medical Lake Railroad Crossing – Safety Improvement	

Emergent (12)

I-90/Access Road Bridge Eastbound – Deck Rehabilitation	SR 503/SR 500 Orchards to Battle Ground – Grind and Inlay
SR 129/Rattlesnake Creek – Fish Barrier Removal	SR 14/Nelson Creek Rd. Vicinity to Bingen – Chip Seal
SR 14/6th St. to Nelson Creek Rd. Vicinity – Chip Seal	SR 542/SR 547 – Intersection Improvement
SR 509/South Normandy Rd. Vicinity to 174th Intersection – Americans with Disabilities Act Compliance	US 101/2.2 miles South of Beacon Point Road – Emergency Slope Stabilization
SR 410/0.5 Miles East of Chinook Pass – Emergent Need Wall Repair	US 101/North of Salmon Creek Bridge – Stabilize Slope
SR 432/I-5 at Old Highway 99 – Intersection Improvements	US 395/SR 17 to Muse Rd. Southbound – Paving

Late (3)

Northwest Region Basic Safety – Guardrail Project deferred to allow time for additional preliminary engineering.	SR 206/Elliott Rd. Drainage – Headwall Retrofit Project delayed to allow county to secure right of way permit.
I-90/Easton Hill Vicinity to Kachess River Bridge Eastbound – Replace/Rehabilitate Concrete Project delayed for additional design efforts and resulting permits.	

Early (1)

SR 507/Old Highway 99 to East of Water Street – Paving

Deferred (5)

SR 129/2nd Street to Highland Ave – Paving Project deferred due to changes in funding and prioritization.	SR 290/Hamilton St. to Mission Ave. – Paving Project deferred due to changes in funding and prioritization.
SR 202/Little Bear Creek – Fish Barrier Removal Project deferred due to changes in funding and prioritization.	US 97/Maryhill Climbing Lane – Rock Scaling Project deferred to allow completion of right of way certifications.
SR 14/Vicinity of Tunnel No. 3 – Rock Scaling Project deferred to allow completion of right of way certifications.	

Deleted (1)

SR 510/South of Reservation Rd. Southeast to South of Fort Lewis Military Rd. – Paving
Project deleted as work will be combined with other projects and completed.

Data source: WSDOT Capital Program Development and Management.

WSDOT meets Legislative goal to reduce highway construction force by June 30, 2015

As of June 30, 2015; Compared to June 30, 2014

1937

Highway construction
program workforce



10.5%

less than the 2,164
employed one year ago

2000

June 30, 2015
target

Data source: WSDOT Capital Program Development and Management.

Notes: Highway construction full-time equivalent (FTE) counts are not just permanent full-time positions, but also include temporary hires and part-time workers. The FTE count is based on the number of hours worked. The declining number of FTEs shown above follows the Legislature's direction for WSDOT to reduce the size of its highway construction workforce to a level of 2,000 FTEs by June 30, 2015.

Gray Notebook subject index, archives and acronym list online

Readers can access the *Gray Notebook* subject index online at <http://bit.ly/GNBsubjectindex>. Every *Gray Notebook* edition is at <http://bit.ly/GNBArchives>, and WSDOT's transportation acronym guide is available at <http://bit.ly/WSDOTacronyms>.

Quick Response (QR) codes accompany some *Gray Notebook* articles. Mobile devices can scan QR codes and link the reader to Web pages, providing readers access to other information related to articles found in this issue. A sampling of codes is presented below:

GNB Subject Index



GNB Archives



WSDOT Acronyms



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Civil Rights Act of 1964, Title VI Statement to the Public

It is the Washington State Department of Transportation's policy to assure that no person shall, on the grounds of race, color, national origin, or sex, as provided by Title VI of the Civil Rights Act of 1964, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any of its federally funded programs and activities.

Any person who believes his/her Title VI protection has been violated, may file a complaint with WSDOT's Office of Equal Opportunity (OEO). For additional information regarding Title VI complaint procedures and/or information regarding our non-discrimination obligations, contact OEO's Title VI Coordinator Oscar Cerda at (360) 705-7082.

Understanding reporting periods

WSDOT programs report their performance data during different periods to best fit the work they do. For example, a program that receives substantial federal funds may report performance based on the federal fiscal year.

The charts below show the reporting periods for *Gray Notebook* 58. April through June 2015 is the second quarter of the calendar year (Q2 2015); the fourth quarter of the state's fiscal year (Q4 FY2015); and the third quarter of the federal fiscal year (Q3 FFY2015). It is also the eighth quarter of the 2013-2015 biennium, which follows the current budget set by the Washington State Legislature.

Calendar, fiscal and federal fiscal quarters

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
GNB 57			GNB 58				GNB 59			GNB 60	
Q1 2015			Q2 2015				Q3 2015			Q4 2015	
Q3 FY2015			Q4 FY2015				Q1 FY2016			Q2 FY2016	
Q2 FFY2015			Q3 FFY2015				Q4 FFY2016			Q1 FFY2016	

2013-2015 biennial quarters

Period	Quarter	Period	Quarter
Jul – Sep 2013	Q1	Jul – Sep 2014	Q5
Oct – Dec 2013	Q2	Oct – Dec 2014	Q6
Jan – Mar 2014	Q3	Jan – Mar 2015	Q7
Apr – Jun 2014	Q4	Apr – Jun 2015	Q8

Notes: A calendar year begins January 1 and ends December 31. Washington state's fiscal year (FY) begins July 1 and ends June 30. The federal fiscal year (FFY) begins October 1 and ends September 30. Biennia begin July 1 and end two years later on June 30.

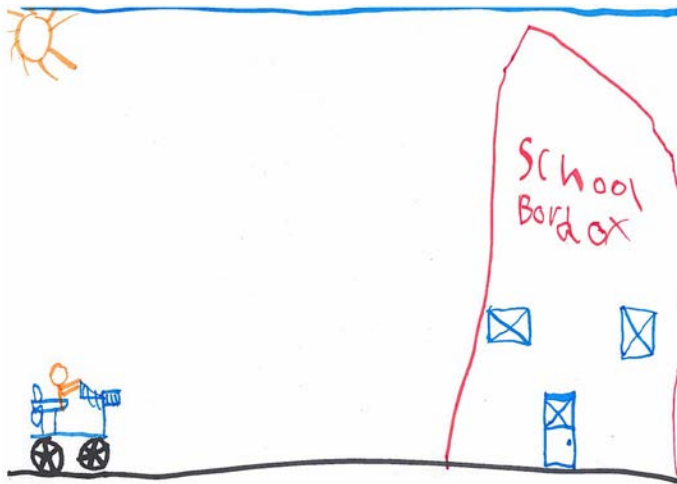
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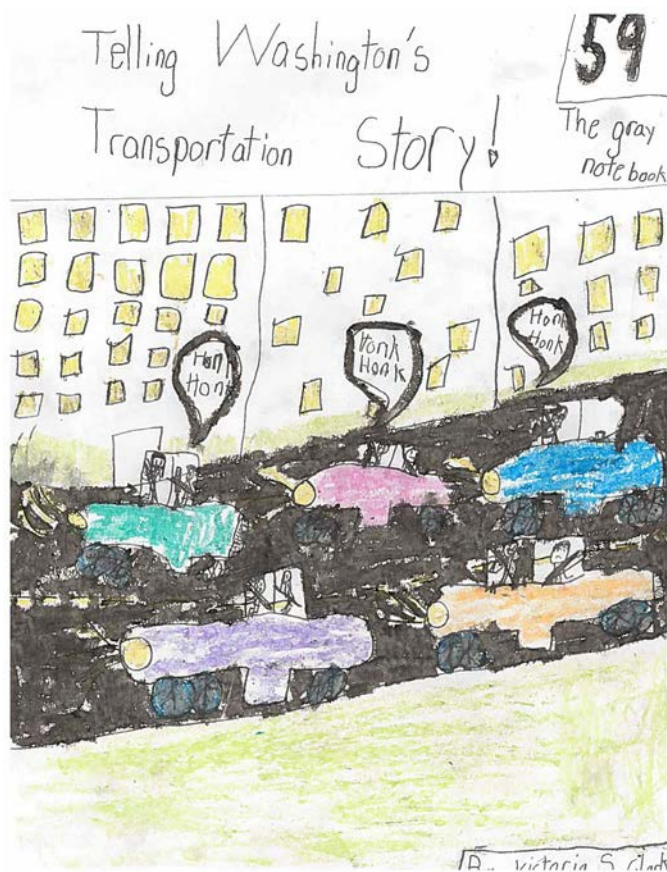
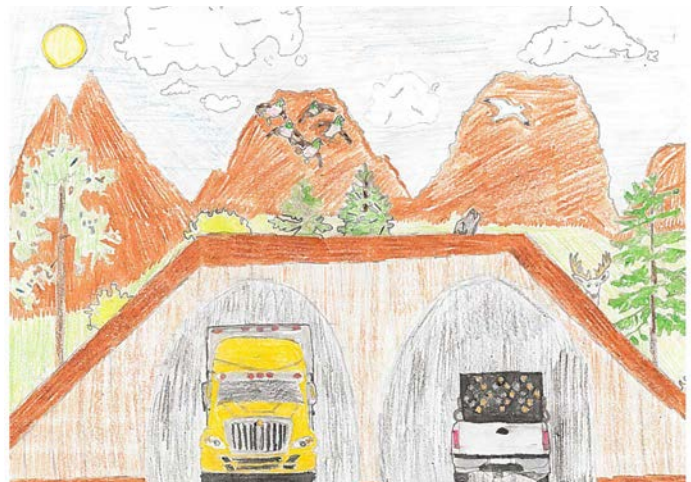
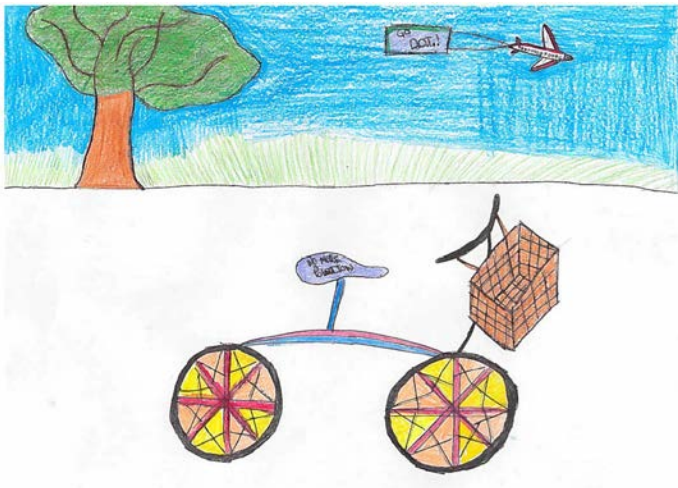
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The drawings of Take Our Daughters and Sons to Work Day artists (name of WSDOT parent/grandparent in parentheses): At left, from top to bottom, 7-year-old Rylan Holmberg (Headquarters Forms and Records Analyst Ashley Holmberg); 12-year-old Jayme Bacon (South Central Maintenance Technician William Bacon) and 7.5-year-old Haylee Suarez (State Hydraulic Engineer Julie Heilman-Suarez); bottom right, 11-year-old Kaito Yan (Headquarters Transportation Engineer Kumiko Izawa), and top right, 12-year-old Josiah A. Mason (Eastern Region Maintenance Technician Jeff Mason).



Young artists flourish during WSDOT art contest



Art entries that truly captured WSDOT's multimodal efforts and maintenance work included a bicycle (top left) by 11-year-old Hannah Williamson, granddaughter of Colleen Reynolds (Material Laboratory IT Manager) and Bill Reynolds (ELG IT Application Development Manager); a Gray Notebook cover (left) by 8-year-old Victoria S. Clark, granddaughter of Linda Pasta (Administrative Assistant) and Cliff Pasta (IT Training Video Specialist), both of WSDOT Headquarters; a detailed wildlife overcrossing (above) by 11-year-old Sydney Wells, daughter of Paula Wells (South Central Region Fiscal Tech); and a snowplow (below) by 14-year-old John Mason, son of Eastern Region Maintenance Technician Jeff Mason.



The children and grandchildren of WSDOT employees fully embraced the theme of "Telling Washington's Transportation Story" as part of the art contest. The artists were provided some delicious treats courtesy of Dairy Queen and WSDOT's Senior Managers Group contributed the prize

money to reward first, second and third place artists. Contest judges included WSDOT employees Ann Briggs, Jo Dayton, Sreenath Gangula, Linda Healy, Bruce Ikenberry, Joe Irwin, Heidi Mabbott and Steve Riddle.