Department of Transporta i

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The Gray Notebook

WSDOT's quarterly performance report on transportation systems, programs, and department management

Quarter ending December 31, 2012 • Published February 25, 2013 Paula J. Hammond, P.E., Secretary of Transportation

Paving the way

WSDOT getting its back into the tough job of pavement preservation

p. 10

People powered

Planning ahead to ensure the state's pedestrian and bicycle programs succeed

p. 5

Have gills will travel

WSDOT projects remove barriers to improve fish passage

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Executive Summary

Highlights in this edition of the *Gray Notebook*

The Washington State Department of Transportation's quarterly performance report, the *Gray Notebook* promotes accountability and transparency agency-wide while focusing on explaining the reasons behind the agency's successes and challenges.

Continuing with WSDOT's efforts to improve content, design and communication, this edition marks a major change, the removal of the gray bar highlights that formerly accompanied each article. The *Gray Notebook* is still organized by policy goal. Beginning with this issue, readers will find article highlights "at a glance" on each goal area's introductory page. (Safety, page 1; Preservation, page 9; Mobility, page 23; Environment, page 33; Economic Vitality, page 39, and Stewardship, page 41.)

This edition continues an 11-year tradition and includes annual reports on WSDOT's pedestrian and bicyclist safety, pavement program, fish passage barriers, environmental compliance and more. The following pages present information on WSDOT's performance for the quarter ending December 31, 2012. Highlights from this edition include:

- New federal legislation, Moving Ahead for Progress in the 21st Century (MAP-21) is under way and is designed to increase transparency and accountability for investments in transportation infrastructure and services nationwide. (p. ix)
- WSDOT's 2012 recordable incident rate improved 11 percent from 2011, and the days away, restricted or transferred rate improved 13 percent from 2011 to 2012. (p. 2)
- Walking and biking increased 7 percent from 2011 to 2012 in Washington. Overall, these activities have increased 10 percent since 2008. (p. 5)
- WSDOT's pavement rehabilitation backlog increased by $44 million to $220 million from fiscal year 2011 to fiscal year 2012. (p. 10)
- WSDOT achieved more maintenance asset condition targets in 2012 than it did in 2011. (p. 18)
- WSDOT's Incident Response program responded to 10,691 incidents in the fourth quarter of 2012, providing Washington drivers about $17.7 million in economic benefit. (p. 24)
- Ferries missed 268 net trips in the second quarter of fiscal year 2013, an increase of 127 net trips over the same quarter in fiscal year 2012. (p. 28)
- Eighty percent of Washington-funded Amtrak Cascades trains arrived at their destination on time in the fourth quarter of 2012. (p. 31)
- WSDOT completed 12 culvert corrections in 2012, restoring access to 55 miles of potential upstream habitat. (p. 34)
- WSDOT had 112 environmental violations in 2012, which is 48 more than in 2011. (p. 36)
- American Recovery and Reinvestment Act funds supported 694 full-time equivalent jobs monthly on Washington highway projects from February 2009 to November 2012. (p. 40)
- WSDOT completed five additional Nickel and Transportation Partnership Account projects, bringing its total to 341 of 421 projects completed. (p. 42)
- The Construction Cost Index WSDOT uses to track changes in its annual materials costs increased 5.1 percent during 2012. (p. 65)
- As of December 31, 2012, WSDOT employed 6,677 permanent full-time employees, 143 (2 percent) fewer than the 6,820 workers employed one year ago. (p. 68)

On this quarter's cover:

A paving crew works on the connection between the old and new SR 99, north of South Holgate Street in Seattle.

This page:

Winter weather packed a wallop on SR 542 near Mount Baker in mid-December as storms dumped six feet of snow in less than a week on the area, downing trees and closing the highway. Approximately 175 trees crossed the seven-mile stretch. WSDOT crews said the storm was one of the worst they'd seen in years but used everything from chainsaws to backhoes to reopen the road quickly.

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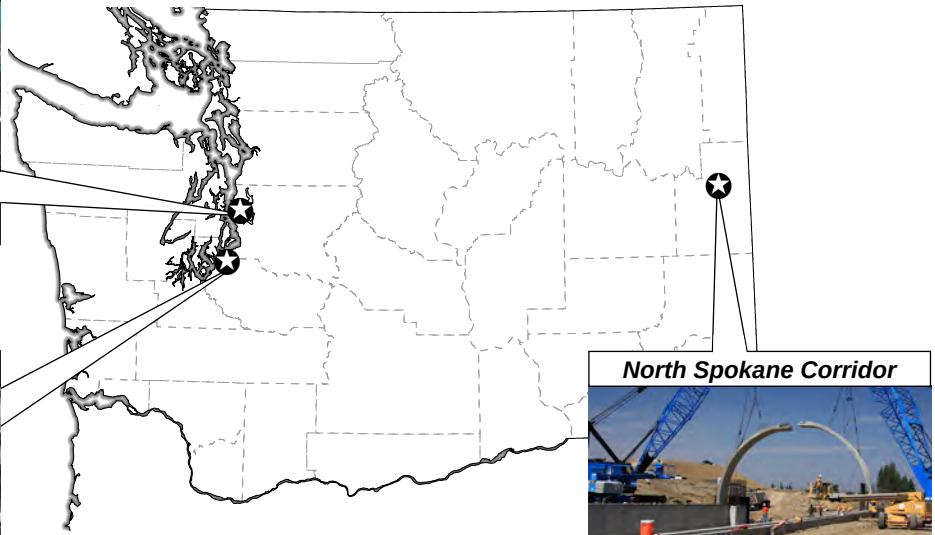
Alaskan Way Viaduct

WSDOT has completed half of the Alaskan Way Viaduct replacement projects. See page 62



Tacoma/Pierce County HOV

WSDOT has opened a temporary bridge to accommodate traffic during construction. See page 63

North Spokane Corridor

WSDOT has completed 5.7 miles of this project to re-route U.S. 395 around Spokane. See page 64

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Table of Tables and Graphs

What's the difference between a calendar year, state fiscal year and federal fiscal year?

Some performance measures addressed in the *Gray Notebook* refer to calendar years and their corresponding quarters, others to state fiscal years/quarters, and still others to federal fiscal years/quarters. While an effort is made to standardize reporting periods, WSDOT programs make the determination on the best time period in which to report their data. For example, a program that receives substantial federal funds may report performance based on the federal fiscal year.

The chart below illustrates the quarters discussed in the pages of the *Gray Notebook*. GNB 48 reports quarterly performance data for October through December 2012, which is the fourth quarter of the calendar year (Q4 2012). This time period is also considered the second quarter of the state's current fiscal year (Q2 FY2013) as well as the first quarter of the federal fiscal year (Q1 FFY2013).

Calendar, fiscal and federal fiscal quarters

A guide to understanding quarters discussed in the Gray Notebook

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
GNB 45			GNB 46			GNB 47			GNB 48		
Q1 2012			Q2 2012			Q3 2012			Q4 2012		
Q3 FY2012			Q4 FY2012			Q1 FY2013			Q2 FY2013		
Q2 FFY2012			Q3 FFY2012			Q4 FFY2012			Q1 FFY2013		

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.

There is the matter of biennial quarters. The Washington State Legislature sets a biennial budget. This issue highlights the sixth quarter of the 2011-2013 biennium. These quarters are as follows:

2011-2013 biennial quarters

A guide to understanding quarters discussed in the Gray Notebook

Period	Biennial Quarter	Period	Biennial Quarter
July - September 2011	Q1	July - September 2012	Q5
October - December 2011	Q2	**October - December 2012**	**Q6**
January - March 2012	Q3	January - March 2013	Q7
April - June 2012	Q4	April - June 2013	Q8

Contributors

The work of many people goes into the writing, editing and production of the *Gray Notebook* every quarter. This list of contributors reflects the efforts of data analysts, engineers, project leads, and many more individuals who collaborate behind the scenes. Information is reported on a preliminary basis as appropriate and available for internal management use; it is subject to correction and clarification. Online versions of this publication are available at www.wsdot.wa.gov/accountability/.

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	Rail/Ferries Construction Dashboard	Joe Irwin	Mike Ellis, Firas Makhlouf
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Linking Performance Measures to Strategic Goals

This table illustrates the alignment of WSDOT's performance measures with the six statewide transportation policy goals and the WSDOT strategic business plan, *Business Directions*. For more information on navigating the WSDOT information stream, see pp. 75-76.

State policy goal: Safety To provide for and improve the safety and security of transportation customers and the transportation system.

WSDOT business direction Vigilantly reduce risks and improve safety on all state-owned transportation modes; reduce fatalities and serious injuries; assist local communities in identifying effective strategies to transportation safety needs.

Key WSDOT performance measures	Reporting cycle	Most recent *GNB* report
Number of traffic fatalities	annual	GNB 46, p. 4
Rate of traffic fatalities per 100 million miles traveled	annual	GNB 46, p. 4
Percent reduction in collisions before and after state highway improvementsz	annual	GNB 45, p. 5
Number of recordable workplace injuries and illnesses	quarterly	GNB 48, p. 4

State policy goal: Preservation To maintain, preserve and extend the life and utility of prior investments in transportation systems and services.
WSDOT business direction Catch up with all necessary maintenance and preservation needs on existing highways, bridges, facilities, ferry vessels and terminals, airports, and equipment, while keeping pace with new system additions.

Key WSDOT performance measures	Reporting cycle	Most recent *GNB* report
Percent of state highway pavement in fair or better condition	annual	GNB 48, p. 10
Percent of state bridges in fair or better condition	annual	GNB 46, p. 8
Percent of targets achieved for state highway maintenance activities	annual	GNB 48, p. 18
Number of ferry vessel life-cycle preservation activities completed	annual	GNB 45, p. 16
Percent of ferry terminals in fair or better condition	annual	GNB 45, p. 14

State policy goal: Environment To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities and protect the environment.
WSDOT business direction Protect and restore the environment while improving and maintaining Washington's transportation system.

Key WSDOT performance measures	Reporting cycle	Most recent *GNB* report
Conformance of WSDOT projects and programs with environmental legal requirements	annual	GNB 47, pp. 31-40
Number of fish passage barriers fixed and miles of stream habitat opened up	annual	GNB 48, p. 34
Number of WSDOT stormwater treatment facilities constructed or retrofitted	annual	GNB 45, p. 34
Number of vehicle miles traveled	annual	GNB 46, p. 17
Transportation-related greenhouse gas emissions (measure to be developed)		

State policy goal: Mobility (Congestion Relief) To provide for the predictable movement of goods and people throughout the state.
WSDOT business direction To move people, goods, and services reliably, safely and efficiently, by adding infrastructure capacity strategically, operating transportation systems efficiently, and managing demand effectively.

Key WSDOT performance measures	Reporting cycle	Most recent *GNB* report
Travel times and hours of delay on state highways	annual	GNB 46, p. 17
Reliable travel times on the most congested state highways around Puget Sound area	annual	GNB 46, p. 19
Percentage of commute trips while driving alone	annual	GNB 38, p. 32
Average length of time to clear major incidents lasting more than 90 minutes on key highway segments	quarterly	GNB 48, p. 26
Ferry ridership	quarterly	GNB 48, p. 28
Ferry trip reliability	quarterly	GNB 48, p. 29
Percent of ferry trips on time	quarterly	GNB 48, p. 30
Amtrak Cascades ridership	quarterly	GNB 48, p. 31
Percent of Amtrak Cascades trips on time	quarterly	GNB 48, p. 31

State policy goal: Stewardship To continuously improve the quality, effectiveness and efficiency of the transportation system.

WSDOT business direction Enhance WSDOT's management and accountability processes and systems to support making the right decisions, delivering the right projects, and operating the system efficiently and effectively in order to achieve the greatest benefit from the resources entrusted to us by the public.

Key WSDOT performance measures	Reporting cycle	Most recent *GNB* report
Capital project delivery: on time and within budget	quarterly	GNB 48, p. 42
Recovery Act-funded project reporting (Rail)	quarterly	GNB 48, p. 61

State policy goal: Economic Vitality To promote and develop transportation systems that stimulate, support, and enhance the movement of people and goods to ensure a prosperous economy.

WSDOT business direction Provide and operate a strong and reliable transportation system that efficiently connects people with jobs and their communities, moves freight, builds partnerships with the private sector, and supports a diverse and vibrant economy.

Key WSDOT performance measures	Reporting cycle	Most recent *GNB* report
Gray Notebook report on Freight	annually	GNB 45, pp. 38
Gray Notebook report on Rail Freight	semi-annually	GNB 47, pp. 42
Gray Notebook report on Transportation Economic Indicators	quarterly	GNB 48, p. 40

Performance Dashboard

✓ Goal has been met. ↑ Performance is trending in a favorable direction. ↔ Trend is holding. ↓ Performance is trending in a unfavorable direction.

Policy goal/Performance measure	Previous reporting period	Current reporting period	Goal	Goal met	Progress	Comments
Safety						
Rate of **traffic fatalities** per 100 million vehicle miles traveled (VMT) statewide (Annual measure: calendar years 2010 & 2011)	0.80	0.80	1.00	✓	↔	The rate of highway fatalities held steady (a lower rate is better). But the total was the lowest since 1954.
Rates of **recordable incidents** and days away, restricted or transferred for every 100 WSDOT workers[1] (Cumulative year to date 2011 & 2012)	6.2/ 3.1	5.5/ 2.7	5.2/ N/A	— / N/A	↑	The rate of worker injuries improved; and the incident rate requiring days away from work worsened.
Preservation						
Percentage of state **highway pavement** in fair or better condition (Annual measure: calendar years 2010 & 2011)	92.0%	90.5%	90.0%	✓	↓	A 1.5 percent decrease from previous year. Pavement condition has been declining since 2008.
Percentage of **state bridges** in fair or better condition[7] (Annual measure: fiscal years 2011 & 2012)	95.0%	95.0%	97.0%	—	↔	Structural condition ratings criteria continue to be a challenge.
Mobility (Congestion Relief)						
Highways: annual (weekday) vehicle **hours of delay** statewide at **maximum throughput speeds**[2] (Annual measure: calendar years 2009 & 2011)	28.1 million	32.5 million	N/A	N/A	↓	Increase of 16% from 2009 to 2011, with 2009 being the least congested year in past five years.
Highways: Average clearance times for **major (90+ minute) incidents** on nine key western Washington corridors (Calendar quarterly measure: Q3 2012 & Q4 2012)	170 minutes	161 minutes	155 minutes	—	↑	Average clearance time decreased for the quarter, but did not meet the goal of 155 minutes.
Ferries: Percentage of trips departing on time[3] (Fiscal quarterly measure: year to year: Q2 FY2012 & Q2 FY2013)	97.1%	96.3%	95%	✓	↓	Performance is less than the same quarter a year ago but still better than the goal.
Rail: Percentage of Amtrak Cascades trips arriving on time[4] (Calendar quarterly measure: year to year Q4 2011 & Q4 2012)	74.8%	80.0%	80%	✓	↑	WSDOT and Amtrak continue to evaluate projects and other means to improve on-time performance.
Environment						
Cumulative number of WSDOT **stormwater management facilities** constructed or retrofitted[5] (Annual measure: calendar years 2010 & 2011)	Over 800	Over 1,037	N/A	N/A	↑	Stormwater facilities will now be constructed under a new permit, with new requirements.
Cumulative number of WSDOT **fish passage barrier improvements** constructed since 1990 (Annual measure: calendar years 2011 & 2012)	257	269	N/A	N/A	↑	Past reporting period number was corrected from 258 to 257.
Stewardship						
Cumulative number of Nickel and TPA **projects completed,** and **percentage on time**[6] (Calendar quarterly measure: Q3 and Q4 2012)	336/ 88%	341/ 88%	90% on time	—	↔	Performance remained the same this quarter and did not meet goal by a small margin.
Cumulative number of Nickel and TPA **projects completed** and **percentage on budget**[6] (Calendar quarterly measure: Q3 and Q4 2012)	336/ 91%	341/ 91%	90% on budget	✓	↔	Performance remained the same as last quarter and continued to meet the goal.
Variance of total project costs compared to **budget expectations**[6] (Calendar quarterly measure: Q3 and Q4 2012)	under budget by 1.2%	under-budget by 1.3%	on budget	✓	↔	Total Nickel and TPA construction program costs are within 1.2 percent of budget.

Notes: N/A means not available: new reporting cycle data not available or goal has not been set. Dash (—) means goal was not met in the reporting period.

1 Recordable incident rate reported as the number of incidents for every 100 full-time employees; the days away, restricted or transfer (DART) rate is a subset of RIR, and reports the number of incidents requiring time off or affecting on-the-job duties for every 100 full-time employees.

2 Compares actual travel time to travel time associated with 'maximum throughput' speeds, where the greatest number of vehicles occupy the highway system at the same time (defined as 70 percent to 85 percent of the posted speeds).

3 "On-time" departures for Washington State Ferries includes any trip recorded by the automated tracking system as leaving the terminal within 10 minutes or less of the scheduled time.

4 "On-time" arrivals for Amtrak Cascades are any trips that arrive at their destination within 10 minutes or less of the scheduled time. See page 31.

5 Number of estimated facilities in permitted counties: Clark, King, Pierce, and Snohomish.

6 Budget and schedule expectations are defined in the last approved State Transportation Budget. See page 43 for more information on capital projects in the current 2012 Legislative Transportation Budget.

Moving Ahead for Progress in the 21st Century (MAP-21)

Overview of federal performance reporting requirements

New federal legislation mandates performance-based management

On July 6, 2012, President Barack Obama signed the Moving Ahead for Progress in the 21st Century Act (MAP-21). This federal legislation will fund transportation investments for federal fiscal years 2013 and 2014 (October 1, 2012 through September 30, 2014). The cornerstone of this law is the transition to a performance and outcome-based federal aid program. The *Gray Notebook* is an example of how WSDOT conducts performance reporting.

The primary objectives of MAP-21 are to increase the transparency and accountability of states for their investment of taxpayer dollars into transportation infrastructure and services nationwide, and to ensure that states invest money in transportation projects that collectively make progress toward the achievement of these national goals:

- Improve safety
- Maintain and improve infrastructure condition
- Reduce congestion
- Improve system reliability
- Support freight movement and economic vitality
- Ensure environmental sustainability
- Reduce project delivery delays

This is the first time that all state departments of transportation (DOTs) and Metropolitan Planning Organizations (MPOs) are required to track and report performance data using a national framework of consistent performance measures. The new measures are applied within four program areas: the Highway Safety Improvement Program, the National Highway Performance Program, the Congestion Mitigation and Air Quality (CMAQ) Program and the National Freight Movement Program.

State DOTs and MPOs are expected to coordinate to set targets for national measures in these program areas. MAP-21 legislation includes some penalties in terms of restrictions to a state's federal funds if the state does not meet its targets over a given time period.

USDOT will establish new performance measures

The U.S. Department of Transportation (USDOT) is tasked with establishing the performance measures needed to meet these national transportation goals. USDOT is going through a process called "rulemaking" through which it will develop the details that control the implementation of performance measurement and reporting. WSDOT continues to provide input into this rule-making process and evaluates any of its policies affected by the implementation of MAP-21 rules. The projected timing for USDOT to issue rules for the performance goals is shown in the table below.

Staged rulemaking schedule for MAP-21

Effective date spring 2015 for all rules

Measures	Safety	Infrastructure	System Performance, CMAQ, Freight
Oct - Dec 2012	Consultation / Notice of proposed rule making		
Jan - Mar 2013			
Apr - Jun 2013			
Jul - Sep 2013			
Oct - Dec 2013	Comments		
Jan - Mar 2014	Final rule	Comments	
Apr - Jun 2014		Final rule	Comments
Jul - Sep 2014			Final rule
Oct - Dec 2014			
Jan - Mar 2015			

Data source: Jeffrey F. Paniati, P.E., Federal Highway Administration, January 13, 2013.

Challenges and opportunities ahead

During these times of severe fiscal constraints, it is important to demonstrate the benefits of transportation investments. This applies to the local, state, and national levels and hits home with taxpayers nationwide. While the specific measures and implementation processes are not yet fully defined, it is clear that this new process will provide both challenges and opportunities for state DOTs and MPOs.

- Following publication of the final rules, state DOTs, in partnership with their MPOs, will have 12 months to develop performance targets for each of the new nationally-established performance measures. The partnership is to ensure consistency.
- MPOs must establish their performance measures six months after state DOTs.
- Some of the MAP-21 performance measures apply only to the National Highway System, which was expanded in 2012 to include an additional 3,336 lane-miles of local agency roads in Washington state. The baseline condition data for these local roads is not currently available.

Moving Ahead for Progress in the 21st Century (MAP-21)

MAP-21 federal performance reporting requirements dashboard

MAP-21 program areas by goal	Federal threshold/ benchmark[1]	MAP-21 target[2]	Penalty[3] Y/N	Existing WSDOT performance measures for this program area
Highway Safety Improvement Program				
Rate of **traffic fatalities** per 100 million vehicle miles traveled (VMT) on all public roads	No	TBD	Yes	Traffic fatality rates using the NHTSA[4] methodology. *Gray Notebook* 50 (to be published August 2013) is expected to include an update on MAP-21 fatality rate implications.
Rate of **traffic serious injuries** per million vehicle miles traveled (VMT) on all public roads	No	TBD	Yes	Serious injury rates using the NHTSA[4] methodology. *Gray Notebook* 50 (to be published August 2013) is expected to include an update on MAP-21 serious injury rate implications.
Number of **traffic fatalities** statewide	No	TBD	Yes	Traffic fatalities using the NHTSA[4] methodology. *Gray Notebook* 50 (to be published August 2013) is expected to include an update on MAP-21 fatality rate implications.
Number of **traffic serious injuries** on all public roads	No	TBD	Yes	Serious injuries using the NHTSA[4] methodology.
Rate of **traffic fatalities** for drivers and pedestrians over 65 years of age per capita	No	TBD	No	Traffic fatalities for pedestrians over 65. See p. 8 of this edition for an update on MAP-21 implications. The rate of traffic fatalities for older pedestrians is part of Washington State's Target Zero campaign.
Rate of fatalities on high risk rural roads	No	TBD	Yes	Traffic fatality rates on high risk rural roads as part of Washington state's Target Zero campaign.
Highway-railway crossing fatalities	No	TBD	No	Fatalities at highway-railway crossings.
National Highway Performance Program				
National Highway System and Interstate **pavement condition**	To be determined	TBD	Yes	Pavement structural and functional condition. See p. 16 of this edition for an update on MAP-21 implications for pavement.
Condition of bridges on the National Highway System	<10% of deck area on SD[5] bridges	TBD	Yes	Several measures of bridge condition including good/fair/poor condition rating and structural deficiency (SD) rating. *Gray Notebook* 50 (to be published August 2013) is expected to include an update on MAP-21 bridge condition implications.
Measures to be determined through federal rulemaking	No	TBD	No	*Congestion Report* detailing highway travel time and reliability trends in Washington state.
National Freight Movement Program				
Measures to be determined through federal rulemaking	No	TBD	No	WSDOT's freight mobility plan will address trucking, rail and marine freight. *Gray Notebook* 49 (to be published May 2013) is expected to include an update on MAP-21 freight implications.
Congestion Mitigation and Air Quality (CMAQ) Program				
Measures to be determined through federal rulemaking	No	TBD	No	*Congestion Report* detailing highway travel time and congestion trends in Washington state.
Measures for on-road mobile source emissions to be determined through federal rulemaking	No	TBD	No	Greenhouse gas emissions by source, including fleet vehicles and ferry vessel operations.
Project Delivery				
Duration of NEPA documentation preparation	No	TBD	No	Percent of projects completed early or on time, percent completed on or under budget, and duration for NEPA document preparation.

Data source: WSDOT Strategic Assessment Office.

Notes: 1 Minimum threshold or benchmark to be established by the USDOT 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 the DOT or MPO does not attain the target within a given time frame. Penalties include minimum allocations of federal funding toward programs that advance progress toward the desired target. 4 NHTSA = National Highway Traffic Safety Administration. 5 SD = structurally deficient.

Safety at a glance

Earlier Safety-related articles

Find previous articles in these GNB editions:

See also

State policy goal

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

WSDOT's business direction

Vigilantly reduce risks to improve safety on all state-owned transportation modes; reduce fatalities and serious injuries; assist local communities in identifying effective solutions to transportation safety needs.

Worker Safety Quarterly Update

Worker Safety

Secretary of Transportation reinforces safety message with employees

WSDOT has lowest number of workplace injuries and illnesses since 2006

There were 336 Occupational Safety and Health Administration (OSHA) recordable incidents in 2012, down 28 percent from 2006 (467 incidents). WSDOT is committed to improving the safety of its employees as they perform their duties. To that end, WSDOT continues its program to transform employee safety, guided by a core value that every employee should leave at the end of their shift just as healthy as when they started.

Secretary Hammond conducts workplace safety events throughout WSDOT

Between September and December 2012, WSDOT sponsored nine workplace safety events across the state. These events were designed with the over-arching goal to improve employee safety and health. Multiple strategies used to reach this goal included: increasing awareness about WSDOT's safety and health emphasis, enhancing WSDOT employee understanding about their responsibility for safety and health, setting expectations for a safe workplace, increasing visibility and presence of the safety team in the field to identify and eliminate hazards in partnership with employees, and increasing education with a health emphasis.

Secretary Hammond hosted nine events across the state to discuss the importance of workplace safety

Secretary of Transportation Paula Hammond traveled throughout Washington state with the WSDOT Safety Champions (see *Gray Notebook* 45, p. 3) to speak at these events and deliver her message about WSDOT's top priority: workplace safety: *Every action … Every day … Every employee.* The primary message is that WSDOT cares about its employees and wants them to be safe at all times.

Secretary Hammond speaks to WSDOT employees about workplace safety: *Every action ... Every day ... Every employee.*

The key messages of these events included:

- It takes a commitment from every WSDOT employee to create a safe workplace.
- Safety affects the job site and can impact life off-the-job for both the short- and long-term.
- WSDOT leadership supports employees making decisions that keep themselves and their coworkers safe and healthy.

Secretary Hammond stressed the importance of employees making decisions to protect their safety and health. Employees have the executive support to say something if they identify an unsafe activity or event and they have the right to stop work if the activity is perceived as unsafe. After each event, supervisors held follow-up safety meetings with their employees to discuss WSDOT's accident prevention program, review their group's incident record, and discuss ways to reduce or eliminate hazards within their work units.

WSDOT improves workplace safety

WSDOT focuses on reducing the agency's overall recordable incident rate (RIR), which serves as the primary measure to gauge employee safety. This incident rate is the number of OSHA-recordable incidents reported for every 100 full-time employees. "OSHA-recordable incidents" is a standard measure that includes all work-related illnesses and injuries.

A second measure for WSDOT employee safety is the cumulative rate for "days away, restricted or transferred," or DART, is a subset of the overall incident rate, and measures the rate of recordable incidents that keep employees away from work, on restricted duty, and/or require a job transfer. The days away, restricted or transferred rate indicates the relative severity of incidents.

Tracking these incident rates allows the agency to better address employee safety, and identify problem areas and progress in preventing work-related injuries and illnesses. (See *Gray Notebook* 47, p. 2, for additional details about how the RIR and DART rates are calculated and applied.)

WSDOT reduces incident rate by 11 percent

During 2012, WSDOT made progress in reducing the OSHA-recordable workplace incidents; the agency-wide incident rate decreased from 6.2 incidents for every 100 full-time employees in 2011, to 5.5 in 2012, an improvement of 11 percent.

WSDOT's recordable incident rate improved 11 percent

Ferries and three regions meet worker incident rate goals in 2012

WSDOT recordable incident rates[1] for 2012

Number of recordable incidents for every 100 full-time employees

	2011	Goal 2012	2012	2011-2012 rate % change[2]
Northwest Region	6.6	5.6	5.7	-14%
North Central Region	8.9	7.9	7.1	-20%
Olympic Region	5.2	4.2	5.5	6%
Southwest Region	6.6	5.6	6.1	-8%
South Central Region	7.8	6.8	6.6	-15%
Eastern Region	9.9	8.9	8.8	-11%
Headquarters	2.2	1.2	3.0	36%
Subtotal	**5.8**	**4.8**	**5.4**	**-7%**
Ferries Division	7.5	6.5	5.5	-27%
Agency-wide	**6.2**	**5.2**	**5.5**	**-11%**

Data source: WSDOT Office of Human Resources and Safety.

Notes: 1 The recordable incident rate is calculated as the count of recordable incidents multiplied by 200,000 hours (approximate number of hours worked by 100 employees in one year), divided by the total hours worked. 2 Incident rate changes: improved = decrease (-%); worsened = increase (+%).

WSDOT's Ferries Division led the way by reducing its incident rate by 27 percent, and met their 2012 RIR reduction goal. Three WSDOT regions also reduced their incident rates by 11 percent or more, and met their 2012 RIR reduction goals: North Central, South Central and Eastern regions. Northwest, Olympic and Southwest regions, and Headquarters had incident rates higher than their goals for 2012. While Northwest and Southwest regions did not meet their goals, they both improved (14 percent and 8 percent, respectively) compared to 2011 recordable incident rates.

Ferries improved its incident rate by 27 percent

Days away, restricted or transferred rates vary in 2012

In 2012, the year-end DART rate agency-wide was 2.7, a 13 percent improvement from 2011 when it was 3.1 for every 100 full-time employees. The Ferries Division improved 45 percent. Northwest, South Central and Eastern regions improved their DART rates by 4 to 21 percent. The DART rates worsened for North Central, Olympic and Southwest regions, and Headquarters, which implies an increase in incident severities.

WSDOT's overall DART rate improved 13 percent

WSDOT continues to perform the "root cause analyses" for work units that have high recordable incident rates or DART rates to assess the trends and identify approaches to minimize future risk of incidents. See *Gray Notebook* 47, p. 4, for additional details on the root cause analysis methodology.

WSDOT "days away[1]" rates for 2012

Number of recordable incidents involving days away, restricted duty, and/or job transfer (DART rate) for every 100 full-time employees

	2011[2]	2012[2]	2011-2012 rate % change[3]
Northwest Region	2.5	2.4	-4%
North Central Region	2.4	2.5	4%
Olympic Region	1.6	3.4	113%
Southwest Region	2.6	3.5	35%
South Central Region	4.2	3.3	-21%
Eastern Region	2.7	2.4	-11%
Headquarters	0.6	1.1	83%
Subtotal	**2.1**	**2.4**	**14%**
Ferries Division	6.4	3.5	-45%
Agency-wide	**3.1**	**2.7**	**-13%**

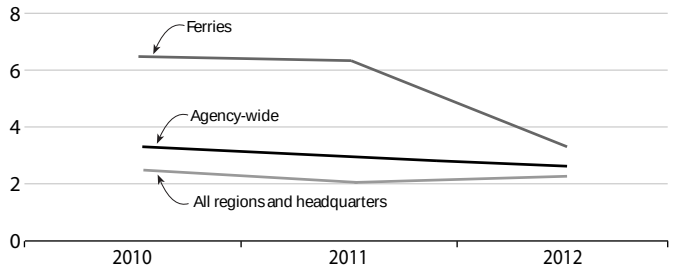
Data source: WSDOT Office of Human Resources and Safety, WSF, Labor and Industries (L&I).

Notes: 1 The "days away" or DART rate is the count of recordable incidents involving days away, restricted duty, or job transfer, multiplied by 200,000 hours, and divided by the total hours worked. 2 WSDOT identified a calculation error that inflated previous DART rates. Corrected numbers for 2011 and 2012 are shown in this table and will not match previous editions of the *Gray Notebook*. 3 Incident rate changes: improved = decrease (-%); worsened = increase (+%).

The graph below illustrates the DART rates over the past three years. Between 2010 and 2012, the DART rate for Ferries showed a 48 percent improvement from 6.7 incidents involving days away, restricted duty, and/or job transfers for every 100 full-time employees in 2010, to 3.5 in 2012. WSDOT as a whole improved 23 percent, from 3.5 in 2010 to 2.7 in 2012.

WSDOT "days away[1]" rate trends for Ferries, regions and headquarters, and agency-wide[2]

2010-2012, Number of recordable incidents involving days away, restricted duty, and/or job transfer (DART rate) for every 100 full-time employees



Data source: WSDOT Office of Human Resources and Safety, Washington State Ferries (WSF), Washington State Department of Labor and Industries (L&I).

Notes: 1 The "days away" or DART rate is calculated as the count of recordable incidents involving days away, restricted duty, or transfer, multiplied by 200,000 hours, and divided by the total hours worked. 2 WSDOT identified a calculation error that inflated previous DART rates. Corrected numbers are shown in this graph and will not match previous editions of the *Gray Notebook*.

Worker Safety
Quarterly Update

WSDOT focuses on safe, healthy employees in 2013

Quarterly lost workdays decreased 45 percent from the same period last year

During the fourth quarter of 2012, WSDOT employees lost 368 workdays due to work-related incidents. This is 45 percent fewer than during the fourth quarter of 2011, when employees lost 666 workdays, showing the positive effect of WSDOT's workplace safety efforts. Highway maintenance workers lost 134 workdays, engineers reported 106 lost workdays, administrative staff reported 20 lost workdays, and Ferries employees lost 108 workdays.

OSHA-recordable injuries sustained and workdays lost by category of worker

October 1 through December 31, 2012, and comparable calendar quarters

	Number of injuries			Days away from work	Percent of all injuries
	Q4 2011	Q3 2012	Q4 2012	Q4 2012	Q4 2012
Highway maintenance	39	31	44	134	61%
Highway engineering	14	14	7	106	10%
Admin. staff	2	6	1	20	1%
Ferry system	26	19	20	108	28%
Total	**81**	**70**	**72**	**368**	**100%**

Data source: WSDOT Office of Human Resources and Safety.

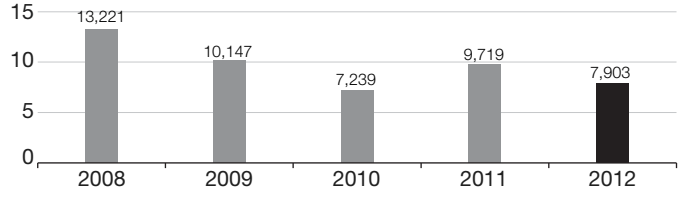
Note: The U.S. Coast Guard requires maritime employees to be 100 percent fit for duty before they may return to work. Some ferry system employees are not able to return to work either part-time or in a limited capacity following an injury.

Annual lost workdays declines 19 percent from 2011

WSDOT has made excellent progress in its efforts to reduce the number of days that employees are unable to report to work due to work related injury or illness. In 2012, WSDOT employees lost 7,903 workdays. The fewest annual workdays lost was 7,239 in 2010. The number in 2012 represents a 19 percent decrease from 2011, and a 7 percent increase from the recorded low in 2010.

WSDOT annual number of lost workdays

2008 through 2012; Cumulative days away from work



Data source: WSDOT Office of Human Resources and Safety, Washington State Ferries (WSF), Washington State Department of Labor and Industries (L&I).

The annual number of lost workdays does not match the summation of quarterly lost days, because the quarterly numbers show days away associated with injuries that occurred during that quarter. After the end of the quarter, days away continue to accrue for some of the injuries.

Wellness: An essential component to the success of WSDOT's safety and health program

WSDOT hosted 13 seasonal flu clinics statewide in the fourth quarter of 2012, offering flu vaccines to WSDOT employees and their families. The number of people taking advantage of this service at their workplace increased 24 percent in 2012 (600 flu shots administered at 13 clinics) compared to 2011, when 485 flu shots were administered at seven clinics. In addition, 490 Tdap vaccines (Tetanus, Diphtheria and Pertussis, also known as whooping cough) were administered in 2012 at 10 clinics. (WSDOT did not offer the Tdap vaccine at WSDOT work sites in 2011.)

Participation in work site flu vaccine clinics increased 24 percent

WSDOT continues to offer a mobile mammogram unit at several work sites. WSDOT employees who participated in the mobile screenings reported they were more likely to get a mammogram when they didn't have to travel from their workplace because it was less of a disruption to their work schedule.

WSDOT promotes "fitness for duty" health program

In 2013, WSDOT will focus on "fitness for duty" to improve employee health, prevent injuries, and promote long, successful careers. The Safety and Health Program will continue to address critical agency-wide employee preventative health issues such as Type 2 diabetes, obesity, high blood pressure, and heart disease by promoting healthy behavior changes and providing information tailored to employee interests and needs. WSDOT will also identify and share important resources to promote health, reduce the risk of disease, and help employees balance work and family. Some of the specific topics already identified include: breast cancer awareness, prostate cancer awareness, chronic disease self-management, resiliency, work-life balance, and ergonomic education. WSDOT will continue to promote the employee health assessment and encourage employees to access their individual health plan provider's online services to address nutrition and fitness.

Washington retains top rank for the most bicycle friendly state

WSDOT improves walking, biking conditions

The Pedestrian and Bicycle Program has improved more than 80 known pedestrian risk locations since 2005. To date, 177 schools across the state have participated in the Safe Routes to School Program, enhancing safety for approximately 77,000 children.

WSDOT offers two funding programs to help local agencies improve conditions for walking and bicycling: The Safe Routes to School and the Pedestrian and Bicycle programs.

In 2012, WSDOT provided two webinars to familiarize applicants with the grant programs, and reached about 400 people around the state. The programs received $160 million in requests, and awarded $26 million to 48 projects in 2012. Future state and federal funding for both programs is subject to approval by the 2013 state Legislature for the 2013-2015 biennium.

Biking and walking rise in Washington; safety targets prove challenging

WSDOT is committed to improving conditions for walking and biking, and continues to track its progress toward the goals set in the Washington State Bicycle Facilities and Pedestrian Walkways Plan. The state and federal goal is to double the percentage of total trips made on foot or by bicycle in Washington by 2027. WSDOT conducts an annual count of pedestrian and bicyclist activity as an indicator of the percent of trips made on foot or by bicycle. The 2012 counts show that walking and biking have increased 10 percent since 2008. The state also aims to reduce by 5 percent each year the number of bicyclists and pedestrians killed or seriously injured in traffic collisions.

Biking and walking in Washington has increased 10 percent

Fatalities per year compared to goal of reducing fatalities by five percent each year

2007 through 2011 data; Goal projected from 2007 baseline

	2007	2008	2009	2010	2011	2012	2013
Pedestrian	60	63	59	61	66	n/a	n/a
Bicyclist	14	9	9	6	11	n/a	n/a
Combined goal[1]	n/a	70	67	63	60	57	54

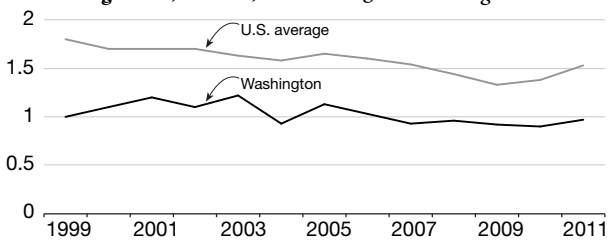
Data source: National Highway Traffic Safety Administration Fatality Analysis Reporting System. 2011 data is preliminary.

Fatality rates rise; lower than national average

The National Highway Traffic Safety Administration lists the pedestrian and bicyclist fatality rates relative to population for each state in the country. Between 2010 and 2011, Washington's pedestrian fatality collision rate rose from 0.90 to 0.97 pedestrian fatalities per 100,000 people. This represents five more pedestrian fatalities than in 2010, an 8 percent increase. Washington's pedestrian fatality rate is 37 percent lower than the national average.

Pedestrian fatality rate

1999 through 2011; Per 100,000 residents in Washington



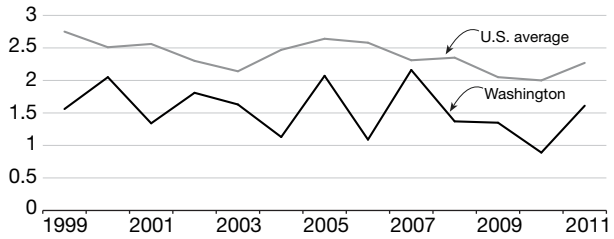
Data source: National Highway Traffic Safety Administration Fatality Analysis Reporting System (FARS).

Note: 2011 data is preliminary.

Washington also saw a rise in the bicyclist fatality collision rate: 0.89 bicyclists per million people in 2010, and 1.61 bicyclists per million people in 2011. This represents five more bicyclist fatalities in 2011 than in 2010, and an increase of 83 percent. Bicyclist fatality collision rates often fluctuate significantly due to the small overall number of fatalities. The state's bicyclist fatality rate is 29 percent lower than the national average.

Bicyclist fatality rate

1999 through 2011; Per million residents in Washington



Data source: National Highway Traffic Safety Administration Fatality Analysis Reporting System (FARS).

Note: 2011 data is preliminary.

Washington ranks No. 1 'Bicycle Friendly State' five years in a row

For the fifth consecutive year, the League of American Bicyclists named Washington as first in the nation in its "Bicycle Friendly State" ranking. In its announcement the league noted, "With support from the highest levels of government, (Washington) leads the nation in creating new bicycle infrastructure and using federal funds for bicycle and pedestrian projects."

Pedestrian and Bicyclist Safety
System Safety Annual Report

Bicycling and walking in urban areas increasing; fatalities are also on the rise

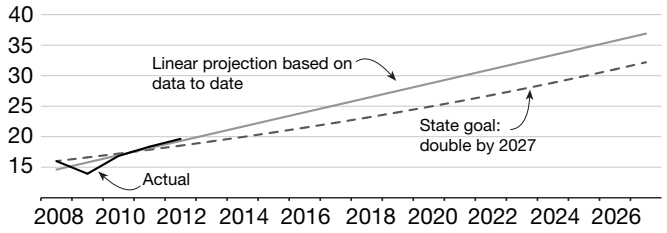
Walking and biking in Washington increase 10 percent

During the annual Washington State Bicycle and Pedestrian Documentation Project, volunteers counted more than 20,000 bicyclists and more than 40,000 pedestrians at 200 locations in 38 cities. Walking and biking increased 7 percent from 2011 to 2012 in Washington. These activities have increased 10 percent in five years. If walking and biking continue to increase at the annual rate tracked by WSDOT, Washington will exceed the state goal of doubling this activity before the 20-year target in 2027.

Washington state walking and biking trends

Pedestrian and bicycle documentation project

2008 through 2012; Bicyclist and pedestrian counts at selected locations; 20-year forecast; Number in thousands



Data source: Washington State Office of Financial Management and WSDOT Statewide Travel and Collision Data Office.

Notes: Projection based on counts from locations that were included in all years of the study. Data collection process consistent with guidance from the National Bicycle and Pedestrian Documentation Project and the Federal Highway Administration.

The highest numbers of bicyclists were observed on trails and bridges and in downtown areas. Pedestrian counts were highest near universities, in downtown areas, near transit stations, and in neighborhoods with mixed residential and commercial development.

Bicyclists' use of helmets related to local laws

In 2012, WSDOT collected data for helmet use during the annual bicycle and pedestrian counts. Overall, 85 percent of bicyclists observed wore helmets. In the 24 jurisdictions where helmets are required by law (there is no statewide law), 90 percent of observed bicyclists wore them, compared to 63 percent in jurisdictions without helmet laws. Currently, more than half of the state population lives in areas with local laws requiring use of a helmet while bicycling.

WSDOT's strategies to reach state goals

Factors leading to serious injuries or fatalities of bicyclists and pedestrians include weather, roadway design, and the behavior of drivers, bicyclist or pedestrian. These factors may occur individually or in combination. In some cases, improvements like sidewalks and crosswalks may not be enough to ensure public safety. Additional infrastructure, enforcement, and public education may be necessary.

The Washington State Bicycle Facilities and Pedestrian Walkways Plan identified five priority focus areas to reach the statewide goal of reducing bicyclist and pedestrian collisions, while increasing mobility:

- Invest in bicycle and pedestrian connections in urban areas,
- Reduce motor vehicle speeds (urban roads with speeds >35 mph,
- Build dedicated facilities to separate bicyclists and motorists,
- Create more visible crossings, and
- Prioritize the needs of at-risk populations.

Strategy: Invest in urban bicycle, pedestrian connections

The majority of biking and walking occurs in urban areas, and these activities are on the rise. Statewide counts show that biking and walking increased in downtown areas and mixed-use neighborhoods; and targeted promotion in urban areas encourages more walking and biking. Additionally, more than 85 percent of collisions involving pedestrians or bicyclists occurred in urban areas between 2009 and 2011 (including but not limited to city streets and main street highways combined). Enhancing facilities for pedestrians and bicyclists in urban areas such as improved crossings, connections and trail systems can improve safety and help reach the statewide goal of decreasing bicycle and pedestrian collisions while increasing walking and biking.

Forty-seven percent of bicyclist and pedestrian fatalities occurred on state highways

From 2009 to 2011, 47 percent (104) of fatal pedestrian and bicyclist collisions occurred on state highways. Thirty-six percent (80) occurred on city streets, and 17 percent (38) occurred on county roads.

Pedestrian and bicyclist collisions by road type

2009 through 2011

	Collisions (fatalities)	Percent of incidents	Centerline miles (percent of system)	
State highways (fatalities)	1,840 (104)	19% (47%)	7,044	(11%)
Main street highways[1] (fatalities)	1,039 (27)	56% (26%)	600	(9%)
City streets (fatalities)	6,954 (80)	72% (36%)	16,654	(26%)
County roads (fatalities)	888 (38)	9% (17%)	39,907	(63%)
Total collisions[3] (fatalities)	9,682 (222)	100% (100%)	63,605	(100%)

Data source: National Highway Traffic Safety Administration Fatality Analysis Reporting System (FARS); 2011 data is preliminary.

Notes: 1 Main street highways are a subset of all state highways, and percents are relative to total on all state highways. 2 This table does not include 19,651 miles of miscellaneous roads, such as those on park lands (there were 33 collisions and no fatalities in 2009-2011).

More than a third of pedestrian fatalities and serious injuries occur in crosswalks

A joint research project between WSDOT and the University of Washington found that there are about 600 miles of city main streets that operate as state highways in more than 180 cities. These city main street highways account for 9 percent of the state highway system. Between 2009 and 2011, these routes experienced 26 percent of bicyclist and pedestrian fatalities on state highways (27 of 104 highway fatalities). In 2011, the state Legislature passed the Complete Streets bill, including the creation of an unfunded grant program. When this grant program is funded, WSDOT will work with local jurisdictions to meet today's transportation needs on these main street highways. See *Gray Notebook* 44, p. 8.

Strategy: Reduce motor vehicle speeds in cities

Speed is a major factor contributing to the severity of injuries sustained in collisions between vehicles and pedestrians. A report titled "A Guide for Reducing Collisions Involving Pedestrians" by the National Cooperative Highway Research Council states that a pedestrian who is hit by a vehicle traveling at 40 mph has an 85 percent chance of being killed; at 20 mph, the fatality rate is only 5 percent. The posted speed limits were 35 mph or greater for more than 65 percent of pedestrian and bicyclist fatalities that occurred between 2002 and 2011 on city streets operating as state highways. WSDOT's research on main street highways helps guide roadway engineers toward designs that reduce vehicle speeds.

Strategy: Create more visible crossings

Between 2001 and 2011, 71 percent of intersection-related pedestrian fatal- and serious-injury collisions happened in marked or unmarked crosswalks (35 percent of all pedestrian fatalities and serious injuries). Twenty-one percent of intersection-related bicyclist fatal- and serious-injury collisions occurred in crosswalks. Treatments such as high visibility pavement markings, curb extensions and flashing beacons increase the visibility of legal crossings.

A push-button activated pedestrian hybrid beacon signals drivers to stop on red for pedestrians to cross the street.
Source: www.pedbikeimages.org / Mike Cynecki

A growing body of research shows that a 69 percent reduction in all collisions can be achieved by installing a pedestrian hybrid beacon, coupled with at least 94 percent of motorists yielding to pedestrians. A pedestrian hybrid beacon is a pedestrian-activated signal located on the roadside or on mast arms over mid-block pedestrian crossings. In addition, raised medians can reduce collisions by 40 percent, and by as much as 69 percent at unsignalized intersections. WSDOT projects incorporate median refuge islands, when appropriate, to help pedestrians safely cross the street. WSDOT plans to install the first pedestrian hybrid beacons on a Washington state highway by 2014 on SR 104 in Edmonds, with funding from WSDOT's Pedestrian and Bicycle Program.

Pedestrian serious injury and fatality collision locations
2001 through 2011

	Intersection		Non-intersection		Driveway	
Location	**Count**	**Percent**	**Count**	**Percent**	**Count**	**Percent**
Marked crosswalk	905	55%	74	4%	16	6%
Unmarked crosswalk[1]	279	17%	25	1%	54	20%
Sidewalk	43	3%	63	3%	34	13%
Roadway	331	20%	1,400	71%	119	44%
Shoulder	19	1%	224	11%	13	5%
Other/ Unknown	81	5%	177	9%	35	13%
Total	**1,658**	**-**	**1,963**	**-**	**271**	**-**

Data source: National Highway Traffic Safety Administration.
Note: 1 Crosswalks occur at all intersections except those with signs prohibiting pedestrians from crossing at that location. Crosswalks can also occur at non-intersection locations.

Strategy: Build dedicated facilities

More than 15,000 bicycle/motor vehicle collisions were reported in Washington from 2001 to 2011. Based on a review of recent research, WSDOT estimates that 40 to 60 percent more collisions involving bicyclists went unreported during that time.

Evaluating fatal and serious injury bicycle collisions by location in Washington state shows where bicycle collisions occurred with respect to the roadway for both intersection and non-intersection locations. Seventy percent of bicyclist fatal and serious injury collisions occurred within the roadway (including on designated bike routes), while bicyclists were obeying the rules of the road. This includes collisions where drivers were following too closely, exceeding safe speeds, or turning into or out of driveways, and where bicyclists were hit by an opening car door while riding next to parked cars. Another 9 percent occurred on the shoulder, and 15 percent occurred while the bicyclist was crossing the roadway. In each case, bicyclists were obeying the rules of the road.

Building dedicated facilities like bike lanes, urban shared-use paths, and bicycle boulevards, and redesigning thoroughfares using "road diets" can increase bicyclist mobility and safety. A road diet

WSDOT addresses needs of children and older adults to improve safety for all

restripes the roadway to reduce the number of motor vehicle travel lanes, and adds bicycle lanes and a two-way left turn lane. Recent research shows that bike lanes can significantly reduce bicycle collisions, as can road diets. In Washington, the city of Redmond is using a road diet to install bicycle lanes on SR 202 with funds from WSDOT's Pedestrian and Bicycle Program. WSDOT will monitor collisions on the roadway and conduct a "before and after" analysis of the road to determine how the project affects safety for all users.

Bicyclist serious injury and fatality collision locations
2001 through 2011

	Intersection related		Non-intersection	
Location/Action	**Count**	**Percent**	**Count**	**Percent**
Marked crosswalk	128	17%	14	2%
Unmarked crosswalk	36	5%	37	5%
Sidewalk	23	3%	56	8%
Designated bike route	52	7%	63	9%
Roadway	485	63%	438	61%
Shoulder	36	5%	94	13%
Other/Unknown	6	1%	14	2%
Total	**766**	**-**	**716**	**-**

Data source: National Highway Traffic Safety Administration.
Note: WSDOT no longer includes self-reported collision data.

Strategy: Prioritize safety improvements for at-risk groups

WSDOT has identified at-risk groups that experience disproportionately high percentages of fatal and serious injury collisions, including school-aged children and adults older than 65.

Children depend on walking and biking to get around

In 2011, 792 young people ages 5 to 18 were involved in pedestrian and bicycle collisions. Twelve percent of these collisions (95) resulted in death or serious injury. Most school-age children, especially those who are 5 to 15 years old, rely on walking, bicycling, or riding as a passenger in a motor vehicle to get around.

Some 792 school-aged children were involved in pedestrian and bicycle collisions in 2011

On the state highway system, almost 90 percent of all pedestrian and bicycle collisions occur within one mile of a school and 21 percent of those involve children ages 5 to 18 (this age range represents 18 percent of the population). More than 2,000 schools (70 percent) are located on or near a state highway, and many have school walk routes that must cross these highways so children can access the school grounds. Making investments near schools on the state highway system will improve conditions for the majority of pedestrians and bicyclists on the state highway system.

WSDOT administers the Safe Routes to School Program, which provides funds for improvements, education, and enforcement efforts to help make it safer for children to walk and bike to school. See *Gray Notebook* 44, p. 5.

Student survey documents how children get to school

In 2013, WSDOT is planning to conduct a statewide student travel survey in partnership with the Washington State Department of Health that will measure how students travel to school (bus, walking, biking, family vehicle). The survey will provide a baseline of student transportation mode choice in Washington and information specific to past and existing WSDOT Safe Routes to School projects. The goal is to systematically monitor student transportation choices, track changes, and identify the effectiveness of various programs aimed at shifting transportation choice away from single-family vehicles.

Older adults suffer a high rate of pedestrian fatalities

Adults ages 65 and older represent 13 percent of the population, yet they make up 25 percent of pedestrian fatalities. The National Institute of Aging reports that one in five adults 65 and older does not drive and may be more dependent on walking. This age group saw serious injury and fatal collisions increase by 17 percent from 2010 to 2011.

In 2007, WSDOT studied several pedestrian applications on SR 7 in Spanaway. The research showed that motorist and pedestrian behavior can be difficult to change through engineering improvements alone. While median refuge islands effectively reduced crossing distances for pedestrians, the improvements should be coupled with education and enforcement efforts.

Similar roadway design strategies can improve walking and biking conditions for children and older adults. Examples include increasing signal crossing time, reducing roadway crossing width, providing crossing opportunities with appropriate treatments, reducing traffic speeds in areas frequented by children or older adults, and ensuring facilities are ADA accessible.

New federal law tracks safety of older pedestrians

The federal transportation legislation Moving Ahead for Progress in the 21st Century (MAP-21) (see pp. ix-x) requires states to track trends for pedestrians ages 65 and older. If fatalities and serious injuries per capita for this group increase over a two-year period, the state must incorporate strategies that focus on older pedestrians into their Strategic Highway Safety Plan. WSDOT is a national leader in evaluating roadways to make improvements for older pedestrians, and will continue tracking trends for this at-risk age group.

Preservation at a glance

Asset Management: Pavement Conditions Annual Report **10**

WSDOT had 90.5 percent of asphalt and concrete pavement in fair or better condition in 2011, compared to 92 percent in 2010 • WSDOT's pavement rehabilitation backlog increased by $44 million to $220 million from fiscal year 2011 to fiscal year 2012 • WSDOT's first asphalt overlay project on concrete resulted in cost savings of approximately $400,000 per lane mile compared to the traditional asphalt reconstruction method

Asset Management: Highway Maintenance Annual Report **18**

WSDOT achieved 80 percent of its maintenance asset condition targets in 2012; up from 65 percent in 2010 and from 73 percent in 2011 • Since 2011, 11 maintenance scores increased, 17 remained unchanged and two decreased • Four of 30 maintenance activities have consistently been below target at the statewide level since 2009: Structural Bridge Repair, Raised/Recessed Pavement Marker Maintenance, Should Maintenance and Nuisance Vegetation Control

Earlier Preservation-related articles

Find previous articles in these GNB editions:

Capital Facilities Annual Report	GNB 47
Bridge Assessment Annual Report	GNB 46
Asset Management: Washington State Ferries Vessel and Terminal Preservation Annual Report	GNB 45
Safety Rest Areas Annual Preservation Report	GNB 45
Asset Management: Pavement Conditions Annual Report	GNB 44
Highway Maintenance Annual Report	GNB 44

See also

Capital Project Delivery Programs 42

State policy goal

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

WSDOT's business direction

Catch up with all necessary maintenance and preservation needs on existing highways, bridges, facilities, ferry vessels and terminals, airports, and equipment, while keeping pace with new system additions.

Asset Management: Pavement Conditions Annual Report

Pavement Conditions

WSDOT introduces measures for long-term pavement sustainability

WSDOT continues to feel the consequences of reduced funding for pavement preservation. While the agency met its goal, with 90.5 percent of state highway pavement in fair or better condition in 2011 (the latest available data), this is a drop of 2.2 percent from 2010, when 92.7 percent was fair or better. WSDOT maintains pavement on 18,622 lane miles of state highways, and 2,000 lane miles of ramps and special use lanes. The agency's pavement management system is recognized as one of the best in the nation. New performance measures are being used by WSDOT to manage the preservation of its pavement, as shown in the dashboard below. This article also introduces new federal performance requirements in the Moving Ahead for Progress in the 21st Century Act (MAP-21) for pavement management (see pp. ix for an overview of MAP-21).

Pavement conditions in 2011

Bituminous surface treatments (BST), also known as chip seal, pavement condition data was not evaluated for the 2011 pavement condition survey due to budget reductions. The state's roadways consist of three pavement types. Chip seal pavement makes up 28 percent of state road lane miles, asphalt (hot mix asphalt and warm mix asphalt) makes up 59 percent, and concrete makes up 13 percent (see table on p. 12). Chip seal pavement on state roads increased by 382 lane miles between 2010 and 2011. It is expected to continue to rise because much of the asphalt pavement that is due for rehabilitation will be replaced with chip seal, which is more cost effective than asphalt under the right conditions. See the *Gray Notebook* 44, pp. 12-13 for a comparison of chip seal and asphalt pavement. It is undetermined at this time if chip seal pavement will be evaluated for the 2012 and future condition surveys.

Survey determines rehabilitation priorities

The annual condition survey determines when pavement is due for rehabilitation or replacement. It measures the cracking, rutting and roughness on 0.1 mile segments of roadway. The lowest rated score between the three measures is used to rate a pavement segment as very good, good, fair, poor, or very poor. A good condition pavement is smooth with few defects while a poor condition pavement is characterized by cracking, patching, rutting and roughness, shown in the photos on p. 12. Pavement segments are prioritized for rehabilitation based on the condition survey.

Without pavement condition data for chip seal, resurfacing is programmed on a scheduled basis rather than based on remaining service life. This runs the risk of replacing chip seal before the end of its useful service life on some segments.

Pavement performance measures dashboard

Performance measure[1]	Previous year	Current year	Goal	Goal met	Progress	Comments
Percent of **pavement in fair or better condition** (Annual measure: calendar years 2010 & 2011)	92.0%[2]	90.5%	90.0%	✓	⇩	Reduction from previous year; chip seal not rated in 2011 (pp. 11-12).
New pavement performance measures						
Average years and percent of **Remaining Service Life**[3] of asphalt and chip seal pavement (Annual measure: fiscal years 2011 & 2012)	6.11 yrs 52.2%	6.09 yrs 51.9%	40% to 60%	✓	⇩	Indicates average remaining life of flexible pavement: about 52% of the average life remains (p. 13).
Asset Sustainability Ratio[4] of asphalt and chip seal pavement (Annual measure: calendar years 2011 & 2012)	0.79	0.70	1.0	–	⇩	Measures the years of service life replenished divided by the service life consumed annually. (pp. 13-14).
Deferred Preservation Liability[5] of all pavement (asphalt, chip seal and concrete) (Annual measure: fiscal years 2011 & 2012)	$176 million	$220 million	$0	–	⇩	Measures the accumulated agency cost of deferred pavement rehabilitation. (p. 14).

Notes: 1 All measures are for WSDOT state highway pavement. 2 For comparison purposes, the 2010 pavement condition for all pavement types was 92.7 percent fair or better. 3 Remaining Service Life is the years and percent left of a pavement segment's remaining useful life before rehabilitation or replacement is necessary. 4 Asset Sustainability Ratio compares the years of useful pavement life replenished in a given year through rehabilitation compared to the amount consumed. 5 Deferred Preservation Liability is the cost in current dollars to fund the backlog of past due pavement rehabilitation work. The project trend for all measures is unfavorable.

Pavement conditions trend downward as preservation funding declines

Pavement conditions drop to 90.5 percent in fair or better condition in 2011

Washington's state highway pavement conditions met the Governor's Cabinet Strategic Action Plan goal of maintaining 90 percent of roads in fair or better condition in 2011. However, pavement condition has dropped from 2010 levels, when 92.7 percent of all pavement and 92 percent of asphalt and concrete pavement were in fair or better condition, shown in the table on p. 12. Despite the drop, average pavement conditions continued to be good in Washington, with 90.5 percent of asphalt and concrete pavement rated fair or better in 2011.

The percent of asphalt and concrete pavement in poor or very poor condition worsened by 2.2 percentage points, with 9.5 percent in poor condition in 2011, compared to 7.3 percent in 2010 for all pavement and 8 percent in 2010 for asphalt and concrete pavement. The total lane miles of asphalt and concrete pavement in poor or very poor condition increased by 11.5 percent from 1,029 lane miles in 2010 to 1,147 in 2011.

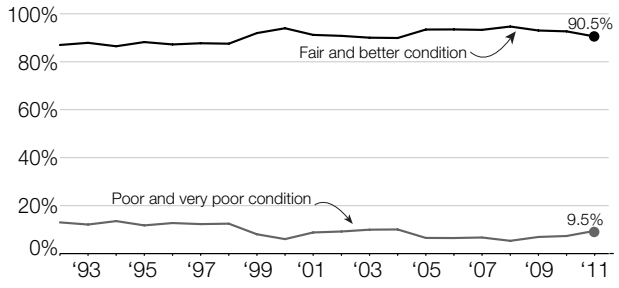
Some 90.5 percent of asphalt and concrete pavement were in fair or better condition in 2011

Pavement in fair or better condition trends downward

Pavement conditions in 2011 continue a slight yet steady decline since 2008 in the percent of pavement in fair or better condition, shown in the graph below. The condition of all WSDOT's pavement types has been declining since 2008 when 94.7 percent was in fair or better condition. The trend is similar for asphalt and concrete pavement (excluding chip seal for comparison purposes), which has been declining since 2005 when 94.3 percent was in fair or better condition. Pavement in fair or better condition has not dropped below 90.5 percent since 2004 for all pavement (and since 1997 for asphalt and concrete).

State highway pavement condition

1993 through 2011; All pavement types; Chip seal pavement excluded for 2011



Data source: WSDOT Materials Lab.

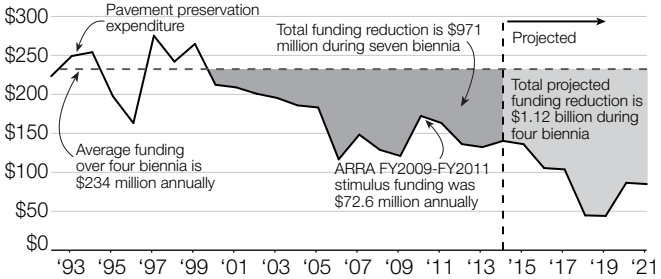
Note: 2011 condition data does not include chip seal pavement due to reduced funding. Data for 2001-2010 include all pavement types.

Funding for pavement preservation declines

Investment in the preservation of WSDOT's pavement has been declining steadily since 1999 with reductions accumulating to $971 million during the last seven biennia. Pavement preservation funding is projected to continue to decline, shown in the graph below. Using agency budget assumptions, the reduction during the next four biennia is projected to be $1.12 billion.

WSDOT historic and projected pavement preservation funding

FY1993 through FY2021; Annual dollars in millions; Constant 2012 dollars; Projection based on agency budget assumptions

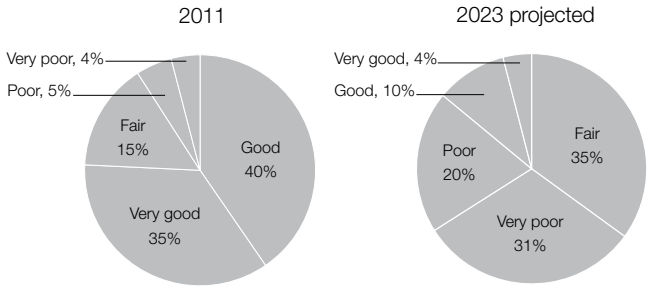


Data source: WSDOT Materials Lab.

WSDOT is at the forefront of implementing cost saving methods to make the state's roads last longer and cost less. However, if the investment in pavement preservation continues to decline, the backlog of pavement rehabilitation will continue to grow. By 2023 more than half of the state's pavement network is projected to be in poor or very poor condition according to current agency budget assumptions, as shown in the pie charts below. Continued funding is necessary to minimize the more costly alternative of replacing pavement.

WSDOT pavement condition

2011 and 2023; Conditions in 2011 exclude chip seal pavement



Data source: WSDOT Materials Lab.

Note: Projection for fiscal year 2023 based on all pavement types and agency budget assumptions.

Asset Management: Pavement Conditions Annual Report

Percent of pavement in fair or better condition decreases in 2011

State highway pavement conditions in 2010 and 2011[1]

Total lane miles; Vehicle miles traveled (VMT) in billions; Funding and lane miles programmed for rehabilitation by biennium; Dollars in millions

Pavement type	2011 lane miles and percent of total lane miles[2]	2011 annual VMT[3] in billions	Condition rating (Target is 90% fair or better) Category[4]	2010	2011	Funding and lane miles programmed for rehabilitation 2011-2013 biennium[5]	2013-2015 biennium[6]
Chip seal (BST) pavement *Six to eight years of service life*[7]	5,181 (28%)	1.56 (5%)	Good/very good Fair **Fair or better** **Poor/very poor**	78.8% 15.9% **94.7%** **5.3%**	not evaluated[1]	$83.75 (31%) 1,927 lane miles	$88.19 (30%) 1,802 lane miles
Asphalt pavement *Ten to 16 years of service life*[7]	11,028 (59%)	21.28 (68%)	Good/very good Fair **Fair or better** **Poor/very poor**	78.7% 13.6% **92.3%** **7.7%**	75.7% 14.8% **90.5%** **9.5%**	$131.49 (49%) 630 lane miles	$170.17 (57%) 562 lane miles
Concrete pavement *Fifty years of service life*[7]	2,413 (13%)	8.61 (27%)	Good/very good Fair **Fair or better** **Poor/very poor**	72.6% 17.9% **90.5%** **9.5%**	75.3% 15.4% **90.7%** **9.3%**	$53.00 (20%) 96 lane miles	$38.64 (13%) 55 lane miles
Total - all pavement for 2010	**18,622 (100%)**	**31.45 (100%)**	Good/very good Fair **Fair or better** **Poor/very poor**	78.0% 14.6% **92.7%** **7.3%**	not evaluated[7]	**$268.24 (100%) 2,653 lane miles**	**$297.01 (100%) 2,419 lane miles**
Total - asphalt and concrete pavement for 2010 and 2011	13,441 (72%)	29.89 (95%)	Good/very good Fair **Fair or better** **Poor/very poor**	77.8% 14.2% **92.0%** **8.0%**	75.6% 14.9% **90.5%** **9.5%**	$184.49 (69%) 726 lane miles	$208.81 (70%) 617 lane miles

Data source: WSDOT Materials Lab and Statewide Travel and Collision Data Office (STCDO).

Notes: 1 Chip seal pavement condition was not evaluated in 2011 due to funding reduction. 2 Lane miles data is from the State Highway Log Planning Report 2011 (v-13). 3 Vehicle miles traveled data is from the WSDOT Geographic Information Sytsem & Roadway Data Office and excludes ramps, collector-distributors and frontage roads. 4 Fair or better includes very good, good, and fair and may not add due to rounding. WSDOT's strategic goal is 90 percent fair or better condition. 5 Dollars and lane miles for the 2011-2013 biennium is from *Gray Notebook* 44. 6 Dollars for the 2013-2015 biennium are approximations and do not include other planned improvements, such as safety enhancements. These numbers are from WSDOT Transportation Executive Information System (TEIS) Version 12GOV002. Lane miles for the 2013-2015 biennium are taken from WSDOT Capital Program Management System (CPMS) on November 15, 2012, TEIS Version 13DOT000 and includes approved projects. 7 Pavement service life varies depending on traffic condition and climate.

Asphalt pavement in good condition.

Asphalt pavement in fair condition: wear in wheelpath and transverse crack across the road.

Asphalt pavement in very poor condition: past due for rehabilitation, will require costly repair.

Remaining Service Life of pavement is expected to drop below target levels

WSDOT introduces new measures to manage pavement preservation sustainably

Looking at pavement condition as a stand-alone performance measure provides only a snapshot in time, instead of the whole picture. WSDOT is using three new performance measures to better evaluate the predictability of pavement preservation needs. These are Remaining Service Life, Asset Sustainability Ratio, and Deferred Preservation Liability.

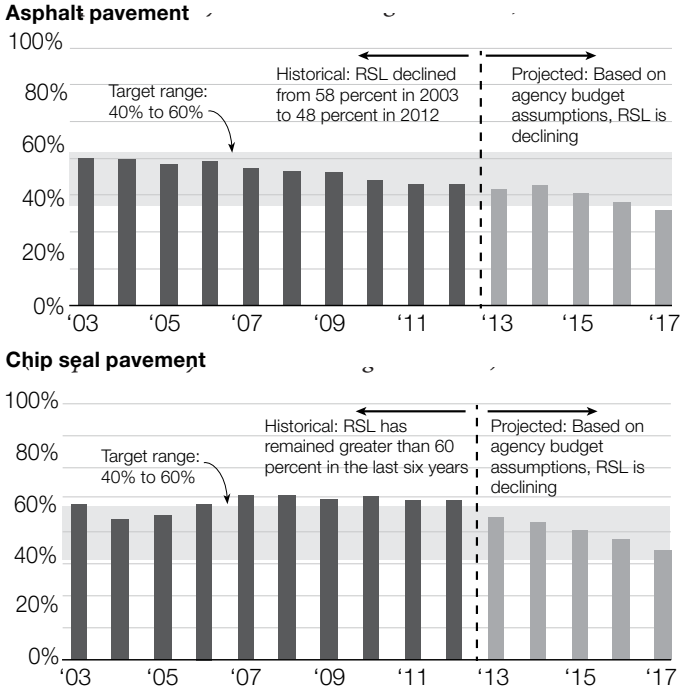
Remaining Service Life of pavement meets target range in 2012, expected to decline

Remaining Service Life (RSL) measures the expected life of pavement by measuring the number of years before rehabilitation is required for any given pavement section. RSL is expressed as the average number of years remaining, and as a percent of the original life. The statewide average RSL is an important aspect of this performance measure.

WSDOT's flexible road network (state-owned roads with asphalt and chip seal pavement) had an average Remaining Service Life of 48 percent for asphalt pavement and 61 percent for chip seal pavement in fiscal year 2012 (July 1, 2011 through June 30, 2012).

Statewide average Remaining Service Life of WSDOT asphalt and chip seal pavement is declining

FY2003 through FY2017; Remaining Service Life (RSL) shown as a percent of the original life



Note: The statewide average 100 percent Remaining Service Life is 14 years for asphalt pavement and eight years for chip seal pavement.

When a road is constructed (or reconstructed) it is typically in excellent condition, with a full service life. After a period of years, the pavement structure will wear and reach a point where intervention (rehabilitation) is necessary. Sometimes intervention can be delayed through maintenance, such as crack sealing or patching. When pavement is rehabilitated, years are added back to the Remaining Service Life. Newly resurfaced asphalt pavement may have an expected life of 16 years in western Washington and 12 years in eastern Washington, depending on climate and traffic conditions.

The statewide average Remaining Service Life over the previous 10 years is shown in the graphs to the left for asphalt and chip seal pavement. The RSL target is between 40 percent and 60 percent, or about half of the remaining years of service life. From an asset management perspective, the target means the agency is not spending too much money on rehabilitating roads with adequate service life left, and is not depleting the asset by letting a backlog of roads go past due for rehabilitation.

The Remaining Service Life of the state's flexible pavement is expected to decline. Future assumptions for asphalt and chip seal pavements are dependant on funding allocations. These allocations are reliant on other state and federal funding sources. Once the statewide average RSL reaches critical levels below 40 percent, it will be expensive to fix the many lane miles of pavement that need rehabilitation.

The Remaining Service Life of the state's flexible pavement is expected to decline using agency budget assumptions

Concrete pavements are managed separately and do not have a cyclical resurfacing process. The RSL performance indicator for concrete will be developed in the future.

Pavement replenishment not keeping up with wear according to the Asset Sustainability Ratio

The Asset Sustainability Ratio measures how well WSDOT's pavement replenishment is keeping up with pavement wear. It explains how much life was put back into the pavement system during the year to replenish the service life that was consumed. WSDOT replenished 70 percent of the lane mile years of flexible pavement (asphalt and chip seal) consumed during 2012, with 11,263 total lane mile years replenished out of about 16,000 lane mile years consumed.

This means the years of service life added back into the flexible road network through rehabilitation was about 70 percent of the service life used in 2012.

Deferred pavement preservation backlog reached $220 million in FY2012

Replenishment is calculated every year by multiplying the lane miles of rehabilitated flexible pavement by the number of years of expected life added to each rehabilitated lane mile. The service life consumed is equal to the number of lane miles on the network, about 16,000; after one year of wear 16,000 lane mile years of pavement life have been consumed. The Asset Sustainability Ratio is the ratio of lane mile years replenished to lane mile years consumed.

WSDOT replenished 70 percent of the lane mile years consumed in 2012

An illustration of the historic Asset Sustainability Ratio for the state's flexible pavement is shown in the graph below. The Asset Sustainability Ratio has been declining over the past decade. The downward trend in the Asset Sustainability Ratio follows the same drop in planned pavement preservation funding and in Remaining Service Life. However, these assumptions depend on agency budget allocations and future funding from other state and federal funding sources.

The target for the Asset Sustainability Ratio is 1.0, meaning the agency is replenishing the same amount of service life into the road network as it is consuming each year. If the ratio is less than 1.0, fewer lane mile years are being put into the network than were consumed by wear and aging. Many consecutive years of an Asset Sustainability Ratio less than 1.0 will decrease the network's overall Remaining Service Life, because the level of pavement preservation is not sustainable.

Deferred Preservation Liability shows cost of past due pavement work increasing

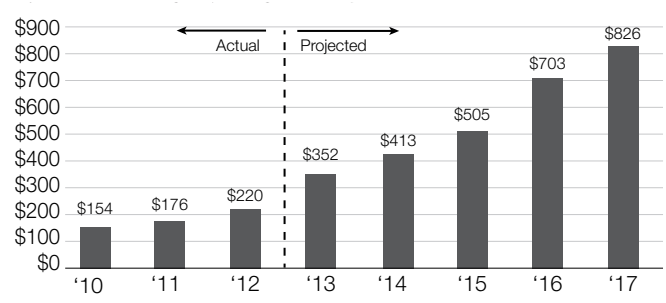
WSDOT's $220 million of deferred pavement preservation liability in FY2012 was $44 million worse than in FY2011, when $176 million was necessary to fund the backlog of pavement rehabilitation work that was past due. It is expected WSDOT will have approximately $826 million deferred preservation liability in FY2017 if the agency's budget assumptions and planned funding levels continue; see graph below. The accrued Deferred Preservation Liability is an estimate of the funding necessary to address the backlog of deferred pavement rehabilitation.

WSDOT's $220 million of rehabilitation backlog in FY2012 was $44 million worse than in FY2011

If funding does not allow for an adequate Asset Sustainability Ratio, some pavement preservation is deferred, incurring a future financial liability. Consequences of deferring pavement preservation become more severe as pavement ages. As rehabilitation is deferred, pavement can undergo more severe damage, requiring more costly repair or reconstruction than if addressed earlier and impacting road maintenance. Higher costs for past due repairs are included in the Deferred Preservation Liability.

WSDOT Deferred Preservation Liability

FY2010 through FY2017; Funding necessary to address deferred pavement rehabilitation for all pavement types; Dollars in millions; Projections based on agency budget assumptions

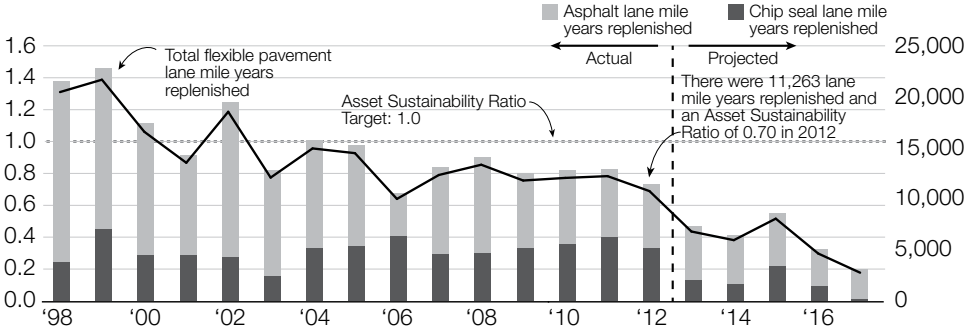


Data source: WSDOT Materials Lab.

The future rise in Deferred Preservation Liability is based on budget assumptions and matches the loss of Remaining Service Life and Asset Sustainability Ratio. Together these measures indicate an unfavorable trend of deterioration that means pavement will be more costly to rehabilitate in the future.

WSDOT Asset Sustainability Ratio for flexible pavement

1998 through 2017; Asset Sustainability Ratio and replenishment in lane mile years for asphalt and chip seal pavement; Projections based on agency budget assumptions



Data source: WSDOT Materials Lab.

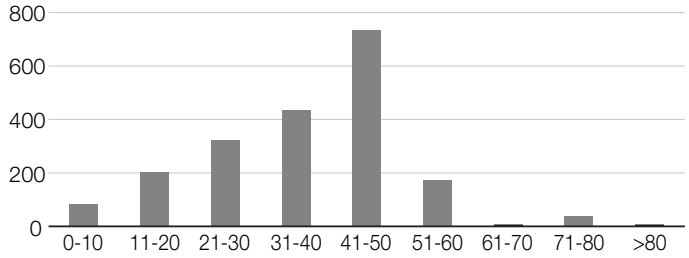
Crack and seat concrete pavement rehabilitation saves time and money

Concrete pavement construction more costly

Concrete pavement does not perform in the same way as flexible pavement (asphalt and chip seal). Flexible pavement is typically managed in a cyclical manner, with resurfacing planned over the life of the pavement. Concrete pavement is substantially more costly to construct, but usually requires little rehabilitation over a longer pavement life (more than 50 years). Sixty two percent of WSDOT's concrete pavement lane miles have never been rehabilitated. However, when the age of concrete pavement begins to exceed 50 years, plans need to be implemented for eventual reconstruction. Nearly half (48 percent) of WSDOT's concrete pavement lane miles is more than 40 years old, and 70 percent is more than 30 years old. The age of WSDOT's concrete pavement by number of lane miles is shown in the graph below.

Lane miles of concrete pavement by age group

Age of concrete pavement in years in 2011



Data source: WSDOT Materials Lab.

Note: Lane miles of concrete pavement by age exclude concrete bridges, which are maintained separately from concrete pavement roadways.

WSDOT evaluates new method for concrete pavement reconstruction: crack and seat with an asphalt overlay

WSDOT is evaluating a new method of rehabilitating concrete pavement in poor condition, called "crack and seat and asphalt overlay." This rehabilitation process fractures the existing concrete roadway in place, turning it into a new flexible base upon which a thick asphalt pavement overlay is placed.

Concrete pavement reconstruction is normally achieved by completely removing the concrete slab in addition to the aggregate base layers, and replacing it with an asphalt or concrete pavement surface. With crack and seat and asphalt overlay, the existing structure remains in place, resulting in substantial cost savings due to reduced material removal and replacement costs and reductions in traffic delays due to shorter construction periods.

State's first crack and seat project saves time, money

In 2011, WSDOT completed its first project with crack and seat and asphalt overlay on I-5 in Skagit County. This project restored 12.5 miles of divided highway from Joe Leary Slough to Nulle Road in Skagit County. Awarded under a design build contract, WSDOT saved more than 38 percent in initial construction costs and is expected to save at least 23 percent in life-cycle costs over a 50-year period.

The cost savings for crack and seat and asphalt overlay is substantial, and is anticipated to be an important alternative to reconstructing concrete pavement as WSDOT's concrete network ages. The typical cost for concrete reconstruction is approximately $2.5 million per lane-mile. Asphalt reconstruction is more than $1 million per lane-mile. The crack and seat and asphalt overlay cost of the Skagit County I-5 project was less than $600,000 per lane-mile, a savings of more than $400,000 per lane-mile. As a result of the cost savings from the Skagit County I-5 project, other suitable locations in Washington are being considered for the crack and seat and asphalt overlay method.

WSDOT's first crack and seat overlay project saved more than $400,000 per lane mile

Local agency pavement management

County road conditions decline in 2012

Conditions on county roads have deteriorated slightly over time. County arterial pavement conditions have dropped steadily from 95 percent in fair or better condition in 2006, to 89 percent in 2012, a decline of six percentage points.

County collector road conditions were steady in previous reporting years and dropped by 3 percent from 95 percent in fair or better condition in 2010 to 92 percent in 2012. City condition data for 2012 is incomplete due to legislatively modified reporting requirements. County pavement condition ratings and city ratings for past years are reported in the table on the next page.

WSDOT reports local agency conditions to Legislature

City and county agencies collectively manage a large network of more than 117,000 lane miles of roadway, about 75 percent of which are paved with concrete, asphalt or chip seal. WSDOT reports the overall condition of the state's local agency pavement network to the state Legislature, using condition data that is mostly provided by cities and counties and by assisting smaller cities with data collection. County road pavement data on the collector and arterial system is gathered and reported by the County Road Administration Board and updated by the counties every two years.

Asset Management: Pavement Conditions Annual Report

Local agency pavement, federal legislation to set national pavement measure

Cities forego pavement condition reporting for 2012

Cities with populations above 25,000 normally collect and report their pavement conditions to WSDOT. Since 2005, WSDOT has assisted small cities (populations below 25,000) with gathering, analyzing and reporting pavement condition data using WSDOT's automated data collection vehicle to survey federally classified arterials and collectors.

In 2011, the Legislature modified reporting requirements to allow cities to forego pavement condition data collection and reporting for the 2011-2013 biennium. As a result, cities with populations above 25,000 did not report pavement conditions to WSDOT for 2012. Therefore, WSDOT's data set for city pavement condition is incomplete and does not accurately compare to previous reporting cycles.

Local agencies still face several challenges in managing the preservation of pavement assets as funding priorities are shifted due to reduced funding. See *Gray Notebook* 44, p. 16, for the top pavement management issues faced by local agencies.

WSDOT collects and reports city pavement condition ratings differently than overall state pavement conditions. City pavement condition measures include the Pavement Condition Index (PCI) and five pavement condition score groups: failed, poor, fair, good, and excellent. This rating system provides WSDOT with a good indicator of the overall system condition.

Percent of local agency pavement in fair or better condition[1]

For 2006, 2008, 2010 and 2012[2] calendar years

	City		County	
Year	**Arterial[3]**	**Collector[4]**	**Arterial[3]**	**Collector[4]**
2006	83%	75%	95%	95%
2008	82%	75%	94%	96%
2010	81%	76%	91%	95%
2012	**Incomplete data[2]**		**89%**	**92%**

Data source: WSDOT Highways and Local Programs.

Notes: 1 Condition data for counties is reported by the County Road Administration Board. Cities with populations over 25,000 self-report condition data. Small cities (under 25,000) data is collected by WSDOT. 2 The 2011 Legislature modified pavement condition reporting requirements for cities in RCW 46.68.113 (2011 c 353 §7), resulting in incomplete pavement condition reporting for 2012. 3 An arterial is a road that connects a city or county to a state route or freeway, and can include the freeway system and state routes. 4 A collector is a road that provides direct access to local roads and driveway access to abutting properties or distributes trips to and from the arterial system.

New federal legislation has the potential to impact pavement management

The new federal Moving Ahead for Progress in the 21st Century Act (MAP-21) includes the implementation of the National Highway Performance Program. MAP-21 will require every state to direct infrastructure investments toward the achievement of performance targets (see overview on pp. ix-x). Pavement targets are an important aspect of national performance reporting. MAP-21 includes funding penalties if a state's targets are not met over a given period of time.

Expansion of the National Highway System

The MAP-21 performance reporting applies only to roads that are part of the National Highway System (NHS), which is a national collection of roadways that are designated as important to the nation's economy, defense, and mobility. The NHS expanded in size by one third in 2012 due to a substantial national revision.

In Washington state, NHS roadways make up 61 percent of WSDOT's mainline miles (11,424 NHS lane miles out of 18,622 WSDOT lane miles). Another 3,336 lane miles of local agency roads are on the NHS. This will be an essential factor in interpreting Washington's data for MAP-21 pavement performance measures, as local agency roads will make up 23 percent of NHS lane miles that will be reported by WSDOT.

International Roughness Index is anticipated to be the MAP-21 national performance measure for pavement

It is expected that MAP-21 will use the International Roughness Index (IRI) as the initial pavement performance measure. The IRI has the advantage of being well known, well documented, and having an existing standard method of measurement. All states currently report IRI data to the Federal Highway Administration (see next page), which it uses as an indicator of overall road health. Yet, comparing values between states can be difficult due to the technical factors involved in collecting and interpreting the data.

WSDOT's experience is that roughness tends to be a delayed performance indicator. By the time roughness reaches an unacceptable threshold, rehabilitation should have already been performed to improve the pavement condition that contributed to roughness (cracking, rutting, or surface deterioration).

WSDOT recommends additional measures be considered for pavement performance. Research and development is expected to occur over the next several years to create methods for calculating and comparing additional performance measures equally between the states.

International Roughness Index deems 10 percent of state roads are too rough

WSDOT reports International Roughness Index

Rough roads carry 8.3 percent of vehicle miles traveled on Washington state highways in 2011

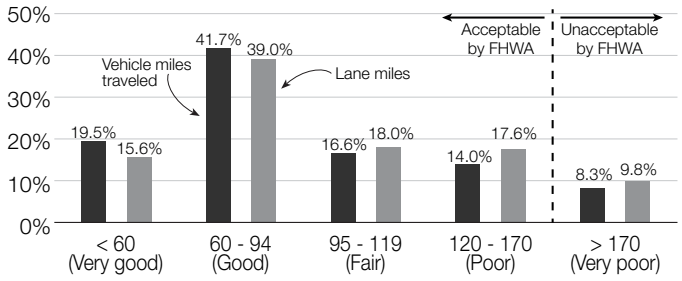
Statewide, 8.3 percent of vehicle miles traveled on WSDOT's pavement network in 2011 were on roads in unacceptable condition according to Federal Highway Administration (FHWA) International Roughness Index criteria. This is a slight increase, up 1.2 percent from 7.1 percent in 2010. FHWA requires reporting on the vehicle miles traveled by IRI categories. The graph below shows the percent of vehicle miles traveled and the percent of lane miles by each of the FHWA roughness categories.

Rough roads make up 9.8 percent of lane miles on state highways in 2011

In terms of lane miles on the state's pavement network, 9.8 percent of lane miles were in unacceptably rough condition in 2011, using FHWA criteria. The IRI may become a national measure of pavement performance in MAP-21 with federal funds to states penalized if targets (yet to be determined) are not met.

Percent of vehicle miles traveled and lane miles for WSDOT pavement by International Roughness Index

All pavement types for 2011; International Roughness Index (IRI) categories by the Federal Highway Administration; IRI in inches per mile



Data source: WSDOT Materials Lab.

WSDOT Pavement Notebook is available online

The Pavement Notebook presents performance reports for the WSDOT road network that are more in-depth and comprehensive than what can be covered in the *Gray Notebook* and are accessible online. Reports include: statewide pavement performance (including breakdowns by county and legislative district); average pavement life; statewide International Roughness Index statistics; and lane miles paved by year.

The Pavement Notebook performance reports are produced by the Pavements Branch of the State Materials Lab and can be accessed at http://www.wsdot.wa.gov/Business/MaterialsLab/Pavements/PavementNotebook.htm.

How WSDOT measures pavement performance

Pavement performance can be defined and measured in different categories that each contribute toward evaluating the overall performance of a road network's pavement.

- **Structural performance** rates the condition of the pavement structure and is typically quantified by the amount of rutting or cracking on the pavement surface. How conditions should be measured and quantified is one of the most difficult categories on which states must reach agreement.
- **Functional performance** relates to how well the pavement is functioning for the road users. It is typically quantified by the road roughness (expressed as the International Roughness Index) and rutting in the pavement surface. Automated equipment measures roughness and rutting. All states must report roughness performance to the Federal Highway Administration.
- **Safety performance** measures road condition safety and is quantified by surface friction measurements (Skid Number or International Friction Index) and accident rates.
- **Economic performance** is relatively new and evolving and considers how efficiently an agency is providing the road infrastructure. It is quantified by cost factors and used to evaluate the life-cycle cost of the pavement structure.
- **Network sustainability** evaluates the long-term stewardship of pavement in terms of operating and maintaining the asset sustainably.

No single indicator can be used to effectively manage the decisions that are involved in preserving the road infrastructure. The best performance indicators for one state may not be the best for another, as each state will have their own processes, reporting requirements, and legislative mandates.

WSDOT evaluates structural and functional performance with the annual pavement condition survey. The survey rates structural performance using a cracking index and a rutting index. Functional performance is evaluated using IRI and the rutting index. A pavement is considered due for rehabilitation when any of the indexes reaches a threshold value. Safety conditions related to friction are measured every two years (half of the state every year) and low skid measurements are reported to region offices for corrective action according to a 1994 WSDOT Directive. Economic performance measures in use by WSDOT were reported in *Gray Notebook* 44, p. 14. This article has introduced three performance measures for network sustainability (see pp. 13-14).

Asset Management: Highway Maintenance Annual Report

Highway Maintenance

WSDOT achieves 80 percent of highway maintenance targets in 2012

WSDOT achieved 80 percent of highway maintenance condition targets in 2012. This is 7 percent higher than the 73 percent achieved in 2011, and 15 higher than in 2010. Between 2011 and 2012, 11 asset condition ratings increased, 17 remained unchanged and two dropped to a lower score. The six targets missed in 2012 were also missed in 2011.

Maintenance plays an important role in WSDOT's Asset Management by meeting the daily needs of maintaining and operating the 18,622 lane miles and 2,000 miles of ramps and special use lanes of the state's highway system. WSDOT focuses on preventive maintenance, repairs, and safe operation of the highway infrastructure.

The Maintenance Accountability Process (MAP) measures and reports on the performance of 30 highway maintenance activities, as part of asset management. WSDOT uses two metrics, asset condition and task completion. For more information and definitions, refer to *Gray Notebook* 44, p. 17. There are a number of factors that impact the condition of WSDOT's highway assets. These factors include maintenance work performed, the timing and scope of WSDOT's preservation projects, weather conditions, and the amount of new highway projects that add infrastructure to the system.

Maintenance Accountability Process

The table on this page lists maintenance activities in order of priority and their Level of Service (LOS) scores achieved compared to the funded targets, which use a grading scale from A+ to F-, with A+ being the best and F- being the worst. Maintenance activities have different funding levels of service. The planned maintenance tasks and timely preservation projects for each activity are targeted to maintain the specific funded LOS. Funding for preservation projects has decreased and WSDOT has yet to update its targets to reflect this decline.

WSDOT misses six targets in 2012

Four of the 30 activities have been consistently below target at the statewide level since 2009: Structural Bridge Repair, Raised/Recessed Pavement Marker Maintenance, Shoulder Maintenance, and Nuisance Vegetation Control. Two of these activities, Structural Bridge Repair and Raised/Recessed Pavement Marker Maintenance, received funding in the 2009-2011 biennium to address maintenance backlogs.

Urban Tunnels measures its LOS by the number of tunnel closures to vehicles carrying flammable cargo. The LOS annual score rose slightly from a C- in 2011 to C in 2012 missing the target of B. In 2012, WSDOT decided to reduce the duration of closures to such vehicles to lessen the time that the fire suppression system is down. As a result, a greater number of closures was needed to accomplish the required work. Also, the I-90 Two Way Transit Project requires closures to flammable cargo to allow designers to examine the tunnel's component designs. The number of closures to flammable cargo are expected to rise when construction begins, decreasing the LOS score.

Asset condition results for 2012

Level of Service (LOS) target by priority for funded vs. achieved

= Missed Targets

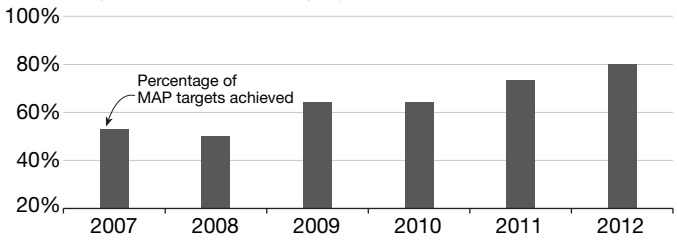
	Funded target	2012 results
Movable & Floating Bridge Operations	B+	A+
Traffic Signal System Operations	C	C+
Snow & Ice Control Operations	A-	A
Keller Ferry Operations	B	B
Urban Tunnel Systems Operations	B	**C**
Structural Bridge Repair	C	**D**
Regulatory/Warning Sign Maintenance	C+	C+
Slope Repairs	B	A
Intelligent Transportation Systems	B-	A-
Maintain Catch Basins & Inlets	D+	C
Bridge Deck Repair	C	C+
Guardrail Maintenance	B+	A-
Pavement Striping Maintenance	C	C
Raised/Recessed Pavement Markers	B	**C+**
Control of Vegetation Obstructions	D+	C
Rest Area Operations	B	B
Sweeping and Cleaning	B+	A
Maintain Ditches	B	B+
Highway Lighting Systems	C+	A-
Guidepost Maintenance	D	D
Maintain Culverts	D+	C-
Pavement Marking Maintenance	C	**D**
Noxious Weed Control	B	B
Shoulder Maintenance	B-	**C+**
Guide Sign Maintenance	B-	B
Stormwater Best Management Practices	C	C
Bridge Cleaning & Painting	C	B
Nuisance Vegetation Control	B-	**D+**
Landscape Maintenance	D+	C-
Litter Pickup	D	D
Percent of targets achieved/exceeded		**80%**

Data source: WSDOT Maintenance Office.

Notes: The 30 maintenance activities are in prioritized order. Stormwater Best Management Practices (BMPs) was changed from Maintain Detention/Retention Basin.

Maintenance Accountability Process

Statewide maintenance targets achieved
2007 through 2012, As a percentage of total



Data source: WSDOT Maintenance Office.

Notes: Targets are adjusted periodically based on funding levels and other maintenance priorities. In 2006, Paving and Crack Seal was merged into one activity, changing the total number of activities from 33 to 32. In 2009, in addition to targets being adjusted to better reflect funding levels, the Safety Patrol activity was removed from reporting, changing the total number of activities from 32 to 31. In 2012, the Pavement Patching and Repair activity was removed from reporting, changing the total number of activities from 31 to 30.

Structural Bridge Repair missed its target of C, dropping from a C- in 2011 to D in 2012. This asset measures its condition by the number of "priority one" repairs completed each year. The scope and cost of these repairs vary by type of repair and location. The cost and duration of repairs have resulted in incomplete work, lowering the overall score. Four of the six regions raised their MAP scores, but scores for two regions remain below the target, which lowered the statewide score.

Raised/Recessed Pavement Marker Maintenance (RPM) achieved a LOS score of C+ in 2012 which was the same as in 2011. The reasons for the missed MAP score are twofold: First, the measurements for the MAP score take place during the summer; much of the work is accomplished late summer and early fall. WSDOT is reviewing the best survey period to assess the condition of this asset.

Second, funding for the pavement preservation program is declining. RPM replacement is an element of paving projects. The inventory of repairs and replacement has grown significantly as less paving work is accomplished.

Pavement Marking Maintenance missed its target of C, maintaining its LOS score of D. This low MAP score can be attributed to harsh winter conditions, combined with wet conditions during the spring and early summer, which result in delays. These conditions delayed the ability to apply pavement markers prior to the MAP survey. Progress on this activity was made later in the summer and fall after WSDOT conducted the survey. As in the RPM activity, WSDOT is reviewing the best time of year to assess the condition of the pavement markers.

Shoulder Maintenance, a lower priority activity, missed its target of B- in three out of six regions. This is an improvement over 2011, when four out of six regions missed the target. Fewer preservation dollars drove the decision to exclude shoulder maintenance from pavement rehabilitation projects in order to save money. This has resulted in many highway shoulders continuing to deteriorate, which increases the cost and amount of maintenance needed.

Nuisance Vegetation Control is among the lowest priority maintenance activities. Four regions missed the target of D+ for four consecutive years; the other two regions met the target at times. As a low priority, this activity is impacted when funding resources are not available.

Investments needed to reduce maintenance backlog
Dollars in millions

2013 - 2015	$22.5
2015 - 2017	$18.2
2017 - 2019	$18.8
2019 - 2021	$8.2
2021 - 2023	$6.8
Total	**$74.5**

Data source: WSDOT Maintenance Office.

Note: Planned investments after the 2011–2013 biennium are not funded. Dollar figures are rounded.

WSDOT uses $3.5 million in backlog dollars for statewide durable stripe application

WSDOT uses waterborne paint as an annual application for most pavement line striping (edge stripes, lane lines, and centerline stripes). The only exceptions are ramps, intersections, and roundabouts, which may use either paint or a more durable striping material. WSDOT is required to maintain a minimum level of service of C for the roadway striping MAP target. The equipment to apply durable striping in large applications is highly specialized and costly.

WSDOT developed a statewide pilot project for contractor-installed durable striping. This project is intended to assess the durable striping delivered by a contractor, augment the existing striping program, reduce backlog, and meet the MAP target. WSDOT identified locations best suited for durable striping and awarded a contract during summer 2012. Most of the work was completed in fall 2012, leaving only a few locations to be finished in spring 2013. This evaluation will help WSDOT measure and determine the benefits associated over time, along with the longevity of the retroreflectivity (how light is reflected off of a surface and returned to its original source) and daytime visibility of the markings.

Asset Management: Highway Maintenance Annual Report

Results mixed for 2012 task completion and asset condition surveys

The tables below shows both asset condition and task completion performance data, by asset; task completion helps the maintenance program measure the actual work performed. This data helps provide accountability for the program, but also gives context to the overall influence of maintenance work to asset condition.

Task completion and asset condition for Roadway Maintenance and Operations

2009 through 2012; Level of Service score for selected maintenance activities

Activity or asset	Task completion goals	Performance measures	Goal Met	2009	2010	2011	2012
Pavement [1]	Maintain 90% fair or better condition rating for WSDOT-owned pavement	% of planned work completed		N/A	163%	68%	86%
		Percent in fair or better condition (Target: 90%)	Yes	93%	92.7%	90.5%	N/A
Shoulder Maintenance [2]	Completed planned maintenance	% of planned work completed		N/A	N/A	N/A	48%
		Asset condition rating (2011 funded target: B-)	No	C+	C+	C	C+

Data source: WSDOT Maintenance Office.

Notes: 1 The task completion measure improved in 2012 to 86% from 68% in 2011, but still falls short of the planned target. Given the emergent nature of pavement repairs, it is difficult to plan the type of repair work that may be needed in any one season. To help address this challenge, WSDOT coordinates the work needed through the pavement management program. 2 A declining number of paving projects each year, along with the practice of alternating the inclusion of shoulders in pavement projects between overlay (where shoulders are included in the project) and inlay (where shoulders are excluded in the project), requiring higher levels of maintenance for longer period of time. As a lower priority, fewer tasks are planned and accomplished, as higher priority activities take precedence.

Task completion and asset condition for Drainage Maintenance and Slope Repairs

2009 through 2012; Level of Service score for selected maintenance activities

Activity or asset	Task completion goals	Performance measures	Goal Met	2009	2010	2011	2012
Catch Basins	Complete annual inspection and maintenance in NPDES[1] permit area	% of inspection/maintenance complete		N/A	N/A	N/A	61%[1]
		Asset condition rating (2011 funded target: D+)	Yes	C	C+	C	C
Culverts	Achieve asset condition	% of planned work completed		N/A	92%	77%	77%
		Asset condition rating (2011 funded target: D+)	Yes	D-	D	C-	C-
Stormwater BMPs[2]	Complete annual inspection and maintenance in NPDES[1] permit area	% of inspection/maintenance complete		Will report results in December 2013			
		Asset condition rating (2011 funded target: C)					

Data source: WSDOT Maintenance Office.

Notes: 1 NPDES stands for the National Pollutant Discharge Elimination System. The initial time period for reporting catch basin inspections completed under WSDOT's stormwater permit was March 2011 to March 2012. Data provided is from this time period. Permit compliance (95% catch basins inspected) was not achieved due to delays in funding to purchase specialized trucks and hire maintenance personnel to complete all of this work. Additional trucks were purchased in April 2012 and personnel to operate them were hired shortly thereafter. Subsequent reporting dates for permit compliance are based on fiscal years (July to June). WSDOT is on track to achieve compliance for this activity for the reporting period of June 2012 to July 2013. 2 Stormwater BMPs stands for Stormwater Treatment Facilities Best Management Practice.

Results mixed for 2012 task completion and asset condition surveys

Task completion and asset condition for Bridge and Tunnel Maintenance

2009 through 2012; Level of Service score for selected maintenance activities

Activity or asset	Task completion goals	Performance measures	Goal Met	2009	2010	2011	2012
Movable or Floating Bridges	Complete planned maintenance	% of total planned work complete		92%	96%	90%	98%
		Asset condition rating (2011 funded target: B+)	Yes	A+	A-	A	A+
Urban Tunnels	Complete planned maintenance	% of total planned maintenance complete		91%	94%	95%	91%
		Asset condition rating (2011 funded target: B)	No	B+	B+	C-	C[1]
Structural Bridge Maintenance	Achieve asset condition	% of Priority 1 repairs completed		42%	67%	66%	60%
		Asset condition rating (2011 funded target: C)	No	F	C-	C-	D[2]
Bridge Deck Maintenance	Completed planned maintenance	% of planned work completed		N/A	N/A	N/A	111%
		Asset condition rating (2011 funded target: C)	Yes	C+	C+	C+	C+

Data source: WSDOT Maintenance Office.

Notes: 1 Preventative Maintenance was completed this reporting period. Design and contract work on the tunnel caused more than the expected number of closures. Additionally, WSDOT shortened the duration of closures, which resulted in an increase to the number of closures. 2 While the task completion of priority one repairs improved from 2011, the overall asset condition declined. The scope and costs of these repairs can vary by type of repair and location. Currently, four of the six regions raised their MAP scores, but scores for Northwest and South Central remain below the target, which lowered the overall asset condition score. WSDOT is evaluating its coordination of the priority one repairs to improve the asset condition.

Task completion and asset condition for Traffic Control Maintenance and Operations

2009 through 2012; Level of Service score for selected maintenance activities

Activity or asset	Task completion goals	Performance measures	Goal Met	2009	2010	2011	2012
Traffic Signal Systems	Complete planned maintenance	% of total planned maintenance complete		44%	79%	90%	88%
		Asset condition rating (2011 funded target: C)	Yes	C	C+	C+	C+
Regulatory Signs	Achieve asset condition	% of planned work completed		N/A[1]	113%	108%	87%
		Asset condition rating (2011 funded target: C+)	Yes	D+	C+	C	C+
ITS[2]	Complete planned maintenance	% of total planned maintenance complete		13%	49%	60%	51%
		Asset condition rating (2011 funded target: B-)	Yes	A-	B+	A-	A-
Cable Barrier[3]	Complete planned maintenance and repairs	% of planned maintenance and repairs complete		N/A[1]	100%	74%	103%
		Asset condition rating (2011 funded target: A)	No	N/A	A+	A+	A-
Pavement Striping Maintenance	Completed planned maintenance	% of planned work completed		N/A[1]	N/A[1]	N/A[1]	88%
		Asset condition rating (2011 funded target: C)	Yes	C-	D	C	C
Raised/Recessed Pavement Marker	Completed planned maintenance	% of planned work completed		N/A[1]	N/A[1]	N/A[1]	85%
		Asset condition rating (2011 funded target: B)	No	C-	C+	C+	C+[4]
Highway Lighting Systems	Completed planned maintenance	% of planned work completed		N/A[1]	N/A[1]	N/A[1]	78%
		Asset condition rating (2011 funded target: C+)	Yes	B+	B-	B+	A-
Guidepost Maintenance	Completed planned maintenance	% of planned work completed		N/A[1]	N/A[1]	N/A[1]	87%
		Asset condition rating (2011 funded target: D)	Yes	D	D+	D	D
Pavement Markers	Achieve asset condition	% of planned work completed		N/A[1]	95%	93%	112%
		Asset condition rating (2011 funded target: C)	No	C	C	D	D[5]

Data source: WSDOT Maintenance Office.

Notes: 1 The table lists "N/A" where data is unavailable. WSDOT intends to expand its reporting of task completion to cover all 30 activities listed on page 18. 2 ITS stands for Intelligent Transportation System. 3 This activity is a subset of the activity Guardrail Maintenance listed on the table on page 18. 4 See page 19, for the reasons for the missed MAP score. 5 See page 19, for the reasons Pavement Markers maintained a lower MAP score.

Asset Management: Highway Maintenance Annual Report

Maintaining the Highway Transportation System

New infrastructure requires maintenance

WSDOT is finalizing the delivery of the largest construction program in its history. Since 2003, more than 400 construction projects have been completed or are under way with a program value of $16.3 billion. These projects add many lane miles, bridges, and other infrastructure to the highway system. When these projects are complete, WSDOT's maintenance program will assume the responsibility of operating and maintaining these assets. Routine maintenance activities, such as culvert inspections, re-painting lane lines and guardrail repair must be conducted regardless of the age of the asset. The maintenance backlog will continue to increase if funding and resources are not increased to match the added infrastructure and backlog.

Properly maintained assets, coupled with preservation projects that replace highway assets when they have reached the end of their useful lifespan, result in better asset conditions and lower replacement costs. A continuing challenge and a key element of effective asset management lies in sustaining a good balance between preservation and maintenance. As preservation funding decreases, maintenance will be tasked with keeping the infrastructure functional for longer time spans, at a higher cost. For example, asphalt pavement has a projected life cycle of 10 to 16 years. (See the pavement preservation article on p. 10) WSDOT conducts annual inspections to establish a "due date" for the pavement rehabilitation. The maintenance program maintains the pavement during its lifetime by patching potholes, crack sealing, and similar activities. If preservation funding for an asset is deferred, the cost difference can be anywhere from a few thousand to several million dollars between rehabilitation at the optimum time and rebuilding after the optimum time for rehabilitation has passed. Ultimately, the cost to maintain pavement and other assets increases as the structures age.

Maintenance Customer Survey shows similar results in 2012

WSDOT resumed its previous method of conducting the Maintenance Customer Service surveys in 2012; the fifth in a series (1996, 2000, 2005, 2010, and 2012). The previous surveys were telephone surveys, with the exception of the 2010 survey which used a Web method. As mentioned in *Gray Notebook* 44, p. 20, the Web survey method yielded significant cost savings, yet it also presented challenges including a smaller survey response. Therefore, the results of the 2012 survey will be compared to the 2005 and earlier surveys. These surveys are designed to evaluate customer satisfaction and obtain public input regarding perceptions of maintenance activities and public priorities. WSDOT uses the surveys to help prioritize and align investment decisions in the Maintenance Program. The full results of this survey can be found on the Maintenance Performance Measures webpage at http://www.wsdot.wa.gov/Maintenance/Accountability/.

Key results of the recent customer survey

Some survey questions asked about driver satisfaction with the current level of highway maintenance. Others addressed the individual maintenance activities, and provided some contextual information about highway maintenance and what it takes to maintain the transportation system. The survey indicated that 74 percent of the 750 survey respondents were generally satisfied with the level of highway maintenance, a slight decrease from 78 percent in the 2005 survey.

Respondents were also asked to rate highway maintenance from very poor to excellent. More than half the respondents (51.6 percent) rated Washington's highway maintenance above average or excellent; 40.1 percent of respondents gave WSDOT an average rating. A small percentage rated highway maintenance as fairly poor (6.1 percent) or very poor (2.1 percent). These results are comparable to those found in the 2005 maintenance customer survey. Since 1996, roadway surfaces are still the top improvement desired by 84 percent of respondents, increasing 15% from 2005.

One survey question asked respondents how well WSDOT responds to emergencies, such as mudslides, floods, and the like. Some 61.4 percent rated WSDOT's response to emergencies as above average or excellent. This rating was slightly lower than in 2000. Finally, 2.4 percent of respondents rated WSDOT's response as fairly poor or very poor in 2012, compared to 4 percent in 2005.

2012 Customer survey results: Maintenance activities ranked by importance

		Percent satisfied/ extremely satisfied	
Rank	Maintenance activity	2005	2012
1	Roadway Surfaces	75.6%	63.5%
2	Road Stripes and Pavement Markers	77.6%	71.1%
3	Snow and Ice Removal	71.7%	77.9%
4	Drainage Features	78.5%	75.2%
5	Traffic Signals	77.4%	85.3%
6	Roadway Signs	91.4%	90.2%
7	Guard Rail	87.5%	89.6%
8	Highway Lighting	76.1%	80.7%
9	Rest Areas	72.6%	85.5%
10	Roadside Litter Removal	73.8%	76.7%
11	Roadside Vegetation	70.0%	75.0%

Data source: 2012 Maintenance Customer Survey.

Mobility at a glance

Earlier Mobility-related articles

Find previous articles in these GNB editions:

Aviation Annual Report	GNB 47
Ferries Annual Report	GNB 47
Congestion Report Executive Summary	GNB 46
Travel Time Trends Semi-Annual Report	GNB 46
Travel Information Annual Report	GNB 44

See also

Capital Project Delivery Programs 42

State policy goal

To improve the predictable movement of goods and people throughout the state.

WSDOT's business direction

Move people, goods, and services reliably, safely and efficiently, by adding infrastructure capacity strategically, operating transportation systems efficiently, and managing demand effectively.

Incident Response Quarterly Update

Incident Response provides economic benefit of $17.7 million

WSDOT's Incident Response (IR) program responded to 10,691 incidents in the fourth quarter of 2012 (October 1 through December 31) clearing incidents in an average of 13.4 minutes. The IR teams' quick response provided Washington motorists about $17.7 million in estimated economic benefit by proactively helping prevent secondary collisions at incident sites and reducing the time and gas they would have wasted in travel delay due to incident-related congestion. The estimated economic benefits include $9.9 million from reduction of traffic delay and $7.8 million from an estimated 2,138 avoided secondary crashes. The IR program's estimated quarterly benefit to cost ratio is approximately 16:1.

WSDOT teams responded to 10,691 incidents, providing an estimated economic benefit of $17.7 million in the fourth quarter

The mission of the Incident Response program is the safe, quick clearance of traffic incidents to minimize congestion, restore traffic flow, and reduce the risk of secondary collisions. Incident Response teams are trained and equipped to provide assistance to motorists and Washington State Patrol (WSP) during traffic-related emergencies. In addition to responding to blocking and emergency incidents, IR teams provide a variety of assistance services such as changing flat tires and providing jumps start to motorists. These services keep traffic moving, and reduce the risk of collisions from distracted driving. The IR program is comprised of approximately 47 full-time equivalent positions, has a fleet of 62 trucks and a biennial budget of $9 million ($1.125 million quarterly).

WSDOT teams respond to 10,691 incidents in the fourth quarter of 2012

WSDOT Incident Response teams responded to 10,691 incidents (preliminary data as of January 15, 2013) during the fourth quarter of 2012, with an average incident clearance time of 13.4 minutes. The fourth quarters of 2011, 2010 and 2009 experienced 10,494, 10,308, and 10,163 incidents with average incident clearance times of 13.3, 13.8, and 13.7 minutes respectively.

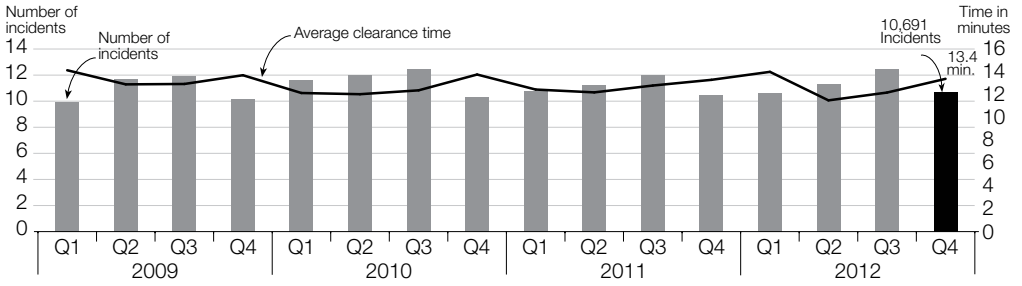
Average incident clearance time in the fourth quarter was 13.4 minutes

Statewide IR responses and average overall clearance time

January 2009 – December 2012; Number of incidents in thousands, clearance time in minutes

Statewide incident responses and average overall clearance time

January 1, 2009 through December 31, 2012; Incidents in thousands; Average clearance times in minutes



Data source: Washington Incident Tracking System (WITS), WSDOT Traffic Office.

Defining Incident Response performance measures

Performance measure	Definition	Measuring unit
Roadway clearance time	The time between the first recordable awareness of an incident (detection, notification, or verification) by a responding agency and first confirmation that all lanes are available for traffic flow.	Time in minutes
Incident clearance time	The time between the first recordable awareness of the incident and the time at which the last responder has left the scene.	Time in minutes
Secondary incidents[1]	The number of unplanned incidents beginning with the time of detection of the primary incident where a collision occurs either within the incident scene or within the queue, including the opposite direction, resulting from the original incident.	Number of incidents

Data source: FHWA Traffic Incident Management Handbook.

Note: 1 The number of secondary incidents avoided as a result of the IR team's presence is a nationally recommended performance measure. Neither WSDOT nor WSP currently collect this data. WSDOT estimates secondary incidents and associated benefits – see *Gray Notebook* 47, p. 19, and *Gray Notebook* 46, p. 26, for calculation methods.

Estimated cost of incident-induced delay down 8.3 percent

Blocking and non-blocking average clearance times by incident duration

October 1 through December 31, 2012; Time in minutes; Cost and economic benefits in dollars

Incident type	Number of incidents	Average IR response time	Average *roadway* clearance time	Average *incident* clearance time	Incident-induced delay costs	Economic benefits from the IR program[1]
Incident duration less than 15 minutes						
Blocking	1,171	2.5	5.1	7.0	$2,493,660	$1,036,857
Non-blocking	6,847	0.5	-	5.1	$8,203,524	$3,974,002
Total	8,018	0.8	5.1	5.3	$10,697,184	$5,010,859
Incident duration ranging between 15 and 90 minutes						
Blocking	1,122	8.7	25.7	33.3	$12,424,485	$5,166,065
Non-blocking	1,425	7.1	-	27.5	$8,923,080	$4,322,574
Total	2,547	7.8	25.7	30.1	$21,347,565	$9,488,639
Incident duration greater than 90 minutes						
Blocking	94	22.2	168.6	190.0	$6,160,665	$2,561,587
Non-blocking	32	18.4	-	166.4	$1,299,056	$629,297
Total	126	21.2	168.6	184.0	$7,459,721	$3,190,884
Grand Total	**10,691**	**2.7**	**22.1**	**13.4**	**$39,504,470**	**$17,690,382**

Data source: Washington Incident Tracking System (WITS), Washington State Patrol, WSDOT Traffic Office, and University of Washington.

Notes: 485 of the 10,691 incidents are "unable to locate" (UTL) incidents; IR personnel were en route to respond, but the incident cleared before the team reached it. UTL incidents are included in the total number of incidents but not figured into average times. 1 "Economic benefits" include the sum of economic benefits from saved time, gas *and* secondary incidents avoided due to the proactive work of the IR teams.

Average clearance times for blocking and non-blocking incidents up from last quarter

Of all incidents statewide in the fourth quarter of 2012, 22.3 percent (2,387) were blocking, and 77.7 percent (8,304) were non-blocking. The average statewide clearance time for blocking and non-blocking incidents was 27.6 minutes and 9.4 minutes, respectively. An incident is defined as blocking when at least one of the travel lanes is closed. Non-blocking incidents usually occur on the shoulder leaving all lanes of travel open. The table above shows average response and clearance times for blocking and non-blocking incidents by duration.

Cost of incident-induced delay down in fourth quarter

In the fourth quarter of 2012, the total cost of incident-induced delay was $39.5 million. This is an 8.3 percent drop from $43.1 million total delay costs in the third quarter of 2012. Of the total cost, $21.1 million was from the 2,387 blocking incidents ($345 per minute) and $18.4 million was from the 8,304 non-blocking incidents ($244 per minute). The cost of delay for the fourth quarter of 2012 by incident duration category was $10.7 million for incidents lasting under 15 minutes; $21.3 million for 15-90 minute incidents; and $7.5 million for incidents over 90 minutes.

Incident Response figures from third quarter 2012 finalized

In *Gray Notebook* 47, WSDOT reported that IR teams responded to 12,459 incidents with an average clearance time of 12.2 minutes. The number of incidents has been updated to 12,466 incidents. Average incident clearance time was unchanged.

A WSDOT Incident Response team in action at a collision near State Route 16. IR teams work in coordination with Washington State Patrol to keep incident sites safe and traffic moving.

Incident Response Quarterly Update

Clearance of over-90-minute incidents on GMAP corridors averages 161 minutes

Disabled vehicles were the most common incidents responded to in the fourth quarter of 2012

During the fourth quarter of 2012, disabled vehicles were the cause of the majority of incidents to which teams responded, as illustrated in the graphs at right. Disabled vehicles include cars with a flat tire, failed engine, or even an empty gas tank; they accounted for 60 percent of incidents lasting less than 15 minutes, and 44 percent of incidents lasting 15 to 90 minutes. For incidents lasting 90 minutes and longer, the most common cause was traffic collisions involving injury (36 percent).

Collisions accounted for 16.4 percent of all incidents responded to in the fourth quarter

Traffic collisions of all types (those with and without injuries or fatalities) accounted for 80 percent of incidents lasting over 90 minutes, 39 percent of incidents lasting 15 to 90 minutes, and 5 percent of incidents lasting less than 15 minutes. Fatality collisions made up less than 1 percent of all incidents to which IR teams responded.

Agencies collaborate to expedite clearance of over-90-minute incidents

There were 126 over-90-minute incidents statewide with an average clearance time of 184 minutes. Of those incidents, 80 were on the nine Government, Management, Accountability, and Performance (GMAP) corridors and had an average incident clearance time of 161 minutes, which is six minutes slower than the 155 minute goal but nine minutes faster than last quarter.

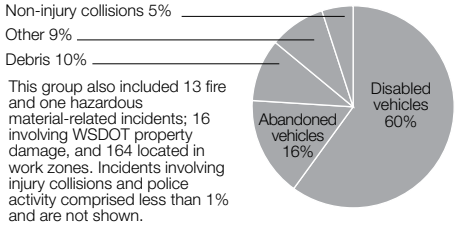
WSDOT and Washington State Patrol have a formal agreement in the Joint Operations Policy Statement (JOPS) to clear blocking traffic incidents in 90 minutes or less, if possible. Additionally, the GMAP program tasks these agencies with lowering the average duration of these over-90-minute incidents on nine key, high-volume highway corridors in the state.

Number and percentage of responses by duration

October 1 - December 31, 2012; Total of 10,691 incidents statewide

Incidents lasting less than 15 minutes (8,018)

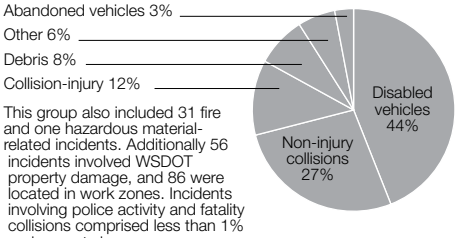
Estimated cost for incidents lasting less than 15 minutes: about $10.7 million



This group also included 13 fire and one hazardous material-related incidents; 16 involving WSDOT property damage, and 164 located in work zones. Incidents involving injury collisions and police activity comprised less than 1% and are not shown.

Incidents lasting 15 to 90 minutes (2,547)

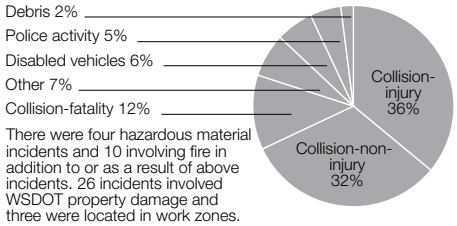
Estimated cost for incidents lasting 15 to 90 minutes: about $21.3 million



This group also included 31 fire and one hazardous material-related incidents. Additionally 56 incidents involved WSDOT property damage, and 86 were located in work zones. Incidents involving police activity and fatality collisions comprised less than 1% and are not shown.

Incidents lasting 90 minutes and longer (126)

Estimated cost for incidents lasting over 90 minutes: about $7.5 million

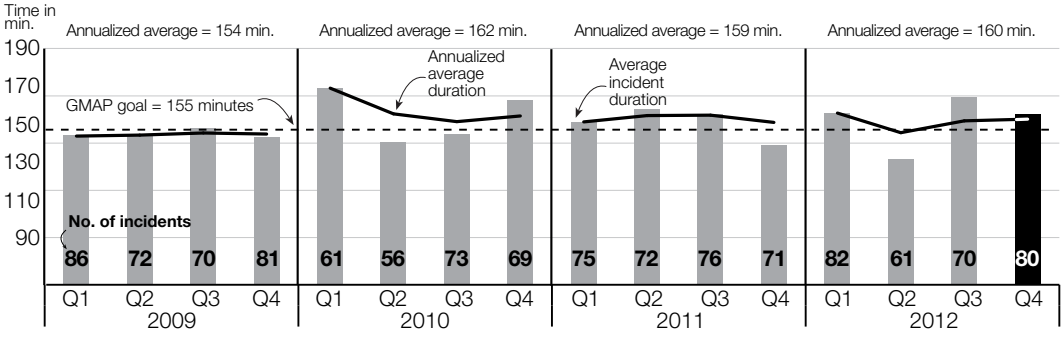


There were four hazardous material incidents and 10 involving fire in addition to or as a result of above incidents. 26 incidents involved WSDOT property damage and three were located in work zones.

Data source: Washington Incident Tracking System (WITS), WSDOT Traffic Office.

Average clearance times for over-90-minute incidents on nine Washington highway segments

January 1, 2009 - December 31, 2012; Number of responses per quarter vs. annualized average duration in minutes



Data source: Washington State Patrol and WSDOT Traffic Office.

Note: The nine GMAP corridors are I-5 in Washington, I-205, I-405, I-90 from Seattle to North Bend, SR 16 from Tacoma to Purdy, SR 18 from Federal Way to I-90, SR 167, SR 512, and SR 520.

Six extraordinary incidents occur in fourth quarter 2012

Extraordinary incidents (lasting six hours or more) on nine key Western Washington routes
October 1 through December 31, 2012; Duration in minutes

Date & time	State route & location	Duration	City	Incident summary
December 8, 2012, 9:31 p.m.	I-5 southbound at milepost 216	498	Stanwood	Non-collision incident involving a semi-truck hauling lumber which caught fire. The incident could not be cleared until the lumber cooled.
November 2, 2012, 7:53 p.m..	I-5 southbound at milepost 52	478	Toutle River	Non-injury collision involving an overturned logging truck. Incident involved extensive cleanup.
December 12, 2012, 10:45 a.m.	SR 18 westbound at milepost 2.7	468	Auburn	Fatality collision involving a rolled-over semi-truck. Incident closed roadway for investigation and recovery.
November 4, 2012, 2:31 a.m.	I-5 southbound at milepost 143	436	Federal Way	Fatality collision involving a semi-truck rollover. Semi-truck was carrying fuel which caught fire. Incident involved a Washington State Patrol investigation.
October 14, 2012, 11:27 p.m.	I-5 northbound at Center Drive	427	DuPont	Injury collision involving three semi-trucks with a diesel fuel spill. Incident involved lane closure until the site was cleaned.
October 17, 2012, 9:57 p.m.	I-5 southbound at milepost 132	422	Tacoma	Non-injury collision involving a semi-truck losing its load of steel pipe causing extensive damage to roadway. Incident involved roadway repair and cleanup.

Data source: Washington State Incident Tracking System (WITS), Washington State Patrol, and WSDOT Traffic Office.

Six extraordinary incidents inflate clearance times

The table above describes six extraordinary incidents that occurred in the fourth quarter of 2012, of which each lasted more than six hours. Five of the six incidents were located on I-5 and the other was within two miles of I-5, on SR 18. All of the extraordinary incidents involved semi-trucks. Excluding these extraordinary incidents, the average over-90-minute incident clearance time on the nine GMAP corridors is 137 minutes. This is 18 minutes faster than the goal of 155 minutes and 24 minutes faster than the average clearance time for over-90-minute incidents on GMAP corridors.

WSDOT tracks incidents lasting more than six hours because they contribute significantly to overall incident clearance times. Extraordinary incidents can also involve damage to WSDOT property and can activate the Major Incident Tow program (see the 2012 *Congestion Report*, p. 73, for more information).

Customer feedback: Incident Response keeps highways safe and moving in 2012

WSDOT IR teams hand out comment cards to drivers who receive assistance. Here are a few comments from people who received help from WSDOT during the fourth quarter of 2012:

- *"I appreciated being helped to a safe location. It was my first experience needing the service and it worked great."*
- *"On this Sunday evening just east of Snoqualmie Pass Summit, our engine failed. [WSDOT's incident responder] set up orange traffic cones and assisted us until we had our truck and trailer to a rest area five miles away. This was a dangerous situation!"*
- *"Thanks [WSDOT], you helped expedite getting my family off the side of I-90, whew!"*

WSDOT's IR teams work with the state patrol to clear major traffic incidents in 155 minutes or less, a goal guided by the GMAP program.

New federal law sets measures for areas impacted by Incident Response program

Moving Ahead for Progress in the 21st Century (MAP-21), the new federal transportation legislation (see pages ix-x), connects state transportation funding to performance. The Incident Response program contributes to WSDOT's performance in three areas related to MAP-21: safety, highway system performance and congestion.

The Incident Response program is one of WSDOT's strategies to improve safety and travel reliability, and reduce vehicle delay by quickly clearing traffic incidents (the largest contributor to non-recurrent congestion). This also reduces emissions from idling cars stuck in incident-induced traffic. Non-recurrent congestion is caused by one-time incidents, such as collisions or inclement weather, and accounts for 46 percent of all congestion.

Washington State Ferries Quarterly Update

Washington State Ferries

Ferries faces service challenges but exceeds on-time performance goal

Washington State Ferries (WSF) exceeded its 95 percent on-time performance goal with 96.3 percent of trips on time in the second quarter of fiscal year 2013 (October 1 through December 31, 2012). Despite decreasing for the quarter, Ferries' trip reliability was 99.3 percent and surpassed the annual goal of 99 percent. Meanwhile, ridership for the quarter was five million, just below projections, and farebox revenue was $33.8 million, 0.5 percent below quarterly projections.

Ferries exceeded its goal, with 96.3 percent of trips on time

Challenges on the Fauntleroy - Vashon - Southworth route lead to missed trips

Ferries' 268 missed trips during the second quarter of FY2013 were 90 percent higher than those in the second quarter of FY2012, which had 141 net missed trips. The increase in net missed trips was due primarily to service disruptions on the Fauntleroy - Vashon - Southworth route.

Service was reduced from a three-boat schedule to a two-boat schedule multiple times on the route this quarter. A mechanical failure on the Motorized/Vessel (M/V) *Klahowya* caused a disruption for six days in mid-December (see p. 29). Additional mechanical issues on the M/V *Klahowya* and the M/V *Sealth* also required schedule adjustments leading to missed trips. Mandatory crewing levels not being met in late December also caused a shift from a three-boat to a two-boat schedule resulting in 15 net missed trips.

Strategies aim to maintain ridership

Washington State Ferries serves as a critical link to communities separated by water or longer driving distances, and is essential to moving goods and people throughout the Puget Sound region.

As the largest operating auto-ferry fleet in the world, carrying 10 million vehicles and more than 22 million ferry passengers each year, WSF faces unique challenges ranging from changing demographics and work patterns to a slow economic recovery.

Ferries' recent strategies to maintain ridership or use resources more effectively include:

- An upgraded online reservation system that enhances access to the Port Townsend - Coupeville route has increased the reservation "show" rate from 61 percent to more than 90 percent since it started in June 2012.
- New WSF vessels improve capacity and service reliability on the Port Townsend - Coupeville and the Point Defiance - Tahlequah routes.
- WSF is evaluating the benefits of a "small" car fare that has been in place since October 2011.

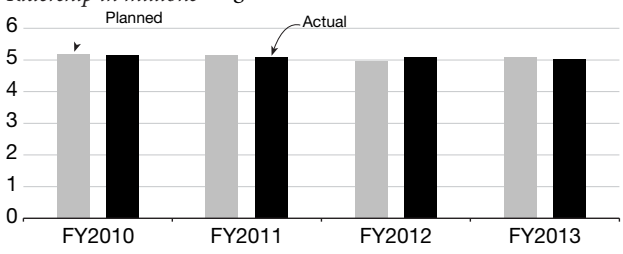
Ridership and revenue both down slightly from quarterly projections

Ridership during the second quarter of FY2013 saw a slight decline to five million. This is about 1.2 percent (or approximately 61,000) fewer riders than projected for the quarter. Compared to the same quarter one year ago, WSF ridership decreased by 0.9 percent, with about 47,000 fewer riders in the second quarter of FY2013 than in the second quarter of FY2012.

Farebox revenue was $33.8 million for the second quarter of FY2013. This is 0.5 percent (or $200,000) less than projected. The decline in revenue is in line with the lower ridership for the quarter. Compared to the same quarter last year, farebox revenue was about $900,000 higher in the second quarter of FY2013, a 2.9 percent increase.

Ferries planned and actual quarterly ridership levels by fiscal year

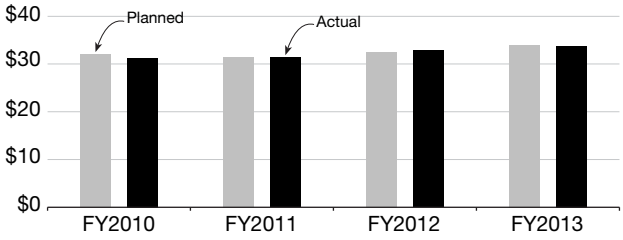
Second quarter (October 1 through December 31), FY2010 - FY2013. Passengers in millions



Data source: WSDOT Ferries Division.

Ferries planned and actual quarterly farebox revenue by fiscal year

Second quarter (October 1 through December 31), FY2010 - FY2013. Dollars in millions



Data source: WSDOT Ferries Division.

Vessel problems lead to more missed trips and cancellations

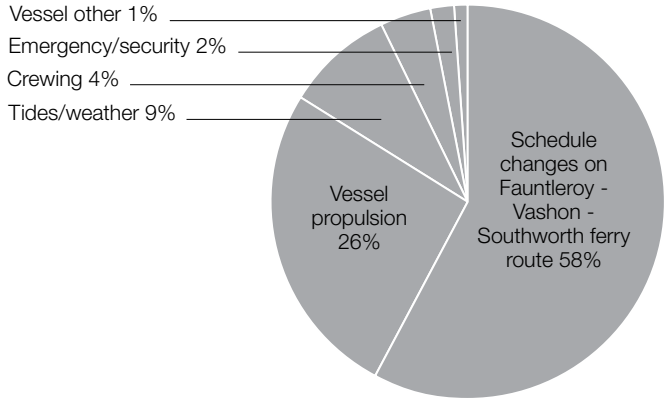
Mechanical problems and crewing issues on vessels resulted in ferries missing 268 net trips in the second quarter of FY2013. This was 127 more net missed trips than in the second quarter of FY2012. Net missed trips are the number of trips canceled that are not replaced. In the second quarter of FY2013, 40,544 regular service trips were scheduled. Of those trips, 942 were canceled and 674 were replaced, resulting in 268 net missed trips and 40,276 total trips for the quarter. (40,544 scheduled – 942 canceled + 674 replacement trips = 40,276 net trips). The net trips figure represents 99.3 percent of total scheduled trips, which exceeds Washington State Ferries annual trip reliability goal of 99 percent.

Ferries missed 268 trips in the quarter, an increase of 127 trips

In total, there were 727 more cancellations in the second quarter of FY2013 than in the same quarter of FY2012. A lack of vessel availability and crewing issues on the Fauntleroy - Vashon Island - Southworth route (also known as the "triangle" route), made up the bulk of this increase. Ferries on the triangle route had 777 cancellations for the quarter, 640 of which WSF was able to make-up. This resulted in 137 missed trips as the schedule was changed from a three-boat to a two-boat schedule.

The schedule change on the route meant that on average for every three trips canceled at least two trips were replaced and less than one trip was missed. These occurrences on the triangle route were the primary reason for the high number of cancellation and replacement trips in the second quarter of FY2013.

Reasons for Ferries' canceled trips
Second quarter (October 1 through December 31), FY2012



Data source: WSDOT Ferries Division.
Note: In November and December a lack of available vessels resulted in a service change on the Fauntleroy - Vashon - Southworth ferry route from a normal three-boat to a two-boat service schedule. Most of these trips were replaced and therefore the number of vessel cancellations overstates the impact to service on this route.

Ferries exceed on-time performance goal

The percentage of sailings system-wide that departed on time in the second quarter of FY2013 declined 0.8 percent from the same quarter in FY2012. Despite the decrease from 97.1 percent to 96.3 percent, WSF exceeded its on-time performance goal of 95 percent for the quarter. The average sailing delay remained the same with an average 1.9 minutes of delay for the second quarter of FY2012 and the second quarter of FY2013.

Washington State Ferries missed trip reliability comparison
Second quarters (October 1 through December 31), FY2012 and FY2013

	Second quarter, FY2012			Second quarter, FY2013		
Route	**Scheduled trips**	**Missed trips[1]**	**Reliability average[2]**	**Scheduled trips**	**Missed trips[1]**	**Reliability average[2]**
San Juan Domestic	6,742	40	99.4%	6,731	13	99.8%
International Route	184	0	100.0%	180	0	100.0%
Edmonds - Kingston	4,284	0	100.0%	4,284	0	100.0%
Fauntleroy - Vashon - Southworth	10,350	36	99.7%	10,341	137	98.7%
Port Townsend - Coupeville	1,940	54	97.2%	1,920	64	96.7%
Mukilteo - Clinton	6,674	7	99.9%	6,678	20	99.7%
Pt. Defiance - Tahlequah	3,496	4	99.9%	3,496	8	99.8%
Seattle - Bainbridge Island	4,165	0	100.0%	4,167	0	100.0%
Seattle - Bremerton	2,747	0	100.0%	2,747	26	99.1%
Total	**40,582**	**141**	**99.7%**	**40,544**	**268**	**99.3%**

Data source: WSDOT Ferries Division.
Notes: 1 Missed trips is the difference (net) between the number of canceled trips and the number of replaced trips. 2 The reliability average is calculated by dividing the recorded number of net trips (scheduled trips - canceled trips + make-up trips) by the number of scheduled trips.

Washington State Ferries Quarterly Update

Ferries on-time performance remains strong

Washington State Ferries on-time performance comparison

Second quarters (October 1 through December 31), FY2012 and FY2013; Sailing delay in minutes

	Second quarter, FY2012			Second quarter, FY2013		
Route	**Actual on-time trips[1]**	**On-time percentage[2]**	**Average sailing delay[3]**	**Actual on-time trips[1]**	**On-time percentage[2]**	**Average sailing delay[3]**
San Juan domestic	5,938	91.3%	3.0	5,781	93.3%	2.2
International Route (Anacortes - Sidney, B.C,)	160	87.9%	3.5	164	91.6%	2.0
Edmonds - Kingston	4,236	99.1%	1.4	4,238	99.6%	1.3
Fauntleroy - Vashon - Southworth	10,056	98.3%	1.8	9,218	94.6%	2.7
Port Townsend - Coupeville	1,770	95.1%	2.5	1,681	91.9%	3.1
Mukilteo - Clinton	6,601	99.5%	1.1	6,526	98.7%	1.0
Pt. Defiance - Tahlequah	3,427	98.7%	2.0	3,192	99.7%	1.3
Seattle - Bainbridge Island	4,019	97.2%	1.3	4,019	97.4%	1.1
Seattle - Bremerton	2,669	97.7%	2.1	2,607	96.5%	2.6
Total	**38,876**	**97.1%**	**1.9**	**37,426**	**96.3%**	**1.9**

Data source: WSDOT Ferries Division.

Notes: 1 About 1 percent of trips are not detected by the automated tracking system due to marine and atmospheric conditions which prevent a trip from being detected when the vessel leaves a terminal. These trips are not included in on-time performance calculations. 2 On-time percentage is the number of actual on-time trips divided by the number of completed trips for the quarter. 3 The average sailing delay is shown in minutes and is an average of the duration of time occurring after the "on-time" window ends and the actual recorded departure time of the vessel. A trip is delayed when a vessel does not leave the terminal within 10 minutes of the scheduled departure time.

Three routes showed measurable declines in on-time performance between the second quarters of FY2012 and FY2013: Fauntleroy - Vashon - Southworth, -4 percent; Port Townsend - Coupeville, -3 percent; and Seattle - Bremerton, -1 percent. Vessel mechanical problems on the Fauntleroy - Vashon - Southworth route slip construction at Port Townsend, and vessel re-assignments on the Seattle - Bremerton route, stemming from using smaller, slower boats while the regular vessels assisted on the triangle route, all contributed to the drops in on-time service.

Three routes showed improvement between the second quarters of FY2012 and FY2013: the Anacortes - Sidney, B.C. International (4 percent), the San Juan Islands domestic route (2 percent), and the Point Defiance – Tahlequah (1 percent).

The percentage of sailings system-wide that departed on time increased by 2.9 percent compared to the previous quarter. In the second quarter of FY2013, 96.3 percent of trips were on time compared to 93.4 percent in the first quarter of FY2013.

There is typically a seasonal increase in on-time performance in the fall and winter seasons when terminal and vessels are not as busy and capacities are not as constrained as during the spring and summer. As a result, the loading and unloading of vehicles is more efficient, which helps vessels stay on schedule.

Rider compliments and complaints increase

Customer complaints increased by 59 percent in the second quarter of FY2013 compared to the same quarter in FY2012, from 6.8 to 10.8 complaints per 100,000 customers (543 compared to 355). Complaints about crewing saw the largest increase with 122 more that the same quarter one year ago (129 compared to seven).

The jump in the crewing category was due to vessel cancellations that occurred when mandatory crewing levels were not met. In addition, there were 55 complaints about downsizing of ferry routes during the quarter, compared to six for the same quarter one year prior. The largest drop was in employee behavior, with 34 fewer complaints than the same quarter one year prior (56 compared to 90).

WSF received 56 compliments in the second quarter of FY2013, a 22 percent increase from the same quarter in FY2012.

Customer compliment

I wanted to commend the crew on the 7:55 am sailing from Bainbridge to Seattle ... for remaining calm and quickly handling the passenger that went into cardiac arrest this morning. It was already upsetting for those of us sitting nearby ... so their calm, quick, and quiet handling of the situation went a long way towards not making it worse. Job well done.

Amtrak Cascades on-time performance reaches 80 percent

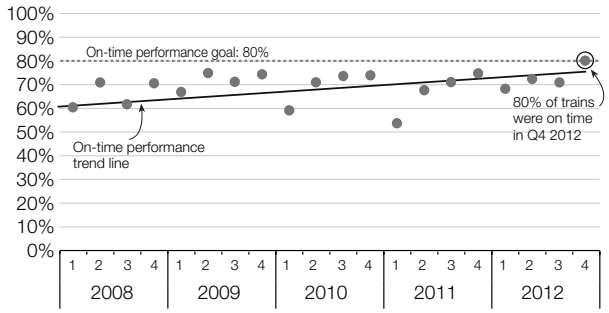
On-time performance steadily increasing

State-supported Amtrak Cascades trains met the on-time performance goal of 80 percent in the fourth quarter of 2012 (October 1 through December 31). This is an increase from the on-time performance rate of 74.8 percent in the fourth quarter of 2011, and marks the first time that WSDOT has met this goal since it began reporting on-time performance in 2001. Amtrak Cascades on-time performance has remained above 70 percent for the last three quarters.

Eighty percent of Washington-funded Amtrak Cascades trains arrived on time in the fourth quarter

Amtrak Cascades on-time performance

2008 through 2012; Percent of trains on time by quarter



Data source: WSDOT State Rail and Marine Office.

Note: On-time performance for Washington-funded trains only.

Amtrak Cascades ridership decreases

Total ridership on all Amtrak Cascades trains was 189,300 for the fourth quarter of 2012. This shows decreases of 4.5 percent and 6.6 percent compared to ridership levels in the same quarters of 2011 and 2010, respectively.

The Amtrak Cascades passenger rail service on the Pacific Northwest Rail Corridor links Eugene and Portland, Oregon, with Tacoma and Seattle, Washington, and Vancouver, B.C. Eleven trains use the 467-mile corridor daily and make stops at 18 stations. Amtrak Cascades trains run on private rail lines owned by BNSF in Washington and British Columbia and by Union Pacific in Oregon. The passenger rail service is jointly managed by WSDOT, the Oregon Department of Transportation and Amtrak, with funding coming from ticket sales and a combination of state and federal sources.

The federal government will no longer contribute toward the cost of intercity passenger rail when the federal Passenger Rail Investment and Improvement Act takes effect in October 2013. This legislation will eliminate federal subsidies to Amtrak Cascades. As a result, Washington and Oregon will absorb the portion of costs currently provided to Amtrak. The annual cost for Washington is anticipated to be approximately $5 million, which was included in the proposed budget.

Amtrak Cascades ridership by funding entity

October 1 through December 31, 2010, 2011 and 2012

Funding partner	Round trips funded	Quarter 4 2010	Quarter 4 2011	Quarter 4 2012
Washington	4	135,170	132,334	122,215
Oregon	2	33,530	33,656	33,887
Amtrak[1]	1	33,975	32,178	33,198
Total ridership		**202,675**	**198,168**	**189,300**

Data source: WSDOT State Rail and Marine Office.

Notes: Washington-funded trains: Amtrak Cascades 501, 506, 507 (Seattle/Portland), 508, 510, 513, 516, and 517. Oregon-funded trains: Amtrak Cascades 500, 504, 507, and 509 between Portland and Eugene. Amtrak-funded trains: Amtrak Cascades 500 and 509 between Seattle and Portland. 1 This round trip is funded by a subsidy from the federal government.

Amtrak Cascades state-supported ridership and revenues decline

Amtrak Cascades state-supported ticket revenues were 7.7 percent lower in the fourth quarter of 2012 compared to the same quarter in 2011. Ticket revenues totaled $4.8 million, compared to $5.2 million in the fourth quarter of 2011.

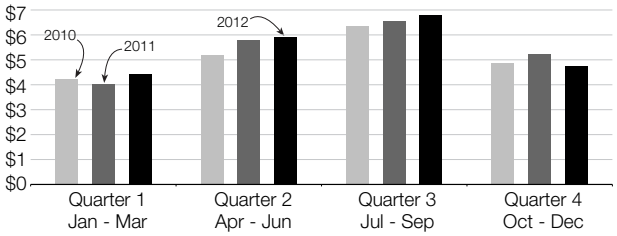
Amtrak Cascades ridership on Washington-funded trains for the fourth quarter of 2012 was 122,215, a 7.6 percent decline from the 132,334 riders in the fourth quarter of 2011.

State-supported Amtrak Cascades quarterly ticket revenues

State-supported Amtrak Cascades ticket revenues by quarter

2010 through 2012; Dollars in millions

2010-2012; Dollars in millions



Data source: WSDOT State Rail and Marine Office.

Rail: Amtrak Cascades Quarterly Update

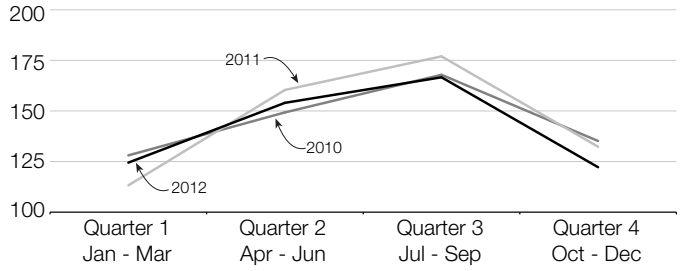
Mudslides negatively impact ridership and revenues

Ridership and revenues were impacted by an unusually high number of mudslides in Washington during the fourth quarter of 2012, resulting in 43 train cancellations and 48 train disruptions. By comparison, there were 12 train cancellations and 19 train disruptions in same quarter in 2011. A disruption occurs if the train either started or ended the trip at a different station than originally scheduled. BNSF imposes a 48-hour moratorium following mudslides that affect railroad tracks, during which time the trains are not allowed to use the tracks so mud and other debris can be cleared, and engineers can assess damage and make necessary repairs. While mudslides negatively affect ridership and revenues, they are not related to the on-time performance rate. On-time performance is only measured for trains that start and end a trip at the scheduled origin and destination, which excludes trains experiencing cancellations or disruptions.

Ticket revenues and ridership declined in the fourth quarter of 2012

State-supported Amtrak Cascades quarterly ridership

2010 through 2012. Number of passengers per quarter. Rider Riders in thousands



Data source: WSDOT State Rail and Marine Office.

Note: Ridership for Washington-funded trains only.

Farebox recovery rate for 2012 slightly lower than previous year

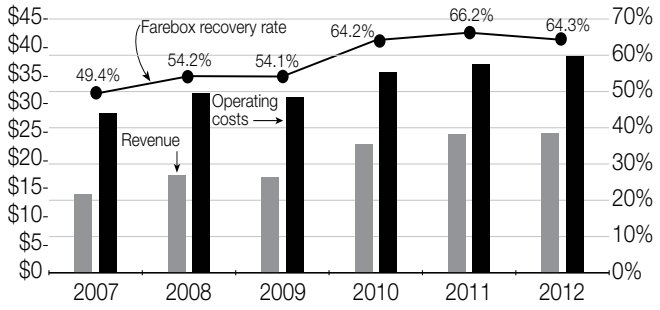
In federal fiscal year (FFY) 2012 (October 1, 2011 through September 30, 2012), state-supported Amtrak Cascades trains had a farebox recovery rate of 64.3 percent, slightly lower than the FFY2011 rate, which was 66.2 percent. The operating costs for Amtrak Cascades totaled $38.4 million in FFY2012, 3.8 percent higher than FFY2011. Revenues were approximately $24.7 million for FFY2012, a 0.7 percent increase from the previous year.

Farebox recovery is estimated as revenues divided by total operating costs, which measures the percentage of operating costs that are offset by revenues. This helps determine how well trains are performing financially, the level of public subsidy required to keep the trains in operation, and highlights areas where WSDOT and Amtrak should take action to improve ridership, revenues, and reduce costs.

Amtrak Cascades passenger train in Puyallup.

Amtrak Cascades farebox recovery

Federal fiscal years (FFY) 2007 through 2012; Dollars in millions



Data source: WSDOT State Rail and Marine Office, based on Amtrak financial billing data.

Note: Farebox recovery rate is calculated as the annual revenue divided by total operating costs for a given year. The above revenues, operating costs and farebox recovery rates are for Washington-funded trains only. The farebox recovery rate for FFY2011 in the above graph has been updated from the rate published in *Gray Notebook* 44, which was based on preliminary data.

Environment at a glance

Fish Passage Barriers Annual Report **34**

WSDOT completed 12 culvert corrections in 2012 • Fish passage projects completed in 2012 restored access to 55 miles of potential upstream habitat • WSDOT anticipates completing 19 fish passage projects in 2013, restoring access to about 112 miles of potential upstream habitat

Environmental Compliance Annual Report **36**

WSDOT performed more than 287,000 highway maintenance activities, conducted more than 162,000 ferry sailings and had 112 environmental violations in 2012 • Fifty-four of the violations in 2012 involved water quality • Of WSDOT's 112 violations, 17 were formal violations, four fewer than in 2011

Earlier Environment-related articles

Find previous articles in these GNB editions:

See also

State policy goal

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

WSDOT's business direction

Protect and restore the environment while improving and maintaining Washington's transportation system.

Fish Passage Barriers Annual Report

Fish Passage Barriers

WSDOT improves fish habitat while working on highways

Projects access 55 miles of habitat in 2012

WSDOT corrected 12 fish passage barriers as part of 10 projects during 2012. These corrections added more than 55 miles of potential upstream habitat for fish. Seven of the corrections were completed as stand-alone projects.

Four culvert correction projects planned to be completed in 2012 were delayed until 2013 (see *Gray Notebook* 44, p. 37). Three of the corrections are part of the SR 520 floating bridge project and were rescheduled to better fit that project's work plan. The other delayed project went to bid late and the contractor was unable to have a new culvert fabricated in time to meet the window for in-stream work. WSDOT anticipates that all work for these projects will be completed in 2013.

Correcting fish passage barriers is a key action item in WSDOT's strategic plan. Since 1991, WSDOT has corrected 269 barriers, unblocking passage to upstream habitat on streams where migrating fish historically spawn. These projects have restored access to 904 miles of potential habitat statewide. WSDOT's fish passage program budget for the 2011-2013 biennium is $23 million, compared to $20.4 million for the 2009-2011 biennium.

A fish-friendly culvert, installed September 2012, restored access to two miles of habitat on a tributary to the Physt River.

WSDOT works with the Washington State Department of Fish and Wildlife (WDFW) to identify and correct culverts and other barriers that block fish movement created where highways cross fish-bearing streams. In 2007, WSDOT and WDFW completed an inventory of all fish passage barriers in the state and identified approximately 1,500 barriers that, if corrected, offer the potential for significant habitat gain.

When possible, WSDOT corrects fish passage barriers as part of transportation construction projects when the

Fish passage construction projects completed in 2012

Projects by completion as a stand-alone project or as part of a larger project with location, funding source(s) and project costs[1]

Stand-alone projects	Funding source	Project cost[1]	Project description
SR 112 west of Port Angeles	TPA, PEF	$979,244	Replaced a 2.5-foot culvert with a 12-foot box culvert on an unnamed tributary to the Physt River.
SR 112 west of Port Angeles	TPA, PEF	$1,981,106	Replaced a 6-foot culvert wtih a 16-foot culvert at Nelson Creek.
I-90 east of Issaquah	PEF, Local	$3,072,084	Replaced a 12-foot culvert with a 34-foot culvert at East Fork Issaquah Creek.
SR 530 west of Darrington	TPA, PEF	$1,866,721	Replaced a 5-foot culvert with an 18-foot culvert at Fortson Creek.
U.S. 97 east of Goldendale	PEF	$2,456,366	Replaced an 11-foot culvert with a 60-foot bridge at Butler Creek.
I-5 near Centralia	TPA	$191,270	Improved channel downstream of China Creek box culvert to address a fish barrier caused by a utility pipe during low flows.
SR 167 near Renton	TPA	$6,750,667	Replaced two 6-foot culverts with a 19-foot culvert at Panther Creek.
Part of larger transportation projects			
SR 9 north of Bothell	Nickel	-	Replaced a 2-foot culvert with a 7-foot culvert on a tributary to Great Dane Creek.
SR 520 near Medina[2]	TPA, Nickel	-	Replaced three barrier culverts with two large, fish-friendly culverts on Yarrow Creek.
SR 21 near Curlew Creek State Park	PEF	-	Replaced two undersized culverts with an 18-foot culvert on Curlew Creek.

Data source: WSDOT Environmental Services Office.

Notes: TPA - Transportation Partnership Account. PEF - Pre-existing Funds. 1 Project cost was available only for stand-alone projects.
2 The fish passage project on SR 520 near Medina is counted as three corrections because three separate barriers were removed.

Fish returning to habitat opened by WSDOT culvert correction projects

agency is already conducting in-water work, which helps reduce mobilization costs. High-priority fish passage barrier corrections are completed through stand-alone projects. Priority barriers are identified through the use of several criteria such as the number and health of fish species present, the amount of potential habitat gain, and the project cost.

Fish returning upstream of WSDOT culvert corrections

WDFW has conducted surveys on 77 out of 90 stand-alone fish passage projects to record the presence, number and species of fish returning to spawn in newly accessible habitat. Fish have been observed and documented upstream of previous passage barriers at 58 of the 77 (75 percent) surveyed sites.

Project highlight: Culvert correction at Butler Creek on U.S. 97 expected to benefit wildlife and traffic safety

In spring of 2013, WSDOT is expected to finish work on a fish passage barrier correction along U.S. 97 near Goldendale where the highway crosses Butler Creek. The project will restore access to 10 miles of potential fish habitat. WSDOT designed the new culvert to provide additional space for deer and other wildlife to pass under the highway along the banks of the creek. The project is located on an eight-mile corridor that is among the worst deer collision areas in eastern Washington. Between 2005 and 2009, 326 deer carcasses were removed from the corridor.

WSDOT expects the improvements to help reduce the deer/vehicle collision rate in the area, providing a benefit for motorists and wildlife alike. WSDOT will report on the effects of this project in the 2013 annual fish passages report.

Projects will add 112 miles of habitat in 2013

WSDOT plans to correct 22 fish passage barriers as part of 19 projects in 2013. Of these, 12 will be stand-alone projects. Based on site surveys these corrections are expected to restore access to an additional 112 miles of currently blocked habitat.

Fish passage construction projects planned in 2013

Projects by completion as a stand-alone project or as part of a larger project with location and funding source(s)

Stand-alone projects	Funding source	Project description
SR 106 east of Union	PEF, FHWA	Replace a 10-foot culvert with a 20-foot bridge at Twanoh Falls Creek.
SR 162 south of Sumner	PEF	Replace an undersized culvert with a fish-friendly box culvert at Ball Creek.
SR 3 north of Bremerton	PEF	Correct in-stream barrier at an existing box culvert on Chico Creek.
SR 7 east of Roy	PEF	Replace a twin 5-foot culvert with a stream simulation culvert at Muck Creek.
SR 507 near Roy	PEF, FHWA	Replace undersized culverts at Lacamas Creek with a stream simulation culvert.
SR 112 west of Port Angeles	PEF, FHWA	Replace twin 4-foot round culverts with a stream simulation culvert at Coville Creek.
SR 11 near Bellingham	TPA, FHWA	Replace three small culverts with a bridge at Padden Creek.
SR 9 north of Sedro-Wooley	PEF, FHWA	Replace an 8-foot culvert with a 17-foot box culvert at Northern Pacific Creek.
SR 105 south of Grayland	PEF, FHWA	Replace temporarily repaired culvert with a "hydraulic designed" culvert at Seastrand Creek.
U.S. 12 east of Randle	PEF, FHWA	Replace two culverts with a hydraulic designed culvert on a tributary to the Cowlitz River.
SR 21 north of Keller	PEF	Replace two small culverts with a 20-foot culvert at South Nanamkin Creek.
U.S. 2 north of Leavenworth	PEF	Replace two 3-foot culverts with a larger fish-friendly culvert at Skinney Creek.
Part of larger transportation projects		
SR 3 near Belfair	TPA	Replace a 2-foot barrier culvert with a 12-foot culvert at a tributary to Mindy Creek.
SR 520 east of floating bridge[1]	Nickel, TPA, FHWA	Replace four barrier culverts with fish-friendly culverts at Yarrow and South Yarrow creeks.
SR 410 south of Enumclaw	PEF	Remove remains of old bridge at new Scatter Creek bridge site as part of a scour project.
I-90 near Lake Keechelus	TPA	Replace a 6-foot culvert with two 140-foot bridges at Resort Creek.
I-90 near Lake Keechelus	TPA	Replace a 6-foot culvert with two 25-foot culverts at Townsend Creek.
I-90 near Lake Keechelus	TPA	Replace 4-foot and 10-foot culverts with two bridges at Prince and Noble creeks.
I-90 east of Snoqualmie Pass	TPA	Replace twin undersized culverts with two 120-foot bridges and a 40-foot bridge on Rocky Run Creek.

Data source: WSDOT Environmental Services Office.

Notes: PEF - Pre-existing Funds. FHWA - Federal Highway Administration. TPA - Transportation Partnership Account. 1 SR 520 east of bridge project removes four barriers and is counted as four corrections.

Environmental Compliance Annual Report

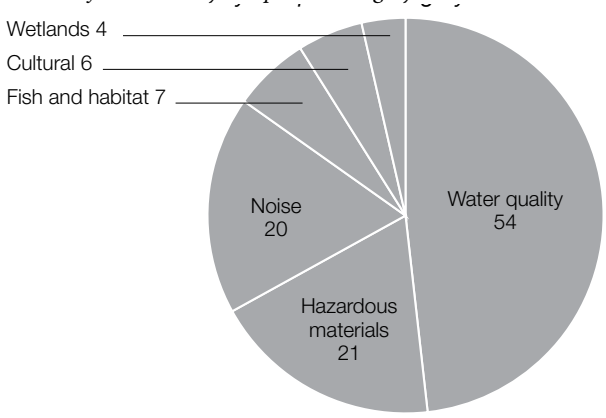
WSDOT records 112 environmental violations in 2012

WSDOT had 112 environmental violations in 2012, which is 48 more than in 2011. In 2012, WSDOT spent approximately $1.3 billion on construction projects, performed more than 287,000 highway maintenance activities, and conducted more than 162,000 ferry sailings. These activities can present unique challenges resulting in environmental violations.

Beginning with this *Gray Notebook* (GNB) compliance data is displayed differently than in past years. WSDOT is no longer counting stormwater discharges that exceed benchmarks set by Washington State Department of Ecology (Ecology) because these benchmarks no longer constitute a permit violation; regulations changed in 2011. Stormwater data is expected to be available in the annual water quality article in GNB 49, to be published in May 2013. In GNB 48, only violations of permits, agreements, approvals, laws and regulations are included. Committed to a being good steward of the environment, WSDOT tracks how well it complies with environmental regulations and permit conditions.

WSDOT's environmental violations in 2012

Number of violations by compliance category



Data source: WSDOT Environmental Services Office Commitment Tracking System.

Water quality issues comprise 48 percent of all WSDOT environmental violations

In 2012, 54 of WSDOT's 112 violations involved water quality, 12 more than in 2011. A large number of the water quality violations (27) occurred when diverting water around work to replace culverts and to protect roads and bridges. In other situations, contractors and WSDOT failed to install or maintain best management practices for preventing erosion and trapping sediment. To address these trends, WSDOT is focusing environmental training in 2013 on stream water bypass and installation of best management practices.

There were 21 hazardous material spills into waters from contractor equipment malfunctions or operator errors.

High noise levels occurring during night work on the Alaskan Way Viaduct SR 99 Bored Tunnel Project accounted for 20 violations. Two of these violations resulted in complaints from the public, which were resolved by the contractor, Seattle Tunnel Partners. The noise variance issued by the city of Seattle sets noise level thresholds at certain locations and also restricts certain activities during nighttime hours.

Fifty-four environmental violations involved water quality in 2012

WSDOT had six violations for not following required cultural or historical resource monitoring protocols during construction. Despite attempts to mitigate impacts at the work site, WSDOT had seven fish and habitat violations. Additionally, three of the four wetland permit violations occurred when contractors impacted more area than regulatory agencies permitted WSDOT to disturb.

Most violations in 2012 were reported by WSDOT to the regulatory agencies, which is part of the permit agreement; other violations occurred during inspections where WSDOT or the contractor corrected the violations immediately. Some of these violations lead to regulatory agencies taking formal enforcement actions.

WSDOT notes 17 formal violations in 2012

Of WSDOT's 112 violations in 2012, 17 were formal violations, four fewer formals than in 2011 (see formal environmental violations graph on p. 37). Ecology issued 10 written notices of violation, of those, the U.S. Army Corps of Engineers issued three, and the Yakama Indian Nation issued one. WSDOT received two monetary penalties in 2012 totalling $2,500 from Ecology, compared to one in 2011 for $2,000. A $1,000 penalty was assessed when water from a newly poured concrete barrier leaked into Ebey Slough in Marysville. A $1,500 penalty occurred when

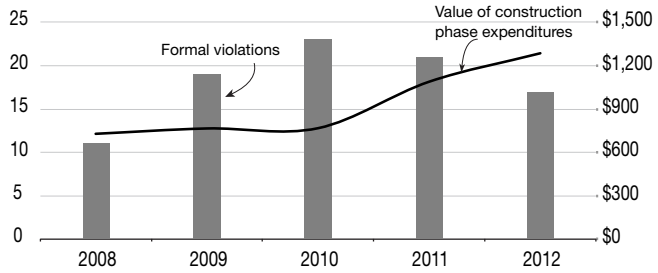
Of 112 environmental violations in 2012, 17 were formal - four fewer than in 2011

WSDOT takes aim at improving environmental compliance

a contractor failed to contain turbid water generated during a pipe rehabilitation project and it entered into Juanita Creek, near Kirkland. WSDOT anticipates receiving a third penalty for failing to obtain the necessary permit prior to conducting maintenance work in a stream. At the time of publication, the amount of the third penalty was yet to be determined.

Formal environmental violations compared to construction expenditures

2008 through 2012; Number of violations; Dollars in millions



Data source: WSDOT Environmental Services Office's Commitment Tracking System.

Notes: Numbers are based on the annual formal violations versus the construction phase expenditures for projects funded partially or fully by Nickel, Transportation Partnership Account, or Pre-existing Funding packages. Formal violations include written notices of violation and monetary penalties from regulatory agencies. Formal violations are a subset of WSDOT's statewide violations.

WSDOT's environmental training program focuses on compliance during construction

During fiscal year 2012 (July 2011 through June 2012) WSDOT delivered an environmental training program focused on ensuring compliance with environmental permits and regulations. The program was well attended with 491 staff participating in construction compliance-related classes. Below are three examples the programs offered:

- Certified Erosion and Sediment Control Lead (CESCL) certification program – CESCL certifications are required by Ecology's Construction Stormwater General Permit. WSDOT staff must be certified before they can perform site inspections or collect water quality samples. In 2011, the WSDOT Erosion Control Program obtained approval from Ecology to internally certify staff. Since then, the program has certified or recertified 121 WSDOT staff. This saves WSDOT money by minimizing travel costs and eliminating third-party fees that range from $300-$500 per person. Training material is now customized to reflect WSDOT's requirements and lessons learned from recent projects.
- Web-based learning opportunities – Training demands don't always match instructor availability. WSDOT responded by making the Spill Prevention Control and Countermeasure Plan Reviewers Training available via the Internet. This allows WSDOT staff to take training when they need it most. Additionally, a separate Web-based class was developed to help staff enter water quality sample results into WSDOT's Construction Water Quality Monitoring System. WSDOT uses this system to send sample results to Ecology to comply with the Construction Stormwater General Permit.
- Customized environmental compliance training for construction staff – Trainers worked with project engineers to identify specific risks on upcoming projects. Scenarios were developed based on the risks identified. Staff were required to team up and discuss how they would react. Archaeologists and hazardous materials experts attended the training to share lessons learned and to raise awareness.

The three examples above address WSDOT's two largest categories of environmental violations from 2012 (see WSDOT's environmental violations chart on p. 36).

Students of the Certified Erosion and Sediment Control Lead certification program install erosion control mats and check dams, which is a best management practice to control stormwater runoff.

Environmental Compliance Annual Report

New law designed to accelerate delivery of transportation projects

Moving Ahead for Progress in the 21st Century (MAP-21) reauthorizes the Federal Aid Highway Program, while expediting project delivery and protecting the environment. See the overview p. ix-x. This article focuses on some of the key ways Congress seeks to expedite transportation projects while protecting the environment. MAP-21 specifically changes the environmental review and approval processes for federally funded state, local and tribal transportation projects. For more information about the new law and federal implementation activities visit www.fhwa.dot.gov/map21/.

MAP-21 has 23 sections that change how each state department of transportation and other transportation project developers comply with national environmental laws. Some of the MAP-21 changes align with WSDOT's pre-existing goals for improving project delivery. They include:

- Simplifying and condensing some of the federal environmental documentation requirements: WSDOT is working with the Federal Highway Administration (FHWA) to prepare the I-90 Snoqualmie Pass East, Avalanche Structures Record of Decision and Final Supplemental Environmental Impact Statement (see photo below).
- Reducing the need for project-by-project reviews and decisions by federal agencies through expanded use of programmatic agreements: WSDOT and FHWA are updating an existing agreement that allows WSDOT to expedite environmental review of routine activities that do not harm the environment.

Design visualization of the Keechelus Lake Avalanche Bridges, a component of the I-90 Snoqualmie Pass East Project.

- Encouraging state departments of transportation and local agencies to continue with purchasing right of ways and developing the contracts prior to completing the federal environmental process: WSDOT has pioneered innovative contracting methods and the use of advance purchase of right of way to deliver Nickel and Transportation Partnership Account (TPA) projects on time.
- Expanding the list of activities that are eligible for expedited review under the National Environmental Policy Act (NEPA), described below.

From July 1, 2011 to December 31, 2012 WSDOT had 487 categorical exclusions approved. The bulk of WSDOT's work involves projects that use best management practices to mitigate environmental impacts, such as paving, bridge maintenance and reconstructing roadway shoulders. These types of projects fall under NEPA's categorical exclusion. By requiring rule updates, and by expanding the list of exempt activities, MAP-21 provides WSDOT with more options for streamlining small projects.

Categorical exclusions are applied to projects because they do not have a significant effect on the human environment

New rules for environmental review

MAP-21 directs the U.S. Department of Transportation (USDOT) to create or update rules that govern the environmental review of transportation projects. Most importantly, it directs USDOT to expand its list of activities that are categorically excluded from federal environmental review. MAP-21 focuses on four specific categories of activities aimed at reducing the time it takes to deliver construction projects:

- Projects within the existing state right of way,
- Projects with less than $5 million in federal funds,
- Emergency repair projects, and
- Other routine projects.

Some of these federal rules have not changed in 25 years. USDOT is required to report to Congress on National Environmental Policy Act completion times for projects prior to and after enactment of MAP-21 as a way to determine success.

Economic Vitality at a glance

Transportation: Economic Update **40**

ARRA funding created or supported 694 full-time equivalent jobs on Washington highway projects each month between February 2009 and December 2012 • WSDOT has spent approximately $543.5 million (98 percent) of the $555 million in ARRA funding awarded for highway projects • For the first time since their peak in October 2009, construction sector employment numbers began to move in a positive direction in 2012

Earlier Economic Vitality-related articles

Find previous articles in these GNB editions:

See also

State policy goal

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

WSDOT's business direction

Provide and operate a strong and reliable transportation system that efficiently connects people with jobs and their communities, moves freight, builds partnerships with the private sector, and supports a diverse and vibrant economy.

Transportation: Economic Update

Washington economic recovery remains slow but steady in 2012

Recovery Act funding supports jobs and Washington economy

State and local highway projects funded in full or part by the American Recovery and Reinvestment Act (ARRA) supported a monthly average of 152 full-time equivalent (FTE) jobs during the fourth quarter (October 1 through December 31) of 2012. The December 2012 data in this article is preliminary and will be updated in the next Transportation: Economic Update article. Authorized by the federal government in February 2009, ARRA brought $555 million in transportation funding to Washington state for 221 highway projects. Approximately $182 million (33 percent) of this was distributed to local and city governments. About 98 percent of ARRA funding awards for Washington highway projects, $543.5 million, has been expended as of December 2012.

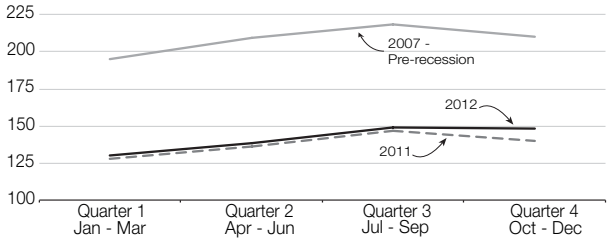
The purpose of ARRA transportation funding is to stimulate the economy and create jobs by investing in infrastructure projects that will improve long-term economic prosperity. After peaking at 1,727 monthly jobs in October 2009, the number of jobs created or supported by ARRA funding for Washington highway projects averaged 694 FTE jobs a month between February 2009 and December 2012. State and local highway projects that were funded in full or part by ARRA dollars have supported more than 5.6 million employee work hours and $224.9 million in payroll as of December 2012. Historically, WSDOT has contracted out 74 percent of this work to the private sector.

Nonresidential construction contracts hit lowest point in more than three decades

Despite a steady decline since its peak in 2007, total construction (residential and nonresidential) sector employment numbers began to move in a positive direction in 2012. Average monthly construction employment reached 140,900 workers in 2012, a 2.5 percent increase from 137,500 workers in 2011. Despite this growth, construction employment remains well below the pre-recession average monthly employment level of 208,200 workers.

Washington state construction sector employment

Average monthly employment by quarter for 2007[1], 2011 and 2012[2]; Employment in thousands of workers



Data Source: Bureau of Labor Statistics.
Notes: 1 Construction employment for 2007 represents pre-recession levels. 2 Average employment for the fourth quarter of 2012 only includes data for October and November. Data for December 2012 was not available at the time of publication.

According to Washington's Economic Revenue and Forecast Council, contracts for new construction projects give an indication of the level of activity roughly six months in the future. The total value of contracts for nonresidential construction projects in Washington (which include transportation) was down 37 percent from January through October 2012 compared to the same 10 months in 2011.

Measured in total square footage, nonresidential contracts spiked at the end of 2011, but dropped to the lowest point in 30 years in March 2012. The data indicates that any improvement in the construction sector is being driven by growth in residential construction. There has been some recovery since March, but the three-month average remains below 2011 levels, signaling continued weakness in nonresidential construction.

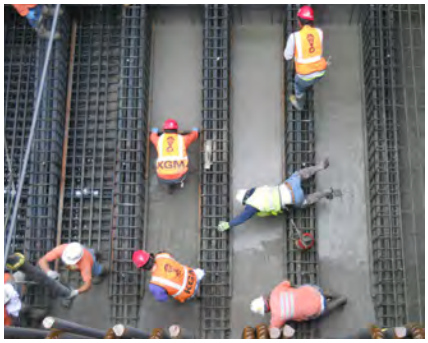
Economic indicators show improvement

At both the state and national levels, 2012 was characterized by a continued moderate recovery from the economic recession that had officially ended three years prior.

The labor market showed signs of improvement in 2012, as the average annual unemployment rate in Washington dropped below 9 percent for the first time in four years to 8.3 percent. Despite improving from 9.2 percent in 2011, the statewide unemployment rate remains substantially higher than the pre-recession (2007) rate of 4.6 percent.

Taxable retail sales, which provide an indication of consumer confidence, continued to trend upward in 2012. From January 1 through June 30, 2012, taxable retail sales totaled $50.9 billion, an increase of 4.7 percent from the same period in 2011.

Statewide per capita income grew from $41,951 in 2010 to $45,302 in 2012, an increase of about 8 percent. This increase in household purchasing power was partially offset by an increase in transportation costs. Washington state gasoline prices averaged $3.89 per gallon in 2012, an increase of 67 cents per gallon (21 percent) from 2010 fuel prices and 5 cents per gallon (1.3 percent) from 2011 prices.



Stewardship at a glance

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

WSDOT's business direction
Enhance WSDOT's management and accountability processes and systems to support making the right decisions, delivering the right projects, and operating the system efficiently and effectively in order to achieve the greatest benefit from the resources entrusted to us by the public.

WSDOT's Capital Project Delivery Programs

WSDOT completes five more Nickel and TPA projects

WSDOT completed five Nickel and Transportation Partnership Account (TPA) projects since the production of the last *Gray Notebook*, bringing its total count to 341 out of 421 projects completed since the 2003 and 2005 gas tax funding packages were approved. Four of these projects were completed during the fourth quarter (October 1 through December 31, 2012). A fifth project, SR 530/Fortson Creek Culvert - Fish Barrier, was completed in late September 2012 (after publication deadlines for *Gray Notebook* 47) and is featured in this edition on page 52.

WSDOT has completed 341 of 421 Nickel and TPA projects; 81 percent on time and on budget

Of the 341 projects completed to date, 88 percent were on time and 91 percent were on budget. The goal for projects being delivered on budget and on time is 90 percent. The total value of these completed projects is approximately $5.6 billion. The remaining $10.8 billion in Nickel and TPA funds will support or continue to support 80 additional projects, including a number of mega-projects like the SR 99/Alaskan Way Viaduct Replacement, I-405 Corridor improvements and the I-5 - SR 16 Tacoma/Pierce County High Occupancy Vehicle program.

WSDOT has advertised one Nickel and TPA project since September 1, 2012, for a total of 28 projects in the construction phase as of December 31, 2012 (pp. 46-48). Six additional projects are in the delivery pipeline and are scheduled to be advertised from January 1 to June 30, 2013.

WSDOT Nickel and TPA project status

Project status	Number of projects	Value in thousands
Projects completed in earlier biennia that are *not* included in the current Transportation Budget	81	$371,970
Projects completed that *are* included in the current Transportation Budget	260	$5,181,249
Completed projects subtotal:	**341**	**$5,553,219**
Projects included in the current Transportation Budget that are not yet completed	80	$10,789,959
Total:	**421**	**$16,343,178**

Data source: WSDOT Capital Program Development and Management.

Cumulative delivery performance[1] of completed Nickel and TPA projects

July 1, 2011 through December 31, 2012

Calendar year	2011		2012			
Quarter	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Number of projects	310	325	325	330	336	**341**
Percent on time	89%	87%	87%	88%	88%	88%
Percent on budget	91%	91%	91%	91%	91%	91%
Percent on time *and* on budget	82%	81%	81%	81%	81%	81%

Data source: WSDOT Capital Program Development and Management.

Note: 1 A project is "on time" if it is operationally complete within the quarter planned in the last approved budget, and "on budget" if the budget is within 5 percent of the last approved budget.

WSDOT advertises 28 Pre-existing Funds projects during the fourth quarter of 2012

Three of 51 Pre-existing Funds (PEF) projects were advertised early and nine were on time during the fourth quarter of 2012 (October 1 through December 31).

Also during the fourth quarter of 2012, WSDOT delayed eight projects within the 2011-2013 biennium and reprioritized 15 of 51 PEF projects (29 percent). Advertisement on these 15 projects was deferred to the 2013-2015 biennium.

Nickel and TPA revenue forecasts continue to fall well short of original projections

Gas tax revenues generated through the 2003 Nickel Account and 2005 Transportation Partnership Account fell short of original projections last quarter, continuing a downward trend that started for both funding sources during the 2005-2007 biennium.

The November 2012 revenue forecast for the 10-year period of the Nickel Account was $1.73 billion. This is 10.1 percent less than the original projection of $1.92 billion. As of November 2012, the revenue forecast for the 16-year TPA was 20.8 percent lower than the original 2005 projection. There is more than a $1 billion dollar difference from the $4.94 billion in anticipated gas tax revenues and the $3.92 billion forecast for November 2012. (Forecasts were corrected in *Gray Notebook* 47 from amounts provided in past editions.)

Combined Nickel and TPA gas tax funding is about $1.2 billion less than original projections

Because Nickel and TPA are both funded through gas taxes, they fluctuate with demand, prices and overall statewide consumption. As less gas is purchased by consumers, the gap between projections and forecasts continues to widen.

Current 2012 Legislative Transportation Budget Performance Dashboard: Highways

Highway construction performance dashboard

As of December 31, 2012; Dollars in thousands

Combined Nickel and TPA programs	**Number of projects**	**Value of program**
Projects completed in earlier biennia that *are not* included in the current Transportation Budget	81	$371,970
Projects completed that *are* included in the current Transportation Budget	260	$5,181,249
Subtotal of completed projects	*341*	*$5,553,219*
Projects included in the current Transportation Budget but not yet completed	80	$10,789,959
Total number of projects[1] in Improvement & Preservation budget	**421**	**$16,343,178**

Schedule and budget summary Nickel & TPA combined: Results of completed projects in the current Legislative Transportation Budget and prior budgets.	**Completed in 2011-2013 biennium budget**	**Total in current legislative budget**	**Cumulative program[2]**
Number of projects completed	37	260	341
Percent completed early or on time	76%	85%	88%
Percent completed under or on budget	89%	92%	91%
Percent completed on time and on budget	73%	80%	81%
Baseline estimated cost at completion	$1,427,427	$5,181,249	$5,553,219
Current estimated cost at completion	$1,408,998	$5,110,509	$5,484,373
Percent of total program over or under budget	1.2% under	1.3% under	1.2% under

Advertisement Record: Results of projects entering into the construction phase or under construction detailed on pp. 46-48.	**Combined Nickel & TPA**
Total current number of projects in construction phase as of December 31, 2012	28
Percent advertised early or on time	76%
Total number of projects advertised for construction in 2011-2013 biennium to date (July 1, 2011 - December 31, 2012)	16
Percent advertised early or on time	81%

Projects to be advertised: Results of projects now being advertised for construction or planned to be advertised, detailed on p. 48.	**Combined Nickel & TPA**
Total projects being advertised for construction bids January 1 - June 30, 2013	6
Percent on-target for advertisement on schedule or early	86%

Budget status; 2011-2013 biennium *Dollars in thousands*	**WSDOT biennial budget**
Budget amount for 2011-2013 biennium	$3,772,395
Actual expenditures to date 2011-2013 biennium (July 1, 2011 - December 31, 2012)	$2,090,361
Total 2003 Transportation Funding Package (Nickel) expenditure	*$240,091*
Total 2005 Transportation Partnership Account (TPA) expenditure	*$776,928*
Total Pre-existing Funds (PEF) expenditure[3]	*$1,073,342*

Data source: WSDOT Capital Program Development and Management.

Notes: 1 The project total has been updated to show "unbundled" projects which may have been previously reported in programmatic construction program buckets (such as Roadside Safety Improvements or Bridges Seismic Retrofit). See the June 30, 2010, *Gray Notebook* 38, p. 55, for more details. 2 Cumulative projects completed from 2003 to December 31, 2012. 3 For full details of the Pre-existing Funds program, see pp. 54-56.

WSDOT's Capital Project Delivery Programs

Current 2012 Legislative Transportation Budget Performance Dashboard: Rail and Ferries

Eleven Nickel and seven Transportation Partnership Account (TPA) rail construction projects costing $103.3 million have been delivered on time and on budget as of December 31, 2012. Four projects (two Nickel-funded, two TPA-funded) are in construction and have a combined award amount of $158 million.

Washington State Ferries has delivered 18 Nickel and TPA projects costing $257.6 million on time and on budget as of December 31, 2012. Four additional projects (three Nickel-funded, one TPA-funded are in construction and have a combined award amount of $231.7 million.

Rail construction performance dashboard *As of December 31, 2012; Dollars in thousands*	**Nickel (2003)**	**TPA (2005)**	**Combined Nickel & TPA**
Schedule, scope, and budget summary: Completed projects			
Cumulative to date, 2003 - December 31, 2012	11	7	18
Percent completed early or on time	100%	100%	100%
Percent completed within scope	100%	100%	100%
Percent completed under or on budget	100%	100%	100%
Percent completed on time and on budget	100%	100%	100%
Baseline estimated cost at completion	$62,380	$40,965	$103,345
Current estimated cost at completion	$62,380	$40,965	$103,345
Percent of total program on or under budget	100%	100%	100%
Advertisement Record: Projects under construction or entering construction phase			
2011-2013 biennium to date (July 1, 2011 - December 31, 2012)			
Total advertised	2	2	4
Percent advertised early or on time	100%	100%	100%
Total award amounts to date	$130,878	$27,081	$157,959

Data source: WSDOT Capital Program Development and Management.

Notes: The rail projects are primarily delivered through master agreements with BNSF who administers construction activities on the projects. The data above is unchanged from the previous quarter because no additional rail projects were completed.

Ferries construction performance dashboard *As of December 31, 2012; Dollars in thousands*	**Nickel (2003)**	**TPA (2005)**	**Combined Nickel & TPA**
Schedule, scope, and budget summary: Completed projects			
Cumulative to date, July 1, 2003 - December 31, 2012	9	9	18
Percent completed early or on time	100%	100%	100%
Percent completed within scope	100%	100%	100%
Percent completed under or on budget	100%	100%	100%
Percent completed on time and on budget	100%	100%	100%
Baseline estimated cost at completion	$48,293	$209,343	$257,636
Current estimated cost at completion	$48,293	$209,343	$257,636
Percent of total program on or under budget	100%	100%	100%
Advertisement Record: Projects under construction or entering construction phase			
Cumulative to date, July 1, 2003 - December 31, 2012	3	1	4
Percent advertised early or on time	100%	100%	100%
Total award amounts to date	$116,322	$115,345	$231,667

Data source: WSDOT Capital Program Development and Management.

Notes: The completed projects record includes the three 64-car vessels, the Motorized/Vessel *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.

Schedule and budget summaries

Biennial summary of all projects completed, 2003-2012

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

Cumulative to date	Fund type	On-time advertised	On-time completed	Within scope	Baseline estimated cost	Current estimated cost	On budget completed	Completed on time and on budget
Current quarter reporting on capital project delivery								
2011-2013 biennium summary This information is updated quarterly throughout the biennium.	32 TPA 5 Nickel	29 on time 8 late	28 on time 9 late	37	$1,427,427	$1,808,998	33 on budget 4 over	27 on time and on budget
2009-2011 reporting on capital project delivery								
2009-2011 biennium summary See *Gray Notebook* issues 35 through 42 for project listings.	16 Nickel 74 TPA	73 on time 17 late	80 on time 10 late	90	$1,641,605	$1,596,970	85 on budget 5 over	76 on time and on budget
Notes: In earlier editions of the *Gray Notebook*, 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.								
Earlier reporting on capital project delivery								
2007-2009 biennium summary See *Gray Notebook* 34 for the quarter ending June 30, 2009, for project listing.	42 Nickel 69 TPA	91 on time 20 late	96 on time 15 late	111	$1,685,749	$1,685,219	102 on budget 9 over	90 on time and on budget
2005-2007 biennium summary See *Gray Notebook* 26 for quarter ending June 30, 2007, for project listing.	52 Nickel 24 TPA	71 on time 5 late	68 on time 8 late	76	$673,858	$668,778	67 on budget 9 over	59 on time and on budget
2003-2005 biennium summary See *Gray Notebook* 19 for quarter ending September 30, 2005, for project listing.	27 Nickel	25 on time 2 late	27 on time	27	$124,580	$124,409	25 on budget 2 over	25 on time and on budget

Data source: WSDOT Capital Program Development and Management.

Note: Prior *Gray Notebooks* may be accessed at www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm.

Five projects completed as of December 31, 2012

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

Project description (County)	Fund type	On-time advertised	On-time completed	Baseline estimated cost	Current estimated cost at completion	On budget completed	Completed on time and on budget
SR 14/Camas Washougal - Add Lanes and Build Interchange (Clark)	TPA		√	$49,738	$48,832	√	√
SR 9/SR 531-172nd Street NE - Improve Intersection (Snohomish)	TPA	√	√	$15,589	$16,001	√	√
U.S. 395/NSC-Francis Avenue to Farwell Road - New Alignment (Spokane)	Nickel		√	$209,889	$209,895	√	√
I-5/Grand Mound to Maytown – Add Lanes and Replace Intersection (Thurston)	Nickel	√		$115,271	$115,475	√	
SR 530/Fortson Creek Culvert - Fish Barrier (Snohomish)	TPA	√	√	$2,508	$1,867	√	√

Data source: WSDOT Capital Program Development and Management.

Note: The SR 530/Fortson Creek culvert project was completed in the third quarter of 2012 after the deadline for *Gray Notebook* 47 articles.

WSDOT's Capital Project Delivery Programs

Advertisement Record

Twenty-eight projects in construction phase as of December 31, 2012

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

Project description Cumulative to date (County)	Fund type	On-time advertised	Ad date	Contractor	Operationally complete date	Award amount
Concrete Rehabilitation Program Although this budget line item is active, no projects are currently planned for construction in the 2011-2013 biennium.	Nickel					
U.S. 2/Chiwaukum Creek - Replace Bridge (Chelan) Advertisement was delayed to allow time for processing a shoreline permit. This project was combined with the U.S. 2/Wenatchee River Bridge project for efficiency.	TPA	Late	Apr-11	Selland Construction	Sep-13	$4,190
U.S. 2/Wenatchee River Bridge - Replace Bridge (Chelan)	TPA	Late	Apr-11	Selland Construction	Sep-13	$3,912
I-5/NE 134th Street Interchange (I-5/I-205) - Rebuild Interchange (Clark)	Nickel	√	May-11	Moore Excavation	Dec-14	$17,791
SR 99/Spokane Street Bridge - Replace Bridge Approach (King)	TPA	√	Oct-12	Pending	Oct-14	Pending
SR 28/Junction U.S. 2 and U.S. 97 to 9th Street Stage 1 - New Alignment (Douglas) This is a multi-contract project with several significant stages. Project operationally complete date delayed from October 2012 due to a contract delay.	TPA	√	Sep-09	Selland Construction	May-13	$4,565
SR 99/Alaskan Way Viaduct - Replacement (King) This project replaces an aging viaduct with a tunnel in downtown Seattle and replaces the south end of the viaduct.						
• SR 99/S. Massachusetts Street to Union Street - Electrical Line Relocation	TPA	√	May-08	Frank Coluccio Construction	Nov-09	$17,040
• SR 99/S. Holgate Street to S. King Street - Viaduct Replacement This subproject has several contract components; the contract awarded to Skanska USA in May 2010 begins removal of the southern portion of the viaduct.	TPA	√	Oct-09 May-10	Signal Electric Skanska USA Civil West	Sep-13 Sep-13	$4,902 $114,569
• SR 99/Battery Street Tunnel - Safety Improvements Additional sign-bridges have some elements that were not initially planned. New environmental right of way siting work and review was needed.	TPA	√	Nov-09	Signal Electric	Nov-10	$2,409
• SR 99/S. King Street Vicinity to Roy Street - Viaduct Replacement	Nickel/ TPA	√	May-10	Seattle Tunnel Partners	Dec-15	$1,089,700
U.S. 395/North Spokane Corridor (NSC) - Design and Right of Way - New Alignment (Spokane)	TPA					
• U.S. 395/NSC - Francis Avenue Improvements	Nickel	√	Apr-12	Graham Construction	Nov-13	$14,046
I-5/Mellen Street Interchange to Grand Mound Interchange - Add Lanes (Thurston, Lewis)	TPA					
• I-5/Blakeslee Junction Railroad Crossing to Grand Mound Interchange - Add Lanes	TPA	√	Feb-10	Tri-State Construction	Dec-11	$19,731
• I-5/Mellen Street to Blakeslee Junction - Add Lanes, Interchange Improvements	TPA	√	Mar-12	Cascade Bridge	Oct-13	$21,596
• I-5/Mellen Street Interchange - Interchange Improvements	TPA		*Combined with project above for construction efficiencies.*			
I-5/Chehalis River - Flood Control (Lewis)	Nickel	√	Mar-12	Cascade Bridge	Oct-13	$21,596
U.S. 97/North of Goldendale - Wildlife Habitat Connectivity (Klickitat)	TPA	√	Apr-12	Rotschy	Oct-14	$2,113
SR 502/I-5 to Battle Ground - Add Lanes (Clark)	TPA	√	Apr-12	Tapani Underground	Oct-15	$5,194
SR 285/West end of George Sellar Bridge - Intersection Improvements (Chelan)	TPA	√	Apr-12	Selland Construction	Nov-13	$9,787
SR 105/North River Bridge - Replace Bridge (Pacific)	TPA	√	Jun-12	Award pending	Sep-14	Pending
SR 105/Smith Creek Bridge - Replace Bridge (Pacific)	TPA	√	Jun-12	Award pending	Sep-14	Pending
U.S. 101/Middle Nemah River Bridge - Replace Bridge (Pacific)	TPA	√	Jun-12	SB Structures	Aug-14	$3,253

Advertisement Record

Twenty-eight projects in construction phase as of December 31, 2012

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

Project description Cumulative to date (County)	Fund type	On-time advertised	Ad date	Contractor	Operationally complete date	Award amount
I-90/Snoqualmie Pass East - Hyak to Keechelus Dam - Corridor Improvement (Kittitas)	TPA					
• I-90/Snoqualmie Pass East, Phase 1A Hyak to Crystal Springs - Detour	TPA	Early	Feb-09	KLB Construction	Oct-09	$3,298
• I-90/Snoqualmie Pass East Phase 1B Hyak to Snowshed Vicinity - Add Lanes and Bridges	TPA	√	Nov-09	Max J. Kuney Company	Oct-13	$76,699
• I-90/Snowshed to Keechelus Dam Phase 1C - Replace Snowshed and Add Lanes	TPA	Late	Apr-11	Guy F. Atkinson Construction	Oct-17	$177,144
Advertisement was delayed to address fire and safety issues with the original snowshed design.						
SR 520/Bridge Replacement and HOV (King)	TPA					
• SR 520 Pontoon Construction (Grays Harbor, Pierce)	TPA	√	Aug-09	Kiewit-General, A Joint Venture	Jul-14	$367,330
Portions of this project are in construction but were previously reported in the "Projects to be Advertised" tables.						
• SR 520/I-5 to Medina - Evergreen Point Floating Bridge and Landings	TPA	√	Dec-10	Kiewit-General, A Joint Venture	Dec-14	$586,561
• SR 520/Medina to SR 202 Vicinity - Eastside Transit and HOV	TPA	√	May-10	Eastside Corridor Constructors	Mar-14	$306,278
SR 99/Aurora Avenue - George Washington Memorial Bridge - Seismic (King)	TPA	√	Jan-11	Massana Construction	Jan-13	$6,157
I-5/Tacoma HOV Improvements (Pierce)	Nickel/ TPA					
• I-5/Port of Tacoma Road to King County Line - Add HOV Lanes	Nickel	Late	Jun-09	Tri-State Construction	May-11	$31,015
Advertisement date was delayed due to design challenges associated with stormwater and floodplain issues; a formal consultation with U.S. Fish and Wildlife and National Oceanic and Atmospheric Administration was required. Inflation factor applied in early July 2008 added $6.6 million to project cost estimate. This project has received federal American Reinvestment and Recovery Act funds.						
• I-5/SR 16 Interchange - Rebuild Interchange	TPA	√	Jul-08	Guy F. Atkinson Construction	Jun-11	$119,925
• I-5/SR 16/Eastbound Nalley Valley - HOV	Nickel/ TPA	√	Jun-11	Mowat Construction Company	Mar-14	$74,688
SR 161/24th Street E to Jovita - Add Lanes (Pierce)	Nickel	Late	Feb-11	Tri-State Construction	Sept-13	$11,928
Advertisement date was delayed to coordinate with local agencies. Project operationally-complete date delayed from June 2012 due to required re-advertisement.						
I-405/Kirkland Vicinity, Stage 2 - Widening (Snohomish, King)	Nickel/ TPA					
• I-405/SR 520 to SR 522 - Widening Stage 2	Nickel	Early	Nov-10	Gary Merlino Construction	Dec-15	10,694
• I-405/NE 195th Street to SR 527 - Northbound Widening	TPA	Early	May-09	Kiewit Pacific	Jun-10	$19,263
SR 9/212th Street SE to 176th Street SE, Stage 3 - Add Lanes (Snohomish)	Nickel	Late	Apr-11	Northwest Construction	Aug-13	$24,297
Advertisement was delayed because the ditches on the project required an individual permit under the jurisdiction of the Army Corps of Engineers.						
SR 522/Snohomish River Bridge to U.S. 2 - Add Lanes (Snohomish)	Nickel	√	Apr-10	Scarsella Bros.	Nov-14	$88,653
SR 529/Ebey Slough Bridge - Replace Bridge (Snohomish)	TPA	Late	Apr-10	Granite Construction	May-13	$21,541
Advertisement date was delayed due to delays in gaining environmental permitting approval after seismic code changes and for wetland mitigation.						

WSDOT's Capital Project Delivery Programs

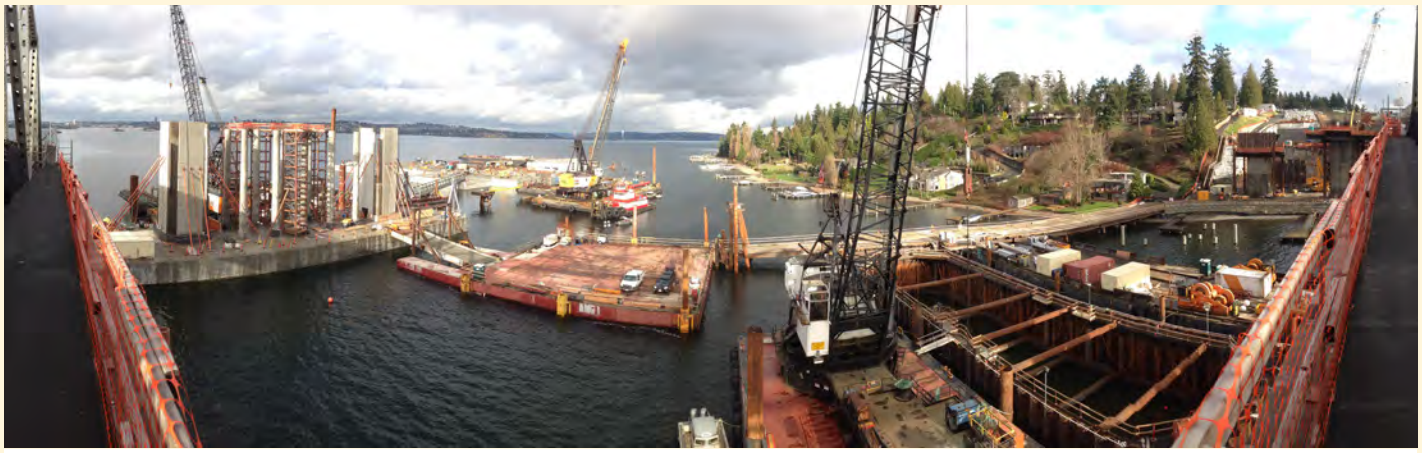
Advertisement Record

Twenty-eight projects in construction phase as of December 31, 2012

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

Project description Cumulative to date (County)	Fund type	On-time advertised	Ad date	Contractor	Operationally complete date	Award amount
SR 161/Clear Lake North Road to Tanwax Creek - Spot Safety Improvements (Pierce)	TPA	Late	Jul-12	Totem Electric of Tacoma	Mar-13	$865
Advertisement date was delayed due to a lower cost design. The operationally complete date was delayed as a result and due to inclement weather.						
SR 9/Pilchuck Creek - Replace Bridge (Snohomish)	TPA	Late	Jul-12	Granite Construction	Jul-14	$8,900
Advertisement date was delayed due to a delay in the hydraulic report, which then delayed the shoreline permit.						
U.S. 101/Bone River Bridge - Replace Bridge (Pacific)	TPA	Late	Apr-12	Cascade Bridge	Nov-13	$5,715
Advertisement delay due to delay in right of way acquisition.						

Data source: WSDOT Capital Program Development and Management.



A panoramic view of the SR 520 bridge work from the East Approach area near Medina. Box columns are constructed on Pontoon W (center left) as water is pumped out of a cofferdam (below right), which will allow crews to safely work nearly 40 feet below the surface of Lake Washington.

Projects to be advertised

Six projects in the six-month delivery pipeline for January 1 through June 30, 2013

Nickel and Transportation Partnership Account (TPA) projects planned to be advertised; Costs estimated at completion; Dollars in thousands

Project description	Fund type	Original planned ad date	Current planned ad date	On schedule	Baseline estimated cost at completion	Current estimated cost at completion
SR 11/Padden Creek - Fish Barrier Removal	TPA	Feb-13	Feb-13	√	$2,567	$2,580
SR 3/Belfair Area - Widening and Safety Improvements	TPA	Jul-12	Jun-13		$18,154	$18,153
SR 112/Coville Creek - Fish Barrier	TPA	Apr-13	Feb-13	√	$3,130	$2,774
SR 6/Rock Creek Bridge East - Replace Bridge	TPA	Apr-13	Apr-13	√	$8,770	$8,767
SR 6/Rock Creek Bridge West - Replace Bridge	TPA	Apr-13	Apr-13	√	$6,953	$6,983
SR 6/Willapa River Bridge - Replace Bridge	TPA	Jan-13	Mar-13		$9,295	$9,299

Data source: WSDOT Capital Program Development and Management.

Original 2003 and 2005 Transportation Funding Packages (Nickel and TPA) Performance Dashboard

The performance dashboards below and those on the following page provide status reports on how WSDOT is delivering the Nickel and Transportation Partnership Account (TPA) programs compared to the original legislative intent as presented in the 2003 and 2005 Legislative Evaluation and Accountability Program (LEAP) lists.

These dashboards feature all budget items including pre-construction and environmental studies that were in the original funding packages, but do not contain local programs projects that WSDOT works on with cities, counties and tribes.

The first two columns in the first table on each page show the total number of projects and the percentage of those projects that are complete, under way, scheduled to start in the future, or affected by a legislatively-approved change of project scope.

The second table on each page provides budget updates showing original planned budgets and the current plan or actual expenditure. In both tables, the next sets of columns break out the program by category: highways, ferries and rail.

It's important to note the Legislature has approved changes to funding packages and assigned funds to different projects since the 2003 and 2005 transportation funding packages were created. As a result, the original funding package (LEAP list) data below will not match the current budgets on pp. 43-44.

Project delivery update: Original 2003 Transportation Funding Package (Nickel)

Status as of December 31, 2012

	Total program		Highways		Ferries		Rail	
	Number of projects	Percent of program	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	117	75%	101	80%	2	40%	14	58%
Total projects under way	29	19%	26	20%	2	40%	1	4%
In pre-construction phase	*16*		*15*		*1*		*0*	
In construction phase	*13*		*11*		*1*		*1*	
Projects scheduled to start	1	1%	0	0%	0	0%	1	4%
Projects deferred or deleted from program	9	6%	0	0%	1	20%	8	33%
Number of legislatively approved scope changes	*20*		*18*		*0*		*2*	
Pre-construction starts within six months	*0*		*0*		*0*		*0*	
Construction starts within six months	*0*		*0*		*0*		*0*	

Data source: WSDOT Capital Program Development and Management.

Notes: Totals do not include local programs projects. Percents may not equal 100% due to rounding.

Project budget update: Original 2003 Transportation Funding Package (Nickel)

Status as of December 31, 2012; Dollars in thousands

	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	**$3,887,483**		**$3,380,124**		**$297,851**		**$209,508**	
Original plan, 2003 through 2009-2011 biennium	$3,278,038	84%	$2,813,701	83%	$293,919	99%	$170,418	81%
Actual expenditures, 2003 through 2009-2011 biennium	$3,262,619	84%	$3,002,188	89%	$132,448	44%	$127,983	61%
Original plan through 2011-2013 biennium	$3,887,483	100%	$3,380,124	100%	$297,851	100%	$209,508	100%
Current plan through 2011-2013 biennium	$3,804,314	98%	$3,351,787	99%	$319,004	107%	$133,524	64%
Actual expenditures, 2003 through December 31, 2012	$3,584,333	92%	$3,243,356	96%	$212,162	71%	$128,815	61%

Data source: WSDOT Capital Program Development and Management.

Notes: Expenditures are Nickel funds only. Totals do not include local programs projects.

WSDOT's Capital Project Delivery Programs

Original 2003 and 2005 Transportation Funding Packages (Nickel and TPA) Performance Dashboard

Project delivery update: Original 2005 Transportation Partnership Account (TPA)

Status as of December 31, 2012

	Total program		Highways		Ferries		Rail	
	Number of projects	Percent of program	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	175	71%	168	73%	0		7	47%
Total projects under way	55	22%	50	22%	1	25%	4	27%
In pre-construction phase	*25*		*24*		*0*		*1*	
In construction phase	*30*		*26*		*1*		*3*	
Projects starting in the future	7	3%	3	1%	1	25%	3	20%
Projects deferred or deleted from program	11	4%	8	3%	2	50%	1	7%
Number of legislatively approved scope changes	*23*		*23*		*0*		*0*	
Pre-construction starts within six months	*0*		*0*		*0*		*0*	
Construction starts within six months	*6*		*6*		*0*		*0*	

Data source: WSDOT Capital Program Development and Management.

Notes: Totals do not include local programs projects. Percents may not equal 100% due to rounding. Since the TPA's passage in 2005, the Legislature has approved changes to the ferry construction program so that the current budget does not match the original budget. Among the changes, TPA funding was provided to the 64-car ferries.

Project budget update: Original 2005 Transportation Partnership Account (TPA)

Status as of December 31, 2012; Dollars in thousands

	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	**$6,982,128**		**$6,678,468**		**$185,410**		**$118,250**	
Original plan, 2005 through 2009-2011 biennium	$4,042,962	58%	$3,886,331	58%	$81,701	44%	$74,930	63%
Actual expenditures, 2005 through 2009-2011 biennium	$2,703,850	39%	$2,572,833	39%	$64,128	35%	$66,889	57%
Original plan through 2011-2013 biennium	$5,585,341	80%	$5,386,836	81%	$87,655	47%	$110,850	94%
Current plan through 2011-2013 biennium	$3,990,940	57%	$3,841,057	58%	$76,244	41%	$73,639	62%
Actual expenditures, 2003 through December 31, 2012	$3,484,370	50%	$3,350,688	50%	$65,359	35%	$68,323	58%

Data source: WSDOT Capital Program Development and Management.

Notes: Expenditures are TPA funds only. Totals do not include local programs projects.

Definitions

Completed projects Projects operationally complete, open to traffic.

Projects under way Funded projects that have begun pre-construction or construction activities.

Projects in pre-construction phase Projects in a "pre-construction phase" have been funded and have commenced active work, such as environmental studies, design work, right of way purchase, preliminary engineering, and other activities that take place before ground-breaking.

Projects in construction All activities from ground-breaking to completion.

Projects starting in the future Projects funded but not yet in a construction or pre-construction phase.

Projects deferred or deleted Projects deferred beyond the 16-year program window or deleted from the program with legislative approval.

Note

The column headed "Percent of program" shows the percentage of each category represented by the raw number. For example, the Ferries columns show that of the five projects listed in the Nickel package, two have been completed, representing 40 percent of the total Ferries program; two Ferries projects are under way, representing 40 percent of the total program; and one Ferries project has been deferred or deleted, representing the remaining 20 percent of the total program.

Completed projects providing return on transportation investments

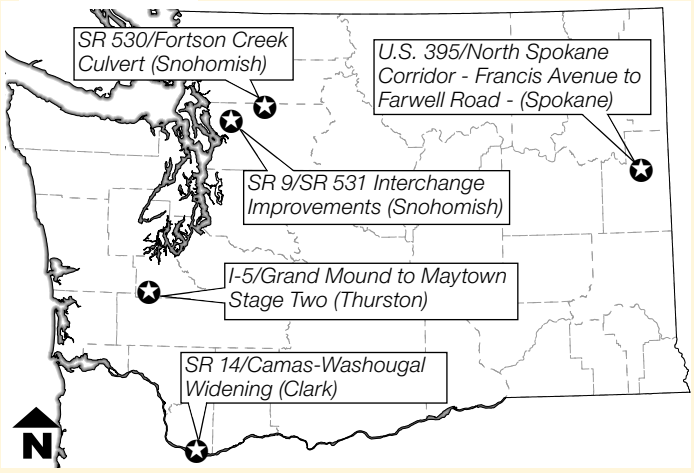
WSDOT completed four Nickel and Transportation Partnership Account (TPA) projects from October 1 to December 31, 2012. Among these was the U.S. 395/North Spokane Corridor - Francis Avenue to Farwell Road - New Alignment mega-project, which received a Transportation Investment Generating Economic Recovery (TIGER) grant to complete remaining work.

Project delivery performance reporting on budgets and schedules is measured against the latest approved budgets in accordance with criteria established by the Legislature. For this quarter, it is the 2012 transportation budget.

In addition to the projects' last approved budgets and schedules, this article includes the original project appropriations to explain changes in budgets.

As projects move from design and construction toward completion, their budgets and schedules may change from those originally approved by the Legislature. The Nickel and TPA baseline budgets and schedules reset whenever changes are made in the last approved legislative budget.

Completed Nickel and TPA project locations
October 1 - December 31 2012; Five projects completed; Title and county



For information on finished 2003 Nickel and 2005 TPA projects, visit www.wsdot.wa.gov/projects/completed.

I-5/Grand Mound to Maytown Stage 2 - Replace Interchange *(Thurston) 2003 Nickel*

This project replaced a bridge over I-5, upgraded on- and off-ramps to current design standards and widened U.S. 12 between Old Highway 99 and Ivan Street to increase capacity. It also installed traffic signals at the ends of the northbound and southbound off-ramps, constructed bicycle lanes and sidewalks along U.S. 12, and added cameras to inform drivers of current traffic conditions.

Benefits: This project realigned and lengthened on- and off-ramps at the interchange to provide more room for vehicles to safely enter and exit the highway, added signals and improved driver sight distance.

Highlights and challenges: During the design phase to manage risks in funding, WSDOT determined the project should be completed in stages and that additional time was required to incorporate the strategy into the plans and contract. A portion of the final paving was removed from Stage 1 and added to Stage 2 to facilitate construction staging and prevent equipment from marring newly constructed pavement. These changes delayed the advertisement date by eight months, pushing it back from January to August 2010.

The accepted bid was 30.6 percent lower than the engineer's estimate, reducing the project cost by $7.7 million

The accepted construction bid was 30.6 percent lower than the engineer's estimate, reducing the project cost by $7.7 million. Right of way costs decreased approximately $6.4 million due to project reconfigurations.

Budget performance: The project was operationally complete for $26.6 million, on target with the last approved budget. The budget at completion was approximately $15.1 million less than the original budget of $41.7 million in 2007.

Schedule performance: The project was operationally complete in November 2012, two months later than the last approved schedule and nearly two years behind the originally scheduled completion date of January 2011.

U.S. 395/North Spokane Corridor - Francis Avenue to Farwell Road - New Alignment *(Spokane) 2003 Nickel, TIGER Grant*

WSDOT completed the $209.9 million U.S. 395/North Spokane Corridor – Francis Avenue to Farwell Road project this quarter. This section of the North Spokane Corridor decreases travel time, fuel usage, and congestion, while improving safety by reducing the potential for collisions on local roads and surrounding arterials.

When complete, the North Spokane Corridor mega-project will improve mobility by providing drivers direct north and south access between I-90 and U.S. 395 through Spokane. The U.S. 395/North Spokane Corridor – Francis Avenue to Farwell Road project was originally reported as being operationally complete in

WSDOT's Capital Project Delivery Programs

Completed projects providing return on transportation investments

A new tunnel to accommodate BNSF trains is just one of the projects included in North Spokane Corridor work completed to date. Here cranes lift 42,000-pound sections into place to form the tunnel's arch.

September 2009 (see *Gray Notebook* 35, p. 66). In January 2010, the mega-project received a $35 million Transportation Investment Generating Economic Recovery (TIGER) grant to build additional southbound lanes between Freya Street and Farwell Road, and to complete the Parksmith interchange.

Budget performance: This project was operationally complete for $209.9 million, which was on target with the last approved budget. The original legislative budget for the project was $108.3 million in 2003, but the scope of work expanded several times as additional projects were added.

Schedule performance: This project was operationally complete in October 2012, on target with the last approved schedule. The original legislative schedule set completion for July 2008, but additional work funded by the TIGER grant pushed the final schedule to the fourth quarter of 2012.

Francis Avenue to Farwell Road – Southbound Lanes

This project completed the southbound lanes between the Francis Avenue and Farwell Road interchanges. It constructed three additional concrete lanes as well as 3.5 miles of divided highway, five highway bridges, two pedestrian bridges and a roundabout.

Benefits: Three additional lanes between Farwell Road and Francis Avenue and the addition of an interchange at Parksmith Road increase capacity and reduce travel time and delays.

Highlights and challenges: WSDOT received $35 million through a federal TIGER grant for the Francis Avenue to Farwell Road – Southbound Lanes project in 2010. These federal dollars funded approximately $26.7 million of the $27.6 million project. Due to low construction bids on this project the United States Department of Transportation allowed WSDOT to use its TIGER grant savings to support final work on the Parksmith interchange.

Parksmith interchange

This project completed the interchange at Parksmith Road near the Mead community, north of Spokane. It included final grading, gravel sub-surface, and final paving of the northbound and southbound on- and off-ramps. Basic ramp grading was a component of an earlier North Spokane Corridor project.

Project benefits: The Parksmith Interchange project is the final component in the northern 5.7-mile section of the North Spokane Corridor. The interchange increases capacity and reduces travel time while improving connectivity to the homes and businesses in Mead as well as nearby commercial and industrial properties.

Highlights and challenges: The accepted construction bid was slightly higher (1.1 percent) than the engineer's estimate. The remaining federal dollars from the Francis Avenue to Farwell Road - Southbound Lanes project provided more than $8.2 million of funding for this $8.7 million project.

SR 530/Fortson Creek Culvert - Fish Barrier *(Snohomish) 2005 TPA*

This project replaced a culvert on Fortson Creek that was restricting fish passage. The project was operationally complete in late-September 2012 (after production deadline for *Gray Notebook* 47).

Benefits: The project removed a migratory fish barrier and replaced it with a larger structure that improves fish passage.

Highlights and challenges: The construction contract for the project was 39.3 percent below the engineer's estimate due to a favorable bidding environment, reducing costs by approximately $525,770.

Budget performance: The project was operationally complete for $1.87 million, on target with the last approved budget and approximately $493,000 less than the original budget.

Schedule performance: It was on target with the last approved schedule and one month ahead of the original schedule.

SR 9/SR 531 - 172nd Street NE - Intersection Improvements *(Snohomish) 2005 TPA*

This project constructed a roundabout at the intersection of SR 9 with SR 531 and 172nd Street NE. Drainage and stormwater systems, as well as illumination and other safety features, were also upgraded.

Benefits: This project improves safety and increases capacity at the intersection of SR 9, SR 531 and 172nd Street by constructing a roundabout.

Completed projects providing return on transportation investments

Highlights and challenges: During the design phase, the advertisement date was delayed from January to October 2011 so WSDOT could find a suitable location for the project's stormwater collection system and work through related right of way acquisitions required to relocate utilities (See *Gray Notebook* 41, p. 82). This also delayed operational completion from fall 2011 to fall 2012. Additional work to relocate existing water and sewer lines for the city of Arlington was included, for which WSDOT was reimbursed.

Budget performance: This legislatively-approved, improved intersection was completed for $8.6 million, which was below the last approved budget and $5.3 million less than the original 2007 budget for the project.

Schedule performance: The project was completed in October 2012 and, despite delays, was on target with the original 2007 and last approved schedules.

SR 14/Camas Washougal - Add Lanes and Build Interchange *(Clark) 2005 TPA*

This project widens SR 14 to four lanes between the West Camas Slough Bridge and Sixth Street in Washougal, and adds a median barrier to divide traffic between Northwest Sixth Avenue and Sixth Street. The new interchange also carries SR 14 traffic over Union Street and Second Avenue.

Benefits: This project improves safety and relieves congestion on SR 14 from Sixth Avenue to east of Union Street (SR 500) by widening SR 14 to four lanes from Lady Island through Second Avenue, and on the East Camas Slough Bridge.

Highlights and challenges: This project originally included widening the West Camas Slough Bridge, but in 2008 the required retrofit work, which would have added $25 million to $30 million to the original project, was cut due to budget constraints. As reported in *Gray Notebook* 37 (pp. 82-83), issues with right of way acquisition, local permitting requirements, and resulting environmental constraints on the construction timeline delayed advertisement from April 2010 to October 2010. Despite this six-month delay, work was completed just one month later than the original schedule. The accepted construction bid was 17 percent below the engineer's estimate, reducing project costs by approximately $6.7 million.

Budget performance: The project was operationally complete for $48.8 million, which was on target with the last approved budget, but approximately $8.8 million more than the original 2006 budget. The original budget was set prior to significant material cost escalation and right of way cost increases.

Schedule performance: The project was operationally complete in October 2012, on target with the last approved schedule but one month later than the original 2006 schedule.

Crews construct footings to support the new Union Street Bridge in March 2012. The SR 14 project built a new interchange to carry traffic over Union Street and Second Avenue, relieving congestion between Camas and Washougal.

WSDOT's Capital Project Delivery Programs

Pre-existing Funds provide WSDOT programs much-needed flexibility

Three of 51 Pre-existing Funds (PEF) projects were advertised early and nine were on time during the fourth quarter of 2012 (October 1 through December 31). This compares to two PEF projects being early and eight on time during the previous quarter (July 1 through September 30, 2012), when 48 were advertised. During the fourth quarter of 2012, WSDOT re-prioritized 15 of 51 PEF projects (29 percent). These have been deferred to the development of the 2013-2015 biennial budget.

Pre-existing Funds amounted to $1.06 billion in 2012 and supported 856 projects to improve the safety, functionality and longevity of the state highway system. Unlike Nickel and Transportation Partnership Account (TPA) projects, which come from fixed lists set by the Legislature and are funded with line item budgets, PEF projects are primarily funded at the program level through federal, state and local sources. This provides WSDOT flexibility with projects and allows the agency to efficiently address issues that arise.

Pre-existing Funds amounted to $1.06 billion in 2012 and supported 856 projects

How WSDOT reports on Pre-existing Funds projects

Between 2001 and 2009, WSDOT began reporting on six individual Pre-existing Funds projects. Five of those projects are complete (see *Gray Notebook* 45, p. 72, for their advertisement, budget, and schedule performance). The sixth project, the SR 28/East End of George Sellar Bridge in Douglas County, is under way. The project was awarded in August 2011 and is scheduled to be complete in June 2013.

Individually tracked projects

WSDOT is constructing a bypass for the SR 28/East End of George Sellar Bridge project in Douglas County. The initial legislative budget for this project was $9.4 million in 2004. The most recent legislative budget for the project was $28.9 million and was approved in 2012. The increase was due to challenges that included right of way issues, higher costs for materials and the addition of a pedestrian tunnel.

All other projects

For all other PEF projects, WSDOT reports on planned versus actual cash flows (see p. 56) for the preservation and improvement programs, and tracks this information for the current biennium (2011-2013).

Of the 201 projects advertised from July 1, 2011, to December 31, 2012, 18 have been early, 85 were on schedule, 49 were late, and 49 were considered emergent and addressed unexpected needs such as landslides and emergency repairs. An additional 90 projects were delayed within the biennium, 27 were delayed out of the biennium and nine have been deleted.

Pre-existing Funds project advertisements schedule performance

Quarter refers to October 1 through December 31, 2012; Cumulative refers to period from July 1, 2011 through December 31, 2012.

	Quarter	Cumulative
Projects advertised as scheduled	9	85
Projects advanced or advertised early	3	18
Projects advertised late	3	49
Emergent projects advertised	13	49
Total projects advertised	**28**	**201**
Projects delayed (delayed within the biennium)	8	90
Projects deferred (delayed out of the biennium)	15	27
Projects deleted	0	9

Data source: WSDOT Capital Program Development and Management.

An explanation of PEF terms

The name Pre-existing Funds differentiates them from more recently introduced funding methods like the 2003 Nickel and 2005 Transportation Partnership Account (TPA). This was necessary because when Nickel and TPA funds started, they had different timelines, reporting, sources and legislation that went along with them.

Advertisement date
The date that WSDOT schedules to publicly advertise a project for bids from contractors. When a project is advertised, it has a completed set of plans and specifications, along with a construction cost estimate.

Advanced
A project from a future quarter which is advertised in the current quarter.

Early
A project with an advertisement date originally scheduled for the current quarter but has its advertisement occur in an earlier quarter.

On time
A project is advertised within the quarter planned in the biennial budget.

Late
A project that is advertised in the current quarter but which missed the original advertisement date.

Emergent
A new project that addresses unexpected needs, such as emergency landslide repair, and is advertised in the current quarter.

Projects not advertised on schedule fall into three categories:

Delayed
A project that has not yet been advertised and which has had the advertisement date moved out of the quarter being reported to another quarter within the biennium.

Deferred
A project not yet advertised and which has had the advertisement date moved out of the quarter being reported to a future biennium.

Deleted
A project that, upon review or due to changing circumstances, is no longer required or has been addressed by another project.

Pre-existing Funds provide WSDOT programs much-needed flexibility

Pre-existing Funds (PEF) projects scheduled for advertisement or advertised this quarter

October 1 through December 31, 2012

Early (3)	
SR 9/Eaglefield Drive Intersection - Paving	SR 20/SNC Railroad Bridge - Seismic Retrofit
North Central Region Highway Advisory Radios Upgrade	
On time (9)	
SR 16/Tacoma Narrows Bridge - Special Repair	I-405/Northbound SE 8th Street Vicinity to SR 520 Interchange Vicinity - Concrete Pavement Rehabilitation
I-90/Spokane Viaduct Latah Creek to Division Street - Illumination Rebuild	I-90/Paha Road Bridge - Deck Rehabilitation
U.S. 2/East of Coles Corner - Box Culvert	I-90/Vicinity Medical Lake Road BNSF Bridge - Deck Rehabilitation
U.S. 101/Commercial Street - Signal Replacement	I-5/Southbound Express Lanes - Electrical System Upgrade
I-90/Division Street to Liberty Park Vicinity - Illumination Rebuild	
Late (3)	
I-82/U.S. 12 to Valley Mall Boulevard Vicinity - Paving Ad late to allow changed scope due to signs of fatigue in the left lane.	SR 99/Lincoln Way Vicinity to Airport Road Vicinity - Southbound Sidewalk Ad late because an extension in the length of the sidewalk required eight additional parcels of right of way.
U.S. 730/Oregon State Line to U.S. 730 Spur - Paving Ad late to revise scope and achieve more life from existing pavement.	
Emergent (13)	
I-5/SR 510 Vicinity - Mitigate Redirectional Landform	SR 21/Keller Ferry - Terminal Rehabilitation
SR 105/Washaway Beach - Rock Stockpile for Erosion Repair	SR 503/Gabriel Road - Safety
SR 16/Bethel Road Vicinity - Mitigate Redirectional Landform	SR 518/42nd Avenue South Vicinity to I-5 Interchange - Concrete Pavement Rehabilitation
SR 16/South of Burnham Drive to SR 302 - Safety Improvements	SR 9/Northern Pacific Creek - Fish Passage
SR 16/SR 160 Vicinity - Mitigate Redirectional Landform	SR 99/Gibson Road - Traffic Signal
SR 16/SR 302 Spur Vicinity - Mitigate Redirectional Landform	U.S. 97/North of Daroga State Park - Turn Lanes
SR 20/Challenger Road Vicinity - Unstable Slope	
Delayed (8)	
I-5/220th Street SW Interchange Vicinity - Ramps Paving Project delayed to combine with similar projects for efficiencies.	SR 203/Skykomish River Bridge - Bridge Deck Overlay Project delayed due to changes in funding and prioritization.
I-5/SR 104 Interchange Vicinity to 52nd Avenue West - Paving Project delayed to combine with similar projects for efficiencies.	SR 522/Echo Lake Road Vicinity to Snohomish River Bridge - Paving Project delayed due to changes in funding and prioritization.
SR 18/Eastbound Green River (Neeley) Bridge - Bridge Deck Rehabilitation Project delayed to revise traffic control plans, address city of Federal Way concerns, perform additional coring, and to address drainage deficiencies on SR 18 under I-5.	SR 530/North Brooks Creek Road to Squire Creek Vicinity - Stormwater Retrofit Project delayed for approval of the shoreline permit.
SR 18/Eastbound Carey Creek Tributary to Issaquah-Hobart Road Vicinity - Paving Project delayed to combine with similar projects for efficiencies.	SR 243/Mattawa - Intersection Improvements Project delayed for continued negotiation with local agency, and public involvement.
Deferred (15)	
U.S. 12/Alpowa Creek to Clarkston - Chip Seal Project deferred due to prioritization of the paving program.	SR 20/SR 153 to Malott Road - Chip Seal Project deferred due to changes in funding and prioritization.
SR 155/Omak Area - Paving Project deferred to avoid conflicts with the city of Omak's sanitary sewer replacement project.	SR 20/Tonasket East - Chip Seal Project deferred due to changes in funding and prioritization.
SR 215/Omak Area - Paving Project deferred to avoid conflicts with the city of Omak's sanitary sewer replacement project.	U.S. 97/Tonasket to South of Oroville - Chip Seal Project deferred due to changes in funding and prioritization.

Continued on next page

WSDOT's Capital Project Delivery Programs

Pre-existing Funds provide WSDOT programs much-needed flexibility

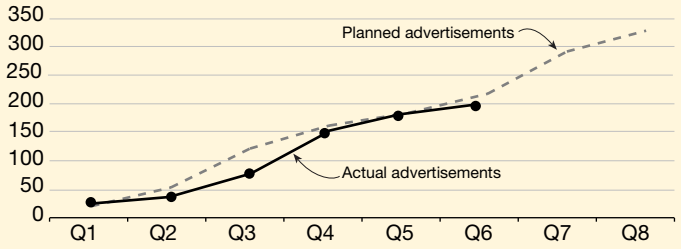
Deferred *(Continued from previous page)*

U.S. 12/Nine Mile Creek Vicinity to Old Highway - Paving Project deferred due to prioritization of the paving program.
SR 108/Wildcat Creek Bridge - Scour Repair Project deferred to complete the NEPA and right of way acquisitions.
I-5/Ship Canal Bridge - Seismic Retrofit Project deferred to allow time for additional design efforts.
SR 203/Drainage Overflow Bridge - Bridge Deck Rehabilitation Project deferred due to changes in funding and prioritization, ADA requirements, and plan revisions.
SR 203/Tolt River Bridge to McDougall Street - Paving Project deferred due to prioritization of the paving program.
SR 174/SR 17 to Grand Coulee - Chip Seal Project deferred due to changes in funding and prioritization.
U.S. 101/Bogachiel River Bridge - Scour Repair Project deferred to allow time for additional design efforts.
U.S. 101/Snow Creek Bridge - Scour Repair Project deferred due to changes in funding and prioritization.
I-90/I-82 Interchange - Ellensburg Vicinity - Add Virtual Weigh in Motion Project unprogrammed due to a change in funding priorities.

Data source: WSDOT Capital Program Development and Management.

Pre-existing Funds project advertisements

2011-2013 biennium; Quarter 6 from October 1, December 31, 2012; Planned vs. actual advertisements



Data source: WSDOT Capital Program Development and Management.

Value of planned Pre-existing Funds advertisements

2011-2013 biennium; July 1, 2011 through December 31, 2012; Dollars in millions

	Number of projects	Original value	Current cost to complete
Total PEF advertisements planned 2011-2013	328	$794.9	$651.1
Planned advertisements through December, 31, 2012	213	$518.0	$381.9
Actual advertisements through December 31, 2012	201	$406.0	$307.0

Data source: WSDOT Capital Program Development and Management.

Pre-existing Funds supporting 213 projects

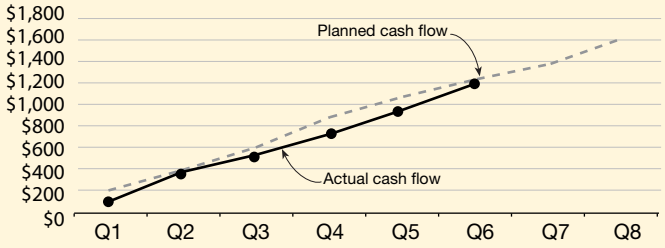
WSDOT has advertised 201 of 213 Pre-existing Funds (PEF) projects planned to date in the 2011-2013 biennium. The projects advertised were initially valued at $518 million but have a current cost to complete of $382 million, which is approximately $136 million less than they were initially valued. This decrease was the result of several projects being reprioritized and deferred during the development of the 2013 biennial budget.

For the quarter ending December 31, 2012, the actual cash flow for the Pre-existing Funds improvement program was approximately $1.2 billion, about $28 million less than the planned cash flow. A combination of project savings and cash flow adjustments on mega-projects resulted in underspending.

The actual cash flow for the PEF preservation program during the same quarter came in at $396 million, which, due to underspending, was approximately $187 million less than the planned amount of $583 million. Project savings and the delay of several bridge preservation projects resulted in underspending.

Pre-existing Funds improvement program cash flow

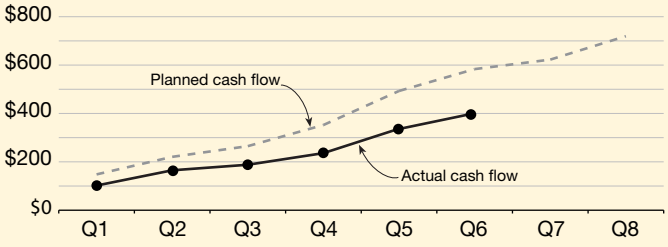
2011-2013 biennium; Quarter 6 from October 1, December 31, 2012; Planned vs. actual expenditures; Dollars in Millions



Data source: WSDOT Capital Program Development and Management.
Note: Original planned cash flow values were updated based on the 2011 Legislative Final Budget.

Pre-existing Funds preservation program cash flow

2011-2013 biennium; Quarter 6 from October 1, December 31, 2012; Planned vs. actual expenditures; Dollars in Millions



Data source: WSDOT Capital Program Development and Management.
Note: Original planned cash flow values were updated based on the 2011 Legislative Final Budget.

Watch List keeps a sharp eye on WSDOT's projects

No new projects added to Watch List

WSDOT added no new projects to its Watch List October 1 through December 31, the fourth quarter of 2012. During the same period three projects were removed from the list and five were updated.

WSDOT maintains the Watch List to deliver on the agency's commitment to "No Surprises" reporting. WSDOT continuously monitors its projects' performance to ensure that any issues affecting schedule or budget are spotlighted by the agency and brought to the attention of executives, Legislators and the public it serves.

The Watch List provides information on issues currently affecting projects, and those that could potentially impact project schedules and budgets. It helps WSDOT track these projects, providing quarterly status reports while explaining the issues at hand, how they are adversely affecting delivery, and what WSDOT is doing to address them.

Projects are removed from the Watch List when these issues are resolved, which may take more than one quarter. An update to the project is provided if new issues arise or old issues persist.

The gray box below describes some of the common problems that may affect the progress of a project from design through completion. They are listed in the order that WSDOT might typically encounter them, starting with planning and ending with construction.

The summary table on the following page lists projects facing schedule or budget concerns and references the problem category; a more detailed description of the precise problem or its resolution appears on the following pages. More information on individual projects can be found at www.wsdot.wa.gov/projects.

Coordination

Local concerns: Concerns raised by local communities may require additional, unanticipated, design, right of way, or utilities work which, if not resolved, might result in costs or delays later in construction.
Federal requirements: Funding and project development issues with Federal Highways Administration (FHWA), Federal Transit Administration (FTA), USDOT; workload prioritization and coordination for reviews by U.S. Fish & Wildlife Service, National Oceanic and Atmospheric Administration (NOAA) Fisheries, U.S. Forest Service or others may result in delays.
Inter-agency issues: Project may require more collaboration with local jurisdictions, or may require interlocal agreements, such as Memoranda of Understanding (MOUs) or Memoranda of Agreement (MOAs).
Tribal government issues: Consultation with tribes as required by Centennial Accord and specific treaties. Where treaty rights are affected, there may be financial settlements unanticipated in the original project budget.

Environmental

Planning & analysis: Completing essential studies required to comply with the National and State Environmental Policy acts (NEPA/SEPA), the Endangered Species Act (ESA), or other programs may take longer and cost more than anticipated.
Technical issues: The time needed to resolve matters involving archeological discoveries, hazardous materials, stormwater, noise, and hydrology may cause delay.
Mitigation: Negotiating for and designing sites to compensate for impacts to wetlands, floodplains, fish habitat and migration, and so on may involve many other factors from design through construction.
Permitting: New information about a project site, changes in design, or new regulatory requirements may delay permitting. If existing permits must be reworked, it can cause delay or additional expense.

Design

Geological: Studies may reveal unsuitable soil conditions for construction on the proposed route.
Alternatives: Design alternatives may require unanticipated revision as the result of environmental analyses and/or public input.
Design disputes: Communities or other entities may challenge design concepts, requiring additional design time.
Design element changes: Project parameters may change, requiring changes to designs in progress or under construction.

Utilities

Agreements with other jurisdictions: Agreements may take longer to obtain than anticipated.
Utility relocations: Moving power, water, gas, or other utility lines may be more complex than originally expected.

Right of Way

Design changes: Project revisions may require additional land.
Land acquisition: Negotiations with landowners regarding purchase of property may take longer than anticipated.
Land appreciation: Property value increases that exceed projections.
Land use designation changes: Land previously zoned as farmland may have been converted to industrial or commercial use, raising the purchase price.

Construction

Contractor issues: Disputes with contractors or disagreements over contract parameters may delay construction at any point in the job.
Cost increase of materials: Unit costs may increase beyond the set budget due to fluctuations in the marketplace or a failure to estimate costs properly at the design phase.
Materials procurement: Unexpected demand or lack of availability of raw materials required for construction.
Site problems: Discovery of contaminated (hazardous) soils, unsuitable geological conditions, or similar unforeseen issues after construction has begun.
Timing problems: Delays at design or right of way may result in work schedules conflicting with events such as fish spawning season.
Weather: Weather unsuitable for construction work can temporarily halt the project.

Litigation

At any point, a problem may escalate if one or more of the parties decides to file a lawsuit.

WSDOT's Capital Project Delivery Programs

Watch List keeps a sharp eye on WSDOT's projects

Watch List projects with schedule or budget concerns
Quarter ending December 31, 2012

Updates to Watch List	Project type	Watch List issue
U.S. 97/Satus Creek Vicinity - Bridge Replacement (Yakima) (Related projects: U.S. 97/Satus Creek Vicinity - Safety Work and U.S. 97/Satus Creek Vicinity - Pavement)	Highway	Design: design alternatives, materials procurement; Construction: weather
U.S. 2/Wenatchee River Bridges - Bridge Replacement (Chelan) (Related project: U.S. 2/Chiwaukum Creek - Replace Bridge)	Highway	Construction: weather, contractor issues, timing problems
SR 161/24th Street East to Jovita - Add Lanes (Pierce)	Highway	Utilities: utility relocations; Construction: timing problems; Construction: weather
SR 520 Pontoon Construction Project (Grays Harbor)	Highway	Construction: materials
SR 520/Medina to SR 202 Vicinity - Eastside Transit and HOV (King)	Highway	Coordination: local concerns, litigation, design changes
Removed from Watch List		
I-5/Express Lane Automation (King)	Highway	Construction: site problems
U.S. 101/Hoh River (Site No. 2) - Stabilize Slopes (Jefferson)	Highway	Design: design element changes
U.S. 97/Cameron Lake Road - Intersection Improvements (Okanogan)	Highway	Design: design alternatives

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

Updates to Watch List

U.S. 97/Satus Creek Vicinity – Bridge Replacement

(Yakima) (Related projects: U.S. 97/Satus Creek Vicinity – Paving and U.S. 97/Satus Creek Vicinity – Safety Work)

This project, budgeted for $13.4 million, will replace a 70-year old, structurally deficient bridge across Satus Creek with a wider, longer bridge. It will also realign U.S. 97, widening shoulders, upgrading pavement, and removing obstructions. When completed, the improvements will potentially reduce collisions and improve sight distance for drivers.

A change in design and negotiations to find a materials source has slowed project progress

This project is in construction and the operationally complete date has been delayed eight months from October 2012 to June 2013. As reported in *Gray Notebook* 47, p. 64, progress had already slowed due to a change in design and negotiations in finding a source for rock materials. A two-week fire closure during summer 2012 further delayed the project. The contractor has shut down the project due to winter weather, and work will resume in spring. Due to the delay, U.S. 97 traffic must continue to use a detour bridge, with potential risks of pavement deterioration to the bridge deck, scour problems at the abutments, and structural damage to the bridge during spring flooding. WSDOT is closely monitoring the situation and will address issues should they arise.

The total cost on this combined project decreased by $700,000 due to favorable bids.

U.S. 2/Wenatchee River Bridges - Replace Bridge

(Chelan) (Related project: U.S. 2/Chiwaukum Creek - Replace Bridge)

These projects, budgeted for $12.5 million and known as the U.S. 2 – Tumwater Canyon Bridge replacements, will replace three narrow bridges over the Wenatchee River and Drury and Chiwaukum creeks with wider bridges designed to meet current standards. The added width is designed to improve safety for drivers, bicyclists and pedestrians. These projects also construct new turn lanes to the Tumwater Campground and add fish passage enhancements in the creek beds.

The projects are in the construction phase, and the budget and schedule continue to be at risk. The project cost has increased by $1.5 million due to costs associated with shaft drilling and roadway excavation of unforeseen, nested boulders. As reported in *Gray Notebook* 47 (p. 65), the operationally complete date has been delayed by nine months to September 2013 due to higher than expected water levels and the unforeseen boulders encountered while drilling.

The project cost increased due to costs associated with shaft drilling and roadway excavation of boulders

At the end of November 2012, the bridge's girders were set and prepared for winter. Completion of this work keeps the project on schedule with the new September 2013 completion date. WSDOT continues to monitor the schedule. The budget increase has been included in the Governor's 2013 Budget.

Watch List keeps a sharp eye on WSDOT's projects

SR 161/24th Street East to Jovita - Add Lanes *(Pierce)*
This project, budgeted for $40 million (including $367,000 of local agency funds), widens a 1.2-mile section of SR 161 from three to five lanes through the city of Edgewood. Construction includes new sidewalks and road approaches, illumination, retaining walls, stormwater drainage facilities, and major utility relocations. When complete, the project is expected to ease congestion and improve safety along the SR 161 corridor.

The project is in the construction phase; the schedule and budget are at risk. As reported in the *Gray Notebook* 47, p. 65, the slow progress on utility relocation and trench construction due to underground utility conflicts delayed the project. Winter weather has further delayed progress.

The operationally complete delay of 15 months, from June 2012 to September 2013, is expected to increase the total project cost by $2.7 million. The budget increase has been included in the Governor's 2013 Budget.

Seattle media crews film construction work on the new SR 520 pontoons during a WSDOT tour in November 2012. The tour followed the status of earlier repairs to areas on the pontoons that had cracked or spalled.

SR 520 Pontoon Construction Project *(Grays Harbor)*
This design-build project, budgeted for a $367 million contract, built a 55-acre casting facility in Aberdeen to construct 21 longitudinal pontoons (360 feet long by 75 feet wide), two cross pontoons (240 feet long by 75 feet wide), and 10 supplemental stability pontoons (98 feet long by 60 feet wide), for the new SR 520 floating bridge. These pontoons are designed to replace the existing floating bridge in the event of a catastrophic failure.

The project is in the second of six pontoon construction cycles; the interim schedule milestones are at risk. As reported in *Gray Notebook* 47, pp. 65-66, repairs were made to the spalling and cracking that appeared on four of the first cycle pontoons that floated out on July 30, 2012, to Lake Washington.

An independent expert panel was convened to evaluate the probable causes of spalling and cracking in the first cycle of pontoons. After the panel's findings, WSDOT made changes to the second cycle, to avoid spalling and reduce cracking. In November, onsite inspectors determined that rebar in three completed pontoons provided the required structural capacity. The panel was established to review design, materials, construction methods, and the overall integrity of the pontoons.

SR 520/Medina to SR 202 Vicinity - Eastside Transit and HOV *(King)*
This design-build project, budgeted for a $306 million contract, will feature a six-lane SR 520 corridor between Medina and Redmond. The project will build an HOV/transit lane, wider shoulders, and environmental improvements including nine fish-passable stream crossings and associated habitat improvements. It will also add community enhancements like highway lids (see *Gray Notebook* 46, pp. 57-58) that feature bicycle and pedestrian paths, a regional trail extension, and construct two new median transit stops along with other transit improvements. When completed, the project will reduce the potential for serious collisions along the SR 520 corridor, and improve mobility and fish habitat.

The project has completed design, and construction is on schedule to be completed by the end of 2013. As reported in *Gray Notebook* 47, p. 66, WSDOT and the design-builder, Eastside Corridor Constructors, continue their discussions on budget and schedule risks that developed after the contract was awarded. Potential schedule and budget effects will be determined after further consultation with the contractor. WSDOT continues to work with the contractor to resolve geotechnical considerations in the area. Negotiations are completed on the Fairweather Basin permit modifications and the additional noise walls. WSDOT is monitoring the project and expects the geotechnical issue to be resolved by spring 2013.

Construction has been slowed due to delays at the 84th Avenue interchange and Fairweather Basin

Construction has been slowed due to delays at the 84th Avenue Interchange and in the Fairweather Basin area. The lawsuit by the Fairweather Basin residents alleging reduced property values as a result of project actions, was resolved in November 2012, a few months earlier than the expected 2013 resolution.

WSDOT's Capital Project Delivery Programs

Watch List keeps a sharp eye on WSDOT's projects

WSDOT's Bill Churney shows the I-5 express lanes' old gate and sign control cabinet, which were replaced in July 2012. Unforeseen challenges with above ground and underground cable and conduit systems delayed completion of a project to automate I-5 express lanes in Seattle. The project has been removed from the Watch List.

Removed from Watch List

I-5/Express Lane Automation *(King)*

This project, originally budgeted for $5.4 million, replaced manual gates with automated gates on the reversible I-5 express lanes in Seattle. It also installed 13 miles of fiber optic lines (allowing WSDOT to reverse lane directions remotely), and added new light-emitting diode (LED) signs, 45 new traffic cameras to monitor gate entrances and blind corners, and camera cabinets. This project reduces congestion by cutting the time needed to switch express lanes from one hour to 15 minutes.

This project was operationally complete in July 2012. Due to pending cost increases related to change orders, the budget is at risk. The schedule is no longer at risk. A construction schedule delay, including contract bid item overruns and several approved change orders led to the cost increases. As reported in *Gray Notebook* 47, p. 64, the project opened to traffic on July 23, 2012, after difficult field conditions on the above ground and underground conduit and cabling systems resulted in delays to the schedule.

The schedule delay and associated cost changes increased the project budget from $5.4 million to approximately $6.2 million, with pending costs of $900,000 increasing the total project cost to $7.1 million. This budget increase was included in the Governor's 2013 Budget and the project has been removed from the Watch List.

U.S. 101/Hoh River (Site No. 2) - Stabilize Slopes *(Jefferson)*

This project, budgeted for $9.6 million, will install several log crib walls to stabilize the river bank and prevent further loss of the U.S. 101 roadway due to Hoh River bank erosion.

The project is in the design phase, and the schedule is at risk. As reported in *Gray Notebook* 47, p. 65, the advertisement date is delayed from January to December 2014 because the design was changed from a log jam to crib wall and due to a permitting delay caused by staff cuts at other agencies during environmental review. The winter advertisement date is necessary for scheduling the in-water work. The delays have pushed operational completion from January 2015 to October 2015.

The risks were realized and the advertisement and operationally complete dates were delayed. The changes were included in the Governor's 2013 Budget. This project has been removed from the Watch List.

U.S. 97/Cameron Lake Road - Intersection Improvements *(Okanogan)*

This project, originally budgeted for $1 million, will make improvements for freight traffic, improve sight distance, and add illumination at the Cameron Lake Road intersection. When complete, the project is designed to reduce the frequency and severity of traffic collisions.

This project is in the design phase, and the schedule was at risk. As reported in *Gray Notebook* 47, p. 64, the advertisement date has been delayed by one month from February to March 2013 to accommodate design changes. The results of a community meeting held in September 2012 showed that most of the community members wanted an alternative design to the WSDOT-proposed roundabout solution. The new design proposal is for left-turn channelization, two new intelligent transportation system signs, and a median between the through lane and the right-turn lane at the intersection of U.S. 97 and Oak Street. The newly proposed improvements to the intersection reduce the potential for collisions, decrease the current cost of the project from an estimated $2 million to $1.5 million, and are solutions the public has weighed in on and are anticipated to accept.

The advertising date was delayed to March 2013 to accommodate design changes

WSDOT will monitor the improvements for effectiveness, as is done for all intersections. This project has been removed from the Watch List.

Federally-funded high speed passenger rail projects on track

Six of WSDOT's 21 federally-funded passenger rail projects were under construction or completed in 2012, with six more set to break ground in 2013. Of the 21 projects, 17 are funded by the 2009 American Recovery and Reinvestment Act, and four are funded by other federal sources. Work includes adding rail line capacity, purchasing new locomotives and passenger rail cars, and upgrading tracks, utilities, signals, stations and advanced warning systems. These projects will add two more Amtrak Cascades round trips between Portland, Oregon and Seattle, Washington, improving on-time performance, and reducing conflicts between passenger and freight trains that share track.

To date, the Federal Rail Administration (FRA) has reimbursed WSDOT for $13.2 million of the $50 million in construction spending that is anticipated by the end of the 2011-2013 biennium.

WSDOT completes Tacoma Rail Connection in 2012; five more projects under construction

The Tacoma D to M Street Connection project was completed on time and five additional projects were under construction in 2012. Of these five, two (King Street Station Seismic Improvements and Everett Storage Track) are expected to be complete in 2013.

WSDOT published the Environmental Assessment for the Point Defiance Bypass project in October 2012, and completed public review of the project the following month. This project will reroute passenger trains from the BNSF mainline along south Puget Sound to an existing rail line along I-5, reducing conflicts between passenger and freight trains. FRA is expected to issue its environmental decision in 2013. A favorable decision will allow WSDOT to draft the final design by the end of 2014, begin construction in 2015, and start new service on the bypass in 2017.

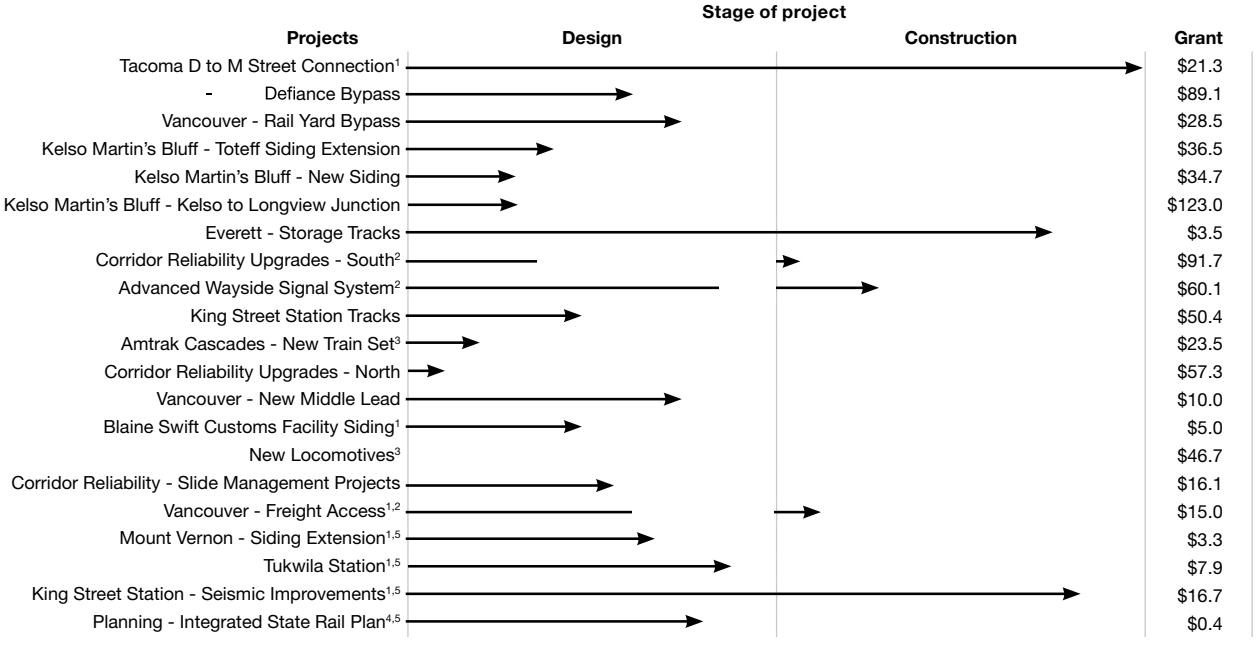
The Vancouver Rail Yard Bypass, Corridor Reliability Upgrades North, Vancouver New Middle Lead, Blaine Swift Customs Facility Siding, Tukwila Station and Corridor Reliability/Slide Management projects are set to begin construction in 2013.

New equipment purchasing plans being developed

Work is under way to purchase eight new locomotives and passenger cars for the Amtrak Cascades service. WSDOT serves in a lead role on a task force for a national committee that is developing plans for rail equipment pooling and ownership. WSDOT will use this information to develop its fleet management model to determine equipment needs. WSDOT is reviewing a feasibility report that compares "double-decker" passenger cars to equipment currently used in the state's system. This report, expected by March 2013, will help WSDOT determine the most beneficial equipment choices.

Federally-funded high speed rail projects

Project status as of December 31, 2012; Rail projects by stage of project; Funding in millions of dollars



Data source: WSDOT State Rail Office.

Notes: 1 Six projects are partially funded from other sources such as Sound Transit, state and local sources and the Federal Transit Administration. 2 Gaps show projects progressing through multiple phases with portions moving into construction while other portions are still in design. 3 The construction timeframe for these projects consists of manufacturing and delivering the new train components. 4 Project only consists of the design phase. 5 The first 17 projects in the table are funded by ARRA. The last four projects are funded by other federal sources.

Mega-projects Special Report

Alaskan Way Viaduct Program

Alaskan Way Viaduct team completes south-end section one year early

Crews completed replacing the southern mile of the Alaskan Way Viaduct in September 2012, one year ahead of schedule and on budget. This section of State Route 99 near Seattle's stadiums now includes a new roadway that has wider lanes, meets current earthquake standards and improves mobility south of downtown.

As construction on the new south-end section concluded, crews started building a new overpass so traffic can bypass frequent train blockages on South Atlantic Street, near the entrance to the Port of Seattle's Terminal 46. The overpass is scheduled to open in late 2013.

Tunnel boring machine on schedule to be shipped to Seattle in spring 2013

SR 99 Tunnel Project leaders traveled to Osaka, Japan in late December 2012 to witness testing of the world's largest-diameter tunnel boring machine, which has been named "Bertha." (See related story on page 73). The machine is five stories tall and more than 300 feet long, roughly the same size as some of Washington State Ferries' largest vessels.

After testing, the machine will be disassembled into 41 pieces and shipped to Seattle

During testing, crews discovered a problem with the main drive unit, which rotates the cutterhead at the front of the machine. The problem was repaired and will not affect the overall project schedule. After testing, the machine will be disassembled into 41 pieces – the largest weighing nearly 900 tons – and shipped to Seattle where it will be reassembled and launched beneath the city from an 80-foot-deep pit near Seattle's stadiums.

More than half of Alaskan Way Viaduct Replacement projects now complete

The SR 99 Alaskan Way Viaduct plays a major role in sustaining Washington's economy and maintaining the public's ability to travel to and through Seattle. However, the viaduct, along with the adjacent seawall, is at risk of failure from earthquakes.

The Alaskan Way Viaduct Replacement Program includes more than 20 projects that will work together to replace the viaduct and reshape the SR 99 corridor through Seattle. The program's largest project will build a nearly two-mile-long tunnel beneath downtown to replace the waterfront section of the viaduct. To date, more than a dozen projects have been completed, with several more in progress or set to break ground soon.

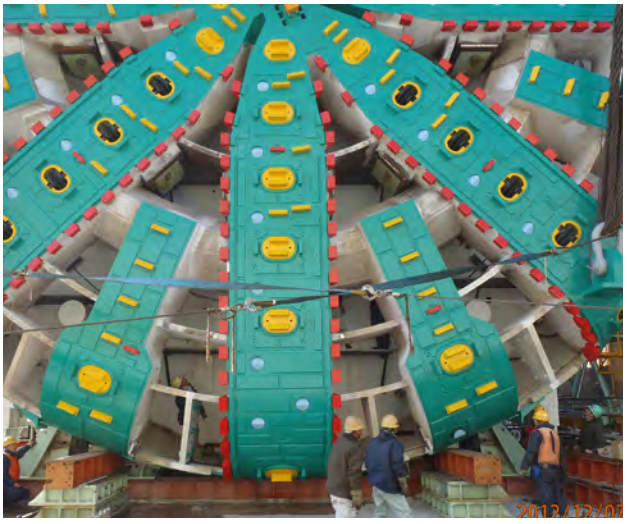
The $3.1 billion program is on time and on budget, having spent approximately $1.45 billion of the total estimated cost of the program through December 2012. Funding comes from state, federal and local sources, as well as the Port of Seattle and tolls.

In mid-2013, an advisory committee is expected to provide recommendations on strategies for tolling the new tunnel, minimizing traffic diversion from the tunnel due to tolling, and mitigating traffic diversion effects on city streets and I-5. Tolls are anticipated to support $200 million of the project budget, while gas tax revenues from the 2003 Nickel and 2005 Transportation Partnership Account are expected to provide more than $1.73 billion.

Expert panel to issue updated report on project schedule and budget this year

An expert review panel formed by the 2011 Legislature to evaluate the viaduct program's finance plan will issue an updated report in 2013.

The panel updated work completed by another expert panel, which convened in 2006, giving the program a clean bill of health in February 2012. The most recent report found that the project is on schedule and budget, while noting that some funding and project agreements need to be solidified.



Crews in Osaka, Japan inspect the tunnel boring machine's massive cutterhead as it is put into place in early December 2012.

Temporary bridge opens to traffic on SR 16 eastbound at Nalley Valley

Crews made significant progress on the I-5/SR 16 Eastbound Nalley Valley project in the fourth quarter of 2012. The project is the second of three to expand and improve the I-5/SR 16 interchange in Tacoma. A temporary bridge carrying eastbound SR 16 traffic opened on schedule in December 2012. Demolition of the old eastbound viaduct is under way and is expected to last through March 2013. Demolition of the original viaduct column section, known as "tetrapods" (see photo below at right) was stopped for a review after a concrete tetrapod fell on the shoulder of South Tacoma Way in January 2013. The operation has resumed with no anticipated impact to project schedule or cost.

A temporary eastbound SR 16 bridge opened on schedule. Demolition of the old Nalley Valley viaduct is under way

To accommodate the future eastbound viaduct alignment, crews will demolish and rebuild the southbound I-5 exit to South 38th Street beginning in March 2013. During this work a 90-day ramp closure of the southbound I-5 exit will impact access to the Tacoma Mall and other businesses.

The new viaduct will add capacity and improve safety when the $115 million Eastbound Nalley Valley project is completed by mid-2014. The table below lists milestones accomplished and those remaining to complete the project. The I-5/SR 16 Eastbound Nalley Valley project is part of a larger series of projects to reduce congestion, improve safety and add 70 high occupancy vehicle (HOV) lane miles in Pierce County. The Tacoma/Pierce County HOV Program has constructed more than 21 HOV lane miles on SR 16 and I-5 to date. Projects to add another 10.7 HOV lane miles are being designed and constructed. These projects constitute the funded portion of the Tacoma/Pierce County HOV Program and represent a $1.6 billion investment in state highways in Pierce County. The remaining 38 HOV lane miles are unfunded.

I-5/SR 16 Eastbound Nalley Valley milestones

Significant milestones completed as of December 2012
Demolished original westbound SR 16 viaduct
Built bridge sub-structure for new southbound I-5 exit to South 38th Street
Built newly-aligned northbound I-5 exit to Tacoma City Center
Built newly-aligned eastbound SR 16 ramp to northbound I-5
Constructed all stormwater ponds
Completed seven out of 24 total retaining walls for the project
Built temporary bridge for eastbound SR 16 traffic
Future milestones for project completion in mid-2014
Demolish existing eastbound SR 16 viaduct (currently under way)
Construct new eastbound SR 16 viaduct
Complete Sprague Avenue interchange, (build two bridges to connect Sprague Avenue to northbound and southbound I-5)
Rebuild ramp from southbound I-5 to South 38th Street (includes building a new bridge)
Rebuild permanent eastbound SR 16 on-ramp to northbound I-5

Data source: WSDOT HOV Program Office.

Award delayed for new Puyallup River bridge

Design is complete on the $306 million I-5 Portland Avenue to Port of Tacoma Road Northbound HOV project, which will build a new northbound I-5 bridge over the Puyallup River. The project has been advertised for construction bids; however, an extension is in place to address easement acquisition and an intergovernmental agreement with the Puyallup Tribe of Indians. The project is scheduled to begin construction in spring 2013, pending reaching Agreement with the Tribe.

Design phase progresses to add HOV lanes to I-5 between M Street and Portland Avenue

Project design is progressing on the $143 million I-5 - M Street to Portland Avenue HOV project. The design team is working toward the milestone of 90 percent plan completion and review. WSDOT is scheduled to advertise for construction bids in August 2013. This project will widen I-5 between M Street and Portland Avenue to accommodate one HOV lane in each direction. The project includes replacing two bridges over I-5 and constructing a new I-5 bridge over the I-705 interchange. The project cost is less than previously reported due to the transfer of some work to the I-5 Portland Avenue to Port of Tacoma Road - Southbound HOV project, which is in the design phase.

This is a view of the original SR 16 Eastbound Nalley Valley viaduct's unique tetrapod support structure. Demolition is expected to last through March 2013.

North Spokane Corridor

WSDOT opens Francis to Farwell segment of North Spokane Corridor

WSDOT opened a new segment of the North Spokane Corridor (NSC) by completing the Francis to Farwell and Parksmith Interchange projects in October 2012. These projects constructed three new southbound lanes 3.5 miles between the U.S. 2/Farwell Road and Francis Avenue/Freya Street interchanges, built seven bridges and the Parksmith interchange. A $35 million federal Transportation Investment Generating Economic Recovery (TIGER) grant funded construction of the projects. See pp. 51-52 for project delivery and budget performance for these projects. All NSC projects completed to date have been delivered on-time and on-budget.

With the completion of these projects, a total of 5.7 miles of the NSC is now open to traffic. When finished, the NSC will reroute U.S. 395 around Spokane's business district creating a 10.5-mile limited-access highway spanning from the current intersection of U.S. 395 and North Wandermere Road south to I-90. The completed corridor is expected to accommodate 150,000 trips daily as travel demand in Spokane County increases with the population.

Some 5.7 miles of the North Spokane Corridor is open to traffic

North Spokane Corridor project updates

Project	Description	Status
Freya Street to Farwell Road	Earthwork, bridges, railroad tunnel, paving	Complete
U.S. 2 Lowering	Earthwork, bridges, paving, creek culvert	Complete
U.S. 2 to Wandermere Road	Paving, bridges	Complete
Francis Avenue to Farwell Road Southbound Lanes	Earthwork, paving and bridges	Complete
Parksmith Interchange	Earthwork, paving for new on- and off-ramps	Complete
Francis Avenue Structure Replacement	Replace structure, improve intersections	Under construction
BNSF Railway Structure Replacement	Realign BNSF track, two highway structures and two rail structures, extend bicycle and pedestrian trail	In development, construction in 2013
Right of Way Acquisition	I-90 vicinity and throughout NSC vicinity	Ongoing
Spokane River to Francis Avenue	Extend U.S. 395 2.5 miles, relocate BNSF tracks, extend pedestrian and bicycle trail	Unfunded
I-90 to Spokane River	Extend U.S. 395 two miles, bridges, I-90/U.S. 395 Interchange	Unfunded

Data source: WSDOT North Spokane Corridor Program.

North Spokane Corridor funding sources

Funding April 1990 to date; In thousands of dollars

Funding source	Funding amount
Local	$340
State	$474,735
Federal	$140,500
Total funding	**$615,575**
Unfunded	$1,320,000
Total project cost (estimated)	**$1,935,575**

Data source: WSDOT North Spokane Corridor Program.

The completed stretch of the NSC currently has an average of 11,000 daily trips, 15.7 percent of which is commercial truck traffic. WSDOT expects the corridor to improve highway system performance in the areas of safety, mobility, and economic vitality (see *Gray Notebook* 46, pp. 61-62, for more on project benefits).

North Spokane Corridor to roll forward in 2013, but still has $1.32 billion in unfunded projects

WSDOT is constructing a $15 million replacement bridge along Francis Avenue. The new overpass accommodates the future realignment of the rail tracks; it also creates space to accommodate the new U.S. 395 highway and minimizes impacts on surrounding development. WSDOT expects the project to be open to traffic in late 2013.

In June 2012, WSDOT was awarded a $10 million federal TIGER grant to help fund the $31.5 million BNSF Railway Structures/Realignment project. The project will relocate 7.5 miles of BNSF tracks, construct two freeway overpasses, and extend the existing 5.5-mile pedestrian/bicycle trail more than one mile into the Hillyard neighborhood. WSDOT expects to advertise for bids for this project in May 2013.

A total of $1.32 billion in estimated project costs are currently unfunded for the NSC. Of this, $750 million is needed to provide a minimal two-lane connection with I-90. The remaining unfunded $570 million would finish the complete build-out of the NSC.

Construction Cost Trends Report

Construction costs continue to escalate in 2012

The Construction Cost Index (CCI) WSDOT uses to track changes in its annual materials costs increased 5.1 percent during 2012, coming in about 1 percent higher than the predicted rate of inflation for the year.

The Construction Cost Index is based on seven work activities that commonly occur in projects (see box at right), and provides an inflation rate for WSDOT's construction program as a whole.

The index helps the agency determine how far its annual funding will go in light of construction material costs. As the Construction Cost Index increases, WSDOT must spend more money for the products that make up the backbone of Washington's transportation system like crushed rock, steel rebar and hot mix asphalt.

The 5.1 percent increase in 2012 comes on the heels of a 5.8 percent increase in 2011. While WSDOT is not experiencing a rapid increase in construction material costs as it did during 2006, the rate of increase remains higher than in the last. During the past decade, WSDOT's CCI has increased by 77.9 percent compared to a 26.4 percent increase during the 13 years from 1990 to 2002 (see graph at right). Inflation on this scale erodes WSDOT's buying power and reduces how much work can be done with the agency's annual budget.

The Construction Cost Index has increased by 77.9 percent in the past 10 years

Higher hot mix asphalt costs drive up WSDOT's Construction Cost Index

About half (48.5 percent) of the Construction Cost Index is based on the price of hot mix asphalt (HMA). The material that enables hot mix asphalt to bind to the roadway is comprised of crude oil; as oil prices increased in 2012, so did the cost of HMA. In 2012, hot mix asphalt prices increased to \$80 per ton, a 21 percent increase above 2011, when the material cost \$66 per ton. WSDOT awarded bids for 660,583 tons of HMA at a cost of approximately \$52.8 million in 2012. The previous year, this same amount would have cost \$43.6 million, about \$9.2 million less.

In 2012, hot mix asphalt prices increased to \$80 per ton, a 21 percent increase over those of 2011 when the material cost \$66 per ton

Hot mix asphalt prices have more than doubled (130 percent) during the past decade, meaning that the money WSDOT budgets for paving projects doesn't go nearly as far as it did in 2002.

Adding to this fiscal decline is the fact that the amount of funding WSDOT receives for repaving is decreasing. Although WSDOT has saved money while continuing to preserve pavements by applying strategies like managing pavement performance using the lowest life-cycle cost, continued investment shortfalls will eventually reduce the quality of pavement throughout the state and increase the number of highway miles requiring resurfacing.

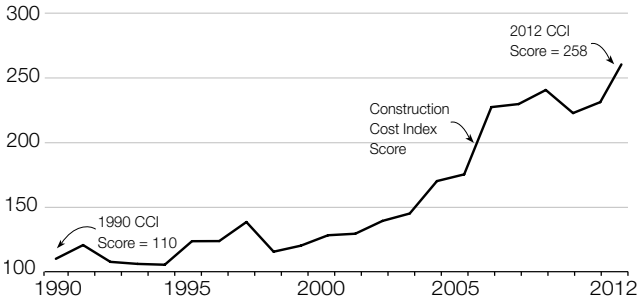
How WSDOT uses low bid prices to figure its Construction Cost Index

WSDOT's Construction Cost Index (CCI) is based on low bid prices for seven work activities common to most highway construction projects:

- Roadway excavation (grading)
- Crushed surfacing (placing crushed rock)
- Hot mix asphalt (asphalt paving)
- Concrete pavement (concrete paving)
- Steel rebar (placing rebar to construct bridges)
- Structural steel (placing large steel forms to construct bridges)
- Structural concrete (placing concrete to construct bridges)

WSDOT's Construction Cost Index

1990 through 2012; Costs of construction materials and activities relative to 1990 levels



Data source: WSDOT Construction Office.

Notes: 2003 and 2004 WSDOT CCI data points adjusted to correct for spiking bid prices on structural steel. WSDOT base 1990 = 110. WSDOT 2012 data through December.

Maximizing WSDOT efficiency and effectiveness

Lean techniques build on WSDOT's long history of using innovative management tools to improve efficiency within the agency. The table below shows the results to date of select WSDOT Lean projects. Lean principled initiatives are under consideration in the areas of planning, design, capital programming/pavement management, maintenance, and traffic operations, which are listed on p. 67.

WSDOT continues to train its employees on Lean tools and techniques. WSDOT's library has a collection of Lean-related books, websites, blogs, and other items available to employees. The Lean training is modeled on the experiences of numerous private sector establishments that have used Lean to transform their organizations, and whose employees use their new skills to increase efficiency, lower costs and improve performance.

In December 2011, then-Governor Chris Gregoire signed the Lean Transformation Executive Order 11-04, to encourage employee creativity and problem-solving skills. Governor Jay Inslee is a strong advocate of Lean management practices and plans on using Lean principles to make more efficient use of state resources.

As WSDOT continues to apply Lean principles in the agency's work, the table below will be updated in each edition of the *Gray Notebook* as projects progress and new initiatives develop.

Applying Kaizen principles at WSDOT

"Kaizen" is the culture and practice of continual improvement of management processes. This term, based on a concept that originates in Japan, translates to "change for the good of all." Kaizen has been applied across a variety of business sectors and by many government agencies.

At WSDOT, Kaizen, along with other Lean tools, has been applied to multiple processes, an example of which is collision reporting. WSDOT recently centralized management of collision data reported to the agency from Washington State Patrol. This centralization has streamlined the data entry process, allowing for on-time delivery in response to customer requests.

WSDOT Lean Dashboard
As of December 31, 2012

Project, program, and description	Results and progress to date
Projects under way	
Streamline sign fabrication process *Maintenance Operations (Central Sign Shop)* Streamline sign ordering, fabrication, and shipping processes to reduce the number of price adjustments necessary to maintain cost recovery and decrease overall lead time.	• Time required to complete a sign order reduced 45%, emergency order lead time reduced 15%, order processing time reduced 87% • A 45% to 95% increase in the percent of sign orders that move through manufacturing process without errors or rework • Routine orders price down 20% ($3.25 per square foot savings)
Reduce collision data backlog *Strategic Planning (Statewide Travel and Collision Data Office)* Supply customers with complete, accurate and timely collision data by streamlining collision data processing and reducing the data backlog.	• Number of reports processed daily improved from 355 in the first eight months of 2012 to a daily average of 513 in January 2013 • The six-month backlog of county collision reports has been pre-processed, county engineers now receive pre-processed collision reports within 24 hours of WSDOT receiving reports
Research government contracts process *Strategic Planning (Office of Research and Library Services)* Improve process for research contracts with other government agencies.	• Survey in process and contract workload spreadsheet complete
Streamline data and information collection and use *Strategic Planning (Office of Research and Library Services)* Establish efficient governance of data and information management for the WSDOT Intranet.	• Lean process started in January 2013, meetings scheduled to occur bimonthly • Draft principles of information management are developed • Virginia DOT model for Intranet management is under review

Note: For more information on the sign fabrication process, collision backlog, and maintenance data collection projects, see *Gray Notebook* 44, pp. 82-83 and *Gray Notebook* 47, pp. 69-70.

WSDOT Lean Dashboard, *continued*
As of December 31, 2012

Project, program, and description	Results and progress to date
Projects under way, *continued*	
Streamline WSDOT's fish passage program *Development Division (Environmental Services Office)* Increase efficiency in the collaborative work that WSDOT and the Washington Department of Fish and Wildlife perform to identify, scope, design and construct fish passage barriers corrections.	• First facilitated Lean meeting scheduled for February 26, 2013
University of Washington/state agency invoicing *Strategic Planning (Office of Research and Library Services) and University of Washington* Standardize and streamline invoicing between the University of Washington and state agencies.	• Lean workshop is scheduled for February 27 - March 1, 2013
Streamline grant reimbursements *Public Transportation Division* Streamline the process of reimbursing grant recipients for their expenses.	• Lean workshop completed in January 2013 • Met with a key customer (grant administrator with the Federal Transit Administration) to discuss how both agencies can collaborate to improve efficiency of the grant reimbursement process using Lean • Review of the value stream maps and recommended changes is scheduled for February 25, 2013
Streamline medical bill paying process *Office of Human Resources and Safety* Reduce the cycle time in receiving, reviewing, processing, and recording payments for medical bills.	• Project initiated in January 2013 to document current process, met in February 2013 to map process improvements • Researching options and plan to implement changes in March 2013 • Results anticipated are a decrease in processing cycle time, a 20% to 40% decrease in labor costs for medical invoice payments process, and a 20% to 40% reduction in process lead time
Lean principled initiatives considered or under way	
Planning Planning initiatives include continuing to identify and implement collision data process improvements, Transportation Improvement Program/Statewide Transportation Improvement Program (TIP/STIP) development, travel data and analysis, local plan review, and *Gray Notebook* production.	
Design Design initiatives include examining alternative delivery methods, simplifying policy and procedural guidance, organizational restructuring, and evaluation of regionalized teams that deliver statewide programs.	
Capital Programming/Pavement Management Capital Program/Pavement Management initiatives include streamlining contract administration and using the Internet to improve communication, and evaluating reporting mechanisms, equipment calibration methods, prioritizing culvert repair and replacement, and maintenance and replacement processes. Additionally, WSDOT is working to prioritize pavement asset management to focus on reducing backlogs of past-due pavement rehabilitation.	
Maintenance Maintenance initiatives include lease consolidation, fleet reduction, and evaluating the cost savings of gas vehicle conversions to propane.	
Traffic Operations Traffic operations initiatives include evaluating replacement cycle for traffic control signs.	

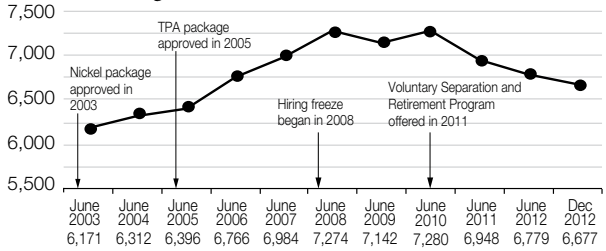
Workforce Level and Training Quarterly Update

WSDOT workforce declined; employee development, training improved

As of December 31, 2012, WSDOT had 6,677 permanent full-time employees. This is 45 fewer than the previous quarter ending September 30, 2012, and 143 (2 percent) fewer than the 6,820 workers employed one year ago. The chart below shows the number of permanent full-time employees since June 2003. The current level is 8 percent below the peak of 7,280 employed in June 2010.

WSDOT has 8 percent fewer full-time, permanent employees than it did during the staffing peak in 2010

Number of permanent full-time employees
From June 2003 to December 2012
June 2003 through December 2012



Data source: Department of Personnel Data Warehouse, Human Resources Management System, WSDOT and the Ferry System payroll.

WSDOT's target workforce level for highway construction program employees is 2,400 full-time equivalents (FTEs) by June 30, 2013, the end of the 2011-2013 biennium. As of December 31, 2012, the highway construction program workforce level was 2,064 FTEs. Winter represents the annual low point for the FTE level, which fluctuates with employees hired for the construction season.

WSDOT proactively manages the workforce level with a constant focus on right-sizing the agency to meet the demands dictated by available project funding. As the design and construction activities wind down from the transportation funding packages passed in 2003 and 2005, WSDOT is sizing the workforce to meet the ongoing needs of the agency. WSDOT offered early retirement and voluntary separation incentives to balance the skills and experience levels needed in the workforce to ensure the long-term success of the agency.

Workforce training and development makes efficient use of the new learning system

More than 3,200 WSDOT employees have logged into the Learning Management System (LMS) at least once since December 31, 2012, and more than 1,490 employees have used it to complete their mandatory Sexual Harassment Awareness and Prevention refresher course (204 in the fourth quarter of 2012). LMS is the web-based training management and tracking system adopted by all state agencies as directed by the Office of Financial Management/Department of Enterprise Services. Since deploying LMS, WSDOT has successfully transferred all historical training records from the Automated Training Management System (ATMS). Now that all employees have accounts, they have access to their training history, can search for available training, and register themselves for courses with their supervisor's approval.

More than 1,490 employees used the Learning Management System to complete mandatory training

New learning resources at employees' fingertips

Skillsoft is a collection of online training and development resources which includes more than 4,000 courses and 25,000 digitized books. It is now available for all WSDOT employees. Skillsoft makes resources available to fill knowledge or skill gaps WSDOT employees may have in areas such as leadership, management, computer programs, project management, customer service, communication and many others. As these resources are accessed via the Internet, WSDOT employees can tap into all that Skillsoft has to offer anywhere they have connectivity: at home, on their smart phones or tablets, 24/7. During work hours, WSDOT employees can engage in learning activities any time with their supervisor's approval as a part of their individual development plan.

New employee development resources include more than 4,000 online courses

WSDOT launching supervisor training program

WSDOT is launching a supervisor/manager development program statewide. The program is intended to strengthen the agency's leadership capabilities by investing in those who have been tasked with leading and developing the WSDOT workforce through supervisory roles. WSDOT will create customized development plans in LMS for each identified supervisor/manager. WSDOT will use assessment tools to identify the specific knowledge and skills to be developed, and will identify activities or resources needed to close any gaps (many of the resources will be available through Skillsoft). The plans will also identify milestones and metrics for measurement. This process will be ongoing throughout the career of each supervisor and manager.

Reporting training compliance challenging during transition to new system

Two of seven mandatory training courses meet 90 percent completion goal

The rate of employees completing training declined in four of the seven mandatory courses for the fourth quarter of 2012, compared to the previous quarter. A goal of 90 percent completion applies to each of these courses. Two courses met or exceeded the goal. WSDOT has seven required training courses for employees to educate and inform a diverse workforce on agency policies and methods for maintaining a respectful workplace.

Training completion has mixed results

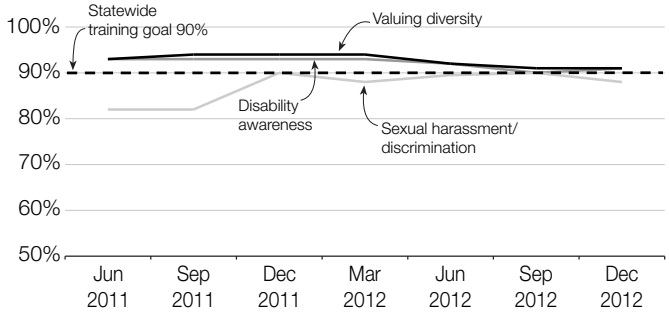
All WSDOT employees must take diversity and policy training courses within six months of starting work. Employees must take periodic refreshers for three mandatory courses. This helps ensure that employees are informed of any policy changes, and provides opportunities for discussion and continued learning.

Two diversity training courses meet compliance goal

The graph below illustrates the completion rates over the past two years for WSDOT diversity training courses compared to the goal of 90 percent completion.

Required diversity training for all WSDOT employees

June 2011 through December 2012; Percentage of employees in compliance



Data source: WSDOT Office of Human Resources and Safety, Staff Development.

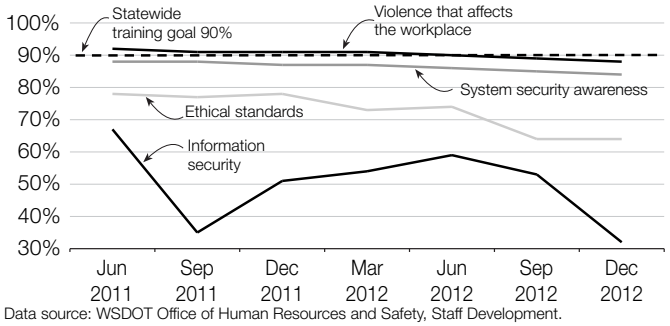
Note: Data for class attendance between May and September 2012 is being entered by hand and verified. Final numbers may not be available as of the Gray Notebook publication date.

Employee training completion for the three mandatory diversity courses was as follows for the fourth quarter of 2012:

- Disability Awareness remained above the goal, at 91 percent in the fourth quarter. No refresher course is required.
- Valuing Diversity remained above the goal, at 91 percent in the fourth quarter. No refresher course is required.
- The Sexual Harassment Awareness and Prevention course completion dipped to 88 percent for the fourth quarter of 2012, below the 90 percent goal. A refresher course is required every three years for managers and every five years for employees.

Required policy training for all WSDOT employees

June 2011 through December 2012; Percentage of employees in compliance



Data source: WSDOT Office of Human Resources and Safety, Staff Development.

Note: Data for class attendance between May and September 2012 is being entered by hand and verified. Final numbers may not be available as of the *Gray Notebook* publication date.

All policy training courses fell below compliance goal

The graph above compares the completion rate to the 90 percent goal for the mandatory policy training courses over the past two years. Employee training completion for these policy courses was as follows for the fourth quarter of 2012:

- The course on violence that affects the workplace dipped to 88 percent for the fourth quarter of 2012, down 1 percent from last quarter, and 2 percent below the 90 percent goal. This course has typically held steady between 91 and 92 percent during the past two years, in part because a refresher course is not required.
- Information Security training is required annually for all state employees. Training completion fluctuated between 51 and 59 percent for the past four quarters, and then dipped to 32 percent in the fourth quarter of 2012. Automatic reminders sent through LMS should help improve compliance.
- System Security Awareness training dipped further below the goal to 84 percent in the fourth quarter of 2012. This course has typically held steady between 87 and 88 percent during the past two years, in part because a refresher course is not required.
- Ethical standards training was below the goal at 64 percent in the fourth quarter of 2012, holding steady with the previous quarter. A refresher course is required every three years for all employees.

WSDOT expects that the recently-deployed Learning Management System will streamline the process of tracking training completion by eliminating paper records and class rosters that were entered by hand into the previous training system. LMS will send automatic reminders as employees approach the due date for their refresher classes. In order for these reminders to

Maintenance training emphasizes safety in the field

work, employees must registers for the class through the system for the first time. WSDOT expects these reminders will improve compliance with the Information Security training in particular because a refresher is required annually for all employees. Future editions of the *Gray Notebook* are expected to highlight training compliance rates that may change related to the improved tracking system and online course offerings.

WSDOT successfully implements new maintenance training courses

WSDOT implemented two new training initiatives in 2012 for maintenance employees, to align with WSDOT's on-going commitment to safety and the Workforce Business Strategy, which was published in September 2011. These new initiatives include two courses: Hazard Assessment for Call-Outs for field maintenance staff and New Employee Orientation.

Hazard Awareness for Call-Outs reaches 100 percent of targeted employees

As a result of recent revisions to the Safety Manual and in recognition of the types of conditions faced by field maintenance staff, WSDOT maintenance trainers developed and implemented the first of these new courses: Hazard Awareness for Call-Outs. This course was specifically designed to help employees recognize and assess hazards they may encounter in the field during emergencies and situations where they are called out to a site unexpectedly.

WSDOT developed a standard training template to implement this program. Each trainer was then able to modify the presentation materials to focus on potential hazards specific to the geographic and regional locations of each crew. This approach worked well as it helped employees taking the course participate and engage in the discussion regarding potential hazards they may face.

New training to prepare maintenance employees to identify on-site hazards reached all targeted employees

During the 2012 calendar year, WSDOT maintenance trainers fully implemented training across the state by providing this course to 100 percent of field staff identified to take this training. Furthermore, this training will continue as a refresher for current employees and be offered to new employees as they come on board.

New employee safety orientation deployed across the state for those entering fieldwork

The New Employee Orientation course is specifically designed to emphasize WSDOT's safety culture and prepare new employees to recognize and assess hazards in the field before they are given field work assignments. While the orientation course emphasizes safety, it also offers new employees a big picture view of the department, provides administrative details of their employment, and identifies the resources needed to be successful. The two-day program also covers a number of mandatory training courses to ensure each employee is ready for work. WSDOT is currently rolling out this orientation curriculum in each region. Many region offices are also pooling resources to help ensure that new employees receive this training on their first day of employment with WSDOT.

The two new courses offered in 2012 are a significant step toward the goal of providing employees with the tools needed to be successful and "Ready for Work."

Employees learn about proper record keeping from a Washington State Department of Agriculture instructor at a regional vegetation management training session in Spokane.

Internal data lags as WSDOT enhances reporting of maintenance and safety training

During the transition to the Learning Management System, WSDOT will not be able to comprehensively report on maintenance and safety training compliance (see *Gray Notebook* 44, p. 79). The data successfully transferred from the previous system; however, to report data, new employee training plans need to be established and entered into the new system. WSDOT will report on the progress of the transition in *Gray Notebook* 49.

Highlights for the quarter ending December 31, 2012

WSDOT is building a sustainable transportation system - working *better*

Work will help Aurora Bridge better withstand earthquake movement

Crews finished steel and concrete work on two specially designed expansion joints on the State Route (SR) 99 George Washington Memorial Bridge (Aurora Bridge) in October. The work will help this vital north-south corridor to better withstand and recover more quickly in the event of a significant earthquake. The Aurora Bridge, built in 1932, is a designated city of Seattle landmark and is listed on the National Register of Historic Places.

Two slabs of concrete separated by a 2-foot, 7- inch diameter bearing are what stands between Aurora Bridge drivers and disaster in an earthquake. This huge bearing allows the bridge to sway any direction with a tolerance of 1-foot. Massana Construction installed these bearings in October 2012.

Seismic retrofitting began in June 2011; this $5.7 million project was funded through federal and state gas taxes and included work on bridge columns and girders on both the Queen Anne and Fremont ends and on the bridge deck that connects the two neighborhoods. In Fremont, crews added more concrete to the girders supporting the bridge and wrapped the unique cross-shaped columns with a special material to increase seismic safety. In Queen Anne, crews dug deep into the hillside and reinforced the bridge-supporting columns with steel. They also added more steel and concrete to the bridge's skeleton to make it sturdier. On the deck of the Aurora Bridge, crews are replacing a bridge-wide expansion joint that rolls on bearings and repairing two others.

BETTER

Seismic retrofitting will help the Aurora better withstand an earthquake

Roundabout replaces signal and is expected to significantly improve safety in Arlington

Crews completed work on a new roundabout in Arlington at the intersection of SR 9 and SR 531 in November. The roundabout replaces a traffic signal at the intersection, which in a five-year span had 28 collisions resulting in 29 injuries. The roundabout is expected to significantly improve safety for roughly 16,000 daily drivers. Recognizing the large number of semi-trucks and horse trailers that travel these highways, WSDOT built the roundabout to accommodate the larger vehicles.

> ***"It's our job now to think about how to do what we do better, faster, cheaper and smarter."***
>
> **Paula J. Hammond, P.E., Secretary of Transportation**

Numerous national studies have shown that roundabouts reduce injuries by 75 percent, fatalities by 90 percent and overall collisions by 37 percent at intersections where they replace signals. Washington state ranks second in the nation, only behind Colorado, for the most roundabouts. There are approximately 240 roundabouts across the state and approximately 70 of those are on state highways.

First stage of Battle Ground project begins

In just four months, crews built 110 acres of wetlands and six stormwater ponds to support a project that will widen SR 502 from I-5 to Battle Ground. The work completed in November helps improve environmental conditions and paves the way for more efficient construction when WSDOT begins widening and improving intersections along SR 502 in summer 2013. The new stormwater ponds help save tax dollars by avoiding the need for temporary stormwater treatment during the next few years of construction. Crews also built three new wetlands and reconstructed an existing wetland

WSDOT is improving SR 502, a critical east-west route in central Clark County. Phase 1 - wetland sites and stormwater ponds - was completed in November 2012. By 2015, the highway will be four lanes wide, separated by median barrier, with four signalized intersections to help move traffic more safely and efficiently.

WSDOT is building a sustainable transportation system - working *faster*

to function better. The wetlands are mitigation for future highway construction.

The $88 million gas tax funded project will help improve safety and mobility along this critical east-west route in central Clark County. Roughly 14,000 vehicles use SR 502 every day, and that number is expected to more than double in the next 20 years. The entire project is scheduled for completion in 2015.

Simpson Avenue bridge preservation work completed one week early in Hoquiam

The U.S. 101 Simpson Avenue Bridge in Hoquiam reopened in early November, one week ahead of schedule following work to repair and stabilize the bridge. The work was originally scheduled to last four weeks. In the three weeks the 1927-era bridge was closed to traffic, crews improved the stability and reliability of the bridge by:

- Installing two additional pier supports at the northeast and southeast corners of the pier;
- Strengthening the walls of the existing pier;
- Transferring the remaining weight of the pier onto the two new supports;
- Removing temporary anchors and cables; and
- Replacing the pier fender protection system.

The U.S. 101 Simpson Avenue Bridge in Hoquiam is a 1,978-foot-long bridge that spans the Hoquiam River.

Year-end reports show High Occupancy Toll lane revenue higher than expected

Traffic and revenue are meeting or exceeding expectations on the SR 520 floating bridge while the popularity of the SR 167 High Occupancy Toll (HOT) lanes continues to rise, according to year-end financial statements.

The SR 167 High Occupancy Toll (HOT) lanes opened in May 2008 between Renton and Auburn. HOT lanes are High Occupancy Vehicle (HOV) lanes for carpools of two or more, vanpools and buses that are also open to toll-paying solo drivers, providing a faster, more reliable trip. The lanes are proving popular with commuters.

Average daily traffic across the SR 520 floating bridge in 2012 was 18 percent higher than expected. Weekend traffic across the bridge steadily increased as well, with usage rates 36 percent higher than anticipated. Even with the higher traffic volumes, drivers are saving about six minutes compared to pre-toll travel times. Tolling on SR 520 is expected to raise $1 billion over the next 30 to 40 years that will help pay for the $4.65 billion SR 520 bridge replacement. It will also fund a High Occupancy Vehicle program, which will build 12.8 miles of safety and mobility improvements from I-5 in Seattle to SR 202 in Redmond.

FASTER

Drivers on SR 520 save six minutes over pre-tolling travel time despite increased traffic.

Traffic along SR 167 HOT lanes is flowing more efficiently, with volumes tripling since May 2008 while maintaining 60-mph traffic speeds. HOT lanes offer solo drivers the option for a faster trip by paying a toll, at a rate determined by current traffic levels. Since the HOT lanes opened in 2008, peak hour traffic speeds in SR 167's general purpose lanes increased by 20 percent to more than 50 mph on average. During weekday, peak-hour travel, HOT lane drivers saved about six minutes of travel time - compared to adjacent general purpose lane travel - by paying an average toll of $1.75. WSDOT opened the HOT lanes as a pilot project in 2008 to reduce congestion and travel time between Auburn and Renton. In 2012, the SR 167 HOT lanes program generated $340,000 in revenue. HOT lane revenue has exceeded operating costs since

WSDOT is building a sustainable transportation system - working *cheaper* and working *smarter*

April 2011. WSDOT plans to request that the Legislature make the SR 167 HOT lanes permanent.

Ferries fuel-conservation program receives national recognition

A highly-skilled team of state employees was recognized this year for its innovative work to conserve fuel and save the state more than $700,000 per year. Crew members of WSDOT's Ferries Division won the President's Transportation Award for water transportation and were recognized for their exemplary service to save fuel on the Edmonds - Kingston ferry route. The award was sponsored by the American Association of State and Highway Transportation Officials.

Beginning in 2010, three Washington State Ferries employees – Staff Chief Engineer Mark Nitchman, Captain John Tullis and now-retired Captain Bill Chapple – collaborated to identify a method to save fuel on the 202-car Motorized/Vessel (M/V) *Puyallup*, serving the Edmonds - Kingston route. The route is 5.2 miles one way and is one of the busiest in the system, serving approximately 3.8 million riders and 2 million vehicles in 2011.

CHEAPER

Reduced ferry fuel consumption saves taxpayers more than $700,000 per year.

The team studied the effect of vessel speed on fuel consumption and on-time arrival and suggested revised throttle settings to maximize fuel efficiency. Following a successful pilot project, WSDOT management adopted and implemented their suggestion, which is now the operating standard for the vessels on the route. As a result, ferries on this route saves 15,000 gallons of fuel per month and 180,000 gallons per year. These fuel conservation efforts have also reduced vessel exhaust emissions.

New I-5 cameras help drivers in Thurston County to "know before you go"

Six new traffic cameras came online in December, allowing travelers in Thurston County to see a little further down the road on Interstate 5 (I-5) between Rochester and Tumwater. The new cameras give the 56,000 travelers who use this section of I-5 daily a real-time look at road and travel conditions. The cameras also help WSDOT and the Washington State Patrol see what they are facing when responding to incidents.

Installed as part of the I-5 Grand Mound to Maytown interchange-rebuild project at U.S. 12, the new cameras are positioned along the roadway between exits 88 and 95. This is one of four projects funded by $390 million from the 2003 and 2005 gas tax packages to improve traffic flow and safety along an 18-mile stretch of I-5 in Lewis and Thurston counties.

SMARTER

Traffic cameras provide travelers with a real-time look at travel conditions.

Awards honor innovators in traffic reduction

The 22 honorees of the 2012 Governor's Commute Smart Awards represent a growing movement in transportation leadership in the workplace. The awards highlight the benefits of Commute Trip Reduction – like better traffic flow and cleaner air – felt by everyone who lives or works in Washington. For every taxpayer dollar that goes to these programs, businesses invest $18. WSDOT's biennial budget alloction for Commute Trip Reduction is $5.7 million.

Employers and individuals, such as Bellevue College's Deric Gruen, represent the essence of smart commuting. Gruen commissioned a parking study and established a transportation management task-force. He led the school's RideshareOnline.com outreach efforts and developed a program using parking fees to offset the rising cost of the school's transit pass program for students and employees. Program participation increased by 30 percent from fall 2010 to fall 2011.

The Governor's Commute Smart Awards recognize communities, businesses, agencies and workplace transportation coordinators for efforts to promote ridesharing and other alternatives to driving alone, such as bicycling and teleworking. Their work improves

Vanpooling and bicycling are just two ways to Commute Smart, benefiting Washington residents with better traffic flow and cleaner air.

Highlights for the quarter ending December 31, 2012

WSDOT is building a sustainable transportation system - working *smarter*

traffic flow and strengthens the economy by empowering more than 570,000 commuters across the state to drive 160 million fewer vehicle miles annually, saving eight million gallons of fuel. It also cuts greenhouse gas emissions by more than 71,500 metric tons.

SR 99 tunnel boring machine has a name – and a Twitter account

The world's largest-diameter tunneling machine now has a name, a face and a voice on Twitter. Bertha, the five-story-tall steel behemoth is expected to begin boring the SR 99 tunnel beneath downtown Seattle next summer.

Bertha's name was chosen as part of a contest for kindergarten through 12th-grade students. Proposed names had to be female and have significance to Washington state heritage, life, nature, transportation or engineering. Bertha was selected from more than 150 entries by a panel of judges that included then-Governor Chris Gregoire and Transportation Secretary Paula Hammond. Elected mayor of Seattle in 1926, Bertha Knight Landes was the first woman to lead a major American city.

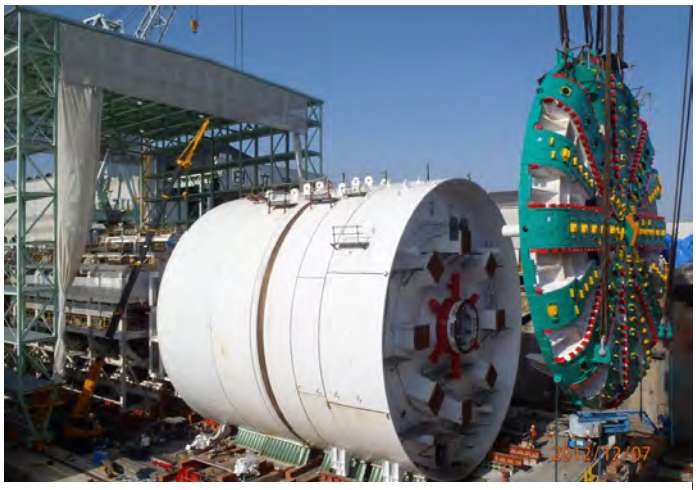
SMARTER

Students named the tunnel boring machine after Bertha Knight Landes, the first woman elected mayor of Seattle.

The winning name was submitted by two entrants: Darryl Elves' fifth-grade class at Poulsbo Elementary School and Elijah Beerbower, a second-grader at Lincoln Elementary School in Hoquiam. All of the winners will be invited to Bertha's dedication ceremony in Seattle next summer. They will also receive special T-shirts and the honor of having the name they chose painted on the side of the machine.

"The next generation of engineers is in our classrooms right now," Hammond said. "Letting students name the machine and providing an opportunity to follow Bertha on Twitter is a great way to engage them in this historic project, which is an engineering marvel."

Crews in Japan are putting the finishing touches on the machine. In December 2012, they installed its 57.5-foot-diameter cutterhead. Bertha will officially become the property of WSDOT's contractor, Seattle Tunnel Partners. Once testing is completed, she'll then be disassembled and loaded onto a ship scheduled to arrive in Seattle next spring 2012. Tunneling is expected start in summer 2013 west of Seattle's stadiums.



Giant cranes lift the 57.5-foot-diameter cutterhead into place on the SR 99 tunnel boring machine in Japan. Once complete, crews will test all components of the machine, including all motors, hydraulics, electrical and control systems. The machine is scheduled to arrive in Seattle from Japan in spring 2013, and start tunneling in summer 2013.

Pass system will allow critical freight to move more efficiently should disaster strike

In late December 2012, WSDOT completed a $2 million project to install cameras, electronic message boards, and upgrades to road signs and the highway advisory radio signal along U.S. 12 and SR 7, the roadways used as an emergency detour for I-5 through Lewis County. The technology and sign upgrades WSDOT's Commercial Vehicle Pass System (CVPS), a way to move critical freight when major truck corridors are closed or severely restricted. CVPS allows emergency managers to categorize and prioritize emergency and essential goods during major disruptions and closures, giving first priority to disaster relief supplies.

WSDOT, the Washington Trucking Association, Washington State Patrol, and the Washington Emergency Management Division developed CVPS after I-5 closed from flooding in 2007 and again in early 2009. WSDOT can modify the CVPS to work anywhere in the state when there is a multi-day highway closure on a priority freight route and there is an alternate route available.

Besides monitoring roadway and traffic conditions during emergencies, WSDOT will use the new equipment in Lewis County to monitor traffic and provide traveler information on a day-to-day basis, supplementing information available on the road and the WSDOT Traveler Information website.

Linking performance measures to strategic goals

The *Gray Notebook* is the basis for WSDOT performance reporting that links performance measures to the strategic plan, legislative and executive policy direction, as well as federal reporting requirements.

Statewide transportation policy goals

The Governor and Legislature have enacted laws establishing policy goals for transportation agencies in Washington (Chapter 516, Laws of 2007).

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;

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.

WSDOT develops the necessary business direction plans to achieve these goals through the agency's strategic planning process, which takes place every two years.

The Transportation Progress Report

Under the Chapter 516, Laws of 2007, the Washington State Office of Financial Management (OFM) is responsible for setting objectives and establishing performance measures for each of the transportation policy goals. OFM must report on the attainment of the goals and objectives to the Governor and Legislature each biennium. In January 2008, OFM published a "baseline" report to get feedback from the Governor and Legislature on draft objectives and performance measures.

The most recent Attainment Report, for 2012, is available online at www.wsdot.wa.gov/Accountability/PerformanceReporting/Attainment.htm, or on OFM's performance and results website, www.ofm.wa.gov/performance/.

WSDOT Strategic Plan

WSDOT's 2011-2017 strategic plan *Business Directions* summarizes WSDOT's work plan based on the programs and budgets authorized by the state Legislature and the Governor. The plan describes the agency strategic directions and initiatives to address critical programs and service delivery mandates. The table on page vii illustrates this alignment. WSDOT's 2011-2017 strategic plan is available online at www.wsdot.wa.gov/Accountability/PerformanceReporting/StrategicPlan.htm.

Other performance reporting requirements

Priorities of Government (POG)

POG is an investment prioritization process used to help the Governor and Legislature develop agency budgets. Every biennium, workgroups composed of government agency and private sector representatives identify results that citizens expect from government, and evaluate the performance of state agency activities and services against those expected results. Information about the 2011-2013 POG process is available at www.ofm.wa.gov/budget/pog.

Government Management Accountability and Performance (GMAP) program

GMAP is a management tool that promotes the sharing and evaluation of current performance to improve results. Under GMAP, then-Governor Gregoire and her leadership team met in "GMAP forums" with agency directors to review performance results and develop action plans for improvement. These meetings provided an opportunity for candid conversations about what is working, what is not, and how to improve results.

In the past, WSDOT regularly reported to the Governor during the Transportation GMAP forums. WSDOT's GMAP reports can be found at www.wsdot.wa.gov/Accountability/PerformanceReporting/GMAP.htm.

About WSDOT's Performance Dashboard

The "dashboard" of performance measures on page viii offers readers a snapshot glance at WSDOT's progress against the statewide policy goals and WSDOT's strategic plan. Some results are discussed in depth within this edition of the *Gray Notebook*, while others are in previous editions or will be updated in coming editions based on established reporting cycles. All previous editions are available online at www.wsdot.wa.gov/accountability.

Navigating the WSDOT Information Stream

Linking performance measures to strategic goals

Through more than 47 editions in more than 11 years, WSDOT has published a quarterly performance report known as the *Gray Notebook*. It presents articles in a way that clarifies the topics' relationship to the six legislative policy goals and to WSDOT's own strategic business directions.

The *Gray Notebook* is organized into sections devoted to those strategic goals. Contents include quarterly and annual reports on key agency functions, providing regularly updated system and program performance information. Annual system performance updates are rotated over four quarters based on data availability and relevant data cycles, to provide in-depth analysis of topics such as capital facilities, aviation and freight. Quarterly topics, such as worker safety, Incident Response, Amtrak Cascades, and Washington State Ferries, are featured in each edition since data is generally available more frequently.

Information pertaining to WSDOT's Federal Recovery Act-funded projects, including high speed rail and Transportation Investment Generating Economic Recovery (TIGER) grant projects, finance, capital project delivery, workforce, and agency highlights appear in the Stewardship section. The Beige Pages address the delivery of the projects funded in the 2003 Transportation Funding Package (Nickel), 2005 Transportation Funding Package (TPA), and Pre-existing Funds (PEF).

More easily tracked business plan results

By aligning the *Gray Notebook*'s articles with WSDOT's business goals as outlined in the strategic plan, *Business Directions*, WSDOT hopes to make tracking performance results against specific strategic actions more straightforward.

Business Directions reflects WSDOT's program and project delivery responsibilities with the goal of demonstrating the best possible return for taxpayers' dollars. For a copy of *Business Directions*, please visit www.wsdot.wa.gov/Accountability/PerformanceReporting/StrategicPlan.htm.

Publication frequency and archiving

The *Gray Notebook* is published quarterly in February, May, August and November. This edition and all past editions are available online at www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm.

A separate detailed navigation folio is available at www.wsdot.wa.gov/Accountability/GrayNotebook/.

Gray Notebook Lite

WSDOT publishes a quarterly excerpt of selected performance topics and project delivery summaries from the *Gray Notebook*, called *Gray Notebook Lite*. The folio-style *Lite* allows for a quick review of WSDOT's most important activities in the quarter. It can be accessed at www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm.

Navigate the WSDOT website

WSDOT prepares information for legislators, state and local officials, interested citizens, and the media on the progress of the state's three capital delivery programs, and an array of detailed information can be found on-line at the WSDOT website.

WSDOT's on-line project reporting uses several different tools, including the *Gray Notebook* (as a downloadable PDF), web-based Project Pages, and Quarterly Project Reports (QPRs). There is a Project Page on the website for each major WSDOT project, and QPRs for Nickel-funded projects in the 2003 Transportation Funding Package.

The WSDOT home page (www.wsdot.wa.gov) offers several ways to find information on projects. The Projects tab on the top navigation bar links to the WSDOT's Projects page; there, you'll find information and links to detailed descriptions of all WSDOT projects. The Accountability navigation menu offers links to several important topics (including congestion relief, safety, and preservation).

Project pages

Project pages (www.wsdot.wa.gov/projects/) report on many WSDOT capital delivery program construction projects. Project pages provide details on overall project vision, funding components, financial tables, milestones, status description, problem discussions, risks and challenges, forecasting, maps, photos, links and more, which are updated regularly.

Quarterly Project Reports

The Quarterly Project Reports (QPRs) are reached by a link on the project page. They summarize quarterly activities such as highlights, milestones, status description, problem statement, risks and challenges, project costs, cash flow, and contact information.

Acronyms used in the *Gray Notebook*

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ATMS	Automated Training Management System
AWV	Alaskan Way Viaduct
ARRA	American Recovery and Reinvestment Act
BMP	Best Management Practice
BST	Bituminous surface treatments
CCI	Construction Cost Index
CESCL	Certified Erosion and Sediment Control Lead
CMAQ	Congestion Mitigation and Air Quality
CPMS	Capital Program Management System
CRAB	County Road Administration Board
CVISN	Commercial Vehicle Information Systems & Networks
CVPS	Commercial Vehicle Pass System
DART	Days away, restricted, or transferred
DOT	Department of Transportation
EB	Eastbound
EIS	Environmental Impact Statement
EOB	End of biennium
ESA	Endangered Species Act
FARS	Fatality Analysis Reporting System
FFY	Federal fiscal year
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FTE	Full-time equivalent
FY	Fiscal year
GIS	Geographic Information Systems
GMAP	Government Management, Accountability and Performance
GNB	Gray Notebook
HMA	Hot mix asphalt
HOV	High occupancy vehicle
HOT	High occupancy toll
HSIP	Highway Safety Improvement Program
I	Interstate
IR	Incident Response
IRI	International Roughness Index
JOPS	Joint Operations Policy Statement
L&I	Labor and Industries
LEAP	Legislative Evaluation and Accountability Program
LMS	Learning Management System
LMY	Lane mile years
LOS	Level of Service
MAP	Maintenance Accountability Process
MAP-21	Moving Ahead for Progress in the 21st Century
MOU	Memoranda of Understanding
MOA	Memoranda of Agreement
MP	Milepost
MPO	Metropolitan Planning Organization
M/V	Motorized/Vessel
NB	Northbound
NEPA	National Environmental Policy Act
NHPP	National Highway Performance Program
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
NOAA	National Oceanic and Atmospheric Administration
NSC	North Spokane Corridor
OEO	Office of Equal Opportunity
OFM	Office of Financial Management
OSHA	Occupational Safety and Health Administration
PCI	Pavement Condition Index
PEF	Pre-existing Funds
POG	Priorities of Government
QPR	Quarterly Project Report
RIR	Recordable incident rate
ROD	Record of Decision
RPM	Raised/Recessed Pavement Marker Maintenance
RSL	Remaining Service Life
SAO	Strategic Assessment Office
SEPA	State Environmental Policy Act
SB	Southbound
SD	Structurally deficient
SR	State Route
STCDO	Statewide Travel and Collision Data Office
TIGER	Transportation Investment Generating Economic Recovery
TEIS	Transportation Executive Information System
TPA	Transportation Partnership Account
UTL	Unable to locate
USDOT	United States Department of Transportation
VMT	Vehicle miles traveled
WB	Westbound
WDFW	Washington State Department of Fish and Wildlife
WITS	Washington Incident Tracking System
WSDOT	Washington State Department of Transportation
WSF	Washington State Ferries
WSP	Washington State Patrol
YTD	Year to date

Gray Notebook Edition Index

Calendar year	Edition number / Date (Washington state fiscal year and quarter)			
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2002	5 / Mar 31, 2002 (Q3 FY2002)	6 / Jun 30, 2002 (Q4 FY2002)	7 / Sep 30, 2002 (Q1 FY2003)	8 / Dec 31, 2002 (Q2 FY2003)
2003	9 / Mar 31, 2003 (Q3 FY2003)	10 / Jun 30, 2003 (Q4 FY2003)	11 / Sep 30, 2003 (Q1 FY2004)	12 / Dec 31, 2003 (Q2 FY2004)
2004	13 / Mar 31, 2004 (Q3 FY2004)	14 / Jun 30, 2004 (Q4 FY2004)	15 / Sep 30, 2004 (Q1 FY2005)	16 / Dec 31, 2004 (Q2 FY2005)
2005	17 / Mar 31, 2005 (Q3 FY2005)	18 / Jun 30, 2005 (Q4 FY2005)	19 / Sep 30, 2005 (Q1 FY2006)	20 / Dec 31, 2005 (Q2 FY2006)
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2010	37 / Mar 31, 2010 (Q3 FY2010)	38 / Jun 30, 2010 (Q4 FY2010)	39 / Sep 30, 2010 (Q1 FY2011)	40 / Dec 31, 2010 (Q2 FY2011)
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2012	45 / Mar 31, 2012 (Q3 FY2012)	46 / Jun 30, 2012 (Q4 FY2012)	47 / Sep 30, 2012 (Q1 FY2013)	48 / Dec 31, 2012 (Q2 FY2013)

Where is the *Gray Notebook* Subject Index?

In the interest of continuing the *Gray Notebook's* transition to a leaner profile, WSDOT has moved the subject index online. This move is complemented by a revised online index, which is more comprehensive and easier to navigate. For more information or to review the subject index, please visit www.wsdot.wa.gov/Accountability/GrayNotebook/SubjectIndex.

All editions of the *Gray Notebook* are available online at www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.

Americans with Disabilities Act (ADA) Information

This material can be made available in an alternative format (large print, Braille, cassette tape, or on computer disk) by emailing the Washington State Department of Transportation Diversity/ADA Affairs Team at wsdotada@wsdot.wa.gov or by calling toll free (855) 362-4ADA (4232). Persons who are deaf or hard of hearing may make a request by calling the Washington State Relay at 711.

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

It is the Washington State Department of Transportation's (WSDOT) 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 discriminated against 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, please contact OEO's Title VI Coordinators, George Laué at (509) 324-6018 or Jonté Sulton at (360) 705-7082.

Other WSDOT Information Available

The Washington State Department of Transportation has a vast amount of traveler information available. Current traffic and weather information is available by dialing 5-1-1 from most phones. This automated telephone system provides information on:

- Puget Sound traffic conditions and travel times
- Statewide construction impacts
- Statewide incident information
- Mountain pass conditions
- Weather information
- State ferry system information, and
- Phone numbers for transit, passenger rail, airlines and travel information systems in adjacent states and for British Columbia.

For additional information about highway traffic flow and cameras, ferry routes and schedules, Amtrak Cascades rail, and other transportation operations, as well as WSDOT programs and projects, visit www.wsdot.wa.gov.

For more information about performance measurement and reporting, visit www.wsdot.wa.gov/accountability/.

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