

The Gray Notebook

WSDOT's quarterly performance report on transportation systems, programs, and department management
Quarter ending September 30, 2012 • Published November 27, 2012 Paula J. Hammond, P.E., Secretary of Transportation

The sky's the limit

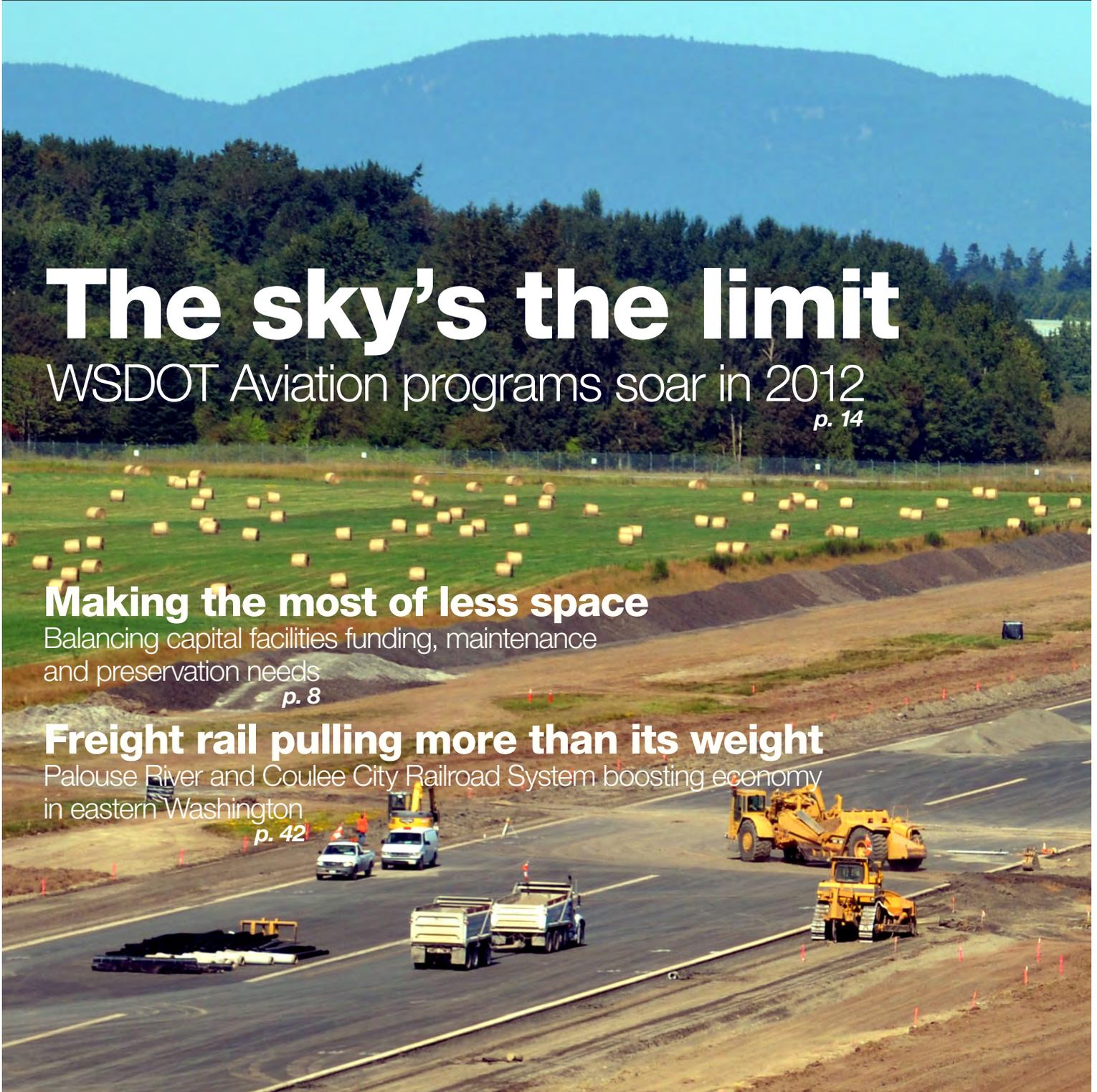
WSDOT Aviation programs soar in 2012
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Making the most of less space

Balancing capital facilities funding, maintenance
and preservation needs
p. 8

Freight rail pulling more than its weight

Palouse River and Coulee City Railroad System boosting economy
in eastern Washington
p. 42



Executive Summary

Highlights in this edition of the *Gray Notebook*



On this quarter's cover:

The Port of Skagit completed a two-year project, improving its main runway and bringing it up to Federal Aviation Administration standards. WSDOT's Airport Aid Grant Program contributed more than \$300,000 in state grants, and leveraged more than \$14 million in FAA grants for the project. The airport is home to 165 aircraft based at the airport, sees about 61,000 take-offs and landings and transports about 175,000 tons of cargo each year. It produces 514 direct and indirect jobs, more than \$23 million in labor income and almost \$58 million in indirect, direct and induced benefits.

This page:

By the time the calendar turns to 2013, crews in Japan will have finished building the SR 99 tunnel boring machine. Up next for the massive machine: a journey by ship to Seattle in early 2013, followed by a summer launch from an 80-foot-deep pit to the west of Seattle's stadiums. The machine will dig for nearly two miles beneath Seattle before emerging from the ground at the north end of downtown in late 2014. The tunnel, which will replace the central waterfront section of the Alaskan Way Viaduct, will open to traffic in late 2015.

The Washington State Department of Transportation's quarterly performance report, the *Gray Notebook*, is progressing toward a leaner profile and more readable format while promoting agency-wide accountability and transparency. The *Gray Notebook*'s Third Generation reporting efforts continue the publication's journey to improve content, design and communication.

This edition includes annual reports on WSDOT's freight rail, aviation and environmental programs, and introduces new performance measures for Washington State Ferries (WSF). The WSF measures will be tracked annually in the *Gray Notebook* and reported to the Legislature.

The following pages present information on WSDOT's performance for the quarter ending September 30, 2012. Selected highlights from this edition include:

- In the first three quarters of 2012, there were 227 Occupational Safety and Health Administration recordable incidents reported, showing a marked decrease from 2011 when there were 395 recordable incidents. (p. 2)
- WSDOT spent \$27.1 million on building lease payments in the 2009-2011 biennium, and expects to spend \$21.2 million in the 2015-2017 biennium. (p. 8)
- During the second round of 2011-2013 Airport Aid grants, WSDOT awarded \$998,809 in state funds to 23 airports for 28 different projects. WSDOT was able to use \$875,077 in state funds to leverage about \$32 million in federal funds, bringing the combined state, local, and federal total to approximately \$35.7 million for fiscal 2012. (p. 14)
- WSDOT's Incident Response program responded to 12,459 incidents in the third quarter of 2012, saving travelers and businesses in Washington about \$10.8 million by reducing the time and gas they would have wasted in travel delay due to congestion. (p. 17)
- Washington State Ferries met 15 of 17 legislative performance goals. (p. 22)
- Washington state-supported Amtrak Cascades ticket revenues decreased 2.5 percent in the third quarter 2012, and ridership declined 5.8 percent compared to the same quarter of 2011. (p. 29)
- WSDOT has prepared or approved more than 25 traffic and underwater noise studies, and more than 60 noise variances to allow construction work at night in fiscal 2012. (p. 32)
- Reducing greenhouse gas emissions by operating ferry vessels more efficiently is a priority for WSDOT's Air Quality program. In fiscal 2012, Washington State Ferries used more than 17.4 million gallons of fuel, a one percent increase from fiscal 2011. (p. 35)
- WSDOT has completed Environmental Species Act reviews and consultations for 277 of 514 projects scheduled for advertisement in the 2011-2013 biennium and 21 of 155 WSDOT projects scheduled for advertisement in the 2013-2015 biennium. (p. 38)
- The Palouse River and Coulee City Rail System generated 10,253 railcar shipments in 2011, a 26 percent increase from 8,119 railcar shipments in 2010. (p. 42)
- WSDOT completed six more Nickel and Transportation Partnership Account projects during the quarter ending September 30, 2012, bringing its total count to 336 out of 421 projects since the 2003 and 2005 gas tax funding packages were approved. (p. 46)
- As of September 30, 2012, WSDOT employed 6,722 permanent full-time employees, 57 fewer than the second quarter ending June 30, 2012. This is 136, or two percent, fewer employees than the 6,858 employed at the end of September 2011. (p. 76)

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8 • There is a \$113.1 million backlog of necessary work for the 66 percent of WSDOT's primary buildings that are more than 25 years old.

14 • WSDOT used \$875,077 to leverage \$32 million in federal funds for Airport Aid grants in FY2012.

22 • WSF met 15 of 17 legislatively mandated performance goals for FY2012.

46 • WSDOT completed six Nickel and TPA projects in the quarter ending September 30, 2012.

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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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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 pages 83-84.

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 increase safety on all state-owned transportation modes; reduce fatalities and serious injuries; assist local communities in identifying effective strategies to transportation safety.

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 improvements	annual	GNB 45, p. 5
Number of recordable workplace injuries and illnesses	quarterly	GNB 47, p. 2

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, 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 44, 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 44, p. 17
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 44, pp. 36-37
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 Move people, goods, and services safely, reliably, and efficiently by operating transportation systems efficiently, managing demand effectively, and adding infrastructure capacity strategically.

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 47, p. 18
Ferry ridership	quarterly	GNB 47, p. 20
Ferry trip reliability	quarterly	GNB 47, p. 20
Percent of ferry trips on time	quarterly	GNB 47, p. 21
Amtrak Cascades ridership	quarterly	GNB 47, p. 30
Percent of Amtrak Cascades trips on time	quarterly	GNB 47, p. 29

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 47, pp. 45-62
Recovery Act-funded project reporting	quarterly	GNB 47, p. 68

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. WSDOT will develop key performance measures and report on them in upcoming editions of the *Gray Notebook*.

<i>Gray Notebook</i> report on Freight	GNB 45, pp. 38-44
<i>Gray Notebook</i> report on Rail Freight	GNB 47, pp. 42-44
<i>Gray Notebook</i> report on Transportation Economic Indicators	GNB 44, p. 42

Performance Dashboard



Goal has been met.



Performance is trending in a favorable direction.



Trend is holding.



Performance is trending in an 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 (Calendar quarterly measure: Q1 - Q3 2011 & YTD 2012)	5.9/ 3.2	4.9/ 3.5	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 pavements in fair or better condition (Annual measure: calendar years 2009 & 2010)	93.0%	92.7%	90.0%			Slight reduction from previous year, as Recovery Act projects wrap up.
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: Q2 2012 & Q3 2012)	143 minutes	170 minutes	155 minutes	–		Average clearance time increased for the quarter, and did not meet the goal of 155 minutes.
Ferries: Percentage of trips departing on time ³ (Fiscal quarterly measure: year to year: Q1 FY2012 & Q1 FY2013)	93.7%	93.4%	90%			Performance is less than the same quarter a year ago but still better than the the goal.
Rail: Percentage of Amtrak Cascades trips arriving on time ⁴ (Calendar quarterly measure: year to year Q3 FY2011 & Q3 FY2012)	71.0%	71.0%	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 2010 & 2011)	245	258	N/A	N/A		Eleven fish passage corrections were completed in 2011.
Stewardship						
Cumulative number of Nickel and TPA projects completed, and percentage on time ⁶ (Calendar quarterly measure: Q2 2012 & Q3 2012)	330/ 88%	336/ 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: Q2 2012 & Q3 2012)	330/ 91%	336/ 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: Q2 2012 & Q3 2012)	under-budget by 1.3%	under-budget by 1.3%	on budget	–		Total Nickel and TPA construction program costs are within 1.3 % 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.

- 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.
- 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).
- '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.
- 'On-time' arrivals for Amtrak Cascades are any trips that arrive at their destination within 10 minutes or less of the scheduled time.
- Number of estimated facilities in permitted counties: Clark, King, Pierce, and Snohomish.
- Budget and schedule expectations are defined in the last approved State Transportation Budget. See page 46 for more information on capital projects in the current 2012 Legislative Transportation Budget. As of this quarter, WSDOT now reports on completed on time and on budget for the whole program, including projects completed in earlier biennia.



In Safety:

Worker Safety 2

WSDOT has made significant progress toward the goal that every employee should leave at the end of their shift just as healthy as when they started. Worker safety metrics track injury frequency and severity for the quarter ending September 2012.

Highway System Safety Programs 5

WSDOT identified 221 top statewide locations with the highest expected average frequency of fatal and serious injury crashes using Safety Analyst, a new software tool.

See also

Incident Response 17

Workforce Training 76

Earlier safety-related articles

Find previous articles in these GNB editions:

Highway System Safety Programs:

Focus on Traffic Fatalities/
Target Zero GNB 46

Rest Areas and Rumble Strips GNB 45

Pedestrian and Bicycle Safety GNB 44

Focus on Before and After
Results of Projects GNB 43

State policy goal

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

WSDOT's business direction

To vigilantly reduce risks and 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

WSDOT emphasizes worker safety, sees mixed results

Worker Safety Highlights

The recordable incident rate has improved, decreasing by 17 percent to date in 2012 compared to the same period in 2011.

Six of WSDOT's eight organizational units are meeting their annual goals as of September 30, 2012.

The agency-wide days away, restricted, or transfer (DART) rate worsened, increasing by nine percent from the same period in 2011. However, four organizational units improved their DART rates, decreasing by 13 percent or more.

Changes in WSDOT recordable incident rates¹ by organizational unit

Number of recordable incidents for every 100 full-time employees

Organizational unit	CY 2011	Q1-Q3 2011	Goal 2012	YTD ² 2012	2011-2012 ² % change ³
Northwest Region	6.6	6.5	5.6	4.5	-31%
North Central Region	8.9	10.7	7.9	6.1	-43%
Olympic Region	5.2	4.0	4.2	5.0	25%
Southwest Region	6.6	3.9	5.6	4.6	18%
South Central Region	7.8	6.5	6.8	5.5	-15%
Eastern Region	9.9	10.4	8.9	8.8	-15%
Headquarters	2.2	2.4	1.2	3.2	33%
Subtotal	5.8	5.4	4.8	4.8	-11%
Ferry System	7.5	7.7	6.5	5.2	-32%
Agency-wide	6.2	5.9	5.2	4.9	-17%

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 Year to date percent change comparing January through September 2011 to 2012. 3 Incident rate changes: improved = decrease (-%); worsened = increase.

WSDOT has embarked on a program to transform its 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. WSDOT has made significant progress toward this goal. In the first three quarters (January through September) of 2012, there were 227 Occupational Safety and Health Administration (OSHA) recordable incidents reported, showing a marked decrease from 2011 when there were 395 recordable incidents. WSDOT's health and safety staff completed training in root cause analysis methods, as part of WSDOT's ongoing commitment to improve employee safety. This method of incident investigation is further described on p. 4.

Worker safety metrics track injury frequency and severity

WSDOT focuses on the agency's overall recordable incident rate as the primary measure to gauge employee safety. This cumulative (year to date) incident rate is the number of OSHA-recordable incidents reported for every 100 full-time employees. "OSHA-recordable incidents" is an industry standard measure that includes all work-related illnesses and injuries (see *Gray Notebook* 45, p. 2). Tracking the incident rate allows the agency to better address employee safety, and identify problem areas and progress in preventing work-related injuries and illnesses.

A second measure for WSDOT employee safety is the cumulative "DART" rate, for "days away, restricted, or transferred." This "days away" rate 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. This rate indicates the relative severity of incidents. If two regions have equal recordable incident rates, but one has a lower days away, restricted, or transferred rate, it indicates which one is experiencing more severe injuries that require longer times for employees to recover. The U.S. Coast Guard requires maritime employees to

be 100 percent fit for duty before they return to work. Therefore, some Washington State Ferries (WSF) employees are not able to return to work either part-time or in a limited capacity following an injury. This stipulation typically leads to higher "days away" rates for WSF employees compared to other WSDOT employees.

Five organizational units improve incident rates

WSDOT's Safety and Health Champions team challenged each region to meet or exceed a full point reduction of their calendar year (CY) 2011 recordable incident rate in 2012. For example, the agency had an incident rate of 6.2 at the end of 2011, and therefore the goal for WSDOT is a rate of 5.2 or less at the end of 2012. Six organizational units are on track to meet their incident rate goals for the year. Olympic Region and Headquarters currently have incident rates higher than their 2012 goals.

As of September 30, 2012 (Q1 - Q3), WSDOT made progress in reducing OSHA-recordable workplace incidents; the incident rate decreased to 4.9 incidents for every 100 full-time employees, a 17 percent improvement from the same period in 2011, when it was 5.9. Five WSDOT organizational units improved their incident rates by 15 percent or more in this time frame. The North Central Region led the way with a 43 percent improvement.

Days away rate and lost workdays increase

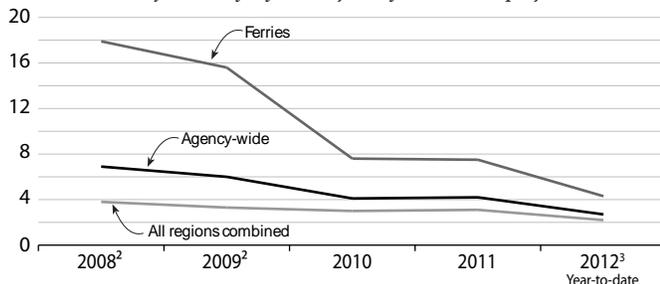
Rate of incidents involving days away, restricted duty or job transfer increases

In the first three quarters of 2012, the “days away” rate was 3.5, nine percent worse than the same period in 2011. Four WSDOT organizational units (North Central Region, South Central Region, Eastern Region, and Ferries) improved their “days away” rates by 13 percent or more. Ferries led the way with a 28 percent improvement. Olympic Region, Southwest Region and Headquarters increased their “days away” rates.

The longer term trend for “days away” rates is illustrated in the graph below. The “days away” rate for Ferries showed a 74 percent improvement from 17.9 incidents involving days away, restricted duty, and/or job transfers for every 100 full-time employees in 2008, to 4.8 in the first three quarters of 2012. The highway regions and Headquarters improved more than 18 percent, from 3.8 in 2008 to 3.1 in the first three quarters of 2012 (January through September).

WSDOT “days away” rate for ferries, regions, and agency wide

Number of recordable incidents involving days away, restricted work activities, and/or job transfer for every 100 full-time employees



Data source: WSDOT Office of Human Resources and Safety, WSF, 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 The 2008-2009 Ferries “days away” rates are based on data from the Jones Act claims database and the L&I database. 3 Q1-Q3 (January - September 2012).

Lost workdays rise 77 percent from the same period in 2011; maintenance workers take brunt of lost workdays

During the third quarter of 2012, WSDOT employees lost 982 workdays to work-related incidents. This is 77 percent more than during the same period in 2011, when employees lost 554 workdays. This increase is due to a high number of lost workdays reported by highway maintenance workers. In 2012, highway maintenance workers lost 511 workdays, while in the third quarter of 2011 they lost 147 workdays to work-related incidents.

WSDOT “days away” rates by organizational unit

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

Organizational unit	CY 2011	Q1-Q3 2011	YTD ² 2012	YTD ² 2011-2012 rate % change ³
Northwest Region	2.6	2.2	2.4	9%
North Central Region	6.5	3.2	2.8	-13%
Olympic Region	2.0	1.5	4.0	167%
Southwest Region	7.2	2.5	5.4	116%
South Central Region	4.4	4.4	3.3	-25%
Eastern Region	3.0	3.3	2.8	-15%
Headquarters	1.6	0.8	2.4	200%
All Regions combined	3.1	2.1	3.1	48%
Ferry System	7.5	6.7	4.8	-28%
Agency-wide	4.2	3.2	3.5	9%

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

Notes: 1 The “days away” 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 Year to date (Q1-Q3) percent change comparing January through September of 2011 and 2012. 3 Incident rate changes: improved = decrease (-%); worsened = increase.

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

July 1 - September 30, 2012, and comparable calendar quarters

Category	Days away from work	Percent of all injuries	Number of injuries		
	Q3 2012	Q3 2012	Q3 2012	Q2 2012	Q3 2011
Highway maintenance	511	44%	31	18	28
Highway engineering	58	20%	14	11	19
Admin. staff	25	9%	6	4	2
Ferry system	388	27%	19	20	15
Total	982	100%	70	53	64

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.

While the number of days away for maintenance employees has increased significantly from the same quarter a year ago, the number of injuries increased by only three, from 28 to 31. The number of injuries for engineers, administrative staff, and ferries employees varied by no more than five injuries per category (listed above) between this quarter and last quarter (Q2 2012) or one year ago (Q3 2011).

Worker Safety Quarterly Update

Analyzing the root causes of worker injuries

WSDOT enhances root cause analysis

Root cause analysis is a systematic problem solving method that identifies and rectifies the source of problems to prevent them from happening again.

In root cause analysis, the investigator systematically analyzes what may lead to on-the-job incidents and injuries. Safety officers focus their root cause analyses on WSDOT work groups with the highest recordable incident rates, and collaborate with the teams to identify and implement safety improvements. The efforts aim to identify systemic issues that lead to repeated incidents, and to raise awareness at all levels of the agency. Safety officers share their best practices for improving safety and reducing workplace incidents throughout the agency.

How WSDOT's worker compensation history factors into insurance premium assessment

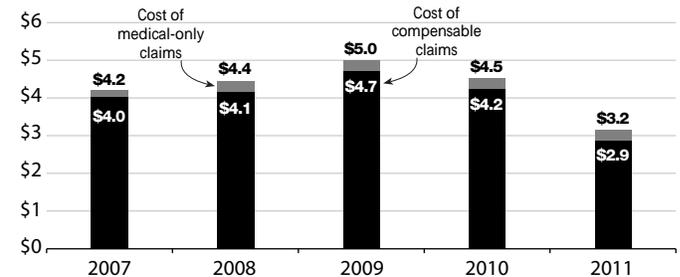
The Washington State Department of Labor and Industries (L&I) calculates a unique experience factor for each employer annually that determines their workers' compensation premiums for the coming year. This factor is based on past claims experience, or costs, and is applied to the base premium rate for the employer's risk class or classes. Washington state has over 300 individual risk classes.

WSDOT's experience factor improved considerably from 2008 to 2011 due to a number of factors including claim frequency (how many claims are filed), claim severity (the expense of claims), and worker hours (the time exposed to hazards). WSDOT's premiums are calculated by multiplying the experience factor to the industry rate(s) established by L&I.

As an insurance system, the overall workers' compensation premiums are intended to cover the lifetime costs of all claims that will occur during the year. L&I considers several factors in determining the overall rate and the rates for each risk class.

Cost of L&I claims, 2007-2011

WSDOT Highways and Ferries System L&I cases only; Dollars in millions



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

Note: *Medical-only claims* are claims for which the payments are for medical costs only and claimants missed three or fewer days of work, excluding the day of injury or illness. *Compensable claims* are claims with medical costs plus costs for wage replacement benefits and/or disability and pension; claimants missed more than three days of work, excluding the day of injury or illness. This is a snapshot of costs incurred through May 1, 2012. Additional charges to these claims may apply.

WSDOT insurance premiums vs. experience factor

2007-2011; Lower experience factors are better; Premiums in dollars

Calendar year	Experience factor	Premium
2007	0.9917	\$6,404,450
2008	1.0622	\$8,565,132
2009	0.8949	\$7,062,174
2010	0.8539	\$7,636,840
2011	0.7294	\$7,638,714

Data source: WSDOT Office of Human Resources and Safety.

These include frequency of long-term disability claims and lifetime pensions, estimated income from investments, and the industry risk class experience. The rates for WSDOT's assigned risk classes and overall premiums increased slightly while the experience factor improved for 2011.

Highway System Safety Programs Quarterly Focus

WSDOT identifies 221 priority locations for safety investments

Over the past decade, WSDOT has reduced collisions on Washington state roads and is constantly looking to identify new strategies that provide the greatest potential to reduce the collision risk at the optimal cost. The agency's goal is to reduce serious injury and fatal collisions faster by using a quantitative, science-based approach. The Safety Analyst software program has been identified as a potential tool in reaching this goal.

WSDOT is finding that Safety Analyst's sophisticated traffic collision models, which use real data on corridor- and system-wide levels, are helpful in making complicated engineering decisions. WSDOT is using Safety Analyst as well as other tools to assess collision risk, identify factors contributing to crashes and potential solutions, analyze benefits and costs, prioritize projects, and perform Before and After analysis.

Safety Analyst proactively identifies safety improvement locations

WSDOT uses various scientific approaches including Safety Analyst to analyze entire highway systems and identify "collision analysis segments" and "intersection analysis locations." Analyses may reveal strategies that can be used to lower the likelihood of crashes. A network screening approach combines observed collision data and a predicted average crash frequency to calculate an expected average crash frequency on roadway segments. The expected average crash frequency is compared to fatal and serious injuries collisions that occurred between 2005 and 2010.

WSDOT identified 221 top statewide locations with the highest expected average frequency of fatal and serious injury crashes using Safety Analyst. These 221 locations are separated into the following geographic categories, with expected average crash frequencies as noted:

- Urban Westside (100 locations), 2.86 crashes per mile per year,
- Rural Westside (21 locations), 1.08 crashes per mile per year, and
- Eastside (100 locations), 1.00 crash per mile per year.

The analysis locations include intersections that had more than eight collisions between 2006 and 2010, with a total societal cost of the collisions of at least \$900,000. The predominant crash types are at-angle, left-turn opposite direction, and rear-end collisions.

These analyses do not include city streets or state highways in cities with populations over 25,000 that have managed access roads and highways. The Revised Code of Washington gives city and local agencies the authority to maintain and build the roadways within their jurisdictions.

State Route 161 Clear Lake to Tanwax Lake project prioritization illustrates Safety Analyst benefits

WSDOT's SR 161 Clear Lake to Tanwax Lake project provides an example of the difference in addressing the safety issues on a corridor using a traditional standards-based method versus Safety Analyst. With the project currently in the engineering phase, WSDOT used both approaches to identify potential solutions to collision issues in the area. These methods can yield very different results in terms of solutions and costs. Using the standards-based method, WSDOT analyzed SR 161 between milepost (MP) 9.48 and MP 10.15 (0.67 road miles). Suggested countermeasures involved significant alterations to the roadway such as smoothing out the radius on four existing curves. These modifications raised the cost of the original estimate.

Analysis methods for safety yield different results

Analysis method, miles analyzed, and suggested solutions

Analysis method	Road-miles analyzed	Suggested solutions
Standards-based	0.67	Increase radii of four horizontal curves; add left-turn lane; widen lanes and shoulders
Safety Analyst	9.00	Install traffic arrows ahead of curves; add chevrons at three of four curves

Data source: WSDOT Capital Program Development and Management Office.

Highway System Safety Highlights

WSDOT uses Safety Analyst, a new software tool, in project prioritization and Before and After analysis.

Safety Analyst models will play a critical role in helping WSDOT achieve the Target Zero goals.

Using Safety Analyst, WSDOT project prioritization process identified 221 top statewide locations with the highest expected average crash frequency of fatal and serious injury crashes.

WSDOT's Before and After project analysis using Safety Analyst resulted in more conservative estimates compared to the traditional "percent change" evaluation method.

In general, roundabouts help improve intersection safety on a system-wide level.

Highway System Safety Programs

Quarterly Focus

Safety Analyst model shows promise in project prioritization

Using Safety Analyst, WSDOT analyzed a nine-mile section of SR 161 with the Network Screening tool including the entire corridor from Graham (MP 4) to Eatonville (MP 13). The Network Screening tool also ranked the sites with potential for crash reduction. These ranked sites were then prioritized based on the expected average crash frequency.

Safety Analyst identified countermeasures based on the type of site, observed accident patterns and safety concerns specific to select improvements. WSDOT then determined which improvements would be most effective. For example, WSDOT selected placing several traffic arrows at locations ahead of horizontal curves as visual markers warning drivers of the upcoming curves, and also adding basic chevrons at three curves. These low-cost strategies are expected to provide substantial safety benefits.

Safety Analyst aids in Before and After safety effectiveness evaluation of roundabouts

Roundabouts are one of the strategies WSDOT is using to reduce collision frequency and severity at intersections (see *Gray Notebook* 27, p. 100). The traditional approach to evaluate the effectiveness of road modifications is to compare Before and After data on collisions at the location and express the change as a percentage.

WSDOT has moved toward using the Safety Analyst tool in its Before and After project performance analyses. Safety Analyst combines crash data for a treatment site with predicted crash frequency data from all Washington sites with similar conditions and traffic. This method is considered more reliable because it incorporates additional factors, like historical data, that contribute to the final percentage rating.

The table at right shows Before and After project analyses performed on two single-lane roundabouts using three years of Before and After data. Both locations were rural four-way stop-controlled intersections that were converted into roundabouts. The first was installed in 2005 at the intersection of SR 206 and Bruce Road, and the second was installed in 2007 at the intersection of SR 501 and 45th Avenue.

The Safety Analyst results conservatively indicate a 64 percent reduction in collisions at the SR 206 roundabout, and a 43 percent reduction at the SR 501 roundabout. These numbers represent a general trend for roundabout performance as opposed to site-specific performance data. This tells WSDOT how roundabouts reduce collision fatalities on a system-wide level, which informs future safety investment decisions. Despite analyzing just two sites, WSDOT's results suggest installing a single-lane

roundabout at a two-lane stop controlled rural intersection potentially reduces collisions. WSDOT continues to compile data to increase analysis reliability as more roundabouts are installed.

Before and After safety analysis using standards-based and Safety Analyst methods

Number of collisions involving injuries and fatalities for three years before and three years after installation of two roundabouts

Intersection location	Number of collisions		Percent collision reduction	
	Before	After	Standards-based ¹	Safety Analyst ²
SR 206 at Bruce Road	4	1	75%	64%
SR 501 at 45th Avenue	8	3	63%	43%

Data source: WSDOT Capital Program Development and Management Office.

Notes: 1 The standards-based method calculates collision reduction as percent change in collisions before and after roundabout installation. 2 Safety Analyst model combines crash data for the treatment sites with predicted crash frequency data from all Washington sites with similar conditions and traffic to calculate collision reductions.

Safety Analyst model helps further Target Zero collision reduction goals

Target Zero is Washington's vision to eliminate traffic related fatalities and serious injuries by 2030. In order to achieve this goal, the state must decrease traffic fatalities by at least 24 incidents each year between 2012 and 2030. Washington averaged 19 fewer traffic fatalities each year for the last ten years, with fatal collisions reduced by an average of 21 per year over the last three years (for more information on fatal collisions see *Gray Notebook* 46, pp. 4-6). Target Zero guides investment decisions aimed at significantly reducing traffic fatalities and serious injuries to the state. By implementing this plan, Washington is building traffic safety partnerships that align and leverage resources and providing strategies specific to the contributing factors of a crash at a location.

WSDOT has used multiple approaches to reduce fatal and serious injury collisions. A number of factors contribute to traffic collisions, including roadway features, vehicle design, driver impairment, and poor decision-making (see *Gray Notebook* 34, p. 7). WSDOT's primary goal with Target Zero is to identify and develop engineering-based solutions. These crash reduction strategies range from adding rumble strips to redesigning interchanges.

Safety Analyst helps WSDOT identify sites with the highest potential for reducing collision severity or frequency, and potential countermeasures for addressing factors contributing to crashes. This, in turn, helps the state get even closer to achieving Target Zero goals.



In Preservation:

Asset Management: Capital Facilities
Annual Report 8

The Capital Facilities program supports WSDOT's mission by housing personnel and equipment across the state. The budget to repair and replace infrastructure and internal systems such as heating and electrical is only sufficient to address two percent of known deficiencies each year. Read about the impact of this and other budget constraints on the Capital Facilities program.

See also

Quarterly Report on Capital Projects 46

Earlier Preservation-related articles

- Find previous articles in these GNB editions:
- Annual Bridge Report GNB 46
 - Asset Management: Washington State Ferries Vessel and Terminal Preservation Annual Report GNB 45
 - Safety Rest Areas Annual Report GNB 45
 - Asset Management: Pavement Conditions Annual Report GNB 44
 - Asset Management: Capital Facilities Annual Report GNB 43
 - Asset Management: Bridge Assessment GNB 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

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

Asset Management: Capital Facilities Annual Report

WSDOT's Capital Facilities program manages public buildings efficiently

Capital Facilities Highlights

Lease consolidation efforts are estimated to reduce costs by \$5.9 million from the 2009-2011 biennium to the 2015-2017 biennium.

Forty percent of WSDOT's primary buildings are in "poor" condition and need significant repairs.

There are \$182.8 million in unfunded high priority needs for capital facilities. An ongoing investment level of \$30 million to \$40 million per biennium is needed to fund critical building needs.

The last of the projects identified to address Americans with Disabilities Act deficiencies is scheduled to be completed by June 2013.

Reductions in WSDOT lease costs

Lease cost and square footage reductions; Dollars in millions

	2009-2011	2015-2017	Net reduction
Cost	\$27.1	\$21.2	\$5.9
Square feet	679,137	538,943	140,194

Data source: WSDOT Capital Facilities Office.

WSDOT unfunded high priority Capital Facilities projects

Project costs in 2012 dollars; Dollars in millions

	Number of projects	Cost estimate
Replacement	18	\$174.00
Minor improvement	21	\$8.78
Unfunded subtotal		\$182.78

Data source: WSDOT Capital Facilities Office.

Space consolidation will reduce \$5.9 million in lease costs

As a result of the economic downturn and subsequent reductions in workforce, WSDOT is consolidating staff from leased buildings into those it already owns. WSDOT estimates that statewide consolidation efforts will save \$5.9 million in building lease payments; WSDOT spent \$27.1 million in the 2009-2011 biennium, and expects to spend \$21.2 million in the 2015-2017 biennium.

WSDOT's Facilities and Lease Board plays a key role in developing, monitoring, and managing occupied buildings for current and future needs (see p. 12 for more details). In 2011, the board began reviewing current and future space needs for every program and project in the state. The greatest opportunities to consolidate from leased into owned space were identified in Thurston, Pierce, and King counties. Considerations in determining lease versus owned space include:

- The need to be close to customers,
- Expected length of occupancy,
- Shifting physical and fiscal responsibility of building maintenance to the landlord,
- The availability of funds in the operating budget,
- How quickly a facility is needed,
- Availability of vacant owned space, and
- Life cycle cost.

WSDOT facilities help deliver programs and services

WSDOT manages about 3.8 million square feet of owned and leased buildings and structures. These facilities assets are strategically located to serve operational needs and to support about 7,000 permanent and seasonal employees. Department buildings are critical to delivery of programs and services such as construction, maintenance, and operations of highways and ferries. WSDOT facilities can be grouped into two categories:

- Facilities that house employees: 1.3 million square feet of office buildings for staff in region, headquarters, project engineering, and operations offices.
- Facilities essential to manage and operate systems, ferries, and highways: 2.5 million square feet of maintenance operations, tunnel and bridge operations, traffic management centers, ferry terminals, materials and equipment storage, and wireless communications buildings.

WSDOT owns about 3.2 million square feet of facilities; many contain unique building systems and components to serve WSDOT's diverse functional needs. In total, about 3.3 million square feet of inventory was required to be a part of the agency's Facilities Oversight Plan, including facilities such as ferry terminals that are not managed by WSDOT's Capital Facilities program.

Critical building financial needs continue to grow

Building repair and replacement is funded in the Capital Facilities construction program. WSDOT's budget for capital facilities in the 2011-2013 biennium is \$30.8 million, with \$25.4 million for operations and \$5.4 million for capital expenditures. Of the \$5.4 million, \$3.8 million is available to repair and preserve facilities assets, and \$400,000 is to comply with stormwater permit requirements. Statewide strategic planning efforts identified an unmet need of \$436 million, including \$158 million for repairs and \$278 million for replacement. There are \$182.8 million in unfunded high priority needs (definition on p. 9) for capital facilities. An ongoing investment level of \$30 million to \$40 million per biennium is needed to fund critical building needs in

Asset Management: Capital Facilities Annual Report

Facilities funding gap and maintenance and preservation needs

WSDOT's Capital Facilities program. For Washington State Ferries facilities, WSDOT estimated an additional need of \$63 million, identified in the 2012 Facilities Oversight Plan (p. 18), subject to change through the legislative budget process. The funds are needed over the next ten years to fund high priority ferry terminal preservation projects, many of which include building components at terminals used for passenger and vehicle operations.

Aging buildings create deficiency backlog

WSDOT owns and operates about 1,400 buildings and structures, of which 968 are managed by the Capital Facilities program. Prior *Gray Notebook* articles report on preservation of additional WSDOT facilities, including safety rest areas and ferry terminals in *Gray Notebook* 45, pp. 12-16. "Primary buildings" account for 89 percent of the area managed by the Capital Facilities program (289 buildings, 2.3 million square feet).

Primary buildings are typically greater than 2,000 square feet and consist of office or crew space that supports the majority of the department's staff. They also provide shop and storage space for vehicles and equipment.

WSDOT primary buildings face \$132.5 million backlog

The 289 primary buildings managed by Capital Facilities have a total deficiency backlog of \$132.5 million. The main cause of the preservation and repair backlog is the steady aging of buildings; 66 percent of primary buildings are more than 25 years old.

Capital Facilities primary building age and backlog

As of July 2012; Dollars in millions

Age of buildings	Number	Percent of total	Backlog per building	Total backlog
25 years or less	96	33%	\$0.20	\$19.4
26 to 50 years	111	38%	\$0.58	\$64.6
More than 50 years	82	28%	\$0.59	\$48.5
Total	289			\$132.5

Data source: WSDOT Capital Facilities Office.

Note: 2012 revised backlog total was reduced by \$27.4 million, due to an updated and standardized estimating process.

Major building systems, such as heating and roofing, tend to require substantial repair or replacement after 20 to 25 years. Older buildings are also more likely to be unsuitable for today's operations, and present problems ranging from bay sizes too small for modern trucks, to insufficient crew facilities.

Updated estimating process reduces estimated repair cost
WSDOT updated the method for developing the statewide repair backlog in 2012 by adopting the RSMMeans database, an industry-recognized source for construction data; this information was

obtained previously from historical project data, contractor quotes and experienced guesses. This update improved estimating consistency statewide, and reduced redundancy and estimating errors. Greater consistency in estimating condition deficiencies allows WSDOT to better prioritize its projects. As a result, primary building assessments were adjusted down from \$159.9 million in 2010 to \$132.5 million in 2012.

Condition ratings for primary buildings holding steady

WSDOT determines impacts to department operations through biennial facility condition assessments. In 2012, 40 percent of primary buildings are rated in poor condition, the same as two years ago.

Capital Facilities primary building condition

Number and percent of primary buildings by condition rating

Condition	2008		2010		2012	
Good	31	11%	24	8%	22	8%
Fair	142	52%	150	52%	150	52%
Poor	100	37%	113	40%	117	40%
Total	273		288		289	

Data source: WSDOT Capital Facilities Office.

Note: Difference in total building numbers are due to new construction or additions to the Capital Facilities program from another WSDOT program.

How WSDOT prioritizes its replacement projects

Capital Facilities major replacement projects are first identified by each region as high priority based on operational importance, condition, and region strategic planning efforts. Each project is then prioritized statewide using a matrix that evaluates four criteria:

- **Facility occupant deficiency** is defined as all factors that put the facility at high risk of failure or citation.
- **Preservation deficiencies** are identified through the facilities condition assessment process. Deteriorated building or site components are identified that need replacement.
- **Operational deficiencies** occur when buildings require more crew, vehicle, or material storage space, identified through the facilities condition assessment process.
- **Facilities more than 50 years old** are less flexible to operational changes, impacting operations of the program being supported.

No facility replacement or major upgrade projects planned for 2011-2013. However, design is funded for the new Northwest Region Traffic Management Center.

Minor repair and preservation costs adding up

Current funding allows for minor repair and preservation projects that typically cost less than \$1 million each. A sample of

Asset Management: Capital Facilities Annual Report

Operation of capital facilities - an ongoing challenge

2011-2013 sample capital facility minor works projects

Project description	Estimate	Description
Projects addressing occupant safety		
Dayton Avenue electrical distribution system assessment	\$15,500	S/CC
Central Park Americans with Disabilities Act (ADA) compliance	\$73,600	S/CC
Waterville drywell removal	\$14,500	EC
Bullfrog pre-wash pad and treatment system	\$106,000	EC
Projects addressing preservation		
Tumwater Materials Lab roof replacement	\$137,100	BP
Dayton Avenue boiler replacement	\$340,000	BP
Okanogan well	\$48,100	BP
Chehalis floor moisture remediation and wall repairs	\$499,600	BP
Olympic Region 6 building roof replacement	\$126,700	BP
Projects addressing operations		
Shuksan Maintenance Facility radio tower	\$225,000	O
Schrag Safety Rest Area radio building	\$55,700	O

Data source: WSDOT Capital Facilities Office.

Note: Description codes indicate S/CC - Safety/Code Compliance; EC - Environmental Compliance; BP - Building Preservation; O - Operational; EN - Emergent Need (facility failure or immediate operational need).

minor repair projects is listed above. To see how Capital Facilities prioritizes minor works projects, refer to *Gray Notebook* 43, pp. 11-12.

Operating program addresses maintenance as requests continue to challenge staff

More than 4,000 corrective maintenance service requests have been initiated since 2009. With the high number of aged and obsolete buildings in WSDOT's inventory, maintenance staff is tasked with responding to more corrective maintenance repairs. The fixed maintenance budget for the biennium is \$8.8 million, and corrective maintenance is \$4.5 million. Corrective maintenance is currently ten percent over projected expenditures. If this trend continues, trade-offs must be made to keep facilities open and operational. This results in reduced preventive maintenance efforts as funding is shifted to address repairs.

The increasing failure rates of aging equipment and systems has resulted in a concerted effort to replace and repair those components. This impacts the resources available to perform preventive maintenance for both the equipment and systems, and makes it challenging to deliver planned preventive maintenance activities according to the schedule.

Preventative maintenance categories

Based on level of criticality

Funded criticality	Activities
10 - Life safety	Hazardous building or site conditions that jeopardize life safety of occupants and impact building occupancy
9 - Code compliance	Mandated compliance with local, state or federal building regulations
8 - Critical systems	Prevention of serious facility deterioration and significantly higher costs if not immediately addressed
7 - Environmental compliance	Mandated compliance with local, state or federal environmental regulations which do not impact building occupancy
6 - Primary systems	Required to support primary systems and equipment. Comprises the majority of site and building equipment and systems
Unfunded criticality	Activities
5 - Secondary system	Required to support secondary systems and equipment
4 - Long-term cost effective measures	Energy or functional conservation measures with a rapid return on investment
3 - Non-structural maintenance	Prevents facility component deterioration and/or potential loss of use or affects economies of operation
2 - Appearance	Required to maintain the image of WSDOT facilities

Data source: WSDOT Capital Facilities Office.

The preventive maintenance prioritization process is based on nine criticality categories numbered two through ten (see the table above). Nearly one-third of Category 6 and all categories 5 and lower are not funded within the current budget.

Overall, WSDOT is performing the 2011-2013 biennium maintenance activities according to the Capital Facilities' plan. The table on the following page illustrates the completion rate of planned preventive maintenance by criticality during the past four quarters. Percentage values greater than 100 indicate that regions are performing additional maintenance activities, beyond those originally scheduled.

Currently, only the most critical preventive maintenance activities are planned and performed, such as mandatory inspections for fire extinguishers and vehicle hydraulic lifts. Other preventive activities are needed to keep systems and equipment operating as efficiently as possible. Of the recommended preventive maintenance activities, only 80 percent can be performed on WSDOT building assets. The additional 20 percent of recommended activities are not reflected in the table.

Saving energy in WSDOT Capital Facilities

Delivery of planned preventive maintenance

2011-2013 biennium; Completion by criticality

Criticality (benchmark)		2011 Q3	2011 Q4	2012 Q1	2012 Q2	Total completed Percent	Number
10	(100%)	91%	102%	97%	113%	100%	1,635
9	(100%)	69%	132%	86%	134%	101%	891
8	(75%)	69%	96%	100%	132%	96%	2,873
7	(75%)	92%	89%	66%	140%	97%	551
6	(75%)	55%	101%	123%	108%	93%	2,578
Average percent		75%	104%	95%	125%	97%	8,528

Data source: WSDOT Capital Facilities Office.

Note: Percentage values greater than 100 indicate that regions are performing additional maintenance activities for identified systems and equipment, beyond those originally scheduled.

Capital Facilities realizing energy savings

All state agencies are required to report energy consumption, strategize energy conservation measures, and benchmark facility energy performance. WSDOT completed benchmarking its reporting of public facilities, submitted strategies to reduce emissions by 2020, and has engaged in annual emissions reporting. In addition, WSDOT is evaluating how the agency aligns with the recent Governor's Executive Order relating to achieving energy efficiency in state buildings.

The Capital Facilities office provides annual estimates of agency electricity and gas use, which are significant components of WSDOT's overall greenhouse gas emissions. Projects completed within the Capital Facilities program are tracked to calculate energy savings and help WSDOT understand how established reduction goals and emission reduction strategies are being met.

An example of how WSDOT is reducing building energy use is a recent lighting upgrade project at the Olympic Region Lakeview and Mullinex area maintenance facilities. The project replaced outdated lighting with energy efficient fixtures, with estimated annual savings of 39 percent for the lighting fixture energy use totaling nearly \$8,000 saved in utility costs. This project was partially funded with a \$149,000 grant from the Washington State Department of Commerce.

Mt. Vernon next on transition plan list

With the completion of the Central Park Americans with Disabilities Act (ADA) renovations project, the only item remaining in the ADA transition plan is installing new door hardware at the Mt. Vernon maintenance facility, planned to be complete by June 2013. See *Gray Notebook* 43, p. 14, for plan details.

A closer look at emergent need projects

Unplanned projects typically arise because an existing system fails, or an immediate operational need emerges. These unexpected projects affect the prioritized list of minor work projects, as they are generally paid for through the deferral of other funded projects.

Corson Avenue materials laboratory moisture room

The Northwest Region materials laboratory provides construction materials testing for WSDOT highway improvement and preservation projects. The moisture room in this building is used to cure concrete cylinders for testing.

Due to the age, high use, and design of the moisture room, the interior enclosure failed, causing severe damage to the walls and allowing water to leak into the testing areas.

WSDOT must maintain the conditioned space to American Association of State Highway and Transportation Officials (AASHTO) standards. Because the room is no longer fully sealed due to the damaged walls, the ability to maintain the AASHTO standards is at risk. WSDOT is evaluating a range of new designs to address this emergent need.



Water damage to the walls of the Corson Avenue materials laboratory moisture room.

Capital Facilities research proposal in works

A growing portfolio of new transportation assets is being developed to support WSDOT's core mission to keep people and businesses moving by operating and improving the state's transportation systems and the economy. In the past, WSDOT has focused on improving highway assets that serve the transportation systems.

However, this growth is burdening old and often outdated building assets. These buildings provide crucial support to the core mission by providing workspace for WSDOT employees who design, construct, maintain, and operate state highways and ferries. They also provide space for the WSDOT equipment needed to inspect and maintain transportation assets. The

Asset Management: Capital Facilities Annual Report

Capital Facilities management shifts to achieve efficiencies

capacity and condition of these building assets are critically challenged by the failure of various building systems, which can be very disruptive to WSDOT daily operations.

The Capital Facilities office is working with the University of Washington on a research project proposal with these main objectives:

- Investigate the impacts of capital assets' conditions on the various functions that support the WSDOT mission.
- Create an assessment model to quantify the impacts of alternative funding levels and asset management strategies.
- Explore data synthesis and analysis methodologies to acquire necessary data on capital asset conditions and functions to support decisions on asset management.
- Develop a robust decision support system to enable the prioritization of asset management projects and their associated budget allocations.

The proposal will be evaluated with other research projects to determine if it is funded in the 2013-2015 biennium. In the meantime, there will be a case study research project on an equipment maintenance building at the Corson Avenue maintenance facility.

Changes to facilities oversight focus on using WSDOT's resources more efficiently

In October 2011, WSDOT Secretary Paula Hammond issued an Executive Order establishing a Facilities and Lease Board to streamline building space decision-making and communicate needs across all department programs. The Executive Order states, "WSDOT must ensure that building space is appropriate, functional, and cost effective." WSDOT completed the 2011-2013 Legislative Budget Proviso Facilities Oversight Plan in September 2012, as directed by the state Legislature. The intent of the plan is to "improve the oversight of real estate procurement and management practices across all department programs and regions, including the Washington State Ferries (WSF)."

In response, WSDOT based short-term actions and long-term funding strategies on principles including:

- Maximizing the use and occupancy of existing state-owned facilities;
- Weighing short-term opportunities to use leased space or right of way buildings against long-term viability and costs;
- Using leased space efficiently and in accordance with business needs, and
- Identifying adequate funds to maintain, preserve and operate occupied buildings.

WSDOT identified specific short-term actions for the next two to three years in the oversight plan including:

- Continue to implement statewide lease consolidations. As a direct result of this consolidation, WSDOT will save a total of \$5.9 million in lease costs from the 2009-2011 biennium to the 2015-2017 biennium.
- Consolidate operations in downtown Seattle into one property by the end of 2015. Fund a predesign study to determine the best long-term location for downtown WSDOT workforce and WSF Division Headquarters.
- Maximize the occupancy of the Northwest Region Headquarters Building (Dayton), a WSDOT-owned facility in Shoreline, ten miles north of downtown Seattle. This could include consolidating staff from downtown Seattle locations, future design-build contractors for WSDOT projects, and long-term leases with other government entities.
- Construct a new Traffic Management Center at the Dayton site, either in a separate structure or as a result of renovating the current building.
- Identify revenue sources to fund Capital Facilities construction at \$30 million to \$40 million per biennium to repair and replace facility assets. WSDOT has put forward an agency proposal for legislation as an initial step toward addressing the capital facilities need, and it has been submitted to OFM for review and potential approval as agency legislation for the 2013 session.
- Implement highest-priority facility projects based on prioritized needs as outlined in Capital Facilities and WSF project lists and project delivery plans.



As detailed in the Oversight Plan, WSDOT will maximize the occupancy of the Northwest Region Headquarters Building (Dayton), a WSDOT-owned facility in Shoreline, by consolidating staff from other locations.



In Mobility:

Aviation Annual Report	14
<i>WSDOT leverages state funds to secure federal grants for airports. Aircraft registrations, emergency response, partnerships for emergency preparedness, and more are covered in the Aviation Annual Report.</i>	
Incident Response	17
<i>WSDOT's Incident Response program responded to 12,459 incidents between July 1 and September 30, 2012.</i>	
Ferries	20
<i>WSDOT met 15 of 17 Washington State Ferries goals established by the Joint Transportation Committee of the Washington State Legislature.</i>	
Passenger Rail	29
<i>WSDOT is planning for the transition away from federal funding for Amtrak Cascades service. Read about revenue and ridership in this quarterly report.</i>	

See also

Quarterly Report on Capital Projects	46
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Earlier Mobility-related articles

Find previous articles in these GNB editions:

Travel Time Trends	
Six Month Update	GNB 46
Congestion Report	
Executive Summary	GNB 46
Travel Information	
Annual Report	GNB 44

State policy goal

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

WSDOT's 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.

Aviation Annual Report

WSDOT grants provide crucial support to smaller airports

Aviation Program Highlights

WSDOT used \$875,077 in state funds to leverage \$32 million in federal funds for Airport Aid grants in FY2012.

Maintaining and improving pavement is the focus of 86 percent of grants awarded in FY2012.

In 2011, the agency responded to 174 emergency incidents, a 14 percent increase in responses from 2010.

WSDOT registered 6,177 aircraft in the first half of 2012, the highest number in six years, generating \$400,000 each year in revenue for Aviation and the General Fund.

WSDOT and the National Guard formed a partnership to equip airports for statewide emergency response in case of a disaster.

Statewide, aviation generates 248,500 jobs, \$15.3 billion in wages, \$792 million in tax revenue (\$548 million credited to the general fund), and \$50.9 billion in economic activity. See *Gray Notebook 45, p. 44.*

There are approximately 136 public-use airports across Washington state. WSDOT manages 16 of these airports; the state owns nine, leases three, and operates four under conditional use permits.

During the second round of 2011-2013 Airport Aid grants, WSDOT awarded \$998,809 in state funds to 23 airports for 28 different projects. WSDOT was able to use \$875,077 in state funds to leverage about \$32 million in federal funds, bringing the combined state, local, and federal total to approximately \$35.7 million for fiscal year (FY) 2012.

WSDOT's Airport Aid Grant program supports smaller airports that are not eligible for federal funding by targeting about 55 percent of grants toward these smaller airports. WSDOT allocates the remaining 45 percent of state grants to federally-funded airports, maximizing limited state dollars by leveraging millions of Federal Aviation Administration (FAA) dollars.

WSDOT typically awards two rounds of Airport Aid grants per biennium. Any public-use airport can apply for a grant. WSDOT can award single grants of up to \$250,000 to individual airports, but requires a minimum local match of five percent. The grant program funds projects that strengthen aviation infrastructure by improving airport pavement, safety, planning, and security.

Local Airport Aid Grants FY2012; By funding source

Funding source	Total funding
Federal	\$31,986,465
Local (matching)	\$2,710,681
State	\$998,809
Total funding	\$35,695,955

Data source: WSDOT Aviation.

Pavement projects account for 86 percent of Airport Aid awards

WSDOT's Airport Aid Grant program focuses on maintaining and improving pavement conditions at Washington state's 136 public-use airports. During the second round of 2011-2013 biennium grants, WSDOT awarded 86 percent of its grants, totaling \$858,130 toward 17 projects that will enhance the aviation system by preserving and extending the life of airport pavements. This surpasses WSDOT's goal of targeting 65 to 75 percent of airport aid investments to pavement maintenance projects.

Airport pavement preservation is a big concern for Washington aviation

A 2006 airport pavement study estimated a backlog of nearly \$163 million in essential pavement maintenance for Washington airports. An updated pavement study will be released in 2013, and WSDOT expects the cost of the backlog to increase. Continual funding to address the backlog for airport pavement maintenance needs to be addressed through sources other than WSDOT Airport Aid grants. WSDOT is evaluating funding mechanisms to address this gap.

Airport grant projects by category

July 2011 - June 2012; Number of projects and funding by project type

Category	Number of projects	Total funding ¹
Pavement	17	\$31,198,054
Safety	6	\$2,873,346
Planning	4	\$1,619,000
Security	1	\$5,555
Total	28	\$35,695,955

Data source: WSDOT Aviation.

Note: 1 Funds include state, federal, and local matching grants.

Improvement program helps prioritize important airport projects

Now in its second year, the Statewide Capital Improvement Program (SCIP) has transitioned from program development to implementation. To increase awareness of the program, WSDOT has visited 38 of the state's 136 public-use airports. WSDOT's goal is to visit at least 90 percent of the airports by the end of 2013. During these visits, WSDOT aviation planners provide valuable technical assistance through one-on-one consultations with airport authorities.

WSDOT works to increase public airport participation in planning process

The Statewide Capital Improvement Program is a one-of-a-kind program designed to increase predictability, consistency, and efficiency among airport authorities, the FAA, and WSDOT when prioritizing and distributing grant funds. WSDOT uses SCIP to prioritize a five-year list of projects, which helps the state and FAA better target limited resources and airports to prioritize and complete their most crucial improvement projects. Data submitted by airport authorities will be used to communicate the financial needs of the state aviation system to state legislators and other local decision-makers. This outreach supports future initiatives to increase funding needed to maintain and enhance the system.

WSDOT hosted six regional workshops in October 2012 to provide airport authorities with an in-depth knowledge of SCIP. The workshops addressed specific strategies for enhancing capital improvement plans (CIPs) and provided a demonstration of WSDOT's new web-based CIP application. The web application went live on WSDOT's aviation website in November 2012. Airports can use the web application to submit their CIPs when applying for future WSDOT Aviation Airport Aid grants.

Other short-term SCIP goals include:

- Achieving a ten percent annual increase in the number of airports submitting capital improvement plans over the next five years. There were 58 CIPs as of September 2012.
- Having 100 percent of airports achieve a current master plan/airport layout plan (ALP) within three years.
- Providing technical assistance to at least one partner each month. WSDOT Aviation has already assisted on almost 300 technical issues to date in 2012, far exceeding the goal.

Relationships built during airport visits and SCIP workshops are designed to strengthen communication and partnerships between airport and WSDOT planners.

WSDOT aviation emergency response program one of the best in the country

In 2011, WSDOT responded to 174 aviation emergency incidents, 14 percent more than 2010. Two of WSDOT's divisions coordinate the state's aviation emergency services program. WSDOT's Aviation division coordinates and manages all aerial search and rescue within the state, while WSDOT's Office of Emergency Management in the Maintenance Operations Division administers the program.

In August 2012, the Air Force Rescue Coordination Center reviewed WSDOT's aviation emergency response program, and praised it as one of the most efficient and effective in the country.

During aviation emergencies or disaster response, WSDOT coordinates the use of all non-commercial aviation assets, including government and volunteer aircraft. Aviation emergencies include WSDOT search and rescue responses to emergency locator transmitters, emergency position-indicating radio beacons, and personal locator beacons associated with aeronautical use.

WSDOT recently established performance measures and targets that will be reported in future editions of the *Gray Notebook*, including:

- Reduce average response time to emergency requests to one hour or less,
- Increase successful outcomes of electronic beacon responses by five percent annually, and
- Ensure no accidents, mishaps, or injuries occur with aircraft or personnel participating in emergency air operations.

Aviation incidents responded to by WSDOT

2010-2011 calendar years; Incidents by type

Type of incidents	Number of incidents	
	2010	2011
Electronic distress beacons	84	101
Full-scale search and rescue missions	3	1
Overdue aircraft	4	3
Aircraft incidents/accidents	52	61
Fatality incidents	10	8
Total incidents responded to by WSDOT	153	174

Data source: WSDOT Aviation.

Aircraft registration program

Washington state law requires that most airworthy general aviation aircraft be registered with WSDOT. Aircraft registrations fees generate about \$400,000 in revenue each year, of which \$150,000 is directed to WSDOT's Aviation division for airport preservation, maintenance and improvement programs (\$250,000 goes toward the Washington state General Fund). Registration is due January 1 each year. In 2003, the Legislature authorized changes to state law (RCW 47.68.250) for aircraft registrations to include penalties for late registrations.

WSDOT soars above last year's aircraft registration goal with highest numbers in six years

In the first six months of 2012, WSDOT registered 6,177 aircraft, an increase of 327 from the total registered in 2011. This surpassed WSDOT's goal to register at least 90 percent (5,345) of aircraft registered in 2011 by the close of FY2012, and it is higher than the numbers recorded in any of the past six years.

Aviation Annual Report

Airport map application will provide technical assistance for land use planning

The increase in registrations is largely attributed to WSDOT's outreach efforts. The department mails two reminder letters to aircraft owners and attempts to contact individuals via email or telephone, if possible, before issuing penalties. WSDOT also contacts new aircraft owners by using the FAA database to inform them of registration requirements.

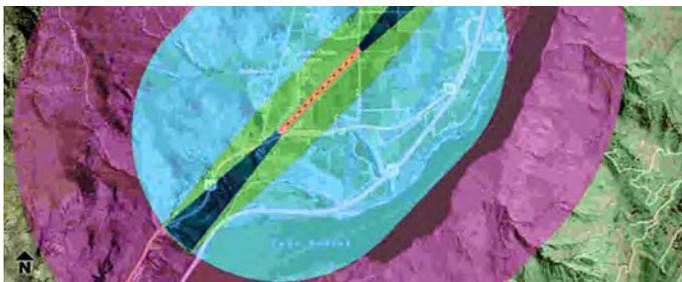
In efforts to continuously improve the aircraft registration process and customer service, WSDOT set registration goals for 2013. New goals are to conduct six aircraft registration outreach/awareness events annually, increase aircraft registration compliance rates (before penalties are applied) to 95 percent or better, and ensure that at least 98 percent of penalty letters issued contain accurate registration status information, including if an owner needs to submit an exemption instead of registering their aircraft.

Mapping application guides land use decisions

Once-remote airports are experiencing increasing pressure from population growth and the expansion of metropolitan areas. Incompatible development near and around airports, such as schools, hospitals, large retail centers, high density residential development, or airspace hazards, are major challenges facing aviation land use.

Encroachment of these incompatible land uses is often due to a lack of information and understanding by decision makers. WSDOT provides information to support decision-making related to airports and land use through the Airport Land Use Compatibility Program. This program provides technical assistance to local jurisdictions, preserves transportation infrastructure, promotes quality of life, and plans for future needs. The program builds on an existing WSDOT application and is scheduled to be deployed in January 2013 at a cost of \$140,000.

WSDOT's Airport Mapping Application will facilitate informed land use decisions. The tool provides online access to critical airport information and interactive planning tools for local jurisdictions, decision makers, agencies, and aviation stakeholders. When



WSDOT's innovative airport mapping application allows users to select and view specific airport features designed to help make land use planning decisions easier.

launched, decision makers will have easy, instant, and free access to imagery, airfield configurations, and airspace information. In addition to an online Geographic Information System (GIS) mapping application, the program includes a Federal Aviation Regulation airspace calculator designed to help prevent potential hazards around airports. The program also provides a sustainable and cost-efficient plan to keep the information updated.

Local jurisdictions and officials can use these information systems to efficiently evaluate potential or existing land use conflicts or airspace hazards. Poor land use choices can result in airports closing or being unable to expand. Informed choices help protect airports and enable growth and expansion to meet airport and community needs.

WSDOT and National Guard form partnership to improve disaster response efforts across state

If a major earthquake or other natural disaster hits Washington state, the 16 WSDOT-managed airports could play a significant role in disaster response. Of the 16 airports, the state owns nine, leases three, and operates four under conditional use permits. These airports are in remote locations throughout the state with six west of the Cascade Mountains and ten to the east. Many of the airports are easily accessible from paved roads and have infrastructure suitable for emergency response and recovery operations.

WSDOT is partnering with the Washington National Guard to make state-managed airports available as potential staging areas for preparedness exercises and for emergency/disaster response. WSDOT is seeking up to \$500,000 in federal grant funds over the next five years to improve up to six state-managed airports and meet the National Guard's standards for emergency staging.

WSDOT-managed airports are strategically located to provide the National Guard with operational and logistical bases for statewide disaster response. The airports are attractive to the National Guard because they offer:

- Helicopter landing capabilities,
- Utilities,
- The potential for infrastructure development,
- Close proximity to water for firefighting operations, and
- Facility maintenance performed by WSDOT.

WSDOT's goal is to sign a memorandum of understanding with the National Guard by July 2013, to make improvements at the Woodland, Easton, Methow, Lake Wenatchee, Sullivan Lake, and Lower Granite airports. The improvements would further advance WSDOT's goal to meet performance objectives outlined in the State-Managed Airport Handbook.

Incident Response Quarterly Update

Traffic Incident Response program provides \$19.5 million in economic benefits

WSDOT's Incident Response (IR) program responded to 12,459 incidents in the third quarter of 2012, saving travelers and businesses in Washington about \$10.8 million by reducing the time and gas they would have wasted in travel delay due to incident-related congestion. In addition, IR teams' quick clearance of primary incidents provided an estimated \$8.7 million in quarterly economic benefits from 2,492 avoided secondary crashes. The total third quarter (July through September 2012) economic benefit from the WSDOT IR program was \$19.5 million, which puts the IR program's estimated quarterly benefit to cost ratio at about 17:1.

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 emergency response and assistance to motorists and the Washington State Patrol (WSP) at collisions and other traffic emergencies. In addition to providing emergency response for blocking and safety incidents, IR teams offer a variety of motorist assistance services such as changing flat tires and providing a jump start, to keep roadways and shoulders clear, traffic moving, and reduce the risk of collisions caused by distracted driving.

WSDOT teams respond to 12,459 incidents to keep traffic moving

WSDOT IR teams responded to 12,459 incidents statewide (preliminary data as of October 15, 2012) during the third quarter of 2012, with an average incident clearance time of 12.2 minutes. The third quarters of 2011, 2010 and 2009 experienced 12,308, 12,444, and 11,941 incidents, respectively, with average statewide incident clearance times of 12.8, 12.4, and 12.9 minutes. In the second quarter of 2012, IR teams responded to 11,292 statewide incidents with an average incident clearance time of 11.6 minutes. These second quarter 2012 numbers were published as preliminary in *Gray Notebook 46*, have changed and are now finalized.

Incident Response Highlights

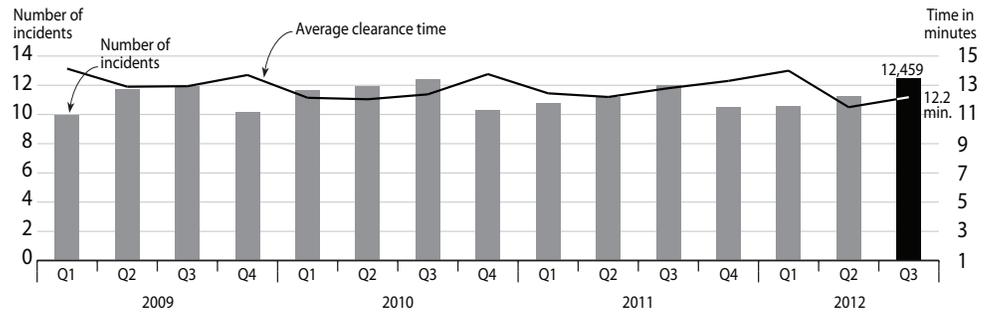
WSDOT's IR program saved travelers and businesses \$19.5 million in avoided costs in the third quarter of 2012.

In the third quarter of 2012, statewide average incident and roadway clearance times were 12.2 and 18.8 minutes, respectively.

In the third quarter of 2012, the average clearance time for the 70 over-90-minute incidents was 170 minutes, missing the 155 minute goal by 15 minutes.

Statewide incident responses and average overall clearance time

January 1, 2009 – September 30, 2012; Number of 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	These incidents are identified as 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.

Notes: 1 Number of secondary incidents avoided as a result of the IR team's presence is a nationally recommended performance measure. Neither WSDOT nor the state patrol currently collect this data. WSDOT is estimating secondary incidents and associated benefits – see gray box on page 19.

Incident Response Quarterly Update

Incident Response helps clear collisions to save travelers time and money

Blocking and non-blocking average clearance times by incident duration

July 1 – September 30, 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	NEW Economic benefits from the IR program ¹
Incident duration less than 15 minutes						
Blocking	1,428	2.6	5.0	6.8	\$3,370,650	\$1,401,506
Non-blocking	8,209	0.5	–	5.1	\$10,214,572	\$4,948,207
Total	9,637	0.8	5.0	5.4	\$13,585,222	\$6,349,713
Incident duration ranging between 15 and 90 minutes						
Blocking	980	9.9	23.7	31.4	\$10,614,270	\$4,413,383
Non-blocking	1,707	8.3	–	26.5	\$11,026,360	\$5,341,458
Total	2,687	8.9	23.7	28.3	\$21,640,630	\$9,754,841
Incident duration greater than 90 minutes						
Blocking	103	21.3	165.2	184.8	\$6,566,730	\$2,730,428
Non-blocking	32	17.7	–	166.4	\$1,299,544	\$629,533
Total	135	20.4	165.2	180.4	\$7,866,274	\$3,359,961
Grand Total	12,459	2.8	18.8	12.2	\$43,092,126	\$19,464,514

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

Notes: The total number of incidents statewide is 12,459. Of these, 577 incidents are “unable to locate” (UTL) incidents; IR personnel were en route to respond, but the incident cleared before the team reached it. The average times in the table above do not include UTL incidents. 1 “New economic benefits” now include the sum of economic benefits from saved time, gas and secondary incidents avoided due to proactive work on the IR teams, see p.19.

Blocking and non-blocking incidents

An incident is defined as blocking when at least one of the travel lanes is closed. Non-blocking incidents occur when all the travel lanes are open including incidents on the shoulder.

Of all incidents statewide between July 1 and September 30, 2012, 20.2 percent (2,511 incidents) blocked traffic, and 79.8 percent (9,948 incidents) were non-blocking. The table above shows statewide average response and clearance times for both blocking and non-blocking incidents by incident duration. The statewide average response time for IR teams arriving on scene was 2.8 minutes in the third quarter of 2012. The average roadway clearance time was 18.8 minutes, and incident clearance time was 12.2 minutes.

Incident induced delay costs go up during summer months

The cost of delay for the incident duration categories listed above was \$13.6 million for incidents lasting less than 15 minutes; \$21.6 million for 15-90 minute incidents; and \$7.9 million for incidents over-90-minutes. There were 135 over-90-minute incidents statewide, of which 70 were on Government, Management, Accountability, and Performance (GMAP) corridors.

During the third quarter of 2012, average statewide clearance time for blocking and non-blocking incidents was 23.7 minutes and 9.3 minutes respectively. The 2,511 blocking incidents total cost of delay was \$20.6 million or \$345 per minute of lane closure. Total cost of delay for the 9,948 non-blocking incidents was \$22.5 million or \$244 per minute of incident.

Extraordinary incidents on nine key Western Washington routes (six hours or more)

July 1 – September 30, 2012; Duration in minutes

Date & time	State route & location	Duration	City	Incident Summary
July 13, 2012 12:44 a.m.	I-5 Northbound at MP 268	823	Custer Safety Rest Area	Injury collision involving a semi with a double trailer. Incident involved a rollover into the median, clean up, freeway closure, and establishing a detour.
August 21, 2012 7:44 p.m.	SR 167 Westbound at SR 512 Ramp	580	Puyallup	Injury collision involving a semi rollover on ramp to SR 512. Incident involved off-loading of semi's cargo to be able to upright the vehicle.
Sept. 13, 2012 12:26 a.m.	I-5 Southbound at MP 270	478	Custer	Injury collision involving two passenger vehicles and a rolled over gravel truck. Incident involved extensive clean up.
August 26, 2012 6:04 p.m.	SR 18 Eastbound at MP 7.5	408	Auburn	Non-injury collision involving a semi and a barrier near Green River. Incident involved HazMat response.

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

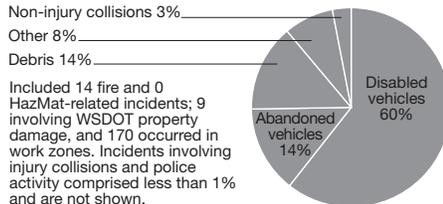
WSDOT breaks down its responses to statewide traffic incidents

Number and percentage of responses by duration: Total of 12,459 IR incidents statewide

July 1 - September 30, 2012

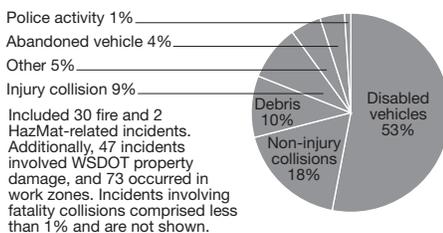
Incidents lasting less than 15 minutes (9,637)

Estimated cost of delay for incidents lasting less than 15 minutes: about \$13.6 million



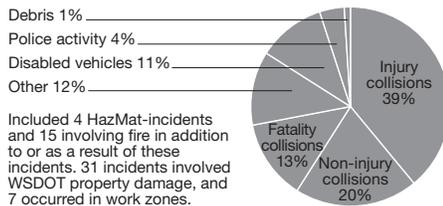
Incidents lasting 15 to 90 minutes (2,687)

Estimated cost of delay for incidents lasting 15 to 90 minutes: about \$21.6 million



Incidents lasting 90 minutes and longer (135)

Estimated cost of delay for incidents lasting 90 minutes and longer: about \$7.9 million



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

Incident Responder Ryan Hottell receives kudos for his honesty and integrity

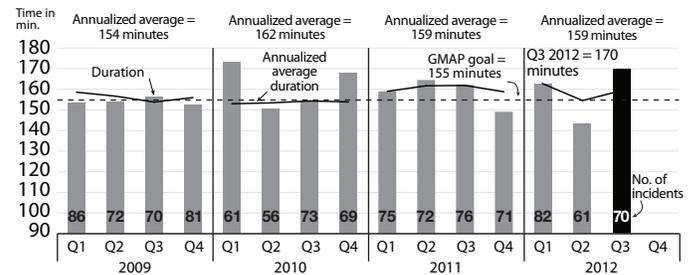
On a Saturday afternoon in late September, Incident Responder Ryan Hottell stopped on the shoulder of northbound I-5 near Napavine to clean up a box of debris. He was almost finished when he spotted a \$20 bill on the shoulder...then a \$100 bill... and another \$100 bill! For just a moment, Ryan questioned the validity of the find: "I thought, is this fake money? Is someone playing a joke on me?"

But it was no joke. Ryan recovered a total of \$791, a receipt from Vancouver, Washington, and - finally - a black leather wallet with ID inside. Ryan put the money and receipt into the wallet and returned to the Chehalis office to report the recovery to the Washington State Patrol.

WSP troopers reviewed the find with Ryan and sent the wallet back to its owner in South Dakota who responded with a letter of appreciation in which he wrote "Your honesty and integrity are indeed an example others rarely experience," to which he added "Thank you for being a great citizen."

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

January 1, 2009 - September 30, 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.

Agencies collaborate to reduce the duration of over-90-minute incidents

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. Through Governor Gregoire's GMAP program, agencies have been charged with lowering the average duration of these over-90-minute incidents on nine key highway corridors in the state.

The nine GMAP corridors experienced 70 over-90-minute incidents in the third quarter of 2012, with an average clearance time of 170 minutes. This is 15 minutes slower than the 155-minute goal.

Extraordinary incidents lasting more than six hours

The table on page 18 describes four incidents this quarter that lasted more than six hours. Excluding these extraordinary incidents, the average over-90-minute incident clearance time in the GMAP area is 145 minutes. This is 10 minutes faster than the goal of 155 minutes. Three out of four incidents were injury collisions and all four involved a semi or truck.

Update to secondary incident estimation process

The gray box on p. 26 of *Gray Notebook 46* explains the methodology for estimating secondary incidents. This procedure used the statewide average incident clearance time in minutes to estimate the economic benefits from secondary incidents. However, with this edition, the economic benefit estimation methodology uses the respective clearance time for each incident instead of a statewide average. This updated procedure provides more accuracy in estimating the economic benefits from secondary collisions avoided. The percent change in estimates from these two methods was 0.36 percent.

Washington State Ferries Quarterly Update

Ferries show strong farebox revenue and ridership despite challenges

Washington State Ferries Highlights

WSF met 15 of 17 legislative performance goals for FY2012.

WSF ridership was 2.9 percent above projected levels for the first quarter of FY2013.

Farebox revenues were \$2.1 million higher than projected for the first quarter of FY2013.

Staffing requirements increase for Ferries

In 2010, an expert panel report suggested a staffing reduction for Washington State Ferries (WSF) to align with U.S. Coast Guard (USCG) Certificate of Inspection (COI) staffing levels. During coalition bargaining in spring 2011, WSF and marine labor unions could not reach agreement on staffing levels implementation and agreed to submit the review of crew levels on ferry vessels to the federal regulatory agency in the USCG Sector for Puget Sound. In October 2012, this USCG review resulted in increased staffing on WSF's six ferries, the Jumbo and Super class ferries. This change is anticipated to occur in December 2012. WSF is working to implement the increased crew levels, and expects a fiscal impact of approximately \$7 million for the 2013-2015 biennium for these vessels. WSF expects additional decisions on three more vessel classes (12 boats). Updates will be provided in future editions of the *Gray Notebook*.

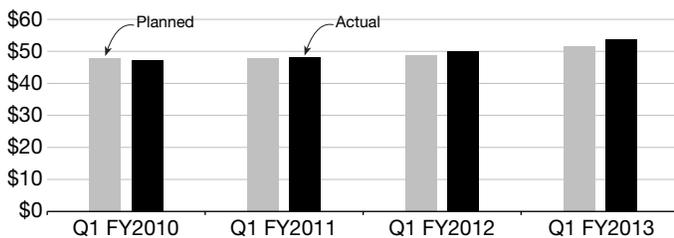
Ferries succeed with ridership and revenue as economic issues persist

Ferries' revenues exceeded projections despite challenges in maintaining ridership resulting from slow economic recovery, and shifting demographics and work patterns in the Puget Sound region (see *Gray Notebooks* 43, p. 24; and 46, p. 27). Ridership was 6.9 million for the first quarter of FY2013 (July - September 2012), which is about 200,000 passengers (2.9 percent) higher than projections for this quarter. WSF served 20,000 (0.3 percent) more riders in the first quarter of

FY2013 than in the first quarter of FY2012. Farebox revenue was \$53.6 million for the first quarter of FY2013. This was \$2.1 million (4.0 percent) higher than projections and about \$3.8 million (7.7 percent) higher than the first quarter of FY2011.

Ferries planned and actual farebox revenue levels by quarter

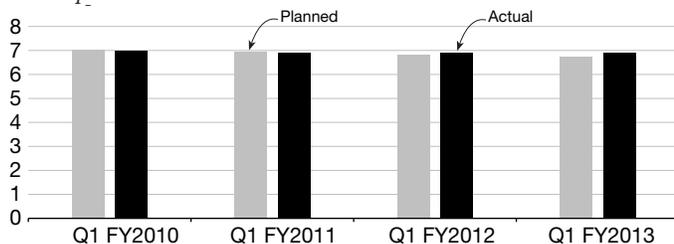
First quarter (July 1 - September 30), FY2010 - FY2013
Dollars in millions



Data source: WSDOT Ferries Division.

Ferries planned and actual ridership levels by quarter

First quarter (July 1 - September 30), FY2010 - FY2013
Ridership in millions



Data source: WSDOT Ferries Division.

Missed trips up, reliability down for quarter

Washington State Ferries missed 220 net trips in the first quarter of FY2013. This was 34 more net missed trips than in the same quarter last year. Net missed trips are the number of trips canceled that were not replaced.

There were 42,692 regular service trips scheduled in the first quarter of FY2013. Of those, 318 trips were canceled and 98 were replaced, resulting in a total of 42,472 trips during the quarter (42,692 scheduled - 318 canceled + 98 replacement trips = 42,472 net trips). This represents a trip reliability rating of 99.5 percent. Trips may be canceled for a variety of reasons, including tide and weather conditions, mechanical problems with vessels or at terminals, emergency transport, staffing issues, and when vessels fall too far behind schedule to complete all trips for that day.

The main reasons for the trip cancellations during the quarter:

- Tides and fog on the Port Townsend - Coupeville route,
- Motorized/Vessel (M/V) *Kaleetan* propulsion issues on the Seattle Bremerton route,
- Propulsion issues on the M/V *Issaquah* and a temporary schedule adjustment from three-boat to two-boat service on the Fauntleroy - Vashon - Southworth route, and
- Not meeting U.S. Coast Guard staffing levels.

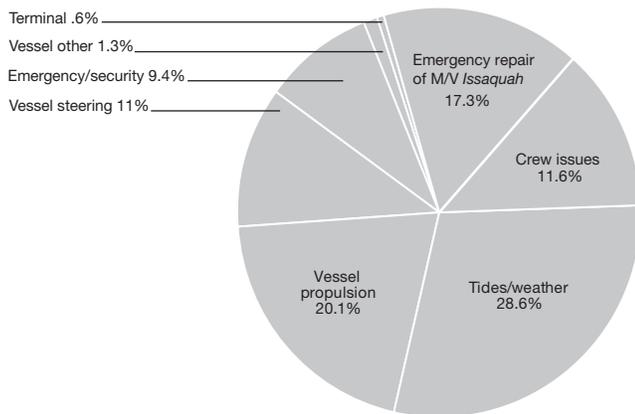
On-time performance down, complaints up for quarter

Missed sailings due to staffing

This quarter, Ferries had 37 crew related cancellations and eight delayed sailings during the first quarter of FY2013 due to its inability to staff the vessels to U.S. Coast Guard minimum staffing levels. Last year, 13 such cancellations were reported. WSF completed 42,472 trips during the quarter, or 99.5 percent of all scheduled trips. The cancellations accounted for 11.6 percent of the 318 trips canceled during the first quarter of FY2013.

Reasons for canceled trips

First quarter (July 1 - September 30), FY2013



Data source: WSDOT Ferries Division.

Note: A schedule reset occurred due to an emergency repair on the M/V Issaquah and accounted for 55 cancellations. Crew issues accounted for 37 cancellations.

On-time performance declines from previous quarter and year-to-year

Fewer sailings departed on time for the first quarter of FY2013 (July 1 to September 30, 2012) than in the previous quarter, but still surpassed the performance goal of 90 percent. On-time sailings dropped to 93.4 percent for the first quarter of FY2013, a 2.1 percentage point decrease from 95.5 percent in the fourth quarter of FY2012.

On-time performance declined by 0.3 percent compared to the same quarter in FY2012. The average sailing delay was up slightly, with an average 3.0 minutes of delay for the first quarter of FY2013 compared to 2.9 minutes of delay in the first quarter of FY2012.

Three routes showed measurable declines in on-time performance in the first quarter of FY2013 as compared to the first quarter in FY2012: the San Juan Domestic (eight percent decline), Mukilteo - Clinton (0.3 percent decline), and the Fauntleroy - Vashon - Southworth (0.3 percent decline).

WSF experiences a seasonal drop in on-time performance in the spring and summer seasons when terminal and vessel capacities are reached. The trend in on-time performance over the past two quarters mirrors this pattern. The additional loading and unloading of vehicles limits the ability of vessels to stay on schedule when delays occur.

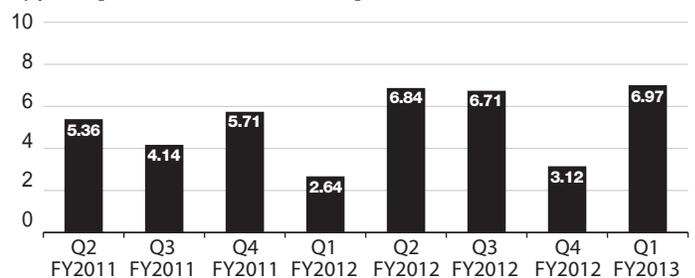
Six routes showed measured improvement in on-time performance in the first quarter of FY2013 over FY2012, including the San Juan - International (9.4 percent increase), Seattle - Bainbridge (5.4 percent increase) and Port Townsend - Coupeville (4.3 percent increase). On-time performance is starting to stabilize at higher annual levels, with FY2012 ending at 96 percent as compared to 91 percent for FY2011. Restoring two-boat service on the Port Townsend - Coupeville route, making service schedule changes on the Edmonds - Kingston, and Point Defiance - Tahlequah routes, and clarifying a two minute cut-off time for vessel loading on the Seattle - Bainbridge route, all played a role in improving annual on-time performance.

Both customer complaints and compliments double compared to previous quarter

Complaints per 100,000 WSF customers more than doubled those made in the previous quarter, increasing from 3.1 (178) to 7.0 (482) from the fourth quarter of FY2012 to the first quarter of FY2013. Loading/unloading, employee behavior, ticketing, reservations and general service accounted for the majority of these complaints. A new reservation system, which affected travelers on the Port Townsend - Coupeville route and commercial vehicles on the Anacortes - Sidney route, was put in place during the first quarter of FY2013 and affected the number of comments WSF received. Ferries is working to improve the reservation system to ensure customers can make reservations easily and meet their reserved sailings with minimal delay. WSF compliments increased over last quarter from 0.40 (23) to 0.69 (48) per 100,000 riders.

Average number of complaints per 100,000 riders

By fiscal quarter, October 1, 2011 - September 30, 2012



Data source: WSDOT Ferries Division.

Washington State Ferries Annual Report



Ferries works to meet new annual performance measure goals

Legislature tracks new Ferries performance measures for 2012, ferries meets 15 of 17 goals

In January 2012, the Office of Financial Management and WSDOT presented a baseline report to the Joint Transportation Committee of the Legislature, establishing 17 performance measures for the Washington State Ferry system. Of these, 15 are new and two were previously reported. These measures were developed to fulfill legislative requirements passed into law during the 2011 session, and emphasize the state's ongoing commitment to providing excellent service across the waters of western Washington.

WSF met 15 of 17 performance goals. The Joint Transportation Committee developed four target groupings to help capture the overall picture of WSF's annual programs and provide insight into what works best. Target groupings include safety performance, service effectiveness, cost containment measures and maintenance and capital program effectiveness. WSDOT is requesting the criteria for passenger injuries reporting be changed to more closely align with federal criteria, and average vessel out of service times be changed to account for non-working days.

Maintenance and Capital program effectiveness

1 Complete 90 percent of terminal projects on time

Washington State Ferries completed 11 of 12 terminal capital projects on time in FY2012 (July 1 to September 30, 2012). The 92 percent achieved completion rate exceeds the performance measurement goal of 90 percent on time, but marks a slight decrease from FY2011, when WSF completed 19 of 20 (95 percent) terminal projects on time.

Project highlights for FY2012 include:

- The Seattle Multimodal Terminal Project completed the Environmental Assessment public scoping process as

Ferries terminal capital projects completed on time

FY2010 - FY2012; All completed ferries terminal projects by fiscal year

	FY2010	FY2011	FY2012
Terminal engineering projects scheduled for completion	4	20	12
Terminal projects completed within same quarter as scheduled operationally complete milestone	4	19	11
Percent delivered on time	100%	95%	92%

Data source: WSDOT Ferries Division.

Note: Fifteen security projects are not included due to a delay in the release of federal grant funds. More than 80 percent of the funds for these projects are from federal grants.

required by the National Environmental Policy Act,

- The Mukilteo Multimodal Terminal Project completed its Draft Environmental Impact Statement,
- The tollbooths at Port Townsend and Coupeville were updated and reconfigured to accommodate reservation upgrades and increase efficiency, and
- Work was completed on Seattle Slip No. 2 Mechanical and Electrical Rehabilitation project.

2 Complete 90 percent of terminal projects on budget

WSF exceeded its goal of 90 percent for FY2012, completing 91 percent of its terminal capital projects on budget. During FY2012, the WSF terminal capital program delivered 11 construction projects, including replacing the right inner piers at the Edmonds dock and replacing the Anacortes Terminal building roof.

Terminal engineering project milestones are established every two years and associated with the biennial budget, and adjustments can be made with supplemental budgets. Projects were counted as on-budget if their total costs were within five percent of the budget authorized in the last legislatively approved budget. Other project highlights are noted in goal one.

Ferries terminal projects completed on budget

FY2010 - FY2012; All completed ferries terminal projects by fiscal year

	FY2010	FY2011	FY2012
Terminal projects completed	4	20	11
Terminal projects completed on or under budget	4	19	10
Percent on budget	100%	95%	91%
Terminal projects budget for completed projects	\$6,036,000	\$32,371,942	\$8,078,711
Terminal projects actual for completed projects	\$4,168,657	\$24,339,643	\$5,414,378
Total of budget spent on completed projects	69%	75%	67%

Data source: WSDOT Ferries Division.

3 Complete 100 percent of new vessel construction and 75 percent of vessel preservation and improvement projects on time

WSF met its goal to complete 100 percent of new vessel construction on time, and exceeded its target for completing 75 percent of its vessel preservation and improvement projects on time. In FY2012, WSF completed 79 percent of its existing vessel preservation and improvement projects on time.



Washington State Ferries Annual Report

Ferries performance measures dashboard

Policy goal*/Performance measure	Prior (FY2011)**	Current (FY2012)**	Goal	Goal met	Comments	
Maintenance and Capital Program Effectiveness						
1	Percent of terminal projects completed on time .	95%	92%	90%	✓	Exceeds on-time goal for FY2012.
2	Percent of terminal projects completed on budget .	95%	91%	90%	✓	Exceeds on-budget goal for FY2012.
3	Percent of new construction ¹ and vessel preservation and improvement ² projects completed on time .	100% ¹ 100% ²	100% ¹ 79% ²	100% ¹ 75% ²	✓	Exceeds on-time goals for vessel construction, preservation and improvement projects.
4	Percent of new construction ¹ and vessel preservation and improvement ² projects completed on budget .	100% ¹ 75% ²	100% ¹ 94% ²	100% 75%	✓	Exceeds on-budget goals for vessel construction, preservation and improvement projects.
14	Preliminary engineering costs <ul style="list-style-type: none"> As a percent of terminal capital project costs As a percent of existing vessel capital project² costs As a percent new vessel project costs 	22% 8% ² 2.5% ¹	25% ³ 17% ^{2,4} 2.8% ¹	19% ^{5,6} 17% ⁵ 10% ⁵	- ✓ ✓	Terminal capital projects were below goals while both existing and new vessel projects exceeded goals for engineering costs.
15	Average vessel out of service time.	8 weeks	7.8 weeks	8 ⁷ weeks	✓	Marks improvement on last period and is better than the out of service time goal.
Safety Performance						
5	Passenger injuries per million passenger miles below three-year moving average.	0.086	0.092	Less than 0.086	-	The number of passenger injuries was above the three-year moving average.
6	OSHA recordable crew injuries per 10,000 revenue service hours.	9.7	5.9	11.8	✓	Surpasses goal by having less OSHA -recordable crew injuries.
Service Effectiveness						
7	Passenger satisfaction with WSF Staff customer service .	86%	95%	90%	✓	Exceeds passenger satisfaction for customer service goal.
8	Passenger satisfaction with cleanliness and comfort of WSF terminals, facilities, and vessels.	85%	90%	90%	✓	Meets customer satisfaction for cleanliness and comfort goal.
9	Passenger satisfaction with service requests made via telephone or WSF website.	76%	89%	90%	-	Was one percent below goal for passenger satisfaction with service requests.
17	Service reliability level (percent of scheduled trips completed).	99.5%	99.6%	99%	✓	Meets service reliability level goal.
16	On-time performance level (percent of trips departing at scheduled time).	94.4%	96.1%	95%	✓	Exceeds on-time performance level goal.
Cost Containment Measures						
10	Annual operating cost estimate per passenger mile compared to budgeted cost.	0.05%	-1.86%	Within 5% of budget	✓	Exceeds goal for annual operating cost per passenger mile.
11	Annual operating cost estimate per revenue service mile compared to budgeted cost.	-1%	-2.02%	Within 5% of budget	✓	Surpasses goal for annual operating cost per revenue service mile.
12	Overtime hours as a percentage of straight time hours compared to budgeted overtime hours.	-1.07%	+0.38%	Within 1% of budget	✓	Exceeds goal for annual overtime as a percentage of straight time.
13	Gallons of fuel consumed per revenue service mile compared to budgeted fuel consumption.	-1.27%	-0.7%	Within 5% of budget	✓	Exceeds goal for fuel consumption per revenue service mile.

Notes: *Goals above are grouped and the numbers are out of sequence to match those used in OFM reporting.**All reporting periods are based on fiscal years. Baseline reporting period is FY2011 (July 2010 - June 2011) and current reporting year is FY2012 (July 2011 - June 2012) unless otherwise noted. 1 New vessel projects. 2 Preservation and improvement projects on existing vessels. 3 Adjusted for consultant use. 4 The M/V Kitsap, M/V Kaleteen, M/V Hyak, and M/V Yakima have no major contracts planned this biennium and were intentionally omitted from the preliminary engineering percentage calculation. 5 Based on WSDOT Estimating Manual – Percentages vary due to project type. 6 Weighted rate for terminal engineering's 11 projects delivered in FY 2012 based on project types and sizes. 7 WSDOT recommended changing the goal from six to eight weeks due to an error in calculating the initial baseline that omitted the non-working days in the calculation.



Ferries works to meet new annual performance measure goals



Ironworkers at Vigor Industrial weld the first two metal plates together for Ferries' newest 144-car ferry. Photo courtesy of Vigor Industrial.

In FY2012 (July 1 to September 30, 2012), WSF targeted 19 vessel preservation and improvement projects with a focus on maintaining their U.S. Coast Guard Certificate of Inspection, which is mandated to keep the vessels in service.

Vessel work that is contracted out requires shipyard or dockside availability and vessel availability, which can make it challenging for WSF to complete necessary preservation and improvement projects on time. Delivering new vessels on time maintains the planned pace of vessel replacement in the aging fleet.

Vessel engineering costs as a percentage of total existing and new project costs

FY2010 - FY2012; Vessel project costs by fiscal year

Existing projects	FY2010	FY2011	FY2012
Preliminary engineering costs	\$2,274,524	\$1,745,197	\$1,353,078
Construction costs	\$17,257,546	\$21,654,615	\$6,808,456
Total cost	\$19,532,070	\$23,399,812	\$8,161,534
Preliminary engineering percent of total cost	12%	7%	17%
New projects	FY2010	FY2011	FY2012
Preliminary engineering costs	-	\$1,699,507 ¹	\$1,699,507 ¹
Construction costs	-	\$65,592,159	\$58,652,329
Total cost	-	\$67,291,666	\$60,351,836
Preliminary engineering percent of total cost	-	3%	3%

Data source: WSDOT Ferries Division.

Note: The M/V *Kitsap*, M/V *Hyak* and M/V *Yakima* have no major contracts planned this biennium and were intentionally omitted from the preliminary engineering percentages calculations. 1 PE costs are shared across the M/V *Salish* and the M/V *Kennewick*, and include the purchase of engineering plans for vessel design.

4 Complete 100 percent of new vessel construction and 75 percent of vessel preservation and improvement projects on budget

WSF met its goal for completing 100 percent of its new vessel construction on budget in FY2012. It also surpassed its 75 percent target for completing vessel preservation and improvements, with 94 percent (16 of 17) of its projects on budget. Of the \$15.6 million budgeted for existing vessels, \$9.6 million (61 percent) was spent. Highlights for FY2012 included completion of the M/V *Kennewick* in October 2011 and completion of dock edging work in December 2011. The vessel program was affected by a lack of Puget Sound shipyard availability in FY 2012.

14 Terminal engineering costs as a percent of total project costs

Ferries Terminal Engineering capital program completed 11 projects in FY2012. Using the WSDOT Design Manual and Cost Estimating Manual for WSDOT projects based on project types and sizes, WSF established a weighted program goal for FY2012 of 19 percent for preliminary engineering costs as compared to total project costs. The FY2012 projects missed the goal and were delivered with a 25 percent preliminary engineering costs compared to total project costs.

The 11 projects in FY2012 were completed under budget, using 67 percent of their authorized legislative budget. (See related chart on page 22.) Spending below the budgeted project amounts was due to a number of factors and directly impacted preliminary engineering (PE) costs. A competitive construction environment produced lower contractor bids and construction costs. FY2012 design actions including cost-benefit analysis as part of pre-design studies, value engineering studies and asset management also drove down construction costs. These actions impacted PE percentages by lowering construction costs and increasing PE costs. Also, in FY2012 changing seismic standards added to design costs for the projects delivered in FY2012.

Terminal engineering costs as a percentage of total project costs

FY2010 - FY2012; Terminal project costs by fiscal year

Terminal Engineering	FY2010	FY2011	FY2012
Preliminary engineering costs	\$1,285,100	\$7,567,906	\$1,305,742 ¹
Construction costs	\$5,343,470	\$26,803,187	\$3,972,147
Total cost	\$6,628,580	\$34,371,093	\$5,390,548
Preliminary engineering percent of total cost	19%	22%	25%

Data source: WSDOT Ferries Division.

Note: 1 Adjusted for consultant use.



Ferries works to meet new annual performance measure goals

15 | Keep the total vessel out of service time to less than eight weeks per year

WSF made its goal to keep its total vessel out of service time to less than eight weeks during FY2012 (July 1, 2011 to September 30, 2012). In total, WSF's 21 vessels were out of service a combined 1,145 days, putting the average for the fleet at approximately 7.8 weeks. While this is a 0.2 percent decrease from the eight weeks tracked in FY2011, when WSF had 19 maintained vessels, it is an increase over FY2009 and FY2010 when total weeks out of service were 6.8 and 7.1, respectively.

Tracking this helps WSF gauge how long vessels need to be out of service to maintain safe and reliable service and U.S. Coast Guard certification.

The vessel out of service calculation has been adjusted to include weekends. This modification changed the baseline and increased the average calculated days vessels are out of service annually. As a result, WSDOT recommends changing the goal from six to eight weeks.

Total vessel out of service time

FY2010 - FY2012; Actual days out of service for maintained vessels

Vessel class	FY2010	FY2011	FY2012
Jumbo Mark II (3 vessels)	60	136	140
Jumbo (2 vessels)	87	128	149
Evergreen State (3 vessels)	218	190	265
Issaquah (6 vessels)	244	375	255
Super (4 vessels)	290	200	234
Kwa-di Tabil (3 vessels)	0	0	72
Rhododendron (1 vessel)	46	30	30
Total days out of service	945	1,059	1,145
Total number vessels	19	19	21
Out of service weeks per vessel	7.1	8.0	7.8

Data source: WSDOT Ferries Division.



The M/V Tacoma is in need of painting. The work is planned to be completed in phases to minimize service disruptions.

Safety performance

5 | Continue to reduce passenger injuries per million passenger miles

WSF was just shy of the goal for having a FY2012 passenger injury rate below a moving average of the last three years. Injuries are now tracked per the National Transit Database (NTD) criteria, which focuses mainly on injuries WSF can actively prevent. NTD results help identify trends and show impacts of processes or programs implemented by WSF. To match existing federal reporting requirements, Ferries suggested adjusting its reporting criteria to match what is reported annually to the Federal Transit Authority. Prior criteria included incidents ranging from heart attacks to bee stings. The goal of being below the three-year moving average has not changed.

Passenger injuries per million passenger miles

FY2010 - FY2012; Passenger miles and injuries by fiscal year

	FY2010	FY2011	FY2012
Passenger miles (in millions)	176	173	174
National Transit Database passenger injuries	11	15	16
Injuries per million passenger miles	0.063	0.087	0.092
Goal (three-year moving average)		0.098	0.086

Data source: WSDOT Ferries Division.

6 | Stay below industry average for OSHA recordable crew injuries per 10,000 revenue service hours

Reducing Occupational Safety and Health Administration (OSHA) recordable injuries by 39 percent in FY2012, WSF met its goal to stay below the industry average of 11.78 injuries per 10,000 revenue service miles.

WSF had 5.9 incidents per 10,000 revenue service miles for the target period, a sharp decrease from the 10.1 incidents recorded in FY2010. WSF believes the improvement is due to actions such as prompt investigation of employee accidents, frequent safety discussions, and placement of no-slip pads on vessels.

OSHA-recordable crew injuries per 10,000 revenue service hours

FY2010 - FY2012; Crew injuries and service hours by fiscal year

	FY2010	FY2011	FY2012
OSHA recordable incidents	128	122	75
10,000 service hours	12.7	12.6	12.7
Incidents per 10,000 service hours	10.1	9.7	5.9
Change from prior year	-15%	-4%	-39%

Data source: WSDOT Ferries Division.

Washington State Ferries Annual Report



Ferries works to meet new annual performance measure goals

Service effectiveness

- 7
- 8 **Keep passenger satisfaction above 90 percent**
- 9

In FY2012 (July 1, 2011 to September 30, 2012), WSF met two out of three targets for passenger satisfaction. Results were compiled during the Washington State Transportation Commission’s Winter Wave Survey in May 2012 given to the Ferry Riders Opinion Group.

WSF’s goal is to have a 90 percent or higher customer satisfaction rating for three individual performance measures.

Survey results found:

- 95 percent of passengers were satisfied with interactions with WSF employees,
- 90 percent of passengers were satisfied with the cleanliness and comfort of WSF terminals, facilities and vessels, and
- 89 percent of passengers were satisfied with requests for service made via telephone or the WSF website.

Washington State Ferries expects recent and upcoming projects at its terminals and on vessels to have positive impacts on future customer satisfaction ratings.

These changes and improvements include:

- Updating the Anacortes Terminal building by installing new passenger seating and carpeting,
- Adding outdoor seating in vendor areas at the Anacortes Terminal,
- Adding seating in the food court area at Colman Dock
- Removing video games from all vessels, and
- Upgrading hot beverage machines on all vessels. The upgrade has been in process since fall 2011, and will provide passengers with more options when WSF’s galleys are closed or non-existent.



Hundreds of bicyclists return to Seattle after participating in the annual Chilly Hilly ride on Bainbridge Island. Accommodating popular events like this help keep WSF customers satisfied.

17 Maintain at least 99 percent service reliability each year

WSF’s annual average trip reliability has consistently been higher than 99 percent, which exceeds its goal for FY2012.

In FY2012, Washington State Ferries completed 99.6 percent of its trips, putting it on par with trip reliability in FY2011, and marking a 0.2 percent increase over FY2010. While Ferries showed excellent reliability in FY2012, poor weather and tides continue to be the leading causes for cancellations. WSF works hard to post any tidal impacts on ferry schedules as early as possible to minimize effects on travelers. See p. 20 for additional detail on recent staffing issues and related reliability impacts.

Washington State Ferries trip reliability comparison FY2010 - FY2012; Trip reliability by route and fiscal year

Route	Percentage of trips made		
	FY2010	FY2011	FY2012
San Juan Domestic	99.7%	99.8%	99.7%
International Route	100.0%	100.0%	100.0%
Edmonds - Kingston	99.7%	99.6%	100.0%
Fauntleroy - Vashon - Southworth	99.5%	99.8%	99.7%
Keystone - Port Townsend	94.1%	96.7%	96.7%
Mukilteo - Clinton	99.9%	98.8%	99.8%
Pt. Defiance - Tahlequah	99.8%	99.8%	99.4%
Seattle - Bainbridge Island	99.8%	100.0%	100.0%
Seattle - Bremerton	99.1%	100.0%	99.9%
Total	99.4%	99.5%	99.6%

Data source: WSDOT Ferries Division.



The M/V Kennewick, the third new 64-car ferry arrives in Port Townsend in early 2012, offering more reliable service to commuters there.



Ferries works to meet new annual performance measure goals

Washington State Ferries on-time performance comparison

FY2011 and FY2012; On-time trips by route and fiscal year

Route	FY2011			FY2012		
	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	23,723	88.4%	3.9	23,490	89.8%	3.4
International Route	665	88.1%	3.5	634	83.5%	2.9
Edmonds - Kingston	16,353	96.8%	2.4	16,879	99.0%	1.6
Fauntleroy - Vashon - Southworth	38,740	95.2%	2.7	39,416	96.6%	2.3
Port Townsend - Coupeville	5,642	84.6%	5.1	7,820	92.7%	3.2
Mukilteo - Clinton	25,533	97.7%	2.1	26,478	98.9%	1.3
Pt. Defiance - Tahlequah	13,306	96.9%	2.8	13,377	98.5%	1.9
Seattle - Bainbridge Island	15,539	94.5%	2.1	15,807	95.9%	1.7
Seattle - Bremerton	10,540	97.1%	2.4	10,648	97.9%	2.0
Total	150,041	94.4%	2.8	154,549	96.1%	2.2

Data source: WSDOT Ferries Division.

Notes: 1 About one 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.

Service effectiveness (continued)

- 16** Maintain an on-time performance level higher than 95 percent

WSF's annual on-time performance for FY2012 (July 1 to September 30, 2012) is showing a trend of improvement from year to year and is stabilizing at higher percentage levels. In FY2012, WSF had an on-time record of 96.1 percent for its 154,549 sailings. The average delay for these trips was 2.2 minutes.

The improvements in FY2012 help WSF exceed the target goal of 95 percent on-time performance.

In FY2011, WSF's on-time performance was 94.4 percent with 150,041 on-time trips, and the average sailing delay was 2.8 minutes. Despite being slightly below the target goal, FY2011 showed a marked increase over FY2010 when 91.7 percent of sailings were on time and the average delay was 3.4 minutes.

WSF delays, when coupled with tight schedules, limit the ability of late vessels to make up time during their routes and get back on schedule. Even with these issues, the on-time percentage is consistently high.

The measure helps gauge operational efficiency and helps identify potential improvements. Fluctuations in on-time performance can result from a variety of reasons including heavy traffic, accumulated delays, weather issues and mechanical problems.

Cost containment measures

- 10** Annual operating cost per passenger mile within five percent of budget

WSF's was well within five percent of the planned cost per passenger mile for FY2012. For the fiscal year, WSF estimated this expense to be \$1.35. Actual costs were \$1.32, making the variance -1.86 percent. Actual operating costs were about \$2 million lower than planned in FY2012 due to fuel costs, while planned passenger miles came in about 1.7 million higher than expected. The routes from Mukilteo - Clinton north carried more passengers than expected, and replacing the M/V *Rhododendron* with the larger M/V *Chetzemoka* on the Point Defiance - Tahlequah route added to the higher passenger numbers in FY2012.

Annual operating cost per passenger mile

FY2010 - FY2012; Planned and actual operating costs and passenger miles by fiscal year

	FY2010	FY2011	FY2012
Planned operating cost (in millions)	\$194.0	\$218.80	\$232.60
Planned passenger miles (in millions)	171.80	168.80	172.50
Planned cost per passenger mile	\$1.13	\$1.29	\$1.35
Actual operating cost (in millions)	\$208.60	\$224.70	\$230.60
Actual passenger miles (in millions)	175.70	173.20	174.20
Actual cost per passenger mile	\$1.19	\$1.30	\$1.32
Variance from plan	5.13%	0.05%	-1.86%

Data source: WSDOT Ferries Division.



Ferries works to meet new annual performance measure goals

Cost containment measures (continued)

11 Annual operating cost per revenue service mile within five percent of budget

WSF's actual operating cost per revenue service mile varied just 2.02 percent from planned expenses for FY2012, meeting the goal of being within five percent of estimated cost for the fiscal year.

This is slightly higher than FY2011 when the variance between planned and actual operating costs was one percent. WSF had expected operating costs to be \$260.47 per mile, but by the end of FY2012 determined these costs were approximately \$255.22. There were about 6,500 more revenue service miles as well.

Annual operating cost per revenue service mile

FY2010 - FY2012; Planned and actual operating costs and revenue service miles by fiscal year

	FY2010	FY2011	FY2012
Planned operating cost (in millions)	\$194.0	\$218.8	\$232.6
Planned revenue service miles	871,189	870,653	896,911
Cost per revenue service mile	\$222.63	\$251.33	\$260.47
Actual operating cost (in millions)	\$208.6	\$224.7	\$230.6
Actual revenue service miles	877,722	884,397	903,364
Cost per revenue service mile	\$237.60	\$254.02	\$255.22
Variance from plan	7%	1%	-2.02%

Data source: WSDOT Ferries Division.

12 Stay within five percent of budget on gallons of fuel consumed per revenue service mile

WSF was within five percent of its planned budget for gallons of fuel consumed per revenue service mile. In FY2012, WSF expected to use about 19.48 gallons per mile. Actual fuel consumption was 19.34 gallons per revenue service mile, putting the difference at a very slim 0.70 percent. Fuel consumption for FY2012 was effectively at the planned level. The slight increase in passengers pushed the actual revenue service miles higher than expected and accordingly this measure was slightly less than one percent below the plan.

Outcome and context of performance:

- Fuel consumption was 0.70 percent below plan,
- Revenue service miles were slightly higher than plan, and
- Actual fuel consumption in total was approximately 3,000 gallons over plan, on a base of 17.5 million gallons.

Gallons of fuel consumed per revenue service mile

FY2010 - FY2012; Planned and actual gallons of fuel consumed and revenue service miles by fiscal year

	FY2010	FY2011	FY2012
Planned fuel consumed (millions of gallons)	16.40	17.10	17.47
Planned revenue service miles	871,189	870,653	896,911
Planned fuel consumed per revenue service mile (gallons)	18.83	19.63	19.48
Actual fuel consumed (millions of gallons)	17.20	17.27	17.47
Actual revenue service miles	877,722	884,397	903,364
Actual fuel consumed per revenue service mile (gallons)	19.06	19.08	19.34
Variance from plan	-1.25%	-0.50%	-0.70%

Data source: WSDOT Ferries Division.



The M/V Chetzemoka makes its way through the Puget Sound. WSF has noted some fuel consumption issues with this vessel class.

13 Actual overtime hours as a percentage of straight time hours within one percent

WSF met its goal to have actual percent of overtime hours compared to straight time hours within one percent of the planned overtime percentage. In FY2012, WSF anticipated overtime to be about five percent of the number of straight time hours. Actual overtime for FY2012 was 129,496 hours, approximately 5.3 percent of the 2.42 million straight time hours. The total variance was 0.38 percent.

Rail: Amtrak Cascades Quarterly Update

WSDOT plans ahead and works to improve on-time performance

Seventy-one percent of Washington state-supported Amtrak Cascades trains reached their destination on time during the third quarter (July through September) of 2012, steady with the same quarter of 2011. Washington state-supported Amtrak Cascades ticket revenues decreased 2.5 percent in the third quarter 2012, and ridership declined 5.8 percent compared to the same quarter of 2011. Lower revenue and ridership levels were due to several train cancellations. Train cancellations were made to accommodate 13 days of track maintenance work.

The future of Amtrak Cascades passenger rail service

The federal government will no longer contribute funding for the Amtrak Cascades passenger rail service when the Passenger Rail Investment and Improvement Act of 2008 takes effect in October 2013. Washington and Oregon plan to share the costs currently provided through federal subsidies for Amtrak. For Washington, this amount is expected to be about \$3 million to \$5 million annually. The source of this funding has not been identified yet.

The Amtrak Cascades passenger rail service is operated by Amtrak and jointly managed by WSDOT and the Oregon Department of Transportation. Amtrak Cascades is funded by ticket sales and a combination of funds from Amtrak's federal subsidies and the states of Washington and Oregon. Washington funds four round trips, two between Seattle and Portland, one between Portland and Vancouver, B.C., and one between Seattle and Vancouver, B.C. Washington's funded trips accounted for 70 percent of total Amtrak Cascades riders during the third quarter of 2012. Amtrak funds one round trip between Portland and Seattle, representing 15 percent of Amtrak Cascades riders in the third quarter of 2012. Oregon funds two round trips between Eugene and Portland, which also accounted for 15 percent of riders.

WSDOT seeks collaboration on State Rail Plan to guide future investment

WSDOT has started work on the Washington State Rail Plan, which will be a strategic blueprint for future public investment in the state's freight and passenger rail network. WSDOT held the first State Rail Plan Advisory Committee meeting in September 2012. General public participation workshops were held in late October 2012 in Spokane and Seattle. Updates on the State Rail Plan will be presented in future editions of the *Gray Notebook*.

Seventy-one percent of trains arrive on time

Washington state-supported Amtrak Cascades trains were 71 percent on time in the third quarter 2012, remaining steady with the same quarter in 2011. The graph on the right shows the trend is getting closer to the 80 percent on-time goal. Causes of delay this quarter included trains travelling at lower speeds through areas with track maintenance, equipment failures, and interference from freight trains.

In July 2012, WSDOT formed an On-time Performance Task Force to investigate train delay causes and identify institutional remedies to reduce delay. The task force includes representatives from BNSF Railway, Union Pacific, Amtrak,

Amtrak Cascades Highlights

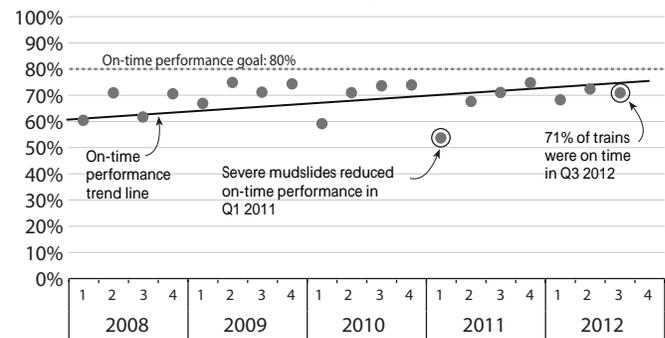
WSDOT is preparing for the anticipated cut of federal funding for the Amtrak Cascades service in October 2013.

Seventy-one percent of Amtrak Cascades trains were on time in the third quarter 2012.

WSDOT formed an On-time Performance Task Force to analyze strategies to reduce passenger train delay.

Ticket revenues declined 2.5 percent and ridership declined 5.8 percent in the third quarter 2012 compared to the same quarter in 2011.

Amtrak Cascades on-time performance
2008-2012; Percent of trains on time by quarter



Data source: Amtrak and WSDOT State Rail Office.

Notes: On-time performance for Washington-funded trains only. A basic indicator of on-time performance, "percent of trains on time," is calculated by dividing the number of trains that arrive at their endpoint on time by the total number of trains operated during a specific period. Amtrak's daily "percent on time" reports incorporate the former Interstate Commerce Commission's (ICC's) tolerance for lateness in the calculations. These ICC allowances consider trains 10 to 30 minutes late as on time, depending on the route length. The tolerance time is 10 minutes for Seattle - Portland trains and 15 minutes for Portland - Vancouver, B.C. trains.

Rail: Amtrak Cascades Quarterly Update

Amtrak Cascades revenue and ridership decline due to canceled trains

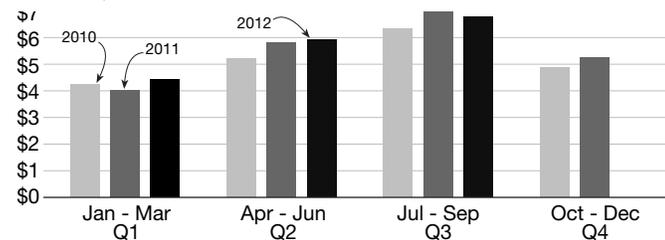
Sound Transit, Talgo, Inc., the Oregon Department of Transportation, the British Columbia Ministry of Transportation and WSDOT. The weekly meetings have resulted in modifying some practices to minimize delays and have improved communication among Amtrak Cascades service delivery partners. For example, one of the railroads developed a new procedure to facilitate communication between dispatching teams and operations teams in order to reduce delays associated with signal malfunctions.

Amtrak Cascades state-supported ticket revenues and ridership decline

Third quarter 2012 ticket revenue declines 2.5 percent
Amtrak Cascades state-supported ticket revenues totaled \$6.8 million in July through September 2012, a 2.5 percent decrease from July through September 2011. Ticket revenues for July through September 2011 were nearly \$7 million, which has been revised from what was previously reported in the *Gray Notebook* to reflect updated and confirmed data.

Amtrak Cascades Washington state-supported ticket revenues by quarter

2010-2012; Dollars in millions



Data source: WSDOT State Rail Office.

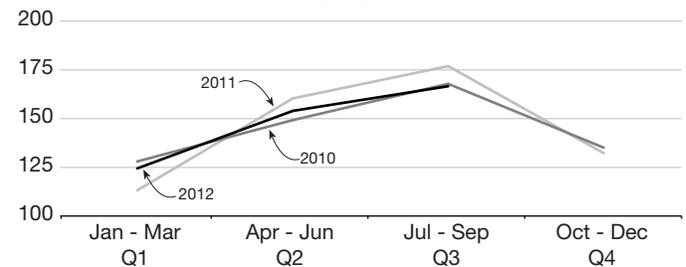
Note: Ticket revenue for Washington-funded trains only. July through September (Q3) 2011 has been corrected to reflect updated and confirmed data.

Third quarter 2012 ridership declines 5.8 percent

Amtrak Cascades state-supported ridership dropped 5.8 percent in the third quarter 2012 compared to the same quarter 2011. There were 166,629 riders in July through September 2012 on Washington supported Amtrak Cascades trains, compared to 176,979 riders during July through September 2011.

The decline in revenue and ridership during the third quarter 2012 was due in part to 13 days of train cancellations resulting from track maintenance and competition in the corridor.

Amtrak Cascades state-supported quarterly ridership 2010-2012; Number of passengers per quarter; Riders in thousands



Data source: WSDOT State Rail Office.

Note: Ridership for Washington-funded trains only.

Amtrak riders satisfied with services

In federal fiscal year (FFY) 2012 (October 1, 2011 to September 30, 2012), 90 percent of customers surveyed were very satisfied overall with Amtrak Cascades' services, shown in the table below. Amtrak regularly surveys its passengers on all trains it operates in the United States using a customer satisfaction index (CSI). Amtrak Cascades' CSI scores are among the highest nationally for all Amtrak lines.

The CSI measures how satisfied customers are with various services onboard Amtrak trains. The table below shows the percentage of very satisfied respondents for several of the measured service categories.

Percent of surveyed Amtrak Cascades customers who were very satisfied with services

Federal fiscal years 2011 and 2012; Customer satisfaction index scores¹

Category	FFY2011	FFY2012	Change ²
Value of Amtrak service for price paid	89%	88%	-1
Smooth/comfortable ride	90%	90%	0
Overall cleanliness of train	88%	89%	1
Info given on services/safety	85%	86%	1
Info given on problems/delays	88%	88%	0
On-time performance	86%	86%	0
Friendly/helpfulness of train conductors	90%	90%	0
Friendly/helpfulness of cafe car personnel	89%	90%	1
Overall Customer Satisfaction Index	90%	90%	0

Data source: Amtrak and WSDOT State Rail Office.

Notes: 1 The survey asks customers to rate each service category on a scale of one to 100. 2 The change column represents the percentage point change between years. There were 1,040 responses (out of more than 500,000 riders) in FY2012 and 1,151 responses in FY2011 (through August of both years).



In Environment:

Noise Quality Annual Report 32

WSDOT research proves some pavement asphalt materials are not cost effective options for noise abatement. Read about this and other noise abatement strategies in the Noise Quality annual report.

Air Quality Annual Report 35

WSDOT is instituting several strategies to reduce ferries emissions through the conversion to cleaner burning fuels and using fuel more efficiently, saving money in the effort.

Endangered Species Act Documentation Annual Report 38

WSDOT conducts reviews on all its projects for compliance with the federal government's Endangered Species Act.

See also

Quarterly Report on Capital Projects 46

Earlier Environment-related articles

Find previous articles in these GNB editions:

Programmatic Permits Annual Report GNB 46

Wetlands Protection Annual Report GNB 45

Water Quality Annual Report GNB 45

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

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

Noise Quality Annual Report

Noise walls block traffic noise near the road

Noise Quality Highlights

WSDOT concluded testing on two of three quieter asphalt pavement pilot projects and determined the new pavement types are not an effective traffic noise reduction strategy.

The number of noise studies and noise walls constructed have not been affected by WSDOT's new Noise Policy and Procedures to date.

WSDOT constructed seven noise walls to date in 2012.

WSDOT is responsible for ensuring transportation activities are in compliance with State (SEPA) and National (NEPA) Environmental Policy Act and other state and federal laws. In FY2012, WSDOT developed a new state noise policy that affects when and where it builds noise walls. WSDOT has prepared or approved more than 25 traffic and underwater noise studies, and more than 60 noise variances to allow construction work at night in FY2012. WSDOT continues conducting research to reduce noise from pavement, bridges, rumble strips, and construction sites; and is evaluating alternatives to standard concrete noise walls. WSDOT also monitors hydro-acoustic or underwater noise to ensure construction-related sounds, like in-water pile driving, do not pose a risk to threatened or endangered species.

Number of noise studies and noise walls constructed have not been affected by new federal rule and resulting WSDOT Noise Policy and Procedures

Federal rules, which became effective in July 2011, require states to adopt new noise policies. The resulting 2011 WSDOT Noise Policy and Procedures was expected to require more noise studies, because more types of projects trigger a noise study. It was also expected to result in fewer noise walls, because the criteria for building noise walls is higher (see *Gray Notebook* 43, p. 30). The federal rule requires more projects to have a noise study performed during the design phase and raises the criteria for determining if noise walls are reasonable. Since the policy took affect, there has been no noticeable change in the number of noise studies performed nor the number of noise walls constructed. It is too early to say whether this is a long term trend.

Recently, more noise walls have been retrofits rather than new construction

To date in 2012, WSDOT has constructed seven noise walls, totaling 1.4 miles and costing \$3.6 million (January-October). Noise walls are WSDOT's most common form of traffic noise abatement. Walls are constructed near roadways to reflect or absorb traffic noise. They are made of concrete or other sound absorbing or sound reflecting materials. At WSDOT, there are two types of projects in which traffic noise is evaluated for these walls.

Type 1 projects require noise studies because of their potential to increase traffic noise for nearby residents. For example, adding lanes, realigning existing roadways, building new roadways, or altering terrain near roadways may increase noise and affect residential neighborhoods. WSDOT has built 60 Type 1 noise walls since 2001.

Type 2 projects are noise abatement retrofits made for existing highways near residential areas that were constructed before 1976, the year traffic noise was first evaluated for highway projects. Type 2 projects are funded by the state Legislature as stand alone projects. The 60 Type 2 projects are prioritized by community age, population density, noise levels, and cost of abatement. The top ten projects are considered a high priority. WSDOT has constructed 20 Type 2 noise walls since 2001. In the past decade most noise walls built were for Type 1 projects built with Nickel and TPA funds. As Nickel and TPA projects are completed, new noise walls will increasingly be Type 2 retrofits for existing roadways rather than noise walls for new construction.

WSDOT noise walls constructed by type

2001-2012; Total length in miles; Total area in square feet

Calendar year	Number of projects		Total length	Total area	Total cost of noise walls ¹
	Type 1	Type 2			
2001	1	0	0.23	6,135	\$233,750
2002	2	0	1.61	83,900	\$1,763,795
2003 ²	2	0	3.11	217,978	\$1,524,400
2004	9	2	3.00	211,334	\$5,857,044
2005	9	1	2.17	162,283	\$4,808,105
2006 ³	13	2	4.07	469,581	\$17,131,508
2007 ³	14	1	5.07	306,243	\$13,690,659
2008	1	0	0.27	5,020	\$193,486
2009	4	7	2.05	184,065	\$21,116,248
2010	2	1	0.77	47,203	\$3,610,053
2011	0	2	1.36	118,180	\$3,243,346
2012 ⁴	3	4	1.43	108,300	\$3,573,127
Total	60	20	25.14	1,920,222	\$76,745,521

Data source: WSDOT Environmental Services Office.

Notes: 1 Total cost of noise walls is the cost at time of construction.

2 Both 2003 walls were constructed with city or private funds.

3 Includes design-build projects with estimated project costs included.

4 Projects through October 2012.

Bridge noise abatement strategies have mixed results

How WSDOT evaluates noise levels and abatement

When a project requires a noise study, WSDOT follows federal guidelines to evaluate traffic noise levels and abatement options:

1. WSDOT determines if the project could have traffic noise impacts in the future. Residential traffic noise impacts occur with sound levels at or above 66 decibels, or if there is a ten decibel increase as a result of the project.
2. If there are impacts, WSDOT evaluates the feasibility of noise abatement to determine whether it can be constructed and effectively reduce noise.
3. If feasible, WSDOT evaluates whether noise abatement is reasonable. This assessment includes comparing the estimated cost to the allowed cost criteria based on future noise levels and whether the community desires the abatement.
4. Noise abatement that is feasible and reasonable is recommended for construction.

WSDOT researches rumble strip noise reduction

In 2011, WSDOT was awarded \$60,000 to research and develop a new rumble strip design that is safe, effective, and produces less noise outside the vehicle than the standard rumble strip. Results of this work are expected in 2013.

WSDOT partners with university to improve hydro-acoustic monitoring, reduce underwater noise

During in-water pile driving, noise is transmitted through the water and the ground around the pile and can pose a risk to fish, and marine birds and mammals. WSDOT monitors underwater noise levels from pile driving to ensure compliance with the Endangered Species Act and the Marine Mammal Protection Act. WSDOT is required to monitor activities with the potential to generate 120 decibels of underwater noise. Biological monitoring can be required for large areas, up to 20 miles away from pile driving, which can add substantial cost to projects.

In 2011, WSDOT awarded the University of Washington (UW) \$135,000 to monitor underwater pile driving noise and design new mitigation tools to reduce the size of the monitored area. UW designed a small-scale prototype of a double-walled pile that can reduce noise levels by 30 decibels. A larger-scale version of the double-wall pile is in the design phase and will be field tested in Lake Washington in late 2012. A final prototype is scheduled for testing in 2013.

Biological monitoring areas remain large until WSDOT demonstrates noise level compliance. Currently, biologists collect

measurements in the field and analyze them in the office. Multiple biologists must remain in the field until the analysis is complete, which adds to project costs. In 2012, WSDOT provided \$30,000 for the UW Applied Physics Laboratory to develop an underwater sound meter that gives instantaneous results. The meter is expected to reduce the number of field staff and become WSDOT's property when it is completed in late 2012.

Reducing traffic noise from bridges

WSDOT reduces Tacoma Narrows Bridge noise

In 2011, WSDOT concluded a pilot project to reduce the low frequency sounds from the Tacoma Narrows Bridge expansion joints that were prompting complaints from nearby residents. The project built new walls and attached sound absorbing material to the walls and existing cable housings to reduce noise. Nearby residents have since reported less noise from the Tacoma Narrows Bridge. Results from the research are published in the WSDOT December 2011 report *Expansion Joint Noise Reduction on the New Tacoma Narrows Bridge* available at <http://www.wsdot.wa.gov/research/reports/fullreports/785.1.pdf>.

Ship Canal Bridge noise remains a challenge

The Ship Canal Bridge is a unique double-decker bridge on I-5 in Seattle where noise from the lower-level express lanes is reflected off the underside of the I-5 mainline into the adjacent neighborhoods. Reducing noise from the bridge is complicated because there are a number of acoustic, engineering, maintenance and aesthetic challenges. WSDOT has closed the express lanes at night since the 1990s to reduce noise from the bridge. In 2004, the state Legislature funded noise reduction research for the bridge, which convened a panel of international acoustic experts in 2008. The panel recommended hanging sound absorbing panels above the express lanes to reduce noise by an estimated four to five decibels. WSDOT installed 700 sound absorbing panels in 2010.

WSDOT evaluated the acoustic performance of this pilot project by measuring noise levels at four locations on the bridge and 18 nearby neighborhood locations before the panels were installed, quarterly for the first year (2010) after installation, and once in 2011. The table on the following page shows the measured results. Noise reductions ranged from one to four decibels, with an average of one decibel. WSDOT determined the lower-than-expected reductions were a result of noise models underestimating how much sound would diffract around the panels and the bridge's ceiling reflecting more noise than predicted. No additional noise reduction efforts are proposed at this time. The WSDOT *I-5 Ship Canal Bridge: Noise Pilot Project* study is available at <http://www.wsdot.wa.gov/projects/i5/shipcanalbridge/>.

Noise Quality Annual Report

Quieter asphalt pavement is not an effective option to reduce traffic noise

Noise levels in neighborhood locations near the Ship Canal Bridge before and after sound abatement

Noise levels in decibels (dBAs)

Location ¹	Before noise panels ²	After noise panels ²	Difference (dBA)
A	92.3	91.8	-0.5
B ³	-	91.2	-
C	91.0	91.8	0.8
D ³	-	91.7	-
1	83.5	80.5	-3.0
2	82.4	78.8	-3.6
3	82.4	80.3	-2.1
4	74.3	71.5	-2.8
5	79.4	77.3	-2.1
6	70.3	69.3	-1.0
7	81.6	80.0	-1.6
8	78.6	77.5	-1.1
9	79.8	80.8	1.0
10	82.6	82.0	-0.6
11	79.8	82.0	2.2
12	77.8	78.0	0.2
13	79.4	78.3	-1.1
14	69.8	70.0	0.2
15	79.3	76.3	-3.0
16	75.2	73.8	-1.4
17	83.2	82.3	-0.9
18	83.3	82.5	-0.8

Data source: WSDOT Environmental Services Office.

Notes: 1 Sound measurements were taken at locations on the bridge (A-D) and in adjacent neighborhoods south of the canal (1-18). 2 Noise levels before installation are an average of December 2009 and February 2010 measures. Noise levels after panel installation are an average of measures taken every quarter in the first year (2010) and once in 2011. 3 Locations B and D are missing data due to equipment malfunctions.

Quieter asphalt pavement is not an effective option for reducing traffic noise

WSDOT has determined quieter asphalt pavements are not a cost effective option for Washington. Most audible noise benefits from quieter asphalt pavements were lost within about six months of installation and two of the three test sections failed structurally 7.5 times faster than conventional asphalt pavement. With 18,630 miles of state highways to maintain, WSDOT must choose technologies that provide cost-effective and long-lasting roadways at the lowest life cycle cost.

When vehicles travel at highway speeds, more than 70 percent of traffic noise comes from tires on pavement. Traffic noise levels vary by the type and condition of the pavement. WSDOT started testing potentially quieter asphalt pavements in 2006 and quieter concrete in 2009 to investigate whether different pavement types and surface treatments reduce traffic noise levels. The research goals are to determine if quieter pavements reduce noise and whether these pavements are cost-effective. WSDOT tested quieter asphalt pavements on I-5, SR 520, and I-405. The quieter pavement test sections were evaluated for noise, smoothness, and rutting over time compared to conventional pavements installed at the same time.

Summary of quieter asphalt and concrete test results

The quieter asphalt pavements on the I-5 and SR 520 test sections were installed in 2006 and 2007, respectively.

- Both were quieter than standard asphalt pavements when first constructed, but lost audible noise reduction benefits after about six months.
- The quieter asphalt pavements also became badly rutted quicker than conventional pavement. Both sections exceeded rut depth thresholds (12 millimeters) within two years and were removed within four years. For comparison, conventional asphalt pavement lasts more than 16 years.

Test sections on I-405 were installed in 2009 using an asphalt mix similar to the I-5 and SR 520 tests. However, the I-405 test sections were installed on top of concrete instead of asphalt.

- The I-405 test section showed no audible benefits compared to conventional asphalt within three years.
- The I-405 test section has held up better structurally than I-5 and SR 520, with rutting depths of five millimeters after three years. Monitoring of this test section concludes in 2013.

WSDOT is also exploring quieter concrete pavements. WSDOT changed the surface texture of concrete pavement in 2009 from transverse to longitudinal tining (from grooves that are perpendicular to traffic to grooves that run parallel). Research demonstrates this reduces noise without compromising safety. WSDOT continues to research tining and other surface textures and will report conclusions in future editions of the *Gray Notebook*.

WSDOT published final reports on quieter asphalt pavements in June 2012, located online at:

I-5 final report: <http://www.wsdot.wa.gov/research/reports/fullreports/683.2.pdf>

SR 520 final report: <http://www.wsdot.wa.gov/research/reports/fullreports/691.2.pdf>

WSDOT looks to reduce emissions, improve air quality statewide

WSDOT's Air Quality program ensures the agency meets clean air standards, promotes clean transportation options, and provides technical support for WSDOT and other agencies. In FY2012, WSDOT prepared and reviewed 15 air quality studies for compliance with State and National Environmental Policy Acts, referred to as SEPA and NEPA, respectively. Air quality studies analyze carbon monoxide and particulate emissions and mobile source air toxins from project construction and operation. The Air Quality program also analyzes greenhouse gas emissions. In addition, WSDOT supported the state's Metropolitan Planning Organizations' efforts to conform with the Clean Air Act for maintenance and nonattainment areas, and supported three federal grant applications aimed at reducing emissions at WSDOT and other public agencies.

Reducing greenhouse gas emissions by operating ferry vessels more efficiently is a priority for WSDOT's Air Quality program. In FY2012, Washington State Ferries used more than 17.4 million gallons of fuel, a one percent increase from FY2011. See p. 36 for more information about Washington State Ferries' efforts to reduce emissions.

The Environmental Protection Agency sets air quality standards in Washington

The U.S. Environmental Protection Agency (EPA) determines if Washington is in compliance with the National Ambient Air Quality Standards for six common pollutants: ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide and lead. Areas that violate these national standards are designated as "nonattainment" areas. A nonattainment area must reduce emissions to meet the standard, after which the area is re-designated as a maintenance area and required to meet conformity requirements for the next 20 years. WSDOT collaborates with public and private stakeholders on state implementation plans, that are developed by the Washington State Department of Ecology which outline how areas will achieve and maintain air quality standards. Failure to achieve the standard as soon as possible, or failing to maintain the lower levels once attained, can result in federal funding restrictions for transportation projects.

Pierce County's struggle for clean air

In 2009, the EPA designated Tacoma and much of Pierce County as a nonattainment area for the 2006 fine particulate matter standard. Particulate matter levels were in violation of the standard during winter when emissions are mostly from wood smoke; vehicles are the major contributor in summer months. WSDOT and the Puget Sound Regional Council represented transportation interests on the Tacoma-Pierce County Clean Air Task Force to develop emission-reduction strategies. The Task Force did not suggest strategies for transportation because improved vehicle standards and planned capital improvements, such as high occupancy vehicle lanes, are expected to reduce transportation emissions. The Washington state Department of Ecology will submit the state implementation plan to the EPA in December 2012.

Air Quality Program Highlights

The EPA will finalize tighter air quality standards for particulate matter in December 2012; Tacoma is expected to continue to be in nonattainment.

About 54 percent of fuel used for ferry vessels is a B5 blend of biodiesel and ultra low sulfur diesel, more than halfway to the goal of 100 percent.

Washington State Ferries is assessing the future use of liquefied natural gas for fuel, which would save money and lower emissions.

The Environmental Protection Agency designated air quality maintenance and nonattainment areas in Washington state

As of September 30, 2012

General location ¹	Pollutant ²	Current designation	Year designated ³	Year of first maintenance plan approved	Estimated end year ⁴
Kent	PM ₁₀	Maintenance	1990	2001	2021
Seattle	CO	Maintenance	1990	1996	2016
	PM ₁₀		1990	2001	2021
Spokane	CO	Maintenance	1990	2005	2025
	PM ₁₀		1990	1997	2027
Tacoma	PM ₁₀	Maintenance	1990	2001	2021
	PM _{2.5}	Nonattainment	2009	TBD	TBD
Olympia	PM ₁₀	Maintenance	1990	2000	2020
Vancouver	CO	Maintenance	1991	1996	2016
Yakima	CO	Maintenance	1977	2001	2021

Data source: WSDOT Environmental Services Office.

Notes: 1 The general locations extend to areas surrounding listed cities. 2 The pollutants are shown by chemical abbreviation: PM₁₀ and PM_{2.5}=different micrometer sizes of particulate matter and CO=carbon monoxide. 3 The year designated is the initial nonattainment designation. 4 After the end year, transportation conformity requirements will no longer apply.

Air Quality Annual Report

Air quality standards tighten as Puget Sound trucks get cleaner

Tougher standards, new software coming from the Environmental Protection Agency

The EPA is expected to finalize tighter particulate matter standards in December 2012. The EPA has proposed near-road monitoring of particulate matter, which is also newly required for nitrogen dioxide and carbon monoxide. Near-road monitoring requires emissions to be measured within 20 meters of the roadway, where pollutant concentrations are expected to be higher than existing monitors located closer to residential areas. This is a new concept and the potential implications remain unclear until measurement data is collected, starting in 2013 for nitrogen dioxide.

New EPA software use begins in December 2012

Beginning in December 2012, WSDOT will be required to use the EPA's new Motor Vehicle Emission Simulator (MOVES) software to model projects' compliance with national air quality standards. WSDOT has been working with the Federal Highway Administration since spring 2012 to develop categorical findings for carbon monoxide to streamline analysis and allow WSDOT staff to continue performing air quality analysis for most projects. These will replace the carbon monoxide screening tool that was developed by WSDOT in 2005. Regional planning organizations are also required to use MOVES to model regional conformity in nonattainment and maintenance areas by March 2013.

WSDOT supports clean trucks around Puget Sound

In coordination with the ports of Seattle and Tacoma, King and Pierce counties, and private developers, WSDOT performed the emissions analysis for a successful \$4.8 million Congestion Mitigation and Air Quality grant to develop a Puget Sound Clean Truck Program. The table below provides details on the three project elements and associated emission reductions.

Puget Sound Clean Truck Program estimated reductions in emissions and fuel

Congestion Mitigation and Air Quality (CMAQ) grant project; Emissions benefits in tons; Reduction in diesel fuel in gallons

Description of project elements		Funding	Annual emissions benefits (tons)			Annual reductions of diesel fuel
			Particulate matter	Nitrogen oxides	Carbon dioxide	
Updating drayage (short-haul) trucks	Replaces more than 200 older trucks with 2007 model year equivalents	\$3,350,000	15	300	2,500	212,000
Truck stop electrification and auxiliary power units (APUs)	Reduces truck idling by adding 35-40 electric charging stations. Retrofits about 22 trucks with APUs	\$1,200,000	1	36	2,100	189,000
Optical Character Recognition (OCR)	Reduces truck idling by speeding up truck entrances and exits from ports	\$250,000	4.7	5.3	296	28,000

Data source: WSDOT Environmental Services Office.

Note: The Puget Sound Clean Truck Program was lead by the Port of Seattle and coordinated with Tacoma, King and Pierce counties, and private developers for a successful \$4.8 million Congestion Mitigation and Air Quality grant.

Ferries looks to reduce emissions

Operating ferry vessels more efficiently helps WSDOT reduce greenhouse gas emissions. Ferry fuel consumption increased by one percent in FY2012 (17.4 million gallons) compared to FY2011 (17.2 million gallons), due to larger engines installed on the three new vessels. Washington State Ferries' efforts to reduce ferry emissions center on two strategies: 1) using cleaner fuel and 2) using fuel more efficiently. With \$63.4 million spent on ferry fuel in FY2012, conserving fuel both lowers emissions and saves money.

Ferries use cleaner ultra low sulfur diesel

Washington State Ferries began using ultra low sulfur diesel (ULSD) in 2007. ULSD burns much cleaner than marine bunker diesel, reducing sulfur dioxide by 90 percent, air toxins by 80 percent, and particulate matter by 20 percent. According to the Puget Sound Air Emissions Inventory (Inventory), sulfur dioxide emissions decreased by 39 percent in the Puget Sound area between 2005 and 2011, largely due to the maritime industry's adoption of ULSD. The Inventory is a collaborative study of trends in Puget Sound maritime air emissions between 2005 and 2011. WSF participated in the study, which can be found in its entirety at <http://www.pugetsoundmaritimeairforum.org/>.

Ferries more than halfway to biodiesel fuel goal

Biodiesel reduces pollutants and greenhouse gas emissions compared to petroleum diesel. In FY2012, 54 percent of the fuel used by Ferries was B5 (a blend of five percent biodiesel and 95 percent ULSD). This is more than halfway to WSDOT's goal of 100 percent B5 fuel use. Although biodiesel use is partially restricted by supply, the newly available biodiesel at the Harbor Island Fuel Dock will significantly increase ferry biodiesel use.

Washington State Ferries reduce emissions and save costs

Ferries looking into liquefied natural gas

Washington State Ferries is analyzing the costs and benefits of using liquefied natural gas (LNG). Compared to the current B5 blend, LNG is 40 to 50 percent less expensive, has more available supply, and produces fewer air emissions. Compared to ultra low sulfur diesel, LNG could reduce nitrogen oxides by as much as 90 percent, particulate matter by approximately 99 percent, and carbon dioxide by up to 20 percent. Ferries is working closely with the U.S. Coast Guard to analyze safety and security risks and develop passenger ferry regulations for LNG-powered ferries. Ferries anticipates the risk and security analysis for the Coast Guard will be complete by summer 2013.

Managing power on the M/V *Hyak* to save fuel

Washington State Ferries plans to retrofit the Motorized Vessel (M/V) *Hyak* with a computerized power management system that uses batteries as backup power sources. Batteries reduce the number of engines in use, which saves fuel, to provide reserve engine capacity when needed, such as during acceleration and deceleration. The batteries are recharged with shore power, which is one third the cost of diesel-generated power or about 8 cents per kilowatt hour. Fuel savings is estimated at 16 percent, or 237,677 gallons a year, with corresponding emissions reductions. Analysis of the M/V *Hyak* power management system will be used to consider the potential for future application.

Ferries operate more efficiently by reducing speed

Washington State Ferries implemented a pilot study to research whether vessels could conserve fuel by reducing speeds while simultaneously maintaining route schedules and on-time performance. Between January and September 2012, reducing speeds on the Edmonds to Kingston route saved approximately 17,000 gallons of fuel per month, resulting in a six percent to eight percent total fuel reduction for the route while maintaining the normal schedule. Air emissions are expected to be reduced by an amount proportional to the fuel saved. The routes from Bremerton and Bainbridge to Seattle will be studied next.

Reducing pushing power at the dock saves fuel

Forty percent of vessel operating time is spent “pushing the dock,” or keeping the ferry in place during loading and unloading. Reducing the pushing power used at the dock would save fuel. The potential fuel savings of reduced pushing power are 329,000 gallons a year, with corresponding emissions reductions. Vessel and engineering staff have safety concerns with reducing the power used to push the dock due to forces on the vessels from vehicles loading, wind and water currents. To begin addressing these concerns, Ferries teamed with the Washington State Patrol to test the stress load created by large trucks suddenly braking

on a vessel deck. The test demonstrated the vessel could be safely held in dock at reduced pushing power even with a large truck suddenly stopping. WSF will work with captains and crew to test reducing pushing power at selected terminals and under various conditions.

Less lube oil can lower emissions by 60 percent

Reducing the amount of lube oil is another strategy to lower ferry emissions. Ferries rebuilt 22 engines with emission reduction kits funded by a 2010 Federal Transit Authority grant. A comparison of lube oil consumption for one month before and after the engine rebuilds on the M/V *Spokane* showed more than 60 percent reductions (150 gallons) for each of its four engines. Ferries has applied for grant funding to retrofit additional vessels.

Ferries are an alternative to driving that cuts emissions

Ferries recently examined the six busiest commuter routes in the ferry system (representing 71 percent of all WSF commuters) to compare the time, cost, and greenhouse gas emissions of a commuter driving around the Puget Sound versus taking a ferry.

Choosing the ferry has lower costs, takes less time and contributes fewer greenhouse gas emissions compared to driving for each commute route shown in the table below. A commuter saves nearly two hours, more than \$31, and 73 kilograms of greenhouse gas emissions (measured in carbon dioxide equivalents) each day by taking the Bainbridge to Seattle ferry rather than driving. Daily greenhouse gas emissions savings taking the ferry instead of driving around the Puget Sound on state highways vary from 44 kilograms to 81 kilograms depending on the route.

The “Drive or Sail” folio can be found on the WSF website at <http://www.wsdot.wa.gov/Ferries/Environment/default.htm>.

Commuting by ferry saves time, costs and emissions

Time in minutes; Greenhouse gas emissions (GHG) saved compared to driving around the Puget Sound

Highest volume commute routes in the Puget Sound ¹	Daily round trip savings		
	Time	Cost	GHG ²
Bainbridge - Seattle	119	\$32	74
Bremerton - Seattle	39	\$21	45
Poulsbo - Seattle	87	\$23	57
Port Townsend - Seattle	75	\$21	48
Langley - Everett	219	\$19	75
Hansville - Everett	194	\$14	81

Data source: WSDOT Washington State Ferries.

Notes: 1 Trips to Seattle assume ferry commuters are walk-on passengers and some routes involve driving to the ferry terminal. Trips to Everett assume commuters drive a vehicle onto the ferries. 2 Greenhouse gas emissions are shown in kilograms of carbon dioxide equivalents.

Endangered Species Act Documentation Annual Report

WSDOT works with federal services to protect species throughout the state

Endangered Species Act Documentation Highlights

Endangered Species Act (ESA) reviews and consultations are complete for 54 percent of projects scheduled for advertisement in the 2011-2013 biennium.

Formal ESA consultations took an average of 259 days in 2011. The federally mandated goal is 135 days. WSDOT is developing time-saving measures with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) to achieve the goal.

Informal ESA consultations took an average of 44 days. WSDOT, USFWS, and NOAA Fisheries have a mutually agreed-to goal of 30 days.

New ESA guidance on marbled murrelets, the listing of two new species, and the potential listing of another species may impact WSDOT projects.

WSDOT reviews all of its projects to ensure compliance with the federal government's Endangered Species Act (ESA). WSDOT has completed ESA reviews and consultations for 54 percent (277 of 514) of projects scheduled for advertisement in the 2011-2013 biennium and 14 percent of WSDOT projects (21 of 155) scheduled for advertisement in the 2013-2015 biennium. Most remaining reviews for both biennia are scheduled to be finalized in the next five to 18 months.

Projects are reviewed by WSDOT for compliance with Section 9 of the ESA, which prohibits "take" of listed threatened and endangered species or adverse modification to critical habitat. Take is defined under ESA as "To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct" any listed species.

Based on that initial review, WSDOT determines if a project may affect listed species or designated critical habitat. If a project may have an effect, Section 7 of the ESA requires that the federal agency providing funding or authorization of the project consult with U.S. Fish and Wildlife Service (USFWS) and/or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries). WSDOT projects that receive federal funds or authorization, most commonly from the Federal Highway Administration (FHWA), the Army Corps of Engineers or the U.S. Forest Service are required to complete a Section 7 consultation. Consultations with USFWS and NOAA Fisheries can be "formal" or "informal."

- Formal consultations are required when a project may affect and is likely to adversely affect ESA listed species or critical habitat.
- Informal consultations are required when project impacts may affect, but are not likely to adversely affect listed species or critical habitat.

Endangered Species Act review status for all funded projects

For 2011-2013 and 2013-2015 biennia

	2011-2013 biennium	2013-2015 biennium
Number of projects		
Projects under review by USFWS and NOAA Fisheries	3	1
Endangered Species Act review underway	46	41
Insufficient information to start the biological assessment ¹	188 ²	92
Endangered Species Act review complete	277	21
Total number of projects	514²	155
Percent of total projects with complete ESA review	54%	14%

Data source: WSDOT Environmental Services Office.

Note: 1 Designs for these projects are not far enough along to begin an ESA review. 2 Some of these projects may not require an ESA review, data subject to refinement.

WSDOT and federal agencies monitoring consultation timeframes

Under the Endangered Species Act, formal consultations must be completed within 135 days of their submittal dates. Timelines for informal consultations are neither mandated nor specified, but WSDOT, USFWS and NOAA Fisheries have mutually agreed to complete them within 30 days of their submittal. While WSDOT works with USFWS and NOAA Fisheries to ensure compliance with the ESA, completing consultations remains the federal agencies' responsibility. Their ability to complete consultations in a timely manner depends upon the availability of qualified staff, workloads, and project size and complexity. USFWS and NOAA Fisheries consult on projects from a variety of public and private entities. WSDOT provides staff support to USFWS and NOAA Fisheries to ensure transportation projects receive timely consideration.

Endangered Species Act Documentation Annual Report

WSDOT works with federal services to protect species throughout the state

Due to funding constraints WSDOT is looking at future staff reductions at both the regions and within positions funded at the USFWS and NOAA Fisheries. Over the last eight years, the average annual duration for formal and informal consultations has exceeded timeline goals, leading to problems in project planning and delivery. WSDOT began collecting limited data on the time it takes to complete consultations in 2002 and officially began tracking average consultation durations in 2004.

Average durations are calculated by counting the number of days between submittal of the biological assessment and the receipt of a signed letter of concurrence or a biological opinion from USFWS and NOAA Fisheries. WSDOT tracks this information to inform project planning and delivery timelines.

WSDOT, USFWS and NOAA Fisheries have developed and implemented several streamlining tools to reduce the average duration of both informal and formal consultations. These tools include guidance documents, conducting regular biological assessment author training to help staff expedite ESA consultations, and establishing agreements on methods used to conduct complex impact analyses, such as stormwater effects.

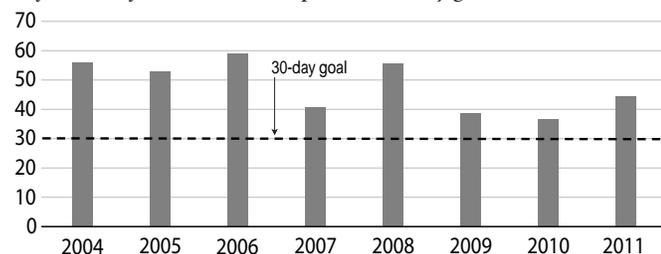
Informal durations fluctuate, stay close to 30-day goal

When WSDOT started collecting data on consultation duration in 2002, informal consultations took an average of 261 days. In 2004, after implementing streamlining measures, the average informal consultation duration dropped to 55 days.

Since 2004, the annual average duration for informal consultation has varied between 36 days in 2010 and 58 days in 2006. In 2011, WSDOT submitted 22 projects for informal consultation, and the average duration with USFWS and NOAA Fisheries was 44 days. This is an increase in duration from 2010 levels and 14 days above the 30-day goal. WSDOT is working with NOAA Fisheries to further develop time-saving strategies such as programmatic permitting for routine WSDOT projects.

Average duration of Endangered Species Act informal consultations

Performance for 2004-2011 compared to 30-day goal



Data source: WSDOT Environmental Services Office.

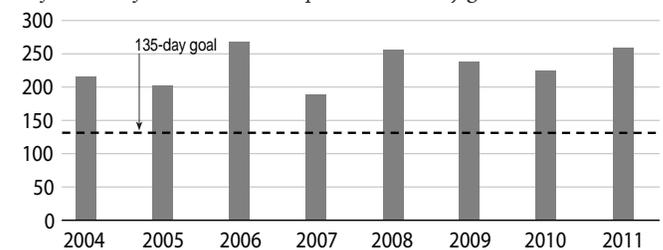
Formal durations continue to run long

Compared with the annual average duration of informal consultations, formal consultations have shown greater variability, and have also missed the mandated duration of 135 days. The number of formal consultations submitted each year is between eight and 14 projects, but does not include mega-projects like the SR 520 Bridge replacement and high occupancy vehicle (HOV) project, which are evaluated separately.

Formal consultations also saw a drop in annual average durations after 2002, when the average duration was 322 days. Since 2003, formal consultations have varied between 189 and 269 days. In 2011, WSDOT submitted eight projects for formal review, and the average duration of ESA formal consultations was 259 days. This is a 34-day increase in duration from 2010, which had a 225-day average duration. WSDOT, USFWS and NOAA Fisheries use the same streamlining tools for formal and informal consultations, but these tools have not resulted in the desired degree of reductions in average annual durations due to the complexity of projects submitted for formal consultations. WSDOT is working with USFWS and NOAA Fisheries to develop additional time-saving and streamlining measures for formal consultations, but future funding constraints will limit the available resources to complete these measures.

Average duration of Endangered Species Act formal consultations

Performance for 2004-2011 compared to 135-day goal



Data source: WSDOT Environmental Services Office.

Endangered Species Act policy changes expected to affect WSDOT

Two years ago, a status review on marbled murrelets, an ESA-listed threatened species, indicated a significant downward population trend. In response, the USFWS is updating its guidance and reviewing the best available science on marbled murrelets. Murrelets are small, diving sea birds that nest on moss-covered limbs in mature and old-growth forests, and forage for small fish in marine waters, like Puget Sound. They can be impacted by a number of WSDOT activities ranging

Endangered Species Act Documentation Annual Report

WSDOT works with federal services to protect species throughout the state

from in-water pile driving to construction projects in nesting habitat. Last year, the U.S. Fish and Wildlife Service (USFWS) developed new thresholds for underwater sounds generated by pile driving. This year, they are focusing on the land-based aspects of marbled murrelet ecology, including the timing and characteristics of their nesting activities.

In June 2012, the USFWS issued the first of three planned documents to provide guidance on the murrelet nesting season. As a result, the nesting season was extended by one week, running from April 1 to September 23, and is no longer divided into an early and late season. In upcoming guidance documents, the USFWS will be updating the definition of suitable marbled murrelet nesting habitat and their guidance on in-air terrestrial disturbance. These final two policy documents are expected to be completed by the end of 2012.

Meanwhile, WSDOT is monitoring developments and assessing how changes to USFWS guidance will affect WSDOT activities and projects. The nesting season guidance is available at www.wsdot.wa.gov/Environment/Biology/BA/BAGuidance.htm.

New Endangered Species Act listings of prairie-dwelling species may impact projects in western Washington

The proposed ESA listing of two new species, both of which reside in prairie habitats, may affect current and future WSDOT projects, particularly in the Southwest and Olympic regions. In October 2012, the USFWS proposed to list the Taylor's checkerspot butterfly as endangered and the streaked horned lark as threatened under the ESA. Critical habitat is also being proposed for both species.

Additionally, the Mazama pocket gopher, which also resides in prairies, is being considered for ESA listing. These proposed changes could potentially require re-opening ESA reviews for WSDOT projects located near critical habitat.



Only 11 known populations of Taylor's checkerspot butterfly exist in Washington. Photo courtesy of USFWS.

Both the Taylor's checkerspot butterfly and the streaked horned lark reside mainly in prairies around the Puget Sound area. There are 11 known populations of the checkerspot butterfly in Washington, occurring in Clallam, Pierce and Thurston counties. Habitat for this species occurs near I-5 south of Olympia, near SR 507 by Roy, Rainier, and Tenino, and along SR 20 at Deception Pass and Whidbey Island.

Streaked horned lark breeding populations occur in Mason, Pierce, Thurston, Grays Harbor, Pacific, Wahkiakum and Cowlitz counties. Streaked horned lark habitat is located near I-5 south of Olympia, SR 507 by Roy, Rainier and Tenino, U.S. 101 by Shelton, I-5 by DuPont, SR 512 near Lakewood and SR 105 by Washaway Beach.



Streaked horned lark breeding habitat areas are near I-5, SR 507, U.S. 101 and SR 105 in WSDOT's Olympic Region. Photo courtesy of USFWS.

It's habitat is also on islands in the Columbia River.

Since there is no grandfathering under the ESA, these new listings require biologists in WSDOT's Olympic, Northwest and Southwest regions to evaluate the potential effects of projects in the immediate vicinity of Taylor's checkerspot butterfly and streaked horned lark and their critical habitats. ESA consultations will be reinitiated for WSDOT projects that may affect these species or their habitats.

Yelm Bypass just one of WSDOT's projects that may be affected by new Endangered Species Act listings

WSDOT has completed the ESA consultation for construction of a bypass project around Yelm near the intersection of SR 510 and SR 507. Only a portion of the project has been constructed and the remaining work is currently unfunded. This Olympic Region project is located in the Mazama pocket gopher habitat.

If the Mazama pocket gopher is listed under the ESA, WSDOT will be required to reinitiate review of the unconstructed portion of the project which could potentially increase estimated costs if a redesign is required to protect critical habitat. As with the other species, the total impacts of listing the Mazama pocket gopher are unknown and WSDOT continues to monitor the status of the species.



In Economic Vitality:

Freight Rail Semi-Annual Report 42
The Palouse River and Coulee City Rail System in eastern Washington is a short-line freight railroad owned by WSDOT. Read about its performance in the Freight Rail Semi-Annual Update.

See also

Ferries 20
 Passenger Rail 29

Earlier Economic Vitality-related articles

Find previous articles in these GNB editions:

Trucks, Goods, & Freight
 Annual Report GNB 45
 Transportation: Economic Update GNB 44
 Freight Rail Semi-Annual Update GNB 43
 Palouse River & Coulee City
 Rail System Rehabilitation GNB 42

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

To 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.

Freight Rail Semi-Annual Update

Palouse River and Coulee City Rail System increases shipments in 2011

Freight Rail Program Highlights

- ▶ The Palouse River and Coulee City Rail System generated 10,253 railcar shipments in 2011, nearly doubling shipments during the first four years of state ownership.
- ▶ The Washington State Grain Train moved 575 carloads in the second quarter of 2012, a record high for the program's 18-year history.
- ▶ For more information on multi-modal freight in Washington, see *Gray Notebook* 43, pp. 38-44.

The Palouse River and Coulee City (PCC) Rail System, a 297-mile short-line railroad owned by WSDOT, continues to meet program goals by nearly doubling railcar shipments during the first four years of state ownership. The system generated 10,253 railcar shipments in 2011, a 26 percent increase from 8,119 railcar shipments in 2010.

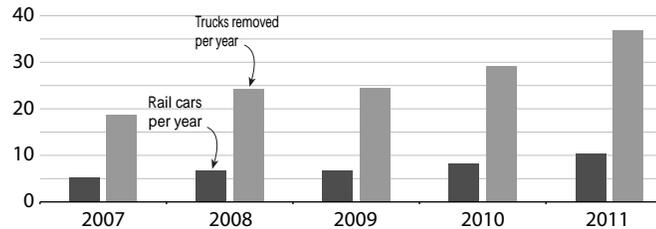
Purchased in 2007, the PCC Rail System is located in Grant, Lincoln, Spokane, and Whitman counties in eastern Washington and is made up of three branch lines: Pleasant Valley (PV) Hooper, Central Washington (CW), and Palouse and Lewiston (P&L). WSDOT manages contracts with these private operators who perform the day-to-day operations on each branch line.

Eastern Washington rail system supports economic vitality

The PCC Rail System continues to ensure that Washington-grown agricultural products are shipped to market in a safe and economical way, benefiting both farmers and consumers. The increase in utilization by farmers and other shippers has been instrumental in reducing truck shipments on eastern Washington highways. In 2011, the amount of goods shipped

PCC rail car shipments and trucks removed from roadways in Washington state

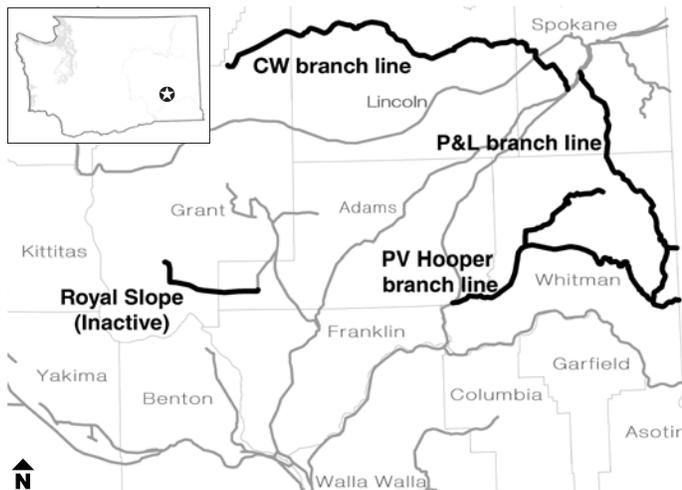
2007-2011; Number in thousands



Data source: WSDOT Freight Systems Division.

by the PCC Rail System removed 36,911 truck loads from Washington's roads, making travel safer and reducing the preservation funding needed to maintain these roadways. Moving these products by rail instead of by truck also benefits the environment due to the fact that rail transportation is up to three times more fuel efficient.

Branch lines of the PCC Rail System



The Palouse River and Coulee City Rail System, a 297-mile short-line railroad purchased by WSDOT in 2007, is made up of three branch lines located in Grant, Lincoln, Spokane and Whitman counties in eastern Washington.

Rehabilitation Plan is on the right track

The Washington Department of Commerce awarded \$3.95 million to WSDOT to rehabilitate deficient sections of track on each of the three PCC Rail System branch lines.

The overall project will be delivered as two separate construction contracts. The first contract, valued at \$1.5 million, will rehabilitate 21 miles of the most deficient track on the 108-mile CW branch line. This contract was advertised on September 10, 2012, and work began just one month later. The CW branch work is critical because the branch operator had two derailments in April 2012.

The second contract, valued at \$2.45 million, will focus on eliminating key slow speed sections of the PV Hooper branch and repairing 12 bridges located on the P&L branch. Work will begin this fall and is expected to be completed within one year.

Freight Rail Semi-Annual Update

Freight rail capital project delivery enhances economic vitality

Washington's economic vitality is improved through a number of projects ranging from connecting businesses to nearby rail track to repairing existing railroad crossings so trains can travel through them more safely and quickly.

WSDOT works with railroads, ports, cities and other stakeholders to construct freight rail projects that support the state's

transportation system. The Tacoma Rail - Sound Refining, and Clark County Rail Line project and the Battle Ground to Vancouver - Track Rehabilitation project were completed this quarter; both were on time and on budget. All projects completed or currently under way in the 2011-2013 biennium are listed below.

Freight rail capital projects

FY2011 - FY2013; All freight rail projects by funding type and stage of project; Funding in thousands of dollars

Grants	Stage of project				Funding
	Agreements	Design	Construction	Close out	
Port of Royal Slope - Rail Line Rehabilitation					\$750
Clark County Rail Line - Battle Ground to Vancouver - Track Rehabilitation					\$2,367
Clark County - Lewis and Clark Rail Line ¹					\$455
Clark County - Chelatchie Prairie Railroad - Track Rehabilitation					\$200
Spokane County - Geiger Spur Rehabilitation ¹					\$198
New Creston Livestock Feed Mill - New Rail Spur					\$346
Tacoma Rail - Sound Refining Rail Spur					\$400
Tacoma Rail - Locomotive Servicing					\$499
Port of Columbia - Wallula to Dayton - Track Rehabilitation					\$247
Port of Vancouver - Grain Spur Extension ¹					\$527
Cascade and Columbia River Railroad ¹					\$684
Columbia Basin-Schrag Line ¹					\$392
Puget Sound and Pacific Railroad ¹					\$498
Everett - Curve Realignment and Storage					\$13,200
Stanwood - Siding Upgrades					\$10,800
Tacoma Rail and Puget Sound and Pacific Railroad - Centralia - Reconfigure Rail ²					\$12,800
					Total: \$44,363
Loans	Stage of project				Funding
	Agreements	Design	Construction	Close out	
Spokane County - Geiger Spur ³					\$180
Tacoma Rail - Locomotive Repower ³					\$450
Tacoma Rail - Annie Tracks 1 and 2 Rail Relay ³					\$612
Tacoma Rail - Yard Track Relay ³					\$361
Tacoma Rail - Yard Track Relay ⁴					\$364
Tacoma Rail - East 11th Street Grade Crossing ⁴					\$355
City of Richland - Loop Track ³					\$250
Port of Everett - New Rail Track					\$1,077
Port of Longview - Rail Loop Construction ⁴					\$858
Port of Vancouver - Farwest Steel Rail Spur ³					\$250
Ballard Terminal Railroad - Meeker Southern Track Re-rail					\$66
					Total: \$4,823
Federal	Stage of project				Funding
	Agreements	Design	Construction	Close out	
Tacoma Rail - Fredrickson to Morton - Track Rehabilitation					\$1,485
Tacoma Rail - Tacoma to Morton and Yelm - Track Rehabilitation					\$755
Port of Olympia Project					\$1,980
Port of Olympia Project					\$793
Hoquiam Horn - Spur Railroad Track Improvement					\$350
					Total: \$5,363

Data source: WSDOT Freight Systems Division.

Notes: 1 Project is funded by a 2011 Freight Rail Assistance Program grant. 2 Project funding will be identified in future biennia. 3 Project is funded by a 2011 Freight Rail Investment Bank loan. 4 Project is funded by a 2012 Freight Rail Investment Bank loan.

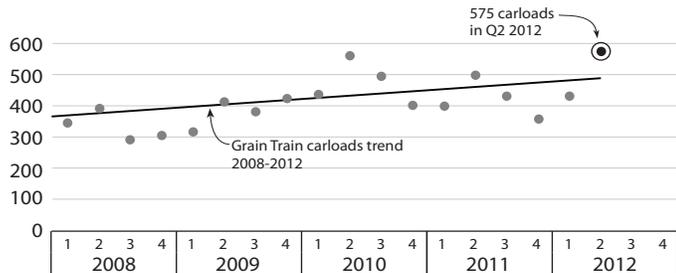
Freight Rail

Semi-Annual Update

Grain Train sets utilization record in second quarter of 2012

Washington State Grain Train carloads

January 1, 2008 - June 30, 2012; Number of carloads by quarter



Data source: WSDOT Freight Systems Division.

Note: Quarters are designated by numbers 1 through 4 on the horizontal axis above the corresponding year. 1 = January-March; 2 = April-June; 3 = July-September; 4 = October-December.

Grain Train shipments continue to trend upward

Washington State Grain Train use increased by 15 percent in the second quarter of 2012 over the same quarter in 2011, reaching 575 carloads. This was the highest in the program's 18-year history. The consistent upward trend in Grain Train utilization is due to a combination of factors including high wheat crop yields in the Palouse region of Washington, relaxed utilization requirements that now allow railcars to move product to California, and continued high fuel costs which lead farmers to ship more by rail and less by truck. The program is on pace to exceed the record for total annual carloads shipped, which peaked at 1,894 carloads in 2010.



The Grain Train supports the state's agricultural community while helping short-line railroads maintain a sufficient customer base for long-term financial viability.

The Grain Train, a financially self-sustaining program, moves products reliably and efficiently from farm to domestic and international markets. The program reduces wear and tear on local roadways and supports financial sustainability for short-line operators throughout eastern Washington.

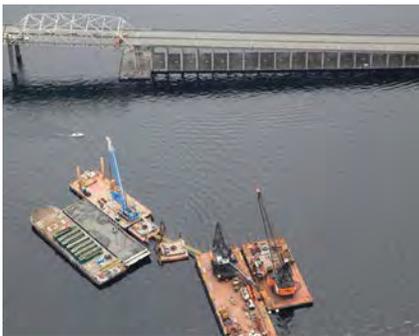
Freight Rail Assistance Program and Freight Rail Investment Bank help state freight trains

The Freight Rail Assistance Program, a grant program funded by the Legislature, is expected to award \$2.75 million in funding for the 2013-2015 biennium. This program is open to applicants in both the public and private sector, and is directed toward larger projects in rail locations of local and state strategic importance.

The Freight Rail Investment Bank provides low interest loans to public sector organizations for smaller projects of up to \$250,000. The overall program is expected to receive \$8.58 million in funding from the Legislature. Applications and project plans are reviewed for completeness, thorough definition and understanding of the project scope, and rigorous cost-benefit analyses.

WSDOT issued a call for projects in June 2012 for the Freight Rail Assistance Program and Freight Rail Investment Bank funding. Applicants were given until September 14, 2012 to submit project proposals for review for either or both programs. The Freight Rail Assistance Program received 22 applications with a total funding request of \$24.93 million.

The Freight Rail Investment Bank received seven applications, an increase from three applications submitted in 2011, seeking a total of \$2.25 million. WSDOT reviewed all the applications and submitted a prioritized list of recommended projects to the Legislature in November 2012. Successful applicants will be notified in spring 2013.



In Stewardship:

WSDOT Capital Project	
Deliver Programs Quarterly Update	46
<i>WSDOT completed six Nickel and Transportation Partnership Account Projects in the quarter ending September 30, 2012.</i>	
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State policy goal

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

WSDOT's business direction

To 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

Highway construction: WSDOT completes six more Nickel and TPA projects

Project Delivery Highlights

WSDOT finished six more of its Nickel and TPA projects in the third quarter of 2012, bringing the total to 336 of 421 completed.

Gas tax revenues continue to trend below revenue forecasts, amounting to a difference of more than \$1 billion between the original projections and actual revenues.

WSDOT completed six more Nickel and Transportation Partnership Account (TPA) projects during the quarter ending September 30, 2012, bringing its total count to 336 out of 421 projects since the 2003 and 2005 gas tax funding packages were approved. The \$165.2 million I-405 South Renton Vicinity - Stage 2 Widening mega-project was among those recently completed. This project reduces congestion and enhances access to downtown Renton between SR 167 and SR 169. Read more about the I-405 mega-project on p. 57 and pp. 72-73.

Of the 336 projects completed, 88 percent of these projects were on time and 91 percent have been on budget (see table at bottom of page). The goal for projects being delivered on budget and on time is 90 percent. The total value of these completed projects is more than \$5.1 billion.

WSDOT builds on Nickel and TPA success, 32 more projects under construction

WSDOT advertised two Nickel and TPA projects since July 1, 2012 for a total of 32 projects in the construction phase as of September 30, 2012 (pp. 50-52). Four additional projects are in the delivery pipeline and are scheduled to be advertised between October 1, 2012, and March 31, 2013 (p. 52).

Nickel and TPA revenue forecasts still well below original projections

Revenues generated through the 2003 Nickel Account and 2005 Transportation Partnership Account are still well below original revenue projections largely due to reduced gasoline use by Washington drivers.

WSDOT Nickel and TPA project status

Project status	Number of projects	Value in thousands
Projects completed in earlier biennia that are <i>not</i> included in the current Transportation Budget	81	\$371,970
Projects completed that <i>are</i> included in the current Transportation Budget	255	\$4,788,254
Completed projects subtotal:	336	\$5,160,224
Projects included in the current Transportation Budget that are not yet completed	85	\$11,182,954
Total:	421	\$16,343,178

Data source: WSDOT Capital Program Development and Management.

The September 2012 revenue forecast for the ten-year period of the Nickel Account is \$1.73 billion. This is 10.1 percent* less than the original projection of \$1.92 billion. As of September 2012, the revenue forecast for the 16-year TPA is 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 \$3.91 billion forecast for September 2012.

Because the Nickel and TPA are both 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. (*Note: Forecasts were

corrected in *Gray Notebook 47* from amounts provided in past editions.)

WSDOT adds one project to Watch List, removes six

WSDOT added the paving, bridge replacement, and safety project on U.S. 97 near Satus Creek in Yakima County to the Watch List of at-risk projects for the third quarter of 2012. The project's operationally complete date has been delayed eight months (see p. 64 for details). During this quarter, WSDOT also removed six other projects from the list.

Cumulative delivery performance¹ of completed Nickel and TPA projects

January 1, 2010 - September 30, 2012

Calendar year	2010				2011				2012		
	Q1 ²	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Number of projects	264	272	282	296	300	304	310	325	325	330	336
Percent on time	89%	89%	90%	91%	90%	89%	89%	87%	87%	88%	88%
Percent on budget	91%	92%	93%	93%	92%	91%	91%	91%	91%	91%	91%
Percent on time and on budget	82%	83%	84%	84%	84%	82%	82%	81%	81%	81%	81%

Data source: WSDOT Capital Program Development and Management.

Notes: 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 five percent of the last approved budget.

2 Unbundled project counts started in Q1 2010; total projects increased from 391 to 421.

WSDOT's Capital Project Delivery Programs

Current 2012 Legislative Transportation Budget Performance Dashboard: Highways

Highway construction performance dashboard

As of September 30, 2012; Dollars in thousands

Combined Nickel and TPA programs	Number of projects	Value of program	
Projects completed in earlier biennia that <i>are not</i> included in the current Transportation Budget	81	\$371,970	
Projects completed that <i>are</i> included in the current Transportation Budget	255	\$4,788,254	
<i>Subtotal of completed projects</i>	336	\$5,160,224	
Projects included in the current Transportation Budget but not yet completed	85	\$11,182,954	
Total number of projects¹ 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	32	255	336
Percent completed early or on time	75%	85%	88%
Percent completed under or on budget	88%	92%	91%
Percent completed on time and on budget	72%	80%	81%
Baseline estimated cost at completion	\$1,034,432	\$4,788,254	\$5,160,224
Current estimated cost at completion	\$1,016,929	\$4,718,440	\$5,092,304
Percent of total program over or under budget	1.7% under	1.5% under	1.3% under
Advertisement Record: Results of projects entering into the construction phase or under construction detailed on pp. 50-52.	Combined Nickel & TPA		
Total current number of projects in construction phase as of September 30, 2012	32		
Percent advertised early or on time	72%		
Total number of projects advertised for construction in 2011-2013 biennium to date (July 1, 2011 - September 30, 2012)	15		
Percent advertised early or on time	80%		
Projects to be advertised: Results of projects now being advertised for construction or planned to be advertised, detailed on p. 52.	Combined Nickel & TPA		
Total projects being advertised for construction bids October 1, 2012 - March 31, 2013	4		
Percent on-target for advertisement on schedule or early	100%		
Budget status; 2011-2013 biennium <i>Dollars in thousands</i>	WSDOT biennial budget		
Budget amount for 2011-2013 biennium	\$3,772,395		
Actual expenditures to date 2011-2013 biennium (July 1, 2011 - September 30, 2012)	\$1,717,955		
<i>Total 2003 Transportation Funding Package (Nickel) expenditure</i>	\$211,562		
<i>Total 2005 Transportation Partnership Account (TPA) expenditure</i>	\$652,538		
<i>Total Pre-existing Funds (PEF) expenditure³</i>	\$853,856		

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 September 30, 2012. 3 For full details of the Pre-existing Funds program, see pp. 60-62.

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 September 30, 2012. Four projects (two Nickel-funded, two TPA-funded) are in construction and have a combined award amount of \$158.0 million.

Since June 30, 2012, Washington State Ferries advertised three additional Nickel-funded projects. All three were advertised on time. It now has six projects currently under construction or entering the construction phase, with a combined Nickel and TPA award amount of \$238.6 million.

Rail construction performance dashboard

As of September 30, 2012; Dollars in thousands

	Nickel (2003)	TPA (2005)	Combined Nickel & TPA
Schedule, scope, and budget summary: completed projects			
Cumulative to date, 2003 - September 30, 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 - September 30, 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: N/A means not applicable. The rail projects are primarily delivered through master agreements with BNSF who administers construction activities on the projects.

Ferries construction performance dashboard

As of September 30, 2012; Dollars in thousands

	Nickel (2003)	TPA (2005)	Combined Nickel & TPA
Schedule, scope, and budget summary: completed projects			
Cumulative to date, July 1, 2003 - September 30, 2012	7	9	16
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	\$35,114	\$209,343	\$244,457
Current estimated cost at completion	\$35,114	\$209,343	\$244,457
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 - September 30, 2012	5	1	6
Percent advertised early or on time	100%	100%	100%
Total award amounts to date	\$123,230	\$115,345	\$238,575

Data source: WSDOT Capital Program Development and Management.

Notes: The completed projects record includes the three 64-car vessels, the M/V *Chetzemoka* which started service in November 2010, the M/V *Salish*, which started service in July 2011, and the M/V *Kennewick*, which started service in February 2012.

WSDOT's Capital Project Delivery Programs

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.	29 TPA 3 Nickel	26 on time 6 late	24 on time 8 late	32	\$1,034,432	\$1,016,929	28 on budget 4 over	23 on time and on budget
2009-2011 reporting on capital project delivery								
2009-2011 biennium summary See <i>Gray Notebook</i> 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 <i>Gray Notebook</i> , 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 <i>Gray Notebook</i> 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 <i>Gray Notebook</i> 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 <i>Gray Notebook</i> 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.

Six projects completed as of September 30, 2012

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

Project description	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
I-5/SR 161/SR 18 - Interchange Improvements	TPA	√	√	\$109,504	\$106,193	√	√
I-405/South Renton Vicinity Stage 2 - Widening	TPA	√	√	\$166,549	\$165,170	√	√
SR 112/Nelson Creek - Fish barrier	TPA	√	Early	\$2,272	\$2,108	√	√
SR 112/Unnamed Tributary to Pysht River - Fish Barrier	TPA	√	Early	\$1,561	\$1,075	√	√
SR 500/St. Johns Boulevard - Build Interchange	TPA	Late	√	\$48,070	\$47,029	√	√
SR 518/Bridges - Seismic Retrofit	TPA	√	√	\$5,865	\$5,210	√	√

Data source: WSDOT Capital Program Development and Management.

WSDOT's Capital Project Delivery Programs

Advertisement Record

Thirty-two projects in construction phase as of September 30, 2012

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

Project description Cumulative to date	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)	TPA	Late	Apr-11	Selland Construction	Sep-13	\$4,190
U.S. 2/Wenatchee River Bridge - Replace Bridge (Chelan) Advertisement was delayed to allow time for processing a shoreline permit. This project was combined with the U.S. 2/Chiwaukum Creek project for construction efficiencies.	TPA	Late	Apr-11	Selland Construction	Sep-13	\$3,912
I-5/NE 134th St. Interchange (I-5/I-205) - Rebuild Interchange (Clark)	Nickel	√	May-11	Moore Excavation	Dec-14	\$17,791
SR 14/Camas Washougal - Add Lanes and Build Interchange (Clark) Advertisement date was delayed due to prolonged right of way negotiations.	TPA	Late	Mar-11	Tapani Underground	Nov-12	\$28,619
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.	TPA	√	Sep-09	Selland Construction	Oct-12	\$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	TPA	√	Oct-09 May-10	Signal Electric Skanska USA Civil West	Sep-13 Sep-13	\$4,902 \$114,569
This subproject has several contract components; the contract awarded to Skanska USA in May 2010 begins removal of the southern portion of the viaduct.						
• 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) - Francis Avenue to Farwell Road - New Alignment (Spokane) The advertisement delay on this project was due to delays in the right of way acquisition.	Nickel	Late	Jan-04		Oct-12	
• NSC - Farwell Road Lowering	Nickel		Jan-04	Max J. Kuney Co.	Jul-05	\$4,976
• NSC - Gerlach to Wandermere - Grading - Construction	Nickel		Nov-04	KLB Construction	Sep-06	\$9,987
• NSC - Francis Avenue to U.S. 2 Structures - Rebid	Nickel		May-06	Max J. Kuney Co.	Jul-08	\$17,236
• U.S. 395/NSC - Freya Street to Fairview Vicinity - Grading and Structures	Nickel		Jan-07	Steelman-Duff	Apr-09	\$10,571
• U.S. 395/NSC - Freya Street to Farwell Road - Paving	Nickel		Feb-07	Acme Concrete Paving	Aug-09	\$19,490
• U.S. 395/NSC - BNSF Railroad Tunnel	Nickel		Sep-07	Scarsella Bros.	Aug-09	\$17,295
• U.S. 395/NSC - Freya Street to Farwell Road - Southbound Additional Lanes	TIGER/ Nickel		Jun-10	Graham Construction & Management	Oct-12	\$21,456
• U.S. 395/NSC - Parksmith Interchang	TIGER/ Nickel		Jun-11	Max J. Kuney Co.	Oct-12	\$6,197
This project was reported as complete in <i>Gray Notebook</i> 35 - September 30, 2009. Subsequent to that date, the project received a TIGER grant from the American Recovery and Reinvestment Act. Those funds were combined with remaining Nickel funds to add the last two projects above.						
U.S. 395/NSC - Design and Right of Way - New Alignment (Spokane)	TPA	√	Apr-12	Max J. Kuney Co.	Nov-15	\$13,255
• U.S. 395/NSC - Francis Avenue Improvements	Nickel	√	Apr-12	Graham Construction	Nov-13	\$14,046

WSDOT's Capital Project Delivery Programs

Advertisement Record

Thirty-two projects in construction phase as of September 30, 2012

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

Project description	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 date changed to allow additional design and review.						
SR 520/Bridge Replacement and HOV (King, Grays Harbor)	TPA					
• SR 520 Pontoon Construction	TPA	√	Aug-09	Kiewit-General, A Joint Venture	Jul-14	\$367,330
Portions of this project are in construction but were not captured in previous <i>Gray Notebook</i> 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	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 (Pierce)	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 ARRA 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 St. E to Jovita - Add Lanes (Pierce)	Nickel	Late	Feb-11	Tri-State Construction	Jun-12	\$11,928
Advertisement date was delayed to coordinate with local agencies.						
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 to allow time for utility relocation and permit approval.						
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

Thirty-two projects in construction phase as of September 30, 2012

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

Project description	Fund type	On-time advertised	Ad date	Contractor	Operationally complete date	Award amount
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	Late	Jun-12	Cascade Bridge	Oct-13	\$21,596
• I-5/Mellen Street Interchange - Interchange Improvements	TPA		Combined with project above for construction efficiencies.			
SR 9/SR 531 - 172nd Street NE - Improve Intersection (Snohomish)	TPA	√	Oct-11	Interwest Construction	Oct-12	\$4,770
SR 530/Fortson Creek Culvert - Fish Barrier (Snohomish)	TPA	√	Mar-12	Ram Construction	Oct-12	\$812
I-5/Chehalis River - Flood Control (Lewis)	Nickel	√	Mar-12	Cascade Bridge	Oct-13	\$21,596
U.S. 101/Bone River Bridge - Replace Bridge (Pacific)	TPA	Late	Apr-12	Cascade Bridge	Nov-13	\$5,715
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
SR 161/Clear Lake North Road to Tanwax Creek - Spot Safety Improvements (Pierce)	TPA	Late	Jul-12	Totem Electric of Tacoma	Dec-12	\$865
SR 9/Pilchuck Creek - Replace Bridge (Snohomish)	TPA	Late	Jul-12	Granite Construction	Jul-14	\$8,900
I-5/Grand Mound to Maytown - Add Lanes and Replace Intersection (Thurston)						
• I-5/Grand Mound to Maytown, Stage One - Add Lanes	Nickel	√	Dec-07	Scarsella Bros.	Jun-10	\$61,495
• I-5/Grand Mound to Maytown, Stage Two - Replace Interchange	Nickel	Late	Aug-10	Tri-State Construction	Sep-12	\$15,518

Advertisement was delayed due to negotiations with the owner of an adjacent railroad on the placement of a culvert under the tracks.
Data source: WSDOT Capital Program Development and Management.

Projects to be advertised

Four projects in the delivery pipeline for October 1, 2012 - March 31, 2013

Nickel and Transportation Partnership Account (TPA) projects now being advertised for construction or 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 6/Willapa River Bridge - Replace Bridge (Pacific)	TPA	Jan-13	Jan-13	√	\$9,295	\$9,281
SR 11/Padden Creek - Fish Barrier Removal (Whatcom)	TPA	Feb-13	Feb-13	√	\$2,567	\$2,567
SR 99/Spokane Street Bridge - Replace Bridge Approach (King)	TPA	Oct-12	Oct-12	√	\$14,471	\$14,466
SR 112/Coville Creek - Fish Barrier (Clallam)	TPA	Apr-13	Feb-13	√	\$3,130	\$3,130

Data source: WSDOT Capital Program Development and Management.

WSDOT's Capital Project Delivery Programs

Original 2003 and 2005 Transportation Funding Packages (Nickel & 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 include all budget items including pre-construction and environmental studies that were included in the original funding packages, but do not include local programs projects.

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 data below will not match the current budgets on pp. 47-48.

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

Status as of September 30, 2012

	Total program		Highways		Ferries		Rail	
	Number of projects	Percent of program						
Total number of projects	156		127		5		24	
Completed projects	116	74%	100	79%	2	40%	14	58%
Total projects under way	30	19%	27	21%	2	40%	1	4%
<i>In pre-construction phase</i>	16		15		1		0	
<i>In construction phase</i>	14		12		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%
<i>Number of legislatively approved scope changes</i>	20		18		0		2	
<i>Pre-construction starts within six months</i>	0		0		0		0	
<i>Construction starts within six months</i>	0		0		0		0	

Data source: WSDOT Capital Program Development and Management.

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

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

Status as of September 30, 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	\$3,891,313	100%	\$3,365,003	100%	\$392,786	132%	\$133,524	64%
Actual expenditures, 2003 through September 30, 2012	\$3,528,697	91%	\$3,214,765	95%	\$185,304	62%	\$128,628	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 & TPA) Performance Dashboard

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

Status as of September 30, 2012

	Total program		Highways		Ferries		Rail	
	Number of projects	Percent of program						
Project number and phase	248		229		4		15	
Total number of projects								
Completed projects	174	70%	167	73%	0		7	47%
Total projects under way	56	23%	51	22%	1	25%	4	27%
<i>In pre-construction phase</i>	26		25		0		1	
<i>In construction phase</i>	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%
<i>Number of legislatively approved scope changes</i>	23		23		0		0	
<i>Pre-construction starts within six months</i>	0		0		0		0	
<i>Construction starts within six months</i>	2		2		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 September 30, 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	\$4,061,751	58%	\$3,908,117	59%	\$75,519	41%	\$78,114	66%
Actual expenditures, 2003 through September 30, 2012	\$3,358,851	48%	\$3,225,649	48%	\$65,093	35%	\$68,109	58%

Data source: WSDOT Capital Program Development and Management.

Notes: Expenditures are Nickel 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 six Nickel and Transportation Partnership Account (TPA), and four Pre-existing Funds (PEF) projects from July 1 to September 30, 2012. (PEF is defined on page 60).

Project delivery performance reporting on budget and schedule 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, TPA and PEF baseline budgets and schedules reset whenever changes are made in the last approved legislative budget.

More information: www.wsdot.wa.gov/projects/completed.

SR 518/Bridges - Seismic Retrofit (King) 2005 TPA

This project retrofitted six bridges on SR 518 between Burien and Tukwila in south King County to better withstand earthquakes.



Project benefits: The project improves safety and reliability at six bridges on SR 518 by retrofitting and strengthening the structures. The work also increases the expected lifecycle of these bridges.

Highlights/challenges: Originally budgeted for \$7.8 million, this project initially faced an unexpected \$900,000 in cost increases as a more refined engineer's estimate identified higher costs for column jacketing, materials, labor, and retrofit work to the crossbeams and superstructures.

This increase, approved by the 2011 Legislature, raised the project's budget to \$8.8 million. However, a favorable construction contract (11.7 percent below the engineer's estimate) along with a revised preliminary estimate in 2011 reduced the project's total estimated cost at completion by \$3 million, to \$5.8 million.

Budget performance: The project was completed for \$5.2 million, which was well below the last approved budget, and approximately \$2.6 million less than the original budget for the project.

Schedule performance: The project was originally scheduled to be operationally complete in April 2012, but faced five months of construction and weather delays. It was completed in August 2012, on target with the last approved schedule.

SR 410/Nile Valley Landslide Reconstruct Route (Yakima) Pre-existing Funds

This project rerouted a section of SR 410 around a half-mile long landslide that occurred in October 2009 in the Nile Valley west of Naches. The slide demolished and buried a section of SR 410, blocking the Naches River and changing the course of its channel. A temporary detour was completed in November 2009.



Project benefits: The new, permanent route for SR 410 restores safe and reliable transportation.

Highlights/challenges: WSDOT engineers were able to find a more cost-effective solution to the SR 410 reroute, reducing costs associated with an earlier plan that called for constructing a new bridge across the Naches River. The change also reduced expected environmental mitigation costs that would have been incurred had the bridge been required. These innovations reduced the project cost by approximately \$11.5 million.

Budget performance: The PEF project was completed for \$9.7 million, which was on target with the last approved budget. The project was originally budgeted for \$21.2 million in 2010.



WSDOT crews work to reroute SR 410 around an 88-acre landslide, opting not to build a new bridge and reducing costs by more than half.

Schedule performance: The project was operationally complete in August 2012, approximately two months ahead of the original schedule and on target with the last approved schedule.

WSDOT's Capital Project Delivery Programs

Completed projects providing return on transportation investments

I-5 Express Lane Automation (King) *Pre-existing Funds*

This project replaced a manual gate system with an automated gate system, added new signs, fiber optic systems and cameras, and upgraded electrical systems at the I-5 express lanes.



Project benefits: The improvements centralize many parts of the express lane operation, and allow WSDOT traffic engineers to remotely control portions of the system from the Traffic Management Center in Shoreline. This makes for a much more efficient system and reduces the time it takes to reverse directions of the I-5 express lanes from one hour to 15 minutes, helping ease midday congestion. The new cameras and electronic message signs improve WSDOT's ability to communicate with drivers about roadway conditions.

Highlights/challenges: The construction contract was awarded at 18.2 percent (approximately \$762,200) below the engineer's estimate. During construction, crews discovered that the system's wiring needed replacing, since it was decades old, resulting in higher costs.



The automated express lane system on I-5 in Seattle reduces the time it takes to switch directions by 45 minutes, easing midday congestion.

Budget performance: This PEF project was originally budgeted for approximately \$5.7 million in 2010. The project was completed for an estimated cost of \$7.1 million which is approximately \$900,000 higher than the last approved budget.

Schedule performance: The project was operationally complete in July 2012, which was on target with the last approved budget, but approximately five months later than the originally scheduled end date of February 2012.

SR 112/Nelson Creek - Remove Fish Barrier (Clallam) 2005 TPA

This project replaced a drainage structure at Nelson Creek that was restricting fish passage.



Project benefits This project removes a migratory fish passage barrier and replaces it with a wider culvert that improves fish passage at this location.

Highlights/challenges: The construction contract for the project

was approximately 3.9 percent below the engineer's estimate. The resulting construction cost adjustments reduced the budget by more than \$150,000.

Budget performance: The project was completed for \$2.1 million, more than \$165,000 less than the original 2011 project budget and on target with the last approved budget.

Schedule performance: The project was operationally complete in September 2012, which is three months ahead of the original and last approved schedules.

SR 9/176th Street SE Vicinity to Broadway Avenue Vicinity - Paving (Snohomish) *Pre-existing Funds*

This project resurfaced deteriorating asphalt with a hot mix asphalt overlay on SR 9 from 176th Street to Broadway Avenue. It also upgraded intersections, adding a turn lane and left-turn pockets where needed.



Project benefits: The turn lane and pockets reduces the risk of rear-end collisions and resulting congestion. Giving drivers a pocket lane to wait before and after they turn also reduces delay and congestion for drivers headed north and south on SR 9,

while repaving the stretch of roadway extends the service life of the existing pavement.

Highlights/challenges: The construction contract was awarded at six percent below the engineer's estimate, reducing the initial costs by approximately \$160,000.

Budget performance: This project was completed for \$3.2 million, which is \$200,000 below the original and last approved budgets.

Schedule performance: This project was operationally complete in September 2012, on target with the original and last approved schedules.

Completed projects providing return on transportation investments

I-405 project near Renton wraps up and brings congestion down



WSDOT completed the I-405 South Renton Vicinity - Stage 2 Widening project this quarter. This project, which included four related projects (described below), adds improvements to reduce congestion, enhances access to downtown Renton and provides better habitat and passage for migrating fish along the busy corridor between SR 167 and SR 169.

The total project, was primarily funded by the 2003 Nickel and 2005 TPA programs, and budget and schedule performance for all four related projects was combined. The benefits and highlights of these individual projects are explained below.

Budget performance: The project was completed for \$165.2 million, about \$7.6 million less than the original 2007 budget of \$172.8 million, and \$300,000 below the last approved budget.

Schedule performance: The project was operationally complete in August 2012, which is almost two years after the original schedule but four months ahead of the last approved schedule.

I-405/Thunder Hills Creek Culvert - Emergency Repair

This project replaced a culvert under I-405 near Renton that failed during record rainfall on December 2 and 3, 2007. A large sinkhole on the shoulder of I-405 also resulted from this rainfall.

Project benefits: The new culvert stabilizes I-405, meets flooding requirements and improves wildlife habitat by providing better passage for migrating fish.

Highlights/challenges: The project faced a number of design and environmental challenges that delayed work and required mitigation, including relocating the culvert work, which added to the overall costs for engineering, right of way and construction and pushed the operationally complete date back one year from December 2011 to December 2012.

I-405/SR 515 - New Interchange

This project constructed an interchange on I-405 at SR 515 (Talbot Road) east of the I-405/SR 167 interchange.

Project benefits: This project improves access to downtown Renton and relieves traffic demand on the I-405 interchanges at SR 167 and SR 169.

Highlights/challenges: Right of way and construction costs were lower than originally budgeted due to the project being consolidated with others on I-405.

I-405/SR 167 to SR 169 - Northbound Widening

This project added a general purpose lane on northbound I-405 from SR 167 to SR 169.

Project benefits: The additional lane adds capacity on northbound I-405 and helps reduce congestion around Renton.

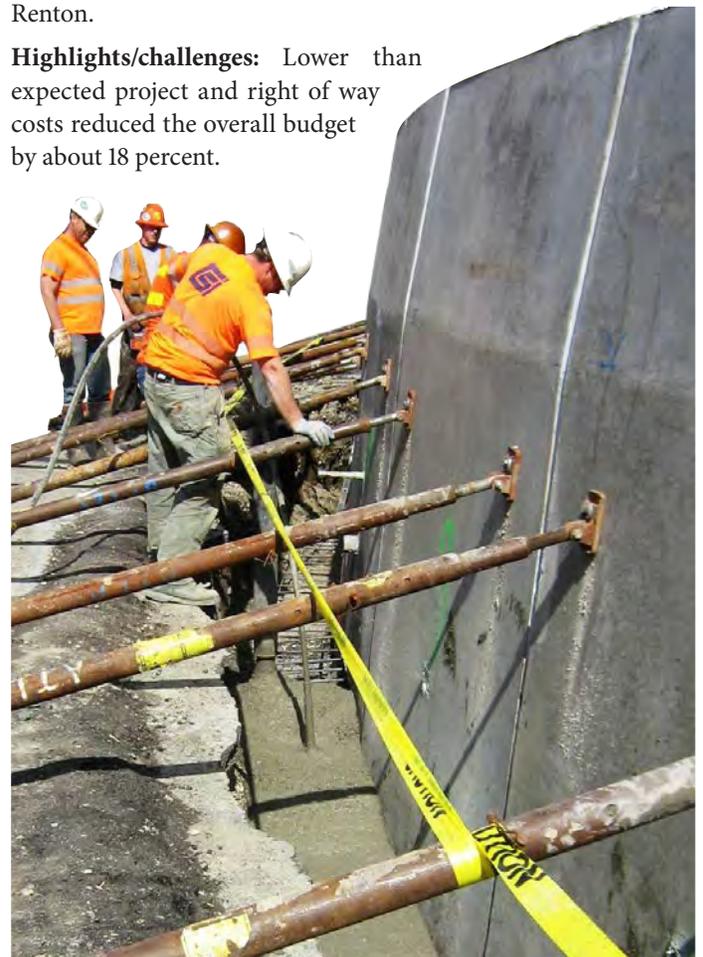
Highlights/challenges: Partnering in the Springbrook Wetlands Mitigation Bank brought about a modification that, unlike the original design, did not require roadway widening and resulted in reduced environmental mitigation costs.

I-405/SR 167 to SR 169 - Add New Southbound Lane

This project added a general purpose lane on southbound I-405 from SR 167 to SR 169.

Project benefits: The additional lane adds capacity on southbound I-405 and helps reduce congestion around Renton.

Highlights/challenges: Lower than expected project and right of way costs reduced the overall budget by about 18 percent.



Crews install a retaining wall for the I-405 South Renton Vicinity project.

WSDOT's Capital Project Delivery Programs

Completed projects providing return on transportation investments

SR 530/Skaglund Hill - Permanent Slide Repair (Snohomish) Pre-existing Funds

This project constructed a retaining wall and improved drainage along a landslide-prone stretch of SR 530.



Project benefits: This project protects an important state highway, keeping the roadway open for commuters and freight traffic. If the SR 530 closed at this location, drivers would have to use a 58-mile detour to travel between Arlington and Darrington.

Highlights/challenges: The construction contract was 5.9 percent (\$210,000) below the engineer's estimate. The operationally complete date was delayed from August 2011 to July 2012 due to slower than anticipated contractor progress on wall construction, and the onset of winter weather.

Budget performance: The project was originally budgeted in 2007 for \$8.7 million (not including the permanent repair), but the scope of work increased and the project was completed for \$13.3 million, which was on target with the last approved budget.

Schedule performance: The project was originally scheduled to be operationally complete in August 2011, but was completed in July 2012. Contractor delays resulted in the fascia walls and the top layer of roadway not being installed within the 2011 construction season.

WSDOT suspended the project for the winter after all the permanent ground anchors were installed due to the weather and construction resumed in spring 2012. Wet spring weather delayed work further. The work was completed on target with the last approved schedule.

SR 112/Unnamed Tributary to Pysht River - Remove Fish Barrier (Clallam) 2005 TPA

This project replaced a drainage structure at Pysht River that was restricting fish passage.



Project benefits: This project removes a migratory fish passage barrier and replaces it with a wider culvert that improves fish passage at this location.

Highlights/challenges: The construction contract for the project

was approximately 29.5 percent below the engineer's estimate. The resulting construction cost adjustments reduced the budget by more than \$446,000.

Budget performance: This project was completed for \$1.1 million, approximately \$486,000 less than the original 2011 budget of \$1.6 million.

Schedule performance: The project was operationally complete in September 2012, which is three months ahead of the original and last approved schedules.

SR 500/St. Johns Boulevard - Build Interchange (Clark) 2005 TPA

This project replaced the intersection at SR 500 and St. Johns Boulevard with a new interchange, which included constructing additional walls, culverts and a multi-use trail while relocating power lines and utilities.



Project benefits: The project potentially reduces collisions caused by drivers changing lanes and merging, including collisions that occurred at the previously signalized intersection. It also reduces congestion by allowing through-traffic on SR 500 to proceed without stopping, and by allowing access to and from St. Johns Boulevard using on- and off-ramps.

Highlights/challenges: WSDOT encountered several design and construction challenges, such as relocating utilities, building ramp bridges under power lines, and protecting a culvert. Following a value engineering study, WSDOT revised certain design elements to keep the project within budget. These revisions also

required another review of environmental documentation. Before it could apply for permits, WSDOT first had to come to an agreement with the Federal Highway Administration on the level of documentation required. This delayed advertisement of the project about six months from April 2010 to October 2010. Additionally, in response to community input, WSDOT opted to keep one lane of St. Johns Boulevard open during the project. The construction staging plans had to be modified and the project schedule was delayed.

Budget performance: The project was originally budgeted for \$30.3 million in 2006. Cost adjustments drove the estimate up to \$57 million, but due to a favorable construction contract, they were reduced by \$8.7 million. Work was completed for \$47 million, which was \$500,000 below the last approved budget.

Schedule performance: This project was operationally complete September 2012, approximately 14 months ahead of the last approved schedule. The project completion date was originally scheduled for April 2009.

Completed projects providing return on transportation investments

I-5/SR 161/SR 18 - Interchange Improvements (King)

2003 Nickel/2005 TPA combined

This project rebuilt the I-5 and SR 18 interchange by replacing the northwest and southeast cloverleaf ramps with a westbound SR 18 to southbound I-5 flyover ramp and an eastbound SR 18 to northbound I-5 flyover ramp. It also constructed a new, direct connection from westbound SR 18 to SR 161.



Project benefits: The project improves safety, reduces congestion and benefits the environment by eliminating weaving vehicle movements through the removal of two cloverleaf loop ramps, increasing traffic flow at this busy interchange, and managing runoff by adding detention ponds to protect 22 wetland sites.

Highlights/challenges: The scope of the project was increased in 2005, putting the project four percent over the original budget of \$112.8 million. WSDOT also incurred unexpected costs associated with the installation of fish passages, but these expenses were offset by the construction contract, which came in 21.3 percent (\$14 million) under the engineer's estimate.



Cranes hoist girders into place to support the new flyover ramps from SR 18 to I-5 near Federal Way.

Budget performance: The project budget at time of completion was \$109.5 million, \$3.3 million less than the original 2006 budget of \$112.8 million. It is anticipated that when the project reaches final closure, the actual cost will be approximately \$90.4 million.

Schedule performance: The project was originally scheduled to be operationally complete in June 2013, but was finished in July 2012 – almost one year early. The July completion put it on target with the last approved schedule.

WSDOT's Capital Project Delivery Programs

Balancing prioritized needs with Pre-existing Funds

Two of the 48 Pre-existing Funds (PEF) projects scheduled for advertisement from July 1 to September 30, 2012, were early and eight were on time. This compares to six PEF projects being early and 27 on time during the previous quarter (from April 1 to June 30, 2012), when 74 were advertised.

Pre-existing Funds support a wide variety of capital projects to improve the safety, functionality and longevity of the state highway system. Unlike Nickel and 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. This provides WSDOT programs flexibility with projects and allows them to more efficiently address issues that arise.

While Nickel and TPA are helping finance 421 projects, valued at \$16.3 billion, all other projects, known as PEF, continue to be funded through federal, state and local funding sources.

How WSDOT reports PEF project performance

From 2001 to 2009, WSDOT reported 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 currently under way and 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 million and was approved in 2010. The increase was due to challenges that included right of way issues, higher costs for materials and the addition of a pedestrian tunnel. The project was awarded in August 2011. Following an approved 18-month delay due to right of way issues, the project is scheduled to be complete in June 2013.

All other projects

For all other PEF projects, WSDOT reports on planned versus actual cash flows for the preservation and improvement programs, and tracks this information for the current biennium (2011-2013). It does the same for planned versus actual advertisements. The *Gray Notebook's* quarterly comparisons follow WSDOT's biennium forecasts for these programs and shows how each is performing in relation to where the agency determined and planned they would be (see p. 62).

Pre-existing Funds projects scheduled for advertisement or being advertised are listed below and on the next page. Tracking when projects are advertised and explaining reasons why they may not be on schedule is an important part of PEF reporting. Terms used in the advertisement section are explained below.

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 ad 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 ad 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 ad 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 ad 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 (PEF) projects scheduled for advertisement or advertised this quarter

July 1 – September 30, 2012

Early

SR 529/Southbound Snohomish River Bridge - Special Bridge Repair

SR 20/SNC Railroad Bridge - Seismic Retrofit

On time

SR 519/Seattle Terminal Slip 1 - Passenger Overhead Loading and Programmable Logic Controller/Electrical Upgrade

SR 104/Edmonds Terminal - Passenger Overhead Loading and Programmable Logic Controller/Electrical Upgrade

Balancing prioritized needs with Pre-existing Funds

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

July 1 – September 30, 2012

On time (continued)

U.S. 12/Railroad Bridge - Seismic Retrofit

I-5/Barnes Road and U.S. 12 Interchanges - Illumination Upgrade

M/V Klahowya Preservation

SR 20 Spur/Friday Harbor Terminal - Pedestrian Access Improvements

SR 24/South of Othello - Sagehill Wasteway Deck Repair

M/V Klahowya Improvement

Emergent

I-90/Sprague Lake Westbound Safety Rest Area - Well Replacement

Oak Harbor Scenic Heights Trailhead

I-90/Raging River Bridge Vicinity - Slope Stabilization

SR 20/West of Twisp Wire - Slope Stabilization

SR 160/Fauntleroy Terminal - Emergency Trestle Repair

Emergency Repair - M/V Issaquah Class Vessels Dockside

Late

SR 906/Travelers Rest - Building Renovation

Ad late to allow for consultant design addressing additional facility deficiencies

I-5/Spokane Street Interchange Vicinity - Special Bridge Repair

Ad late for workforce balancing

SR 9/Pilchuck Creek - Replace Bridge

Ad late for completion of the Hydraulic Report, and county shoreline permit

Region-wide Curve Warning Signing

Ad late for workforce balancing

U.S. 101/Shore Road to Kitchen Road - Widening

Ad late to address challenging right of way acquisitions, followed by utility relocations

U.S. 101/McDonald Creek Bridge - Bridge Replacement

Ad late to combine with another project for efficiency

SR 906 Spur/Coal Creek Bridge - Scour Repair

Ad late for workforce balancing

SR 161/Clear Lake N. Road to Tanwax Creek - Spot Safety Improvements

Ad late for workforce balancing

Eastern Region - Safety Restoration

Ad late for workforce balancing

I-90/Sprague Rest Area Traveler Information

Ad late for workforce balancing

U.S. 195/Cheney-Spokane Road - New Interchange

Ad late for court date on one outstanding right of way parcel

SR 104/Hood Canal Bridge - Install Bike Plates

Ad late for workforce balancing

Delayed

I-5/Gee Creek Southbound Safety Rest Area - Major Renovation

Ad delayed to allow further analysis of the potential solution

I-5/SeaTac Safety Rest Area Northbound - Major Renovation

Ad delayed to ensure federal requirements are met, and project is added to the STIP

I-5/Downtown Seattle Area Sign Structure Replacement

Ad delayed to acquire survey data on I-5, and to field-verify existing electrical system

North Central Region ADA Rural Upgrades

Ad delayed due to continued city and private right of way negotiations. The original advertisement date was January 2013, so it is still advancing the advertisement

SR 26/SR 24 - Othello Intersection Improvement

Ad delayed to allow additional coordination for public involvement

U.S. 97/North of Daroga State Park - Turn Lanes

Ad delayed for needed minor right of way and construction easements

SR 3/Belfair Area - Widening and Safety Improvements

Ad delayed to allow time for right of way acquisitions

I-5/SR 510 Vicinity - Mitigate Redirectional Landform

Ad delayed for workforce balancing

I-5/SR 705 and Railroad Crossing Northbound - Seismic Retrofit

Ad delayed to combine two seismic projects together for efficiency, to be done with the M Street to Portland HOV project

SR 16/South of Burnham Drive to SR 302 - Safety Improvements

Ad delayed to satisfy project analysis issues

SR 16/Bethel Road Vicinity - Mitigate Redirectional Landform

Ad delayed for workforce balancing

SR 16/SR 160 Vicinity - Mitigate Redirectional Landform

Ad delayed for workforce balancing

U.S. 101/South of Skookum Creek Bridge to East of Evergreen Parkway - Paving

Ad delayed for workforce balancing

U.S. 101/South Alder Streer - Rebuild Signal

Ad Delayed to allow materials acquisition for the signal hardware

U.S. 101/West Wishkah Street - Rebuild Signal

Ad Delayed to allow materials acquisition for the signal hardware

U.S. 101/Ennis Street Signal - Rebuild Signal

Ad delayed for NEPA and construction, including equipment fabrication and delivery

U.S. 101/Steamboat Island Road Vicinity - Mitigate Redirectional Landform

Ad delayed for workforce balancing

Deferred

I-5/SR 16 Interchange South-North Ramp - Seismic Retrofit

Ad deferred to next biennium after completion of Eastbound Nalley Valley project

SR 16/Tacoma Narrows Bridge - Replace Maintenance Traveler

Ad deferred one year to evaluate existing bridge traveler for rehabilitation

SR 162/Puyallup River Bridge - Replace Bridge

Ad deferred for Section 106 historic significance and condemnation process

Data source: WSDOT Capital Program Development and Management.

WSDOT's Capital Project Delivery Programs

Balancing prioritized needs with Pre-existing Funds

WSDOT advertises 173 Pre-existing Funds projects for the 2011-2013 biennium

WSDOT has advertised 173 of 178 planned Pre-existing Funds (PEF) projects planned to date in the 2011-2013 biennium. The projects advertised were initially valued at \$357.1 million but have a current cost to complete of \$266.6 million - approximately \$90.5 million less than they were initially valued.

Of the 173 projects advertised from July 1, 2011 to September 30, 2012, 15 have been early, 76 were on schedule, 46 were late and 36 were considered emergent and addressed unexpected needs such as landslides and emergency repairs. An additional 94 projects were delayed or deferred and nine were deleted. WSDOT staff normally assigned to preliminary engineering were drafted for emergent and continuing construction engineering, resulting in the large number of late project advertisements.

Value of planned Pre-existing Funds advertisements 2011-2013 biennium

July 1, 2011 - September 30, 2012; Dollars in millions

	Number	Original value	Current cost to complete
Total PEF advertisements planned 2011-2013	328	\$794.9	\$704.7
Planned advertisements through September 30, 2012	178	\$443.1	\$329.9
Actual advertisements through September 30, 2012	173	\$357.1	\$266.6

Data source: WSDOT Capital Program Development and Management.

Pre-existing Funds project advertisements schedule performance

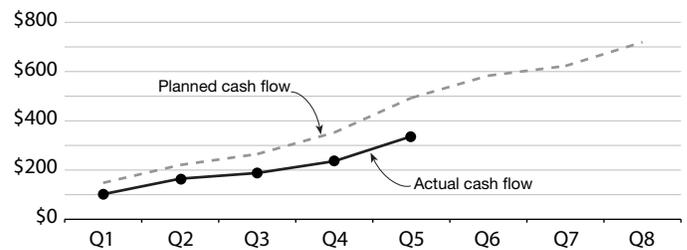
July 1, 2011 - September 30, 2012

	Number
Projects advertised as scheduled	76
Projects advanced or advertised early	15
Projects advertised late	46
Emergent projects advertised	36
Total projects advertised	173
Projects delayed (delayed within the biennium)	82
Projects deferred (delayed out of the biennium)	12
Projects deleted	9

Data source: WSDOT Capital Program Development and Management.

Note: See page 60 for PEF advertisement definitions.

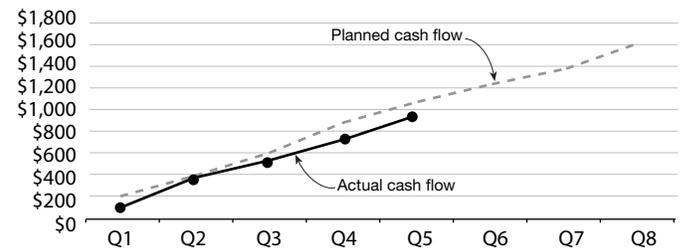
Pre-existing Funds preservation program cash flow 2011-2013 biennium; Quarter ending September 30, 2012; Planned vs. actual expenditures; Dollars in millions



Data source: WSDOT Capital Program Development and Management.

Note: Original planned cash flow values have been updated based on the 2011 Legislative Final Budget.

Pre-existing Funds improvement program cash flow 2011-2013 biennium; Quarter ending September 30, 2012; Planned vs. actual expenditures; Dollars in millions

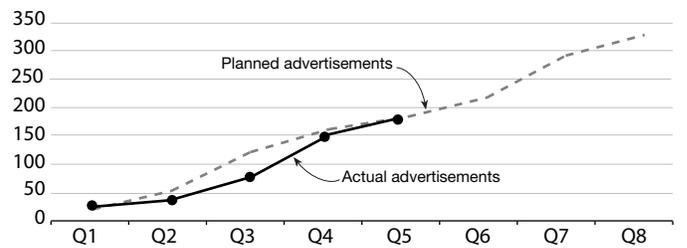


Data source: WSDOT Capital Program Development and Management.

Note: Original planned cash flow values have been updated based on the 2011 Legislative Final Budget.

Pre-existing Funds project advertisements 2011-2013 biennium; Quarter ending September 30, 2012; Planned vs. actual advertisements

2011-2013 biennium; Quarter ending September 30, 2012; Planned vs. actual advertisements



Data source: WSDOT Capital Program Development and Management.

Watch List takes the 'no surprises' approach to projects

WSDOT's Watch List pages deliver on the agency's commitment to "no surprises" reporting of project performance.

The Watch List addresses 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 face them, starting with planning and concluding with construction.

The summary table on the following page lists projects currently facing schedule or budget concerns with a reference to the problem category; a more detailed description of the precise problem or its resolution appears on the following pages. More information is presented on the individual project pages on the WSDOT website 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, etc. 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 takes the 'no surprises' approach to projects

Watch List projects with schedule or budget concerns

Quarter ending September 30, 2012

Added 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
Updates to Watch List		
I-5/Express Lane Automation (King)	Highway	Construction: site problems
U.S. 2/Wenatchee River Bridges - Replace Bridge (Chelan) (Related project: U.S. 2/Chiwaukum Creek - Replace Bridge)	Highway	Construction: weather, contractor issues, timing problems
U.S. 97/Cameron Lake Road - Intersection Improvements (Okanogan)	Highway	Design: alternatives, design disputes
U.S. 101/Hoh River (Site No. 2) - Stabilize Slopes (Jefferson)	Highway	Environmental: permitting, technical issues
SR 161/24th Street East to Jovita - Add Lanes (Pierce)	Highway	Utilities: utility relocations; Construction: timing problems
SR 520 Pontoon Construction Project (Grays Harbor, Pierce)	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		
SR 530/Skaglund Hill Slide (Snohomish)	Highway	Construction: weather, timing problems
SR 26/SR 24 - Othello Intersection Improvement (Adams)	Highway	Design: design element change
SR 16/Tacoma Narrows Bridge - Replace Maintenance Traveler (Pierce)	Highway	Design: timing problems
SR 161/Clear Lake North Road to Tanwax Creek - Spot Safety Improvements (Pierce)	Highway	Design: design element changes
SR 162/Puyallup River Bridge - Replace Bridge (Pierce)	Highway	Design: alternatives
U.S. 195/Cheney-Spokane Road - New Interchange (Spokane)	Highway	Right of way: land acquisition

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

Added to the 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 bridge across Satus Creek with a wider and longer bridge. It will also realign U.S. 97, widen shoulders, upgrade pavement, and remove obstructions. When completed, the improvements will potentially reduce the collisions and improve sight distance for drivers.

This project is in construction and the operationally complete date has been delayed eight months from October 2012 to June 2013. The work is progressing slower than planned due to negotiations in determining a source for rock materials, and a change in design to include a reinforced concrete retaining wall. Although the contractor doubled shifts to recover the work schedule, U.S. 97 traffic will continue to be detoured through the winter. The project is anticipated to be completed in early summer 2013.

The total cost on this combined project has decreased to \$12.7 million, a savings of \$700,000, due to favorable bids.

Updates to Watch List

I-5/Express Lane Automation (King)

This project, budgeted for \$5.4 million, replaced a manual gate 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 will reduce congestion by cutting the time needed to switch express lanes from one hour to 15 minutes.

This project is operationally complete. Due to pending cost increases, the budget is at risk. The schedule is no longer at risk. A construction schedule delay led to a cost increase.

As reported in *Gray Notebook* 46, the delay to the schedule was due to the contractor encountering field conditions that required numerous changes to the above ground and underground

Watch List takes the 'no surprises' approach to projects

conduit and cabling systems, slowing progress and delaying scheduled operational completion from April to August 2012. The contractor was able to recover a portion of the delay by working additional crews on the weekends. The project opened to traffic on July 23, 2012, approximately one month earlier than the anticipated August 2012 date.

The schedule delay and associated cost changes increased the project budget to approximately \$6.2 million, with \$900,000 in pending increases bringing the total project cost to \$7.1 million. The pending cost increase is due to delays from contract bid item overruns, several approved change orders, and ongoing discussions with the contractor regarding the schedule. WSDOT continues to monitor the project for cost impacts.

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 motorists, bicyclists and pedestrians. These projects also construct new turn lanes to the Tumwater Campground and add fish passage enhancements in the creek bed.

The projects are in the construction phase; the budget and schedule are at risk. As reported in *Gray Notebook 46*, the operationally complete date has been delayed by nine months from December 2012 to September 2013 due to high water levels and nested boulders. The contractor has made progress as low water levels have permitted work on the pier shafts to be completed, allowing bridge construction to continue above water.

WSDOT continues to monitor the situation and will determine possible impacts to the contract costs and the operationally complete date after the design revisions and pier construction are completed in 2012.

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

This project, budgeted for \$1 million, will install 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; the advertisement date of February 2013 is at risk. A delay is anticipated due to the revised

alternatives to the proposed roundabout at the intersection of U.S. 97 and Oak Street. WSDOT is proposing the roundabout to improve the intersection, decrease accidents, and allow for safer freight movement through the corridor. An open house was held on September 19 to discuss alternatives to the WSDOT-proposed roundabout. Okanogan County Commissioners, state Representatives Joel Kretz and Mike Armstrong, the mayors of Omak and Okanogan, and some city council members attended the meeting. There was little support expressed for the roundabout option.

WSDOT is reviewing the 160 comments left by attendees and determining the next steps in the project.

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 roadway due to Hoh River bank erosion.

The project is in the design phase; the schedule is at risk. The advertisement date is delayed from January 2014 to December 2014 due to permitting delay caused by staff cuts at other agencies. The winter advertisement date is necessary for scheduling the in-water work.

The delays have pushed operational completion from January 2015 to October 2015.

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. Utility relocation and trench construction are progressing slower than planned due to underground utility conflicts. This delay is postponing roadway widening work due to winter weather. WSDOT and the contractor are attempting to recover some of the work schedule and reduce associated costs.

The operationally complete date has been delayed by 15 months from June 2012 to September 2013. The delays are expected to increase the total project cost by \$2.5 million.

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 ten supplemental

WSDOT's Capital Project Delivery Programs

Watch List takes the 'no surprises' approach to projects

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 46*, the first cycle of pontoons was completed and floated out on July 30, 2012. Work had been delayed due to spalling and cracking in the pontoons. This delay may affect the remaining pontoons' construction schedule.

Prior to float-out, repairs were completed on the four affected pontoons. An independent expert panel evaluated the probable causes for the spalling and cracking, and concurred with the repair procedures in the first cycle. The panel has made recommendations that are reflected in the design and construction of the pontoons currently underway in Aberdeen.



A SR 520 pontoon built in Aberdeen makes its way through the Ballard locks in August.

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 inside 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 lids, a regional trail extension, and construct two new median transit stops along with other transit improvements. When completed, the project will provide enhancements to reduce the potential for serious injury and fatal collisions along the SR 520 corridor, and improve mobility and fish habitat.

The project has completed design, is in construction, and is on schedule to be completed by the end of 2013. As reported in *Gray Notebook 46*, WSDOT and the design-builder, Eastside Corridor Constructors, continue their discussions on budget and schedule risks that developed after the contract award. Potential schedule and budget effects will be determined after further consultation with the contractor.

WSDOT continues to work with the contractor in resolving geotechnical considerations in the area. Negotiations are completed on the Fairweather Basin permit modifications and the additional noise walls.

WSDOT is monitoring the geotechnical item and now expects that issue to be resolved by spring 2013. As reported in *Gray Notebook 46*, the lawsuit by Fairweather Basin residents alleging reduced property values as a result of project actions is expected to be resolved by 2013.

Removed from Watch List

SR 530/Skaglund Hill Slide (Snohomish)

This project, budgeted for approximately \$13 million, built a retaining wall and improve drainage in a landslide-prone area. The project stabilizes the roadway and underlying slope, reducing the potential for landslides.

If this roadway was closed, the shortest alternative route around would be a 58-mile detour.

The project was operationally complete as of July 14, 2012. As reported in *Gray Notebook 46*, the operationally complete date was delayed from June 2012 to July 2012 due to wet spring weather. This project has been removed from the Watch List.

SR 26/SR 24 - Othello Intersection Improvement (Adams)

This project, budgeted for \$700,000, will improve the intersection of SR 26 and SR 24, and reroute traffic through the city of Othello. Reconfiguring and improving the intersection will potentially reduce collisions and enhance drivers' ability to see pedestrians. It also eases congestion caused by traffic entering and leaving businesses at this location.

This project is in the design phase; the budget was at risk. As reported in *Gray Notebook 46*, the budget increased by \$800,000 to a total of \$1.5 million, due to an oversight of work items that should have been included during the construction estimate. WSDOT will fund the unexpected increase. This project has been removed from the Watch List.

Watch List takes the 'no surprises' approach to projects

SR 16/Tacoma Narrows Bridge - Replace Maintenance Traveler (Pierce)

This project, budgeted for \$3.4 million, will replace or rehabilitate the maintenance traveler, a vehicle that travels the length of the bridge's undercarriage and is used by WSDOT maintenance crews to inspect the bridge.

The project is in the design phase and its advertisement date has been delayed one year, from September 2012 to September 2013, due to time needed to evaluate replacing the 70-year old traveler. Maintenance travelers currently available for purchase are too heavy for the bridge.

The operationally complete date has also been delayed one year, from April 2013 to April 2014. This project has been removed from the Watch List.



The maintenance traveler is located underneath the westbound Tacoma Narrows Bridge and carries crews and equipment.

SR 161/Clear Lake North Road to Tanwax Creek - Spot Safety Improvements (Pierce)

This project, originally budgeted for \$4.9 million, was intended to widen the roadway, construct left turn lanes, and install illumination and other safety improvements to reduce the risk of collisions. When complete, this project will potentially reduce collisions on this corridor.

The project is in the design phase; the scope has been downsized to avoid earthwork, paving, and wetland impacts. The schedule has been delayed.

WSDOT used Safety Analyst, a software program, to recommend spot improvements that could be made on the roadway, such as flashing beacons, pavement markings, illuminations, and basic improvements such as upgrading guardrails.

The reduced scope further reduced the construction cost from \$4.9 million to \$1.6 million since there was no right of way acquisition or major construction required to meet the project's objectives. See related article on Safety Analyst on pp. 5-6.

The project was advertised on July 16, 2012, delayed from May 21, 2012, due to the necessary revisions required for the new scope. This project has been removed from the Watch List.

SR 162/Puyallup River Bridge - Replace Bridge (Pierce)

This project, budgeted for \$15 million, will replace the existing bridge, which is too narrow and rated as functionally obsolete. When complete, the project will construct a new, wider bridge that meets current engineering and safety standards.

The project is in the design phase; the schedule is at risk. The advertisement date is delayed to allow more time for the National Historic Preservation Act's Section 106 consultation, which requires addition review of projects that might impact historic structures, like this bridge. WSDOT is also working with utility companies to prepare utility relocation plans. Property appraisals are also currently in process.

The advertisement is delayed one year from December 2012 to December 2013 because the current (McMillin) bridge is listed on the National Register of Historic Places. WSDOT must comply with federal law by developing and evaluating alternatives that could avoid, minimize or mitigate adverse effects to the historic structure. The delay is to seek public input and to acquire right of way parcels.

The operationally complete date is also delayed one year from April 2014 to April 2015. This project has been removed from the Watch List.

U.S. 195/Cheney-Spokane Road - New Interchange (Spokane)

This project, budgeted for \$13.2 million, will construct a new interchange on U.S. 195 at Cheney-Spokane Road. When complete, this project will potentially reduce the number of severe collisions by eliminating left turns on this 55 mph highway.

The project is in the construction phase; the schedule was at risk. The project was advertised on September 24, 2012, a three-month delay from June 25, 2012, due to a pending right of way condemnation proceeding which depended on a court ruling.

The operationally complete date is now delayed by ten months from October 2013 to August 2014. This project has been removed from the Watch List.

WSDOT's Capital Project Delivery Programs

WSDOT's rail programs on the right track with federal Recovery Act funding

Washington state is investing nearly \$800 million in federal high speed rail funds to deliver rail infrastructure improvements that will expand travel choices, preserve freight mobility, and foster economic growth.

WSDOT received \$766.6 million in federal high speed rail funding, part of \$8 billion made available through the 2009 American Recovery and Reinvestment Act (ARRA). An additional \$31 million in non-ARRA funding was awarded to Washington in 2010 from two separate federal rail grant programs within the national high speed rail program. All funding is administered by the Federal Railroad Administration (FRA).

WSDOT is committed to adding two round trips between Portland and Seattle, decreasing the scheduled travel time between the two urban centers by 10 minutes, and increasing on time reliability to 88 percent throughout the corridor in its service outcome agreement with FRA.

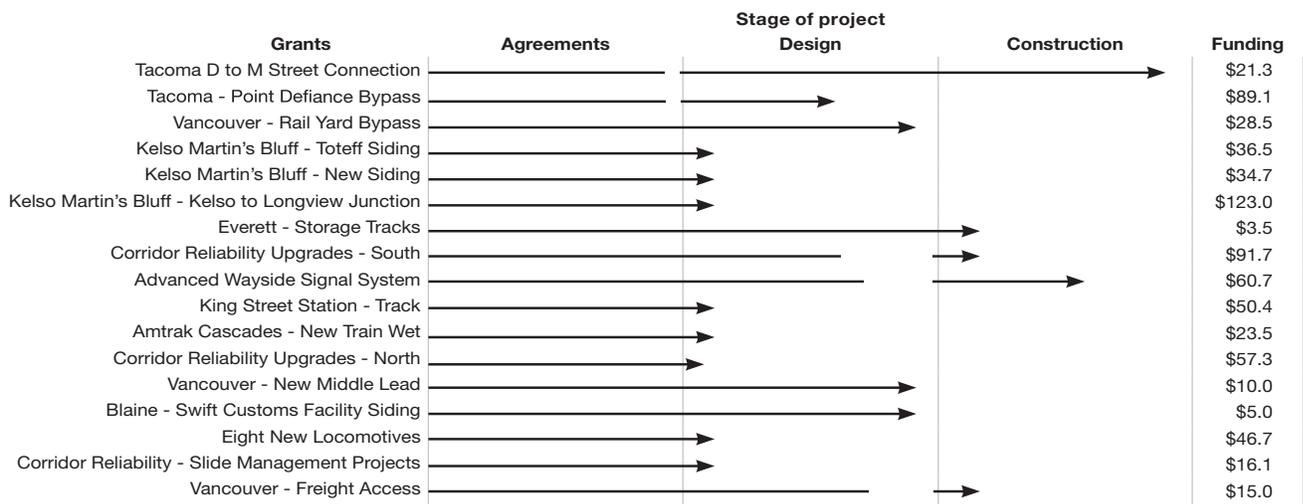
FRA is managing 17 individual projects as a single program under one grant agreement, with a combined budget. The program end date is scheduled for September 30, 2017.

As of September 30, 2012, six of the projects are in the construction phase, but many are still in the design phase. While individual project budgets and schedules change as individual projects move through design and construction processes, the program as a whole is currently within budget and on schedule to be completed in 2017.

The 17 capital projects are listed below and will create additional rail line capacity, and upgrade tracks, utilities, signals, passenger stations and advanced warning systems. The state's rail service will also receive new locomotives and passenger rail cars. This level of investment in passenger rail also supports the creation of skilled construction and operating jobs for railroad crews and regional contractors.

2009 Recovery Act rail capital projects

May 2010 - September 2012; Rail projects by stage of project; Funding in millions of dollars



Data source: WSDOT State Rail Office.

Note: The gaps in the arrows are due to various factors. Some gaps indicate work done by WSDOT prior to receiving received Federal Railroad Administration grants. Other gaps show projects progressing through multiple phases with portions moving into construction while other phases are still in design.

WSDOT benefits from Lean business practices

WSDOT has trained many employees on Lean thinking, tools and techniques over the past nine months. This training is modeled on the experiences of numerous private sector establishments that have used Lean to transform their organizations, and whose employees used their new skills to increase efficiency, lower costs, and improve performance.

Governor Chris Gregoire signed the Lean Transformation Executive Order in December, 2011. Through it she directed all executive cabinet agencies in Washington state government to use Lean principles, methods and tools to create more efficient processes while developing cultures that encourage employee creativity and problem-solving skills. A full text version of Executive Order 11-04 can be accessed online at http://www.governor.wa.gov/execorders/eo_11-04.pdf.

WSDOT has a long history of using management tools to improve efficiency within the organization. Lean transformation techniques build on methods already in use across much of the agency. WSDOT has developed and implemented several Lean pilot projects for the 2011-2013 biennium, including improving processes for both inventory accountability and the Central Sign Shop, and reducing the collision data backlog.

Lean improves inventory accountability, saves state millions

Secretary of Transportation Paula Hammond and Secretary of State Sam Reed presented members of the materials management team with the Extra Mile Award in May 2012. The award recognizes the team's innovative application of Lean management practices to improve inventory accountability and recover maximum value for surplus property. Their effort resulted in:

- 47 percent increase (\$13 million) in maintenance supplies under management,
- 72 percent reduction in inventory adjustments, and
- \$2.2 million in cost avoidance through reuse and redistribution of surplus furniture and materials.

After analyzing inventory records and practices used in field offices, the materials management team determined significant amounts of maintenance materials were bypassing the inventory system. This increased the risk of over- or under-stocking critical materials, tying up cash in unnecessary or obsolete items, and preventing management oversight of materials on hand for operational needs. The team helped field staff and managers with training in inventory management practices, inventory system standard practices, and retrieval of timely status reports and performance measures. This initiative increased the ratio of the amount of materials issued through inventory to those purchased from 59 percent to 87 percent and improved accuracy rates from 93 percent to 98 percent.

The materials management team is also responsible for WSDOT property accountability, redistribution, and disposal programs. Through leadership, collaboration with counterparts in other agencies, and skillful management of surplus property, the team has saved WSDOT and the state almost \$2.2 million during the last five years.

WSDOT Lean Highlights

WSDOT uses Lean principles to create continued innovation, effectiveness and efficiency in planning, design, construction, maintenance, and operations activities.

During the past five years WSDOT saved \$2.2 million by applying Lean principles to inventory management.

WSDOT's Lean review of the collision data collection process resulted in 15 process improvement ideas that will yield an estimated 26 percent reduction to the current processing time.



Secretary of State Sam Reed (second from left) and Secretary of Transportation Paula Hammond (far right) present materials management team members Dan Castro, Cynthia Shaw, Josh Klika and Linda Smith with the Extra Mile Award for their successes with Lean.

WSDOT Lean Special Report

WSDOT benefits from Lean business practices

Central Sign Shop uses Lean to streamline its process review, saving time and money

The WSDOT Central Sign Shop (sign shop) opened in 1983 with ten full-time employees and a goal of providing signs in an efficient, economical and timely manner. The fabrication process has evolved over the years, from the ordering process for signs to the manner in which letters are created for each sign. The sign shop fabricates approximately 8,000 signs per year to address emergent needs such as signs damaged during normal roadway operations. The sign shop, which is currently staffed by five full-time employees, can process routine orders within 30 calendar days, rush orders within two weeks, and emergency orders within 72 hours from receipt of the order.

Sign shop members attended the Lean workshop in August 2012 to identify new ways of doing business, with the goal of stabilizing the sign shop ordering, fabrication and shipping processes in an effort to reduce the number of price adjustments necessary to maintain cost recovery. They looked at ways to improve ordering, fabrication, shipping and recycling while maintaining high levels of productivity and timeliness.

The workshop developed 26 process improvements to be implemented in a three phase (30-, 60-, 90-day) approach.

The following process improvement estimates resulted from the “value stream mapping” process:

- 45 percent reductions in routine sign order lead time, which starts when an order is placed and ends when the final product is delivered;
- 15 percent reduction in emergency and rush order lead time;



Staff members at the Central Sign Shop, located in South Central Region, apply letters to a highway sign for the Olympic Region.

- 87 percent reduction in order processing time;
- Increased average incoming yield from 45 to 95 percent for all three sign manufacturing processes from ordering through shipping. Incoming yield is the percentage of time that a sign order moves through the entire process without errors or rework; and
- An across the board decrease in price of routine orders by \$3.25 per square foot, a 20 percent decrease on average.

Lean helps reduce the collision data backlog

The Statewide Travel and Collision Data Office (data office), along with business partners from the Washington State Patrol, County Road Administration Board, and WSDOT’s Office of Information Technology conducted a Lean review of the Collision Data Processing and Reporting business functions in June 2012. The objective was to efficiently and effectively supply customers with complete, accurate and timely collision data.

Each year the data office receives more than 100,000 collision reports to process from various reporting agencies. The processing time — the period from when a collision occurs until the data is available to customers — can take anywhere from one day to eight months depending on the extent of the customer request. An eight-month delay is unacceptable to some customers requiring fully analyzed data.

The Lean review resulted in 15 process improvement ideas targeted at streamlining the workflow process over a 30-, 60- and 90-day time-frame. If all improvement ideas are fully implemented, it is estimated that approximately 6,000 annual labor hours will be saved in collision processing. This represents an estimated 26 percent reduction in processing time that will be used to reduce the current eight-month backlog.

Applying the 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 process so data is entered only once, allowing for on-time delivery of accurate data in response to customer requests.

Westbound lane opens before I-90 Snoqualmie work shuts down for winter

It has taken four years, more than 84,000 dump-truck loads of material, 163 closures for rock blasting, and enough concrete to fill over 470,000 wheelbarrows to reach the first major milestone on the I-90 Snoqualmie Pass East – Hyak to Keechelus Dam project, which will make the roadway wider, safer and more reliable in winter.

In October, WSDOT opened a section of the new westbound lanes, providing the 27,000 drivers who cross the pass every day a chance to see what I-90 will look like in the future. By next fall, the first three miles of the five-mile project will be complete, with the remaining two miles complete in 2017. Crews still have more dump-trucks to fill, rock blasting to complete and more concrete to pour, to expand I-90 and meet the current and future needs of travelers and the freight community.

WSDOT is reviewing a design alternative that could reduce maintenance and operations costs for the next 75 years. In 2011, the contractor for the final two miles of the five-mile project proposed a design modification to replace the existing concrete tunnel or “snowshed,” which shields a section of I-90 from avalanches, with bridges that would allow avalanches to pass underneath the highway. The original design called for an extended snowshed.

Because this modification wasn’t evaluated in the 2008 Final Environmental Impact Statement (FEIS), WSDOT is partnering with the contractor to prepare a Draft Supplemental EIS. The Draft Supplemental EIS compares and contrasts the effects of the avalanche bridges to those of the extended snowshed, and included a public comment period that ended November 19, 2012. A decision on which structure will be built is expected by January 2013.

Legislative support keeps I-90 project flowing to Keechelus Dam

The Legislature secured \$551 million in 2005 Transportation Partnership Account (TPA) gas tax to improve the first five miles of the 15-mile corridor from just east of the Hyak interchange to the west Easton interchange. Planned improvements include adding a lane in each direction, replacing deteriorating concrete, adding and replacing bridges and culverts, extending chain up/off areas and replacing the snowshed just east of the Snoqualmie Pass Summit with another structure to reduce winter avalanche closures.

Despite tough funding choices and a lean budget, the 2012 Legislature advanced \$106 million in TPA project funds into the 2013-2015 biennium. This is the second phase of the project and continues work for two additional miles from the Keechelus Dam vicinity to the Stampede Pass interchange. WSDOT is currently working on the design, which will include the first wildlife crossing over the highway in the corridor. It is scheduled for construction in 2015.

The last phase of the project, yet to be funded, includes adding 2.5 miles of new lanes in each direction, while stabilizing slopes and building new bridges and culverts from Stampede Pass to the Cabin Creek interchange.

I-90 Snoqualmie Pass East Highlights

WSDOT opened a section of the new westbound I-90 lanes in October 2012.

WSDOT is reviewing a design change for the snowshed that could reduce maintenance and operation costs for the next 75 years.

The 2012 Legislature is supporting an additional two miles of the project in the 2013-2015 biennium.

For more information on the project, visit www.wsdot.wa.gov/Projects/I90/SnoqualmiePassEast/.



The Gold Creek bridges are part of the I-90 Snoqualmie Pass project and improve mobility for some 27,000 daily motorists.

Mega-projects Special Report

WSDOT delivers more than \$1 billion in I-405 corridor work on time, on budget

I-405 Corridor Program Highlights

WSDOT has delivered more than \$1 billion in transportation investments through 12 I-405 corridor projects. All of them have been on time and on budget.

A new northbound auxiliary lane between Northeast 195th Street and SR 527 in Bothell increased travel speeds by 25 to 30 mph during the afternoon peak commute.

Two projects on some of the most congested commutes remain unfunded: I-405 between I-90 in Bellevue and SR 169 in Renton, and the I-405/SR 167 interchange.

The South Bellevue Widening project, completed in 2009, improved travel times by 13 minutes.



According to the 2010 Eastside Corridor Tolling study, drivers who use the express toll lanes on a typical morning commute from Lynnwood to Bellevue in 2013 will save 30 minutes in travel time.

Ongoing upgrades to the I-405/SR 167 corridor are easing heavy traffic congestion by addressing the “worst first” areas, improving road safety and creating regional jobs. Since 2002, WSDOT has delivered more than \$1 billion in transportation investments through 12 corridor projects. All of these projects have been on time and on budget. Another is in the construction phase and brings the total for all 13 projects to \$1.5 billion. These improvements, largely funded by the 2003 and 2005 gas tax initiatives, are increasing travel speeds, reducing travel times, and allowing for greater vehicle throughput during peak commute hours.

The Northeast 6th Street to I-5 Widening and Express Toll Lanes project started in June 2012 and represents the last funded project on I-405. As part of the project, WSDOT will build a northbound and southbound lane between Bellevue and Bothell and pair them with existing high occupancy vehicle (HOV) lanes. When the project is complete in 2015, drivers using the express toll lanes will save up to 30 minutes during their morning commutes on southbound I-405 from Lynnwood to Bellevue, according to estimates from the 2010 Eastside Corridor Tolling study.

Express toll lanes are critical because they:

- Operate the system efficiently and manage demand by using dynamic pricing that increases performance for all lanes in the corridor and moves more people than an additional general purpose lane;
- Generate revenue to help fund future improvements in the corridor, including a new lane between Renton and Bellevue and improvements to the I-405/SR 167 interchange; and
- Reduce congestion by strategically adding capacity and providing travelers with new options for more reliable trips on I-405.

Construction kicked off in 2003 with the Kirkland Nickel Stage 1 Widening project, which added a lane in each direction to I-405 between Northeast 85th Street and Northeast 124th Street. That same year, crews began work to extend Northeast 10th Street across I-405 in downtown Bellevue, which set the stage for the Northeast 8th Street to SR 520 Braided Ramps project in 2009. The Bellevue Braids project, partially funded by the American Recovery and Reinvestment Act (ARRA), was completed in 2012 and substantially improved access, increased traffic throughput by ten percent, and improved peak hour average speeds by ten to 22 mph between downtown Bellevue and mainline I-405.

Further south, WSDOT addressed some of the state’s worst traffic congestion on I-405 between Tukwila and Bellevue. The South Bellevue Widening project was completed in 2009 and reduced travel times by up to 13 minutes, providing more capacity with a new lane in each direction of I-405 and interchange improvements. In 2010, work was completed on the I-5 to SR 169 Stage 1 and 2 Widening projects, adding a new lane in both directions of I-405 between I-5 in Renton and SR 169, reducing congestion and improving travel times.

Drivers in the northern part of the corridor have benefited from the construction of a new northbound auxiliary lane between Northeast 195th Street and SR 527 in Bothell. The ARRA-funded project, which opened to traffic in 2010, increased travel speeds by 25 to 30 mph during the afternoon peak commute.

Funding gaps slow progress on improving congested I-405 commute routes

Two critical projects in some of the most congested commute locations in the state face funding gaps:

- I-405 between I-90 in Bellevue and SR 169 in Renton: A proposed \$890 million project would add a new lane on I-405 in each direction between I-90 in Bellevue and SR 169 in Renton. These new lanes could be paired with the existing HOV lanes to create a two-lane express toll system, completing a continuous 40-mile system on I-405 and SR 167. After this project is complete, drivers using the express toll lanes could shave 25 minutes off their typical afternoon commutes between Bellevue and Tukwila.
- I-405/SR 167 interchange: A proposed \$325 million I-405/SR 167 interchange direct connector would build new structures to connect the existing I-405 express toll lane to the existing SR 167 high occupancy toll (HOT)/express toll lane. The project would reduce delays for drivers approaching this congested area. The 2012 Legislature authorized the use of \$40 million in I-405 corridor funding - saved due to construction bids lower than initially estimated - to start preliminary engineering and make necessary property purchases.



Proposed improvements to the I-405/SR 167 interchange would reduce delays by constructing new structures to connect the existing I-405 carpool lane to the SR 167 HOT/express toll lane.

Completing these two unfunded projects will create a 40-mile express toll lane system and build upon the travel time savings already realized through the 12 completed projects on I-405.

Columbia River Crossing seeks to improve traffic, and the regional economy

Planning and permitting is currently under way for the Columbia River Crossing (CRC) project. The estimated \$3.1 billion to \$3.5 billion project is expected to serve as a long-term, comprehensive solution for improving safety and mobility in the five-mile segment of I-5 between SR 500 in Vancouver, Wash., and Victory Boulevard in north Portland, Ore. The CRC project has gained recognition for its national and regional importance because it is located on I-5 - a major international freight route that connects Mexico to Canada and links multiple high-volume ports.



The only moveable span bridge along the entire length of I-5 from Canada to Mexico is across the Columbia River. Lift events can cause considerable delay.

This mega-project includes constructing a new bridge across the Columbia River, improving five interchanges, extending light rail into downtown Vancouver from north Portland, and enhancing bicycle and pedestrian pathways.

Structural problems on current bridge impact region-wide economic vitality and safety

The current I-5 northbound and southbound bridge structures were built in 1917 and 1958. In 2011, they handled more than 124,000 vehicles each day.

With short on-ramps, limited sight lines, no shoulders to accommodate stalled vehicles, and high levels of use, the bridge can experience congestion for up to six hours a day or stop traffic completely when a section of the bridge is raised to accommodate marine vessels. Businesses throughout the region are affected by this congestion.

Additionally, according to a study commissioned by the Oregon Department of Transportation, Oregon and Washington are among the top trade-dependent states in the country and truck freight volumes in the region are projected to double by 2030. If improvements are not made to existing infrastructure, congestion models project a 15 hour per day delay increase by 2030.

Mega-projects Special Report

Columbia River Crossing Project

Without improvements to the bridge, projected increases in traffic are expected to raise the rate of collisions beyond their current rate of one per day. Another major safety concern is that the wooden pilings of the current bridge are set in liquefiable soil, putting them at risk of failure during a major earthquake.

Washington and Oregon co-managing project

The CRC project is jointly led by WSDOT and the Oregon Department of Transportation. Employees from both states are co-located in the CRC project's Vancouver office, along with staff from the regional transit authorities. Project staff provide information to Oregon and Washington legislative oversight committees and transportation commissions as they discuss project details.

Project funding to come from three major sources

Three major funding sources have been identified for the Columbia River Crossing project's estimated \$3.1 billion to \$3.5 billion cost: the federal government, the states of Washington and Oregon, and revenues anticipated from implementing a tolling system on the I-5 bridge.

Federal funding sources are targeted to contribute \$1.25 billion to the project. This includes an \$850 million New Starts grant from the Federal Transit Administration (FTA) and \$400 million from the Federal Highway Administration for construction. Multimodal improvements to a major freight route uniquely position the project for both federal highway and transit funding. The application process for the \$850 million FTA grant began in 2008.

Matching contributions from Washington and Oregon are necessary to receive federal funds. The financial plan includes a total contribution from the states of \$900 million. CRC project staff members are facilitating discussions with the state legislatures on the states' equity contributions.

The remaining funding is expected to come from tolling operations on the new I-5 bridge.

Recent project progress made on light rail work

Preliminary engineering for light rail progressed to the 30 percent mark in 2012, keeping the project on schedule for the New Starts grant application process. Required pre-construction plans were submitted to FTA in 2012, including a Real Estate Acquisition Management and Utility Management Plan.

In 2012, the Washington Legislature granted toll authority for the new I-5 bridge, a necessary step for FTA's New Starts process.



Northbound traffic backs up as drivers approach the I-5 bridge. Closely spaced interchanges, narrow lanes and limited sight lines contribute to congestion in the project area.

The transportation commissions from Washington and Oregon met in September 2012 to establish a toll rate-setting process and a consultant was hired to conduct an investment grade analysis in advance of toll bonds sales.

In August 2012, the CRC project was identified as a national priority in President Obama's "We Can't Wait initiative," which provides federal permit streamlining. CRC will apply for several federal permits in 2013 and 2014 including a general bridge permit from the U.S. Coast Guard.

Updated river user data was collected in mid-2012 on vessel size, frequency of use, and future business plans. This data will be used in the general bridge permit application to the U.S. Coast Guard at the end of the year. Analysis was conducted in fall 2012 to identify impacts and potential mitigation strategies for affected businesses. At the same time, a regional economic impact analysis assessed I-5 Bridge replacement outcomes for I-5 users, rivers users and the region as a whole.

Next steps

Going into 2013, the CRC staff is working to:

- Support funding discussions in the 2013 legislative sessions,
- Submit general bridge and permit applications,
- Refine engineering designs for the initial construction program,
- Conduct subsurface utility engineering investigations and develop relocation plans, and
- Conduct community outreach as planning progresses.

Southwest Washington I-5 Expansion Program addresses capacity issues

WSDOT is improving an 18-mile stretch of southwest Washington's I-5 corridor to address growing demand in Thurston and Lewis counties. The existing roadway was constructed in the late 1960s and has not been substantially updated since. Roadway capacity is regularly exceeded during peak travel periods. The I-5 Expansion Program includes Nickel- and TPA-funded projects that build new lanes, improve collector-distributor lanes, construct new bridges, and add traffic management features, such as variable message signs. The \$352 million in enhancements are expected to improve traffic flow and reduce accidents for the 56,000 daily drivers.

Completed projects improve I-5 travel between Grand Mound and Maytown

I-5 - Rush Road to 13th (Lewis)

This \$53.6 million project, completed June 2009, added a lane in each direction, a new interchange to support freight access to the Port of Chehalis, and extended the on- and off-ramps.

I-5 - Grand Mound to Maytown: Stage 1 (Thurston)

This \$90 million project added a new lane in both directions on eight miles of I-5 between Grand Mound and Maytown. The project was operationally complete in November 2010.

I-5 - Blakeslee Junction to Grand Mound (Thurston and Lewis)

This \$42 million project widened four miles of northbound and southbound I-5, from two lanes to three, between Blakeslee Junction in Lewis County to just south of the Grand Mound interchange in Thurston County. The project was operationally complete in November 2011.

Project under construction will add bridges and capacity on I-5

I-5 - Mellen Street to Blakeslee Junction: Stage 1 (Lewis)

Mellen Street to Blakeslee Junction is the last funded project of this program and addresses aging infrastructure and capacity issues. To minimize delay from right of way acquisition, the project is being delivered in two stages. The original \$155 million budget for the project was reduced to \$140 million due to favorable bids for Stage 1. This stage will complete the project's in-water work, add collector-distributor (CD) bridges over the Skookumchuck River, and construct a southbound bridge at Blakeslee Junction. It is scheduled to be complete in spring 2013.

I-5 - Grand Mound to Maytown: Stage 2 (Thurston)

This \$26.6 million stage of the Grand Mound to Maytown project modified the interchange at I-5 and SR 12 to address traffic and safety issues. The intersection was changed to a diamond design which reduces traffic merging. It is scheduled to be complete in November 2012.

Project in preliminary engineering phase to give drivers a high road over railroad

I-5 - Mellen Street to Blakeslee Junction: Stage 2 (Lewis)

Stage 2 of the \$140 million I-5 Mellen Street to Blakeslee Junction project will finish new CD lanes, widen I-5 to three lanes in each direction north of Harrison Avenue, build new bridges over the rail tracks at Blakeslee Junction, and repair and paint the Skookumchuck River bridges. The project is on schedule to be advertised for construction in early 2013.

Future unfunded improvements look to address potential flood plain issues

I-5 - 13th Street to Mellen Street (Lewis)

The final five-mile segment in the Centralia/Chehalis area is in need of widening, but solutions to flooding along this corridor must be developed before road projects are funded. WSDOT is evaluating alternatives to protect I-5 and the Chehalis-Centralia Airport, and to improve access to critical facilities during flood events as directed by the 2011 Legislature. Meanwhile, WSDOT continues to seek low-cost interim solutions that reduce congestion and improve safety.

Southwest Washington I-5 Expansion Highlights

Nickel and TPA programs funded 18 miles of improvements between Rush Road and Maytown. A five-mile section in the middle, subject to flooding in severe storm events, remains unfunded.

Three projects were operationally complete as of October 2012. Two of these were completed within the last year.

Favorable bids on the I-5 expansion project resulted in an estimated savings of \$15 million, down from the original \$155 million budget.

The I-5 Expansion Program will improve traffic flow in heavily congested stretches of the corridor and is expected to reduce accidents.

The I-5 Expansion Program will add new traffic management features to the corridor including variable message signs, traffic cameras, and fiber optic lines.

Workforce Level and Training Quarterly Update

WSDOT workforce level continues to decline

Workforce Level and Training Highlights

WSDOT employed 6,722 full-time permanent workers as of September 30, 2012, two percent fewer than in 2011.

Number of permanent full-time employees

June 2003 - September 2012



Data source: Department of Personnel Data Warehouse, HRMS, WSDOT and the Ferry System payroll.

As of September 30, 2012, WSDOT employed 6,722 permanent full-time employees, 57 fewer than the second quarter ending June 30, 2012. This is 136, or two percent, fewer employees than the 6,858 employed at the end of September 2011.

The chart below shows the number of permanent full-time employees since June 2003. For comparison, the current number of permanent full-time employees is about equal to the number in 2006, shortly after the approval of the Transportation Partnership Account (TPA) funding package. The current employment is 7.7 percent below the peak level of 7,280 in June 2010.

The total number of full-time equivalents will generally exceed the number of permanent full-time employees because it includes seasonal, permanent part-time, and non-permanent/on-call workers. The total does not include consultants.

Three of seven mandatory training courses met completion rate goal for third quarter of 2012

WSDOT has seven mandatory training courses for employees to educate and inform a diverse workforce on agency policies and methods for maintaining a respectful workplace. The rate of employees completing training courses declined for six of the seven mandatory courses for the second and third quarters of 2012, compared to the first quarter of

2012. A goal of 90 percent completion applies to each of the seven mandatory classes. Three of the courses met or exceeded this completion rate goal.

WSDOT expects that the recently-deployed Learning Management System (LMS) will streamline the tracking of training completion by eliminating paper records and class rosters that were entered by hand into the previous training system. Future editions of the *Gray Notebook* will discuss observed changes to the training compliance rates that may be related to the improved tracking system and online course offerings.

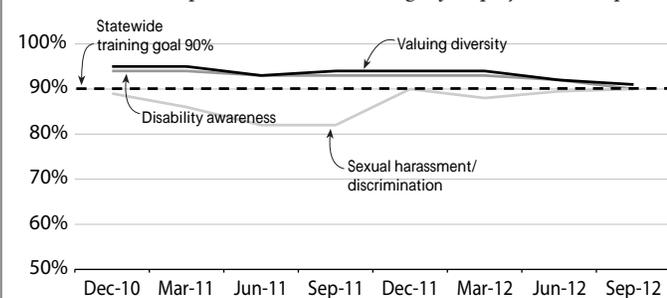
All employees must take mandatory diversity and policy training courses within six months of hire. Employees must also take periodic refresher classes for three of the mandatory courses. These classes are required to ensure that employees are apprised of any policy changes, and to provide opportunities for discussion and continued learning.

The new Learning Management System streamlines the tracking process and increases access to training resources.

Three of the seven mandatory policy and diversity courses met or exceeded the 90 percent completion rate goal.

Required diversity training for all WSDOT employees

December 2010 - September 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 publication date.

Training completion has mixed results

The graph at left illustrates the completion rates over the past two years for WSDOT diversity training classes compared to the goal of 90 percent completion. Employee training completion for the three mandatory diversity courses was as follows for the second and third and quarters of 2012:

1. Disability Awareness remained above the goal at 92 percent second quarter and 90 percent third quarter,
2. Valuing Diversity stayed above the goal at 92 percent in the second quarter and 91 percent in the third quarter, and
3. The Sexual Harassment and Discrimination class met the goal of 90 percent for both the second and third quarters of 2012. A refresher class is required every three years for managers and every five years for employees.

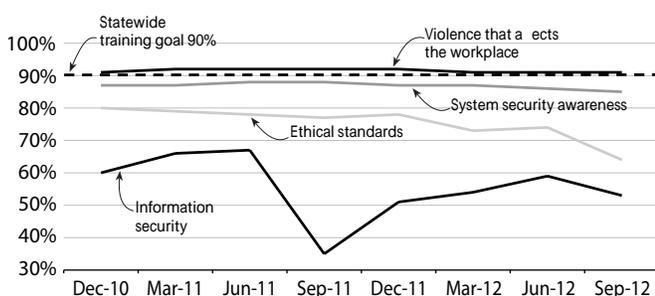
Mandatory training compliance declines; new training system is deployed

The graph below shows the completion rate over the past two years for the policy training classes compared to the 90 percent completion goal. Employee training completion for the four mandatory policy courses was as follows for the second and third quarters of 2012:

4. The course on violence that affects the workplace met the goal in the second quarter and then dipped to 89 percent in the third quarter. This course has held steady between 91 percent and 92 percent over the past two years, in part because refresher courses are not required.
5. Information Security training is required annually for all state employees. Training completion dipped to a low of 35 percent in the third quarter of 2011, but improved over the past year to 59 percent in the second quarter and then decreased to 53 percent in the third quarter 2012.
6. System Security Awareness training dipped further below the goal to 86 percent in the second quarter and 85 percent in the third quarter of 2012. This course has held steady between 87 percent and 88 percent during the past two years, in part because refresher courses are not required.
7. Ethical standards training was below the goal at 74 percent in the second quarter and down to 64 percent in the third quarter of 2012. A refresher class is required every three years for all employees.

Required policy training for all WSDOT employees

December 2010 - September 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 publication date.

New Learning Management System provides increased access to state training resources

WSDOT successfully deployed the Learning Management System (LMS) during summer 2012. LMS delivers a long anticipated upgrade to the system used to manage all aspects of employee training. Washington State Department of Enterprise Services manages the new LMS, which will be used by all Washington state employees, as well as county, city, and higher-education employees throughout Washington. LMS will enhance WSDOT's ability to track compliance, streamline the process for class enrollment, and expand the delivery of online classes. The data from the old training management system was transferred into the LMS to retain past documentation of employee attendance at mandatory and elective courses. The following functions are currently available through the LMS:

- Training managers can schedule classes
- Employees can self-register for available classes
- Employees can view and print their training histories
- Training coordinators can register employees for classes
- New eLearning courses can be uploaded into the system
- Certificates of completion no longer need to be printed for most classes – the system automatically captures class completions

On-line training opportunities are offered to employees that reach beyond mandatory courses

WSDOT purchased on-line learning resources for employees from a private vendor. WSDOT employees now have access to over 5,000 courses and 30,000 digitized books anytime and anywhere with an Internet connection.

The range of courses offered is broad, encompassing business skills such as administrative support, communication, finance, and leadership; desktop skills such as Adobe and Microsoft Office; safety and health; and Information Technology professional certifications. There is also a specialized collection of courses intended for all supervisors throughout WSDOT. The management training series is comprised of 42 leadership competencies including coaching, delegation, managing conflict, project management, and strategic thinking.

Highlights for the quarter ending September 30, 2012

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

New ramps at I-5 and SR 18 in Federal Way let traffic “fly over” congestion

Sometimes the best way to avoid a traffic jam is to fly over it. That’s exactly what drivers are doing in Federal Way with two new elevated ramps between I-5 and SR 18. The new ramps opened in July 2012, six months ahead of schedule.

The aptly-named flyover ramps route vehicles directly from one highway to the other – a seamless transition that reduces merging and lane changing at different speeds. One ramp takes vehicles from westbound SR 18 to southbound I-5, while the other takes vehicles from eastbound SR 18 to northbound I-5. The new ramps are the cornerstone of a \$112.8 million project aimed at reducing congestion at the I-5/SR 18/SR 161 interchange. The project also rebuilt ramps from eastbound SR 18 to southbound I-5 and ramps to SR 161. The ramp from SR 18 to SR 161 opened in late September.

The area is a key corridor for businesses such as Wild Waves and Weyerhaeuser, and for trucks hauling freight to and from the Kent/Auburn industrial complex.



Crews install steel girders to support the new flyover ramps at the I-5/SR 18 interchange.

New ramp meters to ease congestion on I-5

New ramp meters will help smooth traffic flow and ease congestion along eight miles of I-5 between Tukwila and Federal Way. Ramp meters are being installed at four separate interchanges where traffic routinely slows during the morning and afternoon rush-hour commutes.

The average morning commute speed for northbound traffic is 37 mph on I-5 between Federal Way and Tukwila, and it’s slightly faster at 40 mph southbound for the evening commute. When traffic signals at intersections near these ramps turn green, a

“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**

dozen or more cars enter I-5 at the same time, further clogging already slow traffic on the interstate.

Ramp meters eliminate this by allowing one or two vehicles onto the interstate at a time and are proven to reduce collisions by at least 30 percent. Every minute a lane is blocked by a collision or other incident it adds four to ten minutes of traffic delay, so reducing collisions at these merge areas also reduces congestion.

Contractor crews working for WSDOT began installing meters along northbound and southbound I-5 in August. The new meters will be located on the following ramps: South 188th Street to northbound I-5, South 188th Street to southbound I-5, South 200th Street to southbound I-5, SR 516 westbound to northbound I-5, SR 516 eastbound to northbound I-5, SR 516 to southbound I-5, South 272nd Street to northbound I-5, and South 272nd Street to southbound I-5.

BETTER

\$1.4 million in Pre-existing Funds paid for ramp meters on I-5 between Tukwila and Federal Way.

Automated speed-enforcement cameras installed to slow drivers at Snoqualmie Pass

As an attempt to slow drivers and improve safety, an automated speed-enforcement camera was placed in a construction zone on I-90 over Snoqualmie Pass in September. For about one month, travelers saw signs warning “Speed limit photo enforced” prior to entering the five-mile-long work zone of the I-90 Snoqualmie Pass East – Hyak to Keechelus Dam project.

The Legislature directed WSDOT to use the automated speed-enforcement cameras in active construction zones as a pilot program that ends June 2013. Winter weather hit and construction moved off the I-90 roadway in October. WSDOT is still evaluating new locations for the cameras. In 2008 and 2009, the cameras were used in two work zones on I-5 south of Olympia, which helped reduce speeds in both areas.

A vehicle parked near the highway will monitor speeds both eastbound and westbound and a camera photographs the rear

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



The signs on I-90 over Snoqualmie Pass warn drivers of the speed enforcement camera.

license plates of speeding vehicles. Drivers caught speeding by automated enforcement in the I-90 Snoqualmie Pass work zone could face a \$137 fine.

The automated speed-enforcement camera is part of WSDOT's Give 'em A Brake program, which encourages drivers to slow down in work zones. Slowing motorists through areas under construction not only protects workers, it also protects the drivers themselves. Nationally, more than 90 percent of work-zone-related injuries involve drivers and their passengers.

WSDOT installing tougher, brighter lane stripes on some of the state's busiest highways

The worn-out stripes along some of the state's busiest highways will soon be a thing of the past as crews restripe about 40 miles of roadway, in eight counties, along six routes. The new stripes are made out of a more durable material that will withstand wear and tear, improve visibility for drivers and is more durable in harsh conditions.

In September, WSDOT's contractor Specialized Pavement Marking started work on a \$2.7 million safety project to restripe high-traffic locations on I-5. The restriping is occurring in Marysville, Lynnwood, Lacey, Tumwater and the express lanes in Seattle, SR 240 in Richland, U.S. 2 in Cashmere, U.S. 12 in Walla Walla and I-205 near Vancouver, Wash.

Crews spent about 40 days laying down the more durable, plastic-like lane lines across the state, finishing for the season in November. Work in southwest Washington will be completed in spring 2013.

Next SR 99 bridge south of downtown Seattle opens to drivers this fall, ahead of schedule

The southern half of Seattle's State Route (SR) 99 Alaskan Way Viaduct is gone, a vanishing act performed by demolition crews last fall about six months ahead of schedule. The encore: completion of the new SR 99 south of downtown in September 2012.

WSDOT's \$114.6 million contract to build the new SR 99 roadway near Seattle's stadiums – known as the South Holgate Street to South King Street project – was completed one year ahead of schedule and on budget. Crews put the finishing touches on the second of two side-by-side bridges, which will eventually connect to the SR 99 tunnel. The east bridge will carry northbound SR 99 traffic with southbound traffic remaining on the west bridge. The new bridges provide drivers with three lanes in each direction. A temporary construction bypass connects the new roadway to the remaining viaduct along the downtown waterfront. The bypass will remain in place until the SR 99 tunnel opens in late 2015.

The early-completion announcement follows WSDOT's recent award of a construction contract for a new overpass at South Atlantic Street that will allow freight and other traffic to bypass a busy train track. Atkinson Construction bid \$29.4 million to build the overpass, \$6.2 million under WSDOT's estimate. Construction started in August, just as work on the new SR 99 bridges wrapped up. The new overpass, part of the Alaskan Way Viaduct Replacement Program, is scheduled to open by December 2013. Finishing the SR 99 bridges early not only saves time and money, it gives the adjacent Atlantic Street overpass and tunnel contractors more room to efficiently complete their work.



Crews clear rubble during demolition of the SR 99 Alaskan Way Viaduct's south end, completed six months ahead of schedule.

Highlights for the quarter ending September 30, 2012

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

New automated express lanes save drivers time

If time is money, then WSDOT's newly automated I-5 express lanes in Seattle are certainly a good investment. In July, WSDOT streamlined the way engineers switch the I-5 reversible express lanes. A switch that used to take up to an hour is now accomplished in just 15 minutes.

The newly automated system uses 45 new cameras, new signs, new controllers, new signal and data cabinets, two new highway advisory radio stations and dozens of miles of underground fiber lines and Ethernet connections to reduce the time it takes to switch the express lanes and communicate information.

Translated into vehicles, it means an increased capacity for 900 more vehicles per day

during the week and 1,000 more vehicles per day on weekends. Mainline congestion will improve as more vehicles move onto the express lanes, and engineers estimate drivers will save about six minutes on every trip between Albro Street and Northgate.

For years, WSDOT had a team drive through and manually switch each of the 23 signs and ramps. Traffic engineers now can verify from a desk in Shoreline that the gates are closed and that signs are working and displaying the right message. One person will still drive the entire seven-mile corridor for a final visual inspection as a safety precaution.



I-5 express lane entrance at Pike Street in Seattle.

FASTER

Automating the reversal of the express lanes results in a trip time that is about six minutes shorter through downtown Seattle.

Small team of investigators saves millions

Motorists seldom need to drive far on the highway to see it – a dented stretch of guardrail, a damaged strand of cable barrier or chunks of concrete chipped off the underside of a bridge.

It is WSDOT's job to fix the damage and state taxpayers typically pay for this through gas taxes. More often now, however, the person who caused the damage is picking up the tab. Recovered costs help stretch transportation dollars further to keep highways maintained and save taxpayer dollars.

WSDOT estimates an annual average of \$9.3 million in damage occurs to state highways and other facilities, such as rest areas. The agency has a team investigating damage cases statewide. They begin by matching highway workers' reports of damage

with Washington State Patrol accident reports. During the last fiscal year, the investigative team collected some 3,600 payments for all types of damages, recovering \$6.9 million to help pay for materials, labor and equipment needed to keep bridges sound and highways safe.

At times the cases go unresolved. In situations like a damaged cable barrier, workers frequently find the cable did its job by stopping the vehicle, but the driver simply went on their way without reporting it. Other times, when more than one vehicle is involved, the driver who damaged the guardrail might have swerved due to the actions of another driver. WSDOT files an incident claim only when a responsible party is clearly identified.

CHEAPER

Damage recovery investigations have a 10:1 return on investment ratio.

Award for cost savings in ferry construction

Delivering value for transportation dollars was among attributes cited in a regional award presented in July 2012 to WSDOT for building three new ferries under budget.

WSDOT won the regional "Under Budget, Large Project" category and was recognized for building three 64-car, 750-passenger vessels on time and at a savings to taxpayers. WSDOT is now entered into a competition for one of two national awards that carry \$10,000 in prizes. This is the fifth time WSDOT has won an award in the America's Transportation Awards competition sponsored by the American Association of State and Highway Transportation Officials.

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

Four years ago, Washington State Ferries (WSF) began work to restore service to more than 660,000 customers annually who rely on the SR 20 marine highway between Port Townsend and Coupeville. Ferries on that route had been removed from service for safety reasons.

WSF delivered three new ferries as a design-bid-build project in 42 months – exceptionally quick by shipbuilding industry standards – and nearly \$7 million under budget. The Chetzemoka, Salish and Kennewick were constructed, and two of them now sail between Port Townsend and Coupeville.

WSF used an existing vessel design that met the route’s operating requirements, shortening the preliminary engineering timeline from nearly 15 months to six months. Work was divided among four state shipyards to further expedite ferry construction and assembly. This sustained jobs for Washington’s shipbuilding industry and helped local economies.

“We’ve proven beyond a shadow of doubt that we can build

CHEAPER

WSDOT built three new ferries in 42 months. They were delivered nearly \$7 million under budget.

vessels in the state of Washington on time and under budget,” said state Transportation Secretary Paula Hammond. “Winning this award honors the hard work we do every day, and we’re proud to receive it.”



The M/V Salish began service on the Port Townsend/Coupeville route in July 2011. Photo courtesy of VIGOR/Dean Wallace.

Vehicle registration holds placed for some toll violators on SR 520, Tacoma Narrows Bridge

Drivers who ignored notices for unpaid tolls on the SR 520 or Tacoma Narrows bridges may find they are unable to renew their vehicle registration. Starting in September, WSDOT



Drivers who opt not to pay tolling infractions can incur additional penalties and might even have holds placed on their vehicle registration by the Washington State Department of Licensing (DOL).

began providing the Washington State Department of Licensing (DOL) with approximately 7,900 holds for vehicles. The DOL will keep the registration holds in place until all tolls, accrued fees and penalties are paid.

WSDOT issued the first civil penalties relating to unpaid tolls in April 2012, and is using the vehicle license hold process as one of the final steps to ensure tolls are enforced fairly. Owners of vehicles with registrations that expire in December 2012 will receive the first renewal notices from DOL with holds resulting from unpaid notices of civil penalties. Drivers with unpaid civil penalties will not be able to renew their registration until they resolve the violations.

Vehicle registration holds are only put in place after other attempts to collect tolls have been exhausted. The registered owner of a vehicle receives a toll bill in the mail about 14 days after crossing the bridge. Drivers who don’t pay their first toll bill within 15 days of receiving the bill receive a second notice with a \$5 reprocessing fee. Civil penalty notices with a \$40 per transaction penalty are issued more than 80 days after the bridge crossing. Registered vehicle owners have up to 20 days to respond to WSDOT with payment or to dispute the civil penalty. WSDOT only notifies DOL to place a vehicle registration hold, when the violations remain unpaid.

Vehicle owners can contact the Good To Go! customer service center to settle unpaid tolls or to check if they have a vehicle registration hold. DOL will notify vehicle owners of any registration holds via renewal notices or when owners attempt to renew their tabs.

Highlights for the quarter ending September 30, 2012

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



Washington state Transportation Secretary Paula Hammond points out features on the 10-foot long, motorized model of the SR 99 tunnel boring machine in August. The model is on display at Milepost 31, the Alaskan Way Viaduct Replacement Program's information center in Seattle's Pioneer Square.

Tunnel boring machine replica debuts

The world's largest-diameter tunnel-boring machine will arrive in Seattle next year, but you don't have to wait until then to check it out. A ten-foot long motorized model and other exhibits are now on display at Milepost 31, located at 211 First Avenue South in Seattle, open between 11 a.m. and 5 p.m. Tuesdays through Saturdays. Admission is free. Seattle Tunnel Partners, the tunnel contractor, loaned the model to Milepost 31.

Milepost 31 is an award-winning information center that provides an inside look at the SR 99 Tunnel Project, and celebrates the people and projects that shaped historic Pioneer Square. Since opening in December 2011, thousands of visitors have come to view its artifacts and interactive exhibits that describe the tunnel, the neighborhood's changing landscape and the role transportation has played in the city's development.

"This model is an invaluable tool for education," said Secretary of Transportation Paula Hammond. "It helps show the scale of the project and is a symbol of all the technological innovations that will make it a success."

WSDOT website makes parking easier in Seattle neighborhoods

A recently launched website, www.downtownseattleparking.com, featuring hours, rates and directions for nearby parking spaces is making parking in downtown Seattle's Pioneer Square and waterfront neighborhoods easier. Designed to help drivers

locate affordable, convenient parking, WSDOT launched the site in August 2012 to encourage visitors to spend time in two of Seattle's most popular neighborhoods during SR 99 tunnel construction and other local work.

The website features an interactive map that shows the locations of parking garages and lots in both neighborhoods. Addresses, directions, rates and hours are available for each parking facility. Visitors can access information via the Web before leaving home, or via mobile phone. Nearby businesses hope the site will match their customers with the perfect parking space.

SMARTER

WSDOT launches a new website to improve parking in downtown Seattle.

Even before construction removed parking spaces in Pioneer Square and on the waterfront, parking was the biggest barrier for people coming to downtown Seattle according to a four-county perception study conducted in 2011 by the Downtown Seattle Association (DSA) and Metropolitan Improvement District. Survey respondents specifically mentioned a perceived lack of parking spaces and/or affordable options.

Efforts to boost parking are funded by WSDOT as part of its commitment to mitigate for the loss of parking during SR 99 tunnel construction. WSDOT has worked closely with the Seattle Department of Transportation, DSA, the Alliance for Pioneer Square and other stakeholders from the affected neighborhoods to develop a number of strategies to make parking easier.

WSDOT adds toll-free telephone, email for disabled

For people with disabilities and others who need information about accommodation and access to the state-owned transportation system, contacting WSDOT has never been simpler. A toll-free telephone number, 1-855-362-4ADA (4232), and email, wsdotada@wsdot.wa.gov, assists people with questions or concerns about the Americans with Disabilities Act and access to Washington state highways, ferries and other WSDOT facilities, services and programs.

The toll-free phone line to WSDOT's Diversity/ADA Affairs office began in July 2012 and now provides a single point of contact for people with accommodation requests or comments about services. The phone line is staffed 8 a.m. to 5 p.m. Monday through Friday. Outside normal business hours, callers may leave a message. Email messages can be sent at any time to wsdotada@wsdot.wa.gov, and people who are deaf or hard of hearing can contact WSDOT through the Washington State Relay by dialing 711.

Navigating the WSDOT Information Stream

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, the Governor and her leadership team meet in "GMAP forums" with agency directors to review performance results and develop action plans for improvement. These meetings provide an opportunity for candid conversations about what is working, what is not, and how to improve results.

WSDOT regularly reports 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 46 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 press 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*

A partial list of acronyms and abbreviations appearing in this issue

AASHTO	American Association of State Highway and Transportation Officials	MOVES	Motor Vehicle Emission Simulator
ADA	Americans with Disabilities Act	MP	Milepost
ARRA	American Recovery and Reinvestment Act	M/V	Marine Vehicle
BNSF	Burlington Northern Santa Fe	NB	Northbound
BTD	Biennium to date	NEPA	National Environmental Policy Act
CD	Collector-distributor	NOAA	National Oceanic and Atmospheric Administration
CIP	Capital improvement plan	NSC	North Spokane Corridor
CMAQ	Congestion Mitigation and Air Quality	NTD	National Transit Database
CO	Carbon monoxide	OEO	Office of Equal Opportunity
CRC	Columbia River Crossing	OFM	Office of Financial Management
CSI	Customer satisfaction index	OSHA	Occupational Safety and Health Administration
CY	Calendar year	PCC	Palouse River and Coulee City
DART	Days away, restricted, or transfer	POG	Priorities of Government
DSA	Downtown Seattle Association	PEF	Pre-existing Funds
EB	Eastbound	PM	Particulate matter
EOB	End of biennium	QPR	Quarterly Project Report
EPA	Environmental Protection Agency	SAO	Strategic Assessment Office
ERP	Expert review panel	SB	Southbound
ESA	Endangered Species Act	SCIP	Statewide Capital Improvement Program
ETC	Electronic Transaction Consultants	SEPA	State Environmental Policy Act
FAA	Federal Aviation Administration	SR	State route
FEIS	Final Environmental Impact Statement	TIGER	Transportation Investment Generating Economic Recovery
FHWA	Federal Highway Administration	TPA	Transportation Partnership Account
FRA	Federal Railroad Administration	ULSD	Ultra low sulfur diesel
FTA	Federal Transit Administration	USDOT	United States Department of Transportation
FY	Fiscal year	USFWS	United States Fish and Wildlife Service
GIS	Geographic Information Systems	UW	University of Washington
GMAP	Government Management, Accountability and Performance	WB	Westbound
GNB	Gray Notebook	WSDOT	Washington State Department of Transportation
HOV	High occupancy vehicle	WSF	Washington State Ferries
HOT	High occupancy toll	WSP	Washington State Patrol
I	Interstate	YTD	Year to date
IR	Incident Response		
JOPS	Joint Operations Policy Statement		
LEAP	Legislative Evaluation and Accountability Program		
L&I	Labor and Industries		
LED	Light-emitting diode		
LMS	Learning Management System		
LNG	Liquefied natural gas		
MOA	Memoranda of Agreement		
MOU	Memoranda of Understanding		

Gray Notebook Edition Index

Calendar year	Edition number / Date (Washington state fiscal year and quarter)			
2001	1 / Mar 31, 2001 (Q3 FY2001)	2 / June 30, 2001 (Q4 FY2001)	3 / Sept 30, 2001 (Q1 FY2002)	4 / Dec 31, 2001 (Q2 FY2002)
2002	5 / Mar 31, 2002 (Q3 FY2002)	6 / June 30, 2002 (Q4 FY2002)	7 / Sept 30, 2002 (Q1 FY2003)	8 / Dec 31, 2002 (Q2 FY2003)
2003	9 / Mar 31, 2003 (Q3 FY2003)	10 / June 30, 2003 (Q4 FY2003)	11 / Sept 30, 2003 (Q1 FY2004)	12 / Dec 31, 2003 (Q2 FY2004)
2004	13 / Mar 31, 2004 (Q3 FY2004)	14 / June 30, 2004 (Q4 FY2004)	15 / Sept 30, 2004 (Q1 FY2005)	16 / Dec 31, 2004 (Q2 FY2005)
2005	17 / Mar 31, 2005 (Q3 FY2005)	18 / June 30, 2005 (Q4 FY2005)	19 / Sept 30, 2005 (Q1 FY2006)	20 / Dec 31, 2005 (Q2 FY2006)
2006	21 / Mar 31, 2006 (Q3 FY2006)	22 / June 30, 2006 (Q4 FY2006)	23 / Sept 30, 2006 (Q1 FY2007)	24 / Dec 31, 2006 (Q2 FY2007)
2007	25 / Mar 31, 2007 (Q3 FY2007)	26 / June 30, 2007 (Q4 FY2007)	27 / Sept 30, 2007 (Q1 FY2008)	28 / Dec 31, 2007 (Q2 FY2008)
2008	29 / Mar 31, 2008 (Q3 FY2008)	30 / June 30, 2008 (Q4 FY2008)	31 / Sept 30, 2008 (Q1 FY2009)	32 / Dec 31, 2008 (Q2 FY2009)
2009	33 / Mar 31, 2009 (Q3 FY2009)	34 / June 30, 2009 (Q4 FY2009)	35 / Sept 30, 2009 (Q1 FY2010)	36 / Dec 31, 2009 (Q2 FY2010)
2010	37 / Mar 31, 2010 (Q3 FY2010)	38 / June 30, 2010 (Q4 FY2010)	39 / Sept 30, 2010 (Q1 FY2011)	40 / Dec 31, 2010 (Q2 FY2011)
2011	41 / Mar 31, 2011 (Q3 FY2011)	42 / June 30, 2011 (Q4 FY2011)	43 / Sept 30, 2011 (Q1 FY2012)	44 / Dec 31, 2011 (Q2 FY2012)
2012	45 / Mar 31, 2012 (Q3 FY2012)	46 / June 30, 2012 (Q4 FY2012)	47 / Sept 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 moved the index online. This move will be complemented by a revised online index that is currently under construction. It will be 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

Persons with disabilities may request this information be prepared and supplied in alternative formats (large print, Braille, cassette tape, or on computer disk) by emailing the Washington State Department of Transportation Diversity/ADA Compliance 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 through Washington Relay at 7-1-1.

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

The Washington State Department of Transportation (WSDOT) assures that no person shall, on the grounds of race, color, national origin, sex, age, disability, or income status, as prescribed by Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and related statutes, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity. WSDOT further assures every effort will be made to ensure nondiscrimination in all of its programs and activities, whether or not those programs and activities are federally funded. For questions regarding WSDOT's Title VI Program, please call (509) 324-6018 (Eastern Washington Title VI Coordinator), or (360) 705-7082 (Western Washington Title VI Coordinator).

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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