



**Washington State
Department of Transportation**

The Gray Notebook

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

Paula J. Hammond, P. E.
Secretary of Transportation

2001-2011
A decade of transparency

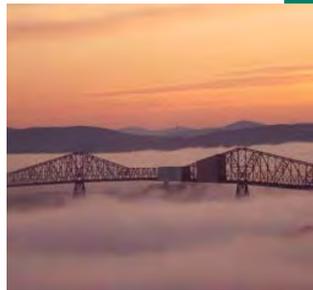


**GNB
43**



**Quarter ending
September 30, 2011**

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In this edition

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- Noise Quality
- Air Quality
- Endangered Species Act Documentation



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- Highway System
- Safety Programs: Before & After Results
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Executive Summary



On this quarter's cover (from top):

A birdcage? Spiderman? No, it's a worker tying rebar for the abutment at the south end of the new southbound SR 99 bridge.

A small plane waits on the tarmac of Olympia Regional Airport, one of the oldest public airports in America.

The Lewis & Clark Bridge emerges from a bank of fog.

Replacing the roof of the Anacortes Ferry Terminal.

Workers install brackets on the east side (facing westbound traffic) on the east highrise of the SR 520 bridge.

This page: High water in high summer: Christine Falls in Mt Rainier NP.

Performance highlights in this edition of the *Gray Notebook*

Since 2001, WSDOT's quarterly *Gray Notebook* (also called the *GNB*) has served as one of the agency's primary accountability reporting tools. It contains quarterly, semi-annual, and annual updates on a wide range of agency activities, programs, and capital project delivery.

This edition of the *Gray Notebook* presents information on WSDOT's performance for the quarter ending September 30, 2011, as well as five annual and two semi-annual reports. Selected highlights from this edition include:

- **Analysis of 29 highway safety projects showed they helped reduce serious injury and fatal collisions by 14%.** All collisions that resulted in any degree of injury or fatality were reduced by 19%. (*Highway System Safety: Focus on Before and After Results*; pp. 5-8)
- **WSDOT prioritizes repairs and improvements to its 288 primary buildings to maximize its investment returns.** About 66% of all primary buildings are more than 25 years old, and 40% are in 'poor' condition. The backlog of repairs and improvements that would make them safer, more durable, or more operationally efficient is estimated to cost \$142.7 million. (*Capital Facilities Annual Report*; pp. 10-14)
- **WSDOT awarded 43 grants to help fund projects at public airports across the state in FY 2011.** Federal, state, and local contributions brought the value of awarded grants to almost \$9.3 million. (*Aviation Annual Report*; pp. 16-18)
- **WSDOT estimates that the economic benefit to businesses and the traveling public from the assistance provided by the Incident Response program was about \$11 million in the third quarter of 2011.** Analysis presents the incident clearance times along with the cost of delay by incident type and duration. (*Incident Response Quarterly Report*; pp. 19-23)
- **WSDOT's noise reduction research sees varied degrees of success.** Quieter asphalt paving has not shown consistent, long-lasting results, while tests of quieter concrete surface texturing treatments show promise. WSDOT continues to research cost-effective solutions. (*Noise Quality Annual Report*; pp. 30-34)
- **WSDOT works hard to help improve Puget Sound area air quality, as ferries and other vessels contribute to regional maritime emissions.** Solutions include using more carbon-neutral biodiesel, more efficient operation of ferry boats, and retrofits to engine components. (*Air Quality Annual Report*; pp. 35-37)
- **WSDOT has completed Endangered Species Act documentation for 21% of projects scheduled for advertisement in the 2011-2013 biennium.** (*Endangered Species Act Documentation Annual Report*; pp. 38-40)
- **Both Grain Train and produce rail car use continued to rise in the third quarter of 2011, as Washington farmers and growers took advantage of the state-sponsored freight rail services.** (*Freight Rail Semi-Annual Report*; pp. 42-44)
- **As of September 30, 2011, WSDOT has delivered 310 of 421 Nickel and Transportation Partnership Account (TPA) projects valued at \$4.1 billion,** on target with the funding provided in the 2012 Transportation Budget. To date, 87% of completed projects have been delivered early or on time and 93% have been on or under budget. As of September 30, 2011, 43 projects were under construction. (See the *Beige Pages* for a quarterly report of WSDOT's *Capital Project Delivery Program*; pp. 48-61.)
- **As of September 30, 2011, 212 of 219 Recovery Act highway projects have been completed,** and WSDOT continues to move forward on High Speed Rail projects worth more than \$766 million. The *Recovery Act Special Report* (pp. 46-47) includes project employment data through September 2011.

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5 :: The quarterly **Highway System Safety Programs** article presents Before and After analysis of how safety projects have reduced the number of the serious and fatal injury collisions.

10 :: The **Capital Facilities Annual Report** addresses the condition rating of WSDOT-owned buildings and progress on reducing the backlog of repairs.

16 :: The annual report on **Aviation** covers aircraft registration for FY 2011, noting that WSDOT registered more than 98% of active aircraft in Washington.

19 :: The **Incident Response Quarterly Update** article introduces customer service comments as well as a new method to place value on IR services.

42 :: The **Freight Rail Semi-Annual Update** reports that freight railroads operating in Washington carried 103 million tons of freight in 2009.

48 :: This edition includes a summary of capital project delivery in the 2009-2011 Biennium Report.

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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, please see pages 87-88.

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 solutions to transportation safety needs.

Key WSDOT performance measures	Reporting cycle	Last Gray Notebook report
Number of traffic fatalities	annual	GNB 42, p. 4
Rate of traffic fatalities per 100 million miles traveled	annual	GNB 42, p. 5
Percent reduction in collisions before and after state highway improvements	annual	GNB 41, p. 6
Number of recordable workplace injuries and illnesses	annual	GNB 43, 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	Last Gray Notebook report
Percent of state highway pavement in fair or better condition	annual	GNB 40, p. 12
Percent of state bridges in fair or better condition	annual	GNB 42, p. 8
Percent of targets achieved for state highway maintenance activities	annual	GNB 40, pp. 19
Number of ferry vessel life-cycle preservation activities completed	annual	GNB 41, p. 20
Percent of ferry terminals in fair or better condition	annual	GNB 41, p. 18

State policy goal: Environment 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	Last Gray Notebook report
Conformance of WSDOT projects and programs with environmental legal requirements	annual	GNB 40, pp. 40-41
Number of fish passage barriers fixed and miles of stream habitat opened up	annual	GNB 40, pp. 38-39
Number of WSDOT stormwater treatment facilities constructed or retrofitted	annual	GNB 41, p. 34
Number of vehicle miles traveled	annual	GNB 42, p. 16

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

Key WSDOT performance measures	Reporting cycle	Last Gray Notebook report
Travel times and hours of delay on the most congested state highways	annual	GNB 42, p. 17
Reliable travel times on the most congested state highways around Puget Sound	annual	GNB 39, p. 19
Percentage of commute trips while driving alone	annual	GNB 38, p. 31
Average length of time to clear major incidents lasting more than 90 minutes on key highway segments	quarterly	GNB 43, p. 22
Ferry ridership	quarterly	GNB 43, p. 24
Ferry trip reliability	quarterly	GNB 43, p. 25
Percent of ferry trips on time	quarterly	GNB 43, p. 25
Amtrak <i>Cascades</i> ridership	quarterly	GNB 43, p. 27
Percent of Amtrak <i>Cascades</i> trips on time	quarterly	GNB 43, p. 28

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	Last Gray Notebook report
Capital project delivery: on time and within budget	quarterly	GNB 43, pp. 48-52
Recovery Act-funded project reporting	quarterly	GNB 43, pp. 46-47

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 and key performance measures

Performance measures and strategic business directions for the new policy goal "Economic Vitality" are in development as part of the 2011-13 strategic planning process. Information will be added to this table in a future edition of the *Gray Notebook*.

Gray Notebook report on Freight GNB 41, pp. 42-50
Gray Notebook report on Rail Freight GNB 43, pp. 42-44

Performance Dashboard



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: 2009 & 2010)	0.87	0.80	1.00			The rate of highway fatalities continues to decline (a lower rate is better)
Rate of strains and sprains / hearing-loss injuries per 100 WSDOT workers ¹ (calendar quarterly measure: Q2 2011 & Q3 2011)	3.4/ 0.8	2.0/ 0.0	2.4/ 0.4	—		Both strains/sprains and hearing loss met their goals for the quarter, but not for the year to date
Preservation						
Percentage of state highway pavements in fair or better condition (annual measure, calendar years: 2008 & 2009)	94.7%	93.0%	90.0%			Recovery Act-funded projects helped with backlog, but does not address all long-term needs
Percentage of state bridges in fair or better condition ⁷ (annual measure, fiscal years: 2010 & 2011)	98.0%	95.0%	97.0%	—		Deck code ratings added to criteria contributed to the change
Mobility (Congestion Relief)						
Highways: annual weekday hours of delay statewide at maximum throughput speeds ² (annual measure: calendar years 2008 & 2010)	34.8 million	31.7 million	N/A	N/A		Reduction of 21% driven by both reduced demand due to the economy and increased capacity
Highways: Average clearance times for major (90+ minute) incidents on 9 key western Washington corridors (calendar quarterly measure: Q2 2011 & Q3 2011)	165 minutes	162 minutes	155 minutes	—		Average clearance time improved for the quarter, but did not meet the goal
Ferries: Percentage of trips departing on time ^{3, 7} (quarterly, year to year: FY11 Q1, FY12 Q1)	82.9%	93.7%	90%			Performance is higher than the same quarter a year ago
Rail: Percentage of Amtrak <i>Cascades</i> trips arriving on time ^{4, 7} (quarterly, year to year: FY11 Q1, FY12 Q1)	73.6%	71%	80%	—		WSDOT and Amtrak continue to evaluate projects and other means to improve on-time performance
Environment						
Cumulative number of WSDOT stormwater treatment facilities constructed or retrofitted ⁵ (annual measure: calendar years 2008 & 2009)	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 2008 & 2009)	226	236	N/A	N/A		Ten additional retrofits were completed in 2009
Stewardship						
Cumulative number of Nickel and TPA projects completed, and percentage on time ^{6, 7} (quarterly: FY11 Q4, FY 12 Q1)	304/ 89%	309/ 89%	90% on time	—		Performance did not improve this quarter and did not meet goal
Cumulative number of Nickel and TPA projects completed and percentage on budget ^{6, 7} (quarterly: FY11 Q4, FY12 Q1)	304/ 94%	309/ 94%	90% on budget			Competitive bidding and construction environment contribute to controlling costs
Variance of total project costs compared to budget expectations ^{6, 7} (quarterly: FY11 Q4, FY 12 Q1)	under-budget by 1.0%	under-budget by 1.0%	on budget			Total Nickel and TPA construction program costs are within 1% of budget

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

1 Sprains/strains and hearing loss are current high priority focus areas for WSDOT. Hearing loss rate based on preliminary data.

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

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

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

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

6 Budget and schedule expectations are defined in the last approved State Transportation Budget. See page 48 for more information on capital projects in the current 2011 Legislative Transportation Budget.

7 Washington's fiscal year (FY) begins on July 1 and ends on June 30. FY12 Q1 refers to the quarter ending September 30, 2011.

Contributors

The work of many people goes into the writing, editing, and production of the Gray Notebook every quarter. This list of contributors reflects the efforts of data analysts, engineers, project leads, and many more individuals 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. On-line versions of this publication are available at www.wsdot.wa.gov/accountability/

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Safety

Statewide 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.



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Earlier articles concerned with safety

- Highway System Safety Programs: Focus on Traffic Fatalities/Target Zero, GNB 42
- Highway System Safety Programs: Focus on Run-off-road and Intersections, GNB 41
- Safety Rest Areas, GNB 41
- Pedestrian & Bicyclist Safety GNB 40

Worker Safety Quarterly Update

WSDOT employees: Rates of injuries and illnesses

Worker Safety Highlights

OSHA-recordable injuries to WSDOT staff are down 26% year on year.

The number of strains and sprains are also lower this quarter.

Number of OSHA-recordable injuries sustained by category of worker

July 1-September 30, 2011 (Quarter 3, calendar year 2011)

Injuries	Highway maintenance	Highway engineering	Admin staff	Ferry system
Number of injuries July-Sept 2011	28	19	2	15
Percent of all injuries these number represent	44%	30%	3%	23%
Total days away from work associated with these injuries	147	31	9	367
Days away due to sprains/strains	19	8	0	300
For comparison				
Number of injuries Apr-June 2011	45	21	6	31
Number of injuries July-Sept 2010	49	14	3	20

Data source: WSDOT Safety Office.

WSDOT safety performance: Third quarter 2011 comparisons

The number of all OSHA-recordable injuries to WSDOT employees decreased 26% – from 86 to 64 – between July 1-September 30, 2010, and the same quarter in 2011. This is also 38% less than in previous reporting period (second calendar quarter, 2011), when WSDOT employees experienced 103 injuries. The number of sprain/strain injuries – the target of a concerted injury-reduction effort for several years (see the March 2010 *Gray Notebook 37*, pp. 2-3) – decreased from 40 in the third quarter of 2010 to 32 in the same quarter of 2011, a 20% reduction. This is 43% fewer compared to previous reporting period, when WSDOT employees experienced 56 sprains/strains. This quarter's sprain/strain rate is 2.0 per 100 workers: down from 3.4 in the second quarter of CY 2011 and from 2.4 in the third quarter of 2010.

Four WSDOT regions record fewer injuries this quarter

During the third quarter of 2011, Northwest region reported a 50% reduction in OSHA-recordable injuries, 14 fewer compared to the same period in 2010. Olympic region reported a 46% reduction, six fewer injuries than the same period in 2010. Ferries reported a 25% reduction, five fewer injuries than the same period in 2010. Headquarters reported a 56% reduction, five fewer than the same period in 2010.

Regional progress towards strain/sprain and hearing loss injury reduction goals

As of September 30, two WSDOT regions (Olympic and Ferries) were on track to meet the 2011 sprain/strain injury reduction goal, and four regions (OR, SCR, SWR, HQ) are on track to meet the hearing loss reduction goal for 2011. Olympic Region is on track to meet both goals, and is the only region presently on track to meet or beat both injury reduction goals.

WSDOT strain/sprain injury rates per 100 workers by organizational unit

Quarter 3 (July 1-September 30, 2011) cumulative results and injury reduction goals

Organizational unit	CY 2010 results	Rate of injuries in Q3 CY 2011	Cumulative rate for CY 2011	CY 2011 goal	On-track to achieve CY 2011 goal?
Northwest Region	3.3	1.8	3.2	2.2	No
North Central Region	2.0	7.0	7.5	2.2	No
Olympic Region	2.6	1.2	1.7	2.2	Yes
Southwest Region	2.5	1.7	2.2	2.2	No
South Central Region	1.2	1.6	4.2	2.2	No
Eastern Region	4.6	5.1	5.2	2.2	No
All regions combined	2.9	2.3	3.4	2.2	No
Headquarters	0.8	0.7	1.4	0.4	No
Ferry System	3.8	2.4	4.1	4.7	Yes
Agency-wide	2.7	2.0	3.2	2.4	No

Data source: WSDOT Safety Office.

Lost Workdays / Hearing Loss Injury Results

The number of lost workdays decreases by 42%

In this reporting period, WSDOT employees lost 554 workdays to injuries. Last year in the same quarter, employees lost 958 workdays (an improvement of 42%,) and 784 in the second quarter of 2011 (an improvement of 29%).

By employee type, this quarter's results show highway maintenance workers lost 147 workdays, engineers had 31 lost days, and administrative staff had nine lost days. Ferries maintenance employees lost 367 workdays.

Workdays lost to strains/sprains injuries also improved by 42%

This quarter, WSDOT employees lost 327 workdays associated with sprain/strain injuries, compared to 568 injuries the same quarter a year earlier (42% fewer injuries) and 489 in the second quarter of 2011 (33% fewer).

WSDOT hearing loss injury rates per 100 workers by organizational unit

Quarter 3 (July 1-September 30, 2011) cumulative results and goals

Organizational unit	CY 2010 results	Rate of injuries in Q3 CY 2011	Cumulative rate for CY 2011	CY 2011 goal	On-track to achieve CY 2011 goal?
Northwest Region*	0.3	0.0	0.5	0.4	No
North Central Region*	2.4	0.0	2.1	0.4	No
Olympic Region	1.0	0.0	0.0	0.4	Yes
Southwest Region	0.6	0.0	0.3	0.4	Yes
South Central Region	1.4	0.0	0.3	0.4	Yes
Eastern Region*	0.5	0.0	0.7	0.4	No
All regions combined	0.8	0.0	0.5	0.4	No
Headquarters*	0.1	0.0	0.0	0.0	Yes
Ferry System	1.2	0.0	0.8	0.4	No
Agency-wide	0.7	0.0	0.5	0.4	No

Data source: WSDOT Safety Office. * Region has completed hearing testing.

WSDOT's hearing loss prevention strategies

This concludes a report on WSDOT's hearing loss prevention programs (see Gray Notebook 41, p.3, and GNB 42, p. 3).

Benefits of dosimetry

Minimizing false attribution of hearing loss claims from non-occupational sources: There are many sources of hearing loss, but no accepted clinical methods for distinguishing or apportioning which source produced the loss. WSDOT can minimize the number of claims artificially attributed to occupational exposure by enrolling only those employees who are at risk of occupational noise-induced hearing loss in its hearing loss conservation programs.

Selection of best hearing protection for employees: Hearing protection devices offer different amounts of sound reduction. Selecting the right protection requires obtaining full-shift averaged noise exposure. Excessive protection can result in

secondary hazards due to reduced situational awareness as well as improper and/or inconsistent use of protection. Insufficient protection will result in hazardous exposure even if hearing protection is worn consistently and properly. Careful selection of proper hearing protection can reduce both hearing loss claims and other accidents.

Reduced costs an additional benefit

Preliminary noise studies indicate that many noise exposures at WSDOT are not as high as presumed and do not constitute a hazard; they suggest that many WSDOT employees may not need to be enrolled in the hearing conservation program. WSDOT may save tens of thousands of dollars a year through reduced hearing loss claims and hearing test service charges, and use those resources to effectively promote safety elsewhere. WSDOT may also recover hundreds of hours of lost productivity by eliminating hearing tests for those who do not need them.

Worker Safety Quarterly Update

Wellness News

Wellness News

WSDOT is a designated Washington Wellness Worksite
WSDOT is the first large state agency to attain the Washington Wellness Worksite (W3) designation agency-wide. To achieve it, WSDOT was required to submit applications demonstrating a healthy work culture and measurable achievement in improving employee health over a period of 18 months. The application required rigorous self-study and documentation. To maintain the designation, WSDOT is expected to sustain qualifying criteria and report it on an annual basis.

This joint project of the Health Care Authority and the Health Promotion Research Center wanted to test how measurement tools helped detect health behavior changes over time. The table at right is a snapshot from some of the results of the 2011, one-year follow-up survey taken by the six participating agencies, conducted before June 30, 2011.

- The agencies participating in the W3 Collaborative surpassed the goal of a 30% survey completion rate by achieving a 62% completion rate in May 2011.
- 62% of W3 Collaborative employees met the Center for Disease Control's recommended physical activity guideline; this figure improved by 6% from the 2010 survey result, and is 8% above the Washington State physical activity figure.
- The measurement tool appears to have successfully detected health changes in attitude and perception of organizational support for healthy lifestyles over time.

WSDOT Wellness Program will use the survey information to begin choosing and implementing the appropriate health and productivity interventions that will help keep employees on the track of a healthy lifestyle. These interventions may include tobacco cessation, physical activity, weight management, self-care, and stress management.



Improving Employee Health & Performance

The Washington Wellness Worksite designation is valid from July 2011 through December 2012, and state work organizations may use the illustration shown above to publicize their designation in recruitment and retention materials, and in promoting their wellness programs. The pilot programs that established the foundation of the designation program were funded by Senate Bill 5930 from July 2007-June 2011.

Selected results from the WSDOT health surveys

Selected measures from annual health surveys, 2010 compared to 2011

Measure	Percent change
Workplace support for physical activity engagement	+6% improvement
Workplace support of healthy behaviors	+7% improvement
Recommended physical activity level (%)	+7% more employees increased their levels of physical activity
Daily intake of fruits and vegetables	+2% more employees increased their daily intake of fruits and vegetables
Past year flu shot	+3% more employees received an annual flu vaccine
Smoking status	2% more employees reported themselves as non-smokers

Data source: W3 Collaborative Health Survey results.

Highway System Safety Programs Quarterly Focus

Focus on: Before & After Results of WSDOT Safety Projects

Keeping citizens safe on Washington's highways is a top priority for WSDOT and the Governor. Washington State's Strategic Highway Safety Plan, Target Zero, outlines the goal to achieve zero traffic deaths and zero serious injuries by the year 2030. In order to achieve this goal, the state must decrease traffic fatalities by 23 each year between 2010 and 2030. WSDOT plays a key role in the statewide effort in partnership with WSP, WTSC, and Washington local agencies to achieve this goal. This article reports Before and After analysis for 29 new projects that reduced serious and fatal injury collisions by 14%.

Serious injury and fatal collisions reduced by 14% in 29 projects

WSDOT continuously monitors the performance of safety projects. Implementing these 29 projects helped reduce fatal and serious injury collisions by 14%: (4 collisions): 25 fatal and serious injury collisions in the After period compared to 29 in the Before period. The table at right presents Before and After collision data in four categories.

Using traditional evaluation methods, results showed a 10% reduction (92 collisions) for all types of collisions (860 vs. 952), a 2% reduction (eight collisions) in property-damage-only crashes (495 vs. 503), and 19% reduction (84 collisions) in all injury/fatal collisions (365 vs. 449).

Risk-based safety projects pose challenges for Before & After analysis

The last safety project analysis (in the December 2008 *Gray Notebook* 32, pages 5-7) examined 47 projects for Before and After project conditions. These 47 projects reduced serious and fatal injury collisions by 20%.

Collisions occurrence on state routes is random in nature and related to human behavior as well as the traveling environment. Highway modifications can address some but not all crashes. Factors such as enforcement, education, and emergency medical services must all be considered. WSDOT continuously evaluates the system and adjusts its programs and approaches to address these issues, but recognizes that it must incorporate its partners and the public in finding future solutions.

Over the years, WSDOT implemented safety initiatives to aggressively address highway safety needs. These initiatives have greatly diminished the collision clusters related to site specific engineering factors. These past investments were targeted by type and location, with a focus on reducing observed crashes (as opposed to crash risks), and the short term benefits may appear to be higher. WSDOT's recent analysis has identified fewer such collision clusters. The remaining collisions are more scattered and often associated with human behaviors (e.g., DUI, speed, inattention) and there may be fewer highway engineering-based solutions that will address these factors.

Overall, benefits and results of risk-based projects are more difficult to define and analyze as the crash potential is addressed before crashes actually occur. (A typical risk-based project is marked with an asterisk in the table on page 7). The overall system risk is reduced but the Before and After collision reduction results may vary and other analysis methods will be needed to fully capture risk-based project benefits. WSDOT is looking for new tools, such as SafetyAnalyst (see page 8), to help quantify the Before and After benefits of risk-based safety strategies.

Highway System Safety Highlights

Washington must eliminate 23 fatalities each year between 2010 and 2030 to achieve the Target Zero goal.

Before and After results for 29 safety projects

Collisions for all projects: 3 years Before and After construction

	All types	Property damage only	All injury/ Fatal	Serious injury/ Fatal
Before period	952	503	449	29
After period	860	495	365	25
Percent reduction	-10%	-2%	-19%	-14%

Data source: WSDOT Statewide Travel and Collision Data Office.

Before and After analysis of 29 projects show 14% reduction in serious and fatal injury collisions.

In both the 2011-2013 and 2013-2015 biennia, WSDOT will be increasing its emphasis on intersection-related crash reduction.

Highway System Safety Programs

Quarterly Focus

Focus on: Intersections – Target Zero Priority Two; SafetyAnalyst

Typical safety modifications included replacing existing bridge rail to current standards, upgrading guardrail to meet current standards, and intersection modifications such as installing sidewalks, channelization, signing, and illumination. WSDOT evaluates and uses lower cost engineering strategies where potential collision reduction benefits exist. Lower-cost strategies may reduce the potential for fatal and serious collisions in the top three engineering focus areas (run-off-the-road, intersections, head-on) of the Target Zero program. WSDOT selects the strategies that may provide the greatest improvement in risk reduction at the optimal cost.

Methodology for Before and After analysis

Projects funded through Nickel and TPA gas tax dollars that have three years of Before data and three years of After data, are selected for the Before and After analysis. After the project

pool is identified, analysts obtain collision information for each project using the mile post limits where the project improvements were made, based on the construction contracts. Collision information is obtained in full year increments to eliminate seasonal influence on collision occurrences. Collision information is then placed into different categories for Before and After periods to enable comparisons that will reveal purposes to see if there was any improvement in collision reduction within the project limits. The four categories addressed in this article are: All collisions, Property damage only (PDO) collisions, All injury/fatal collisions, and Serious injury/fatal collisions.

The primary metric in safety performance analysis is how well the project helped to reduce and eliminate serious injury/fatal collisions that would contribute to the state's efforts to achieve its Target Zero goal.

Highway safety projects Before and After study update

For projects completed between March 1, 2007, and February 28, 2008. Before and after periods are each three years

Project title	Work description	Period	Collisions annually			
			All types	Property damage only	All injury/Fatal	Serious injury/Fatal
I-90/Columbia River Bridge – Upgrade bridge rail	Retrofit nonstandard bridge rail	Before	2	1	1	0
		After	2	2	1	0
SR 397/Columbia River Bridge – Upgrade bridge rail	Retrofit nonstandard bridge rail 397/20	Before	7	4	3	0
		After	7	4	3	0
SR 16/NW of Tacoma Narrows to SE of Burley – Install cable barrier	Install cable median crossover barrier	Before	38	22	15	0
		After	37	26	11	2
SR 821/Selah to Ellensburg – Roadside safety improvements	Centerline rumble strips	Before	19	12	6	1
		After	18	11	6	1
SR 3/SR 106 S Belfair – Install signal	Install signal system	Before	3	2	1	0
		After	2	2	1	0
I-5/SR 532 NB Interchange Ramps – Add turn lanes	Interchange improvements	Before	9	5	4	0
		After	6	4	2	0
SR 165/Carbonado Vicinity – Upgrade guardrail	Upgrade guardrail at various locations	Before	2	1	0	0
		After	0	0	0	0
US 12/Wildcat Creek to I-82 – Roadside safety improvements	Install guardrail, remove fixed objects, and slope flattening	Before	88	52	36	5
		After	77	48	29	4
SR 410/Morse Creek to US 12 – Roadside safety improvements	Install guardrail, remove fixed objects, slope flattening, clear zone	Before	25	12	14	3
		After	24	12	12	2
SR 516/208th and 209th Ave SE – Add turn lanes	Channelization	Before	11	6	6	0
		After	3	1	1	0
Pierce and Thurston Co – Roadside safety improvements	Install guardrail, removal of fixed objects or slope flattening	Before	316	157	159	11
		After	298	160	139	12

Highway System Safety Programs Quarterly Focus

Focus on: Before & After Results of WSDOT Safety Projects

Highway safety projects Before and After study update

For projects completed between March 1, 2007, and February 28, 2008. Before and after periods are each three years

Project title	Work description	Period	Collisions annually			
			All types	Property damage only	All injury/ Fatal	Serious injury/Fatal
US 2/Dryden — Install signal	Install signal system	Before	4	2	2	0
		After	2	1	0	0
SR 531/Lakewood Schools — Construct Sidewalks	Pedestrian risk (score 23.5)	Before	1	1	0	0
		After	3	3	0	0
SR 9/108th Street NE (Lauck Road) — Add turn lanes	Channelization	Before	9	4	4	0
		After	5	2	3	0
SR 7/SR 507 to SR 512 — safety improvements	Retaining walls, sidewalks and illumination	Before	368	192	176	6
		After	331	188	144	3
I-90/EB Ramps to SR 18 — Add signal and turn lanes	Signal and channelization	Before	21	14	8	0
		After	22	17	4	0
I-90/Harvard Rd Pedestrian Bridge — Construct Bridge	Design and construct a pedestrian overcrossing	Before	4	2	1	0
		After	4	3	2	0
SR 3/Imperial Way to Sunnyslope — Add lanes	Widening and channelization	Before	12	7	5	1
		After	6	5	2	0
US 2/Pickle Farm Road and Gunn Road — Add turn lanes	Channelization	Before	1	1	0	0
		After	1	0	1	0
I-90/EB Ramps to SR 202 — Construct Roundabout	Roundabout	Before	3	2	1	0
		After	2	1	1	0
SR 25/Spokane River Bridge — Upgrade bridge rail	Install guardrail on bridge 25/6	Before	0	0	0	0
		After	0	0	0	0
SR 25/Columbia River Bridge — Upgrade bridge rail	Install thrie beam guardrail on Bridge 25/130	Before	1	1	0	0
		After	0	0	0	0
SR 20/Thompson Road — Add signal	Signalization	Before	2	1	1	0
		After	2	1	1	0
SR 169/SE 291st St Vicinity (Formerly SE 288th Street) — Add turn lanes	Channelization, illumination, and signing	Before	4	1	3	0
		After	3	2	1	0
SR 401/US 101 to E of Megler Rest Area Vic — Upgrade guardrail	Replace nonstandard guardrail elements	Before	2	0	2	0
		After	3	2	1	0
* US 12/Wynoochee River Bridge — Upgrade bridge rail	Upgrade bridge rail 012/025	Before	0	0	0	0
		After	0	0	0	0
* This project represents a typical risk-based project.						
US 101/Quinault River Bridge — Upgrade bridge rail	Upgrade bridge rail 101/160	Before	0	0	0	0
		After	0	0	0	0
SR 105/Johns River Bridge — Upgrade bridge rail	Upgrade bridge rail 105/108	Before	0	0	0	0
		After	1	1	0	0
SR 116/SR 19 to Indian Island — Upgrade bridge rail	Upgrade bridge rail 116/005 and approach guardrail ends	Before	0	0	0	0
		After	0	0	0	0

Data source: WSDOT Statewide Travel and Collision Data Office.

Highway System Safety Programs

Quarterly Focus

Focus on: Before & After Results of WSDOT Safety Projects

WSDOT targets serious injury and fatal collisions at intersections

Washington's Target Zero's safety plan contains four major priority areas, with each priority area focusing on various traffic safety-related issues. Target Zero's Priority One emphasis is focused on reducing/eliminating driver impairment, speeding, and run-off-the-road collisions. WSDOT has installed cable median barriers, rumble strips, and guard rail to contain the vehicle that is running off the road and alert the driver when the vehicle starts to leave the travel lane. WSDOT has seen positive results with these strategies, which have been reported in past *Gray Notebook* editions. Encouraged by the success so far, WSDOT will be increasing its emphasis on the second tier of Target Zero priorities, which are intersection-related collisions, in 2011-2013. Similar efforts are under way to reduce fatal and serious injury collisions on local agency roads (see *Gray Notebook 41*, page 7).

Countermeasures or strategies that have potential to reduce collisions within the intersection influence area range from improving channelization at the intersection to installing a traffic signal, even reconfiguring the intersection into a roundabout. So far, 15 intersection locations have been identified for these types of modifications (see table below); design and construction is expected to complete by the end of 2013-2015 biennium. Before and After evaluation of these safety projects will be reported in the *Gray Notebook* about three years after the operationally complete date of each project.

List of intersection improvement projects

Design and construction scheduled for 2011-13 and 2013-15

1	SR 9/32nd St SE — Roundabout
2	I-90/West Lake Sammamish Parkway — Intersection modification
3	SR 99/Gibson Road — Traffic signal
4	SR 410/Watson Street — Signal
5	SR 17/S of Othello — Left turn lanes
6	SR 26/SR 24 — Othello intersection improvement
7	US 97/N of Daroga State Park — Turn lanes
8	SR 243/Mattawa — Intersection improvements
9	SR 281/South of Quincy at Road 9 NW — Left turn lanes
10	SR 302/118th Ave NW — Intersection improvement
11	SR 510/SE of Reservation Rd — Intersection improvement
12	I-5/Columbia River to SR 500 Scoping for Safety Strategy
13	US 12/Naches to Yakima — Corridor intersection safety
14	US 2/Jct SR 206 Improvements
15	US 195/Cheney-Spokane Rd — New interchange

Data source: WSDOT Traffic Office.

New 'SafetyAnalyst' software will help WSDOT in safety project prioritization and analysis

WSDOT is working hard to identify strategies that provide the greatest potential to reduce the risk of collision at the optimal cost and helps the agency reduce serious injury and fatal collisions faster than the traditional WSDOT approach of designing solutions using a standards-based, matrix-driven approach.

WSDOT has employed this standards-based approach since 1995, with support from FHWA, and it has led to significant reduction in the number of traffic-related fatal collisions each year. The fatal collisions that remain to be addressed are widely dispersed and random in nature. This situation has presented the department, as well as other state DOTs, with a significant challenge on determining how to identify the right place to make future safety investments. WSDOT, along with the other state DOTs, began working with the Transportation Research Board (TRB) and the American Association of State Highway and Transportation Officials (AASHTO) to develop new tools that could analyze transportation networks and identify investment locations based on risk factors associated with the highway in conjunction with improved, scientific-based analysis of the collision history.

SafetyAnalyst has potential for identifying risk projects and performing Before and After analysis

For the last two years WSDOT has been evaluating a tool, developed by TRB, AASHTO, and FHWA, called SafetyAnalyst. This software application can be used to review the highway network or any portion of it to identify sites with potential for safety improvement. The tool can also help diagnose collision risk at a specific location, and may be used to identify actual solutions for improving safety.

SafetyAnalyst provides the ability to analyze a strategy and compare one strategy to another to determine the potential collision reduction benefit achieved by implementing a proposed solution. This tool may also be used to conduct Before and After evaluations for identifying the changes in conditions following the improvement.

WSDOT believes this tool has the capability to perform the two basic approaches of safety analysis and alternative safety counter measure evaluation more quickly and more effectively. The agency looks forward to finding locations with cost-effective solutions that can be implemented during this time of tight revenue, while continuing to make progress in reducing the number of severe collisions.



Preservation

Legislative 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, airports, and equipment, while keeping pace with new system additions.



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Earlier articles concerned with preservation

Asset Management: Bridge Assessment, GNB 42
Safety Rest Areas (Preservation), GNB 41
Post-Winter Maintenance, GNB 41
Ferries Vessel & Terminal Preservation, GNB 41
Highway Maintenance, GNB 40
Asset Management: Pavement Conditions, GNB 40
Intelligent Transportation Systems, GNB 39
Capital Facilities Annual Report, GNB 38

Asset Management: Capital Facilities Annual Report

Capital Facilities Program

Capital Facilities Highlights

40% of primary buildings are in “poor” condition and need significant repairs.

66% of primary buildings have been identified as more than 25 years old, with a \$142.7 million backlog of necessary work.

92% of identified ADA deficiencies have been corrected, with the remaining to be completed in 2011-13.

New for this report in 2011:

- WSDOT 2011-2013 capital facilities budget, see page 10.
- Improved method for developing repair backlogs in 2012, see page 11.
- Capital facility minor works projects for the 2011-2013 biennium, see page 12.
- 2010 preventative maintenance workload by criticality data, see page 14.
- ADA transition plan update, see page 14.

The capital facilities program is responsible for the maintenance, operations, improvement, and preservation of 966 department-owned buildings and structures at 296 separate sites across the state. These ‘facilities assets’ are valued at more than \$1 billion dollars; they serve the needs of WSDOT’s programs that construct, maintain, and operate state highways.

Facilities assets, which contain many unique uses and complex building systems, include region headquarters complexes, traffic management centers, maintenance crew facilities, commercial vehicle repair, welding and fabrication shops, project engineer offices, testing laboratories, materials storage, and wireless communications sites.

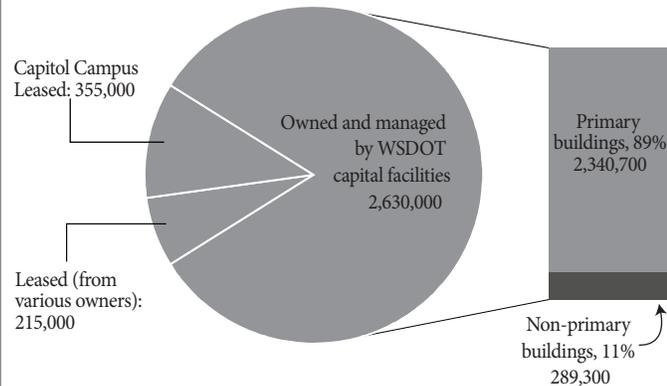
\$3.7 million available to preserve facilities assets in the 2011-2013 biennium

WSDOT’s budget for capital facilities in the 2011-13 biennium is \$30.85 million, with \$25.4 million for operations and \$5.4 million for capital expenditures. Of the \$5.4 million, \$3.7 million is available to repair and preserve facilities assets, and \$0.4 million is available to comply with storm-water permit requirements. At the current funding level, 2% of identified building repairs can be performed each year.

This article presents methodologies for identifying facilities needs and priorities that the capital facilities program has in place to implement the strategies presented in Business Directions, WSDOT’s 2011-2017 Strategic Plan.

WSDOT occupied building space

As of October 2010; Square footage (excludes Ferries and Safety Rest Areas)



Data source: WSDOT Computer Aided Facility Management (CAFM) System Building Inventory.

WSDOT primary building condition rating

Number of primary buildings by condition rating

Condition	2008	2010
Good	31 (11%)	24 (8%)
Fair	142 (52%)	150 (52%)
Poor	100 (37%)	113 (40%)
Total¹	273	288

¹ Differences in building numbers are due to new construction or additions to the Capital Facilities program from another WSDOT program.

Data source: WSDOT Capital Facilities Office.

Identifying high priority preservation and improvement needs

Of the 3.2 million square feet of buildings that WSDOT occupies, 2.6 million square feet are managed by the Department’s capital facilities program. About 89% (2.3 million square feet) of this building space is contained in 288 “primary buildings:” office and crew space that support a majority of the department’s staff and provides storage space for vehicles and equipment. For more information on why WSDOT now focuses on primary buildings see *Gray Notebook* 38, page 9.

40% of primary buildings are rated “poor”

In 2010, 113 of 288 primary buildings were rated in poor condition. This is up from 100 buildings rated poor in 2008, a 13% increase. Since 2008, the capital facilities program has focused on high priority preservation and improvement projects for the 288 primary buildings. For more information on the condition, age, and backlog of these facilities, see page 11.

Capital Construction Program

Primary buildings are a focus for high priority preservation and improvement projects. In order to prioritize needs among these buildings, WSDOT assesses impacts to department operation through biennial Facility Condition Assessments (FCA).

FCAs use building industry standards and are conducted every two years. Unlike some of its other asset management programs, WSDOT does not conduct these assessments annually, as results do not change significantly every year. The condition of individual building systems is evaluated, and used to identify repair backlogs and to determine facility replacement priorities.

The FCA rates the building system on a scale of 1–5, with 1 being good and 5 being poor. If a building system is found to be deficient, it is rated 4 or 5 and a preliminary repair cost is estimated. The sum of building system ratings is the total building rating, this is used to define its condition as good, fair, or poor. Preliminary repair cost estimates for buildings are then used to define the statewide repair backlog.

In 2012, WSDOT will improve the way it estimates repair backlogs

The method for developing the statewide repair backlog has been modified for the next round of backlog information submittals, due on January 30th, 2012 from the regions. An estimating spreadsheet has been created using RSMeans as the source for building out repair cost estimates. The intent is to make repair cost estimating consistent statewide. The 2012 estimates will contain updated repair backlog costs and building condition ratings. This information will be reported in a future edition of the *Gray Notebook*.

191 aged and obsolete primary buildings need preservation and replacement

The main cause of the preservation and repair backlog is the steady aging of buildings: 66% of primary buildings are more than 25 years old, with a \$142.7 million dollar backlog, and 27% exceed 50 years old. Major building systems – such as heating, plumbing, lighting, roofing, and structural elements – require substantial repair or replacement after 20 or 25 years. Older buildings are more likely to be inefficient or unsuitable for today’s operations, with problems that range from an inadequate number of vehicle bays and bay sizes too small for modern trucks, to insufficient crew facilities and material storage.

Based on 2010 condition assessments, WSDOT faces an accelerating repair backlog at each building as facility age increases.

The 288 primary buildings add up to a total deficiency backlog of \$160 million. The table shows the backlog per building by age group for primary buildings.

WSDOT primary building age and backlog

As of October 2011; Dollars in millions

Age	Number of buildings	Backlog per building	Backlog total
25 years or less	97 (34%)	\$0.18	\$17.2
26 to 50 years	112 (39%)	\$0.77	\$85.7
50 years or more	79 (27%)	\$0.72	\$57.0
Total	288		\$159.9

Data source: WSDOT Capital Facilities Office.

The total deficiency backlog for all facilities has increased \$8.3 million (4%) since 2008, increasing from \$188 million to \$196.3 million. Primary buildings make up \$159.9 million, or 82%, of the 2010 backlog.

A building replacement backlog of about \$280 million has been identified in the 2010 Capital Facilities Strategic Plan. This 16-year plan was finalized in October 2010 and will be updated each biennium.

Prioritizing projects - Minor works

Based on condition assessment data, region facility managers request prioritization of minor works projects valued under \$1 million. Projects generally consist of building system and structural repair, roofing, paving, siding, lighting and electrical improvements, and radio tower installation.

Minor works projects are prioritized into three categories (occupant, preservation, and operational) with occupant projects addressed first.

- **Occupant** projects are those that contain hazardous site or building conditions that may jeopardize health and safety of staff, the public, and the environment, and/or are immediate violations of local, state, or federal regulations.
- **Preservation** projects replace and preserve failing buildings systems or elements that have a high risk of failure and require constant corrective maintenance.
- **Operational** projects correct insufficient building space, provide wireless communication, and/or improve facility components that impact ‘mission critical’ operations.

Asset Management: Capital Facilities Annual Report

Emergent Needs

Select capital facility minor works projects: 2009 – 11 *Completed in the 2009 - 2011 biennium*

	Project budget	Description
Projects addressing occupant safety		
Electric City Ridge Radio Tower Replacement	\$139,000	S/CC
Union Gap Sign Shop Ventilation Repairs	\$19,000	S/CC
Raymond Prewash Pad and Treatment System Improvements	\$46,600	EC
Goldendale Drainage Improvements	\$27,500	EC
Hyak Prewash Building	\$471,500	EC
Colville Vehicle Storage Environmental Improvements	\$57,300	EC
Projects addressing preservation		
Corson Ave. Mats Lab Roof Replacement	\$174,800	BP
Mottman Modular Roof/HVAC Replacement	\$262,000	BP
Woodland Roof Replacement	\$95,300	BP
Projects addressing operations		
Wandermere Vehicle Storage Building	\$292,800	EN

Data source: WSDOT Capital Facilities Office.

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

Select capital facility minor works projects: 2011 – 13 *Planned for completion in the 2011 - 2013 biennium*

	Project budget	Description
Projects addressing occupant safety		
Arlington Sand Shed Replacement	\$121,000	S/CC
Dayton Ave. Electrical Distribution System Assessment	\$16,500	S/CC
Central Park ADA Compliance	\$65,300	S/CC
Packwood Creosote Loading Dock Removal	\$6,600	EC
Bullfrog Pre-Wash Pad and Treatment System Improvements	\$106,000	EC
Projects addressing preservation		
Tumwater Materials Lab Roof Replacement	\$114,800	BP
Dayton Ave. Boiler Replacement	\$340,000	BP
Okanogan Well Improvements	\$74,300	BP
Chehalis Floor Moisture and Wall Repairs	\$464,000	BP
Olympic Region 06 Bldg Roof Replacement	\$105,000	BP
Projects addressing operations		
Shuksan Radio Tower	\$225,000	O
Schrag Radio Building	\$75,000	O

Data source: WSDOT Capital Facilities Office.

Note: Description codes indicate S/CC - Safety/Code Compliance; EC - Environmental Compliance; BP - Building Preservation; O - Operational.

Accommodating emergent need projects

The prioritized list of minor works projects is affected when new unexpected projects are identified. These unplanned projects typically arise because an existing system has failed, or an immediate operational need has emerged. These projects are generally paid for through the deferral of other funded projects.

Chehalis siding project

As work was under way to correct floor moisture issues at the Chehalis area maintenance facility/project engineering office building, workers found extensive moisture damage and mold within the wall systems and repairs to correct the damage was required. The damage to the walls was caused by failures to the building's exterior systems. About \$240,000 in prioritized minor works projects must be deferred to fund this emergent need.



Chehalis AMF/PE office building. Above: damaged walls can be seen throughout. Right: repairs to the damaged walls are under way.

Asset Management: Capital Facilities Annual Report

Operating Program

Major upgrade and replacement projects

Facility projects range from minor remodels to large-scale site acquisition and commercial development. Projects valued at \$20 million or more are typically Regional Complex replacement projects, such as the Olympic Region Headquarters and the Vancouver Light Industrial Replacement project. Projects valued at more than \$5 million are generally large maintenance facility such as the Northwest Region maintenance facility replacement project. Projects under \$5 million are smaller scale, such as replacement of the Hazel facility and the Sekiu building.

Projects over \$1 million are typically regarded as facility replacement or major upgrade projects needing line item appropriation; they are generally requested separately using OFM pre-design study guidelines. No facility replacement or major upgrade projects are planned for 2011-13.

Capital facility replacement costs

Estimated costs as of June 2010

Project type	Value
Projects worth less than \$5 million	\$42,294,000
Projects worth between \$5 and \$19 million	\$121,041,000
Projects worth more than \$20 million	\$117,100,000

Data source: WSDOT Capital Facilities Office.

Operating program addresses facilities maintenance

Daily operations and maintenance activities help keep WSDOT buildings and structures open for use. Implementation of a coordinated statewide facility maintenance system has allowed WSDOT to benchmark and identify critical equipment and systems, outline required maintenance schedules, and develop predefined levels of service. Elements of this program are used to evaluate, quantify, and provide funding to each region for daily facility maintenance and operational needs.

To further refine and prioritize work, WSDOT reassessed levels of service and developed methods to measure work performance. For example, quarterly preventative maintenance activities achieved are compared to planned activities, allowing WSDOT to better understand completion rates. This data will allow the agency to prioritize future allocation and workforce needs.

Preventive maintenance

Preventive maintenance is regularly scheduled maintenance work necessary to prevent equipment breakdown and to maintain proper facility and equipment operations.

Inspection, calibration, adjustment, cleaning, lubrication, and parts replacement are all components of preservation work. The most important aspect of such maintenance is that it is planned work: identifying need, then maintaining and replacing items before a failure occurs.

To mitigate equipment failures and manage preventive maintenance, WSDOT uses a Computerized Maintenance Management System (CMMS). Each building system and/or piece of equipment associated with a site or building is inventoried and maintained in the CMMS system with an assigned level of priority, or criticality. Assigning a criticality level to systems and equipment helps WSDOT prioritize preventive maintenance activities and assists in communicating which activities are funded.

Criticality levels are prioritized by nine categories (see table below). Failure to complete life safety (10) or code compliance (9) activities could jeopardize employee health or safety, while categories 8, 7, and 6 ensure operation of critical systems. Categories 5 and below are not funded within the current budget.

Preventative Maintenance Criticality Matrix

Funded criticality	Activities
10 - Life safety	Hazardous building or site conditions that jeopardize life safety of occupants and impacts 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 criticalities and activities

5 - Secondary systems	Work 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.

Asset Management: Capital Facilities Annual Report

Other Program Highlights

Corrective maintenance

Corrective maintenance is one-time, emergency, breakdown, or corrective work, such as repairs to equipment bay doors, roofs, or plumbing, or replacing heating and ventilation equipment. These unexpected, urgent repairs require immediate response with labor and materials.

Increases in corrective maintenance costs are often linked to decreases in preventive maintenance efforts. Preventive maintenance should typically account for the largest part of a maintenance budget, and deferral of preventive activities tends to change that balance. Additionally, increasing failure rates of aging equipment and systems results in increased effort to replace and repair those components, which impacts the resources available maintain all equipment and systems.

Preventive maintenance workload by criticality

2008-2010

Criticality	2008	2009	2010
10	12%	8%	8%
9	12%	14%	10%
8	27%	29%	28%
7	1%	3%	4%
6	48%	46%	50%
Total	100%	100%	100%

Data source: WSDOT Capital Facilities Office.

The table identifies the relatively consistent levels in WSDOT's facility maintenance efforts, by criticality. The results were derived by evaluating completed service requests on equipment or systems within a criticality and compared to the overall effort. WSDOT expends the largest effort in facility maintenance on equipment in criticality 6, which contains the most equipment in our inventory, and includes HVAC, lighting, and air compressors. By contrast, criticality 7 has fewest equipment/systems in the inventory (criticalities 6 – 10) and receives the smallest investment in effort.

Other program highlights

Agency energy performance

All state agencies are required to report energy consumption, strategize energy conservation measures, and benchmark facility energy performance. WSDOT completed benchmarking its reporting public facilities, submitted strategies to reduce emissions by 2020, and has engaged in annual emissions reporting.

In its effort to track, measure and report energy reductions, the WSDOT is developing tools that will enable the agency to calculate energy savings related to projects. These tools can be applied to most projects, and will enable better quantification of how established reduction goals and emission reduction strategies are being met.

ADA transition plan update

In the 2007-2009 biennium, WSDOT hired a team of consultants to assess WSDOT-owned public access buildings statewide for compliance with the Americans with Disabilities Act.

As a basis, the 2009 WSDOT Statewide Capital Facilities ADA Transition Plan identified 221 non-compliant capital facilities items with an estimated cost of \$167,000 needed to bring them up to code. Sixty of these items were addressed operationally or were determined to be not applicable.

With the addition of four items at the Central Park Maintenance Facility, 19 items remain, and they will be complete before July 31, 2012.

WSDOT Facilities and Lease Board

In the 2011-13 biennium there is a requirement under Section 604 of the final Transportation Budget Bill (ESHB 1175), which requires a plan to be developed to improve the oversight of departmental facilities assets including owned, leased, tunnel, bridge, maintenance, traffic management centers, and ferries facilities. The plan must be submitted to the governor and the joint transportation committee by September 1, 2012.

To improve oversight of department facilities, WSDOT has created a Facilities and Lease Board to ensure that the department is transparent and proactive in identifying and implementing cost-effective solutions for ongoing and future facilities needs. WSDOT Executive Order E 1079.00 details the purpose and responsibilities of the Facilities and Lease Board.

Included in this effort is the considerations of the Workforce Business Strategy impact on facilities, which details WSDOT's future plans to eliminate a number of regional offices over the next several years. This is expected to have a low impact on WSDOT owned capital facilities, as most of the offices to be closed are leased space. As these leases are terminated, some staff may be consolidated into remaining WSDOT owned spaces.

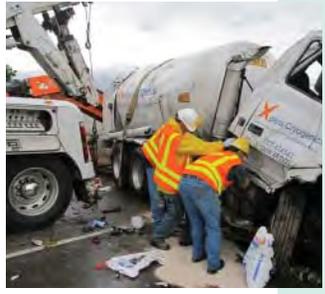
Mobility (Congestion Relief)

Statewide 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.



In this section

- Aviation Annual Report 16
- Incident Response Quarterly Update 19
- Washington State Ferries Quarterly Update 24
- Rail: Amtrak *Cascades* Quarterly Update 27

See also

- Freight Rail Semi-Annual Update 42
- Special Report: Federal Recovery Act-funded Projects 46
- Quarterly Report on Capital Projects (Beige Pages) 48
- New Ferry Construction 71

Earlier articles concerned with mobility

- Measuring Delay and Congestion Annual Report, GNB 42 and special publication Commute Options Annual Report, GNB 42
- Travel Time Trends Six Month Update, GNB 42
- Traveler Information, GNB 41

Aviation Annual Report

Aviation Highlights

WSDOT awarded grants to 43 projects in the second round of aviation grants for the 2009-2011 biennium.

Federal, state, and local contributions brought the value of awarded grants to almost \$9.3 million.

WSDOT exceeded its goal for aircraft registration for FY 2011, registering 5,888 aircraft, more than 95% of active aircraft in Washington.

WSDOT coordinated 153 search and rescue operations in 2010, a 6% increase from 2009.



Planes lined up in preparation for a search and rescue drill in 2010.

Aviation programs provided 43 grants in FY 2011

WSDOT Aviation's Airport Aid Grant Program provides financial assistance to many of the state's 138 public airports. Through the program, WSDOT leverages millions of dollars in federal grants by using a relatively small amount of state and local match contributions, which totaled 23% in Fiscal Year 2011. WSDOT typically awards two rounds of grants each biennium, or one round each fiscal year. Any municipality, local government, or federally-recognized tribe that owns a public use airport can apply for a grant. Washington's public airports are critical links within the state's transportation network, and the grant program funds projects that strengthen aviation infrastructure in the areas of pavement, safety, maintenance, security, and planning.

During the second round of 2009-2011 biennium grants, WSDOT awarded \$962,206 to 38 airports for 43 projects. Despite a projected decline in aviation revenues, WSDOT was able to use approximately \$432,944 to leverage \$7 million in federal funds, bringing the combined state, local, and federal total to almost \$9.3 million. The projected decline in revenue was a result of the recession, higher fuel prices, and extended winter weather that reduced the opportunities for flight.

The maximum amount WSDOT awards to an individual sponsor in a single grant is \$250,000. WSDOT requires a minimum local match of 5%, (or 2.5% for grants matching federal funds), which can be in cash or in-kind volunteer labor and materials; however, the airport sponsor is required under state law to document and record the value of contributions and in-kind donations.

WSDOT's aviation grant programs

WSDOT uses a matrix and scoring table from its WSDOT Airport Aid Grant Procedures Manual to evaluate grant applications that meet the minimum requirements. The methodology allocates state grant funds in two categories: airport type and project type.

Allocation of funds by airport type

WSDOT Aviation grants help to support airports that are not on National Plan of Integrated Airport Systems (NPIAS), which means they are not eligible for federal funding. Non-NPIAS airports represent about 55% of the airports that receive WSDOT Aviation grant funding. The other 45% of grants are allocated to airports on the NPIAS.

Allocation of funds by project type

Once funds are allocated by airport type, they are further subdivided into three categories:

- 75% for pavement projects,
- 15% for safety projects, and
- 10% for maintenance, security, and planning projects

WSDOT fiscal year 2011 aviation grants

By funding source

Funding source	Total funding
Federal	\$7,091,675
State	\$962,206
Local (matching)	\$903,494
Other sources	\$308,075
Total funding	\$9,265,450

Data source: WSDOT Aviation.

Each project is prioritized according to a corresponding system of points based on the particular project type. Some projects may be worth five points, while others may be worth 15 or 20 points. Points are also awarded based on several additional considerations, such as whether a project has community support, local match funding, or economic development potential. Once points are assigned, projects are ranked on the WSDOT Airport Aid Grant list and top-scoring projects are recommended for funding. Projects submitted for airport aid grants come from each airport's Capital Improvement Plan.

WSDOT fiscal year 2011 grants

Number of projects and total funding by category

Category	Number of projects	Total funding
Pavement	16	\$6,502,874
Safety	14	\$2,172,096
Maintenance, planning, or other	9	\$570,227
Security	3	\$17,863
Runway safety	1	\$2,390
Total projects and funding	43	\$9,265,450

Data source: WSDOT Aviation.

Nearly all eligible aircraft register with WSDOT

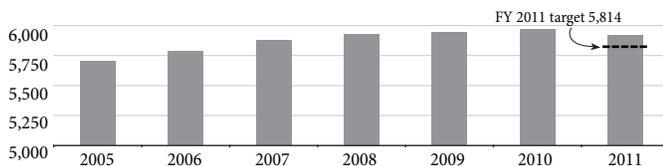
Washington state law requires that all airworthy general aviation aircraft be registered with WSDOT Aviation or have an exemption. Aircraft registration fees directly support WSDOT's airport preservation, maintenance, and improvement programs. Registration is due annually in January.

While about 10,000 aircraft are registered with the FAA, about half of those qualify for exemptions from Washington state registration. Many aircraft are exempt from state registration due to their status as commercial operators, and others apply for training, government, or non-airworthy exemptions.

As of October 3, 2011, 5,888 of 5,933 active aircraft were registered with WSDOT, exceeding the state's goal to register at least 98%, or 5,814, of eligible aircraft.

Number of aircraft registrations 2005 to 2011

Registration goal is 98% of active aircraft



Data source: WSDOT Aviation.

Efforts to improve aircraft registration

In 2003, the Legislature authorized changes to state law for aircraft registrations to include penalties for late registrations. WSDOT maintains a database of all registered aircraft owners and also checks the FAA registration database. WSDOT also mails two reminder letters to each aircraft owner and attempts to contact individuals via e-mail or telephone, if possible, as a final reminder before issuing penalties.

Since the law took effect in 2003, registration increased 5% from 5,654 in 2003 to 5,934 in 2010. Registration fell 0.8% in 2011 to 5,888, because fewer aircraft are in active service.

State Capital Improvement Program

Like the highway system, Washington's system of 138 public use airports is a critical component of the state's transportation system. Constant maintenance and improvements are necessary to meet the needs and demands of the traveling public, businesses, and emergency medical services.

Current aviation system needs far outweigh available funding. The State Capital Improvement Program (SCIP) will tackle the challenge of targeting state and federal resources in a more strategic way by better identifying and prioritizing aviation related projects. This process will help WSDOT and local governments communicate to decision-makers about the need for continued and increased investments into Washington's airport system.

The SCIP is intended to be a continuous, multi-year funding program that will assess Washington's airport improvement needs for the next five years, as well as the long-term over the next 20 years. Once complete, the program will help WSDOT, the Federal Aviation Administration (FAA), and local governments better anticipate future airport development capital needs and make strategic investments to maximize resources.

WSDOT will develop and implement the program on two fronts in partnership with the FAA: a program for airports eligible for FAA Airport Improvement Program funds and a program for airports only eligible for WSDOT Airport Aid Program funds. FAA provided WSDOT a grant to develop the SCIP for use implementing its Airport Improvement Program.

Aviation Annual Report

Search and rescue responses in 2010

WSDOT is required under state law to manage all air search and rescue operations within the state and coordinate the use of aviation assets for disaster relief efforts. WSDOT closely coordinates search and rescue operations with all available resources and agencies, including the Washington State Patrol, Washington Emergency Management Division, U.S. Coast Guard, and the U.S. Air Force Rescue Coordination Center. WSDOT also uses volunteer resources from Washington Air Search and Rescue, the Civil Air Patrol, and county sheriffs' departmental search and rescue programs across the state.

In 2010, WSDOT responded to 153 incidents, including three full scale search and rescue operations.

WSDOT 2010 Aviation Emergency Services operations

Type of response	Number of responses	
	2009	2010
Emergency locator transmitters	74	84
Full scale search and rescue missions	2	3
Overdue aircraft	5	4
Aircraft incidents	58	52
Fatalities	5	10
Total incidents	144	153

Data source: WSDOT Aviation.

Handbook documents best management practices for 17 state-managed airports

The State Managed Airport Handbook documents the management principles, policies, performance measures, and guidelines for the maintenance, construction, and operation of state-managed airports. WSDOT published the handbook in February 2011 following an examination of the role the state-managed airports serve in Washington's overall transportation system. The handbook is available online at wsdot.wa.gov/aviation/StateManagedAirportsHandbook.htm.

WSDOT developed the handbook as part of an effort to evaluate and better understand the comparative benefit of investing in these airports. Of the airports, WSDOT owns nine, leases four, and operates the remaining four under special use permits.

WSDOT's 17 state-managed airports	
State-owned	Leased
Bandera	Avey (Laurier)
Copallis	Little Goose (Starbuck)
Easton	Lower Granite (Colfax)
Lake Wenatchee (Leavenworth)	Lower Monumental (Kahlotus)
Lester (closed indefinitely)	Special Use Permit
Methow Valley (Winthrop)	Ranger Creek (Greenwater)
Skykomish	Rogersburg (Anatone)
Tieton (Rimrock)	Stehekin
Woodland	Sullivan Lake (Metaline Falls)

Incident Response Quarterly Update

WSDOT's Incident Response (IR) program responded to 12,038 incidents in the third quarter of 2011, saving the citizens and businesses of Washington about \$11 million dollars in wasted time and gas lost while idling in traffic (see the gray box on page 21). The IR program's teams are scheduled to work during peak traffic and commute periods, and are also available 24/7 for call out.

The mission of the IR program is to safely and quickly clear traffic incidents to minimize congestion, to restore traffic flow, and to reduce the risk of secondary collisions. The IR 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 life safety incidents, IR teams report on abandoned vehicles and offer a variety of motorist assistance services such as changing flat tires and providing a jump start or a gallon of gas. These services keep roadways clear, traffic moving, and reduce the risk of collisions caused by distracted driving.

WSDOT IR teams responded to 12,038 incidents between July 1 and September 30 of 2011

WSDOT IR teams responded to 12,038 incidents statewide during the third quarter of 2011, with an average incident clearance time of 12.8 minutes. Quarter 3 (July 1-September 30) includes the summer months, and usually has the highest number of incidents in the year: 2010, 2009, and 2008 experienced 12,444, 11,941, and 12,383 incidents, with clearance times of 12.4, 12.9, and 12.6 minutes respectively. In quarter 2 of 2011, IR teams reported 11,204 statewide incidents with an average incident clearance time of 12.2 minutes.

Incident response by WSDOT region

The Puget Sound region is Washington's most populous area, with more traffic activity compared to other parts of the state. Of the 12,038 incidents responded to in this quarter, the Northwest Region (the program's largest region, covering the Puget Sound area) responded to 7,758 incidents (64%). Olympic Region (Tumwater - JBLM area) responded to 1,854 incidents (15%), followed by Southwest (Vancouver) and Eastern regions (Spokane) with 1,094 (9%) incidents and 924 (8%) incidents respectively. South Central Region (Yakima) attended 400 incidents (3%), and North Central Region (Wenatchee) saw eight incidents (less than 1%).

How are IR teams notified of an incident?

IR teams are notified of an incident in three ways: "roving," "dispatch," and "call out." The IR program has teams that are scheduled to work "roving" the urban commute corridors along popular commute routes during the morning and afternoon peak travel periods. The teams are "notified" by either Washington State Patrol (WSP) 911 communication centers, the WSDOT Traffic Management Centers (TMC), who use CCTV and other tools to locate incidents, or from other WSDOT work crews. IR teams are available 24/7 for after hours call out if needed. During this past quarter, 74% of the total incidents were "roved upon," 25% were "dispatched," and 1% were "called out."

Incident Response Highlights

The IR program cleared 12,038 incidents in quarter 3 of 2011 with a clearance time of 12.8 minutes.

WSDOT IR program saved travelers and businesses about \$11 million by reducing the time and gas they wasted in traffic for quarter 3, 2011.

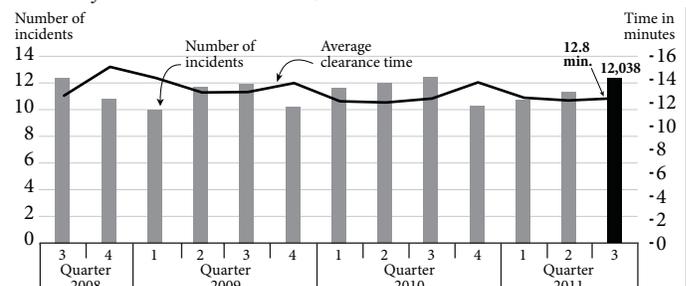
The quarterly average clearance time for all over-90-minute incidents on the nine key western Washington highway segments is 162 minutes.

For quarter 3, 2011, the total amount paid to Major Incident Tow (MIT) authorized tow companies was \$13,602.50.

Statewide IR responses and average overall clearance time

Third quarter 2008 to third quarter 2011

Number of incidents in thousands, clearance time in minutes



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

Incident Response Quarterly Update

Traffic Incidents, Clearance Times, and Associated Societal Costs

Traffic incidents are major contributors to non-recurring congestion

Blocking incidents hinder the flow of traffic, reducing roadway capacity and vehicle throughput. As long as travel lanes are open, the risk of non-recurring congestion and secondary collisions is greatly reduced. But even incidents that are not in travel lanes but on the shoulder can contribute to congestion, as drivers slow down out of caution or curiosity. It is important to make the distinction between blocking and non-blocking incidents, by region and statewide, so that adequate resources are made available to handle incident response strategically.

Of all incidents statewide between July 1 and September 30, 2011, 22% (2,612 incidents) blocked traffic, while 78% (9,426 incidents) were non-blocking. When examined by region, the percentage of incidents that blocked traffic ranges between 18% and 29%. The Olympic region is an exception: only 9% of incidents blocked traffic lanes and 91% were non-blocking.

WSDOT classifies incidents based on the duration for clearance times: less than 15 minutes, 15-90 minutes, and longer than 90 minutes. The table below shows how many blocking and non-blocking incidents occurred within each of the three categories and their associated societal costs.

The cost of incident induced delay can be significant

IR teams rove upon incidents and clear them as soon as they occur during the peak commute periods. This keeps people and business moving by operating the state highway system efficiently, in turn providing considerable economic benefits. Statistics show that the WSDOT incident response program cost is about \$50 an hour which includes the cost of labor and equipment.

An average incident that does not involve a lane closure results in about 576 vehicle-minutes of delay per minute that the incident is present. If the same incident closes a lane, the effect of that lane closure results in 814 vehicle-minutes of delay per minute of closure. When converted to dollars, an average incident with no lane closure costs \$244 per minute of incident; an incident with lane closure costs \$345 per minute of lane closure. These are averaged numbers: they can significantly underestimate delay in heavier volume conditions and significantly overestimate delay in lower volume conditions. These numbers are based on the Incident Response Phase 3 research conducted by Washington State Transportation Center (TRAC) at University of Washington. The complete research report can be found on WSDOT website at www.wsdot.wa.gov/Research/Reports/700/761.1.htm

Between July 1 and September 30, 2011, WSDOT recorded 12,038 incidents, of which 2,612 incidents were blocking and 9,426 incidents were non-blocking. The cost of delay for the 2,612 blocking incidents at \$345 per minute of lane closure is about

Blocking and non-blocking average clearance times by incident duration

July 1-September 30, 2011 (3rd calendar quarter); Time in minutes; Cost in dollars

Incident type	Number of incidents	Average IR response time	Average roadway clearance time	Average incident clearance time	Incident-induced delay costs
Incident duration less than 15 minutes					
Blocking	1,414	2.0	4.7	6.6	\$3,337,875
Non-blocking	7,773	0.3	3.5	5.1	\$9,782,204
Less than 15 minutes total	9,187	0.5	4.5	5.3	\$13,120,079
Incident duration ranging between 15 and 90 minutes					
Blocking	1,088	9.3	25.6	32.7	\$12,000,825
Non-blocking	1,621	6.3	23.5	26.8	\$10,470,284
Between 15 and 90 minutes total	2,709	7.5	25.2	29.2	\$22,471,109
Incident duration greater than or equal to 90 minutes					
Blocking	110	26.8	179.1	191.0	\$7,249,140
Non-blocking	32	50.9	126.7	155.5	\$1,213,900
90 minutes or longer total	142	32.3	170.4	183.0	\$8,463,040
Grand total	12,038	2.5	20.3	12.8	\$44,054,228

Data source: WITS, Washington State Patrol, WSDOT Traffic Office, and University of Washington.

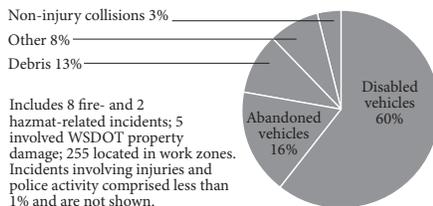
Note: The total number of incidents statewide is 12,038. Of these, 514 incidents are 'unable to locate' (UTL) incidents: IR personnel were en-route to respond, but the incident cleared before the team could reach it. The average times in the table above do not include UTL incidents.

Benefits of IR Program / Responses to Incidents Involving Fatalities

Number and percentage of responses by duration:
Total of 12,038 IR incidents statewide,
July 1-September 30, 2011

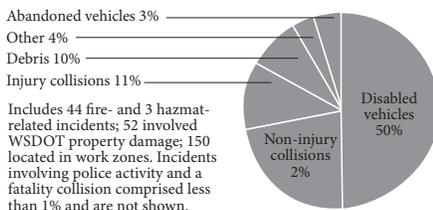
Incidents lasting less than 15 minutes (9,187)

Estimated cost for incidents lasting less than 15 minutes: about \$13.1 million



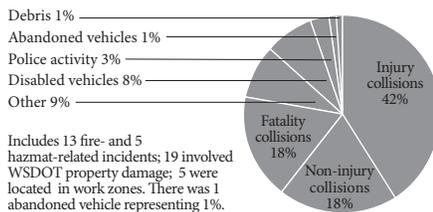
Incidents lasting 15 to 90 minutes (2,709)

Estimated cost for incidents lasting 15 to 90 minutes: about \$22.5 million



Incidents lasting 90 minutes and longer (142)

Estimated cost for incidents lasting 90 minutes and longer: about \$8.5 million



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

\$22.6 million. The cost of delay for 9,426 non-blocking incidents at \$244 per minute of incident is \$21.5 million. The cost of delay incurred in the three duration categories was about \$13.1 million for incidents lasting less than 15 minutes; \$22.5 million for incidents lasting 15-90 minutes; and \$8.5 million for over-90 minutes incidents.

Putting IR benefits in perspective

A motorist whose car has run out of gas and rolled onto the highway shoulder has two alternatives: call a friend or motor club and wait for help or walk to a gas station. The car is likely to remain on the shoulder for about one hour. This non-blocking incident of 60 minutes incurs \$14,640 in incident-induced delay, caused by vehicles slowing down around the incident. However, should an IR roving truck arrive at the scene and give the motorist a gallon of gas, clearing the incident now takes about five minutes, incurring \$1,220 in incident-induced delay costs and about \$8 for IR personnel time and equipment – including the price of a gallon of gas. Addressing minor incidents – such as a stalled car on the shoulder – provides a cost savings to the society of \$13,420 by greatly reducing incident-induced delay.

Incident Response saved people and businesses about \$11 million in quarter 3 of 2011

Based on research performed by the University of Maryland “A case study of Maryland CHART Operations,” and “Safe-Clear Performance Report 2008,” published by Rice University and Texas Transportation Institute conducted for the City of Houston, incident-induced delay was reduced by about 25% on average when incident response personnel assisted with incident clear-up. WSDOT estimates that the IR program saved citizens and businesses in Washington about \$11 million in this quarter. The dedicated average quarterly IR program budget is \$1.125 million.

IR crews assisted at 27 fatality incidents between July 1 and September 30, 2011

In the third quarter of 2011, IR teams responded to 27 incidents in which fatality was one of several contributing factors. All 27 incidents except one were over-90-minute incidents; of the 27, 25 were blocking incidents. Ten of the 27 fatality incidents occurred during the peak commute periods, and 15 occurred over the weekend, between 8:00pm on Friday and 5:00am on Monday.

Fatality clearance times fluctuate based on many contributing factors

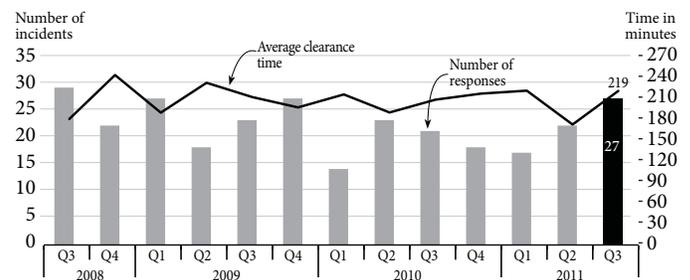
The average clearance time for these 27 fatality incidents was recorded at 219 minutes. In the second quarter of 2011, IR teams responded to 22 fatality incidents that had an average clearance time of 171 minutes. In the third quarter of 2010, teams responded to 21 fatality incidents with an average clearance time of 207 minutes.

Clearance times depend on the nature of the incidents as well as the number and types of emergency responders required at the scene in order to safely clear the incident.

Responses & average fatality collision clearance time

July 1, 2008 to September 30, 2011

Number of responses in thousands, clearance time in minutes



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

Incident Response Quarterly Update

Over-90 Minute Incidents, Extraordinary Incidents, and Major Incident Tow Program

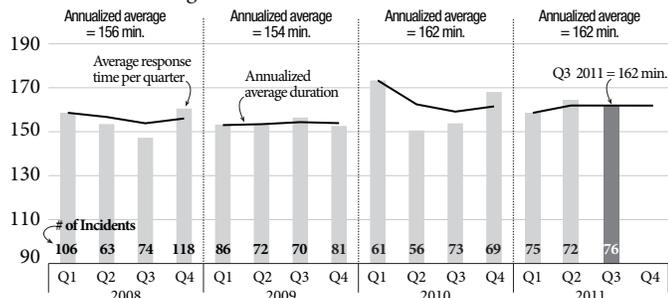
WSP and WSDOT target reductions in duration of over-90-minute incidents

WSDOT and WSP have a formal agreement in the Joint Operations Policy Statement (JOPS) to clear incidents in 90 minutes or less, if possible, although incidents with complicating factors may require more time to clear. Through her Government Management, Accountability, and Performance (GMAP) program, Governor Gregoire has charged the agencies with lowering the average duration of these over-90-minute incidents on nine key highway corridors in the state.

There were 76 over-90 minute incidents in the third quarter of 2011, with an average clearance time of 162 minutes. This is three minute faster than last quarter.

Progress toward the goal for reducing average clearance times for over-90 minute incidents on nine key western Washington highway segments

January 1, 2008 - September 30, 2011; 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 from the Oregon border to the British Columbia border, 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.

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

Third quarter of 2011, Duration in minutes

Date & time	State route & location	Duration	City	Incident Summary
July 1, 2011 00:50 AM	SR 18 WB at SR 516 MP 11.50	441	Covington	Injury collision – Driver fatigue caused a fully loaded semi to crash through guardrail into a ditch. A second semi truck then hit debris from the first collision, becoming disabled and leaking fuel; guardrail had to be removed to recover truck. A detour was set up around the incident. Additional time was needed to contain the fuel spill, pump fuel off the second semi, and clean up debris field.
Sep. 15, 2011 5:29 AM	SR 167 SB at SR 512 MP 6.10	386	Puyallup	Injury collision/rollover – Fully loaded semi crashed through guardrail, rolled over and down embankment, leaking diesel fuel. Dept. of Ecology Response Team responded. The driver was extricated by Fire/Rescue and transported by EMS to hospital. MIT tows recovered semi after fuel spill was controlled. 30 posts & 250 feet of guardrail were damaged; a temporary work zone was established to repair the guardrail.

Data source: WITS, Washington State Patrol, and WSDOT Traffic Office.

Extraordinary incidents lasting more than six hours

Two incidents lasting more than six hours took a total of 827 minutes, or an average of nearly 6.9 hours each. Both incidents involved heavy commercial trucks and both involved fuel spills. Without factoring in these incidents, the average clearance time would have been 155 minutes. For more information on the extraordinary events lasting six hours or more, see table below.

Major Incident Tow (MIT) Program

Heavy trucks are involved in about 5% of all collisions, yet they comprise a disproportionate 25% to 30% of collisions that take longer than 90 minutes to clear – not least due to their physical size and their capacity to carry heavy and diverse loads. Trucks carry every type of cargo imaginable, from groceries to toxic chemicals – the latter especially can create environmental and public safety risks if the containers are breached or the load is spilled in a collision or rollover. These incidents can cause prolonged highway closures that cause congestion, secondary incidents, and economic loss. Clearing them often requires specialized recovery equipment that is not always readily available.

To reduce the cost and damages to the highway system from these major incidents, immediate and significant response is required to restore the highway systems capacity, operation and function. Non-recurring congestion and secondary incidents caused by lost capacity constitute a major loss to the highway system and the traveling public. Within this context, it is the policy of WSDOT, WSP, and heavy-tow-truck contractors to respond to these incidents and return the highway system to its original operating condition as quickly as possible.

Major Incident Tow Program & Customer Service Responses

Major incident tow activation clearance time and dollars paid to tow companies

Third quarter of 2011, Clearance time in minutes, Amount paid in dollars, Time stamps in hour:minutes

Date and Time	State route & location	MIT activation time	MIT tow at scene	Notice to proceed (NTP)	Travel lanes open	MIT clearance time (min.)	Amount paid	Tow company
July 20, 2011 7:30 AM	I-90 WB at MP 11	N/A	10:00	10:21	11:38	77	\$2,737.50	Quality Tow
August 5, 2011 8:04 AM	I-90 WB at SR 900	8:10	8:30	8:40	9:25	45	\$2,715.00	Todd's Towing (Clark's Tow sub)
August 29, 2011 9:31 AM	SR 18 EB at C Street	9:31	10:15	10:23	10:54	31	\$2,715.00	Pro-Tow - Maple Valley
Sep. 15, 2011 9:38 AM	I-5 SB at SR 432	9:59	10:11	10:24	11:05	41	\$2,697.50	Carl's Towing
Sep. 24, 2011 12:30 PM	I-90 WB at SR 18	12:51	13:10	13:50	14:51	61	\$2,737.50	Quality Tow

Data source: WITS, Washington State Patrol, and WSDOT Traffic Office.

MIT is a legislatively mandated program, instituted to improve the incident clearance times when a heavy vehicle is involved in a blocking incident. This program provides incentive pay for authorized tow companies to clear the incident within 90-minutes upon receiving a notice-to-proceed (NTP) instruction from the scene commander. For 2011-2013 biennium, the legislature apportioned \$145,000 to continue the MIT program. In the third quarter of 2011, there were five MIT activations; the total amount paid to authorized tow companies was \$13,602.50. Four of these incidents occurred in King county and one in Cowlitz county.

Customer service an integral part of IR

IR teams provide important motorist assistance services to the traveling public, but also offer reassurance to motorists who may be alarmed or upset by their situation. Conditions on routes like the floating bridges, where there are no shoulders, or some busy commute routes, where shoulders are narrow, make even changing a flat tire hazardous. The IR team's primary concern is the safety of all parties involved. Upon arrival, the IR technicians will ask about the problem and, if needed, offer the assistance needed to ensure their safety and get them back under way.

“ Incident Response: What customers said this quarter...

- Excellent service! Dave was super friendly and changed my tire in 2 minutes! His overall attitude made me feel being stuck on I-90 was no big deal. Whew!
- Trent was a total savior. We were stranded at a light blocking the left turn lane. They were right there and got us to safety. Thank you.
- I had seen the trucks but didn't know that they could help prevent an accident by assisting me when I was stupid enough to run my bike out of gas. Thanks Richard.
- This service saved my day allowing me to complete my business! I will use my voting power to support this service.
- Mark was amazing! I had three teenagers with me and our insurance roadside assistance did not show up so he changed our tire. We love him!
- Craig was phenomenal and much welcomed surprise. He fixed my tire fast and was very concerned with my safety.
- This service was very quick. Rick was super professional and helpful. This was my first experience with your program. This means the world to our community. If there is any other way to promote this service please add me to your mailings.
- Thank God for people like Richard. Within 2 minutes he realized the problem and fixed it. If it were not for Richard we would have wasted \$300 on towing. He is a genius!

WSDOT welcomes feedback from travelers who have been helped by its Incident Response teams. Customers can use the pre-addressed business reply post cards provided by IR teams, by email to HQCustomerService@wsdot.wa.gov, or via WSDOT's on-line survey at wsdot.wa.gov/Operations/IncidentResponse/surveylink.htm. The comments above were selected from all customer comments received between July 1 and September 30, 2011.

Washington State Ferries Quarterly Update

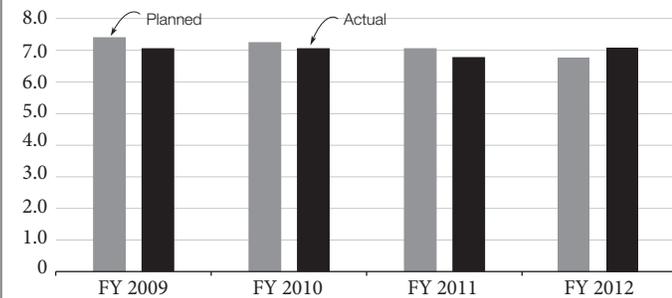
Ridership and Farebox Revenue

Washington State Ferries Highlights

Ridership for the quarter was 7 million, 3% above the quarterly projection.

WSF planned and actual ridership levels by fiscal year

First quarter (July 1 - September 30), fiscal years 2009 - 2012
Ridership in millions



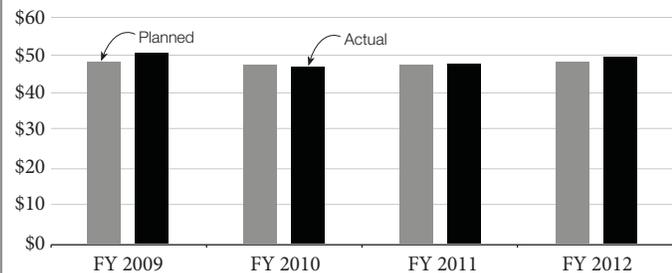
Data source: WSDOT Ferries Division.

Farebox revenue was \$49.8 million, 2.6% above the quarterly projection.

On-time performance was 93.7% and average sailing delay was 2.9 minutes for the quarter, an improvement over the same quarter in FY 2011.

WSF planned and actual farebox revenue levels by fiscal year

First quarter (July 1 - September 30), fiscal years 2009 - 2012
Dollars in millions



Data source: WSDOT Ferries Division.

Note: GNB 42 reported the farebox revenue for Q4 of FY 2010 as \$39.6 million, the correct amount is \$38.8 million.

Washington State Ferries (WSF) serves as both an extension of the state's highway system and as a regional mass-transit provider. It provides a critical link to communities separated by water or longer driving distances, and is essential to the movement of goods and people in the Puget Sound region. It is the largest operating auto-ferry fleet in the world, carrying 10 million vehicles and 22 million ferry passengers each year.

Ridership above projected levels and improves over one year ago

For the first quarter of fiscal year 2012 (July 1—September 30), 7.0 million people traveled on the Ferry system, about 204,000 (3.0%) above the levels projected in June 2011. Compared to the same quarter one year ago, WSF served 151,000 more riders (2.2%).

WSF faces a number of challenges in trying to maintain ridership at or near projected levels. Over the last several years, both demographics and work patterns in the Puget Sound region have shifted. For example, the 65-and-older population of Island County has grown at a faster rate than the total population. Between 2007 and 2010, the county's over-65 population grew 9.5% compared to 3.4% growth in the total population. People in this age group tend to have more discretion in their travel choices because they have reached retirement age and are less likely to be daily commuters.

Additionally, higher than average unemployment rates due to the nationwide recession also contribute to the decline in the number of daily commuters riding the ferry system. Other ridership challenges WSF faces include competition from other travel options and fare increases.

WSF is developing and implementing several management strategies to help address these challenges. These strategies include: a reservation system to spread demand to off-peak times making ferry travel more predictable, new vessels that allow for increased capacity and improved service reliability on the Port Townsend-Coupeville route, and a new fare structure that adds a 'small' car category which will allow for more capacity within the current fleet and existing service schedule.

Farebox above projected levels and improves compared to FY 2011

For the first quarter of FY 2012, farebox revenue was \$49.8 million, \$1.2 million (2.6%) above projected levels. Farebox revenues were approximately \$1.7 million (3.5%) above the same quarter last year.

Revenue performance is impacted by the same issues that affect ridership; namely demographics, work patterns, and the continued sluggish economy. The Washington State Transportation Commission adopted two items that will affect fare revenue:

- A 2.5% fare increase, effective October 2011
- A new fare category for small vehicles under 14 feet long

Washington State Ferries Quarterly Update

Service Reliability

WSF is also working to increase non-fare revenues through increasing concession and advertising revenue, and through a new agreement with the Washington State Lottery.

More missed trips compared to the same period in FY 2011

The number of net missed trips in the first quarter of FY 2012 was 48 more than the number of missed trips in the first quarter of FY 2011, 186 compared to 138. The primary difference in the number of missed trips as compared to a year ago is on the Port Townsend – Coupeville route: over the last year two new vessels (the *M/V Chetzemoka* and *M/V Salish*) have been in service on this route. Previously the *M/V Steilacoom II*, a leased vessel, had been operating on this route after the Steel Electric class ferry vessels were removed from service in November, 2007. The new, larger ferries now serving this route have different characteristics than the leased vessel and therefore it is difficult to make comparisons for the same time periods on this route.

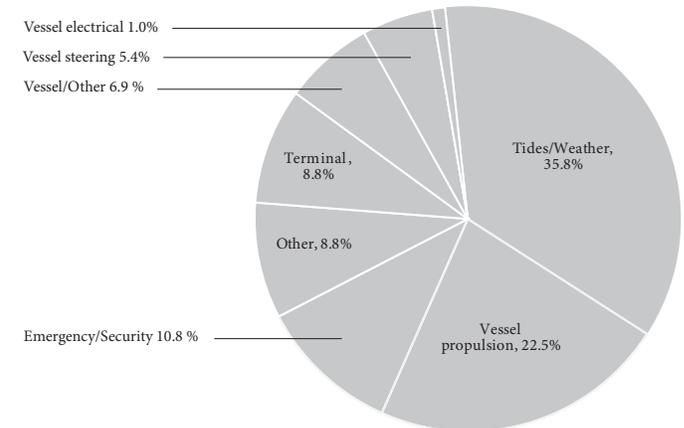
In the first quarter of FY 2012, 42,601 regular service trips were scheduled. Of those trips, 204 were cancelled and 18 were replaced, resulting in a total of 42,415 trips during the quarter (42,601 scheduled – 204 cancelled + 18 replacement trips = 42,415 net trips).

Trips are cancelled for a variety of reasons, including tide and weather conditions, mechanical problems with vessels or terminals, and cancellations arising when a ferry is diverted for

emergency transport. Trips are also missed when vessels fall too far behind the published schedule to make all the trips for that day.

Reasons for missed trips

First quarter (July 1 - September 30), FY 2012



Data source: WSDOT Ferries Division.

On-time performance lags behind previous quarter but improves year-to-year

A trip is considered delayed when a vessel does not leave the terminal within 10 minutes of the scheduled departure time. The quarterly average delay is the average delay past 10 minutes of the scheduled departure time. WSF calculates its on-time performance rating using an automated tracking system on board each vessel that records when it leaves the ferry terminal.

Washington State Ferries missed-trip reliability comparison

Route	First quarter, fiscal year 2011			First quarter, fiscal year 2012		
	Scheduled trips	Missed trips ¹	Reliability average ²	Scheduled trips	Missed trips ¹	Reliability average ²
San Juan (Domestic)	7,953	24	99.7%	7,018	6	99.9%
Anacortes-Sidney, B.C. (International)	358	0	100.0%	356	0	100.0%
Edmonds - Kingston	4,308	18	99.6%	4,314	2	100.0%
Fauntleroy - Vashon - Southworth	10,784	27	99.7%	10,785	16	99.9%
Port Townsend - Coupeville	1,840	28	98.5%	2,760	107	96.1%
Mukilteo - Clinton	6,960	35	99.5%	6,958	34	99.5%
Pt. Defiance - Tahlequah	3,496	2	99.9%	3,496	13	99.6%
Seattle - Bainbridge Island	4,167	2	100.0%	4,167	4	99.9%
Seattle - Bremerton	2,747	2	99.9%	2,747	4	99.9%
Total	42,613	138	99.7%	42,601	186	99.6%

Data source: WSDOT Ferries Division.

Notes: 1 Missed trips is the difference (net) between the number of cancelled trips and the number of replaced trips.

2 The reliability average is calculated by dividing the recorded number of net trips (scheduled trips - cancelled trips + make-up trips) divided by the number of scheduled trips.

Washington State Ferries Quarterly Update

Service Reliability / Customer Feedback

Washington State Ferries on-time performance comparison

Route	First quarter, fiscal year 2011			First quarter, fiscal year 2012		
	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 Islands (Domestic)	5,536	74.6%	7.8 minutes	6,109	88.2%	3.6 minutes
Anacortes-Sidney, B.C. (International)	300	84.0%	3.2 minutes	281	79.2%	6.3 minutes
Edmonds-Kingston	3,668	85.8%	3.9 minutes	4,213	97.7%	2.2 minutes
Fauntleroy-Vashon-Southworth	8,621	81.7%	4.1 minutes	10,127	95.0%	2.7 minutes
Port Townsend - Coupeville	1,369	76.3%	6.8 minutes	2,310	87.9%	4.4 minutes
Mukilteo-Clinton	6,043	87.7%	3.2 minutes	6,750	97.6%	1.9 minutes
Pt. Defiance-Tahlequah	3,076	88.3%	3.5 minutes	3,327	96.7%	2.7 minutes
Seattle-Bainbridge Island	3,465	83.5%	4.1 minutes	3,711	89.5%	3.3 minutes
Seattle-Bremerton	2,468	89.9%	3.4 minutes	2,624	95.8%	2.7 minutes
Total	34,546	82.9%	4.6 minutes	39,452	93.7%	2.9 minutes

Data source: WSDOT Ferries Division.

Notes: 1 Number of actual trips represents trips detected by the automated tracking system. It does not count all completed trips during the quarter, nor all trips counted are "on-time".

2 A trip is counted as "on-time" if it departs within 10 minutes of the scheduled sailing time.

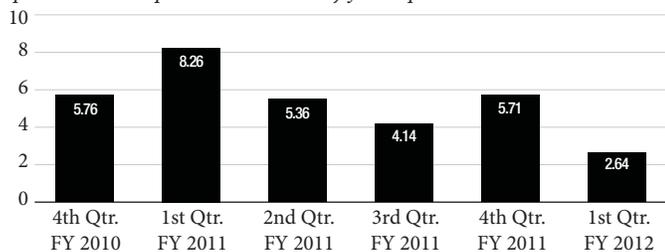
3 The average sailing delay is an average of the duration of time occurring after the "on-time" window ends and the actual recorded departure time of the vessel.

The percentage of sailings system-wide that departed on time decreased quarter-to-quarter by 2.5%: 93.7% on time in the first quarter of FY 2012 as compared to 96.2% in the previous quarter. On-time performance compared to the same quarter in FY 2011 improved by 10.8%. The average sailing delay improved from 4.6 minutes of delay for the first quarter of FY 2011 to 2.9 minutes of delay for the first quarter of FY 2012.

Customer complaints decrease significantly compared to the previous quarter

In the first quarter of FY 2012, there was a decrease in customer complaints, from 5.7 to 2.6 per 100,000 customers, a 54% decrease. The largest decreases in number of complaints compared to the previous quarter were for complaints about employee behavior, facilities/vessel maintenance, and ticketing.

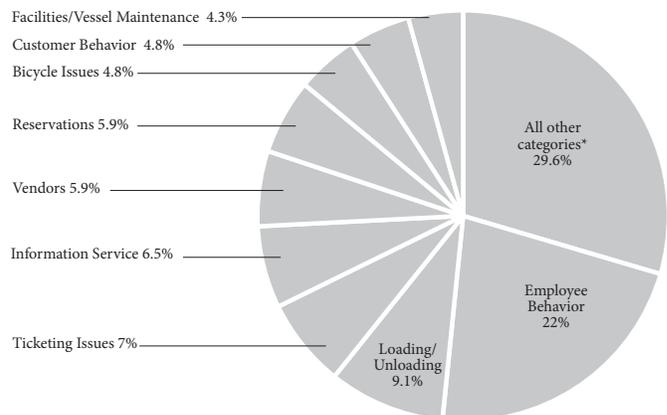
Average number of complaints per 100,000 customers April 1, 2010 - September 30, 2011, by fiscal quarter



Data source: WSDOT Ferries Division.

Common WSF complaint categories

Quarter one fiscal year 2012 (July 1 - September 30, 2011)



Data source: WSDOT Ferries Division.

*Note: "All other categories" includes the following complaint categories, each of which received less than 4% of the total complaints in the first fiscal quarter of FY 2012: On-Time Performance, Police/WSF issues, Noise, General Service, Miscellaneous Issues, Schedule, Signage, Safety Issues, Website, Advertising, Crewing, Smoking Issues, Terminal/Vessel Cleanliness, Parking Issues, Injury to Customer, and Damage to Customer Property.

WSF works to reduce air emissions

For more information about how WSF is reducing air emissions through using biodiesel, adjusting vessel speeds to save fuel, exploring the use of alternative fuels and hybrid propulsion systems, and through retrofitting vessel engines, see the *Air Quality Annual Report* on page 35.

Rail: Amtrak Cascades Quarterly Update

Passenger Rail: Amtrak Cascades

Washington is one of 13 states to provide operating funds to Amtrak for intercity passenger rail service. Amtrak *Cascades* train operations span 466 miles of rail between Eugene, Oregon, and Vancouver, B.C. Amtrak uses five European-designed Talgo trains which can travel faster comfortably through curves than conventional train equipment. Three trains are owned by Washington and the other two are owned by Amtrak.

Amtrak *Cascades* service is jointly funded by the states of Washington and Oregon, and Amtrak. Washington funds two round trips between Seattle and Portland, one round trip between Portland and Vancouver, B.C., and one round trip between Seattle and Vancouver, B.C. Oregon funds two round trips between Eugene and Portland, and Amtrak funds one round trip between Portland and Seattle. The table below shows ridership proportional to funding entity.

Amtrak Cascades ridership by funding partner

July-September (Quarter 3) ridership, 2009-2011

Funding partner	Round trips funded	Quarter 3 July – Sept 2009	Quarter 3 July – Sept 2010	Quarter 3 July – Sept 2011
Washington	4	156,769	167,886	176,979
Oregon	2	27,810	33,297	37,529
Amtrak	1	36,483	35,979	36,829
Total ridership		221,062	237,162	251,337

Data source: WSDOT State Rail and Marine Office.

Note: Washington-funded trains: Amtrak *Cascades* 501, 506, 507 (Seattle/Portland), 508, 510, 513, 516, and 517. Oregon-funded trains: Amtrak *Cascades* 500, 504, 507, and 509 between Portland and Eugene. Amtrak-funded trains: Amtrak *Cascades* 500 and 509 between Seattle and Portland.

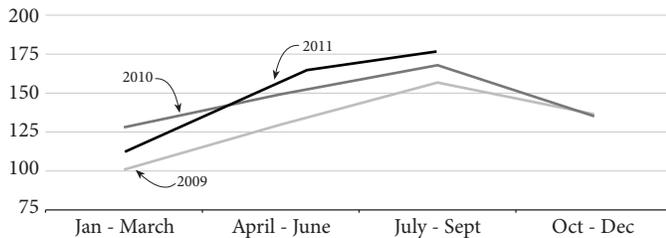
Amtrak Cascades third quarter ridership up 5.4% compared to the same quarter in 2010

State-supported Amtrak *Cascades* service was up 5.4% from the same period in 2010 and up 12.9% from the same time period in 2009. Amtrak *Cascades* served 176,979 passengers in the third quarter of 2011; this is more passengers served in any quarter in 2009, 2010, or the first half of 2011.

Amtrak Cascades quarterly ridership

Number of passengers per quarter, 2009 - 2011

Riders in thousands



Data source: WSDOT State Rail and Marine Office.

Note: Ridership for Washington-funded trains only.

Rail Performance Highlights

State-sponsored Amtrak Cascades quarter 3 2011 ridership is up 5.4% compared to quarter 3 of 2010.

On-time performance is 71% for the quarter, down 2.6% compared to the same quarter in 2010.

Ticket revenues are up 3.7% compared to quarter 3 of 2010.

For more information on Recovery Act-funded High Speed Rail, see page 47.



Rail: Amtrak Cascades

Quarterly Update

Passenger Rail: Amtrak Cascades

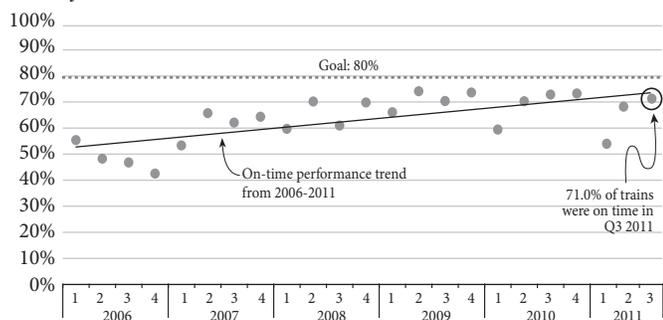
Quarterly average on-time performance was 71%, down slightly from the same quarter in 2010

On-time performance for state-supported Amtrak *Cascades* trains was 71.0% for the quarter, down 2.6% compared to the same quarter in 2010, and down 0.1% from the third quarter of 2009. The long-term goal for on-time performance is 80%; the trend since 2006 shows a gradual increase towards the 80% goal.

On-time performance is affected by a number of natural and operational conditions that vary daily; WSDOT examines these issues with Amtrak and the host railroad, BNSF, to determine the causes of delay. Contributing factors include localized speed restrictions (slow orders for track condition), interference from other trains on the corridor, poor weather, station overtime, slow running trains, and customs.

Amtrak Cascades on-time performance

Percent of trains on-time, 2006 - 2011



Data source: WSDOT State Rail and Marine Office.

Note: 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.

Amtrak Cascades ticket revenue up 3.7%

During the second quarter of 2011, ticket revenues for state-sponsored Amtrak *Cascades* trains were up 3.7% compared to the same period in 2010. Revenue was driven mainly by an effective ticket pricing strategy and a second train to Vancouver, B.C., which attracts long-distance riders, and additional ridership along the corridor.

Second train to Vancouver B.C. generates an incremental revenue of \$4.5 million annually

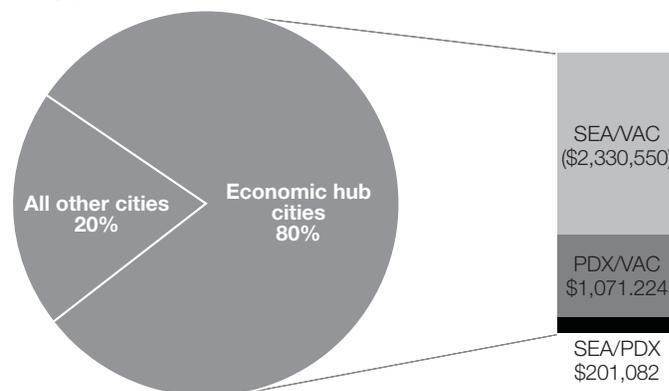
The operational strategy to expand the second train to Vancouver, B.C. in August 2009 generated \$3.36 million in direct ticket revenues and \$1.16 million in induced ticket revenue for a total incremental revenue of \$4.52 million.

Where does the growth come from?

The following graphic shows that the major growth opportunity comes from intercity riders at major economic hubs and population centers (Seattle, Portland, and Vancouver, BC). This has a policy implication for future operation and development strategies. WSDOT is planning a feasibility study on operating express service between economic hubs and population centers, to identify and capture future growth opportunities.

Net revenue effect from trains 513/516 expansion to Vancouver, B.C.

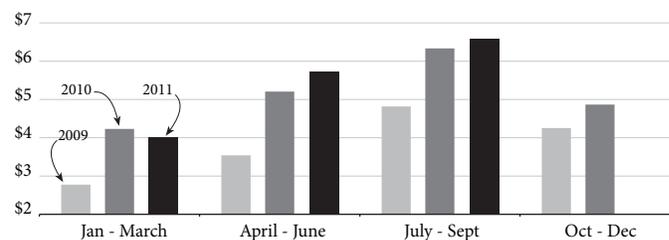
Incremental revenue of trains 513 and 516
Induced revenue growth of trains 510 and 517
Change from 2008 to 2010



Data source: WSDOT State Rail and Marine Office.

Amtrak Cascades ticket revenue by quarter

Dollars in millions, 2009 - 2011



Data source: Amtrak and WSDOT State Rail and Marine Office.

Note: Ticket revenue for Washington-funded trains only.



Environment

Statewide 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.



In this section

Noise Quality Annual Report	30
Air Quality Annual Report	35
Endangered Species Act Compliance Annual Report	38

See also

Quarterly Report on Capital Projects (Beige Pages)	48
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Earlier articles concerned with environment

- Programmatic Permitting, GNB 42
- Water Quality, GNB 41
- Wetlands Preservation, GNB 41
- Fish Passage Barriers, GNB 40
- Environmental Compliance, GNB 40
- NEPA Documentation, GNB 40
- Air Quality, GNB 39
- Noise Quality, GNB 39
- Endangered Species Act Documentation, GNB 38
- Special Report: Climate Change, GNB 34

Noise Quality Annual Report

Noise Program Highlights

WSDOT's new state noise policy will affect where and when noise walls will be constructed.

Updated noise policies and procedures can be found at www.wsdot.wa.gov/Environment/Air/noise.htm

Since 2008, nine of 15 noise walls constructed were for noise retrofit (Type 2) projects.

Preliminary results in the Ship Canal Bridge noise study indicate that actual noise reductions are not as large as anticipated by the expert review panel.

The quieter asphalt test pavements have not been effective at reducing tire pavement noise after about 6 months of being open to traffic.

Quieter asphalt pavement test sections on I-5 in Lynnwood and SR 520 in Medina were badly rutted after two years and have been removed.

WSDOT is currently evaluating noise performance for several concrete surface textures, and quieter concrete test pavements are showing promising results.

WSDOT develops innovative and cost-effective noise abatement strategies, conducts transportation noise studies for State Environmental Protection Act (SEPA) and National Environmental Protection Act (NEPA) compliance, prepares permit applications for night construction noise variances, and conducts acoustic research. In fiscal year 2011, WSDOT continued evaluating alternatives to standard concrete noise walls, developed a new state noise policy, completed and approved more than 35 traffic noise studies, and prepared more than 100 construction noise variances. The agency also began research to reduce noise from rumble strips and monitor underwater sound (hydro-acoustic).

Updates to Federal regulations may result in more noise studies, and fewer noise walls

Federal regulations require states to evaluate traffic noise whenever they expand or change a road in a way that could change noise levels or bring traffic closer to neighborhoods. In July 2010, the Federal Highway Administration (FHWA) published a final rule updating noise regulations that describe how traffic noise and noise abatement must be addressed on highway projects using federal money. The rule requires state DOTs to develop a state noise policy that is approved by FHWA. WSDOT has published the 2011 WSDOT Noise Policy and Procedures document, which now applies to all new traffic noise studies, and those studies that were not substantially complete by July 13, 2011. The new policy is likely to affect when and where noise walls are built, result in more traffic noise analysis, and likely lead to fewer (though larger) noise walls. See the gray box on the next page for information on how WSDOT evaluates traffic noise and noise abatement.

Most noise walls built since 2008 have been retrofit projects

Noise walls are the most common form of traffic noise abatement (see *Gray Notebook* 35, page 30); they can range from four to 30 feet tall, and are made of concrete or other materials that reflect or absorb noise. WSDOT evaluates its road construction projects for traffic noise impacts and mitigation in two categories: Type 1 and Type 2 projects.

Type 1 projects require a traffic noise study because they have the potential to increase traffic noise levels for nearby residents by bringing a road closer to people or by adding traffic lanes. Since 2008, WSDOT has constructed six noise walls for Type 1 projects.

Number and cost of noise walls constructed between 2000 and 2010, by project type

Length in miles; Area in square feet; Dollars in millions

Years	Project type	Total number of noise walls built	Average number built per year	Total length of walls	Total area of noise walls	Total cost of noise walls	Average cost per noise wall ²
2001-2007 ¹	Type 1	49	7	18.4	1,323,425	\$29.8	\$0.6
	Type 2	5	< 1	0.6	99,612	\$3.3	
2008-2010	Type 1	6	2	0.9	11,815	\$6.9	\$1.09
	Type 2	9	3	1.9	147,401	\$9.5	

Data source: WSDOT Environmental Services Office

Data notes: 1 Between 2000 and 2007 (7 years), the majority of funded noise mitigation projects were Type 1. In 2008, noise mitigation efforts shifted focus to Type 2 projects.

2 Average cost combines costs for both Type 1 and Type 2 projects.

WSDOT Noise Research

Type 2 projects are noise abatement retrofits made to existing highways for residential areas that were constructed before the highway was built or expanded. Retrofit projects are prioritized by community age, density, noise levels, and the cost of abatement, and are made possible through targeted funding from the Washington State Legislature. This state-funded noise retrofit-noise barrier program is WSDOT's effort to improve the noise levels near highways in an equitable way, since traffic noise was not studied before 1976, after construction of highways like I-5.

WSDOT has constructed nine retrofit noise walls since 2008—a third more than Type 1 noise walls, but there remain about 60 other prioritized, but unfunded, retrofit locations statewide. The table on the previous page shows that almost two of the nearly three miles of noise walls constructed since 2008 are Type 2 projects.

WSDOT noise research seeks to expand cost-effective options

Traffic noise is a concern for many residents living along state highways. WSDOT continues to study new, efficient, cost effective ways to manage noise generated from highways and bridges. Typically, noise barriers (noise walls and earthen berms) have been the most effective method for reducing traffic noise, though they can be expensive and are not always constructible. WSDOT is evaluating other ways to address noise quality like changing the surface texture of concretes, using “quieter” pavements, and applying retrofits for unconventional noise sources such as bridge expansion joints.



The noise walls near this bridge joint on the Tacoma Narrows Bridge were coated with a material that absorbs sound

Reducing centerline rumble strip noise

Rumble strips are commonly used safety features proven to reduce vehicle crashes. However, noise from rumble strips is the cause of frequent complaints by nearby residents. In 2011, the WSDOT research office allocated \$60,000 to research

WSDOT follows these steps to evaluate noise

When a project requires a noise study, WSDOT follows federal guidelines for a three-step process to evaluate traffic noise levels and traffic noise abatement.

- Step 1: WSDOT determines whether the project will create traffic noise impacts. In Washington, traffic noise impacts occur when noise levels reach or exceed 66 decibels for residences, or when traffic noise is modeled to increase by at least 10 decibels after the project is complete.
- Step 2: WSDOT considers the feasibility of noise abatement if noise impacts are expected with the project. Assessing feasibility means that WSDOT evaluates whether noise abatement is both constructible and effective at reducing noise levels.
- Step 3: WSDOT evaluates the reasonableness of noise abatement. Abatement measures that are determined feasible will be compared to the allowed cost/benefit criteria. Cost-effective noise abatement that is desired by the affected community is recommended for construction.

centerline rumble strip noise and develop a new rumble strip design that is safe and effective, and also produces less noise for people outside the vehicle than the current design. Research results are expected in 2012 and will be featured in a future *Gray Notebook* edition.

WSDOT cooperates with UW on underwater noise monitoring and research

Since 2005, WSDOT has monitored underwater noise levels from impact and vibratory pile driving to ensure compliance with the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA) (see ESA annual report on page 38 for more information). Underwater noise that reaches or exceeds certain thresholds can cause injury or death to fish and some marine mammals, and WSDOT is required to monitor activities with the potential to generate underwater noise reaching 120 decibels. Noise can travel long distances both through the water and the ground below the pile, so noise monitoring could be required up to 20 miles away from the construction site. Monitoring costs and work stoppage required to protect nearby marine mammals can add substantial cost to projects.

WSDOT and the University of Washington were awarded \$134,931 for continued noise monitoring, and to design effective mitigation tools to reduce the size of the biological monitoring area. Results of the research are expected in 2013.

Noise Quality Annual Report

Bridge Noise

Reducing noise from bridge expansion joints

WSDOT is also researching new ways to reduce bridge noise, particularly from bridge expansion joints, with a pilot project on the Tacoma Narrows Bridge. The goal was to reduce the annoying qualities of the low frequency sounds coming from the bridge joint. WSDOT installed noise walls about 10 feet tall that extended from the expansion joint towards the affected community; the walls were coated with an absorptive material to reduce noise reflections. Quantitative results suggest some reduction in the most annoying low frequencies of the targeted bridge joint, and area residents have made positive comments about improved noise conditions. WSDOT will publish a report on the pilot project in early 2012.

Before and After: Ship Canal Bridge noise study results

The Ship Canal Bridge is a unique double-decker bridge on I-5 in Seattle: the mainline lanes are on the top deck, and the express lanes are on the bottom deck. Noise from the express lanes is

reflected off the underside of the top deck and into adjacent neighborhoods. In 2004, the Legislature awarded WSDOT funding to research traffic noise from the Ship Canal Bridge. In 2008, a panel of national acoustic experts evaluated the research and made recommendations for further analysis and abatement. The expert panel recommended hanging panels with sound absorptive properties vertically from the ceiling above the express lanes. This abatement strategy was expected to reduce noise by four to five decibels, and the panels were installed as a pilot project on the south end of the bridge in 2010.

WSDOT assessed the acoustic performance of the pilot project by measuring 18 neighborhood locations near the bridge before construction, quarterly for the first year after construction, and will continue to record results annually for two years after that. The table above shows results through the third quarter after construction: in 55% of locations, the reductions are closer to one or two decibels than the four to five decibels predicted in the modeling.

Noise levels in neighborhood locations surrounding the Ship Canal Bridge

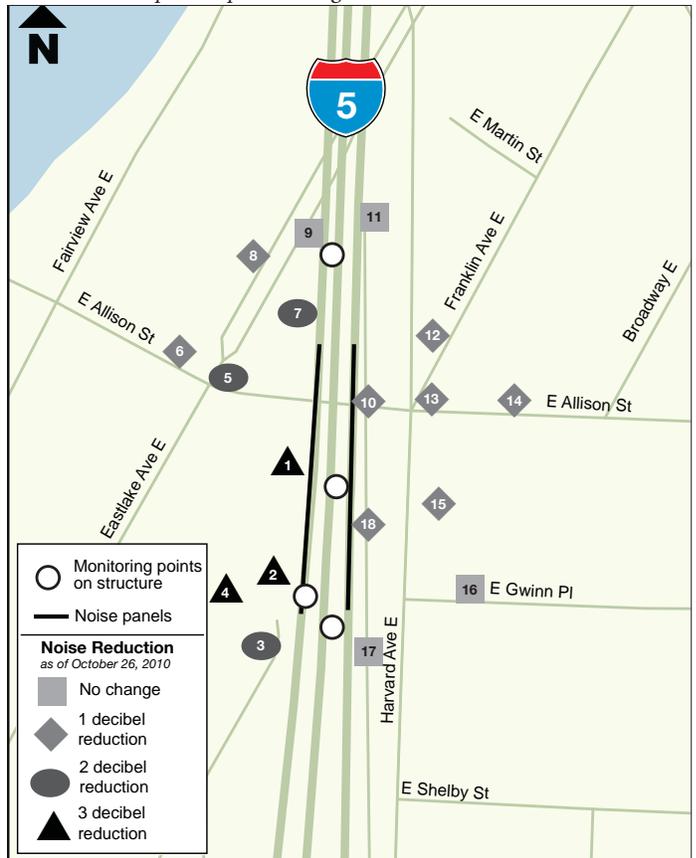
Noise levels in dBA, 1-hour L_{eq}

Location number	Before construction	After construction				Average change
	February 2010	October 2010	February 2011	June 2011		
1	84	81	80	80	4	
2	82	79	79	78	3	
3	82	80	80	80	2	
4	73	71	72	71	2	
5	79	77	77	77	2	
6	69	69	69	69	0	
7	83	80	80	80	3	
8	80	78	77	78	2	
9	82	81	80	81	1	
10	84	82	82	82	2	
11	82	82	82	81	0	
12	80	79	79	77	2	
13	79	78	78	78	1	
14	72	70	70	70	2	
15	77	77	76	76	1	
16	72	75	72	74	-2	
17	80	82	83	82	-2	
18	82	82	83	82	0	

Data source: WSDOT Environmental Services Office

I-5 Ship Canal Bridge: noise study results

Numbers on map correspond to neighborhood location numbers



Quieter Pavement Testing

Measuring noise where the rubber hits the road

When vehicles travel at highway speeds, more than 70% of traffic noise comes from tires on pavement: traffic noise levels vary by the type and condition of the pavement. WSDOT investigates how pavement types and surface treatments can reduce traffic noise levels and, potentially, supplement other forms of traffic noise abatement. One research goal is to determine if WSDOT can build pavements that reduce noise and are long-lasting with little to no additional costs compared to conventional asphalt pavements.

WSDOT started testing quieter asphalt pavement designs in 2006. The quieter asphalt pavements (rubberized asphalt and polymer-modified asphalt) were quieter than standard asphalt pavements when first constructed, but then lost any audible noise reduction benefits in six to 12 months. All pavements are evaluated for noise, smoothness, and rutting over time and where possible, compared to conventional pavements installed at the same time. WSDOT has collected monthly acoustic measurements using a technique called the On-Board Sound Intensity (OBSI) method (see the gray box below for details). Only one of the three original quieter asphalt pavement test sections is still in operation.

Test sections on I-5 and SR 520

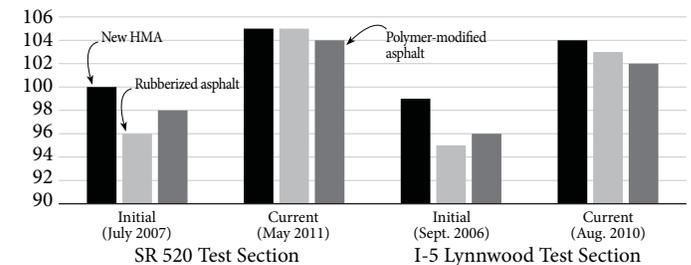
Generally, the asphalt quieter test pavements have not been effective at reducing tire pavement noise after about six months of being open to traffic. The test sections on I-5 in Lynnwood (constructed in 2006) and SR 520 in Medina (constructed in 2007) were badly rutted and were removed in 2010 and 2011, respectively. Only two years after installation, rut depths on SR 520 Lane 2 exceeded 12 millimeters, the threshold depth when pavements are programmed for rehabilitation. Rut depths on the I-5 quieter pavement test section in Lynnwood showed similar rutting wear. WSDOT is currently reviewing the research data, evaluating the life-cycles, and assessing cost effectiveness of these quieter pavements, and will present the final research results in a future *Gray Notebook* edition.

How is noise measured?

Noise is measured in a unit called a decibel, which is a simplified term used here to represent an A-weighted decibel scale. This scale describes sounds in a range heard by the human ear. Noise experts agree that sound levels must differ by at least three decibels to be noticeable to a young, healthy human ear (audibly quieter). Noise barriers like noise walls and earthen berms can typically provide a noise reduction of five to 10 decibels, with 10 decibels cutting the perceived noise level experienced by 50%.

Initial and current noise levels for quieter pavement test sections on I-5 and SR 520

By pavement materials used; Noise levels in dBAs



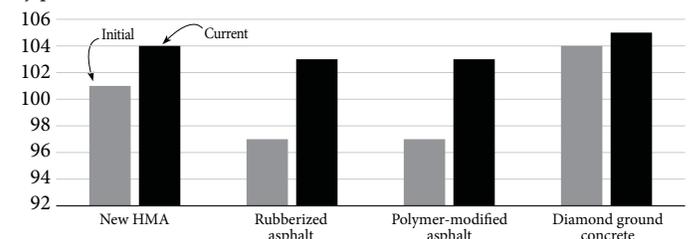
Data source: WSDOT Environmental Services Office.

Test sections on I-405

The quieter asphalt pavements on both directions of I-405, just south of downtown Bellevue, were constructed in 2009. Like the other quieter asphalt pavement test sections, these were measured monthly for noise (weather permitting) and twice yearly for smoothness and rutting. A diamond ground test section was also included as part of the I-405 test section (see the graph below for results on surface texturing).

Initial and current noise levels for quieter pavement test section on I-405 in Bellevue vicinity

By pavement materials used; Noise levels in dBAs



Data source: WSDOT Environmental Services Office.

The polymer-modified asphalt was initially louder than the rubberized asphalt and both were quieter than the conventional asphalt. Since installation, the quieter pavement test sections have remained very similar acoustically, but neither are currently audibly (≥ 3 dBA) quieter than conventional asphalt. The diamond

Noise coming from the tire/pavement interaction is measured using the On Board Sound Intensity (OBSI) method, the standard method in the United States. This method uses a pair of microphones mounted on the right rear tire of a sedan, three inches off the pavement, to ensure that only the tire/pavement noise is being measured. These measurements are useful for comparing acoustic performance between pavements, but the results do not reflect sound levels experienced at nearby homes, which are much lower.

Noise Quality Annual Report

Quieter Pavement Testing – Concrete Surface Treatments

ground section was louder than any of the asphalt pavement sections initially, but has only increased by 1 dBA in almost two years, compared to the 3-6 dBA increase for the asphalt test sections.

After 20 months (April 2011), both the quieter and conventional pavement test sections on SR 405 had ruts of similar depths. The rut depths in Lane 1 for the rubberized and polymer sections were 4.3 (3/16 inch) and 3.5 mm (1/8 inch), respectively. The hot mix asphalt (HMA) test section has a rut depth of 3.2 mm (1/8 inch).

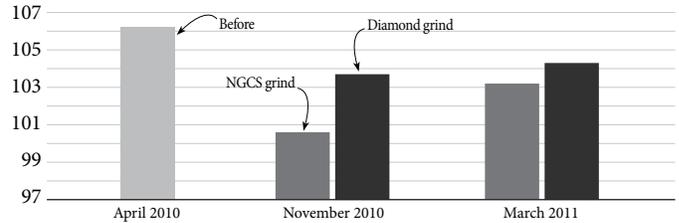
Before and After: Noise performance of concrete surface texturing

Texture is added to concrete roadways to create friction and improve safety. Changing the surface texture of concrete can also change the noise from tires passing over it. In 2009, WSDOT changed its standard concrete surface texture for new pavements from transverse tining (grooves perpendicular to traffic direction) to longitudinal tining (grooves parallel to traffic direction) after research demonstrated that the change could reduce noise without reducing safety. WSDOT also began evaluating the acoustic and durability performance of the concrete surface textures for new pavements and rehabilitation projects; new concrete: longitudinal tining, and concrete rehabilitation in the form of diamond grinding and Next Generation Concrete Surface (NGCS) texturing. Initial results for quieter concrete test pavements show promise, and are planned for use in future WSDOT projects.



Next generation concrete surface test section on I-82 near Granger.

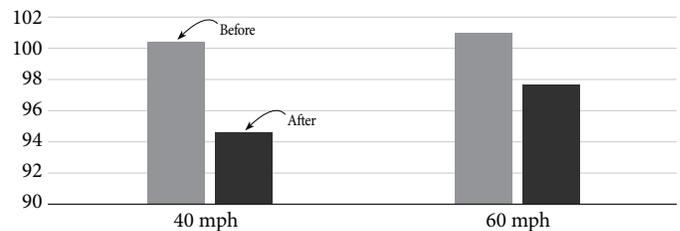
Before and After: Noise performance of Next Generation Concrete Surface and Diamond grinding I-82 in Granger vicinity Noise levels measured in dBAs



Data source: WSDOT Environmental Services Office.

WSDOT has collected noise measurements before and after construction of quieter pavement for diamond ground concrete on I-5 and I-405 in Seattle, and for NGCS texturing on Avondale Road in King County. In 2011, WSDOT built a test section of NGCS on I-82 near Granger, Washington. The results to date suggest that the NGCS section is quieter, but not audibly quieter, (see gray box on the previous page) than the same area before grinding occurred. WSDOT will continue to evaluate these sections twice annually to evaluate the performance over time.

Before and After: Noise performance of Next Generation Concrete Surface Avondale Road test section, King County Noise levels measured in dBAs



Data source: WSDOT Environmental Services Office.

Status of Designated Maintenance Areas in Washington

The U.S. Environmental Protection Agency (EPA) determines if Washington State complies with the National Ambient Air Quality Standards (NAAQS) for the six common pollutants:

- ozone (O₃)
- particulate matter (PM_{2.5}, PM₁₀)
- carbon monoxide (CO)
- nitrogen dioxide (NO₂)
- lead (Pb)
- sulfur dioxide (SO₂)

If measurements (collected by the Washington Department of Ecology or local Clean Air agencies) reveal that an area has violated the NAAQ standard, it can be designated as a ‘non-attainment’ area. After a nonattainment area reduces emissions to within the standard levels, it is re-designated as a maintenance area for the next 20 years. Failing 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 within the non-attainment or maintenance areas. Federal funding restrictions can affect WSDOT projects and operations in those areas. WSDOT collaborates with other local governments and regional planning authorities to develop a state implementation plan for the violating pollutant; it describes how the area will 1) reduce emissions below the standard levels, and 2) maintain those lower levels for the next 20 years. Washington currently has nine maintenance areas and one nonattainment area.

Washington’s only nonattainment area

The City of Tacoma and much of surrounding Pierce County (called “Wapato Hills/Puget Sound,” see table below) was designated a nonattainment area for the 2006 fine particulate (PM_{2.5}) standard by EPA in 2008. Most of the area’s particulate emissions are from wood smoke. The Washington Department of Ecology is presiding over a stakeholder process (meetings, a formal public hearing, and mailing efforts) used to solicit community feedback and involve public and private stakeholders in the development of emission reduction strategies. Results of the stakeholder process will be incorporated into the PM_{2.5} State Implementation Plan for this area that will be finalized in 2013. WSDOT is working with air quality partner agencies to help determine EPA test parameters to evaluate attainment status.

List of EPA-designated maintenance areas for Washington

As of September 30, 2011

Maintenance area	Violation year	Pollutant (chemical abbreviation)	Current status
Spokane	1978	Carbon Monoxide (CO)	Maintenance
Puget Sound urban area	1978	Carbon Monoxide (CO)	Maintenance
Yakima	1978	24-hour fine particulate matter (PM ₁₀)	Maintenance
Duwamish Industrial Area (Seattle/South King County)	1987	24-hour fine particulate matter (PM ₁₀)	Maintenance
Tacoma Tideflats/Puget Sound	1987	24-hour fine particulate matter (PM ₁₀)	Maintenance
Kent/Puget Sound area	1987	24-hour fine particulate matter (PM ₁₀)	Maintenance
Vancouver	1991	Carbon Monoxide (CO)	Maintenance
Spokane	1991	24-hour fine particulate matter (PM ₁₀)	Maintenance
Olympia urban area	1997	24-hour fine particulate matter (PM ₁₀)	Maintenance
Wapato Hills/Puget Sound	2006	24-hour fine particulate matter (PM _{2.5})	Non-attainment

Data Source: WSDOT Environmental Services Office.

Air Quality Program Highlights

New federal ozone standards will be reviewed in 2013, and not earlier as previously reported in the September 2010 Gray Notebook 39.

A 2005 Puget Sound Maritime Air Emssions study found that harbor craft, including WSF vessels, contribute about one-third of the regional maritime emissions.

Since 2005, WSF has implemented strategies such as equipment retrofits, vessel speed changes, and using new fuels, to reduce emissions.

Air Quality Annual Report

Reducing WSDOT's Emissions Contributions

Delay of new federal ozone standards

In the *September 2010 Gray Notebook* 39 WSDOT reported that EPA-approved tighter standards for ground level ozone (O₃) were expected by December 31, 2010. After numerous temporary delays, the Obama Administration decided in September 2011 to postpone approval of new standards until the 2013 standards review schedule. The current (2008) 8-hour standard is 75 parts per billion (ppb). The new standard would have been between 60-70 ppb. Measurement data suggests that a tighter standard could create new nonattainment areas in the state, including areas near I-5 in the Central Puget Sound and near I-90 in Spokane.

New EPA software will be used in 2012

In 2010, EPA released its new Motor Vehicle Emission Simulator (MOVES) software and a schedule for its implementation on federally funded projects. Certain types of projects within non-attainment and maintenance area require air quality modeling, and EPA MOVES must be used on these projects after December 2012. Currently, WSDOT models 'project level' emissions using its own screening tool and prepares related environmental compliance documents. On October 4, 2011, EPA extended by one year the date when EPA MOVES must be used for regional modeling, from March 2, 2012, to March 2, 2013. Regional planning organizations are responsible for modeling regional transportation air quality in nonattainment and maintenance areas.

WSF works to reduce air emissions

WSF vessels burn 17.5 million gallons of diesel each year, which is a combination of ultra low sulfur diesel and biodiesel. WSF's goal is to use as much biodiesel as possible— up to 20% as long as budget is available. WSF fuel consumption is directly linked to reduced air emissions; fuel use is affected by factors such as vessel speeds, engine power used to push the vessel against the docks during loading and unloading, the number of engines in use at any one time, hull condition, and traffic congestion on the shore. In 2006, WSF formed a fuel conservation group to explore ways to reduce fuel consumption. Recent initiatives from the group are in development; they include looking for ways to reduce vessel speeds, use passive restraint to reduce the fuel burn associated with docking and loading, reduce the number of engines in operation, and retrofitting engines.

Slowing down saves fuel

In January 2011, WSF began a speed-reduction trial on ferry crossings between Edmonds and Kingston. Slowing a vessel reduces hull drag, which reduces fuel consumption. By reducing the vessel speeds on this route, WSF is saving around 15,000

gallons of fuel a month, which is about a 5% reduction in total fuel consumption. WSF targeted routes and sailing times for speed reductions that would support on-time performance and trip reliability. The Seattle-Bainbridge route is scheduled to begin selected speed reductions in October 2011. See the Ferries article on page 24 for more information on ferry route performance.



The M/V Hyak ferry may convert from diesel to hybrid diesel-electric if WSDOT receives a grant aimed at reducing greenhouse gas emissions.

Captains apply engine power to push the vessel against the docks while loading and unloading vehicles; ferries use 20% to 25% of the total fuel consumed while pushing against the dock. Tests are under way to determine if it's possible to safely reduce engine RPMs while pushing against the dock. Reducing RPMs could significantly reduce fuel consumption and air pollution.

Ferry engines are more fuel efficient when operated at higher peak loads. Some classes of WSF vessels have multiple sets of engines to assure safe and continuous operation if one engine fails. In 2011, WSF reduced the number of engines being used in the Jumbo Mark II vessels from three to two. Further reductions may be possible if safe vessel operation can be demonstrated.

WSF explores using alternative fuels and hybrid propulsion systems

Biodiesel is considered a carbon neutral fuel, and reduces greenhouse gas emissions compared to 100% petroleum diesel. WSF is currently using as much biodiesel as possible, given budget constraints. Biodiesel is currently in use on 17 ferries; WSDOT plans to use biodiesel on five more vessels in 2012.

Liquefied natural gas (LNG) has the potential to reduce carbon dioxide by 15% to 20% compared to petroleum diesel. LNG is used in ferries in Norway, and the Joint Transportation Committee is currently studying the use of LNG for ferry vessels in Washington. The US Coast Guard has no current regulations for LNG on passenger ferries.

In early 2012, WSF will learn if it will be awarded a Transportation Investment Generating Economic Recovery (TIGER III) grant to convert the *M/V Hyak* ferry from diesel to hybrid diesel-electric to reduce fuel use and air emissions. Hybrid ferries charge a bank of batteries with the diesel engine when the ferry is moving, and with electric shore power when the ferry is docked. Like a hybrid car, they can operate as an electric vessel for short trips. The hybrid system will provide significant fuel savings which means reduced air pollution.

Retrofits save oil and reduce air emissions

Electromotor Division (EMD) engines are installed in most of the vessels in the WSF fleet. During major EMD engine overhauls, crews install engine components designed to reduce the use of engine lube oil and lower particulate emissions. Retrofits made to the *M/V Spokane* and *M/V Walla Walla* reduced the consumption of lube oil by half. These kits are mandated by federal statute to reduce particulate emissions by a minimum of 25%. *M/V Klahowya* and *M/V Tillikum* are the next ferries scheduled for retrofits.



Retrofits were made to the M/V Walla Walla that will help reduce ferries air emissions in Puget Sound.

You can manage what you can measure

Last year, WSDOT sought funding to acquire flow meters that evaluate the effects of weather, tidal and current, and vessel conditions on ferry vessel mileage (see the September 2010 *Gray Notebook* 39, page 25). In 2011 a fuel monitoring system was installed on the *M/V Walla Walla*. The project goal is to improve understanding of how different vessel operations affect fuel use. WSF expects vessel operators to use fuel information from the new system to adjust operations and maximize fuel efficiency. WSF estimates that the flow meters could save 2% of the total annual fuel use on ferries with the systems installed.

WSF participated in other efforts to determine fleet emissions levels in 2011. The Puget Sound Air Emissions Inventory (PSAEI) is a collaborative effort between Puget Sound ports, vessel owners and operators, railways, and nongovernmental organizations to develop a snapshot of maritime and port-related air emissions. The first emissions inventory was collected in 2005. The second inventory for the 2011 effort is more than half complete, and the final report is due in summer 2012.

The 2005 study found that harbor craft, including WSF vessels, contributed about one-third of the Puget Sound region maritime emissions. WSF expects to see a significant reduction in emissions compared to the 2005 PSAEI in part because of improved accuracy in the load factors used to calculate ferry emissions, and because of its active efforts to reduce fuel consumption and operational emissions.

Endangered Species Act Documentation Annual Report

Endangered Species Act Documentation Highlights

ESA consultations are complete for 21% of projects scheduled for advertisement in the 2011–2013 biennium.

In 2010, formal consultation durations with the Federal Services averaged 266 days.

The USFWS adopted new sound thresholds for marbled murrelets that make WSDOT pile driving projects less likely to cause harm or death.

WSDOT is working with the FHWA and NOAA on a new programmatic biological consultation that will cover 30% to 50% of projects statewide.

‘Species take’ defined by the USFWS is “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct; may include significant habitat modification or degradation if it kills or injures wildlife by significantly impairing essential behavior patterns including breeding, feeding or sheltering.”

Section 7 of the Endangered Species Act (ESA) requires that all federal agencies consult with the US Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries—both agencies are colloquially referred to as ‘the Services’), if the agency determines that any project it funds, authorizes, or carries out, may affect listed species or designated critical habitat. WSDOT is required to comply with Section 7 of the ESA as a result of federal funding or authorization, most commonly from the Federal Highway Administration (FHWA), the Army Corps of Engineers or the US Forest Service.

Consultations with the Services can occur in two formats:

- Informal consultations, where impacts may affect listed species or critical habitat but in a way that is insignificant or discountable.
- Formal consultations, where the project will likely result in species take or adverse impacts to the species (see the June 2010 *Gray Notebook* 38, page 42, for more discussion about ESA, take, and adverse impacts).

WSDOT conducts an ESA review on all projects to ensure compliance with Section 9 of the ESA, which prohibits take of listed threatened and endangered species. Based on that review, projects may require an informal or formal consultation with the Services or no consultation at all. The request for consultation and the analysis of impacts is submitted to the Services through a report called a Biological Assessment (BA).

The table below shows that WSDOT has completed ESA reviews and consultations for 21% of the projects scheduled for advertisement in the 2011-2013 biennium. For the 2013-2015 biennium, only 11% of the projects have completed their ESA reviews and consultations; most of the remaining projects will be finalized within the next 12 to 18 months.

Endangered Species Act (ESA) compliance status for all funded projects

Number of projects	2011-13 Biennium	2013-15 Biennium
Projects under review at ‘the Services’	5	0
ESA Review or biological assessment underway	109	37
Insufficient information to start the biological assessment ¹	237	77
ESA review complete ²	91	14
Total number of projects	442	128

Data source: WSDOT Environmental Services Office.

Data notes: 1 This indicates that WSDOT does not yet have enough information regarding design to begin an ESA review.

2 Projects that have completed an ESA review include those requiring consultation (formal or informal) with the federal services and those that did not require consultation (‘no effect’ reviews or programmatic biological assessments).

WSDOT and the Federal Services continue to monitor informal and formal consultation timeframes

Under the ESA, a formal consultation must be completed within 135 days, however time-lines for informal consultations are neither mandated nor specified. WSDOT and the Services continue to work to achieve the mutually agreed timeline (duration) of 30 days for informal consultations. The amount of time it takes for the Services to complete a consultation under

Endangered Species Act Documentation Annual Report

Durations of Consultations with the Federal Services

the ESA is influenced by many factors such as staff workloads and project size and complexity. While WSDOT works collaboratively with the Services to ensure compliance with the ESA, completing consultations remains the responsibility of the Services, and their ability to complete their reviews in a timely manner depends upon the availability of qualified staff, resources, and staff workloads. Services staff review projects from a variety of public and private entities, and WSDOT provides staff support to the Services to ensure transportation projects receive timely review and consideration.

In the past seven years, the average annual duration for consultations has exceeded both timeline goals, which has led to problems in both project planning and delivery. WSDOT officially began tracking the number of days it took to complete consultations in 2003. Average durations are calculated by counting the number of days between submittal of the biological assessment, and the receipt of a signed concurrence letter or a biological opinion from the Services.

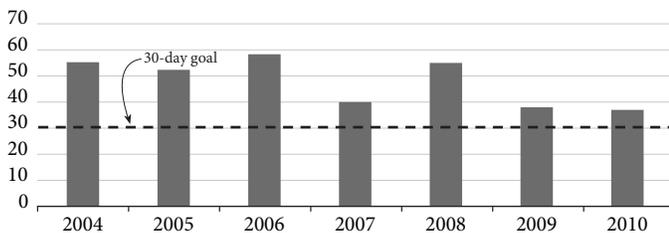
WSDOT and the Services have implemented several streamlining tools to reduce the average duration of both informal and formal consultations, and have produced guidance documents and implemented trainings to help staff expedite ESA consultations. Some of these efforts include conducting regular biological assessment author training, and agreement between WSDOT and the Services on the methods used to conduct complex effects analyses, such as stormwater effects analyses.

Informal durations fluctuate, but get closer to the goal

In 2004, the average informal consultation took 55 days. Between 2004 and 2010, the annual average duration for informal consultation has varied between 37 and 58 days. In 2010 WSDOT submitted 29 projects for informal consultation, and the average duration with the Services was 37 days.

Average duration of informal consultations with the Services, 2004 - 2010

Duration measured in calendar days.



Data source: WSDOT Environmental Services.

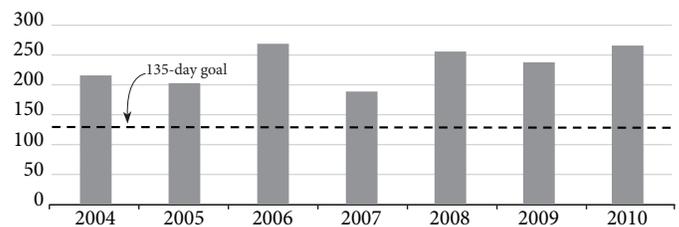
Data note: 30-day goal is an agreement between WSDOT and the Services and is not specified in the Endangered Species Act.

Formal durations continue to run long

Compared with the annual average duration of informal consultations, formal consultations have shown greater variability in average durations between years, and have also missed the mandated duration of 135 days. The number of formal consultations submitted each year is between 10 and 14 projects, (not including mega projects, which are evaluated separately), and annual average durations vary between 189 and 269 days. In 2010, WSDOT submitted 23 projects for formal review, and the average duration of ESA formal consultations was 266 days. WSDOT and the Services use the same streamlining tools for formal and informal consultations, but these tools have not resulted in the desired reductions in average annual durations.

Average duration of formal consultations with the Services, 2004 - 2010

Duration measured in calendar days.



Data source: WSDOT Environmental Services.

Future ESA developments that may affect WSDOT projects

In September 2011, the USFWS adopted new underwater noise level thresholds for foraging marbled murrelets, an ESA-listed threatened species. This small diving sea bird nests on moss-covered limbs in mature and old-growth forests, and forages for small fish in marine waters like Puget Sound. The birds are susceptible to underwater sound pressures generated by impact pile driving while they are diving. The USFWS has been using a series of noise thresholds (measured in A-weighted decibels-dBA) to establish when disturbance and even injury could occur.

The USFWS adopted new thresholds developed by an expert panel. The new thresholds set sound exposure levels for impact pile driving at higher levels (that is, louder) for barotrauma, injury, and harassment. USFWS has defined barotrauma as sound levels at which murrelets are expected to be physically injured, while the injury threshold is set based on damage to hair cells in the ear. The harassment threshold is based on disturbance to normal behaviors such as feeding, breeding and resting. USFWS will release a report

Endangered Species Act Documentation Annual Report

Programmatic Biological Consultations

on the new thresholds in the fall of 2011; it will be available at www.wsdot.wa.gov/Environment/Biology/BA/BAGuidance.htm

For projects requiring pile driving, WSDOT biologists calculate the expected zones of harm and harassment, and then visually monitor the zones for the presence of marbled murrelets during impact pile driving activities. Teams of biologists monitor from small boats and from the shore, and signal to the contractor to stop if marbled murrelets enter the zone. Pile driving may not resume until after the birds have left the zone. Monitoring may require ten or more biologists to adequately cover the zone. Though the new thresholds are expected to result in smaller zones of harm, the zone for harassment will stay the same.

While the new thresholds will not reduce the amount of monitoring effort required by WSDOT, it will make it easier for the USFWS to avoid making jeopardy determinations (conclusions that a project or activity will jeopardize the species' existence) for marbled murrelets on pile driving projects because murrelets will be less likely to be harmed or killed by WSDOT project activities. Monitoring for marbled murrelets is not required during vibratory pile installation, so many projects are using vibratory pile driving as a minimization measure. For more information on noise studies and research, see page 31.



WSDOT biologists patrol the waters of Puget Sound during pile driving activities to monitor for ESA protected species.

Programmatic biological consultations can streamline the ESA consultation process and project timelines

WSDOT is currently working with FHWA and NOAA Fisheries to develop a programmatic biological consultation (PBC) to cover routine types of construction projects that WSDOT conducts regularly and in a predictable manner. Unlike individual consultations where the exact location, timing, and methods are all known and described during the consultation process, PBCs allow the consultation process to proceed for common or routine activities even when the exact time or frequency of those activities are unknown. By consulting on routine projects and coming to agreement on the expected effects to ESA species, WSDOT and the Services can streamline the process and shorten the consultation timeline for projects that can complete their consultation through a PBC. Currently WSDOT has two programmatic biological consultations with USFWS: one that covers Eastern Washington, and one for Western Washington. In the last two years, 42% of the informal consultations and 26% of the formal consultations with USFWS used the existing PBCs.

WSDOT is working with the FHWA to complete a programmatic biological consultation with NOAA Fisheries, which is expected to cover 30% to 50% of WSDOT projects statewide. The NOAA Fisheries PBC will be a companion to the current USFWS programmatic consultations, and will provide coverage for all NOAA-listed species for the highway construction program. It will not provide coverage for Washington State Ferries maintenance or construction projects. The NOAA Fisheries PBC is being developed and WSDOT expects it will be completed by June 2012, with implementation occurring as soon as fall of 2012.

Economic Vitality

Statewide 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.



In this section

Freight Rail Semi-Annual Update 42

See also

Federal Recovery Act-funded Projects 48

Earlier articles concerned with economic vitality

Special Report: Palouse & Coulee City Rail System, GNB 42

Trucks, Goods & Freight, GNB 41

CVISN, GNB 41

Economic Vitality Special Report on Projects, GNB 40

Freight Rail Semi-Annual Update

Freight Rail Highlights

In 2009, freight railroads operating in Washington carried 103 million tons of freight.

The Freight Rail Investment Bank received three project proposals in September 2011. All three projects have been recommended for loan funding.

In the third quarter of 2011, 431 Grain Train carloads were shipped.

The produce car utilization rate for the first nine months of 2011 was 58%.

For more information about multi-modal freight in Washington State, see Gray Notebook 41, pages 42-50.

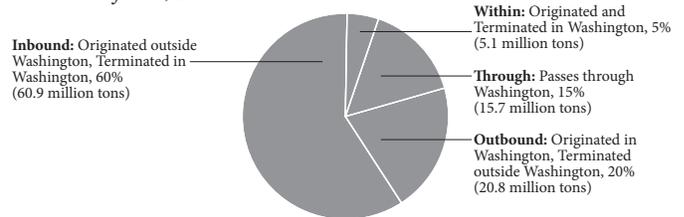
Rail transportation supports economic competitiveness and economic viability. The state's rail system has evolved over the last century to serve a wide range of passenger and freight markets and extends across many parts of the state. Thirty-two of the state's 39 counties are served by one of the state's freight railroads. There are two mainline freight railroads—the BNSF Railway Company (BNSF) and the Union Pacific Railroad (UP)—and 20 active short-line railroads operating in the state.

Freight rail movement in Washington

In 2009, freight railroads operating in the state carried 103 million tons of freight over 3,604 operated route miles. As a global gateway state, Washington plays an important role in the national economy. A large amount of agricultural freight arrives in Washington by rail from the Midwest for export to the rest of the world through Washington's seaports. The largest component of Washington's rail freight in 2009 was inbound movement: 60% (60.9 million tons) of rail freight originated outside the state and terminated in Washington.

Washington rail freight movement

In millions of tons; 2009



Data source: WSDOT State Rail and Marine Office.

Freight Rail Investment Bank

The Freight Rail Investment Bank is a \$5 million low-interest loan program open to public sector organizations: it is intended to help finance smaller projects. WSDOT issued a "call for projects" based on legislative priorities in June 2011. Proposal submittals were due back to WSDOT on September 16, 2011. WSDOT received three proposals for consideration. WSDOT performed a cost-benefit analysis, along with verification of facts as they related to the number and location of shippers, together with their carloads moved. Each request was scored in ten different categories by experts in WSDOT's Rail Office. All three applications met the minimum requirement for funding, and WSDOT recommends that all three loan applications be submitted for funding by the Rail Bank by the legislature.



Freight Rail Projects

Freight rail projects

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

vitality. Projects include building new tracks, upgrading existing tracks, and improving rail-related facilities for Washington shippers and businesses.

Freight rail capital projects: 2011 - 2013

Recently Completed	On time	On budget
Tacoma Rail/Tacoma - New Refinery Spur Tracks	√	√
Tacoma Rail/Fredrickson to Morton - Track Rehabilitation	√	√
Tacoma Rail/Tacoma to Morton and Yelm - Track Rehabilitation	√	√
Port of Ephrata/Ephrata - Additional Spur Rehabilitation	√	√
Port of Moses Lake/Northern Columbia Basin - Segments 2 & 3	√	√
Intermodal Infrastructure Enhancement Project, Port of Olympia	√	√
Intermodal Infrastructure Enhancement Project, Port of Olympia	√	√
Port of Quincy - Short Haul Intermodal Pilot Project	√	√
Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail	√	√
Tacoma Rail and Puget Sound and Pacific RR - Reconfigure Rail Phase 1B	√	√
Other Selected Freight Rail Projects		
Palouse River and Coulee City RR - Rehabilitation	On-going	On-going
Puget Sound and Pacific Railroad (2011 FRAP)	On-going	On-going
Palouse River and Coulee City RR - Rail Authority-Sponsored Rehabilitation	On-going	On-going
CW Line/Lincoln County - Grade Crossing Rehabilitation	On-going	On-going
Port of Royal Slope Improvements	On-going	On-going
Clark County Rail Line/Battle Ground to Vancouver - Track Rehabilitation	On-going	On-going
Clark County - Lewis and Clark Rail Line (2011 FRAP)	On-going	On-going
Spokane County - Geiger Spur (2011 FRAP)	On-going	On-going
Spokane County - Geiger Spur (2011 FRIB)	On-going	On-going
Tacoma Rail/Tacoma - Improved Locomotive Facility	On-going	On-going
Tacoma Rail - Locomotive Repower (2011 FRIB)	On-going	On-going
Tacoma Rail - Annie Tracks 1 & 2 Rail Relay (2011 FRIB)	On-going	On-going
Tacoma Rail - Yard Track Relay (2011 FRIB)	On-going	On-going
City of Richland - Loop Track (2011 FRIB)	On-going	On-going
Port of Columbia/Wallula to Dayton - Track Rehabilitation	On-going	On-going
Port of Everett - New Rail Track (FRIB)	On-going	On-going
Port of Vancouver - Rail Terminal Expansion - Track Work	On-going	On-going
Port of Vancouver - Grain Spur Extension (2011 FRAP)	On-going	On-going
Port of Vancouver - Farwest Steel Rail Spur (2011 FRIB)	On-going	On-going
Cascade and Columbia River Railroad (2011 FRAP)	On-going	On-going
Columbia Basin - Schrag Line (2011 FRAP)	On-going	On-going
Puget Sound and Pacific RR Disaster Repair	On-going	On-going
Port of Pasco - Intermodal Facility Improvements, Phase 4	On-going	On-going
Palouse River and Coulee City RR - Acquisition	On-going	On-going
New Creston Livestock Feed Mill Spur Track	On-going	On-going

Data source: WSDOT State Rail and Marine Office.

Note: FRAP is the Freight Rail Assistance Program and FRIB is the Freight Rail Investment Bank.

Freight Rail

Semi-Annual Update

Grain Train / Produce Rail Program

Long-term trend in Grain Train usage continues to increase

The Washington State Grain Train is a financially self-sustaining transportation program supporting the state's agricultural community, while helping short-line railroads maintain a sufficient customer base for long-term financial viability.

The long-term upward trend for Grain Train use remains intact, despite a 13% decrease in carloads for the third quarter of 2011 compared to the same period in 2010. There were 431 carloads shipped in 2011 compared to 495 carloads shipped in 2010. Compared to the third quarter of 2009 (381 carloads shipped), Grain Train use is up 13%.

Produce rail car utilization up in the first nine months of 2011

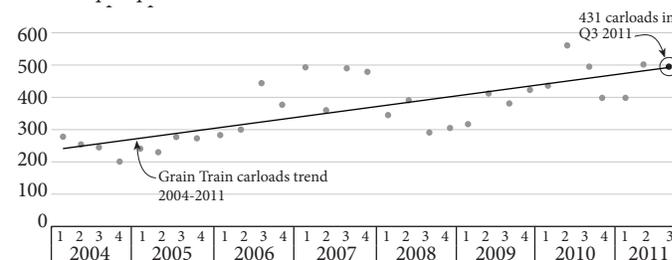
In 2006, the legislature authorized WSDOT to provide a pool of refrigerated rail cars to haul perishable agricultural commodities. The program began operation in 2006 using a federal grant and state funds. The produce cars are used by shippers in Washington to transport produce throughout the U.S.

A total of 874 shipments have been made since the program began in 2006, resulting in an average utilization ratio of 52%. The utilization ratio has increased from 47% in 2010 to 58% in the first nine months of 2011.

The produce rail cars are used to ship fresh and frozen fruits and vegetables including potatoes, and frozen fish and meat. Fresh and frozen fruits and vegetables have been the most heavily shipped products through this program at 72% of all produce types.

Washington State Grain Train carloads

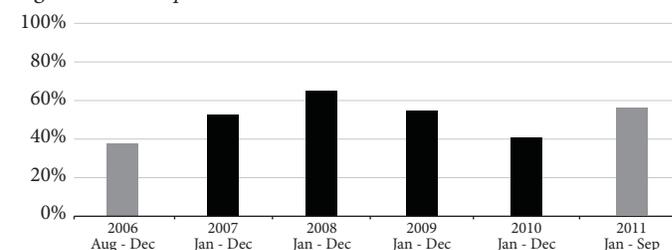
Carloads per quarter, 2004 - 2011



Data source: WSDOT State Rail and Marine Office.

Produce rail car average monthly utilization rate

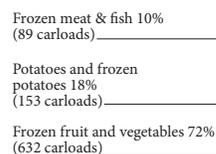
Percent of time produce cars are in operation for month August 2006 to September 2011



Data source: WSDOT State Rail and Marine Office.

Produce rail car shipments by product

August 2006 to September 2011



Data source: Compiled by WSDOT State Rail and Marine Office from data reports of Rail Logistics.



Stewardship

Statewide 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.



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Special Report on Federal Recovery Act-funded Projects

Recovery Act-funded Projects Overview

Recovery Act Highlights

Through September 2011, \$766 million has obligated to Washington High-Speed Rail projects.

212 of 219 Recovery Act-funded highway projects were completed as of September 30, 2011.

Employees have worked 4.8 million hours and earned more than \$189.4 million in payroll on Recovery Act highway projects.

212 of 219 Recovery Act highway projects now complete

As of September 30, 2011 construction is complete on 212 of 219 Recovery Act-funded highway projects, including projects that preserved WSDOT highways and improved local government roads and bridges. Almost all of the highway projects, costing \$490 million, and transit projects, totaling \$179 million, have been completed or delivered. Only a few Recovery Act-funded highway projects remain under construction, including the I-405/NE 8th to SR 520 Bellevue Braids – Interchange in King County. More than 97% of the \$490 million awarded for those projects has been spent. Workers on Recovery Act-funded highway projects have worked 4.8 million hours and earned more than \$189 million in payroll.

Recovery Act-funded TIGER projects in Seattle’s Mercer Corridor and Spokane’s North Spokane Corridor are also under way and should be complete in 2013. Together, the projects received \$65 million in Recovery Act funds.

Work continues on SR 433 Lewis and Clark Bridge

One of the remaining Recovery Act-funded projects is painting the Lewis and Clark Bridge, which crosses the Columbia River between Cowlitz County and Oregon. Construction closed for the season in October and is expected to be finished in 2013. The project received \$12.3 million Recovery Act funds; its \$50 million total budget includes funding from Oregon. The painting project will help preserve the bridge by stripping off old paint and applying new paint to reduce corrosion.

The bridge was built in 1929 and carries 21,000 vehicles a day. The photos below show how sections of the bridge are painted to improve preservation. The project includes extensive environmental containment measures to reduce the likelihood that paint can fall into the river below. While tarps have been removed, several sections of the structure will remain wrapped in cables over the winter.



Recovery Act-funded work on the Lewis and Clark Bridge between Longview, WA, and Rainier, OR, remains under way.



The photos above show a section of the bridge that has not been painted and one that has been painted.

Special Report on Federal Recovery Act-funded Projects

Recovery Act-funded Projects Update

\$766 million obligated for High Speed Rail projects in Washington

Agreements signed in September between WSDOT and the Federal Railroad Administration (FRA) secure approximately \$31 million in previously awarded federal high-speed rail funds, to move forward with more projects aimed at improving and expanding Amtrak *Cascades* service between Portland and Vancouver, B.C. The \$31 million brings the total to more than \$766 million in federal high-speed-rail funding awarded and obligated for projects in Washington. Only \$15 million remains to be obligated.

Recurring mudslides that have primarily affected the northern portion of the corridor prompted FRA and WSDOT to dedicate \$16.1 million of those funds to identify slope stabilization needs. WSDOT and BNSF Railway will work together surveying problem areas and determining appropriate repair solutions that can help reduce mudslide delays. Work is expected to begin in 2012.

In addition, the FRA, WSDOT, and the Port of Vancouver agreed to dedicate \$15 million toward improving rail access to the port area, building a new connection to the existing track to help alleviate rail delays near the busy port.

Recovery Act-funded highway employment

July through September 2011; Dollars in millions

	July	August	September	Total to date
Total labor hours	101,478	85,295	91,081	4.8 million
Total payroll value	\$4.3	\$3.3	\$3.8	\$189.4
Monthly full time equivalents	587	493	526	N/A
Individuals working on projects	1,816	1,288	1,637	N/A

Data source: FHWA RADS - WSDOT Capital Program Development & Management, Highways & Local Programs.

Note: Totals include all labor on Recovery Act-funded highway projects from February 2009 to September 2011. Also includes TIGER projects.

Recovery Act-funded highway projects as of September 30, 2011

Number of projects by jurisdiction; dollars in millions

Project information	State	Local	Total
Highway projects certified and awarded/under construction	51	168	219
Projects completed	46	166	212
Financial information	State	Local	Total
Recovery Act dollars provided	\$340	\$150	\$490
Total cost of obligated projects ²	\$736	\$792	\$1,528
Total Recovery Act dollars spent	\$326.8	\$148	\$474.8

Data source: WSDOT Capital Program Development & Management Office, Highways and Local Programs Office.

Note: Project totals are cumulative, for example "projects awarded/under construction" include completed projects. Does not include TIGER.

¹ 17 state and 23 local projects were added to the list and received federal approval, 6 local projects are no longer receiving funds. Also includes two safety program buckets for rumble strip and cable median barrier projects. The programs are described in greater detail in GNB 40.

² Includes non-Recovery Act leveraged fund sources.

WSDOT's Capital Project Delivery Programs

2009-2011 Biennium Wrap Up

Project Delivery Highlights

WSDOT completed 90 projects in the 2009-2011 biennium; the cumulative total from 2003 through June 30, 2011, was 303.

The cumulative number of projects completed through September 30, 2011, is 310.

87% of all Nickel and TPA projects were completed early or on time.

93% of all Nickel and TPA completed projects were on or under budget.

82% of all Nickel and TPA projects were completed both on time and on budget.

For details on WSDOT's Federal Recovery Act-funded projects, see pages 46-47.

For details on projects developed through the Pre-Existing Funds (PEF) program, see pages 77-79.

For details on expenditures compared to cost at completion, see the Original 2003 and 2005 Transportation Funding Packages (Nickel & TPA) Performance dashboards pages 51-52.

This special report covers the performance results of WSDOT's capital projects construction program during the 2009-2011 biennium. The data discussed in the first section of this report reflect the status of projects through June 30, 2011. Cumulative data through the first quarter of the new 2011-2013 biennium appears on the third page.

Reporting in the *Gray Notebook* revised in the 2009-2011 biennium to show individual as well as programmatic and bucket projects

The Transportation Budgets signed into law by Governor Gregoire direct WSDOT to develop and construct a specified list of projects in the course of the biennium. The greater part of these line-item projects were itemized in the original 2003 and 2005 Nickel and Transportation Partnership Accounts (TPA) programs.

In the September 2010 *Gray Notebook* 35, the Beige Pages' tables "unbundled" as individual projects several that may have been previously reported as one "bucket" of projects or as a project "bundle." This provided readers with a more comprehensive account of the entire program in the current Transportation Budget. By "unbundling" these previously rolled-up projects, the total combined number of projects in WSDOT's capital project delivery program increased, from 391 to 421.

Challenges to project delivery in the 2009-2011 biennium

In contrast to the previous biennium, 2007-2009, with its unprecedented increases in construction material prices driving project estimates higher than budgeted in many cases, the 2009-2011 biennium experienced significant project cost savings due to the aggressive bidding climate brought on by the national recession. On average there were more contractors bidding on WSDOT work than during the previous two years, and the increased competition led to lower bid prices. When the project savings are federal funds, this requires additional planning to obligate and program those funds on other projects or else risk the loss of those funds.

Another result of the national recession was, and continues to be, the reduction in fuel tax collections resulting in reduced revenue available to fund the preservation program and reduced revenue to support the bond debt service for the Nickel and TPA accounts. As a result, there are instances where projects must be delayed until funding is available.

Progress against budget

The 2009-2011 budget contained appropriations amounting to \$4.3 billion for state transportation system projects. The measure for "on budget" compares the cost at completion with the most recent Legislative baseline. It is based on the cost of the project coming within 5% of the budget estimate as it appears in the most recent budget list.

As of June 30, 2011, WSDOT had completed 304 projects funded by the Nickel and Transportation Partnership Account funding packages. Within the 2009-2011 biennium, a total of 90 projects were completed, for an estimated cost at completion of \$1.6 billion. The 2009-2011 appropriated amount for these projects was \$1.64 billion; the cost at completion is 2.7% under budget.

Within the 2009-2011 biennium, 74 TPA projects were completed, at an estimated cost at completion of \$920 million, 95% of which were

Budget performance for Nickel and TPA projects

2009-2011 biennium; Dollars in thousands

	Original appropriation	Cost at completion	Variance
16 Nickel projects	\$689,540	\$677,444	1.8% under
74 TPA projects	\$952,065	\$919,526	3.4% under

Data source: WSDOT Capital Program Delivery and Management Office.

2009-2011 Biennium Wrap Up

within budget. The 16 Nickel projects are estimated to cost \$677 million; 88% were completed on budget.

Performance against schedule

Occasionally, projects enjoy excellent circumstances and weather at the right times for the contractor to complete the project early, but the converse is often the case. Poor weather, insufficient or delayed materials, unexpected issues with the site geology or environmental permitting, problems acquiring right of way or moving utilities: all can delay project completion.

The approval of a new legislative budget can also reset a project's scheduled delivery date. For this biennium, WSDOT's performance against scheduled delivery of projects was good overall, with 88% of the 16 Nickel projects and 89% of the 74 TPA projects completed on time.

Schedule performance for Nickel and TPA projects

2009-2011 biennium, measured against last legislative expectation

	Percent on time advertised	Percent on time completed
16 Nickel Projects	75%	88%
74 TPA projects	82%	89%

Data source: WSDOT Capital Program Delivery and Management Office.

Data note: On time means project was completed within the planned quarter.

Performance against scope

As with budgets and schedules, the issuance of a legislative budget can, if approved, reset a project's scope. All 90 Nickel and TPA project completed within the 2009-2011 biennium met their legislative scope expectations.

Major projects of the 2009-2011 biennium

U.S. 12/Frenchtown vicinity to Walla Walla – Add lanes (Walla Walla)

This project constructed a new four-lane divided highway to replace eight miles of two-lane highway on U.S. 12 west of Walla Walla. The project also built a new interchange and roundabouts at Pine Street and Myra Road. The section of U.S. 12 from the vicinity of McDonald Road to Walla Walla had experienced considerable congestion and a number of collisions.

The addition of a new lane reduced congestion, and offered more passing opportunities. The new divided highway with a median is expected to reduce collisions as well.

Completing this project meant that WSDOT made the halfway point to completing a four-lane highway on U.S. 12 from the Tri-Cities to Walla Walla. Projects building 18 miles of four-lane U.S. 12 are now open to traffic, with 21 miles remaining.



Easy-to-negotiate roundabouts mark the new US 12 / Myra Road interchange near Walla Walla.

The project met challenges to its budget, which were driven in part by a steep rise in fuel costs and a design change to avoid a historic property. It cost \$53.4 million at completion, \$3.6 million below the last approved budget, and \$17.4 million above its original FY 2005 budget.

SR 539/Ten Mile Road to SR 546 - Widening

Drivers on this busy route regularly experienced congestion and delay, and the community had concerns about safety. This project did more than simply widen a two-lane highway to four lanes. It also added four wide roundabouts, divided a median with cable barrier, and replaced four bridges on SR 539, including a new steel truss bridge over the Nooksack River.

The project had to be completed before the 2010 Winter Olympics in Vancouver, which advanced the schedule and affected project delivery. Higher property values and relocation costs increased the cost of right-of-way by \$17 million, and steel that was necessary for the bridge construction was unavailable at times during construction. Still, the project came in below the approved budget and was operationally complete in time for the heavier traffic demands of the Winter Olympics.



The SR 539 widening project included building a new steel truss bridge over the Nooksack River.

I-405 Corridor Improvement projects (King)

Throughout the 2009-2011 biennium, WSDOT continued to complete key components of the I-405 corridor improvements program. The I-405-I-5 to SR 169 Stage 1 Widening project was completed in September 2010. High volumes of commuters travel through this area, making the I-405/SR 167 interchange one of the most congested in the state. To ease this congestion, WSDOT added one northbound lane and one southbound lane to I-405 between I-5 and SR 167; one southbound lane on SR 167 between

WSDOT's Capital Project Delivery Programs

2009-2011 Biennium Wrap Up / Cumulative Results

I-405 and SW 41st Street; and extended the southbound SR 167 HOV lane from I-405 to the start of the HOT (high occupancy toll) lane.

Just a few months later, in December 2010, WSDOT opened the new Talbot Road interchange that will reduce I-405 congestion through Renton, known as the *I-405-I-5 to SR 169 Stage 2 Widening* project. Construction had begun in the summer of 2009. The new interchange improves access to downtown Renton and relieves traffic demand on the I-405 interchanges at SR 167 and SR 169. The Stage 2 project also constructed an additional lane in each direction on I-405 between SR 167 and SR 169 and built a new Benson Road S. Bridge over I-405. The improved access to and from Renton should also help reduce congestion-related collisions.

Two new ferries join the Washington State Ferries fleet

Washington's first new ferry in more than a decade made its inaugural sailing on November 14, between Whidbey Island and Port Townsend. The 64-vehicle MV *Chetzemoka*, named after the Klallam Chief Chetzemoka (c. 1808-1888), was christened by Governor Chris Gregoire and recognized by the S'Klallam tribes.

In May, 2011, the newest vessel to be added to WSDOT's fleet of ferries, the MV *Salish*, was delivered by builder Todd Pacific Shipyards. Final outfitting, Coast Guard certification, and crew training were completed in June. WSF and the communities of Port Townsend and Whidbey Island celebrated the restoration of two-boat service on June 30 at the Port Townsend ferry terminal, and the new ferry began service on the Port Townsend/Coupeville route at noon on July 1, 2011.



A view through the car deck of the new WSF vessel *Salish*.



The new ferry *Chetzemoka* heads for Port Townsend.

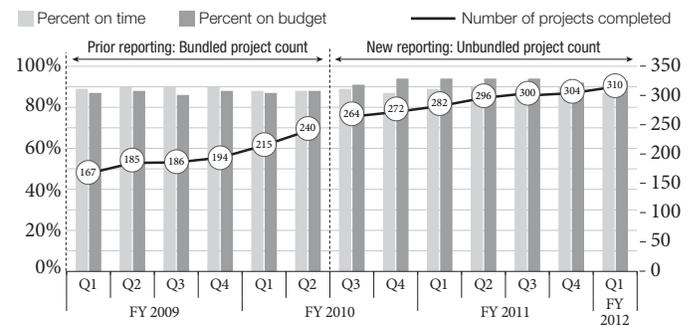
Cumulative results through September 30, 2011

The cumulative capital program delivery performance, including 76 projects completed in earlier biennia, currently shows 89% of projects completed early or on time and 91% completed on or under budget, both unchanged from last quarter.

As of September 30, 2011, 82% of all completed projects were both on time and on budget, unchanged from last quarter.

Cumulative on time and on budget performance of Nickel and TPA projects

310 of 421 projects completed as of September 30, 2011



Data source: WSDOT Capital Program Development and Management.

First quarter FY 2012 performance results: On time and on budget delivery performance on individual projects is unchanged from last quarter

WSDOT's on time and on budget results for the current highway construction program are shown on page 51. Six projects have been completed in the first quarter of the new 2011-2013 biennium. Of the six projects completed, 67% were early or on time and 67% were under or on budget.

Of the six projects completed this quarter, four were delivered on or under budget. Two projects were delayed by at least one quarter. More information on completed projects is on page 54 and pages 64-66.

Capital projects executive summary of project number and value

Cumulative results as of September 30, 2011, reflecting the 2011-2013 Transportation Budget

Program element	Number of projects	Value of program (\$ in thousands)
Projects completed in earlier biennia that are <i>not</i> included in the current Transportation Budget	76	\$343,051
Projects completed that <i>are</i> included in the current Budget	234	\$3,818,693
Subtotal of completed projects	310	\$4,167,744
Projects included in the current Budget that are not yet completed	111	\$11,168,300
Total	421	\$15,330,044

Data source: WSDOT Capital Program Development & Management.

WSDOT's Capital Project Delivery Programs

Current 2011 Legislative Transportation Budget Performance Dashboard: Highways

Highway construction performance dashboard

As of September 30, 2011; 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	76	\$343,051
Projects completed that <i>are</i> included in the current Transportation Budget	234	\$3,818,693
<i>Subtotal of completed projects</i>	<i>310</i>	<i>\$4,161,744</i>
Projects included in the current Transportation Budget but not yet completed	111	\$11,168,300
Total number of projects¹ in Improvement & Preservation budget²	421	\$15,330,044

Schedule and Budget Summary: Results of completed projects in the current Transportation Budget detailed on pages 51 and 52.

	Combined Nickel & TPA
Number of projects in current Transportation Budget completed to date: 2003 – September 30, 2011	234
Percent completed early or on time	87%
Percent completed under or on budget	92%
Percent completed on time and on budget	82%
Baseline estimated cost at completion	\$3,818,693
Current estimated cost at completion	\$3,766,354
Percent of total program over or under budget	-1.4% Under
Total number of projects completed in 2011-2013 biennium to date	6
Percent completed early or on time	67%
Percent completed under or on budget	67%
Percent completed on time and on budget	67%
Baseline estimated cost at completion this biennium	\$35,952
Current estimated cost at completion this biennium	\$35,833
Percent of total program under or over budget	0.3% Under

Advertisement Record: Results of projects entering into the construction phase or under construction detailed on pages 53-56.

	Combined Nickel & TPA
Total cumulative number of projects in construction phase to date, 2003 – September 30, 2011	43
Percent advertised early or on time	74%
Total number of projects advertised for construction in 2011-13 biennium to date	0
Percent advertised early or on time	N/A

Projects To Be Advertised: Results of projects now being advertised for construction or planned to be advertised, detailed on page 57.

	Combined Nickel & TPA
Total projects being advertised for construction bids October 1, 2011 - March 31, 2012	4
Percent on or better than anticipated advertisement schedule	75%

Budget status: 2011-2013 biennium

Dollars in thousands

	WSDOT biennial budget
Budget amount for 2011-2013 biennium	\$3,866,050
Actual expenditures to date 2011-2013 biennium	\$195,014
<i>Total 2003 Transportation Funding Package (Nickel) expenditure</i>	\$25,054
<i>Total 2005 Transportation Partnership Account (TPA) expenditure</i>	\$94,502
<i>Total Pre-Existing Funds (PEF) expenditure³</i>	\$75,457

Data source: WSDOT Capital Program Development & Management.

1. This 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*, page 55, for more details.

2. Per the 2005-2007 Transportation Budget, Section 603.

3. For full details of the PEF program, see pages 77-79.

WSDOT's Capital Project Delivery Programs

Current 2011 Legislative Transportation Budget Performance Dashboard: Rail and Ferries

Ten Nickel and seven Transportation Partnership Account (TPA) rail construction projects have been delivered on time and on budget as of September 30, 2011, for \$102.8 million. Five projects (three Nickel-funded, two TPA-funded) in construction have award amounts of \$25.9 million. One additional rail project

is planned for advertisement before March 31, 2012. To date, Ferries has completed five Nickel and four TPA construction projects, including the two 64-car vessels, the *Chetzemoka* and the *Salish*. The *Kennewick* was accepted in October 2011 after the quarter ended and will be discussed in the next *Gray Notebook*.

Rail construction performance dashboard

As of September 30, 2011; Dollars in thousands

	Nickel (2003)	Transportation Partnership Account (TPA 2005)	Combined Nickel & TPA
Schedule, scope and budget summary: completed projects			
Cumulative to date, 2003 – September 30, 2011	10	7	17
% Completed early or on time	100%	100%	100%
% Completed within scope	100%	100%	100%
% Completed under or on budget	100%	100%	100%
% Completed on time and on budget	100%	100%	100%
Baseline estimated cost at completion	\$61,857	\$40,965	\$102,822
Current estimated cost at completion	\$61,857	\$40,965	\$102,822
% of total program on or under budget			
Advertisement record: projects under construction or entering construction phase			
Biennium to date, 2011-13			
Total advertised	3	2	5
% Advertised early or on time	100%	100%	100%
Total award amounts to date	\$18,072	\$7,872	\$25,944
Advertisement schedule: projects now being advertised or planned to advertise			
October 1, 2011 through March 31, 2012			
Total being advertised for construction	0	0	0
% On schedule or earlier	–	–	–

Ferries construction performance dashboard

As of September 30, 2011 dollars in thousands

	Nickel (2003)	Transportation Partnership Account (TPA 2005)	Combined Nickel & TPA
Schedule, scope and budget summary: completed projects			
Cumulative to date, 2003 – September 30, 2011	5	4	9
% Completed early or on time	100%	100%	100%
% Completed within scope	100%	100%	100%
% Completed under or on budget	100%	100%	100%
% Completed on time and on budget	100%	100%	100%
Baseline estimated cost at completion	\$18,382	\$147,313	\$165,695
Current estimated cost at completion	\$18,382	\$147,313	\$165,695
% of total program on or under budget	0% over	0% over	0% over
Advertisement record: projects under construction or entering construction phase			
Cumulative to date, 2003 – September 30, 2011	0	2	2
% Advertised early or on time	N/A	100%	100%
Total award amounts to date	\$0	\$114,805	\$114,805

Data source: WSDOT Capital Program Development & Management. N/A means not applicable.

* Note: The advertisement record includes the contract for the "144 Auto class ferry" furnished equipment. This already-purchased equipment has been accepted and currently is in storage; it will be installed during future, at-present unfunded, ship construction. The overall contract remains open to negotiate the training and installation of the equipment. The advertisement record also includes the third 64 Auto class ferry vessel (*Kennewick*), which is expected to be delivered late October 2011. The completed projects record includes the first and second 64 Auto Vessels, the *Chetzemoka* which started service in November 2010 and the *Salish*, which started service in July 2011.

WSDOT's Capital Project Delivery Programs

Schedule and Budget Summaries

Biennial summary of all projects completed 2003-2011

Nickel & 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 on time and on budget
Current quarter reporting on capital project delivery								
2011-2013 Biennium summary	4 TPA		4 on time	6	\$35,952	\$35,844	4 on budget	4 on time and on budget
This information will be updated quarterly throughout the biennium.	1 Nickel 1 TPA/ Nickel		2 late				2 over	
May be accessed at www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm .								
2009-2011 reporting on capital project delivery								
2009-2011 Biennium summary	16 Nickel		80 on time	90	\$1641,605	\$1,596,970	85 on budget	76 on time and on budget
See <i>Gray Notebooks 35-42</i> for project lists.	74 TPA		10 late				5 over	
To view projects completed in the 2009-2011 biennium, please see <i>Gray Notebook 35</i> (quarter ending September 30, 2009), <i>Gray Notebook 36</i> (quarter ending December 31, 2009), <i>Gray Notebook 37</i> (quarter ending March 31, 2010), <i>Gray Notebook 38</i> (quarter ending June 30, 2010), <i>Gray Notebook 39</i> (quarter ending September 30, 2010), <i>Gray Notebook 40</i> (quarter ending December 31, 2010), <i>Gray Notebook 41</i> (quarter ending March 31, 2011), and <i>Gray Notebook 42</i> (quarter ending June 30, 2011).								
May be accessed at www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm .								
NOTE: 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 wrapup, the tables are 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	42 Nickel		96 on time	111	\$1,685,749	\$1,685,219	102 on budget	90 on time and on budget
See the <i>Gray Notebook</i> for the quarter ending June 30, 2009, for project listing	69 TPA		15 late				9 over	
May be accessed at www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm .								
2005-2007 Biennium summary	52 Nickel		68 on time	76	\$673,858	\$668,778	67 on budget	59 on time and on budget
See <i>Gray Notebook</i> for quarter ending June 30, 2007, for project listing	24 TPA		8 late				9 over	
May be accessed at www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm .								
2003-2005 Biennium summary	27 Nickel		27 on time	27	\$124,580	\$124,409	25 on budget	25 on time and on budget
See <i>Gray Notebook</i> for quarter ending September 30, 2005, for project listing							2 over	
May be accessed at www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm .								

WSDOT's Capital Project Delivery Programs

Schedule and Budget Summaries: Current Biennium

Six projects completed as of September 30, 2011

Nickel & 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 on time and on budget
SR 503/4th Plain/SR 500 Intersection – Add turn lane (Clark)	TPA	√	√	\$811	\$748	√	√
SR 410/214th Ave E to 234th – Add lanes (Pierce)	Nickel/TPA	√		\$18,454	\$19,825		
Project completion was delayed due poor weather. Project exceeded budget due to the cost of additional working days.							
SR 11/Chuckanut Park and Ride – Build park and ride (Skagit)	TPA	√	√	\$11,874	\$11,493	√	√
This project was delayed due to unsuitable soils and the early onset of winter.							
US 2/Wagley's Creek Tributary (Sultan Mill Pond) – Fish passage (Snohomish)	TPA	√	√	\$987	\$817	√	√
I-5/Capital Boulevard Bridge – Upgrade bridge rail (Thurston)	Nickel			\$1,040	\$1,300		
Project completion was delayed due poor weather. Project exceeded budget due to the cost of additional working days.							
SR 548/Terrell Creek – Fish passage (Whatcom)	TPA	√	√	\$2,786	\$1,650	√	√

Data source: WSDOT Capital Program and Delivery Management.

WSDOT's Capital Project Delivery Programs

Advertisement Record

43 projects in construction phase as of September 30, 2011

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
Cumulative to date						
Concrete Rehabilitation Program	Nickel					
Although this budget line item is active, no projects are currently planned for construction in the 2009-2011 biennium.						
US 2/Chiwaukum Creek – Replace Bridge (Chelan)	TPA	√	Mar-11	Selland Construction Inc.	Sep-13	\$4,190
US 2/Wenatchee River Bridge – Replace bridge (Chelan)	TPA		Apr-11	Selland Construction Inc.	Sep-13	\$3,912
Advertisement was delayed to allow time for processing a shoreline permit.						
SR 500/St Johns Blvd – Build interchange (Clark)	TPA		Jan-11	Tapani Underground, Inc.	Nov-13	\$27,237
Advertisement date was delayed due to delays in gaining environmental permitting approval.						
I-5/NE 134th St Interchange (I-5/I-205) – Rebuild interchange (Clark)	Nickel	√	May-11	Moore Excavation, Inc.	Dec-14	\$17,791
SR 14/Camas Washougal – Add lanes and build interchange (Clark)	TPA		Mar-11	Tapani Underground, Inc.	Nov-12	\$28,619
Advertisement date was delayed due to prolonged right-of-way negotiations.						
I-5/SR 432 Talley Way Interchanges – Rebuild interchanges (Cowlitz)	TPA	√	Sep-09	Northwest Construction, Inc.	Dec-11	\$20,529
SR 28/Jct US 2 and US 97 to 9th St, Stage 1 – New alignment (Douglas)	TPA	√	Sep-09	Selland Construction, Inc.	Oct-12	\$4,565
This is a multi-contract project with several significant stages.						
SR 243/S of Mattawa – Install lighting (Grant)	TPA	√	Dec-10	Valley Electric Co. of Mt Vernon, Inc.	Nov-11	\$96
US 101/Unnamed Tributary to Lower Salmon Creek – Fish barrier (Grays Harbor)	TPA	√	May-11	Rognlin's, Inc.	Nov-11	\$897
I-405/South Renton Vicinity Stage 2 – Widening (King)	Nickel/ TPA					
• I-405/Thunder Hills Creek Culvert – Emergency Repairs	TPA	√	Feb-08		Dec-12	
WSDOT and key parties are working together to develop an acceptable long term solution to this failed culvert.						
• I-405/SR 167 to SR 169 – Northbound widening (King)	TPA	√	Oct-08	I-405 Corridor Design Builders	Dec-10	\$83,599
• I-405/SR 167 to SR 169 – Add new southbound lane (King)	Nickel	√		<i>Combined with project above for construction efficiencies.</i>		
• I-405/SR 515 – New interchange (King)	TPA	√		<i>Combined with project above for construction efficiencies.</i>		
I-405/NE 8th St to SR 520 Braided ramps – Interchange improvements (King)	TPA	√	Mar-09	Guy F. Atkinson Construction, LLC	Dec-12	\$107,500
This project received federal Recovery Act stimulus funds.						
I-90/Eastside Bridges – Seismic (King)	TPA	√	Oct-08	Imco General Construction, Inc.	Nov-11	\$5,999
This is a project within the Bridge Seismic Retrofit Program.						
SR 99/SR 518 Interchange Bridge Crossing – Seismic Retrofit (King)	TPA	Late	Mar-10	Mid-Mountain Contractors, Inc.	Aug-11	\$762

This WSDOT project is tied to the Sea-Tac Airport Rental Parking Facility project, which is administered by the Port of Seattle; POS makes decisions on the overall project schedule. The project schedule has been changed several times, including a delay in advertisement date stemming from funding problems; after funding was secured, it was scheduled to advertise December 2009 but was delayed an extra quarter to March 2010. The operationally complete date has now been delayed to August 2011, based on the contractor's schedule for the car rental facility work. This is a project within the Bridge Seismic Retrofit Program.

WSDOT's Capital Project Delivery Programs

Advertisement Record

43 projects in construction phase as of September 30, 2011

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
SR 99/Alaskan Way Viaduct — Replacement (King)						
• SR 99/S Massachusetts St to Union St — Electrical line relocation	TPA	√	May-08	Frank Coluccio Construction	Nov-09	\$17,040
• SR 99/S Holgate St to S King St — Viaduct replacement	TPA	√	Oct-09 May-10	Signal Electric, Inc. 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 St Tunnel — Fire and safety improvement	TPA	√	Nov-09	Signal Electric, Inc.	Nov-10	\$2,409
Additional sign-bridges have some elements that were not initially planned. New environmental right-of-way siting work and review was needed.						
• SR 99/S King St Vicinity to Roy St — Viaduct Replacement	Nickel/ TPA	√	May-10	Seattle Tunnel Partners	Dec-15	\$1,089,700
I-90/Snoqualmie Pass East — Hyak to Keechelus Dam — Corridor improvement (Kittitas)						
• I-90/Snoqualmie Pass East Phase 1A Hyak to Crystal Springs — Detour (Kittitas)	TPA	Early	Feb-09	KLB Construction, Inc.	Oct-09	\$3,298
• I-90/Snoqualmie Pass East Phase 1B Hyak to snowshed vicinity — Add lanes and bridges (Kittitas)	TPA	√	Nov-09	Max J. Kuney Co.	Oct-13	\$76,699
• I-90/Snowshed to Keechelus Dam Phase 1C — Replace snowshed and add lanes (Kittitas)	TPA	Late	Apr-11	Guy F. Atkinson Construction, LLC	Oct-17	\$177,144
Advertisement date changed to allow additional design and review.						
Lake Washington Congestion Management (King)	TPA	√	May-09	Elcon Corporation	Dec-11	\$ 34,450
SR 520/Bridge Replacement and HOV (King)						
• SR 520 Pontoon Construction (Grays Harbor)	TPA	√	Aug-09	Kiewit-General, A Joint Venture	Jul-14	\$367,330
Portions of this project are now in construction, but were not previously captured in <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 Contractors	Mar-14	\$306,278
SR 520/I-405 vicinity seismic retrofit (King)	TPA	√	Mar-10	Guy F. Atkinson Construction, LLC	Sep-11	\$4,083
This is a project within the Bridge Seismic Retrofit Program.						
I-5/SR 161/SR 18 — Interchange improvements (King)	Nickel/ TPA	√	Apr-10	Mowat Construction, Inc.	Oct-12	\$50,779
The award amount for this project was incorrectly reported as \$3,702 in <i>Gray Notebook 38</i> .						
SR 99/Aurora Ave — George Washington Memorial Bridge — Seismic (King)	TPA	√	Jan-11	Massana Construction, Inc.	Jan-13	\$6,157
SR 518/Bridges — Seismic (King)	TPA	√	Mar-11	Graham Construction and Management, Inc.	Apr-12	\$3,708

WSDOT's Capital Project Delivery Programs

Advertisement Record

43 projects in construction phase as of September 30, 2011

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/Tacoma HOV Improvements (Pierce)	Nickel/ TPA					
<ul style="list-style-type: none"> I-5/Port of Tacoma Rd to King Co Line — Add HOV lanes (Pierce) 	Nickel	Late	Jun-09	Tri-State Construction, Inc.	May-11	\$31,015
Advertisement date was delayed due to design challenges associated with stormwater and floodplain issues; a formal consultation with US Fish & Wildlife (USFW) and National Oceanic & Atmospheric Administration (NOAA) was required. Inflation factor applied in early July 2008 added \$6.6M to project cost estimate. This project has received federal Recovery Act stimulus funds.						
<ul style="list-style-type: none"> I-5/SR 16 Interchange — Rebuild interchange (Pierce) 	TPA	√	Jul-08	Guy F. Atkinson Construction, LLC	Jun-11	\$119,925
<ul style="list-style-type: none"> I-5/SR 16/ EB Nalley Valley — HOV 	Nickel/ TPA	√	Jun-11	Mowat Construction Company	Mar-14	\$74,688
SR 161/24th St E to Jovita — Add lanes (Pierce) Advertisement date was delayed to coordinate with local agencies.	Nickel		Feb-11	Tri-State Construction Inc	Jun-12	\$11,928
SR 530/Sauk River Bank Erosion — Realign roadway (Skagit)	TPA	√	Dec-10	Trimaxx Construction Inc	Jul-12	\$2,481
I-405/Kirkland Vicinity Stage 2 — Widening (Snohomish, King)	Nickel/ TPA					
<ul style="list-style-type: none"> I-405/SR 520 to SR 522 — Widening Stage 2 	Nickel	Early	Nov-10	Gary Merlino Construction Inc.	Dec-15	10,694
<ul style="list-style-type: none"> I-405/NE 195th St to SR 527 — Northbound widening (Snohomish, King) 	TPA	Early	May-09	Kiewit Pacific Co.	Jun-10	\$19,263
SR 9/Lundeen Parkway to SR 92 — Add lanes and improve intersections (Snohomish)	TPA	√	Mar-10	Granite Construction Co.	Oct-11	\$10,921
SR 9/212th St SE to 176th St SE, Stage 3 — Add lanes (Snohomish) Advertisement was delayed to allow time for utility relocation and permit approval.	Nickel		Apr-11	Tri-State Construction, Inc.	Aug-13	\$1,252
SR 522/Snohomish River Bridge to US 2 — Add lanes (Snohomish)	Nickel	√	Apr-10	Scarsella Bros., Inc.	Nov-14	\$74.653
I-5/196th St (SR 524) Interchange — Build ramps (Snohomish) The completion date has been delayed one quarter to reflect the contractor's schedule.	TPA		Apr-10	Northwest Construction Inc.	Oct-11	\$18,727
SR 529/Ebey Slough Bridge — Replace bridge (Snohomish)	TPA		Apr-10	Granite Construction Co.	May-13	\$21,541
US 395/North Spokane Corridor — US 2 to Wandermere and US 2 Lowering — New alignment (Spokane)	Nickel	√	Aug-08		Nov-11	
<ul style="list-style-type: none"> NSC — US 2 to Wandermere vicinity (Spokane) 	Nickel		May-09	Graham Construction & Management, Inc.	Nov-11	\$37,541
<ul style="list-style-type: none"> US 395/NSC — US 2 lowering (Spokane) 	Nickel		Aug-08	Graham Construction and Management, Inc.	Oct-11	\$42,849
US 395/North Spokane Corridor — Francis Ave to Farwell Rd — 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	
<ul style="list-style-type: none"> NSC-Farwell Road Lowering 	Nickel		Jan-04	Max J. Kuney Company	Jul-05	\$4,976
<ul style="list-style-type: none"> NSC-Gerlach to Wandermere — Grading — Construction 	Nickel		Nov-04	KLB Construction Inc.	Sep-06	\$9,987

WSDOT's Capital Project Delivery Programs

Advertisement Record

43 projects in construction phase as of September 30, 2011

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
• NSC-Francis Avenue to US 2 Structures — Rebid	Nickel		May-06	Max J. Kuney Company	Jul-08	\$17,236
• US 395/NSC-Freya to Fairview vicinity — Grading and Structures	Nickel		Jan-07	Steelman-Duff	Apr-09	\$10,571
• US 395/NSC-Freya St to Farwell Rd — PCCP Paving	Nickel		Feb-07	Acme Concrete Paving	Aug-09	\$19,490
• US 395/NSC — BNSF RR Tunnel	Nickel		Sep-07	Scarsella Bros. Inc.	Aug-09	\$17,295
• US 395/NSC — Freya to Farwell Rd – Southbound additional lanes	TIGER/ Nickel		Jun-10	Graham Construction & Management Inc.	Jun-12	\$21,456
This project was reported as complete in <i>Gray Notebook 35</i> - 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 project shown above.						
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., Inc.	Jun-10	\$61,495
• I-5/Grand Mound to Maytown Stage Two – Replace interchange	Nickel	Late	Aug-10	Tri-State Construction, Inc.	Sep-12	\$15,518
Advertisement was delayed due to negotiations with the railroad on the placement of a culvert under the tracks.						
I-5/Mellen Street interchange to Grand Mound interchange — Add lanes (Thurston, Lewis)						
• I-5/Blakeslee Junction Railroad Crossing to Grand Mound interchange — Add lanes (Thurston, Lewis)	TPA	√	Feb-10	Tri-State Construction	Dec-11	\$19,731
• I-5/ Mellen Street to Blakeslee Junction — Add lanes, interchange improvements (Thurston, Lewis)	TPA		Apr-12		Dec-14	
• I-5/Mellen St Interchange — Interchange improvements (Thurston, Lewis)	TPA		<i>Combined with project above for construction efficiencies.</i>			
I-5/14th Ave Thompson Pl — Add noise wall (Thurston)	TPA	√	Nov-10	Mowat Construction Company	Jul-11	\$1,654
I-5/Queets Dr E Tanglewild — Add noise wall (Thurston)	TPA	√	Nov-10	Mowat Construction Company	Jul-11	\$1,213
US 12/SR 124 Intersection — Build interchange (Walla Walla)						
Advertisement was delayed until land exchange with US Fish and Wildlife was completed.						
I-5/36th St vicinity to SR 542 vicinity — Ramp reconstruction (Whatcom)	TPA	√	May-10	Vetch Construction	Jul-12	\$4,440
SR 542/Everson Goshen Rd Vic to SR 9 vicinity – Intersection Improvements (Whatcom)	TPA	√	Jan-11	Boss Construction, Inc.	Oct-11	\$2,549
I-82/Valley Mall Blvd Interchange — Rebuild interchange (Yakima)	TPA	√	Nov-09	Apollo, Inc.	Oct-11	\$19,080
This project received federal Recovery Act stimulus funds.						
SR 22/I-82 to Toppenish — Safety improvements (Yakima)	Nickel	√	Oct-09	Steele Trucking, Inc.	Nov-11	\$143
The completion date for the second stage of this project has been delayed one year due to work that could not be performed inside the irrigation window.						
SR 823/Selah vicinity — Reroute highway (Yakima)	TPA	√	Dec-09	Hurst Construction LLC	Jul-12	\$3,573
The project was delayed until fall 2010 due to right of way issues. Its completion date has been delayed one year to 2012.						

Data source: WSDOT Capital Program Development and Management.

WSDOT's Capital Project Delivery Programs

Projects To Be Advertised

4 Projects in the delivery pipeline for October 1, 2011 through March 31, 2012

Nickel & 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 99/Spokane St Bridge – Replace bridge approach (King)	TPA	Sep-11	Dec-11		\$15,889	\$16,178
US 101/Bone River Bridge – Replace bridge (Pacific)	TPA	Jan-12	Jan-12	√	\$13,297	\$12,890
SR 9/SR 531-172nd Street Northeast – Improve intersection (Snohomish)	TPA	Oct-11	Oct-11	√	\$14,035	\$14,035
Advertisement has been delayed to right of way acquisition issues. Additional time is needed to acquire the parcels, attain possession, and start utility relocation work prior to construction						
SR 530/Fortson Creek Culvert – Fish Barrier (Snohomish)	TPA	Mar-12	Mar-12	√	\$2,508	\$2,628

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

Each quarter, WSDOT provides a detailed update on the delivery of the highway capital programs in the *Gray Notebook* and on the web (at www.wsdot.wa.gov) through the Project Pages and Quarterly Project Reports.

The dashboards below and on page 61 provide a status report on how WSDOT is delivering the program compared to the original Legislative intent as presented in the 2003 and 2005 LEAP (Legislative Evaluation & Accountability Program) lists. These dashboards include all budget items including preconstruction and environmental studies that were included in the original funding packages.

The first two columns in the first table 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 presents a budget update 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.

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

Status as of September 30, 2011

Project number and phase	Total program		Highways		Ferries		Rail	
	Number of projects	Percent of program						
Total number of projects	156		127		5		24	
Completed projects	111	71%	98	77%	1	20%	12	50%
Total projects under way	35	22%	29	23%	3	60%	3	13%
<i>In preconstruction phase</i>	17		15		2		0	
<i>In construction phase</i>	18		14		1		3	
Projects starting in the future	3	2%	0	0%	0	0%	3	13%
Projects deferred, or deleted from program	7	4%	0	0%	1	20%	6	25%
<i>Number of Legislatively approved scope changes</i>	20		18		0		2	
<i>Preconstruction starts within 6 months</i>	0		0		0		0	
<i>Construction starts within 6 months</i>	2		2		0		0	

Data source: WSDOT Capital Program Development & Management.

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

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

Status as of September 30, 2011; 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 2009-11 biennium	\$3,161,784	84%	\$2,813,701	83%	\$293,919	99%	\$170,418	81%
Actual expenditures, 2003 through 2009-11 biennium	\$3,173,276	84%	\$3,002,184	89%	\$132,448	44%	\$127,983	61%
Original plan through 2011-13 biennium	\$3,887,483	99%	\$3,380,124	100%	\$297,851	100%	\$209,508	100%
Current plan through 2011-13 biennium	\$3,732,973	96%	\$3,441,080	102%	\$160,302	54%	\$131,591	63%
Actual expenditures, 2003 through September 30, 2011	\$3,291,522	85%	\$3,027,442	88%	\$135,944	46%	\$128,136	61%

Data source: WSDOT Capital Program Development & Management.

Note: 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, 2011

Project number and phase	Total program		Highways		Ferries		Rail	
	Number of projects	Percent of program						
Total number of projects	248		229		4		15	
Completed projects	156	63%	150	64%	0		6	40%
Total projects under way	73	29%	67	31%	1		5	33%
<i>In preconstruction phase</i>	37		35		1		1	
<i>In construction phase</i>	36		32		0		4	
Projects starting in the future	8	3%	4	2%	1		3	20%
Projects deferred, or deleted from program	11	4%	8	3%	2		1	7%
<i>Number of Legislatively approved scope changes</i>	23		23		0		0	
<i>Preconstruction starts within 6 months</i>	0		0		0		0	
<i>Construction starts within 6 months</i>	4		4		0		0	

Data source: WSDOT Capital Program Development & Management.

Note: Totals do not include Local Programs projects.

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

Status as of September 30, 2011; 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 2009-11 biennium	\$4,062,962	58%	\$3,886,331	58%	\$81,701	44%	\$74,930	63%
Actual expenditures, 2005 through 2009-11 biennium	\$2,703,851	39%	\$2,572,834	39%	\$64,128	35%	\$66,889	57%
Original plan through 2011-13 biennium	\$5,585,341	80%	\$5,386,836	81%	\$87,675	47%	\$110,850	94%
Current plan through 2011-13 biennium	\$4,640,145	66%	\$4,491,431	67%	\$74,964	40%	\$73,750	62%
Actual expenditures, 2005 through September 30, 2011	\$2,798,865	40%	\$2,667,639	38%	\$64,373	35%	\$67,113	57%

Data source: WSDOT Capital Program Development & Management.

Note: Expenditures are TPA funds only. Totals do not include Local Programs projects.

Definitions

Completed projects Projects operationally complete, open to traffic.

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

Projects in preconstruction 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 preconstruction 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, one has been completed, representing 20% of the total Ferries program; three Ferries projects are under way, representing 60% of the total program; and one Ferries project has been deferred or deleted, representing the remaining 20% of the total program.

WSDOT's Capital Project Delivery Programs

Paying for the Projects: 2003 Transportation Funding Package (Nickel) financial information

Revenue forecast update

The following information incorporates the September 2011 transportation revenue forecast projections. The accompanying charts compare the current projected revenue forecast to the baseline forecast used in the budget making process when the 2003 Funding Package was adopted. The 2003 Funding Package was developed as a ten-year plan from 2003 through 2013. Due to timing and funding issues, the 2007 Legislature moved projects beyond 2013. Both cumulative ten-year totals and individual biennial amounts are shown in the chart below.

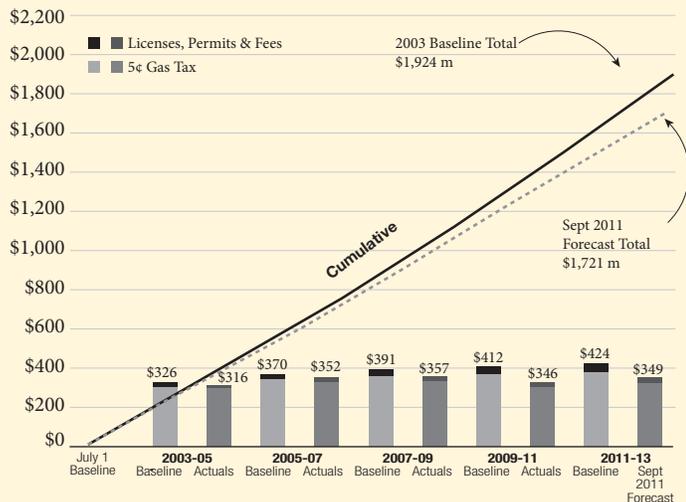
Current forecasted revenues include the most recent actual revenue collection data available as well as updated projections based on new and revised economic variables.

The September 2011 forecast for gas tax receipts and licenses, permits, and fees for the Transportation 2003 (Nickel) Account is lower than the baseline forecast for the ten-year outlook by 11.8%. This reduction is due to continued lower gasoline consumption. Because Washington State's gas tax is based on gallonage rather than price, reduced consumption results in reduced revenues.

Transportation 2003 (Nickel) account revenue forecast

March 2003 Legislative baseline compared to the September 2011 Transportation Revenue Forecast Council

Dollars in millions



Data source: WSDOT Financial Planning.

Numbers may not add due to rounding.

2003 Transportation Funding Package Highlights

Deposited into the Transportation 2003 (Nickel) Account

- 5¢ increase to the gas tax
- 15% increase in the gross weight fees on trucks

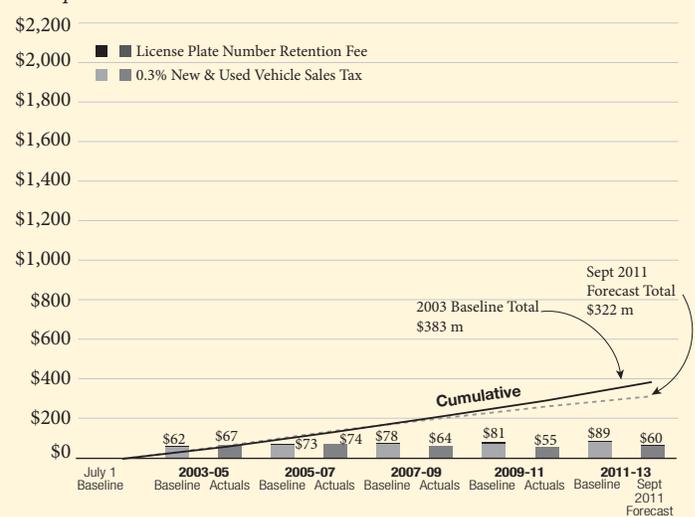
Deposited into the Multimodal Account (established in 2000)

- An additional 0.3% sales tax on new and used vehicles
- \$20 license plate number retention fee

Multimodal Account projections for the vehicle sales tax are lower than the baseline forecast resulting in a decrease of 19.9% in the ten-year outlook. This decrease is primarily due to the decline in vehicle sales.

Multimodal Account (2003 Package) revenue forecast

March 2003 Legislative baseline compared to the September 2011 Transportation Revenue Forecast Council



Data source: WSDOT Financial Planning.

Numbers may not add due to rounding.

Paying for the Projects: 2005 Transportation Partnership Account (TPA) financial information

Revenue forecast update

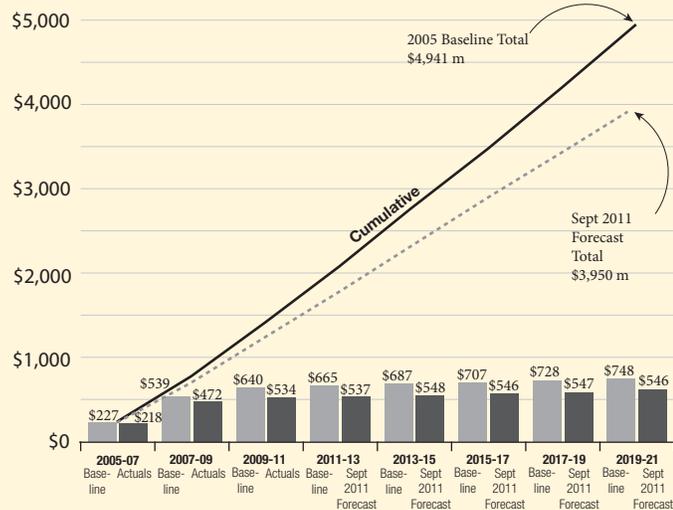
The accompanying chart compares the current September 2011 revenue forecast to the baseline forecast used in the budget making process when the 2005 Funding Package was adopted. The 2005 Funding Package was developed as a 16-year plan extending from 2005 through 2021.

The September 2011 forecast for gas tax receipts over the 16-year period decreased by 25.1% from the baseline forecast. This reduction is due to continued lower gasoline consumption. Because Washington State's gas tax is based on gallonage rather than price, reduced consumption results in reduced revenues.

Transportation Partnership Account (TPA) gas tax revenue forecast

March 2005 Legislative baseline compared to the September 2011 Transportation Revenue Forecast Council

Dollars in millions



Data source: WSDOT Financial Planning.

Numbers may not add due to rounding.

2005 Transportation Package Revenue Sources

- 9.5¢ increase to the gas tax phased in over four years
 - 3.0¢ in July 2005
 - 3.0¢ in July 2006
 - 2.0¢ in July 2007
 - 1.5¢ in July 2008
- New vehicle weight fees on passenger cars
 - \$10 for cars under 4,000 pounds
 - \$20 for cars between 4,000 and 6,000 pounds
 - \$30 for cars between 6,000 and 8,000 pounds
- Increased combined license fees for light trucks
 - \$10 for trucks under 4,000 pounds
 - \$20 for trucks between 4,000 and 6,000 pounds
 - \$30 for trucks between 6,000 and 8,000 pounds (Farm vehicles are exempt from the increase)
- A \$75 fee for all motorhomes
- Fee increases to various driver's license services
 - Original and renewal license application increased to \$20 (previously \$10)
 - Identicators, driver permits and agricultural permits increased to \$20 (previously \$15)
 - Commercial driver license and renewal increased to \$30 (previously \$20)
 - License reinstatement fee increased to \$75 (previously \$20)
- DUI Hearing increased to \$200 (previously \$100)
- Fee increases to various license plate charges
 - Reflectorized plate fee increased to \$2 per plate (previously 50¢)
 - Replacement plates increased to \$10 (previously \$3)

WSDOT's Capital Project Delivery Programs

Completed projects: Delivering performance and system benefits

Between July 1 and September 30, 2011, WSDOT completed six Nickel and Transportation Partnership Account (TPA) projects that improved bridge rail and fish passage, modified an interchange, added lanes, and built a new park and ride lot. Each project faced unique challenges to be completed on time and on budget.

Project delivery performance reporting on budget and schedule is measured against last approved budgets in accordance with

criteria established by the Legislature; for this quarter, it is the 2011 transportation budget. This report includes the original project appropriation from the 2003 and 2005 budgets to explain changes in project budgets over time. The graphs offer a visualization of the fluctuations in a project's cost from year to year and are scaled to show the dollar range in greater detail.

More information on completed projects is available online at www.wsdot.wa.gov/projects.

SR 503/4th Plain/SR 500 Intersection – Add turn lane (Clark)

This project improved the intersection of SR 503/SR 500 and Fourth Plain Road in Vancouver, Clark County, to allow a new turn lane.

Project's benefits: The intersection was consistently congested during peak traffic hours, backing up traffic onto westbound Fourth Plain. Constructing a new turn lane allows motorists to make a right turn while through traffic is stopped at the intersection.

Highlights/challenges: The project was awarded for \$281,000, 11% below the engineer's estimate.

Budget performance: The project cost \$749,000 at completion, \$62,000 below the last approved budget and \$202,000 below the original 2005 Transportation Partnership Account budget. Savings were achieved in part due to the low bid and reduced construction materials costs.

Schedule performance: The project was operationally complete in September 2011, three quarters ahead of the last approved schedule of June 2012.



SR 410/214th to 234th – Additional lanes and signal (Pierce)

This project widened SR 410 for 1.49 miles in both directions in Bonney Lake, Pierce County. The project also installed a new traffic signal and stormwater treatment improvements.

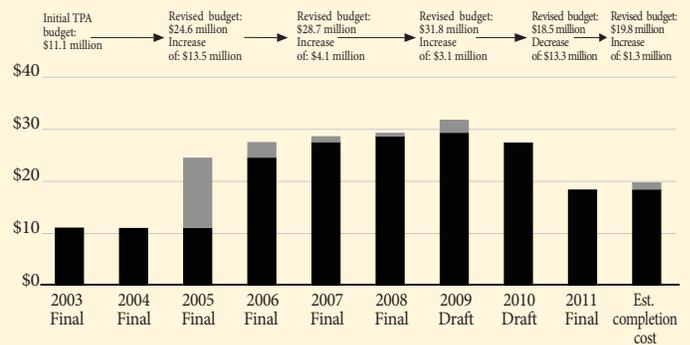
Project benefits: The widening added capacity on the main highway in a section of SR 410 that had experienced tremendous growth over the last decade.

Project highlights and challenges: Long and extended wet weather caused the construction to extend into a second season and require additional working days that affected both the budget and the schedule. The project budget experienced changes as the economic climate in the state changed. The initial increases were the result of additional right-of-way, higher property values, materials escalation, and inflation. The project budget later decreased due to the competitive bid climate and lower material costs.

Budget performance: The project cost \$19.8 million at completion, \$1.4 million above the last approved budget, due to the additional working days. The project cost \$8.7 million more than its original Nickel budget of \$11.1 million.

SR 410/214th to 234th – Additional lanes and signal (Pierce)

Annual project budget from conception to annual cost at completion
Dollars in millions



Data Source: WSDOT Capital Project & Delivery Management Office.

Schedule performance: The project was completed in September 2011, one quarter behind the last approved schedule due to extended wet spring weather that delayed construction.



Completed projects: Delivering performance and system benefits

SR 11/Chuckanut Park and Ride – Build park and ride (Skagit)

This project built a new park and ride lot near the intersection of I-5 and SR 11/Chuckanut Drive in Skagit County. The facility offers 367 parking spaces and a motorcycle parking area.

Project's benefits: The project provides improved opportunities for area residents to connect with three transit agencies or carpool along the I-5 corridor.

Highlights/challenges: Right-of-way purchases for the project were combined with acquisitions for the associated SR 11/I-5 Interchange to Josh Wilson Road – Rebuild Interchange project, which was completed in October 2010. Significant real estate cost escalation in the area, in conjunction with higher material costs, increased the cost of the project.

Budget performance: The project cost almost \$11.5 million at completion, \$378,000 below the last approved budget. This was \$7.5 million more than the original 2005 Transportation Partnership Account budget of \$4 million.

Schedule performance: The project was operationally complete in September 2011, on time with the last approved schedule.



The project built a new park and ride lot near the interchange of SR 11 and I-5 in Skagit County. The park and ride helps commuters connect with three transit agencies.

US 2/Wagley's Creek Tributary (Sultan Mill Pond) – Fish passage (Snohomish)

This project improved fish passage by removing wood dams and debris and improving the existing stream slope.

Project's benefits: The project improves fish habitat by removing impediments to the stream. The project was part of the statewide fish passage improvements funded by the 2005 Transportation Partnership Account tax package.

Highlights/challenges: The successful low bid by Anderson Environmental Contracting, LLC was 27% below the engineer's estimate, reducing the cost of the project by \$145,090.

Budget performance: The project cost \$817,000 at completion, \$170,000 below the last approved budget of \$987,000.

Schedule performance: The project was operationally complete in July 2011, on time with the last approved schedule.



The project improved the stream slope for Wagley's Creek Tributary under US 2 in Snohomish County.

WSDOT's Capital Project Delivery Programs

Completed projects: Delivering performance and system benefits

I-5/Capitol Blvd Bridge – Upgrade bridge rail (Thurston)

This project installed a new fence on the Capitol Boulevard Bridge over I-5 in Olympia.

Project's benefits: The new 8-foot-6-inch fence replaced an existing 3-foot tall railing and 2-foot-7-inch fence. Large gaps between the original fence and rails allowed debris and objects to fall through. The new fence included tighter chain link mesh that eliminated the gaps and reduced opportunities for debris to fall from the bridge. The bridge stands 71 to 74 feet above a busy section of I-5 that carries about 138,000 vehicles daily. Anything that falls from the bridge can cause distraction, delays, or a collision.

Highlights/challenges: The project was initially designed to replace the bridge rail on the Capitol Boulevard Bridge, but an analysis of collision data revealed that installing a new fence on both sides of the bridge was a higher priority. The project required installing netting and other containment measures to prevent debris from falling during construction. The construction contract was awarded for about \$519,000 which was about \$98,000 below the engineer's estimate.

Budget performance: The project cost \$1.3 million at completion, \$240,000 above the last approved budget, in part because the contractor required additional measures to secure debris at the construction site. The project cost \$1,256,000 above the \$44,000 original 2005 Transportation Partnership Account budget mainly because it was changed from a bridge rail replacement to a bridge fence replacement.

Schedule performance: The project was operationally complete in July 2011, one quarter behind the last approved schedule.

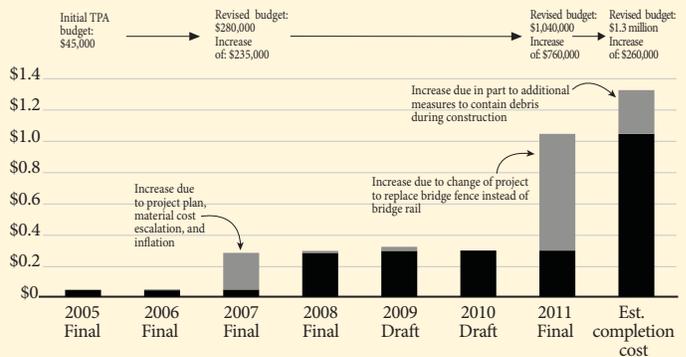


The project installed new bridge rail on the Capitol Boulevard Bridge over I-5 in Thurston County. The photo below to the left shows the previous rail that was replaced. The new rail is in the photo to the right.



I-5/Capitol Blvd Bridge - Upgrade Bridge Rail (Thurston)

Annual project budget from conception to annual cost at completion
Dollars in millions



Data Source: WSDOT Capital Project & Delivery Management Office.

SR 548/Terrell Creek - Fish passage (Whatcom)

The existing culvert beneath the east-west portion of Grandview Road is a barrier for fish. WSDOT replaced the 6-foot diameter, 132-foot long round culvert with a much larger box culvert that is 10 feet tall, 25 feet wide and 88 feet long.

Project's benefits: Removing the old culvert and replacing it with a box culvert will allow salmonids to reach prime spawning gravel and rearing habitats upstream. This allows the potential recovery for runs of steelhead, coastal cutthroat, chum, and coho salmon--populations which were drastically reduced over the last 50 years.

Highlights/challenges: One of the challenges on this project was that unsuitable soils required deeper boring than planned.

Budget performance: The project cost \$1.7 million at completion, about \$1 million under the last approved budget due to a low bid of \$672,411 that was 35% below the engineer's estimate, as well as right-of-way adjustments. The estimated cost at completion was approximately \$1.1 million over the initial approved budget.

Schedule performance: The project was completed in September 2011, one quarter early.



Project Spotlight: Southwest Washington I-5 Expansion Program

WSDOT is adding lanes and rebuilding interchanges along the I-5 corridor in southwest Washington to accommodate growing needs in Thurston and Lewis counties. The existing roadway was completed in the late 1960s and has not been substantially modified; its current capacity is exceeded during peak travel periods, particularly around the holidays. These Nickel and TPA projects will widen the corridor in both directions, redesign and improve collector and distributor lanes, construct new flyovers and bridges, and add new traffic management features.

Completed project

I-5 Grand Mound to Maytown – Add lanes, Stage 1 (Thurston)

This \$90 million project built an additional lane for eight miles in both directions of I-5 between Grand Mound and Maytown in Thurston County. The project was operationally complete in November 2010, though plant establishment and minor construction items continue.

Projects under construction

I-5 Blakeslee Junction to Grand Mound (Thurston & Lewis)

This \$40 million project widens north and southbound I-5 from two to three lanes for four miles in each direction from Blakeslee Junction in Lewis County to just south of the Grand Mound interchange in Thurston County. Construction began in June of 2010 and is nearing completion. Three lanes in each direction will be open in November 2011.

I-5 Grand Mound to Maytown – Stage 2 – New interchange (Thurston)

WSDOT awarded the contract to Tri-state Construction and construction began in January 2011. The bridge decks, approach slabs, and barrier are complete on both bridges. Crews are building approach embankments to prepare for a partial closure of the interchange to switch traffic to the new alignment. Remaining construction elements include: construction of the on and off ramps, final overlay on I-5, US 12, and ramps, plant establishment, and minor construction items. The project is expected to be operationally complete in the summer of 2012, depending on suitable weather.

Projects in preliminary engineering phases

I-5 Mellen Street to Blakeslee Junction (Lewis)

This \$155 million project is the final funded phase of the widening of I-5. It will construct new collector-distributor lanes between the Mellen Street and Harrison Avenue interchanges, and widen I-5 from two to three lanes in each direction north of Harrison Avenue. WSDOT will improve the Harrison Avenue interchange, construct new bridges over the railroad tracks at Blakeslee Junction, and repair and paint the Skookumchuck River bridges.

The project will require many complex property acquisitions. To reduce the risk of delays, WSDOT is developing a plan to deliver the project in two stages. Staging will allow the project to utilize the first in-water work season and deliver critical path construction items on time to make the scheduled operationally complete date in 2014.

Future unfunded improvements

I-5 13th Street to Mellen Street (Lewis)

When funded, this project will complete the corridor in the Centralia/Chehalis area. Improvements to this five-mile section of I-5 will include reconstructing four interchanges, railroad and city street overcrossings, stream crossings, and connections to local roads. WSDOT has been working with local agencies, businesses, and community members to develop the project.

Southwest Washington I-5 Corridor Highlights

One project is operationally complete: I-5 Grand Mound to Maytown – Add Lanes, Stage 1.

Two projects are now in the construction phase: I-5 Grand Mound to Maytown, Stage 2 and I-5 Blakeslee Junction to Grand Mound.

Bridge decks, approach slabs, and barrier are complete on I-5 Grand Mound to Maytown – Stage 2. Traffic will soon be switched to the new alignment.

The new lanes between Blakeslee Junction and Grand Mound are expected to open to traffic in November 2011.

The last major funded project, I-5 Mellen Street to Blakeslee Junction, will begin construction in 2012.

WSDOT's Capital Project Delivery Program

Special Report: SR 520 Bridge Replacement and HOV Program

SR 520 Program Highlights

The Pontoon Construction Project has started constructing the first round of pontoons at the new casting facility in Grays Harbor.

The SR 520 Bridge Replacement and High Occupancy Vehicle (HOV) Program is a long-term investment in one of the region's busiest corridors, connecting the population and employment centers in Seattle and the Eastside of Lake Washington. The SR 520 Program currently includes four projects that will replace the aging floating bridge across Lake Washington, and complete critical safety and mobility improvements along the corridor from I-5 in Seattle to SR 202 in Redmond. The four projects are: the *Pontoon Construction Project*, the *Medina to SR 202: Eastside Transit and HOV Project*, the *I-5 to Medina: Bridge Replacement and HOV Project*, and the first stage of the *I-5 to Medina project*—called the *SR 520 Floating Bridge and Landings project*. The result will be a new SR 520 that will provide more commuting choices and better trip reliability for drivers, transit riders, bicyclists and pedestrians, while protecting the regional environment and keeping our economy moving forward.

SR 520 Program: Project Overview Map



The Medina to SR 202 project is currently under construction and has completed three of eight fish passage culverts, and work has begun on the Evergreen Point Road lid and Bellevue Way bridge.

A \$586.5 million design-build contract was awarded in August 2011 to replace the SR 520 floating bridge.

WSDOT has completed environmental review for all projects in the SR 520 program.

Major environmental milestones achieved

In summer 2011, WSDOT published the final environmental impact statement (EIS) for the SR 520, *I-5 to Medina Bridge Replacement and HOV Project*. The Federal Highway Administration then issued the Record of Decision, granting federal approval for the project and marking the completion of the environmental review process—a major milestone. The Record of Decision allows WSDOT to obtain permits, finalize design, and begin construction.

SR 520 program construction projects are under way

Construction is already in full swing on the *Pontoon Construction* and *Eastside Transit and HOV* projects, and WSDOT will soon begin work on replacing the floating bridge.

Pontoon Construction Project brings jobs to Grays Harbor county

As reported in *Gray Notebook* 39, page 58, and *Gray Notebook* 41, page 77, work began in February 2011 in Aberdeen to build a pontoon casting facility. This facility is now being used to build pontoons that will be used to replace the SR 520 floating bridge. Grays Harbor county has an estimated unemployment rate of 13%, one of the highest in the state, but the *Pontoon Construction project* is providing a visible boost to the local economy. About 200 workers have been hired to work on the project to date, and the \$367 million design-build project has met a major milestone by beginning work on the first cycle of pontoons, which will be complete in the first quarter of 2012. A construction webcam shows real-time

Special Report: SR 520 Bridge Replacement and HOV Program

pontoon construction, and can be viewed on the project website: www.wsdot.wa.gov/Projects/SR520/Pontoons.

WSDOT has nearly completed the Grass Creek mitigation project, providing mitigation for effects on wetland and aquatic resources from casting facility construction. The project will enhance a 68-acre site located about seven miles northwest of Hoquiam in Grays Harbor County, establish wetlands, and reconnect tidal channels.



Soundview Aerial Photography captured a bird's eye view of the SR 520 casting facility in Aberdeen as contractors prepare to construct the first round of pontoons.

Medina to SR 202: Eastside Transit and HOV Project construction is supporting about 400 jobs

In 2008, the FHWA approved WSDOT's request to construct transit and HOV improvements on SR 520 from Medina to Redmond as an independent project, called the *Medina to SR 202: Eastside Transit and HOV project*. WSDOT worked with Eastside community members along the SR 520 corridor on a collaborative design process to develop key features for the project, including community connecting lids. In 2010, WSDOT and FHWA completed the required federal and state environmental processes, and received funding and approval to move forward with this \$306 million design-build project. When it's complete in 2013, it will feature:

- A six-lane corridor with a continuous inside transit/HOV lane all the way to SR 202 in Redmond.
- Median transit stops at Evergreen Point Road and 92nd Avenue Northeast.
- A regional bicycle/pedestrian path.
- A direct-access ramp to 108th Avenue Northeast for carpools and transit.
- Wider, safer shoulders.
- Improvements to the Evergreen Point Road Park and Ride.

- Environmental and community enhancements such as fish habitat improvements, noise walls, stormwater treatment and detention facilities, and three new community-connecting lids.

Work began in April 2011 and about 400 workers have been hired to date. Construction work completed so far includes: three out of eight fish-passage culverts under the highway, pier walls to support the first lid at Evergreen Point Road in Medina, and temporary stormwater detention facilities throughout the project area to treat construction runoff before it reaches Lake Washington. They have also demolished part of the Bellevue Way Northeast bridge making room for future improvements.

WSDOT is currently negotiating changes to this project contract to address construction overlap, permit changes, and other project improvements. For more information on these contract changes, see the Watch List section on page 74.

WSDOT is finalizing agreements, working with communities, and preparing for first stage of construction on the I-5 to Medina project

The *SR 520, I-5 to Medina: Bridge Replacement and HOV Project* will replace the roadway and vulnerable structures along SR 520, and ultimately construct a six-lane corridor from I-5 in Seattle to Evergreen Point Road in Medina. The first stage is the *Floating Bridge and Landings project*, which will build a new, safer, six-lane floating bridge.

Stage 1-SR 520 Evergreen Point Floating Bridge and Landings Project

In August 2011, WSDOT awarded a \$586.5 million design-build contract to Kiewit-General-Manson for the *Floating Bridge and Landings project*. This project includes:

- Building a six-lane floating bridge with wider, safer shoulders, a transit/HOV lane in each direction and a bicycle/pedestrian path.
- Towing concrete pontoons from Grays Harbor and assembling the floating bridge on Lake Washington.
- Building an additional 44 concrete pontoons and 58 anchors.
- Building an east approach connection from the new floating bridge to the new six-lane Eastside roadway currently under construction.
- Building a new maintenance facility and dock on the east shore of Lake Washington, located beneath the new east approach connection.

WSDOT's Capital Project Delivery Program

Special Report: SR 520 Bridge Replacement and HOV Program

WSDOT is working to secure agreements with the Muckleshoot Indian Tribe, and will soon receive necessary state and federal permits so that construction can begin on Lake Washington in 2012. The target date to open the new bridge to drivers is December 2014.

Coordination with the City of Seattle continues

In September 2010, the Seattle City Council sent a letter to WSDOT requesting that both parties formalize a joint understanding for how the City of Seattle and WSDOT would ensure various commitments for the *I-5 to Medina project* are met. Since that time WSDOT has worked with the city on a Memorandum of Understanding (MOU).

The MOU recaps the importance of the SR 520 corridor, acknowledges previous city resolutions related to SR 520, and outlines roles and responsibilities for WSDOT and the City of Seattle. The MOU also includes WSDOT commitments related to design refinements and community enhancements, and outlines ongoing work with other partner agencies and the City. Finally, the MOU states the City of Seattle's support for the I-5 to Medina project as WSDOT seeks funding from the Legislature next session. The Seattle City Council will review the draft MOU with Mayor McGinn, and, together with WSDOT, plan to sign the MOU before the end of 2011.

Seattle Community Design Process

This fall, WSDOT kicked off the Seattle Community Design Process. This process is a series of interactive public sessions where members of local communities can come and talk with SR 520 program staff, learn more about the I-5 to Medina project, and share their ideas about design elements for the new SR 520 corridor between I-5 to the floating bridge. The first session, on October 1, was well attended; the next session is scheduled for November 9. This process is being guided in part by a design advisory group, made up of members of local agencies and members of the public. The project team will submit a progress report to the Governor and Legislature at the end of the year.

Ongoing coordination with the Muckleshoot Tribe

WSDOT and FHWA have been consulting with the Muckleshoot Indian Tribe (MIT) on projects for the SR 520 program since July 2000. The MIT is a cooperating agency under the National Environmental Policy Act and has treaty fishing rights in Lake Washington.

WSDOT Executive Leadership briefed the MIT Tribal Council on the Preferred Alternative for the *I-5 to Medina project* in May 2010. Since that time, SR 520 program leadership and representatives from the Governor's office have engaged in regular consultation with the MIT Fish Commission and Preservation Committee. Together, all participants are working toward signing an agreement between the state of Washington, WSDOT, and the MIT in December 2011.

WSDOT receives legal challenge

The Coalition for a Sustainable 520, a coalition made up of several community members who live along the SR 520 corridor, filed a lawsuit against WSDOT on September 2, 2011. On behalf of WSDOT, Washington's Office of the Attorney General will be filing an answer to the complaint, and will work with the court, the U.S. Attorney General's Office, and the Coalition for a Sustainable 520 to establish a case schedule.



This rendering shows how the new SR 520 floating bridge will have two general purpose lanes and one HOV lane in each direction, and will include wider, safer shoulders.

SR 520 Program costs and funding update

In 2009, the Washington State Legislature set a \$4.65 billion budget cap for the entire SR 520 program, which includes safety, mobility, and environmental improvements from I-5 in Seattle to SR 202 in Redmond. In 2011 the Legislature authorized \$2.62 billion in funding (including sales tax) for WSDOT to begin construction of the new SR 520 floating bridge, a pontoon construction facility and pontoons, and Eastside transit and HOV improvements.

Special Report: New Ferry Construction

The last of the Kwa-di Tabil Class (64-car) ferries was delivered ahead of schedule

The third and final Kwa-di Tabil class ferry, the *M/V Kennewick*, neared completion in the third quarter of 2011. Vessel outfitting at Everett Shipyard is ahead of schedule, and the main engines, service generators, and boilers have all been successfully tested in preparation for sea trials conducted by the builder on October 6. Trials to demonstrate the vessel to WSF and the U.S. Coast Guard were scheduled for October 12. While the contract delivery date is currently set for the end of January 2012, Vigor Shipyards delivered the vessel to WSDOT on October 31, 2011.



The contractor demonstrated the Kennewick to WSDOT and the US Coast Guard, and could be seen sailing the waters of Puget Sound in October.

WSDOT will now conduct extensive final outfitting and crew training. The total final cost for the *Kennewick* is estimated at \$58.8 million, subject to some minor changes. The date ferry service will be provided using the *Kennewick* will depend on the progress of crew training, but WSDOT anticipates putting the *Kennewick* into service on the Port Townsend/Coupeville route in January 2012.

Construction on new 144-car ferries to begin in 2012

As described in the *June 2011 Gray Notebook 42*, page 60, WSDOT plans to build up to three new 144-car ferries needed to replace the aging fleet. A design-build contract for these ferries was awarded in 2007, and after some negotiations, WSDOT has accepted Vigor Shipyards' design. Vessel price and construction schedules have had to be renegotiated, and a change to the contract was signed and approved on November 1, 2011. The first vessel will be delivered 27 months after the contractor receives a notice to proceed with work. Contractors could begin cutting steel for the new ferry as early as January 2012, and the first vessel constructed will use the propulsion system machinery manufactured in 2008, and currently being stored. At this time, only one vessel is funded.

Bids due for Keller Ferry

WSDOT is moving forward to replace the 12-car ferry *Martha S.*, also known as the Keller Ferry, which operates on the Columbia River in eastern Washington (see *Gray Notebook 42*, page 60). The *Martha S.* was placed into service in 1948 and has exceeded its 60-year design life. Repair and maintenance costs are increasing along with the amount of time the vessel is out-of-service to accomplish needed repairs.

WSDOT advertised the construction contract for a new 20-car, all-aluminum ferry in July 2011. The contract requires delivery of the new vessel in May 2013. Prospective bidders visited the site to see the unique challenges they will face, including the need to deliver a vessel in pieces over the highways. WSDOT is prequalifying several bidders, and bids were opened on November 8.

Project Highlights

Sea trials for the *M/V Kennewick* took place in October, and the vessel was delivered 3 months ahead of schedule.

Construction on the first new 144-car ferry could begin in January 2012.

Currently, only one vessel is funded for construction.

Propulsion systems currently in storage will be used on the new 144-car ferry.

Bids for the Columbia River Keller Ferry were opened November 8.

WSDOT's Capital Project Delivery Program

Special Report: Tacoma Pierce County HOV Program Quarterly Update

Tacoma Pierce HOV Program Highlights

Construction on the I-5/SR 16 Eastbound Nalley Valley Interchange will begin this fall.

Project details are available on the website at www.wsdot.wa.gov/Projects/PierceCountyHOV/SR16_EBNalleyValley/

Construction on the I-5: Portland Avenue to Port of Tacoma Road continues, and retaining walls should be complete by the end of November.

Design has resumed on the I-5: M Street to Portland Avenue project after the design team was reassigned to meet contract delivery dates committed to by the legislature.



This artist's rendering shows what SR 16 will look like in 2014 when the I-5/SR 16 Eastbound Nalley Valley construction project (eastbound viaduct on left) is complete. Like the westbound project, the eastbound project will be open to all traffic and is designed to accommodate future construction of HOV facilities.

Construction progress

I-5/SR 16 Eastbound Nalley Valley Interchange

Now that the I-5/SR 16 Westbound Nalley Valley project is complete, construction is set to begin on its sister eastbound project. The I-5/SR 16 Eastbound Nalley Valley project was awarded to Mowat Construction Company of Woodinville in September for \$74.7 million. Construction is scheduled to begin this fall and continue through spring 2014.

Like the westbound project, the eastbound project will build general-purpose facilities that are precursors to future HOV construction. In this second stage, crews will build a new eastbound viaduct, demolish the remaining original viaduct, build new ramps from South Sprague Avenue to northbound and southbound I-5, install Intelligent Transportation System hardware, and make numerous other improvements.

The effects on travelers will be similar to those seen during the westbound project: narrowed and realigned lanes, night time lane and ramp closures, and a few total eastbound highway closures during girder-lifting activities. Two I-5 ramps will also be closed for up to 90 days around the clock: the northbound I-5 exit to City Center, and the southbound I-5 exit to South 38th Street.

I-5: Portland Avenue to Port of Tacoma Road – Northbound HOV Stage 1

The \$22 million Stage 1 project is the first of several to reconstruct I-5 between Portland Avenue and the Port of Tacoma Road in Tacoma. The project completes preliminary work needed for the larger northbound I-5: Portland Avenue to Port of Tacoma Road – Northbound HOV project, scheduled for construction in early 2012. Construction on this project began in July 2010; since then, crews successfully installed 857 stone columns and 175 soil cement columns. These columns fortify the surrounding soil so it will support bridge piers and embankments for the future northbound I-5 bridge spanning the Puyallup River. The project includes widening four I-5 bridges (two over Portland Avenue and two over Bay Street). All of the in-ground work has been completed for the bridge widening. Four retaining walls are included in the project, and all four are under construction with completion scheduled for the end of November. Column jacketing, to seismically retrofit the two existing bridge structures, will also be complete by then.

Design progress

I-5: Portland Avenue to Port of Tacoma Road – Northbound HOV

Design plans are nearly complete on this \$203 million project, the highlight of which is a new northbound I-5 bridge over the Puyallup River. The design team is working hard to meet a late January 2012 advertisement date, though some permits and right-of-way easements remain to be secured.

I-5: M Street to Portland Avenue – HOV

In early 2010, design work stopped on this project because of changes in the program's biennial budget. The design team was reassigned to other projects within the Tacoma/Pierce County HOV Program. Now that the Eastbound Nalley Valley project is under construction, design work has resumed on the I-5: M Street to Portland Avenue – HOV project. Design is nearly 60% complete, and the team has updated the project delivery plan, the project schedule, and the budget.

Watch List: Projects with schedule or budget concerns

WSDOT is committed to frequent and accurate “no surprises” reporting of project performance. WSDOT emphasizes rigorous analysis while communicating in plain language, unencumbered by jargon or insider terminology. As part of that commitment, WSDOT regularly addresses issues that do, or potentially could, affect a project’s schedule and budget: they are outlined here in the Watch List. When these issues are resolved, which may take more than one quarter, the project is removed from the Watch List. If new issues arise, an update to the project will be provided in the Update to Watch List section.

The gray box below describes some of the common problems that may affect the successful progress of a project from design through completion; they are listed in the order in which WSDOT might face them, starting in the earliest planning stages and concluding with actual construction.

The summary on page 74 lists projects currently facing schedule or budget concerns with a reference to these over-arching descriptions; a more detailed description of the precise problem or its resolution appears on the following pages. Still more information is presented on the individual project pages on the WSDOT website at www.wsdot.wa.gov/projects. Projects paid for through Pre-Existing Funds are discussed on pages 77-79.

It is important to note that while the number of projects appearing on the Watch List has occasionally grown over time, so have the number of projects under way (we report on the project whether it is under construction or in planning and design phases). By tracking problem projects more closely on the Watch List, WSDOT can keep all its stakeholders informed while evaluating possible solutions.

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 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 US Fish & Wildlife Service, NOAA Fisheries, US Forest Service, etc.

Inter-agency issues: Project may require more collaboration with local jurisdictions, or may require inter-local 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 time spent in design.

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 that 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 mean work schedules conflict with events such as fish spawning season.

Weather: Weather unsuitable for construction work will 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: Projects with schedule or budget concerns

Added to Watch List	Project type	Watch List issue
SR 99/Spokane St Bridge - Replace Bridge Approach (King)	Highway	Coordination: inter-agency issues
SR 520/Medina to SR 202 Vicinity - Eastside Transit and HOV (King)	Highway	Coordination: local concerns; Design: design element changes; Litigation
SR 9/Pilchuck Creek - Replace Bridge (Snohomish)	Highway	Environmental: permitting; Design: alternatives
SR 11/Padden Creek - Fish Barrier Removal (Whatcom)	Highway	Design: design element changes
Updates to Watch List		
US 2/Wenatchee River Bridge – Replace bridge (Chelan) aka US 2/Tumwater Canyon – Bridge replacements and US 2/Chiwaukum Creek – Replace Bridge	Highway	Construction: weather, contractor issues, timing problems
I-405/Thunder Hills Creek Culvert – Emergency repair (King)	Highway	Environmental: fish passage barrier
SR3/ Belfair Area – Widening and safety improvements (Mason)	Highway	Right-of-Way: land appreciation; Design: design element changes
US 395/NSC-US 2 to Wandermere and US 2 Lowering – New alignment (Spokane)	Highway	Construction: site problems; timing problems
Removed from Watch List		
No projects were removed from Watch List this quarter.		

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

Added to Watch List

SR 520/Medina to SR 202 – Eastside Transit and HOV (King)

This project, valued as a \$306 million design-build contract, will feature a six-lane SR 520 corridor between Medina and Redmond. The project will include an inside HOV/transit lane, build wider shoulders, construct environmental improvements including nine fish passable stream crossings and associated habitat improvements, build community enhancements like lids and a regional trail extension, and create two new median transit stops and other transit improvements. When completed, the project will provide design enhancements that will reduce the potential for serious injury and fatal collisions along the SR 520 corridor, and improve mobility and fish habitat.

The project is in the design and construction phases. WSDOT is currently discussing budget and schedule risks with the design-builder that developed after contract award. Any potential schedule and cost effects will be determined after further consultation between WSDOT and the design-builder.

WSDOT is evaluating the following:

1. Clarifying scope elements and timing near Evergreen Point Road where the Eastside and SR 520 Floating Bridge projects interface.
2. Incorporating additional permit conditions into the contract.

3. Addressing local jurisdictions' concerns regarding design elements at two Eastside interchanges: 84th Avenue Northeast and 92nd Avenue Northeast.

The agency is also responding to a lawsuit by Fairweather Basin residents alleging reduced property values as a result of project actions.

WSDOT is monitoring these items and expects the issues to be resolved by February 2012. The lawsuit is not expected to be resolved until mid-2012, at the earliest.

See the SR 520 program special report on pages 68-70 for more information about the program and the status of this project.

SR 99/Spokane St Bridge - Replace bridge approach (King)

Bridge 99/538

This project, budgeted for \$14 million, will replace outdated timber piles supporting the southernmost section of the Spokane Street Bridge with a lightweight structural fill material that allows WSDOT to construct the structure in stages, and saves money by eliminating risks associated with constructing heavier bridges.

The project is in the design phase; the budget and schedule are at risk. Because the project will discharge runoff stormwater into the City of Seattle's drainage system, WSDOT must comply with the city's stormwater standards. WSDOT's earlier designs

Watch List: Projects with schedule or budget concerns

to manage runoff did not comply, and WSDOT is now working with the city to determine treatment options and evaluate the feasibility of those options. WSDOT may incur increased costs for revised plans and additional construction work.

The project schedule is also at risk. The advertisement date may be delayed three months, from September 2011 to December 2011; the delay would allow WSDOT and local agencies to better coordinate other projects currently under construction in a way that would minimize traffic impacts. The other projects include:

- Alaskan Way Viaduct's Holgate to King project.
- City of Seattle's Spokane Street Viaduct widening.
- City of Seattle's Horton Street bridge replacement project.
- Port of Seattle's East Marginal Way grade separation project.

If the advertisement date is delayed, the project completion date will also be delayed by ten months, from January 2013 to October 2013.

The potential budget increase and the changes to the advertisement and completion dates for this project are included in the 2012 Supplemental budget request. An update will be provided next quarter.

SR 9/Pilchuck Creek – Replace bridge (Snohomish)

Bridge 9/134

This project, approved in the 2011 Transportation Budget, is budgeted for \$19.5 million. It will replace the existing 17-foot-wide bridge over Pilchuck Creek with a wider bridge meeting current design standards. Although rated 'functionally obsolete,' due to narrow width and scour issues which have now been fixed, the bridge is safe for drivers to cross. The bridge is on the only north-south detour route available in the area if I-5 has to be closed and traffic rerouted.

The project is in the design phase; the budget continues to be at risk. As reported in the June 2010 *Gray Notebook 38*, the budget was increased to \$19.4 million, mostly due to the construction costs of relocating the bridge around an environmentally sensitive wetland. The total project cost is now anticipated to be \$19.7 million, due to a \$234,000 net change mainly on the right-of-way costs to acquire seven parcels. Most of this increase is included in the proposed 2012 Supplemental budget request.

The schedule continues to be at risk. The existing double-arched bridge, designed by Daniel B. Luten in 1916, has historical interest as one of the few remaining Luten bridges in the state. WSDOT is consulting with various agencies regarding the disposition of

the old bridge; until agreement is reached, the agency cannot begin the permitting process. The advertisement date has been delayed from January 2012 to April 2012.

WSDOT anticipates meeting the operationally complete date of fall 2013 on schedule. The agency will continue to monitor and address the schedule risks depending on the agreement, the permitting process, and land acquisition. An update will be provided next quarter.

SR 11/Padden Creek – Fish barrier removal (Whatcom)

This project, budgeted for \$1.1 million, will replace a portion of a brick tunnel that channelizes Padden Creek and is a barrier to fish passage with a new bridge on SR 11. WSDOT is coordinating this work with the City of Bellingham. Bellingham has received a grant to restore Padden Creek, which includes removing the tunnel so the city can recreate a natural streambed that receives more daylight.

The project is in the design phase; the budget and schedule are at risk. The original plan called for WSDOT to install a box culvert, but requirements from the Washington State Department of Fish & Wildlife now call for the construction of a 40-foot bridge structure. Because of this change, construction costs have increased by \$1.3 million, bringing the total project cost to \$2.4 million.

The schedule is also at risk. The advertisement date may be delayed to early 2013, which in turn delays project completion by one month from September to October 2013. Both the cost increase and the schedule delay are included in the proposed 2012 Supplemental budget request. An update will be provided next quarter.

Updates to Watch List

I-405/Thunder Hills Creek Culvert – Emergency repair (King)

This project, budgeted for \$18.1 million, addresses a culvert on I-405 that failed during record rainfall in 2007, and which was a barrier to fish passage. WSDOT and key parties found that modifying the culvert at Thunder Hills Creek for fish passage requirements was not feasible. A replacement site more favorable to fish passage was selected at Panther Creek on SR 167.

This part of the project is in the design phase. As reported in the June 2011 *Gray Notebook 42*, at the recommendation of the US Army Corps of Engineers (USACE), WSDOT continued to work with an independent technical team to review and evaluate the design. WSDOT incorporated the technical team's

WSDOT's Capital Project Delivery Programs

Watch List: Projects with schedule or budget concerns

comments into the Panther Creek culvert design, and this design was submitted to Washington Department of Fish and Wildlife (WDFW) for their evaluation. WDFW has reviewed and provided concurrence with the proposed culvert design and support for the location of the mitigation. The design team will be meeting with USACE, WDFW, and Muckleshoot Indian Tribe Fisheries Division to obtain final concurrence for construction during the summer of 2012.

Advertisement is currently scheduled for February 2012. If the design at the Panther Creek location cannot be adjusted to meet these agencies' fish passage needs, WSDOT will look for another site to meet its mitigation obligations and further delay the project schedule.

SR3/ Belfair Area – Widening and safety improvements (Mason)

This project, budgeted at \$18.1 million, will extend the center turn lane and provide paved shoulders and sidewalks on both sides of SR 3 from milepost 24.91 to milepost 27.08. The work will address traffic congestion, safety, bicycle and pedestrian facilities, storm sewer improvements, and stormwater mitigation requirements.

The project is in the design phase; the cost and scope of the project are at risk. As reported in the June 2011 *Gray Notebook 42*, cost estimates to deliver the entire project have risen by \$6 million, due to right-of-way prices. WSDOT is proposing to construct the improvements in two stages.

Current project funding is adequate to complete Stage 1 of the project, which will construct improvements from just south of Belfair Elementary School and Theler Center to Ridge Point Boulevard. Stage 2 will extend from the intersection of SR 3 with SR 106 to just south of Belfair Elementary School and Theler Center.

WSDOT is working with the Governor's budget staff to incorporate the additional \$6 million request in the Governor's proposed 2012 Supplemental budget. WSDOT continues to focus widening and safety efforts on those sections of the project that require the least amount of additional right-of-way.

U.S. 395/NSC-U.S. 2 to Wandermere and U.S. 2 lowering – New alignment (Spokane)

This project, budgeted for \$128.1 million, will construct a new four-lane divided freeway between US 2 and US 395 at Wandermere, new structures at Wandermere and at US 2, and a pedestrian/bike path from US 2 to Wandermere. When complete, it will open a new two-mile section of the North Spokane Corridor.

The project is in the construction phase; the schedule continues to be at risk. As reported in the June 2011 *Gray Notebook 42*, although work continues on the project, progress is slow, and the November 2011 operationally complete date is still at risk. Early onset of winter conditions may also prevent the contractor from completing the paving work late in the project. Project completion would then be delayed to spring 2012. An update will be provided next quarter.

The budget reported in the June 2011 *Gray Notebook 42* was \$150 million. The current budget is \$128.1 million, reflecting a decrease of \$21.9 million. This reduction supports continued improvements on the North Spokane Corridor program.

U.S. 2/Wenatchee River Bridge – Replace bridge 2/215 (Chelan)

200201L Related project: U.S. 2/Chiwaukum Creek – Replace bridge 2/212

These projects, known as 'U.S. 2 – Tumwater Canyon Bridge Replacements,' will replace three old, narrow bridges over the Wenatchee River and Drury and Chiwaukum creeks with new, wider bridges designed to current standards. The added width will potentially improve safety for motorists, cyclists, and pedestrians; work will also include new turn lanes into Tumwater Campground and fish passage enhancements in the creek bed.

The projects are in the construction phase; the schedule continues to be at risk. As reported in the June 2011 *Gray Notebook 42*, WSDOT's permit from the Washington Department of Fish & Wildlife (WDFW) restricted in-water construction work to 90 days between July 1 and September 30. WDFW extended the period for in-water work from September 30 to October 31 for this season. Due to higher-than-normal water levels in the Wenatchee River, construction could not start until August. Once work began, the contractor encountered large boulders while drilling holes for the new bridge piers, and progress has been slower than planned. As a result, the operationally complete date has been delayed from December 2012 to September 2013.

The budget for this project was reported as \$12.5 million in the June 2011 *Gray Notebook 42*. This quarter, the budget was increased to \$13.5 million, due an anticipated risk. However, this project will again be reported as budgeted at \$12.5 million in the December 2011 *Gray Notebook 44*, due to favorable bids.

Removed from Watch List

No projects were removed this quarter.

WSDOT's Capital Project Delivery Programs

Pre-Existing Funds (PEF) Programmatic Reporting

The Pre-Existing Funds (PEF) program funds a wide variety of capital projects to improve the safety, functionality, and longevity of the state highway system. Unlike Nickel and Transportation Partnership Account (TPA) projects, which are fixed lists of projects set by the Legislature and funded with a line item budget for each individual project, PEF projects are funded at the program level.

Funding is aligned to commitments to address set priorities such as preserving pavement each biennium. Each biennium, new PEF projects are programmed based on prioritized needs and available funds, and the list of PEF projects changes each biennium. However, unexpected projects can arise during the biennium that require urgent action, and WSDOT will re-portion funds from other projects to address emergency needs.

Examples of PEF projects include: pavement preservation and repaving, bridge repairs and replacement, slope stabilization, safety projects such as cable median barriers and rumble strips, environmental retrofit to improve fish passage and stormwater management, and preservation of facilities associated with the highway system such as rest areas.

PEF project performance is reported at two levels

Six individually tracked projects

Six projects are reported individually due to their size or significance (see below).

All other projects

WSDOT reports on: actual versus planned cash flow for the overall PEF program; actual versus planned project advertisements; and the advertisement record of projects open for construction bids (see page 79).

WSDOT completed 315 PEF projects in the 2009-2011 biennium

WSDOT planned to advertise 252 PEF projects, valued at \$843.7 million, in the 2009-2011 biennium. Including an additional 59 emergent need projects that arose during the biennium, WSDOT advertised 299 PEF projects.

During this biennium, WSDOT completed 315 projects funded through PEF. The cost at completion for these projects was \$702 million, 10% less than the budgeted amount of \$779 million. Of the 315 projects, 88% were completed on or under budget.

Six individually tracked Pre-Existing Funds (PEF) projects: results through September 30, 2011

Dollars in millions

Project Description	First legislative budget & year	Baseline current legislative approved & year	Scheduled date to begin preliminary engineering		Scheduled date for advertisement		Schedule date to be operationally complete	
			Date	On time	Date	On time	Date	On time
US 2/Ebey Island Viaduct and Ebey Slough Bridge (Snohomish)*	\$32.1 2002	\$6.2 2007	Dec-98	√	Nov-00	√	Dec-03	√
• US 2/50th Avenue SE vicinity to SR 204 vicinity – Bridge rehabilitation		\$10.8 2007	Jul-06	√	Feb-07	√	Sept-07 complete	√
• US 2/43rd Avenue SE vicinity to 50th Ave SE vicinity – Bridge rehabilitation	\$26.7 2009	\$14.0 2010	Jan-09	√	Dec-10	Late	Dec-11	
SR 202/SR 520 to Sahalee Way - Widening (King) Project operationally complete February 2008.	\$36.9 2001-03	\$81.2 2010	May-98	√	Aug-05	√	Feb-08	√ Early
SR 539/Horton Road to Tenmile Road - Widen to five lanes (Whatcom) Project operationally complete November 2008.	\$32.0 2001-03	\$68.3 2010	Oct-90	√	Jan-07	√	Nov-08	√
SR 28/E End of the George Sellar Bridge - Construct bypass (Douglas) Advertisement delayed due to right of way issues.	\$9.4 2004	\$28.0 2010	May-04	√	May-11	Late	Aug-13	
US 101/Purdy Creek Bridge - Replace bridge (Mason) Advertisement delayed due to additional design needed to bring plans up to WSDOT Standards when they were returned from the consultant. Project operationally complete August 2009.	\$6.0 2004	\$10.2 2010	Aug-04	√	May-08	Late	Aug-09	√ Early
SR 303/Manette Bridge Bremerton vicinity - Replace bridge (Kitsap)	\$25.5 2002	\$82.9 2010	Sep-96	√	Mar-10	√	Jan-12	

Data source: WSDOT Capital Program Development & Management.

WSDOT's Capital Project Delivery Programs

Pre-Existing Funds (PEF) Projects: Advertisement and financial overviews

Value of planned PEF advertisements: 2011-2013 biennium

July 1, 2011 through June 30, 2013; Dollars in millions

	Number	Original value	Current cost to complete
Total PEF advertisements planned 2011-2013	326	\$751.5	\$736.2
Planned advertisements through September 30, 2011	8	\$10.0	\$9.3
Actual advertisements through September 30, 2011	14	\$16.8	\$19.6

Data source: WSDOT Capital Program Development & Management.

PEF project advertisements schedule performance

July 1, 2011 through September 30, 2011

	Number
Projects advertised as scheduled	6
Projects advertised Early	0
Projects advertised Late	0
Emergent projects advertised	8
Total projects advertised	14
Projects delayed (delayed within the biennium)	2
Projects deferred (delayed out of the biennium)	0
Projects deleted	0

Data source: WSDOT Capital Program Development & Management.

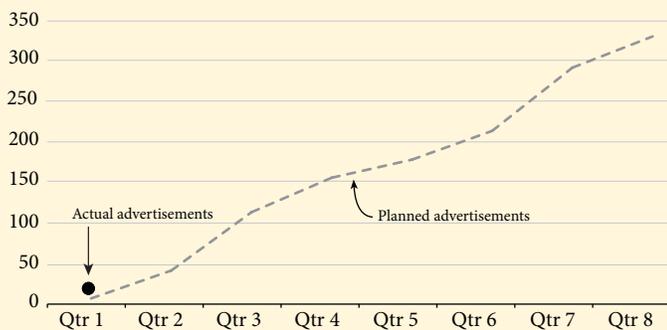
Note: See page 79 for PEF advertisement definitions.

Pre-Existing Funds project advertisements

Planned vs. actual expenditures

2011-2013 biennium, quarter ending September 30, 2011

Dollars in millions



Data source: WSDOT Capital Program Development and Management.

Paying for the Projects: Financial information

The 2011 Transportation Budget provides for about \$2,326 million in PEF expenditures through the 2011-2013 biennium. As of the end of the first quarter (September 30, 2011), actual expenditures totaled \$198 million, about \$152 million (57%) under the planned expenditure. This variance for the Highway Construction Program was divided between the Improvement and Preservation programs.

The Preservation Program planned cash flow was \$148 million, and actual expenditures in the quarter were \$102 million. This was \$46 million, or 31%, below plan. The Improvement Program planned cash flow was \$202 million, and actual expenditures were \$96 million. This was about \$106 million, or 52%, under plan.

Pre-Existing Funds improvement program cash flow

Planned vs. actual expenditures for 2011-2013 biennium

Quarter ending September 30, 2011; Dollars in millions



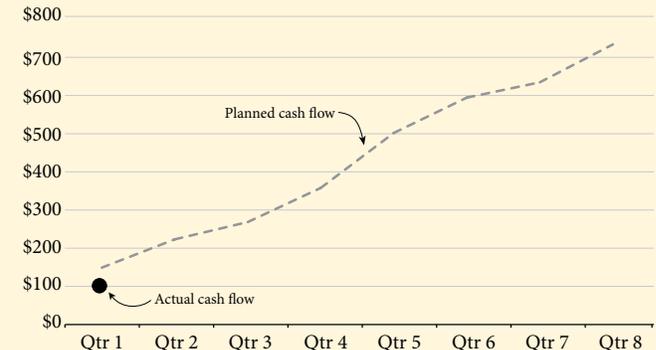
Data source: WSDOT Capital Program Development and Management.

Note: As of Quarter 1 (July 1 - Sept 30, 2011), original planned cash flow values have been updated based on the 2011 Legislative Final Budget.

Pre-Existing Funds preservation program cash flow

Planned vs. actual expenditures for 2011-2013 biennium

Quarter ending September 30, 2011; Dollars in millions



Data source: WSDOT Capital Program Development and Management.

Note: As of Quarter 1 (July 1-Sept 30, 2011), original planned cash flow values have been updated based on the 2011 Legislative Final Budget.

WSDOT's Capital Project Delivery Programs

Pre-Existing Funds (PEF) Projects: Advertisement record

Title	Advertised as scheduled
SR 507/Vicinity East Gate Rd to 208th St E – Safety Project advertisement delayed to allow time for a proposed design change to relocate and realign the 8th Ave S. roadway to intersect SR 507 at a location further south for better sight distance.	Delayed
US 97/Dry Creek W of Ellensburg – Construct bridge Construction was delayed in order to work with FHWA on approval of the proposed permanent work.	Delayed
SR 167/24th St E Bridge – Special repair	√
SR 16/Olympic Drive NW Bridge – Special repair	√
US 101/Lost Lake Bridge – Seismic retrofit	√
Southwest Region Low cost Pavement Repair – Roadway preservation	√
South Central Region Preventative Maintenance – Roadway preservation	√
Management of Environmental Mitigation Sites ER – 11/13	√
I-90/Sullivan Rd Intersection – Concrete intersection	Emergent
I-90/2.0 Miles W of Summit WB – Rockfall mesh repair	Emergent
US 395/North of Orient – Unstable slope	Emergent
SR 536/Skagit River Bridge – Dolphin replacement	Emergent
Eastern Region Low Cost Pavement Repair – Paving	Emergent
SR 507/East Gate Rd – Install signal	Emergent
I-5/S 216th St vicinity to I-405 Interchange vicinity – Concrete pavement replacement	Emergent
SR 21/Keller Ferry Boat – Replace boat	Emergent

Data Source: WSDOT Capital Program Delivery Management

A glossary of PEF advertisement terms

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. A √ mark in the Advertisement record indicates that a project advertised on time within the quarter.

Advanced

A project from a future quarter which has been advertised in the current quarter.

Early

Project with an ad date originally scheduled for the current quarter but occurred in an earlier quarter.

Late

A project that was advertised in the period being reported but which missed the original ad date.

Emergent

A new project that addresses unexpected needs such as emergency landslide repair.

Projects which were 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.

Cross Cutting Management Issues

Use of Consultants

Use of Consultants Highlights

WSDOT consultant spending totaled \$62.8 million between April 1, 2011 and September 30, 2011.

Consultants contributed to many major programs including the SR 520 Bridge Replacement, the Columbia River Crossing, and the I-90 Snoqualmie Pass project.

WSDOT uses consultants for preliminary engineering, land surveying, real estate negotiation, transportation studies, and other services.

74% of highway program dollars are contracted to the private sector and 54% of the design effort for Nickel and TPA was delivered by consultants.

Consultants are retained to complete tasks and projects that WSDOT does not have the resources or expertise to perform internally. Two different types of consultant agreements are used: task order agreements and project-specific agreements.

Task order agreements comprise the majority of consultant contracts. Each year, WSDOT assesses the types of work services that it regularly uses, including preliminary engineering, traffic engineering, real estate appraisal and negotiation, land surveying, and transportation studies. Based on needs estimated biennially, the agency advertises for predetermined categories of work, and initiates task order agreements with qualified consultants.

WSDOT regions then determine if work can be completed using a task order agreement. Project specific agreements, which are individually advertised by project, are typically used for work that cannot be performed using a task order agreement. For example, WSDOT might use a project specific agreement to design a bridge or an interchange.

From April 1, 2011, to September 30, 2011 (quarters two and three of calendar year 2011), the net total of new consultant expenditures was \$34,041,500 for task order agreements, \$7,291,000 for project specific agreements, and \$21,515,00 for general engineering consultant agreements. For a breakdown of the \$62,848,000 in total expenditures for Q2 and Q3 of CY 2011, see the *Consultant expenditures* table on the following page.

Task order agreements

Thirty-six task order agreements had Nickel project expenditures during this period; total expenditures for services rendered were \$1,262,000 for 33 prime consultant firms. Ninety-five task order agreements had Transportation Partnership Account (TPA) project expenditures during this period; expenditure totals were \$1,352,000 for 69 prime consultant firms. The total statewide task order agreement consultant expenditures (excluding Nickel, TPA, and general engineering consultants) for the same period were \$31,428,000. For a list of significant expenditures for consultants, see the *Significant authorizations for task order consultants* table on the following page.

Consultant utilization definitions & examples

Authorization type	Description	Project examples	Service performed by consultant
Task Order Agreements	Consultant performs regularly occurring work in one of multiple categories including preliminary engineering, traffic engineering, real estate appraisal and negotiation, land surveying, and transportation studies work.	U.S. 12 - Wallula to Walla Walla Corridor Study (Nickel and TPA)	David Evans and Associates conducted a preliminary environmental investigation on preferred corridor alignments for U.S. 12 from the Wallula junction to the city of Walla Walla.
General Engineering Agreements	Consultant supervises the planning, design, and program management responsibilities for very large scale mega-projects, or clusters of related projects.	SR 167 Valley Freeway Corridor (Nickel)	Perteet is organizing the corridor project's partnership groups, handling the public involvement process, and evaluating environmental documentation.
Project Specific Agreements	Consultant performs services for a specific project.	SR 520 West Lake Sammamish Boulevard to SR 202 (Nickel)	CH2M Hill was selected as the prime design consultant for stages 3A and 3B of a flyover ramp that will comply with the City of Redmond's stormwater design codes.

Data source: WSDOT Consultant Services Office.

Use of Consultants

General engineering agreements

Six high-profile general engineering consultant (GEC) projects had consultant agreements expenditures between April 1, 2011, and September 30, 2011. GEC expenditure totals were \$21,515,210, divided between six primary consultant firms, \$-7,811,000 were TPA funds, and \$29,326,000 were Pre Existing Funds (PEF). The negative dollar value for TPA funds indicates that funding was transferred from the TPA account to the PEF account. For a breakdown of the projects, see the *Expenditures for general engineering consultants* table below.

Project-specific agreements

From April 1, 2011, to September 30, 2011, new expenditures for project-specific Nickel agreements and/or supplements totaling \$821,000 were divided between 16 prime consultants. New expenditures for project-specific TPA agreements and/or supplements were \$3,958,000, divided between 22 prime consultants. All non-Nickel/TPA, project specific, consultant authorizations totaled \$2,511,855. The *Significant authorizations for project-specific consultants* table on this page lists significant expenditures for project-specific agreements.

Consultant expenditures

April 1, 2011 to September 30, 2011, dollars in millions

Type of consultant agreement	Nickel	TPA	PEF	Total
Task order consultant agreements (including GEC agreements)	\$1.26	\$-6.46*	\$60.75	\$55.56
Project-specific agreements/supplements	\$0.82	\$3.96	\$2.51	\$7.29
Totals	\$2.08	\$-2.50*	\$63.26	\$62.85

Significant authorizations for task order consultants

April 1, 2011 to September 30, 2011, dollars in millions

Project	Consultant	Total expenditures
Columbia River Crossing Project (TPA, PEF)	David Evans and Associates, Inc.	\$7.66
SR 520 TransLake Washington Project (TPA, PEF)	Parametrix, Inc.	\$2.54
Alaskan Way Viaduct and Seawall EIS (Nickel, TPA, PEF)	PB Americas, Inc.	\$4.37

Expenditures for general engineering consultants (GEC)

April 1, 2011 to September 30, 2011, dollars in millions

Project	Consultant	Expended this period
GEC Alaskan Way Viaduct & Seawall Replacement Project	Hatch Mott MacDonald	\$4.80
GEC I-90 Snoqualmie Pass East – Hyak to Keechelus Dam	URS Corporation	\$0.97
GEC Northwest Region Mt. Baker Area	H.W. Lochner, Inc.	\$0.05
GEC Northwest Region Mt. Sno-King Area	Aecom USA, Inc..	\$0.00
GEC SR 167 Extension	Jacobs Engineering	None
GEC SR 167 Valley Freeway Corridor	Perteet, Inc.	\$0.02
GEC SR 520 Bridge Replacement and HOV Project	HDR Engineering, Inc.	\$15.68
GEC Tacoma/Pierce County HOV Program	CH2M Hill, Inc.	None
Total		\$21.52

Significant authorizations for project-specific consultants

April 1, 2011 to September 30, 2011, dollars in millions

Project	Consultant	Total expenditures
I-405 General Engineering Consultant (Nickel, TPA, PEF)	HNTB Corporation	\$3.84
Express Lanes Predesign Study (PEF)	PB Americas	\$0.54
SR 520 Bridge Replacement Program- Program Management Services (TPA, PEF)	Program Navigators, Inc.	\$0.27

Source for all tables: WSDOT Consultant Services Office.

* Note: Negative values are due to a transfer of funds from the TPA account to the PEF account.

Workforce Level and Training Quarterly Update

Workforce Level and Training

Workforce Level & Training Highlights

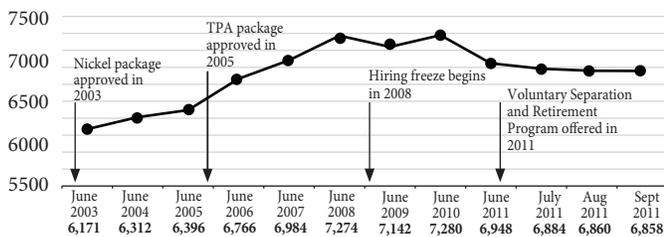
WSDOT employed 6,858 full-time permanent workers as of September 30, 2011, 4.4% below the 7,171 a year ago.

On September 30, 2011, WSDOT employed 6,858 permanent full-time employees, 90 fewer than the previous quarter ending June 30, 2011. This is 313 fewer employees, or 4.4% less, than the 7,171 at the end of September 2010. The decrease in the number of permanent full-time employees was due in part to a voluntary separation and retirement incentive program designed to reduce the size of the state workforce. A majority of the 89 employees who accepted the incentives and left state service selected June 30, 2011 as their last day. As a result, those employees were counted in the last quarter's total. More information about the incentive program, which ended in June, is in *Gray Notebook 42*, pg. 81.

The chart below shows the number of full-time permanent employees since June 30, 2003. The total number of full-time equivalencies (FTEs) will generally exceed the number of permanent full-time employees, as seasonal, permanent part-time, and non-permanent/on-call workers are funded from FTE allocations. The total does not include consultants. More information on consultants is on pages 80-81.

Number of WSDOT permanent full-time employees

From June 2003 to September 2011



Data source: Dept. of Personnel Data Warehouse, HRMS, WSDOT and the Ferry System payroll.

Training compliance rates vary for courses mandatory for all employees

Compliance changed less than 1% in the quarter ending September 30, 2011 for six of the seven courses mandatory for all employees. However, information security training compliance declined sharply as its one-year refresher requirement came due.

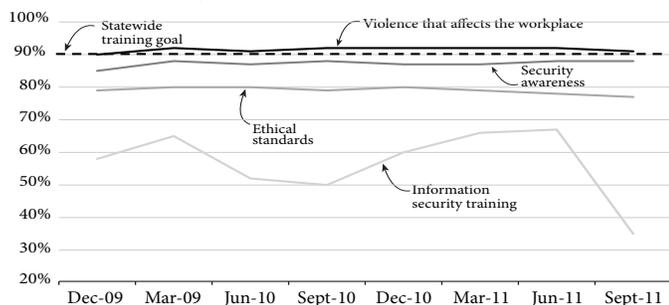
Information security training is required annually for all state employees. While almost 86% of WSDOT employees have completed the course once, and 67% were in compliance as of June 30, 2011, just 35% were in compliance on September 30, 2011, as employees missed the required refresher course. All employees were sent an email reminder in October to increase compliance and more than 700 completed the self-administered course.

Three courses – valuing diversity, disability awareness, and violence that affects the workplace – met the 90% compliance goal for the quarter ending September 30, 2011.

Compliance with most mandatory courses remained steady. Information security compliance dropped sharply in the quarter, while diversity, disability awareness, and violence in the workplace courses met their goals.

Mandatory policy training for all employees

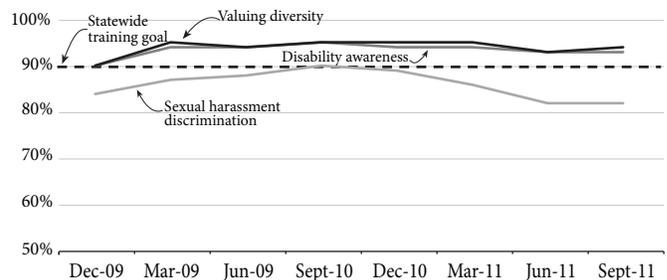
By percentage of employees in compliance, goal is 90%



Data Source: WSDOT Human Resources Office, Staff Development.

Mandatory diversity training for all WSDOT employees

By percentage of employees in compliance, goal is 90%



Data source: WSDOT Human Resources Office, Staff Development.

Workforce Level and Training Quarterly Update

WSDOT increasing diversity training sessions next quarter

On September 30, 2011, 82% of WSDOT employees were in compliance with sexual harassment/discrimination, unchanged from June 30, 2011. WSDOT has recently increased the number of training sessions in four of the six regions and headquarters in order to improve compliance, and is scheduling sessions in the remaining two regions.

Managers are required to take sexual harassment/discrimination training every three years and all employees are required to complete the training every five years.

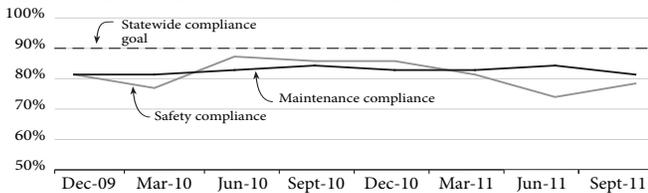
WSDOT is offering all three diversity courses, including valuing diversity and disability awareness in a six-hour training session for new employees called respectful workplace training. These sessions are allowing employees in multiple regions to attend multiple courses in an efficient manner.

Maintenance and safety training compliance

Compliance improved in safety training courses and decreased slightly in maintenance training as WSDOT remains below its 90% compliance goal in both types of courses. Safety compliance was 79% on September 30, 2011, up 3% from June 30, 2011. Maintenance compliance was 81%, down 2% from June 30, 2011.

Maintenance and safety training compliance

By percentage of employees in compliance, goal is 90%



Data source: WSDOT Human Resources, Staff Development.

Refresher training requirements for first aid and hearing conservation again resulted in low compliance for some regions. Refresher training is required annually for hearing conservation and every three years for first aid.

Training compliance varies over the year as refresher requirements come due and seasonal or new employees join the workforce. The chart below shows compliance in maintenance and safety courses over the last two years.

Compliance improved in three regions

Regional compliance increased for Northwest, Olympic and Eastern regions in the quarter ending September 30, 2011. Southwest and Eastern region met their 90% training goals for the quarter.

Region maintenance and safety training compliance

Percentage of employees in compliance on September 30, 2011

Region	Percent in compliance	% change from last quarter	Biennium average	Goal met
Northwest	75%	8%	75%	
North Central	81%	0%	81%	
Olympic	84%	2%	84%	
Southwest	92%	-1%	92%	√
South Central	79%	0%	79%	
Eastern	90%	1%	90%	√

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

Highlights of Program Activities

For the quarter ending September 30, 2011

Project starts, updates, and completions

Project starts

I-5 preservation near Woodland (Cowlitz)

In August, work began to preserve the roadway on a heavily traveled I-5 freight corridor between Woodland and Kalama. Contractor crews are replacing eight miles of deteriorating concrete panels and resurfacing pavement between the East Fork Lewis River Bridge and Todd Road. In addition to paving work, crews will replace aging expansion joints on the southbound span of the Dike Road Bridge, and pave eight ramps at the Dike Road and SR 503 interchanges in Woodland.

While working at the SR 503 interchange, WSDOT's contractor also will complete project elements that will improve safety in the area, including upgrading 11 sidewalk ramps to meet current American with Disability Act standards and building a new sidewalk along the south side of Lewis River Road beneath the I-5 overpass. Other improvements include upgrades to guardrail, signs, and street lights.

SR 9 Widening near Clearview (Snohomish)

On August 8, crews working for WSDOT kicked off the third and final stage of a project that will eventually widen nearly eight miles of SR 9 to four lanes. Crews will add a new north- and southbound lane between 212th Street SE in Maltby and 176th Street SE in Clearview. This project is part of WSDOT's long-range plan to make SR 9 through Snohomish County wider and safer. Between 2004 and 2009, the stretch of SR 9 between 212th Street SE and 176th Street SE averaged more than one collision a week. In addition to widening the highway in this area, crews will install raised median barrier to prevent serious crossover collisions; nine new marked U-turn locations will allow drivers to safely turn across the highway.

SR 542 Mount Baker Highway (Whatcom)

In July, construction began on a new roundabout that will make it easier and safer to turn on and off of SR 542, Mount Baker Highway, at the busy Smith Road intersection near Deming. WSDOT opened the first roundabout on Mount Baker Highway in June at the intersection of SR 9, commonly referred to as Nugents Corner. This brings to 14 the total number of open roundabouts in Whatcom County.

Project updates

I-5 Salmon Creek interchange (Clark)

Crews started the third stage of construction in July on the Salmon Creek Interchange Project (SCIP), adding new lanes to both directions of I-5 between NE 139th and NE 179th streets.

The project includes adding a new exit lane on northbound I-205 at the off-ramp to NE 134th Street. This ramp often backs up onto the interstate, especially during the afternoon commute. A new exit lane will help improve traffic flow and help prevent high-speed, rear-end collisions. A joint effort between WSDOT and the Clark County Department of Public Works, SCIP brings significant safety and mobility improvements to one of the fastest-growing areas in the county.

SR 18 ramp (King)

Crews working for Mowat Construction rebuilt an entire ramp from westbound SR 18 to northbound I-5 in Federal Way and completed the work six days earlier than planned. The ramp, which was closed on August 8, reopened on August 26. During the 19-day closure, crews raised it 20 feet and moved it to the east. The new ramp has 10 foot shoulders and wider lanes to better serve the 10,000 drivers who rely on it daily. Relocating this ramp will make room for a new flyover ramp between westbound SR 18 and southbound I-5. Vehicles traveling on westbound SR 18 will now access the ramp to northbound I-5 further east. The work is part of a \$112 million project to ease congestion and improve safety at the I-5/SR 18/SR 161 interchange. Two new flyover ramps will eliminate lane weaving that can lead to congestion and collisions. The new flyover ramps will open in mid-2012 and the project is expected to be complete in late 2012.



The retaining wall on SR 18 at I-5 is under construction in this image grabbed by a highway traffic camera.

I-90 Snoqualmie Pass (Kittitas)

More improvements began in September to improve an additional two miles of I-90. WSDOT awarded Guy F. Atkinson, LLC (Renton) the contract for the \$236 million I-90 Snoqualmie Pass East – Snowshed to Keechelus Dam Project. For this portion of the project, which improves the highway between the Keechelus Lake Snowshed (milepost 58) and Keechelus Dam (milepost 60), crews will construct three lanes in each direction, replace

For the quarter ending September 30, 2011

bridges and culverts, stabilize rock slopes, and demolish and replace the snowshed. The work will take six years to complete because of the short construction seasons on Snoqualmie Pass. The estimated completion date is summer 2017.

Project completions

I-5 Vancouver (Clark)

Six weeks of work, 14,000 tons of asphalt, and two miles of new lane lines add up to a smoother and safer drive on I-5 through downtown Vancouver. Contractor crews finished striping the new pavement on both directions of I-5 between the Columbia River and West 39th Street in mid-August. During the course of the project, crews removed cracked and rutted pavement, laid new asphalt, and painted fresh lane lines. More than 100,000 drivers travel this stretch of I-5 daily, including thousands of vehicles moving interstate commerce up and down the west coast. The \$2.8 million project was funded through state highway improvement dollars.

Alaskan Way Viaduct Final Environmental Impact Statement (EIS) (King)

Ten years of technical analysis, plus public, agency and tribal review, came to fruition in July when the Federal Highway Administration (FHWA), WSDOT, and City of Seattle released the final environmental impact statement (EIS) for the SR 99 Alaskan Way Viaduct replacement project. The FHWA signed the record of decision on August 23, allowing WSDOT to begin final design and construction of the SR 99 tunnel beneath downtown Seattle.

The final EIS examines the potential environmental effects of viaduct replacement alternatives, and builds on the analysis included in the 2004 draft EIS, the 2006 supplemental draft EIS, and the 2010 supplemental draft EIS. The document compares the effects of all three build alternatives (bored tunnel, cut-and-cover tunnel and an elevated structure), and explains why a bored tunnel is the preferred alternative. Also discussed in the document are details about the three alternatives with and without tolls. Because the analysis shows that tolling would cause some drivers to shift to downtown streets, Alaskan Way, and I-5, WSDOT and the city agreed to establish a committee to assess and make recommendations to mitigate traffic impacts caused by tolling. The final EIS also contains responses to more than 3,000 comments received during the comment periods of the three previous draft documents.

Ferries

Safety improvements planned for Friday Harbor ferry terminal

Friday Harbor ferry terminal will get a safety upgrade thanks to a \$240,000 grant from the Federal Highway Administration (FHWA). WSDOT will use the funding to build a barrier and gate to separate walk-on customers from vehicle traffic during ferry loading and unloading. The project will also include signs to direct foot passengers to the terminal exit, town landmarks, and pick-up/drop-off areas.

Aviation

WSDOT awards \$1.1 million in first round of 2011-2013 Airport Aid grants

Twenty-six Washington airports will receive a share of nearly \$12 million in federal, state, and local funds to maintain airport pavements, improve safety, and enhance security. WSDOT contributed \$1.1 million through its Airport Aid Program, and used \$433,290 in state funds to leverage more than \$9 million in federal grants. About two-thirds (67%) of the funding for the 32 airport improvement projects are focused on airport pavements. See pages 16-18 for the Aviation Annual Report.

Rail

Rail agreement expected to lead to improved Amtrak Cascades service and local jobs

An agreement signed in late July by WSDOT and BNSF Railway clears the way for work to begin on rail improvements that ultimately will generate hundreds of jobs and improve Amtrak *Cascades* service between Seattle and Portland. The agreement means the state can begin initial work this fall using some of the \$781 million in federal grants awarded to Washington in the past two years. This money is part of the 2009 American Recovery and Reinvestment Act (ARRA) high-speed-rail grants administered by the Federal Railroad Administration.

Building bypass tracks and making upgrades to existing tracks shared by Amtrak and BNSF will result in faster and more reliable Amtrak *Cascades* service while also allowing BNSF the ability to provide freight rail service. The ARRA money will also be used to purchase new locomotives and passenger coaches. The agreement allows BNSF to move forward on projects, worth nearly \$400 million. The first rail-improvement project will occur in Everett, where two new tracks will be built for freight trains entering the rail terminal, taking them out of the way of oncoming passenger trains. These added tracks will eliminate a

Highlights of Program Activities

For the quarter ending September 30, 2011

substantial rail-yard bottleneck. BNSF has been working with the state for two decades in a public-private partnership that has expanded passenger services while maintaining the ability to move goods and freight throughout the region.

U.S. Department of Transportation announces \$31 million to improve rail service in Washington

On September 21, 2011, U.S. Transportation Secretary Ray LaHood announced \$31.1 million for the state of Washington to improve intercity passenger and freight rail service on the Amtrak *Cascades* line.

A highlight of the rail dollars includes:

- Pacific Northwest Corridor Reliability – \$16.1 million for design, environmental review and construction work to stabilize and improve track structure along the rail line between Blaine, WA, and the Columbia River Bridge in Vancouver, WA.
- Vancouver-Port Access Rail Improvements – \$15 million for construction of a new, rail access route to the Port of Vancouver, including grade separation at an existing rail crossing which has acted as a significant choke point for rail traffic. WSDOT and the Port of Vancouver are contributing a combined total of \$22 million to this project. Construction is expected to begin in July 2012.

Amtrak's *Cascades* service is one of its faster growing routes. Ridership grew 10% in 2010 to 838,251 passengers, and is trending to break that record in 2011.

Travelers choosing Amtrak *Cascades* in record numbers

With chronic mudslides and disruptions in the rearview mirror, Amtrak *Cascades* rebounded in the second quarter of 2011, surpassing both monthly and quarterly ridership records reached in 2010. After an unusually rough start in the first three months of this year, ridership for April, May and June between Vancouver and Eugene soared to 231,194 passengers – the highest second-quarter totals since the service started in 1994. Second quarter ridership numbers increased 8%, compared with the second quarter of 2010, with 16,550 new passengers. June had the highest ridership increase of the three months with 78,839 passengers, up 10% over the previous June.

Traveler Information and Safety

Real-time traffic information visible on the web

Travelers can now view a new traffic flow map that shows real-time traffic conditions on I-90 between North Bend and Ellensburg, and decide whether to take another route, delay their trip, or continue on. Travelers can access the new flow maps from their favorite mobile device at home or on the road by checking out the “What’s Happening on I-90” (www.wsdot.wa.gov/projects/i90/whathappening/) and “Snoqualmie Mountain Pass” (www.wsdot.wa.gov/traffic/passes/snoqualmie/) web pages.

The system uses a series of 22 sensors along the highway that pick up speeds of vehicles in different lanes. A computer crunches the data and produces colorful maps that visually depict roadway congestion. Green means no delays so drivers are good to go; yellow indicates moderate congestion with some delay; red means heavy congestion with longer delays; and black means stop-and-go traffic. Travel times that show how long it will take to travel from North Bend to Ellensburg also appear on the screen. The \$1.3 million project replaces a 20-year-old communications system: it includes the online flow maps and the travel time signs that were activated earlier this summer, and can provide real-time information to drivers and WSDOT's Traffic Management Center.

Announcements, awards and events

Electric vehicle charging stations coming to I-5 and U.S. 2

The Washington State Department of Commerce and WSDOT are teaming up to implement the nation's first “electric highway,” a basic network of public access electric vehicle (EV) recharging locations along I-5. Once implemented, Washington will have



Passengers make their way along the platform at Seattle's King Street Station to board a waiting Amtrak *Cascades* train.

For the quarter ending September 30, 2011

the first border-to-border highway to offer fast charge technology, to serve the more than two million electric vehicles that market analysts say will be sold in Washington, Oregon, and California in the next decade.

WSDOT selected AeroVironment from six other companies during a competitive contract award process in which they submitted proposals to electrify I-5 and U.S. 2 on a budget of \$1 million. The California-based company will manufacture, supply, install, and operate a network of nine fast-charging stations for electric vehicles.



Secretary of Transportation Paula Hammond and Commerce Secretary Rogers Weed with an electric vehicle charging station.

Stations will be located on I-5 every 40 to 60 miles between the Canadian border and Everett, and between Olympia and the Oregon border, as well as on U.S. 2 between Everett and Leavenworth. The fast-charging stations will be operational by November 30, and will power an electric vehicle from zero to fully charged in less than 30 minutes. Each station also will include a Level 2 “medium-speed” charger, which will cost less for users but require between four and six hours for a full charge. The stations will be located at private retail locations such as shopping malls, fueling stations, and travel centers with easy access to the highway.

For more information on the West Coast Green Highway, see *Gray Notebook* 38, June 2010, page 74.

Hitachi Zosen Corporation chosen to build SR 99 tunnel-boring machine

Seattle Tunnel Partners, WSDOT’s design-build contractor for the proposed SR 99 bored tunnel, has selected Hitachi Zosen Corporation of Japan to supply the machine that will construct

the tunnel. Hitachi Zosen will be responsible for designing, manufacturing, assembling, testing, and commissioning the machine, as well as training Seattle Tunnel Partners’ personnel. Of the four firms that submitted boring machine proposals on May 31, Hitachi Zosen was the best value manufacturer based on overall technical requirements, support capabilities, price and schedule. Other factors considered were the teams’ ability to conduct management and supervision on the construction site; and warranty and bonding.

WSDOT projects celebrated on national stage

WSDOT was recently recognized for its successes in sustainable transportation and environmental protection. The U.S. DOT awarded the *SR 410 Nile Valley Landslide Detour* project its 2011 Exemplary Human Environment Initiative award and the Exemplary Ecosystem Initiative award – one of only two projects nationwide to receive both awards. This October 2009 project addressed a catastrophic landslide in a remarkably short time, helping residents and businesses return to normal before winter snows fell, and incidentally preserving more than 500 Chinook, coho, and steelhead salmon from the dammed Naches River.

WSDOT received a second Exemplary Ecosystem Initiative award for a 2004 project near Blyn, in Clallam County, where local groups were struggling to revive the dying ecosystem at Jimmycomelately Creek. WSDOT partnered with the community, not only helping to construct a new bridge on U.S. 101 that greatly improved the migration of fish and wildlife and reduced flooding, but WSDOT crews also helped restore the nearby estuary.

Local transportation projects receive awards

Local transportation projects achieved excellence in safety enhancements, construction, innovative design, environmental sustainability and community involvement, earning 2011 Awards of Excellence, presented by WSDOT and the Federal Highway Administration (FHWA). The 2011 Awards of Excellence projects, part of close to 300 projects completed in 2010, highlight local, community improvements. Award winners were:

- Best County Award: Mason County – Tahuya River Bridge #2 on Belfair Road
- Best City Award: City of Redmond – NE 36th Street Bridge Project
- Director’s Award: City of Grandview – “Alive Downtown” Revitalization Project
- Best Special Award: Lummi Nation – Haxton Way Pedestrian Pathway Project

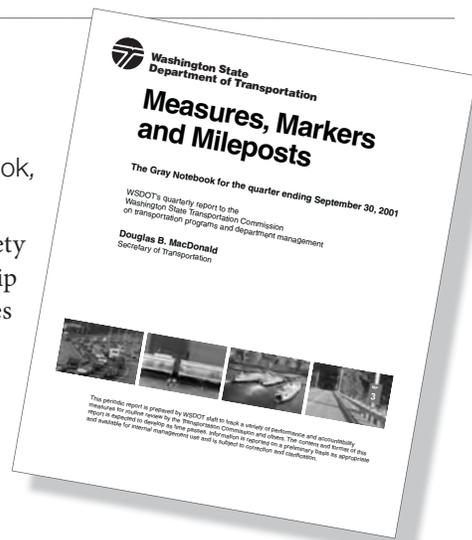
Gray Notebook 10th Anniversary Celebration

Edition 3: September 30, 2001

This continuing series looks back at the first performance measures published in WSDOT's first year of accountability and performance reporting in the Gray Notebook, and offers a comparison to today's reporting.

The third edition, now 22 pages long, introduced additional reporting on workforce safety by discussing accident prevention activities, new detailed examination of segment ridership patterns in the Amtrak *Cascades* update, and an examination of Park & Ride lot usage rates in the commute trip reduction article.

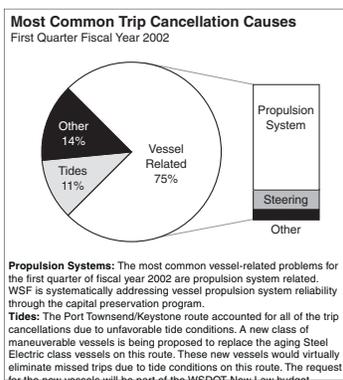
A special one-page feature discussed freeway operations efficiency initiatives, noting that Washington was even then a leader in implementing technology such as freeway traffic cameras and in-pavement electronic sensors. WSDOT was working hard to apply these technologies "in a more aggressive way to assist road crews in clearing accidents, freeing traffic jams, and directing motorists around trouble spots... One of WSDOT's leading internet websites, *Puget Sound Traffic Cameras*, receives 120,000 visitor sessions a month. During the winter, the *Mountain Pass Report* website gets up to 200,000 visitor sessions a month." In 2011, WSDOT's website has many more web pages providing traveler information, but Seattle area traffic is still very popular, with almost five million page views a month, while more than a half a million visitors viewed the mountain pass pages in January and February of 2011.



Washington State Ferries reporting begins

This quarter's *Gray Notebook 3* introduced reporting on the Washington State Ferries (WSF) system, highlighting customer service, on-time performance, trip reliability, ridership numbers, and farebox revenues.

A trip reliability index debuted in *GNB 3*, drawing for comparison on data from fiscal years 1999 and 2000. With 75% of the cancelled trips due to vessel-related problems, especially propulsion systems, WSDOT noted that it was systematically addressing those reliability problems through the capital preservation program. By 2011, the index has been replaced by a simpler presentation of missed trips and a reliability average: a route with three missed trips of 1000 planned trips now shows a reliability average of 99.7%.



The article also addressed actions arising from the Legislature's Joint Task Force on Ferries. Among the recommendations were incremental tariff increases to raise the farebox recovery rate to 80% of operating costs over six years; the first increase was put in place in June 2001. The predicted drop in ridership following fare hikes did occur, but at a less steep rate than predicted; the article concluded that these results "do not fully reflect the possible long-term implications from the September 11 events."

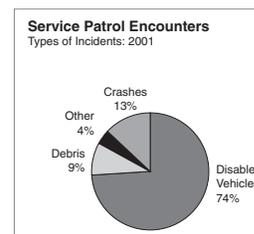
Highway safety improved through low-cost projects

Another new article in the third edition examined WSDOT's efforts to improve highway safety, including publication of two lists of high accident locations and high accident corridors. The tables reported the number of fatal and disabling-injury crashes, the estimated cost to society of the collisions, and WSDOT's proposed solutions – including whether the project was funded or not. It went on to discuss low cost enhancement safety projects, detailing the benefits to implementing "spot investments to provide immediate improvement." The article also reported statewide fatality rates compared to the U. S. overall, and crash rates compared to vehicle miles traveled.

Incident Response reporting debuts

WSDOT reported that a new database had been developed to give IR teams a consistent method of storing data about incidents they attended. Reports could now examine in greater detail the average response time and the average clearance time, but WSDOT acknowledged that "response time is consistent but limited based on available resources... [and] clearance time varies greatly depending on the type of incident and the emergency response partners involved."

Also appearing for the first time is a pie chart showing the types of incidents encountered by service patrols in 2001. Today's IR reporting breaks these incident types further into the duration of the incident (see page 21 for the current report's details).



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 for the strategic plan, legislative, and executive policy directions, 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;

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

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 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 this law, the Washington State Office of Financial Management (OFM) is responsible for setting objectives and establishing performance measures for each of the 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 2010, 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 vi 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 2001-2013 POG process is available at: www.ofm.wa.gov/budget/pog.

Government Management Accountability and Performance program (GMAP)

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 results and develop action plans to improve results. 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 vii offers readers a snapshot glance at WSDOT's progress against the five 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. Turn to the Subject Index (pp. 91-96) to find earlier coverage; all previous editions are available online at www.wsdot.wa.gov/accountability.

Navigating the WSDOT Information Stream

Navigating the WSDOT information stream

Through more than 40 editions, in fact ten 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, freight, and a post-winter report on highway maintenance. 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.

Matters pertaining to WSDOT's Federal Recovery Act-funded projects, including high speed rail and 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 simple.

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/navigateGNB.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 virtually all 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. Project pages cover the overall project vision, financial details and funding components, milestones, roll-up cash flow, contact information, maps and links to QPRs.

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.

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Calendar year	Edition number / date (Washington state fiscal year & quarter)			
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2002	5 / Mar 31, 2002 (FY02 Q3)	6 / June 30, 2002 (FY02 Q4)	7 / Sept 30, 2002 (FY03 Q1)	8 / Dec 31, 2002 (FY03 Q2)
2003	9 / Mar 31, 2003 (FY03 Q3)	10 / June 30, 2003 (FY03 Q4)	11 / Sept 30, 2003 (FY04 Q1)	12 / Dec 31, 2003 (FY04 Q2)
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2005	17 / Mar 31, 2005 (FY05 Q3)	18 / June 30, 2005 (FY05 Q4)	19 / Sept 30, 2005 (FY06 Q1)	20 / Dec 31, 2005 (FY06 Q2)
2006	21 / Mar 31, 2006 (FY06 Q3)	22 / June 30, 2006 (FY06 Q4)	23 / Sept 30, 2006 (FY07 Q1)	24 / Dec 31, 2006 (FY07 Q2)
2007	25 / Mar 31, 2007 (FY07 Q3)	26 / June 30, 2007 (FY07 Q4)	27 / Sept 30, 2007 (FY08 Q1)	28 / Dec 31, 2007 (FY08 Q2)
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2009	33 / Mar 31, 2009 (FY09 Q3)	34 / June 30, 2009 (FY09 Q4)	35 / Sept 30, 2009 (FY10 Q1)	36 / Dec 31, 2009 (FY10 Q2)
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Edition ranges (e.g. 3-12) include first and last edition in the range. All editions can be accessed at:
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*Note: Some performance measures for *Gray Notebook* 35, 39 & 42 are featured in the stand-alone annual Congestion Report, available online at www.wsdot.wa.gov/Accountability/Congestion/

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*Note: Some performance measures for *Gray Notebook* 35, 39, & 42 are featured in the stand-alone annual Congestion Report, available online at www.wsdot.wa.gov/Accountability/Congestion/

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*Note: Some performance measures for *Gray Notebook* 35, 39 & 42 are featured in the stand-alone annual Congestion Report, available online at www.wsdot.wa.gov/Accountability/Congestion/

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*Note: Some performance measures for *Gray Notebook* 35, 39 & 42 are featured in the stand-alone annual Congestion Report, available online at www.wsdot.wa.gov/Accountability/Congestion/

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Americans with Disabilities Act (ADA) Information

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 calling the Washington State Department of Transportation Office of Equal Opportunity (OEO) at (360) 705-7097. Persons who are deaf or hard of hearing may contact OEO through the Washington Relay Service at 7-1-1.

Civil Rights Act of 1964, Title VI Statement to Public

WSDOT ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person on the basis of race, color, national origin or sex in the provision of benefits and services resulting from its federally assisted programs and activities. For questions regarding WSDOT's Title VI Program, you may contact the Department's Title VI Coordinator at (360) 705-7098 or (509) 324-6018.

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/.