



**Washington State  
Department of Transportation**

# The Gray Notebook

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

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Secretary of Transportation

**2001-2011**  
A decade of transparency

**GNB  
42**



**Quarter ending  
June 30, 2011**

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- Measuring Delay & Congestion Excerpts
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# Executive Summary



## On this quarter's cover (from top):

Workers guide a huge concrete culvert section that will cross beneath all lanes of SR 520 west of Bellvue Way.

Wood forms support rebar and concrete road deck in a new flyover ramp where US 2 connects SR 522.

Congested traffic backs up on a section of I-5 northbound where too-close interchanges force vehicles to weave and merge quickly.

Winter lingered longest at Chinook Pass, where eastbound and westbound snowplows finally met on June 11, 2011.

The sun rises behind Mt Rainier to illuminate the newly completed SR 16 and I-5 interchange at Nalley Valley.

**This page:** Persistent cool and wet weather into spring delayed the growth of many traditional June bloomers.

## Performance highlights in this edition of the *Gray Notebook*

Since 2001, WSDOT has employed the quarterly *Gray Notebook* (also called the *GNB*) as one of the agency's primary accountability reporting tools. The *GNB* contains quarterly, semi-annual, and annual updates on a range of agency activities, programs, and capital project delivery. This quarter, WSDOT also marks the 10th anniversary of annual performance reporting on congestion in Washington with the publication of the 2011 Congestion Report.

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

- **There were 459 traffic fatalities in Washington in 2010, down 6.7% from 2009 and the lowest on record since 1954.** The rate of fatalities per million miles driven was the best in the state's recorded history dating to 1910. (*Focus on Highway Safety Target Zero*; pp. 4-6)
- **As of June 30, 2011, 95% of Washington's state-owned bridges are in good or fair condition.** WSDOT's performance measure now includes deck codes, bringing it into alignment with FHWA's measure. (*Bridge Assessment Annual Report*; pp. 8-14)
- **Excerpts from the 2011 Annual Congestion Report provide a comprehensive update on delay, travel times, and vehicle volumes, comparing 2008 to 2010 data.** It is WSDOT's 10th annual analysis of travel statewide, with an emphasis on the major freeways in the Puget Sound region and assessment of WSDOT's congestion relief projects and strategies. The full report, published separately, is available on line at [www.wsdot.wa.gov/accountability/congestion](http://www.wsdot.wa.gov/accountability/congestion). (*Annual Congestion Report Highlights*; pp. 16-20)
- **Travel times in early 2011 show modest changes, for better or worse, from earlier years in the Semi-Annual Travel Trends Report.** (*Travel Time Trends Semi-Annual Report*; pp. 22-24)
- **WSDOT's use of programmatic permits saved the agency staff time and expedited projects in FY 2011.** (*Programmatic Permits Annual Report*; pp. 34-36)
- **WSDOT accepted delivery of M/V Salish on May 12, and the vessel entered service on July 1, 2011.** Other new ferry construction updates include completion of major construction on the M/V *Kennewick* on April 1, and the completion of detailed design for construction of 144-car ferries on June 30. (*New Ferry Construction Update*; pp. 59-60)
- **In FY 2011, 146 of 171 highway construction and ferry terminal contracts were awarded to contractors at a cost less than WSDOT estimated.** The awards averaged 17.4% below estimates. The number of projects with contract cost overruns is down 2.1% from FY 2010. (*Construction Contracts Annual Report*; pp. 77-80)
- **As of June 30, 2011, WSDOT has delivered 303 of 421 Nickel and Transportation Partnership Account (TPA) projects valued at \$4.1 billion,** on target with the funding provided in the 2010 Supplemental Transportation Budget. To date, 89% of completed projects have been delivered on time and 94% have been on budget. As of June 30, 2011, 50 projects were under construction. (See the *Beige Pages* for a quarterly report of WSDOT's *Capital Project Delivery Program*; pp. 42-76.)
- **200 American Recovery and Reinvestment Act (Recovery Act) highway projects have been completed.** The *Special Report* (pp. 40-41) includes project employment data through June 2011.

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4 :: In 2010, Washington experienced the lowest fatality rate in its history, at 0.80 per 100 million VMT. Highway safety is discussed in the **Highway Safety Target Zero Report**.

8 :: The **Bridge Assessment Annual Report** shows that for FY 2011, 95% of WSDOT's bridges are in good or fair condition.

16 :: Trends in this year's report show that most congestion performance metrics for 2010 are higher than 2009 but below 2008 levels – see the **Annual Congestion Report** highlights.

22 :: Travel times in early 2011 show modest changes from previous years in the **Semi-Annual Travel Trends Report**.

28 :: 96.2% of ferry trips were on time. The **Ferries Quarterly Update** also reports on ridership.

40 :: The **Special Report on Recovery-Act funded Projects** notes that 200 highway projects have been completed.

59 :: The second new 64-car ferry was delivered in June 2011 – see the **New Ferry Construction 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 89-90.

**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 41, p. 4

**State policy goal: Preservation** To maintain, preserve, and extend the life and utility of prior investments in transportation systems and services.

**WSDOT business direction** Catch up with all necessary maintenance and preservation needs on existing highways, bridges, facilities, ferry vessels, 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 42, pp. 25-26
Ferry ridership	quarterly	GNB 42, p. 28
Ferry trip reliability	quarterly	GNB 42, p. 29
Percent of ferry trips on time	quarterly	GNB 42, p. 29
Amtrak <i>Cascades</i> ridership	quarterly	GNB 42, p. 31
Percent of Amtrak <i>Cascades</i> trips on time	quarterly	GNB 42, pp. 31-32

**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 42, pp. 42-52
Recovery Act-funded project reporting	quarterly	GNB 42, pp. 40-41

**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

# Performance Dashboard



Policy goal/Performance measure	Previous reporting period	Current reporting period	Goal	Goal met	Progress	Comments
<b>Safety</b>						
Rate of <b>traffic fatalities</b> 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 <b>strains and sprains / hearing-loss injuries</b> per 100 WSDOT workers <sup>1, 7</sup> (calendar quarterly measure: Q1 2011 & Q2 2011)	3.4/ 0.5	3.4/ 0.8	2.4/ 0.4	—	↓	Both strains/sprains and hearing loss were well over their goals for the quarter and for the year to date
<b>Preservation</b>						
Percentage of state <b>highway pavements</b> 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 <b>state bridges</b> in fair or better condition (annual measure, fiscal years: 2010 & 2011)	98.0%	95.0%	97.0%		↓	Deck code ratings added to criteria contributed to the change
<b>Mobility (Congestion Relief)</b>						
<b>Highways:</b> annual weekday <b>hours of delay</b> statewide at <b>maximum throughput speeds</b> <sup>2</sup> (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
<b>Highways:</b> Average clearance times for <b>major (90+ minute) incidents</b> on 9 key western Washington corridors <sup>7</sup> (calendar quarterly measure: Q4 2010 & Q1 2011)	159 minutes	165 minutes	155 minutes	—	↓	Three extraordinary (6+ hour) incidents affected the program's average clearance time this quarter
<b>Ferries:</b> Percentage of trips departing on time <sup>3, 7</sup> (quarterly, year to year: FY10 Q4, FY11 Q4)	88.2%	96.2%	90%	✓	↑	Performance is higher than the same quarter a year ago
<b>Rail:</b> Percentage of Amtrak <i>Cascades</i> trips arriving on time <sup>4, 7</sup> (quarterly, year to year: FY10 Q4, FY11 Q4)	72.4%	67.8%	80%	—	↓	WSDOT and Amtrak continue to evaluate projects and other means to improve on-time performance
<b>Environment</b>						
Cumulative number of WSDOT <b>stormwater treatment facilities</b> constructed or retrofitted <sup>5</sup> (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 <b>fish passage barrier improvements</b> constructed since 1990 (annual measure: calendar years 2008 & 2009)	226	236	N/A	N/A	↑	Ten additional retrofits were completed in 2009
<b>Stewardship</b>						
Cumulative number of Nickel and TPA <b>projects completed, and percentage on time</b> <sup>7</sup> (quarterly: FY11 Q3, FY11 Q4)	300/ 89%	303/ 89%	90% on time		↓	Performance decreased slightly from previous quarter, did not meet goal <sup>8</sup>
Cumulative number of Nickel and TPA <b>projects completed and percentage on budget</b> <sup>7</sup> (quarterly: FY11 Q3, FY11 Q4)	300/ 94%	303/ 94%	90% on budget	✓	↔	Competitive bidding and construction environment contribute to controlling costs <sup>8</sup>
Variance of total project costs compared to <b>budget expectations</b> <sup>6, 7</sup> (quarterly: FY11 Q3, FY11 Q4)	under-budget by 1.0%	under-budget by 1.0%	on budget	✓	↔	Total Nickel and TPA construction program costs are within 1% of budget <sup>8</sup>

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 expectations are defined in the last approved State Transportation Budget.

7 Washington's fiscal year (FY) begins on July 1 and ends on June 30. FY11 Q3 refers to the quarter ending March 31, 2011.

8 See page 58 for more information on the expanded view of capital projects in the current 2010 Legislative Transportation Budget for highway construction.

# 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/](http://www.wsdot.wa.gov/accountability/)

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<b>Economic Vitality</b>	Palouse & Coulee City RR	Jeannie Beckett, Laura Kingman
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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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Safety Rest Areas, GNB 41
Pedestrian & Bicyclist Safety GNB 40
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# Worker Safety

## WSDOT employees: Rates of injuries and illnesses

### Worker Safety Highlights

The year-to-year number of OSHA-recordable injuries in the second quarter rose 8% between 2010 and 2011, but the number of workdays lost to injury or illness was down by 3%.

The number of workdays lost to strain/sprain injuries was down 23% in Q2 2011 compared to Q2 2010.

Two regions are on track to meet 2011 injury goals. Other regions may also meet the goal, as goals are a rate based on injuries and the number of hours worked.

### WSDOT safety performance: Second quarter 2011 comparisons

The number of all OSHA-recordable injuries to WSDOT employees rose 8% between the second quarter of calendar year 2010 and the same quarter of 2011: from 95 to 103. This in turn is 10% more than the first quarter of 2011, when WSDOT employees experienced 94 injuries. Year-on-year, the number of second quarter sprain/strain injuries – the target of a concerted injury-reduction effort for several years – decreased 3%, from 58 in 2010 to 56 in 2011. This is, however, a 2% increase (55 strain/sprain injuries) on the first quarter of 2011. The sprain/strain rate is 3.4, unchanged from last quarter, but up from 2.2 in the same quarter of 2010.

### Regional progress towards goals

As of June 30, two WSDOT regions (OR and WSF) are on track to meet the 2011 sprain/strain injury reduction goal, and three regions (OR, SCR, HQ) are on track to meet the hearing loss reduction goal for 2011. Other regions may still meet their goals in 2011: as the goals are a rate based on injuries and hours worked, even a relatively high rate early in the year can be greatly reduced if no additional injuries occur as the hours worked continue to increase through the year.

### Overall workdays lost to injury or illness decreases

In the second quarter of 2011, WSDOT employees lost 784 workdays, compared to 806 lost days in 2010 (3% fewer) and 834 in the first quarter of 2011 (6% fewer). Maintenance workers lost 737 days, engineers 44 days, and administrative staff three days.

### Fewer workdays lost to strain/sprain injuries

Strain/sprain injuries were associated with 489 lost days in the second quarter of 2011 compared to 577 days the same quarter a year earlier (a reduction of 15%), and 639 in the first quarter of 2011 (a decrease of 23%). The majority of strain/sprain injuries continue to result from ergonomic-related and slip/trip/fall incidences.

### Strain/sprain injuries form a lower percentage of injuries and the associated days away

While the number of OSHA recordable injuries actually increased year-on-year in the second quarter of 2011, the ratio (%) of sprains/strains to all injuries decreased from 61% in 2010 to 54% in 2011, a trend that continues quarter to quarter in 2011. In the second quarter, 54% of all injuries were classified as sprains/strains, compared to 59% in the first quarter.

The associated workdays lost ratio (%) of sprain/strains showed even greater improvement in the second quarter of 2011, as sprains/strains were associated with 62% of all lost days due to injury, compared to 72% of all workdays lost in the same quarter of 2010. When comparing the first two quarters of 2011, WSDOT experienced even greater improvement. In the first quarter, workdays lost associated with sprains and strains made up 77% of all workdays lost due to injury. During the second quarter, they accounted for only 62% of workdays lost due to injury.

### Number of OSHA-recordable injuries sustained by category of worker

April 1-June 30, 2011 (Quarter 2, calendar year 2011)

Injuries	Highway maintenance	Highway engineering	Admin staff	Ferry system
Number of injuries Apr-June 2011	45	21	6	31
Percent of all injuries these number represent	44%	20%	6%	30%
Total days away from work associated with these injuries	67	44	3	670
<i>Days away due to sprains/strains</i>	62	0	3	424
<b>For comparison</b>				
Number of injuries Jan-Mar 2011	48	9	5	32
Number of injuries Apr-June 2010	48	14	3	30

Data source: WSDOT Safety Office.

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

Quarter 2 (April 1-June 30, 2011) cumulative results and injury reduction goals

Organizational unit	CY 2010 results	Rate of injuries in Q2 CY 2011	Cumulative rate for CY 2011	CY 2011 goal	On-track to achieve CY 2011 goal?
Northwest Region	3.3	3.2	3.7	2.2	No
North Central Region	2.0	6.0	7.7	2.2	No
Olympic Region	2.6	1.1	2.0	2.2	Yes
Southwest Region	2.5	5.2	3.0	2.2	No
South Central Region	1.2	3.1	5.8	2.2	No
Eastern Region	4.6	3.7	3.8	2.2	No
<b>All regions combined</b>	<b>2.9</b>	<b>3.3</b>	<b>3.8</b>	<b>2.2</b>	<b>No</b>
Headquarters	0.8	2.4	1.7	0.4	No
Ferry System	3.8	4.7	4.7	4.7	Yes
<b>Agency-wide</b>	<b>2.7</b>	<b>3.4</b>	<b>3.6</b>	<b>2.4</b>	<b>No</b>

Data source: WSDOT Safety Office.

## WSDOT hearing loss injury rates per 100 workers by organizational unit

Quarter 2 (April 1-June 30, 2011) cumulative results and goals

Organizational unit	CY 2010 results	Rate of injuries in Q2 CY 2011	Cumulative rate for CY 2011	CY 2011 goal	On-track to achieve CY 2011 goal?
Northwest Region*	0.3	1.5	0.7	0.4	No
North Central Region*	2.4	3.0	3.1	0.4	No
Olympic Region	1.0	0.0	0.0	0.4	Yes
Southwest Region	0.6	0.9	0.4	0.4	No
South Central Region	1.4	0.0	0.4	0.4	Yes
Eastern Region*	0.5	1.9	1.0	0.4	No
<b>All regions combined</b>	<b>0.8</b>	<b>1.1</b>	<b>0.7</b>	<b>0.4</b>	<b>No</b>
Headquarters*	0.1	0.0	0.0	0.0	Yes
Ferry System	1.2	0.8	1.2	0.4	No
<b>Agency-wide</b>	<b>0.7</b>	<b>0.8</b>	<b>0.7</b>	<b>0.4</b>	<b>No</b>

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

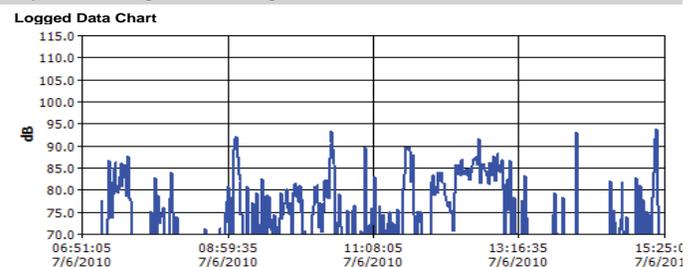
## WSDOT's hearing loss prevention strategies

*This article continues a report on WSDOT's hearing loss prevention programs (see Gray Notebook 41, p.3); it will be concluded in GNB 43, next quarter.*

As noise levels normally fluctuate widely throughout a work shift, noise exposures are measured over a time-weighted average (TWA). A tester then calculates the average of all measurements taken over the monitoring period, to report it as a TWA. Noise regulations as well as the epidemiology of noise-related affects are based on TWA studies as it has the best correlation to health effects of noise.

Sound is measured in units called decibels, abbreviated as "dB". An example of the decibel level throughout a noise monitoring

study at WSDOT is shown on the graph below, with the time at the bottom and the decibel level on the left. The TWA result of this study was 77.5 dB. As the peaks and valleys suggest, a "snapshot" of noise taken at one moment can give an inaccurate estimation of the average noise experienced in a day, which is why time-weighted averages are used for noise studies.



# Highway System Safety Programs

## Quarterly Focus

### Focus on: Traffic Fatalities and Target Zero

#### Highway Safety Highlights

In 2010, Washington saw 6.7% fewer traffic fatalities compared to 2009. This was the lowest number of traffic fatalities recorded (459) since 1954 (413).

In 2010, Washington experienced the lowest fatality rate in the state's recorded history - 0.80 per 100 million VMT.

Target Zero: 7.7% of all traffic fatalities had run-off-the-road as the only contributing factor.

In 2010, Washington ranked 2nd in the nation with the highest percentage of seat belt use (97.6%) based on observation studies.

More information on Target Zero can be found at [www.targetzero.com](http://www.targetzero.com)

National strategy resources: [www.usroadwaysafety.org](http://www.usroadwaysafety.org), [www.strategicsafetyplan.com](http://www.strategicsafetyplan.com)

#### Washington annual traffic fatalities 2005-2010

Year	2005	2006	2007	2008	2009	2010
All public roads	649	633	571	521*	492*	459
State highways	316	308	280	234	241	232

Data source: Fatal Accident Reporting System (FARS).

\* Note: GNB 38 reported the number of traffic fatalities for 2008 and 2009 as 522 and 491 respectively. These numbers have been updated to 521 and 492 due to updates made to FARS. The 2010 numbers are considered to be preliminary until December 31, 2011.

#### Reducing the number of traffic fatalities in Washington

Reducing the factors that contribute to severe or fatal collisions on Washington's highways is a top priority for WSDOT and other state agencies. The countermeasures selected do not always lead to highway modifications, and may focus on issues such as speeding, impaired driving, seat belt use, and other human behaviors. The intent is to focus on those strategies that will help Washington to continually reduce traffic fatalities.

Washington's Strategic Highway Safety Plan, "Target Zero," has been recognized nationally for its goal of zero fatal and serious crashes, and for the success that the state has achieved as multiple partners worked together toward a common goal. Washington's success has helped build a consensus at the national level, as more states realize that working together with partner and stakeholder groups sharing a 'zero fatal crash' vision is the appropriate thing to do. In fact, a national safety plan called *Toward Zero Deaths: A National Strategy on Highway Safety*, that is currently being developed by the Federal Highway Administration, draws on Washington's experiences.

#### Target Zero: Washington's goal of zero traffic deaths and zero serious injuries

Target Zero, Washington's strategic highway safety plan, was recently revised in 2010 to identify the state's traffic safety needs and to guide investment decisions that would achieve significant reductions in traffic fatalities and serious injuries by 2030. With this plan, Washington seeks to build traffic safety partnerships throughout the state, aligning and leveraging state and local resources to reduce fatal and serious crashes. The "four E's" all contribute to the goals set forth in the plan. WSDOT works with the public and leaders in the fields of education, engineering, enforcement, and emergency medical services to achieve future success.

Target Zero contains four major priority areas, with each priority area focusing on various traffic safety-related issues. Fatal traffic collisions often involve driver impairment, excessive speed, or run-off-the-road situations. Target Zero strategies are identified to address these three issues in Priority One, as well as other key contributors to fatal collisions within priorities Two through Four. In order to assess the effectiveness of strategies that improve roadway safety, WSDOT collects and analyzes traffic collision data from state and local jurisdictions.

#### Traffic fatalities decrease to lowest number since 1954

The downward trend in traffic fatalities continues on Washington highways, city streets, county roads, and other public roadways. For the first time in the state's history, Washington experienced a consecutive annual downward trend in the number of traffic fatalities over a five year period. 2010 reflects the lowest number of traffic fatalities recorded (459) since 1954 (413).

These reductions are due in part to new state laws, including the seat belt law; increased enforcement, such as speed and DUI patrols; and significant investments in highway safety projects, such as cable median barrier, rumble strips, and intersection modifications. Although the state continues to make progress with these focused strategies, the number of fatalities still needs to be further reduced.

### Focus on: Traffic Fatalities and Target Zero

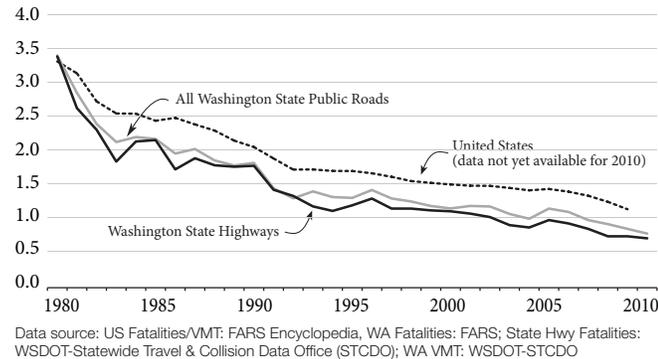
**Washington traffic fatality rate lower than national fatality rate: 0.80 per 100 million vehicle miles traveled**

Traffic fatality rates are commonly expressed as deaths per 100 million vehicle miles traveled (VMT). In 2003, a national target was set by U.S. Secretary of Transportation Norman Mineta: to lower the fatality rate to 1.00 fatalities per 100 million VMT by 2008. In 2007, Washington met the national target with a fatality rate of 1.00, and since then has been consistently below the national benchmark. In 2010, Washington's fatality rate was its lowest per 100 million VMT in 100 years at 0.80.

The most recent national average fatality rate reported by the National Highway Traffic Safety Administration was 1.14 for 2009. Washington's fatality rate for that year was 0.87, tied with New York as the nation's seventh lowest fatality rate among all states. National fatality data for 2010 is not yet available for comparison.

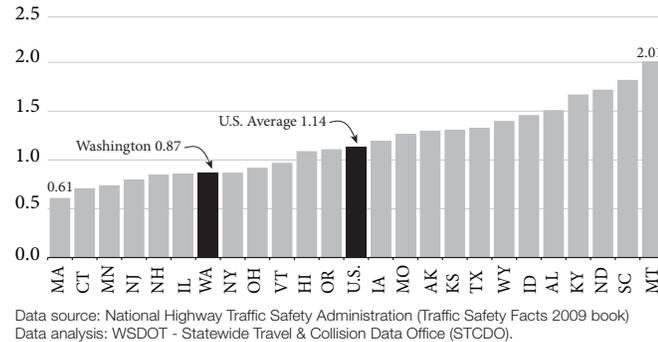
**Traffic fatalities rates in Washington compared to the national average**

*Fatalities per 100 million vehicle miles traveled; 1980-2010*



**Rate of fatalities per 100 million vehicle miles traveled (VMT) in the U.S. in 2009**

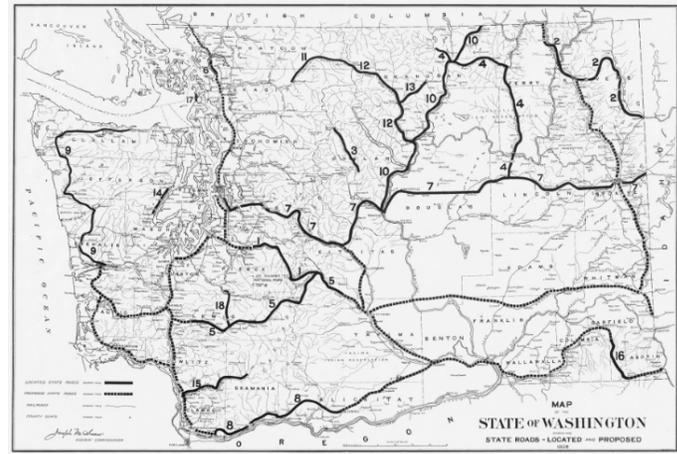
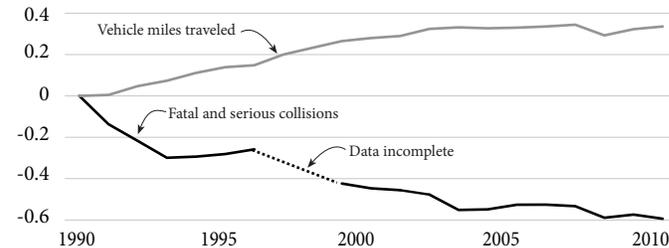
*Sampling of states; Public roads: Highways, city, and county roads*



Over the past 20 years, the fatality rate on all Washington public roads (state, city, and county) has decreased 57%, from 1.85 in 1990 to 0.80 in 2010. For Washington state highways only during this period, fatal and serious injury collisions are down 59%, from 2,497 collisions in 1990 to 1,014 in 2010 even as state highway VMT increased 34%.

**Washington's fatal and serious injury collisions compared to vehicle miles traveled**

*Washington state highways; Percent change from 1990 through 2010*



*In 2010, Washington's state fatality rate per 100 million vehicle miles traveled was at its lowest since this road map was current – in 1910.*

# Highway System Safety Programs

## Quarterly Focus

### Focus on: Traffic Fatalities and Target Zero

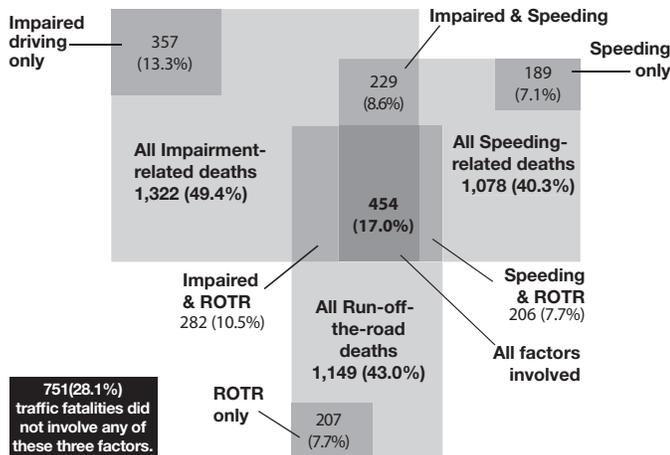
#### Analysis of Target Zero's Priority One traffic-related fatalities in 2006-2010

Between 2006 and 2010 there were 2,675 total traffic fatalities. Out of these 2,675 fatalities, 1,924 (71.9%) involved driver impairment, speeding, or run-off-the-road, or a combination of these factors; these are Target Zero Priority One issues. The proportion of each factor's contribution in fatalities have remained roughly steady for the last four years, with impaired driving involved in almost half of all fatalities, and speed or run-off-the-road in about 40% of all fatalities.

WSDOT uses multiple approaches to reduce the potential for run-off-the-road crashes or the associated outcome of these crashes (e.g., rumble strips to alert drowsy drivers that they are leaving the lane or crossing the centerline). To date, WSDOT has installed 226 miles of cable barrier, with eight miles in the planning or programmed stages, and 2,196 miles of rumble strips, with 343 miles in the planning or programmed stages. See the *Gray Notebook 41* (pp. 6-8) for an article focusing on run-off-the-road and intersection-related collisions and WSDOT initiatives to achieve safety goals.

#### The role of impairment, speed, or run-off-the-road in traffic fatalities, 2006-2010

Data derived from 2,675 total traffic fatalities; 71.9%, or 1,924 deaths involved driver impairment, speeding, or run-off-the-road (ROTR), or a combination of these behaviors.



Data source: Fatal Accident Reporting System (FARS) and WSDOT Statewide Travel and Collision Data Office (STCDO).  
Prepared by: WA Traffic Safety Commission.

#### Seat belt use

Even though the problem of unrestrained vehicle occupants has moved from Priority One to Priority Two within the current Target Zero plan, WSDOT and Washington Traffic Safety Commission (WTSC) continue to measure progress and compliance with seat belt laws. Washington's seat belt usage rate has been above 90% since 2002, when the 'Click it or Ticket' seat belt project began. The 'Click it or Ticket' program model calls for stepped-up enforcement, and publicity warning motorists that the patrols are happening. WSDOT supports this effort by putting the seat belt message on lighted variable message road signs visible on more than 150 highways throughout the state. In 2010, Washington ranked second in the nation with the highest percentage of seat belt use (97.6%) based on observation studies. As remarkable as this percentage is, 32% of vehicle occupants killed in crashes last year were not wearing a seat belt.

#### Washington seat belt use rates

By road type

Type of road	2008	2009	2010
Interstate highways	97.51%	97.38%	98.32%
State routes	96.55%	95.45%	97.10%
U.S. routes	95.11%	96.68%	97.32%
County roads	90.60%	92.81%	93.76%
City streets	92.72%	93.98%	95.62%

Data source: Washington Traffic Safety Commission.



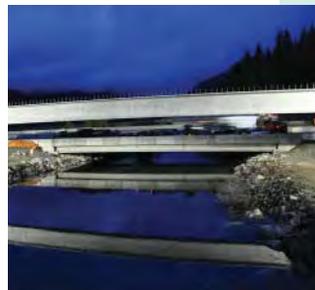
# Preservation

## 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.



### In this section

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### See also

Special Report: Federal Recovery Act-funded Projects	40
Quarterly Report on Capital Projects (Beige Pages)	42

### Earlier articles concerned with preservation

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: Bridge Assessment Annual Report

## Bridge Condition Ratings

### Bridge Preservation Highlights

For FY 2011, 95% of WSDOT's bridges are in good or fair condition.

For FY 2011 WSDOT has added deck codes as part of the performance measure used to classify the condition of bridges.

A full closure of the existing SR 303 Manette Bridge will begin on July 24 and last four months, to complete the construction of the new bridge.

The last phase that will complete painting the SR 433 Lewis and Clark Bridge is under way and should be complete in 2013.

WSDOT is responsible for managing state-owned bridges and related structures on state highways. These bridges help freight move through and around the state and allow people to commute to work and to travel safely all across Washington.

### Bridge condition update: 95% of WSDOT bridges in good or fair condition

WSDOT uses a performance measure which classifies a bridge as good, fair, or poor using the National Bridge Inspection Standards (NBIS) bridge superstructure, substructure, and deck codes. Previously, WSDOT only used superstructure and substructure codes. For fiscal year (FY) 2011, the deck code was included as part of the performance measure because WSDOT has made improvements in the measurement and consistency of this data and the bridge deck is a primary load-carrying element. Prior to FY 2011, deck area codes were excluded due to data quality issues, which WSDOT has since worked to improve through better tracking.

In order for a deck rating to be classified as "poor," 2% or more of the total bridge deck area must have been temporarily repaired by maintenance crews and/or there is active concrete deterioration. The inclusion of the NBIS deck code in FY 2011 is the main reason the percentage of bridges in the poor condition category increased. Because the criteria WSDOT uses to determine the number of bridges in "Good/Fair/Poor" condition now matches the criteria used by the Federal Highway Administration (FHWA) to classify bridges as structurally deficient (SD), the number of WSDOT bridges rated "poor" is now equal to the number classified as SD.

WSDOT reports on the condition of its bridges to Washington's Office of Financial Management in accordance with reporting standards set by the Governmental Accounting Standards Board (GASB). This measure is consistent with data provided in the Comprehensive Annual Financial Report (CAFR), a detailed presentation of the state's financial condition. The Governor's Government Management Accountability and Performance (GMAP) goal is to maintain 97% of all bridges statewide at a rating of good or satisfactory (fair).

For FY 2011, 86% of WSDOT bridges were in good condition and 9% were in fair condition. In FY 2011, 152 (4.8%) bridges were rated in poor condition. There were 80 bridges (2.5%) classified as poor due to the deck code inspection rating.

Another way to look at the ratings for the bridge network is by deck area verses the number of bridges as shown in the table to the right. Both the number of bridges and the amount and percentage of deck area in "poor" condition has grown since FY 2008.

### Bridges in "Poor" condition, by deck area

FY 2008 to FY 2011

Year	Number of bridges	Deck area (SF)	Percentage of deck area in "Poor" condition
2011	152	4,254,899	9.4%
2010	68	3,821,066	8.5%
2009	78	2,554,872	5.7%
2008	94	2,245,235	5.1%

Data source: WSDOT Bridge and Structures Office.

### Bridge structural condition ratings

Condition ratings by fiscal year (based on the number of bridges)

Description	2006	2007	2008	2009	2010	2011*
<b>Good</b> A range from no problems to some minor deterioration of structural elements.	88%	88%	88%	89%	90%	<b>86%</b>
<b>Fair</b> All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, cracking, spalling, or scour.	9%	9%	9%	8%	8%	<b>9%</b>
<b>Percentage of Good + Fair bridges</b>	97%	97%	97%	97%	98%	<b>95%</b>
<b>Poor</b> Advanced deficiencies such as section loss, deterioration, cracking, spalling, scour, or seriously affected primary structural components. Bridges rated in poor condition may have truck weight restrictions.	3%	3%	3%	3%	2%	<b>5%</b>

Source: WSDOT Bridge and Structures Office.

\* Note: For fiscal year 2011 NBIS deck codes are now included as part of the "good/fair/poor" performance measure, previously only superstructure and substructure codes were included. The addition of deck codes brings WSDOT's "good/fair/poor" into alignment with FHWA's SD metric.

# Asset Management: Bridge Assessment Annual Report

## Bridge Inventory



The SR 303 Manette Bridge in Bremerton (see story on page 58).

### Inventory increases by eight bridges in FY 2011

The number of vehicular bridges 20 feet or longer has increased from 3,031 to 3,039 since July 2010. This increase is primarily due to new bridges being built within the highway system. WSDOT has 21 ferry terminal locations, but for inspection purposes, 56 structures that carry vehicles and 15 that do not carry vehicles are also included in the inventory. The number of bridges that carry a railroad was reduced by one from the previous year, with the transfer of the responsibility for a bridge on SR 908 to the city of Redmond. The number of pedestrian bridge structures has increased from 67 to 72 with the construction of five new pedestrian bridges in 2010.

The average age of all WSDOT vehicular bridges is 43 years, with 233 bridges that are 75 years old or older. The oldest documented state bridge is the earth-filled concrete arch carrying SR 290 over the Spokane River, built in 1910.

### WSDOT inventory of bridges and structures

As of June 30, 2011

	Number	Square feet
Vehicular bridges greater than 20 feet long	3,039	45,011,593
Structures less than 20 feet long	351	n/a
Border bridges maintained by the border state	6	n/a
Culverts greater than 20 feet long	111	n/a
Pedestrian structures	72	326,235
Tunnels and lids	41	n/a
Ferry terminal structures	69	807,220
Buildings (I-5 Convention Center)	1	n/a
Railroad bridges	5	n/a
<b>Totals of all structures*</b>	<b>3,695</b>	<b>46,145,048</b>

Data source: WSDOT Bridge and Structures Office.

\*Note: The total number excludes bridges maintained by border states.

### Bridge preservation program aims to maintain a safe bridge network through cost-effective actions

WSDOT's bridge preservation program consists of categories of work that ensure state-owned bridges remain safe and operational. Inspections are performed by trained WSDOT inspectors. Bridge preservation work is normally designed by engineers in the Bridge and Structures Office and then advertised for contractors to bid on and construct. State maintenance crews also complete some types of repairs to preserve the state's bridge network. The goal for this program is "Do the right work on the right bridge at the right time."

Bridge preservation activities include:

- **Inspection** – Perform federally required inspections on state-owned bridges and structures.
- **Asset management** – Identify, prioritize, and plan in order to preserve the bridge and structure network based on review of the inspection data.
- **Replacement and rehabilitation** – Rehabilitate and replace bridges when needed. Repair or replace deteriorated bridge elements such as concrete columns, expansion joints, or anchor cables.
- **Preservation** – Extend bridge service life by repainting steel structures; also repair and overlay concrete bridge decks.
- **Risk reduction** – Proactively address seismic retrofit of bridges and scour repair of bridge piers in rivers.

### FHWA reports the amount of structurally deficient deck area in the state has grown 24.1% between 2007 and 2010

The FHWA's national inventory shows Washington has 7,755 total bridges, which includes structures owned by both state and local agencies. In 2010, 394 bridges (9.1% of the total deck area) were classified as structurally deficient (SD). Between 2007 and 2010, the percentage of structurally deficient deck area has increased by 24.1% mainly due to the inclusion of many of WSDOT's largest bridges. Washington's percentage of SD bridge deck area is ranked 23rd highest nationally.

### FHWA inventory of structurally deficient (SD) bridges

For Washington, 2007 – 2010

	Number of SD bridges	SD deck area (in square feet)	Percentage of SD deck area
2010	394	6,706,707	9.1%
2009	405	6,202,863	8.5%
2008	422	5,904,672	8.2%
2007	400	5,403,983	7.5%

Data source: WSDOT Bridge and Structures Office, FHWA.

# Asset Management: Bridge Assessment Annual Report

## Bridge Inspections / Bridge Load Ratings

### Bridge inspection program helps WSDOT manage bridge assets

Inspecting the state's bridges and structures is vital to ensure public safety, determine the condition of the asset, and to provide a basis to determine future maintenance and preservation needs. The FHWA, WSDOT, and cities and counties, work together to ensure the quality of inspections. Joint agency bridge inspection classes are available each year to train and update bridge inspectors. The FHWA also conducts National Bridge Inspection (NBI) quality assurance inspection reviews of a few local agencies one week each year.

#### 1,500 bridge inspections scheduled for 2011

For 2011, WSDOT has scheduled 1,500 bridges for inspection. Under-bridge inspection trucks (UBIT) will be required on 234 of those inspections. WSDOT will perform 67 inspections for local agency-owned bridges, and has planned 25 underwater dive inspections for bridges and nine for ferry terminal facilities. WSDOT will also inspect 187 sign structures in 2011.

#### WSDOT schedules inspections to minimize disruptions

Scheduling the appropriate date for each bridge inspection takes planning and coordination; factors considered include traffic windows to minimize disruptions to the public, construction that may be under way on a bridge, or wildlife habitat near the bridge. New FHWA inspection performance measures require a bridge to be inspected very close to its current inspection cycle. For example, a bridge that is on a 24 month cycle must be inspected as close as possible to the day two years from its previous inspection. Bridge inspections that require use of a UBIT in urban areas often must be done during a weekend traffic window from daylight to 10am, so crews may need several closures to complete an inspection. About 20 bridges on state highways are known nesting sites for migratory birds, so WSDOT schedules inspections outside their nesting periods.



Peregrine falcon nesting box under the I-5 Ship Canal bridge.

### Bridge load ratings help ensure public safety

A bridge's design takes into account the maximum truck load it can carry when it was built. Engineers perform load rating tests on structures to verify that they can safely carry legal and permitted loads. As bridge structures get older and deteriorate, the maximum truck load rating is re-analyzed based on bridge condition in the field. If results show that the structures are not safe to carry certain loads, WSDOT will reduce the allowable weight of trucks crossing it. In the 2009-11 biennium, the WSDOT Bridge Office performed 114 load ratings and hired consultants to perform an additional 59 for a total of 173.

#### Total number of bridges with weight restrictions

FY 2011

Load restricted bridges – Trucks must comply with reduced axle weights for a specific bridge.	125
Load posted bridges – The allowable weight of trucks is restricted below typical legal weight limits.	17
<b>Total</b>	<b>142</b>

Data source: WSDOT Bridge and Structures Office.

### Permitting process for load rated bridges

Legal load weights for roads and bridges are established by the Legislature. Restrictions are placed on the amount of weight that can be carried on a vehicle axle as well as on a group of axles based on the length of the group. WSDOT's list of state bridges with load posting/restrictions is shared with the public through the Commercial Vehicle Services (CVS) program. Permits are required for 'super' loads that exceed legal limits. WSDOT engineers work with CVS to analyze permit requests to ensure that proposed axle configurations and loads are legal, and to verify that structures on the route can carry the anticipated loads before issuing a permit for the load to proceed. The table below details the number of requests received, approved, and denied since 2006.

#### Truck super load requests

For Washington State Highways, 2006-2010  
Trucks over 200,000 lbs and/or 8 tire axles

Year	Total requests	Approved	Denied
2010	985	965	20
2009	1,071	1,014	57
2008	906	832	74
2007	1,212	1,144	68
2006	937	861	76

Data source: WSDOT Bridge and Structures Office.

# Asset Management: Bridge Assessment Annual Report

## Bridge Replacement and Rehabilitation

### Summary of WSDOT's planned bridge spending

For the 2011 – 2013 biennium

Bridge replacement/rehabilitation	\$135 million
Bridge repairs, movable bridges	\$21.6 million
Steel bridge painting	\$40.3 million
Concrete bridge deck rehabilitation	\$14 million
Seismic retrofit	\$40.2 million
Scour mitigation	\$5.4 million

Data source: WSDOT Bridge and Structures Office.

### Replacement and rehabilitation

The bridge preservation program includes funding for the replacement and rehabilitation of selected bridges. To qualify for federal funds for replacement, a bridge must have a sufficiency rating of less than 50 and be classified as structurally deficient (SD) or functionally obsolete (FO). For rehabilitation, the criteria is similar except the sufficiency rating must be less than or equal to 80. (Definitions of SD and FO are available in *Gray Notebook 34*, page 22.)

When prioritizing future replacement candidates, WSDOT mainly considers those bridges with a sufficiency rating less than 50 and classified as SD. As of June 30, 2011, 149 bridges more than 20 feet long are classified as SD, roughly 9.4% of the total inventory of bridges over 20 feet excluding three ferry terminal structures. Nineteen of these bridges have been prioritized for future replacement/rehabilitation based on their truck volumes, structural condition, and any load restrictions in place. The total estimated cost to replace or rehabilitate these 19 bridges is about \$193 million.

### \$135 million to be used to address bridge rehabilitation and replacement in the 11-13 biennium

The funds for this work comes from the 2005 Transportation Partnership Account (\$31.1 million), the State Motor Vehicle Account (\$1.4 million), and the Federal Bridge Replacement/Rehabilitation Account (\$101.6 million). Twenty-six bridges were identified for replacement or rehabilitation as part of the 2005 TPA funding program, including partial funding for the SR 104 Hood Canal bridge. Ten of these bridges and the Hood Canal bridge have been completed to date, with 13 scheduled to be completed or under construction in the 2011-13 biennium. Seven additional bridges included for replacement or rehabilitation this biennium are funded with pre-existing transportation funds.

Three bridge replacement/rehab projects are under contract:

- SR 303 Manette (Bremerton) – \$60.6 million
- SR 529 Ebey Slough (Marysville) – \$42.3 million
- US 2 Ebey Island Bridge (Everett) – \$8.6 million

### WSDOT received \$21.6 million in the 2011-13 biennium to address bridge repairs and movable bridges

The major repair category of the bridge preservation program includes corrective work that cannot be accomplished within typical maintenance programs and must be done through contracts. This work addresses the specific bridge element in need of repair and is not intended to upgrade all deficiencies to current standards. The most common types of repairs include expansion joint replacement, concrete column repair, floating bridge anchor cable replacement, and mechanical/electrical rehabilitation for movable bridges.

WSDOT develops a prioritized list of repair needs each biennium. Unexpected problems that must be repaired as soon as possible are dealt with through emergency contracts.

There are 100 items on WSDOT's prioritized list of future repairs which are estimated to cost nearly \$100 million. With a budget of \$20 million per biennium, it will take WSDOT about 10 years to complete all the work on the current list. This list is periodically updated.

### WSDOT movable bridges

As of June 30, 2011

Route	Name	Year built	Average daily traffic	Number of marine openings in 2010
12	Wishkah River	1925	15,000	13
12	Heron St	1949	15,000	12
12	Snake River	1939	21,000	2
99	1st Ave S (NB)	1956	40,000	1,078
99	1st Ave S (SB)	1996	40,000	1,078
101	Chehalis R	1955	21,000	102
101	Riverside	1970	15,000	177
101	Simpson Ave	1928	15,000	60
104*	Hood Canal	1979	17,000	335
520**	Evergreen Pt	1963	100,000	5
529	Snohomish R (NB)	1927	16,500	391
529	Snohomish R (SB)	1954	16,500	391
529	Steamboat Sl (NB)	1927	16,000	39
529	Steamboat Sl (NB)	1954	16,000	39
529**	Ebey Slough	1925	15,500	1

Data source: WSDOT Bridge and Structures Office.

\* Hood Canal West Half built in 1979 / East Half built in 2009.

\*\* Bridge scheduled to be replaced with a fixed span bridge.

# Asset Management: Bridge Assessment Annual Report

## Bridge Preservation

### Steel bridge painting: 94 bridges currently due or past due for painting

WSDOT owns 289 painted steel bridges that require routine painting. WSDOT also shares painting costs for steel bridges on the Oregon and Idaho borders. Protective paint coatings on steel bridge elements are essential to prevent corrosion and extend service life. Bridge painting can be a major project with significant costs due to the complexity of safety, environmental, and containment system requirements. Bridge inspection data is used to determine the condition of the paint coatings on steel bridges. Nearly all of the bridges on WSDOT's future paint list will need full paint removal, requiring the construction of a containment system around the bridge to keep old paint and the abrasive material used to remove it from entering the environment. An emerging issue is how to balance the added weight of the containment system with the need to maintain all the lanes of traffic across the bridge.

There are 94 WSDOT steel bridges either due or past due for painting. WSDOT painted five bridges in 2009 and 2010, and shared the expense of painting the north steel truss spans of the US 101 Astoria Bridge and sections of the SR 433 Lewis and Clark bridge with Oregon. Painting the main truss on the Lewis and Clark bridge (the final phase) was awarded in June 2010 for \$33.7 million.

### Status of WSDOT steel bridge painting needs

	Number of bridges	Cost to repaint
Past due for painting	28	\$139 million
Due for painting	66	\$185 million
Not due for painting	195	\$373 million

Data source: WSDOT Bridge and Structures Office.

WSDOT has a \$40.3 million budget for the 2011-13 biennium to paint steel bridges. The majority of this (\$38 million) will be used to repaint two bridges over the Columbia River (SR 433 Lewis and Clark, and US 101 Astoria).



SR 433 – Lewis and Clark Bridge, in Longview. These pictures show the containment for the painting operations on the main steel truss spans. Construction began in 2010 and is scheduled to be complete in 2013.

### Bridge deck repair and overlay

WSDOT has been working since the early 1980s on a systematic program to prevent concrete deck deterioration, generally caused by winter salt applications. Maintenance crews usually apply temporary repairs in the form of quick cure patching materials that only have a service life of a few years.

New bridges, built after 1980, are constructed with epoxy-coated rebar that resists corrosion caused by winter de-icing salts. Bridge inspections identify pre-1980 bridges with deteriorated concrete deck areas so WSDOT can rehabilitate them by applying a concrete overlay. The average cost to repair and apply a traditional modified concrete overlay to a bridge deck is \$75 a square foot. This is about 25% of the cost to completely replace a bridge deck or 10% of the cost to replace an entire bridge. WSDOT will program a bare concrete deck for repair and overlay when 2% or more of the area is deteriorated or has previous maintenance repairs.

Modified concrete overlays are the primary overlay type used by WSDOT to rehabilitate concrete bridge decks: the first such repair was made in 1979. The overlay process begins by setting up traffic control and closing part or all of the bridge. Next, a hydromilling machine uses high pressure water to remove ½” of the existing concrete and also any deteriorated concrete. Any deep areas are then patched, and the modified concrete overlay is applied and cured. The curing process takes about 42 hours. The average service life of a concrete overlay on bridges is about 25 years. It is very likely that more of these concrete overlays will require replacement in the future.

Bridges with asphalt deck overlay have traditionally been addressed within roadway paving projects. More of these bridges will likely need to be addressed in stand-alone projects since more roadway paving projects are now using bituminous surface treatments (BST) which cannot be used on a bridge deck. Bridge decks require hot mix asphalt (HMA) along with a membrane to provide a smooth ride surface and to protect the rebar in the bridge deck from winter deicing.

*WSDOT has prioritized 72 bridge decks for future rehabilitation*

For the 2011-13 biennium, the concrete bridge deck rehabilitation budget is \$14 million to repair and overlay 15 bridge decks. WSDOT has prioritized 72 bridges that need future deck rehabilitation and overlay at an estimated cost of \$149 million.

# Asset Management: Bridge Assessment Annual Report

## Bridge Risk Reduction

Seismic retrofit of selected bridges and scour repair of bridge piers in rivers are proactive approaches to minimizing the risk of damage to bridges due to earthquake and flooding.

### Seismic retrofit

WSDOT has collaborated with federal, state, and local agencies to prioritize bridges in the Puget Sound region that require a seismic retrofit, using a risk-based approach which incorporates WSDOT's strategic disaster response plan. Bridge engineers perform a seismic analysis of each bridge to determine the exact scope of the retrofit. The most common type of retrofit includes adding steel jackets around the columns and adding more concrete-and-steel reinforcement to the pier caps (also known as a "bolster").

The planned bridge seismic retrofit budget for the 2011-13 biennium is \$40.2 million. The total number of bridges suitable for retrofitting increased by 20 in FY 2011 to 900 with the addition of bridges that are supported by hollow core piles.

### Bridge seismic retrofit status

	FY 2010	FY 2011
Completely retrofitted*	258	259
Partially retrofitted	139	135
Needs retrofitting	472	490
Under contract	13	16
<b>Total</b>	<b>880</b>	<b>900</b>

Data source: WSDOT Bridge and Structures Office.

\* Note: Excludes retrofit of bridge foundations.

### SR 99 Aurora Avenue bridge seismic retrofit under contract

Massana Construction, Inc. was awarded the third and final seismic retrofit contract on the Aurora Avenue bridge for \$6.2 million to retrofit the approach span bridge columns, beams, and girders with carbon fiber reinforced polymer. Scale model testing at Washington State University was used to develop the seismic retrofit details.



Design visualization of the Aurora Ave column retrofit.

### Scour mitigation

"Scour" is defined as the eroding away of the stream bed material from under bridge foundations. Scour generally happens when a river is experiencing high water flows. Nationally, as in Washington, more bridges have collapsed from the scour of bridge foundations than from any other cause (43 documented WSDOT bridges since 1923).

- More than 1,500 WSDOT bridges and culverts longer than 20 feet in length are over water.
- 318 WSDOT bridges and culverts longer than 20 feet are classified as "scour critical."

The term "scour critical" is used by the FHWA to classify those bridges with a calculated potential scour depth that is lower than the existing bridge foundations. WSDOT has developed a plan of action for each of these bridges. Once funding has been authorized for a repair, it generally takes two to four years to design a scour repair and obtain the environmental permits to complete a scour repair.

The planned bridge scour repair budget for the 2011-13 biennium is \$5.4 million.

### Bridge damage due to vehicle impacts

Each year a few bridges are significantly damaged from truck impacts, mostly from over-height loads. WSDOT's inspectors and maintenance crews respond on an emergency basis in order to assess the severity of the damage and determine what repairs need to be made. WSDOT has developed criteria to determine if damaged prestress girders are repairable or require replacement.

Bridges requiring significant repair or element replacement are covered by federal emergency relief funds or by bridge preservation funds. WSDOT then seeks reimbursement through the responsible party's insurance company, which in some cases requires litigation.

### WSDOT damaged bridges to be repaired by contract

Dollars in thousands

Date of damage	Route	Bridge name	Element damaged	Cost to repair
3/2011	5	113th St UC	PCG	\$900
1/2011	16	Olympic Dr	PCG	\$1,171
1/2011	395	Court St UC	PCG	\$1,001
12/2009	167	24th St UC	PCG	\$1,197
12/2009	2	Anderson Cr	Bridge rail	\$614

Data source: WSDOT Bridge and Structures Office.

Note: PCG = Prestress Concrete Girder

# Asset Management: Bridge Assessment Annual Report

## Local Agency Bridges

WSDOT, through its Highways and Local Programs division, manages the Federal Aid Highway Bridge program for local agencies. The program follows policy guidance found in federal statute, Washington state legislation, and the Washington Transportation Plan.

Local agencies' bridges are inspected at least once every two years; WSDOT conducts field reviews and provides training and technical assistance for municipalities that must inspect bridges along city streets and county roads. WSDOT and local governments closely follow federal guidelines in their bridge inspection and maintenance procedures.

### Local bridge conditions

The Federal Highway Administration (FHWA) requires all states to report annual state, city, and county data concerning the structural condition and adequacy of all bridges statewide. A structurally deficient (SD) bridge is safe as long as all restrictions are obeyed, but may be need of costly repairs or replacement in order to carry current legal loads.

Additionally, following a thorough review, bridges are assigned sufficiency rating number between 0 and 100. The rating takes into account some 75 factors reviewed during an inspection and

also considers a bridge's age, length, and width, and the average amount of traffic the bridge handles. **Currently, 95% of Washington's locally owned bridges are considered in good or fair structural condition.**

### Top five challenges for locally managed bridges in Washington

- **Age and deterioration** – A number of bridges in the state, constructed before the 1950s and 1960s, need major repair or replacement. Usually built to last 75 years, about 30% of locally owned bridges are more than 50 years old.
- **Congestion** – Some of Washington's bridges have become bottlenecks for both freight and general traffic, particularly at interchanges and major river crossings.
- **Construction costs** – The dollars available for bridges are buying less in the marketplace, as construction costs have risen including the price of steel, asphalt, concrete, and earthwork. Replacing smaller bridges can mean construction of new larger bridges in order to repair impacts to streams and rivers and ensure today's environmental standards are met.
- **Maintaining bridge safety** – Cities and counties face funding shortages which limit their ability to conduct the kind of ongoing preventive maintenance, rehabilitation, seismic strengthening, and replacement that would keep bridges sound indefinitely.
- **Regionally significant bridge replacement needs** – The costs of new bridges and their related intersections prevent many cities and counties from making larger bridge improvements that are needed to address congestion and serve economic growth. High costs for bridges often exceed the available resources.

### Structural condition summary of Washington's locally managed bridges

Spring 2011

	County owned		City owned		Total	
	% of bridges	% of deck area	% of bridges	% of deck area	% of bridges	% of deck area
<b>Good</b>	83%	85%	76%	76%	82%	81%
<b>Fair</b>	12%	11%	17%	12%	13%	11%
<b>Poor</b>	4%	4%	7%	12%	5%	8%
<b>Percentage of Good + Fair bridges</b>					<b>95%</b>	<b>92%</b>

Data source: WSDOT Highways and Local Programs Office.

### Detailed conditions of Washington's locally managed bridges

Spring 2011

Condition	Number of bridges	Deck area (Sq. Ft.)	Number of bridges funded	Deck area funded (Sq. Ft.)	Percent of bridges funded	Percent of deck area funded
Sufficiency rating less than 30 and SD	75	589,360	43	304,650	57%	52%
Sufficiency rating less than 50 and SD	154	1,029,890	56	329,230	36%	32%
Sufficiency rating less than 50	275	1,918,750	61	341,600	22%	18%
Sufficiency rating less than 50 and weight restricted or load posted	112	670,790	27	96,920	24%	14%
Weight restricted or load posted	199	947,580	27	96,920	14%	10%
<b>Total inventory</b>	<b>3,950</b>	<b>14,500,000</b>	<b>65</b>	<b>350,000</b>	<b>2%</b>	<b>2%</b>

Data source: WSDOT Highways and Local Programs Office.



# 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.



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- Commute Options Annual Report 21
- Travel Time Trends Semi-Annual Report 22
- Incident Response Quarterly Update 25
- Washington State Ferries Quarterly Update 28
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**See also**

- Special Report: Federal Recovery Act-funded Projects 40
- Quarterly Report on Capital Projects (Beige Pages) 42
- New Ferry Construction 59

**Earlier articles concerned with mobility**

- Traveler Information, GNB 41
- Travel Time Trends Six Month Update, GNB 40
- Measuring Delay and Congestion Annual Report, GNB 39 and special publication
- Commute Options Annual Report, GNB 38

# Measuring Delay and Congestion Annual Report

## 2011 Congestion Report Executive Summary: Looking at 2010 data

### Highlights from the Annual Congestion Report

Vehicle miles traveled (VMT) has risen for two years in a row. Washingtonians drove 65 miles more in 2010 than in 2008; 57 of those miles were on state highways.

Delay on state highways in 2010, when measured at maximum throughput speeds, was 13% greater than in 2009 but still 9% lower than in 2008.

Per person, people in Washington spent 12% more time delayed in traffic in 2010 compared to 2009, but 4% less time than they did in 2008.

In 2010, the cost of delay to drivers and businesses in Washington was estimated to be \$759 million at maximum throughput speeds, and \$1,108 million at posted speeds.

Between 2008 and 2010, changes to travel times and reliability were modest on most of the 40 high-demand Puget Sound region commute routes.

In 2010, compared to 2008, 45 out of 48 HOV commutes provided more reliable travel times than corresponding general purpose lanes.

Read the full 2011 Annual Congestion Report on line at [www.wsdot.wa.gov/Accountability/Congestion/](http://www.wsdot.wa.gov/Accountability/Congestion/)

### Congestion increasing since 2009, nears 2008 levels

The trends of decreasing congestion and lessening delay that prevailed from 2008 through 2009 appear to have slowed, as both delay and vehicle miles traveled on Washington's roadways increased in 2010. Statewide congestion data for the past five years shows that 2009 was the least congested year for Washington. But in 2010, as Washington's economy slowly began to regain ground and gas prices stabilized, congestion on the state highway system rose, however, it is unclear whether the rise in congestion will continue.

Trends in this year's report show that most congestion performance metrics for 2010 are higher than 2009 but below 2008 levels.

In 2010, delay on state highways when measured at maximum throughput speeds was 13% greater than in 2009 but still 9% lower than in 2008. Similar trends were seen when the delay metric was calculated at posted speed limits. Per person, people in Washington spent 12% more time in traffic in 2010 compared to 2009, but 4% less time compared to 2008; again, the delay was similar when calculated at posted speeds. WSDOT measures delay against both posted speed and maximum throughput speed, and uses the latter to most efficiently manage the transportation system.

Compared to 2008, annual vehicle miles traveled (VMT) increased in 2010 on all roads (by 3.1%) and on state highways (by 3.3%). This means that Washingtonians drove about 65 more miles in 2010 (8,505 vehicle miles per person) compared to 2008 (8,440 miles), and 57 of those 65 miles were on state highways: per person VMT on all roads increased by 0.8% and on state highways by 1.2%.

### Factors influencing congestion

As Washington's economy rebounds, economic growth will result in more people spending more time on the road as they drive to work, to school, to shopping centers, or on other errands. Congestion metrics demonstrate these signs, as the leading performance indicators showed an increase in 2010 compared to 2009, even though the magnitude of this increase is within 2008 levels. The Federal Highway Administration's (FHWA) Office of Operations acknowledges that roughly half of the congestion experienced by Americans happens virtually every day – it is “recurring.” This is the type of congestion where there are simply more vehicles than roadway capacity. The other half of congestion is caused by temporary disruptions that take away part of the roadway's capacity from use – or “nonrecurring” congestion. The three main causes of nonrecurring congestion are incidents, ranging from a flat tire to an overturned hazardous material truck (25% of congestion), work zones (10% of congestion), and weather (15% of congestion).

Although congestion can be used as an indicator of economic growth, it also has negative economic consequences. Delay costs money – for example, as drivers waste fuel in stop-and-go traffic or when businesses suffer lost productivity when shipments are slower to arrive at their destination. When estimated against posted speeds, statewide travel delay cost drivers and businesses in Washington \$1.11 billion in 2010; the cost of this delay in 2008 and 2009 was \$1.22 billion and \$1.06 billion respectively. When measured at maximum throughput speed, delay remains expensive. It cost drivers and businesses \$759 million in 2010 – 11% more than the \$685 million cost in 2009 – but it is still 10% lower than the \$846 million cost in 2008.

# Measuring Delay and Congestion Annual Report

## Congestion Report Dashboard of Indicators

2011 Congestion Report Dashboard of Indicators	2006	2007	2008 <sup>7</sup>	2009	2010	Difference 2009 vs. 2010	Difference 2008 vs. 2010
<b>Demographic and economic indicators</b>							
State population (millions)	6.4	6.5	6.6	6.7	6.7	0.8%	1.5%
Average gas price per gallon (July)	\$3.08	\$3.05	\$4.36	\$2.81	\$3.06	8.2%	-29.8%
Washington unemployment rate (annual)	5.0%	4.6%	5.5%	9.3%	9.6%	0.3%	4.1%
Washington rate of annual economic growth <sup>1</sup>	4.1%	5.2%	1.0%	-2.4%	1.6%	1.6%	-0.8%
Washington real personal income (billions) <sup>2</sup>	\$245.3	\$258.2	\$263.2	\$261.5	\$263.9	0.9%	0.3%
<b>Systemwide congestion indicators</b>							
<b>Vehicle miles traveled</b>							
All public roads vehicle miles traveled (VMT), in billions	56.5	57.0	55.4	56.5	57.2	1.3%	3.1%
All public roads per capita VMT, in miles	8,867	8,780	8,440	8,467	8,505	0.4%	0.8%
State highways vehicle miles traveled (VMT), in billions	31.8	32.0	30.7	31.5	31.8	1.0%	3.3%
State highways per capita VMT, in miles	4,982	4,928	4,667	4,717	4,724	0.1%	1.2%
<b>System congestion</b>							
Lane miles of state highway system congested <sup>3</sup>	1,030	1,010	930	950	994	4.6%	6.9%
Percent of state highway system congested <sup>3</sup>	5.7%	5.6%	5.2%	5.2%	5.5%	0.3%	0.3%
<b>Delay on state highways</b>							
Total vehicle hours of delay, in millions of hours <sup>4</sup>	39.6	35.1	34.8	28.1	31.7	13%	-9%
Annual hours of per capita delay on state highways <sup>4</sup>	6.2	5.4	4.9	4.2	4.7	12%	-4%
<b>Cost of delay on state highways (2010 dollars in millions)</b>							
Measured at maximum throughput speeds <sup>4,5</sup>	\$1,027	\$885	\$846	\$685	\$759	11%	-10%
Measured at posted speeds <sup>5</sup>	\$1,449	\$1,294	\$1,215	\$1,062	\$1,108	4%	-9%
<b>Corridor-specific congestion indicators</b>							
<b>Congestion on 52 commute routes in the central Puget Sound region</b>							
Annual Maximum Throughput Travel Time Index (MT <sup>3I</sup> ) <sup>6</sup>	1.50	1.45	1.25 <sup>7</sup>	1.31	1.37	4.6%	9.6%
Number of commute routes with MT <sup>3I</sup> > 1 <sup>6</sup>	46	46	41 <sup>7</sup>	44	45	N/A	N/A
<b>WSDOT congestion relief projects</b>							
Number of completed Nickel and TPA mobility projects as of December 31st of each year (cumulative)	14	33	43	65	73	8	30
Cumulative project value (dollars in millions)	\$206	\$898	\$1,245	\$2,128	\$2,524	\$396	\$1,279

Data sources include: WSDOT, Office of Financial Management; Economic and Revenue Forecast Council; Bureau of Economic Analysis, U.S. Department of Energy - Energy Information Administration; Bureau of Labor Statistics - Consumer Price Index.

Notes: Analysis in the Congestion Report examines 2008 and 2010 annual data, five years of data is provided here for information only. 1 The rate of annual economic growth is measured through Washington Real Gross Domestic Product as reported in chained 2005 dollars. Values shown in the Difference 2009 vs. 2010 and Difference 2008 vs. 2010 column reflect the difference in Gross Domestic Product instead of the difference in growth rates. 2 Washington real personal income is measured in chained 2005 dollars. 3 Based on below 70% of posted speed. 4 Based on maximum throughput speed thresholds (85% of posted speed). 5 Inflation adjusted using the Consumer Price Index (CPI). 6 MT<sup>3I</sup> is the ratio of average peak travel time compared to maximum throughput speed travel time. MT<sup>3I</sup> greater than one means the commute route experiences congestion. 7 2008 data not available for four of the 52 routes. This lack of data might be a reason for lower average MT<sup>3I</sup> and number of commute routes with MT<sup>3I</sup> >1. For more information see gray box on page 15 of the 2009 Annual Congestion Report.

# Measuring Delay and Congestion Annual Report

## Executive Summary of Measures and Results

The *2011 Annual Congestion Report* examines 2010 calendar year data focusing on the most traveled commute routes in the central Puget Sound region, and where data are available around the state. The Congestion Report's detailed analysis shows where and how much congestion occurs, and the trends on the state highway system.

### Calendar year 2010 saw a spike in congestion compared to 2009, but still within 2008 levels

The downward congestion trend in Washington seems to have ended in 2009 as 2010 data shows an increase in delay and vehicle miles traveled on state roadways. Statewide congestion data for the past five years shows that 2009 was the least congested year

for Washington State. With the rebounding economy and stabilization of gas prices, congestion on the state highway system is on the rise beginning in 2010, however, it is unclear whether the rise in congestion will continue.

In 2010, travel delay on state highways, when measured at maximum throughput speeds, is 13% higher than 2009 and 9% lower than 2008. In the central Puget Sound region, 78% of the monitored commute routes have shown modest changes in average travel times - within two minutes. Less than half of these commutes showed a modest change in 95% reliable travel times, while 39% saw an increase and 14% saw a decrease in 95% reliability, beyond two minute fluctuations.

### 2011 Congestion Report Executive Summary of measures and results



Trend is moving in a favorable direction.



Trend is holding.



Trend is moving in an unfavorable direction.

Trend

Page

#### Statewide indicators: Percent system congested, hours of delay, and vehicle miles traveled

<p><b>Total statewide delay</b> Statewide delay, relative to both posted speeds and maximum throughput speeds (calculated at 85% of posted speed), decreased by 6% and 9% respectively. The reduction in delay indicates that many highways across the state became less congested between 2008 and 2010. On the other hand, statewide delay, relative to posted speeds and maximum throughput speeds, rose in 2010 compared to 2009 by 8% and 13% respectively.</p>	<p>Total statewide vehicle hours of delay was reduced by 9% between 2008 and 2010 relative to maximum throughput speeds.</p>		<p>13</p>
<p><b>Per person delay</b> Statewide, delay was reduced from about 4.9 hours per person annually in 2008 to 4.7 hours per person annually in 2010, when measured using maximum throughput speeds. Statewide per capita delay was lowest in 2009 (4.2 hours), and rose again in 2010 (4.7 hours).</p>	<p>Per person delay was reduced by 4% between 2008 and 2010 relative to maximum throughput speed.</p>		<p>14</p>
<p><b>NEW Percent of the system delayed</b> Roughly 11.6% of state highways (in lane miles) were delayed in 2008, meaning traffic flow dropped below 85% of posted speeds. This metric remained the same at 11.6% in 2010. As expected, most of the traffic delay on state highways is in urban areas.</p>	<p>The percent of state highways with delays is unchanged between 2008 and 2010.</p>		<p>14</p>
<p><b>Percent of the system congested</b> Roughly 5.2% of state highways (in lane miles) were congested in 2008 and 2009, meaning traffic flow dropped below 70% of posted speeds. This measure rose to 5.5% in 2010. As expected, most of the congested state highways are in urban areas.</p>	<p>0.3% more state highways are congested, up from 2008 (5.2%) to 2010 (5.5%).</p>		<p>14</p>
<p><b>Vehicle miles traveled (VMT)</b> Between 2008 and 2010, total VMT increased, by 3.1% on all public roads and by 3.3% on state highways. Per person VMT also increased statewide, by 0.8% on all public roads and by 1.2% on state highways.</p>	<p>Total VMT on all public roadways increased by 3.1% between 2008 and 2010.</p>		<p>17</p>

#### Central Puget Sound corridors: Hours of delay and vehicle miles traveled

<p><b>Vehicle hours of delay on major central Puget Sound region corridors</b> Between 2008 and 2010, vehicle hours of delay relative to the posted speeds (60 mph) and maximum throughput speeds decreased by approximately 11% and 14% respectively. All surveyed corridors saw reduced delay. Between 2009 and 2010, some of these corridors saw substantial increases in vehicle hours of delay.</p>	<p>Travel delay in the Central Puget Sound area is down 14% relative to maximum throughput speeds.</p>		<p>16</p>
<p><b>Vehicle miles traveled (VMT) increased overall in the central Puget Sound in 2010.</b> On selected major Puget Sound region corridors, VMT increased by 1.8% in 2010 compared to 2008. The steepest rise was more than 4% on I-405; VMT on SR 520 saw the smallest increase, 0.7%.</p>	<p>VMT in the Central Puget Sound area increased by 1.8% in 2010 compared to 2008.</p>		<p>16</p>

# Measuring Delay and Congestion Annual Report

## Executive Summary of Measures and Results

### 2011 Congestion Report Executive Summary of measures and results



Trend is moving in a favorable direction.



Trend is holding.



Trend is moving in an unfavorable direction.

Trend

Page

#### Central Puget Sound corridors: Throughput productivity

**Throughput productivity** compares the observed average vehicle flow (vehicles per hour per lane – vphpl) in each commute direction for a selected location to the observed highest average five minute vehicle flow at that location. Between 2008 and 2010, for 16 selected Puget Sound monitoring locations, 10 showed improvements in vehicle throughput, while three worsened, two did not change, and one did not experience any productivity loss.

Between 2008 and 2010, 13 out of 16 monitored locations either improved or remained the same while three got worse.



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#### Travel times analysis: 40 high-demand Puget Sound commute routes

**Average peak travel times** Between 2008 and 2010, 28 of 36 surveyed high-demand commute routes saw changes in average peak travel time of less than two minutes. Eight routes changed by more than two minutes: three showed shorter travel times and five routes saw longer travel times. (Note: only 36 of 40 routes had data available for 2008.)

Average peak travel times on 28 of 36 routes changed by less than two minutes between 2008 and 2010, five worsened, three improved.



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**Duration of congested period** The duration of congestion—defined as the period of time in which average speeds fall below 45 mph—improved on 18 routes between 2008 and 2010, with improvements ranging from five minutes to 1 hour 45 minutes. The duration of congestion was unchanged on six routes, and average speeds on two routes did not fall under the 45 mph threshold.

Between 2008 and 2010, the duration of congestion improved on 18 routes and was unchanged on six; two routes had no congestion.



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**95% reliable travel times** Between 2008 and 2010, 17 of the 36 high-demand commutes saw modest changes (less than or equal to two minutes) in 95% reliable travel time. 14 commutes saw reliable travel times worsen between three and ten minutes, while reliable travel times improved on five commutes ranging from three minutes to 11 minutes.

Reliable travel times improved on four commutes, saw no significant change on 17, and worsened on 14, when comparing 2010 to 2008.



28

#### Additional performance analyses for the 40 high-demand Puget Sound commute routes

**Range of percentiles reliability analysis** Reliability percentile analysis looks at travel times at the 50th percentile (median), 80th percentile, 90th percentile, and 95th percentile values for the 40 high demand routes. The percentile analysis also provides a way to track changes in travel times over the years at a finer level, in order to evaluate operational improvements.

28

**Percentage of days when speeds were less than 36 mph — Stamp graphs** The most visual evidence of how peak periods changed in 2010 can be seen in the graphs on pages 32-33. These “stamp graphs,” comparing 2008 and 2010 data, show the percentage of days annually that observed speeds are below 36 mph (threshold for severe congestion).

31

**Travel time comparison graphs** The bar graphs on pp. 49-51 show four of the travel time performance indicators during the peak five minutes interval for weekday: travel times at posted speeds, travel time at maximum throughput speeds (50mph), average peak five minute travel times, and 95% reliable travel times. For each of the surveyed high-demand commutes, both general purpose (GP) and HOV travel times are shown. The graphs also illustrate the travel time advantages HOV lane users have compared to GP lane users.

49

#### Travel time analysis: 12 additional Puget Sound commutes

In addition to the 40 high demand commute routes, WSDOT tracks 12 other commutes in the central Puget Sound region where data are available. Average travel times for all 12 routes saw a negligible change between 2008 and 2010. In terms of the 95% reliable travel time, eight of the 12 routes saw modest changes (within two minutes), while travel times grew longer (by between two and seven minutes) on the remaining four routes.

95% reliable travel times deteriorated on four of 12 commutes. Average travel time changes between 2008 and 2010 were negligible.



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# Measuring Delay and Congestion Annual Report

## Executive Summary of Measures and Results

### 2011 Congestion Report Executive Summary of measures and results



Trend is moving in a favorable direction.



Trend is holding.



Trend is moving in an unfavorable direction.

**Trend**

**Page**

#### Travel time analysis: Spokane commutes

Average travel times on I-90 EB and I-90 WB between Argonne Road and Division Street have shown modest changes (about half a minute). 95th percentile travel times improved eastbound by 32% and deteriorated on westbound by 2%.

95th percentile reliable travel times improved on eastbound by 32%.



35

#### HOV Lane performance

**HOV Lane reliability standard** The reliability standard requires the HOV lane to maintain a speed of 45 mph for 90% of the peak hour. In 2008, six of 14 HOV commute corridors met the reliability standard; seven of 14 corridors met the standard in 2010. Of the seven that did not, five of the seven evening peak commutes have such high traffic volumes that the corridors are below the HOV performance standard; two of the seven morning peak commutes are also below the performance standard.

In 2010, the HOV lane reliability standard was met on one more location.



37

**Person throughput** Most HOV lanes continue to be more effective at moving more people during peak periods than general purpose (GP) lanes. At the monitoring locations, the average HOV lane carries about 33% of the people on the freeway in the morning and evening peak periods. At seven of the ten monitoring locations, HOV lanes moved more people than adjacent GP lanes.

In 2010, the HOV lanes carried more people than the adjacent GP lanes at one less location.



39

**HOV Lane travel times** Average travel times and 95% reliable travel times are almost always faster in HOV lanes than in general purpose (GP) lanes. In 2010, average HOV lane travel times performed better than GP lane travel times on 40 out of 48 routes and were unchanged on eight routes. Forty-five HOV routes provide better reliability (95% reliable travel time) than their respective GP counterparts.

In 2010, two more routes showed travel time benefit for HOV compared to adjacent GP lanes.



40

#### Ongoing tracking of performance for operational strategies

**Operate efficiently: Incident Response (IR) annual report** Between 2008 and 2010, statewide average incident clearance time improved by 6.3%. The total number of incidents cleared was down by 2.5%

Average incident clearance time improved by 6.3%.



54

#### Travel time analysis: January-May 2011 semi-annual report

The trends described in the article result from a comparison of traffic conditions in the first five months of 2011 to those from the same time periods in 2009 and 2010. Taken as a whole, 2011 travel times in both of the morning and evening commute periods have changed only modestly in comparison to those of both 2009 and 2010.

Travel time changes for 18 commutes monitored have seen little change between 2010 and 2011.



# Commute Options Annual Report

## WSDOT's Demand Management Tools Include Commuter Options

### Commute options help WSDOT manage demand as part of the Moving Washington program to fight congestion

Reducing trips on Washington's highway system by encouraging the use of higher occupancy modes of transportation, and by shifting some travel to non-peak hours, are some of the strategies WSDOT uses to manage the demand for capacity on Washington's highways. These strategies also support other important goals, including reducing greenhouse gas emissions and energy consumption. WSDOT builds on a foundation of strong partnerships throughout the region to successfully reduce the demand for vehicle travel throughout the state.

### Vanpools adversely affected by the current economic climate

The 2010 economic climate within Washington continued to have an impact on transit agency operated vanpool programs. Budgetary constraints coupled with increased operating costs and equipment unavailability, and in some cases an unsuccessful attempt to pass a transit tax increase ballot measure, resulted in some transit agency's inability to meet and address vanpool demand. Additionally, some transit agencies during WSDOT's last vanpool grant funding cycle did not apply for grant funds due to the economic unknowns and demand unknowns and/or inability to support additional vanpools in operation.

Economic conditions have improved some in 2011, contributing to statewide transit operated vanpool programs adding 160 vanpools through June 2011. New participant survey data obtained from King County Metro vanpool staff indicated that the primary contributing factor that prompted new riders to start vanpooling was that they were returning back to work. The survey also showed that 34% of new vanpool participants joined or started a vanpool as a result of increased fuel costs. Before joining a vanpool, 48% of the survey respondents indicated that they drove alone to work.

### Joint Base Lewis-McChord

During the 2011 legislative session, the legislature made an effort to address continued congestion and traffic delays along I-5 by funding 50 new vans that would serve Joint Base Lewis-McChord (JBLM). Pierce Transit, which serves the base, experienced severe budget problems in 2010 and a failed transit tax increase ballot measure in 2011. Due to proposed staff cuts in 2011, transit agencies that border Pierce's Public Transportation Benefit Area (PTBA) may be called upon to assist with the operation of vanpools to JBLM.

### WSDOT works to reduce the impact of construction on commuters

To develop demand management plans, construction impacts on roadway capacity are analyzed, and an overall trip reduction target is developed. The goal is to keep traffic moving as well as it did before construction. WSDOT works with local jurisdiction partners including cities, counties and transit agencies to develop trip reduction programs with the target in mind. For example, WSDOT began investing \$31.9 million in transit and demand management strategies through King County Metro (KCM) before construction on the massive Alaskan Way Viaduct and Seawall Replacement Program began.

A detailed report on construction traffic mitigation, and also on the RideshareOnline program, can be found in WSDOT's 2011 Congestion Report, pages 56-57.

### Commute Options Highlights

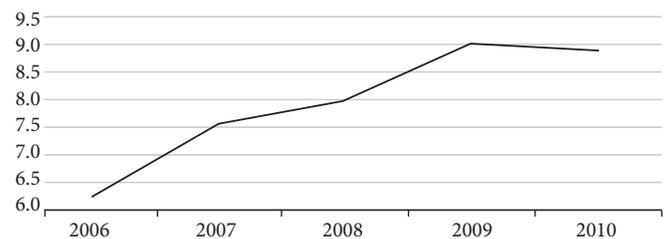
Statewide transit operated vanpool program added 160 vanpools as of June 2011.

Legislature funded 50 new vans to relieve traffic delays and congestion along I-5 within the vicinity of Joint Base Lewis McChord (JBLM)

More information on WSDOT's commute options strategies is available online at [www.wsdot.wa.gov/partners/commute/](http://www.wsdot.wa.gov/partners/commute/).

### Statewide annualized vanpool trips

2006-2010



Data source: WSDOT Public Transportation Division.

# Travel Time Trends Semi-Annual Report

## Travel Trends in the Seattle Area: January-May 2011 vs. 2009-2010

### Travel Time Trends Highlights

The first five months of 2011 have seen modest changes in travel times compared to similar time frames in the previous years.

Evening commutes showed more variance in travel times compared to the morning commutes.

The five-year trend from 2007 to 2011 shows major travel time improvements along with increased throughput on I-5 Federal Way to Seattle and I-405 Tukwila to Bellevue. SR 167 also showed a modest increase in traffic volumes.

The five-year trend for evening commutes fluctuates year-to-year with overall modest improvements in average travel times. Traffic volumes on I-5 Federal Way to Seattle and I-405 Bellevue to Everett show a consistently increasing trend.

This semi-annual analysis provides up-to-date information about central Puget Sound region travel trends due to changes in the economy, as well as ongoing congestion relief strategies and projects under the state's Moving Washington program to fight congestion. Specifically, this report focuses on a sample of 18 key commute routes in the central Puget Sound region, listed on page 23. These results supplement the annual Congestion Report, which takes a more comprehensive look at the state's congestion trends, as well as those of the central Puget Sound region. See pages 16-20 for an executive summary of the 2011 Congestion Report.

The trends described in this article are derived from a comparison of traffic conditions in the first five-months of 2011 to those from the same time periods in 2009 and 2010. This report also looks at a five-year trend for some routes.

### Travel time changes in first five months of 2011 were modest

The trends shown on page 23 summarize the travel time and volume changes that occurred in the central Puget Sound region in the first five months of 2011 (January-May) compared to the same period in 2009 and 2010. Taken as a whole, travel times in both the morning and evening commute periods have changed only modestly compared to both 2009 and 2010.

The morning commute shows very little change from 2010, with the largest change measured to be a one minute change on the Bellevue to Seattle via SR 520. Traffic volumes along the key routes have also stayed mostly flat, with only the SR 520 corridor showing a peak period volume reduced by almost 3% from 2010.

In the afternoon commute, travel times changed slightly, with two routes – Bellevue to Everett via I-405 and I-5, and Bellevue to Seattle via SR 520 – showing improvements of more than two minutes. Only three other routes changed by more than a minute. Peak period traffic volumes on those routes have not changed significantly, but they have dropped more than 3% on the commute back to the Eastside from downtown Seattle across the two floating bridges.

### Five years of travel time and volume data show trends with more substantial changes

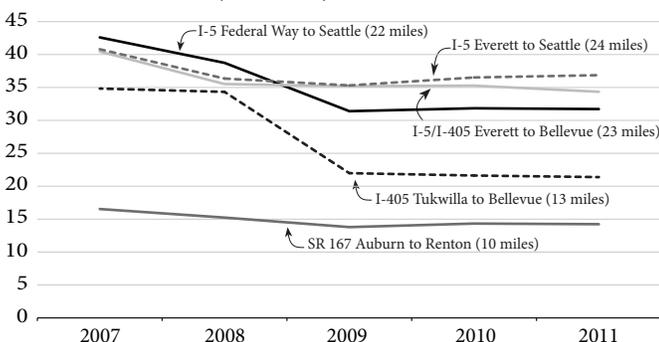
Examining five years of data (January-May, 2007-2011) for the morning peak period gives a more complete picture of recent trends. The longer time frame shows modest improvements in travel times across all routes, with major improvements occurring on I-5 from Federal

Way to Seattle and on I-405 from Tukwila to Bellevue. The I-405 improvements are due largely to the addition of capacity on I-405 approaching the I-90 interchange. To learn more about this improvement, see the 2010 Congestion Report, pages 57-58, which includes the results of a detailed Before and After analysis on this project.

The improvements on I-5 can not be attributed to a specific construction project occurring between 2007 and 2009. In both cases, travel times have remained constant since those improvements took place. For all routes, a minor amount of fluctuation in travel time has occurred from year to year, but the overall trend is toward slightly faster travel. For a detailed analysis on the I-5 travel time improvements please refer to the 2010 Congestion Report, pages 24-26.

### Travel time trends on select Puget Sound morning commute routes

First half of 2007 - 2011; Posted speed 60 mph;  
Travel time in minutes (6am - 9am)



Data source: Washington State Transportation Center (TRAC).

# Travel Time Trends Semi-Annual Report

## January-May, 2009-2011: Travel time changes were modest

### Travel time performance for January-May in 2009-2011 on a sample of 18 high demand commute routes

Morning (AM) peak is between 6 am and 9 am; Evening (PM) peak is between 3 pm and 7 pm; Length of route in miles; all travel times in minutes

Route name (route length in miles)	Direction of travel	Average travel time in minutes during peak period			Δ 2010 vs. 2011	Peak average travel time percent change in minutes			Peak volume change		Daily volume change	
		2009	2010	2011		2010 vs. 2009	2011 vs. 2010	2011 vs. 2009	2010 vs. 2009	2011 vs. 2010	2010 vs. 2009	2011 vs. 2010
<b>Morning commutes</b>												
I-5 Federal Way to Seattle (22)	NB	31.7	31.8	31.7	-0.1	0.5%	-0.4%	0.2%	1.1%	-0.6%	0.1%	-2.8%
I-5 Everett to Seattle (24)	SB	35.4	35.3	34.3	-0.9	-0.2%	-2.7%	-2.9%	2.5%	-1.5%	0.9%	-2.1%
I-5/I-405 Everett to Bellevue (23)	SB	35.2	36.5	36.9	0.3	3.7%	1.0%	4.7%	-0.1%	-0.6%	0.6%	-1.3%
I-405 Tukwila to Bellevue (13)	NB	21.6	21.6	21.4	-0.2	0.1%	-1.1%	-1.0%	5.7%	-1.4%	1.7%	-0.1%
SR 167 Auburn to Renton (10)	NB	13.8	14.3	14.2	-0.1	3.9%	-0.7%	3.2%	3.8%	-1.8%	-0.4%	-1.0%
I-405/I-90/I-5 Bellevue to Seattle (11)	SB/WB/NB	12.3	12.4	12.2	-0.2	0.7%	-1.6%	-0.9%	n/a	0.3%	n/a	0.1%
I-405/SR 520/I-5 Bellevue to Seattle (10)	NB/WB/SB	13.6	14.3	13.3	-1.0	5.5%	-7.2%	-2.1%	0.6%	-2.9%	0.7%	-4.7%
I-5/I-90/I-405 Seattle to Bellevue (11)	SB/EB/NB	12.4	11.9	12.7	0.8	-3.8%	6.8%	2.7%	-2.3%	1.5%	-1.4%	-1.2%
I-5/SR 520/I-405 Seattle to Bellevue (10)	NB/EB/SB	15.2	15.4	14.6	-0.8	0.9%	-5.1%	-4.2%	-0.4%	-3.2%	0.8%	-5.4%
<b>Evening commutes</b>												
I-5 Seattle to Federal Way (22)	SB	28.8	26.8	26.5	-0.4	-6.9%	-1.3%	-8.2%	2.4%	-1.7%	0.4%	-3.7%
I-5 Seattle to Everett (24)	NB	34.6	32.8	31.3	-1.6	-5.2%	-4.8%	-9.8%	0.5%	0.0%	1%	-0.8%
I-405/I-5 Bellevue to Everett (23)	NB	33.3	34.8	32.6	-2.3	4.6%	-6.5%	-2.2%	1.1%	-1.7%	1.4%	-1.5%
I-405/I-5 Bellevue to Tukwila(13)	SB	27.1	24.9	26.0	1.1	-8.2%	4.4%	-4.2%	1.9%	-1.1%	1.0%	-0.1%
SR 167 Renton to Auburn (10)	SB	12.6	13.4	12.9	-0.4	6.0%	-3.2%	2.6%	0.2%	-0.4%	2.9%	1.0%
I-405/I-90/I-5 Bellevue to Seattle (11)	SB/WB/NB	15.5	17.1	17.4	0.4	10.3%	2.1%	12.6%	n/a	0.2%	n/a	0.1%
I-405/SR 520/I-5 Bellevue to Seattle (10)	NB/WB/SB	21.4	23.2	20.4	-2.8	8.1%	-11.9%	-4.7%	0.6%	-0.6%	0.7%	-4.7%
I-5/I-90/I-405 Seattle to Bellevue (11)	SB/EB/NB	14.0	12.4	14.0	1.6	-11.1%	12.7%	0.1%	-1.1%	-3.2%	-1.4%	-1.2%
I-5/SR 520/I-405 Seattle to Bellevue (10)	NB/EB/SB	15.7	16.3	15.2	-1.1	4.1%	-6.9%	-3.0%	1.7%	-3.3%	0.8%	-5.4%

Data source: WSDOT Northwest Region and the Washington State Transportation Center (TRAC) at the University of Washington.

Note: Travel time and volume data for weekdays only. General purpose lane volumes only, HOV/HOT lane volumes not included. Daily volumes are duplicates in both the AM and PM routes. n/a indicates data not available for westbound I-90 due to construction. Travel time table values are based on five month comparison (January thru May for 2009, 2010, 2011). A negative value in percent change indicates improvements in travel times.

# Travel Time Trends Semi-Annual Report

## Factors Affecting Travel Trends: 2007-2011

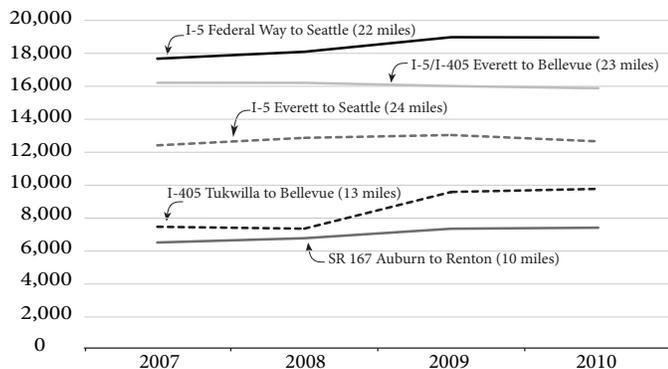
Morning commute traffic volumes have been less consistent than the travel times. The peak period traffic volumes on I-5 and I-405 (the two corridors that had significant travel time improvements) have increased markedly as improved traffic flow has allowed greater throughput in the peak periods. On the remaining corridors, the trends are more mixed. SR 167 (Auburn to Renton) shows a modest increase in traffic while volumes on the other corridors have either remained stable or declined slightly.

Afternoon commute travel time trends see a year-to-year fluctuation from positive to negative. The overall trend of the north/south routes is toward modest improvement in the average travel time. In contrast, the cross-lake routes show no continuing trend: instead, travel times on these routes have fluctuated from year-to-year, due at least in part to the effects of construction activity on I-90. Afternoon volume trends are quite flat, with only the southbound I-5 trip from Seattle to Federal Way and the

### Traffic volume trends on select Puget Sound morning commute routes

2007 - 2010; Posted speed 60 mph;

Annual average weekday traffic volume between 6am - 9am



Data source: Washington State Transportation Center (TRAC).

northbound I-405 trip from Bellevue to Everett showing consistently increasing trends. The other four routes show essentially constant weekday peak period volumes.

### Effect of economic factors on travel time trends

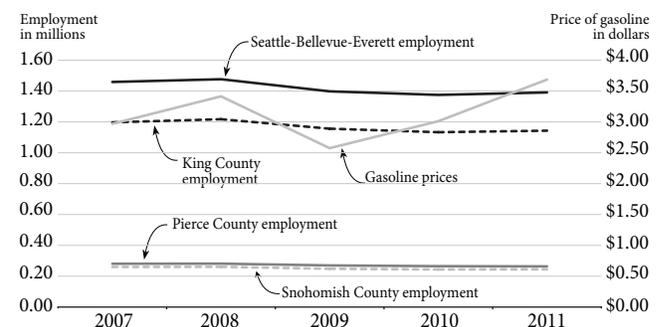
These trends (or lack of a change) are quite interesting, given the significant changes in gasoline prices and economic conditions that have occurred in the region. The graph below shows average annual employment by county and the average annual gas price for the 2007–2011 period.

The general decline in employment is likely to be the cause of

the modest traffic volume decreases seen in the morning on several corridors. However, it appears that on several corridors, decreased peak period congestion has facilitated pent-up travel demand that is larger than the travel reduction caused by the tight economy. That is, when additional capacity has been provided on a very congested freeway, as on I-405 northbound

### Five year trend for annual Puget Sound regional employment and gasoline prices

2007 - 2011



Data source: Washington State Employment Security Department; US Department of Energy-Energy Information Administration (EIA)

approaching I-90, travel that had previously taken place outside of the peak period has shifted into the peak to take advantage of that capacity. (Travelers who previously used I-405 at 5:30 AM are now using it at 6:00 AM, and those using it at 6:00 AM now use it at 6:15 because decreased traffic congestion allows them to leave for work later in the morning.) Those volume changes are larger than the traffic volume reduction caused by lower employment in the region.

In the afternoon, neither the changing employment market nor gas prices appear to have caused significant changes in peak period traffic volumes.

# Incident Response Quarterly Update

The WSDOT Incident Response (IR) Program's mission is to safely and quickly clear traffic incidents to minimize congestion, restore traffic flow, and reduce the risk of secondary collisions. The IR teams are trained and equipped to provide emergency response and assistance to motorists and Washington State Patrol (WSP) troopers at collisions and other traffic emergencies. In addition to providing emergency response to blocking and life safety incidents, IR teams report abandoned vehicles and offer a variety of motorist assistance services including changing flat tires, and providing a jump start or gallon of gas. These services keep roadways clear, traffic moving, and reduce the risk of collisions caused by distracted driving. The IR program has scheduled roving units that operate during peak traffic and commute periods and are also available 24/7 for call out.

## IR teams responded to 4.4% fewer incidents in Q2 2011 than in Q2 2010

WSDOT's IR teams responded to 11,204 incidents between April 1, 2011 and June 30, 2011, 4.2% more than the previous quarter's 10,755 incidents, but 3.8% fewer than the 11,644 incidents in the second quarter of 2010. The statewide average clearance time for all incidents in the quarter ending June 30, 2011 was 12.2 minutes, 1.6% less than the prior quarter's 12.4 minutes, but 1.7% longer than the 12 minute average clearance time in the second quarter of 2010. The graph below shows the responses and quarterly average clearance time for incidents since April 2008.

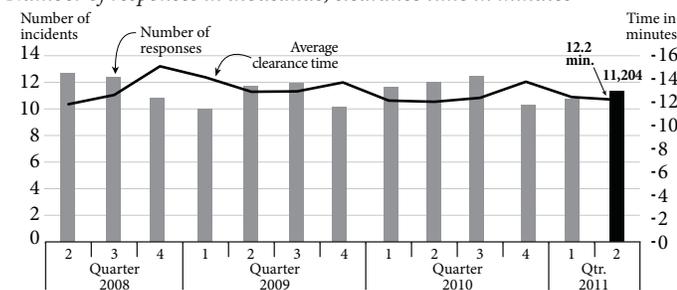
## Fatality clearance times reduced by 22% compared to last quarter

IR teams responded to 22 incidents in the second quarter of 2011 for which fatality was one of the several contributing factors. The incidents had an average clearance time of 171 minutes, 22% less than last quarter's average clearance time of 219 minutes and 9% less than the average clearance time of 188 minutes in the same quarter of 2010. Clearance times depend on the nature of the incidents and the kind of emergency responders required at the scene for detailed investigations.

## Statewide IR responses and average overall clearance time

April 1, 2008 to June 30, 2011

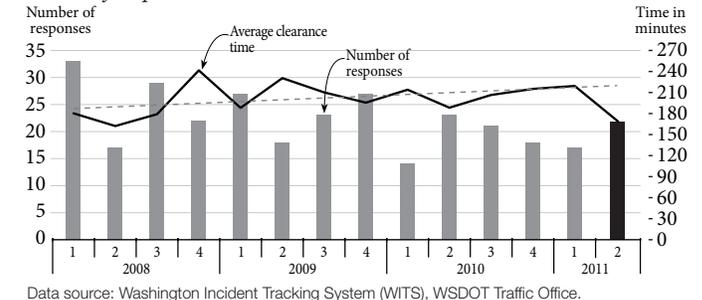
Number of responses in thousands, clearance time in minutes



## Statewide IR responses and average fatality collision clearance time

April 1, 2008 to June 30, 2011

Number of responses, clearance time in minutes



## Incident Response Highlights

The Incident Response program cleared 11,204 responses in the quarter ending June 30, 2011.

The IR program cleared the average incident in 12.2 minutes during the quarter.

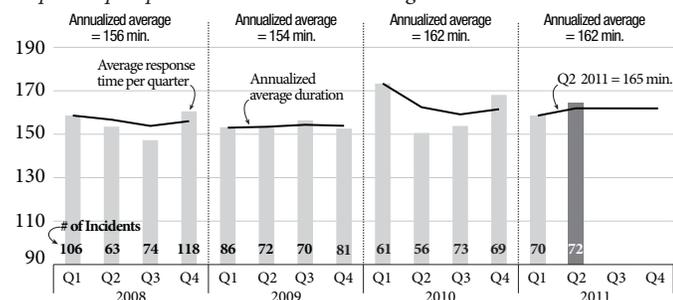
The average quarterly clearance time for all over-90 minute incidents is 165 minutes.

# Incident Response Quarterly Update

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

January 1, 2008 to June 30, 2011

Responses per quarter vs. annualized average duration in minutes



Data source: Washington State Patrol and WSDOT Traffic Office.

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

WSDOT and WSP have a formal agreement 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 charged the agency with lowering the average duration of these over-90-minute incidents on nine key corridors in the state.

The nine GMAP corridors are I-5 from the Oregon border to the British Columbia border, I-90 from Seattle to North Bend, I-405, SR 18 from Federal Way to I-90, SR 16 from Tacoma to Purdy, SR 167, SR 520, SR 512, and I-205.

## Average duration of over-90-minute incidents rose to 165 minutes in the second quarter of 2011

During the second quarter of 2011, 72 over-90-minute incidents occurred on the nine key routes, with an average duration of 165 minutes. This is six minutes longer than last quarter.

Three incidents lasting more than six hours took a total of 1,791 minutes, or an average of nearly 10 hours each. All three incidents involved heavy commercial trucks and two of three involved fuel spills. Without factoring in these incidents, the average clearance time would have been 146 minutes. For more information on the extraordinary events lasting six hours or more, see page 27.

## Enhanced Incident Report (EIR) Pilot Project

In 2010, the Governor challenged WSP and WSDOT to consider what innovations could further speed up clearance of over-90-minute blocking incidents on the nine key highways. The agencies developed a pilot project that asks WSP officers in a portion of King County to record detailed reports, called Enhanced Incident Reports (EIR), about the over-90-minute incidents they attend over the course of one year. The pilot project began in July 2010 and concluded in June 2011.

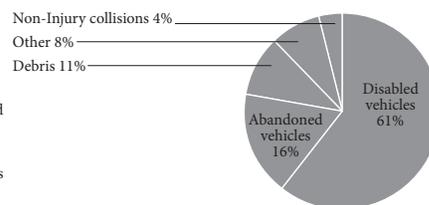
The pilot project resulted in improved communication between responding agencies, including WSDOT, WSP, fire services, Ecology, and other responders. The new data the pilot program generated was consistent with earlier data relating to incident durations and causes.

## Number and percentage of responses by duration

April 1, 2011 to June 30, 2011

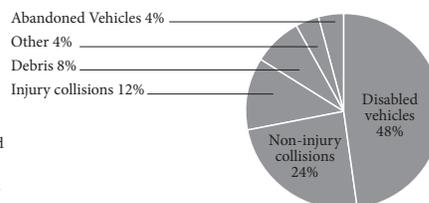
### Incidents lasting less than 15 minutes (8,321)\*

This group also includes 5 Fire and 3 HazMat related incidents; 6 involving WSDOT property damage, and 178 located in work zones. Incidents involving Injuries and Police Activity comprised less than 1% and are not shown.



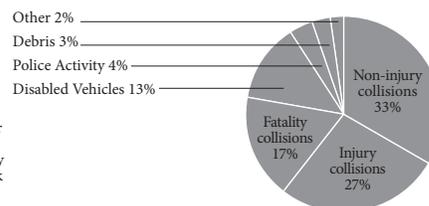
### Incidents lasting 15 to 90 minutes (2,309)\*

This group also included 25 Fire and 3 HazMat related Incidents. Additionally 63 incidents involved WSDOT property damage, and 117 were located in work zones. Incidents involving Police activity comprised less than 1% and are not shown.



### Incidents lasting 90 minutes and longer (108)\*

There were 2 Hazardous Materials and 4 involving Fire in addition to or as a result of above incidents. 21 incidents involved WSDOT property damage, and 2 were located in work zones. There was 1 Abandoned Vehicle Incidents representing 1%.



\*There are a total of 466 reports of incidents that were Unable to Locate (UTL) where there is no clearance time associated and therefore not included in these time breakdown counts.

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

## Extraordinary incidents on nine key western Washington routes

*Incidents lasting six hours or more, April 1 to June 30 2011*

Date & time	Duration & location	Incident description
April 20 6:47 p.m.	469 min. I-5, MP 251 (Whatcom)	A passenger car cut off a semi resulting in a collision that sent the car into the median barrier and the truck rolling over in the median, destroying the trailer and spilling its load of apples into the median. A labor crew removed the apples to reduce the weight of the trailer so it could be righted and towed, a process that required tow trucks. The semi also leaked fluids so WSDOT and WSP worked with Department of Ecology (DOE) to prevent further contamination. A total closure was required during the recovery process.
May 3 4:38 a.m.	685 min. I-5, MP 265 (Whatcom)	Semi driver reported that his brakes 'locked up' which resulted in him losing control and the rig rolling over and losing its load of watermelon. A rental company brought in fork-lifts and a labor force to unload and re-pack the watermelons. A dump truck was then called in to remove the rest of the watermelons and other debris, so the truck and trailer could be righted and removed.
May 13 10:53 a.m.	637 min. SR 167, MP 0.8 (Pierce)	A semi, loaded with 40,000 lbs of paper roll, collided with a Jeep and the guardrail before leaving the roadway. The collision caused a diesel fuel leak that required the fuel be removed from the truck's saddle tanks. DOE was advised and contractor NRC Environmental Services personnel responded to the scene to finish removing the hazardous material. The semi and trailer were then righted and towed.

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



*This semi crash on April 20 left apples strewn across the median and required closures that lasted almost eight hours.*



*After a semi crash on May 3, 2011, a team removed the truck's load of watermelons so it could be righted and towed. The incident took more than 11 hours to clear.*

# Washington State Ferries Quarterly Update

## Ridership and Farebox Revenue

### Washington State Ferries Highlights

Ridership was 5.8 million, 1.6% below the quarterly projection.

Farebox revenue was \$39.4 million, 0.1% below the quarterly projection.

The number of missed trips decreased from 361 in quarter four of FY 2010 to 85 in the same quarter of FY 2011.

99.8% of all scheduled trips were completed, compared to 99.5% during the same period last year.

On-time performance was 96.2% and average sailing delay was 2.2 minutes for the quarter, an improvement over the same quarter in 2010.

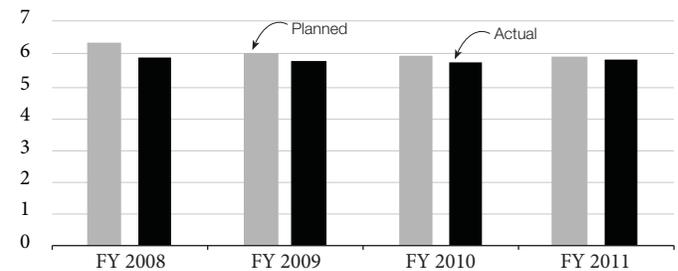
The customer complaint rate increased 38% compared to the same quarter in 2010, from 4.1 to 5.7 per 100,000 customers.

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 nearly 23 million ferry passengers each year.

### Ridership remains below projected levels but increases compared to the same quarter in FY 2010

For the fourth quarter of fiscal year 2011 (April 1—June 30), 5.8 million people traveled on the Ferry system, about 93,000 (1.6%) below the levels projected from June 2010. Compared to the same quarter one year ago, WSF served about 86,500 more riders (1.5%). Quarterly ridership continues to lag projections, as the public continues to choose less discretionary travel, including ferry travel, as a response to the recent spike in fuel prices which began in February, and the ongoing recovery from the economic downturn.

**WSF planned and actual ridership levels by fiscal year**  
Fourth quarter (April 1 - June 30), fiscal years 2008 - 2011  
Ridership in millions



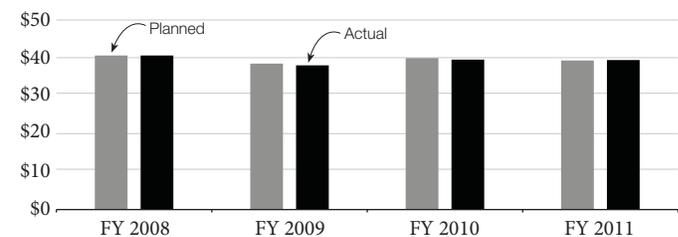
Data source: WSDOT Ferries Division.

### Farebox revenues slightly lower than projected levels for Q4 FY 2011

For the fourth quarter of FY 2011, farebox revenue was \$39.4 million, \$54,000 (0.1%) below the projected levels. Farebox revenues were about \$209,500 (0.5%) lower than the same quarter in 2010.

As noted in the last edition of the *Gray Notebook*, ridership and farebox revenues are now presented on a quarterly basis, comparing the current quarter to the same quarter one year earlier. In this way, it is possible to provide a direct comparison that accounts for seasonality and offers a more accurate look at overall trends in ridership and in revenue.

**WSF planned and actual farebox revenue levels by fiscal year**  
Fourth quarter (April 1 - June 30), fiscal years 2008 - 2011  
Dollars in millions



Data source: WSDOT Ferries Division.

## Service Reliability

### Significant drop in number of missed trips as compared to one year earlier

The number of net missed trips in the fourth quarter of FY 2011 was 276 fewer than the number of missed trips in the third quarter of FY 2011, 85 vs. 361. Last quarter saw 234 missed trips due to planned maintenance on the Mukilteo-Clinton ferry route over two three-day weekends.

In the fourth quarter of FY 2011, 40,196 regular service trips were scheduled. Of those trips, 139 were cancelled and 54 were replaced, resulting in a total of 40,111 trips during the quarter (40,196 scheduled – 139 cancelled + 54 replacement trips = 40,111 net trips). More than half these cancellations occur on one ferry route (Port Townsend–Coupeville). During quarter four, 79 trips were cancelled and 49 replaced for a total of 30 missed trips. This route has unique tidal conditions, and weather disproportionately affects this route (see page 28 of the March 2010 *Gray Notebook* 37).

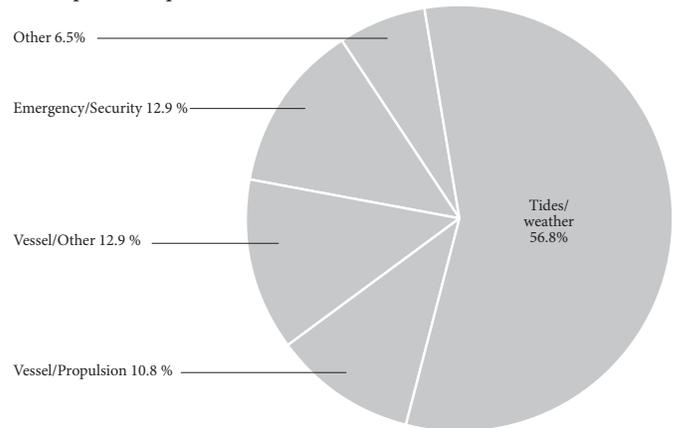
Trips are cancelled for a variety of reasons, including tide and weather conditions, mechanical problems with vessels or terminals, and cancellations arising when a ferry is diverted for emergency transport. Trips are also missed when vessels fall too far behind the published schedule to make all the trips for that day. Compared to the third quarter, there were 19 fewer cancellations due to vessel propulsion issues, 24 fewer due to tides/weather.

### WSF trip reliability no longer includes missed-trip index

As noted in the last edition of the *Gray Notebook*, WSDOT no longer reports a “missed trip index” (MTI). Instead, trip reliability will be reported in terms of the numbers of missed trips and the reliability percentages. For example, reliability of 99.7%

### Reasons for missed trips

Fourth quarter (April 1 - June 30), FY 2011



Data source: WSDOT Ferries Division.

on a route indicates that there have been three missed trips for every thousand planned trips.

### On-time performance continues to improve

A trip is considered delayed when a vessel does not leave the terminal within 10 minutes of the scheduled departure time, an international standard. 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 each of its vessels that records when a vessel leaves the ferry terminal.

The percentage of sailings system-wide that departed on time improved quarter-to-quarter by 1.1%: 96.2% on time in the fourth quarter of FY 2011 compared to 95.1% in the previous

### Washington State Ferries missed-trip reliability comparison

Route	Fourth quarter, fiscal year 2010			Fourth quarter, fiscal year 2011		
	Scheduled trips	Missed trips <sup>1</sup>	Reliability average <sup>2</sup>	Scheduled trips	Missed trips <sup>1</sup>	Reliability average <sup>2</sup>
San Juan (Domestic)	6,877	18	99.7%	6,705	14	99.8%
Anacortes-Sidney, B.C. (International)	182	0	100.0%	206	0	100.0%
Edmonds - Kingston	4,538	19	99.6%	4,242	24	99.4%
Fauntleroy - Vashon - Southworth	10,295	13	99.9%	10,295	13	99.9%
Port Townsend - Coupeville	1,820	121	93.4%	1,820	30	98.4%
Mukilteo - Clinton	6,630	6	99.9%	6,632	0	100.0%
Pt. Defiance - Tahlequah	3,458	8	99.8%	3,458	4	99.9%
Seattle - Bainbridge Island	4,121	16	99.6%	4,121	0	100.0%
Seattle - Bremerton	2,717	1	100.0%	2,717	0	100.0%
<b>Total</b>	<b>40,638</b>	<b>202</b>	<b>99.5%</b>	<b>40,196</b>	<b>85</b>	<b>99.8%</b>

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	Fourth quarter, fiscal year 2010			Fourth quarter, fiscal year 2011		
	Actual on-time trips <sup>1</sup>	On-time percentage <sup>2</sup>	Average sailing delay <sup>3</sup>	Actual on-time trips <sup>1</sup>	On-time percentage <sup>2</sup>	Average sailing delay <sup>3</sup>
San Juan Islands (Domestic)	5,574	74.6 %	4.6 minutes	6,075	91.9%	2.9 minutes
Anacortes-Sidney, B.C. (International)	170	83.3%	5.3 minutes	190	92.7%	2.9 minutes
Edmonds-Kingston	3,781	84.2%	4.6 minutes	4,152	98.7%	1.7 minutes
Fauntleroy-Vashon-Southworth	9,039	88.3%	3.0 minutes	10,021	97.8%	2.1 minutes
Port Townsend - Coupeville	1,482	89.1%	3.5 minutes	1,278	77.7%	6.8 minutes
Mukilteo-Clinton	6,137	92.6%	2.3 minutes	6,586	99.4%	1.6 minutes
Pt. Defiance-Tahlequah	3,004	89.9%	3.3 minutes	3,368	97.9%	2.5 minutes
Seattle-Bainbridge Island	3,693	90.1%	2.3 minutes	3,954	96.1%	1.7 minutes
Seattle-Bremerton	2,520	92.8%	2.6 minutes	2,661	98.0%	1.8 minutes
<b>Total</b>	<b>35,400</b>	<b>88.2%</b>	<b>3.3 minutes</b>	<b>38,285</b>	<b>96.2%</b>	<b>2.2 minutes</b>

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.

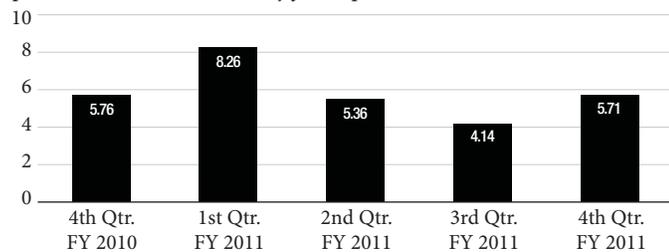
3 The average sailing delay is an average of the duration of time occurring after the "on-time" window ends and the actual recorded departure time of the vessel.

quarter. On-time performance compared to the same quarter in FY 2010 improved by 8.0%. The average sailing delay improved from 3.3 minutes of delay for the fourth quarter of FY 2010 to 2.2 minutes of delay for the fourth quarter of FY 2011. The median sailing delay for the fourth quarter of FY 2011 was one minute, meaning half the trips had less than one minute delay (or no delay), and half had more.

### Customer complaints increase

Customer complaints increased by 38% in the fourth quarter of FY 2011, from 4.1 to 5.7 per 100,000 customers. The predominant causes for complaints were facilities/vessel maintenance and employee behavior (32 more complaints for each area compared

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

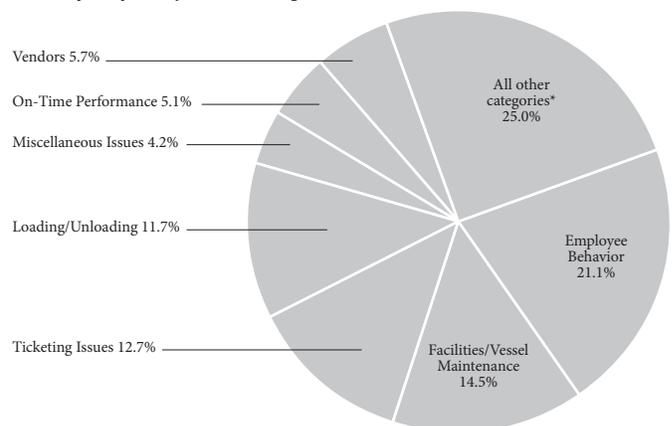


Data source: WSDOT Ferries Division.

to last quarter). The only area with significantly fewer complaints during the quarter was ferry scheduling, a decrease of 14 complaints. For more information about how WSF manages customer feedback, see *Gray Notebook* 40, page 34.

### Common WSF complaint categories

Quarter four fiscal year 2011 (April 1 - June 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 fourth fiscal quarter of FY 2011: Americans with Disabilities Act, Bicycle issues, Customer behavior, Terminal/vessel cleanliness, Police/WSF issues, Damage to customer property, Food service, Information service, Injury to customer, Medical related issues, Oversized vehicles, Parking issues, Safety issues, General service, Signage, Smoking issues, Schedule, Crewing, Advertising, Customs, Noise, Reservations, Downsizing, Website.

# 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 for daily operations; three are owned by Washington and the other two are owned by Amtrak.

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

### Amtrak Cascades ridership by funding partner

April-June (Quarter 2) ridership, 2009-2011

Funding partner	Round trips funded	Quarter 2		
		April – June 2009	April – June 2010	April – June 2011
Washington	4	129,791	149,270	160,398
Oregon	2	26,836	31,141	35,977
Amtrak	1	32,841	34,230	34,819
<b>Total ridership</b>		<b>189,468</b>	<b>214,641</b>	<b>231,194</b>

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 second quarter ridership up 7.5% from last year

Ridership on the state-supported Amtrak *Cascades* service was up 7.5% from the same period in 2010 and up 23.6% for the same time period in 2009. The increase in ridership between 2009 and 2011 can be explained by the addition of a second train to Vancouver, B.C.; the increase between 2010 and 2011 is likely associated with high gasoline prices seen in Q2 of 2011. State-supported Amtrak *Cascades* served 160,398 passengers in the second quarter of 2011.

### Quarterly average on-time performance is 67.8%, down from the same quarter in 2010

On-time performance for state-supported Amtrak *Cascades* trains was 67.8% for the quarter, down 4.6% compared to the same quarter in 2010, and down 9.4% from the second quarter of 2009. The current goal for on-time performance is 80%.

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, and slow-running trains. See the graph on the following page.

### Rail Performance Highlights

Amtrak *Cascades* Q2 2011 ridership is up 7.5% compared to Q2 of 2010.

On-time performance is 67.8% for the quarter, 4.6% lower than the same quarter in 2010.

Ticket revenues are up 11.4% compared to Q2 of 2010.

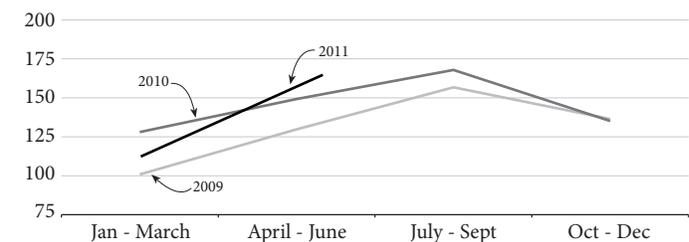
Customer satisfaction scores for Amtrak *Cascades* were at 90% for FY 2011.

For more information on Recovery Act-funded High Speed Rail see page 41.

### 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.

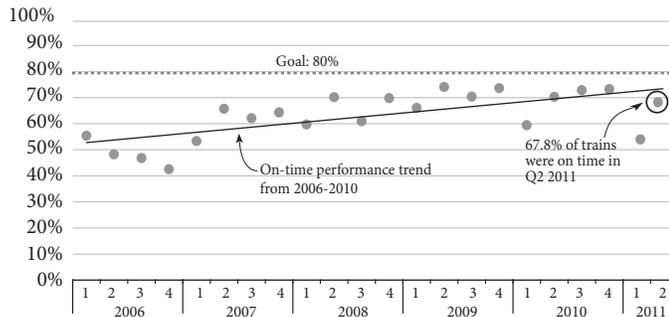
# Rail: Amtrak Cascades

## Quarterly Update

### Passenger Rail: Amtrak Cascades

#### Amtrak Cascades on-time performance

Percent of trains on-time, 2006 – 2011



Data source: WSDOT State Rail and Marine Office.

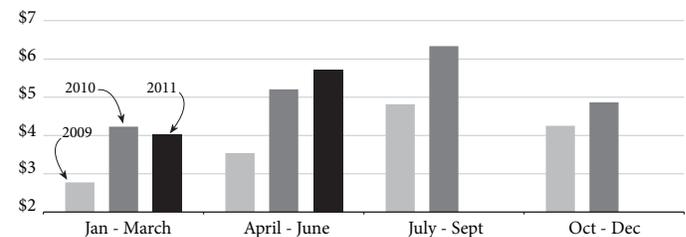
Note: On-time performance for Washington-funded trains only. A basic indicator of on-time performance, “percent of trains on time” is calculated by dividing the number of trains that arrive at their endpoint on time by the total number of trains operated during a specific period. Amtrak’s daily “percent 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.

#### State-supported Amtrak Cascades ticket revenue up 11.4%

During the second quarter of 2011, ticket revenue for Amtrak Cascades trains were up 11.4%, when compared to the same period in 2010. Increased revenue was driven mainly by effective ticket pricing strategies, the second train to Vancouver, B.C., and additional ridership along the corridor.

#### 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.

#### Amtrak Cascades customer satisfaction scores at 90%

Amtrak regularly surveys its passengers to gauge customer satisfaction on all trains it operates in the United States. Amtrak Cascades customer satisfaction scores (CSI) were 90% for both FY 2010 and FY 2011. The CSI measures how satisfied customers are with Amtrak Cascades

services onboard the trains. Below is a list of some of the categories that are measured. WSDOT first reported this performance measure 10 years ago in *Gray Notebook 2*.

For more information on the 10th anniversary of the *Gray Notebook* see page 88.

#### Amtrak Cascades: selected average customer satisfaction scores

FY 2011 compared to FY 2010

	Average score FY 2011	Average score FY 2010	% Change from FY 2010 to FY 2011
Value of Amtrak service for price paid	90%	90%	0%
Smooth/comfortable ride	91%	90%	1%
Overall cleanliness of train	89%	88%	1%
Info given on services/safety	86%	83%	3%
Info given on problems/delays	88%	87%	1%
On-time performance	85%	84%	1%
Friend./helpful. of train conductors	90%	88%	2%
Friend./helpful. of café car personnel	92%	88%	4%
<b>Overall CSI</b>	<b>90%</b>	<b>90%</b>	<b>0%</b>

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

Note: CSI scores represent the percentage of very satisfied respondents. There were 959 responses in FY 2011 and 991 responses in FY 2010.



# 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**  
Programmatic Permitting Annual Report 34

**See also**  
Quarterly Report on Capital Projects (Beige Pages) 42

- Earlier articles concerned with environment**
- 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

# Programmatic Permits Annual Report

## Programmatic Permits Help Expedite Agency Processes

### Programmatic Permits Highlights

WSDOT holds four programmatic permits from Department of Ecology, and nine from Washington Department of Fish & Wildlife.

The Department of Ecology reissued one permit in 2011.

WSDOT estimates that for 2010, programmatic permits saved the agency up to 4,300 hours, or 537.5 8-hour work days, in staff time.

WSDOT's programmatic permits are agreements with the state's water resource regulatory agencies: the Washington State Department of Ecology (Ecology) and the Washington State Department of Fish and Wildlife (WDFW). These permits cover routine environmental activities in the construction and maintenance of state transportation facilities. WSDOT develops these programmatic permits with water resource agencies to help simplify and expedite regulatory processes.

Programmatic permits improve efficiency by reducing the number of staff hours otherwise spent processing individual permits; they also provide standards that WSDOT can design its projects to meet. The tables on the following pages display the active programmatic permits issued to WSDOT activities by either the Ecology or WDFW.

In 2010, two Ecology permits were renewed: 'Washing and painting bridges and ferry terminals' and 'Aquatic mosquito control.' In addition, three WDFW programmatic permits were renewed or amended: 'Marine sediment test boring,' 'Marine pile removal and replacement,' and 'Statewide bridge and ferry terminal maintenance.' In 2011, Ecology reissued their 'Aquatic plant and algae management' permit.

### WSDOT saves time using programmatic permits for its activities

In 2010, the WDFW programmatic permits covered 953 separate activities. This saved WSDOT an estimated 3,100 hours that would have otherwise been required to fill out the required permit applications; in most cases this would have been an individual Joint Aquatic Resource Permit Application (JARPA) to receive individual permits for specific in-water activities. The programmatic permits also allow the work to be performed expeditiously, without having to wait up to 45 days to receive a permit from WDFW. In addition, notification prior to starting work ranges from no notification to three days for WDFW programmatic permits. Notification requirements are typically reduced for programmatic permits because the work is routine in nature and has minimal impact on the environment.

The Ecology permits for aquatic herbicide applications and mosquito control are issued to private individuals and companies as well as public agencies like WSDOT. Again, the programmatic permit helps WSDOT utilize its resources better: to seek coverage for each separate

aquatic plant or mosquito control activity could take up to 210 hours. WSDOT's 'Washing and painting bridges and ferry terminals' permit, issued by Ecology, saved an estimated 950 hours of staff time; the permit covers washing or painting the department's ferry terminals and metal bridge structures. (For more information on bridge preservation, see pp. 8-14).

The real savings to WSDOT lies in the ability to perform the work when needed without a long lag time between planning the activity and performing the work. The notification period for the activities covered under the Ecology permit ranges from no notification to 10 days. Obtaining individual permits to perform these activities could take 45 days to six months (or longer) depending on the specific permit. Overall, WSDOT estimates that the programmatic permits issued by Ecology and WDFW saved the department approximately 4,300 hours of staff time in 2010.



*Programmatic permits can expedite geotechnical boring activities for WSDOT projects, such as those shown here on Lake Washington.*

## Inventory of Programmatic Permits Issued by State Agencies

### Programmatic permits issued by the Department of Ecology

Activity covered	Description and guidance	Effective <sup>1</sup>	Expires	Number of activities using permit				
				2006	2007	2008	2009	2010
Washing and painting bridges and ferry terminals	Covers the following washing and painting activities: <ul style="list-style-type: none"> <li>• Bridge washing</li> <li>• Ferry terminal washing</li> <li>• Bridge painting</li> <li>• Ferry terminal painting</li> <li>• Spot cleaning for inspection</li> </ul>	1/12/2010	1/12/2015	31	21	6	11	24
Aquatic mosquito control	Allows the application of pesticide to control mosquito species within WSDOT's right-of-way	6/18/2010	6/18/2015	62	16	103	92	49
Aquatic plant and algae management general permit	Allows the application of herbicide to control non-noxious invasive plant species within WSDOT's right-of-way	3/18/2011	3/18/2016	7	2	1	0	0
Noxious aquatic plant control	Allows the application of herbicides to control noxious invasive plant species within WSDOT's right-of-way	1/16/2008	2/16/2013	7	0	1	4	4

Data source: WSDOT Environmental Services Office.

Data note: 1 Effective dates represent the most recent permit re-issue date, not the original permit issue date.

### Programmatic agreements can expedite project delivery

Like their programmatic permit counterparts, programmatic agreements for environmental compliance activities can save WSDOT time and facilitate project delivery. FHWA, WSDOT, the Washington State Department of Archaeology and Historic Preservation (DAHP), and the Advisory Council for Historic Preservation signed a Statewide Programmatic Agreement (PA) in 2007 that delegates WSDOT to conduct compliance with Section 106 of the National Historic Preservation Act on behalf of FHWA. This agreement replaced an earlier agreement, and streamlined the review process by allowing WSDOT to “exempt” certain actions from further review by DAHP or FHWA.

Exempt activities have been determined by resource agencies to have little or no potential effect on historic resources. The Statewide PA facilitates WSDOT's environmental compliance by allowing WSDOT cultural resources specialists to consult directly with other federal, state, and tribal agencies on behalf of FHWA, thereby greatly reducing the time it would otherwise take if FHWA staff had to act on every action between WSDOT and consulting parties. Overall, this programmatic agreement allows WSDOT to protect the state's cultural resources efficiently by focusing on activities that have the greatest potential to affect cultural resources.

During the FY09-11 biennium, WSDOT reviewed 391 projects for compliance under the terms of the Statewide PA. Of these

391 projects, WSDOT found 125 projects (32%) to be exempt from National Historic Preservation Act requirements.

Since the first agreement between FHWA, WSDOT, and DAHP in 2003, WSDOT has found that 490 of its 1,958 projects qualified for exemption. Further, more than 100 agreements have been negotiated between WSDOT and various consulting parties to avoid, minimize, or mitigate negative effects of WSDOT projects on cultural resources. These include tribal and pioneer archaeological sites, underwater sites, historic buildings and ferry terminals, and historic bridges.



Section 106 protects historic resources like the McMillin Bridge in Pierce County, which is listed on the National Register of Historic Places and has been recorded for the Historic American Engineering Records.

# Programmatic Permits Annual Report

## Inventory of Programmatic Permits Issued by State Agencies

### Programmatic permits issued by the Department of Fish & Wildlife

Activity covered	Description and guidance	Effective <sup>1</sup>	Expires	Number of activities using permit				
				2006	2007	2008	2009	2010
Channelized stream maintenance	Allows sediment removal to pre-existing conditions	6/02/2009	6/01/2014	51	31	25	12	42
Fishway structures in fresh waters statewide	Allows removal of sediments and other debris from fishways as well as minor repairs of the structure	6/02/2009	6/01/2014	5	1	2	9	3
Statewide culvert maintenance in freshwater <sup>2</sup>	Allows structural repair and sediment removal	6/02/2009	6/01/2014	60	54	39	94	120
Debris removal from WSDOT bridge structures	Allows the removal and relocation of non-embedded large woody debris and material from WSDOT bridges	6/02/2009	6/01/2014	68	50	13	17	18
Statewide bridge and ferry terminal maintenance	Covers bridge and ferry terminal maintenance and repair on over-water structures	6/02/2009	1/21/2013	1449	1089	547	816	769
Beaver dam removal	Allows the removal of beaver dams within WSDOT's right-of-way statewide	6/02/2009	5/01/2013	126	56	53	63	133
Freshwater sediment test boring	Covers freshwater sediment test boring activities statewide	6/09/2009	6/09/2013	5	12	3	5	0
Marine sediment test boring	Allows test boring and sediment sampling for WSDOT projects in all state marine waters	2/13/2009	2/13/2014	2	7	3	4	4
Marine pile removal and replacement	Allows the replacement and removal of up to 40 piles per project in marine waters	2/18/2010	2/17/2015	2	2	2	1	5

Data source: WSDOT Environmental Services Office.

Data notes: 1 Effective dates represent the most recent permit re-issue date, not the original permit issuance.

2 Culvert maintenance activities have increased due to WSDOT's culvert inspection program (See p. 103 of *Gray Notebook 27* for more information).



Programmatic permits can save time during the planning stage for bridge washing and painting activities such as the work shown here on the Lewis and Clark Bridge.



# 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**

Special Report: Palouse & Coulee City Rail System 38

**See also**

Federal Recovery Act-funded Projects 40

**Earlier articles concerned with economic vitality**

Trucks, Goods & Freight, GNB 41

CVISN, GNB 41

Economic Vitality Special Report on Projects, GNB 40

Rail Freight Semi-Annual Report, GNB 39

# Economic Vitality Update

## Palouse River & Coulee City Rail System Rehabilitation

### PRCC Rail System Highlights

WSDOT purchased the lines, which serve eastern Washington agriculture and manufacturers, for a total of \$15.5 million to keep them from being abandoned.

Restoration funding totalling \$12.2 million, partially set up as a grant to the PCC Rail Authority, has provided for urgently needed repairs and rehabilitation of track, trestles, and drainage, as well as engineering and cost evaluation studies.

For more information, visit [www.wsdot.wa.gov/projects/rail/pcc\\_acquisition/](http://www.wsdot.wa.gov/projects/rail/pcc_acquisition/)

At 300 miles, the Palouse River and Coulee City (PCC) Rail System is the state's longest short-line freight rail system. WSDOT purchased the lines in 2004 and 2007 to keep them from being abandoned completely after many years of deferred maintenance and neglect. The PCC Rail System serves eastern Washington grain cooperatives, manufacturers, and farmers; wheat, barley, peas, lentils, fertilizer, and lumber are among the products efficiently transported by rail. The PCC comprises three lines run by different operators (see map below).



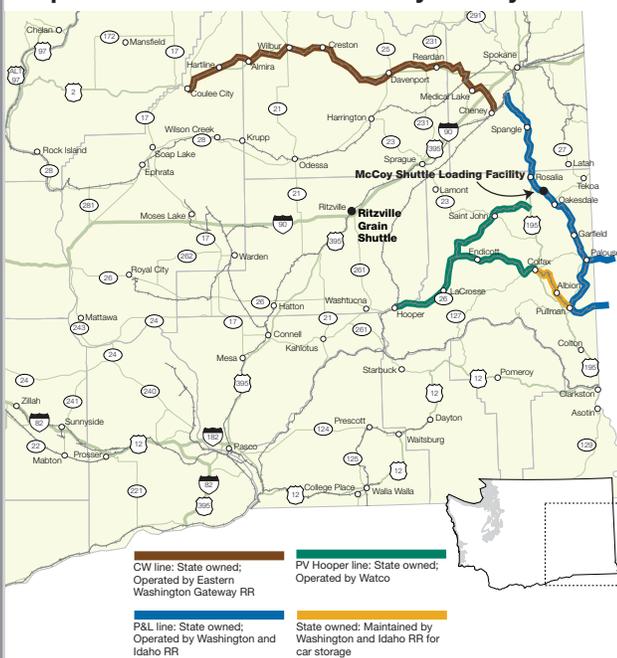
Crews replace ties and rails on an old trestle on the P & L Branch, prolonging the life of the trestle and allowing trains to cross safely.

### Rehabilitation work helps restore services

Although WSDOT owns the line, the PCC Rail Authority (Authority) is responsible for the oversight of the business and economic development aspects and the prioritization of the repair work. The Authority is an intergovernmental agency comprised of Grant, Lincoln, Spokane, and Whitman counties; WSDOT administers the grant funds and manages the daily operational aspects of the system. In the 2007-09 Transportation Budget, Washington's legislature provided \$8.6 million for the most critical work needed to enable continued operations through 2011.

An independent review and analysis was prepared to determine the most urgent and most beneficial projects. The grant funds were used on the highest priority projects: repairs to bridges and bridge approaches, ditching, ties, surfacing, and joint repair.

### Map: Palouse River & Coulee City Rail System



### Revitalized rail routes can spur economic vitality

Since WSDOT purchased the PCC lines, a new business entity consisting of two grain cooperatives and one rail interest is investing \$15-\$17 million to build the 110-car McCoy Shuttle Loading Facility. This loading facility – with its 1.3 million bushels of storage capacity – will increase farmers' ability to transport their grain to market and provide a competitive shipping alternative to trucking. A McCoy Shuttle Loading Facility train holding 410,000 bushels of grain takes 373 trucks off local roads, reducing costly damage to highways. This is a long-term investment by all parties: managers of the proposed facility expect it will take 20 years to recover the investment.

### Challenges remain for WSDOT and the PCC Rail System

The PCC Rail System suffered from years of deferred maintenance before the state purchased it, and a minimum of \$30 million is estimated for basic rehabilitation. Estimates for all necessary repairs, improvements, and maintenance, to operate the PCC efficiently and safely in years to come, total \$175 million. WSDOT's legislative mandate to preserve, administer, and operate this short line system is presently unfunded in the current Transportation budget, but the rail system must be maintained in operable condition for it to succeed. WSDOT is exploring funding options that will help address the maintenance needs and keep the line running.

# 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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## See also

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## Earlier articles concerned with stewardship

Transportation Research Annual Report, GNB 40	
Tolling Annual Report, GNB 39	

# Special Report on Federal Recovery Act-Funded Projects

## Recovery Act Highlights

More than 90% of Recovery Act highway projects, 200 of 219, were completed as of June 30, 2011.

Employees have worked more than 4.4 million hours and earned more than \$177 million in payroll on Recovery Act highway projects.

Additional transit and ferry projects were completed this quarter, including preservation on the M/V Kittitas and the construction of a Grant Transit Authority facility in Moses Lake.

Recovery Act-funded High-Speed Rail projects continue toward construction. More information is available on page 41.

The 2009 American Recovery and Reinvestment Act (Recovery Act) provided Washington more than \$1.5 billion in transportation funds to preserve and expand the transportation system while helping to create and retain jobs during the national recession. Washington and its local governments received \$492 million for highway projects, \$179 million for transit systems, \$781 million for High-Speed Rail, and won \$65 million in competitive grants for TIGER (Transportation Investments Generating Economic Recovery) funds for road projects in Seattle and Spokane; Sound Transit also received \$45 million in early funding for a light-rail project.

### 200 Recovery Act highway projects now complete

In June, WSDOT completed the US 395/Lee Road to I-90 Junction concrete rehabilitation and dowel bar retrofit project in Spokane County. More than 90% of the state and local highway projects funded through the Federal Highway Administration (FHWA) are now complete. Only seven state and 12 local projects are still under way.

### Second advertisement under way for North Spokane Corridor TIGER grant

In June, WSDOT advertised a project to build the Parksmith Interchange on the North Spokane Corridor using funds from the \$35 million TIGER project. The project is scheduled to begin later this year. The southbound lanes of the North Spokane Corridor between Francis and Farwell roads are under construction and scheduled for completion in spring 2012.

### Rural transit agencies receive new buses and complete transit facility project

Three Washington transit agencies recently accepted eight Recovery Act-funded buses. In June, Clallam Transit received four buses and Jefferson Transit received two buses. Pacific Transit received two 30-foot buses in May.

Grant Transit Authority opened its new maintenance and operations base in Moses Lake on June 17. The Recovery Act provided \$3.6 million for the \$5.1 million project, while WSDOT invested an additional \$600,000. The facility includes an administration building which will house operations and administrative staff. Covered parking will be available for 28 fleet vehicles, and a three-bay maintenance shop will provide plenty of room for fleet maintenance.

### Payroll on Recovery Act highway projects now over \$177 million to date

Between April 1 and June 30, 2011, workers on state and local Recovery Act highway projects earned almost \$14.3 million working more than 338,000 hours. To date, the projects have provided more than \$177 million in payroll to workers.

### Recovery Act-funded highway employment

*Calendar year 2011; Dollars in millions*

	January	February	March	April	May	June	Total to date
Total labor hours	87,240	91,224	94,933	124,330	119,016	94,958	4,465,855
Total payroll value	\$3.8	\$3.8	\$4.1	\$5.2	\$4.9	\$4.2	\$177
Monthly full time equivalents	504	527	549	719	688	549	N/A
Individuals working on projects	1,816	1,803	1,847	2,141	2,175	1,756	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 March 2009 to June 2011.

# Special Report on Federal Recovery Act-Funded Projects

## Recovery Act Progress Summary and High-Speed Rail Update

### Recovery Act-funded highway projects as of June 30, 2011

Number of projects by jurisdiction; dollars in millions

Project information	State	Local	Total
Highway projects certified by the Governor <sup>1</sup>	51	168	219
Contracts awarded/under construction	51	168	219
Projects completed	44	156	200
Financial information	State	Local	Total
Recovery Act dollars provided	\$340	\$152	\$492
Total cost of obligated projects <sup>2</sup>	\$736	\$792	\$1,528
Total Recovery Act dollars spent	\$308.7	\$146	\$454.7

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 projects already completed.

<sup>1</sup> 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.

<sup>2</sup> Includes non-Recovery Act leveraged fund sources.

### Seven WSDOT Recovery Act-funded highway projects under way as of June 30, 2011

Completion planned in 2011

**SR 14/I-5 to SE 164th Avenue Interchange – Paving**

**SR 26/Grant County Line to SR 17 – Resurfacing**

**I-82/Valley Mall Blvd Interchange – Rebuild Interchange**

Completion planned in 2012

**I-90/Lake Easton Vicinity to Big Creek Bridge Vicinity EB – Replace/Rehab Concrete**

**I-405/NE 8th St to SR 520 Braided Ramps – Interchange Improvements**

Completion planned in 2013

**SR 433/Lewis and Clark Bridge – Superstructure Painting**

**I-5/SR 16/EB Nalley Valley – HOV**

Forty-four state projects have been completed to date

### High-speed rail program begins more projects

In the quarter ending June 30, 2011, WSDOT began work on several more Recovery Act-funded High-Speed Intercity Passenger Rail projects for the Pacific Northwest Corridor. The

table below shows the list of projects by the date that activities, including engineering, environmental permitting, design, and construction, are expected to begin. More information is at <http://www.wsdot.wa.gov/Funding/stimulus/passengerrail.htm>

### Status of WSDOT's 2009 Recovery Act High Speed Intercity Rail Program projects

Updated as of June 30, 2011

Project	Activities	Start	Finish
Point Defiance Bypass (Tacoma)	PE/NEPA, Final design, Construction	May 2010	Jan 2017
D to M Street Connection Tacoma	Construction	Aug 2010	Nov. 2012
Cascades Corridor Reliability Upgrade – South	PE, Final design, Construction	June 2011	Dec 2014
Corridor Reliability Upgrades – North	PE/NEPA, Final design, Construction	June 2011	Feb 2015
Advanced Wayside Signal System (corridor-wide)	PE, Final design, Construction	June 2011	March 2015
Kelso Martin's Bluff – Kelso to Longview Jct. (Kelso)			
Kelso Martin's Bluff – New Siding (Kalama)			
Kelso Martin's Bluff – Toteff Siding (Kalama)	PE/NEPA, ROW, Final design, Construction	June 2011	Sept. 2017
Vancouver – New Middle Lead	PE/NEPA, Final design, Construction	July 2011	Sept. 2013
Rail Bypass (Vancouver)	Final design, Construction	July 2011	March 2016
Storage Track (Everett)	Final design, Construction	Aug 2011	Sept 2012
Amtrak Cascades New Train Set (Corridor-wide)	RFP, Fabrication and Testing	Sept 2011	April 2016
New Locomotives (8) – Corridor Wide	RFP, Fabrication and Testing	Sept 2011	April 2016
Blaine – Swift Customs Facility Siding	PE/NEPA, Final design, Construction	Nov 2011	Sept 2015
King Street Station track upgrades (Seattle)	ROW, Final design, Construction	July 2012	Aug 2014

Data source: WSDOT State Rail & Marine Office.

Note: Dates represent portions of work funded by Recovery Act high-speed rail funds.

# WSDOT's Capital Project Delivery Programs

## Highway Construction: Nickel and TPA Project Delivery Performance Overview

### Project Delivery Highlights

WSDOT has completed 89 projects in the 2009-2011 biennium, and a total of 303 projects that were shown in previous or current Transportation Budgets.

89% of all Nickel and TPA projects were completed early or on time, no change from last quarter.

94% of all Nickel and TPA completed projects were on or under budget, no change from last quarter.

85% of all Nickel and TPA projects were completed both on time and on budget, no change from last quarter.

For details on WSDOT's Federal Recovery Act-funded projects, please see pages 40-41.

### Dashboard shows progress against 2010 Transportation Budget and includes individual programmatic and bucket projects

The 2010 Supplemental Transportation Budget signed into law by Governor Gregoire on March 30, 2010, directs 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 TPA programs. The 2011-2013 Transportation Budget was approved and signed into law on May 16, 2011; information about the list and number of projects for this biennium will be presented, along with an end-of-biennium wrap up article, in *Gray Notebook 43*.

The Beige Pages' tables show individual "unbundled" projects from programmatic budget items (such as the Bridges Seismic Retrofit Program), as well as subprojects within mega-projects (such as the Alaskan Way Viaduct project). The total combined number of projects in WSDOT's capital project delivery program through June 30, 2011, is 421.

### Capital projects executive summary of project number and value

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	70	\$239,485
Projects completed that <i>are</i> included in the current Budget	233	\$3,864,526
<b>Subtotal of completed projects</b>	<b>303</b>	<b>\$4,104,011</b>
Projects included in the current Budget that are not yet completed	118	\$11,433,170
<b>Total</b>	<b>421</b>	<b>\$15,537,181</b>

Data source: WSDOT Capital Program Development & Management.

### 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 43. The cumulative capital program delivery performance, including 70 projects completed in earlier biennia, currently shows 89% of projects completed early or on time and 94% completed on or under budget, both unchanged from last quarter.

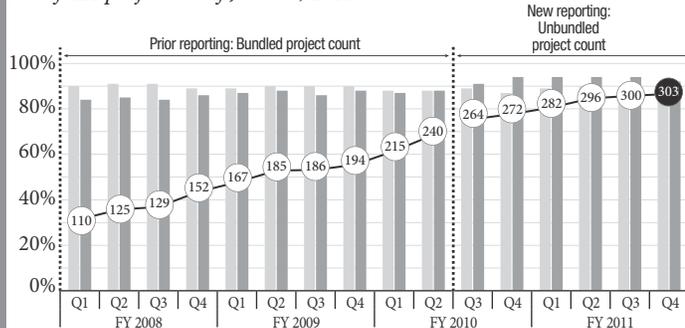
As of June 30, 2011, 85% of all completed projects were both on time and on budget, unchanged from last quarter.

Eighty-nine projects have been completed in the 2009-2011 biennium, including three completed in the quarter ending June 30, 2011. Of the 89 projects completed this biennium, 89% were early or on time and 96% were under or on budget.

Of the three projects completed this quarter, all three were delivered on or under budget. One project was delayed by unsuitable soils and winter weather, a second by additional time required for analysis and design; the third was not a WSDOT led project. More information on completed projects is on page 45 and pages 55-57.

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

303 of 421 projects as of June 30, 2011



Data source: WSDOT Capital Program Development & Management.

# WSDOT's Capital Project Delivery Programs

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

### Highway construction performance dashboard

*As of June 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	70	\$239,485
Projects completed that <i>are</i> included in the current Transportation Budget	233	\$3,864,526
<i>Subtotal of completed projects</i>	<i>303</i>	<i>\$4,104,011</i>
Projects included in the current Transportation Budget but not yet completed	118	\$11,433,170
<b>Total number of projects<sup>1</sup> in Improvement &amp; Preservation budget<sup>2</sup></b>	<b>421</b>	<b>\$15,537,181</b>

**Schedule and Budget Summary:** Results of completed projects in the current Transportation Budget detailed on page 45.

	Combined Nickel & TPA
Number of projects in current Transportation Budget completed to date: 2003 – June 30, 2011	233
Percent completed early or on time	89%
Percent completed under or on budget	94%
Percent completed on time and on budget	85%
Baseline estimated cost at completion	\$3,864,526
Current estimated cost at completion	\$3,810,727
Percent of total program over or under budget	-1% Under
<b>Total number of projects completed in 2009-11 biennium to date</b>	<b>89</b>
Percent completed early or on time	89%
Percent completed under or on budget	96%
Percent completed on time and on budget	85%
Baseline estimated cost at completion this biennium	\$1,641,355
Current estimated cost at completion this biennium	\$1,596,604
Percent of total program under or over budget	-3% Under

**Advertisement Record:** Results of projects entering into the construction phase or under construction detailed on pages 46-49.

	Combined Nickel & TPA
Total cumulative number of projects in construction phase to date, 2003 – June 30, 2011	50
Percent advertised early or on time	74%
<b>Total number of projects advertised for construction in 2009-11 biennium to date</b>	<b>38</b>
Percent advertised early or on time	71%

**Projects To Be Advertised:** Results of projects now being advertised for construction or planned to be advertised, detailed on page 50.

	Combined Nickel & TPA
Total projects being advertised for construction bids July 1, 2011 - December 31, 2011	2
Percent on or better than anticipated advertisement schedule	50%

### Budget status: 2009-2011 biennium

*Dollars in thousands*

	WSDOT biennial budget
<b>Budget amount for 2009-2011 biennium</b>	<b>\$3,234,650</b>
Actual expenditures to date 2009-2011 biennium	\$2,384,667
<i>Total 2003 Transportation Funding Package (Nickel) expenditure</i>	\$519,086
<i>Total 2005 Transportation Partnership Account (TPA) expenditure</i>	\$1,223,768
<i>Total Pre-Existing Funds (PEF) expenditure<sup>3</sup></i>	\$641,813

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 67-71.

# WSDOT's Capital Project Delivery Programs

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

Ten Nickel and seven Transportation Partnership Account (TPA) rail construction projects have been delivered on time and on budget as of June 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 to be advertised before December 31, 2011.

To date, Ferries has completed five Nickel and one TPA construction projects, and two TPA-funded contracts have been awarded for \$181 million. Additional Ferries construction projects are not planned for advertisement in the 2009-2011 biennium. The award of a fourth ferry is pending, depending on future availability of funds.

### Rail construction performance dashboard

As of June 30, 2011; Dollars in thousands

	Nickel (2003)	Transportation Partnership Account (TPA 2005)	Combined Nickel & TPA
<b>Schedule, scope and budget summary: completed projects</b>			
Cumulative to date, 2003 – June 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			
<b>Advertisement record: projects under construction or entering construction phase</b>			
Biennium to date, 2009-11			
Total advertised	3	2	5
% Advertised early or on time	100%	100%	100%
Total award amounts to date	\$18,072	\$7,872	\$25,944
<b>Advertisement schedule: projects now being advertised or planned to advertise</b>			
July 1, 2011 through December 31, 2011			
Total being advertised for construction	0	0	0
% On schedule or earlier	-	-	-

### Ferries construction performance dashboard

As of June 30, 2011 dollars in thousands

	Nickel (2003)	Transportation Partnership Account (TPA 2005)	Combined Nickel & TPA
<b>Schedule, scope and budget summary: completed projects</b>			
Cumulative to date, 2003 – March 31, 2011	5	1	6
% 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	\$80,500	\$98,882
Current estimated cost at completion	\$18,382	\$80,500	\$98,882
% of total program on or under budget			
<b>Advertisement record: projects under construction or entering construction phase</b>			
Cumulative to date, 2003 – June 30, 2011	0	2	2
% Advertised early or on time	N/A	100%	100%
Total award amounts to date	\$0	\$181,397	\$181,397

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 two contracts in the "64 Auto class ferry" vessel program: the first contract covers building the first ship, the second contract covers building the second and third vessels.

Note: The completed projects record includes the first contract of the 64 Auto New Vessel project, which was delivered in September 2010 and started service in November 2010.

# WSDOT's Capital Project Delivery Programs

## Schedule and Budget Summary

### 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
2003-2005 Biennium summary See <i>Gray Notebook</i> for quarter ending September 30, 2005, for project listing	19 Nickel	4 early 15 on time	6 early 13 on time	19	\$118,575	\$118,450	9 under 8 on budget 2 over	17 on time and on budget
May be accessed at <a href="http://www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm">www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm</a> .								
2005-2007 Biennium summary See <i>Gray Notebook</i> for quarter ending June 30, 2007, for project listing	50 Nickel 23 TPA	20 early 48 on time 5 late	49 early 16 on time 8 late	73	\$650,986	\$652,896	27 under 33 on budget 13 over	53 on time and on budget
May be accessed at <a href="http://www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm">www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm</a> .								
2007-2009 Biennium summary See <i>Gray Notebook</i> for quarter ending June 30, 2009, for project listing	42 Nickel 60 TPA	18 early 62 on time 22 late	45 early 43 on time 14 late	102	\$1,764,364	\$1,769,732	52 under 38 on budget 12 over	80 on time and on budget
May be accessed at <a href="http://www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm">www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm</a> .								

The full data on the 2009-2011 Biennium will be reported in the next Gray Notebook, published in November 2011. To view projects completed in the 2009-2011 biennium, please see Gray Notebook 35 for the quarter ending September 30, 2009, Gray Notebook 36 for the quarter ending December 31, 2009, Gray Notebook 37 for the quarter ending March 31, 2010, Gray Notebook 38 for the quarter ending June 30, 2010, Gray Notebook 39 for the quarter ending September 30, 2010, Gray Notebook 40 for the quarter ending December 31, 2010, and Gray Notebook 41 for the quarter ending March 31, 2011.

May be accessed at [www.wsdot.wa.gov/Accountability/GrayNotebook/gnb\\_archives.htm](http://www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm).

### 3 Projects completed as of June 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 285/George Sellar Bridge — Additional eastbound lane (Chelan, Douglas) Advertisement date was delayed one month to address additional bridge analysis, design, and detailing requirements and to purchase railroad easements.	TPA	Late		\$18,835	\$18,423	√	
SR 99/Aurora Ave N Corridor — Add HOV lanes (King) This project represents WSDOT's contribution to a City of Shoreline project.	TPA	√		\$20,026	\$20,026	√	
US 97/Blewett Pass — Add passing lane (Kittitas) This project was delayed due to unsuitable soils and the early onset of winter.	TPA	√		\$2,311	\$1,512	√	

Data source: WSDOT Capital Program and Delivery Management.

# WSDOT's Capital Project Delivery Programs

## Advertisement Record

### 50 projects in construction phase as of June 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
<b>Cumulative to date</b>						
Concrete Rehabilitation Program Although this budget line item is active, no projects are currently planned for construction in the 2009-2011 biennium.	Nickel					
I-405/South Renton Vicinity Stage 2 – Widening	Nickel/ TPA					
<ul style="list-style-type: none"> <li>I-405/Thunder Hills Creek Culvert – Emergency Repairs WSDOT and key parties are working together to develop an acceptable long term solution to this failed culvert.</li> </ul>	TPA	√	Feb-08		Dec-12	
<ul style="list-style-type: none"> <li>I-405/SR 167 to SR 169 – northbound widening (King)</li> </ul>	TPA	√	Oct-08	I-405 Corridor Design Builders	Dec-10	\$83,599
<ul style="list-style-type: none"> <li>I-405/SR 167 to SR 169 – Add new southbound lane (King)</li> </ul>	Nickel	√		<i>Combined with project above for construction efficiencies.</i>		
<ul style="list-style-type: none"> <li>I-405/SR 515 – New Interchange (King)</li> </ul>	TPA	√		<i>Combined with project above for construction efficiencies.</i>		
I-405/NE 8th St to SR 520 Braided ramps – Interchange improvements (King) This project received federal Recovery Act stimulus funds.	TPA	√	Mar-09	Guy F. Atkinson Construction, LLC	Dec-12	\$107,500
I-90/Eastside Bridges – Seismic (King) This is a project within the Bridge Seismic Retrofit Program.	TPA	√	Oct-08	Imco General Construction, Inc.	Sep-11	\$5,999
SR 99/Alaskan Way Viaduct – Replacement (King)						
<ul style="list-style-type: none"> <li>SR 99/S Massachusetts St to Union St – Electrical line relocation</li> </ul>	TPA	√	May-08	Frank Coluccio Construction	Nov-09	\$17,040
<ul style="list-style-type: none"> <li>SR 99/S Holgate St to S King St – Viaduct replacement</li> </ul>	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.						
<ul style="list-style-type: none"> <li>SR 99/Battery St Tunnel – Fire and safety improvement</li> </ul>	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/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.						
SR 520/I-405 vicinity seismic retrofit (King) This is a project within the Bridge Seismic Retrofit Program.	TPA	√	Mar-10	Guy F. Atkinson Construction, LLC	Sep-11	\$4,083
I-90/Snoqualmie Pass East – Hyak to Keechelus Dam – Corridor improvement (Kittitas)						
<ul style="list-style-type: none"> <li>I-90/Snoqualmie Pass East Phase 1A Hyak to Crystal Springs – Detour (Kittitas)</li> </ul>	TPA	Early	Feb-09	KLB Construction, Inc.	Oct-09	\$3,298
<ul style="list-style-type: none"> <li>I-90/Snoqualmie Pass East Phase 1B Hyak to snowshed vicinity – Add lanes and bridges (Kittitas)</li> </ul>	TPA	√	Nov-09	Max J. Kuney Co.	Oct-13	\$76,699

# WSDOT's Capital Project Delivery Programs

## Advertisement Record

### 50 projects in construction phase as of June 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"> <li>I-5/Port of Tacoma Rd to King Co Line — Add HOV lanes (Pierce)</li> </ul> <p>Advertisement date was delayed due to design challenges associated with stormwater and floodplain issues; a formal consultation with US Fish &amp; Wildlife (USFW) and National Oceanic &amp; 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.</p>	Nickel	Late	Jun-09	Tri-State Construction, Inc.	Nov-11	\$31,015
<ul style="list-style-type: none"> <li>I-5/SR 16 Interchange — Rebuild interchange (Pierce)</li> </ul>	TPA	√	Jul-08	Guy F. Atkinson Construction, LLC	Dec-11	\$119,925
I-5/Ardena Road Bridge — Upgrade bridge rail (Pierce)	Nickel	Late	Jun-09		Nov-11	
This project was combined for construction with I-5/Port of Tacoma Rd to King Co Line — HOV. This is a project within the Bridge Rail Retrofit Program.						
I-405/Kirkland Vicinity Stage 2 — Widening (Snohomish, King)	Nickel/ TPA					
<ul style="list-style-type: none"> <li>I-405/SR 520 to SR 522 — Widening Stage 2</li> </ul>	Nickel	Early	Nov-10	Gary Merlino Construction Inc.	Dec-15	10,694
<ul style="list-style-type: none"> <li>I-405/NE 195th St to SR 527 — Northbound widening (Snohomish, King)</li> </ul>	TPA	Early	May-09	Kiewit Pacific Co.	Jun-10	\$19,263
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"> <li>NSC — US 2 to Wandermere vicinity (Spokane)</li> </ul>	Nickel		May-09	Graham Construction & Management, Inc.	Nov-11	\$37,541
<ul style="list-style-type: none"> <li>US395/NSC — US 2 lowering (Spokane)</li> </ul>	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)	Nickel	Late	Jan-04		Oct-12	
The advertisement delay on this project was due to delays in the right-of-way acquisition.						
<ul style="list-style-type: none"> <li>NSC-Farwell Road Lowering</li> </ul>	Nickel		Jan-04	Max J. Kuney Company	Jul-05	\$4,976
<ul style="list-style-type: none"> <li>NSC-Gerlach to Wandermere — Grading — Construction</li> </ul>	Nickel		Nov-04	KLB Construction Inc.	Sep-06	\$9,987
<ul style="list-style-type: none"> <li>NSC-Francis Avenue to US 2 Structures — Rebid</li> </ul>	Nickel		May-06	Max J. Kuney Company	Jul-08	\$17,236
<ul style="list-style-type: none"> <li>US 395/NSC-Freya to Fairview vicinity — Grading and Structures</li> </ul>	Nickel		Jan-07	Steelman-Duff	Apr-09	\$10,571
<ul style="list-style-type: none"> <li>US 395/NSC-Freya St to Farwell Rd — PCCP Paving</li> </ul>	Nickel		Feb-07	Acme Concrete Paving	Aug-09	\$19,490
<ul style="list-style-type: none"> <li>US 395/NSC — BNSF RR Tunnel</li> </ul>	Nickel		Sep-07	Scarsella Bros. Inc.	Aug-09	\$17,295
<ul style="list-style-type: none"> <li>US 395/NSC — Freya to Farwell Rd — Southbound additional lanes</li> </ul>	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)						
<ul style="list-style-type: none"> <li>I-5/Grand Mound to Maytown Stage One — Add lanes</li> </ul>	Nickel	√	Dec-07	Scarsella Bros., Inc.	Jun-10	\$61,495
<ul style="list-style-type: none"> <li>I-5/Grand Mound to Maytown Stage Two — Replace interchange</li> </ul> <p>Advertisement was delayed due to negotiations with the railroad on the placement of a culvert under the tracks.</p>	Nickel	Late	Aug-10	Tri-State Construction, Inc.	Sep-12	\$15,518

# WSDOT's Capital Project Delivery Programs

## Advertisement Record

### 50 projects in construction phase as of June 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
<b>Biennium to date (2009-11)</b>						
US 2/Chiwaukum Creek – Replace Bridge (Chelan)	TPA	√	Mar-11	Award pending	Dec-12	
SR 500/St Johns Blvd – Build interchange (Clark) Advertisement date was delayed due to delays in gaining environmental permitting approval.	TPA		Jan-11	Tapani Underground, Inc.	Nov-13	\$27,237
SR 14/Camas Washougal – Add lanes and build interchange (Clark) Advertisement date was delayed due to prolonged right-of-way negotiations.	TPA		Mar-11	Tapani Underground, Inc.	Nov-12	\$28,619
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) The advertisement date was advanced so that construction on the irrigation canal could occur during the 2009/10 winter while the irrigation water is shut off.	TPA	√	Sep-09	Selland Construction, Inc.	Oct-12	\$735
SR 243/S of Mattawa – Install lighting (Grant)	TPA	√	Dec-10	Valley Electric Co. of Mt Vernon, Inc.	Nov-11	\$96
Lake Washington Congestion Management (King)	TPA	√	May-09	Elcon Corporation	Jul-11	\$ 34,450
SR 520/ Bridge Replacement and HOV (King)	TPA					
• SR 520 Pontoon Construction (King)	TPA	√	Aug-09	Kiewit-General, A Joint Venture	Apr-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. If necessary, new subprojects will be recorded in the advertisement pipeline tables in future editions.						
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
SR 410/214th Ave E to 234th – Add lanes (Pierce)	TPA	Late	Dec-09	J. R. Hayes & Sons	Aug-11	\$6,784
The advertisement and operationally complete dates have been delayed to allow time for continued environmental compliance issues. Right-of-way plans were revised for new pond sites, which required restarting the cultural resources process.						
SR 161/24th St E to Jovita – Add lanes (Pierce)	Nickel		Feb-11	Award pending	Jun-12	
Advertisement date was delayed to coordinate with local agencies.						
SR 530/Sauk River Bank Erosion – Realign roadway (Skagit)	TPA	√	Dec-10	Trimaxx Construction Inc	Jul-12	\$2,481
SR 11/Chuckanut Park and Ride – Build park and ride (Skagit)	TPA	√	Jan-11	Interwest Construction, Inc.	Jul-11	\$3,199
SR 9/Lundeen Parkway to SR 92 – Add lanes and improve intersections (Snohomish)	TPA	√	Mar-10	Granite Construction Co.	Dec-11	\$10,921
SR 522/Snohomish River Bridge to US 2 – Add lanes (Snohomish)	Nickel	√	Apr-10	Scarsella Bros., Inc.	Nov-14	\$15,514
I-5/196th St (SR 524) Interchange – Build ramps (Snohomish)	TPA		Apr-10	Northwest Construction Inc.	Oct-11	\$18,727
The completion date has been delayed one quarter to reflect the contractor's schedule.						

# WSDOT's Capital Project Delivery Programs

## Advertisement Record

### 50 projects in construction phase as of June 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 529/Ebey Slough Bridge — Replace bridge (Snohomish)	TPA		Apr-10	Granite Construction Co.	May-13	\$21,541
US 2/Wagley's Creek Tributary (Sultan Mill Pond) – Fish Passage (Snohomish)	TPA	√	Mar-11	Anderson Environmental Contracting, LLC	Aug-11	\$338
I-5/Mellen Street interchange to Grand Mound interchange — Add lanes (Thurston, Lewis)	TPA					
• I-5/Blakeslee Junction Railroad Crossing to Grand Mound interchange — Add lanes (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/Capitol Blvd Bridge - Upgrade bridge rail (Thurston) Advertisement date was delayed due to additional review of design elements.	Nickel		Oct-10	Cascade Bridge LLC	May-11	\$519
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.	TPA		Oct-10	Award pending	Oct-12	
I-5/36th St vicinity to SR 542 vicinity — Ramp reconstruction (Whatcom)	TPA	√	May-10	Vetch Construction	Oct-11	\$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
SR 548/Terrell Creek – Fish passage (Whatcom)	TPA	√	Feb-11	KLB Construction, Inc.	Oct-11	\$672
I-82/Valley Mall Blvd Interchange — Rebuild interchange (Yakima) This project received federal Recovery Act stimulus funds.	TPA	√	Nov-09	Apollo, Inc.	Oct-11	\$19,080
SR 22/I-82 to Toppenish — Safety improvements (Yakima) 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.	Nickel	√	Oct-09	Steele Trucking, Inc.	Nov-11	\$143
SR 823/Selah vicinity — Reroute highway (Yakima) The project was delayed until fall 2010 due to right of way issues. Its completion date has been delayed one year to 2012.	TPA	√	Dec-09		Jul-12	

### Quarter ending June 30, 2011

US 2/Wenatchee River Bridge – Replace bridge (Chelan) Advertisement was delayed to allow time for processing a shoreline permit.	TPA		Apr-11	Award pending	Dec-12	
I-5/NE 134th St Interchange (I-5/I-205) – Rebuild interchange (Clark)	Nickel	√	May-11	Moore Excavation, Inc.	Dec-14	\$17,791
SR 503/4th Plain/SR 500 Intersection – Add turn lane (Clark)	TPA	√	May-11	Kerr Contractors, Inc.	Jun-12	\$281
US 101/Unnamed Tributary to Lower Salmon Creek – Fish barrier (Grays Harbor)	TPA	√	May-11	Rognlin's, Inc.	Dec-11	\$897
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

Data source: WSDOT Capital Program Development and Management.

# WSDOT's Capital Project Delivery Programs

## Projects To Be Advertised

### 2 Projects in the delivery pipeline for July 1, 2011 through December 31, 2011

*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	Sep-11	√	\$14,069	\$14,037
SR 9/SR 531-172nd Street Northeast – Improve intersection (Snohomish)	TPA	Jan-11	Oct-11		\$14,731	\$15,589

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

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](http://www.wsdot.wa.gov)) through the Project Pages and Quarterly Project Reports.

The dashboards below and on page 52 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 June 30, 2011

Project number and phase	Total program		Highways		Ferries		Rail	
	Number of projects	Percent of program						
<b>Total number of projects</b>	<b>156</b>		<b>127</b>		<b>5</b>		<b>24</b>	
Completed projects	110	71%	97	76%	1	20%	12	50%
Total projects under way	36	23%	30	24%	3	60%	3	13%
<i>In preconstruction phase</i>	17		15		2		0	
<i>In construction phase</i>	19		15		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.

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

Status as of June 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
<b>Total original Legislative planned budget</b>	<b>\$3,887,483</b>		<b>\$3,380,124</b>		<b>\$297,851</b>		<b>\$209,508</b>	
Original plan, 2003 through 2007-09 biennium	\$2,450,750	63%	\$2,102,667	62%	\$219,285	74%	\$128,798	61%
Actual expenditures, 2003 through 2007-09 biennium	\$2,641,045	68%	\$2,469,953	73%	\$80,904	27%	\$90,188	43%
Original plan through 2009-11 biennium	\$3,278,038	84%	\$2,813,701	83%	\$293,919	99%	\$170,418	81%
Current plan through 2009-11 biennium			\$3,003,747	89%				
Actual expenditures, 2003 through June 30, 2011	\$3,249,715	84%	\$2,989,284	88%	\$132,448	44%	\$127,983	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 June 30, 2011

Project number and phase	Total program		Highways		Ferries		Rail	
	Number of projects	Percent of program						
<b>Total number of projects</b>	<b>248</b>		<b>229</b>		<b>4</b>		<b>15</b>	
Completed projects	153	61%	147	64%	0		6	40%
Total projects under way	76	31%	70	31%	1		5	33%
<i>In preconstruction phase</i>	37		35		1		1	
<i>In construction phase</i>	39		35		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>	1		1		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 June 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
<b>Total original Legislative planned budget</b>	\$6,982,128		\$6,678,468		\$185,410		\$118,250	
Original plan, 2005 through 2007-09 biennium	\$2,274,805	33%	\$2,224,451	33%	\$1,940	1%	\$48,414	41%
Actual expenditures, 2005 through 2007-09 biennium	\$1,336,628	19%	\$1,296,476	19%	-	0%	\$40,152	34%
Original plan through 2009-11 biennium	\$4,042,962	58%	\$3,886,331	58%	\$81,701	44%	\$74,930	63%
Current plan through 2009-11 biennium			\$2,583,009	39%				
Actual expenditures, 2005 through June 30, 2011	\$2,650,862	38%	\$2,519,845	38%	\$64,128	35%	\$66,889	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.

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

### Revenue forecast update

The following information incorporates the June 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 June 2011 forecast for gas tax, licenses, permits, and fees revenue for the Transportation 2003 (Nickel) Account is lower than the baseline forecast for the ten-year outlook by 11.5%. 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.

Multimodal Account projections for the vehicle sales tax are lower than the baseline forecast resulting in a decrease of 16.1% in the ten-year outlook. This decrease is primarily due to the decline in vehicle sales.

### 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

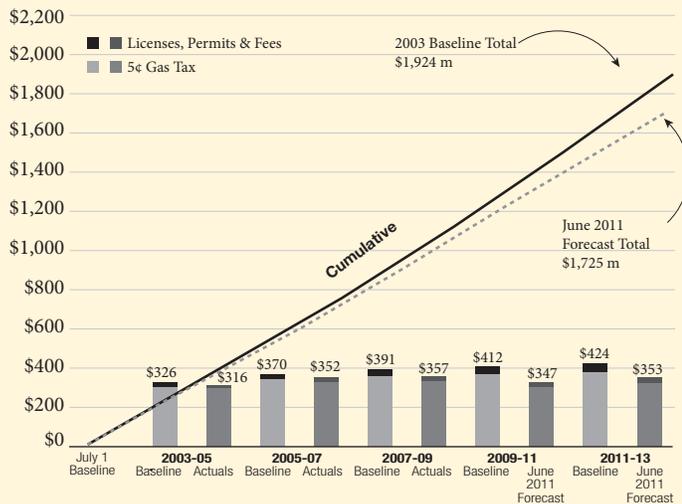
#### Deposited into the Multimodal Account (established in 2000)

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

### Transportation 2003 (Nickel) account revenue forecast

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

Dollars in millions

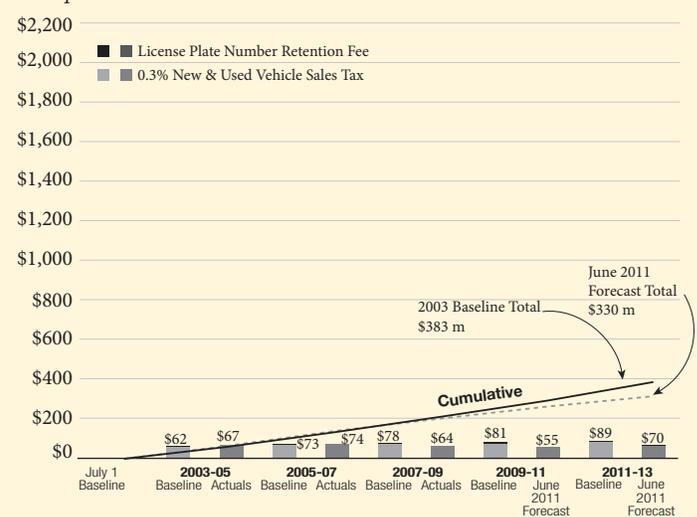


Data source: WSDOT Financial Planning.

Numbers may not add due to rounding.

### Multimodal Account (2003 Package) revenue forecast

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



Data source: WSDOT Financial Planning.

Numbers may not add due to rounding.

# WSDOT's Capital Project Delivery Programs

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

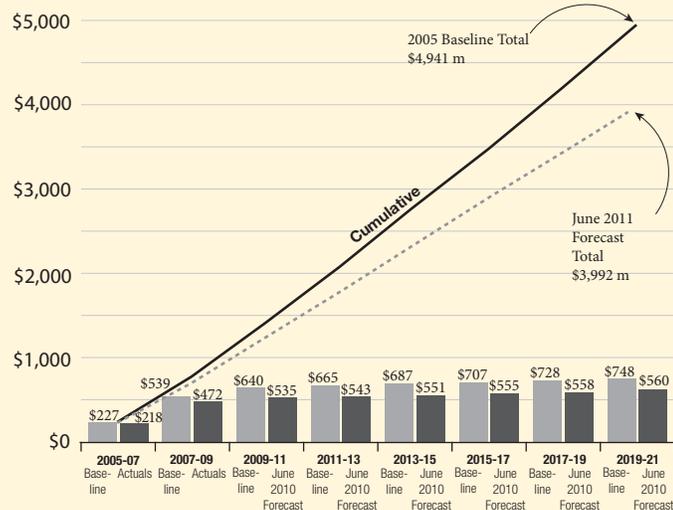
### Revenue forecast update

The accompanying chart compares the current June 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. Due to declining revenues, projects have been extended beyond 2021.

The June 2011 forecast for gas tax revenue over the 16-year period has decreased by 23.8% from the baseline forecast. This reduction is due to continued lower gasoline consumption. Because Washington'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 June 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)
  - Identical cards, 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)

## Completed Projects: Delivering performance and system benefits

Between April 1 and June 30, 2011, WSDOT completed three Nickel and Transportation Performance Account projects that improved a bridge, built a passing lane and contributed to adding high-occupancy vehicle lanes. Each project faced unique challenges to be delivered on time and on budget.

Building upon the principles of Performance Journalism and accountability, WSDOT publishes a brief report on each project completed in a quarter, organized by county. The summaries are intended to provide a better sense of the project delivery process, WSDOT's efforts to use tax dollars as efficiently as possible, and the benefits citizens can expect to see from completed projects.

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

with criteria established by the Legislature; for this quarter, it is the 2010 supplemental 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 is scaled to show the dollar range in greater detail.

In addition, WSDOT completed a major component of the Pierce County HOV program, the I-5/SR 16 Westbound Nalley Valley Viaduct, which opened on June 26, 2011. More information about that project is available on page 61.

More information on completed projects is available online at [www.wsdot.wa.gov/projects](http://www.wsdot.wa.gov/projects).

### SR 285/George Sellar Bridge – Additional eastbound lane (Chelan, Douglas)

This project widened the George Sellar Bridge on SR 285 to accommodate an additional eastbound lane. The project also built a new bicycle and pedestrian structure to replace the sidewalks that were removed to make room for the new fifth lane.

**Project benefits:** Eastbound traffic was congested on both ends of the George Sellar Bridge and this project alleviates a bottleneck that was restricting traffic. The project will increase travel flow on and off the bridge to reduce travel times and associated congestion-related collisions.

**Highlights/challenges:** The project required more extensive modifications to the existing bridge than initially anticipated in order to accommodate the additional lane.

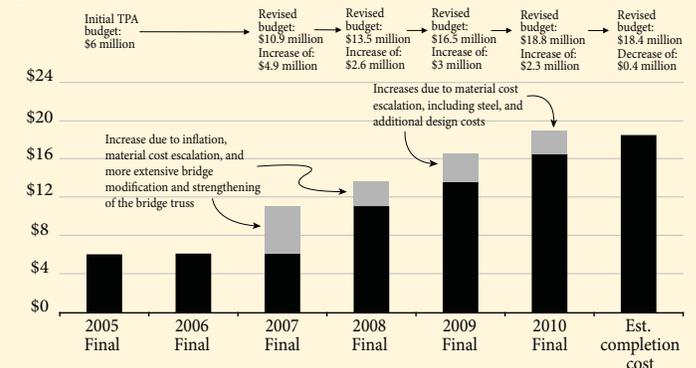
**Budget performance:** The project cost \$18.4 million at completion, about \$410,000 under the last approved budget. Earlier in the project, cost increases were needed due to materials cost escalation and design modifications mentioned above. In 2009, the project was awarded for \$12.9 million, \$2.3 million above the engineer's estimate. The 2009 Legislature approved an increase to the budget to cover the higher expenses for design, steel, and inflation.

**Schedule performance:** The project was completed in June 2011, one quarter behind the last approved schedule, due to unsuitable weather conditions. The project opened to the public before the busy July 4, 2011, weekend.

*This project used a barge in the Columbia River to install heavy reinforcement support beams below the George Sellar Bridge deck in order to build an additional eastbound lane on the existing bridge.*

### SR 285/George Sellar Bridge – Additional EB Lane (Chelan, Douglas)

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



Data Source: Capital Program Development & Management Office.



# WSDOT's Capital Project Delivery Programs

## Completed Projects: Delivering performance and system benefits

### *SR 99/Aurora Ave N Corridor – Add HOV lanes (King)*

This City of Shoreline project is widening SR 99 northbound and southbound on the outside of the roadway from N. 165th Street through N. 205th Street. The project also is relocating the utilities along the road from poles to underground cables.

*Project benefits:* This project will improve travel times for high occupancy vehicles and transit providers on SR 99 in Shoreline. The project will also improve general purpose lane traffic flow on SR 99, a key north-south corridor in the Puget Sound region that carries 40,000 to 45,000 vehicles daily.

*Project highlights or challenges:* This City of Shoreline project received \$7 million in 2005 Transportation Partnership Account funding. The project, which the city has divided into multiple phases, is not yet complete. However, the state's obligation to the project is complete with the final payment in June 2011. Another section, from N. 145th Street to N. 165th was completed earlier.

More information on the project is available at [www.cityofshoreline.com](http://www.cityofshoreline.com).



Photo Credit: City of Shoreline, April 2010.

*In addition to adding new HOV lanes on SR 99, this City of Shoreline project is building new utility vaults to house utilities underground. Though construction is still under way, WSDOT completed its project by contributing \$7 million to the city in June 2011.*

## Completed Projects: Delivering performance and system benefits

### US 97/Blewett Pass – Passing lane (Kittitas)

This project built a passing lane on northbound US 97 in an area where numerous passing-related collisions have occurred.

*Project's benefits:* Due to the mountainous terrain, which restricts the width of the road, there are few locations to pass on US 97. The project gives drivers a dedicated place to pass slower vehicles, nine miles south of the Blewett Pass Summit near Mineral Springs, reducing the risk of passing-related collisions.

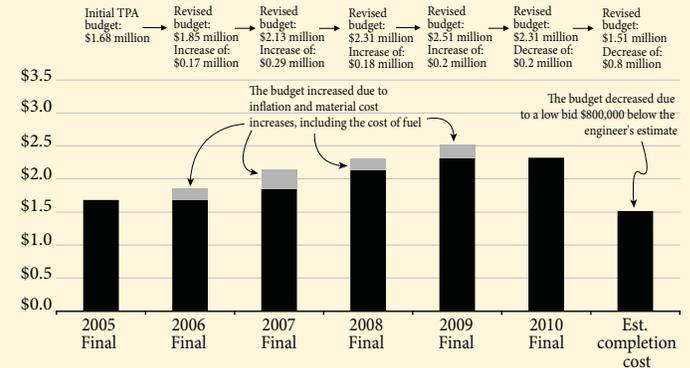
*Highlights/challenges:* The scope was changed earlier in the process to extend the length of the passing lane to give drivers more distance to safely pass. In 2010, the project's advertisement was delayed after spotted owls were sighted in the region, to allow time for the required detailed biological opinion before advancing the project.

*Budget performance:* The project cost \$1.5 million at completion, about \$800,000 below the last approved budget due to a low bid that was \$881,188 below the engineer's estimate. The estimated cost at completion was below the original \$1.68 million cost in 2005 due to the low bid.

*Schedule performance:* The project was completed in June 2011, three quarters behind the last approved schedule of October 2010 because of early and lasting winter weather conditions at the project site. Cold temperatures extended into spring, delaying paving work which requires warm temperatures.

### US 97/Blewett Pass - Passing lane (Kittitas)

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



Data Source: Capital Program Development & Management Office.



This project built a new passing lane on US 97 near Blewett Pass in Kittitas County.

# WSDOT's Capital Project Delivery Programs

## Project Spotlight: Manette Bridge Replacement

### Manette Bridge Replacement Project Program Highlights

WSDOT is replacing the Manette Bridge with a new wider bridge in Bremerton.

The project is expected to cost \$57.8 million at completion.

The current bridge closed July 24 for the final replacement. The new bridge will open to traffic November 2011.

More information on the project is available at its website: [www.wsdot.wa.gov/projects/sr303/manettebridgereplacement/](http://www.wsdot.wa.gov/projects/sr303/manettebridgereplacement/)

WSDOT is building a new bridge in Bremerton to replace the iconic Manette Bridge, which was constructed in 1930. The bridge is now feeling its age and experiencing cracks, rust, and concrete deterioration. The new bridge will meet required structural standards and include wider shoulders in both directions, a 10-foot-wide walking path, and a new roundabout to better accommodate traffic. The new bridge is scheduled to open to traffic November 2011.

### Manette Bridge closed to traffic on July 24

On July 24, WSDOT closed the existing bridge to allow for final completion of the new bridge. The closure enables the construction crews to place concrete on the new bridge, demolish sections of the old bridge, and prepare the highway connections. Pedestrians and bicyclists will still be able to travel over the existing bridge, with the exception of two week-long periods at the beginning and end of the closure, when the bridge will need to be completely closed to traffic.

During the closure period, the roughly 12,000 vehicles a day that use the Manette Bridge will detour 1.4 miles to the larger Warren Avenue Bridge. The Warren Avenue Bridge typically carries about 40,000 vehicles daily.

### Crack in June caused one-day closure

WSDOT temporarily closed the Manette Bridge on June 8, 2011, after crews building the new bridge discovered a crack in the existing bridge's roadway. WSDOT bridge inspectors determined the crack was due to deck settlement and that the bridge could still handle vehicle traffic. The road was opened the following afternoon.

### Construction began in August 2010

The Manette Bridge was initially placed on the WSDOT Bridge Replacement Priority Array List in 1993. WSDOT and the contractor, Manson-Mowat, began construction in August 2010. The bridge replacement was funded with \$60.6 million of gas tax revenue not included in the 2003 or 2005 tax packages.



The original Manette Bridge, left, closed to traffic on July 24, 2011. The new bridge currently under construction in this April photo, right, is scheduled to open to traffic in November 2011. After 80 years, the Manette Bridge was showing its age and in need of replacement.

## Special Report: New Ferry Construction

### Kwa-di Tabil Class (64-car) Ferries

The second quarter of 2011 saw much progress on the remaining two Kwa-di Tabil class (64-car) ferries. Builder Vigor Shipyards (formerly Todd Pacific Shipyards) performed sea trials on the *M/V Salish* in late April, demonstrating the vessel to WSDOT, Washington State Ferries (WSF) experts, and the U.S. Coast Guard (USCG). Following successful trials and the issuance of the Certificate of Inspection from the USCG, WSDOT accepted delivery of the *Salish* from Vigor on May 12.

The *Salish* was then taken to Dakota Creek Industries shipyard in Anacortes to have additional rub rails installed. In early June, the vessel underwent safety and operational enhancements at WSF's Eagle Harbor Maintenance Facility, and crews began onboard training. The *Salish* was moved to Port Townsend on June 12 where crews continued training with practice navigating the Port Townsend/Coupeville route. WSDOT and the communities of Port Townsend and Whidbey Island celebrated the restoration of two-boat service to the route on June 30, and the *Salish* began service July 1.



Workers had a steep climb aboard the *M/V Salish* as they prepared for further installations at Dakota Creek Industries shipyard in Anacortes.

The third and final Kwa-di Tabil class ferry, the *M/V Kennewick*, was rolled out of the construction hall at Vigor Shipyards on April 1. The vessel was christened by Rep. Judy Clibborn on May 27. Work continued at Vigor until June 4, when the *Kennewick* was moved to Everett Shipyard for outfitting. The vessel remains on track for delivery in fall 2011, followed by extensive sea trials and crew training; the vessel should enter service in late 2011 or early 2012.

### A look at the cost breakdown

The total budget for the three Kwa-di Tabil ferries was \$213.2 million through the 2011-2013 biennium.

The total final cost was \$80.5 million for the *Chetzemoka* and \$66.6 million for the *Salish*. Lessons learned building the *Chetzemoka* were incorporated into the contract for the *Salish* and *Kennewick*, which will allow WSDOT to construct the three vessels for the projected amount of \$207.8 million, realizing a savings of about \$5.4 million from the original budget. About \$36.79 million was moved from the 2011-13 biennium budget to the 2009-11 biennium, and additional funds were freed up through program adjustments, in order to address needs prompted by Vigor's faster construction pace, which will result in early delivery of the *Kennewick*.

Two million dollars in savings has been reprogrammed, while the remaining amount is being held in the contingency fund. The fund is used to account for budget changes brought about by changes in USCG regulations, potential problems with owner-furnished equipment, and rising materials costs.

### New Ferry Construction Program Highlights

*M/V Kennewick* rolled out of the construction hall on April 1.

WSDOT accepted delivery of *M/V Salish* on May 12. The vessel entered WSF service on July 1, 2011.

Detailed design for construction of 144-car ferries was completed on June 30.

For more information, visit [www.wsdot.wa.gov/projects/ferries/64carferries/](http://www.wsdot.wa.gov/projects/ferries/64carferries/).



Washington State House Transportation Chairwoman Rep. Judy Clibborn christens the *M/V Kennewick* at Vigor Shipyards, May 27, 2011. Left to right: WSDOT Secretary Paula Hammond, Vigor Industrial President and CEO Frank Foti, WSDOT Deputy Secretary Dave Dye, Rep. Clibborn, Vigor Shipyards President Steve Welch, WSDOT Ferries Division Deputy Chief George Capacci.

# WSDOT's Capital Project Delivery Programs

## Special Report: New Ferry Construction

### 144-car Ferries

With construction of the 64-car ferries wrapping up, WSDOT is moving forward to build new, larger ferries, with a goal of constructing up to three new 144-car ferries. During the 2011 legislative session the House and Senate passed SB 5742, which funded the construction of one 144-car ferry with a budget of \$146.9 million.

The prime contractor for this design-build contract (awarded in December 2007) is Vigor Shipyards, with J. M. Martinac Shipbuilders and Nichols Brothers Boat Builders as subcontractors. Guido Perla and Associates have been contracted by Vigor as design agent subcontractor. WSDOT will be supplying major machinery under a separate contract, including the vessels' 3000 HP main diesel engines, controllable pitch propellers, generators, gearing, and other components of the propulsion and control systems.

The detailed design package for construction of the 144-car ferries was completed on June 30 and delivered to WSDOT and WSF experts for review, which should take about 60 days. WSF has asked Vigor to go back and develop a revised price closer to their original estimate. The 2011-13 budget includes \$123.8 million for the one ferry.

Once WSDOT accepts the design package, the contract stipulates a 45-day period for final negotiations of price and the construction schedule. With an agreed price and schedule, WSDOT can issue the order that will allow construction of the first 144-car ferry to begin. If negotiations progress as planned, Vigor could order items requiring a long lead time in late 2011 and be ready to begin construction in early 2012.



*The Martha S., also known as the Keller Ferry, crosses the Columbia River at its confluence with the Sanpoil River from Ferry County and the Colville Indian Reservation to Lincoln County.*

### Keller Ferry

WSDOT is moving forward to replace the *Martha S.*, also known as the Keller Ferry. This vessel crosses the Columbia River and connects Lincoln County to Ferry County and the Colville Indian Reservation in eastern Washington.

The ferry must be replaced because it is approaching its 60-year design life and its capacity limit of 40 tons is inadequate for current transportation needs at this site. The *Martha S.* is limited to transporting 12 cars, and only one 80,000-pound gross weight truck can be transported at a time; heavier trucks must use a detour route that is about 60 miles one way. Repair and maintenance costs are also increasing as the vessel ages.

In spring 2011, WSDOT completed the design for the new vessel, and will advertise the construction contract in July 2011. The contract will be advertised nationally, as \$9.6 million of the total construction amount provided in the 2011-13 transportation budget for Keller Ferry replacement comes from federal appropriations. WSF and WSDOT Eastern Region are partnering for both design and construction management of the project.

## Special Report: Tacoma Pierce County HOV Program Quarterly Update

### ***I-5/SR 16: Westbound Nalley Valley interchange completed in June***

A major section of the Tacoma Pierce County HOV Program was completed on June 26, 2011 when the Westbound Nalley Valley Interchange opened in Tacoma. The completed project details below have more information on the project's benefits, budget, and schedule. In June, WSDOT also advertised the next section of the project, the Eastbound Nalley Valley Viaduct, for contractor bids and it is expected to be awarded in late summer or early fall.

### **Completed project: *I-5/SR 16 Westbound Nalley Valley Interchange***

This project rebuilt the interchange at I-5 and westbound SR 16, constructed new wider ramps, a new westbound viaduct and associated roads that will accommodate general-purpose traffic and improve traffic flow on I-5 and SR 16. The project built 10 new bridges on 77 piers spanning seven acres over Nalley Valley in Pierce County.

*Project benefits:* The project addresses one of the largest bottlenecks in Pierce County, eliminating an infamous 'weave' that slowed traffic on northbound and southbound I-5 as it entered SR 16. That safety improvement and other improvements have reduced the potential for collisions, improved traffic flow and provided additional capacity on westbound SR 16.

The Westbound Nalley Valley project is the first of three to improve the I-5/SR 16 interchange. On the heels of the westbound project will be the Eastbound Nalley Valley project, which will do similar construction on eastbound SR 16 and complete the ramps connecting SR 16 and Sprague Avenue. That facility will also be for general-purpose traffic. The third component, building HOV facilities and direct-connect HOV ramps between SR 16 and I-5, will take place in 2020 to 2022.

### **Tacoma Pierce County HOV Program Highlights**

The new Westbound Nalley Valley Viaduct opened to traffic on June 26, 2011.

The estimated cost at completion was \$169.5 million, 7.8% below the \$184 million estimated cost at the start of construction.

The Eastbound Nalley Valley Viaduct companion project was advertised for construction in June.



*Opened in 1971, the original Nalley Valley viaduct carried 40,000 cars daily. An engineering marvel at the time, its unique concrete tetrapod supports served the structure well. However, the tetrapod supports did not allow engineers to widen the structure to accommodate additional lanes and ramps.*



*The new Westbound Nalley Valley Viaduct, ramps and supporting roadways opened in June 2011. The new facility expands highway capacity and eliminates the infamous 'weave' associated with the original structure. The project reduces the potential for collisions and increases traffic flow on I-5 and westbound SR 16. The new design accommodates a future eastbound facility and HOV lanes and ramps.*

# WSDOT's Capital Project Delivery Programs

## Special Report: Tacoma Pierce County HOV Program Quarterly Update

*Project challenges and highlights:* Approximately 131,000 motorists pass through the project's construction area each day and require a significant effort to inform drivers about lane restrictions, exit closures, and traffic updates. Total highway closures and detours were required during numerous girder-lifting operations.

*Project benefits and challenges, continued:* During excavation, WSDOT discovered greater quantities of both hazardous and unsuitable soils than was expected, requiring additional excavation, shoring, and backfill.

A design error on the eastbound SR 16 exit to Sprague Avenue, which was not caught until construction of the ramp was approximately 90% complete, resulted in an incorrect profile for the ramp. To correct it, WSDOT removed 700 feet of the ramp, lowered the profile and rebuilt that ramp section.

A contractor-proposed design change led to the construction of WSDOT's first precast concrete segmental bridge. WSDOT had constructed many concrete segmental bridges, but this was the first to employ long-line precasting of the roadway sections at an off-site facility. The change led to a shared cost savings of \$407,000.

*Budget information:* At the start of construction, the initial cost estimate for all phases of work, including project engineering, right-of-way expenses, and construction, was \$184 million. The estimated cost at completion for all phases of work is now \$169.5 million, due primarily to favorable bids by Guy F. Atkinson Construction.



The new Westbound Nalley Valley Viaduct opened to traffic on June 26, 2011, several months ahead of the last approved schedule.

Construction close-out activities will continue through year's end, after which time a precise project cost will be determined. Funds remaining after the project close-out will be allocated to completion of the remaining Tacoma/Pierce County HOV Program projects.

*Schedule information:* The project was completed in June 2011, on time with the last approved schedule. Several elements of the interchange, including the full interchange with Sprague Avenue, will not be completed until the Eastbound Nalley Valley Interchange project is finished in 2013.

## Watch List: Projects with schedule or budget concerns

WSDOT is committed to frequent and accurate “no surprises” reporting of project performance, emphasizing 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 64 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](http://www.wsdot.wa.gov/projects). Projects paid for through Pre-Existing Funds are discussed on pages 67-71

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
US 2/Wenatchee River Bridge – Replace bridge (Chelan)	Highway	Construction: weather, contractor issues, timing problems
SR3/ Belfair Area – Widening and safety improvements (Mason)	Highway	Right-of-Way: land appreciation; Design: design element changes
Updates to Watch List		
I-405/Thunder Hills Creek Culvert – Emergency repair (King)	Highway	Environmental: fish passage barrier
US 395/NSC-US 2 to Wandermere and US 2 Lowering – New alignment (Spokane)	Highway	Construction: site problems; timing problems
Removed from Watch List		
SR 502/I-5 to Battle Ground – Add lanes (Clark)	Highway	Right-of-way: land acquisition
I-5/NE 134th Street Interchange (I-5/I-205) – Rebuild Interchange (Clark)	Highway	Right-of-way: land acquisition
SR 28/East end of the George Sellar Bridge – Construct bypass (Douglas)	Highway	Right-of-Way: land acquisition
SR 518/Bridges – Seismic retrofit (King)	Highway	Construction: cost increase of materials
SR 99/Aurora Ave - George Washington Memorial Bridge – Seismic retrofit (King)	Highway	Design: alternatives
US 97/Blewett Pass – Passing lane (Kittitas)	Highway	Construction: site problems, weather
SR 9/212th St SE to 176th St SE, Stage 3 – Add lanes (Snohomish)	Highway	Environmental: permitting; Utilities: utility relocations

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

### Added to Watch List

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

Related project: U.S. 2/Chiwaukum Creek – Replace bridge 2/212  
 These projects, budgeted for \$12.5 million and known as the ‘U.S. 2 – Tumwater Canyon Bridge Replacements’ project, 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 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 is at risk. The project was initially delayed by a protest lodged by a contractor about another contractor’s apparent lowest bid, which in turn delayed the award of the project and execution of the contract. This dispute has since been resolved, and the project was awarded in late June. Additionally, water levels in the Wenatchee River have been unusually high at 150% of normal, and high water lasted into the construction season, delaying the start of construction until August.

WSDOT’s permit from the Washington Department of Fish & Wildlife (WDFW) restricts the type and amount of in-water

construction work that can be done during the fish spawning season: WSDOT’s construction window for this project is July 1-September 30. Some in-water work may be accomplished in the 2011 construction season if WDFW will extend the period for the in-water work later than the end of September. The operationally complete date has been delayed from December 2012 to September 2013, based on the permit’s construction restrictions.

#### *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, and the need for pedestrian facilities south of SR 106 to Cokelet Lane. Roadway improvements include the continuation of the existing two-way, left turn lane, close to the intersection of SR 3 and Romance Hill Road to the intersection of SR 3 and SR 106. Other improvements include pedestrian and bicycle facilities, storm sewer improvements and mitigation requirements. When complete, this project will relieve congestion and enhance motorist safety.

The project is in the design phase; the cost and scope of the project are at risk. The current budget estimate is insufficient to deliver the entire project. Cost estimates have risen by \$6 million due to increased right-of-way values. Based on funding

## Watch List: Projects with schedule or budget concerns

availability and estimated costs, WSDOT is proposing to construct the improvements in two stages.

Current estimates indicate that project funding is adequate to complete stage one. WSDOT is working with Legislative staff to see if additional funding can be obtained to deliver both stages of the project. Until the funding issue is resolved, WSDOT will continue to focus widening and safety efforts on those sections of the project that require the least amount of additional right-of-way.

### 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 March 2011 *Gray Notebook 41*, the schedule continues to be at risk. Last quarter, at the recommendation of the US Army Corps of Engineers (USACE), WSDOT submitted its entrance channel design for the Panther Creek culvert to an independent technical team to review and evaluate the design. WSDOT has incorporated the technical team's comments into the Panther Creek culvert design, and this design was submitted to the WDFW for their evaluation. WDFW did not concur with the proposed design. The design team is working to schedule a meeting with WDFW and City of Renton to discuss potential adjustments to the culvert design that will create a configuration that WDFW can support at this location.

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.

#### *US 395/NSC-US 2 to Wandermere and US 2 Lowering – New alignment (Spokane)*

This project, budgeted for \$150 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 March 2011 *Gray Notebook*

*41*, work resumed on the project in March 2011, following the winter shutdown, but the revised operationally complete date of November 2011 was potentially still in jeopardy.

Extremely wet spring weather has in fact slowed progress towards completion of work, and the November 2011 date continues to be at risk. Early onset of winter conditions may also prevent the contractor from completing the paving work late in the project. Completion may be delayed to spring 2012. An update will be provided next quarter.

### Removed

#### *SR 502/I-5 to Battle Ground – Add lanes (Clark)*

This project, budgeted for \$88 million, will widen SR 502 to four lanes from I-5 east into the City of Battle Ground to relieve congestion and reduce collisions.

This project is in the design phase; the schedule has been at risk. As reported in the March 2011 *Gray Notebook 41*, WSDOT has not been able to acquire all the right-of-way required for the more than 170 properties in time for the April 2012 advertisement date.

Construction of the project has been split into two separate stages, providing significant savings and other benefits. Stage One will be advertised in spring 2012, and will include the construction of the wetland site and stormwater treatment facilities. The second stage, advertising in early 2013, will include all remaining utility and roadway widening work.

The operationally complete date for the overall project has been delayed by one year to the fall of 2015.

#### *I-5/NE 134th Street Interchange (I-5/I-205) – Rebuild Interchange (Clark)*

This partnership project with Clark County is budgeted for \$98 million, which includes WSDOT's \$84.3 million fixed contribution. It will reconstruct the NE 134th Street Interchange at the junction of I-5 and I-205 to maintain safety on both highways, and to keep traffic moving through the interchange area.

This project is in the construction phase; the schedule was at risk. As reported in the March 2011 *Gray Notebook 41*, the project is being delivered in two stages because not all necessary right-of-way could be acquired before the scheduled advertisement in April 2011.

Stage one is in construction, and will be delivered on the original schedule, allowing the contractor to use most of the 2011 construction season; this work will not delay improvements to the

# WSDOT's Capital Project Delivery Programs

## Watch List: Projects with schedule or budget concerns

interstate. Stage one is expected to be complete and open to traffic in fall of 2013. For stage two, WSDOT will continue right-of-way negotiations with the intent of beginning construction in the fall of 2011. This will delay the operationally complete date for the overall project by one year, to the fall of 2014.

### **SR 28/E End of the George Sellar Bridge – Construct bypass (Douglas)**

This project, budgeted for \$29 million, will construct a bypass route for southbound traffic to improve capacity at the SR 28 and Grant Road intersection, reduce accidents, and benefit freight movement at the east end of the George Sellar Bridge on SR 28. Funding is included for a pedestrian tunnel connection to the Apple Capital Loop Trail along the Columbia River.

The project is in the construction phase; the schedule was at risk. As reported in the March 2011 *Gray Notebook 41*, condemnation procedures were granted by the Court, allowing the project to proceed. The second risk to the schedule, calling for additional drainage work by the City of Wenatchee, did not materialize.

The project was advertised in May 2011 as anticipated.

### **SR 518/Bridges – Seismic retrofit (King)**

(Bridges 518/8; 518/9; 518/10; 518/12; 518/13; and 518/14NW)

This project, budgeted for \$7.8 million, will retrofit six bridges on SR 518 in south King County so they can better withstand an earthquake.

The project is now in the construction phase; the budget was at risk. The estimated \$900,000 cost increase, reported in the September 2010 *Gray Notebook 39*, resulted from a more refined cost estimate which identified higher costs for column jacking, materials, labor, and retrofit work to the crossbeams and superstructures. This increase was included in the Transportation budget passed by the 2011 Legislature, and raised the project's budget to \$8.7 million.

The project was advertised and awarded in spring 2011. Due to favorable bids, the project's total estimated cost at completion has been reduced by \$2.8 million to \$5.9 million. Work began in late May, and is expected to be completed on schedule in spring 2012.

### **SR 99/Aurora Ave - George Washington Memorial Bridge – Seismic retrofit (King)**

This project, budgeted for \$7.7 million, completes the remaining seismic retrofit work on the historically significant George Washington Memorial Bridge. When complete, it will reduce the probability of catastrophic damage from an earthquake.

The project is in the construction phase; the budget was at risk. The updated total project cost of \$16.3 million, as reported in the September 2010 *Gray Notebook 39*, was included in the budget recently passed by the 2011 Legislature. That cost was based on successful scale model testing of the fiber-reinforced polymer (FRP)-wrapped bridge columns and completion of the seismic analysis of the bridge in retrofitted condition.

Due to favorable bids at award, the project's total cost has been reduced by savings to \$10.5 million. Work began in mid-May and WSDOT expects it will be completed by winter 2013.

### **US 97/Blewett Pass – Passing lane (Kittitas)**

This project, budgeted for \$2.3 million, provides for a new northbound passing lane nine miles south of the summit of Blewett Pass. This project allows drivers to pass slower vehicles without using the oncoming traffic lane, reducing the chance of head-on collisions.

The project is in the construction phase; the schedule was at risk. As reported in the March 2011 *Gray Notebook 41*, unsuitable soils were replaced and early winter weather delayed paving. The return of warmer weather allowed paving to resume in June.

It was operationally complete in June 2011 as anticipated.

### **SR 9/212th St SE to 176th St SE, Stage 3 – Add lanes (Snohomish)**

This project, budgeted for \$87.3 million, will widen SR 9 between 212th St SE and 176th St SE from two to four lanes, construct a raised median, and upgrade traffic signals at 180th St SE and 176th St SE. When complete, it will relieve congestion that arose following rapid local development, and improve safety on a high accident corridor.

This project is in the construction stage; the schedule was at risk. As reported in the March 2011 *Gray Notebook 41*, advertisement was delayed from March to April 2011 to wait for the United States Army Corps of Engineers (USACE) individual permit. The permit was issued in April.

Utility relocation work, reported as delayed in the March 2011 *Gray Notebook 41*, is now 85% complete. WSDOT expects the relocations to be completed by mid-August 2011 without affecting the operationally complete date scheduled for summer 2013.

The project, awarded in June, has a reduced cost of \$70.2 million due to favorable bids. Work is expected to begin in early August.

## 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.

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 page 71 for schedule and budget information on these projects).

#### *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 pages 68-70).

### Just under 300 PEF projects advertised in the 2009-2011 biennium

In the current biennium, from July 1, 2009, through the quarter ending June 30, 2011, WSDOT planned to advertise 252 PEF projects, valued at \$843.7 million.

Of the 252 projects planned for advertisement through the end of the biennium, 12 were deferred out of the biennium and three projects were deleted. An additional 59 emergent projects were advertised between 2009 and 2011, bringing the total number of PEF projects advertised for construction to 294. (See the table 'PEF project advertisements schedule performance' on page 68.)

Of the 28 planned PEF advertisements scheduled for this quarter, 15 were advertised as scheduled. Eight projects were deferred to a future biennium, four projects were advanced from a future quarter, and 18 projects delayed from a previous quarter were advertised late; 18 emergent projects were advertised. One project was deleted.

The original value for the projects advertised through the end of the biennium was \$924.9 million; the current estimated cost at completion for all projects under construction is \$795.5 million. (See the table *Value of planned PEF advertisements: 2009-11 biennium.*)

# WSDOT's Capital Project Delivery Programs

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

### Value of planned PEF advertisements: 2009-11 biennium

July 1, 2009 through June 30, 2011; Dollars in millions

	Number	Original value	Current cost to complete
Total PEF advertisements planned 2009-2011	252	\$843.7	-
Planned advertisements through June 30, 2011	252	\$843.7	-
Actual advertisements through June 30, 2011	294	\$924.9	\$795.5 *

Data source: WSDOT Capital Program Development & Management.

\* In cases where WSDOT's estimates contain multiple sources, the PEF reported amount is a calculated percentage based on the contract total value. PEF projects may have Nickel and TPA funding not reported in this section.

### PEF project advertisements schedule performance

July 1, 2009 through June 30, 2011

	Number
Projects advertised as scheduled	174
Projects advertised Early	20
Projects advertised Late	41
Emergent projects advertised	59
<b>Total projects advertised</b>	<b>294</b>
Projects delayed (delayed within the biennium)	6
Projects deferred (delayed out of the biennium)	12
Projects deleted	3

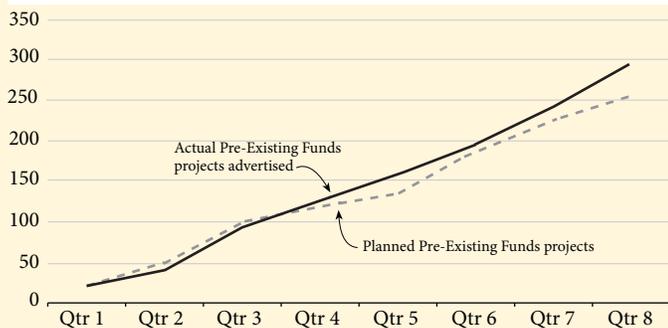
Data source: WSDOT Capital Program Development & Management.

See page XXX for PEF advertisement definitions.

### Pre-Existing Funds projects construction program

Planned vs. actual number of projects advertised 2009-2011 biennium, quarter ending June 30, 2011

Number of projects



Data Source: WSDOT Capital Program Development and Management.

Note: As of Quarter 8 (April 1 - June 30, 2011), Original planned project counts have been updated based on the 2010 Supplemental Budget.

### Paying for the Projects: Financial information

The 2010 Supplemental Budget provides for about \$1,292 (\$1.599) million in PEF expenditures through the eighth quarter of the biennium. As of June 30, 2011, actual expenditures totaled \$1.302 million, a variance of \$297 million, or about 18.6%, from the biennial plan. The variance for the Highway Construction Program was divided between the Improvement and Preservation programs.

The Preservation Program planned cash flow was \$625 million, and actual expenditures were \$555 million. This was \$70 million, or 11.2%, under plan.

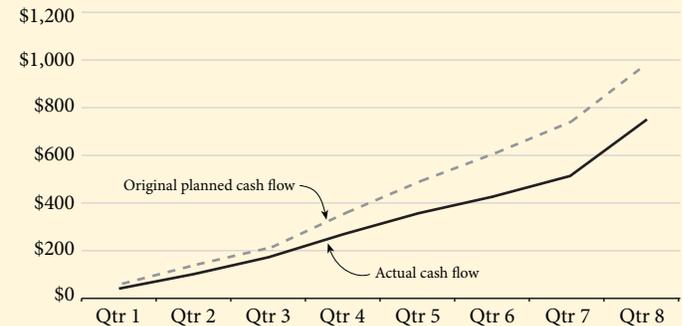
The Improvement Program planned cash flow was \$974 million, and actual expenditures were \$747 million. This was about \$227 million, or 23.3%, under plan.

### Pre-Existing Funds improvement program cash flow

Planned vs. actual expenditures

2009-2011 biennium, quarter ending June 30, 2011

Dollars in millions



Data Source: WSDOT Capital Program Development and Management.

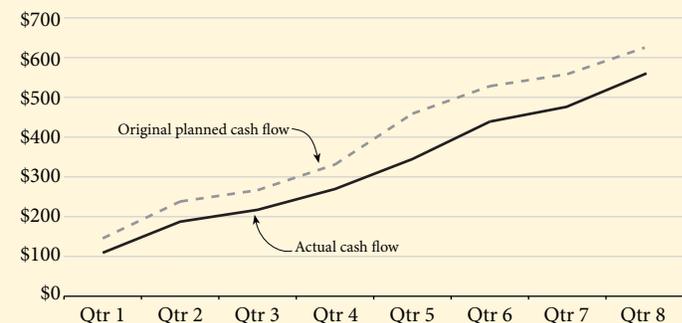
Note: As of Quarter 8 (April 1 - June 30, 2011), Original planned cash flow values have been updated based on the 2010 Supplemental Budget.

### Pre-Existing Funds preservation program cash flow

Planned vs. actual expenditures

2009-2011 biennium, quarter ending June 30, 2011

Dollars in millions



Data Source: WSDOT Capital Program Development and Management.

Note: As of Quarter 8 (April 1 - June 30, 2011), Original planned cash flow values have been updated based on the 2010 Supplemental Budget.

# WSDOT's Capital Project Delivery Programs

## Pre-Existing Funds (PEF) Projects: Advertisement record

Title	Advertised as scheduled
I-5/Canyon Creek Drainage Improvements	√
I-5/Clover Creek Bridge — Bridge deck	Early
I-5/Meridian Rd to Pendleton Ave — Stormwater retrofit Delayed to better align with current workforce resources.	Late
I-5/N Fork Lewis River Bridge to Todd Road vicinity — Paving	√
I-5/N Fork Lewis River Bridge to Todd Road vicinity — Safety	√
I-5/SR 121 to N of Tumwater Blvd — Paving Delayed to add design of developer-added work.	Late
I-5/SR 528 Southbound On-Ramp — Sidewalk Delayed to allow time to address comments from constructability review.	Late
I-5/vicinity Clover Creek Bridge — Concrete pavement rehabilitation Paving work combined with separate bridge work project.	Deleted
Olympic Region Centerline Rumble Strips 2011 — Safety Prioritization of work.	Late
Southwest Region I-5 and I-205 Redirectional land forms	Early
SR 117/Tumwater Truck Route — Major electrical Advertisement date was delayed because ADA modifications to the sidewalk design increased right-of-way needs on the project, which in turn needed extra time for acquisition negotiations.	Late
SR 122/US 12 to Mossyrock — Chip seal	√
SR 14/Clark Co line to Prindle Rd vicinity, with exceptions — Paving	Deferred
SR 14/Marble Rd vicinity to Belle Center Rd — Safety improvements	Deferred
SR 142/Little Klickitat River to US 97 — Paving	√
SR 142/Spring Creek Bridge — Scour repair	√
SR 161/0.24 miles SE of Mashel River Bridge — Slope stabilization Not covered by existing programmatic permit. Advertisement delayed to complete formal consultation for NEPA and ESA approvals.	Late
SR 161/Mashel River Bridge — Bridge scour Not covered by existing programmatic permit. Advertisement delayed to complete formal consultation for NEPA and ESA approvals.	Late
SR 163/N 46th St to N 54th St — Concrete pavement rehabilitation	Deferred
SR 167/vicinity I-5 to Puyallup River Bridge — Paving Advertisement date was delayed to design a pedestrian ramp, complying to ADA standards to the maximum extent feasible.	Late
SR 18/SR 99 Vic to Auburn Black Diamond Rd interchange — Paving	√
SR 20/Barrier Creek — Culvert replacement	√
SR 20/Libbey Rd Vic to Sidney St vicinity — Realignment and widening Advertisement date late due to delays on the Environmental 4(f) process and NEPA approval.	Late
SR 21/Vic. Malo to Kettle River — Paving	Deferred
SR 224/Yakima Overflow Bridge — Scour repair Tied with two other region scour repair projects, which moved the advertisement and operationally complete dates out to allow work in the water.	Late
SR 27/Palouse Highway to 32nd vicinity — Chip seal	√
SR 28/E End of the George Sellar Bridge — Construct bypass Advertisement date delayed due to difficulties in acquiring right of way.	Late
SR 282/Ephrata — Safety	Deferred
SR 3/0.7 Miles S of SR 304 — Slope stabilization	Deferred
SR 3/1.1 Miles S of SR 304 — Slope stabilization	Deferred

# WSDOT's Capital Project Delivery Programs

## Pre-Existing Funds (PEF) Projects: Advertisement record

Title	Advertised as scheduled
SR 500/SE 3rd Ave vicinity to SE 7th Ave — Paving Advertisement date delayed to allow splitting this Federal project from a group project.	Late
SR 525 Spur/Paine Field Boulevard — Pedestrian improvements Advertisement date delayed to allow time to address comments from constructability review.	Late
SR 7/Morton to Nisqually River Bridge — Chip seal with paving	√
SR 823/Yakima River Bridge at Selah — Scour repair Delay was to tie this project with two others. Construction dates all now match.	Late
SR 99/Hylebos Creek to Pacific Highway S — Paving Advertisement date delayed to allow the additional time needed to complete the design.	Late
SR 99/I-5 to Hylebos Creek — Paving Advertisement date delayed to allow the additional time needed to complete the design.	Late
US 101/Old Joe Slough — Fish barrier removal	Deferred
US 101/Port Angeles Signals — Major electrical Advertisement and operationally complete dates were delayed due to the need for right of way and to address ADA issues.	Late
US 101/South Branch Big Creek — Fish barrier removal	Early
US 101/South Branch Big Creek Tributary — Fish barrier removal	Early
US 12/Salkum Vic To Surrey Creek vicinity, with exceptions — Paving	√
US 2/Espanola Rd to Fairchild AFB — Chip seal	√
US 2/Jct SR 21 to Creston — Chip seal	√
US 2/vicinity Spokane Co Line to SR 211 vicinity — Chip seal	√
US 97/Canal Drain Ditch Bridge — Scour repair Tied with two other region scours, which moved the advertisement and operationally complete dates back to allow work in the water.	Late
US 97A/North of Wenatchee — Wildlife Fence Stage 2	√
I-5/Dike Access Rd and BN RR Bridge — Replace expansion joints	Emergent
I-5/Interstate Bridge to 39th Street vicinity — Paving and safety	Emergent
I-90/5 Miles W of Ellensburg — 2011 Emergency flood repair	Emergent
I-90/Price Creek SnoPark to Easton Hill — Pavement repair	Emergent
Olympic Region Low Cost Pavement Repair — Paving	Emergent
SR 16/Wollochet Dr NW to Burnham Dr — Stormwater retrofit	Emergent
SR 24/SR 243 Vernita Intersection Power Supply — Electrical update	Emergent
SR 26, SR 27 & SR 127 Centerline Rumble Strips	Emergent
SR 26/Longmeir Rd to Dusty Rd — Guardrail improvements	Emergent
SR 4/Germany Creek vicinity — Emergency slope stabilization	Emergent
SR 410/Horseshoe Bend vicinity — 2011 Emergency flood repair	Emergent
SR 410/Rock Creek — 2011 Emergency flood repair	Emergent
SR 9/152nd St Sight Distance and Channelization Improvements	Emergent
US 12/Gulch Bridge to Tieton Rd vicinity — Paving	Emergent
US 195/S Fork Palouse River Bridge — ADA modification	Emergent
US 2/Rice Road & Fern Bluff Intersections — Safety improvements	Emergent
US 2/S of Coles Corner — Turn lanes	Emergent
US 395/Court Street Bridge — Replace/Repair girders	Emergent

Data source: WSDOT Capital Program Development & Management.

# WSDOT's Capital Project Delivery Programs

## Pre-Existing Funds (PEF) Reporting: Six tracked projects

### Six individually tracked Pre-Existing Funds (PEF) projects: results through June 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.

### 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

## Utilities

### Utilities Highlights

Of the 15 Nickel and Transportation Partnership Account projects that were advertised between January 1 and June 30, 2011, three were assigned Risk Level 2 and three were assigned Risk Level 3.

There were no Pre-Existing Funds (PEF) projects assigned a utilities risk level above Risk level 1.

For more information about projects with utilities delays or concerns, please consult the Watch List on pp. 63-66.

Some WSDOT projects present challenges in coordinating construction with existing utilities. Utilities such as water, electricity, sewer, storm drains, telephone lines, cable, and internet locations often need to be accommodated, and sometimes even relocated. WSDOT's goal is to use active planning to avoid such conflicts and potential delays before and during construction.

When existing utilities are in the way of highway construction projects, affected utility companies are given reasonable time to design and relocate facilities. In order to deliver construction projects on time, risk levels related to utilities are assigned to individual projects to better prioritize WSDOT's coordination between engineers, contractors, and utility companies.

WSDOT tracks utility risks for all Nickel, TPA, and PEF projects. 15 Nickel and TPA projects with utility impacts were advertised between January 1 and June 30, 2011. Of these 15 projects, nine were assigned the lowest utilities risk, Risk Level 1, compared to two for the previous six months. The remaining projects include three assigned Risk Level 2, and three assigned Risk Level 3. The three risk levels are described in the table below.

### Background information for projects assigned Risk Level 2

#### Utilities risk levels for advertised Nickel and TPA Projects

Level	Description	Jul-Dec 2010	Jan-Jun 2011
1	<b>Low</b> – Utilities have been relocated, and/or are clear of construction.	2	15
2	<b>Moderate</b> – Utility companies are actively pursuing relocation and WSDOT has assurances the utilities will be clear by the date bids are opened.	1	3
3	<b>High</b> – Utilities have not been relocated, and will not be relocated by the bid opening date that has been cited in the contract provisions. WSDOT assurance that the utility company will be able to meet the date stipulated on the contract.	3	3

Data source: WSDOT Utilities Office.

Note: Totals do not include projects funded primarily by Pre-Existing Funds (PEF).

### Projects funded by the 2003 Nickel program

#### *I-5/SR 16 Eastbound Nalley Valley Interchange (Pierce)*

This project is part of the I-5/SR 16 Tacoma/Pierce County HOV program, and is the second of three construction phases to rebuild the Nalley Valley viaduct. This series of projects will reduce congestion, improve safety and add HOV lanes in Pierce County. This project was advertised on June 13, 2011 at Risk Level 2. While many of the utilities have been removed and relocated as part of the first phase (I-5/SR 16 Westbound Nalley Valley project), some remaining utilities still need to be relocated to accommodate the second construction phase. Tacoma Power utility poles and associated wires need to be relocated during construction (this removal was delayed at the request of the WSDOT project office), gas lines operated by Puget Sound Energy (PSE) must be relocated, and utility poles and associated wires supporting on-site project field offices will be removed. All utility conflicts were expected to be resolved within the first two weeks of July, and are not expected to affect construction. Remaining utility work will include protecting a water line that will remain in place during construction. Construction on this project is expected to begin in early fall 2011. For more information, see the special report on page 61.

## Utilities

### ***SR 522/Snohomish River Bridge to US 2 – Widening and safety (Snohomish)***

This project widens more than four miles of SR 522 to four lanes, from just west of the Snohomish River Bridge to 179th Avenue SE in Monroe. It will build four new bridges, add median barrier to separate oncoming traffic, build a roundabout at 164th Street SE, add a noise wall, build a wildlife crossing, and upgrade lighting and signing. This project was advertised on April 4, 2011, at Risk Level 2. At that time, multiple relocations were still pending, and all but one utility relocation was to be complete before project construction began. Most utility work is scheduled to be complete by the end of July 2011, and the remaining utility (Williams gas line) will be bridged during project construction. Special provisions to manage the relocation of the gas line are included in the project specifications.

### **Projects funded by the 2005 Transportation Partnership Account (TPA) program**

#### ***SR 542/Everson Goshen Rd vicinity to SR 9 vicinity- Intersection improvements (Whatcom)***

This project will improve two intersections to reduce collisions and congestion along Mount Baker Highway. This highway is a primary east-west route for communities east of Bellingham, and the only road to the Mt. Baker Ski Area and Artist Point in the North Cascades. This project was advertised on January 31, 2011, at Risk Level 2. Affected utilities within the project footprint include PSE, Black Rock Cable, and Cascade Natural Gas; these utilities were relocated as of July 1, 2011. Right-of-way issues for this project will result in some utility relocations taking place prior to and during construction.

### **Background information for projects with utilities Risk Level 3**

#### **Projects funded by the 2003 Nickel package**

#### ***SR 161/24th St. East to Jovita Boulevard –Add lanes (Pierce)***

This project will ease congestion and improve safety along the SR 161 corridor in Edgewood by adding through lanes, turn lanes, and improved signals at access points. The final facility will be five lanes (two through lanes each direction plus a center

turn lane), with paved shoulders, curbs and sidewalks on both sides. Four-foot-wide planter strips will be provided between the curb and sidewalks. Original bids received on this project were rejected, and the project was advertised again on June 20, 2011, at Risk Level 3. Gas line relocation was delayed three weeks by the City of Edgewood because a hazardous material investigation occurred during excavation. Gas lines operated by PSE were relocated in June 2011, and service taps associated with those lines were expected to be complete in July 2011. A PSE transmission line was relocated and was also expected to be complete by July 2011.

#### ***SR 9/212th St SE to 176th St SE Stage 3 Widening (Snohomish)***

This project widens more than two miles of SR 9 from a two-lane road to a four-lane divided highway, relieving traffic congestion and improving safety and traffic flow on SR 9. The project was advertised on April 18, 2011, at Risk Level 3. Utility relocations are delayed until right of way can be acquired. Despite these challenges, many utilities will be relocated before project construction. Sprint began relocation work on June 30, and the Cross Valley Water District is completing work on water line relocation. Neither of these activities should result in an impact to the project. PSE gas relocation was scheduled to be complete by the end of July 2011.

#### ***SR 20/Libbey Road to Sidney Street, Realignment and Widening (Island)***

This project will rebuild and realign the Arnold Road intersection resulting in improved sight distances and safety. This project was advertised on April 18, 2011, at Risk Level 3. Cable relocations are complete, and most PSE utility relocations are complete. One utility pole supporting PSE and Frontier utilities needs relocation, and requires right of way acquisition and additional coordination with the Nature Conservancy.

# Cross-Cutting Management Issues

## Right of Way

### Right-of-Way Highlights

96% of projects with a right-of-way phase were ready to certify on time January through June 2011.

54% of projects scheduled for certification received an on-time right-of-way certification.

WSDOT acquired 130 parcels in the first half of 2011, 23% fewer parcels than during the first half of 2010.

Five Judgement and Decrees have been issued January through June 2011

WSDOT's business practices regarding real estate acquisition are strictly guided by state and federal regulations. Before a project is advertised for bidding, WSDOT must certify that all rights necessary to construct, operate, and maintain the project have been acquired. WSDOT's goal is to deliver 100% on-time certification for all projects.

Certification is considered to be on time if it occurs within the scheduled quarter. Twenty-four projects with a right of way phase were scheduled to be certified in the first six months of 2011. Thirteen of the 24 were certified on-time (54%), and ten projects were ready for certification but delayed due to a change in advertisement date. Eleven projects were categorized as having delayed right-of-way certification. Two of the 11 projects were delayed as a result of right-of-way management activities, including complex negotiations with property owners, and insufficient time to acquire property rights. The tables below and on the following page show the number of projects with certification-related issues.

### On time right-of-way certification results

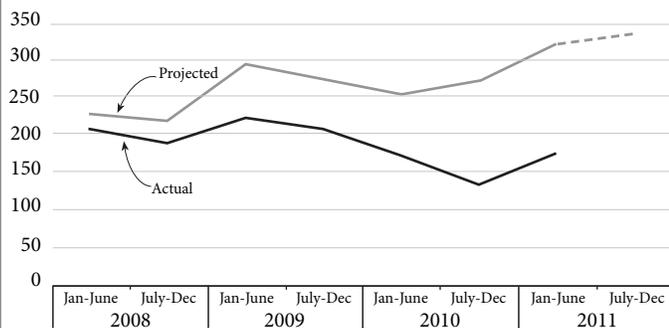
	Jan-June 2009 <sup>1</sup>	July-Dec 2009	Jan-June 2010	July-Dec 2010	Jan-June 2011
Total number of projects with a right-of-way phase	15	16	44	17	24
Number of projects with right-of-way certification delays	0	4	8	6	11
Percent of projects with on-time certification	100%	75%	82%	65%	54%

Data source: WSDOT Real Estate Services.

Note: 1 Methodology for calculating the percentage of projects with on-time certification changed at the end of 2008, see GNB 32 and 34 for more information.

### Acquisitions for all Nickel, TPA, and PEF projects

January 2008 – June 2011 actuals vs. projections



Data source: WSDOT Real Estate Services.

### Fewer acquisitions needed as the number of new projects falls

Since 2009, the number of parcels WSDOT acquires for right-of-way has been falling. As the number of programmed construction projects continues to wind down, the number of acquisitions will also continue to fall. In the first six months of 2011, 130 parcels were acquired compared to 169 parcels in the first six months of 2010, and 219 parcels in the first six months of 2009. The actual parcel acquisitions for the first six months of 2011 were about 41% of projections (130 actual acquisitions vs. 316 projected). WSDOT currently estimates it will need to acquire 330 parcels during the last six months of 2011.

## Right of Way

### Projects with right-of-way certification delay

January-June 2011

Project title	Right-of-Way certification related issue
US 101/Hoh River – Stabilize Slopes	Project on hold for re-design, right-of-way needs undetermined.
SR 161/Clear Lake N Road to Tanwax Creek – Spot Safety Improvements	Project on hold for re-design, right-of-way needs undetermined.
SR 162/Puyallup River Bridge Replacement	Delayed for Section 106 compliance.
US 101/Old Joe Slough – Fish Barrier Removal	Project on hold for re-design, right-of-way needs undetermined.
SR 9/SR 531 to 172nd St NE – Intersection Improvements	Complex and difficult negotiations and design revisions compound delay.
SR 532/Pilchuck Creek Tributary – Fish Barrier Removal	Design not yet completed.
I-5/NE 134th St. Interchange – Rebuild interchange, Phase 2	Project now managed in two phases instead of one, second phase scheduled for certification in late 2011.
US 97/North of Goldendale – Wildlife Habitat Connectivity	Right-of-way impacts not determined, project advertisement date moved to 2012.
SR 105/Smith Creek Bridge Replacement	NEPA process recently complete, acquisitions to follow, project advertisement date moved to 2012.
SR 105/North River Bridge Replacement	Project combined with SR 105/Smith Creek Bridge replacement, project advertisement date moved to 2012.
SR14/Marble Rd Vicinity to Belle Center Road – Safety Improvements	Obtained USFW project concurrence in January 2011, leaving insufficient time to acquire necessary property rights.

Data source: WSDOT Real Estate Services.

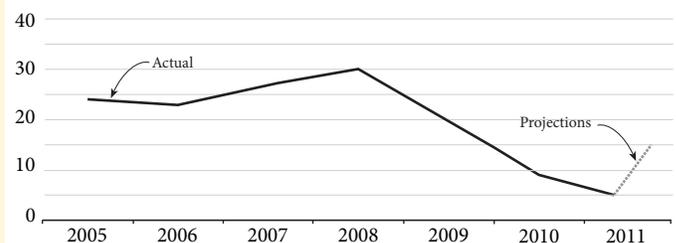
### Right-of-way condemnations projected to increase

Condemnation involves legal action to acquire property by operation of law. Of the 30 open condemnation cases, 15 are new cases that were opened in the first six months of 2011. There have been five Judgment and Decrees issued in the first six months of 2011. There were nine for the entire year of 2010, compared to 20 issued for the entire year of 2009. WSDOT estimates acquiring 15 total properties by condemnation for 2011.

### How are on-time certifications calculated?

As previously reported (p. 101, GNB 32), the methodology for calculating on-time right-of-way certification changed in 2008. Before 2008, delayed certifications were considered to be on-time if the delay was not directly related to real estate management activities. For instance, if a project advertisement date was delayed because of design revisions or inability to secure necessary permits, the right-of-way certification was still recorded as on-time. Today, on-time calculations include all delayed certifications, regardless of the reason for delay.

### Condemnations for all Nickel, TPA, and PEF projects 2005–2011 actuals



Data source: WSDOT Real Estate Services.

Note: 2011 data reflects the first six months of the year.

# Cross-Cutting Management Issues

## Construction Cost Trends

### Construction Cost Trends Highlights

WSDOT's Construction Cost Index (CCI) increased 4.9% in the first half of 2011 compared to an increase of 3.8% in 2010.

From 2006 through the first half of 2011, the CCI increased an average of 1.3% per year.

WSDOT has benefited from recent stable and predictable cost inflation.

WSDOT's Construction Cost Index (CCI) is a weighted average of low bidders unit prices for the seven most common work activities that are performed on highway construction projects. WSDOT tracks the lowest contractor bids for these seven work items, which include the cost of all materials, labor, and equipment needed to complete the activity as well as a contractor's overhead and profit. The resulting index records the rate of construction cost inflation experienced overall in WSDOT's project delivery program.

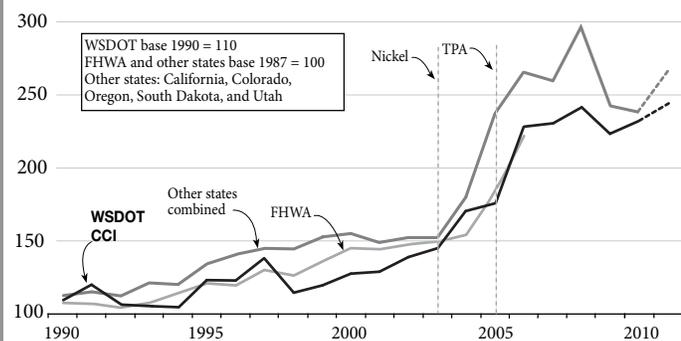
When inflation rates spike and later drop, it is more difficult to determine how much it will cost to deliver planned projects. WSDOT benefits from stable and predictable cost inflation.

### WSDOT's Construction Cost Index increased by 4.9% in the first half of 2011

During the first six months of 2011, WSDOT's CCI recorded a 4.9% increase in construction costs. For comparison, WSDOT's CCI increased 3.8% in 2010. As WSDOT anticipated, a stagnant construction climate has kept inflation for construction materials low and interest in bidding on highway projects high. For more information about construction costs and recent bidding trends, see *Gray Notebook* 40 page 84-85.

From 2006 through the first half of 2011, WSDOT's CCI increased an average of 1.3% a year. This is significantly slower compared to when costs increased more than 50% between 2002 and 2006 alone. These relatively stable conditions are not likely to last. So far – due in part to a stagnant construction market – WSDOT has not been affected by price increases for construction materials passed along in contractors' bids. In the future, bid prices for WSDOT contracts may begin to increase as economic conditions improve and cost inflation associated with construction materials begins to climb.

**Construction Cost Indices (CCI) Washington, FHWA, and selected western states 1990 – 2011**



Notes: WSDOT index is for quarters 1 and 2 calendar year 2011. FHWA index was discontinued in 2007. Other states 2010 data is the average of Colorado and Utah annual data and Oregon quarters 1 and 2. Other states 2011 data is Utah first quarter data. California index included until calculation method changed in 2010. The 2003 and 2004 WSDOT CCI data points adjusted to correct for spiking bid prices on structural steel.

### Components that make up WSDOT's CCI

*By material and corresponding weight as a percentage*

Hot mix asphalt	48.5%
Structural concrete	17.4%
Roadway excavation	10.7%
Crushed surfacing	7.9%
Structural steel	6.9%
Steel reinforcing bar	5.4%
Concrete pavement	3.2%

Data source: WSDOT Construction Office.

# Construction Contracts Annual Report

## Contract Award to Engineers' Estimate

WSDOT engineers prepare cost estimates for construction contracts that the agency plans to advertise for competitive bids. The engineers' estimate is put together using current pricing information for the design WSDOT has developed. Bids will differ from WSDOT's estimate when WSDOT's assumptions differ from contractor's about the cost of materials, equipment or labor needed to construct the design. When this happens, the cost to construct a project can change.

The cost to complete a project can also change during the construction process when it is necessary to make changes to the contract or material quantities. Changes to the contract can increase or decrease costs. WSDOT's project budgets are set before design begins, though many variables can change the cost to complete the desired project. For this reason, WSDOT closely tracks the differences between the estimate, the bid amount, and the final cost of all contracts. The result is a measure of WSDOT's design accuracy. In addition to the information reported here, WSDOT tracks detailed information about why costs increase on each completed contract (see 'cost overruns' gray boxes on pages 79 and 80). This information is used to improve WSDOT's design and project delivery processes.

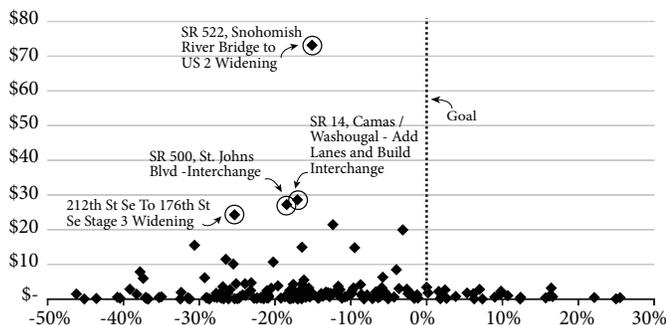
### 14% more construction contracts awarded in 2011

WSDOT awarded 171 highway construction and ferry terminal contracts during FY 2011, 14% more than the number of contracts awarded during FY 2010. WSDOT tracks the difference between the engineers' estimate and the contract award amount (the lowest amount that a qualified contractor bid on for the particular contract). In FY 2011, the total award amount for all contracts was \$500,946,009, which is 17.4% less than the engineers' estimates of \$606,659,306. In FY 2010, contract bids came in 20.9% lower than estimates. The table on the following page compares highway construction contract awards over six years. For more information about why contract bids vary from the agency estimates, see Construction Cost Trends on p. 76.

The scatter plot below (left) shows the award value for each contract and the percent greater or less than the engineers' estimate. One hundred and forty six contracts (85.4%) were awarded below the engineers' estimate, and the remaining 25 contracts were awarded at a cost greater than the engineers' estimate. The graph below (right) shows the total value of the contracts, categorized by the percent they were awarded above and below agency estimates.

### Individual contracts: Award amount to estimate

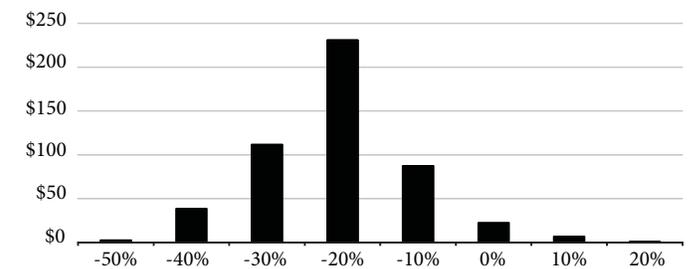
Percent award amount above or below engineers' estimate, FY 2011  
Dollars in millions



Data source: WSDOT Construction Office.

### Distribution of contract value over/under: Award amount to estimate

Percent award amount above or below engineers' estimate, FY 2011  
Dollars in millions



Data source: WSDOT Construction Office.

### Construction Contracts Highlights

In FY 2011, 146 of 171 were awarded to contractors at a cost less than estimated.

The total final cost of 146 contracts completed in FY 2011 was 5.9% greater than the amount awarded, but 5.5% less than the WSDOT cost estimate.

The final cost for 82.9% of completed contracts was less than 10% above the award amount.

The number of projects with contract cost overruns is down 2.1% from FY 2010.

# Construction Contracts Annual Report

## Contract Final Cost to Award Amount

### Highway construction contracts awarded: Year-to-year comparison

Dollars in millions

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Number of contracts awarded	135	160	149	172	150	171
Total award amount for these contracts	\$386.0	\$539.0	\$544.4	\$677.8	\$832.7	\$500.9
Total engineer's estimate for these contracts	\$370.3	\$533.1	\$605.4	\$816.2	\$1,053.1	\$606.6
Avg. % total awards were above/below the total estimate value	1.7%	0.4%	-5.9%	-17.0%	-18.0%	-15.2%
% Total award is above/below the engineer's estimate	4.2%	1.1%	-10.1%	-17.0%	-20.9%	-17.4%
Combined contract value awarded below the estimate	32.6%	35.5%	77.8%	82.8%	78.3%	94.7%
Number of contracts awarded below the estimate	64	77	99	150	130	146
% of contracts awarded below the estimate	47.4%	48.1%	66.4%	87.2%	86.7%	85.4%

Data Source: WSDOT Construction Office.

Data note: Does not include design-build, Hood Canal Bridge, emergency, on-call, or ferry vessel repair contracts. Ferry terminal contracts were added in 2008.

### 12.6% fewer contracts completed in FY 2011 compared to FY 2010

WSDOT completed 146 highway and ferry terminal contracts in FY 2011, 21 fewer contracts than completed in FY 2010 (167). For every completed contract, WSDOT tracks final construction costs compared to the engineers' estimate and the contractor's bid. WSDOT's goal is for the final construction costs to be no more than 10% greater than the contract award amount.

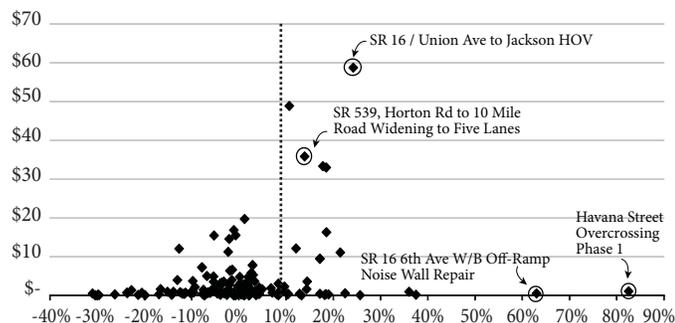
The total final cost of the contracts completed in FY 2011 was \$560,274,880. This exceeds the total contract award amount of \$528,847,312 by 5.9%, a slight increase over FY 2010 (5.5%).

The scatter plot below shows the final cost of each contract and the percent above or below the award amount. The final cost for 121 out of 146 completed contracts (82.9%) was less than 10% above the award amount. The remaining 25 contracts cost 10% or more than the award amount at completion. Final costs exceeded the award amount for all completed contracts by an

### Individual contracts: Final cost to award amount

Percent final cost above or below award amount, FY 2011

Dollars in millions



Data source: WSDOT Construction Office.

average of 0.3%, indicating that a few large contracts with high overruns accounted for most of the difference.

### Final contract costs 5.5% below engineers' estimates for FY 2011

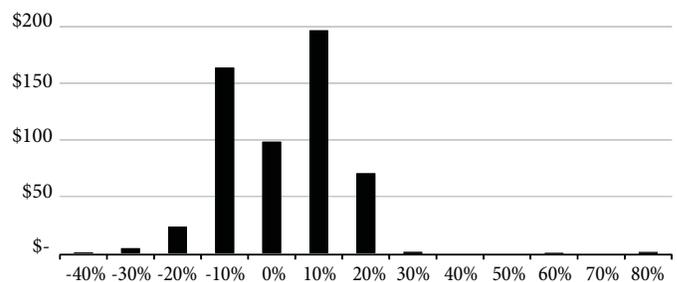
The final cost for contracts completed in FY 2011 was \$560,274,880. This was 5.5% less than the total estimates for these contracts. This builds on a trend that began last fiscal year, when final costs first dropped below engineers' estimates. For more information about the difference between agency and contractor estimates, see the Construction Cost Trends article on page 76.

The scatter plot shows the final cost of each contract and the percent greater or less than the engineers' estimate. The final cost for 130 construction contracts (89%) was less than 10% higher than the engineers' estimate. The remaining 16 contracts (11%) cost 10% or greater than the engineers' estimate, which represents a decrease in the number of cost overruns in FY 2011.

### Distribution of contract value over/under: Final cost to award amount

Percent award amount above or below engineers' estimate, FY 2011

Dollars in millions



Data source: WSDOT Construction Office.

## Contract Final Cost to Award Amount

### Completed contracts: Final cost to award amount

Dollars in million

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Number of contracts completed	125	136	131	163	167	146
Total final cost for these contracts (without sales tax)	\$231.3	\$290.7	\$310.2	\$404.1	\$535.5	\$560.2
Total award amount for these contracts	\$207.0	\$273.2	\$295.4	\$372.6	\$507.8	\$528.8
Average % final costs exceeded award amount	3.6%	3.2%	2.7%	2.7%	2.5%	0.3%
% final cost exceeded award amount	11.7%	6.4%	5.0%	8.4%	5.5%	5.9%
% of contract values less than 10% above award	54.7%	66.7%	75.8%	59.7%	79.5%	51.8%
Number of contracts less than 10% above award	100	109	112	136	135	121
% of contracts less than 10% above award	80.0%	80.1%	85.5%	83.4%	80.8%	82.9%

Data source: WSDOT Construction Office.

Data note: Does not include design-build, Hood Canal Bridge, emergency, on-call, or ferry vessel repair contracts. Ferry terminal contracts were added in 2008.

### Significant cost overruns: Final cost to award

#### Havana Street Overcrossing, Phase 1

The final cost was \$1 million, 35% above the contractor's bid of \$600,000 due to site conditions that were different than anticipated. WSDOT pays for costs incurred when site conditions turn out to be different than planned for. By taking on this risk, contractors can plan for and bid on projects based on the information provided, without having to inflate bid prices to account for uncertainty. Geotechnical information used to inform design did not anticipate the large rocks that were encountered during construction which added time to the contract and increased the cost of construction by nearly \$500,000.

#### SR 16/Union to Jackson

The final contract cost was \$58.7 million, 24% higher than the award amount due to contract changes for unplanned work, bid item overruns, and unseasonably wet weather affecting work progress. The project also experienced challenges related to

widening existing structures and difficult bridge work access, which drove up the cost to complete the Snake Lake, Pearl Street, and 6th Ave. bridges. These changes and the additional time needed resulted in a \$5.6 million final settlement to the contractor, while other contract changes totaled an additional \$5.8 million in added costs.

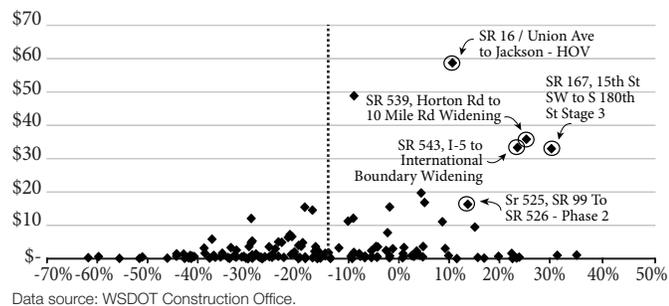
#### SR 539/Horton Rd to Tenmile Rd Widening

The final cost was \$35.8 million, 14% above the contractor's bid of \$31.5 million, due to escalating costs for construction materials as well as higher-than-planned amounts of labor and materials needed for construction. This contract included an adjustment for both asphalt and fuel costs that resulted in payments to the contractor totalling nearly \$1 million for price increases on these materials. Other expenses that raised the contract cost included extra traffic control needed to manage the volume of traffic using this section of SR 539 daily, and additional environmental compliance work.

### Individual contracts: Final cost to estimate

Percent final cost above or below engineers' estimate, FY 2011

Dollars in millions



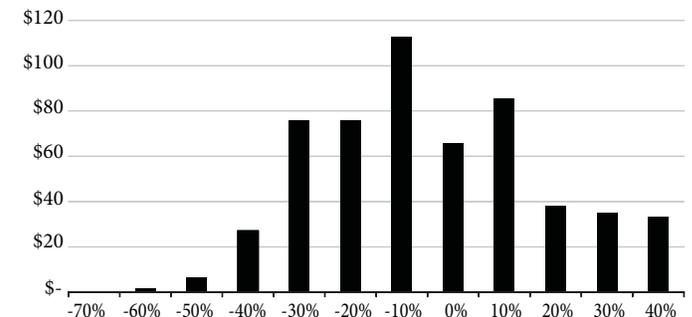
Data source: WSDOT Construction Office.

### Distribution of contract value over/under:

#### Final cost to estimate

Percent final cost above or below engineers' estimate, FY 2011

Dollars in millions



Data source: WSDOT Construction Office.

# Construction Contracts Annual Report

## Contract Final Costs to Engineers' Estimate

### Completed contracts: Final cost to engineers' estimate

Dollars in millions

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Number of contracts completed	125	136	131	163	167	146
Total of construction contract estimates completed	\$228.9	\$287.0	\$298.2	\$379.1	\$556	\$590
Total final cost for construction contracts <sup>1</sup>	\$231.3	\$290.7	\$310.2	\$404.1	\$535.5	\$557.8
% total contract values cost above/below estimate	1.0%	1.3%	4.0%	6.6%	-3.7%	-5.5%
% of contract value less than 10% above estimate	64.5%	63.5%	63.8%	49.6%	69.3%	65.5%
Number of contracts less than 10% above estimate	93	96	89	116	133	130
% of contracts less than 10% above estimate	74.4%	70.6%	67.9%	71.2%	79.6%	89%

Data source: WSDOT Construction Office.

Data note: Does not include design-build, Hood Canal Bridge, emergency, on-call, or ferry vessel repair contracts. Ferry terminal contracts were added in 2008.

<sup>1</sup> Cost does not include sales tax.

### Significant cost overruns: Final cost to estimate

#### SR 525/SR 99 to SR 526 Phase 2

The final cost was \$16.3 million, 14% above the engineers' estimate of \$14.3 million, following numerous design changes that occurred during construction. WSDOT, in coordination with the City of Mukilteo and area businesses, added project elements including turn lanes and signals. The project is located in a high traffic commercialized area of Mukilteo near Paine Field and SR 99. Traffic congestion around the project required modifying a number of access points to business during construction. These changes increased the cost of the contract, requiring more high-cost materials such as asphalt and crushed surfacing than originally estimated. The largest change to the project was replacing access hatches on the stormwater drainage system throughout the project after it was determined that the original design was not strong enough to support the weight of bus traffic driving on the hatches.

#### SR 543/I-5 to International Boundary Widening

The final cost was \$33.3 million, 45% above the engineer's estimate of \$22.9 million. More than half this increase was due to the difference between the engineers' estimate and the contractor's bid. This project was advertised in 2006, when costs were escalating quickly and fewer contractors were bidding on WSDOT projects. The contract was awarded 24% above the estimate after WSDOT obtained additional funding. During construction, problems from wet and sandy soils, and drilled piling in the locations of bridges and retaining walls led to increased costs for drilled shaft work. Other overruns resulted from structural wall changes, increased traffic control, environmental compliance, and site preparation.

### Design-build contracts

WSDOT uses different kinds of construction contracts to deliver transportation projects. The most common types are design-bid-build and design-build contracts.

Design-bid-build contracts are the most typical construction contract, where WSDOT engineers do the design work, calculate the total quantities and activities needed to complete the project, and advertise a fully designed project for a contractor to bid on and construct.

For design-build contracting, WSDOT executes a single contract with one entity (called the design-builder) for the design and construction services to provide the completed project. In this case, WSDOT develops a preliminary design, and the design-builder is responsible for completing the design and building the project. WSDOT sets a series of expectations for the completed project, a scope of work (including performance, engineering, and quality standards for the contractor's work), and a maximum budget price. The design-builder submits a technical proposal describing how they plan to do the work, what it will look like, and a proposal price of how much it will cost. WSDOT reviews and scores the technical proposals, then opens the price proposals. The project is then awarded to the proposer with the best combination of low price and technical score. Typically, WSDOT will establish what is called an upset price (maximum amount WSDOT plans to spend) based on engineers' estimates and budget, and will not award a contract to a design-builder if the price of their proposal exceeds the upset price.

Future *Gray Notebook* articles on construction contracts will include more discussion on design-build contracting.

# Workforce Level and Training Quarterly Update

## Workforce Level

On June 30, 2011, WSDOT employed 6,948 permanent full-time employees, 101 fewer employees than the previous quarter ending March 31, 2011. This is 332 fewer employees than at the end of June 30, 2010, due in part to an increasing number of retirements and a hiring freeze that requires the agency to fill only critical positions. 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 in *Gray Notebook 41*.

### Workforce Level and Training Highlights

WSDOT employed 6,948 permanent full-time employees on June 30, 2011, 338 fewer than at the same time in 2010.

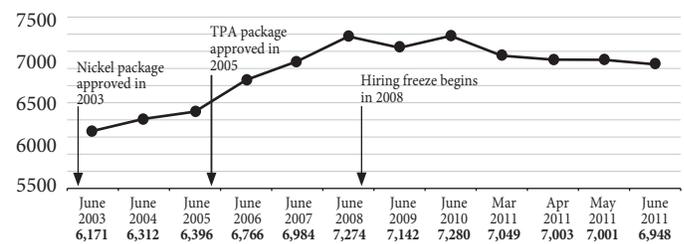
### Voluntary Separation and Retirement Incentive Program offered in FY 2011

In 2009, the Legislature authorized state agencies to develop Voluntary Separation and Retirement Incentive Programs (VSPs) as one tool to help reduce the size of the state workforce. In consultation with the Office of Financial Management (OFM), WSDOT conducted a pilot of the program in the fall of 2010, which offered permanent employees with sufficient state service an incentive of up to \$30,000 to retire or leave state employment. Of the 38 employees offered an incentive, 13 accepted and left state service by November 30, 2010.

In January 2011, WSDOT invited all divisions and regions to submit business plans detailing which employees could be offered VSP incentives based on employee eligibility and the fiscal and operational impacts of each position. Of the 1,462 WSDOT employees that met the agency's separation and retirement criteria, 541 employees received offers to participate in the 2011 incentive program. Eighty-nine employees, 16%, accepted the incentive offer and left state service by June 30, 2011. WSDOT provided incentives to the 89 employees totaling \$2,789,000. Participation fell just below the target of at least 100 employees.

### Number of permanent full-time employees

From June 2003 to June 2011



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

89 WSDOT employees participated in the Voluntary Separation and Retirement Incentive program ending June 30, 2011.

Compliance declined in four of the seven training courses required for all employees in the quarter ending June 30, 2011.

Safety and maintenance training compliance declined from 81% to 78% in the quarter ending June 30, 2011.

### Participation in Voluntary Separation and Retirement Incentive Program (VSP)

Employee participation by region  
By eligible employees offered the incentive

Region	Offered	Taken
Eastern	47	4
Ferries	6	2
Headquarters	67	34
North Central	38	9
Northwest	140	16
NW - AWV/SR 520	45	4
Olympic	102	10
South Central	45	5
Southwest	50	5
<b>Total</b>	<b>541</b>	<b>89</b>

Data source: WSDOT Human Resources Office.

Employee participation by work class  
By eligible employees offered the incentive

Majority job class title	Offered	Taken
Maintenance Specialist & Technician	2	2
Property Acquisition Specialist	20	6
Transportation Engineer	268	33
Transportation Planning Specialist	34	7
Transportation Tech & Tech Engineer	62	9
Washington Management Service	116	13
Other classifications	39	19
<b>Total</b>	<b>541</b>	<b>89</b>

Total cost of incentives: \$2,789,000

Anticipated savings by August 2012: \$7,477,804

Data source: WSDOT Human Resources Office.

# Workforce Level and Training Quarterly Update

## Workforce Level and Training Compliance

Each agency has two full years from the program's effective date to recover the cost of the incentives paid to employees. By August 2012, WSDOT is expected to save \$7,477,804 through the use of the incentive program.

Several other Washington agencies used similar Voluntary Separation and Retirement Incentive programs. Agencies and institutions of higher education that reported the outcome of the incentive program to OFM before June 30, 2011, provided \$9.3 million in incentives for voluntary separation, retirement, and downshifting to 478 employees.

As a result of the incentives, the participating agencies, including WSDOT, report a net savings of \$12.7 million in the 2009-11 biennium, and anticipate an additional \$13.9 million in savings from these actions prior to their deadlines for recovering the cost of the incentive payments.

### Training compliance mixed for courses required for all employees

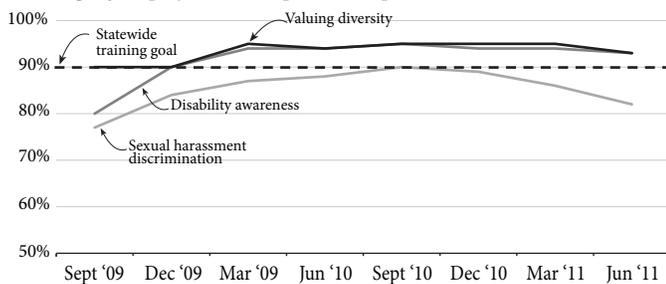
Training compliance declined for four of seven courses required for all employees in the quarter ending June 30, 2011, while compliance increased in two courses and stayed the same in one. Compliance as of June 30, 2011 was above the 90% goal for three courses: disability awareness, valuing diversity, and violence that affects the workplace. See the charts on this page for compliance over the last two years.

### Diversity compliance training reassigned

In May 2011, WSDOT transferred responsibility for the diversity training from the agency's Office of Equal Opportunity to the Office of Human Resources. WSDOT has scheduled mandatory trainings for three regions and is reviewing compliance reports and scheduling mandatory trainings for three regions, Ferries, and Headquarters.

### Required diversity training for all WSDOT employees

Percentage of employees in compliance, September 2009 to June 2011



Data Source: WSDOT Human Resources Office, Staff Development.

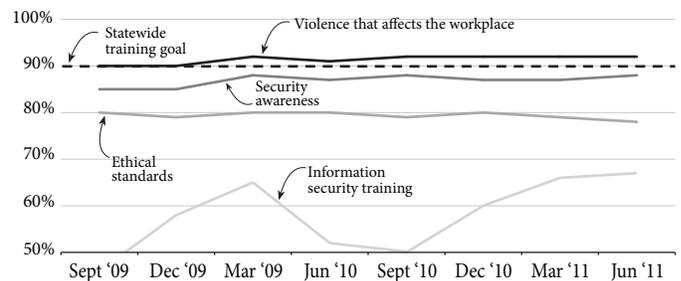
On June 30, 2011, 82% of WSDOT employees were in compliance with sexual harassment/discrimination training, down from 86% on March 31, 2011. State law requires refresher training every five years for all employees and every three years of all managers and supervisors. Valuing diversity and disability awareness training are both at 93% compliance, down slightly from the previous quarter.

### Policy training compliance mixed

Training compliance improved slightly for information security training and security awareness, and remained steady for violence that affects the workplace. Compliance decreased slightly for ethical standards, which requires training every three years.

### Required policy training for all WSDOT employees

Percentage of employees in compliance, September 2009 to June 2011



Data Source: WSDOT Human Resources Office, Staff Development.

### Safety and maintenance mandatory training compliance down from March 31, 2011

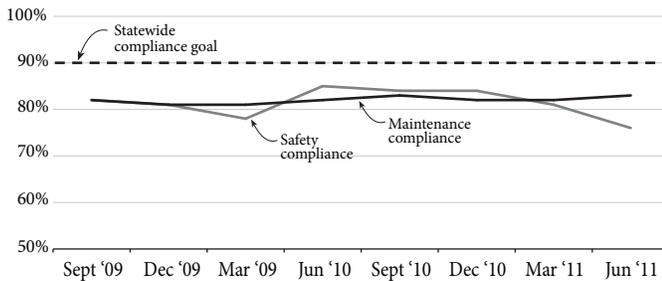
Statutorily required maintenance and safety training compliance for WSDOT employees was 78% on June 30, 2011, 3% below the previous quarter. Compliance for safety courses was 76% this quarter, 5% below the previous quarter and 14% below the goal of 90%. Compliance for maintenance courses was 83%, up 1% from the previous quarter. The graph on the following page shows quarterly compliance over the last two years.

Training compliance fell in part because employees who have taken first aid and hearing conservation courses came due for refresher training and have not yet completed the training. Refresher training is required annually for hearing conservation and every three years for first aid.

## Training Compliance, continued

### Maintenance and safety training compliance

By percentage of employees in compliance September 2009 to June 2011



Data Source: WSDOT Human Resources Office, Staff Development.

### Safety and maintenance training by region

WSDOT tracks statutorily required training compliance for its maintenance workers by region. Training compliance improved in three regions and dropped in three regions in the quarter ending June 30, 2011. The table documents each region's compliance with all the courses listed as a single measure. For the quarter, Southwest region met the 90% goal for safety and maintenance training compliance, with 93% compliance. Eastern, South Central, and North Central Regions all improved their training compliance during the quarter.

### Region maintenance and safety training compliance

Percentage of employees in compliance on June 30, 2011

Region	Percent in compliance	% change from last quarter	Biennium average	Goal met
Northwest	67%	-10%	74%	
North Central	81%	7%	82%	
Olympic	82%	-1%	81%	
Southwest	93%	-4%	95%	√
South Central	79%	4%	84%	
Eastern	89%	1%	90%	

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

### Employee driver training compliance is at 97%

WSDOT's goal is to reach 90% compliance with required safety training. As of June 30, 2011, WSDOT identified 1,075 employees who are candidates for the required training; of those, 1,048 (97%) had completed the training. Statewide compliance is down slightly from June 30, 2010, when it was 98%.

All six regions met their training compliance goal. Headquarters, with 82% compliance, did not meet the goal.

Before 2004, WSDOT conducted a voluntary driver-skills class offering safety training to employees who drove WSDOT vehicles. In 2005, OFM instituted a mandatory driver safety training program for all state employees who drive state-owned vehicles more than 1,000 miles a month at least six months a year, and also for employees that have had two accidents in two years while operating state-owned vehicles.

WSDOT formerly used Eversafe driver training, but now offers its own course to employees. Managers and supervisors are responsible for identifying employees who must participate in the program and ensuring they are trained.

### Driver safety training compliance by region

By percentage of employees in compliance September 2009 to June 2011

Region	Employees requiring training	Training completed to date	Percent in compliance	Goal met
Northwest	334	315	94%	√
North Central	133	132	99%	√
Olympic	139	138	99%	√
Southwest	218	217	100%	√
South Central	98	97	99%	√
Eastern	136	135	99%	√
Headquarters	17	14	82%	

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

# Highlights of Program Activities

## For the quarter ending June 30, 2011

### Project starts, updates, and completions

#### Project starts

##### **SR 520 pontoon construction (Grays Harbor)**

In May, crews began excavating more than a quarter-million cubic yards of dirt for a casting basin – a crucial step for building concrete pontoons to replace the aging and vulnerable SR 520 floating bridge in the Seattle area. Crews will dig down 30 feet to allow construction of the 33 concrete pontoons that will eventually be towed to Lake Washington in Seattle.



*Crews began pouring the concrete for the first of six pontoons.*

The completed casting basin will be 900 feet long and 200 feet wide. See *Gray Notebook 41*, page 77, for more information.

##### **I-5 repairs (Skagit)**

Crews began a \$20 million, season-long project in mid-May to smooth the roadway and reduce maintenance headaches on Interstate 5 in Skagit County. Workers are repairing and paving 12 miles of northbound I-5 from north of the SR 11 Chuckanut Drive interchange in Burlington to south of Lake Samish near Bellingham. Engineers designed the project using a truck-mounted concrete breaker, similar looking to a guillotine, to crack the concrete panels. The process, called “crack and seat,” cracks the panels and then they are run over with a heavy roller to “seat” them in the ground before paving over the roadway with asphalt. The work is expected to be finished this fall.

##### **I-82 repairs (Yakima)**

In early April crews began a project to improve 19 miles of east I-82 between Union Gap and Granger. Originally built between 1977 and 1980, normal wear and tear has left the highway uneven and bumpy as concrete panels have separated, rutted and cracked. To strengthen and improve I-82, crews will tie the concrete panels together with metal dowel bars, replace cracked panels, and grind the driving surface smooth. The \$13.4 million project is expected to finish this fall.

#### Project updates

##### **I-90 Snoqualmie Pass (Hyak)**

Crews resumed rock blasting operations on I-90 after a snowy spring as part of the I-90 Snoqualmie Pass East – Hyak to Keechelus Dam project. The first of a series of controlled rock

blasts on I-90 near the east snowshed began May 11. For the safety of the traveling public, crews temporarily close I-90 in both directions from Hyak (milepost 54) to the Price Creek Sno-Park (milepost 61) for up to an hour. After crews blast, they remove debris from the roadway and shoulders, inspect the slopes for stability and safety, and reopen all lanes of I-90. The \$551 million project will widen a five-mile stretch of the highway from four to six lanes and improve reliability and safety. This multi-year project is funded by the 2005 gas tax and is scheduled to be complete in 2016.



*Crews are rock blasting again on I-90 to make way for added lanes on I-90 as part of the I-90 Snoqualmie Pass East project.*

##### **SR 99 Alaskan Way Viaduct (King)**

Long-term lane reductions on the State Route 99 Alaskan Way Viaduct corridor through Seattle’s SODO neighborhood began in May. SR 99 was reduced to two lanes in each direction between the West Seattle Bridge and Seattle’s sports stadiums, and will remain a four-lane highway through SODO through 2013 and possibly longer, until the central waterfront portion of the viaduct is replaced. The lane reduction provides crews working for the WSDOT with the necessary work space to safely and efficiently replace the southern mile of the seismically vulnerable viaduct and keep SR 99 open during construction.

WSDOT teamed up with the city of Seattle and King County to make investments to keep people and goods moving during this long-term lane reduction. WSDOT has funded additional bus service with 41 new bus trips on key routes connecting downtown Seattle to West Seattle, White Center and Burien. Overall, Metro has 11 viaduct bus routes serving those corridors with more than 500 daily trips in both directions. In addition to buses, there also are Metro vanpools and King County Water Taxi service between Seacrest Dock in West Seattle and Pier 50 in downtown Seattle. WSDOT also contributed \$50 million to the city of Seattle’s South Spokane Street Viaduct Project so that an additional travel route is available to West Seattle drivers.

## For the quarter ending June 30, 2011

### SR 529 Ebey Slough (Snohomish)

Crews working to replace the aging SR 529 bridge over the Ebey Slough reached a major milestone in June when they finished setting the girders that will form the backbone of the new wider, taller bridge. Each girder section is seven feet tall, weighs about 31 tons and is 100 to 135 feet long – about the length of three school buses. Crews assembled 49 girder sections to form seven massive girders that will span the slough with a new 680-foot-long bridge. They expect to begin shifting northbound SR 529 traffic to the new bridge by April 2012, with all traffic on the new bridge by August 2012. They'll then demolish the old bridge. Work on the \$42.3 million project is expected to be complete by the end of 2013.

### Project completions

#### SR 4 Rockfall stabilization (Cowlitz)

With the final piece of rockfall fence anchored in place on June 21, crews completed a landslide repair project on SR 4 near Stella. SR 4 was closed near Germany Creek Road (milepost 50) on April 5 when a landslide covered the highway. WSDOT hired Scarsella Brothers Inc. of Seattle through a \$350,000 emergency contract, and crews worked through April and May to stabilize the hillside above the roadway. Meanwhile, WSDOT completed a pre-planned rock scaling project just east of Cathlamet (milepost 39). Contractor Janod Inc. of Dorian, Quebec, began work May 16, and used two scaling crews to tackle the \$380,000 project and complete the work ahead of schedule on May 24. Both projects were funded through state highway improvement dollars. WSDOT prioritizes unstable slopes and rockfall projects on a statewide basis and has dedicated \$300 million to evaluate, prioritize and mitigate slope issues through the Unstable Slope Management System.



A crane lifts one of the girder sections. The girders weigh in at about 540 pounds a linear foot, about 62,000 pounds – or 31 tons – per section.

### SR 16 Westbound Nalley Valley (Pierce)

See pages 61-62 for the full story on this project.

## Ferries

### WSDOT welcomes new 64-car ferry to the fleet

The newest vessel to be added to WSDOT's fleet of ferries, the *M/V Salish*, was delivered by builder Todd Pacific Shipyards in May. Final outfitting, Coast Guard certification and crew training was 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 on the vehicle deck of the *Salish*. The new 64-car ferry began service on the Port Townsend/Coupeville route at noon on July 1. The two Kwa-di Tabil class (64-car) ferries will serve the Port Townsend/Coupeville route through the summer and early fall. On Columbus Day, October 10, the route will be reduced to one-boat service for the off-peak season – the same schedule that operated when the Steel Electric class ferries served the route.



The Port Gamble S'Klallam, Lower Elwha Klallam, and Jamestown S'Klallam tribes performed a welcoming ceremony for *M/V Salish*.

### Ferries rideshare program recognized with Diamond Award

Washington State Ferries (WSF) won a Commuter Challenge Diamond Award for a rideshare program that sends vanpoolers and carpoolers to the head of the line with fare discounts, cutting their travel time. The annual award recognizes the Washington State Department of Transportation's Ferries Division for "implementing an innovative trip reduction program that dovetails with regional transit agencies and local public vanpool programs to provide incentives of priority ferry loading and time incentives," said Stephen Gerritson, vice president of enterpriseSeattle, which sponsors the Diamond Awards.

By offering fare discounts and front-of-the-line service for vanpools and carpools with permits, WSF now supports 172 vanpools and 67 carpools on seven ferry routes. Not only does it save ferry commuters money and time, it also helps reduce traffic congestion and air pollution in the Puget Sound region. (See page 21, and the *2011 Annual Congestion Report*, for more information on vanpools.)

# Highlights of Program Activities

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## For the quarter ending June 30, 2011

### Aviation

#### WSDOT Aviation Emergency Services joins with WSDOT Office of Emergency Management

WSDOT combined its Aviation Emergency Services with its Office of Emergency Management. The pairing allows WSDOT to build its emergency response and expertise in emergency planning, plus add more technical and communications support in the air and on the ground. WSDOT's Aviation Emergency Services manages the state's air search-and-rescue operations and assists in disaster-relief efforts. Combining these services within the agency's Office of Emergency Management brings together the state's core emergency transportation, safety and security operations for a streamlined disaster response.

#### WSDOT names new Aviation director

A veteran of aviation, Tristan Atkins was named director of the Aviation Division at WSDOT. Atkins is a 23-year veteran of the Washington State Patrol, where he was commander of the aviation section for 10 years. He holds the military rank of colonel, having served as an Army aviator for 28 years. In his new role, Atkins will continue the work to better integrate aviation with the state's other transportation modes such as highways, rail and ferries, supporting WSDOT's overall mission of maintaining a reliable, responsible, and sustainable system. Atkins starts on August 23 in the Aviation Division's Arlington headquarters office.

### Rail

#### High-speed rail funding heads to Washington

Federal and state officials signed documents in April that guarantee Washington state will get \$145 million in high-speed-rail funding originally intended for Ohio and Wisconsin, bringing Washington state's total to \$735 million in stimulus high-speed-rail funding.

WSDOT is in the process of negotiating agreements with stakeholders and the Federal Railroad Administration to secure \$31 million in additional federal high speed rail funding awarded in 2010 and \$15 million in funding awarded earlier this year that was a result of stimulus funds returned by Florida. These awards bring Washington state's total to about \$781 million in federal high-speed-rail funding. All funding will be used for improvements that boost the rail-line capacity and relieve mainline congestion, allowing Amtrak *Cascades* to offer more frequent and reliable passenger rail service between Portland and Vancouver, B.C.

### Traveler Information and Safety

#### New travel time signs installed in King County

Two new electronic signs on westbound SR 520 just east of I-405 in Bellevue and on westbound SR 522 in Woodinville were activated in April with travel times to Seattle. WSDOT also activated a third sign on southbound I-405 in Kirkland. The signs adapt to changing conditions on the road and give drivers real-time information to help them avoid unexpected traffic backups.

Crews installed the new signs on westbound SR 520 one mile east of I-405 in Bellevue, SR 522 at the SR 202 overpass in Woodinville and southbound I-405 at the NE 72nd Place overpass in Kirkland. The projects are a cooperative effort between WSDOT, Puget Sound Regional Council, King County and the United States Department of Transportation. This collaboration, known as the Lake Washington Urban Partnership, aims to improve traffic flow across the lake by implementing variable tolling on SR 520 and Smarter Highways on SR 520 and I-90; enhancing transit service and supporting regional carpool and telework programs.

#### Smarter Highway signs lit up on I-90

WSDOT crews made the final touches before bringing online the electronic speed-limit and lane-status signs that stretch along westbound I-90 between 150th Avenue S.E. in Bellevue and Interstate 5 in Seattle. Crews also activated the signs on eastbound I-90 between I-5 and West Mercer Way on Mercer Island. The remaining eastbound signs will be covered until the I-90 Two-Way Transit and HOV Operations, Stage 2 project opens to traffic early next year.

The signs are part of the SR 520/I-90 Active Traffic Management project and will alert drivers to reduce their speed or change lanes when there are collisions or backups on the road. I-90 is the third Puget Sound-area highway to receive the new high-tech overhead signs that display variable speed limits, lane status and real-time traffic information to let drivers know what's happening on the road ahead. Crews have installed more than 300 new electronic signs on I-5, SR 520 and I-90 as part of Smarter Highways.

### Announcements, awards and events

#### Washington commended for showing taxpayers where their transportation dollars go

Washington was ranked among the top 13 states in the nation in using performance measures – such as safety, improved traffic flow and increased economic growth – to show taxpayers how their transportation dollars are being spent. A report released by the Pew Center on the States and The Rockefeller Foundation, "Measuring Transportation Investments: The Road to Results,"

## For the quarter ending June 30, 2011

said the 13 states earned the distinction of leading the way by having “goals, performance measures and data that put their lawmakers in a better position to make cost-effective policy and spending choices.”

WSDOT specializes in using performance data to track highway systems operations including congestion, collisions and collision response. The report highlights WSDOT’s use of cost-benefit and other types of economic analysis to make transportation decisions. The report cited centerline rumble strip installation as a key example. WSDOT’s research showed that centerline rumble strips could prevent serious and costly crashes. These low-cost improvements provided a return on investment of about 25 to one.

### WSDOT crews reopen Spirit Lake Memorial Highway

Crews raced against the clock to clear nearly 20 feet of late-spring snow from SR 504 in time for visitors to annual reopening of the Johnston Ridge Observatory. The scenic byway, also known as Spirit Lake Memorial Highway, was reopened Saturday, May 14. The highway had been closed since mid-December 2010 due to heavy snowfall. WSDOT closes SR 504 from the Hummocks Trailhead to the Johnston Ridge Observatory each year due to hazardous snow conditions and avalanche risk. The roadway reopens in the spring when weather conditions improve and crews are able to effectively clear the snow from the roadway.

### Late-season snow causes second latest reopening for North Cascades Highway

The May 23 reopening of the North Cascades Highway marked the second latest since the highway opened 39 years ago. The latest ever was June 14, 1974, and the next latest, surpassed by this year, was in 1976 when it reopened on May 21. The clearing effort took more than six weeks, compared to just three-and-a-half

weeks last spring. Nine feet of snowfall in March and a record seven-and-a-half feet in April on the western slopes of the Cascades kept avalanche control technicians and snow clearing equipment on Stevens Pass until the avalanche threat eased and allowed the team to move up to the North Cascades. There, they found SR 20 buried in snow as deep as 75 feet.



*Plowing crews struggle to find the tarmac on the road to Spirit Lake.*

### Chinook Pass reopened in late June

WSDOT maintenance crews reopened the east side gate to SR 410 Chinook Pass at Morse Creek, five miles east of the summit, on June 23. At the same time, west side crews reopened the gate at the SR 123 junction, about four miles west of the summit. The snow in late April was 25 to 30 feet deep in some of the avalanche chutes, which was the deepest snowpack for this time of year since 1999. While June 23 is not the latest reopening date, it is among the top five; July 12, 1974, was the latest. Crews had hoped to reopen Chinook Pass by Memorial Day weekend every year, but more than 700 inches of snow and extreme avalanche danger slowed the effort this year. Flooding due to heavy rains in the lowlands of SR 410 (Rock Creek) also took crews away from the reopening effort. Nearby SR 123, Cayuse Pass (elev. 4,675 ft.), was reopened on May 26.

### I-90 Snoqualmie Pass project wins conservation award

The Cascade Land Conservancy presented its Innovative Conservation Project award to WSDOT’s I-90 Snoqualmie Pass East Project (I-90 project) during its annual Conservation Awards in Seattle. The award recognizes conservation projects involving unique or non-traditional collaboration, and celebrates the cooperation and persistence required to overcome obstacles and preserve land that is important to a community.

Since planning for the I-90 project began in 1999, WSDOT has worked with dozens of government agencies to ensure the project met transportation, safety and mobility needs, and mitigated impacts to the Central Cascades’ ecosystem and the state’s economy. WSDOT also established innovative partnerships with university researchers and conservation groups to help with wildlife-monitoring efforts, acquire property for conservation and generate public awareness. Relationships with transportation-based organizations and businesses also helped WSDOT gain insight into the needs of interstate users.

### Pedal power reigns in Washington: state ranks no. 1 in nation

For the fourth year running, Washington has earned the title of “Most Bicycle Friendly State” from the League of American Bicyclists. Washington is a leader among the states in its efforts to improve conditions for bicycling through its programs, policies and places to ride. Across Washington the number of people bicycling has increased, shown in the Washington State Department of Transportation’s (WSDOT) annual statewide bicycle and pedestrian count report. In a three-day snapshot taken at 155 locations across the state in fall 2010, volunteers counted nearly 16,000 bicyclists compared to more than 9,600 in 2009.

# Gray Notebook 10th Anniversary Celebration

## Edition 2: June 30, 2001

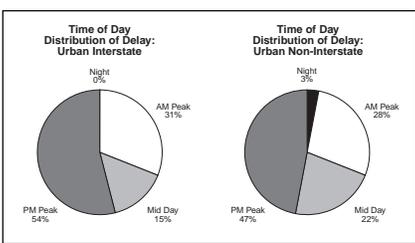
This continuing series looks back at the first measures published in WSDOT's first year of accountability and performance reporting in the Gray Notebook, their impact, and offers a comparison to today's reporting.

Then as now, one of the most pressing concerns of citizens and legislators alike was the problem of congested roads. The second edition of the *GNB* tackled the question of how to solve congestion and mobility bottlenecks from several perspectives. Among them was the problem of how to identify and quantify congested routes, then translate those complex data-sets into terms drivers on those routes could understand. This *GNB* also introduced readers to a host of existing and planned strategies that were already starting to address congestion in the state.

### Highway Traffic Congestion

Effectively the first annual Congestion Report, this four-page article identified congested locations, defined performance measures, benchmarked Washington against nationally accepted measures, and described operational and capital strategies to address congestion.

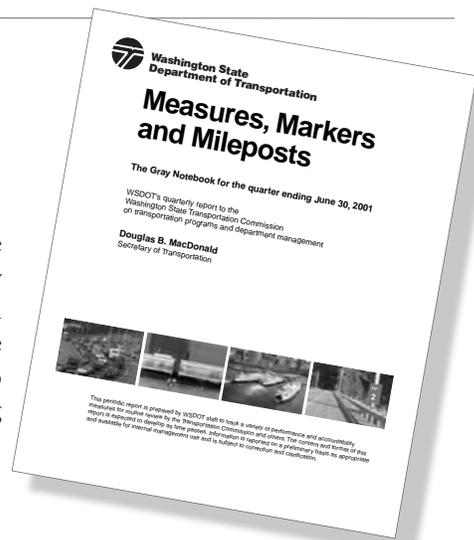
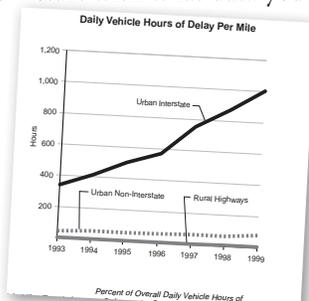
Route	Centerline Miles	Travel Rate Index	Daily Vehicle Hours of Delay Per Mile	Daily Vehicle Miles Traveled
I-5 Seattle to Everett	30	2.5	2,328	5,106,306
I-5 Tacoma to Seattle	30	2.7	3,049	5,784,192
I-5 Olympia to Tacoma	30	1.6	554	3,295,523
I-5 Vancouver to Kelso	39	1.1	31	2,401,288
I-90 Spokane to Idaho	22	1.3	126	1,284,611



Five "Popular Commutes" around the state were measured by delay compared to daily vehicle miles traveled (VMT), using a 'travel rate index' to rank the segments; two simple pie charts showed the distribution of times of delay on urban interstates and urban non-interstate state routes. By the stan-

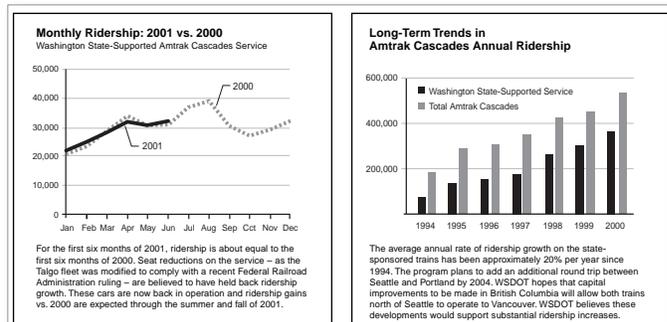
dards of today's report (see pages 16-20), the early reporting was opaque and far from nuanced, with few opportunities for detailed analysis or cause-and-effect discussions.

But WSDOT's guiding mantra for performance reporting is "don't wait for the perfect measure – start with what data you have and improve both your data and your reporting over time." The current in-depth analysis of travel times (see the separate 2011 Congestion Report), before-and-after construction results, and more would have been difficult to develop without the early data provided from 2001 onwards.



### Commute Trip Reduction

Also in the second edition, and also addressing congestion relief, the first Commute Trip Reduction article (now Commute Options, p. 21) examined employer participation, investments, and benefits, and looked at vanpooling trends. Washington – now as then – continues to be a national leader in the development of vanpool programs. The economic climate prevailing in 2001 had a dampening effect on the growth of vanpools, just as the recession at the end of the decade has. However, the number of vans operated under vanpool program has more than doubled in the past decade, which indicates a tremendous growth in vanpool trips and ridership.



### Amtrak Cascades

Washington has supported Amtrak rail service on the Oregon-British Columbia route since 1994. The first report on the *Cascades* service presented data on monthly ridership, long-term ridership trends between 1994 and 2000, and on-time performance. In addition to making a case for the degree to which train services help reduce congestion on the I-5 corridor, the first report presented customer satisfaction scores – a metric that returns to annual reporting with this edition of the *GNB*. *Cascades* continues to rank with the very best scoring trains of all Amtrak's corridor services.

# Navigating the WSDOT Information Stream

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## 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

In 2007, the Governor and Legislature enacted a law establishing five policy goals for transportation agencies in Washington State (Chapter 516, Laws of 2007).

The five 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; and

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

In March 2010, the Governor and Legislature added a new policy goal for transportation: Economic Vitality. It directs WSDOT to “promote and develop transportation systems that stimulate, support, and enhance the movement of people and goods to ensure a prosperous economy.” WSDOT is developing the necessary business direction plans through the agency's strategic planning process.

### 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](http://www.wsdot.wa.gov/Accountability/PerformanceReporting/Attainment.htm), or on OFM's performance and results website: [www.ofm.wa.gov/performance/](http://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 2011-17 strategic plan is available online at: [www.wsdot.wa.gov/Accountability/PerformanceReporting/StrategicPlan.htm](http://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 2001-13 POG process is available at: [www.ofm.wa.gov/budget/pog](http://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](http://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](http://www.wsdot.wa.gov/accountability).

# Navigating the WSDOT Information Stream

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## 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 makes the topics' relationship to the six Legislative policy goals – and WSDOT's own strategic business directions – more clear.

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](http://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](http://www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm).

A separate detailed navigation folio is available at [www.wsdot.wa.gov/Accountability/GrayNotebook/](http://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](http://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](http://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/](http://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, roll-up 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.

# Gray Notebook Subject Index

Calendar year	Edition number / date (Washington state fiscal year & quarter)			
2001	1 / Mar 31, 2001 (FY01 Q3)	2 / June 30, 2001 (FY01 Q4)	3 / Sept 30, 2001 (FY02 Q1)	4 / Dec 31, 2001 (FY02 Q2)
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)
2004	13 / Mar 31, 2004 (FY04 Q3)	14 / June 30, 2004 (FY04 Q4)	15 / Sept 30, 2004 (FY05 Q1)	16 / Dec 31, 2004 (FY05 Q2)
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)
2008	29 / Mar 31, 2008 (FY08 Q3)	30 / June 30, 2008 (FY08 Q4)	31 / Sept 30, 2008 (FY09 Q1)	32 / Dec 31, 2008 (FY09 Q2)
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)
2010	37 / Mar 31, 2010 (FY10 Q3)	38 / June 30, 2010 (FY10 Q4)	39 / Sept 30, 2010 (FY11 Q1)	40 / Dec 31, 2010 (FY11 Q2)
2011	41 / Mar 31, 2011 (FY11 Q3)	42 / June 30, 2011 (FY11 Q4)		

Edition ranges (e.g. 3-12) include first and last edition in the range. All editions can be accessed at: [www.wsdot.wa.gov/Accountability/GrayNotebook/gnb\\_archives.htm](http://www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm)

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- Airport Land Use Compatibility and Technical Assistance (21, 25, 29)
- Airport Pavement Conditions (17, 21, 25, 29, 33)
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## Topic (Edition)

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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/](http://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/](http://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/](http://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/](http://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/](http://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](http://www.wsdot.wa.gov).

For more information about performance measurement and reporting, visit [www.wsdot.wa.gov/accountability/](http://www.wsdot.wa.gov/accountability/).