Washington State Department of Transportation

The Gray Notebook

GNB 32

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

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Secretary of Transportation

Quarter ending December 31, 2008

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In this edition

Annual Reports
Highway Safety
Asset Management: Pavement Conditions
Highway Maintenance
Environmental Programs:
Erosion Control, Compliance, Construction Site Water Quality

Quarterly Reports
Incident Response
Rail
Ferries
Capital Projects
Workforce

http://www.wsdot.wa.gov/accountability

Executive Summary

Performance highlights in this edition of the *Gray Notebook*

This edition of the *Gray Notebook* presents information on WSDOT's performance in the quarter ending December 31, 2008, as well as seven annual reports. Highlights from this edition include:

- The Beige Pages present a quarterly report of WSDOT's **Capital Project Delivery Program.** As of December 31, 2008, WSDOT has delivered a total of 185 Nickel and Transportation Partnership Account (TPA) projects valued at $1.9 billion, on target with the funding provided in the 2007-09 Transportation Budget. At quarter end, December 31, 2008, WSDOT had completed 16 projects, 42 projects were under construction, and 18 projects advertised for construction bids. An additional 34 projects are scheduled to be advertised by June 30, 2009. Ninety percent of Nickel and TPA projects combined are early or on time, 88% are under or on budget, and 79% are both on time and on budget. (pp. 48-97)

A special note on the **American Recovery and Reinvestment Act (Stimulus)**: Washington will receive an estimated $492 million for transportation stimulus projects, $345 million of which will fund state transportation priorities, while the remaining $148 million will fund city and county transportation projects. Projects are expected to be "shovel ready." WSDOT will assure the same level of accountability for these projects as it has for Nickel and TPA projects, and will begin reporting on stimulus projects in the next *Gray Notebook* edition.

- A special report, **The Making of a Project**, describes the key phases of the road construction process. (pp. 108-111)
- **Highway Safety**:

  Results of Highway Safety Projects WSDOT's sixth annual study of the "before and after" results of highway safety projects shows that the 47 projects evaluated reduced serious injury and fatality accidents by 20%. (pp. 5-7)

  Pedestrian and Bicyclist Safety Washington improved in national rankings for pedestrian-involved incidents, from 15th in 2006 to 13th in 2007. The state declined in bicyclist safety rankings to 35th in 2007 from 11th in 2006, due to an increase of seven fatalities, from seven to 14. (pp. 8-9)
- **Pavement Conditions** The overall condition of state highway pavement experienced a slight decline between 2006 and 2007, with 93.3% of pavement in good or fair condition. WSDOT is concerned about the growing backlog of asphalt pavement preservation needs, as well as aging concrete pavement. The agency is implementing innovative strategies to extend pavement life. (pp. 12-16)
- **Highway Operations and Maintenance** WSDOT achieved 50% of its service level targets for highway operations and maintenance in 2008. This was due to a growing highway inventory and large increases in the cost of maintenance supplies. New performance targets, taking into account funding availability, will be set for the 2009-11 biennium. (pp. 17-20)
- **Environmental Compliance Assurance** For 2008, WSDOT reduced the number of reportable environmental noncompliance incidents by 10% and non-reportable incidents by 33%. (pp. 38-39) For other annual reports on environmental topics, see pages 34-43.
- **Ferries On-Time Performance** Ninety-five percent of ferry departures were on time. The average length of delays was reduced by two minutes. (p. 27)

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Pavement Assessment Annual Report 12
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Highway Maintenance Annual Report 17
Includes Integrated Vegetation Management.

Ferries Preservation & Construction Update 21
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Environmental Reporting 34-45
Including a special report on the SR 530 Erosion Control project.

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Navigating the WSDOT Information Stream

Linking performance measures to strategic goals

WSDOT's mission The mission of WSDOT is to keep people and business moving by operating and improving the state's transportation systems vital to our taxpayers and communities.

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 state;
- **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.

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 second report will be published in March 2009.

The Attainment Report is available on OFM's performance and results website: http://www.ofm.wa.gov/performance/.

WSDOT Strategic Plan

WSDOT's 2009-2015 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 pages viii-ix illustrates this alignment. WSDOT's 2009-11 strategic plan is available online at: http://www.wsdot.wa.gov/Accountability/PerformanceReporting/StrategicPlan.htm.

About WSDOT's Performance Dashboard

The 'dashboard' of performance measures on the facing page 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. 112-121) to find earlier coverage; all previous editions are available online at www.wsdot.wa.gov/accountability.

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 2009-11 POG process is available at: 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: http://www.wsdot.wa.gov/Accountability/PerformanceReporting/GMAP.htm.

Performance Dashboard

Data as of December 31, 2008

✓ Goal has been met. ⇧ Performance is trending in a favorable direction. ⇔ Trend is holding. ⇩ Performance is trending in a unfavorable direction.

Policy goal/Performance measure	Previous reporting period	Current reporting period	Goal	Goal met	Progress	Comments
Safety						
Number of **traffic fatalities** per 100 million vehicle miles traveled (VMT) in Washington State (annual measure, calendar years 2006 & 2007)	1.12	1.0	1.0	✓	⇧	Working toward additional reductions through *Target Zero*
Yearly **OSHA-recordable injury and illness rate** per 100 WSDOT maintenance & engineering workers (annualized: FY08 Q4, FY09 Q1[6])	4.2	4.9	6.0	✓	⇩	Continuing to aggressively improve worker safety despite recent rise in annualized OSHA injury and illness rate
Preservation						
Percentage of state **highway pavements** in fair or better condition (annual measure, calendar years 2006 & 2007)	93.5%	93.3%	90.0%	✓	⇔	Performance level exceeds goal - challenges ahead
Percentage of **state bridges** in fair or better condition (annual measure, calendar years 2006 & 2007)	97.4%	97.0%	97.0%	✓	⇔	Performance level meets goal - trending downward
Mobility (Congestion Relief)						
Average clearance times for **major (90+ minute) incidents** on key Puget Sound corridors (quarterly: FY08 Q4, FY09 Q1[6]))	147 minutes	156 minutes	5% reduction	---	⇩	High numbers of extraordinary incidents (6 hr. +) affected the quarterly response average
Percentage of **Washington State Ferries** trips departing on-time[2] (quarterly: FY08 Q4, FY09 Q1[6])	87%	95%	90%	✓	⇧	Quarterly performance improved over previous quarter
Percentage of **Amtrak *Cascades*** trips arriving on-time[3] (quarterly: FY08 Q4, FY09 Q1[6])	61%	69%	80%	---	⇧	Performance is continuing to improve
Annual weekday **hours of delay** statewide on highways compared to maximum throughput (51 MPH)[1] in thousands of hours (annual measure, calendar years 2006 & 2007)	23,330	25,490	N/A	---	⇩	Growth in delay slowed from 35% to 8% between 2005 and 2007's recorded delay hours
Environment						
Cumulative number of WSDOT **stormwater treatment facilities** constructed or retrofitted[4] (annual measure, calendar years 2006 & 2007)	809	850	N/A	---	⇧	New stormwater facilities permit will expand WSDOT's responsibilities
Cumulative number of WSDOT **fish passage barrier improvements** constructed since 1990 (annual measure, calendar years 2006 & 2007)	205	218	N/A	---	⇧	More then 400 linear miles of habitat restored (estimated)
Stewardship						
Cummulative number of Nickel and TPA **projects delivered, and percentage of on-time and on-budget delivery performance** (quarterly: FY08 Q4, FY09 Q1[6])	167/ 78%	185/ 79%	90% on-time and on-budget	---	⇧	On-time and on-budget delivery performance improved over last quarter despite challenges.
Variance of total project costs compared to **Legislative budget expectations**[5] (quarterly: FY08 Q4, FY09 Q1[6])	0%	0%	0%	✓	⇧	Overall program delivered under budget
Percentage of **completed contracts** final costs within 10% of the original award amount (annual measure, state fiscal years 2007 & 2008[6])	80.1%	85.5%	100%	---	⇧	Performance has improved with better estimates and contract documentation

[1] 'Maximum throughput' is defined as the optimal traveling speed, where the greatest number of drivers can occupy the highway at the same time; usually measured as 51 MPH. The data represents the year prior to the year in which it was reported.

[2] 'On-time' departures for Washington State Ferries includes any trip recorded by the automated tracking system as leaving the terminal within 10 minutes of the scheduled departure time.

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

[4] Facilities in Clark, King, Pierce, and Snohomish counties.

[5] Budget expectations are the figures established by the Legislature annually for major projects under construction.

[6] WSDOT's fiscal year begins on July 1 and ends on June 30. There are eight fiscal quarters in the biennium, and are organized as follows: Quarters 1 & 5: July 1 - September 30, Quarters 2 & 6: October 1 - December 31, Quarters 3 & 7: January 1 - March 31, Quarters 4 & 8: April 1 - June 30

Navigating the WSDOT Information Stream

Linking performance measures to strategic goals

This table illustrates the alignment of WSDOT's performance measures with the five statewide transportation policy goals and the WSDOT strategic plan, *Business Directions*. (See also pg. vi)

State Policy Goal	WSDOT Business Direction	Key WSDOT Performance Measures	Reporting Cycle	Last *Gray Notebook* Report
1. Safety: To provide for and improve the safety and security of transportation customers and the transportation system	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.	Number of traffic fatalities	annual	GNB 30 pp. 4
		Rate of traffic fatalities per 100 million miles traveled	annual	GNB 30 pp. 4
		Percent reduction in collisions before and after state highway improvements	annual	GNB 30 pp. 6-7
		Number of recordable workplace injuries and illnesses	quarterly	GNB 32 pp. 2-4
2. Preservation: To maintain, preserve, and extend the life and utility of prior investments in transportation systems and services.	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.	Percent of state highway pavement in fair or better condition	annual	GNB 32 pp. 12-16
		Percent of state bridges in fair or better condition	annual	GNB 30 pp. 13
		Percent of targets achieved for state highway maintenance activities	annual	GNB 32 pp. 17-20
		Number of ferry vessel life-cycle preservation activities completed	quarterly	GNB 32 pp. 21-22
		Percent of ferry terminals in fair or better condition	quarterly	GNB 32 pp. 21-22
3. Mobility (Congestion Relief): To provide for the predictable movement of goods and people throughout the state.	Move people, goods, and services reliably, safely, and efficiently by adding infrastructure capacity strategically, operating transportation systems efficiently, and managing demand effectively.	Travel times and hours of delay on the most congested state highways	annual	GNB 31 pp. 18-31
		Reliable travel times on the most congested state highways around Puget Sound	annual	GNB 31 pp. 32-37
		Percentage of commute trips while driving alone	annual	GNB 27 pp. 92
		Average length of time to clear major incidents lasting more than 90 minutes on key highway segments	quarterly	GNB 32 pp. 31
		Ferry ridership	quarterly	GNB 32 pp. 24
		Ferry trip reliability	quarterly	GNB 32 pp. 26-27
		Percent of ferry trips on-time	quarterly	GNB 32 pp. 26-27
		Amtrak *Cascades* ridership	quarterly	GNB 32 pp. 28
		Percent of Amtrak *Cascades* trips on time	quarterly	GNB 32 pp. 29

Linking performance measures to strategic goals

State Policy Goal	WSDOT Business Direction	Key WSDOT Performance Measures	Reporting Cycle	Last *Gray Notebook* Report
4. Environment: Enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment.	Protect and restore the environment while improving and maintaining Washington's transportation system.	Conformance of WSDOT projects and programs with environmental legal requirements	annual	GNB 30 pp. 36
		Number of fish passage barriers fixed and miles of stream habitat opened up	annual	GNB 30 pp. 39
		Number of WSDOT stormwater treatment facilities constructed or retrofitted	annual	GNB 32 p. 40-41
		Number of vehicle miles traveled	annual	GNB 31 pp. 41
		Transportation-related greenhouse gas emissions (measure to be developed)	n/a	n/a
5. Stewardship: To continuously improve the quality, effectiveness and efficiency of the transportation system	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.	Capital project delivery: on-time and within-budget	quarterly	GNB 32 pp. 49-50
		Note: Stimulus reporting will begin in *Gray Notebook* Edition 33, for the quarter ending March 31, 2009.	quarterly	

Navigating the WSDOT Information Stream

Organization of the Gray Notebook

Through more than 30 editions, in fact eight years, WSDOT has published a quarterly performance report titled *Measures, Markers & Milestones*, but known far and wide by its informal moniker, the *Gray Notebook*. Between its gray covers, it was organized in two sections:

- the Beige Pages, so-called for the color of paper they were printed on, which covered project delivery on the Nickel, Transportation Partnership Account (TPA), and Pre-Existing Funds project programs, and
- the White Pages, which presented quarterly and less frequent reports on a wide variety of transportation-related topics.

With the 30th edition, the *Gray Notebook* (now its formal title) made a host of other changes. This page will help you find the information and reports you are looking for.

How is the Gray Notebook organized?

The *Gray Notebook* (GNB) presents articles in a way that makes the topics' relationship to the five Legislative policy goals – and WSDOT's own strategic goals – more clear. (These goals are discussed in detail on page vi.)

The *Gray Notebook* is organized into five sections devoted to those strategic goals, each marked by a page that recaps WSDOT's goals for Safety, Preservation, Mobility/Congestion Relief, Environment, and Stewardship. Each section divider carries a mini-directory to the topics covered within the section, and points to other articles within the GNB that contain information relevant to that goal.

The first four sections primarily feature quarterly and annual reports on key agency functions, providing regularly updated system and program performance information that was previously covered in the White Pages. 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.

The Beige Pages are still beige; reporting on the delivery of the projects funded in the 2003 Transportation Funding Package (Nickel), 2005 Transportation Funding Package (TPA), and Pre-Existing Funds (PEF), they appear in the Stewardship section. They contains summary tables, detailed narrative project summaries, and financial information supporting WSDOT's "no surprises" reporting focus. The Stewardship section also presents articles covering finance, workforce, and similar issues.

More easily tracked business plan results

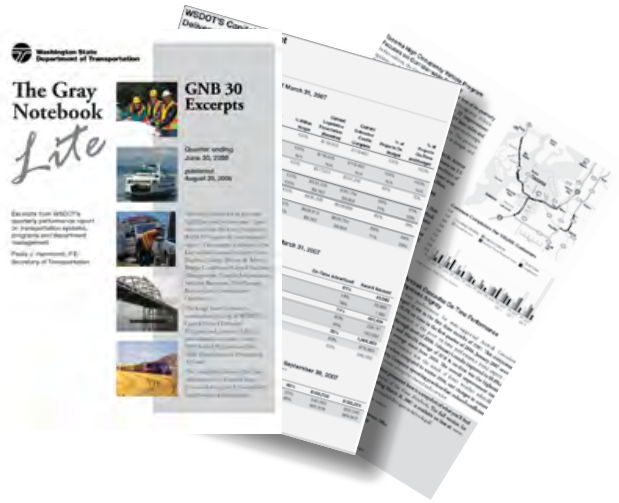
By aligning the *Gray Notebook*'s articles with WSDOT's business goals as outlined in the strategic plan, *Business Directions*, WSDOT hopes to make tracking performance results against specific strategic actions more simple.

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: 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 http://www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm.

A separate detailed navigation folio is available at 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*. *Lite* allows for a quick review and provides a short synopsis of selected topics. It is published as a four-page folio with a two-page Beige Page summary insert and can be accessed at http://www.wsdot.wa.gov/Accountability/GrayNotebook/navigateGNB.htm.

Online capital project reporting and using the 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. The *Gray Notebook*, in the Beige Pages section, highlights each quarter's progress and reports on financial and other program management topics, but much more 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.

Navigating the WSDOT website

The WSDOT home page (shown at left; 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) and the most recent edition of the *Gray Notebook*.

Project Pages

Project Pages (found at www.wsdot.wa.gov/projects/, typical page shown below) 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, all updated regularly.

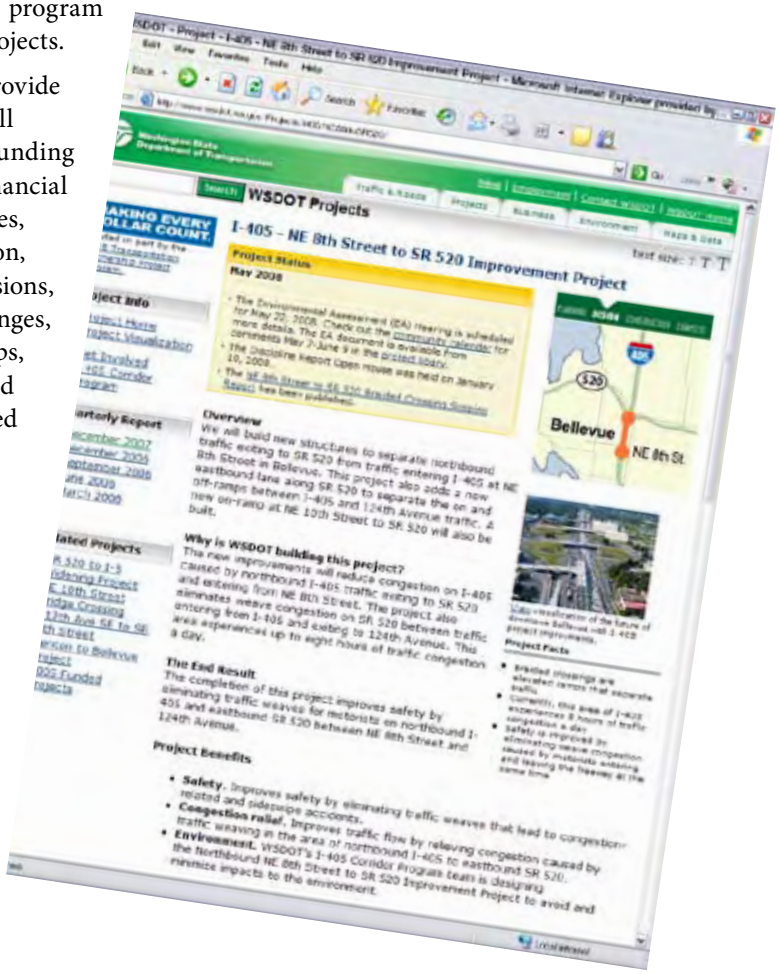
Project Pages cover:

- Overall project vision
- Financial table, 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:

- Highlights
- Milestones
- Status description
- Problem statement
- Risks and challenges
- Project costs, cash flow
- Contact information.



Contributors

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

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Safety

Statewide policy goal:

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

WSDOT's business goal:

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.

In this section

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Pedestrian & Bicyclist Safety 8

Special Focus on: Rural Roads 10

See also

Incident Response 30

Workforce Training 98

Earlier safety-related articles

Highway Safety, GNB 30

Safety Rest Areas, GNB 29

Worker Safety: Quarterly Update

WSDOT Employees: Recordable injuries and illnesses

Employee injuries increasing in FY 2009

WSDOT employees experienced 99 OSHA-recordable injuries/illnesses in the second quarter of Fiscal Year (FY) 2009. That is 10 injuries fewer than in the same quarter in FY 2008. However, to date, WSDOT employees have sustained 185 injuries in FY 2009, 28 more than during the same period last year, as shown in the graph below. The sharp injury increase in the first quarter of FY 2009 from FY 2008 negated the injury decline in the second quarter. The goal is no more than 212 injuries for the entire fiscal year. WSDOT aims to reduce the number of OSHA-recordable injuries and illnesses among employees by 60% from FY 2006 to FY 2009. The North Central and Urban Corridors regions remain on track to meet their goals.

Preventing sprain and strain injuries continues to be a challenge

The most frequent employee injuries, sprains and strains, are often caused when employees are actively lifting, carrying, pulling or pushing. Sprains and strains accounted for 38% of the injuries in the second quarter and 46% of the injuries this fiscal year. Other common injuries include hearing loss (17%) and contusion/crush/bruise injuries (15%).

WSDOT seeks to prevent future injuries through training, outreach and research on avoiding sprains and strains, understanding ergonomics and embracing wellness programs.

Injury severity and related costs declined in 2008

The costs associated with employee injuries decreased in 2008, as the severity of injuries declined. The combined effort to prevent injuries, and the renewed focus in managing claims resulted in a reduction in the costs of employee injury claims. As a result, the agency's insurance premiums are projected to decline in 2009.

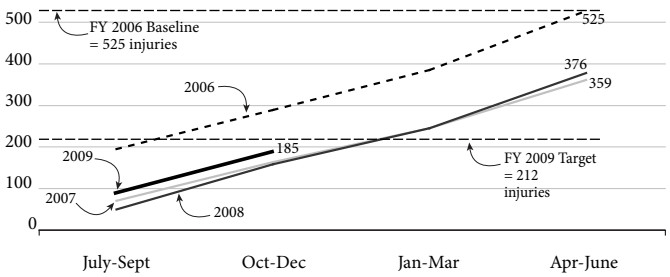
Worker Safety Highlights

WSDOT employees experienced 185 injuries in FY 2009 to date, 28 more than for the same period last year.

Sprains and strains accounted for 46 percent of WSDOT employee injuries and illnesses in the same period.

Cumulative OSHA-recordable injuries and illnesses

FY 2006 to 2nd quarter FY 2009



Data Source: WSDOT Safety Office.

Progress towards achieving OSHA-recordable injury reduction goal (by region)

FY 2009 through quarter 2 (July 2008 - December 2008); Target goal: 60% reduction in OSHA-recordable injuries

Region	FY 06 baseline	FY 08 through Q2	FY 09 through Q2	FY 09 target	Comments	On track Yes/No
Northwest	122	31	35	49	46% of injuries sustained were sprain/strain injuries.	No
North Central	33	5	4	13	50% of injuries sustained were sprain/strain injuries.	Yes
Olympic	71	31	22	28	32% of injuries sustained were sprain/strain injuries.	No
South Central	33	10	14	13	50% of injuries sustained were sprain/strain injuries.	No[2]
Southwest	31	4	7	12	43% of injuries sustained were sprain/strain injuries.	No
Eastern	56	9	14	22	36% of injuries sustained were sprain/strain injuries.	No
Urban Corridors[1]	N/A	1	0	4	No injuries.	Yes
Headquarters	23	7	8	9	25% of injuries sustained were sprain/strain injuries.	No
Ferry System	156	59	81	62	51% of injuries sustained were sprain/strain injuries.	No[2]
WSDOT Total	**525**	**157**	**185**	**212**	**46% of injuries sustained were sprain/strain injuries.**	No

Data Source: WSDOT Safety Office.

[1]WSDOT started tracking OSHA-recordable injuries for Urban Corridors (UCO) as a separate region in FY 2008; it was initially part of the Northwest region.

[2]The region has missed the target for the year.

[3] As a result of rounding by regions, the goal of 212 total injuries/illnesses for FY 2009 is slightly more than a 60% reduction of the WSDOT baseline.

WSDOT Workers: Recordable injuries and illnesses

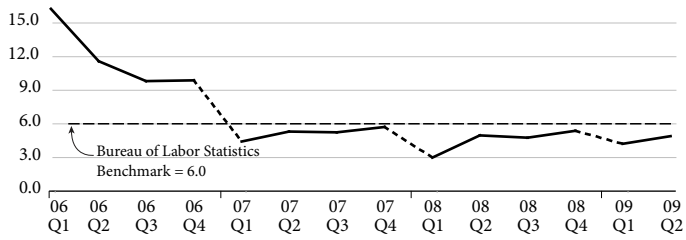
OSHA-recordable injury and illness rates[1]: annualized

Highway, street, and bridge construction workers

The injury rate for WSDOT's highway, street, and bridge construction workers was 4.9 per 100 workers through the second quarter, which is 14% higher than the previous quarter. WSDOT's rate is 18% lower than the most recent federal Bureau of Labor Statistics Benchmark (2006) of 6.0.

Yearly OSHA-recordable injuries and illnesses rate for maintenance and engineering workers: annualized

FY 06 - 2nd quarter FY 09; OSHA-recordable injury rate per 100 workers[1]



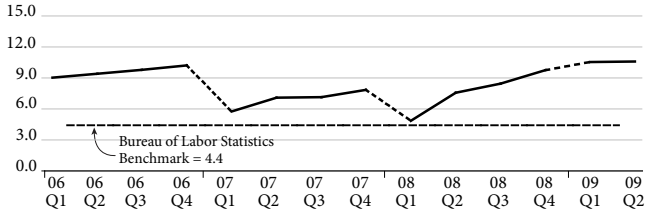
Data Source: WSDOT Safety Office.
[1]Rates are only cumulative for each fiscal year.

Ferry system workers

Ferry workers' annualized injury rate through the second quarter was 10.5 per 100 workers. This is the same as the previous quarter and three more than the same quarter a year ago. The ferry system's current rate is 139% higher than the most recent federal Bureau of Labor Statistics Benchmark (2006) of 4.4 in the industry classification of Inland Water Transportation Workers.[2]

Yearly OSHA-recordable injuries and illnesses rate for ferry system workers: annualized

FY 06 - 2nd quarter FY 09; OSHA-recordable injury rate per 100 workers[1]



Data Source: WSDOT Safety Office and WSDOT Ferry System.
[1]Rates are only cumulative for each fiscal year.

Number of OSHA-recordable injuries/illnesses by category of WSDOT worker

Highway maintenance workers

For the second quarter FY 2009, highway maintenance workers reported 41 injuries, 41.4% of all injuries agency-wide. This was 33% (11 injuries) higher than the previous quarter. There were 112 days away from work associated with the injuries, and 14 were sprain/strain injuries.

Highway engineering worker injuries

For the second quarter, highway engineering workers reported 13 injuries, the same as the previous quarter, and 13.1% of all injuries agency-wide. There were 47 days away from work associated with injuries, and nine were sprain/strain injuries.

Administrative staff injuries

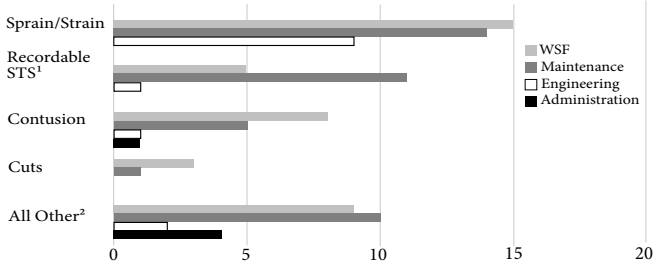
There were five injuries to WSDOT administrative staff for the second quarter of FY 2009, a 150% increase (three injuries) over the previous quarter and 5.1% of all injuries agency-wide. There were 123 days away from work associated with the injuries. The injured parts of the body were the wrist and leg.

Ferry system injuries

Ferry system workers reported 40 injuries for the second quarter, 2% (one injury) lower than the previous quarter and 40.4% of all injuries agency-wide. There were 488 days away from work associated with injuries, and 15 were sprain/strain injuries.

Number of work injuries by type

October 1 through December 31, 2008 (second quarter, FY 2009)



Data Source: WSDOT Safety Office and WSDOT Ferry System.
Note: If no measure is shown, no injuries of that type were reported by other WSDOT groups.
[1]An OSHA recordable Standard Threshold Shift (STS) is if an employee's hearing test reveals that the employee experienced a work-related STS in hearing in one or both ears, and the employee's total hearing is 25 dB or more above audiometric zero (averaged at 2000, 3000 and 4000 Hz) in the same ear(s) as the STS, the case must be considered recordable.
[2]Calculated by subtracting the above subtotals from the total reported injuries for the quarter.

[1]OSHA-recordable Injuries and Illnesses is a standard measure that includes all related deaths and work-related illnesses and injuries which result in death, loss of consciousness, days away from work, days of restricted work, or medical treatment beyond first aid. The U.S. Bureau of Labor Statistics provides the selected 2006 national average benchmark. One worker equals 2,000 hours per year.
[2]The ferry system operates a ship repair facility, urban transit system, and an inland water transportation system with numerous boardings and unloadings daily. These diverse activities make it difficult to identify relevant worker injury benchmarks. On the recommendation of BLS, the Ferry System measures workers under the NAICS code Inland Water Transportation. The Inland Water Transportation normally incorporates far fewer boardings and unloadings than the Ferry System requires.

Worker Safety Quarterly Update

WSDOT Workers: Preventing injuries and illnesses

Efforts underway to reduce injuries

WSDOT is taking steps to reduce injuries and illnesses, stressing safety vigilance. The second-leading cause of sprain/strain injuries are slip/trip/fall incidents. There have been 28 in the first two quarters of FY 2009, following 38 slip/trip/fall incidents in FY 2008.

These sprains and strains may be best mitigated by controlling their source. Workers are encouraged to wear footwear with slip resistant soles and heels year-round. A number of regions have tested additional traction devices including cleats or other similar materials for use under certain conditions such as ice and snow with favorable results.

For work on steep slopes, climbing aids can be utilized to prevent slip/trip/fall related injuries. Employees have been instructed to take the time to survey the work site to identify potential problem areas and evaluate fixes or different control measures as part of their Pre-Activity Safety Plans.

Weather also presents a risk for slip/trip/fall injuries to employees working in the field and those arriving at the office. Ice was among the highest slip/trip/fall contributing factors, and was cited in five injuries in FY 2008 and seven of 12 injuries between December 15, 2008, and January 6, 2009. Employees were injured in ice-related slip/trip/fall incidents while working to remove snow or navigating slick parking lot surfaces.

Snow and ice are leading causes of slip/trip/fall injuries at WSDOT, including seven of 12 employee injuries during the recent winter storm.

Wellness progam

WSDOT's Wellness Program is designed to assist employees to be more healthy and fit. WSDOT continues to bolster the wellness program using surveys and outreach to expand education and program offerings to best suit identified employee needs.

South Central Region employees Jeff Minnick and Debby Black participate in Project Development's "Stretch and Flex" program.

The ergonomics program seeks to prevent future injuries through training, outreach and research.

The agency's ergonomics presentations and awareness video, available on the internal website, detail preventive methods for the office and the field. The programs address risk factors and recommend techniques and stretches to safeguard against injuries.

Safety Recognition Award program budget reduced

These are challenging economic times, with declining revenues and budget shortfalls. Based on those realities, WSDOT suspended in January 2009 the incentive from the Individual Safety Recognition Award program. WSDOT will continue rewarding employees with certificates, ensuring that safety achievement will be valued and recognized. The Safety Advisory and Policy Committees are providing and soliciting suggestions for alternative ways to recognize safe employee behavior.

Before & After Safety Studies

Before & After Safety Studies Highlights

- 47 safety projects reduced fatal and serious injury collisions by 20%: 74 fatal and serious injury collisions in the after period compared to 59 in the before period.
- All injury and fatal collisions declined by 9% over the same time period.
- One project, on SR 20 & Oak Harbor NCL to Frostad Road, resulted in a decrease of 28% in injury collisions.

Keeping citizens safe on Washington's highways is a top priority for WSDOT and the Governor. Washington State's Strategic Highway Safety Plan, Target Zero, outlines the goal to achieve zero traffic deaths and zero serious injuries by the year 2030. In order to achieve this goal, the state must decrease traffic fatalities by 25 each year between 2008 and 2030.

WSDOT plays a key role in the statewide effort to achieve this goal. To assess the effectiveness of highway safety strategies, WSDOT collects and analyzes highway traffic incident data. This edition of the *Gray Notebook* presents the 2008 Before and After Safety Project Study, annual updates on pedestrian and bicycle fatalities and safety, and an update on efforts to improve safety on rural two lane highways.

Annual Before and After safety project study

Each year, WSDOT completes a variety of safety improvement projects throughout the state highway system, ranging from adding turn lanes and traffic signals, to installing median barriers and rumble strips. As part of a continuing effort to determine the effects of these projects on reducing the number and severity of traffic collisions, WSDOT has conducted its sixth annual Before and After Safety Study.

Similar to the last report, this year's report assesses the changes in collisions with serious injuries and fatalities on highways with completed WSDOT safety projects. This information was included to show how safety enhancement projects are contributing to the state's efforts to achieve Target Zero, the basis of Washington State's Strategic Highway Safety Plan. The plan was developed to identify Washington State's traffic safety needs and to guide investment decisions.

Serious injury and fatal collisions reduced by 20% in 47 projects

Implementing these 47 projects reduced fatal and serious injury collisions by 20% (15 collisions): 59 fatal and serious injury collisions in the after period compared to 74 in the before period. Although the "all types" and "property damage only" categories increased, injury and fatal collisions, and more specifically the serious injury and fatal collisions, decreased. These 47 projects recorded a 3% increase (76 collisions) for all types of collisions (2,331 compared to 2,225), and an 11% increase (152 collisions) in property-damage-only collisions (711 from 687). However, the same 47 projects showed a 9% reduction (76 collisions) in all injury/fatal collisions (896 compared to 820).

Before and After results for 47 safety projects

Collisions per year for all projects: 24-36 months before and after construction

	All types	Property damage only	All injury/ fatality	Serious injury/ fatality
Before period	2254.7	1359	895.7	73.7
After period	2331.0	1511.3	819.7	58.7
Percent change	3.4%	11.2%	-8.5%	-20.4%

Source: Transportation Data Office.

Sixteen of these projects installed crossover cable median barrier. Collisions in the median routinely increase after any type of median barrier system is installed. An errant vehicle that may have been able to travel 30 or 40 feet into an open median before installation may only be able to travel 15 to 20 feet before it strikes a newly placed barrier. (For additional detail on cable medians, see the June 30, 2008, *Gray Notebook* 30.)

Before & After Safety Studies

The date range for all completed projects used within the study is October 1, 2004 through September 30, 2006. This made it possible for each project to have 24 or 36 months of available before and after data. At the time of this study, the most current available collision data within the state repository was through September 30, 2008. Therefore, the date range for the completed projects within this study allows the possibility of incorporating projects with a minimum of 24 months of "after" period data (October 1, 2006 through September 30, 2008). For a list of all 47 projects in the Before and After study see: http://www.wsdot.wa.gov/Accountability/Publications/PerformanceDocuments.htm#graynotebook .

Measuring highway safety projects

WSDOT's safety projects are classified into two categories: collision reduction and risk prevention. Risk prevention projects improve roadways to lessen the risk of future collisions. As such, these types of projects typically do not show a significant decrease in collision results in Before and After studies.

The June 30, 2006, *Gray Notebook* noted that Before and After collision reduction numbers may "level off" as WSDOT implements more risk prevention type projects. This study does reflect lower reduction percentages. WSDOT is still exploring performance measurement methods for better assessing the results of risk prevention projects.

Data collection threshold

In the first *Gray Notebook* article (December 2003) on the Before and After study of safety improvement projects, projects with a minimum threshold of 18 months for the "before" period and 12 months for the "after" period were used. Subsequent reports increased the involved minimum thresholds for the number of months for both time periods.

This study, like previous studies, includes the most comprehensive before and after project data to date. As mentioned earlier, either 24 or 36 months for the before period, and 24 or 36 months for the after period was used. Reporting on complete year increments mitigates the potential of seasonal factors influencing the study.

All projects with more than 36 months of data for the after period were eliminated largely due to the potential effect of the following:

- new road projects within the surrounding vicinity can change the intended benefits of an earlier completed project, and
- changing demographics, i.e., new residential developments due to population growth, can affect road usage over the course of time.

As in preceding editions, the data is annualized (12 month average) to make a valid comparison. The study reports on all projects combined each year.

Highlighted projects from the most recent Before and After study

SR 20 & Oak Harbor NCL to Frostad Road – New channelization (Island)

This project in Oak Harbor built a two-way left-turn lane, channelized intersections with left turn lanes in both direction and added an eastbound right turn lane at Frostad Rd. In addition, WSDOT built a westbound passing lane and installed illumination and signing within the project area.

For the three years before construction, the intersection saw an average of 39.3 collisions annually, compared to 31.5 annually for the after period – a 20% reduction in collisions. During the same time period, injury collisions decreased by 28%.

SR 20 & Oak Harbor NCL to Frostad Road – New channelization

Before & After Safety Studies

SR 302 & Elgin-Clifton Road – Intersection improvements (Pierce)

This project involved the installation of a signal at the intersection of SR 302 at Elgin-Clifton Road. It is a "T" intersection with heavy volumes on both the major leg and the minor (stop controlled) leg of the intersection.

These heavy volumes led to several entering-at-angle and left-turn-related collisions: for the three year period before construction, April 1, 2002 through March 31, 2005, there was an average of 10 collisions per year, 43% of which were entering at angle. Seventeen collisions involved injuries, including one fatal injury and two serious injury collisions.

In the two-year period following the improvements, there has been an average of 2.5 collisions a year, predominately rear-end collisions. The number of injury collisions has dropped from 5.7 annually to one a year, with no fatal injury or serious injury collisions.

SR 302 & Elgin-Clifton Road – Improved intersection

SR 14 & 32nd Street – Intersection improvements (Clark)

This project improved the safety of the intersection of SR 14 and 32nd Street in a cost-effective manner by prohibiting left-turn and through maneuvers from 32nd Street onto SR 14 in Clark County, and also constructed a westbound right-turn lane. The major work included paving, installing concrete traffic islands, upgrading illumination systems, signing, striping, and delineators.

There was an average of eight collisions a year at this intersection prior to the improvements; nearly 30% of the collisions were at-angle involving vehicles from 32nd Street, attributing to five of the six injury collisions in the section in the three years before construction.

Since construction finished in 2005, total collisions have been reduced by 33%, injury collisions have been reduced by almost 43%, and at-angle collisions have dropped more than 70%.

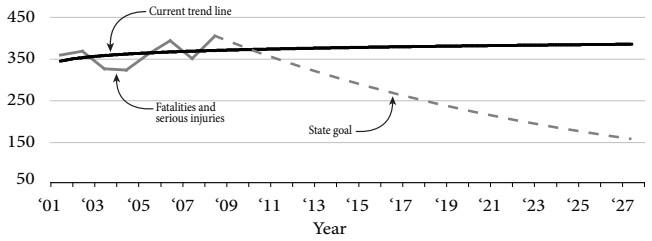
SR 14 & 32nd Street – Improved intersection

Pedestrian and Bicyclist Safety

WSDOT is committed to improving conditions for biking and walking, and has set an aggressive target to reduce serious injuries and fatalities statewide, however, the number of serious injuries and fatalities for pedestrians and cyclists, on all roads and highways in the state, has not declined significantly, averaging 358 between 2001 and 2008. This update addresses current trends in pedestrian and bicyclist safety, discusses the recently released State Bicycle Facilities and Pedestrian Walkways Plan, and the Bicycle and Pedestrian Documentation Project.

Average annual fatal & injury traffic collisions involving bicyclists and pedestrians

2001 actual collisions to 2027 goal



Data Source: WSDOT Project Control & Reporting Office.

WSDOT and numerous partners at the state, local, and regional level established a goal of reducing the number of bicyclists killed or injured in traffic crashes by 5% each year, while doubling the percentage of trips made by bicycle within the next 20 years.

State Results: Washington's pedestrian and bicycle safety rankings

Washington's rankings among other states improved for pedestrian safety and declined slightly for bicycle safety. For pedestrian safety, Washington improved in national rankings from 15th in 2006 to 13th in 2007 with a crash rate of 0.93 pedestrian-involved crashes per 100,000 people, or 60 pedestrian fatalities on city streets, county roads, and state highways.

Overall, Washington's national ranking slipped in bicyclist safety from 11th in 2006 to 35th in 2007 with a bicyclist crash rate of 2.16 per 1,000,000 people, or 14 people on all streets and roads. Rankings of state crash rates often fluctuate significantly due to the relatively small numbers of fatal collisions involving bicyclists – the state's bicycle safety rank has fluctuated in the past, ranking 10th in 2004, 25th in 2005, and 11th in 2006.

Injuries more common in urban areas

Collisions involving bicyclists and pedestrians are most frequent and severe in urban areas on higher speed arterials. Between 2001 and 2007, 86% of all collisions and 78 percent of fatal and serious injury collisions involving pedestrians or bicyclists occurred in urban areas.

Incident locations, 1999 – 2007

In Washington, slightly more than 15% of pedestrian fatalities occurred within marked crosswalks, while over 45% occurred at unmarked crossings. On state highways, approximately 10% of all legal crosswalk locations are marked and 4% are signalized. A sampling of city and county roads indicates a similar percentage of marked legal crossings and a higher percentage of signalized locations.

Between 1999 and 2007, 16% of traffic collisions involving cyclists occurred while crossing roadways and another 58% occurred while riding with traffic. Riding with traffic includes collisions where drivers were following too closely or exceeding safe speeds, driveway turning movements are frequent, and where bicyclists were hit by an opening car door while riding next to parked cars.

Highlights

WSDOT and partners at the state, local, and regional level established an aggressive goal:

- double the percentage of trips made by bicycle within the next 20 years;
- reduce the number of bicyclists killed or injured in traffic crashes by 5% each year.

State pedestrian-involved crashes declined from 2007, while the bicyclist crash rate increased slightly.

The League of American Bicyclists named Washington the nation's number one "Bicycle Friendly State."

WSDOT installed 3.5 miles of sidewalk, 1.5 miles of bike lanes, and .8 miles of shared use path in 2008 to improve pedestrian and bicyclist safety and mobility.

Fatal pedestrian incident locations at intersections

1999-2007

Location	Percent
Crossing – marked crosswalk not available	46%
Crossing – not in crosswalk	25%
Crossing – in crosswalk	17%
Shoulder	8%
Other – Off Roadway	3%
Unknown	0%
Total	100%

Source: WSDOT Highways & Local Programs.

Pedestrian and Bicyclist Safety

Fatal bicyclist incident locations and actions
1999-2007

Location/Action	Percent
Cyclist turned into path of vehicle	17%
Fell into traffic	2%
Riding against traffic	4%
Riding with traffic	58%
Crossing	16%
All other actions	1%
Unknown	2%
Total	100%

Source: WSDOT Highways & Local Programs.

2008-2027 Washington State Bicycle Facilities and Pedestrian Walkways Plan

The 2008-2027 plan establishes objectives, implementation steps and performance measures in each of the five state transportation policy areas. Consistent with statutory requirements, the plan identifies unfunded projects- $1.6 billion in state and local projects - that would improve bicycle and pedestrian safety and mobility across the state. Approximately 25% of these projects are located on or near state routes.

The plan also sets a statewide goal of decreasing fatal and serious injury collisions on all roads involving bicyclists and pedestrians by 5% a year for the next twenty years, while doubling the total number of trips made by biking and walking. To achieve the goal, the number of fatal and serious injuries to bicyclists and pedestrians on both state and local roads must decrease to 150 or fewer by 2027.

Increasing the number of pedestrians and cyclists is key to reducing the number of serious injuries and collisions: studies have shown that motorists are less likely to collide with pedestrians or bicyclists when there are more people bicycling and walking. A community that doubles the amount of bicycling and walking can expect to reduce an individual's risk of being struck by a motorist by more than 60%, as motorists drive slower and more cautiously when they see many pedestrians and bicyclists in the street

WSDOT Bicycle & Pedestrian Documentation Project

WSDOT recently completed a Statewide Bicycle and Pedestrian Documentation Project to collect data on and benchmark walking and bicycling across the state as part of a National Bicycle and Pedestrian Documentation Project. Counts were taken in Fall 2008, with the majority of participating cities taking counts at six locations within their city between 7-9am and 4-6pm. About 24,000 bicyclists and pedestrians were counted at over 125 locations across the state.

The counts will be used to assess the state's progress in its long term goals, and also help WSDOT more accurately estimate demand, measure the benefits of investments, and design projects. This information will help target future safety and mobility projects for bicyclists and pedestrians.

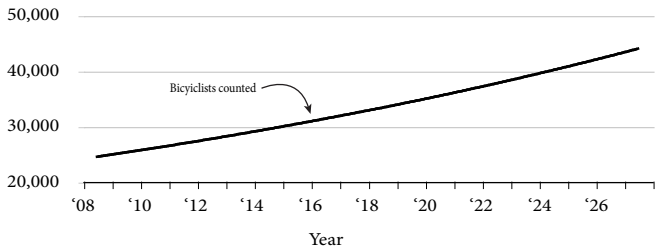
Washington is America's #1 bicycle-friendly state

The League of American Bicyclists named Washington as the nation's number one "Bicycle Friendly State" in the fall of 2008. This was the first time the award was given to an entire state.

The designation goes beyond looking at fatality and collision rates. States are rated on how they encourage bicycling via legislation, policies and programs, education, planning, and places to ride. Highlights of the state's bicycling commitment are its exemplary bike-related laws and dedicated state-level funding sources for bicycle safety projects and programs.

Secretary of Transportation Paula Hammond recently stated "We are fortunate to have strong partnerships between local and state agencies, bicycle groups and healthcare providers ... we've developed priorities and strategies to improve bicycle connections, increase statewide coordination, and make biking a viable commute option."

Pedestrian & bicycle documentation projection
2008 benchmark and 2027 goal



Data Source: WSDOT Project Control & Reporting Office.

Results of WSDOT bicycle and pedestrian projects

WSDOT received funding from the 2003 and 2005 legislatively funded gas tax projects to improve safety for pedestrians and bicyclists. These projects range from low cost safety enhancements, usually costing less than $50,000 to larger safety projects. The results of these projects included 3.5 miles of sidewalk, 1.5 miles of bike lanes, and .8 miles of shared use path installed in 2008.

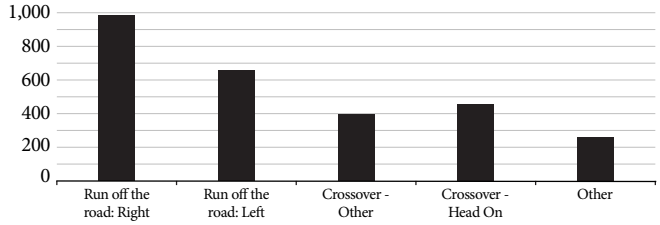
Highway Safety: Special Report on Rural Roads

Reducing fatalities and serious injuries on rural two-lane roads

Although serious injuries on state highways and interstates have declined by 10.6% from 659 in 2002 to 568 in 2007, the number of serious injuries and fatalities on rural two lane state highways increased 14% (37) from 2005 to 2007. WSDOT analyzed the type and direction (run off the road, crossing the centerline) of each of these incidents, and subsequently developed location-specific strategies. The locations and types of these fatalities and serious injuries are shown in the chart below.

State rural two-lane highway collision locations

Fatal and serious collisions, 1999-2007



Source: WSDOT Systems Analysis & Program Development.

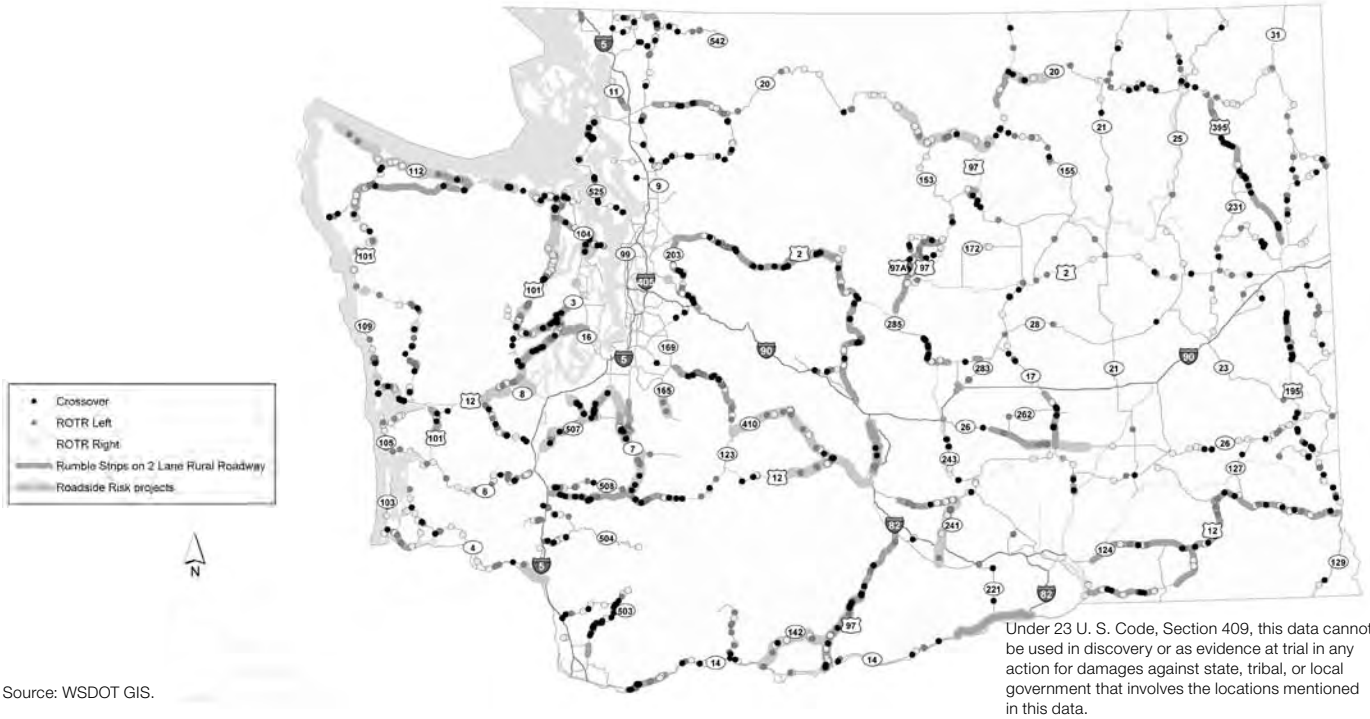
To improve safety, WSDOT has undertaken a series of location-specific solutions to prevent and reduce the severity of serious injuries and collisions. On highways with a number of cars running off the road, WSDOT has initiated or planned roadside safety improvements, such as replacing or adjusting guardrail, replacing deficient signing or restoring sight distance at intersections, to reduce the frequency and severity of collisions and improve motorist safety. The 2008 Legislative Transportation Budget provided $38 million for 34 roadside safety projects statewide, which are planned to be completed by 2011.

For areas with high numbers of vehicles crossing the centerline, WSDOT is installing rumble strips to reduce the occurrence of inattentive drivers colliding with vehicles traveling in the opposite direction. There are five centerline rumble strip projects programmed in the 2009-2011 biennium at a cost of approximately $2 million. Some will carry over and be completed in the 2011-2013 biennium.

Preliminary assessments of rumble strips demonstrate their effectiveness: WSDOT conducted preliminary evaluations of 518 miles of centerline rumble strips that have been in place six months or longer, and preliminary results indicate a 28% reduction in all fatal and serious injuries collisions.

WSDOT anticipates that these targeted investments, many of which began construction in the past year, will improve safety on rural two lane roads, and will report on the effectiveness of these strategies in future editions of the *Gray Notebook*.

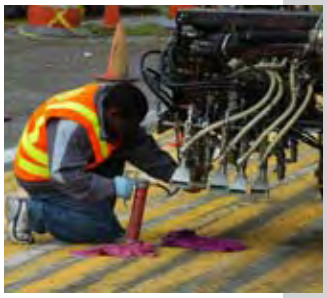
Map: Run-off-the-road and crossover collisions on WA rural two-lane roadways



Source: WSDOT GIS.

Under 23 U. S. Code, Section 409, this data cannot be used in discovery or as evidence at trial in any action for damages against state, tribal, or local government that involves the locations mentioned in this data.

Preservation



Legislative policy goal:

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

WSDOT's strategic goal:

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.

P
preservation

In this section

Asset Management Pavement Assessment Annual Report 12
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Integrated Vegetation Management 20
Washington State Ferries Preservation & Construction 21

See also

Washington State Ferries (Mobility) 24
Capital Projects Quarterly Report (Beige Pages) 48

Previous GNB reports

Capital Facilities, GNB 30
Bridge Assessment, GNB 30
Safety Rest Areas, GNB 29

Asset Management: Pavement Conditions Annual Report

Pavement Conditions in 2007

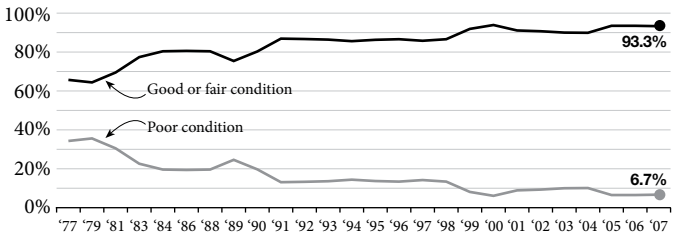
WSDOT currently maintains over 18,000 lane miles of state highway pavement consisting of three pavement types: chip seal (also called BST or bituminous surface treatments), hot mix asphalt (HMA), and concrete. The agency's pavement management system has been recognized as one of the best in the nation. It focuses on alternative preservation strategies based on lowest life-cycle costs (LLCC), in the face of sharp cost increases, reduced revenues, and continuing deterioration of concrete pavements. Several paving projects have been proposed in the American Recovery and Reinvestment Act which reduce the backlog of asphalt and chip-seal needs, and extend the useful life of concrete pavements by rehabilitating with retrofit dowel bars. Project selection and specific amounts for funding are pending at press time.

Pavement conditions see slight decline in 2007

According to the 2007 pavement condition survey, road conditions continued to be good in Washington State. More than 93% of roads were rated as good or fair. The percentage of all pavements in poor condition increased slightly to 6.7% in 2007, compared to 6.5% in 2006. In 2000, there were 1,068 lane miles (6.1%) of pavements in poor condition, while in 2007 the total was 1,162 lane miles.

State highway pavement trends

All pavement types; 1977-2007



Data Source: WSDOT Materials Lab.

HMA pavements in poor condition increased by 43 lane miles (or 0.5% of all HMA lane miles) from 2006 to 2007. The condition of chip seal pavements in poor condition increased by five miles; the condition of Portland Cement Concrete (PCC) pavements stayed relatively constant.

Pavement Condition Highlights

- Roughly 93.3% of pavement was in good or fair condition in 2007 (6.7% in poor)—a slight decline in conditions compared to 2006 (6.5% in poor)).
- Currently 550 lane miles of hot mix asphalt (HMA) pavement are past due for rehabilitation.
- Sixty percent of concrete pavements are now 30+ years old.
- WSDOT roadways with good or fair smoothness carry 94% of total statewide vehicle miles traveled.

Pavement conditions and funding programmed by pavement type (pre-stimulus)

Pavement Type	Total lane miles[1]	Annual VMT[3] 2007 *(Billions)*[2]	Rating	2006	2007	2007-09 dollars programmed *(Millions)*[4]		2009-11 dollars programmed *(Millions)*[4]	
Chip Seal Pavements or Bituminous Surface Treatments (BST) A chip seal is a durable surface that provides six to eight years of performance life at an initial cost of approximately $25,000 - $50,000 per lane-mile.[4]	4,434 (24%)	1.2 (3.9%)	Good/Fair	91%	92%				
			Poor	9%	8%	$47.6	18.9%	$53.9	22.1%
Hot Mix Asphalt Pavements The life of an asphalt pavement surface is typically 10 to 16 years, depending on climate and traffic factors. Initial construction cost is approximately $200,000 per lane-mile.[4]	11,558 (63%)	21.9 (68.4%)	Good/Fair	94%	94%				
			Poor	6%	6%	$166.2	65.9%	$158.9	65.2%
Portland Cement Concrete (PCC) Pavements New concrete pavements are designed for a life of 50 years at an initial cost of $2.5 million per lane-mile. Dowel bar retrofit is a concrete pavement rehabilitation that has an initial construction cost of approximately $600,000 per lane-mile.[4]	2,416 (13%)	8.9 (27.8%)	Good/Fair	93%	93%				
			Poor	7%	7%	$38.2	15.2%	$30.8	12.7%
Total	18,424	32.0	Good/Fair	93.5%	93.3%				
			Poor	6.5%	6.7%	$252.0		$243.6	

[1]Data Source: State Highway Log Planning Report 2005- includes all lane miles.
[2]Data Source: Transportation Data Office - excludes ramps, collector - distributors or frontage roads.
[3]Vehicle Miles Traveled: A measure of the amount of vehicular travel. One vehicle traveling one mile = 1 VMT.
[4]These numbers are approximations and do not include other improvements that may be planned for roadway sections, such as safety enhancements. They cannot be used for budgeting specific projects. These costs do not reflect the total Life Cycle Costs of a pavement structure.

Pavement Preservation Strategies

Pavement management at the lowest life cycle cost (LLCC)

The basic management principles behind LLCC are rather simple: if rehabilitation is done too early, pavement life is wasted, if rehabilitation is done too late, very costly repair work may be required, especially if the underlying structure is compromised. The condition at which a pavement is rehabilitated is carefully analyzed by the Washington State Pavement Management System (WSPMS). WSDOT continually looks for ways to balance these basic principles while making adjustments to traditional paving practices.

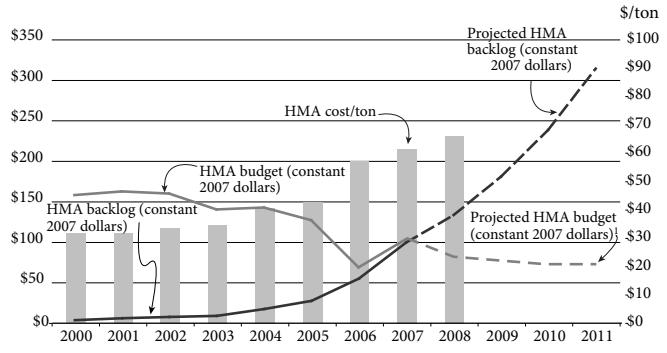
Growing backlog for HMA pavement poses challenge for WSDOT to maintain current conditions

While HMA preservation backlogs were significantly reduced over the past three decades, they are now beginning to grow due to rising construction costs and funding constraints. The rising cost of asphalt (primarily due to the rising cost of crude oil) has taken a significant toll on WSDOT's Roadway Preservation program. Because two-thirds of the WSDOT roadway network is surfaced with HMA, each increase in the cost of asphalt increases project costs and reduces the amount of miles that can be maintained within a fixed budget.

The lowest-cost network preservation strategy requires that a certain number of miles of pavement be rehabilitated each year on a continuing basis. When funding is not available to perform the required pavement rehabilitations, a backlog develops. There are currently 550 lane miles of HMA pavement due for rehabilitation. This is estimated to increase to 1,774 lane miles by 2011.

Hot Mix Asphalt backlog

HMA cost is dollars per ton
Dollars in millions



[1] Does not include stimulus estimates.
Data Note: All dollar amounts were adjusted using the Construction Cost Index (CCI)
Data Source: WSDOT Materials Lab and WSDOT Construction Office

Agency uses surface treatments to extend pavement life

One strategy employed by WSDOT to delay the effect of the growing backlog of HMA pavement rehabilitation has been to use surface treatments for lower-volume roadways. The surface treatments cost less, but do not last as long as HMA rehabilitations. By resurfacing lower-volume HMA pavements with chip seal, WSDOT has added five to seven more years to its life for one-third the equivalent annual cost ($5,000 vs. $15,000 per lane mile per year). About 40% of HMA roads are "lower volume" (average daily traffic of 5,000 or less). This temporary strategy stretches the funds available for pavement preservation over more road miles, but will not reduce the backlog of pavement rehabilitation needs over the long run.

With 60% of concrete pavements now 30+ years old, WSDOT develops triage-style preservation strategy

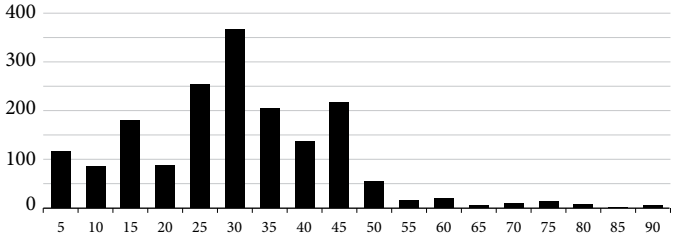
There are 2,416 lane-miles of concrete pavement in the WSDOT road network (roughly 13% of the state system). Concrete pavements are designed to withstand our heaviest traffic loads, carrying 32% of the truck miles traveled in Washington. These pavements are also in our busiest corridors, carrying 34% of the total vehicle miles traveled.

The investment in concrete pavements made in the 1960s and 1970s has paid off, with hundreds of lane-miles carrying much more traffic than expected when they were built. Concrete pavements originally designed for 20 years have lasted more than 35 years; many will be as old as 50 years before they are replaced. While these pavements have proven to be excellent investments, WSDOT now faces the fact that more than 60% of Washington concrete pavements are 30 years old or older.

There is currently an identified need for $1.7 billion in concrete pavement restoration. WSDOT estimates that 400 lane miles should be replaced in the next 20 years ($2.5 million per lane mile), while another 1,000 lane miles should be dowel bar retrofitted in the next 12 years at an estimated cost of $600,000 per lane mile.

Age of concrete pavements on state highways

In lane miles by number of years old



Data Source: WSDOT Materials Lab.

Pavement Preservation Strategies

WSDOT has developed a strategy similar to medical triage to preserve its concrete pavements: the agency first invests in pavements whose life can be greatly extended if treated with dowel bar retrofit and diamond grinding. WSDOT defers pavements which need complete replacement until future funding becomes available on the scale necessary for full replacement. This strategy improves and extends the life of the greatest number of lane-miles with the available level of funding.

WSDOT's innovative strategies extend the life of pavements overall

WSDOT has been able to maintain the high level of road quality desired by the people of the state through careful management strategies, evaluation of alternative pavement investments, and the exploitation of technology. Some of the management strategies, such as life-cycle cost evaluation, use of chip seals to extend service life, and the triage approach to concrete pavement preservation were discussed above. WSDOT Materials Lab is considered a national leader when it comes to implementing new and innovative technology. Some examples of this are:

- Dowel-bar Retrofit: installing dowel-bars in aging concrete pavements to improve load transfer and extend the life of the pavement.
- Pavement Recycling: reclaiming asphalt from older pavements and blending the reclaimed asphalt into the new asphalt mix.
- Warm-Mix Asphalt: using chemical additives in the asphalt mix allows asphalt construction at lower temperatures, improving placement density and lowering emissions.
- Implementation of performance graded binders: use of asphalt binders that have been specially engineered for different traffic and climate conditions.
- Implementation of improved HMA paving practices, such as longitudinal joint construction, use of joint adhesives, and reducing HMA temperature differentials.

These innovations not only reduce costs and provide better road performance, they also reduce the environmental impact of our road system and contribute to the long-term sustainability of the natural resources we use. The use of the state's pavement management system (WSPMS) provides a framework for evaluating and continually monitoring the performance of our roadway investments. In 2008, the FHWA published a *Transportation Asset Management Case Study: Pavement Management Systems – The Washington State Experience*. In this publication the FHWA states that the WSPMS can serve as a model for other states.

WSDOT assists Washington cities in reporting on the conditions of city-owned pavements

In April 2003, the Legislature established planning and efficiency goals for the state and local transportation network. Among other provisions, the legislation requires cities to report pavement condition data for their arterial and collector streets each biennium.

WSDOT helps cities in the analysis and reporting of pavement conditions. To assist small cities (population under 25,000), WSDOT uses its automated data collection van to survey federally classified arterials and collectors. The 25 cities in the state with populations over 25,000 collect their own data and submit them to WSDOT to be included in the analysis.

Roughly 82% of city arterials and collectors are in fair or better condition

Results from the *2008 Washington's City Arterials Condition Report* show that of the 1,795 centerline miles surveyed, 64% of the pavement on city-owned roadways is in good to excellent condition, 18% are in fair condition, and another 18% are in poor to failed condition. This distribution is nearly identical to the distribution seen in the 2006 report. The 2008 report can be found at: http://www.wsdot.wa.gov/NR/rdonlyres/F65F6840-1CEF-468A-A32A-ADA9C454EE73/0/2008_Pavement_Report.PDF

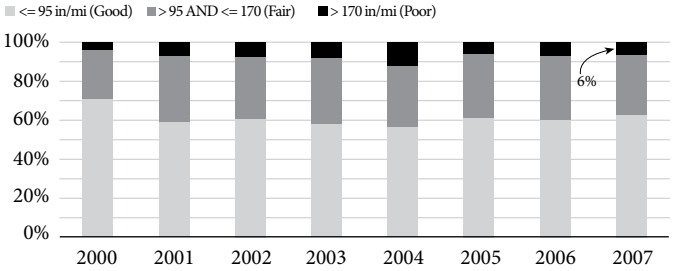
HMA paving on I-5 near Lynnwood.

Pavement Smoothness

WSDOT roadways with poor smoothness carry less than 10% of total statewide VMT

Future reporting requirements from the Federal Highway Administration (FHWA) will include the combination of Vehicle Miles Traveled (VMT) data with the International Roughness Index (IRI), a measure of pavement smoothness. This is a reasonable statistic, since it indicates the importance of providing smooth roads where the most traffic is. The reporting will be for the percent of VMT on roads with "good" smoothness (IRI < 95 in/mi), "fair" smoothness (IRI > 95 and < 170 in/mi), and "poor" smoothness (IRI > 170 in/mi). In general, more than 60% of VMT have "good" smoothness and roughly 6% have "poor" smoothness on WSDOT managed roadways. For more information on IRI please see page 16.

Percentage of total vehicle miles traveled at good, fair, and poor levels of IRI



Data Source: WSDOT Materials Lab.

National study puts WSDOT among top five states for Interstate smoothness and best practices

In 2008, a national research report (AASHTO Publication CPM-1) named WSDOT as one of five "top performing states" with regard to pavement management for smoothness on Interstate Highways. The study evaluated pavement data for 30 states. As a result, five agency best practices were identified for the top performing states. They were:

- Strong performance management orientation.
- Use of end-result pavement construction specifications with incentive bonuses.
- Building close working relationships with paving contractors.
- Integrating customer input.
- Pavement management.

FHWA annual smoothness condition ratings

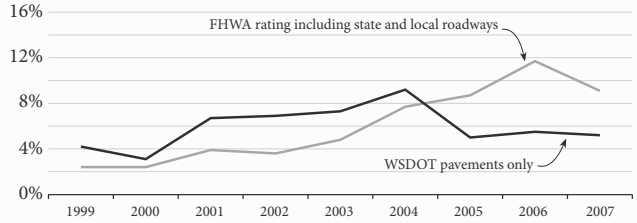
In the past, the *Gray Notebook* has reported on FHWA statewide pavement smoothness ratings. The FHWA rating for Washington is an indicator of the roughness for all roads in the state (including local roads). For their statewide ratings, FHWA relies on Highway Performance Management System (HPMS) data, which is a sampling of all public roads in the state, not just those maintained by WSDOT. As part of its pavement management system, WSDOT measures roughness for 100% of its roadways each year.

The graph below compares WSDOT and FHWA data for the percent of roadways rated "poor" according to IRI. The statewide data from FHWA shows a steady upward trend of rougher roads, which agrees with the drop in ranking for the state as a whole over the past few years. The WSDOT data does not have a similar pattern, and, instead, indicates a generally flat trend of around 6% of roads with poor smoothness, with some year-to-year variation.

The 2007 ranking of states using the FHWA combined state and local data puts Washington in 32nd place with 9.1% in poor condition (see table below).

WSDOT vs FHWA annual smoothness condition ratings

Percent of all pavement with poor smoothness (IRI>170 in/mi)



Data Source: WSDOT Materials Lab; FHWA.

2007 FHWA national pavement smoothness ratings[1]

Rank	State	Total miles reported	# of miles with poor smoothness	% with poor smoothness
1	Georgia	10799	13	0.1%
2	Alabama	7850	56	0.7%
3	Nevada	3070	26	0.8%
4	Montana	6976	67	1.0%
5	Florida	10855	126	1.2%
31	Maine	2328	196	8.4%
32	**Washington**	**6289**	**574**	**9.1%**
33	Pennsylvania	11571	1058	9.1%
51	Dist. of Columbia	112	133	84.0%

Data Source: Highway Statistics 2008, U.S. Department of Transportation
[1] FHWA 2006 roughness ratings include state and locally managed roadways.

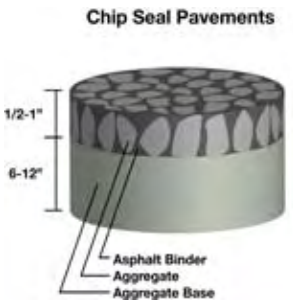
Asset Management: Pavement Conditions Annual Report

Basic Pavement Types and Ratings Summary

Pavement types

Chip Seals or Bituminous Surface Treatments (BST)

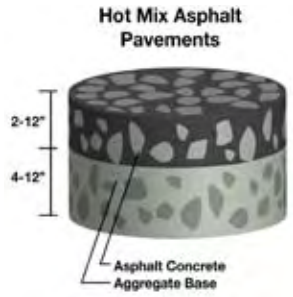
Asphalt is sprayed on the road surface and covered with a layer of rock chips, creating a flexible surface. As the asphalt cools it becomes solid. Chip seals are appropriate for lower volume roads. Chip seal roads are typically rural and have six to eight years of performance life. It is often cost effective to combine small projects into larger, regional projects.



Example of chip seal roadway surface.

Hot Mix Asphalt (HMA)

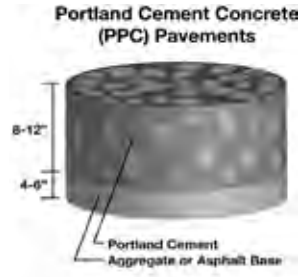
HMA is a flexible pavement, often used on roads with moderate to high traffic volumes. In Western Washington, the average HMA pavement life is 16.5 years; in Eastern Washington it is 11.3 years due to seasonal temperatures. The state average is 14.7 years.



Example of HMA roadway surface.

Portland Concrete Cement (PCC)

Newly constructed PCC pavements are designed for a 50 year life. PCC pavement is a rigid surface, typically placed on heavily traveled interstates, principal arterials, and intersections.



Example of PCC roadway surface.

Pavement ratings

WSDOT uses a combination of pavement ratings shown below to determine when pavements are due for rehabilitation, based on Lowest Life Cycle Cost (LLCC) management.

Pavement Structural Condition (PSC)

A pavement will develop structural deficiencies for two reasons: truck traffic and cold weather. The PSC is a measure based on distress, such as cracking and patching, which relates to the pavement's ability to carry loads. PSC ranges from 100 (best condition) to 0 (worst condition). A roadway should be considered for rehabilitation when it falls within the PSC range of 40 to 60.

PSC example.

Rutting

Rutting is caused by heavy truck traffic or studded tire wear. Ruts deeper than 1/2 inch have the potential to hold water, increasing the risk of hydroplaning for high-speed traffic. A roadway should be rehabilitated when the rut depth is greater than 1/3 inch.

Rutting example.

Roughness

The International Roughness Index (IRI) is a procedure to measure pavement ride. A full-sized van, with a laser-measuring device mounted on the front bumper, measures the roughness of the pavement. A roadway should be rehabilitated when the IRI value is between 170 and 220 inches per mile.

Roughness example

WSDOT uses a technologically advanced approach to collect pavement condition data

WSDOT is one of a few states to perform its pavement condition survey using an automated pavement condition vehicle on 100% of the surveyed lane. This allows WSDOT to complete an evaluation of all state highways. WSDOT's vehicle travels at highway speeds and collects data through the use of high-resolution digital imaging to determine the amount of cracking and patching, pavement roughness and rutting annually on all state highways.

Maintenance Accountability Process

MAP, the Maintenance Accountability Process, evaluates the condition of the highway system, as it relates to 32 maintenance activities. Field surveys are conducted on over 2,200 randomly selected sites to collect data for 14 of the 32 MAP activities. Data for the remaining 18 MAP activities is collected in separate surveys conducted each year in the fall. Results from all surveys are compared to MAP criteria to determine the Level of Service (LOS) delivered. LOS targets are expressed in terms of highway features (for example, the percent of damaged guardrail within the survey sites), and are set by the Legislature. MAP targets are updated each biennium. To find out more about MAP, go to http://www.wsdot.wa.gov/maintenance/mgmt/accountability.htm.

MAP Highlights

50% of highway maintenance targets were achieved in 2008.

Maintenance backlog continues to grow, now estimated at roughly $85 million.

Half of highway maintenance activity targets achieved in 2008

Sixteen of the 32 MAP targets, 50%, were achieved in 2008, continuing a downward trend due to increased inventories of highway features and reduced buying power resulting from inflation. Seventeen (53%) of the targets were achieved in 2007.

Infrastructure additions continue to increase maintenance needs as inflation erodes spending power

The 2003 Nickel Package and the 2005 Transportation Partnership Account (TPA) provided funding for 391 construction projects over a period of several years. As of September 30, 2008, 167 of these projects have been completed, along with many projects funded with pre-existing funds, increasing the infrastructure by approximately:

- 219 lane miles (99 mainline and 120 ramp), requiring striping each year, along with snow plowing, de-icing, pavement markings, pavement patching, and crack sealing as needed.
- 158 signal systems, requiring 13 preventive maintenance tasks each per year – an additional 2,054 tasks.
- 616 Intelligent Transportation Systems, requiring between two and 12 preventive maintenance tasks each year, depending on the type of ITS component.
- 73 bridges, resulting in added structural inspection and upkeep (cleaning, flushing, painting, etc.), along with an additional 1,124,883 square feet of deck surface to maintain.

In addition, these projects increased the amount of other features requiring maintenance, such as guardrail, guideposts, culverts, catch basins, signing, and illumination.

Coupled with the increase in inventories is the sharp rise in material costs. The price tag for materials used to maintain highway systems continues to climb, reducing buying power. For more information on increasing material costs, please see pp. 100-101.

Maintenance targets achieved: 2007 vs. 2008

Maintenance activities in prioritized order

Pass: ✓ Fail: X	2007	2008
Movable & Floating Bridge Operations	✓	✓
Traffic Signal System Operations	X	X
Snow & Ice Control Operations	✓	✓
Keller Ferry Operations	✓	✓
Urban Tunnel Systems Operations	✓	✓
Structural Bridge Repair	X	X
Regulatory/Warning Sign Maintenance	X	X
Slope Repairs	✓	✓
Intelligent Transportation Systems (ITS)	✓	✓
Maintain Catch Basins & Inlets	X	X
Pavement Patching & Repair	X	X
Bridge Deck Repair	X	X
Guardrail Maintenance	✓	X
Pavement Striping Maintenance	X	X
Raised/Depressed Pavement Markers	X	X
Control of Vegetation Obstructions	X	X
Rest Area Operations	✓	✓
Sweeping and Cleaning	✓	✓
Maintain Ditches	✓	✓
Highway Lighting Systems	X	X
Guidepost Maintenance	X	X
Safety Patrol	✓	X
Maintain Culverts	X	X
Pavement Marking Maintenance	X	✓
Noxious Weed Control	✓	✓
Shoulder Maintenance	✓	✓
Guide Sign Maintenance	✓	✓
Maintain Detention/Retention Basins	✓	✓
Bridge Cleaning & Painting	✓	✓
Nuisance Vegetation Control	✓	✓
Landscape Maintenance	X	X
Litter Pickup	X	X
Percent of activity targets achieved	**53%**	**50%**

Data Source: WSDOT Maintenance Office.

Highway Maintenance: Annual Report

Maintenance Accountability Process

New MAP targets being set for the 2009-11 Biennium

For the new biennium, WSDOT is adjusting activity targets to correspond with 2008 delivery and the proposed 2009-11 budget. With the new targets WSDOT anticipates 100% achievement, but at a reduced LOS for some activities. The 2009-11 Decision Package investment will improve LOS ratings for a number of targeted activities (i.e. signals, structural bridge maintenance), as it begins to address the maintenance backlog for these activities.

Maintenance backlog grows as tasks are deferred

Results from an audit performed on the Maintenance Program by the State Auditor's office, noted that maintenance program funding and staffing levels have not kept up with workload increases from infrastructure deterioration, system expansion, and increased regulatory requirements. This has led to the creation of a backlog of maintenance and repairs.

MAP has provided tools to assist WSDOT with re-evaluating priorities and how it conducts business, to do more with less. Work methods have been modified to be more efficient. Activities have been reviewed and prioritized according to importance, which is essential to the endeavor of becoming more efficient. WSDOT continues to improve MAP and is currently working on strategies to develop a centralized maintenance management system to better determine the effectiveness of efforts and estimate the extent of the backlog. A team has been charged with developing recommendations for how to achieve this.

Statewide and regional MAP level of service scores 2008[1]

Activities in prioritized order	Target	State	NW	NC	OLY	SW	SC	E
Movable & floating bridge operations	B+	A+	A+	–	A	–	A+	–
Traffic signal system operations	C+	C-	B-	C	F+	D+	C-	C-
Snow & ice control operations	A-	A	A	B+	A	A	A	B+
Keller Ferry operations	B	B	–	–	–	–	–	B
Urban tunnel systems operations	B	B	B	–	–	–	–	–
Structural bridge repair	C	D	D	A+	D+	F+	F	F+
Regulatory/warning signs	C+	C	D	C+	B+	C+	D	D-
Slope repairs	B	A	A-	A	A	A+	A	A
Intelligent Transportation Systems	B-	B	A	A-	A	D	A-	C+
Maintain catch basins & inlets	B	D+	D+	C	C	C	C+	F+
Pavement patching & repair	B	C+	B-	C	A-	B+	C	C+
Bridge deck repair	B-	C	C-	A-	C	B	C-	D
Guardrail maintenance	A	B+	B	B	A	B	A+	B+
Pavement striping maintenance	C+	C	C-	C-	C	C-	C-	C
Pavement markers	B	C	C-	A+	C+	F	F+	C
Control of vegetation obstructions	B-	D+	F-	A	D	B	A+	C-
Rest area operations	B	B	B-	B-	B	B	B	B
Sweeping and cleaning	B+	A	A+	A+	A	A-	A	A
Maintain ditches	B	B	B-	B+	A	B	A+	B+
Highway lighting systems	B+	C+	D	D+	B	D	B	A
Guidepost maintenance	C-	D	D+	D+	C	D	F	D
Safety patrol	C+	C	B	C-	C	C	C-	C
Maintain culverts	C	D-	F+	F+	C	D	D	F
Pavement marking maintenance	C-	C	C-	D+	D	C	C	C
Noxious weed control	B	A	A	A	A+	A+	D+	D+
Shoulder maintenance	B-	B+	A	A	B+	A	C-	B-
Guide sign maintenance	B-	B	C	A-	A	B	C+	B
Detention/retention basins	C	C	C	C	C	C	C	C
Bridge cleaning & painting	C	B	B	B	B+	C	B-	B
Nuisance vegetation control	B-	A	A+	B+	B	A+	D+	A-
Landscape maintenance	C-	D+	D	–	C-	D	D+	C-
Litter pickup	C-	D	D	D+	D	D	D	B
Percent of targets achieved		**50%**	**50%**	**59%**	**66%**	**63%**	**44%**	**53%**

1. LOS scores are rated from A (best) to F (worst).
Data Source: WSDOT Maintenance Office

Estimated cost of backlog for selected maintenance activities

Traffic signal system operations	$5,820,000
Structural bridge repair	$12,465,000
Regulatory/warning sign maintenance	$922,000
Intelligent Transportation Systems (ITS)	$6,000,000
Pavement patching & repair	$10,450,000
Raised/depressed pavement markers	$1,200,000
Maintain culverts	$2,465,000

Data Source: WSDOT Maintenance Office.

Maintenance Accountability Process

Changes to surveys produce better data more efficiently

MAP field surveys have traditionally been performed twice a year, spring and fall, by many maintenance personnel, an assignment juggled amongst their other duties. In 2008, it was decided to conduct only one survey per year, in the summer months, using dedicated teams and limiting the number of surveyors. This will provide better data for some activities, such as noxious and nuisance weeds, when the spring and fall surveys were too early and/or too late; weeds had either not appeared, or had already gone dormant. Data produced by teams dedicated to MAP, rather than fitting it in with other assignments resulted in data with fewer anomalies. Teams working out of their own areas may provide more objectivity. The added safety benefit for the process is the decreased exposure for WSDOT personnel conducting the surveys.

Also, a new mobile computer application was put to use for data collection. This allowed surveyors to input data as it was collected rather than taking notes while conducting the survey, returning to the truck to do calculations and fill out a form, then returning to the office to input data into a computer. Handling the data only once resulted in fewer errors, and the mobile application validated the data when saving. A review by maintenance staff was conducted after surveys were completed to determine what worked well and what did not, along with recommendations for change.

Maintenance crew repairs a damaged guardrail.

MAP Levels of Service

Level of service (LOS) is reported on a scale of "A" through "F" for each maintenance activity. LOS scores are assigned to maintenance activities at the section, area, region, and statewide levels. For MAP reporting, three regions report at the area level and three report at the section level.

As an example of how LOS is assigned, assume that Olympic Region, Area 1, has 74 culverts within its 137 survey sites, with two of those deficient (2.7% deficient) which translates into an LOS B. The region score is based on all culverts surveyed on all survey sites in the region and the statewide score is based on the total number of culverts surveyed across the state.

The general definition of each LOS is as follows:

- *LOS "A"* – This is a very high service level in which the roadway and associated features are in excellent condition. All systems are operational and users experience no delays.
- *LOS "B"* – This is a high maintenance service level in which the roadway and associated features are in good condition. All systems are operational. Users may experience occasional delays.
- *LOS "C"* – This is a medium maintenance service level in which the roadway and associated features are in fair condition. Systems may occasionally be inoperable and not available to users. Short term delays may be experienced when repairs are being made, but would not be excessive.
- *LOS "D"* – This is a low maintenance service level in which the roadway and associated features are kept in generally poor condition. Systems failures occur because it is impossible to react in a timely manner to all problems. Occasionally delays may be significant.
- *LOS "F"* – This is a very low service level in which the roadway and associated features are kept in poor and failing condition. A backlog of systems failures would occur because it is impossible to react in a timely manner to all problems. Significant delays occur on a regular basis.

2007-2008 Post Winter Report will provide an in-depth look at winter maintenance challenges

The second half of December 2008 brought unusual challenges statewide, from the lowest temperatures seen in decades, to record snowfall, to widespread flooding. The annual Post Winter Report in the March 31, 2009 edition of the *Gray Notebook* will present these challenges, and those still to come, detailing why they were unique compared to previous winters.

To learn more about winter travel strategies, weather forecasts, chain requirements, and to see how WSDOT maintenance crews clear the roads, see: www.wsdot.wa.gov/winter

Integrated Vegetation Management

Integrated Vegetation Management (IVM) involves creating and maintaining roadside plant communities that help the environment and provide for safer highway operations at the lowest possible life-cycle costs. This is accomplished through carefully planned and executed maintenance activities as well as roadside conservation and restoration during highway construction. When soil is conserved and improved, and native vegetation is preserved or restored following highway construction, the ongoing roadside maintenance requirements are reduced.

Area IVM plan development and implementation

Integrated Vegetation Management is applied by WSDOT maintenance crews on all state-managed highways through specific local, integrated plans. These plans contain an inventory of roadside management aspects and detailed guidance on how the areas can be most effective in managing all types of vegetation given the varying roadside conditions in each area.

The development of the area IVM plans is a cyclical adaptive management process. It is dependent on input from the crews, the public, and other external partners. As roadside vegetation patterns grow and change over time, the plans, along with records kept by the crews, serve as a reference for learning from successes and failures of past treatments. WSDOT is engaged in an ongoing refinement process within each region and maintenance area, which includes annual evaluation of practices, monitoring of results, updates to plan documents based on lessons learned and changing conditions, and training of the crews.

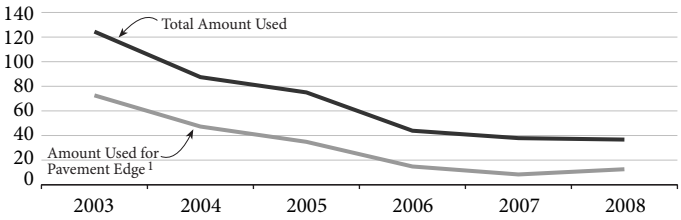
Herbicide use has stabilized over two years

The primary measurement for WSDOT herbicide use is pounds of active ingredient. Herbicide use along state highways has decreased each year since 2003. Overall, there has been a 70% decrease in pounds of active ingredient over the past four seasons. Less reliance on the maintenance of a vegetation-free strip at edge of pavement accounts for the largest portion of this reduction.

It is expected that there will be a gradual trend of continuing herbicide use reductions in coming years, as the IVM process matures and area plans are refined. However, it is likely that there will be slight annual fluctuations up and down as the result of seasonal conditions, increasing weed population, newly listed endangered species of weeds, and funding levels.

WSDOT herbicide use trends, 2003-2008

Pounds of active ingredients (in thousands)



Data Source: WSDOT Maintenance Office.
[1] Included in "Total Amount Used" trendline.
Data Note: This same graph in the December 31, 2007, *Gray Notebook* showed the "Total amount used" in 2007 as approximately 36,718 pounds of active ingredients. The correct amount was actually 36,862 pounds and is reflected in the graph above.

No violations since 2004, one claim under investigation

WSDOT also tracks compliance with laws that apply to use of herbicides for roadside maintenance. The Washington State Department of Agriculture (WSDA) conducts investigations of alleged herbicide misuse in response to public complaints, for all types of application throughout the state. Between 2004 and 2006 no findings of violation and no public complaints were registered. In 2007 two investigations were initiated as a result of public concern and WSDOT applicators were cleared of any fault. In 2008 there was one claim that is still under investigation by WSDA, and a final determination has not yet been reached.

IVM Highlights:

The IVM program has allowed WSDOT to reduce its herbicide applications by 70% since 2003.

Total pounds of herbicide used are down roughly 3.5% from 2007, though the number of pounds used on the pavement edge increased by 50% in 2008.

No formal violations have been issued to WSDOT for herbicide applications since 2004.

WSDOT and the University of Washington are almost ready to publish their findings on alterative methods for IVM based on observations from 38 sites and 19 different approaches. The results will be published in the Summer of 2009 and will be available at: www.wsdot.wa.gov/

Terminal Preservation Update

WSDOT's ferry system is part of the state's highway system and a regional mass-transit provider. It provides a critical link to communities separated by water or long driving distances, and is essential to the movement of goods and people in the Puget Sound. WSDOT places high priority on preserving terminals and vessels, and is working with the Governor and Legislature to find long-term solutions to Ferries' preservations needs.

Currently, WSDOT manages 20 ferry terminals and a repair facility, comprised of 597 separate components. WSDOT evaluates terminals like other state bridges, using the Washington State Bridge Inventory System to track the condition of all ferry terminal and repair facility components. Included in the conditional assessment are all of the critical components of a terminal's super- and sub-structures, including landing aids (wingwalls and dolphins), vehicle transfer span systems, overhead loading systems, trestles, bulkheads, and pavements. Ferry terminals are part of the agency's inventory of over 3,500 bridges and related structures.

Terminal components are assessed based on four condition ratings: "good," "fair," "poor," and "sub standard." (The "sub-standard" condition rating is unique to the ferry system compared with other WSDOT bridge programs. This rating does not mean the system is unsafe, but is in greater need of preservation.) The rating system evaluates the level of deterioration, damage, and compromised functionality on terminal components before giving them a structural condition rating. What distinguishes "good" from "fair," for example, is defined in the table below.

WSF bridge structural condition definitions

Category	Description
Good	The structure is performing as designed with all elements functioning as intended.
Fair	All primary structural elements are sound but may have deficiencies such as crushed timbers, deterioration, and some section loss of anchor chain.
Poor	There is moderate deterioration of some of the elements due to section loss or rotten and crushed timbers, and moderate loss of anchor chain are present.
Sub-standard	There is advance deterioration due to section loss of steel elements, rotten or crushed timbers, broken or leaning pilings, broken hardware, and severe section loss of anchor chain. Flotation structure may be compromised.

Source: WSDOT Ferry System

WSDOT last reported on terminal condition ratings in the June 30, 2008 *Gray Notebook*. Since the last report, the percentage of components that were rated "good" or "fair" dropped from 86% to 84%. The table below details the condition levels of these components for all 20 of WSDOT's terminals and its repair facility.

WSF structural condition rating for terminal systems

System	# of systems	Good	Fair	Poor	Sub-standard
Landing aids[1]	176	53%	19%	16%	11%
Vehicle transfer spans	210	27%	59%	13%	1%
Overhead loading systems	66	55%	42%	3%	0%
Trestle & bulkheads	72	24%	69%	7%	0%
Pavement	73	58%	33%	5%	4%
Total average	**597**	**41%**	**43%**	**11%**	**4%**

Data Source: WSDOT Ferry System.
[1] Includes dolphins and wingwalls.

The majority of structures that were rated "poor" or "sub-standard" in the last WSDOT assessment were landing aids such as wing-walls and dolphins. Many of these aging components are deteriorating creosote-soaked wood pilings that are susceptible to rot from being submersed in the marine environment. WSDOT's plan is to replace these systems with concrete and steel structures to improve the usable life-span of these components, and to reduce marine contamination by removing creosote sources from the water.

Ferry vessel life-cycle preservation work

WSF uses a life-cycle preservation system that includes two system classifications (Category 1 and Category 2 systems). Each vessel has components that are classified as either being a Category 1 or Category 2 system. Category 1 systems are those components that are considered by regulatory agencies (such as the U.S. Coast Guard) as "vital" to the protection of people, the environment, and infrastructure. These include systems

Vessel Preservation Update / Construction Program Update

necessary to start, keep in motion, stop, land, and unload a vessel. The Category 2 systems are all other vessel components that are refurbished as part of a life-cycle preservation system.

For the 2007-2009 biennium, WSF planned on refurbishing or replacing 43 Category 1 systems and 50 Category 2 systems. So far this biennium, WSF has replaced 16 Category 1 components, including two hull steel replacements during the second fiscal quarter. There have been 27 Category 2 systems replaced, which include two potable water tank structural preservations, one topside painting, one salt water piping replacement, one sewage tank structural preservation, and a bilges structural preservation, during the second fiscal quarter.

Vessel preservation activities

Second quarter of fiscal year 2009, 2007-09 biennium

System	Systems preserved[1]	Planned number of preservations[2]
Category 1 Systems	16	43
Category 2 Systems	27	50
Total	**43**	**93**

Data Source: WSDOT Ferry System.
1. Cumulative to date.
2. For the 2007-09 biennium.

WSF will not meet its target of preserving all of the 93 items originally planned for this biennium. The sudden retirement of the four Steel Electric vessels and the number of unplanned emergency dry-dockings for hull steel replacement on older vessels disrupted the initial schedule. On some of the other items not accomplished, notably piping replacements, further inspection found that the condition of these systems did not require them to be replaced at this time.

Vessel preservation measure under development

In the future, WSDOT will measure vessel preservation using condition ratings in accordance with Legislative goals. The methods to determine overall vessel conditions are currently under development.

WSF Construction Program update

The WSF construction program for 2007-09 provides for capital investments throughout the ferry system. This program preserves and builds new ferry terminals and vessels; it is authorized to spend approximately $250 million.

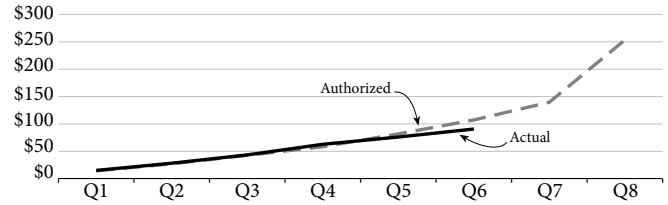
Vessel construction biennium-to-date

At the end of the second fiscal quarter, vessel construction expenditures were under-spending by $11.86 million, a 19.3% variance from the authorized funds ($61.45 million) for the quarter ending December 31, 2008.

The major sources of the variance are under-spending on the new vessel construction, and preservation work on the

Construction program expenditures for Washington State Ferries

Through first quarter of fiscal year 2009, 2007-09 biennium
Authorized vs. actual, cumulative dollars in millions[1]



Data Source: WSDOT Ferry System.
[1]Authorized figures were revised in the September 30, 2008 edition of the *Gray Notebook*. See the March 31, 2008 edition of the *Gray Notebook* for more previous figures.

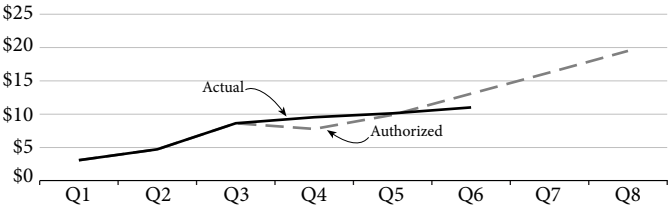
M/V *Kaleetan* that is being deferred into the next biennium because of delays in the manufacture of new propulsion generators. However, work on the new vessel (*Island Home* class) is progressing as required to meet the target completion date in 2010. The March 31, 2009, *Gray Notebook* will begin a series of quarterly special reports on the new vessel construction.

Terminal construction biennium-to-date

Terminal construction expenditures were under-spending by $3.21 million, a 9.6% variance from the authorized funds ($33.26 million) for the quarter ending December 31, 2008. The majority of the variance for the terminal construction program can be attributed to delay of the Port Townsend wingwall and tie-up pilings projects.

Emergency expenditures for Washington State Ferries

Through first quarter of fiscal year 2009, 2007-09 biennium
Authorized vs. actual, cumulative dollars in millions[1]



Data Source: WSDOT Ferry System.
[1]Authorized expenditures were revised in the September 30, 2008 edition of the *Gray Notebook*. See March 31, 2008 *Gray Notebook* for older figures.

Mobility
(Congestion Relief)

Statewide policy goal:

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

WSDOT's business goal:

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

Moving Washington

Moving Washington is WSDOT's three-part strategy to fight congestion on the state transportation system, make trips more reliable and safe, and improve overall traffic flow.
Moving Washington strategies include:

Managing demand: *WSDOT is reducing demand on the system by providing citizens with options such as HOV lanes, Commute Trip Reduction programs, and Traveler Information.*

Operating efficiently: *WSDOT is making the system operate more efficiently by using tools such as ramp meters, synchronized traffic signals, and incident response trucks to clear traffic accidents.*

Adding capacity strategically: *WSDOT is delivering the largest transportation capital construction program in our state's history. Capital projects improve safety by relieving chokepoints that cause recurring congestion.*

More information on Moving Washington is available at:
http://www.wsdot.wa.gov/Congestion/

mobility

In this section

Washington State Ferries Quarterly Update 24
Rail Quarterly Update 28
Incident Response Quarterly Update 30

See also

Quarterly Report on Capital Projects (Beige Pages) 48

Earlier mobility-related articles

Congestion Report, GNB 31
Travel information, GNB 30
Freight and CVISN, GNB 29

Washington State Ferries Quarterly Update

Ridership and Farebox Revenue

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. Currently, it is the largest operating auto-ferry fleet in the world, carrying over 10 million vehicles and 23 million passengers each year.

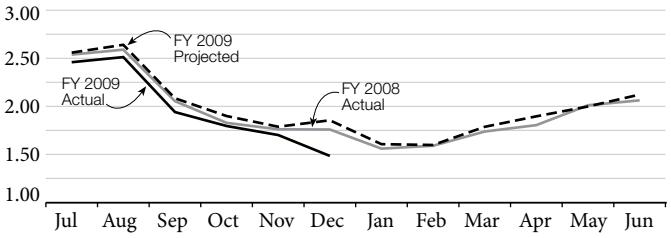
Ridership levels remain below projected levels

For the second fiscal quarter, 5 million people traveled on the ferry system. For this quarter, WSF ridership was 10.1% below projected levels, or 560,760 fewer riders. Generally, the decline in ridership levels reflects the current national trends of reduced discretionary travel. WSF's fiscal year ridership projections incorporate both traditional commuter and seasonal tourist demands. Any economic conditions that affect the Puget Sound-region's employment levels or tourism is thought to have a related effect on actual WSF ridership levels. Of particular note is the decline in ridership for December as two-thirds of the decline in ridership for the quarter occurred in this month. In December 370,594 fewer passengers rode the ferries than projected. A combination of winter storms and unseasonably cold weather which occurred immediately preceding and during the holidays may have contributed to this unusual drop in ridership for December.

Ferries ridership by month

Actual ridership vs. planned ridership for fiscal year 2009

Ridership in Millions



Data Source: WSDOT Ferry System.

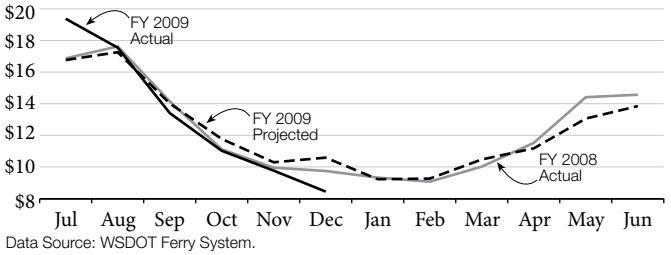
Farebox revenue drops below projections

Farebox revenue was down 10.5% from projected levels for the quarter as compared to the previous quarter and this mirrors a similar decline in ridership (see above). This trend includes a significant difference in December ($2.1 M below projected levels), that accounted for a 63% of the decline in revenue for the quarter. Farebox revenue was $29.2 million during the quarter, $3.4 million less than the projected revenue of $32.6 million. Also, farebox revenue was $1.6 million less than the same quarter one year ago ($30.8 million).

Ferries farebox revenues by month

Actual revenues vs. planned revenues for fiscal year 2009

Dollars in millions



Data Source: WSDOT Ferry System.

Washington State Ferries Highlights:

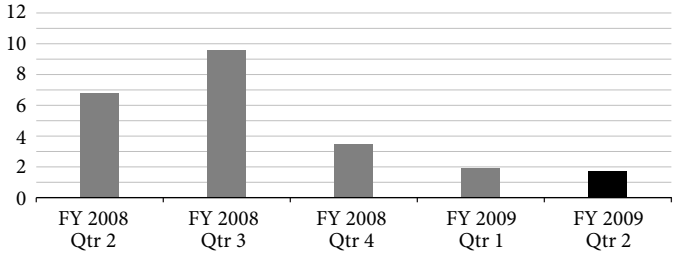
- Ridership was 10.1% below expected levels for the quarter, with two-thirds of the decline occurring in December, 2008.
- Farebox revenue was 10.5% below projections for the quarter, in line with the decline in ridership for the quarter.
- Customer complaints were down for two consecutive quarters, to an average of 1.7 complaints per 100,000 customers.
- The average number of missed trips per regular commuter increased for the first time in two quarters to an (annualized) average of 2.13 trips.
- Overall service reliability remains high: the ferry system completed 99.47% of 40,855 trips.
- On-time performance improved to 95% of trips recorded as departing "on-time".
- The average delay was 2.8 minutes past the "on-time" sailing window, an improvement over the delay experienced last quarter (average of 4.8 minutes) and one year ago (3.1 minutes).

Customer Feedback

Average customer complaint rate improves for third consecutive quarter

In the second fiscal quarter, WSF continued the trend of fewer complaints and with a 10.5% reduction in the rate of complaints as compared to the first quarter of fiscal year 2009 (1.7 complaints per 100,000 riders versus 1.9 complaints per 100,000 riders in the first fiscal quarter). There were 84 complaints made during the quarter. Compared to the same quarter one year ago, customer complaints were lower by 6.1 complaints per 100,000 riders, a 78% reduction in the rate of complaints.

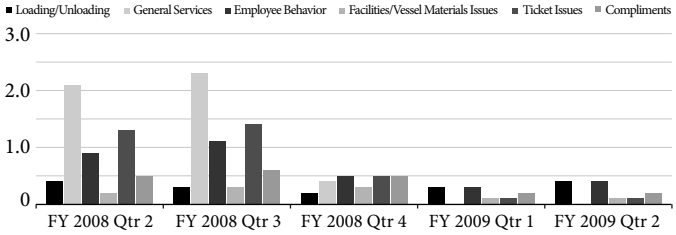
Average number of complaints per 100,000 customers



Data Source: WSDOT Ferry System.
Note: Beginning FY 2008 Quarter 4, WSDOT added four new complaint categories to its inventory that were not featured in previous quarters' calculations. They are 'Advertising', 'Vendors', 'Noise', and 'Reservations'.

While all major categories of complaints were similar to or lower than the previous quarter, there was a slight increase in comments about employee behavior (22). The department takes customer feedback seriously: each complaint about employee behavior results in a meeting between the employee and his or her supervisor to determine if corrective actions are needed.

Common complaints per 100,000 customers



Data Source: WSDOT Ferry System.

New vessel construction progress reporting to debut in next *Gray Notebook*

Beginning with the March 31, 2009 *Gray Notebook*, WSDOT will debut a new quarterly progress report on the design and construction of replacement vessels. The Legislature authorized and funded new vessel construction in 2003 as part of the Nickel finance package and in 2008 in order to address the emergency removal of the 84-year old Steel Electric vessel class from service.

The vessels authorized for construction in 2008 will primarily service the Keystone - Port Townsend route. The first vessel is scheduled to be completed and in service within 18 months of the first day of construction. WSDOT originally decided to use an existing design from a Washington state-based shipbuilder that has been in service for the Pierce County ferry system (the M/V *Steilacoom II*). However, research suggested that another vessel design would be suitable for a route that experiences stronger tidal conditions and other adverse weather. The Island Home vessel class was originally designed for the Cape Cod, Massachusetts ferry system, but was designed in Washington state. The Island Home design is better suited to customer needs and local maritime conditions than the M/V *Steilacoom II* is. WSDOT has decided to adopt and modify this design in order to comply with existing state regulations that require design and construction to be done in Washington state. The first vessel construction award was given to Todd Shipyards on December 1, 2008 for construction of one Island Home class vessel.

WSDOT anticipates that it will soon solicit bids from Washington state-based shipbuilders for the construction of new ferry vessels funded by the 2003 Nickel package. These ferries are updated designs of the successful Issaquah-130 class vessels, but will carry 144 cars instead. Construction of the third and final vessel is expected to be completed by 2012.

The new vessel construction reporting will be placed in the Stewardship section of each *Gray Notebook*, with the other long-term, "mega" projects such as the ***SR 104 Hood Canal Bridge*** and ***Tacoma/Pierce County HOV program***. Each quarter will contain an analysis of the construction and development phases of the two new vessel classes, and will conclude with the delivery of the final vessel.

Washington State Ferries Quarterly Update

Service Reliability

Number of missed trips increases over the previous quarter

Trip reliability for the second fiscal quarter declined for the first time in two (reporting) quarters to an annualized average of 2.13 missed trips per year based on the second fiscal quarter. This is a 46% increase in the annualized average of missed trips as compared to the first quarter of FY 2009.

WSF's missed trip index measures trip reliability averages, and is 'annualized' based on quarterly data, assuming 400 trips a year for each commuter. In the second quarter of FY 2009, 40,885 sailing trips were scheduled. Of those trips, 234 were canceled and 17 were replaced, resulting in a total of 40,668 trips during the quarter (40,885 scheduled trips – 234 cancelled trips + 17 replacement trips = 40,638 net trips). The system had a 99.5% overall reliability rating for the quarter, missing only one half of one percent of trips scheduled despite challenging maritime conditions which occur during the fall and the winter.

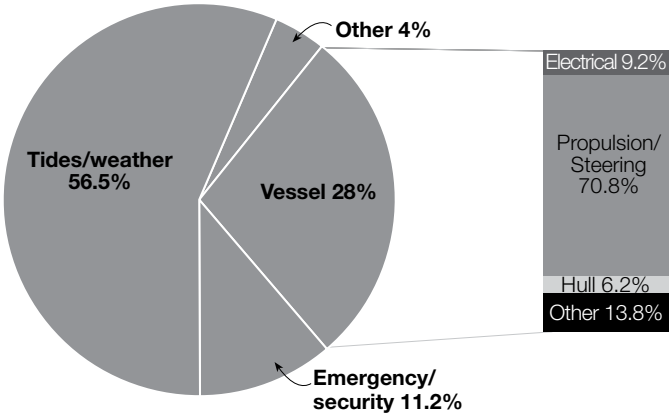
Six of the 10 routes had an individual missed trip reliability average that was better than the system-wide average, and four routes had a reliability rating that exceeded the system-wide average (the Edmonds - Kingston route, the Seattle - Vashon Island passenger-only route, which WSF is operating for the King County ferry district, and the Point Defiance - Tahlequah route).

The operationally-challenging Port Townsend - Keystone route posted a missed trip reliability average of 26.4, which is a 62% decline in service reliability over the previous quarter. The Port Townsend – Keystone route encounters some of the strongest tidal conditions in Puget Sound in addition to the challenging weather conditions (heavy fog and wind) which can overcome the operational abilities of the smaller M/V *Steilacoom II* ferry that has been operating on this route.

The M/V *Steilacoom II* was leased from Pierce County shortly after the removal of the Steel Electric class of ferries were pulled from service due to safety concerns in November, 2007. The M/V *Steilacoom II* is scheduled to be leased for use on this route until the end of FY 2010 when the first *Island Home*-class ferry is scheduled to be delivered for service.

Reasons for trip cancellations

Second quarter, fiscal year 2009



Data Source: WSDOT Ferry System.

WSF missed-trip reliability comparison

	Second quarter, fiscal year 2008			Second quarter, fiscal year 2009		
Route	Number of missed trips[1]	Missed trip index (average)[2]	Overall reliability average[3]	Number of missed trips[1]	Missed trip index (average)[2]	Overall reliability average[3]
San Juan (Domestic)	39	2.29	99.43%	8	0.47	99.88%
Anacortes-Sidney, B.C. (International)	9	20.57	95.10%	0	0.00	100.00%
Edmonds - Kingston	8	2.26	99.44%	42	3.66	99.09%
Seattle - Vashon (Passenger Only)	0	0.00	100.00%	10	10.10	97.47%
Fauntleroy - Vashon - Southworth	29	1.11	99.72%	21	0.81	99.79%
Keystone - Port Townsend	299	78.32	83.63%	116	26.42	93.80%
Mukilteo - Clinton	4	0.23	99.94%	5	0.30	99.25%
Pt. Defiance - Tahlequah	4	0.51	99.87%	17	2.19	99.45%
Seattle - Bainbridge Island	0	0.00	100.00%	0	0.00	100.00%
Seattle - Bremerton	5	0.78	99.92%	0[4]	0.00	100.00%
TOTAL	**415**	**4.11**	**98.80%**	**217**	**2.13**	**99.47%**

Data Source: WSDOT Ferry System.

[1] 'Number of missed trips' is the difference (net) between the number of cancelled trips and the number of replaced trips.

[2] 'Missed trip index' is based on the number of missed trips per year for one commuter making 400 trips per year, including a departure and return trip on the same day, or 200 days per year. In previous editions of the *Gray Notebook*, this measure was referred to as the 'trip reliability index'.

[3] The overall 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.

[4] The Seattle-Bremerton run had four cancellations this quarter, and six make up trips, which resulted in a (net) of two trips, having the effect of zero missed trips.

Service Reliability

On-time performance improves 8% over last quarter

WSF's system-wide on-time performance rating improved 8% from the previous quarter. For the second fiscal quarter, WSF had an average of 95.2% of sailings recorded as sailing "on-time". Compared with the same quarter one year prior, on-time performance improved 0.8% over the 94.4% recorded in the second quarter of FY 2008.

The average sailing delay improved 42% compared to the previous quarter (2.8 minutes in the second quarter versus 4.8 minutes in the first quarter). This is also an improvement as compared to the same quarter one year prior, when the average sailing delay was 3.1 minutes. A trip is considered delayed when a vessel does not leave the terminal within 10 minutes of the scheduled departure time. The average delay is the quarterly average of time experienced 10 minutes after the departure time.

WSF calculates its on-time performance rating using an automated tracking system on each of its terminals which records when a vessel leaves the dock. If a vessel is recorded as leaving the dock within 10 minutes of the scheduled departure time, then the trip is considered 'on-time'. WSF's on-time performance rating is calculated on the number of trips recorded by its automated tracking system; however, marine and atmospheric conditions may prevent all trips from being detected when a vessel leaves a terminal.

This quarter's system-wide on-time performance rating and average sailing delay does not include completed trips on the Keystone - Port Townsend route. Because WSF is using a leased vessel from Pierce County Ferry System, the boat is without an automated tracking system that can report on-time departures.

Federal stimulus package contains funding for ferry systems

On February 17, 2009, President Obama signed into law the 2009 American Recovery and Reinvestment Act (ARRA, also known as the federal stimulus) that included $60 million dollars for ferry system investments to be divided among the states.

It is unknown at press time how much of the ARRA stimulus funding might be distributed to WSDOT for the ferry system. However, WSDOT will be developing performance reporting for all capital projects that are financed wholly or in part by the ARRA stimulus. Any Ferries projects or activities supported by these funds will be included in future reporting.

WSF on-time performance comparison

	Second quarter fiscal year 2008			Second quarter fiscal year 2009		
Route	**Number of actual trips[1]**	**Percentage of trips on time[2]**	**Average delay from scheduled sailing time**	**Number of actual trips[1]**	**Percentage of trips on time[2]**	**Average delay from scheduled sailing time**
San Juan Islands (Domestic)	6,063	92%	3.1 minutes	6,525	92%	3.0 minutes
Anacortes-Sidney, B.C. (International)	143	91%	3.4 minutes	180	81%	6.5 minutes
Edmonds-Kingston	4,264	94%	3.3 minutes	4,528	93%	3.6 minutes
Seattle-Vashon (Passenger Only)	325	97%	3.7 minutes	359	97%	3.1 minutes
Fauntleroy-Vashon-Southworth	9,347	93%	3.7 minutes	10,341	95%	3.0 minutes
Keystone-Port Townsend	1,068	88%	5.0 minutes	N/A[3]	N/A[3]	N/A[3]
Mukilteo-Clinton	6,453	99%	2.1 minutes	6,450	98%	2.3 minutes
Pt. Defiance-Tahlequah	2,909	95%	3.6 minutes	2,057	94%	3.7 minutes
Seattle-Bainbridge Island	3,898	96%	1.9 minutes	4,135	98%	1.5 minutes
Seattle-Bremerton	2,405	96%	3.1 minutes	2,511	97%	3.1 minutes
TOTAL	**36,875**	**94%**	**3.1 minutes**	**37,086**	**95%**	**2.8 minutes**

Data Source: WSDOT Ferry System.

[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.

[32] Keystone - Port Townsend route is being serviced by a substitute vessel, the M/V *Steilacoom II*, which is not equipped with WSF's automated tracking system equipment, and can not report on-time performance for this route.

Rail Quarterly Update

State-supported Amtrak *Cascades*

Washington State is one of 13 states to provide operating funds to Amtrak for intercity passenger rail service. Amtrak *Cascade*s train operations span 466 miles of rail between Eugene, Oregon and Vancouver, British Columbia. Amtrak uses five European-designed, Talgo trains for daily operations. Three are owned by Washington State and two by Amtrak.

Amtrak *Cascades* service is jointly funded by Amtrak, and the states of Washington and Oregon. Amtrak provides operating funds for one daily round-trip route, Oregon provides for two routes, and Washington, through WSDOT, provides for four roundtrips.

An Amtrak *Cascades* train crosses a bridge.

Rail Highlights

Ridership on state-supported Amtrak *Cascades* was a record 521,493 in 2008, a 14% increase over the same period in 2007.

On-time performance improved to 69% this quarter, from 61.4% in the same period last year (on-time performance goal is 80%).

Amtrak and WSDOT completed the first phase of a $10 million interior renovation on all coach and business-class train cars in January 2009.

Amtrak *Cascades* 2008 ridership sets new record

State-supported Amtrak *Cascades* experienced record ridership during 2008, totalling 521,493 for 2008, an increase of 14% over 457,498 in 2007. Ridership on all Amtrak *Cascades* trains was 774,421 in 2008 representing a 14.4% increase over 676,760 in 2007.

Seattle remained the most heavily used station on the Amtrak *Cascades* route with Portland, OR a close second. Eugene, OR rose from the fifth spot in 2007 to become the third busiest station in 2008, likely due to the addition of connecting bus service in the Eugene area. Tacoma and Vancouver, B. C., rounded out the top five.

On-time performance shows improvement

On–time performance for state supported Amtrak *Cascades* averaged 69% for the fourth quarter of 2008, compared to 61.4% in the fourth quarter of 2007. Annual on-time performance for 2008 averaged 64% for 2008, an improvement over the 59.5% on-time performance for 2007.

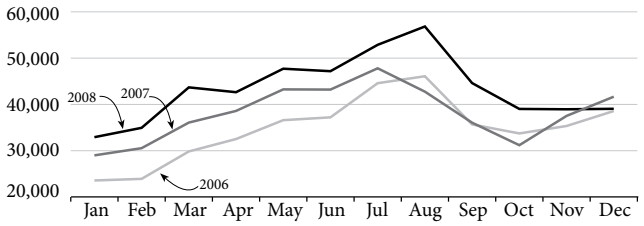
The 81.67% on-time performance for November 2008 exceeded the contract goal between WSDOT and Amtrak and was the best monthly performance for state-supported Amtrak *Cascades* in five years. Weather-related delays contributed to the decrease in on-time performance in December.

Strong revenue growth improves farebox recovery and offsets substantial cost increases

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

State-supported Amtrak *Cascades* monthly ridership

Number of passengers per month, calendar year 2006 through 2008

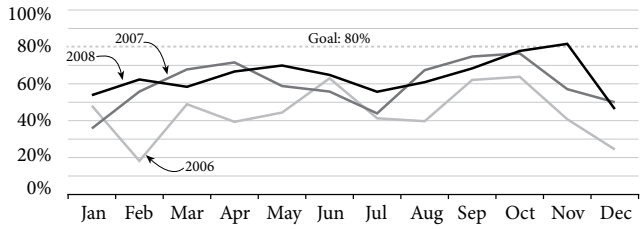


Data Source: Amtrak and WSDOT Rail Office.

State-supported Amtrak *Cascades* on-time performance

On time performance per month, calendar year 2006 through 2008

Percent on time



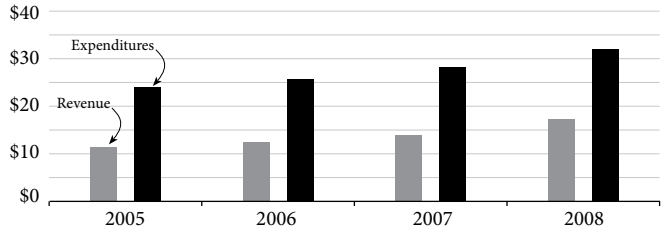
Data Source: Amtrak and State Rail and Marine Office.

The on-time performance goal for Amtrak *Cascades* is 80% or better. A train is considered on-time if it arrives at its final destination within 10 minutes or less of the scheduled arrival time.

State-supported Amtrak *Cascades*/Washington State Grain Train

State-supported Amtrak *Cascades* farebox recovery

FFY 2006 - FFY 2008 (Oct. 2005 through September 2008)
Dollars in millions



Data Source: WSDOT Rail and Marine.

In Federal Fiscal Year (FFY) 2008, state-supported Amtrak *Cascades* trains had a farebox recovery of 54.24%, higher than the 48.84% farebox recovery in FFY 2007. State supported Amtrak *Cascades* operating costs totaled $31.9 million in FFY 2008, which was 11.3% higher than the previous year. This increase was primarily driven by substantial fuel and labor cost increases. Operating revenues were approximately $17.3 million for FFY 2008, an increase of more than $3.3 million (23.6%) over the previous year.

Total taxpayer subsidy for Washington state-supported Amtrak *Cascades* trains was $14.6 million in FFY 2008, a slight decrease of 0.4% over the previous year. Strong revenue growth was able to offset substantial operating cost increases throughout the year.

Pilot program of Thruway service enhances mobility options

In May 2008, Amtrak launched a pilot program of a new connecting motorcoach service linking Bellingham, Mount Vernon, and Everett with Amtrak *Cascades* train service. This connecting service enables riders traveling from as far away as Eugene, OR, to reach these north sound communities without an excessive layover, as well as providing a new convenient mid-day travel option. The Oregon Department of Transportation provides similar Amtrak *Cascades* Thruway motorcoach/train connections between Eugene, Albany, Salem, and Portland.

This service continues to grow and exceed expectations. Ridership for the fourth quarter increased 9% over the third quarter to 5,333. Ridership now averages 58 riders a day. More than half the riders using the Thruway service are traveling between Seattle and Bellingham. In October, the Thruway bus revenues covered 93% of the costs.

Washington State Grain Train

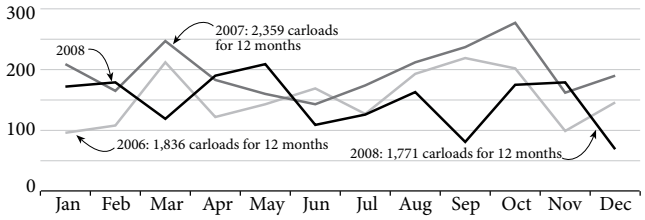
The Washington State Grain Train is a financially self-sustaining, transportation program supporting the state's agricultural community while helping short-line railroads maintain a sufficient customer base for long-term financial viability.

Grain train shipments decrease

Use of the WSDOT grain train cars was down over the fourth quarter of 2007. Total carloads for the fourth quarter of 2008 decreased 33% over the fourth quarter of 2007. There were 423 carloads shipped in the fourth quarter of 2008 compared with 629 in the fourth quarter of 2007. Wheat prices have fallen significantly over the past several months and many farmers are storing their wheat rather than selling it.

Washington Grain Train carloads

Carloads per month from CY 2006 through CY 2008



Data Source: WSDOT Rail Office.

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

National grain delivery declined in 4th quarter

Nationally, grain car loadings for U.S. Class I Railroads in 2008 were 3.2% above the 2007 level, at 1,215,376. However, as commodity prices lowered, the movement of grain declined in the 4th quarter. From January 2008 to the last week of August, U.S. grain car loadings averaged 2,400 cars per week (11%) more than the 3-year average. After the first week of September, until the end of 2008, weekly grain car loadings averaged almost 2,000 cars per week (-8%) under the 3-year average. The USDA's weekly Grain Transportation Report can be accessed online at: http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5072950&acct=graintransrpt.

Amtrak *Cascades* Performance Report available

The annual 2008 Amtrak *Cascades* Performance Report, which contains information on ridership, revenue, and costs, is now available at www.wsdot.wa.gov/freight/rail.

Incident Response Quarterly Update

Statewide Incident Response

The mission of WSDOT's Incident Response (IR) program is to safely and quickly clear traffic incidents on state highways. Quick clearance minimizes congestion and dangerous traffic blockages that can lead to secondary collisions. IR roving units, which operate during peak traffic periods, also offer a variety of free assistance that reduces motorists' exposure to risk, such as providing fuel and jump starts, changing flat tires, and moving blocking vehicles safely off the roadway. IR units are trained and equipped to assist Washington State Patrol (WSP) troopers at collisions and other traffic emergencies. Available for call out 24 hours a day, seven days a week, IR units assist WSP with traffic control, mobile communications, clean-up, and other incident clearance functions as needed during major incidents. More information on the IR program can be found at www.wsdot.wa.gov/Operations/IncidentResponse/.

IR Performance Highlights:

Average clearance time increased by 2.5 minutes to 15.1 minutes due to winter weather.

Annualized average duration of 90+ minute incidents on the nine key congested routes increased by nine minutes to 156 min.

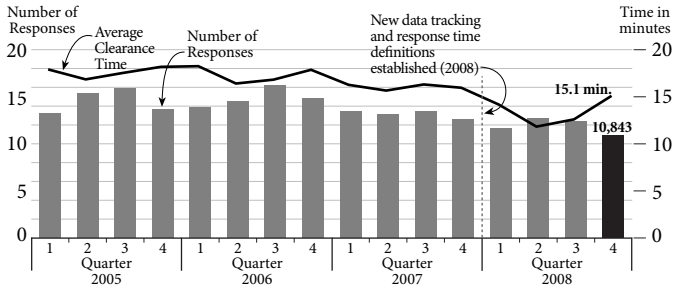
Average clearance time increases due to winter weather

In Quarter 4, 2008, the average clearance time for all incidents was 15.1 minutes. This is up 19.8% from last quarter's average clearance time of 12.6 minutes, and up 10.2% from the 13.7 minute average clearance time in the same quarter of 2007. The Quarter 4, 2008 clearance time was impacted by unusually high clearance time values in December, when major snowstorms hit Washington. In addition to causing conditions that provide potential for increased incidents, the storms also hindered quick clearance when responders, emergency personnel, and tow trucks were overwhelmed by the number of incidents on the roadways. The resulting congestion affected responders' ability to quickly reach the scene of incidents.

Number of responses and overall average clearance time

July 2005-December 2008

Number in thousands, clearance time in minutes



Data Source: Washington Incident ResponseTracking System, WSDOT Traffic Office.

Note: Program-wide data is available since January 2002. Prior to Q3 of 2003, the number of responses by the IR program are shown. From Q3 2003 to Q2 2007, responses by Registered Tow Truck Operators and WSP Cadets have been reported in the total. From Q1 2002 to Q4 2007, Average Clearance Time do not include "Unable-to-Locate" (UTL) responses into calculation. Average number of responses does include UTLs, because this represents work performed on behalf of the Incident Response Program. In Q1 2008, WSDOT's Incident Response Program moved to a new database system and began calculating average clearance time in a different way. This accounts for the apparent decrease in the average clearance time value.

Number of incidents dropped in Quarter 4

The number of incidents WSDOT IR drivers responded to during Quarter 4, 2008 dropped to 10,843 incidents. The past five quarters saw a range of 11,686-13,401 incidents. This quarter's number is 13.6% lower than the average number of incidents a quarter for that five-quarter period. Apples-to-apples comparisons are not available prior to those quarters due to personnel reductions in the Seattle and Tacoma areas (for more on reductions, see March 31, 2008 *Gray Notebook*, p. 76).

This reduction in responses occurred for two primary reasons. First, statewide traffic volumes were down 2% for October and November, resulting in fewer incidents overall. In December, although volumes were down dramatically, the number of traffic incidents responded to was relatively high compared to the prior two months due to severe weather events. The drop in volumes during the quarter most likely contributed to a reduction in collisions on state highways. Preliminary data for Quarter 4, 2008 show 12,459 collisions, down 10.2%-21.1% over Quarter 4 for the previous five years.

Another reason for the decrease in incidents involves staffing and deployment changes in the IR Program. During Quarter 4, 2008, there were two fewer IR drivers on the road (because of the state's hiring freeze and a driver being on medical leave), which reduced WSDOT's capacity to respond to incidents.

Number of incidents responded to by WSDOT's IR program

Q3 2007 - Q4 2008

Quarter	Number of incidents
Q4 2008	10,843
Q3 2008	12,383
Q2 2008	12,707
Q1 2008	11,686
Q4 2007	12,560
Q3 2007	13,401

Source: WSDOT Traffic Office
Washington Incident Tracking System

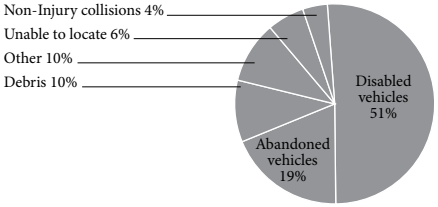
Statewide Incident Response

IR responses & overall average clearance time

Quarter 4, 2008

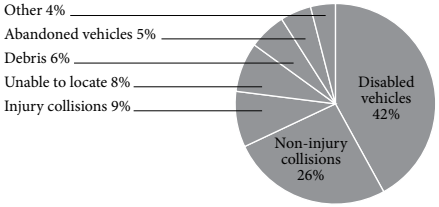
Incidents Lasting Less Than 15 Minutes (7,694)

Fatality, Injury and Police Activity were less than 1% (not shown). There were 17 Fires, 5 Hazardous Materials events involved incidents in addition to or as a result of above incidents. 15 incidents involved WSDOT property damage, and 246 were located in work zones.



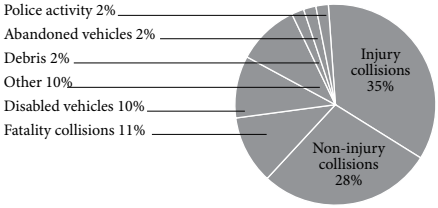
Incidents Lasting 15 to 90 Minutes, (2,943)

Fatality was less than 1% (not shown). There were 6 Hazardous Materials and 95 Fire involved incidents in addition to or as a result of above incidents. 120 incidents involved WSDOT property damage, and 161 were located in work zones.



Incidents Lasting 90 Minutes and Longer (166)

There were 5 Hazardous Materials and 30 Fire involved incidents in addition to or as a result of above incidents. 62 incidents involved WSDOT property damage, and 6 were located in work zones.



Data Source: WSDOT Traffic Office and Washington State Patrol
Data Note: Because of linked incidents, only 10,803 incidents are reflected here. For more information on linked incidents please see the gray box on this page.

Statewide traffic volume changes comparing Quarter 4, 2008 to the 3-year average[1]

Percent change from 2005-2007 monthly average

October	-2.0%
November	-1.9%
December	-15.7%

Source: WSDOT Transportation Data Office.
[1] All 2008 data is preliminary.

Collisions on state highways comparing Quarter 4 2008 to the same period for previous years

2003-2008

	Annual	Q4	% Δ from Q4 2008
2008[1]	47,013	12,459	—
2007	52,225	15,009	-17.0%
2006	53,473	15,787	-21.1%
2005	53,356	15,419	-19.2%
2004	48,829	13,873	-10.2%
2003	47,798	14,582	-14.6%

Source: WSDOT Transportation Data Office.
[1] Data note: 2008 data is preliminary.

Also, in order to save on fuel costs, WSDOT IR trucks roved less and instead waited to be alerted to incidents. This policy for saving gas is still in place in WSDOT's busiest region for the IR Program, and therefore the agency anticipates that numbers will be down in Quarter 1, 2009, as well.

Average fatality clearance times increase to 4 hours

During Quarter 4, 2008, WSDOT's Incident Responders attended 22 fatality collisions statewide. The average clearance time of these fatality incidents, 242 minutes (just over four hours), is uncommonly high for this measure (see graph on the next page). Of these 22 fatality incidents, seven lasted over five hours; by contrast, the previous three quarters of 2008 had a total of five incidents lasing five or more hours. In one of the 22 incidents, a pipe bomb was discovered in one of the involved vehicles, which made the clearance time of this incident nearly

WSDOT uses "linked" incidents in Q4, 2008 data

This quarter, for the first time, WSDOT used the concept of "linked" incidents for data calculation purposes. Linked incidents are defined as a series of incidents involving disabled or abandoned vehicles, occurring at the same time and in close proximity, and sharing the same underlying cause. (Collisions are considered separately.) That underlying cause usually relates to road conditions (e.g. snow, ice, or mud slides), which also hinder timely clearance.

An example of a linked incident occurred during the snowstorm of December 18, 2008. One IR driver handled 41 concurrent incidents between 7:45am and 3:00pm, all on I-90 between mileposts 9.6 and 9.7, near the I-405 interchange. Sixteen of these incidents were classified as over-90-minute incidents, including eight stuck Metro buses and one Metro tow truck that slid into a ditch while trying to extract a bus. Considered separately, these incidents would have accrued more than 88 hours, which would have skewed the overall average duration for the quarter from 15.1 to 15.4 minutes.

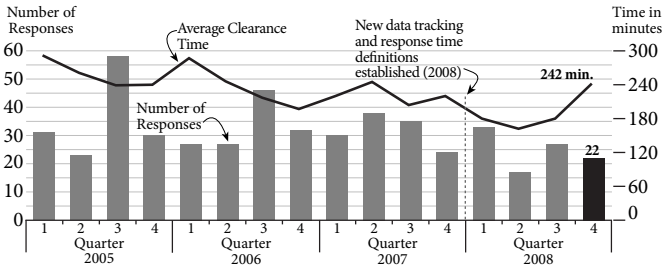
To resolve the potential for linking incidents to affect data, WSDOT will count the 41 records individually and add them to the total when determining the number of incidents responded to in the quarter. However, only a single time-duration value, starting from the beginning of the first linked incident to the end of the last linked incident, will be used to represent the clearance time of the linked incidents.

Incident Response Quarterly Update

Statewide Fatality Responses/Key Congested Corridors

Number of responses and average clearance time of fatality collisions

January 2005-December 2008



Data Source: Washington Incident Tracking System, WSDOT Traffic Office.

Note: In Q1 2008, WSDOT's Incident Response Program moved to a new database system and began calculating average clearance time in a different way. This accounts for the apparent decrease in the average clearance time value.

12 hours. This incident alone caused the average duration of the quarter's fatality incidents to rise by twenty minutes. WSDOT will continue to assess this value to see if this is a trend or a one-time rise in the fatality incident clearance times.

2008 average duration of over-90-minute incidents on the 9 key routes misses target by one minute

For CY 2008, WSP and WSDOT attained an annualized average of 156 minutes for all over-90-minute incidents on the 9 key congested corridors, one minute over the Governor's target of 155-minutes. In Quarter 4, 2008, there were 118 over-90-minute incidents with an average lane-blocking time of 161 minutes.

Six extraordinary incidents push average clearance times higher during Quarter 4, 2008

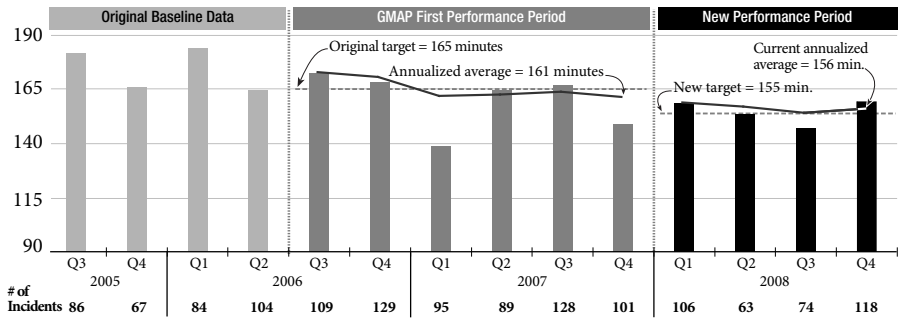
This quarter WSP and WSDOT handled six extraordinary (6+) hours incidents. These incidents can exert a strong influence on the quarterly average so WSDOT and WSP generally highlight them to explain why they were so time-consuming. In this quarter, five of the six incidents involved commercial motor vehicles, and the sixth occurred during the December snowstorms. Without these incidents in the data set, this quarter's average duration for over-90-minute lane-blocking collisions would have fallen from 161 to 144 minutes.

The following are brief descriptions of the six extraordinary (6+ hour) incidents:

- October 3, NB & SB I-5, MP 88, 403 minutes: Collision with multiple fatalities and multiple serious injuries. Two semi trucks were involved.
- October 4, SB I-5, Kalama, 497 minutes: Multiple vehicle collision with semi rollover; semi driver trapped in cab and had to be extracted.
- October 20, EB 16 at I-5 interchange, 396 minutes: Multiple vehicle injury collision with semi rollover; damage to WSDOT property; semi trailer needed to be unloaded before being uprighted.
- November 6, SB I-5, Olympia, 362 minutes: Collision with one fatality and one injured; semi involved.
- December 17, NB I-5 Bellingham, 405 minutes: Semi rollover down embankment. Class C tow required.
- December 18, EB 520, 400 minutes: Property damage collision; road eventually closed for safety purposes due to snow and ice.

Progress towards the goal for reducing average clearance time for over-90 minute incidents on 9 key highway segments

July 2005-December 2008
Average duration in minutes



Data Source: Washington State Patrol and WSDOT Traffic Office.

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 goal:

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

In this section

Quarterly & Annual Updates: Environmental Documentation 34

Annual Update: Environmental Compliance Assurance 38

Annual Update: Stormwater Treatment Facilities 40

Annual Update: Erosion Control Preparedness 42

Annual Update: Construction Site Water Quality 43

Special Report: SR 530 Phase I Project 44

See also

Quarterly Report on Capital Projects (Beige Pages) 48

Earlier Environment-related articles

Air Quality, GNB 31

Noise Quality, GNB 31

Programmatic Permits, GNB 30

Fish Passage Projects, GNB 30

Environmental Documentation, GNB 29

Environmental Documentation

Endangered Species Act Quarterly Update

The Endangered Species Act (ESA) requires that all projects with federal funds or permits be evaluated for effects and potential impacts the project may have on federally-listed endangered and threatened species. Projects that will result in impacts to listed species undergo consultation either informally or formally with the Services: US Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration/National Marine Fisheries Service (NOAA Fisheries). WSDOT projects with no effect on ESA-listed species do not undergo consultation with the Services. WSDOT's ESA activities for Nickel, TPA, and PEF funded projects are described below and summarized in the table on page 35.

Nickel Projects with ESA Components

Twenty-four Nickel projects have been planned for advertisement for the 2007-09 biennium. As of the end of the quarter, all of these projects have completed an ESA review or consultation. For the 2009-11 biennium, thirteen projects have been funded. Three projects have completed an ESA review. Two projects are currently undergoing formal consultation at the Services (***I-5/Port of Tacoma Road to King County Line HOV*** and ***I-5/NE 134th St Interchange***). The ***I-5/NE 134th Street Interchange*** has experienced several challenges during the consultation, but is expected to be complete within the quarter ending March 31, 2009. The remaining eight Nickel projects of the 2009-11 biennium include seven with ESA reviews underway, and one project that does not have enough information at this time to determine consultation need.

Transportation Partnership Account Projects with ESA Components

Ninety-four Transportation Partnership Account (TPA) projects are planned for the 2007-09 biennium. More than 90% (85) of these have completed an ESA review or consultation with the Services. The remaining projects include one formal and five informal ESA reviews that are underway. Two of the projects are combined under a single ***Tacoma/Pierce County HOV-program*** project consultation (For more information on this mega-project, please see page 82 of the *Gray Notebook*). One remaining project does not have enough information to determine consultation need at this time. Fifty-five projects are TPA-funded in the 2009-11 biennium. Two of these projects are undergoing formal consultation at the Services (***SR 14/Camas Washougal Lanes and Interchange*** and ***I-5/Portland Avenue and SR 167 Interchanges***). Twenty-one projects for the 2009-11 biennium have completed ESA review or consultation and 25 are underway. Seven are waiting for additional information to determine consultation needs.

Pre-Existing Funds Projects with ESA Components

Of the 245 Pre-Existing Funds (PEF) projects scheduled for advertisement in the 2007-09 biennium, 234 have completed an ESA review or consultation. The remaining 11 projects consist of five that do not have enough information to determine the level of required review at this time, five with ESA reviews underway and one that is undergoing informal consultation with the Services. In the 2009-11 biennium, there are 89 projects PEF-funded projects scheduled to go to advertisement. Eighteen of these have completed an ESA review or consultation. Two projects are undergoing formal consultation with the Services (***I-5/Puyallup River Bridge to King County Line*** and ***SR 303/Manette Bridge Replacement***). Fifty projects will complete ESA requirements in the future and 19 projects do not have enough information at this time to determine consultation needs.

Endangered Species Act Documentation Highlights:

2007-09 Nickel projects: All projects have completed all required ESA documentation

2009-11 Nickel projects: Three projects have completed review, two are in formal consultation, the remaining eight will complete ESA review in the future.

2007-09 TPA projects: 85 projects have completed review, six projects are currently under review, and three will complete ESA review in the future.

2009-11 TPA projects: 21 projects have completed review, two projects are currently under review, and 32 will be reviewed in the future.

2007-09 PEF projects: 234 projects have completed review, one project that is under review, five that do not require review, and five projects that will be reviewed in the future.

2009-11 PEF projects: 18 projects have completed review, two are currently under review, 19 require more information, and 50 will complete requirements for review in the future.

Endangered Species Act Quarterly Update

Endangered Species Act compliance for all projects

Project status	2007-09 Nickel projects	2009-11 Nickel projects	2007-09 TPA projects	2009-11 TPA projects	2007-09 PEF projects	2009-11 PEF projects
Projects under review at the Services	0	2	2	2	1	2
ESA review or Biological Assessment under way	0	7	6	25	5	50
Projects which lack sufficient information to start the Biological Assessment[1]	0	1	1	7	5	19
ESA review complete[2]	24	3	85	21	234	18
Total number of projects	**24**	**13**	**94**	**55**	**245**	**89**

Data Source: WSDOT Environmental Services.

[1]This means that WSDOT does not yet have enough information regarding design to begin an ESA review.

[2]Projects that have completed an ESA review include those requiring consultation (formal or informal) with the services and those that did not require consultation (no effect reviews or programmatic BAs)..

Future WSDOT shoreline and floodplain permits may be affected by recent federal agency finding

On September 22, 2008, the National Marine Fisheries Service (NMFS) issued a biological opinion on the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program. NMFS determined that implementing the National Flood Insurance Program would jeopardize the continued existence of listed Puget Sound chinook and steelhead, Hood Canal chum, and southern resident killer whales. In addition, the action would destroy or adversely modify designated critical habitat of chinook, chum and killer whales. As a result of the jeopardy and adverse modification determinations, NMFS worked with FEMA to develop 'Reasonable and Prudent Alternatives' to the National Flood Insurance Program to avoid violation of the Endangered Species Act (ESA).

This opinion does not affect WSDOT directly but does affect local agencies who participate in the National Flood Insurance Program, which regulates construction of homes, businesses, and infrastructure within the 100-year floodplain of an (FEMA) identified river or stream. To meet the 'Reasonable and Prudent Alternatives' defined in the biological opinion, local agencies may revise their local ordinances and require mitigation for activities within the floodplain. Since WSDOT does obtain floodplain and shoreline development permits from local agencies, WSDOT will be required to comply with the requirements of the city or county's floodplain management ordinances. In the future, WSDOT may be required to comply with different local agency ordinances as they adjust to changes in the way FEMA manages the National Flood Insurance Program.

The NMFS's biological opinion only applies to the Puget Sound region and not to the remainder of the state at present. All local agencies who participate in the National Flood Insurance Program within the state have the option to voluntarily adopt the 'Reasonable and Prudent Alternatives.'

Above, the Chehalis River valley brings flooding next to the ***I-5 Rush Road to 13th Street*** construction project.

Environmental Documentation

National Environmental Policy Act Annual Report

All proposed WSDOT projects that involve federal funds, federal permits, and/or action on federal land must comply with the National Environmental Policy Act (NEPA). This procedural law requires an analysis of a proposed project's effects on both the natural and built environment. An environmental impact statement (EIS) is prepared if there is potential for significant effects and an environmental assessment (EA) is prepared when the effects are believed to be unknown.

Historically, EISs and EAs have taken a considerable amount of time to complete. The Federal Highway Administration (FHWA) reported that in 2001, the national average was 54 months (4.5 years) to complete an EIS and 18 months (1.5 years) to complete an EA. In October 2003, FHWA established a national goal of reducing the median processing time for EISs to 36 months (3 years) and EAs to 12 months (1 year) by 2007.

EIS processing times expected to shorten

WSDOT appears to be making progress towards attaining the national goal, but further analysis is required. Between January 1999 and September 2003, WSDOT initiated EISs for 14 projects. Of those projects, seven EISs were completed with a median of 36.7 months. Of the seven remaining EISs, four are still active and in various stages of progress and three have been put on hold. The four active projects were initiated before the 2003 national goal. One project was completed in 2008. The I-90 Snoqualmie Pass project EIS and record of decision was issued with a completion time of 106 months.

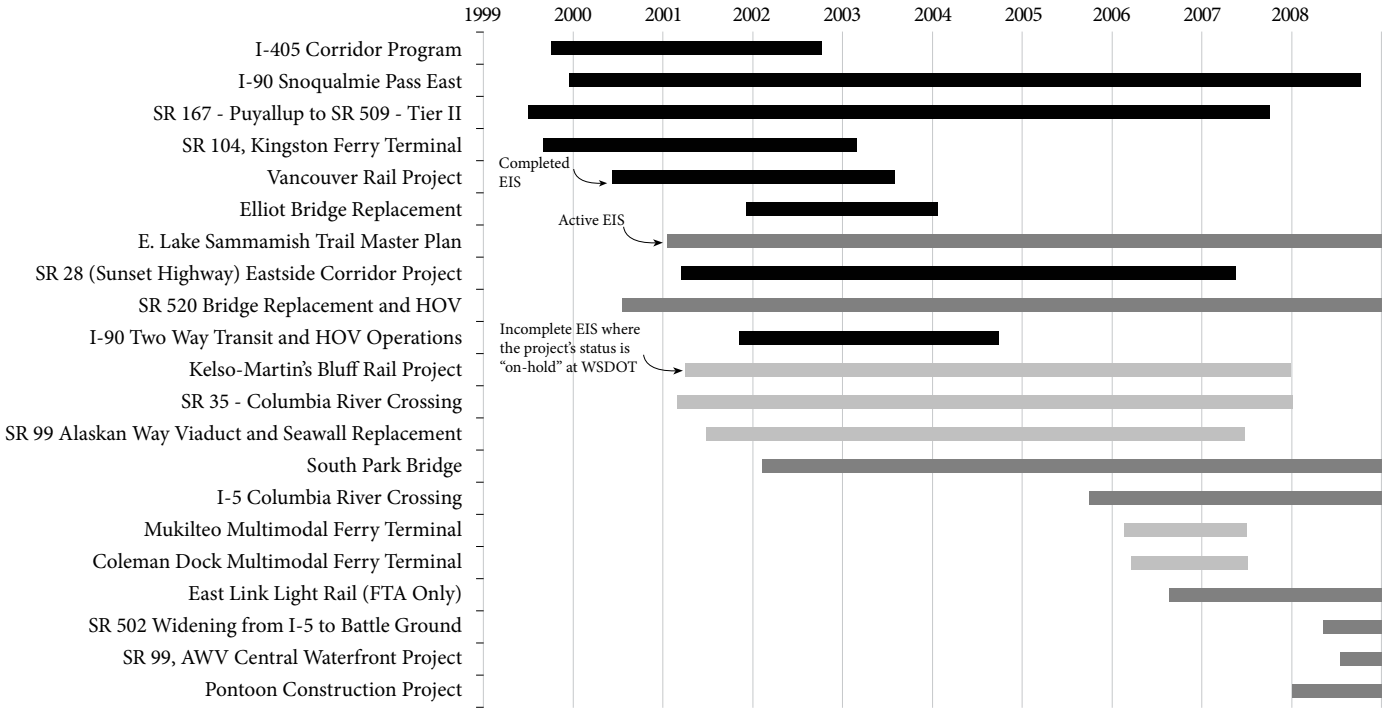
Since the national goal for EISs was set in October 2003, WSDOT has initiated seven additional EISs. Two of these EISs have been put on hold and the remaining five were still incomplete at the end of 2008. Draft EISs have been issued for two of the projects. Four of the active projects have not yet exceeded the national 36 month delivery goal. Only the ***I-5 Columbia River Crossing*** project, a complex multi-agency effort that was started September 30, 2005, has an EIS exceeding the national 36 month goal (39 months).

More analysis on EIS processing times to follow

To assess the reasons for delay, WSDOT is examining 12 project EISs in a 10 year period that took three or more years to process. Initial analysis indicates that for EIS projects, delays are influenced by not one, but many factors. These findings are preliminary and based on an informal survey of NEPA specialists involved in the document development process. Detailed results are scheduled for release in the March 31, 2009, *Gray Notebook*.

Duration of processing times for environmental impact statements

Number of months per individual project, 1999-2008; National goal is for processing times to be no more than 36 months



Data Source: WSDOT Environmental Services Office.

National Environmental Policy Act Annual Report

Environmental Assessment processing times reduced by 40%

A total of 23 environmental assessments (EA) were initiated between January 1999 and September 2003 have been completed with processing times ranging from 23 to 98 months, with a median processing time of 42 months, which is 30 months longer than the national goal of 12 months.

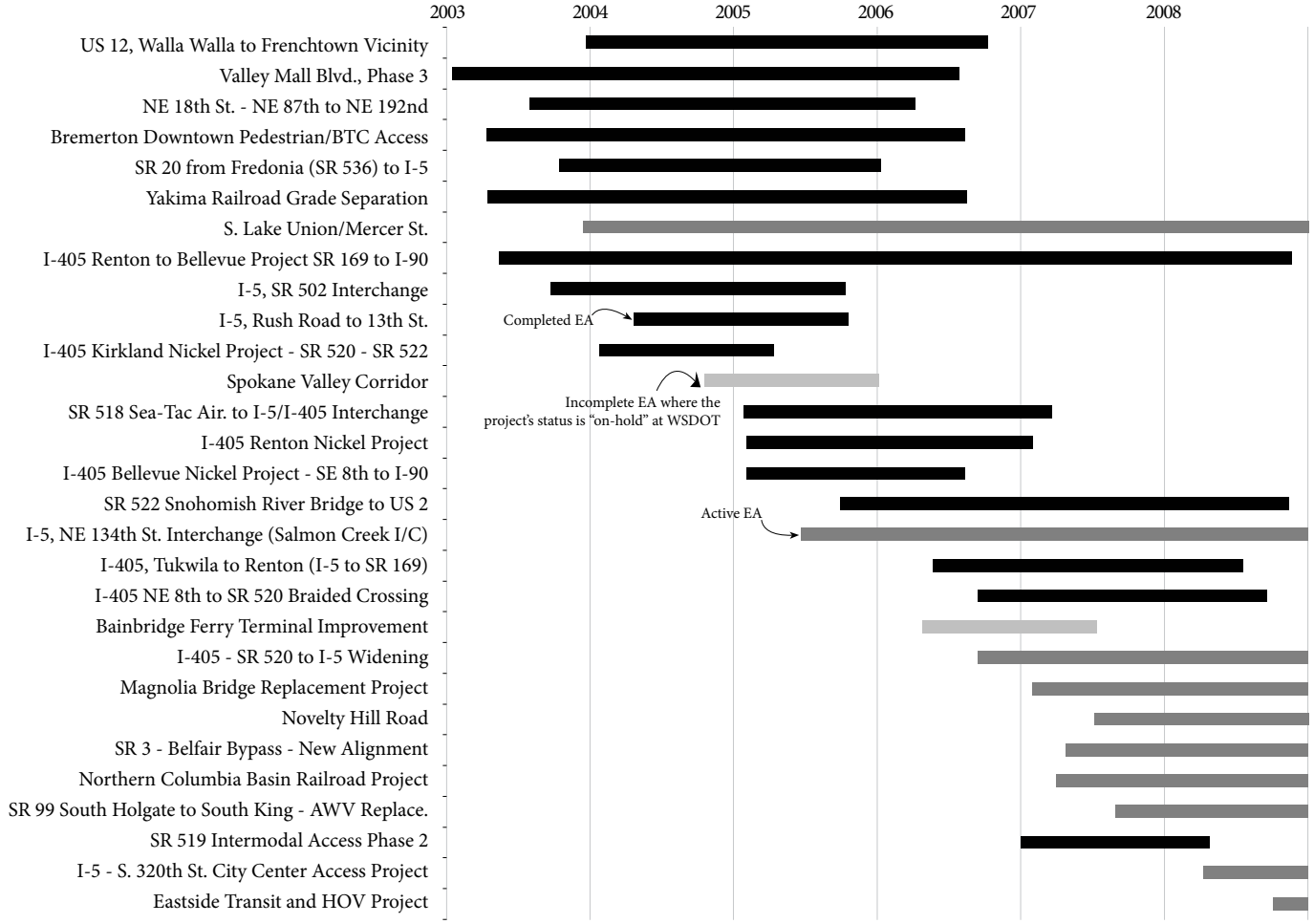
Since the national goal began in October 2003, WSDOT has initiated 24 EAs. While the processing time for twelve completed EAs is exceeding the national 12 month target processing time, WSDOT has reduced its median to an average of 25 months, a 40% decrease compared to the median processing time for the EAs initiated prior to the national goal. Ten incomplete EAs are in various stages of development and were initiated between two months and five years ago. Two projects have been put on hold or shelved.

Study of EA delays nearly complete

WSDOT is examining all of the reasons associated with processing delays for EAs. The 21 environmental assessments started over a five-year period that have taken 12 or more months to complete are being analyzed. Detailed results of the investigation are scheduled for release in the March 31, 2009, *Gray Notebook*.

Duration of processing times for environmental assessments

Number of months per individual project, 2003-2008, National goal is for processing times



Data Source: WSDOT Environmental Services

Environmental Compliance Assurance Annual Report

As part of its Environmental Management System (EMS), WSDOT tracks its compliance with environmental requirements for construction, maintenance, and ferry activities. This article analyzes WSDOT compliance information collected in 2008, and discusses non-reportable and reportable events as well as those that resulted in formal violations from regulatory agencies.

Reportable events decrease by ten, formal violations increase by three in 2008

The EMS requires that the department monitor for potential environmental compliance issues during construction, maintenance and operations, and ferry system operations. In 2008, WSDOT recorded 464 separate events: 369 non-reportable events and 95 reportable events. Of the 95 reportable events, WSDOT received 11 formal violations. There were 188 fewer non-reportable events and ten fewer reportable events in 2008 when compared with 2007. The 369 non-reportable events were smaller compliance events which were quickly corrected. Of the 11 violations, ten were issued in the form of Warning Letters and one was issued as an Immediate Action Order, and no monetary penalties were issued in 2008.

Environmental Compliance Highlights

In 2008, reportable events are down by 10% and non-reportable events are down by 33%.

Formal violations increased to 11 in 2008 from eight in 2007. There were no fines issued to WSDOT for any of the 11 violations.

Environmental compliance strong despite increases in department activities

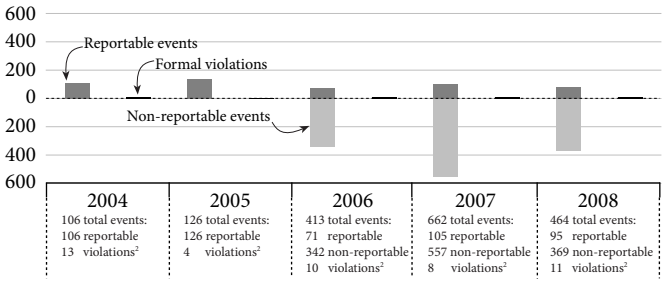
The activities WSDOT performs to build highways and operate ferries, plus maintain the infrastructure of both systems, increases the risk of non-compliance events. The majority of events take place around construction sites, where there can be significant disruption to the environment. In 2008, WSDOT worked on roughly 210 capital construction projects, which includes projects funded by Nickel, TPA, and Pre-Existing Funds worth about $1.03 billion. (For more information on the size and scope of the Nickel, TPA, and PEF programs, see pages 48-69 and 93-96.) The 95 reportable non-compliance events were a very small percentage in comparison to all of WSDOT's activities in 2008, for example, more than 291,000 separate maintenance activities and more than 162,000 ferry sailings.

Types of 2008 reportable events

Water quality remains WSDOT's biggest compliance concern. In 2008, 68 reportable events involved water quality issues, mostly from turbid discharges after heavy rains. Fourteen hazardous materials events involved small spills of oil, fuel, and other equipment fluids that affected natural resources before response and clean up. Six events involved unauthorized placement of fill or material in wetlands (WSDOT later removed and repaired or mitigated elsewhere). Five events impacted fish or their habitat by placing construction material in areas not permitted or from direct harm to fish during authorized

WSDOT's environmental compliance events, 2004-2008

Number of non-reportable events vs. number of formal violations received[1]



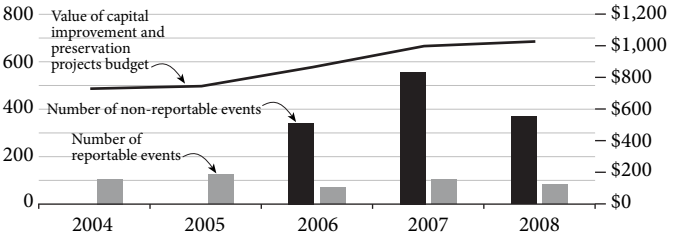
Data Source: WSDOT Environmental Services Office.

[1] Ultimate goal is zero reportable events and formal violations, however, the nature and scale of work WSDOT does makes this difficult. Interim goal is an annual reduction in overall number and severity of reportable events and formal violations.

[2] Violations result from reportable events incurred annually, and are not separate events. They are not included in the 'total events' category to prevent double-counting.

Environmental compliance vs. value of Nickel and TPA capital improvement and preservation projects 2004-2008

Number of reportable and non-reportable compliance events vs. value of budgeted construction projects annually (in millions)



Data Source: WSDOT Environmental Services Office.

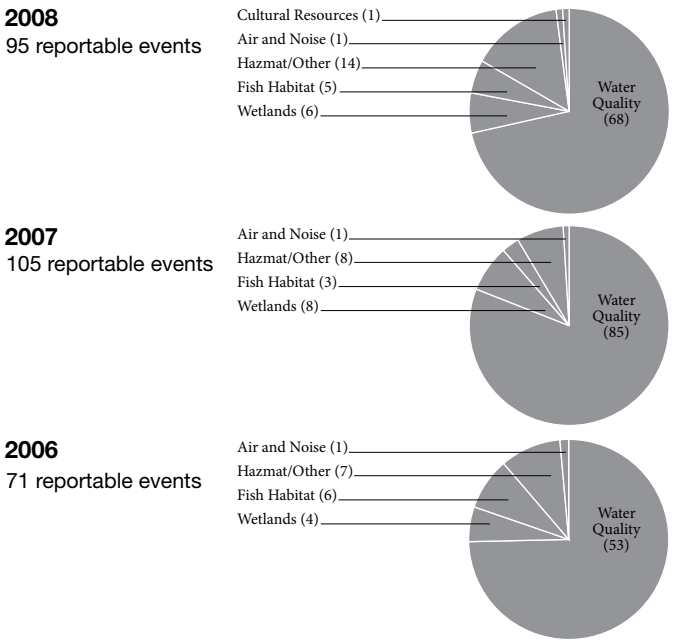
fish exclusion techniques (used during habitat improvement projects). One project disturbed known cultural resources when it removed protective fencing and deposited soil over the artifacts. Another exceeded noise level standards by failing to properly secure a noise shroud. These issues are similar to the types of reportable compliance events of the last two years.

Despite stricter water quality sampling requirements, fewer events recorded in 2008

One of WSDOT's toughest challenges is maintaining compliance while working in and around water. In 2006, the Washington State Department of Ecology (Ecology) issued a new National Pollution Discharge Elimination System (NPDES) Construction Stormwater General Permit that requires WSDOT to sample water discharges for projects greater then one acre. Discharges with levels of turbidity (suspended soil in water) above 25 nephelometric turbidity units (NTU) but below 249 NTU do not require agency notification, but do require WSDOT to take preventative measures to reduce turbidity. WSDOT must immediately notify agencies if stormwater discharges measure above 250 NTU.

In 2008, WSDOT experienced a decrease in the number of events associated with reportable levels of turbidity (For performance of in-water work in 2007, please see page 43). WSDOT also experienced a decrease in the number of non-reportable water quality events in 2008 as well, which are tracked for internal management purposes to ensure a timely response and has reported them here. Since 2006, the number of recorded non-reportable water quality events has grown. WSDOT attributes this to the increased sampling requirements introduced in 2006, increased number of projects being delivered, better recognition of potential compliance concerns, and improved internal monitoring and reporting activities.

WSDOT reportable events by category, 2006-2008



Data Source: WSDOT Environmental Services Office.

This picture shows a WSDOT contractor drilling a shaft next to Purdy Creek on U.S. Highway 101. When the steel casing is inserted and soil removed, concrete will be inserted to support a new bridge.

This activity presents the potential for hazardous materials spills to water from leaking equipment, unapproved encroachment on sensitive areas and associated buffers, plus impacts to water quality from sediment or concrete discharges.

WSDOT takes steps to minimize these risks with planning, contractual agreements, on-the-ground management practices, and field inspections. Despite these efforts, unintended impacts may still occur. The goal in these situations is to respond quickly and reduce the severity of the event.

Stormwater Treatment Facilities Annual Report

Managing stormwater runoff effectively cuts down on pollutants entering streams and rivers, contributes to both Puget Sound and salmon recovery, and reduces flooding and erosion. WSDOT, along with other agencies and municipalities, are governed under the federal Clean Water Act which requires National Pollution Discharge Elimination System (NPDES) permits for stormwater discharges to state waters.

WSDOT's highways and other transportation facilities cover over 40,000 acres of ground with hard, impermeable surfaces, including roads, ferry terminals, and parking lots. These surfaces prevent water from penetrating the ground where it can be naturally filtered. Stormwater treatment facilities help to absorb contaminants from rain water that runs across the highways and other surfaces, minimizing the chance that they will reach, streams, rivers, and groundwater supplies. WSDOT is working to minimize the adverse impact of stormwater runoff from its facilities on the environment.

WSDOT's stormwater facilities inventory continues to increase

Since 1995, WSDOT's stormwater activities in King, Snohomish, Pierce, and Clark counties have been managed under the NPDES stormwater permit. Under this permit, WSDOT constructs features such as catch basins, culverts, and stormwater treatment facilities to control and remove pollutants from stormwater. The permit also requires the maintenance and operation of these features, as well as vegetative management.

Managing flow and establishing stormwater treatment facilities are important in minimizing the negative impacts stormwater runoff can have on the environment. Since 1996, WSDOT has constructed approximately 2,000 stormwater treatment facilities state wide, of which over 850 are in the four counties covered under the permit. The number of stormwater treatment facilities built in any one year is driven by legislatively mandated project lists, construction schedules, funding, technical complexity, and regulatory approval processes. Because these factors are sometimes beyond WSDOT's control, the number of facilities built in any one year is not necessarily a direct measure of WSDOT's performance. Instead it is a measure of cumulative progress contributing to the protection of Washington state's water quality from stormwater runoff.

The installation of stormwater treatment facilities is considered an important measure of water quality improvement. The Department of Ecology presumes that by using "best management practices," stormwater is being treated to meet water quality standards. This presumption is based on research of stormwater treatment technologies and avoids the need for costly measurements at each discharge point.

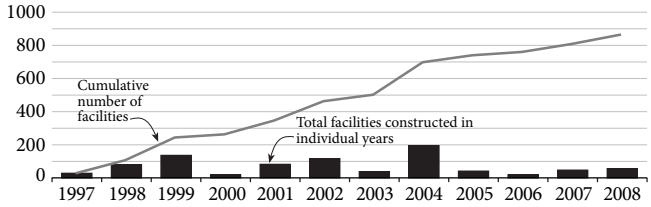
Stormwater Treatment Facilities Highlights

- WSDOT's infrastructure covers 40,000 acres, which is roughly the same size as Bainbridge Island.
- Fifty-six facilities were constructed in 2008, bringing the four-county inventory to 866.
- WSDOT's stormwater treatment facilities serve roughly 12.6% of the department's total centerline highway miles.
- WSDOT expects the Department of Ecology to finalize its new stormwater treatment permit in 2009; it is expected to increase the number of areas that require installation of treatment facilities.

The Paragon Hotel has been removed to make way for the NE 10th Street Bridge and a future stormwater wetland site. Plastic is placed over the construction site daily to control erosion.

WSDOT stormwater treatment facilities, 1997-2008

Number of facilities built in Clark, King, Pierce, and Snohomish Counties annually and cumulatively

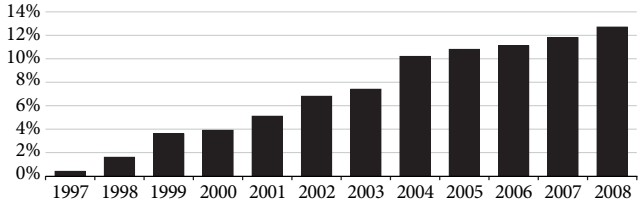


Source: WSDOT Environmental Services.

While new highway projects are designed to effectively manage stormwater, most of Washington state's highway infrastructure was built before federal Clean Water Act requirements were enacted. Many of these older highways and facilities will need to be retrofitted to meet stormwater treatment goals. Approximately 13% of state highway miles in the four permit counties have stormwater treatment facilities. To effectively address portions of the highway system in need of retrofit, WSDOT has developed a new screening tool that identifies and prioritizes retrofit projects that will provide the greatest environmental benefits.

Percentage of state-managed highways with NPDES-required stormwater treatment facilities, 1997-2008

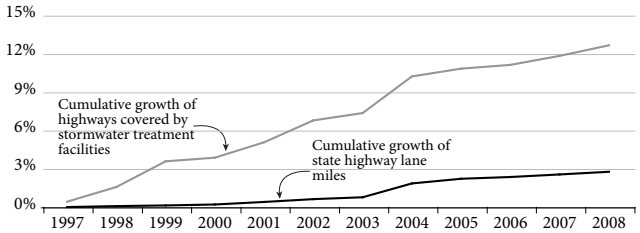
In Clark, King, Pierce, and Snohomish counties



Source: WSDOT Environmental Services.

More of the state highway system is being covered by stormwater treatment facilities, 1997-2008

Cumulative growth of the percentage of state highways covered by stormwater treatment facilities vs. the growth in total highway lane miles.



Data Source: WSDOT Environmental Services Office, WSDOT Traffic Data Office.

New stormwater permit under development

WSDOT has also been working with the Department of Ecology to develop a new NPDES stormwater permit, and on February 4, 2009, the new permit was issued; it takes effect as of March 4, 2009. This new permit will require more extensive stormwater management over a larger geographic area that includes approximately 100 cities and all or parts of 17 counties across the state. Almost every state highway and transportation facility in urbanized areas will fall under this new stormwater permit. In addition to constructing new stormwater treatment facilities, WSDOT will be required to inventory its stormwater drainage network and associated features (e.g. ditches, pipes, drains, stormwater treatment facilities, and discharges), increase maintenance and inspection, continue to retrofit priority highway segments when possible, and expand monitoring and reporting.

The Department of Ecology has developed a website that details the new WSDOT stormwater permit at: http://www.ecy.wa.gov/programs/wq/stormwater/municipal/wsdot.html.

Erosion Control Preparedness Annual Report

Highway construction crews work hard to prevent rains from damaging sites and washing soils into streams. They prevent erosion by spreading straw, planting grass, building ponds, and taking other precautions to protect disturbed soils. These precautions are implemented according to detailed Temporary Erosion and Sediment Control (TESC) plans that are required by permits, created by WSDOT project designers, and put into place by contractors.

In addition to the weekly site inspections required by permits, each fall, WSDOT inspects construction sites to document how thoroughly these plans are implemented, evaluate how effective the plans are at preventing erosion, and identify areas for improvement. In October 2008, WSDOT inspected 15 active projects (14 in western Washington and one in eastern Washington) with significant potential for erosion problems due to a project area's size, steepness, soil type, or proximity to surface waters.

The table below contains the results from the annual site inspections from 2003 through 2008. For example, In 2008 all projects where dewatering (removing water) was applicable, acceptable measures were in place. WSDOT's performance steadily improved from 2003 through 2005. Performance dropped in 2006 for several of the recorded measures. However, performance in 2007 rebounded, with all measures above 80% and only one measure demonstrating a drop in performance. In 2008, performance is at an all time high, with all measures above 80% and no measurable decreases in performance.

There are several reasons for the continued improvement in 2008. First, due to forecasted wet weather, projects began preparing sites earlier for winter. Second, WSDOT fixed deficiencies that were identified during the initial site inspection. Third, two projects were nearing completion so much of the site had already been permanently stabilized.

Strategy for improving performance

In 2009, WSDOT will focus its training and technical support on actively preventing erosion and managing stormwater. WSDOT will also continue to work on creating clearer instructions for designing, installing, and maintaining best management practices, striving for 100% performance in 2009.

Erosion and sediment control assessment results, 2003-2008

Percentage of Activities in Compliance, 2003-2008

2008 Performance	Assessment Measure	2003	2004	2005	2006	2007	2008	Status
Excellent	Dewatering	71	100	100	100	100	100	Stable[1]
Excellent	Channels for temporary stormwater conveyance are stabilized	64	73	87	59	92	100	Improved
Excellent	Control other pollutants from impacting water quality	N/A[2]	100	100	89	93	100	Improved
Excellent	Protect cut & fill slopes	50	89	79	56	83	100	Improved
Excellent	Storm drain inlet protection	82	83	86	93	92	100	Improved
Excellent	Delineate clearing limits	100	100	95	94	90	100	Improved
Excellent	Manage project erosion/sediment control BMPs[3] proactively	75	80	90	92	90	98	Improved
Excellent	Sediment control BMPs[3] installed on time	90	100	95	61	92	93	Stable[1]
Excellent	Control flow rates	84	100	95	72	93	93	Stable[1]
Excellent	Maintain BMPs[3]	70	50	67	44	81	93	Improved
Excellent	Access routes prevent tracking of mud onto streets	69	91	82	94	81	86	Improved
Excellent	Erosion control BMPs[3] installed on-time (stabilize soils)	N/A[2]	67	86	56	83	80	Stable[1]

Data Source: WSDOT Environmental Services

[1] Stable performance status was achieved for all measures that remained within 5% of the previous years' rating.
[2] Categories added since the 2003 report.
[3] BMPs = Best Management Practices

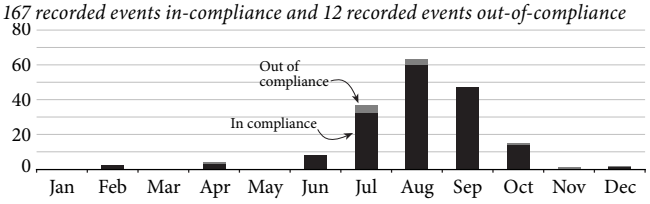
Construction Site Water Quality Annual Report

In-water work samples reveal 93% annual compliance rate

The Washington State Department of Ecology's (Ecology) permits require sampling of in-water work projects to test for water quality impacts. During in-water work, WSDOT inspectors collect flowing water samples from sites where compliance with state standards is thought to be most challenging.

Monthly compliance with state water quality standards during in-water work, 2008

167 recorded events in-compliance and 12 recorded events out-of-compliance



Source: WSDOT Environmental Services Office.

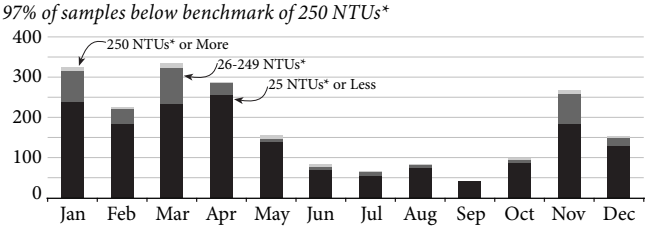
The graph at left summarizes results comparing water quality upstream and downstream from 12 projects. Results show that 93% (167 out of 179) of the samples collected met state water quality standards for turbidity (measure of cloudiness of the water). Of the 12 non-complying events, four were associated with earthwork next to a stream channel that created turbidity in the stream. The remaining non-compliance events were associated with breached berms in wetland mitigation sites (three recorded events), moving or placing rock in stream channels (three recorded events), excavation within a stream channel (one recorded event), and stream bank erosion caused by work to stabilize the channel (one recorded event). In addition, three in-water work projects collected pH samples in association with concrete work. Of the 20 pH samples collected, all but one met standards for pH. Water that comes in contact with curing concrete can have an unnaturally high (alkaline) pH level. If high pH water enters a nearby waterway, it could harm aquatic life.

Sampling for federal turbidity levels shows 97% compliance rate

WSDOT also tests for turbidity on projects that have National Pollutant Discharge Elimination System (NPDES) permits. From January to December 2008, only 3% of the 2,100 samples WSDOT collected exceeded the 250 NTU benchmark for NPDES permits (NPDES). In October 2006, Ecology began requiring all earthwork projects with five or more acres of soil disturbance to sample discharge water quality. In October 2008, this sampling threshold dropped to one acre or more of soil disturbance. Projects meeting these thresholds are required to collect water turbidity samples at all locations where stormwater leaves the construction site. Ecology provides indicators of compliance for these samples. These benchmark values project the likelihood of meeting water quality standards and are indicators of properly functioning best management practices (BMPs). Discharge samples from construction sites that measure less than 25 Nephelometric Turbidity Units (NTUs are the unit used to measure the cloudiness of water) are considered not likely to exceed state water quality standards under most conditions, and BMPs are thought to be functioning well. Construction site discharges above 25 NTUs indicate BMPs are not functioning properly and action must be taken to correct problems. A discharge of 250 NTU or more has a higher risk of exceeding water quality standards: Ecology must be notified and immediate corrective actions taken.

Monthly compliance with NPDES general permit benchmarks, 2008

*97% of samples below benchmark of 250 NTUs**



Data Source: WSDOT Environmental Services Office.
*Data Note: NTUs=Nephelometric Turbidity Unit.

Construction Site Water Quality Highlights

In 2008, 179 samples were taken for in-water work state water quality standards, a 113% increase over the 84 samples taken in 2007.

The 2008 in-water work state water quality sample results reveal 93% compliance, a 6% increase over 2007's average (87%).

97% of all NPDES samples taken in 2008 revealed turbidity levels below the reportable 250 NTU benchmark.

The federal Clean Water Act amendments of 1987 extended the National Pollutant Discharge Elimination System to cover stormwater discharges, resulting in additional water quality testing for projects with NPDES permits.

For more information, see pages 38-39.

Special Report: SR 530 Erosion Control Project: Environmental Programs in Action

WSDOT reports on a variety of performance measures that are designed to assess how its environmental programs help to minimize potential environmental degradation as it may occur during the course of construction, maintenance, or day-to-day operations. In 2008, WSDOT completed emergency repairs along SR 530 in Skagit county to counter chronic erosion that was endangering the highway. This is an excellent example of a project that involves several of the environmental programs reported in this edition of the *Gray Notebook*, as well as a success story in innovative project design.

Worsening flooding creates unwanted changes in the SR 530/Sauk River vicinity

State Route (SR) 530 and the Sauk River run parallel to each other for about 10 miles south of Rockport in Skagit County. The highway is an important transportation link between I-5 and the North Cascades Highway (SR20), serving as the primary route for local transit, tourists, and the forest resource industries. Regular seasonal flooding is typically generated by heavy rainfall and rain-on-snow events in November and December.

The site location has been subjected to record flooding, erosion, and severe channelization since 1990. In November 1990, the area experienced its third-highest 'flood of record.' Following the flood, the embankment along SR 530 was hardened to resist the Sauk River's new channelization. In 2003, additional hardening was installed upstream after the early spring flooding. In 1993, the top of the river bank was 50 feet from the road at the upstream end of the site, and 110 feet from the road at the downstream end. By the October 2003 early season flood, the Sauk had eroded the bank to a near-vertical bluff, extending to within one to three feet of the paved portion of SR 530.

SR 530 Sauk River Erosion Control Project Map

The record flooding over the previous 15 years resulted in the progressive loss of the highway's right-of-way, which separated SR 530 from the Sauk river. Planning was under way for a possible highway realignment when a 30-year flood event in November, 2006, eroded the river bank further; it created new geomorphic changes, including new flows entering the stream channel adjacent to the highway, and increased opportunities for avulsion, where sediment deposits would be carried downstream, exposing SR 530 to erosion. These concerns resulted in a change in project scope and a new, more immediate, bank protection project that protects the highway from flood damage, and prevents frequent road closures due to repeated flooding and maintenance.

Rip-rap had been placed along the riparian edge of the Sauk River and the right-of-way of SR530 to compensate for erosion caused by seasonal flooding.

SR 530 Erosion Control Project:

THE SR 530 Erosion Control Project is a showcase for many of WSDOT's environmental programs covered in this edition *Gray Notebook*, including:

- Construction Site Water Quality (43).
- Erosion Control Preparedness (42).
- Endangered Species Act Documentation (34-35).
- Environmental Compliance Assurance (38-39).

Special Report: SR 530 Erosion Control Project: Environmental Programs in Action

Environmental measures implemented in project design and scope

The Sauk River, as it runs along SR 530, has been designated by Congress as a Wild and Scenic River, which means that infrastructure changes along the protected riparian zone require careful planning.

Protecting habitat for endangered fish species

The Sauk River supports seven salmonid species, four of which are listed under the Endangered Species Act (see page 34-37 for more information on WSDOTs ESA documentation efforts). The side channel created by the 2003 flooding was identified as high-quality spawning habitat for chum salmon and potentially high-quality rearing habitat for coho and steelhead juveniles during the winter and spring. Minimizing any impacts to this habitat became critical in the SR 530 project's planning and design phases.

Controlling erosion

Stream bank erosion is a natural process that occurs as rivers meander. However, WSDOT must take steps to protect highway infrastructure that might be affected by erosion. In the past, short-term maintenance solutions have often used rip-rap (large rubble) in order to harden the banks because it was the best immediate fix available at the time. However, placement of rip-rap removes or precludes the development of riparian habitat for spawning fish, degrades stream complexity, and is not a long-term solution to erosion.

Erosion can also be caused by construction projects, when water moves through a project site, trapping and removing sediment in its path. WSDOT works to minimize construction site erosion as well as the effects of (natural) stream bank erosion, including on the SR 530 project. (See page 42 for more information on Erosion Control Preparedness measures.)

Construction site water quality

Construction activity that results in erosion represents one of several critical water quality issues that WSDOT has to monitor. Specifically, WSDOT takes samples of water near active construction sites as required, to test for turbidity (the relative cloudiness of water). There are measurable thresholds that indicate how well WSDOT is doing to minimize turbidity during its projects. (See page 43 for more information on Construction Site Water Quality.) The Sauk River project posed considerable water quality challenges, due to deep and swiftly flowing water. This made the securing of water quality Best Management Practices (BMPs), such as turbidity curtains, difficult. Despite these challenges however, no water quality standards recorded were exceeded during project construction. (See pages 38-39 for more information on Environmental Compliance Assurance.)

Above right: the steel supports used to construct the log wall are being assembled into place. The boom helps to minimize surface erosion from increasing the local turbidity.

Below right: the log wall when completed. The boom is still in place where WSDOT felt turbidity might remain an issue.

Special Report: SR 530 Erosion Control Project: Environmental Programs in Action

Partners help to modify project to minimize environmental impacts

When the side channel at MP 58 and the existing project became an imminent threat to SR 530, it required changes to the project scope and urgency. In order to meet the emerging avulsion threat WSDOT conducted a Value Engineering (VE) study. This process brought together an interdisciplinary design team that included representatives from:

- Representatives from WSDOT's Design Team,
- Washington Department of Fish & Wildlife,
- U.S Department of Agriculture's U.S. Forest Service,
- Local Tribes,
- local agencies,
- and affected residents.

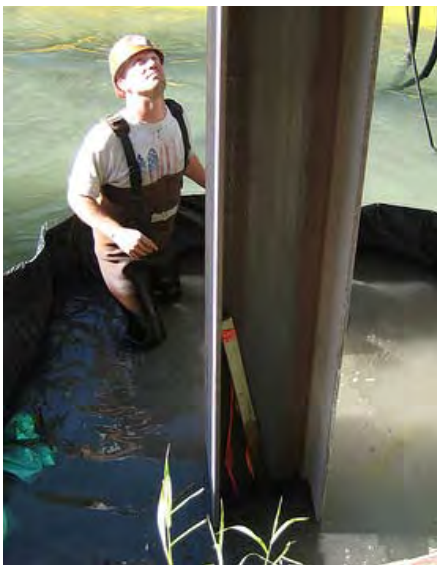
The VE study found that the avulsion risk was so severe that the highway would not likely survive the winter, and that a rapid response to protect the highway would have to be developed and implemented within the remainder of the 2008 summer construction season.

The VE team approach resulted in an agreed-upon solution that was creative and effective, calling for a plan with a bank stabilization design called a "log crib wall." This approach had already been used successfully on Washington's Nooksack River. The consultant who designed the project on the Nooksack joined the design team for the Sauk River project.

The completed log crib wall on SR 530 is constructed of 112 steel pilings, large trees, and rock that act as a buffer between the riverbank and the highway. The design has many benefits for both transportation and the river environment (http://www.wsdot.wa.gov/projects/sr530/saukriverrealignment/).

Project-design benefits include:

- the log crib wall is narrow in profile and can be used in areas where space is limited between the river and highway;
- since the materials used to build the crib wall are fish-friendly, mitigation costs are avoided for the project;
- woody debris slows the flow of the river, reducing the erosive force of water while providing habitat complexity including protective cover and resting areas for fish;
- the wood invites insects and provides a feeding area for fish;
- plantings along the top of the riverbank help to stabilize the bank and provide shade for fish.



A worker guides a steel piling for the log wall into place on the Sauk River.

How does this successful example help WSDOT?

As a result of the team approach, design, permitting, and construction of the project was completed between July and October, 2008 – a relatively short amount of time for this type of work. High flows in November 2008 and January 2009 put the project to the test, and it performed as was intended, withstanding flood flows and protecting the road.

The crib wall used in this project can be modified to fit many chronic maintenance sites across the state, both for WSDOT and for other entities. Further, modification of an existing design saved valuable time and reduced costs. The design is tested, works well in environmentally sensitive areas, improves fish habitat, and protects the highway.

WSDOT's Chronic Environmental Deficiencies (CED) program aims to correct situations that cause repeated environmental and infrastructure damage as discussed on SR 530. Working with WDFW, WSDOT is moving away from costly, repetitive repairs and moving toward long-term solutions that address transportation needs and benefit fish habitat.

WSDOT will protect the highway in the short term by installing river bank protection. The long-term plan is to shift the highway away from the Sauk River, which will reduce the need for road closures and the risk of highway damage. This will help the local economy and save tax money by minimizing future, potentially costly repairs. WSDOT will also study the SR 530/Sauk River corridor to examine long term solutions for other sections of highway that have experienced similar erosion problems.

Stewardship

Statewide policy goal:

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

WSDOT's business goal:

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.

stewardship

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WSDOT's Capital Project Delivery Programs

Highway Construction: Nickel and TPA Project Delivery Performance Overview

WSDOT has successfully delivered 185 Nickel and TPA projects on target with the $1.937 billion Legislative budget

Since 2003, WSDOT has delivered a total of 185 Nickel and Transportation Partnership Account (TPA) projects for $1.937 billion, on target with the Legislative budget expectation.

Gray Notebook may report on stimulus funding

Progress on these construction packages are reported on quarterly in the 'Beige Pages' of the Stewardship section of the *Gray Notebook*. WSDOT is ready and committed to apply the same high Nickel and TPA accountability and reporting standards to any potential federal transportation stimulus funding. Future *Gray Notebook* beige pages may be expanded to accommodate these goals.

WSDOT delivers 16 projects during the second quarter of FY 2009

WSDOT's capital program delivery performance improved to 81% of projects delivered on-time and on-budget through the second quarter of FY 2009, as another four Nickel projects and 12 TPA projects were completed.

On-time and on-budget performance on individual projects remains steady

For the 185 highway projects completed through December 31, 2008, changes from the previous quarter are:

- On-time delivery performance improved slightly to 90%;
- On-budget performance improved slightly to 88%;
- On-time and on-budget project delivery performance also improved slightly to 79%.

60 Nickel and TPA projects under construction or advertised for construction

This quarter, 18 new projects were advertised for construction. Four projects were advertised earlier than scheduled, two projects were advertised late, and the rest were on time. Six projects are pending contract award amount, but the remaining projects have been awarded for a cumulative construction contract total of $1.3 million.

34 projects totaling an estimated $1.64 billion at completion are scheduled to advertise by June 30, 2009

Five significantly sized projects have budgets of $20 million or more, while another five have budgets between $10 and $20 million. All but seven are on their original schedule, and one has been advanced to advertise earlier.

Project information in Schedule, Scope & Budget tables

The beige pages report the agency's project delivery performance against the most recent Legislative baseline (currently the 2008 supplemental budget). The *Gray Notebook* also includes the amount originally appropriated in the 2003 Nickel and 2005 TPA funding packages.

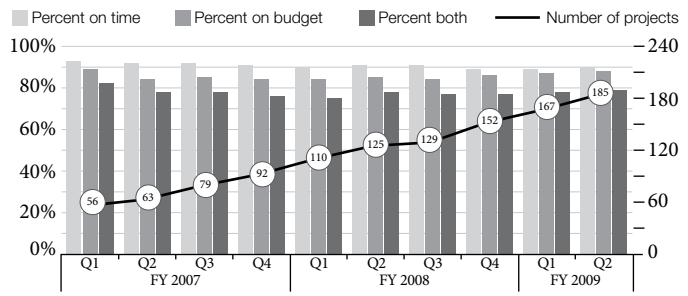
WSDOT also notes (with a check mark and/or an asterisk in the Schedule, Scope, & Budget tables) the delivery of project scope against the scope described in the original budget. The *Gray Notebook* reports "on scope" as compared to last Legislative expectations. This reporting complements the inclusion of original budget information.

Project Delivery Highlights for Nickel and TPA combined:

- Both Nickel and TPA programs are 100% on or under their total legislative baseline of $1.937 billion to date.
- 90% of Nickel and TPA projects combined are early or on time, a 1% improvement on last quarter's results.
- 88% of Nickel and TPA projects combined are under or on budget, an improvement of 1% from last quarter.
- 79% of Nickel and TPA projects combined were both on time and on budget, a 1% improvement on last quarter.

Cumulative performance of Nickel and TPA projects

As of December 31, 2008



Data Source: WSDOT Project Control and Reporting.

Highway Construction Performance Dashboard

Each quarter, WSDOT provides a detailed update on the delivery of the highway capital programs in the *Gray Notebook* and on the web (at www.wsdot.wa.gov) through the Project Pages and Quarterly Project Reports. The *Gray Notebook*'s Beige Pages generally do not include planning studies or projects that do not have a construction phase. Pre-Existing Funds (PEF) projects are budgeted by program for the improvement and preservation of the highway system, and the delivery of the work is reported programmatically in six categories.

Each of the 153 Nickel and 238 TPA projects has a line item budget, and are reported at an individual project level. Budgets for PEF, Nickel, and TPA in this edition of the *Gray Notebook* are based on the 2008 Supplemental Budget.

Highway construction performance dashboard

Dollars in thousands

	Nickel (2003)	TPA (2005)	Combined Nickel & TPA	Pre-Existing Funds (PEF)
Total number of projects	153	238	391	752
Total program budget *	$3,946,466	$9,415,872	$13,362,338	$4,285,911
Schedule, Scope, and Budget Summary: Results of completed projects				
Cumulative to date, 2003 – December 31, 2008	For Nickel and TPA details, see pages 51-57			See pages 93-96
Total cumulative number of projects completed	**108**	**77**	**185**	
% Completed early or on time	89%	91%	90%	
% Completed within scope	100%	100%	100%	
% Completed under or on budget	91%	83%	88%	
% Completed on time and on budget	82%	74%	79%	
Baseline estimated cost at completion	$1,699,976	$244,043	$1,944,019	
Current estimated cost at completion	**$1,700,034**	**$237,328**	**$1,937,362**	
% of total program over or under budget	0.0% over	2.8% under	0.3% under	
Biennium to date, 2007-09				
Total biennium number of projects completed	**39**	**54**	**93**	**281**
% Completed early or on time	85%	91%	88%	-
% Completed within scope	100%	100%	100%	-
% Completed under or on budget	90%	87%	88%	-
% Completed on time and on budget	79%	78%	78%	-
Baseline estimated cost at completion	$946,073	$229,124	$1,175,197	$1,568,364
Current estimated cost at completion	$945,376	$222,614	$1,167,990	$1,576,622
Advertisement Record: Results of projects entering into the construction phase or under construction				
Cumulative to date, 2003 – December 31, 2008	For Nickel and TPA details, see pages 59-62			See pages 93-96
Total number of projects in construction phase	**18**	**42**	**60**	**N/A**
% Advertised early or on time	83%	90%	88%	-
Total award amounts to date	$577,298	$724,059	$1,301,357	-
Biennium to date, 2007-09				
Total advertised	12	33	45	164
% Advertised early or on time	92%	91%	91%	95%
Total award amounts to date	$308,737	$273,907	$582,644	N/A
Advertisement Schedule for projects in the pipeline: Results of projects now being advertised for construction or planned to be advertised				
January 1, 2009 through June 30, 2009	For Nickel and TPA details, see pages 63-65			See pages 96-97
Total projects being advertised for construction bids	**3**	**31**	**34**	**82**
% on or better than schedule	100%	68%	71%	-

Data Source: WSDOT Project Control & Reporting. * per 2005-2007 Transportation Budget, Section 603.

Rail and Ferries Construction Performance Dashboard

A total of six Nickel projects and four Transportation Partnership Account (TPA) rail construction projects have been delivered on time and on budget as of December 31, 2008 (100% on-time, 100% on-budget) for $38,055 million. Five projects (three Nickel-funded, two TPA-funded) in construction have total award amounts of $27,866. Five rail projects are planned to advertise prior to June 30, 2009.

To date, ferries has not completed any construction projects using Nickel or TPA funding, but three projects (two Nickel-funded and one TPA-funded) are in construction.

Rail performance dashboard

As of December 31, 2008; dollars in thousands

	Nickel (2003)	Transportation Partnership Account	Combined Nickel & TPA
Schedule, scope and budget summary: completed projects			
Cumulative to date, 2003 – September 30, 2008	6	4	10
% 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	$23,090	$14,965	$38,055
Current estimated cost at completion	$23,090	$14,965	$38,055
% of total program on or under budget	100%	100%	100%
Advertisement record: projects under construction or entering construction phase			
Biennium to date, 2007-09			
Total advertised	3	2	5
% Advertised early or on time	100%	100%	100%
Total award amounts to date	$23,301	$4,565	$27,866
Advertisement schedule: projects now being advertised or planned to advertise			
January 1, 2009 through June 30, 2009			
Total being advertised for construction	3	2	5
% On schedule or earlier	0%	0%	0%

Ferries performance dashboard

As of December 31, 2008; dollars in thousands

Advertisement record: projects under construction or entering construction phase			
Cumulative to date, 2003 – December 31, 2008			
Total number of projects in construction phase	2	1	3
% Advertised early or on time	25%	100%	40%
Total award amounts to date	$10,712	$49,196	$59,908
Advertisement schedule: projects now being advertised or planned to advertise			
January 1, 2009 through June 30, 2009			
Total being advertised for construction	0	0	0
% On or better than schedule	N/A	N/A	N/A

Data Source: WSDOT Project Control and Reporting Office.

Schedule, Scope and Budget Summary

185 Highway projects completed as of December 31, 2008

Nickel and Transportation Partnership Account (TPA) projects, costs estimated at completion, dollars in thousands

Project Description	Fund type	On-time advertised	On time completed	Within scope	Baseline estimated cost	Current estimated cost	On budget	Completed on time, on budget
Cumulative to date								
2003-05 Biennium Summary See *Gray Notebook* for quarter ending Sept 30, 2006, for project listing. May be accessed at http://www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm.	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
2005-07 Biennium Summary See *Gray Notebook* for quarter end June 30, 2007, for project listing. May be accessed at http://www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm.	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

Project Description	Fund type	Original appropri-ation & *year*	On time adver-tised	On time completed	Within scope	Baseline estimated cost	Current estimated cost at completion	On budget	Completed on time, on budget
Biennium to date (2007-09)									
Adams and Franklin counties– Roadside safety improvements (Adams, Franklin) Advertisement date was delayed to complete cultural resource survey and environmental permits. The operationally complete date was delayed until spring due to the time required for the contractor to purchase and receive steel components for the guardrail system.	TPA	$1,000 *2005*	Late	Late	√	$1,000	$901	Under	
SR 14/Benton County— Roadside safety improvements (Benton)	TPA	$800 *2005*	√	Early	√	$1,691	$1,602	Under	√
SR 24/SR 241 to Cold Creek Rd — Add passing lanes (Benton, Yakima)	TPA	$3,800 *2005*	√	Early	√	$5,145	$4,434	Under	√
US 2/Roadside safety improve-ments — Safety (Chelan) The operationally complete date reported in the September 2008 *Gray Notebook* was October 2008. The correct completion date is August 2008.	TPA	$800 *2005*	√	Early	√	$800	$800	√	√
US 2/Dryden — Install signal (Chelan)	Nickel	$320 *2003*	√	√	√	$498	$498	√	√
West Olympic Peninsula — Roadway safety improvements (Clallam, Grays Harbor, Jefferson)	TPA	$2,000 *2005*	√	√	√	$2,000	$1,231	Under	√
SR 112/Hoko and Pysht Rivers — Erosion control (Clallam) This project is now closed after a lengthy evaluation subsequent to state forces repair work completed in December 2006 that corrected the deficiencies at the time.	TPA	$250 *2005*	Early	Early	√	$250	$146	Under	√
SR 14/Lieser Rd Interchange — Add ramp signal (Clark)	TPA	$1,000 *2005*	Early	Early	√	$973	$833	Under	√
SR 500/I-205 Interchange — Extend merge lane (Clark)	TPA	$975 *2005*	Early	Early	√	$1,002	$690	Under	√

WSDOT's Capital Project Delivery Programs

Schedule, Scope and Budget Summary

185 Highway projects completed as of December 31, 2008

Nickel and Transportation Partnership Account (TPA) projects, costs estimated at completion, dollars in thousands

Project Description	Fund type	Original appropri-ation & *year*	On time adver-tised	On time completed	Within scope	Baseline estimated cost	Current estimated cost at completion	On budget	Completed on time, on budget
SR 502/10th Ave to 72nd Ave — Safety improvements (Clark)	TPA	$1,215 *2005*	Early	√	√ *	$736	$749	√	√
* Project scope reduced to low-cost operational enhancements after TPA program funded a widening project in the same corridor.									
SR 503/Gabriel Rd intersection (Clark)	TPA	$773 *2005*	√	Early	√ *	$501	$501	√	√
* Presence of potential hazardous waste site raised construction costs to a point exceeding the projected benefits of building the right turn lane. Project scope reduced to low-cost operational enhancements during the 2007 legislative session.									
I-5/Lexington vicinity — Construct new bridge (Cowlitz)	Nickel	$5,000 *2003*	√	√	√	$5,000	$5,000	√	√
SR 432/Roadside safety improvements (Cowlitz)	TPA	$600 *2005*	Early	Early	√	$616	$470	Under	√
SR 260, 263, and 278 — Upgrade guardrail (Franklin, Spokane, Whitman)	Nickel	$1,025 *2005*	Late	Late	√	$1,054	$883	Under	
Advertisement date was delayed to complete cultural resource survey and environmental permits. The operationally complete date was delayed until spring due to the time required for contractor to purchase and receive steel components for the guardrail system.									
US 12/SR 127 to Clarkston — Roadside safety improvements (Garfield, Columbia)	TPA	$1,900 *2005*	√	Early	√	$307	$144	Under	√
US 12/Waitsburg to SR 127 — Roadside safety improvements (Garfield, Columbia, Walla Walla)	TPA	$166 *2006*	√	Early	√	$266	$111	Under	√
SR 17/Pioneer Way to Stratford Rd — Widen to four lanes (Grant)	TPA	$15,215 *2005*	√	Early	√	$20,989	$20,985	√	√
US 12/Clemons Rd vicinity — Inter-section improvements (Grays Harbor)	TPA	$2,500 *2005*	√	Early	√	$1,455	$1,159	Under	√
US 12/Wynoochee River Bridge — Upgrade bridge rail (Grays Harbor)	Nickel	$43 *2005*	Late	√	√	$257	$202	Under	√
Advertisement date delayed to tie this project with another for efficiency.									
US 101/Quinault River Bridge — Upgrade bridge rail (Grays Harbor)	Nickel	$51 2005	Late	√	√	$268	$229	Under	√
Advertisement date changed to balance with Nickel Bridge Rail retrofit allocation.									
SR 105/Johns River Bridge — Upgrade bridge rail (Grays Harbor)	Nickel	$68 *2005*	Late	√	√	$338	$263	Under	√
Advertisement date changed to balance with Nickel Bridge Rail retrofit allocation.									
US 101/Mt Walker — Add passing lane (Jefferson)	TPA	$2,500 *2005*	Late	√	√	$3,550	$2,397	Under	√
Advertisement date delayed for possible redesign of structural elements. Redesign was deemed unnecessary and the project was advertised in 4/07.									
SR 116/SR 19 to Indian Island — Upgrade bridge rail (Jefferson)	Nickel	$154 *2005*	Late	Late	√	$475	$570	Over	
Advertisment date delayed due to Dept of Archaeology & Historic Preservation (DAHP) review required for this project.									

Schedule, Scope and Budget Summary

185 Highway projects completed as of December 31, 2008

Nickel and Transportation Partnership Account (TPA) projects, costs estimated at completion, dollars in thousands

Project Description	Fund type	Original appropri-ation & *year*	On time adver-tised	On time completed	Within scope	Baseline estimated cost	Current estimated cost at completion	On budget	Completed on time, on budget
SR 410 and SR 164 — Roadside safety improvements (King)	TPA	$1,200 *2005*	√	Early	√	$1,200	$1,188	√	√
I-5/Pierce County Line to Tukwila interchange — Add HOV lanes (King)	Nickel	$55,100 *2003*	Early	Late	√	$142,593	$139,865	√	
The delay in operationally complete date, from May 2007 to July 2007, was due to poor weather that reduced the number of workable contract days.									
I-5/S Seattle Northbound Viaduct — Bridge paving (King)	TPA	$11,389 *2005*	√	Early	√	$14,360	$16,072	Over	
Project was over budget due to increased quantities for polyester concrete, project security, and additional contractor incentive payment.									
I-5/Southbound Viaduct, S Seattle vicinity — Bridge repair (King)	TPA	$3,910 *2005*	√	Early	√	$1,108	$1,266	Over	
Project was over budget due to increased traffic control and additional contractor incentive payment.									
I-90/Eastbound Ramps to SR 18 — Add signal and turn lanes (King)	Nickel	$3,354 *2003*	√	Early	√	$5,012	$5,012	√	√
I-90/Eastbound Ramps to SR 202 — Construct roundabout (King)	Nickel	$932 *2003*	√	√	√	$1,832	$1,843	√	√
SR 99/Alaskan Way Viaduct Yesler Way vicinity — Stabilize foundation (King)	TPA	$4,472 *2008*	√	√	√	$4,637	$4,637	√	√
SR 99/S 284th to S 272nd St — Add HOV lanes (King)	Nickel	$13,304 *2003*	√	√	√	$15,404	$15,153	√	√
SR 167/15th St SW to 15th St NW — Add HOV lanes (King)	Nickel	$39,600 *2003*	√	Early	√	$41,491	$42,729	√	√
Operational completion was expected in December 2007, based on an accelerated schedule submitted by the contractor. The contractor was unable to complete the paving operations in 2007 due to bad weather in November and December; further, harsh winter weather damaged remaining ramps, which required roadway and paving repairs. In addition, electrical work meshed more efficiently with the adjacent HOT lane project. WSDOT asked OFM for funds to cover the higher costs.									
SR 167 HOT Lanes Pilot Project — Managed lanes (King)	TPA	$13,780 *2005*	Early	Early	√	$17,877	$19,050	Over	
The project is operationally complete but over budget due to higher than expected construction costs for sign bridges, retaining walls and environmental work. Traffic control costs were higher than initially estimated: contractor used night lane closures during summer 2008 in order to meet construction schedule.									
SR 169/SE 291st St vicinity (formerly SE 288th Street) — Add turn lanes (King)	TPA	$1,600 *2005*	√	√	√	$2,606	$2,669	√	√
SR 202/Jct SR 203 — Construct roundabout (King)	Nickel	$2,803 *2003*	√	Late	√	$3,950	$3,950	√	
Operationally complete date was delayed when project was shut down due to severe weather conditions.									
I-405/SR 520 to SR 522 — Widening (King)	Nickel	$163,735 *2003*	√	√	√	$87,293	$81,445	Under	√
SR 515/SE 182nd St to SE 176th St vicinity — Construct traffic island (King)	TPA	$900 *2005*	Late	√	√	$1,701	$1,691	√	√
Advertisement date delayed due to utility relocation issues.									

WSDOT's Capital Project Delivery Programs

Schedule, Scope and Budget Summary

185 Highway projects completed as of December 31, 2008

Nickel and Transportation Partnership Account (TPA) projects, costs estimated at completion, dollars in thousands

Project Description	Fund type	Original appropri-ation & *year*	On time adver-tised	On time completed	Within scope	Baseline estimated cost	Current estimated cost at completion	On budget	Completed on time, on budget
SR 516/208th and 209th Ave SE — Add turn lanes (King)	Nickel	$1,443 *2003*	Late	Late	√	$1,881	$2,367	Over	
Delays by the utility company in turn delayed construction into late fall; heavy rains delayed the schedule further and added labor and equipment costs.									
SR 522/I-5 to I-405 — Multimodal improvements (King)	TPA	$9,681 *2003*	Early	Early	√	$22,581	$22,509	√	√
SR 3/Imperial Way to Sunnyslope — Add lanes (Kitsap)	TPA	$2,544 *2005*	Late	Early	√	$2,911	$1,547	Under	√
Advertisement date delayed due to unresolved utilities issues.									
SR 3/SR 303 Interchange (Waaga Way) – Construct ramp (Kitsap)	Nickel	$15,179 *2003*	√	√	√	$24,828	$26,191	Over	
Increase was due to change orders to cover overruns in erosion control, traffic control, and slope maintenance.									
US 97/Klickitat County— Roadside safety improvements (Klickitat)	TPA	$1,000 *2005*	√	Early	√	$1,000	$871	Under	√
SR 7/Lewis County— Roadside safety improvements (Lewis)	TPA	$1,700 *2005*	√	Early	√	$1,680	$879	Under	√
SR 401/US 101 to east of Megler Rest Area vicinity — Upgrade guardrail (Pacific)	Nickel	$130 *2005*	Early	Early	√	$296	$152	Under	√
Pierce and Thurston counties— Roadside safety improvements (Pierce, Thurston)	TPA	$1,000 *2005*	√	Early	√	$1,000	$936	Under	√
I-5/S 48th to Pacific Ave — Add HOV lanes (Pierce)	Nickel	$92,987 *2003*	√	√	√	$105,546	$105,546	√	√
SR 7/SR 507 to SR 512 — Safety improvements (Pierce)	Nickel	$11,429 *2003*	√	Late	√	$20,268	$20,931	√	
The operationally complete date was delayed due to additional time needed for signal system installation, which delayed paving and sidewalk work.									
SR 20/Ducken Rd to Rosario Rd — Add turn lanes (Skagit, Island)	Nickel	$4,393 *2003*	Late	√	√	$8,505	$8,520	√	√
Advertisement date delayed due to environmental permitting issues.									
SR 20/Thompson Road — Add signal (Skagit)	TPA	$775 *2005*	Early	√	√	$1,038	$1,038	√	√
US 2 and SR 92 — Roadside safety improvements (Snohomish)	TPA	$1,200 *2005*	√	Late	√	$1,232	$1,222	√	
The operationally complete date was delayed because project was shut down due to winter weather and unavailable materials.									
US 2/Fern Bluff to Sultan Startup — Stormwater drainage improvements (Snohomish)	TPA	$799 *2005*	√	Early	√	$1,012	$465	Under	√
US 2/10th St intersection vicinity — Stormwater drainage improvements (Snohomish)	TPA	$441 *2005*	√	√	√	$534	$212	Under	√

Schedule, Scope and Budget Summary

185 Highway projects completed as of December 31, 2008

Nickel and Transportation Partnership Account (TPA) projects, costs estimated at completion, dollars in thousands

Project Description	Fund type	Original appropri-ation & *year*	On time adver-tised	On time completed	Within scope	Baseline estimated cost	Current estimated cost at completion	On budget	Completed on time, on budget
US 2/Pickle Farm Rd and Gunn Rd — Add turn lanes (Snohomish)	Nickel	$973 *2003*	Late	√	√	$1,322	$1,346	√	√
Advertisement date delayed to address design deviations and late addition of consultant staff.									
I-5/SR 526 to Marine View Drive — Add HOV lanes (Snohomish)	Nickel	$246,286 *2003*	Early	√	√	$220,575	$221,314	√	√
I-5/41st St interchange — Widening and rebuild ramps (Snohomish)	TPA	$40,400 *2005*	Early	√	√	$42,844	$42,844	√	√
SR 531/Lakewood Schools — Construct sidewalks (Snohomish)	TPA	$460 *2005*	Early	√	√	$705	$495	Under	√
SR 9/SR 522 to 228th St SE, Stages 1a and 1b — Add lanes (Snohomish)	Nickel	$22,250 *2003*	√	√	√	$22,840	$24,459	Over	
Project was over budget due to higher than anticipated costs associated with erosion control and water removal. Work on the project was suspended in December 2007 and moved to February 2008 to avoid adverse impacts to wetlands adjacent to the project site during winter weather.									
SR 9/228th St SE to 212th St SE (SR 524), Stage 2 — Add lanes (Snohomish)	Nickel	$22,283 *2003*	√	√	√	$31,181	$31,322	√	√
SR 9/108th Street NE (Lauck Road) — Add turn lanes (Snohomish)	Nickel	$1,353 *2003*	√	√	√	$1,846	$1,828	√	√
SR 9/Schloman Rd to 256th St NE — New alignment (Snohomish)	Nickel	$15,952 *2003*	Late	Early	√	$16,137	$16,750	√	√
Advertisement date delayed due to additional time needed to acquire environmental permits and right-of-way parcels.									
SR 9/252nd St NE vicinity — Add turn lane (Snohomish)	Nickel	$881 *2003*	Late	Early	√	$1,731	$1,639	Under	√
Advertisement date delayed due to additional time needed to acquire environmental permits and right-of-way parcels.									
SR 9/268th St Intersection — Add turn lane (Snohomish)	Nickel	$2,765 *2003*	Late	Early	√	$2,833	$2,833	√	√
Advertisement date delayed due to additional time needed to acquire environmental permits and right-of-way parcels.									
SR 99/N of Lincoln Way — Construct sidewalks (Snohomish)	TPA	$931 *2005*	√	√	√	$1,557	$1,557	√	√
I-90/Latah Creek and Lindeke St Bridges — Upgrade bridge rail (Spokane)	Nickel	$737 *2005*	√	Early	√	$813	$810	√	√
I-90/Harvard Rd Pedestrian Bridge — Construct bridge (Spokane)	TPA	$332 *2005*	√	√	√	$1,333	$1,371	√	√
SR 902/Medical Lake interchange — Intersection improvements (Spokane)	TPA	$600 *2005*	Late	√	√	$743	$830	Over	
The current estimated cost to complete includes $187,000 of developer mitigation funding. When the developer mitigation funds are added to the current Legislative Expectation Baseline for this project, the project was actually completed within budget.									

WSDOT's Capital Project Delivery Programs

Schedule, Scope and Budget Summary

185 Highway projects completed as of December 31, 2008

Nickel and Transportation Partnership Account (TPA) projects, costs estimated at completion, dollars in thousands

Project Description	Fund type	Original appropri-ation & *year*	On time adver-tised	On time completed	Within scope	Baseline estimated cost	Current estimated cost at completion	On budget	Completed on time, on budget
SR 25/Spokane River Bridge — Upgrade bridge rail (Stevens, Lincoln)	Nickel	$354 *2005*	√	√	√	$369	$249	Under	√
SR 25/Columbia River Bridge — Upgrade bridge rail (Stevens)	Nickel	$448 *2005*	√	√	√	$468	$408	Under	√
SR 4/Svensen's Curve (Wahkiakum)	Nickel	$6,714 *2003*	√	√	√ *	$1,637	$1,637	√	√
Real estate and construction costs escalated to a point exceeding the projected benefits of straightening the curve. Project scope reduced to low-cost operational enhancements during the 2007 legislative session.									
US 12/Attalia vicinity — Add lanes (Walla Walla)	Nickel	$10,333 *2003*	√	Early	√	$16,201	$16,206	√	√
SR 542/Boulder Creek Bridge — Replace bridge (Whatcom)	TPA	$6,025 *2005*	Late	Late	√	$7,258	$7,247	√	
Advertisement date delayed due to time required to analyze alternative bridge footings, in turn delaying environmental review and permitting process. Operationally complete date delayed when demolition of the old bridge missed the 2007 fish passage window and was rescheduled to 2008: final embankments for the new bridge could not be constructed with old bridge still in place.									
SR 543/I-5 to Canadian border — Add lanes (Whatcom)	Nickel	$33,897 *2003*	Late	Early	√	$49,013	$50,807	√	√
Advertisement date delayed due to delays in acquiring right of way.									
SR 270/Pullman to Idaho State Line — Add lanes (Whitman)	Nickel	$30,619 *2003*	Late	√	√	$31,188	$31,188	√	√
Advertisement date delayed due to environmental permitting issues and Corps of Engineers mitigation negotiations. The project was completed within budget; however, WSDOT is currently negotiating with the contractor on a significant contractor claim.									
Whitman and south Spokane counties— Roadside safety improvements (Whitman, Spokane)	TPA	$1,000 *2005*	Late	Late	√	$1,000	$899	Under	
Advertisment date delayed to complete cultural resource survey and environmental permits. The operationally complete date was delayed until spring due to the time required for contractor to purchase and receive steel components of the guardrail system.									
SR 241/Rattlesnake Hills vicinity — Roadside safety (Yakima, Benton)	TPA	$1,100 *2005*	Late	Early	√	$2,170	$1,865	Under	√
Advertisment date delayed due to environmental permitting issues.									
SR 410/Rattlesnake Creek — Stabilize slopes (Yakima)	TPA	$250 *2005*	√	Early	√	$331	$332	√	√
SR 823/Goodlander to Harrison Rd — Build sidewalk (Yakima)	TPA	$376 *2005*	√	Early	√	$993	$1,177	Over	
Cost increases due to design changes for utility relocation and right of way easements, as well as material cost escalation and inflation. Cost increases are covered by Pre-Existing Funds.									
Current Quarter									
US 2/Wenatchee — Build trail connection (Chelan)	TPA	$1,000 *2005*	Early	√	√	$1,835	$1,835	√	√
US 2/US 97 Peshastin East — New interchange (Chelan)	Nickel	$25,350 *2003*	√	Early	√	$21,935	$21,934	√	√

Schedule, Scope and Budget Summary

185 Highway projects completed as of December 31, 2008

Nickel and Transportation Partnership Account (TPA) projects, costs estimated at completion, dollars in thousands

Project Description	Fund type	Original appropri-ation & *year*	On time adver-tised	On time completed	Within scope	Baseline estimated cost	Current estimated cost at completion	On budget	Completed on time, on budget
East Olympic Peninsula — Road-way safety improvements (Clallam, Jefferson, Kitsap, Mason, Pierce)	TPA	$2,900 *2005*	√	Late	√	$2,900	$2,857	√	
A delay in the materials procurement and a delay in the ad date contributed to the delay of the operationally complete date.									
US 101/Blyn vicinity — Add passing lanes (Clallam)	Nickel	$2,085 *2003*	√	√	√	$4,381	$3,834	Under	√
SR 112/Neah Bay to Sekiu — Roadside safety improvements (Clallam)	TPA	$10,373 *2005*	√	√	√	$10,373	$10,373	√	√
SR 112/Sekiu vicinity to US 101 — Install guardrail (Clallam)	TPA	$1,800 *2005*	√	√	√	$1,800	$1,800	√	√
I-5/SR 502 Interchange — Build interchange (Clark)	Nickel	$34,730 *2003*	√	Early	√	$51,748	$52,382	√	√
I-405/Bridges — Seismic (King)	TPA	$1,265 *2007*	√	Early	√	$1,580	$1,521	√	√
I-90/Two Way Transit — Transit and HOV — Stage 1 (King)	TPA	$15,000 *2003*	Late	Early	√	$20,504	$18,430	Under	√
Advertisement date delayed to obtain Agreement of Access with Mercer Island.									
US 101/SR 3 on-ramp to US 101 northbound — Add new ramp (Mason)	TPA	$3,000 *2005*	Early	√	√	$4,240	$3,788	Under	√
Advancement was made to complete this work prior to the scheduled closing of Hood Canal Bridge.									
US 97/Brewster vicinity — Install lighting (Okanogan)	TPA	$150 *2005*	Early	Early	√	$196	$196	√	√
SR 161/SR 167 EB Ramp — Realign Ramps (Pierce)	Nickel	$2,039 *2003*	√	√	√	$3,066	$3,065	√	√
SR 9, SR 11, and SR 20 — Roadside safety improvements (Skagit)	TPA	$1,400 *2005*	√	√	√	$1,400	$1,683	Over	
Project was completed over budget because additional elements (guardrail in several new locations, replacing two school flashing beacon signs) were added to reflect high traffic volumes and to help reduce accidents on SR 9.									
SR 530/Sauk River (Site #2) — Stabilize river bank (Snohomish)	TPA	$3,750 *2005*	Early	Early	√	$3,335	$4,518	Over	
Project was completed over budget after severe winter weather increased the deteriorating condition of the river embankment, and an emergency contract was awarded to prevent a section of the roadway from collapsing into the river.									
SR 542 and SR 547 — Roadside safety improvements (Whatcom)	TPA	$1,300 *2005*	√	√	√	$1,284	$615	Under	√
US 12/Naches River north of Yakima — Stabilize slopes (Yakima)	TPA	$1,600 *2005*	√	√	√	$2,985	$2,976	√	√

WSDOT's Capital Project Delivery Programs

Schedule, Scope and Budget Summary

Biennial totals 2007-2009

Nickel and Transportation Partnership Account (TPA) projects, costs estimated at completion, dollars in thousands

	Percent on time advertised	Percent on time completed	Percent within scope	Current Legislative expectation baseline	Current estimated cost at completion	Percent within budget	Percent on time and on budget
Totals current quarter (December 31, 2008)	**94%**	**94%**	**100%**	**$133,562**	**$131,807**	**88%**	**81%**
4 Nickel Projects	100%	100%	100%	$81,130	$81,215	100%	100%
12 TPA Projects	92%	92%	100%	$52,432	$50,592	83%	75%
Totals biennium to date (2007-09)	**76%**	**88%**	**100%**	**$1,175,197**	**$1,167,990**	**88%**	**78%**
39 Nickel Projects	67%	85%	100%	$946,073	$945,376	90%	79%
54 TPA Projects	83%	91%	100%	$229,124	$222,614	87%	78%
Totals cumulative to date**	**85%**	**90%**	**100%**	**$1,944,019**	**$1,937,362**	**88%**	**79%**
108 Nickel Projects	85%	89%	100%	$1,699,976	$1,700,034	91%	82%
77 TPA Projects	86%	91%	100%	$244,043	$237,328	83%	74%

Source: WSDOT Project Control and Reporting Office

**Note: Dollars shown are for all fund types, not just Nickel or Transportation Partnership Account funds.

Definitions

On-Time Advertised
The project was advertised within the quarter as planned based on the original Legislative expectation (2003-05 Nickel, 2005-07 TPA).

On-Time Completed
The project was operationally complete within the quarter as planned in the original Legislative expectation (2003-05 Nickel, 2005-07 TPA). "Operationally complete" is the date when the public has free and unobstructed use of the facility. In some cases, the facility will be open, but minor work items may remain to be completed.

Within Scope
The project was completed within the specific functional intent of a project as last approved by the Legislature.

On-Budget
The project was within +/- 5% of the current Legislative expectation (baseline).

Advertisement Record

60 Projects in construction phase as of December 31, 2008

Nickel and Transportation Partnership Account (TPA) projects, dollars in thousands

Project description	Fund type*	On time advertised	Ad date	Contractor	Operationally complete date	Award amount
Cumulative to date						
SR 518/SeaTac Airport to I-5 – Eastbound widening (King)	TPA	√	Apr-07	Tri-State Construction, Inc.	Jun-09	$26,631
SR 509/SR 518 Interchange – Signalization and channelization (King)	TPA	Early	*Combined with the project above for construction efficiencies.*			
I-405/NE 10th St – Bridge crossing (King)	TPA	Early	Sep-06		Jun-09	
• I-405/NE 10th St Bridge crossing	TPA		Sep-06	City of Bellevue	Apr-08	$9,772
• I-405/NE 10th St Bridge crossing Stage 2	TPA		Sep-07	Max J. Kuney Company	Jun-09	$13,866
SR 509/I-5 to Sea-Tac – Freight & congestion relief (King)	TPA	Late	Jun-06	Tri-State Construction, Inc.	Sep-09	$344
The original advertisement date was November 2005. It was delayed pending voter outcome on Initiative I-912 in November 2005. It was not added to the project list in the 2006 Legislative Budget; the ad date was updated to June 2006 in the 2007 Legislative Budget.						
I-405/I-90 to SE 8th St – Widening (King)	Nickel	Early	Oct-06	Guy F. Atkinson Construction LLC	Dec-09	$124,000
I-405/112th Ave SE to I-90 – NB Widening (King)	TPA	Early	*Combined with the project above for construction efficiencies.*			
SR 167/S 180th St to I-405 – SB Widening (King)	TPA	Early	Feb-07	Tri-State Construction Inc	Jun-10	$91,500
I-405/SR 181 to SR 167 – Widening (King)	TPA	Early	*Combined with the project above for construction efficiencies.*			
• I-405/I-5 to SR 169 Stage 1 widening	TPA		Feb-07	Tri-State Construction Inc	Jun-10	
• I-405/Springbrook Creek – Wetland and habitat mitigation bank	TPA		Aug-06	Scarsella Bros., Inc.	May-09	$12,539
I-405/I-5 to SR 181 – Widening (King)	TPA	Early	*Combined with the project above for construction efficiencies.*			
SR 520/W Lake Sammamish Parkway to SR 202, Stage 3 – Widening (King)	Nickel	Late	Jan-07	Tri-State Construction, Inc.	Sep-11	$9,988
The advertisement for the flyover ramp portion of this project was delayed to January 2007 due to stormwater and wetland design changes. The flyover ramp is currently open to traffic and the widening portion of the project was advertised in November, 2008.						
SR 104/Hood Canal Bridge – Replace east half (Kitsap, Jefferson)	TPA	√	Feb-03	Kiewit-General, A Joint Venture	Jun-09	$204,000
I-5/Rush Rd to 13th St – Add lanes (Lewis)	Nickel	√	Mar-07	Scarsella Bros., Inc.	Dec-09	$33,750
SR 20/Fredonia to I-5 – Add lanes (Skagit)	Nickel	√	Nov-06	Scarsella Bros., Inc.	Oct-09	$15,139
SR 20/Quiet Cove Rd vicinity to SR 20 Spur – Widening (Skagit)	Nickel	√	May-07	Marshbank Construction, Inc.	Oct-09	$6,129

WSDOT's Capital Project Delivery Programs

Advertisement Record

60 Projects in construction phase as of December 31, 2008

Nickel and Transportation Partnership Account (TPA) projects, dollars in thousands

Project description	Fund type*	On time advertised	Ad date	Contractor	Operationally complete date	Award amount
US 395/NSC – Francis Ave to Farwell Rd – New alignment (Spokane)	Nickel	Late	Jan-04		Aug-09	
The advertisement delay on this project was due to delays in the right-of-way acquisition.						
• NSC-Farwell Rd – Lowering	Nickel		Jan-04	Max J. Kuney Co.	Jul-05	$4,976
• NSC-Gerlach to Wandermere – Grading	Nickel		Nov-04	KLB Construction Inc.	Sep-06	$9,987
• NSC-Francis Ave to US 2 – Structures	Nickel		May-06	Max J. Kuney Co.	Jul-08	$17,236
• US 395/NSC-Freya to Fairview vicinity – Grading and structures	Nickel		Jan-07	Steelman-Duff	Nov-08	$10,571
• US 395/NSC-Freya St to Farwell Rd – PCCP paving	Nickel		Feb-07	Acme Concrete Paving	Mar-09	$19,490
• US 395/NSC – BNSF rail tunnel	Nickel		Sep-07	Scarsella Bros. Inc.	Aug-09	$17,295
Biennium to date (2007-09)						
SR 17/Othello vicinity to Soap Lake vicinity – Install lighting (Adams, Grant)	TPA	Early	Dec-07	Central Washington Asphalt, Inc.	Aug-10	$5,134
Advertisement date advanced to construct a portion of this project as a part of a larger PEF program for construction efficiencies.						
SR 26/Othello vicinity – Install lighting (Adams, Grant)	TPA	Early	*Combined with the project above for construction efficiencies.*			
Advertisement date advanced to construct a portion of this project as a part of a larger PEF program for construction efficiencies.						
I-205/Mill Plain Exit (112th Connector) – Build ramp (Clark)	Nickel	Early	Mar-08	Selby Bridge Company, Inc.	Dec-09	$14,875
I-205/Mill Plain Interchange to NE 18th St – Stage 1 (Clark)	TPA	Early	*Combined with the project above for construction efficiencies.*			
US 101/W Fork Hoquiam River Bridge – Replace bridge 101/142 (Grays Harbor)	TPA	√	Mar-08	Ross Bros. & Company, Inc.	Feb-09	$3,545
US 101/W Fork Hoquiam River Bridge – Replace bridge 101/145 (Grays Harbor)	TPA	√	*Combined with the project above for construction efficiencies.*			
SR 522/University of Washington Bothell – Build interchange (King)	TPA	Late	Oct-07	Mowat Construction Co.	Oct-09	$36,651
Advertisement date was delayed due to environmental permitting issues. The project was originally advertised in January, 2007 and then pulled from ad due to budget constraints. The project was re-advertised in October, 2007 and was awarded in January, 2008.						
SR 900/SE 78th St vicinity to I-90 vicinity – Widening and HOV (King)	Nickel	√	May-08	Icon Materials	Oct-09	$19,354
I-5/Boston St to E Shelby St – Southbound I-5, west side – Noise wall (King)	TPA	√	Mar-08	C. A. Carey Corp.	Apr-10	$5,376
I-5/5th Ave NE to NE 92nd St – Noise wall (King)	TPA	√	Feb-08	Wilder Construction Co.	Jun-10	$3,315
Central King to South Snohomish Bridges – Seismic (King, Snohomish)	TPA	√	Jul-08	Granite Northwest, Inc. DBA Wilder	Jul-10	$6,734
SR 11, SR 525, and SR 900 – Roadside safety improvements (King, Snohomish, Skagit)	TPA	√	Feb-08	Coral Construction Company	Dec-10	$1,463
SR 519/ I-90 to SR 99 Intermodal access project – Interchange Improvements (King)	Nickel	Early	Jun-08	Kiewit Pacific Co.	Sep-10	$66,969

Advertisement Record

60 Projects in construction phase as of December 31, 2008

Nickel and Transportation Partnership Account (TPA) projects, dollars in thousands

Project description	Fund type*	On time advertised	Ad date	Contractor	Operationally complete date	Award amount
SR 16/Burley-Olalla Interchange – Build interchange (Kitsap)	Nickel	Late	Apr-08	Ceccanti, Inc.	Aug-10	$16,329
Advertisement date was delayed to allow time to address continuing design review issues including temporary erosion control and utility boring designs.						
SR 142/Roadside Safety – Roadside improvements (Klickitat)	TPA	Early	Mar-08	Dirt and Aggregate Interchange	Oct-10	$300
SR 6/South Fork Chehalis River Bridge – Replace bridge (Lewis)	TPA	√	May-08	Scarsella Bros., Inc.	Dec-09	$7,854
Lincoln Co – Roadside safety improvements (Lincoln)	TPA	√	Aug-08	Coral Construction Co.	Apr-09	$596
SR 704/Cross Base Highway – New alignment (Pierce)	TPA	Early	Mar-08	Ceccanti, Inc	Jun-09	$7,350
Project advertised early to allow construction of the first stage at the east end of the corridor and to finish right-of-way acquisition within the 2007-09 biennium.						
I-5/SR 16 Interchange – Rebuild interchange (Pierce)	TPA	√	Jul-08	Guy R. Atkinson Construction LLC.	Jul-11	$119,925
SR 9/Lake Stevens Way to 20th St SE – Improve intersection (Snohomish)	TPA	√	Apr-08		Jun-09	
This is a WSDOT project administered by Snohomish County in order to coordinate more effectively with locally managed projects, and improve cost and construction efficiency.						
SR 9/176th St SE Vicinity to SR 96 – Add signal and turn lanes (Snohomish)	Nickel	√	Jan-08	Scarsella Bros. Inc.	Mar-10	$18,878
SR 9/Marsh Rd Intersection – Safety improvements (Snohomish)	TPA	√	*Combined with the project above for construction efficiencies.*			
SR 9/SR 96 to Marsh Rd – Add lanes and improve intersections (Snohomish)	TPA	√	*Combined with the project above for construction efficiencies.*			
US 395/NSC-US 2 to Wandermere and US 2 – Lowering, new alignment (Spokane)	Nickel	√	Aug-08	Graham Construction and Management, Inc.	May-11	$42,849
I-5/Grand Mound to Maytown Stage One – Add lanes (Thurston)	Nickel	√	Dec-07	Scarsella Bros., Inc.	Jun-10	$61,495
US 12/Frenchtown vicinity to Walla Walla – Add lanes (Walla Walla)	TPA	√	Dec-07	Apollo, Inc	Oct-09	$33,733
SR 539/Tenmile Road to SR 546 – Widening (Whatcom)	Nickel	√	Dec-07	Max J. Kuney Co.	Oct-09	$53,987
Quarter ending December 31, 2008						
US 395/Columbia Dr to SR 240 – Rebuild interchange (Benton)	TPA	√	Oct-08	KLB Construction, Inc	Nov-09	$11,520
I-5 Guardrail retrofit – Safety (King)	Nickel	√	Dec-08	Tri-State Construction	Oct-09	$1,326
I-5/Boeing Access Rd vicinity to Snohomish county line – Pavement repair (King)	Nickel	√	Oct-08	Interstate Improvement, Inc.	Dec-09	$9,875
I-90/Eastside Bridges – Seismic (King)	TPA	√	Oct-08	Imco General Construction, Inc.	May-10	$5,999
I-90/I-5 to 12th Ave S – Seismic retrofit (King)	TPA	√	Oct-08	PCL Construction Services, Inc.	Jun-10	$5,703
I-405/SR 167 to SR 169 – Add southbound lane (King)	Nickel	√	Oct-08		Jun-11	

WSDOT's Capital Project Delivery Programs

Advertisement Record

60 Projects in construction phase as of December 31, 2008

Nickel and Transportation Partnership Account (TPA) projects, dollars in thousands

Project description	Fund type*	On time advertised	Ad date	Contractor	Operationally complete date	Award amount
I-405/SR 167 to SR 169 – Northbound widening (King)	TPA	√	Oct-08		Jun-11	
I-405/SR 515 – New interchange (King)	TPA	√	Oct-08		Jun-11	
SR 307/SR 104 Safety Corridor study – Spot improvements (Kitsap)	TPA	√	Nov-08		Jul-09	
US 101/Hoodsport vicinity – Stabilize slope (Mason)	TPA	Late	Dec-08		Aug-09	
Project missed the 2008 construction season due to additional time needed for Endangered Species Act (ESA) compliance and acquiring state water quality permit.						
SR 20/W of Okanogan – Roadside safety improvements (Okanogan)	TPA	√	Dec-08	Central Washington Asphalt, Inc.	Aug-09	$5,733
I-5/172nd St NE (SR 531) Interchange – Rebuild interchange (Snohomish)	TPA	√	Oct-08	Northwest Construction Inc.	Dec-10	$12,976
SR 532/270th St NW to 72nd Ave NW – Improve safety (Snohomish, Island)	TPA	Late	Oct-08		Dec-10	
This is a design-build project. Advertisement date delayed to allow additional time needed to acquire environmental permits and right-of-way parcels.						
SR 532/General Mark W. Clark Memorial Bridge – Replace bridge (Snohomish)	TPA	Early	*Combined with the project above for construction efficiencies.*			
SR 532/Sunrise Blvd to Davis Slough – Improve safety (Island)	TPA	Early	*Combined with the project above for construction efficiencies.*			
SR 532/General Mark W. Clark Memorial Bridge – Improve safety (Snohomish)	TPA	Early	*Combined with the project above for construction efficiencies.*			
SR 532/64th Ave NW to 12th Ave NW – Improve safety (Snohomish)	TPA	Early	*Combined with the project above for construction efficiencies.*			
I-5/Bakerview Rd to Nooksack River Bridge, Slater Rd interchange – Safety improvements (Whatcom)	Nickel	√	Oct-08	Penhall Company	Sep-09	$2,800

Advertisement Record summary	Percent on time advertised	Award amount
Totals current quarter (December 31, 2008)	**89%**	**$55,932**
4 Nickel projects	100%	$14,001
14 TPA projects	86%	$41,931
Totals biennium to date (2007-09)	**91%**	**$582,644**
12 Nickel projects	92%	$308,737
33 TPA projects	91%	$273,907
Totals cumulative to date (Projects under way)	**88%**	**$1,301,357**
18 Nickel projects	83%	$577,298
42 TPA projects **	90%	$724,059

Source: WSDOT Project Control and Reporting Office

* As established by the 2005 Legislative Evaluation and Accountability Program (LEAP) committee. However, dollars shown are for all fund types, not just Nickel or Transportation Partnership Account (TPA) funds.

** US 101/Lynch Road-Safety Improvements: This project has been removed from the cumulative TPA project count. Mason County is the lead on this project. WSDOT's original assumption was that the county would advertise in 2005, but based on new information, this project has been deferred into the 09-11 biennium.

Projects To Be Advertised

34 Projects in in the delivery pipeline from January 1, 2009, through June 30, 2009

Nickel and Transportation Partnership Account (TPA) projects now being advertised for construction or planned to be advertised, costs estimated at completion, dollars in thousands

Project Description	Fund type*	Original planned ad date	Current planned ad date	On schedule	Baseline estimated cost at completion	Current estimated cost at completion
SR 26/Othello vicinity – Roadside safety improvements (Adams)	TPA	Feb-09	Feb-09	√	$714	$714
SR 240/Beloit Rd to Kingsgate Way – Widen roadway (Benton)	TPA	Jan-09	Feb-09	√	$16,872	$12,204
SR 285/George Sellar Bridge – Add eastbound lane (Chelan, Douglas) Advertisement date delayed one month to address additional bridge analysis, design, and detailing requirements, and to purchase railroad easements.	TPA	Dec-08	Jan-09	Delayed	$13,491	$16,480
US 101/Sol Duc River Bridge – Upgrade bridge rail (Clallam)	Nickel	Mar-09	Mar-09	√	$386	$414
SR 4 and SR 401 – Roadside safety improvements (Cowlitz, Pacific, Wahkiakum)	TPA	Feb-09	Feb-09	√	$700	$700
SR 4/Climbing lane to Coal Creek Rd vicinity – Upgrade guardrail (Cowlitz, Wahkiakum)	Nickel	Apr-09	Apr-09	√	$3,601	$3,441
US 2/S of Orondo – Add passing lane (Douglas) Advertisement date delayed due to delays in obtaining environmental permitting and right-of-way parcels.	TPA	Nov-08	Mar-09	Delayed	$3,364	$3,512
SR 28/Jct US 2 and US 97 to 9th St, Stage 1 – New alignment (Douglas) Advertisement date advanced so that construction on the irrigation canal could occur during the 2009/10 winter while the irrigation water is shut off.	TPA	Oct-09	Apr-09	Advanced	$53,910	$58,122
N Stevens and Ferry Co – Roadside safety improvements (Ferry, Stevens) Advertisement date delayed due to environmental permitting issues.	TPA	Aug-08	Feb-09	Delayed	$900	$900
SR 17/Moses Lake to Ephrata – Widening (Grant) Advertisement date delayed to accommodate a design alternative change that reduces the shoulder width from 8 foot to 4 foot and keeps the project on budget.	TPA	Nov-08	Feb-09	Delayed	$5,000	$5,000
SR 17/N of Moses Lake – Add passing lane (Grant) Advertisement date delayed to accommodate a design alternative change that reduces the shoulder width from 8 foot to 4 foot and keeps the project on budget.	TPA	Nov-08	Feb-09	Delayed	$1,306	$1,439
SR 109/Unnamed tributary to Pacific (1) – Fish passage barrier (Grays Harbor)	TPA	Apr-09	Apr-09	√	$1,180	$1,302
US 101/Mosquito Creek tributary to North River – Fish barrier (Grays Harbor)	TPA	May-09	May-09	√	$1,292	$1,604
SR 160/SR 16 to Longlake Rd vicinity – Widening (Kitsap)	Nickel	Jan-09	Jan-09	√	$8,525	$11,051
SR 305/Unnamed Tributary to Liberty Bay – Fish passage barrier (Kitsap) Advertisement date delayed due to negotiations with resource agencies subsequent to combining this project with another fish barrier removal project for efficiency.	TPA	May-08	Mar-09	Delayed	$1,821	$1,984
I-405/NE 8th St to SR 520 Braided ramps – Interchange improvements (King)	TPA	Mar-09	Mar-09	√	$255,301	$277,936
SR 99/SR 518 Interchange Bridge Crossing – Seismic retrofit (King)	TPA	Mar-11	Apr-09	Advanced	$9,461	$1,381
I-90/Snoqualmie Pass East, Hyak to Keechelus Dam – Corridor improvement (Kittitas)	TPA	Oct-09	Feb-09	Advanced	$545,000	$594,297
SR 122/Harmony Resort vicinity – Fish passage barrier (Lewis)	TPA	Apr-09	Apr-09	√	$651	$720

WSDOT's Capital Project Delivery Programs

Projects To Be Advertised

34 Projects in in the delivery pipeline from January 1, 2009, through June 30, 2009

Nickel and Transportation Partnership Account (TPA) projects now being advertised for construction or planned to be advertised, costs estimated at completion, dollars in thousands

Project Description	Fund type*	Original planned ad date	Current planned ad date	On schedule	Baseline estimated cost at completion	Current estimated cost at completion
SR 3/Jct US 101 to Mill Creek – Safety (Mason)	TPA	Mar-09	Mar-09	√	$2,299	$2,509
I-5/I-705 to Port of Tacoma interchange – Add HOV lanes (Pierce)	TPA	May-09	May-09	√	$153,850	$171,251
I-5/Puyallup River Bridge east and west – Add HOV lanes (Pierce)	TPA	May-09	May-09	√	$375,830	$420,526
I-5/Fisher Creek vicinity – Stormwater drainage improvements (Skagit)	TPA	Jan-09	Mar-09	√	$285	$862
SR 11/Chuckanut Park & Ride – Build park & ride (Skagit)	TPA		Apr-09		$12,690	$12,990
SR 20 and SR 530 – Roadside safety improvements (Snohomish, Skagit)	TPA	Jan-09	Feb-09	√	$1,000	$1,475
SR 92, SR 520, SR 530, and SR 534 – Roadside safety improvements (Snohomish)	TPA	Feb-09	Feb-09	√	$1,000	$525
Spokane, Stevens, and Pend Oreille Co – Roadside safety improvements (Spokane, Stevens, Pend Oreille)	TPA	Aug-08	Feb-09	Delayed	$1,010	$1,010
Region Traffic cannot complete signing plans prior to Advertisement date. Advertisement date moved from 12/2008 to 2/2009.						
I-5/Chuckanut Creek vicinity – Stormwater drainage improvements (Whatcom)	TPA	Jan-09	Mar-09	√	$1,145	$899
I-5/Padden Creek vicinity – Stormwater drainage improvements (Whatcom)	TPA	Jan-09	Mar-09	√	$521	$521
I-5/Squalicum Creek vicinity – Stormwater drainage improvements (Whatcom)	TPA	Jan-09	Mar-09	√	$420	$420
I-5/Dakota Creek vicinity – Stormwater drainage improvements (Whatcom)	TPA	Jan-09	Mar-09	√	$793	$462
SR 542/Nooksack River – Redirect river and realign roadway (Whatcom)	TPA	Mar-08	Jan-09	Delayed	$16,574	$16,576
Advertisement date was first delayed to allow additional right-of-way acquisition. It was advertised in May 2008 but pulled from ad because FHWA right-of-way certification requirements were not met prior to bid opening. Advertisement is rescheduled for January 2009 to keep the in-water construction work within the July 1 to September 30th fish passage window.						
US 12/Tieton River west crossing – Replace bridge (Yakima)	TPA	Oct-08	Apr-09	Delayed	$8,123	$9,062
The scheduled advertisement date was delayed due to the extended time obtaining the Joint Aquatic Resource Permit Application (JARPA) permit from the county.						
US 12/Tieton River east crossing – Replace bridge (Yakima)	TPA	Oct-08	Apr-09	Delayed	$6,213	$6,881
The scheduled advertisement date was delayed due to the extended time obtaining the Joint Aquatic Resource Permit Application (JARPA) permit from the county.						

Projects To Be Advertised

34 Projects in in the delivery pipeline from January 1, 2009, through June 30, 2009

Nickel and Transportation Partnership Account (TPA) projects now being advertised for construction or planned to be advertised, costs estimated at completion, dollars in thousands

Projects to be advertised	Percent advertised on schedule	Baseline estimated cost at completion	Current estimated cost at completion
Total (January 1, 2009, through June 30, 2009)	**71%**	**$1,505,228**	**$1,639,172**
3 Nickel Projects	100%	$12,512	$14,906
31 TPA Projects **	68%	$1,492,716	$1,624,267

Source: WSDOT Project Control and Reporting Office

* As established by the 2005 Legislative Evaluation and Accountability Program (LEAP) committee. However, dollars shown are for all fund types, not just Nickel or Transportation Partnership Account funds.

** Two projects listed in the September 2008 GNB as ready to advertise in December 2008 – SR150/W of Chelan - Install lighting (Chelan), and SR971/S. Lakeshore Rd - Install lighting (Chelan) – did not advertise on schedule. The advertisement was delayed one year as part of the proposed Governor's 2009-11 Transportation budget in an effort to adjust the overall budget constraints.

WSDOT's Capital Project Delivery Programs

Project Milestones: Nickel projects

Schedule milestone tracking for Nickel projects

Schedule milestone results for all Nickel projects with one or more milestone activities

Milestone	Scheduled milestones to date	Scheduled milestones achieved to date	Scheduled milestones not achieved	Scheduled milestone achievement rate**	Milestones achieved early
Project definition complete					
Biennium to date (2007-09)	2	5	0	250%	0
Cumulative to date	139	150	1	108%	12
Begin preliminary engineering					
Biennium to date (2007-09)	8	8	0	100%	0
Cumulative to date	148	153	0	103%	5
Environmental documentation complete					
Biennium to date (2007-09)	20	19	2	95%	1
Cumulative to date	131	129	3	98%	1
Right-of-way certification					
Biennium to date (2007-09)	20	17	3	85%	1
Cumulative to date	75	76	4	101%	5
Advertisement date*					
Biennium to date (2007-09)	19	17	1	89%	1
Cumulative to date	126	126	1	100%	1
Operationally complete					
Biennium to date (2007-09)	39	39	0	100%	5
Cumulative to date	101	108	0	107%	7

Source: WSDOT Project Control and Reporting Office
* Advertisement date includes projects that went to ad & completed in the same quarter.
** Achievement rate may be higher than 100% where the actual number of milestones achieved exceed the number of scheduled milestones. This results when milestones are achieved ahead of their scheduled dates.

Milestone definitions:

Project definition complete
Project definition is the preliminary picture of what a project will achieve and generally how it will do so. It includes deficiencies being addressed, the purpose for a project, location, and project information to the best available level. It is not a true project scope (that requires design effort) but it does support the very first preliminary cost estimate.

Begin preliminary engineering
A project schedule usually has two general phases, the pre-construction phase and the construction phase. Pre-construction involves design, right-of-way, and environmental activities. Beginning the preliminary engineering marks the start of the project design and is usually the first capital spending activity in the delivery process.

Environmental documentation complete
The National Environmental Policy Act (NEPA) and the State Environmental Policy Act (SEPA) require that an appropriate level of environmental assessment be prepared for almost all WSDOT projects. Depending on the project, these can take the form of an Environmental Impact Statement (EIS) or another document of lesser scale. These assessments end in the issuance of a Record of Decision (ROD) or other summary document. This milestone is the date that WSDOT will have finished and submitted to the appropriate regulatory agencies, the documentation for the ROD and/or issuance of permits.

Right-of-way certification
Often WSDOT projects require the acquisition of right of way or property rights. The right-of-way certification marks the point in time that right-of-way acquisition requirements are met and the process is complete for advertisement.

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.

Operationally complete
The date when the public has free and unobstructed use of the facility. In some cases, the facility will be open, but minor work items may remain to be completed.

Project Milestones: Transportation Partnership Account (TPA) projects

Schedule milestone tracking for TPA projects

Schedule milestone results for all TPA projects with one or more milestone activities

Milestone	Scheduled milestones to date	Scheduled milestones achieved to date	Scheduled milestones not achieved	Scheduled milestone achievement rate**	Milestones achieved early
Project definition complete					
Biennium to date (2007-09)	36	48	4	133%	3
Cumulative to date	203	217	5	107%	19
Begin preliminary engineering					
Biennium to date (2007-09)	43	42	3	98%	1
Cumulative to date	210	220	5	105%	15
Environmental documentation complete					
Biennium to date (2007-09)	97	101	11	104%	11
Cumulative to date	167	168	13	101%	14
Right-of-way certification					
Biennium to date (2007-09)	55	41	16	75%	5
Cumulative to date	83	77	16	93%	10
Advertisement date*					
Biennium to date (2007-09)	75	66	14	88%	7
Cumulative to date	125	118	14	94%	7
Operationally complete					
Biennium to date (2007-09)	61	53	9	87%	9
Cumulative to date	75	76	9	101%	10

Source: WSDOT Project Control and Reporting Office
* Advertisement date includes projects that went to ad & completed in the same quarter.
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Paying for the Projects: 2003 Transportation Funding Package (Nickel) financial information

Revenue forecast update

The following information incorporates the November 2008 transportation revenue forecast. 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 November 2008 forecast for gas tax receipts and licenses, permits, and fees for the Transportation 2003 (Nickel) Account is lower than the baseline forecast for the ten-year outlook by 7.1%. 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 is lower than the baseline forecast resulting in a decrease of 6.4% in the ten-year outlook. This decrease is due to the decline in vehicle sales.

2003 Transportation Funding Package highlights

Deposited into the Transportation 2003 (Nickel) Account (established in 2003)

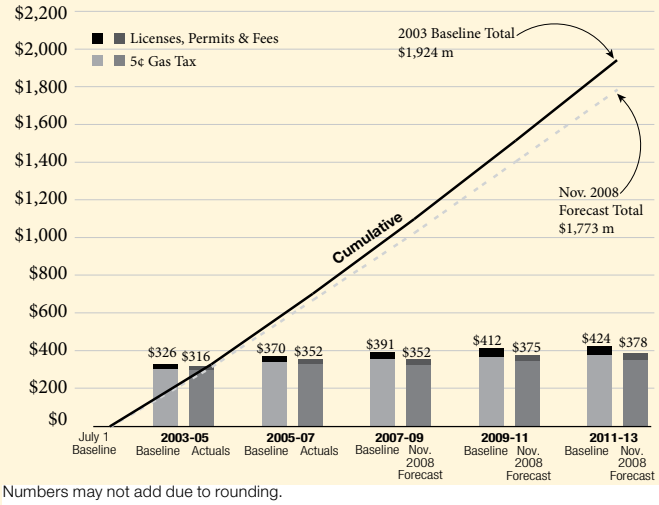
- 5¢ increase to the gas tax
- 15% increase in the gross weight fees on trucks

Deposited into the Multimodal Account (established in 2000)

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

Transportation 2003 (Nickel) account revenue forecast

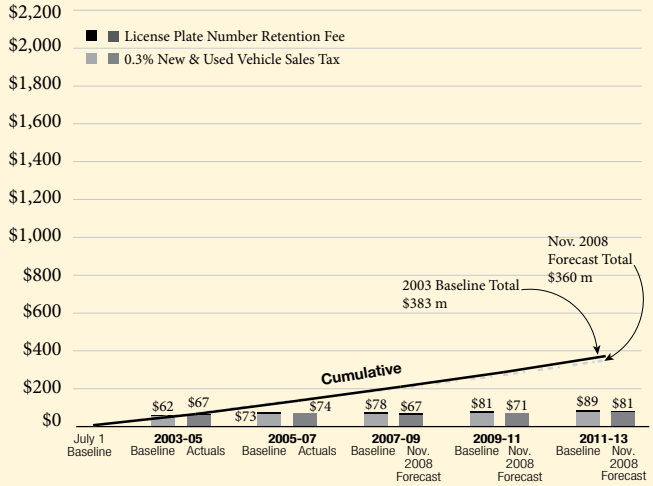
March 2003 Legislative baseline compared to the November 2008 Transportation Revenue Forecast Council
Dollars in millions



Numbers may not add due to rounding.
Data source: Financial Planning.

Multimodal Account (2003 Package) revenue forecast

March 2003 Legislative baseline compared to November 2008 Transportation Revenue Forecast Council
Dollars in millions



Numbers may not add due to rounding.
Data source: Financial Planning.

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

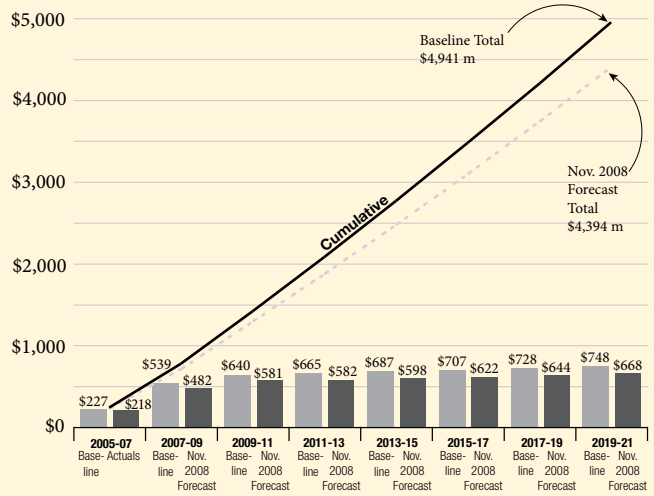
Revenue forecast update

The accompanying chart compares the current November 2008 revenue forecast to the "baseline" forecast used in the budget making process when the 2005 Funding Package was adopted. The 2005 Funding Package was developed as a 16-year plan extending from 2005 through 2021.

The November 2008 forecast for gas tax receipts over the 16 year period decreased by 12.5% from the baseline forecast. This reduction is due to continued lower gasoline consumption. Because Washington State's gas tax is based on gallonage rather than price, reduced consumption results in reduced revenues.

Transportation Partnership Account (TPA) gas tax revenue forecast

March 2005 Legislative baseline compared to the November 2008 Transportation Revenue Forecast Council
Dollars in millions



Numbers may not add due to rounding.
Data source: Financial Planning.

2005 Transportation Funding 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 motor homes
- Fee increases to various driver's license services
  - Original and Renewal License Application increased to $20 (previously $10)
  - Identicards, Driver Permits and Agricultural Permits increased to $20 (previously $15)
  - Commercial Driver License and Renewal increased to $30 (previously $20)
  - License Reinstatement Fee Increased to $75 (previously $20)
- DUI Hearing increased to $200 (previously $100)
- Fee increases to various license plate charges
  - Reflectorized Plate Fee increased to $2 per plate (previously 50¢)
  - Replacement Plates increased to $10 (previously $3).

WSDOT's Capital Project Delivery Programs

Completed Projects: Delivering Performance and System Benefits

Every quarter, WSDOT reports on completed construction projects in the Schedule, Scope & Budget tables in the Beige Pages. These tables summarize all construction activities from beginning of the current biennium to the close of last quarter.

Each of these projects improve travel by making roads safer, trips faster and more reliable, and improving the environment and economy. Each project also faces unique challenges in being delivered both on-time and on-budget.

Building upon the principles of performance journalism, WSDOT publishes a brief wrap-up on each project completed in a quarter, organized by county. These close-out summaries will provide a better sense of the processes involved in delivering projects, WSDOT's efforts to use tax dollars as efficiently as possible, and the benefits citizens can expect to see from completed projects.

Between October 1 and December 31, 2008, WSDOT completed 16 projects designed to improve mobility, safety, preservation and the environment.

Project delivery performance regarding budget and schedule is measured against last Legislative expectations in accordance with criteria established by the Legislature; for this quarter, it is the 2008 Supplemental Budget (2008 Final). These wrap- ups include the original project appropriations from the 2003 or 2005 budgets to explain changes in project budgets over time. The graphs offer a visualization of the increases and decreases in a project's cost from year to year. The scale of each graph starts at various intervals to show the dollar range in greater detail. A note on page 80 explains typical issues resolved in 'roadside safety improvements' projects.

More information on completed projects is available online at the projects web page at http://www.wsdot.wa.gov/projects/

US 2/Roadside safety improvements (Chelan)

This project installed guardrail, removed objects, and improved roadsides on US 2 in Chelan County.

Project's benefits: This project was designed to improve motorist safety by reducing the number and the severity of collisions – particularly run-off-the-road collisions – in a mountainous section of US 2 that had a high number of injury-producing collisions. In the five years prior to this project, 71 of the 238 non-alcohol-related collisions on this section involved vehicles running off the road, including three serious injuries.

Project's highlights or challenges: WSDOT consulted with a number of local stakeholders and then evaluated safety data for 20 miles of US 2, a segment running eastwards from the summit of Stevens Pass to the Coles Corner turnoff to SR 207 and Lake Wenatchee State Park. The project provided a higher level of protection with 9,308 feet of new guardrail and 2,482 feet of concrete barrier.

Budget performance: The final project cost was $800,000, on budget with both the last Legislative expectation and the original 2005 enacted budget of $800,000.

Schedule performance: This project was delivered six weeks ahead of the last Legislative expectation in August 2008*.

*Note: The September 2008 *Gray Notebook* reported that this project was expected to be operationally complete in October 2008. It was in fact operationally complete in August 2008.

Map: US 2 roadside safety improvements

This project installed 9,308 feet of new guardrail along US 2 in Chelan County.

Completed Projects: Delivering Performance and System Benefits

US 2/Wenatchee – Build trail connection (Chelan)

The project constructed a direct connection linking the Apple Capital Loop Trail to the Olds Station Industrial Area and US 97A. It added 1,600 feet to the trail, including a new bridge for pedestrians and bicyclists.

Project's benefits: The newly constructed connection provides a new safe access point to a popular trail, decreasing the risk of injury for pedestrians and cyclists at busy highway and railway crossings. Before its construction, trail users carried their bikes across four 50-mph traffic lanes and two concrete barriers on US 2, or crossed over railroad tracks and hiked to US 97A.

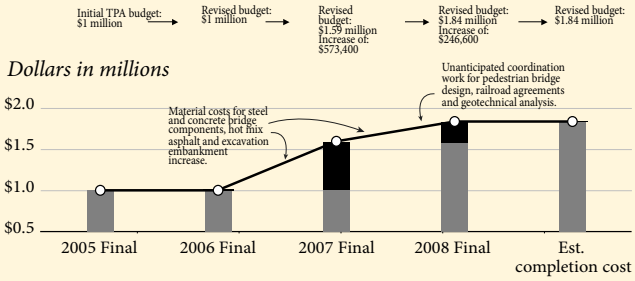
Project's highlights or challenges: Construction required WSDOT to first negotiate complex right-of-way and access agreements with BNSF Railroad. The project required additional geotechnical analysis, which contributed to the increased cost.

Budget performance: The final project cost $1.8 million, on budget with the last Legislative expectation. The original 2005 enacted budget of $1 million increased by $800,000 due to material cost increases for steel and concrete bridge components, hot mix asphalt, and excavation embankment.

Schedule performance: The project was completed in November 2008, on time with the last Legislative expectation.

US 2/Wenatchee – Build trail connection

Estimated annual project budget from conception to final completion



Data Source: WSDOT Project Control & Reporting Office.

The construction of a new trail connection will increase safety by keeping pedestrians and bicyclists away from the highway and railroad tracks.

US 2/US 97 Peshastin East – New interchange (Chelan)

This project constructed a new interchange at the junction of US 2 and US 97, four miles east of Leavenworth, and about 1000 feet west of the existing intersection.

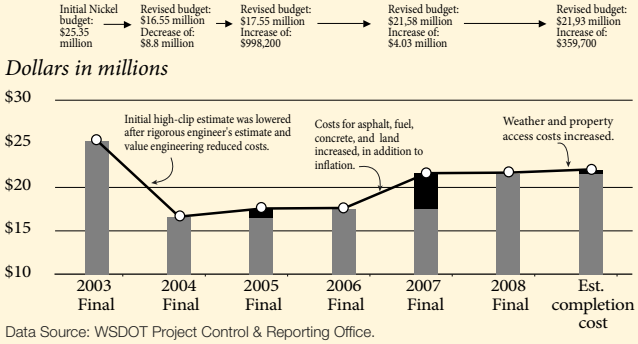
Project's benefits: This project was designed to improve motorist safety at the intersection by reducing the number and severity of collisions. The site had been identified as a high accident location in a 'High Accident' corridor. In the five years prior to this project, there have been 46 collisions not involving alcohol at the site, including two serious injuries.

Project's highlights and challenges: The project attracted 12 bids, a level of competitiveness that helped reduce the cost by more than $1 million. The low bidder, KLB Construction, Inc. offered a construction estimate of $9.78

continued on next page

US 2/US 97 Peshastin East – New interchange

Estimated annual project budget from conception to final completion



Data Source: WSDOT Project Control & Reporting Office.

WSDOT's Capital Project Delivery Programs

Completed Projects: Delivering Performance and System Benefits

US 2/US 97 Peshastin East Interchange

continued from previous page

million, 14% below the WSDOT engineer's estimate. Right-of-way acquisition was a major challenge for this project, as property values increased sharply in the vicinity prior to construction.

Budget performance: The final project cost was $21.9 million, on budget with the last Legislative expectation and $3.5 million less than the original 2003 enacted budget of $25.4 million. The project's initial estimated budget was reduced after the engineer's estimate determined the project could be completed for $16.6 million. However, subsequent escalation of real estate values, material costs (asphalt, fuel, concrete), and inflation increased the final cost to $21.9 million.

Schedule performance: This project was delivered in October 2008, ahead of the last Legislative expectation.

The new interchange opened to traffic in October.

Eastern Olympic Peninsula – Roadside safety improvements (Clallam, Jefferson, Kitsap, Mason, Pierce)

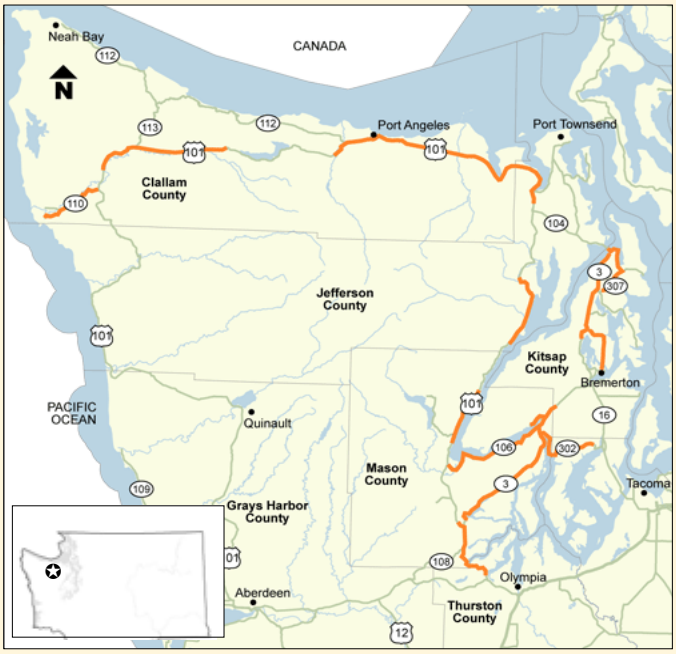
WSDOT identified areas with fatal and disabling injury collisions on Olympic Peninsula state highways (SR 3, US 101, SR 104, SR 106, SR 300, SR 302, and SR 307), in Clallam, Jefferson, Kitsap, and Mason counties. This project installed guardrail, removed roadside objects, and flattened slopes.

Project's benefits: The roadside changes made in this project will improve motorist safety and reduce the severity of run-off-the-road collisions on these routes. In the five years prior to this project, 834 of 2,707 non-alcohol related accidents in the project area involved run-off-the road collisions, including 29 of 76 serious injury collisions and six of 30 fatality collisions.

Project's highlights and challenges: The project evaluated more than 120 sites on seven state highways in five counties in order to determine the solutions that would provide the greatest reduction in the likelihood of fatal and serious injury collisions. This extensive review resulted in higher-than-anticipated preliminary engineering costs, but no increase in the overall project cost. A delay in materials procurement and to the advertisement date contributed to a three-month delay in the operationally complete date.

Budget performance: The final project cost was $2.9 million, on target with both the original 2005 enacted budget and the last Legislative expectation.

Map: Eastern Olympic Peninsula roadside safety improvements



This safety project addressed stretches of seven highways that have seen more than 800 run-off-the-road collisions in the five years before the project's completion.

Schedule performance: This project was delivered in October 2008, three months behind the last Legislative expectation.

Completed Projects: Delivering Performance and System Benefits

SR 112/Neah Bay to Sekiu – Roadside safety improvements (Clallam)

This safety project installed guardrail, removed fixed objects, and improved roadsides on a 61-mile stretch of SR 112 in Clallam County.

Project's benefits: There have been a high number of run-off-the-road collisions on this road. This project was designed to improve safety on US 101 by reducing the number and severity of collisions involving vehicles leaving the roadway. In the five years prior to this project, there have been 276 non-alcohol related collisions on this corridor, including six fatalities and nine serious injuries. Collision data will be further analyzed over time.

Project's highlights or challenges: Three SR 112 roadside improvement projects were combined for efficiency into one project and then divided into two stages. Improvements that could be completed without right-of-way permits and environmental mitigation were completed in October. A second stage will be completed next year.

Budget performance: Stage 1 of the project was completed on budget with both the original 2005 enacted budget of $10.4 million and the last Legislative expectation.

Schedule performance: This project was completed in October 2008. This was on time with the last Legislative expectation.

SR 112/Sekiu vicinity to US 101 – Install guardrail (Clallam)

This project installed guardrail, removed fixed objects and improved roadsides on a stretch of SR 112 in Clallam County.

Project's benefits: There have been a high number of run-off-the-road collisions on this road. This project was designed to improve safety on US 101 by reducing the number and severity of collisions involving vehicles leaving the roadway. In the five years prior to this project, there have been 276 non-alcohol related collisions on this corridor, including six fatalities and nine serious injuries.

Project's highlights or challenges: Three SR 112 roadside improvement projects were combined for efficiency into one project and then divided into two stages. Improvements that could be completed without right-of-way, permits and environmental mitigation were completed in October. A second stage will be completed in 2010.

Budget performance: Stage 1 of the project was completed on budget with both the original 2005 enacted budget of $1.8 million and the last Legislative expectation.

Schedule performance: This project was completed in October 2008. This was on time with the last enacted budget.

Map: SR 112 roadside safety improvements

New guardrail and other safety improvements addressed a 61-mile stretch of SR 112 that had seen 276 non-alcohol-related collisions in the five years before the project's completion.

This newly installed warning sign alerts drivers to curves ahead.

WSDOT's Capital Project Delivery Programs

Completed Projects: Delivering Performance and System Benefits

US 101/Blyn vicinity – Add passing lanes (Clallam)

This project constructed east and westbound passing lanes for two-thirds of a mile in each direction on US 101 near Blyn.

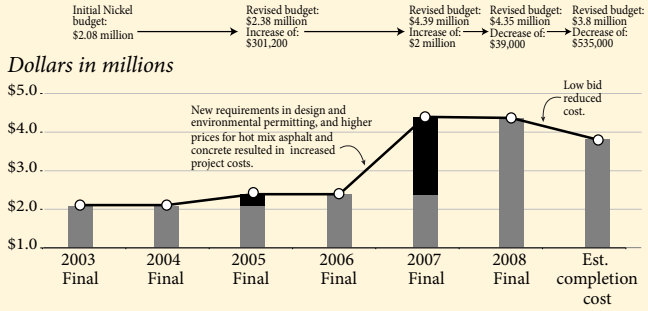
Project's benefits: The passing lanes were designed to relieve traffic congestion on a heavily traveled two-lane roadway with a high volume of trucks and recreational vehicles. The strategically located passing lanes provide motorists opportunities to safely pass slower-moving vehicles.

Project's highlights or challenges: The project's long delay from initial design in 1995 to construction in 2008 coincided with changes in state and federal regulations on water quality, stormwater runoff, and hydraulic requirements. As a result, much of the preliminary engineering work needed to be revised to meet new standards, increasing the cost of the project.

Budget performance: The final project cost was $3.8 million, on target with the last Legislative expectation. New requirements in design and environmental permitting, as well as the increased costs of materials for hot mix asphalt and concrete, resulted in an increase of $1.7 million over the original FY 2003 enacted budget.

US 101/Blyn vicinity – Add passing lane

Estimated annual project budget from conception to final completion



Data Source: WSDOT Project Control & Reporting Office.

Schedule performance: The project was completed in October 2008, on time with the last Legislative expectation.

I-5/SR 502 Interchange – Build interchange (Clark)

This project provides a more direct connection between Battle Ground and I-5 by constructing a new interchange with SR 502 at 219th Street, and improving the intersection of SR 502 and NE 10th Avenue.

Project's benefits: The project was designed to reduce congestion delays and improve traffic flow at the NE 179th Street interchange. The improvements should reduce travel times, and local leaders hope the interchange will help improve economic development and job creation on SR 502 near Battle Ground.

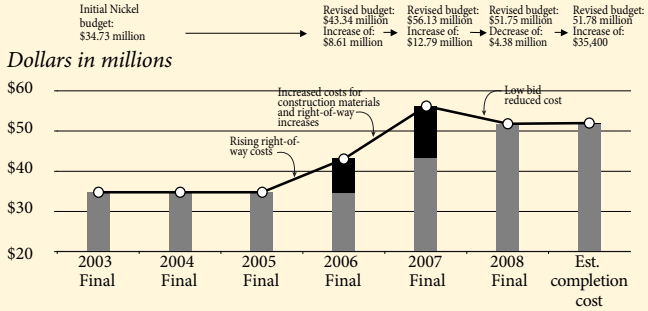
Safety will also improve because fewer vehicles will be using the northbound off ramp of the current NE 179th Street interchange, combined with a reduction of traffic weaving between that interchange and the I-5/I-205 junction.

Project's highlights and challenges: Rising property values in this area sharply increased the cost of right-of-way acquisition needed for the interchange. Part of the increased cost was offset by a funding transfer from the upcoming SR 502/I-5 to Battle Ground project, which will continue widening the roadway.

continued on next page

I-5/SR 502 Interchange – Build interchange

Estimated annual project budget from conception to final completion



Data Source: WSDOT Project Control & Reporting Office.

Construction on the new interchange in July.

Completed Projects: Delivering Performance and System Benefits

I-5/SR 502 Interchange
continued from previous page

Budget performance: The final project cost was $52.4 million, $4 million below the last Legislative expectation. Higher prices for right-of-way acquisition and increasing costs for construction materials resulted in an increase of $17.7 million over the original 2003 enacted budget of $34.7 million.

Schedule performance: This project was completed in October 2008 eight months ahead of the last Legislative expectation.

Map: I-5/SR 502 Interchange

The completed interchange will provide the City of Battle Ground with a direct connection to I-5.

I-90/Two Way Transit – Transit and HOV, Stage 1 (King)

As stage one of a multi-stage project, WSDOT created an HOV lane for 7.5 miles in the westbound outer roadway on the I-90 bridges across Lake Washington. Construction also included a new 80th Avenue SE HOV direct access ramp, modifications to the Bellevue Way HOV direct access ramp, and a variable speed limit system westbound from I-405 to I-5.

Project's benefits: The new HOV lane will improve traffic flow during rush hour for buses and high occupancy vehicles traveling between Bellevue and Seattle, while the direct access ramps will allow such vehicles to enter and exit the freeway without having to merge through the other lanes of traffic.

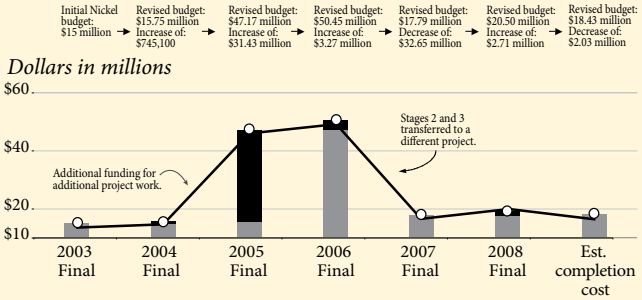
Project's highlights and challenges: In the 2005 budget, additional improvements to this stretch of I-90 were proposed that would have substantially increased both the costs and the work required. For greater efficiency, the project was then separated into three separate project stages in 2007. The chosen design for Stage 1 allowed WSDOT to use the existing capacity and width of the I-90 bridges to add a westbound HOV lane.

Budget performance: The final estimated project cost for Stage 1 was $18.4 million, below the last Legislative expectation and about $3.4 million above the original 2003 enacted budget, due to increased materials costs and unexpected night work.

Schedule performance: This project was completed in October 2008, earlier than the last Legislative expectation.

I-90 Two Way Transit – Transit and HOV, Stage 1

Estimated annual project budget from conception to final completion



Data Source: WSDOT Project Control & Reporting Office.

Construction on I-90 expanded HOV lanes during rush hour.

WSDOT's Capital Project Delivery Programs

Completed Projects: Delivering Performance and System Benefits

I-405/Bridges – Seismic (King)

This project constructed seismic retrofits on four I-405 bridges in Renton between SR 900 and NE 44th Street to reduce potential damage from an earthquake.

Project's benefits: Retrofitting bridges to improved seismic standards helps protect the I-405 designated emergency access corridor by reducing the likelihood of severe damage to road structure in an earthquake.

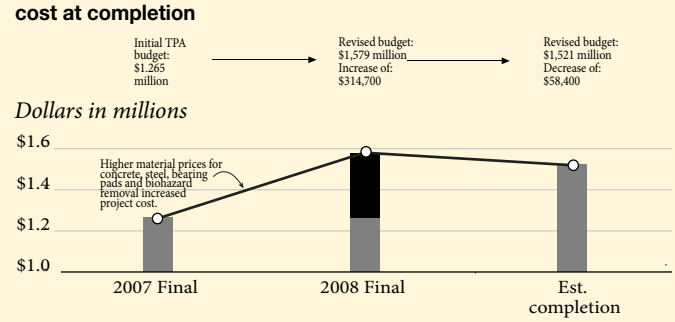
Project's highlights and challenges: The bulk of the construction occured under the roadway without construction-related traffic impacts as crews reinforced bridge columns, crossbeams and girders out-of-sight.

Budget performance: The final project cost was $1.5 million, in line with the last enacted budget, but $260,000 over the original estimate due to higher material costs for concrete, steel, bearing pads for the girders, and biohazard removal.

Schedule performance: The project was completed in October 2008, nine months ahead of the last Legislative expectation.

I-405/Bridges – Seismic

Estimated annual project budget from conception to final completion



The project reinforced supports under four I-405 bridges to meet seismic standards.

US 101/SR 3 On ramp to US 101 Northbound - Add new ramp (Mason)

This project constructed a new on-ramp to northbound US 101 at SR 3, where vehicles needing to go north previously had to cross southbound US 101 traffic.

Project's benefits: The project was designed to improve interchange efficiency and safety by reducing the severity and frequency of collisions. In the five years prior to this project, there have been 21 non-alcohol related collisions at this intersection, including one fatality.

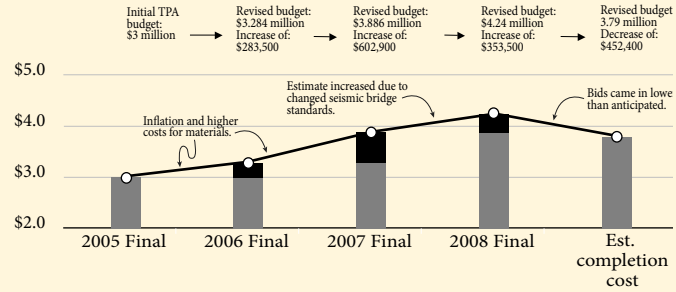
Project's highlights and challenges: This interchange was partially built in 1971, when traffic volumes on US 101 were low, but over time the interchange became a chokepoint, as vehicles turned left across high-speed traffic. With a 60% surge in US 101 traffic expected during the six-week closure of the Hood Canal Bridge in May-June 2009, WSDOT shortened the construction window to complete one year early, before traffic volumes increased.

Budget performance: The project was completed on budget with last Legislative expectation. The original 2005 enacted budget of $3 million increased $800,000 due to inflation and the higher price of construction materials. In 2008, the project estimate was again increased to meet new seismic bridge standards, but bids came in lower than anticipated, allowing the project to stay within budget.

Schedule performance: This project was completed in November 2008, six weeks ahead of the last Legislative expectation.

US 101/SR 3 On ramp to US 101 N – Add new ramp

Estimated annual project budget from conception to final completion



Data Source: WSDOT Project Control & Reporting Office.

Completed Projects: Delivering Performance and System Benefits

US 97/Brewster vicinity – Install lighting (Okanogan)

This project installed streetlights on US 97 in Brewster.

Project's benefits: This project increased pedestrian visibility on a stretch of US 97. New lighting and related pedestrian improvements will help night-shift employees at the city's fruit-packing plants safely cross the highway to and from the employee parking area during hours of darkness.

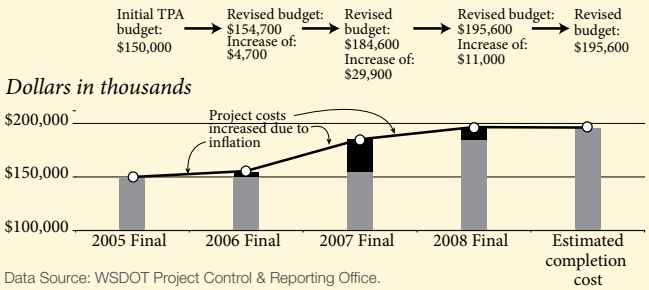
Project's highlights and challenges: The project was one of several proposed improvements to pedestrian safety in Brewster, which required careful state-city coordination to reduce costs. The completion date was moved up nearly a year so WSDOT's project could be completed at the same time as a city project using a grant from the Transportation Improvement Fund.

Budget performance: The project was completed for $195,600, on budget with last Legislative expectation, but about 30% over the original 2005 enacted budget of $150,000 due to inflation and material cost increases.

Schedule performance: This project was completed in December 2008, one month behind the last Legislative expectation.

US 97/Brewster – Pedestrian lighting

Estimated annual project budget from conception to final completion



Data Source: WSDOT Project Control & Reporting Office.

SR 161/SR167 Eastbound Ramp – Realign ramps (Pierce)

This project realigned the westbound and eastbound ramps connecting SR 167 and SR 161, replaced the existing signal with a new signal system, and upgraded existing signals at the North Levee Road intersection.

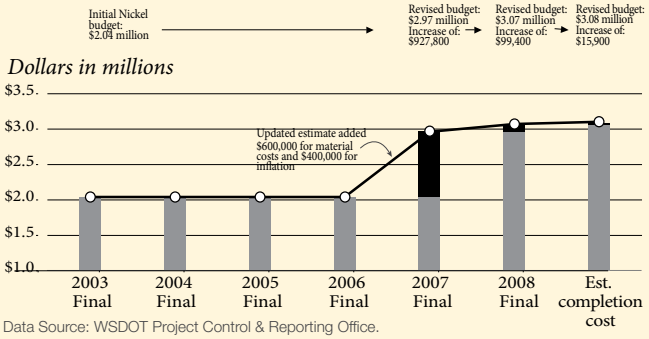
Project's benefits: The new, more efficient, intersection allows wider turn movements at this high accident location in Puyallup, which in turn should reduce the frequency and severity of collisions. In the five years prior to this project, there were 86 non-alcohol-related collisions at this location. The area should also experience congestion relief as traffic flow through the intersection improves.

Project's highlights and challenges: The project was first proposed in 1996 and then shelved until 2003, when it was added to the Nickel funding package project list. In 2006, a revised estimate incorporated $600,000 in higher costs for materials and $400,000 for inflation, resulting in the project's budget increase.

Budget performance: The final project cost was $3 million, on budget with the last Legislative expectation and $1 million above the original 2003 enacted budget.

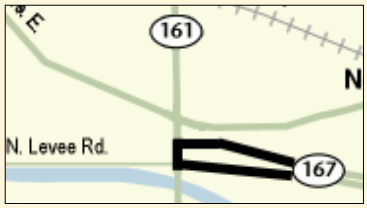
SR 161/SR 167 Eastbound Ramp - Realign ramps

Annual project budget from conception to estimated cost at completion



Data Source: WSDOT Project Control & Reporting Office.

Map: SR 161/SR 167 Eastbound Ramp



Schedule performance: This project was delivered in November 2008, on time with the last Legislative expectation.

WSDOT's Capital Project Delivery Programs

Completed Projects: Delivering Performance and System Benefits

US 12/Naches River N of Yakima – Stabilize slopes (Yakima)

This project corrected chronic riverbank erosion that threatened US 12 and aquatic habitat in the Naches River, by redirecting roughly 2,700 feet of the Naches River. While realigning the river, WSDOT also repaired the riverbank and stabilized the slope above it.

Project's benefits: In addition to reducing the cost of frequent maintenance work for continual temporary repairs and bank stabilization, the project also improves pool habitat for fish

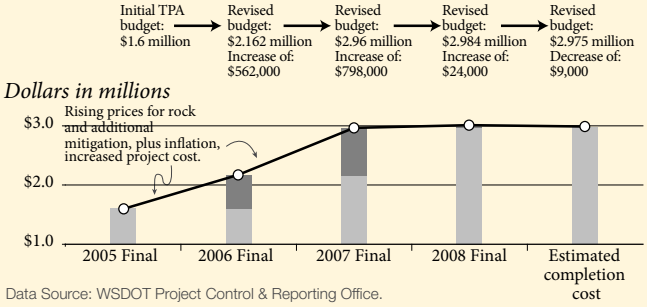
Project's highlights and challenges: The City of Yakima, Yakima County, and WSDOT worked together to develop a long-term plan that would stabilize the floodplain areas of the Naches River while protecting US 12 from erosion during periods of high water. Underwater work around sensitive fish habitat, during the construction of 30 rock groins or woody habitat features, required additional environmental mitigation and modifications that delayed permit applications and right-of-way acquisitions.

Budget performance: The final project cost was $3 million, on target with the last Legislative expectation but about $1.4 million more than the original 2005 enacted budget of $1.6 million. Costs rose with inflation, as well as higher prices for rock, plus costs associated with additional mitigation work.

Schedule performance: This project was completed in October 2008, two months ahead of the last legislative expectation.

US 12 Naches River N of Yakima – Stabilize slopes

Estimated annual project budget from conception to final completion



Data Source: WSDOT Project Control & Reporting Office.

The Naches River slope stabilization at US 12 helps protect the highway from erosion.

SR 530/Sauk River Site #2 – Stabilize river bank (Snohomish)

This project built a log 'crib wall' to protect a section of SR 530, a vital link between the North Cascades Highway and I-5, from the Sauk River, combating aggressive riverbank erosion that threatened to wash away sections of the roadway south of Rockport.

Project's benefits: By stabilizing a very vulnerable section of riverbank, these repairs will preserve the roadway until it can be realigned much farther from the river's edge. In addition, the design chosen helps preserve the 'Wild & Scenic' designation of this part of the Sauk River, and enhances endangered salmon habitat.

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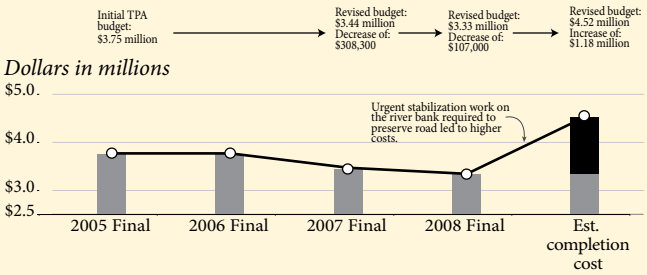
SR 530/Sauk River Site #2 – Stabilize river bank

Estimated annual project budget from conception to final completion



Data Source: WSDOT Project Control & Reporting Office.

Completed Projects: Delivering Performance and System Benefits

SR 530/Sauk River Site #2

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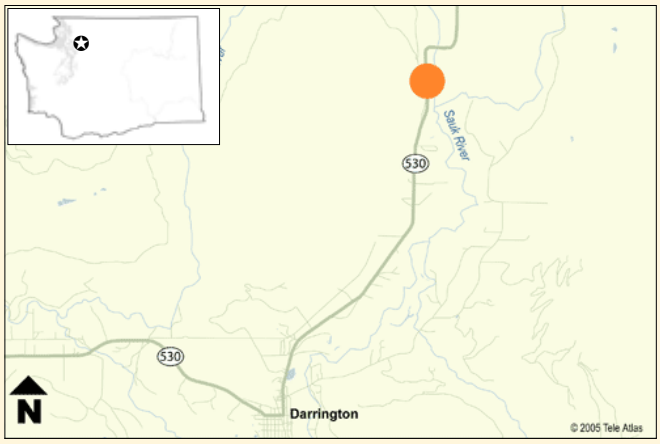
Project's highlights and challenges: When the Sauk River changed course following a 30-year flood event, a previously shallow, slow channel became a deep, fast-flowing portion of the river. WSDOT reevaluated the work plan and immediately addressed the increased erosion, working collaboratively with the Washington Dept of Fish & Wildlife (WDFW), US Forest Service, and local tribes. Crews drilled 112 steel pilings into the river bank to hold 355 logs and 15,000 cubic yards of rock and woody debris in place. (See page 44 for more details on this project's highlights.)

Budget performance: The final project cost of $4.5 million was $1.1 million more than the last Legislative expectation and $700,000 more than the original 2005 enacted budget of $3.8 million. The increase, spurred by the urgent need to preserve the existing road, was nonetheless mitigated by WSDOT's selection of a design that was already developed and approved by WDFW. WSDOT has identified other locations that can use the same design with minor modifications.

Schedule performance: The project was completed in October 2008, on time with the last Legislative expectation.

Map: SR 530/Sauk River Site #2



Crews used 355 logs and other materials to stabilize the Sauk River bank along SR 530.

SR 9, SR 11 and SR 20 – Roadside safety improvements (Skagit)

This project installed guardrail and removed fixed objects to improve roadsides in Skagit County.

Project's benefits: By installing guardrail and making other changes to the roadside environment, this project will improve motorist safety and reduce the severity of collisions. In the five years prior to this project, 381 of 1160 non-alcohol related collisions involved vehicles running off the road, including four fatal and seven serious injury collisions.

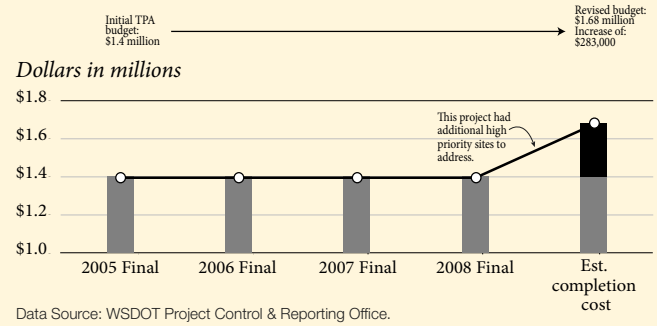
Project's highlights and challenges: The evaluation of sites on these routes determined the project had additional high priority locations to address, resulting in the addition of 3,700 feet of guardrail to this portion of the SR 9 corridor. For increased construction efficiencies, the project was combined with two other projects on the SR 9 corridor ('Whatcom and Skagit Highways Roadside safety improvements' and 'SR 542 and SR 547- Roadside safety improvements', see page 80).

Budget performance: The original 2005 enacted budget of $1.4 million was adjusted due to additional high priority sites to $1.7 million estimated cost at completion. The additional $300,000 was funded by a transfer from other SR 9 corridor roadside safety improvement projects.

Schedule performance: The project was completed in December, 2008, on time with the last Legislative expectation.

SR 9, SR 11, and SR 20 – Roadside safety improvements

Estimated annual project budget from conception to final completion



Data Source: WSDOT Project Control & Reporting Office.

WSDOT's Capital Project Delivery Programs

Completed Projects: Delivering Performance and System Benefits

SR 542 and SR 547 – Roadside safety improvements (Whatcom)

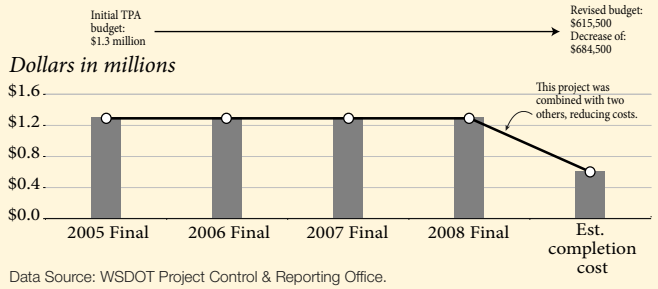
This project installed guardrail and removed fixed objects to improve roadsides on SR 542 and SR 547 in Whatcom County.

Project's benefits: By installing guardrail and making other changes to the roadside environment, this project will improve motorist safety and reduce the severity of collisions. In the five years prior to this project, 140 of 1,183 non-alcohol related collisions involved vehicles running off the road, including seven fatal and three serious injury collsions.

Project's highlights and challenges: The SR 9 corridor in Whatcom and Skagit counties required the installation of new guardrail and other safety improvements to the roadside. WSDOT studied this and other sections to identify priorities and construction cost efficiencies. Planners determined that this project's highest priority needs could be met while also achieving cost savings by combining it with two other corridor projects ('Whatcom and Skagit Highways Roadside Safety Improvements' and 'SR 9, SR 11, and SR 20- Roadside Safety Improvements,' see page 79).

SR 542 & SR 547 – Roadside safety improvements

Estimated annual project budget from conception to final completion



Data Source: WSDOT Project Control & Reporting Office.

Budget performance: The original 2005 enacted budget of $1.3 million was reduced to $615,500, allowing $684,500 to be transferred to other SR 9 corridors requiring roadside safety improvements.

Schedule performance: The project was completed in December 2008, on time with last Legislative expectation.

More information on completed safety projects

WSDOT will continue to analyze collision data over time for highway projects that included a roadside safety component. The before and after safety analysis examines the extent to which safety improvement projects reduce the frequency and severity of collisions.

Roadside safety improvements include elements designed to increase motorist safety. Typical improvements include installing guardrail or concrete barrier, and work may also include flattening slopes, improving sightlines and removing roadside objects. Roadside objects can include thick wooden or steel posts that do not have breakaway features, as well as trees, mailboxes, boulders, and other objects.

Special Report: US 12 Corridor at Walla Walla/Tri-Cities

The US 12 widening project between the Tri-Cities and Walla Walla is expanding the main commerce route in one of the fastest-growing areas of Washington. The estimated $460 million project will widen US 12 from two lanes to a four-lane divided highway across a 40-mile span. With the support of the 33-member US Highway 12 Coalition, the project is designed to improve safety, fight congestion, and improve freight mobility in the area.

Providing a four-lane divided highway greatly enhances safety for this corridor where there have been more than 1,000 collisions over the past 15 years. Traffic will be separated by a median or concrete barrier. The Traffic Safety Bureau estimates changes will result in a 40% reduction in serious injury and fatality collisions.

The project also reduces the potential for congestion delays on the freight corridor as growth increases demand on the current, heavily travelled two-lane highway. The average daily traffic on this route ranges from 7,000 to 13,000 vehicles, about 33% of which are heavy trucks carrying more than 10 million tons of cargo across this section of US 12 each year. Slow-moving trucks and recreational vehicles impede the flow of traffic.

The state Office of Financial Management estimates that the three local counties (Benton, Franklin, and Walla Walla) will grow by more than 100,000 people from 2005 to 2025. Economic development depends on access to a high-quality transportation system, as businesses shipping and storing products prefer to be located within a few miles of at least a four-lane highway. The completed expansion of US 12 is expected to lure new business to the Walla Walla valley, bringing jobs and needed tax revenue.

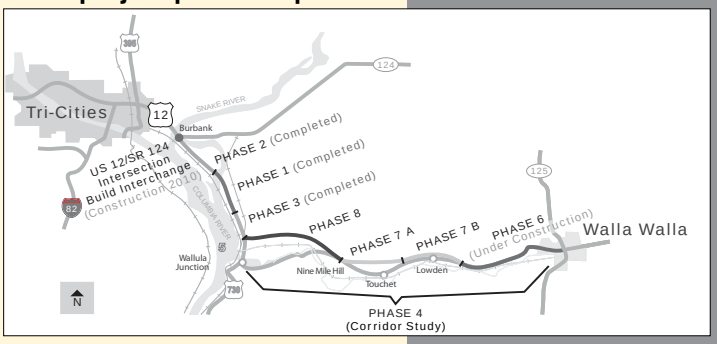
The project, funded by a combination of state and federal money, has been divided into seven phases, including six construction stages and a planning stage. The US 12 corridor study has identified a northerly corridor that eliminates the need for widening Phase 5. Three of the seven projects have been completed, two are under way, and planning continues on the final two projects.

- ***US 12 McNary Pool to Attalia*** – Widening project completed August 2004
- ***SR 124 to McNary Pool*** – Widening project completed October 2005
- ***Attalia Vicinity*** – Widening project completed September 2007
- ***Walla Walla to Wallula*** – Project study planning nearing completion
- ***Frenchtown to Walla Walla*** – Widening project under way
- ***Nine Mile Hill to Frenchtown*** – Planning for widening project under way
- ***Wallula Junction to Nine Mile Hill*** – Planning for widening project under way

A new roundabout constructed at Pine Street in Walla Walla (part of the eight-mile phase from ***Frenchtown to Walla Walla***) opened to traffic in December; the phase is expected to be operationally complete in the fall of 2009.

A segment of four-lane US 12 near Walla Walla, set to open to traffic later this year.

US 12 project phase map



Source: WSDOT Planning Office.

Project Highlights

- The corridor widening project would expand US 12 to four lanes for 40 miles from Tri-Cities to Walla Walla
- Three of seven stages are complete, two others are currently under way.
- The project team uses new public outreach tools, including YouTube, to educate the public about project highlights such as the new roundabout at Pine Street in Walla Walla.
- WSDOT worked collaboratively with state and federal agencies to minimize environmental impacts.

WSDOT's Capital Project Delivery Programs

Special Report: Tacoma/Pierce County HOV Program Quarterly Update

The Tacoma/Pierce County HOV Program is a series of safety and congestion improvement projects that add HOV lanes and other upgrades to I-5, SR 16 and SR 167. Currently, seven projects have been completed with six on-time and five on-budget (see table). Six more projects are in the design phase, and one, the ***I-5/SR 16: Westbound Nalley Valley project***, is under construction. Five additional projects in the program are currently unfunded.

I-5/SR 16: Westbound Nalley Valley construction under way

In October, the ***Westbound Nalley Valley project*** was awarded to Guy F. Atkinson Construction Company for $119,924,730. The project will improve Nalley Valley Viaduct connections and alignments with new I-5 and SR 16 structures built earlier in the HOV program. Benefits include: eliminating the current traffic weave created by merging traffic, increasing capacity in the westbound direction, increasing motorist safety, and improving stormwater management and wetlands.

Traffic management

WSDOT's public outreach on this project focused on describing project benefits and highlighting traffic impacts that will occur when the SR 16/Sprague Avenue interchange is closed for several years. The two eastbound ramps are scheduled to close in February 2009; the two westbound ramps will close in fall 2009. Signed alternate routes will reroute traffic during the extended closures.

Next project - Port of Tacoma Road to King County Line

The next project scheduled to go to construction is ***I-5: Port of Tacoma Road to King County line***. This project, with a scheduled ad date of July 2009, will widen I-5 and build 5.8 HOV lane miles in the north- and southbound highway median. The project incorporates two other separate projects that will: pave mainline I-5 between Wapato Creek and the King County line; and upgrade the Ardena Road (70th Street) bridge rail.

Currently the ***Port of Tacoma to King County line*** design team is finalizing numerous engineering and environmental reports associated with highway design and environmental compliance, as well as addressing comments provided in a recent WSDOT plan review. The team is also gathering information from engineering and environmental studies commissioned in response to community input on whether noise walls should be built.

Completed Tacoma/Pierce Co. HOV projects

Project name	On-time	On-budget
I-5: 38th St. interchange	✓	✓
SR 16: Sprague Ave. interchange to Snake Lake	✓	Over
SR 16: Pearl St. to Jackson Ave.	✓	✓
SR 16: 36th St. interchange to Olympic Dr.	✓	✓
SR 16: Union to Jackson Ave.	*	*
I-5: South 48th St. to Pacific Ave.	✓	✓
SR 16: Jackson Ave. to 36th St. interchange	✓	✓
Currently funded projects to be completed*		
I-5/SR 16: Westbound Nalley Valley	Under construction	
I-5: Port of Tacoma Rd. to King County line	In design	
I-5: M St. to Portland Ave.	In design	
I-5/SR 16: Eastbound Nalley Valley	In design	
I-5: Portland Ave. to Port of Tacoma Rd. – Northbound HOV	In design	
I-5: Portland Ave. to Port of Tacoma Road – Southbound HOV	In design	
I-5/SR 16: HOV connectors	Design to begin in 2017	

Data Source: HOV Program Office.

* Budget and schedule performance will be reported upon final completion.

Project Highlights

Seven of 14 funded projects have been completed.

The construction contract for the *Westbound Nalley Valley* project was awarded in October 2008.

The Tacoma/Pierce County HOV Program calls for construction of 70 miles of HOV lanes. Over 15 miles are open on SR 16, 17 additional miles are currently funded. Other projects, currently unfunded, would build the remaining 38 miles.

Some projects within the Tacoma/Pierce County HOV program are preparing for future HOV construction. These include two large completed projects on I-5 (the *38th Street Interchange* and *South 48th Street to Pacific* projects), and the *Westbound and Eastbound Nalley Valley* projects.

For more information on traffic impacts, see www.tacomatraffic.com.

For more information on the Tacoma/Pierce County HOV projects, see: www.wsdot.wa.gov/projects/piercecountyhov/.

Special Report: SR 104 Hood Canal Bridge east-half replacement and west-half retrofit

The SR 104 Hood Canal Bridge is an economic lifeline for the people and businesses of the Olympic Peninsula and a gateway for visitors coming to experience the wonders of the region. The bridge first opened to the public on Aug. 12, 1961. The east half is now nearing the end of its structural life. The project began in 1997, with construction starting in 2003. The rebuilt bridge features a wider roadway and state-of-the-art draw span components to improve safety and reliability and reduce congestion. The east-half of the bridge will be replaced in summer 2009, and west-half retrofitting will be completed by December 2009.

Overall project completion reaches 87%

As of December 31, 2008, construction on the project was 87% complete. All 14 of the new pontoons and three retrofitted pontoons are complete and have been assembled. WSDOT is currently working on the bridge superstructure, roadway, electrical, mechanical and hydraulic systems, and control buildings for the moveable portions of the bridge. Both trusses and A-frames have been assembled, with all steel components scheduled to arrive in Seattle and Port Gamble Bay by March.

Project schedule and upcoming milestones

The project is currently on schedule. Temporary bridge closure and pontoon float-in operations will begin on May 1, 2009. Upcoming milestones include:

- February – Draw span and lift span mechanical and electrical testing complete
- February-April – Trusses and pontoons completed and towed into Port Gamble Bay for mooring
- May-June – Temporary bridge closure to remove east half of bridge, and install pontoons and trusses
- June – Bridge re-opens.

Project budget

The Hood Canal Bridge project, with a last legislatively approved budget of $470 million, includes widening and retrofitting the west-half, replacing the east and west approach spans, replacing the Hood Canal Bridge eastern floating portion, and replacing the east and west transition spans. Recently, the project has experienced cost increases due to multiple factors including higher fuel and materials prices, extended materials storage, and problems associated with constructing bridge components at confined and congested sites. At this time, the project is running $29 million over budget. WSDOT plans to cover these costs with available federal funds.

Temporary bridge closure

WSDOT will provide alternate travel options for travelers during the six week bridge closure in May-June 2009, as set forth in the 2009 Closure Mitigation Commitment Plan. Every portion of the Hood Canal Bridge project, from design to construction, has centered on keeping the closure time as short as possible. Instead of closing the bridge for the 42-month construction cycle, only a six week closure will be required. Drivers will have several options for getting around Hood Canal during the closure.

Accomplishments this quarter

Important milestones accomplished this quarter include the completion of the east truss, and paving at the Port Gamble and Shine Pit park and rides.

The second of two transition trusses was completed in December.

Project Highlights

- The Hood Canal Bridge replacement project was 87% complete as of December 31, 2008.
- The bridge will be closed from May-June 2009. WSDOT is providing an assortment of travel options for drivers during the closure period.
- The second of two transition trusses was completed at Oregon Iron Works in Vancouver, Wash. in December.
- Grading and paving at two park and ride lots was complete in November and December. The closure operation work remains on schedule and will continue through April.
- For more information on this project, visit www.hoodcanalbridge.com.

WSDOT's Capital Project Delivery Programs

Watch List: Projects with schedule and 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 pages 85-86 lists projects currently facing schedule or budget concerns with a reference to these overarching descriptions; a more detailed description of the precise problem or its resolution appears on the following pages. Still more information is presented on the individual project pages on the WSDOT website at www.wsdot.wa.gov/projects. Projects paid for through Pre-Existing Funds are discussed on page 94.

It is important to note that while the number of projects appearing on the Watch List has 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.

Environmental

Archeological: Unexpected finds may require additional time for careful excavation.

Reviews & approvals: Completing state and federally required environmental studies may take longer than anticipated, may reveal unexpected problems with the project location, or prompt the involvement of community or other agencies.

Fish passage barrier: Many factors must be taken into account to design and construct 'best practice' water conduits, including negotiating with resource agencies and tribes to develop appropriate designs to ensure fish can pass through.

Geological: Studies may reveal unsuitable soil conditions for construction on the proposed route.

Mitigation: Minimizing harm to wetlands and other natural features may involve many other factors from design through construction.

Permitting: New information about a project site or changes in design can lead to the reworking of permits, causing delay or additional expense.

Coordination

Local concerns: Concerns raised by local communities may require additional design work which if not resolved might result in litigation expenses.

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.

Design

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.

Team turnover: Changes in staff may delay progress as new team members are brought up to speed on the project.

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.

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.

Watch List: Projects with schedule and budget concerns

Watch List summary

Projects with budget and/or schedule concerns

Added to Watch List	Project type	Watch List issue
SR 500/St. John's Blvd – Build interchange (Clark)	Highway	Design: alternatives; Environmental: reviews & approvals, fish passage barrier
I-5/SR 432 Talley Way interchanges – Build interchanges (Cowlitz)	Highway	Design: design element changes
I-405/112th Ave SE to 8th Street, South Bellevue (King)	Highway	Construction: materials procurement
Blaine – Custom facility siding (Whatcom)	Rail	Design; Environmental: permitting
Updates to Watch List	**Project type**	**Watch List issue**
SR 532/Corridor improvements – Design-build contracts (Island, Snohomish) • SR 532/270th Street NW to 72nd Avenue NW – Improve safety • SR 532/Sunrise Boulevard to Davis Slough – Improve safety • SR 532/General Mark W. Clark Memorial Bridge – Improve safety • SR 532/64th Avenue NW to 12th Avenue NW – Improve safety • SR 532/General Mark W. Clark Memorial Bridge – Replace bridge	Highway	Environmental: permitting; Right-of-way: land acquisition; Design: design element changes
SR 167/15th Street SW to 15th Street NW – Add HOV lanes (King)	Highway	Construction: weather, contractor issues
New 144-Auto Ferries (King, Kitsap, San Juan)	Ferry	Design: alternatives
Mount Vernon – Siding improvements (Skagit)	Rail	Design: alternatives
Everett – Curve realignment and storage tracks (Snohomish)	Rail	Environmental: mitigation
Stanwood – New station; Siding upgrade (Snohomish)	Rail	Environmental: permitting

Removed from Watch List	Project type	Watch List issue
I-90 / I-5 to 12th Avenue South – Seismic retrofit (King)	Highway	Construction: cost increase of materials
SR 99/Aurora Avenue George Washington Memorial Bridge – Seismic (King)	Highway	Design: alternatives
I-5 / Rush Road to 13th Street – Add lanes (Lewis)	Highway	Construction: cost increase of materials, archaeological, geological
SR 410 White River – Stabilize slopes (Pierce)	Highway	Design: alternatives
SR 410 / 214th Avenue E to 234th – Add lanes (Pierce)	Highway	Environmental: archaeological; permitting
SR 9 / SR 528 – Improve intersection (Snohomish)	Highway	Coordination: local concerns
SR 522/Snohomish River Bridge to US 2 – Add lanes (Snohomish)	Highway	Design: alternatives
SR 529/Ebey Slough Bridge – Replace bridge (Snohomish)	Highway	Environmental: geological, mitigation
US 12/Tieton River East and West Bridges – Replace bridge (Yakima)	Highway	Environmental: reviews & approvals
Port Townsend-Keystone Vessel Replacement Project (Island)	Ferry	Design: alternatives
Eagle Harbor Maintenance Facility (Kitsap)	Ferry	Design: alternatives (legal issue)
Mukilteo Multimodal Ferry Terminal (Snohomish)	Ferry	Design: alternatives

Source: WSDOT Project Control and Reporting.

WSDOT's Capital Project Delivery Programs

Watch List: Projects with schedule and budget concerns

Watch List summary

Projects with budget and/or schedule concerns

Projects awaiting 2009 Legislative review *	Project type	Watch List issue
SR 285/West end of George Sellar Bridge – Intersection improvements (Chelan)	Highway	Design: Increased cost of materials; Right-of-way: land acquisition
SR 285/George Sellar Bridge – Additional eastbound lane (Chelan, Douglas)	Highway	Construction: cost increase of materials
SR 14/ Camas Washougal – Add lanes and build interchange (Clark)	Highway	Environmental: geological, permitting; Design: alternatives
SR 522 / University of Washington Bothell – Build interchange (King)	Highway	Construction: timing problems
I-405 / NE 8th Street to SR 520 braided ramps – Interchange improvements (King)	Highway	Design: cost increase of materials
I-405/SR 520 to SR 527 – Widening Stage 2 (King)	Highway	Design: alternatives
SR 167/8th Street East vicinity to South 277th Street vicinity – Southbound managed lane (King, Pierce)	Highway	Design: design element change, cost increase of materials
I-405/SR 181 to SR 167 – Widening Stage 1 (King)	Highway	Right-of-way: land acquistion; Construction: timing problems
SR 16 Burley-Olalla interchange – Build interchange (Kitsap)	Highway	Construction: timing problems
I-5/Mellen to Grand Mound – Widening, interchange reconstruction (Lewis, Thurston) • I-5/Blakeslee Junction railroad crossing to Grand Mound interchange – Add lanes • I-5/Mellen Street to Blakeslee Junction – Add lanes, interchange improvements • I-5/Mellen Street interchange – Interchange improvements	Highway	Design: alternatives
SR 3 / Belfair area – Widening and safety improvements (Mason)	Highway	Design: alternatives
SR 9 / 212th Street SE to 176th Street SE, Stage 3 – Add lanes (Snohomish)	Highway	Environmental: mitigation; Design: cost increase of materials
I-5/Grand Mound to Maytown Stage One – Add lanes (Thurston)	Highway	Construction: cost increase of materials, timing problems
US 12/SR 124 intersection – Build interchange (Walla Walla)	Highway	Right-of-way: land acquistion
Vancouver – Rail Bypass and West 39th Street Bridge (Clark)	Rail	Right-of-way: land acquisition
Tacoma – Bypass of Pt. Defiance (Pierce)	Rail	Right-of-way: land acquisition; Design: re-design

* Note: These projects were on the Watch List as reported in the September 2008 *Gray Notebook 31*. They are currently awaiting Legislative review during the 2009 session. A *Gray Notebook* update will be provided as information becomes available; more information may be available on the relevant project pages on the WSDOT website at http://www.wsdot.wa.gov/projects/.

Watch List: Projects with schedule and budget concerns

Added to Watch List

SR 500/St. John's Blvd – Build interchange (Clark)

This project, budgeted for $51.6 million, will replace a signalized intersection with a freeway-style interchange. Complex construction elements include tall walls, high-voltage power lines, utility relocation, culverts, and a multi-use trail and park. When completed, it will improve safety and traffic flow.

The project is in the design phase; the budget is at risk. An in-depth design review for efficiencies conducted in autumn of 2007 developed proposals resulting in substantial construction savings but increased design costs. To trim costs, designers recommend elimination of wall fascia panels, reconfiguration of the westbound onramp to SR 500, and reduction of the bridge width. Other budget-related issues include a recent requirement from the Federal Highway Administration (FHWA) for a Supplemental Environmental Assessment (the preparation of which may also affect the schedule), and additional investigation of anticipated archaeological discoveries within the project footprint. The combination has increased the design budget by $1.5 million, and WSDOT is currently reviewing the overall impact of these potential risks to the budget.

As reported in the March 2008 *Gray Notebook*, the project schedule was delayed from April 2009 to April 2010 to allow time for assessment of the design review and other matters. Additional schedule risks might arise from time required to deal with issues related to archaeological investigations, a possible realignment of the Discovery Trail, and new direction in regards to environmental documentation.

I-5/SR 432 Talley Way interchanges – Rebuild interchanges (Cowlitz)

This safety project, budgeted for $45 million, will reconstruct the I-5 interchange at SR 432 and the adjacent SR 432 interchange at Talley Way. The two interchanges are closely spaced and experience congestion and operational problems. This project will improve safety, create improved connections between existing roads, and decrease congestion.

This project is in the design phase. As reported in the September 2008 *Gray Notebook*, this project was redesigned to address poor soil conditions and stay within budget. The current design includes private access road work that would be required as part of a proposed adjacent development. WSDOT is negotiating with the developer of the adjacent property to recover current and anticipated expenses incurred by WSDOT.

Depending on time needed for negotiations with the developer and the possible need for additional biological assessment associated with the additional work, the schedule is at risk of delay.

I-405/I-90 to SE 8th St – Widening, South Bellevue (King)

Related projects
I-405/112th Ave SE to I-90 – NB Widening
I-405 Bellevue Vicinity Seismic Retrofit

This I-405 project, budgeted for $200.5 million, constructs one additional lane each in the northbound and southbound directions between I-90 and SE 8th St. The added lanes will reduce extreme congestion in this area.

This project is currently under construction. The schedule is at risk because equipment components have not arrived as expected from the supplier. If the equipment is not delivered in January 2009, then the contractor's schedule could be impacted, which in turn could increase project costs. For safety reasons, WSDOT will not open the I-405 southbound lanes from SE 8th to I-90 until the electrical and Intelligent Transportation Systems (ITS) equipment components for illumination are available and installed.

WSDOT is working with the equipment supplier and looking at other options for obtaining the needed equipment. Updates will be provided next quarter.

Blaine – Custom facility siding (Whatcom)

This project, budgeted for $5.7 million, constructs additional rail line capacity to accommodate customs and security needs, while reducing congestion and delays for freight and passenger trains on the main line.

The budget is at risk. In July, BNSF notified WSDOT that the project estimate was $1 million over the current budget as a result of additional design efforts to avoid impacting wetlands. The primary reasons for the cost increase were inflation due to increased signal materials and increased engineering costs for the redesign to avoid the wetlands. WSDOT and BNSF worked together to adjust the project to keep within the current budget. The December 2008 project estimate places the project back in budget with the adjusted scope.

The schedule is also at risk. WSDOT was recently notified by BNSF that all projects must go through the Section 106 Archeological review by the United States Army Corps of Engineers. This process takes approximately six months.

The budget issue and permitting delay will delay advertisement until at least June 2009 which also delays the project completion date until April 2010.

WSDOT's Capital Project Delivery Programs

Watch List: Projects with schedule and budget concerns

Updates to Watch List

SR 532/ Corridor improvements – Design-Build (Island, Snohomish)

Related projects:
SR 532/270th St NW to 72nd Ave NW – Improve safety
SR 532/Sunrise Blvd to Davis Slough – Improve safety
SR 532/General Mark W. Clark Memorial Bridge – Improve safety
SR 532/64th Ave NW to 12th Ave NW – Improve safety
SR 532/General Mark W. Clark Memorial Bridge – Replace bridge

The SR 532 Corridor Improvements, a design-build corridor project, consists of five individual projects with a total budget of $82.2 million. Components include replacing the General Mark W. Clark Memorial Bridge and widening highway connections to the new bridge. When completed, it will improve traffic flow and motorist safety on the SR 532 corridor between Camano Island and I-5.

WSDOT issued requests for proposals (RFP) on October 13, 2008 to four prequalified design-build teams; proposals were received on December 22, 2008. The opening of the proposals has been accelerated to January 22, 2009, and WSDOT anticipates awarding the contract in February 2009.

As reported in the September 2008 *Gray Notebook*, the construction schedule continues to be at risk due to ongoing right-of-way acquisition and environmental permitting processes, which must be completed by July 1, 2009, to avoid affecting the construction schedule. To reduce the likelihood of schedule slippage, WSDOT has taken two actions: prioritizing right-of-way parcels so the properties required to build the proposed base alternative are purchased first, and working closely with permitting agencies to obtain all environmental permits by June 2009. Updates will be provided as information becomes available.

SR 167/15th St SW to 15th St NW – Add HOV lanes (King)

This project, budgeted for $41.5 million, built substantial improvements to SR 167 between the cities of Auburn and Renton, including high occupancy vehicle (HOV) lanes, an Intelligent Transportation System (ITS), and HOV ramps. Improvements are intended to relieve congestion, increase capacity, and provide a travel time advantage to transit and HOV traffic.

The project is now operationally complete, and WSDOT is in the process of reconciling contractor claims for additional work or compensation. As reported in the September 2008 *Gray Notebook*, ramps were damaged by heavy rain during the winter 2007-08 construction shutdown, requiring $821,000 in repairs and reworking. WSDOT submitted a request to the Office of Financial Management (OFM) to proceed with this increase to the project's budget.

An additional $418,000 has been identified as a cost increase due to extra earthwork excavation for building the ramps and the impacts from associated contract delays, but this amount was not identified in time for it to be considered by the 2009 Legislature. WSDOT is considering how to address this increase. The combined known cost increase is about $1.2 million.

Further cost risk still exists based on a request from the contractor for compensation related to delays. WSDOT is waiting for the contractor to provide documentation for the compensation request. An update will be provided next quarter.

Ferries updates to Watch List

New 144-Auto Ferry

This project, originally budgeted for $283 million, was to build up to three new 144-auto ferries.

Recent vessel bids have been 30% higher than the engineer's estimates. If current trends continue, the cost of the three 144-car vessels is closer to $420 million. As reported in the September 2008 *Gray Notebook 31*, the first part (dealing with preliminary technical proposals) of the two-part contract with Todd's Pacific Shipyard (TPS) was delayed two months to December 2008. TPS has also now requested that the due date for the master construction schedule and price proposal be delayed, until the end of the current legislative session, which is June 2009. All these elements are required before the second part of the contract (dealing with detailed design and construction, price and schedule) can be negotiated.

The overall construction schedule may be delayed due to these requests. The "Notice to Proceed" on Part 2 should be issued by April 2009, with the first vessel to be completed in February 2011.

The Governor's 2009-2011 proposed budget recommends constructing one 144-car ferry in the 2015-2017 biennium and four additional vessels starting in 2025. Additionally, a study to examine vessel needs, commissioned by the Joint Transportation Committee, recommends delaying construction of the 144-car vessels until the 2020 – 2030 timeframe.

More information will be provided as it becomes available.

Watch List: Projects with schedule and budget concerns

Rail updates to Watch List

Mount Vernon - Siding Improvements (Skagit)

This project, budgeted for $3.8 million, extends the existing rail siding to avoid rail conflicts, allowing the southbound train from Bellingham to depart earlier in the day.

This project's schedule and budget continue to be at risk. As reported in the September 2008 *Gray Notebook*, the Washington Utilities Transportation Commission (WUTC) issued its final decision regarding the closure of Hickox Road, which was appealed by BNSF and a private citizen. The WUTC will respond to the appeal by mid-January 2009. The lawsuit filed by the City of Mount Vernon in October 2007 against WSDOT is also still pending. Neither the city nor WSDOT has taken any further action while the decision for crossing closure is pending.

The budget is also at risk. Revised figures from BNSF indicate the project budget is now estimated at $3 million, which is $1 million over budget because of increased signal costs. BNSF will provide additional funding or adjust the scope of the project to stay within state funding.

An update will be provided in the next *Gray Notebook*.

Everett - Curve realignment and storage tracks (Snohomish)

This project, budgeted for $14 million, will realign curves to improve speeds for passenger service on the Seattle-Vancouver, B.C., route.

In September, BNSF released a revised estimate which indicates that the project is now $2.2 million underfunded. [checking remove: The primary reasons for the cost increase are inflation and unanticipated contaminated soils.}

In order to complete this project, BNSF Railway will need to fill wetlands on their property. The September 2008 *Gray Notebook* reported that WSDOT estimated that the permits would be obtained by June 2008, but the applications have not yet been approved. BNSF continues to work with the Army Corps of Engineers and the Washington State Department of Ecology to obtain the required wetland permitting. Construction work began in November 2008, working in areas that do not require permits. Once the remainder of the permits are obtained, construction can begin in the areas that require the wetland permits.

As previously reported in the *Gray Notebook*, the advertisement date is still delayed to April 2009, which continues to delay the project completion date to April 2010. The project is pending a 2009 Legislative decision.

Stanwood - New station, Siding upgrade (Snohomish)

These two projects, budgeted for $21 million, will construct a new train platform to service Amtrak *Cascades* passengers, and upgrade and extend the siding in Stanwood.

The construction start and operationally complete dates for the siding extension are at risk. As reported in the September 30, 2008, *Gray Notebook*, construction on the siding extension depends on the approval of a local road closure and the approval of environmental permits. BNSF applied for the permits in August, but it may take up to six months for approval.

Additionally, WSDOT was recently notified by BNSF that all projects, including the siding extension, must go through the Section 106 Archeological review – of cultural resources that might be affected by construction – by the US Army Corps of Engineers. This process takes about six months.

However, final designs for the new station were completed in September, 2008, and BNSF agreed to allow the construction of the station to begin, although it will not allow the station to be used until construction of the siding can proceed. WSDOT has received the station construction management agreement with Amtrak: the station project is now scheduled for advertisement in January 2009, with a scheduled completion of September 2009.

Since the station will be constructed before the siding extension, WSDOT will work with BNSF on an agreement to allow service at the new station while the siding extension is in design and construction.

Removed from Watch List

I-90/I-5 to 12th Ave S - Seismic retrofit (King)

This project, budgeted for $10.4 million, will conduct seismic retrofits on three existing bridges on I-90 in the I-5 interchange area to reduce the chance of catastrophic damage from an earthquake.

This project is now in construction. Last quarter, WSDOT estimated a $4 million construction cost increase due to higher labor costs and price escalation for construction materials. The anticipated cost increase did not materialize after the project was awarded in December 2008.

The project is currently within budget and the operationally complete date continues to be delayed to June 2010.

WSDOT's Capital Project Delivery Programs

Watch List: Projects with schedule and budget concerns

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

This project, budgeted for $5.6 million, completes the remaining seismic retrofit work on the historically significant George Washington Memorial Bridge to reduce the probability of catastrophic damage from an earthquake.

The project is in the design phase. As reported in the September 2008 *Gray Notebook*, a new polymer fiber technology that could be used to stabilize the bridge supports requires testing. After a longer-than-anticipated search, WSDOT has engaged Washington State University to conduct these tests, which were scheduled to begin in October 2008 and conclude in May 2009. Testing is now expected to be completed in August 2009, three months later than reported last quarter.

Both schedule and budget are at risk due to the extensive testing and design work required.

Impacts on the schedule include:

- delay to the advertisement date, from October 2009 to January 2011, to allow time to complete the testing and to incorporate the results into the seismic design.
- the construction phase will now extend over two construction seasons, due to the delayed ad date.
- the planned operationally complete date has been delayed from November 2010 to January 2013.

Impacts to the budget include an estimated cost of $235,000 for the polymer fiber testing, but also a $9 million increase due to construction cost inflation which may occur if the construction phase is extended over two construction seasons.

WSDOT will continue to assess all the budget and schedule issues, as well as the results of the testing. The project will be removed from the Watch List until potential risks become clearer, when an update will be provided.

I-5/Rush Road to 13th Street - Add lanes (Lewis)

This project, budgeted for $51 million, will improve a 3.7 mile section of I-5 from Rush Road to 13th Street in Lewis County. By constructing an additional lane in each direction and a new interchange at LaBree Road, the project will reduce congestion and improve traffic flow.

This project is currently under construction; the budget was at risk. The current estimate forecasts a $2 million budget shortfall at completion of the project. The shortfall is due to increased costs for oil, archaeological investigation and monitoring, erosion control, traffic control, added work due to soil conditions.

Additionally, the contractor's schedule has increased planned expenditures in the 2007-2009 biennium by $7 million, and reduced expenditures in the 2009-2011 biennium plan by $5 million. WSDOT has submitted a request to the Office of Financial Management to proceed with this $7 million increase to the project budget in the 2007-2009 biennium.

The project remains on schedule for completion in 2009.

SR 410/White River - Stabilize slopes (King)

This project, budgeted for $16.8 million, will correct erosion problems that, during high-water conditions in the past, have caused the White River to flood SR 410 and damage the roadbed. The project will also reduce the risk of future wash-outs.

This project is in the design phase. Last quarter WSDOT reported the project's budget was at risk. To stay within the $16.8 million budget, WSDOT is using in-house design staff rather than consultants to minimize design costs on the remaining design work.

However, ongoing difficulties in reaching agreements with adjacent property owners appear unlikely to be resolved before the scheduled April 2009 advertisement date. WSDOT has recommended to the Governor and Legislature that construction of this project be deferred from the 2009-2011 biennium to a future date. Deferral is part of balancing the statewide transportation budget in light of reduced revenue projections. This project is removed from the Watch List pending any other 2009 Legislative actions.

SR 410/214th Ave E to 234th-Add Lanes (Pierce)

This project, budgeted for $29.3 million, will construct two additional general purpose lanes, a median barrier, and a traffic signal to improve traffic operations and mobility.

This project is in the design phase; the schedule was at risk. As reported in the September 2008 *Gray Notebook*, the advertisement date was adjusted from February 2009 to August 2009 because additional archaeological testing was required to complete the cultural resources report. The cultural resources study was completed on schedule in December 2008. The project's budget was unaffected, and it remains on schedule for the August 2009 date.

SR 9/SR 528 - Improve intersection (Snohomish)

This project, budgeted for $17.1 million, will build left-turn and right-turn lanes on SR 9 and SR 528 as needed, and upgrade the traffic signal and illumination. Intersection improvements will also address deficiencies in drainage, stormwater, and environmental impacts.

Watch List: Projects with schedule and budget concerns

This project is in the design phase. The September 2008 *Gray Notebook* reported that continued work on the project depends upon a decision from a large retailer on whether it will construct a commercial development at this intersection, and – if development goes ahead – whether the retailer will pay for intersection improvements. The retailer has delayed its project twice, most recently to 2010.

In the current economic climate, it remains uncertain if the retailer will build, delay, or cancel the development. Further work on WSDOT's project has been delayed until the developer reaches a decision, at which point the project may proceed with a delayed start date or be deleted. Until that time, it will be removed from the Watch List.

SR 522/Snohomish River Bridge to US 2 - Add lanes (Snohomish)

This project, budgeted for $176.5 million, will construct two new traffic lanes, including five new bridges, to form a four-lane divided highway. The project will improve motorist safety and reduce congestion by doubling capacity from the existing two-lane roadway.

The September 2008 *Gray Notebook* reported that WSDOT intended to assess alternative design options to determine if an anticipated $3.2 million cost increase could be avoided while remaining on schedule for a December 2009 advertisement.

After evaluation, WSDOT has determined the design cannot be altered in order to bring the total cost back within budget and still maintain the functional intent of the project. WSDOT has recommended to the Governor and Legislature that construction of this project be deferred from the 2009-2011 biennium to 2015. Deferral is part of balancing the statewide transportation budget in light of reduced revenue projections. This project is removed from the Watch List pending any other 2009 Legislative actions.

SR 529/Ebey Slough Bridge - Replace bridge (Snohomish)

This project, budgeted for $44 million, will replace the old Ebey Slough Bridge with a new fixed-span structure designed to meet current standards.

This project is in the design phase. The budget is at risk: the revised project cost estimate is $49.5 million. The increased estimate is based on further re-evaluation of the bridge item estimates used in the July 2008 in-depth interdisciplinary design review and bid results from other recently awarded bridge contracts.

WSDOT has recommended to the Governor and Legislature that construction of this project be deferred from 2009-2011 to the 2011-2013 biennium. Deferral is part of balancing the statewide transportation budget in light of reduced revenue projections. This project is removed from the Watch List pending any other 2009 Legislative actions.

US 12/Tieton River East Crossing ;
US 12/Tieton River West Crossing - Replace bridge (Yakima)

This project, budgeted for $14.3 million, will replace the two structurally deficient bridges across the Tieton River with two bridges that will be wider and meet current standards.

The schedule issue reported in the September 2008 *Gray Notebook* was resolved when Yakima County approved the Joint Aquatic Resource Permit Application (JARPA) in December 2008. One environmental permit remains outstanding but no delays are anticipated. The project is expected to go to advertisement in April 2009 with construction beginning in early summer 2009.

Port Townsend - Keystone Vessel Replacement Project

This project, budgeted for $84.5 million, was orginally intended to build two Island Home Class ferries and one Steilacoom II Class ferry.

When the bid to build the Steilacoom II vessel came in about $9 million over the agency's estimate, WSDOT decided to move forward with the two Island Home Class ferries and drop the Steilacoom II from the project. The project was advertised for construction on September 10, 2008; the only bid received was opened on November 13, 2008. The bid result was $65 million to construct one vessel and $124 million to construct two vessels, which exceeded the state's estimate by 30%. When all of the costs, such as construction engineering, contingencies, preliminary engineering, and project support, are added to the shipyard construction contract, the total for one vessel is about $81 million.

WSDOT decided to award the construction of one vessel to Todd Pacific Shipyard. Construction of the vessel began in December 2008, with delivery expected by June 2010. Starting in the March 31, 2009, *Gray Notebook*, the construction of the new ferry will be covered in a dedicated project page.

Eagle Harbor Maintenance Facility (Kitsap)

The Eagle Harbor Maintenance Facility Preservation Project has multiple stages of work which are budgeted for a total $46.3 million. The current stage, a $31.6 million renovation project, addresses the maintenance building, dock and a slip bridge

Watch List: Projects with schedule and budget concerns

structure at Eagle Harbor. The reconstruction of the slip bridge was completed in 2006, on-time and on-budget for $7 million.

As reported in the September 2008 *Gray Notebook*, WSDOT advertised this project on September 15, 2008. The contract has now been awarded (on November 3, 2008), at around $3 million below WSDOT's estimate. Construction is scheduled to begin January 2009, and the project is scheduled for completion in June 2011.

There may be future risks to both schedule and budget, due to the unusual nature of this project's site, which may include working over a Superfund site and renovating a building still in operational use.

Mukilteo Multimodal Ferry Terminal (Snohomish)

This project, budgeted for $152 million, will relocate the terminal, provide a new terminal building, improve connections to other modes of transportation, and alleviate local traffic congestion.

WSDOT has now signed a sub-lease with the Buzz Inn, adjoining the existing terminal, for a four-year initial term with two possible two-year extensions. Shoreline permit drawings were submitted in September, and WSDOT expects permits to be issued by the City of Mukilteo in April 2009, with construction to relocate a generator expected to begin in the same month.

The overall schedule continues to be at risk due to the long-range planning process. As reported in the September 2008 *Gray Notebook*, WSDOT cannot finalize the design for the proposed new terminal until it finishes the processes mandated by the Legislature and applies those results to the design.

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 performance is reported at two levels:

Six individually tracked projects:

- Six projects are reported individually due to their size or significance (see below and the following pages for schedule and budget information on these projects).

All other projects:

WSDOT reports on:

- On achievement of project milestones by type of project, see page 94.
- Actual versus planned cash flow for the overall PEF program, see page 95.
- Before & After results on selected types of projects. Examples include: pavement conditions (see pages 12-16), and reductions in accidents (see pages 5-7).

Six individually tracked PEF projects: results through December 31, 2008

Dollars in millions

Project description	First legislative budget *(year)*	Baseline current legislative approved	Scheduled date to begin preliminary engineering	On time	Scheduled date for advertisement	On time	Scheduled or actual date to be operationally complete
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 (Snohomish)		$10.8 *(2007)*	Jul-06		Feb-07		Sep-07
This is stage one of the original US 2 / Ebey Viaduct and Ebey Slough Bridge project.							
• US 2/43rd Ave SE vicinity to 50th Ave SE vicinity - Bridge rehabilitation (Snohomish)		$22.6 *(2007)*	Jan-09		Aug-10		Dec-11
SR 202/SR 520 to Sahalee Way - Widening (King)	$36.9 *(2001-03)*	$82.7 *(2007)*	May-98	√	Aug-05	√	Feb-08
SR 539/Horton Road to Tenmile Road - Widen to five lanes (Whatcom)	$32.0 *(2001-03)*	$66.3 *(2007)*	Oct-90	√	Jan-07	√	Nov-08
SR 28/E End of the George Sellar Bridge - Construct bypass (Douglas)	$9.4 *(2004)*	$22.9 *(2007)*	May-04	√	Jul-10	Late	Dec-11
The construction phase has been delayed to balance the financial plan for the 2009-11 biennium budget process.							
US 101/Purdy Creek Bridge - Replace bridge (Mason)	$6.0 *(2004)*	$15.1 *(2007)*	Aug-04	√	May-08	Late	Sep-09
Advertisement delayed due to additional design needed to bring plans up to WSDOT standards when they were returned from the consultant.							
SR 303/Manette Bridge Bremerton vicinity - Replace bridge (Kitsap)	$25.5 *(2002)*	$69.0 *(2007)*	Sept-96	√	Mar-10	√	Jun-13
Construction phase has been delayed to balance the financial plan 07-09 biennium Legislative book.							

Source: WSDOT Project Control and Reporting Office

WSDOT's Capital Project Delivery Programs

Pre-Existing Funds (PEF) Projects

Watch List concerns for the six individually tracked PEF projects

SR 539/Horton Road to Tenmile Road - Widen to five lanes (Whatcom)

This project, budgeted for $67.7 million, widens SR 539 to four lanes with a continuous two-way left-turn lane between Horton Road and Tenmile Road. Other improvements include replacing two bridges and a culvert at Deer Creek, drainage construction, reconstructing traffic signals at three intersections, and adding illumination. The work will relieve congestion and increase traffic capacity.

This project is under construction. Increased cost of asphalt and fuel costs through the summer and early fall added $200,000 to the cost increases reported in the September 2008 Gray Notebook. The total project cost is now $68.4 million.

The budget risk to this project has been resolved. Because this is a PEF project, the budget was balanced within the program.

The new lanes on this four-mile section of SR 539 north of Bellingham were opened to traffic on November 19, 2008. Crews will continue planting and monitoring environmental mitigation throughout the winter and will return in spring 2009 to finish paving near Deer Creek.

SR 28/East End of George Sellar Bridge – Construct bypass (Douglas)

This project, one of three involving the George Sellar Bridge, is budgeted for $22.9 million. It will construct a bypass route for southbound traffic, to improve capacity overall and reduce accidents at the east end of George Sellar Bridge. The project also includes funding for a pedestrian tunnel to reach Columbia River amenities.

The project is in the design phase. The budget continues to be at risk. As reported in the September 2008 *Gray Notebook*, a $4.7 million project cost increase was due to higher than expected commercial property values, an increased cost of materials, and a significant increase in the amount of coordination work with local agencies and adjacent projects.

Continued price escalation in asphalt and fuel and identified cost risks due to the construction of the mechanically stabilized earth wall system (MSE) has resulted in an additional $1.7 million cost increase for construction. These risks have increased the total project cost estimate to $29.3 million.

The project schedule is also at risk. To balance the available programmatic funding, WSDOT will delay the ad date by nine months and the operationally complete date three months.

The cost increase and the schedule adjustments will be updated pending the 2009 Legislative session.

Milestone tracking for programmatic Pre-Existing Funds (PEF) projects

Number of projects with these milestones, 2007-2009 biennium to date, milestone and expenditure achievement to date (December 31, 2008)
Dollars in millions

	Begin engineering		Advertised for bids		Operationally complete		Expenditures	
Programmatic categories*	**Planned**	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**
Pavement preservation	80	71	82	71	145	141	$204	$191
Bridges (preservation/replacement)	29	27	29	24	32	31	$92	$71
Slope stabilization	11	13	19	18	19	21	$29	$26
Safety (roadside, rumble strips, median cross-over, etc.)	31	32	42	33	53	49	$84	$77
Environmental retrofit (fish passage improvement, stormwater runoff)	8	8	6	4	6	7	$11	$7
Other facilities (rest area, weigh stations, etc.)	7	8	15	13	33	32	$194	$144
Totals	**166**	**159**	**193**	**163**	**288**	**281**	**$614**	**$516**

Data Source: WSDOT Project Control and Reporting Office.

* While elements of one or more categories may be included in some of the projects (such as a bridge preservation project that improves safety), every project has been assigned to one primary category for reporting purposes.

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

164 PEF projects advertised as of December 31, 2008

The 2007-09 Highway Construction Program includes a commitment to advertise 277 Pre-Existing Funds (PEF) projects in the current biennium. Of the 195 PEF advertisements planned through the six quarters ending December 31, 2008, 164 projects were advertised. Of the 195 scheduled, 23 were delayed to future quarters of this biennium, 10 were deferred to future biennia, and one project was deleted.

Of the 43 planned PEF advertisements scheduled for this quarter, 27 were advertised as scheduled. Nine of the planned advertisements were delayed to later in this biennium, three have been deferred to a future biennium, and none were deleted. No advanced, emergent, or delayed projects were advertised in this quarter.

Pre-Existing Funds projects: Biennial progress

July 1, 2007 through December 31, 2008

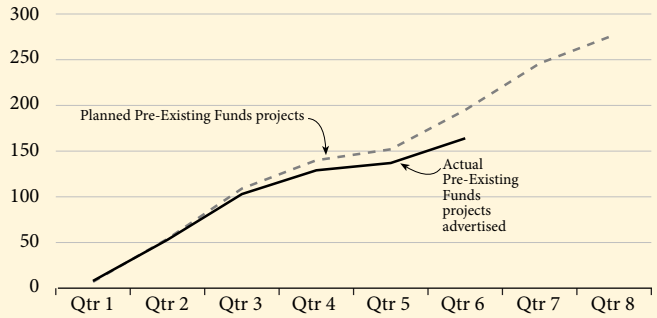
WSDOT total award estimate*:	$254.4 M
Actual total award amount*:	**$231.3 M**
Projects advertised (see page 97 for definitions)	
As Scheduled	147
Early	9
Late	5
Emergent	3
Total projects advertised 2007-Dec 31, 08	**164**
Projects Delayed (delayed within the biennium)	23
Projects Deferred (delayed out of the biennium)	10
Projects Deleted	1

Data Source: WSDOT Project Control & Reporting Office.

* In cases where the Department's Estimate and Award amounts 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.

Pre-Existing Funds projects construction program advertisements

Planned vs. actual number of projects advertised
2007-2009 biennium, quarter ending December 31, 2008



Data Source: WSDOT Project Control and Reporting Office.

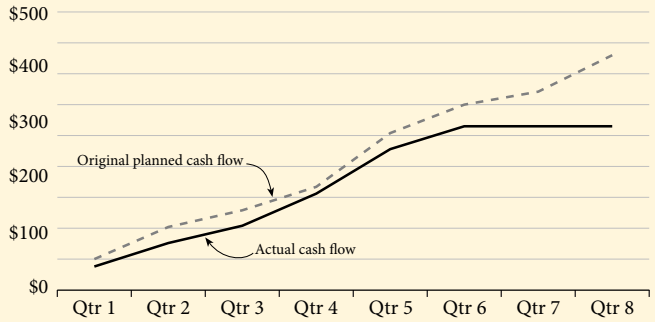
Paying for the projects: Financial information

WSDOT submitted an expenditure plan to the Legislature for the sixth quarter of the biennium totaling about $614 million. As of December 31, 2008, actual expenditures totaled $516 million, a variance of about $99 million, or 16%, from the biennium plan. The variance as of the end of the sixth quarter for the Highway Construction Program was divided between the Improvement and Preservation programs.

The Preservation Program planned cash flow was $350 million, and actual expenditures were $315 million. This was $36 million under plan, or 10%. The Improvement Program planned cash flow was $264 million, and actual expenditures were $201 million. This was about $63 million under plan, or 24%.

Pre-Existing Funds preservation program cash flow

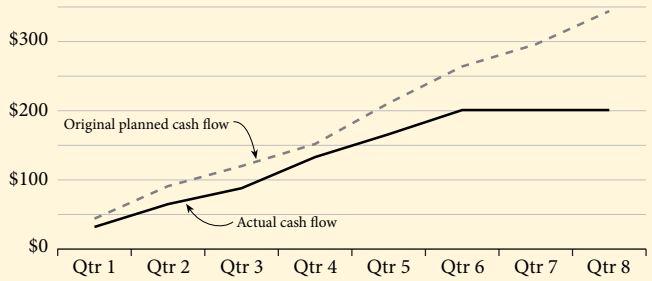
Planned vs. actual expenditures
2007-2009 biennium, quarter ending December 31, 2008
Dollars in millions



Data Source: WSDOT Project Control and Reporting Office.
Note: As of Quarter 5 (July 1 - Sept. 30, 2006), Original Planned Cash Flow values have been updated based on the 2006 Supplemental Budget.

Pre-Existing Funds improvement program cash flow

Planned vs. actual expenditures
2007-2009 biennium, quarter ending December 31, 2008
Dollars in millions



Data Source: WSDOT Project Control and Reporting Office.
Note: As of Quarter 5 (July 1 - Sept. 30, 2006), Original Planned Cash Flow values have been updated based on the 2006 Supplemental Budget.

WSDOT's Capital Project Delivery Programs

Pre-Existing Funds (PEF) Projects: Advertisement record

PEF projects scheduled for advertisement or advertised this quarter

October 1, 2008 – December 31, 2008

Project description	On-time advertised
NC Region Sign Update 2007 - 2009	√
US 2/E of Stevens Pass - Miscellaneous sign structure	√
US 2/E of Orondo - Slope stabilization Advertisement date was delayed due to environmental permitting and acquisition of a right-of-way certification for parcel owned by the Bureau of Land Management.	Delayed
US 2/97 Lincoln Rock State Park to Orondo - Paving Advertisement date was delayed due to environmental permitting and acquisition of right-of-way.	Delayed
US 2/Wilbur pedestrian improvements - Safety	Delayed
I-5/52nd Ave W to SR 526 - Northbound Paving Advertisement delayed as part of the new budget proposal in order to balance the available funds.	Delayed
I-5/Arlington City Limit vicinity to Stillaguamish River - Paving	√
I-5/SR 532 to Hill Ditch Bridge - Concrete pavement rehabilitation	Delayed
I-5/Burlington - Westview School noise wall	√
I-5/SR 530 to Samish Hwy - MMA Striping Advertisement delayed as part of the new budget proposal in order to balance the available funds.	Deferred
I-5/Bakerview Rd to Nooksack Rd Bridge - Concrete pavement rehabilitation	√
SR 6/Chehalis River Bridge Riverside - Timber pile replacement	Early
SR 9/Martin Rd vicinity to Thunder Creek - Realignment and widening	√
SR 9/SR 542 to Smith Creek Bridge vicinity - Paving	√
US 12/West Side White Pass - Stabilize slope	√
US 12/3 Miles East of SR 123 - Stabilize slope	√
SR 20/Winthrop Westward - 2009 Chip Seal	√
SR 20/Okanogan Southward - 2009 Chip Seal	√
SR 20/5 Miles East of Tonasket - 2009 Chip Seal	√
SR 28/Quincy area - Paving	√
I-90/Eastgate vicinity bridges - Seismic	√
I-90/E. Fork Issaquah Crk Bridge vicinity to Raging River Bridge vicinity - Safety	√
I-90/Medical Lake Rd Bridge - Bridge deck repair	√
I-90/Spokane Port of Entry - Weigh station relocation	Delayed
US 97/Brewster Area - Pedestrian improvement	Early
US 97/8 Miles South of US 2 Intersection - Slope stabilization	Early
US 97/North of Blewett Pass - Slope stabilization	Early
US 97/South of Tonasket - Bridge deck repair	√
US 97A/North of Wenatchee - Slope stabilization Advertisement date was deferred one year to meet the needs of the public by eliminating full road closures during the summer tourist season and fruit harvests.	Deferred
US 101/ Astoria-Megler Bridge- North end painter This is a border bridge partnership project with the state of Oregon. ODOT is the lead agency, and is managing delivery of the project.	Delayed
SR 153/Methow Northward - 2009 Chip Seal	√
SR 155/Coulee Dam Westward - 2009 Chip Seal	√

Pre-Existing Funds (PEF) Projects: Advertisement record

PEF projects scheduled for advertisement or advertised this quarter

October 1, 2008 – December 31, 2008

Project description	On-time advertised
US 195/Jct SR 271 to Cornwall Rd - Centerline rumble strips	Delayed
SR 281/Quincy area - Paving	√
SR 509/vicinity S 112th St - Pedestrian improvements, Safety improvements	√
SR 520/I-405 to W Lake Sammamish Parkway Interchange - Paving	√
SR 525/I-5 to Ash Way Bridge - Paving Advertisement delayed as part of the new budget proposal in order to balance the available funds.	Delayed
SR 529/BN Railroad Bridge to North Access Road - Paving Advertisement delayed as part of the new budget proposal in order to balance the available funds.	Deferred
SR 536/SR 20 to Skagit River - Paving	√
SR 538/I-5 to Laventure Road - Paving	√
SR 542/Britton Rd to Cedarville Rd - Paving	√
SR 542/Cedarville Rd to Coal Cr Bridge vicinity - Paving	√
SR 599/S 133rd St vicinity to SR 99 vicinity - Median cross-over protection	√

Source: WSDOT Project Control and Reporting Office.

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

Construction Cost Trends

WSDOT tracks construction cost information to calculate its Construction Cost Index (CCI), a weighted average of low unit bid prices for the seven most common work activities that the agency awards to contractors. The bids for these seven activities include the cost of the materials, labor, and equipment needed to complete the activity.

Like other agencies, WSDOT prepares estimates for its projects using recent bid price information and inflates the cost to construct the projects in the future using rates provided by leading global forecasters. The global forecast is constantly adjusted, and as time passes, the rate of inflation that was actually experienced is added to the end of the forecast. WSDOT's CCI allows the agency to compare inflation on its project bids to actual inflation rates experienced in its program and to the rates used to predict inflation.

In 2003 and again in 2005, the Legislature passed two funding packages, the Nickel and Transportation Partnership Account, enabling WSDOT to construct additional projects. The majority of the Nickel and TPA projects were originally budgeted in either 2003 or 2005, with the projects going to advertisement and construction over ten fiscal biennia. However, the inflation rates used in 2003 and 2005 do not accurately account for cost increases experienced since then, resulting in a noticeably large impact on WSDOT's ability to deliver its program both on-time and on-budget. Many factors – including record crude oil prices, huge international, national, and local building programs, economic and technical changes in the production of construction materials, and increases in labor costs – contributed to pushing actual construction inflation far above predictions from 2003 through 2007.

Construction Cost Index increased 4.7% in 2008

The graph to the right plots the past 19 years of CCI data for Washington state. It also plots the CCI of the Federal Highway Administration (FHWA) and the average of the CCI data for several western states: California, Colorado, Oregon, South Dakota, and Utah.

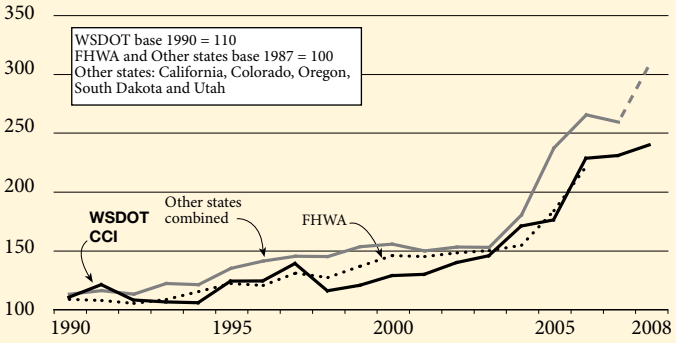
From 1990 through 2001, the CCI remained fairly steady, increasing an average of 1.5% a year. But, from 2002 through 2008, the CCI has increased an average of 10% a year. While the rate of increase experienced during 2008 was lower than some recent years, construction costs remain elevated. In fact, construction costs captured in WSDOT's CCI are 66% higher today than in 2003.

During 2008, global economic conditions reduced demand for many materials such as steel and concrete. In the second half of 2008, bids for many materials decreased. Due to reductions in private sector and other public sector building, WSDOT has also experienced an increase in the number of contractors bidding on projects. For these reasons, WSDOT is optimistic that – for the immediate future – the agency will continue to receive lower, competitive bid prices, and therefore, reduced construction cost inflation. More information about construction costs can be found at http://www.wsdot.wa.gov/biz/construction/pdf/costs0109.pdf.

Construction Cost Trends Highlights

- Despite a 21.3% increase in the first half of 2008, the CCI slowed down in the last half of 2008 to a 4.7% rate of inflation.
- Since 2002, the WSDOT CCI has averaged a 10% increase each year, and has risen 66% since the Nickel package was passed in 2003.
- The average number of bidders has increased to 4.4 per contract, and 78% of all contracts were awarded with three or more competitive bids.
- The number of projects receiving only one competitive bid declined to 4%, the lowest rate ever recorded.

Construction Cost Indices
Washington state, FHWA, and selected western states
1990 - 2008



Data Sources: WSDOT 2008 index is for 2008 year.
FHWA index discontinued in 2007.
Other states 2008 data is the average of California, Oregon, and Utah 2nd quarter indices, and Colorado 1st, 2nd & 3rd quarter data. and South Dakota 1st & 2nd quarter data.
Note: 2003 and 2004 WSDOT CCI data points adjusted to correct for spiking bid prices on structural steel.

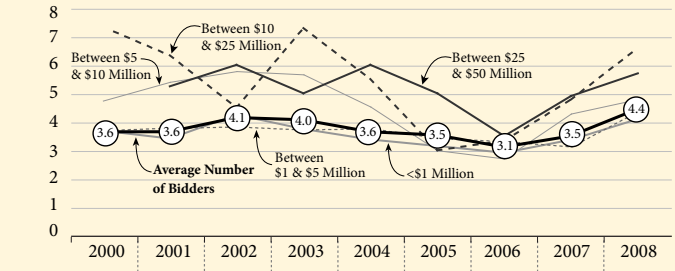
Construction Cost Trends

Average number of bidders increased in 2008

WSDOT receives the best prices for its projects when the contract advertised is attractive enough to interest three or more firms. Between 2004 and 2008, construction work was plentiful and WSDOT experienced a decrease in the number of firms interested in state projects. This has now changed as there is less work available for contractors to choose from in other sectors.

Average number of bidders

By size of contract



	2000	2001	2002	2003	2004	2005	2006	2007	2008
1 Bidder	7.7%	12.3%	12.6%	8.5%	13.4%	9.2%	10.3%	8.1%	4.1%
2 Bidders	26.1%	23.2%	22.2%	17.6%	20.4%	22.0%	37.6%	34.5%	17.6%
3 Bidders	23.9%	23.2%	15.6%	24.2%	22.5%	33.3%	19.7%	23.7%	23.0%
More than 3 Bidders	42.3%	41.2%	49.6%	49.7%	43.7%	35.5%	32.5%	33.8%	55.4%

Source: WSDOT Construction Office

WSDOT received an average of 4.4 bids for each job it opened bids on during 2008. This is the highest average for bids received since WSDOT began tracking the average number of bidders for its projects in 2000. Overall, in 2008, 78% of WSDOT construction contracts that went to bid met the internal goal of receiving three or more bids each. Since setting the goal, this is the highest recorded annual percentage of contracts receiving three or more bids since WSDOT began tracking this measure. The number of contracts receiving just one bid decreased to 4%, also the lowest rate since this measure was tracked.

The increase in competitive bidding is good news. It shows that the contracting community is better able to assist WSDOT in delivering its large project delivery program than in the recent past. Under the current trend, these competitive conditions will produce more favorable contract prices than if fewer bidders were interested in the work.

Stimulus funding to increase construction activities

In February 2009, President Obama signed into law the American Recovery and Reinvestment Act, also known as the federal stimulus. It is uncertain as to how the influx of stimulus funds will affect the bidding climate in Washington state when stimulus-funded projects become available in neighboring states and in local communities. So far, the Congressional Budget Office has signaled that, unless major changes to construction planning, design, and bidding were to be adopted by states, it could not see major changes in the way that construction companies approach and bid for transportation projects.

The I-5/SR 16 Westbound Nalley Valley Interchange project is an example of projects receiving multiple, competitive bids in 2008. In recent years, WSDOT struggled to attract qualified bidders to its large project delivery program, but by improving the bidding language, a softening economy, and the incorporation of such tools as the materials escalation clauses, WSDOT has been able to attract three or more bids for the majority of its projects. This project received six competitive bids, and came in $10 million under the engineer's original estimate.

Cross Cutting Management Issues

Utilities

Some WSDOT construction projects present challenges in coordinating construction with existing utilities such as water, electricity, sewer, storm drains, telephones, and fiber optic lines. In some cases the utilities need to be relocated. WSDOT's goal is to proactively work with utility companies to avoid conflicts and potential delays before and during construction.

When existing utilities are in the way of construction projects, utility companies are given a reasonable amount of time to design and relocate facilities. In order to deliver projects on time, WSDOT assigns risk levels to better prioritize coordination work needed between engineers, contractors, and utilities groups.

Projects with utility risks advertised from July to December 2008

US 395 - Columbia Drive to SR 240 -Rebuild interchange (Risk Level 2 - moderate)

This project will reconfigure the US 395 / SR 240 interchange in Kennewick. Improvements add a second through-lane for southbound US 395 to improve traffic flow and reduce the risk of collisions. At the time of advertisement, there were two pending service agreements and a pending NPDES permit. These issues were resolved prior to bid opening.

SR 307/SR 104 Spot improvements - safety (Risk Level 3 - high)

Project features include new guardrail, better lighting at two intersections, sight-distance improvements, and realignment of the SR 307/Port Gamble Road intersection. WSDOT has been coordinating with the utility companies and they have agreed to relocate the utilities that conflict with the roadway alignment work.

I-5 172nd St. Northeast - interchange modification (Risk Level 3 - high)

This project will improve access to and from Interstate 5 at State Route 531 (172nd St. Northeast) by building a new, two-lane loop ramp, adding turn lanes, and widening existing ramps. There are utilities that need to be relocated by March of 2009, but the relocation is currently behind schedule. The utility owner has been given notice of their responsibility for any contractor claims that arise due to work delay.

I-5/SR 16 Westbound Nalley Valley interchange (Risk Level 3 - high)

The Westbound Nalley Valley construction contract builds a new westbound connection between SR 16 and I-5. The project required relocation of a sanitary sewer line prior to construction. The relocation did not occur before project advertisement, but was subsequently relocated in time for construction.

North Spokane Corridor - US 2 Lowering (Risk Level 3 - high)

This project will lower US 2 between Farwell Road and Deadman Creek, construct six bridges and multiple retaining walls for the North Spokane Corridor/US 2 Interchange, and complete mainline paving through the interchange. The majority of the affected utilities have already been relocated. However, some work will need to be done by the contractor. No problems are anticipated.

Utilities Highlights

From July 1, 2008 to December 31, 2008, 27 Nickel and TPA funded projects were advertised. Five had moderate or high risks of potential delay due to required utilities work. WSDOT has worked proactively to mitigate these risks.

Utilities risk levels for advertised Nickel and TPA projects

Level	Description	Jan-Jun 2008	Jul-Dec 2008
1	Low - Utilities have been relocated, and/or are clear of construction	29	22
2	Moderate - Utility companies are actively pursuing relocation and the department has assurances the utilities will be clear by the date bids are opened.	4	1
3	High - Utilities have not been relocated, and will not be relocated by the bid opening date that has been cited in the contract provisions. The department has assurance that the utility company will be able to meet the date stipulated on the contract.	7	4
	Total	**40**	**27**

Data Source: WSDOT Utilities Office.

Right-of-way

All certifications in the six-month period completed on time

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 business practices regarding acquiring real estate are strictly guided by state and federal regulations. WSDOT's goal is to deliver 100% on-time right-of-way certification for all projects; it is one of the six milestones tracked for all Nickel and TPA projects.

Certification is considered to be on-time if it occurs within the scheduled quarter. Twenty projects with a right-of-way phase were scheduled to be certified between July and December 2008. All were certified on-time.

Right-of-way Highlights

100% of right-of-way certifications between July and December 2008 were completed on time.

Acquisition trends

As planned, WSDOT is acquiring fewer land parcels compared to previous years. The actual number of land parcels acquired was actually slightly lower than expected, with 185 parcels acquired between July and December 2008, compared to 228 parcels during the same time period in 2007.

Right-of-way condemnations

Condemnation involves legal action to acquire property by operation of law. Condemnation rates continue to show a steady increase. Of the 29 open condemnation cases, nine are new cases opened in the last six months of 2008 and 20 are pending, pre-July 2008, cases.

On-time right-of-way certification results

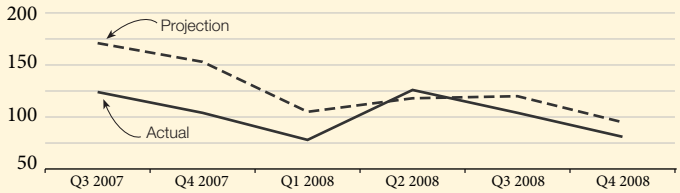
	Jul-Dec 2007	Jan-Jun 2008	Jul-Dec 2008
Projects with a right-of-way phase	45	49	24
Projects with certification delays	0	3	0
Percent of projects with on-time certification	100%	94%[1]	100%

Data Source: WSDOT Real Estate Services (RES).

[1] The methodology for calculating the percentage of projects with on-time certification has been changed. Previously, delayed certifications were considered to be on-time if the delay was not within RES control. The new calculation includes all delayed certifications, regardless of the reason for the delay. The on-time certification percentage for January - June 2008 was previously reported as 98%; the new methodology changes this to 94%.

Acquisitions for all PEF, TPA and Nickel projects

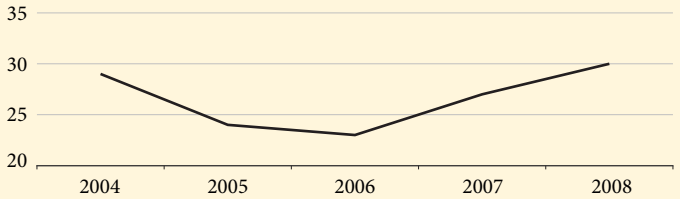
July 1, 2007 - December 30, 2008, actuals and projections



Data Source: WSDOT Real Estate Services.

Condemnations for all PEF, TPA and Nickel projects

Condemnations, 2004 - 2008



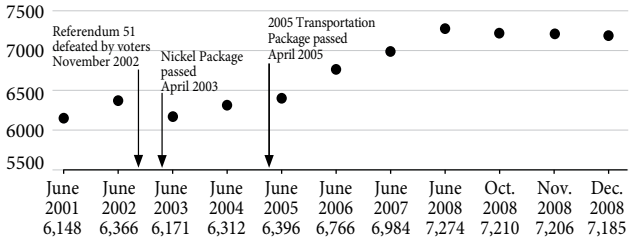
Data Source: WSDOT Real Estate Services.

Workforce Level and Training Quarterly Update

This quarter, WSDOT employed 7,185 permanent full-time employees on December 31, 2008, a decrease of 62 employees from the previous quarter ending September 30, 2008. The total number of permanent full-time employees reached a high of 7,282 in July, as WSDOT delivers the largest construction program in department history. On August 4, Governor Gregoire announced a statewide hiring freeze as state revenues, including gas tax revenues, declined. The number of permanent full-time employees has declined slightly in each of the last five months. The chart to the right shows the total number of permanent full-time employees since June 30, 2001. 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.

Number of permanent full-time employees at WSDOT

As of December 31, 2008



Data Source: Dept. of Personnel Data Warehouse, HRMS, WSDOT and the ferry system payroll.

Workforce training compliance improved

Compliance levels for four of six training classes required for all employees improved in the quarter ending December 31, 2008. Training all employees who have yet to receive required basic training in valuing diversity, disability awareness, and sexual harassment/discrimination courses is the top 2009 training priority for the Office of Equal Opportunity (OEO). The office is identifying employees who need training courses and setting up a compressed one-day module for large groups to increase compliance. The plan maximizes compliance in a manner consistent with the reduction of staff currently available to conduct mandatory training.

New state rules requiring managers to receive sexual harassment/diversity training every three years instead of five years (as of March 30, 2008) led to a 7% decline in compliance and new efforts to increase refresher training. OEO staff updated training to incorporate the new content requirements issued by Department of Personnel and are working with WSDOT Human Resources staff throughout the state to ensure employee attendance in basic and refresher training, and ensure course completion is accurately identified and tracked for WSDOT compliance.

Workforce Level and Training Highlights

The statewide workforce level declined 62 during the quarter to 7,185 permanent full-time employees.

Compliance levels improved for four of the six training courses required for all employees.

Increased refresher requirements precipitated a 7% decline in compliance with sexual harassment/discrimination training.

Compliance for statutorily required maintenance and safety training increased 1% to 83%.

Worker compliance with mandatory training for all WSDOT workers

Second quarter, FY 2009, October 1, 2008 to December 31, 2008

Training Course	Workers requiring training	Basic training completed to date	Workers needing basic training	Workers needing refresher training	Completed training reporting quarter	Total in compliance	% in compliance	% change from previous quarter
Disability awareness	8,029	6,983	1,046	326	251	6,657	83%	1%
Ethical standards	8,029	7,783	246	1,691	379	6,092	76%	2%
Security awareness	8,029	6,561	1,468	N/A	97	6,561	82%	1%
Sexual harassment/ discrimination	8,029	7,235	794	1,911	282	5,324	66%	-7%
Valuing diversity	8,029	7,045	984	414	356	6,676	83%	2%
Violence that affects the workplace	8,029	6,876	1,153	N/A	73	6,876	86%	0%

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

Statutorily required maintenance training

Compliance for statutorily required maintenance employees improved to 83% this quarter, a 1% increase over last quarter. WSDOT's goal is to achieve 90% compliance for statutorily required training for maintenance employees. Numerous state laws and regulations stipulate specific training requirements for many activities maintenance workers perform. Regional maintenance and safety trainers use a variety of approaches to increase compliance rates and provide training. Training compliance fluctuates by season and is generally higher in the fall and spring, when more employees are available for training.

Statutorily required training
Quarter ending Dec. 31, 2008

	Total requiring training	Total people complying	% complying current quarter	% change from last quarter	Past biennium average	Current biennium average
Aerial Lift	173	152	88%	-2%	87%	91%
Bucket Truck	362	289	80%	1%	82%	80%
Confined Space Entry	500	418	84%	1%	79%	83%
Drug & Alcohol Certification	1,240	1,174	95%	2%	90%	90%
Drug-free Workplace	345	315	91%	0%	87%	91%
Electrical Safety Awareness	305	216	71%	9%	57%	63%
Excavation, Trenching & Shoring	383	303	79%	-3%	81%	83%
Fall Protection	718	613	85%	-2%	84%	84%
Forklift	1,073	920	86%	0%	89%	87%
Hazard Communications	1,409	1,283	91%	2%	84%	88%
Lockout/Tag Out	595	487	82%	-1%	72%	83%
Personal Protective Equipment	1,371	1,200	88%	2%	83%	85%
Proper Lifting	1,440	1,228	85%	0%	71%	81%
Supervisor Return to Work	209	159	76%	-2%	73%	77%
Blood-borne Pathogens[1]	435	201	46%	-9%	56%	61%
Fire Extinguisher[1]	1,372	1,030	75%	0%	57%	71%
Hazardous Materials Awareness[1]	845	649	77%	0%	73%	78%
Hearing Conservation[1]	1,354	1,152	85%	8%	76%	79%
Lead Exposure Control[1]	84	28	33%	11%	35%	33%
Railway Work Certification[1]	0	0	N/A	N/A	69%	76%
Respirator Protection[1]	184	71	39%	17%	17%	29%
Emissions Certification[2]	72	45	63%	-13%	57%	74%
First Aid[3]	1,466	1,261	86%	0%	83%	80%
Flagging & Traffic Control[3]	1,143	1,050	92%	1%	92%	91%
Total	17,078	14,244	83%	1%	78%	81%

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

[1] Refresher training required annually; [2] Refresher training required every two years . [3] Refresher training required every three years.

Two regions achieve 90% goal

WSDOT tracks statutorily required training compliance for its maintenance workers by region. The table to the right documents each region's compliance with all the courses above as a single measure. Training compliance increased in six of seven regions during the fourth quarter of 2008, and the Eastern and Southwest regions continued to exceed the 90% compliance goal.

Required training for maintenance employees by WSDOT region

Region	Current quarter percent in compliance	Percent change from last quarter	Current biennium (2007-09) average	Past biennium (2005-07) average	Goal met
Northwest	77%	0%	75%	70%	
North Central	79%	-1%	80%	79%	
Olympic	82%	7%	76%	71%	
Southwest	94%	0%	93%	91%	✓
South Central	87%	0%	83%	79%	
Eastern	93%	0%	91%	91%	✓

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

In the last edition, the table reversed the current quarter compliance and current biennium average columns. This version is correct.

Highlights of Program Activities

For the quarter ending December 31, 2008

Project Starts

SR 16, Pierce County

A project that eliminates one of Pierce County's worst bottlenecks by rebuilding the westbound section of the SR 16 Nalley Valley viaduct moved a step closer to reality. On October 6, WSDOT awarded a construction contract worth $119.9 million. Moving from I-5 to westbound SR 16 is often a frustrating experience during the peak commute hours. Drivers from northbound and southbound I-5 jockey for position as they merge onto SR 16 or exit at Sprague Avenue. These conflicts lead to slowdowns, backups and the potential for collisions. Two new bridges—one for northbound I-5 traffic entering SR 16 and one for southbound I-5 traffic entering SR 16—will eliminate the weaving conflict. In addition, each bridge will have its own off-ramp to Sprague Avenue.

SR 519, King County

A $67 million project intended to improve traffic and freight mobility and pedestrian safety on SR 519, near the sport stadiums in Seattle's SoDo neighborhood, kicked off on October 23. The SR 519 project is located on S. Atlantic Street and S. Royal Brougham Way between First Avenue S. and I-5, near Qwest and Safeco Fields. Freight and ferry traffic use SR 519 to reach the waterfront and Port of Seattle terminals, as do a growing number of commuters heading to and from I-5 and I-90 and the stadium area. A large number of pedestrians also cross SR 519 on their way to and from events at the stadiums. As part of this project, crews will build two bridges that will eliminate the delays that drivers and pedestrians currently experience while waiting for trains to pass. The bridges include a westbound off-ramp from I-90 and I-5 that connects to the existing S. Atlantic Street (Edgar Martinez Drive S.) overpass, and a bridge for vehicles, pedestrians, and bicyclists along S. Royal Brougham Way. Crews also will widen the intersection of S. Atlantic Street and First Avenue S. to add turn lanes. WSDOT expects this final phase of the SR 519 Intermodal Access Project to be complete by mid-2010.

SR 519, King County.

US 2, US 395, Spokane County

Work on the next major component of the North Spokane Freeway will complete the North Spokane Corridor/US 2 interchange. This stage of the project will lower US 2 between Farwell Rd and Peone Creek, creating the clearance needed for the highway to pass underneath the North Spokane Corridor freeway. The project includes building six bridges totaling over 77,000 square feet of bridge deck, plus multiple retaining walls along US 2. For now, drivers will see minimal traffic interruptions since most of the work is focused on the new bridges. However, from June 2009, major excavation work on US 2 will restrict traffic to three narrow lanes—one southbound and two northbound. The job is expected to be completed in 2011.

Project Updates

I-5, Lewis County

On December 12, WSDOT opened an additional lane in each direction of I-5 between Rush Road and 13th Street, south of Chehalis. The new lanes are part of the $51 million I-5, Rush Road to 13th Street project that widens I-5 and builds a new interchange at LaBree Road. The four-mile section is the first in a series of four projects to be completed along an 18-mile stretch of I-5 from central Lewis County to south Thurston County. The improvements planned through the corridor are designed to support economic development, increase safety, and reduce congestion. Work began in April on the second project, which widens an eight-mile stretch of freeway and improves on-ramps and off-ramps in Thurston County.

I-405, Bellevue, King County

In November, crews set girders for a new NE 10th Street bridge over I-405. The new bridge will provide a direct connection between downtown Bellevue and the city's growing hospital district, as well as relieve congestion on NE 8th Street. Crews set two girders each night for 12 nights. Each girder weighs between 27 and 38 tons – roughly the weight of the *Hammering Man* at the Seattle Art Museum. When connected together, the girders will span 368 feet across I-405. WSDOT is teaming up with the City of Bellevue to build the new bridge over the freeway. Earlier this year, the City of Bellevue completed construction on the first stage of the project when it built a

For the quarter ending December 31, 2008

I-405 in Bellevue.

bridge approach on the east side of I-405 near Overlake Hospital. WSDOT started construction of the second stage with the demolition of the Paragon Hotel in March. The bridge is expected to be open to traffic by summer 2009.

SR 522, Snohomish County

This summer, crews rebuilt the intersection of SR 522 and Woodinville Drive in Bothell. In mid-December, they turned on a new traffic signal. The signal will direct traffic on SR 522 through the Woodinville Drive intersection and help motorists safely turn to enter and exit the roadway. In fall 2009, crews will reprogram the signal and open the north leg of the SR 522/Woodinville Drive intersection that will carry traffic to the new south entrance of the Bothell campus. WSDOT is working with the University of Washington and Cascadia Community College to build a new entrance on the south side of the Bothell campus. Crews will also build a new roadway for SR 522 (Bothell Way NE) from the I-405 interchange to Kaysner Way in Bothell.

I-90, Kittitas County

In October the Federal Highway Administration (FHWA) signed an Environmental Impact Statement Record of Decision (ROD) giving WSDOT's long-awaited I-90 Snoqualmie Pass East Project the green light to move forward with construction in spring 2009. The project will improve I-90 by providing a safer, more efficient six-lane freeway from Hyak to Easton. The project will straighten roadway curves, replace old pavement, and reduce rock fall and avalanche hazards. WSDOT will also construct wildlife crossings over and under I-90 for the safe movement of wildlife and enhance wetlands and habitats throughout the corridor. Construction is scheduled to begin on the first five miles of the project in 2009. The next step for the I-90 Project is to finish design of the first phase and move into construction in the spring.

Project Completions

For more detailed performance information on all projects completed this quarter, turn to pages 70-80.

SR 502, Clark County

WSDOT opened a new freeway interchange at I-5 and SR 502 in Clark County on October 15. The $52 million project will improve safety and reduce congestion in this part of central Clark County. Travel times will be reduced since the interchange provides a direct east-west connection between I-5 and the growing city of Battle Ground. Safety will be improved by reducing the number of vehicles using the northbound off ramp of the current NE 179th Street interchange. The project will also help reduce weaving between the NE 179th Street interchange and the I-5/I-205 junction. Construction on the project began in April 2007 and was completed in October, a full season ahead of schedule.

SR 9, Snohomish County

On November 21, crews completed a $20.7 million project to improve safety on two miles of SR 9 near Arlington. WSDOT and contractor crews began construction in spring 2007. In a year and a half, crews built a bridge over Harvey Creek; filled in a dip in the road to improve visibility; straightened a curvy section of roadway and, installed a box culvert at Kackman Creek to improve fish passage beneath the highway.

SR 25, Stevens County

Crews completed 27 miles of paving of SR 25 from Bossburg Road to Canada north of Colville. The $5.8 million project repaired deteriorated pavement and restored the roadway surface on this international trade route. Drainage and guardrail improvements were also made.

SR 539, Whatcom County

Crews opened the last one and one-half miles of new lanes on the Guide Meridian (SR 539) north of Bellingham on November 19, completing the four-mile, $66 million widening and safety improvement project between Horton and Ten Mile roads. With the new lanes now open between Smith and Hemmi roads, the Guide Meridian is five lanes wide – two lanes in each direction with a middle turn lane. This will help relieve congestion and improve safety for the 20,000 or so drivers who use this road daily. Crews will return in spring 2009 to lay the final layer of asphalt near Deer Creek. They were not able to complete paving before the autumn rains came.

Highlights of Program Activities

For the quarter ending December 31, 2008

Ferries

New ferry on the way for Port Townsend to Keystone route

WSDOT Ferries Division announced on December 1 that it awarded a contract to Todd Pacific Shipyards to build one 64-car ferry. With the $65.5 million contract award, the new ferry is on an 18-month construction timeline. The ferry will serve the Port Townsend to Keystone route that has been without a state-owned auto ferry since the Steel Electric Class ferries were taken out of service in November 2007. Since then, various temporary solutions have been in place, including a leased auto ferry, the Steilacoom II, from Pierce County. The new 64-auto ferry will hold up to 750 passengers.

Edmonds waterfront, Unocal Pier

On November 24, WSDOT's Ferries Division began removing the former fueling pier known as the Unocal Pier located off the shore of Marina Beach Park in Edmonds. The project will remove approximately 530 creosote-treated lumber piles and 31,000 square feet of creosote-treated timber decking to return the offshore area to its natural state. Because the project will also remove the existing marine habitat on the pilings, WSDOT is working with Point Defiance Zoo & Aquarium and the Seattle Aquarium to collect marine samples for public exhibits at their respective aquariums. This project is funded by WSDOT Ferries Division as early environmental mitigation for future improvements to the Edmonds Ferry Terminal. Work is expected to continue through March 2009.

Public Transportation

Travel Washington Apple Line provides needed bus service in North Central Washington

On October 28, a formal ribbon cutting ceremony in Omak celebrated a new 160-mile "Apple Line" bus route from Omak through Wenatchee to Ellensburg. The Apple Line joined the Grape Line in Walla Walla and the Dungeness Line on the Olympic Peninsula to round out the state's Travel Washington network of intercity bus service.

Travel Washington connects communities by linking rural towns and cities with urban areas, connecting them to national intercity bus, rail, and air service. The Travel Washington Apple Line is part of the only Intercity Statewide Network in the nation to be funded through a Federal Transit Administration (FTA) pilot program that matches private sector investments with federal grant funds. Greyhound Bus Lines provided the local match and the Washington State Department of Transportation (WSDOT) awarded a grant to Northwestern Trailways to provide the Apple Line service.

Construction begins on Swift Bus Rapid Transit

On December 3, bus rapid transit took a step closer to reality in the Puget Sound region. Ground-breaking took place on the Community Transit's Swift Line, which will run hybrid buses every 10 minutes most of the day on a 17-mile corridor of Highway 99 in Snohomish County. Swift will cross the boundary between Community Transit and Everett Transit service districts, where passengers must now transfer from one agency's buses to another's bus. The two agencies signed a partnership agreement that allows Community Transit to run the service in Everett while Everett Transit will pay for stations in the city limits.

U.S. Senator Patty Murray joined other dignitaries in turning dirt on the first of 24 Swift stations at the corner of Highway 99 and Airport Road in Everett. Community Transit is paying for half the $32 million project cost, with other funding coming from the City of Everett, WSDOT, and the Federal Transit Administration (FTA).

Traveler Information

WSDOT offers new tools for road and pass condition reports

Just in time for the season's wintry weather, WSDOT began offering mountain pass reports via e-mail, text messaging, and Twitter. WSDOT offers subscribers more than 25 specialized e-mail alerts, including news and information for freight haulers, construction-related traffic revisions, project updates from all around the state, and timely updates on pass conditions. Users can also choose to receive e-mail alerts as text messages on cell phones or other wireless devices. Users subscribe to the e-mail service through the WSDOT Web site at www.wsdot.wa.gov and clicking the link for "E-mail

For the quarter ending December 31, 2008

updates," which allows users to choose the news and information that they want to receive by e-mail or text message. Twitter users can add WSDOT to their personal accounts at "wsdot.wa.gov/news." Pass conditions are available by texting from any mobile device or via Twitter.

Online I-5 flow map stretches south to Olympia

In fall 2008, Olympia commuters joined the ranks of Seattle and Tacoma drivers with their own real-time traffic flow map. WSDOT completed the installation of data stations along the I-5 corridor in Tumwater, Olympia, and Lacey. This expands WSDOT's travel-information tools in Thurston County with an additional 14 miles of flow-map coverage. In addition to the data stations in this area, WSDOT added traffic cameras and Variable Message Signs. This $65,000 addition to Thurston County's transportation system is part of the ongoing expansion of the flow map. Filling the Thurston County gaps in the WSDOT flow map is an important step toward providing drivers with estimated point-to-point travel times on overhead signs.

Freight Transportation

WSDOT releases freight transportation economic report on I-5 and I-90 closures

A new report released by WSDOT shows just how important road maintenance and operations are to the state's economy. The report documents more than $75 million in freight-related economic impact related to the closures of I-5 and I-90 forced by the winter storms of 2007-2008. The analysis will help state officials make informed decisions about economic and infrastructure investments for the state's transportation system. WSDOT is using the study's findings to develop additional strategies to respond quickly during future disruptions.

WSDOT had unplanned costs of repairing road damage and clearing snow. Winter operations were $9.1 million over the anticipated budget for 2007-2008 for a total of $40.3 million. The I-5 closure caused approximately $18 million in damage to state highways.

Announcements, Awards, and Events

WSDOT wins national award for communications on I-5 project in Seattle

The WSDOT's 2007 information campaign to warn commuters of massive lane closures on I-5 in Seattle won the National Partnership for Highway Quality's (NPHQ) 2008 Gold Award for Public Communications. The "Making A Difference" award, presented on November 14 in San Antonio, Texas, recognized WSDOT's efforts to get the word out to drivers and transit riders about the I-5 Spokane Street to I-90 Bridge Repair Project in downtown Seattle. In August 2007 WSDOT reduced northbound I-5 to just two to three lanes around the clock for two weeks while crews replaced failing expansion joints and resurfaced lanes on a one-mile section of the freeway. Despite the extensive closures, backups rarely extended more than two miles from the I-5/I-90 interchange, a location renowned as one of the worst bottlenecks in the country.

WSDOT closes three scenic Cascades routes for the season

WSDOT closed Chinook Pass, Cayuse Pass, and the North Cascades Highway for the season on December 15. After reviewing the snowfall accumulations and the forecast for more snow later in the week, WSDOT maintenance crews and avalanche forecasters agreed that the avalanche risk was too great to keep these seasonal highways open. Every year, WSDOT closes each pass for the winter due to high avalanche risk and hazardous driving conditions. All three passes have numerous slide areas that pose significant dangers to travelers, WSDOT maintenance crews, and park staff. The combination of avalanche danger, mountainous terrain, lack of cell phone service, inclement weather, and the low number of vehicles, make driving these passes in the winter a potentially hazardous endeavor. If drivers get stranded, it might be many hours before anyone could find them. In addition, on December 12, WSDOT closed SR 504 at Hummocks Trail, east of Coldwater Lake, for the season.

SR 410 Chinook Pass

Special feature: The Making of a Project

A review of the major phases of a WSDOT highway construction project

Strong highway connections drive Washington's economy. To ensure the network meets personal and business needs, it is also necessary to develop strong communication between WSDOT and the state's citizens. In addition to the accountability standards presented in the *Gray Notebook*, this article aims to further explain the highway construction process. A highway project, from concept through construction, is a complex process that involves time, money, expertise in many areas and citizen involvement. This article outlines major elements of the road construction process, some of which occur concurrently. As you read, look for key phrases in ***bold***: they will help you relate the process discussed with the milestones tracked for all Nickel and TPA projects. Full definitions of those milestones are found on pages 66-67.

First identify the road's deficiency

WSDOT's Capital Improvement and Preservation Program is a rolling 16-year plan for addressing highway preservation and improvements, rail infrastructure, facilities, traffic operations, ferries, and local programs. Once WSDOT identifies and prioritizes transportation needs, the Governor proposes a budget listing the highest priority projects to the Legislature.

WSDOT is required by the Legislature (in RCW 47.05) to select projects and services according to factual need. When a highway deficiency has been identified, WSDOT begins the process of evaluating alternative solutions to find the most environmentally acceptable solution that provides the maximum improvement in performance for the funds available – the biggest bang for the taxpayers' buck. When the ***project definition is complete***, WSDOT has developed a preliminary picture of what a project will achieve and generally how WSDOT will accomplish the work.

WSDOT might learn of a problem with a roadway, or other aspect of transportation infrastructure such as a bridge, in many different ways. Here are just a few:

- WSDOT data analysts in headquarters might notice a pattern of safety problems that need correcting;
- a WSDOT crew might see a problem during standard maintenance review;
- a constituent might bring a problem to legislator, who in turn sponsors a bill to fund a construction project;
- local civic or county entities might bring a problem to a WSDOT regional office.

For more detail in how WSDOT defines project needs after identifying a deficiency, look through the Completed Projects section (pages 70-80). Project titles can be deceptively simple: 'roadside safety improvement' might mean installing several miles of guardrail, removing objects so vehicles that leave the road are less likely to collide with something solid, even regrading steep slopes. For examples of the kinds of problems faced in maintaining roads, turn to the Highway Maintenance article on pages 17-19.

Planning begins

WSDOT develops projects that will meet meet federal and state standards while meeting the overall needs of the transportation system: supporting economic vitality and improving the safety, security, and mobility of people and freight.

Once a highway problem or need is identified, the next step is to define the project's purpose. Planners identify and evaluate various designs to find the most cost-effective and environmentally acceptable solution, then define the scope of the proposed solution with a cost estimate and cost-benefit analysis. The project summary, which documents the results of the process, has three components: the project definition, design decisions summary, and environmental review summary.

Transportation planning, and project scoping and programming, are driven to a large extent by federal and state requirements. These requirements protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and planned growth and economic development patterns at state and local levels. Other goals include improving the ways in which roads connect with other transportation modes serving both people and freight, and promoting efficient system management and operation.

Planning projects is a collaborative process that involves feedback from other organizations and stakeholders (see box below), so their input can be incorporated into the project specifications. Planning often involves negotiations with others, including the public, about traffic impacts, environmental mitigation and long-term use considerations.

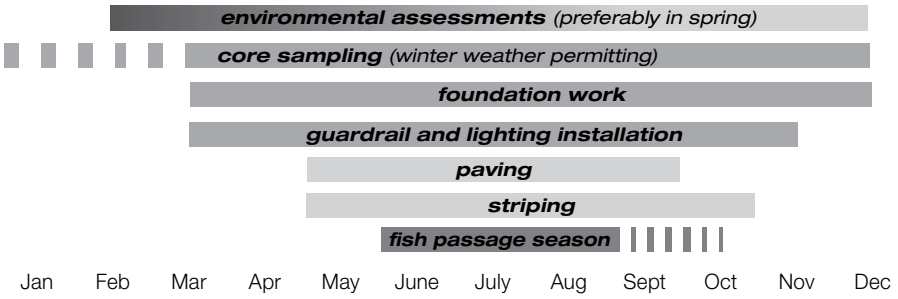
WSDOT design partners

Metropolitan Planning Organizations (MPOs)	Ports and Railroads
Regional Transportation Planning Organizations (RTPOs)	US Forest Service
Transit agencies	US National Park Service
Other transportation providers	Tribes
	Cities
	Counties

A review of the four major phases of a WSDOT highway construction project

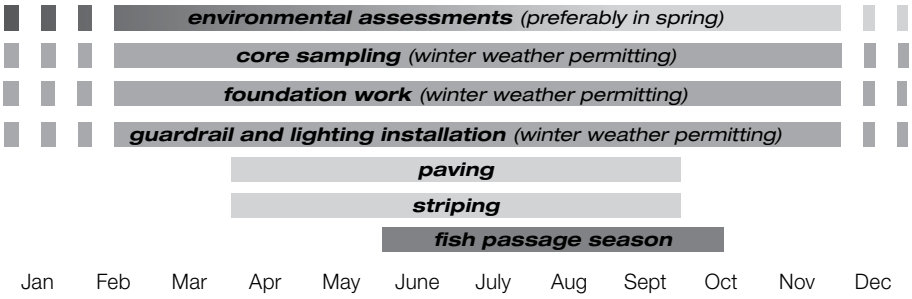
Eastern WA construction season

All work weather permitting; fish passage season dependent on stream/shore location of work



Western WA construction season

All work weather permitting; fish passage season dependent on stream/shore location of work



Timing is everything...

When WSDOT is ready to move a project from the drafting table to the construction site, the project planning team are already carefully studying the calendar. Weather, particularly winter's deep freeze and annual rainfall patterns, affects most of the tasks WSDOT and its contractors must undertake to build and maintain highways, roads, and bridges.

WSDOT will plan a project's ***advertisement date*** with the construction season in mind. If an ad date is missed, other aspects of the construction plan must be juggled to keep the project on track if it is to meet the operationally complete milestone date. The Advertisement Record and Projects To Be Advertised tables (pages 59-65) track the important milestones that show WSDOT will be able to meet the coming construction season with projects ready to roll.

The design phase: from the drawing table to construction documents

Beginning preliminary engineering marks the start of project design, and is usually the first capital spending activity in a project's timeline. In the design phase, WSDOT's designers and engineers at headquarters and the regional offices craft a good value for money solution to the deficiency and prepare the contract specifications. All phases of a project are interdependent and overlapping and the design process is always affected by the planning and construction phases, which can cause a revision of the design at any time when new and unexpected challenges are identified. For each project, WSDOT's designers:

- Define and evaluate design alternatives
- Devise strategies to minimize impacts and maximize benefits
- Identify right of way needs
- Develop plans, specifications and estimates

WSDOT designers conduct their work using standard principles to guide them, many of which can be found in the WSDOT design standards manual (http://www.wsdot.wa.gov/Publications/Manuals/M22-01.htm). Each project design effort holds among its prime objectives to:

- Optimize safety for the user and the community
- Design in harmony with the community, and preserve the environmental, scenic, aesthetic, historic, and natural resource values of the area
- Design and build with minimal disruption to the community
- Ensure efficient and effective use of the resources (time, budget, community) of all involved parties.

Furthermore, good design engages with stakeholders at the federal, state, and local levels and solicits input for how design choices will impact them in order to assist the development of a most beneficial design for all. Feedback is commonly received on issues such as safety, environment, land use, aesthetics, traffic maintenance, impact to businesses and residents, disabled access, and bicycle and pedestrian concerns.

As needed preconstruction work and solutions are identified, WSDOT's design team is charged with concurrently addressing some issues before construction begins and before design work is completed, such as identifying federal, state and local jurisdictions and requirements, acquiring right of ways, negotiating with utilities, negotiating permit requirements, and acquiring environmental approvals with an eye towards improving conditions while mitigating impacts to the environment.

Special feature:
The Making of a Project

A review of the four major phases of a WSDOT highway construction project

Dedicated specialized support

Within the WSDOT Design Office, the Strategic Analysis Estimating Office provides technical support with estimates, risk analysis, value engineering, and project development support to WSDOT headquarters and regional offices. The group also serves as a resource for project offices navigating the areas of cost risk, value engineering, estimating, project development support and training.

Value Engineering

In the Value Engineering (VE) process, WSDOT reviews a project's features and looks for ways to improve quality, minimize impacts, foster innovation, and lower costs. A VE study takes about five days and involves a multidisciplinary team such as planning and right-of-way staff, citizens, and environmental specialists. If the study is done during the design phase, then the team might be composed of construction, design, traffic, and maintenance staff.

Cost Risk Assessment (CRA) and CEVP®

Risk management is an integral part of the WSDOT project management process. Both Cost Risk Assessment (CRA) and Cost Estimate Validation Process® (CEVP) processes are used to conduct project risk assessments. CEVP is used for projects over $100 million, and CRA is used for projects valued between $25 million and $100 million.

Permitting & other pre-construction elements

While other design and planning tasks are being conducted, and before construction can fully begin, WSDOT has other tasks to complete.

Environmental requirements

Federal and state environmental regulations require documentation and disclosure of environmental impacts resulting from the construction and operation of WSDOT facilities. The rules under the State Environmental Policy Act (SEPA) outline the documentation requirements for all WSDOT projects. When the action involves federal funds, lands, or permits, compliance with the National Environmental Policy Act (NEPA) is also required. The level of environmental documentation varies; acquiring permits can take anywhere from two to 22 months depending on the impacts and the complexity of the project.

WSDOT identifies potential environmental issues, permits, and approvals early in the planning and design process. Projects may require one or more of 57 possible authorizations from federal, state, or local agencies. Authorizations can begin after the federal and state ***environmental documentation processes are complete*** and the design has been advanced sufficiently to give the permitting agencies the necessary project details.

Before & during: environmental compliance

In addition to environmental issues addressed during the design and planning phases, WSDOT is responsible for ensuring the construction site complies with all environmental protection requirements. To learn more, turn to pages 38-46 in this *Gray Notebook*, and read the NEPA article examining a 'typical' project's environmental challenges in GNB 33 next quarter.

Cultural resources issues

WSDOT must comply with state and federal laws that apply to sites and historic structures. Throughout the development of projects, WSDOT consults with Native American tribes, the Washington Sate Historic Preservation Officer (SHPO), federal agencies, and the public to meet environmental requirements. WSDOT developed a progressive tribal consultation model (www.wsdot.wa.gov/Environment/Tribal/default.htm) to streamline requirements for a thorough, holistic review.

Right-of-way acquisition

The ***right-of-way certification*** process is an important part of many WSDOT projects in which existing property is not sufficient to expand a project. The intent of these laws is to assure fair and equitable treatment of property owners and tenants, and to encourage and expedite acquisitions by negotiations.

The process allows for notification, appraisal, negotiations, and potential condemnation if an agreement is not reached. With many property owners often involved in one project, this part of the process can result in delays. Other challenges that can arise include increased costs due to zoning changes, funding delays, condemnations and property value inflation; hold-out property owners, slow utility coordination and coordination issues between design engineers and right-of-way plan development. See page 103 for more on right-of-way issues.

Utilities

Some projects require relocating utilities or negotiating with railroads. When a WSDOT project impacts utility facilities, it is obligated to pay for the relocation cost and replacement. Typically, the utility performs the work and the state covers the cost. Formal agreements with railroads are typically required for construction projects taking place within railroad property and negotiations require extended time and effort to complete, taking up to one year. See page 102 for more on utilities.

Changing standards: seismic, federal, state

Periodically, across the nation transportation standards are updated. For example, the Minnesota bridge disaster in 2006 led to seismic retrofits that previously were not anticipated. This increased the quality of construction oversight on bridges.

A review of the four major phases of a WSDOT highway construction project

Construction begins

The State Construction Office strives for consistent, cost-effective, quality construction of WSDOT projects through a process that involves collaboration with contractors and oversight of their work. The Construction Office coordinates the development of policies and standards, provides training, guidance, oversight, technical expertise and advocacy, introduces innovation, and coordinates and shares information on construction issues.

The construction process begins after the plans, specifications and estimates for a project are complete and property and permits required for construction have been secured.

The process begins with public notification that WSDOT is ready to accept bids for a project. The bidding documents describe the work needed for the approved project; the lowest qualified bidder that meets the project specifications is selected.

After a bid is accepted, the WSDOT project engineer meets with the contractor to discuss components of the construction, including schedule, cost, safety, traffic impacts, environmental programs, utilities, and permitting involved in the project. The project engineers strive to create an environment that encourages a cooperative approach to completing the project. This can be helped by developing a team consisting of both the contractor's and WSDOT's project staff.

Additional approvals or permits may be needed during construction if an issue that was not foreseen during project development is encountered. This could occur, for example, if a previously unknown wetland, stream, or endangered/threatened species habitat is discovered; if a change in project design results in impacts to areas not covered by an existing environmental permit; or if a hazardous material or cultural artifact is discovered during construction.

The construction start is the date when work actually starts on building the project and activity might be seen on the site. Each contract specifies the number of working days the contractor has to complete the work. The working day clock starts on the 10th calendar day after WSDOT officially executes the contract. Work beginning on the site will depend on the weather and the nature of the work that needs to be performed.

The ***operationally complete date*** arrives when the public has free and unobstructed use of the facility. In some cases, the facility will be open, but minor work items may remain. Final contract completion is the date when all contractual work is done and all payments to contractors have been made.

At any point in the process of developing and building a project, a problem may escalate if a citizen, civic body, contractor, or other entity decides to file a lawsuit. The project may be able to continue during litigation, but if work is halted by a judge's ruling, WSDOT must comply until the case is heard and closed.

Regarding Ferries & Rail projects

In future quarters, the *Gray Notebook* will examine rail and ferry construction projects, which have challenges that can be quite different from road construction.

Under way and afterwards: How WSDOT monitors and reports

While a project is under construction, WSDOT works to maintain openness and accountability by measuring project delivery and by reporting results to the Governor, the Legislature, the public, and other interested parties. The primary publication for project reporting and accountability is in the Beige Pages of the *Gray Notebook* (see pages 48-97), which report on financial and other program management topics, and provide detailed information on key projects. Other sections of the publication address key agency functions providing regularly updated system and program performance information. WSDOT will apply the same rigorous performance and reporting standards to any future federal stimulus projects.

Once projects are complete, reporting begins on system management, focusing on issues such as Maintenance and Preservation (see pages 12-22). Additionally, some projects may be studied as part of WSDOT's ongoing Before & After safety (see pages 5-7) and congestion relief studies (see the September 2008 *Gray Notebook 31*, pages 10-56), or used as a resource for pavement noise and other environmental studies.

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Americans with Disabilities Act (ADA) Information

Persons with disabilities may request this information be prepared and supplied in alternate formats by calling the Washington State Department of Transportation at (360) 705-7097. Persons who are deaf or hard of hearing may call Access Washington State Telecommunications Relay Service by dialing 7-1-1 and asking to be connected to (360) 705-7097.

Civil Rights Act of 1964, Title VI Statement to Public

Washington State Department of Transportation (WSDOT) hereby gives public notice that it is the policy of the department to assure full compliance with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and related statutes and regulations in all programs and activities. Persons wishing information may call the WSDOT Office of Equal Opportunity at (360) 705-7098.

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
- 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 http://www.wsdot.wa.gov

For this or a previous edition of the *Gray Notebook*, visit www.wsdot.wa.gov/accountability

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