



**Washington State
Department of Transportation**

The Gray Notebook

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

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Secretary of Transportation



2001-2011
A decade of transparency



GNB 41



**Quarter ending
March 31, 2011
10th Anniversary
Edition**

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In this edition

- Annual Reports
 - Safety Rest Areas
 - Post-Winter Highway Maintenance
 - Ferries Vessel & Terminal Preservation
 - Traveler Information
 - Water Quality
 - Wetlands Protection
 - Freight/CVISN



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 - Highway System
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Executive Summary



On this quarter's cover (from top):

New guardrail lines SR 203, helping reduce run-off-the-road collisions.

WSDOT's incident response team serves motorists in tight spots.

A stormwater infiltration pond filters polluted water running off the highway before it can reach groundwater.

Freight volumes have improved in Washington, marking a slow recovery from recession.

Officials cut the ceremonial ribbon at the Sound Transit Mountlake Terrace Freeway Station.

This page: April snow and May avalanches have delayed the crews clearing the North Cascades Highway, making this spring the latest opening date since 1974.

Performance highlights in this edition of the *Gray Notebook*

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

The *Gray Notebook* celebrates the publication's tenth year as WSDOT's primary transportation system performance report with a short article highlighting then-and-now performance measures (see page 96).

Reports for the quarter ending March 31, 2011

This edition of the *Gray Notebook* presents information on WSDOT's performance for the quarter ending March 31, 2011, as well as eight annual and two semi-annual reports. Selected highlights from this edition include:

- **Analysis of the five most frequent collision types shows WSDOT safety initiatives contribute to lower collision rates by up to 23%.** The agency's ongoing focus on run-off-road and intersection collisions includes outreach to Washington counties. (*Focus on Highway System Safety Programs*; pp. 6-8)
- **Truck freight volumes on Washington highways are slowly returning to pre-recession levels.** WSDOT's innovative truck bottleneck identification project will help identify choke-points across the state. The report covers all modes: roads, air, marine, and rail. (*Trucks, Goods & Freight Annual Report*; pp. 42-50)
- **WSDOT constructed 202 stormwater management facilities in 2010**, which help prevent polluted runoff from entering natural bodies of water. WSDOT also completed 100% of scheduled inspections required by its stormwater pollution prevention plans. (*Water Quality Annual Report*; pp. 32-37)
- **WSDOT's 68 wetland mitigation sites produced 9% more acreage than required**, and developed three mitigation banks generating around 300 credits, of which 100 remain for future projects. WSDOT protects and maintains wetland mitigation sites in perpetuity. (*Wetlands Protection Annual Report*; pp. 38-40)
- **Around 22.3 million travelers used WSDOT's safety rest areas in 2010**, up 2.5% from the previous year. The level of service score remains at 'B-' for the second year. (*Safety Rest Areas Annual Safety and Preservation Reports*; pp. 9-10, 12-14)
- **Even with record-setting rain, snow, and low temperatures, WSDOT maintained an 'A' level of service score for winter road conditions.** Heavy snow in the passes contributed to higher costs for deicer, plowing, and avalanche control. (*Highway Maintenance Annual Post Winter Report*; pp. 15-17)
- **As of March 31, 2011, WSDOT has delivered a total of 300 Nickel and Transportation Partnership Account (TPA) projects valued at \$4.1 billion**, on target with the funding provided in the 2010 Supplemental Transportation Budget. Within the quarter ending March 31, 2011, WSDOT had completed three projects, and 48 projects were under construction; an additional six projects are scheduled for advertisement by September 30, 2011. (See the *Beige Pages* for a quarterly report of WSDOT's *Capital Project Delivery Program*; pp. 57-87.)
- **219 American Recovery and Reinvestment Act (Recovery Act) highway projects were awarded to contractors by the end of March 2011, including 190 that have been completed.** The *Special Report* includes employment data through March 2011, and discusses how Washington's Recovery Act projects are creating and preserving jobs. (pp. 54-56)

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6 :: Collisions involving intersections and run-off-the-road crashes are discussed in the **Highway System Safety Programs Focus Report.**

9 :: Data analyzed in the **Safety Rest Areas Annual Reports** show that visitor numbers rebounded in 2010.

15 :: WSDOT maintained an 'A' level of service despite difficult weather – see the **Annual Post Winter Report.**

18 :: 85% of WSDOT's ferry terminals are in good or fair condition; vessel condition is also discussed in the **Ferry Vessel & Terminal Preservation Report.**

22 :: The **Traveler Information Annual Report** notes that web traffic to the agency's site increased 4% in 2010 over 2009.

32 :: WSDOT's new commitments in stormwater management and reporting are discussed in the **Water Quality Annual Report.**

38 :: WSDOT preserves and maintains 183 wetland sites, discussed in the **Wetlands Protection Annual Report.**

42 :: The **Trucks, Goods & Freight Annual Report** features a special report on new truck bottleneck research. It also addresses rail, marine, and air freight.

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Linking Performance Measures to Strategic Goals

This table illustrates the alignment of WSDOT's performance measures with the six statewide transportation policy goals and the WSDOT strategic business plan, *Business Directions*. For more information on navigating the WSDOT information stream, please see pages 97-98.

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

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

Key WSDOT performance measures	Reporting cycle	Last Gray Notebook report
Number of traffic fatalities	annual	GNB 38, p. 5
Rate of traffic fatalities per 100 million miles traveled	annual	GNB 38, p. 6
Percent reduction in collisions before and after state highway improvements	annual	GNB 38, p. 7
Number of recordable workplace injuries and illnesses	annual	GNB 41, p. 4

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

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

Key WSDOT performance measures	Reporting cycle	Last Gray Notebook report
Percent of state highway pavement in fair or better condition	annual	GNB 40, pp. 12
Percent of state bridges in fair or better condition	annual	GNB 38, pp. 12
Percent of targets achieved for state highway maintenance activities	annual	GNB 40, pp. 19
Number of ferry vessel life-cycle preservation activities completed	annual	GNB 41, p. 20
Percent of ferry terminals in fair or better condition	annual	GNB 41, p. 18

State policy goal: Environment Enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment.

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

Key WSDOT performance measures	Reporting cycle	Last Gray Notebook report
Conformance of WSDOT projects and programs with environmental legal requirements	annual	GNB 40, pp. 40-41
Number of fish passage barriers fixed and miles of stream habitat opened up	annual	GNB 40, pp. 38-39
Number of WSDOT stormwater treatment facilities constructed or retrofitted	annual	GNB 41, p. 34
Number of vehicle miles traveled	annual	GNB 39, p. 10

Transportation-related greenhouse gas emissions (measure to be developed)

State policy goal: Mobility (Congestion Relief) To provide for the predictable movement of goods and people throughout the state.

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

Key WSDOT performance measures	Reporting cycle	Last Gray Notebook report
Travel times and hours of delay on the most congested state highways	annual	GNB 39, p. 10
Reliable travel times on the most congested state highways around Puget Sound	annual	GNB 39, p. 11
Percentage of commute trips while driving alone	annual	GNB 38, p. 31
Average length of time to clear major incidents lasting more than 90 minutes on key highway segments	quarterly	GNB 41, p. 24
Ferry ridership	quarterly	GNB 41, p. 26
Ferry trip reliability	quarterly	GNB 41, p. 27
Percent of ferry trips on time	quarterly	GNB 41, p. 28
Amtrak <i>Cascades</i> ridership	quarterly	GNB 41, p. 29
Percent of Amtrak <i>Cascades</i> trips on time	quarterly	GNB 41, p. 30

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

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

Key WSDOT performance measures	Reporting cycle	Last Gray Notebook report
Capital project delivery: on time and within budget	quarterly	GNB 41, pp. 57-67
Recovery Act-funded project reporting	quarterly	GNB 41, pp. 53-55

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

WSDOT business direction and key performance measures

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

Current Gray Notebook report on Freight GNB 41, pp. 42-50

Performance Dashboard



Policy goal/Performance measure	Previous reporting period	Current reporting period	Goal	Goal met	Progress	Comments
Safety						
Rate of traffic fatalities per 100 million vehicle miles traveled (VMT) statewide (annual measure, calendar years: 2008 & 2009)	0.94	0.87	1.00	✓	↑	The rate of highway fatalities continues to decline (a lower rate is better)
Rate of strains and sprains / hearing-loss injuries per 100 WSDOT workers ^{1, 7} (calendar quarterly measure: Q4 2010 & Q1 2011)	2.5/ 0.5	3.4/ 0.5	2.4/ 0.4	—	↓	Both strains/sprains and hearing loss were well over their goals for the quarter and for the year
Preservation						
Percentage of state highway pavements in fair or better condition (annual measure, calendar years: 2008 & 2009)	94.7%	93.0%	90.0%	✓	↔	Recovery Act-funded projects helped with backlog, but does not address all long-term needs
Percentage of state bridges in fair or better condition (annual measure, fiscal years: 2009 & 2010)	97.0%	98.0%	97.0%	✓	↑	Recovery Act funds contributed to increase in Good/Fair rating
Mobility (Congestion Relief)						
Highways: annual weekday hours of delay statewide at maximum throughput speeds ² (annual measure: calendar years 2007 & 2009)	32 million	25 million	N/A	N/A	↑	Reduction of 21% driven by both reduced demand due to the economy and increased capacity
Highways: Average clearance times for major (90+ minute) incidents on 9 key western Washington corridors ⁷ (quarterly: FY11 Q1, FY11 Q2)	168 minutes	159 minutes	155 minutes	—	↑	Two extraordinary (6+ hour) incidents and seasonal weather affected the program's average clearance time this quarter
Ferries: Percentage of trips departing on time ^{3, 7} (quarterly, year to year: FY10 Q3, FY11 Q3)	91.5%	95%	90%	✓	↑	Performance is lower than one year ago, higher than previous quarter
Rail: Percentage of Amtrak <i>Cascades</i> trips arriving on time ^{4, 7} (quarterly, year to year: FY10 Q2, FY11 Q2)	59.1%	53.7%	80%	—	↓	WSDOT and Amtrak continue to evaluate projects and other means to improve on-time performance
Environment						
Cumulative number of WSDOT stormwater treatment facilities constructed or retrofitted ⁵ (annual measure: calendar years 2008 & 2009)	Over 800	Over 1,037	N/A	N/A	↑	Stormwater facilities will now be constructed under a new permit, with new requirements
Cumulative number of WSDOT fish passage barrier improvements constructed since 1990 (annual measure: calendar years 2008 & 2009)	226	236	N/A	N/A	↑	Ten additional retrofits were completed in 2009
Stewardship						
Cumulative number of Nickel and TPA projects completed, and percentage on time ⁷ (quarterly: FY11 Q1, FY11 Q2)	296/ 90%	300/ 89%	90% on time	—	↑	Performance decreased slightly from previous quarter, did not meet goal ⁸
Cumulative number of Nickel and TPA projects completed and percentage on budget ⁷ (quarterly: FY11 Q1, FY11 Q2)	296/ 94%	300/ 94%	90% on budget	✓	↔	Competitive bidding and construction environment contribute to controlling costs ⁸
Variance of total project costs compared to budget expectations ^{6, 7} (quarterly: FY11 Q1, FY11 Q2)	under-budget by 1.0%	under-budget by 1.0%	on budget	✓	↔	Total Nickel and TPA construction program costs are within 1% of budget ⁸

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

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

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

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

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

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

6 Budget expectations are defined in the last approved State Transportation Budget.

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

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

Contributors

The work of many people goes into the writing, editing, and production of the Gray Notebook every quarter. This list of contributors reflects the efforts of data analysts, engineers, project leads, and many more individuals behind the scenes.

Information is reported on a preliminary basis as appropriate and available for internal management use; it is subject to correction and clarification. On-line versions of this publication are available at www.wsdot.wa.gov/accountability/

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Safety

Statewide policy goal

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

WSDOT's business direction

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



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Earlier articles concerned with safety

- Pedestrian & Bicyclist Safety GNB 40
- Highway Safety, GNB 38

Worker Safety

2011 Injury and Illness Rates

Worker Safety Highlights

Injuries and illnesses among WSDOT employees increased 14% year-on-year, but are 8% down quarter-on-quarter.

WSDOT continues work on implementing a comprehensive hearing loss prevention program.

WSDOT's risk factor, which affects the calculation of the agency's insurance premiums, is the lowest in five years, although premium amounts may remain higher than last year.

OSHA-recordable injuries and illnesses increase year on year

The number of OSHA-recordable injuries to WSDOT employees in the first calendar quarter of 2011 (January 1-March 31) increased compared to one year ago, although there were fewer injuries than last quarter (October 1-December 31). First quarter injuries in 2011 numbered 94, 14% more than the 81 recorded in the first quarter of 2010, and 8% fewer than the 102 recorded in the last quarter of 2010.

The number of sprain/strain injuries, as a subset of all injuries and illnesses, also increased: 55 in the first quarter of 2011, 28% more than the 43 in the first quarter of 2010, and 7.8 % more than the 51 sprains/strains reported last quarter. The sprain/strain rate per 100 workers for the current quarter is 2.7, 0.6 lower than the previous quarter's rate of 3.3. The table below shows current quarter performance against the previous quarter and the same quarter a year ago.

Workdays lost to strains/sprains injuries increases

WSDOT workers lost 834 days away from work due to all injuries and illnesses, an increase of 26% from the 661 workdays lost in the fourth quarter of 2010. Sprain/strain injuries were associated with 639 of those lost workdays, 18% more than the 542 such injuries reported the same quarter in 2010 and 65% more than the 388 in the fourth quarter of 2010.

Regional progress towards goals

Southwest Region is the only region currently on track to meet the 2011 sprain/strain injury reduction goal. Only WSDOT Headquarters has completed its annual hearing tests; other regions are conducting, but have not yet completed, testing. At the end of the first quarter, North Central Region and the Ferry System are not currently on track to meet the hearing loss reduction goal for 2011.

Analyzing first quarter strain/sprain injury results

Ergonomics-related sprains and strains made up about 38% of such injuries this quarter, and were sustained mostly by WSDOT maintenance workers (75%). Investigations into the causes of these injuries indicate that they are the result of performing many different tasks at several different locations throughout the day; no one task is responsible for a majority of these injuries. The nature of physical work can break down components of the musculoskeletal system over time. By the time an injury eventually occurs, the most recent task may not be the true, or only, cause of the injury.

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

Quarter 1 (January 1-March 31, 2011) cumulative results and injury reduction goals

Organizational unit	CY 2010 results	Rate of injuries in Q1 CY 2011	Cumulative rate for CY 2011	CY 2011 goal	On-track to achieve CY 2011 goal?
Northwest Region	3.3	3.2	3.2	2.2	No
North Central Region	2.0	8.9	8.9	2.2	No
Olympic Region	2.6	2.8	2.8	2.2	No
Southwest Region	2.5	0.9	0.9	2.2	Yes
South Central Region	1.2	6.2	6.2	2.2	No
Eastern Region	4.6	3.7	3.7	2.2	No
All regions combined	2.9	3.7	3.7	2.2	No
Headquarters	0.8	0.6	0.6	0.4	No
Ferry System	3.8	5.0	5.0	4.7	No
Agency-wide	2.7	3.4	3.4	2.4	No

Data source: WSDOT Safety Office.

Injury Rates / Hearing Loss Prevention

To address these complex ergonomics-related injuries WSDOT works with its on-staff ergonomist and line managers to identify, evaluate, and mitigate job-tasks that contain ergonomics-associated risks. The goal is to eventually mitigate all job-task risks that can contribute damage to the musculoskeletal system. Tasks that have already been mitigated include those involving lifting, repetitive motions, and awkward postures, and have produced positive effects such as a drastic reduction in injuries sustained by WSF ticket sellers.

The balance of the strain/sprain injuries among employees this quarter are mostly the result of slips, trips, and falls (30%), and vehicle accidents (23%). Analysis of these injuries reveals that the majority should have been prevented: slipping on wet and icy surfaces, tripping, jumping off vehicles, and not following work procedures.

WSDOT's comprehensive anti-sprain and strain campaign includes the use of pre-activity safety plans, ergonomics training and the ongoing reduction of risk factors, and the promotion

WSDOT hearing loss injury rates per 100 workers by organizational unit

Quarter 1 (January 1-March 31, 2011) cumulative results and goals

Organizational unit	CY 2010 results	Rate of injuries in Q1 CY 2011	Cumulative rate for CY 2011	CY 2011 goal	On-track to achieve CY 2011 goal?
Northwest Region	0.3	0.0	0.0	0.4	Yes
North Central Region	2.4	3.0	3.0	0.4	No
Olympic Region	1.0	0.0	0.0	0.4	Yes
Southwest Region	0.6	0.0	0.0	0.4	Yes
South Central Region	1.4	0.0	0.0	0.4	Yes
Eastern Region	0.5	0.0	0.0	0.4	Yes
All regions combined	0.8	0.2	0.2	0.4	Yes
Headquarters*	0.1	0.0	0.0	0.0	Yes
Ferry System	1.2	1.7	1.7	0.4	No
Agency-wide	0.7	0.5	0.5	0.4	No

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

WSDOT's hearing loss prevention strategies

Hearing loss continues to be WSDOT's second most frequent injury/illness. Aside from the effect on the employees' quality of life, hearing loss injury compensation is an expensive burden on the state. Since 2007, WSDOT has had about 200 OSHA-recordable hearing loss cases and paid almost \$250,000 for about 30 hearing loss workers' compensation claims.

While occupational-noise-induced hearing loss is 100% preventable, recent studies have shown that occupational noise accounts for only about 10% of hearing loss in the United States. As the Boomer generation approaches retirement age, hearing loss claims can be expected to rise in both number and cost. Nearly 40% of 60-year-olds not exposed to workplace noise qualify as "hearing impaired," but Washington courts do not allow consideration for the effects of aging on hearing (the largest contributor to hearing loss) in workers' compensation claims. WSDOT is implementing a hearing loss prevention program to protect employees, to limit workers' compensation liability, and to be effective stewards of taxpayer funding.

Basic elements of a hearing loss prevention program

1. Training on the hazards of noise and how to protect oneself.
2. Annual audiograms (hearing tests) to monitor the status of hearing and take corrective action to prevent further loss when indicated.
3. Noise studies (noise dose metering or "dosimetry") to establish which employees are exposed to hazardous levels of noise and who should be included in the program, and to determine appropriate levels of hearing protection.
4. Selection and provision of proper hearing protection to the employees in the program.

WSDOT is developing a mandatory 90-minute hearing conservation training program for employees whose work exposes them to noise, and has already established a reimbursement program for custom molded hearing protection. More details will be presented in the next quarter's *Gray Notebook*.



Worker Safety

Worker Compensation Update / Wellness Programs

of daily stretching and flexing and other wellness activities. WSDOT expects workers to do their part in performing their work safely, while supervisors are expected to ensure that staff plan their work properly, and to discipline workers who do not follow the precautions put in place to help ensure their safety.

Number of OSHA-recordable injuries sustained by category of worker

January 1-March 31, 2011 (Quarter 1, calendar year 2011)

Injuries	Highway maintenance	Highway engineering	Admin staff	Ferry system
Number of injuries Jan-Mar 2011	48	9	5	32
Percent of all injuries these number represent	51%	10%	5%	34%
Total days away from work associated with these injuries	231	47	7	549
Days away due to sprains/strains	194	47	7	391

For comparison

Number of injuries Oct-Dec 2010	51	9	3	39
Number of injuries Jan-Mar 2010	37	9	8	27

Data source: WSDOT Safety Office.

WSDOT's Worker Compensation Experience Factor and premium assessment

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

WSDOT's experience factor has improved considerably over the past five years due to a number of factors including: claim frequency (how many claims are filed), claim severity (the expense of claims), and worker hours (the time exposed to hazards).

WSDOT insurance premiums vs. experience factor

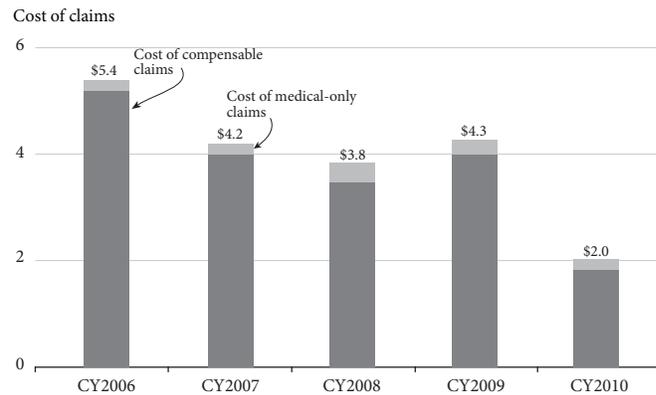
2007 - 2011

Calendar year	Experience factor	Premium
2007	0.9917	\$6,404,450
2008	1.0622	\$8,565,132
2009	0.8949	\$7,068,478
2010	0.8539	\$7,645,234
2011	0.7294	\$7,700,000*

Data source: WSDOT Human Resources Office,
*Estimated cost, actual cost will depend on the number of hours worked.

Cost of L&I claims, 2006-2010

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



Data source: WSDOT Safety Office.

Data notes:

Medical-only claims are claims for which the payments are for medical costs only and claimants missed 3 or fewer days of work, excluding the day of injury or illness.

Compensable claims are claims with medical costs plus costs for wage replacement benefits and/or disability and pension; claimants missed more than 3 days of work, excluding the day of injury or illness. This is a snapshot of costs incurred through 1/31/2011. Additional charges to these claims may apply.

WSDOT's premiums are calculated by multiplying the experience factor to the industry rate(s) established by L&I.

As an insurance system, the overall workers' compensation premiums for a year are intended to cover the lifetime costs of all claims that will occur during the year. L&I considers several factors in determining the overall rate and the rates for each risk class. These include: frequency of long-term disability claims and lifetime pensions, estimated income from investments, and the industry risk class experience. Because the rates for WSDOT's assigned risk classes increased, overall premiums have increased despite the improved experience factor for 2011.

WSDOT Wellness Activities

Health Risk Assessments

The employee health risk assessment (HRA) is a questionnaire that employees take every calendar year to find out more about their own health. Every year, all state employees who have health benefits through the Public Employees Benefits Board are encouraged to take their HRA online through their PEBB health plan. For 2010, WSDOT ranked 24 out of 83 state agencies, the highest completion ranking it has achieved – and the highest ranked large agency.

Highway System Safety Programs

Introducing expanded reporting on highway safety

WSDOT has for many years reported on highway safety improvements and results in the *Gray Notebook* as well as in other publications and on the www.wsdot.wa.gov website. The annual reports in the *Gray Notebook* have focused on important topics such as the number and location of fatal or serious injury collisions on state highways or involving cyclists, with incidental reporting on safety issues on rural routes, low cost safety improvements, or similar matters.

With this edition of the *Gray Notebook*, WSDOT will present an in-depth report on a wider variety of the department's highway system safety programs every quarter. These Quarterly Focus articles will still address the most pressing problems facing the state in its efforts to attain Target Zero – no fatal accidents on any of the state's highways – and report performance results of agency projects through its Before & After studies.

Quarterly Focus articles will also examine many additional topics of interest, such as safety projects on or near Native American tribal lands, or research into innovative pavement treatments that can help motorists steer safely back on to the road if they inadvertently leave the roadway.

Possible upcoming Quarterly Focus topics include a project aimed at identifying locations suitable for added passing lanes, due for completion in September 2011, and new projects to help improve safety at intersections with higher-than-average rates of collisions, planned for 31 locations around the state.

Highway safety program topics in future Quarterly Focus reports

This list includes the tentatively scheduled reporting edition, subject to availability of data.

- WSDOT's progress in reaching the governor's goal of zero highway fatalities (Target Zero) – *June*
- Results of Priority One safety improvements – *June*
- Highway fatalities in Washington compared to national statistics – *June*
- Roadway safety trends on or near tribal lands – *June*
- Performance results of low cost safety improvements (such as cable median barrier, rumble strips, and guard rail upgrades) – *September*
- WSDOT's strategic planning for high accident locations and corridors – *September*
- Public-private partnerships to develop new safety improvement projects that are cost-effective and serve more than one need in a community or along a state highway – *September*
- Bicycle and pedestrian safety improvements – *December*
- Bike and pedestrian fatalities and accidents in Washington compared to national safety statistics – *December*
- Safety improvement partnerships with Washington's counties and cities, the Transportation Safety Council, and the Washington State Patrol – *December*

Highway System Safety Programs

Quarterly Focus

Focus on: Run Off the Road and Intersection Collisions

Highway System Safety Programs Quarterly Highlights

WSDOT has installed 1,237 miles of shoulder rumble strips since May 2003, 2,163 miles of centerline rumble strips, 229 miles of cable median barrier, 93 miles of new guardrail and replaced about 62 miles of non-standard guardrail.

For all county roads, run-off-the-road collisions account for 54% and intersection-related collisions account for 24% of all the fatal and serious injury collisions.

This *Gray Notebook's* Quarterly Focus examines safety initiatives that address run-off-the-road and intersection-related collisions. It examines state, local, and tribal safety programs that have been implemented and are being developed to help reduce fatal and serious injury collisions in Washington and achieve Target Zero goals. (See the Highway Safety Annual Report in the June 2010 *Gray Notebook* 38, pages 5-10, for more Target Zero information.)

The first section covers the work WSDOT has delivered through various safety initiatives that contribute to reducing fatal and serious injury collisions. The second section reviews the local agency road safety program administered by WSDOT. The third section describes the further steps WSDOT is planning to implement in order to achieve the Target Zero goals.

WSDOT's initiatives to achieve safety goals

WSDOT has implemented various safety initiatives over the years to reduce run-off-the-road collisions. They include:

Shoulder rumble strips WSDOT installed 1,237 miles of shoulder rumble strips since May 2003.

Centerline rumble strips WSDOT installed 2,163 miles of centerline rumble strips since May 1996. Both forms of rumble strips notify drivers that they are leaving their lane through sound and vibration.

Cable median barrier WSDOT installed over 229 miles (1,210,900 linear feet) of cable median barrier since March 2001. These barriers reduce the potential for head-on collisions along divided highways.

Guardrail infill WSDOT installed guardrail where it did not previously exist. The agency has installed about 93 miles (488,987 linear feet) of guardrail since August 1989. This excludes locations where the guardrail was replaced.

Eliminating non-standard guardrail Non-standard guardrail refers to an older system using concrete posts spaced wider than 6'3". Commonly installed before 1970, this design pre-dates much of the current standardized crash test criteria. Twenty-three guardrail upgrade projects, between 1996 and 2009, replaced about 62 miles (325,821 linear feet) of non-standard guardrail.

WSDOT analyzes five most frequent fatal, serious, and evident-injury crashes

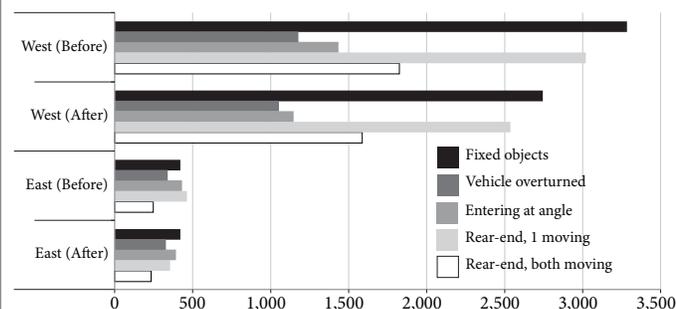
WSDOT has analyzed collision data for the five most frequent kinds of accidents to examine the effectiveness of its safety initiatives. The Before data comprises five years between 2000 and 2004, the After data includes five years between 2005 and 2009. The data was analyzed separately for eastern and western Washington, and urban and rural areas. The collision type "vehicle overturned" typically involves a vehicle that ran off the road and down a steep side slope, while "entering at angle" and "rear-end" are intersection-related.

The graph at left shows the change in collision trends for urban areas. In western Washington, data showed a reduction in collisions of between 11% and 20%; "vehicle overturned" collisions were down by 11% and "entering at angle" collisions dropped by 20%.

Eastern Washington urban areas saw collision reductions ranging from 'no change' to 23%. The frequency of

Urban Washington: Five most frequent fatal, serious, and evident-injury collision types

Number of collisions: Before data 2000-2004, After data 2005-2009



Source: WSDOT Collision Datamart, Capital Program Development and Management Office.

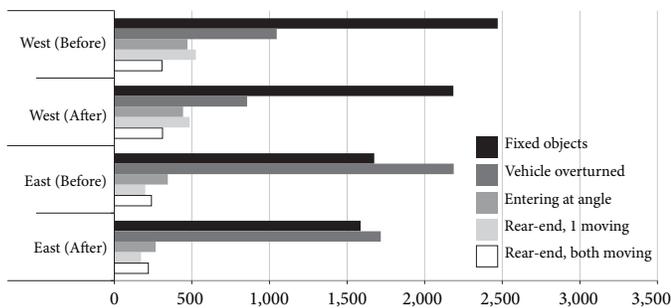
Notes: East - Eastern Washington includes WSDOT North Central, South Central, and Eastern regions. West - Western Washington includes WSDOT Northwest, Olympic, and Southwest regions.

Focus on: Run Off the Road and Intersection Collisions

“fixed-object” collisions was unchanged, while “rear-end” collisions (involving vehicles traveling in the same direction in which the leading vehicle stopped) dropped significantly by 23%. One possible reason for unchanged “fixed object” results is the addition of guardrail or concrete barriers to a road. They are intended to reduce the severity of collisions involving an

Rural Washington: Five most frequent fatal, serious, and evident-injury collision types

Number of collisions: Before data 2000-2004, After data 2005-2009



Source: WSDOT Collision Datamart, Capital Program Development and Management Office.
Notes: East - Eastern Washington includes WSDOT North Central, South Central, and Eastern regions. West - Western Washington includes WSDOT Northwest, Olympic, and Southwest regions.

unshielded object. Because they are placed closer to the roadway, they have a greater potential to be struck by an errant vehicle.

As in urban areas, Western Washington rural areas saw reductions in the top collisions types of between 7% and 18%, while “rear-end” collisions for vehicles moving in the same direction increased by 1%. “Vehicle overturned” collisions were reduced by 18% while “entering at angle” collisions dropped by 6%. Eastern Washington rural areas showed collision reductions of between 5% and 23%. “Fixed object” collisions were reduced by 5%; “overturned” and “angle” collisions dropped 21% and 23% respectively.

This analysis emphasizes how the different safety initiatives employed by WSDOT, along with other external factors, have helped reduce the fatality, serious, and evident injury collision across the state highway system.



New guardrail lines SR 203, improving a 24-mile stretch of highway between Fall City and Monroe.

Local agencies target run-off-the-road and intersection-related collisions to achieve goals

Fatal and serious injury collisions are the focus of both the federal safety program (SAFETEA-LU) and Washington’s state safety program (Target Zero). These crashes were evaluated by type of collision for all 39 counties. When put together, all county roads, run-off-the-road collisions account for 54% of all fatal and serious injury collisions. Intersection-related collisions account for 24% of all fatal and serious injury collisions.

Providing funding for counties to target run-off-the-road and intersection crashes not only aligns with the Strategic Highway Safety Plan’s top two priorities, it is also the most cost-effective approach. There were 2,016 fatal or serious injury run-off-the-road crashes and 884 intersection-related crashes on county roads from 2004-2008. Run-off-the-road and intersection-related crashes constitute 77% (2,900 of the total 3,746) of all fatal or serious injury crashes that are being addressed by county safety program.

Over the next six years, \$45 million in federal funds will be available for the county safety program. These funds are being allocated proportionately between the two programs, resulting in \$31.3 million provided for run-off-the-road countermeasures and \$13.7 million provided for intersection-related countermeasures on county roads, based on the crash rate per mile for both run-off-the-road and intersection-related crashes.

WSDOT works with counties to develop low-cost solutions that address run-off-the-road crashes

WSDOT works closely with counties to develop proposals for low-cost solutions that aim to address as many miles of the roadway system as possible with the funds available. This risk-based approach acknowledges that fatal and serious injury crashes tend to be more random in nature on county roads.

County proposals for the roads to be addressed and the countermeasures to be used were discussed with WSDOT technical experts; when a proposal was agreed upon, funds were awarded. All 39 counties received a portion of the available funding for run-off-the-road crashes, ranging from \$500,000 to \$1,700,000 per county. Also based on the data-driven analysis and methodology, 36 counties received a portion of the available funding for intersection-related crashes. Funding levels range from \$250,000 to \$1,125,000 per county.

Counties were given program information in August 2010. All 39 counties now have approved safety proposals in place, and funded projects will be complete by the end of 2013.

Highway System Safety Programs

Quarterly Focus

Focus on: Run Off the Road and Intersection Collisions

WSDOT works with tribes to reduce fatalities

There are 29 federally recognized tribes located within the state of Washington. Through the Centennial Accord, the state and tribes have formally committed to working together on a government-to-government basis to address a number of common problems, including traffic safety issues. Native American reservations in Washington often include a mix of tribal, state, county, and city roads, which creates jurisdictional complexities with law enforcement, collision reporting, road maintenance, and capital safety projects.

Recent years have shown a decreasing trend in traffic-related fatalities and serious injuries in Washington. However, despite a statewide decrease of 18% in the total number of traffic fatalities between 2003 and 2009 (from 600 to 492), the number of Native American traffic fatalities remained unchanged at close to 30 annually. Further, Native Americans continue to be disproportionately represented in traffic fatalities. The fatality rate for Native Americans in Washington is 3.3 times greater than for non-Native Americans, and is high across all types of motor vehicle collisions. Significant data gaps exist, making it difficult to analyze data specific to reservations in Washington. Data serves as the critical link in identifying safety problems, selecting appropriate countermeasures, and evaluating performance.

WSDOT and the Washington Traffic Safety Commission worked closely with tribes during the recent update of Target Zero. Several partnership opportunities to address some of these issues have been identified; they include these areas:

- Working with tribes to obtain maps of all reservation roads so that WSDOT can report data specific to all reservations in the state. This will help tribes identify appropriate solutions and support funding requests.
- Working with tribal law enforcement to provide technical assistance and resources to address the under-reporting of collisions on or near reservations.
- Coordinating with tribes on state and federal funding opportunities. Over the past eight years, the WSDOT Safety Program (I-2) has funded 22 safety projects on reservation and tribal trust lands throughout the state. Three additional projects are currently programmed. WSDOT and WTSC have also offered to partner with tribes to address chronic underfunding of tribal traffic safety issues at the federal level.
- WSDOT partnered with the tribes to host two Tribal Traffic Safety Summits (May 2009 & April 2011) for outreach, education, and the identification of opportunities to collaborate.

WSDOT's next steps to achieve

Target Zero goals

WSDOT is taking further steps to reduce traffic fatalities and serious injury collisions by undertaking different low-cost high-benefit strategies. Some of the strategies noted below are already programmed or in development.

Treating side slopes The WSDOT RFIP (Roadside Features Inventory Program) team has been tasked with identifying slopes steeper than 3-to-1. The data collection will be completed by September 2011. The locations will then be analyzed for implementation of appropriate counter measures to reduce the severity of rollover and other collisions. This could mean using guardrail and other strategies to keep vehicles on the roadway.

Intersection related improvements Based on the Intersection Analysis Location (IAL) data, projects have been programmed for 31 specific locations around the state. Of them, 29 are intersection improvements while two are roundabouts.

Identifying passing lane locations The WSDOT RFIP (Roadside Features Inventory Program) team will be collecting data related to existing passing lanes by September 2011. WSDOT engineers will analyze this data and compare it to other datasets to identify locations for future passing lanes where warranted using the new 'safety analyst' software tool for implementation of appropriate counter measures to reduce the severity of head-on and other collisions. Eight passing lane projects are currently programmed.

Pavement safety edge testing During the 2011 construction season, WSDOT will test a new pavement edge treatment that can help errant vehicles safely reenter the roadway. When vehicles leave the roadway where the pavement drops off steeply, they may overcorrect when reentering the roadway. The overcorrection may lead to the vehicle swerving into oncoming traffic or rolling over.

The edge treatment will be applied on two HMA demonstration projects in different areas of the state. Besides potentially reducing the severity of run-off-road collisions, other benefits include reduced maintenance and immediate drop-off edge protection during construction. Studies in other states have found that the implementation of the pavement safety edge has minimal impact on project cost. WSDOT anticipates there will be a savings. Cost of the pavement edge shoe—one of the tools needed to form the pavement edge—is estimated at \$3,000.

After completing these projects, WSDOT will report on the pavement edge stability and durability, constructability, and operational characteristics of the pavement edge treatment, and assess whether or not to fully implement the treatment.

Safety Rest Areas Annual Safety Report

Helping address highway safety

Safety rest areas are located on the highway system to improve traveler safety by providing periodic opportunities for highway users to stop when fatigue or other distractions impact driver attention. There are 47 rest areas statewide, 28 on the interstate system and 19 on state highways.

Rest areas support the objectives and strategies of Washington's Strategic Highway Safety Plan, *Target Zero*. The vision of *Target Zero* is to reduce traffic fatalities and serious injuries to zero by the year 2030. Drowsy or fatigued drivers are in Priority Area Four, which account for less than 10% of the total highway deaths. From 2006 to 2008, the number of deaths related to drowsy drivers was 77 deaths (4.5%), which was a reduction of 10.5% from 2003-2005 numbers. Safety rest areas are considered important for highway safety at both state and national levels.

22.3 million travelers used WSDOT's safety rest areas in 2010

Rest area user data for 2010 show an increase in the number of visitors statewide over 2009. Visitor data are calculated from the amount of water used on site, fixture flow rates, and average daily traffic volumes from the highway. The total number of

Safety Rest Areas Highlights

Visitation is, on average, up 2.5% statewide for 2010 compared with 2009.

Thirteen facilities saw a gain in visitors in 2010 over 2009.

New SR-7 Elbe rest area is expected to complete construction by end of 2011.

Safety rest area visitor data

Number of visitors by rest area, change between 2009 & 2010

Total visitors statewide		2009: 21,788,596	2010: 22,348,011	Change: 559,415					
Safety rest area	County	2009	2010	Change	Safety rest area	County	2009	2010	Change
I-5 Gee Creek NB & SB	Clark	1,657,471	1,789,560	132,089	I-90 Schrag EB & WB	Adams	758,253	907,097	148,844
I-5 Toutle River NB & SB	Cowlitz	2,053,066	2,350,600	297,534	I-90 Sprague Lake EB & WB	Lincoln	1,238,185	1,240,273	2,088
I-5 Scatter Creek NB	Thurston	1,205,494	1,379,700	174,206	U.S. 2 Nason Creek	Chelan	469,881	451,257	-18,624
I-5 Maytown SB	Thurston	1,533,000	1,481,900	-51,100	U.S. 2 Telford	Lincoln	352,225	245,280	-106,945
I-5 SeaTac NB	King	1,778,280	1,747,620	-30,660	SR 8 Elma EB	Grays Harbor	413,273	337,093	-76,180
I-5 Silver Lake SB	Snohomish	270,463	337,635	67,172	SR 12 Bevin Lake	Lewis	216,704	147,632	-69,072
I-5 Smokey Point NB & SB	Snohomish	1,158,196	1,450,600	292,404	SR 14 Chamberlain Lake	Klickitat	386,157	282,100	-104,057
I-5 Bow Hill NB & SB	Skagit	1,931,233	1,979,650	48,417	SR 17 Blue Lake ¹	Grant	29,280	27,520	-1,760
I-5 Custer NB & SB	Whatcom	755,184	889,140	133,956	SR 24 Vernita	Benton	201,882	203,200	1,318
I-82 Selah Creek EB & WB	Yakima	607,782	813,333	205,551	SR 26 Hatton Coulee	Adams	78,487	56,220	-22,267
I-82 Prosser	Benton	818,484	597,870	-220,614	SR 28 Quincy Valley	Grant	140,966	145,194	4,228
I-90 Indian John Hill EB & WB	Kittitas	1,783,875	1,652,520	-131,355	U.S. 195 Horn School	Whitman	269,808	282,072	12,264
I-90 Ryegrass EB & WB	Kittitas	795,334	715,400	-79,934	SR 401 Dismal Nitch	Pacific	130,659	85,000	-45,659
I-90 Winchester EB & WB	Grant	664,300	664,300	0	SR 504 Forest Learning Center ¹	Cowlitz	90,674	88,245	-2,429

Data source: WSDOT Facilities Office.

Data note: Visitor data is estimated by tracking water usage at facilities. Eight of the 47 facilities are not included because these sites are not set up to track water usage: I-90 Travelers Rest, I-90 Price Creek EB, SR 2 Iron Goat, SR 12 Alpowwa Summit EB & WB, SR 12 Dodge Junction, SR 21 Keller Ferry, and SR 26 Dusty. "1" indicates a seasonally operated facility.

Safety Rest Areas

Annual Safety Report

Preliminary Before and After data collection / Roadside park inventory update

visitors statewide increased by 2.5% in 2010 (22.35 million users), about 559,000 more than in 2009 (21.79 million). Possible explanations for more visitors include generally lower gas prices and higher local tourism travel. As noted in WSDOT's *2010 Congestion Report*, gas prices declined in 2009 while state visitor volumes and total direct travel spending increased between 2009 and 2010 (see Washington Department of Commerce's *2011 Washington State Travel Impacts*). Also, state employment trends may have led to more local 'staycations.'

Rest areas aim to improve highway safety

Safety rest areas aim to reduce fatigue-related traffic collisions by allowing highway users more frequent opportunities to pull off the highway before fatigue sets in. Factors that could determine the use of "safety breaks" include the number of amenities, truck parking availability, and traveler knowledge of rest area locations.

Preliminary studies seek Before and After data of fatigue-related collisions near rest areas

WSDOT is currently collecting Before and After data of fatigue-related collisions near its newest safety rest areas. Fatigue-related collisions are those with officer-reported contributing circumstances of drivers being "apparently asleep" or "apparently fatigued."

Preliminary studies will consider the *2001 AASHTO Guide for Development of Rest Areas on Major Arterials and Freeways* in evaluating fatigue-related collisions in relation to safety rest areas. In these studies, WSDOT will investigate additional influences near safety rest areas such as nearby rumble strips, grade separations, or highway lighting improvements, as well as national benchmarks, best practices, and regional and local data in reducing fatigue-related collisions.

Additional stopping opportunity in 2011 – Elbe, WA

One of WSDOT's newest rest area sites is the Elbe Safety Rest Area, currently under construction on SR 7. The new facility will include five vault toilets and two waterless urinals, 12 parking spaces, interior and exterior visitor plazas, traveler information, picnic tables, benches, and landscaping. This project incorporates sustainable elements including: the reuse and adaptation of a historic Civilian Conservation Corps bunkhouse, stormwater control, bicycle storage racks, native landscaping, and energy efficient heating and lighting. The site is designed to allow for future installation of electric vehicle charging stations.

By the end of the 2011, the Elbe Safety Rest Area will serve travelers heading to and from Mount Rainier, offering skiers and

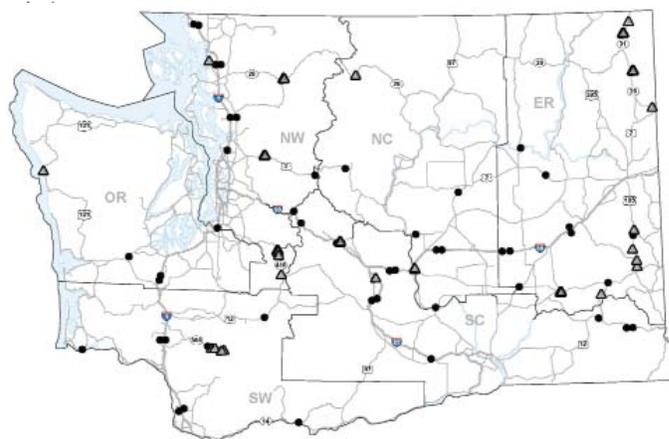
other recreational enthusiasts a stopping opportunity near the bottom of the mountain.

Roadside parks inventoried to identify additional stopping opportunities

Roadside parks and viewpoints, located mostly on state routes, offer highway users a chance to stop and rest. WSDOT recently completed an inventory to confirm the number and location of such mini-parks statewide. WSDOT currently owns 14 sites, with improvements such as paved or gravel parking areas, amenities such as picnic areas or RV parking, and recreational trails. The most important characteristic of these sites is the highway buffer

Map: WSDOT safety rest areas and roadside parks / viewpoints

Roadside parks and viewpoints marked with triangles;
Safety rest areas marked with dots



separating parking areas from adjacent roadways. An additional 13 sites with scenic views and historic markers have no highway buffer, but do provide an area to pull off the roadway.

Truck parking efforts continue

WSDOT is continuing to look for partnership opportunities to construct additional truck parking at rest areas. No additional truck parking stalls have been added since the 2009 Scatter Creek Truck Parking project which increased capacity from 20 to 37 truck stalls.



Preservation

Legislative policy goal

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

WSDOT's business direction

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



In this section

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Ferries Vessel & Terminal Preservation Annual Report	18

See also

Special Report: Federal Recovery Act-funded Projects	54
Quarterly Report on Capital Projects (Beige Pages)	57

Earlier articles concerned with preservation

Highway Maintenance, GNB 40
Asset Management: Pavement Conditions, GNB 40
Intelligent Transportation Systems, GNB 39
Asset Management: Bridge Assessment, GNB 38
Capital Facilities Annual Report, GNB 38

Safety Rest Areas Annual Preservation Report

Facility Inventory and Maintenance Condition Ratings

Safety Rest Areas Preservation Highlights

The maintenance level of service rating for WSDOT's safety rest areas remains at a B- for two years in a row.

88% of safety rest area users reported their experience as "very good" or "good."

The majority of condition ratings for safety rest area buildings and sites are either Fair-Mid or Fair-Low.

WSDOT expects to complete 104 project elements related to the *Americans with Disabilities Act* by the end of 2011.

Building replacements for SR 24 Vernita and I-82 Selah safety rest areas are under way.

Condition ratings for 43 safety rest areas

Number and percentage of safety rest areas in each category in 2010

Condition	Number	Percentage
Good (meets standards)	8	19%
Fair - High (minimal deficiencies)	7	16%
Fair - Mid (adequate condition)	11	26%
Fair - Low (multiple deficiencies)	16	37%
Poor (multiple major deficiencies)	1	2%

Data source: WSDOT Facilities Office.

Data note: Only 43 of 47 facilities were evaluated. The remaining four were not evaluated because they are fairly new, minimal-amenity facilities. All 47 are planned to be evaluated in 2012.

Safety rest areas help reduce and prevent fatigue-related collisions by providing stopping opportunities along Washington's highway system. WSDOT maintains and preserves 47 safety rest areas in order to keep them open and operational for the traveling public.

Overview of WSDOT's safety rest area facilities

Feature	Count	Feature	Count
Safety rest areas	47: 28 Interstate 19 non-Interstate	On-site sewage treatment systems	41
Acres	694	RV dump stations	20
Buildings	94	Truck parking stalls	580
On-site drinking water systems	31	Passenger parking stalls	1,560

Data source: WSDOT Facilities Office.

In 2010, a covered vending and information kiosk was converted into a coffee service building at the Indian John Hill safety rest area, increasing the statewide building inventory by one. Also, as a result of a 2010 correction to the water and sewer system inventory, there was one additional drinking water system and one additional on-site sewage treatment system included in the inventory.

Safety rest area maintenance performance rating steady at B-

The Maintenance Accountability Process (MAP) measures the outcomes of safety rest area maintenance activities. Surveys are conducted to rate the condition of the rest areas. (For more information on the MAP, see the Highway Maintenance Annual Report, *Gray Notebook 40*, page 18.) For the second year in a row, the target of a B rating was missed, achieving a rating of B-. This B- still falls within the "good" condition, which means that the rest rooms are clean, hand dryers and partitions are functional, lawns are mowed, and there is very little litter. However, the two-year decrease in janitorial services and site condition MAP scores indicate that these maintenance activities will need to be addressed to prevent further deterioration.

Majority of safety rest area facility conditions rated as Fair-Mid or Fair-Low

WSDOT conducts building and site condition assessments every two years. Condition ratings differ from MAP ratings in that they focus on evaluating building and site components, structures, and systems, and not maintenance or operational components. There are five category ratings for rest area conditions: Good, Fair-High, Fair-Mid, Fair-Low, and Poor. In 2010, the majority of rest area facilities have condition ratings in the Fair-Mid to Fair-Low categories. The next statewide assessment will be completed by January 2012, and include all areas.

Safety Rest Areas Annual Preservation Report

Facility Condition Ratings / ADA Review / Preservation Projects

The two lowest-rated facilities based on building and site condition were the eastbound Selah Creek (Fair-Low) and Vernita (Poor) SRAs. Because of these substandard condition ratings, both Vernita and eastbound Selah Creek were prioritized for replacement. New buildings are under construction and will be complete by the end of 2011. The primary restroom buildings will be replaced with added capacity to minimize visitor wait times. Minor preservation projects were also completed last biennium at other rest areas which will improve condition ratings as a whole statewide.

Fewer comment cards lead WSDOT to investigate new methods of collecting feedback

Rest area comment cards provide customer feedback to WSDOT. However, the low number of comment cards returned in 2010 indicates that this method of collecting information may no longer be effective. Nearly 1000 comments were received

User satisfaction with safety rest area facilities

Rating	2009	2010
Excellent	0%	0%
Very Good	44%	45%
Good	43%	43%
Satisfactory	8%	7%
Unsatisfactory	5%	5%

Data source: WSDOT Facilities Office.

Data note: 2009 data based on 495 comment card responses, 2010 data based on 361 responses.

Minor preservation projects for safety rest areas

2009 - 2011 biennium

Project category	Category description	Biennium allocation	Project types	Number of projects
Occupant	Hazardous site or building components that jeopardize the health and safety of staff, the public, the environment, and/or are immediate violations of local, state, or federal regulations.	\$387,000	Safety	2
			Environmental	5
			Code compliance	6 (ADA)
Preservation	Replacement and preservation of frequently failing systems, or systems with high risk of failure that requires constant corrective maintenance.	\$281,000	Replacement	3
			Renovation	7
Operational*	Insufficient or lack of building space, wireless communication, and/or site improvements that impact mission critical operations.	\$0	Building capacity	0
			Amenities	0
			Site improvements	0

Data source: WSDOT Facilities Office

*Data note: Operational category projects are addressed if funding allows, or after priorities in the Occupant and Preservation categories are addressed.

in 2007, with reduced numbers each following year: 626 in 2008, 495 in 2009, and 361 in 2010.

Safety rest area comment cards have five user satisfaction rating categories: Excellent, Very Good, Good, Satisfactory, and Unsatisfactory. Despite the lower number of comment cards for 2009 and 2010, visitors indicated similar levels of satisfaction with safety rest area facilities.

WSDOT is investigating other ways travelers can comment on their experience, including internet feedback programs and on-line surveys, which the agency expects will increase the number of responses.

2009 Americans with Disabilities Act (ADA) review

WSDOT has been working to meet federal Disability Act requirements by addressing identified deficiencies at its facilities. Preliminary inspections identified 104 ADA-related work items, ranging from installing proper signage and adjusting fixtures to increasing space by moving interior walls. WSDOT plans to complete all but 10 of these items by the end of the 2011-2013 biennium; the remainder have been incorporated into preservation projects that will be complete by the end of 2011.

Minor preservation projects

Safety rest area projects range from minor projects to large-scale site acquisition and commercial development. WSDOT prioritizes projects using a rating system which designates the type of project and allows the most needed projects to be funded first. The three minor preservation project categories and their associated 2011-2013 biennium projects are described in the table below.

Safety Rest Areas

Annual Preservation Report

Preservation Projects

North Central Region recreational vehicle (RV) dump station projects

The replacement of RV dump stations at both the Nason Creek and Winchester safety rest areas will use a new WSDOT standard design that allows for more efficient dump station operations, giving RV users more access to the stations during freezing temperatures. Nason Creek work includes water system improvements and the addition of a 400-foot-long RV waiting lane. These combined North Central Region RV projects are scheduled to be complete by October 2011.

Electric vehicle charging stations at safety rest areas

The US Department of Energy is funding a public-private partnership to install electric vehicle charging stations at specific locations along the I-5 corridor. Most of the sites will be on private property, but two will be located at border entry safety rest areas. By summer 2011, travelers coming from Oregon will be able to stop and charge their electric vehicles at four charging stalls in the northbound Gee Creek safety rest area at milepost 11; Washington and Canadian travelers will be able to charge their vehicles at southbound Custer rest area's two charging stations at milepost 269. WSDOT is installing secondary electrical services that will allow private vendors to tie into a dedicated service for the charging stations. These charging stations will be available in the summer of 2011.

The electric vehicle charging station initiative will allow visitors to rest while they recharge their electric vehicles, thereby helping to reduce the number of fatigued drivers on state highways.

Major upgrade and replacement projects

Complete rest area reconstructions are performed when minor project funding will not address the major deficiencies of a facility. These projects typically rely on federal funding for rest area building replacements, parking lot renovations, and necessary improvements to associated water and sewer systems. Both major rest area replacement projects in this biennium were designed to accommodate electric vehicle charging stations.

I-82 Selah safety rest area eastbound – building replacement

Construction began March 25, 2011 on the new 14-stall restroom building at Selah. The replacement facility will be ADA compliant, incorporating several sustainable design components, including native and drought resistant landscaping, low flow plumbing fixtures, energy efficient heating and light fixtures, improved indoor air quality, the use of local materials, and the abatement of hazardous materials. Construction is scheduled to be complete by November 1, 2011.

SR24 Vernita safety rest area – building replacement

Construction of the new fully accessible, ten-stall restroom building is under way, with completion scheduled for June 2011. Sustainable features include the use of locally manufactured building materials, low flow plumbing fixtures, natural lighting through windows and reflective surfaces, hazardous materials abatement, energy efficient lighting fixtures, and improved indoor air quality. The site lighting will be improved and the parking area will be repaired and repaved.



Construction under way at Vernita safety rest area - March 2011.

Safety rest area partnerships add facilities

WSDOT continues to look for additional rest stop opportunities by working with external partners to identify and address high priority highway safety needs.

WSDOT is partnering with Clallam County to construct the Deer Park safety rest area, west of Port Angeles on SR 101. When completed, the rest area will be owned and operated by Clallam County. Construction of the rest area will begin in the 2011-2013 biennium in conjunction with an interchange safety improvement project to modify highway access to and from Buchanan Drive and Old Deer Park Road.

WSDOT is also partnering with the Cowlitz River Valley Historic Society to construct a new safety rest area in Morton, WA, near the intersection of SR 7 and SR 508, about a mile north of US 12. This project is sponsored by the Cowlitz River Valley Historic Society using federal scenic byway grant funding; WSDOT is responsible for project management and design.

Highway Maintenance Annual Post Winter Report

WSDOT is responsible for keeping Washington’s highways open for the safe and reliable movement of people and goods year-round. That mission requires crews to respond to weather conditions that create challenges for the transportation system each winter. The state’s varied terrain and major mountain passes require WSDOT to assess avalanche danger, remove heavy snowfall, deal with major flooding, and address weather-related landslides. The snow and ice control operations are reviewed annually and receive a level of service score as part of WSDOT’s Maintenance Accountability Process (MAP).

2011 winter included heavy snow in the passes

The fall of 2010 provided several indicators that the winter season of 2010-11 would be unusually cold and wet in the Northwest. Weather forecasters predicted a significant La Niña winter with more than average precipitation and cooler than average temperatures throughout the state and the Northwest.

The 2010-2011 season showcased some of winter’s disruptive elements, including heavy snow in the passes, high winds, storms, flooding and landslides, and sustained late season snow that continued to impede mountain pass travel through April. (See page 17 for full winter weather details.)

Performance grade for level of service: A

Even though the winter of 2010-2011 had its share of challenges, the level of service provided remained in the “A” range. An “A” level of service is defined as having minimal snow or ice buildup on roadways, attaining bare pavement as soon as possible, and few travel delays. The following graph shows the correlation between roadway condition and application type. Deicer tends to stay on the roadway, minimizing the bond between pavement and ice or snow, making removal easier. Sand is not as effective because it is blown off the roadway by traffic. Sand also has the added cost of spring cleanup. As crews continue to use deicers, instead of sand, in a higher percentage of applications, the winter roadway condition rating remains high.

While the winter of 2010-11 provided challenges, WSDOT did not request additional funds to cover the associated higher-than-planned expenditures. The prior winter season was milder than average, which helped offset some of this winter’s costs. Additionally, maintenance managers were prudent with program delivery expenditures in the preceding summer and fall months, which helped to absorb the winter’s financial impact. The supplemental transportation budget the Legislature approved in 2011 also included \$835,000 in supplemental funds to cover some landslide repair costs that were not eligible for federal emergency relief funding. Together, these efforts have helped the maintenance program operate within its budget through a challenging winter.

Post-Winter Highlights:

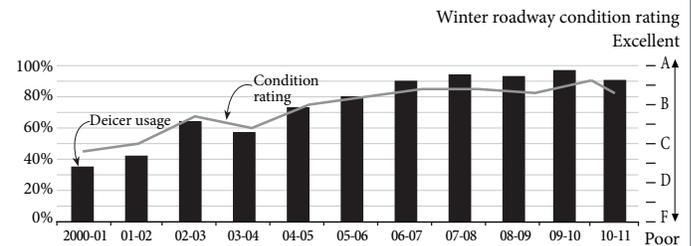
Level of service receives “A” rating for winter 2010-2011.

Due to heavier snows and more avalanche control missions, snow and ice removal expenditures totaled \$37 million through March 31, 2011, \$6 million above the previous winter.

Winter conditions lasted through late April, requiring the studded tire removal deadline to be extended three times.

Statewide deicer use and winter roadway condition ratings

Percentage of roadway treatments using deicer, 2001-2002 through 2010-2011



Data source: WSDOT Maintenance Office.

Note: Winter season is November 1 - March 31.

Highway Maintenance Annual Post Winter Report

Avalanche Control and Pass Closures

Inches of accumulated snowfall recorded at mountain pass highways

Winter season snowfall in 2008-09, 2009-10, and 2010-11, at key dates (December 31, March 31, April 15)

Location	Winter of 2008-09			Winter of 2009-10			Winter of 2010-11		
	12/31/2008	3/31/2009	4/15/2009	12/31/2009	3/31/2010	4/15/2010	12/31/2010	3/31/2011	4/15/2011
Stevens Pass	136	393	429	169	322	369	170	451	517
Snoqualmie Pass	138	379	423	127	234	283	191	410	473
White Pass	183	433	465	113	217	266	176	361	406

Data source: WSDOT Maintenance Office.

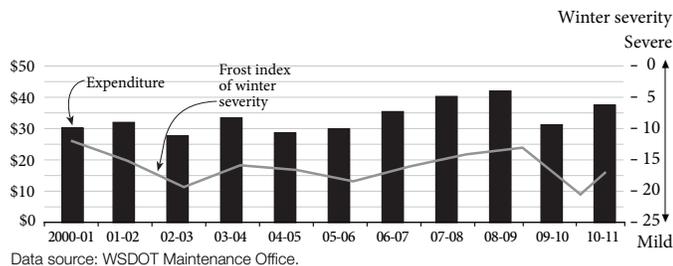
Frost Index and snow and ice expenditures

The frost index measures winter severity based on daily temperatures gathered from 29 weather stations around the state. A lower number means lower temperatures and a higher probability of snow and ice.

Another important indicator of winter severity is WSDOT's snow and ice expenditures. Higher accumulations of snow and ice require more labor, equipment and materials to provide safer road conditions. As of March 31, 2011, winter expenditures had reached \$37 million, \$6 million more than in 2009-2010. These costs continue to accumulate as long as snowfall persists in the mountain passes. The graph below shows the correlation between these indicators.

Winter severity and snow and ice expenditures

Winter severity (frost index) from November 1 to March 31
Dollars in millions



Data source: WSDOT Maintenance Office.

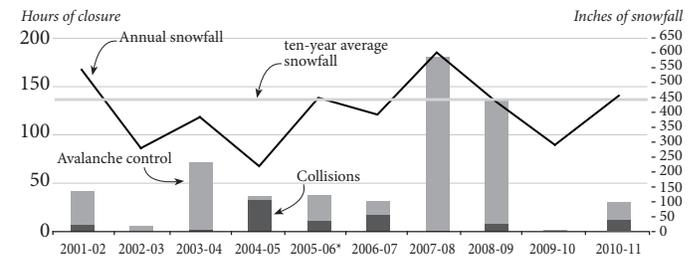
Avalanche control activities are a normal part of maintenance on major mountain passes. In 2009-2010, WSDOT performed five avalanche control missions on I-90 at Snoqualmie Pass, requiring 10 detonations and 513 pounds of explosives. The 2010-2011 winter's total through March 31 was 36 missions requiring 43 detonations, using 3,408 pounds of explosives. And, as March went out like a lion instead of a lamb, the snow continued to fall in April. WSDOT performed 17 additional avalanche missions, as of April 24, 2011.

The table immediately above shows the total snow accumulation at the three major cross-state mountain passes for the last three winters, through April 15 of each year.

The graphs below show the relationship between snowfall, closures for collisions, and closures for avalanche control. The 2010-2011 winter required more avalanche control than 2009-2010, which was a mild winter for avalanche control.

Westbound I-90 Snoqualmie Pass winter closure hours

Hours of closure compared to inches of snowfall



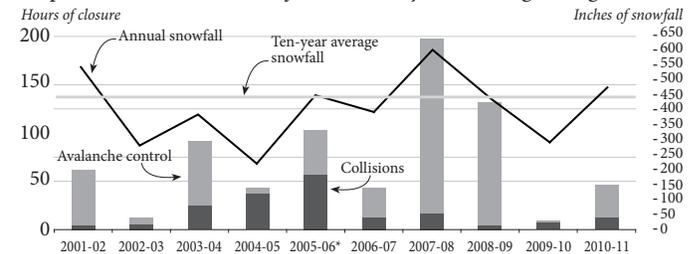
* Does not include 2005-06 rock fall closures - (WB) 56 hours.

Data source: WSDOT Maintenance Office.

Eastbound I-90 Snoqualmie Pass winter closures

Hours of closure due to avalanche control vs. collision

Compared with seasonal snowfall and nine-year running average



* Does not include 2005-06 rock fall closures - (EB) 42 hours.

Data source: WSDOT Maintenance Office.

Winter Weather Report 2010-2011

The season began with late October snowfall in the mountain passes that gave way to mid November damaging high winds in combination with heavy pass snows. One November event brought 60 mile per hour winds to Western Washington and sufficient snows to cause the closure of Chinook and Cayuse passes for the season. Snoqualmie Pass also experienced the first of many closures for spin-outs during this period and closed out the month of November with 72 inches of snow accumulation over the final two weeks.

Record-setting snow event in Spokane

Spokane registered the snowiest November on record with 25.7 inches of snow, surpassing the previous record of 24.7 inches set in 1955.

Thanksgiving week evening commute snowstorm causes huge traffic challenges

On November 22, 2010, the Seattle area experienced a wet snow to freeze event which turned the evening commute into a marathon event for many commuters. Temperatures dropped rapidly in the afternoon turning wet roads into icy roads. Many metro buses and large trucks lost traction and blocked highways, snarling traffic. These blocking vehicles, in combination with the heavy commute that blocked ramps and through lanes, hampered WSDOT maintenance crews in their ability to clear the roads.



Several jackknifed semis block southbound I-5 near NE 77th Street in Seattle in the early morning hours of November 23, 2010.

December brought heavy rain, flooding and landslides

This eventful November gave way to a less dramatic December. However, heavy rains in mid-December caused widespread flooding and several landslides that affected state highways. The high winds that accompanied the rain brought down trees causing additional road closures in many areas.



WSDOT crews cleared US 2 at Stevens Pass on March 31, 2011.

Significant late-season snowfall led to three extensions for studded tire removal

Winter took some time off in January but late February and early March brought the most significant storm of the season, with cross-state travel implications. Heavy snowfall on Snoqualmie Pass, including 78 inches in the month of February, caused numerous road closures and delays; in comparison, the average February snowfall at Snoqualmie Pass is 46.5 inches.

Typical of La Niña winters, mountain snows continued into March and April. Snoqualmie Pass received another 80" of snow in March, and set a new record for April snowfall with 72 inches as of April 24. Stevens Pass recorded 123 inches in March and 74 inches in April, as of April 23. Due to this late snowfall, the deadline for removing studded tires was extended three times, the most in recent memory.

Winter weather lasts through April

This winter doesn't seem to want to end. As of April 28, snow continued to fall in the mountains, and the work of clearing the highways to keep traffic moving in winter conditions goes on. With the continued focus on winter activities, other work normally planned for spring such as striping and pavement maintenance, will be curtailed to remain within the overall budget. Only higher priority work will be addressed until the new fiscal year begins on July 1, 2011.

Washington State Ferries

Ferry Vessel & Terminal Preservation

Ferry Vessel & Terminal Preservation Highlights

85% of terminal systems have a condition rating of good or fair.

73% of vessel systems are operating within their standard life cycles.

As a result of terminal preservation investments through March 2011, 7.1% of the value of terminal systems need preservation as compared to an end-of-biennium objective of 6.6%.

As a result of vessel preservation investments through March 2011, 33.4% of the value of vessel systems need preservation as compared to an end-of-biennium objective of 24.7%.

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 people and goods in the Puget Sound. WSDOT places high priority on preserving terminals and vessels in order to provide safe and reliable service. State law directs WSDOT to use two metrics with respect to the preservation of Ferry System infrastructure. They are condition ratings and reduction of preservation needs.

WSDOT transitioning to terminal and vessel condition ratings

As with other capital asset preservation programs, Ferries' reports must be filed annually. WSDOT has been transitioning to reporting terminal and vessel condition ratings, and terminal condition reporting is now fully implemented. The process for reporting vessel condition ratings is still under development; it is scheduled to be ready for full reporting in June 2012. As an interim measure, WSDOT reports a life cycle assessment of vessel systems.

Ferry terminals condition report

WSDOT Ferries Division operates 20 ferry terminals and a maintenance repair facility, and is responsible for the repair and preservation of the 19 terminals and the repair facility located in Washington. (The 20th terminal is in Sidney, British Columbia.) Terminal assets include 755 separate components, called systems or facilities in the Ferries life cycle cost model (LCCM). These systems are grouped into the following types: landing aids (wingwalls and dolphins), vehicle transfer span systems, overhead loading systems, trestles, bulkheads, pavements, buildings, and passenger-only facilities. WSDOT inspects and evaluates terminal LCCM assets for condition and remaining service life at least every three years.

2010 terminals condition rating results

The table below shows condition ratings as of February 2011 based on 2010 inspection results. Eighty-four percent of state ferry terminal systems are currently rated in "good" or "fair" condition – down 1% from 2009. The majority of structures that are rated "poor" or "substandard" are vehicle transfer span systems, primarily the electrical and mechanical systems, paved areas, and landing aids such as wing-walls and dolphins. Many existing transfer span electrical and mechanical systems are functionally obsolete and have been renovated many times.

Condition ratings for paved areas have also been revisited and recent inspections and representative samplings of distressed areas indicate a greater amount of paved assets are in the "poor" or "sub-standard" categories. Many of the landing aids are deteriorating, creosote-soaked, wood pilings that are susceptible to rot from being immersed in salt water. WSDOT's plan is to replace timber bridge assets such as trestles on timber pilings or timber dolphins and wingwalls 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. WSDOT will also continue developing an asset management program in order to prioritize preservation decisions under constrained funding and optimize between maintaining and repairing terminal assets and preserving terminal assets by future rehabilitation or replacement.

WSF structural condition rating categories for terminal systems

Inspection results for 2010

Type of facility or system	# of systems	Good 90-100	Fair 70-89	Poor 50-69	Substandard 0-49	Not rated
Landing aids*	179	55%	22%	12%	11%	0%
Vehicle transfer spans	210	35%	49%	16%	0%	0%
Overhead loading systems	66	62%	30%	8%	0%	0%
Trestle & bulkheads	72	31%	58%	7%	3%	0%
Pavement	77	25%	42%	19%	14%	1%
Buildings	136	45%	54%	1%	0%	1%
Passenger only facilities	15	53%	33%	13%	0%	0%
Total average	755	43%	42%	11%	4%	0%

Data source: WSDOT Ferry System.

* Landing aids Includes wingwalls and dolphins.

Ferry Terminal Condition Ratings

Inspecting and scoring terminal assets

Terminal bridge assets (e.g. landing aids, transfer span systems, trestles and bulkheads, overhead loading systems, passenger-only facilities, and pavements on trestles) are included in the Washington State Bridge Inventory System (WSBIS), and WSDOT inspects them for structural integrity and condition. Vehicle-traffic-bearing trestles and transfer spans are further reported in the National Bridge Inventory (NBI) database in accordance with federal criteria. WSDOT does not report at the federal level on bridge elements that do not carry vehicles but inspects them for safety and structural integrity. Transfer span electrical and mechanical systems and landing aids are inspected and rated according to criteria established by WSDOT. Terminal paved assets are evaluated and rated according to WSDOT local agency standards, but these are being evaluated and redeveloped to provide a more suitable condition rating plan for pavement that does not see heavy use.

WSDOT also inspects and evaluates terminal building assets. In 2009, WSF developed a method of scoring that categorized and weighted building components according to the WSDOT Capital Systems Plan for Facilities. The scoring system was modified so that evaluations receive a score based on a 0-to-100 scale comparable to the way all other LCCM components are measured. If the building does not contain these components then they are removed from consideration in scoring (for example, storage buildings do not have plumbing systems so that area is not applicable). WSDOT reports the condition and status of terminal building assets to OFM for inclusion in the statewide Facilities Inventory System (FIS) for all state agencies.

The condition ratings applied to terminal assets use a scale of 0 to 100 and evaluate individual system elements to obtain the overall structure or system rating. Not all systems are being evaluated under this format currently. The numerical condition ratings are also used for updates to the Ferries LCCM. The first table on this page defines the condition categories (good, fair, poor, and substandard); there is also an additional category of “not rated.” The “substandard” category is unique to the Ferries system: it 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 of terminal components before giving them a structural condition rating. The “not rated” category accounts for structures that may be under construction or were added during the past year which have not yet been assessed.

WSF bridge structural condition definitions

Category (rating score)	Description
Good (90-100)	The structure is performing as designed with all elements functioning as intended.
Fair (70-89)	All primary structural elements are sound but may have deficiencies such as crushed timbers, deterioration, and some section loss of anchor chain.
Poor (50-69)	There is moderate deterioration of some elements due to section loss or rotten and crushed timbers, and moderate loss of anchor chain are present.
Sub-standard (0-49)	There is advanced 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.

Vessel life cycle assessment report in place of condition ratings

Vessel condition reporting is under development. In the interim, the status of the fleet is reported in terms of life cycle assessment.

WSDOT tracks the life cycle status of vessel systems in terms of how close systems are to the end of their standard life cycle intervals. The vessel life cycle assessment table on the following page shows the number of vessel systems having

- (1) more than 10% of their standard life remaining or
- (2) 10% or less of their standard life remaining; or are
- (3) 10% or less beyond their standard life, or
- (4) more than 10% beyond their standard life.

These classifications do not indicate that systems are safe or unsafe, but rather how closely their condition should be monitored. At the end of the seventh quarter of the 2009-2011 biennium (March 31, 2011), 73% of the systems that comprise the vessels of the fleet are operating within their standard life cycles.

What is included in vessel systems categories as designated by the U.S. Coast Guard

There are two categories of vessels systems. Category 1 systems are designated by the U.S. Coast Guard (USCG) as “vital to the protection of people, the environment and the vessel.” All other vessel systems are designated category 2. As of March 31, 2011, 86% of Category 1 systems and 51% of category 2 systems are operating within their standard life cycles.

Vessel life cycle assessment is also displayed in terms of types of vessel systems: communication-navigation and life saving equipment, major mechanical and electrical equipment, passenger and crew spaces, piping systems, propulsion systems,

Washington State Ferries

Ferry Vessel & Terminal Preservation

Ferries Vessel Life Cycle Assessment

Vessel system life cycle assessment based on preservation completed through March 2011

Category 1 and Category 2 systems as defined by U.S. Coast Guard standards

2009-11 Biennium	Total number of systems	More than 10% standard life remaining	10% Or less standard life remaining	10% Or less beyond standard life	More than 10% beyond standard life
Category 1 systems					
Communication, navigation, lifesaving systems	451	66%	18%	1%	15%
Major mechanical/electrical systems	104	93%	0%	1%	6%
Piping systems	60	63%	2%	5%	30%
Propulsion systems	245	87%	5%	0%	8%
Security systems	34	100%	0%	0%	0%
Steel structural systems	40	70%	3%	0%	28%
All category 1 systems	934	76%	10%	1%	13%
Category 2 systems					
Major mechanical/electrical systems	139	40%	13%	4%	43%
Passenger and crew spaces	58	53%	0%	5%	41%
Piping systems	80	26%	9%	3%	63%
Steel structural systems	116	44%	10%	0%	46%
Structural protection systems	176	49%	6%	0%	45%
All category 2 systems	569	43%	8%	2%	47%
All vessel systems	1,503	63%	10%	1%	26%

Data source: WSDOT Ferry System.

Data note: Numbers may not add due to rounding.

security systems, steel structures and structural protective systems. The vessel system life cycle assessment table shows the status of each of these types of systems. Currently, all types of category 1 systems have a higher percentage of systems operating within their standard life cycles than does any type of category 2 systems. This reflects WSDOT's emphasis on preserving USCG-designated "vital" systems.

Performance-based preservation budgeting for Ferry System terminals and vessels

WSDOT identifies Ferry System preservation needs, and measures actual against planned performance in reducing preservation needs. Biennial preservation needs consist of the value of the backlog of preservation needs existing at the start of a biennium plus additional preservation needs that come due during the biennium. Investments in preservation reduce the backlog of needed work. Performance is evaluated by comparing the actual biennium-to-date backlog of preservation to the planned end-of-biennium backlog. All of this information is evaluated using the "preservation needs percent" (PNP) score, a measure that is the percentage of the value of terminal or vessel systems that have reached the end of their standard life cycles.

Terminal preservation performance

At the end of seven quarters, biennium-to-date terminal preservation investments have not yet achieved planned end-of-biennium preservation performance. Actual terminal preservation investments have resulted in a biennium-to-date PNP score of 7.1% compared to the planned score of 6.6%, a variance of 0.5% in PNP score from plan. Due to the freeze on terminal investments to free up funding needed for accelerated delivery of new vessel construction, WSDOT does not expect to reach the terminal preservation backlog reduction target for this biennium.

Vessel preservation performance

At the end of seven quarters, biennium-to-date vessel preservation investments have not yet achieved planned end-of-biennium preservation performance. Actual vessel preservation investments have resulted in a biennium-to-date PNP score of 33.4% compared to the planned score of 24.7%, a variance of 8.7% in PNP score from plan. While vessel preservation work is under way in the last quarter of the biennium, it is insufficient to allow the department to reach the vessel preservation backlog reduction target for this biennium.

The amount of preservation work achieved and backlog needs addressed, will be presented in a follow-up report in September.



Mobility (Congestion Relief)

Statewide policy goal

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

WSDOT's business direction

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



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Trucks, Goods & Freight Annual Report	42
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Earlier articles concerned with mobility

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

Traveler Information Annual Report

Traveler Information Highlights

5-1-1 calls during winter 2010-11: 1.1 million, second straight year with low call volumes.

2010 web traffic increased 4% over 2009, due in part to November 2010 storm.

WSDOT unveiled a new version of the travel and traffic website and offered new mobile phone applications in 2010.

WSDOT provides traveler information to the public in a variety of formats. The system that started with the 5-1-1 Traveler Information phone system is now greatly expanded, with options including the travel information website, Twitter & RSS feeds, the Traffic PDA mobile application, e-mail alerts, highway radio transmissions, and variable message signs (VMS).

In the summer of 2010, WSDOT installed a series of state-of-the-art, federally funded Active Traffic Management (ATM) signs on northbound I-5 in a highly congested area near Boeing Field, and later on SR 520. These signs are activated when a traffic incident occurs, to give drivers information about the conditions ahead.

5-1-1 calls low for second consecutive winter

5-1-1 is a nationwide traveler information system: it links to neighboring areas and supplements local travel information by providing its data and web services to other agencies. Travelers can obtain information ranging from current traffic flow to construction schedules, accident alert slow downs, weather and mountain pass closures, to schedules for the Washington State Ferry system. Mountain pass and weather inquiries traditionally account for about 75% of calls during the winter, so weather is an important factor in call volumes. The chart below shows the seasonal fluctuations.

For the second winter in a row, a strong La Niña weather pattern produced erratic weather with a lot of rain and heavy snow in the mountains later in the season. Some localized heavy snow and icy conditions in the fall affected drivers on the west side of the Cascades, but subsequent milder conditions prevailed until later in the first quarter of 2011. The significant late snowfall created high avalanche conditions in the passes, keeping WSDOT crews busy performing avalanche control and snow removal late into spring.

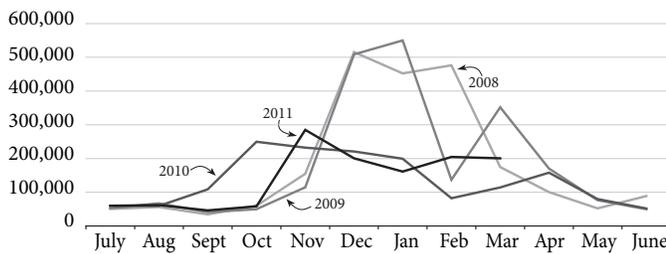
Despite the early mild weather, calls to the 5-1-1 information line for this fall/winter season (October 2010 through March 2011) totaled more than 1.1 million, up 1.1% from last winter's record-low call volume of just less than 1.1 million. This year's call volume mirrors those of last year, when few major storms took place in the heart of the winter season.

By comparison, the extreme weather during the fall/winter of 2007-08 and 2008-09 each brought over 1.7 million calls to the 5-1-1 system. Average daily call volume remains near 2,000 in the spring/summer season (April to September), up to a range of 5,000 to 30,000 calls a day during the few severe storm event days that occur during the fall/winter season.

In December 2010, Washington's 5-1-1 system received its 11 millionth call.

Calls to WSDOT's travel information service

Four-year trend: FY 2008 to 2011, in thousands of calls



Data source: Vector directory numbers, WSDOT Traffic Office.

Winter-season 5-1-1 hotline calls by category

Percentage of total calls from October to March

Information requested	2007-2008	2008-2009	2009-2010	2010-2011
Traffic	15.5%	19%	16.7%	16.1%
Mountain pass	75.3%	69%	73.7%	74.8%
Ferry	2%	2.9%	4.7%	3.4%
Weather	2.8%	3.1%	3%	3.3%
Other	4.4%	6%	2%	2.4%

Data source: Vector directory numbers, WSDOT Traffic Office.

Online programs and new software

Agency website traffic increased 4% in 2010

WSDOT traffic and travel information website page views stayed relatively level in 2010 compared to the previous year, rising 4% to nearly 298.7 million from 285.5 million.

Weather disruptions late in 2010 helped account for the increase as usage topped 1.9 million views a day in November 2010 and 1.3 million views a day in December 2010. The 58.5 million page views in November 2010 doubled the 29.2 million views of November 2009.

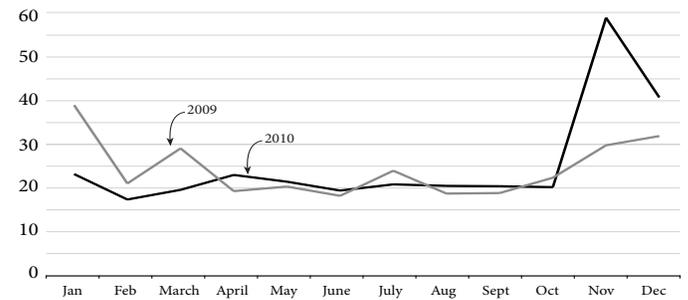
The chart to the right shows the impact of weather on web traffic as flooding and snowstorms in early 2009 generated much higher web traffic than the calmer winter weather in early 2010.

Latest traffic and travel information website version unveiled in November

WSDOT launched a new beta version of the traffic and travel information site, www.wsdot.wa.gov/traffic/alpha, in November 2010 for public feedback. The new display will expand the detail and amount of information available, but will effectively reduce the number of page views because it allows information to update automatically without reloading the page.

The Ferries Vessel Watch application already uses this style of mapping website at www.wsdot.com/ferries/vesselwatch, which allows users to track vessels online.

WSDOT traffic and travel website monthly page views *In millions, comparing 2009 to 2010*



Data source: WSDOT Communications Office.

New apps provide travel information for mobile devices

WSDOT launched new mobile applications, or apps, for Android in April and the iPhone in August, to provide the same information available on the website in a more convenient format for smart phones and other devices. In 2010, there were 27,000 downloads of the Android app, and 17,500 downloads of the iPhone app.

Web usage data service changed

In 2010, WSDOT changed its web usage data provider from Omniture to Google Analytics. The change was a cost-saving measure to reduce expenses for web management by \$50,000 annually. The transition will not result in changes when comparing future year web usage data to earlier data.

Incident Response Quarterly Update

Incident Response Highlights

The IR program cleared 10,755 incidents in the quarter ending March 31, 2011.

The IR program cleared the average incident in 12.4 minutes during the quarter.

The quarterly average clearance time for all over-90-minute incidents is 159 minutes.

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

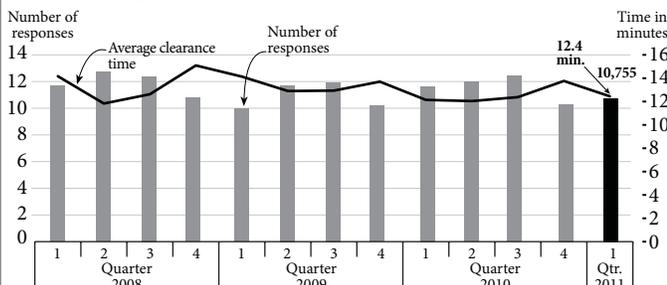
IR teams responded to 7.6% fewer incidents in Q1 2011 than in Q1 2010

Between January 1 and March 31, 2011, WSDOT's IR teams responded to 10,755 incidents, 4.3% more than the previous quarter's 10,308 incidents, but 7.6% fewer than the 11,644 incidents in the first quarter of 2010. The statewide average clearance time for all incidents in the first quarter of 2011 was 12.4 minutes, 10.1% less than last quarter's 13.8 minutes, but 2.4% longer than the 12.1 minute average clearance time in the first quarter of 2010.

Responses and average overall clearance time

January 1, 2008 to March 31, 2011

Number of responses in thousands, clearance time in minutes



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

The quarters with winter months often have longer clearance times and fewer responses, in part because of weather-related conditions. The graph to the left shows the responses and quarterly average clearance time for incidents since January 2008.

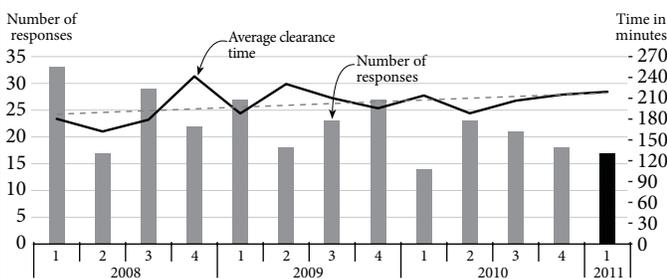
Fatality clearance times rise slightly

IR teams responded to 17 incidents in the first quarter of 2011 for which fatality was one of the several contributing factors. The incidents had an average clearance time of 219 minutes, 1.9% longer than last quarter's average clearance time of 215 minutes and 2.3% longer than the average clearance time of 214 minutes in the same quarter of 2010. Clearance times depend on the nature of the incidents and the kind of emergency responders required at the scene for detailed investigations.

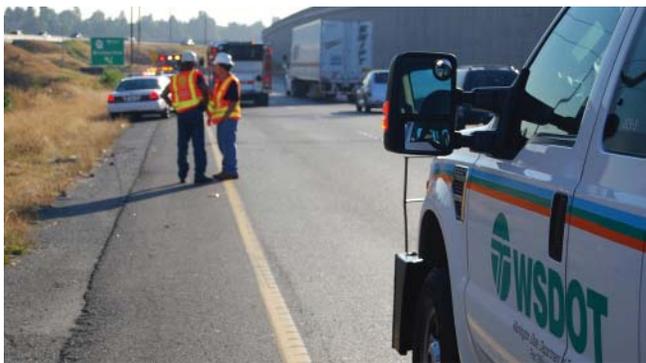
Responses and average fatality collision clearance time

January 1, 2008 to March 31, 2011

Number of responses in thousands, clearance time in minutes



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



WSDOT Incident Response teams respond to incidents on Washington highways to clear roads, help drivers, and keep traffic moving safely.

Over-90-Minute Incidents

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

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

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

Average duration of over-90-minute incidents decreased to 159 minutes in the first quarter of 2011

During the first quarter of 2011, 75 over-90-minute incidents occurred on the nine key routes, with an average duration of 159 minutes. This is nine minutes shorter than the last quarter.

Over-90-minute incidents have the potential to cause more travel impacts during weekday commuting hours. Forty-six of the 75 over-90-minute incidents, 61%, occurred during weekday peak periods. Of the remaining 29 over-90-minute incidents, 20 took place on weekdays during off-peak hours and nine occurred during the weekends.

In addition, 20 over-90-minute incidents took place on Washington highways outside of the nine key corridors.

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

First quarter of 2011

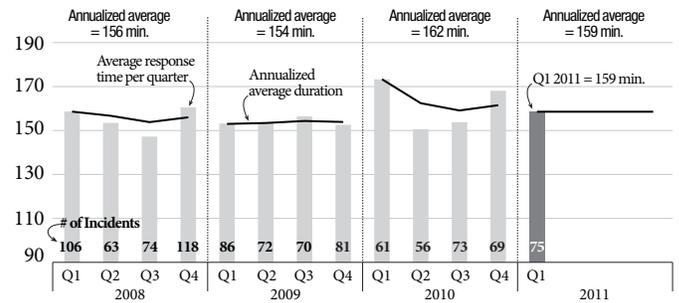
Date & time	Duration & location	Incident description
March 24 2:22 a.m.	537 min. I-5, MP 271 (Whatcom)	Non-injury collision involving a semi truck that ran into the median and rolled over. The trailer had to be partially unloaded before removal.
Feb. 21 4:00 a.m.	493 min. I-5, MP 240 (Skagit)	Non-injury collision involving a semi truck that rolled over and damaged 120 feet of guard rail. Crews had to remove debris.
March 28 5:18 a.m.	378 min. I-5, MP 238 (Skagit)	Non-injury collision involving a semi truck that rolled over. The incident pushed mud on I-5 and the Fire Department washed off the road.
Feb. 14 4:58 a.m.	364 min. SR 18, MP 25 (King)	Blocking injury collision involving a semi truck that rolled over. The incident included a hazardous materials spill and barrier damage.

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

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

January 1, 2008 to March 31, 2011

Responses per quarter vs. annualized average duration in minutes



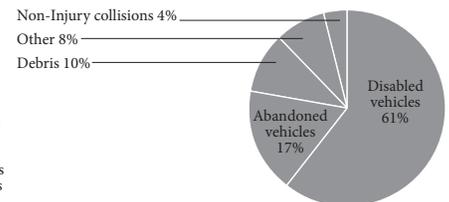
Data source: Washington State Patrol and WSDOT Traffic Office.

Number and percentage of responses by duration

Q1: January 1, 2011 - March 31, 2011; 10,744 incidents

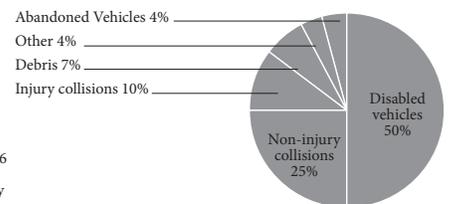
Incidents lasting less than 15 minutes (8,256)

This group also included 7 Fire and 2 HazMat related incidents, 6 involving WSDOT property damage, and 55 located in work zones. Incidents involving Injuries and Police Activity comprised less than 1% and are not shown.



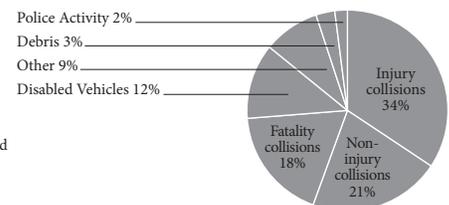
Incidents lasting 15 to 90 minutes (2,404)

This group also included 28 Fire and 1 Haz Mat related incident. Additionally 57 incidents involved WSDOT property damage, and 36 were located in work zones. Incidents involving Police activity comprised less than 1% and are not shown.



Incidents lasting 90 minutes and longer (95)

There were three hazardous materials and seven fire-involved incidents. Also, 16 incidents involved WSDOT property damage, and two were located in work zones. Abandoned vehicle incidents represented 1% and are not shown.



Data source: WITS, WSDOT Traffic Office.

Washington State Ferries Quarterly Update

Ridership and Farebox Revenue

Washington State Ferries Highlights

Ridership was 4.6 million, 4.0% below the quarterly projection.

Farebox revenue was \$28.5 million, 2.1% below the quarterly projection.

The number of missed trips increased from 122 to 361 compared to the same quarter last year, due mainly to temporary closures of the Mukilteo ferry terminal for planned maintenance work.

99.1% of all scheduled trips were completed, compared to 99.7% during the same period last year.

On-time performance was 95.1% and average sailing delay was 1.7 minutes for the quarter, an improvement over the same quarter in 2010.

The customer complaint rate decreased nearly 25% compared to the same quarter in 2010, from 5.4 to 4.1 per 100,000 customers.

Washington State Ferries (WSF) serves as both an extension of the state's highway system and as a regional mass-transit provider. It provides a critical link to communities separated by water or longer driving distances, and is essential to the movement of goods and people in the Puget Sound region. It is the largest operating auto-ferry fleet in the world, carrying 10 million vehicles and nearly 23 million ferry passengers each year.

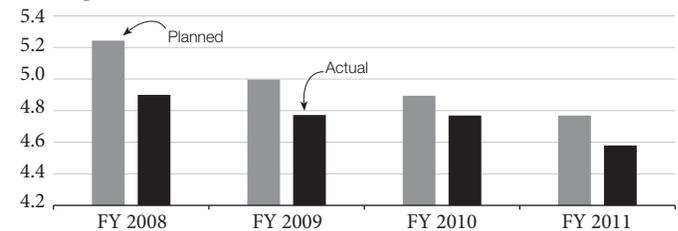
Ridership remains below projected levels

For the third quarter of fiscal year 2011 (January 1–March 31), 4.6 million people traveled on the ferry system, about 189,000 (4.0%) below the projected levels. Compared to the same quarter one year ago, WSF served 190,000 fewer riders (4.0%). Quarterly ridership continues to lag projections, as the public continues to choose less discretionary travel, including ferry travel, as a response to the recent spike in fuel prices which began in February, and the ongoing recovery from the economic downturn.

WSF planned and actual ridership levels by quarter

Third quarter (January 1 - March 31), fiscal years 2008 - 2011

Ridership in millions



Data source: WSDOT Ferries Division.

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

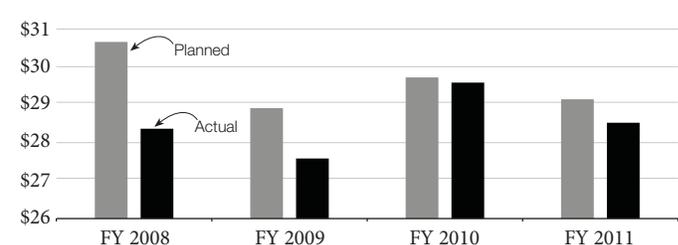
Farebox revenues below projected levels

For the third quarter of FY 2011, farebox revenue was \$28.5 million, \$619,000 (2.1%) below the projected levels. Farebox revenues were approximately \$1,062,000 (3.6%) lower than the same quarter last year. As with ridership, it is expected that farebox revenue will continue to lag projected levels until fuel prices normalize and the economy fully recovers. The difference between planned and actual revenue again decreased between FY 2010 and FY 2011.

WSF planned and actual farebox revenue levels by quarter

Third quarter (January 1 - March 31), fiscal years 2008 - 2011

Dollars in millions



Data source: WSDOT Ferries Division.

Service Reliability

More trips missed compared to previous quarter due to maintenance at Mukilteo Terminal

The number of net missed trips in the third quarter of FY 2011 was 239 more than the number of missed trips in the third quarter of FY 2010: 361 compared to 122. However, 234 of the missed trips this quarter occurred on the Mukilteo-Clinton ferry route due to planned maintenance at Mukilteo terminal, which occurred over two consecutive three-day weekends (Friday-Sunday) in March. During the closure on this route, additional ferry service was provided from the Edmonds ferry terminal on a temporary Edmonds-Clinton ferry route.

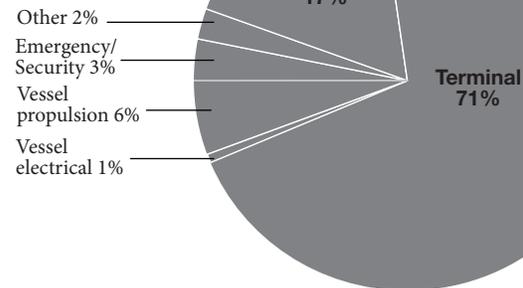
In the third quarter of FY 2011, 38,615 regular service trips were scheduled. Of those trips, 596 were cancelled and 235 were replaced, resulting in a total of 38,254 trips during the quarter (38,615 scheduled - 596 cancelled + 235 replacement trips = 38,254 net trips). The Port Townsend - Coupeville route accounted for 88 missed trips (114 canceled, 26 replaced); unique tidal conditions and weather disproportionately affect this route (see *Gray Notebook 37*, p. 28).

Trips are cancelled for a variety of reasons, including tide and weather conditions, mechanical problems with vessels or terminals, and cancellations arising when a ferry is diverted for emergency transport. Trips are also missed when vessels fall too far behind the published schedule to make all trips for that day.

Compared to the second quarter, 50 fewer cancellations were due to vessel propulsion issues, 16 fewer due to vessel steering, and seven fewer due to tides/weather. These figures do not include cancellations due to the Mukilteo terminal closure in March (430 cancellations, of which 196 were replaced).

Reasons for missed trips

Third quarter (January 1 - March 31), FY 2011



Data source: WSDOT Ferries Division.

WSF trip reliability no longer includes missed-trip index

As noted in *Gray Notebook 39* (page 19), WSDOT no longer reports a “missed trip index” (MTI). Instead, trip reliability will be reported in terms of the numbers of missed trips and a reliability percentages. As context for the system as a whole, reliability of 99.7% on a route indicates that there have been three missed trips for every thousand planned trips.

On-time performance improves in third quarter

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

Washington State Ferries missed-trip reliability comparison

Route	Third quarter, fiscal year 2010			Third quarter, fiscal year 2011		
	Scheduled trips	Missed trips ¹	Reliability average ²	Scheduled trips	Missed trips ¹	Reliability average ²
San Juan (Domestic)	6,158	17	99.7%	6,209	0	100.0%
Anacortes-Sidney, B.C. (International)	12	0	100.0%	12	0	100.0%
Edmonds - Kingston	4,526	2	100.0%	4,186	0	100.0%
Fauntleroy - Vashon - Southworth	9,697	14	99.9%	9,696	15	99.8%
Port Townsend - Coupeville	1,800	76	95.8%	1,800	88	95.1%
Mukilteo - Clinton	6,530	0	100.0%	6,530	234	96.4%
Pt. Defiance - Tahlequah	3,592	6	99.8%	3,420	24	99.3%
Seattle - Bainbridge Island	4,075	1	100.0%	4,075	0	100.0%
Seattle - Bremerton	2,687	6	99.8%	2,687	0	100.0%
Total	39,077	122	99.7%	38,615	361	99.1%

Data source: WSDOT Ferries Division.

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

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

Washington State Ferries Quarterly Update

Service Reliability / Customer Feedback

Washington State Ferries on-time performance comparison

Route	Third quarter, fiscal year 2010			Third quarter, fiscal year 2011		
	Actual trips ¹	On-time percentage ²	Average sailing delay ³	Actual trips ¹	On-time percentage ²	Average sailing delay ³
San Juan Islands (Domestic)	5,273	87.0%	3.0 minutes	5,672	92.5%	1.9 minutes
Anacortes-Sidney, B.C. (International)	9	75.0%	4.7 minutes	10	83.3%	3.9 minutes
Edmonds-Kingston	4,023	89.8%	3.3 minutes	4,049	97.2%	1.8 minutes
Fauntleroy-Vashon-Southworth	8,789	91.2%	2.4 minutes	9,091	94.3%	1.7 minutes
Port Townsend - Coupeville	1,578	92.9%	2.3 minutes	1,440	91.7%	3.5 minutes
Mukilteo-Clinton	6,160	96.3%	1.7 minutes	5,902	97.2%	1.3 minutes
Pt. Defiance-Tahlequah	3,099	88.7%	3.3 minutes	3,190	94.8%	2.2 minutes
Seattle-Bainbridge Island	3,757	92.7%	1.4 minutes	3,909	96.5%	0.9 minutes
Seattle-Bremerton	2,521	94.5%	2.3 minutes	2,552	95.7%	2.0 minutes
Total	35,209	91.5%	2.5 minutes	35,815	95.1%	1.7 minutes

Data source: WSDOT Ferries Division.

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

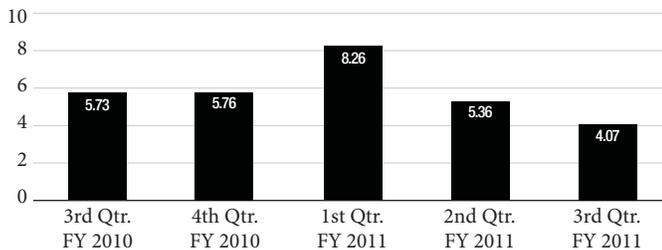
2 A trip is counted as "on-time" if it departs within 10 minutes of the scheduled sailing time.

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

The percentage of sailings system-wide that departed on time improved quarter-to-quarter by 3.5%: 95.1% on time in the third quarter of FY 2011 compared to 91.6% in the previous quarter. On-time performance compared to the same quarter in FY 2010 was up by 3.6%. The duration of sailing delay also improved quarter-to-quarter (1.7 minutes of delay compared to 2.5 minutes the previous quarter). The median sailing delay for the third quarter of FY 2011 was 1 minute, meaning half the trips had less than 1 minute delay (or no delay), and half had more.

Average number of complaints per 100,000 customers

January 1, 2010 - March 31, 2011, by fiscal quarter



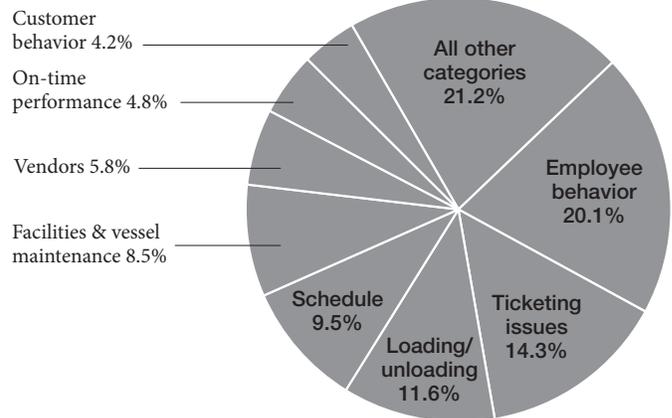
Data source: WSDOT Ferries Division.

Customer complaints decrease

In the third quarter of FY 2011, there was a decrease in customer complaints, from 5.4 to 4.1 per 100,000 as compared to the previous quarter, a nearly 25% decrease. The largest decrease was for complaints about employee behavior, with 17 fewer than in

Common WSF complaint categories

Quarter three fiscal year 2011 (January 1 - March 31, 2011)



Data source: WSDOT Ferries Division.

*Note: "All other categories" includes the following complaint categories, each of which received less than 4% of the total complaints in the third fiscal quarter of FY 2011: Americans with Disabilities Act, Bicycle issues, Terminal/vessel cleanliness, Police/WSF issues, Damage to customer property, Information Service, Injury to customer, Medical related issues, Miscellaneous issues, Parking issues, Safety issues, General service, Smoking issues, Noise, Reservations, Website.

the previous quarter (38 compared to 55). The only major area of complaints that increased during the quarter was ticketing issues (27 compared to 23).

For more information on how WSF manages customer feedback, please see *Gray Notebook* 40, page 34.

Rail: Amtrak Cascades Quarterly Update

Passenger Rail: Amtrak Cascades

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

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

Amtrak Cascades ridership by funding partner

January-March (Quarter 1) ridership, 2009-2011

Funding partner	Round trips funded	Quarter 1 Jan – March 2009	Quarter 1 Jan – March 2010	Quarter 1 Jan – March 2011
Washington	4	100,859	128,054	113,239
Oregon	2	24,957	26,427	26,629
Amtrak	1	24,322	29,292	27,145
Total ridership		150,138	183,773	167,013

Data source: WSDOT State Rail and Marine Office.

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

State-supported Amtrak Cascades fourth quarter ridership down 11.6% from previous year

State-supported Amtrak *Cascades* ridership was down 11.6% from the same period in 2010 but up 12.3% for the same time period in 2009, serving 113,239 passengers in the first quarter of 2011. During the first quarter of 2010, ridership was up primarily due to the Winter Olympics. In the first quarter of 2011, there were many days of interrupted service due to mudslides caused by poor weather.

Quarterly average on-time performance is 53.7%, down from the same quarter in 2010

On-time performance for state-supported Amtrak *Cascades* trains was 53.7% for the quarter, down 5.4% compared to the same quarter in 2010, and down 13.1% from the first quarter of 2009. The long-term goal for on-time performance is 80%.

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

Rail Performance Highlights

Amtrak *Cascades* Q1 2011 ridership is down 11.6% compared to the same quarter in 2010.

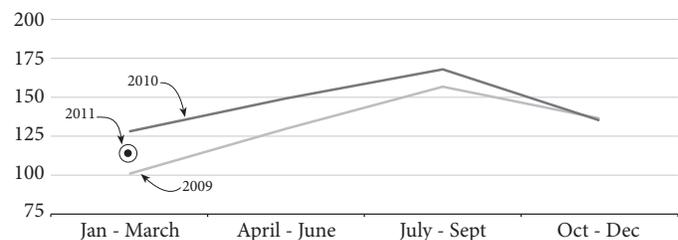
On-time performance is 53.7% for the quarter, 5.4% lower than the same quarter in 2010.

Ticket revenues are down 5% compared to Q1 of 2010.

For more information on Recovery Act-funded High-Speed Rail, see page 56.

Amtrak Cascades quarterly ridership

Number of passengers per quarter, 2009 - 2011
Riders in thousands



Data source: WSDOT State Rail and Marine Office.

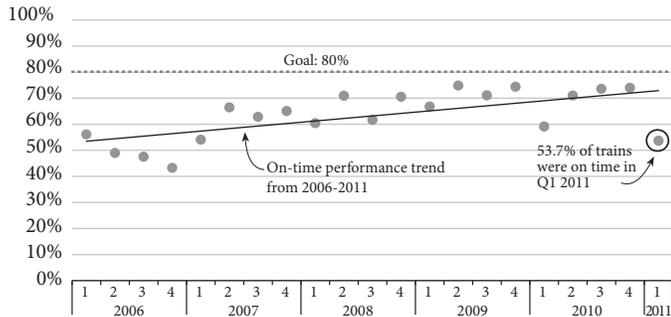
Note: Ridership for Washington-funded trains only.

Rail: Amtrak Cascades Quarterly Update

Passenger Rail: Amtrak Cascades

Amtrak Cascades on-time performance

Percent of trains on-time, 2006 - 2011



Data source: WSDOT State Rail and Marine Office.

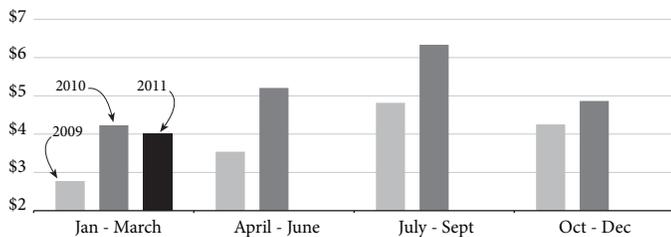
Note: A basic indicator of on-time performance, “percent on time” is calculated by dividing the number of trains that arrive at their endpoint on time by the total number of trains operated during a specific period. Amtrak’s monthly “percent on time” reports incorporate the former Interstate Commerce Commission’s (ICC’s) tolerance for lateness in the calculations. These ICC allowances consider trains 10 to 30 minutes late as on time, depending on the route length. The tolerance time is 10 minutes for Seattle–Portland trains and 15 minutes for Portland–Vancouver, BC trains.

Amtrak Cascades ticket revenue down 5%

During the first quarter of 2011, ticket revenues for Amtrak Cascades trains were down 5%, when compared to the same period in 2010. This is primarily due to the number of days that the trains were unable to operate because of mudslides and other disruptions. Revenue was driven mainly by an effective ticket pricing strategy and the second train to Vancouver, B.C., which attracts long distance riders.

Amtrak Cascades ticket revenue by quarter

Dollars in millions, 2009 - 2011



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

Note: Ticket revenues for Washington-funded trains only.

Recently completed project benefits passenger rail

Stanwood – Siding upgrades

This project, completed in February 2011, was funded through the 2003 Nickel transportation package for \$15.95 million. The project extended an existing railroad siding track north of Stanwood by 13,000 feet, nearly 2.5 miles, to reduce rail traffic congestion and help Amtrak Cascades trains stay on schedule. The project also upgraded two public crossings and closed a third, which improves public safety.



Second track work on the Stanwood – Siding upgrade project.

Rail planning grant update

The Federal Railroad Administration (FRA) granted WSDOT \$400,000 to develop an integrated state rail plan; WSDOT is currently preparing the statement of work and other documents required by the agreement. WSDOT recently completed freight rail and passenger rail plans and other strategic planning studies. Due to these proactive actions and the outcomes from these actions, WSDOT is confident that it will be able to meet all the requirements outlined in the PRIIA (Passenger Rail Investment and Improvement Act) and Notice of Funding Availability (NOFA) for the state rail plan if the grant is obligated. See *Gray Notebook* 40, p. 36 for more information.



Environment

Statewide policy goal

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

WSDOT’s business direction

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



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Water Quality Annual Report

WSDOT's Commitment to Protecting and Restoring Water Quality

Water Quality Highlights

In 2010, WSDOT built 384 stormwater management facilities statewide; 202 are in the NPDES municipal permit area, and 144 are in the Puget Sound area (page 33).

WSDOT has completed 100% of scheduled 2010 Stormwater Pollution Prevention Plan (SWPPP) inspections (page 34).

One percent of 1,637 centerline miles of highway in the permit area and 4% of 1,965 centerline miles within the Puget Sound basin have permit-defined stormwater outfalls inventoried (page 35).

80% of construction stormwater samples met turbidity benchmarks; less than 3% of the 2800 samples collected were over the benchmark requiring phone reporting (page 36).

WSDOT's NPDES Municipal and Construction permit indicators and performance measures

Indicators, performance measures, and progress in 2009 permit area: 2009-2010

Topic/Indicator	2009	2010
Key performance measure		
Stormwater management facilities constructed <i>Number of stormwater treatment facilities constructed annually</i>	131	202
Inventory of stormwater discharge points <i>Percent of state highway centerline miles with permit-defined outfalls inventoried</i>	0%	1%
Progress toward developing and implementing SWPPPs <i>Percent of maintenance facilities, rest areas, and park & ride lots inspected twice annually for SWPPP implementation</i>	100%	100%
Construction site stormwater monitoring <i>Percent of water quality samples at or below 25 NTU turbidity benchmark</i>	84%	80%

Source: WSDOT Environmental Services Office.

Traditionally, WSDOT's stormwater management program focused on maintaining safe driving conditions and preserving the condition of roadways. While safety and preservation continue to be top priorities, WSDOT has also made protecting and restoring the environment an important goal. With more than 7,000 miles of highways, plus rest areas, ferry terminals, maintenance facilities, and park and ride lots, WSDOT operates and maintains more than 40,000 acres of paved surfaces. WSDOT recognizes that stormwater runoff from these transportation facilities – carrying various polluting substances – can contribute to water quality problems. Managing the stormwater that comes from its facilities helps WSDOT fulfill its environmental stewardship commitment, as well as meet regulatory conditions imposed by local, state and federal authorities. In response, WSDOT developed a stormwater program to meet regulatory obligations which are among the most comprehensive and stringent in the country.

WSDOT's two stormwater permits: Municipal and construction

The federal government recognizes that stormwater discharges can contribute to poor water quality, and the Clean Water Act was amended to reflect this in 1987. The National Pollutant Discharge Elimination System (NPDES) permit program is the primary enforcement tool to ensure compliance with the Clean Water Act's provisions. In 1995, the Washington State Department of Ecology (Ecology) granted WSDOT coverage under several general NPDES municipal stormwater permits. These permits were replaced by a separately issued municipal stormwater permit in 2009. Requirements of the 1995 general NPDES permit were generally oriented to stormwater management as it relates to cities and counties. The 2009 municipal stormwater permit allowed WSDOT to customize its stormwater management program to better fit its business operations and linear network of transportation facilities. It also greatly expanded WSDOT's responsibilities and the areas of the state regulated under permit coverage. (See the March 2010 *Gray Notebook* 37, pp. 33-36.)

The NPDES construction stormwater general permit (CSGP) is another part of the comprehensive national NPDES program. Construction site operators must be covered by this permit if they are engaged in clearing, grading, and excavating activities that disturb one or more acres and discharge stormwater to surface waters of the state. They are required to develop and implement stormwater pollution prevention plans (SWPPPs) and use best management practices (BMPs) that effectively reduce or prevent the discharge of pollutants into receiving waters.

Gray Notebook reporting of water quality performance

This year's Water Quality Annual Report adds information on WSDOT's progress on inventorying its stormwater discharge points, as well as progress made in implementing stormwater pollution prevention plans. WSDOT tracks performance indicators to evaluate compliance with aspects of the municipal stormwater permit, and to assess the effectiveness of its Stormwater Management Program Plan.

Stormwater Management Facilities

WSDOT's 40,000 acres of paved surfaces and hardscaping prevent precipitation and snowmelt from infiltrating into the ground, altering natural drainage patterns and creating more stormwater runoff. During a routine autumn afternoon rain shower, one acre of pavement produces the same amount of runoff as several square miles of native rangeland.

WSDOT increases its inventory of stormwater management facilities

Before 2009, WSDOT tracked the number of stormwater management facilities built within areas regulated by the 1995 NPDES permits. The regulated area was greatly expanded in 2009 when WSDOT's municipal stormwater permit was issued. Now, WSDOT tracks the number of stormwater facilities built statewide within the permit-regulated areas, and within the Puget Sound Basin.

In 2010, WSDOT built 384 facilities statewide, 202 of which are in the permit area, and 144 of which are in the Puget Sound Basin. The number and location of stormwater management facilities constructed each year depends upon many factors including: legislatively mandated project lists, design and construction schedules, funding, and regulatory approvals.

Stormwater can contribute to downstream water quality problems

Because rain cannot penetrate the pavement, it may not be able to recharge ground water and feed the base flows of streams. Instead, it may flow over paved surfaces, sometimes entering a piped stormwater drain or other conveyance system, but eventually it will run into streams, lakes, bays, or the ocean without any opportunity to infiltrate into the ground. Runoff flows faster over hard, impervious surfaces and through pipes than it does through natural vegetation. The increased volume and flow rate of stormwater produces higher peak water flow downstream of the hardscape. These higher peak flows can lead to downstream flooding, stream bank erosion, stream bed scouring, and muddy waters that may suffocate fish egg nests.

Stormwater runoff can also carry pollutants to natural bodies of water. Pollutants common to stormwater runoff from WSDOT's transportation facilities and operations come from vehicle emissions, brake pad and tire wear, materials from vehicle corrosion and leaks, spills, leaves, litter, deicers, fertilizer, pesticides, and erosion. The amount of pollution ultimately entering the environment can be affected by whether or not the water is treated beforehand.

Conditions affecting runoff pollution

The amount of pollution washed off the roadway depends on the amount of pollutants on the road surface, the surface roughness, the slope, how much and how hard it rained, and for how long. For example, left untreated, more pollutants can wash into a stream from a hard rain hitting a smooth road than from light rain falling on a rough road surface with the same pollutants.

Typical stormwater management facilities

One way to manage the effects of stormwater on the environment is by constructing stormwater management facilities. These facilities can help reduce pollutants in stormwater runoff, control the flow rate and volume of runoff, or perform both functions. Stormwater management facilities often used by WSDOT include stormwater infiltration ponds, wide-bottomed grass ditches known as biofiltration swales, media filter drains, and roadside 'vegetated filter strips' that use plants to filter runoff.

WSDOT designs many of its stormwater management facilities to mimic the natural environment. For example, some stormwater facilities collect and store runoff allowing it to filter slowly through its highly permeable base into the ground, reducing the volume of stormwater entering natural waterbodies. Allowing stormwater to evaporate and seep gradually into the ground reduces peak flows, reducing stream bank erosion and downstream flooding. Infiltration also removes pollutants from stormwater by allowing them to settle to the bottom of the pond where they are absorbed by plants, broken down by microbes, and filtered into the soil. These infiltration facilities can provide complete or nearly complete reduction of pollutants and flow to surface waters.



Vegetated filter strip designed to treat highway runoff in the median.

Water Quality Annual Report

Implementing Stormwater Pollution Prevention Plans at WSDOT Facilities

WSDOT's Municipal Stormwater Permit requires development of individual Stormwater Pollution Prevention Plans (SWPPPs) for maintenance facilities, rest areas, ferry terminals, and WSDOT-maintained park & ride lots located within the permit coverage area. These plans are considered a living document, and the agency expects to continually revise the plans as best management practices (BMPs) are improved. WSDOT only needs to develop plans for facilities that have drainage systems designed to transport stormwater to bodies of water.

WSDOT has developed plans for 31 maintenance facilities, six rest areas, 11 park & ride lots, and 11 ferry terminals. These plans identify potential sources of pollutants at each facility, methods to prevent stormwater from coming in contact with pollutants, and best management practices (BMPs) to prevent and control the discharge of contaminated water to surface and groundwater. The plans require WSDOT to perform inspections at specified rates annually, carried out by crews that have been trained on the content and intent of each pollution prevention plan.

WSDOT completes all scheduled 2010 SWPPP inspections

Highway maintenance crews received training on the SWPPPs and all plans have been implemented. HQ Highway Maintenance staff complete SWPPP site inspections of maintenance facilities, rest areas, and park & ride lots a minimum of twice a year to insure SWPPPs are implemented and permit requirements are met. All scheduled inspections were performed in 2010. SWPPPs for ferry terminals were developed in 2010 and will begin implementation in 2011.

Common pollutant sources at WSDOT maintenance facilities

There are many sources for potential stormwater pollution found at WSDOT maintenance facilities. The obvious include the various petroleum products, cleaning products, and herbicides that are used and stored at these sites. These hazardous materials must be stored within buildings, and care must be taken during storage, use, and loading so that these products are not released to the environment.

Some less obvious pollutants include the different types of sand, rock, chlorides (salt), and specialized equipment maintenance crews must have on hand to do their job. Piles of crushed rock, dirt, winter traction sand, asphalt grindings, and street sweepings can all potentially release sediment to on-site stormwater drainage systems. Liquid anti-icing/de-icing chemicals, conditioned sand, and de-icing solid chemicals all contain some

form of salt. Without proper safeguards, salt can find its way into drainage systems as a result of spills during the loading of trucks, filling salt sheds and anti-icer storage tanks, leakage from salt sheds, and when equipment is washed to remove residual salt.

Follow-through from inspections

When inspection crews find deficiencies, they notify the Maintenance Superintendent and Facility Planner/Engineer so that corrective actions can take place. Some deficiencies are sufficiently extensive or complex that they cannot be corrected using good housekeeping practices. In these circumstances, capital improvements may be needed to meet the plan's performance requirements. The table below shows capital projects completed in the 2009-2011 biennium. Funding availability will dictate what new projects can be scheduled in the coming biennium.

Stormwater capital improvements, 2009-2011

Project	Cost	Location
Oil and water separator to sanitary sewer	\$12,200	Mt Vernon Area Maintenance Facility (AMF)
Secondary containment for liquid anti-icer tanks	\$14,300	Mt Vernon AMF
Oil and water separator to sanitary sewer	\$11,200	Spokane St. Section Maintenance Facility (SMF)
Pet waste collection facility	\$300	Silver Lake Safety Rest Area (SRA)
Pet waste collection facilities	\$600	Smokey Point SRAs (two sites)
Pet waste collection facility	\$300	SeaTac SRA
Drywell removal connection to stormwaterpond	\$13,000	Moses Lake SMF
Pre-wash pad drainage system	\$20,000	Moses Lake SMF
Secondary containment for liquid anti-icer tanks	\$12,500	Alder SMF
Salt shed	\$61,900	Alder SMF
Connecting shop drainage to sanitary sewer	\$14,700	Port Angeles AMF
Pet waste collection facilities	\$600	Gee Creek SRAs (two sites)
Anti-icer mixing tank paving	\$23,100	Pines SMF
Wash pad building	\$36,600	Pines SMF
Secondary containment for liquid anti-icer tanks	\$15,000	Wandermere AMF
Drywell removal	\$1,600	Wandermere AMF

Source: WSDOT Environmental Services and Maintenance Offices.

Stormwater Discharge Point Inventory

Stormwater Discharge Point Inventory

WSDOT's stormwater discharge points are the locations where concentrated stormwater leaves, or enters, through a manmade conveyance, WSDOT's storm sewer systems. When the discharge is to waters of the state like a: stream, wetland, lake, or Puget Sound, the point is commonly referred to as an "outfall". From 1995 until around 2008, the focus of WSDOT's early stormwater inventory efforts was to identify and inventory stormwater discharge locations that had the highest need of retrofit.

Since 2009, WSDOT expanded this inventory to capture a more complete dataset of stormwater discharge points. This new inventory captures a much wider range of information on how stormwater is being conveyed and what it is going. Doing so enables WSDOT to meet its 2009 NPDES municipal stormwater permit obligations to map and inventory permit-defined outfalls, as well as connection points with other municipal separate storm sewer systems (MS4s).

Upgrading the quality and quantity of data captured in the field improves the inventory

As of June 30, 2010, WSDOT has conducted stormwater discharge inventory work on 1% of its 1,637 centerline miles of highways within the municipal stormwater permit coverage area, and about 4% of 1,965 centerline miles of highways within the Puget Sound Basin.

The current stormwater discharge inventory consists of three status levels: 'complete' discharge point inventory where all known discharge locations have been identified under current procedures, 'partial' inventory, where some but not all discharge points have been identified, and 'areas of no data'. A partial inventory designation indicates data is incomplete according to information requirements in the 2009 permit.

In fiscal year 2010, WSDOT focused on inventorying its stormwater system in the Puget Sound Basin. This is because stormwater has been identified as a high priority for the recovery of Puget Sound. In addition, the agency combined its inventory

Stormwater discharge inventory, FY 2010

Number and percent of miles of complete and partial stormwater discharge point inventories

	Complete	Partial	Total center line miles
Miles inventoried in the permit area	24 (1%)	851 (52%)	1,637
Miles inventoried in the Puget Sound Basin	73 (4%)	827 (42%)	1,965

Data source: WSDOT Environmental Services Office.

efforts with implementation of other parts of the permit – specifically, identifying and eliminating illicit discharges to WSDOT's system and responding to water cleanup plans (these are plans prepared by Ecology to address polluted bodies of water).

Next steps for the stormwater discharge point inventory

WSDOT will continue the stormwater features inventory and data documentation process. Discharge points will serve as the anchor feature in the on-going program to map WSDOT's complete storm sewer systems within the permit area.

As required by the permit, ongoing discharge inventory efforts will also map stormwater system connections with other municipal systems. This will enable WSDOT to trace the stormwater's path through constructed conveyances and across civic boundaries to the final outfall. WSDOT will coordinate its work with cities and counties, sharing data to form the most complete inventory of connections in the most efficient manner.



Salt spill at a WSDOT maintenance facility risks spreading polluted stormwater runoff into nearby waterbodies.



The walled secondary containment unit for salts ensures that any spillage is prevented from reaching the pavement in runoff.

Water Quality Annual Report

Construction Site Stormwater Discharge Monitoring

Construction site water quality monitoring

WSDOT monitors the quality of stormwater discharging from construction sites as required by the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General permit. Construction projects with one or more acres of soil disturbance are required to sample discharge water quality. Projects meeting this acreage threshold must collect 'grab samples' at all locations where stormwater discharges from the project site and enters state surface waters. This article summarizes the performance of the water quality samples taken in 2010.

80% of construction stormwater samples were below the turbidity benchmark value

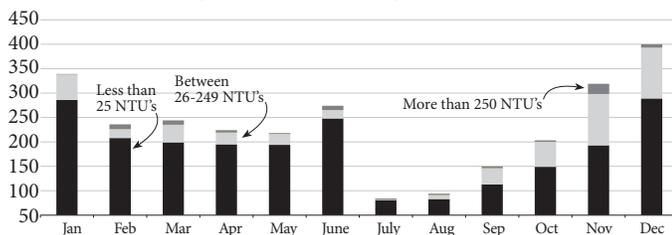
Washington's Department of Ecology (Ecology) has designated a benchmark value for turbidity (a measure of water cloudiness) and a phone reporting trigger value. When the latter is reached, WSDOT must phone Ecology immediately to report the problem.

The turbidity benchmark value is 25 Nephelometric Turbidity Units (NTUs – the unit used to measure turbidity). Discharge samples at or below this benchmark value indicate properly functioning best management practices (BMPs) and no additional action is required. Discharge samples above the 25 NTU benchmark indicate improperly functioning BMPs requiring implementation of additional actions (called adaptive management) to improve performance. The phone reporting trigger value is 250 NTU. Discharge samples of 250 NTUs or more trigger immediate corrective action, and additional sampling if the discharge is not stopped.

The following graph summarizes stormwater discharge data collected under the NPDES General permits from 2010. Over the past year, less than 3% of the nearly 2800 turbidity discharge samples WSDOT collected exceeded the 250 NTU phone reporting trigger value. Seventeen percent (17%) of the samples were recorded between 26 and 249 NTUs. The majority of the samples (80%) were below the 25 NTU turbidity benchmark value.

Monthly compliance with NPDES general permit benchmarks, 2010

Measurements in Nephelometric Turbidity Units (NTUs)



Data source: WSDOT Environmental Services Office.

*NPDES is the National Pollution Discharge Elimination System.

The overall score for samples below the reporting trigger value of 250 NTUs remains at 97%, stable with the previous year's results. The increase in samples in the 26-249 NTU range (from 14% to 17%) may be due to any or all of several factors. These include the larger number of samples taken, a wetter and more challenging construction season, and project locations with greater stormwater management challenges. Site-specific analysis is difficult because each project location is unique (climate, soil type, topography, size, and so on). WSDOT continually makes improvements in its training and guidance materials, and trains people in sampling collection techniques. As a result of more frequent or more rigorous application of testing protocols a project may produce a greater number of mid-range samples that affect overall results.

Water quality sampling for projects involving work in natural bodies of water

WSDOT also samples water quality upstream and downstream from projects that include in-water work, to be sure they meet state water quality standards and do not affect water quality downstream from the project. In past *Gray Notebooks*, performance results for in-water samples were reported in this article, but because in-water work is not regulated under the NPDES stormwater permits, any future reporting on the topic will instead be included in the Environmental Compliance article. (See the December 2010 *Gray Notebook 40*, pp. 40-41, for the most recent coverage.)

Erosion control at construction sites

Preventing erosion and controlling sediment transport is a continual effort for all WSDOT construction projects. These important ongoing efforts protect water quality, maintain a safe work site, and stabilize soil after construction. Practices employed to prevent soil erosion and sediment transport include: minimizing disturbance to existing vegetation, building ponds, installing erosion control blankets, and planting grass for ground cover. The emphasis is on minimizing and protecting bare soils to prevent erosion from starting. These practices, called Best Management Practices (BMPs), are implemented according to project-specific Temporary Erosion and Sediment Control (TESC) plans. WSDOT performs weekly field inspections throughout construction to ensure BMPs are operating properly, and to ensure TESC plans are updated to reflect current field conditions. In addition, each fall, WSDOT conducts a statewide review to assess the erosion control preparedness of active construction projects.

Construction Site Stormwater Discharge Monitoring, continued

Results of 2010 assessments

In October and November of 2010, WSDOT assessed 22 projects (18 in western Washington and four in eastern Washington) with significant erosion potential based on project size, steepness of slopes, soil type, or proximity to sensitive waterways.

In 2010, acceptable measures were in place on all projects where dewatering was performed. WSDOT's overall performance improved from 2004 through 2008. In 2009, WSDOT experienced slight decreases in preparedness in several measures, most notably in protection of cut-and-fill slopes. In 2010, the score for protection of cut-and-fill slopes showed some improvement, but the scores reveal downward trends in other measures.

Performance of October 2010 assessment sites

Effective erosion control results from proactive cooperation between WSDOT and its contractors. WSDOT attributes some of the low performance values in 2010 with inconsistent contract enforcement in areas such as soil covering and seeding application timelines, BMP installation and maintenance, and pollution control. The low performance score for pollutant control stemmed from inadequate on-site Spill Prevention Control and Countermeasures (SPCC) plans or methods on three projects. While no spills were observed during the assessment process, all work crews must take proper precautions associated with pollution control at all times.

Improving erosion control performance

One objective for conducting fall assessments involves optimizing erosion control preparedness before more severe winter weather sets in, but the ultimate goal aims to minimize sediment release in stormwater discharges. To accomplish this, WSDOT developed four steps to improve performance in 2011. These steps include: increase contract enforcement of TESC plans, improve the communication of roles and responsibilities for achieving compliance, raise the standards for Erosion and Sediment Control (ESC) Lead performance, and alter the timing and reporting procedures for fall assessments.

WSDOT will improve staff training to increase contract enforcement and role communication. The third step requires the development of a statewide provision for use by WSDOT inspectors with the goal of raising the standards for contractor ESC Lead performance. The last step involves increasing efficiency and utility of the fall assessment process. Starting the assessments earlier allows more time for individualized follow up assessments, provides more meaningful feedback to project personnel, and more time to increase preparedness.



Stormwater infiltration pond near roadway.

Wetlands Protection Annual Report

Wetland monitoring and evaluation

Wetland Protection Highlights

Since 1988, WSDOT has established, enhanced, or restored 183 wetland sites covering 908 acres across Washington.

WSDOT has three wetland mitigation banks it can use to accommodate future project needs.

Wetlands are transitional areas between land and water, and are either saturated with water or covered by shallow water for part of each year. Wetlands are important elements of watersheds: they help regulate the amount of water moving through a watershed by soaking up water during wet periods and slowly releasing it during dry periods. In addition, wetlands reduce peak flood levels, recharge groundwater, improve water quality, and provide habitat for fish and wildlife.

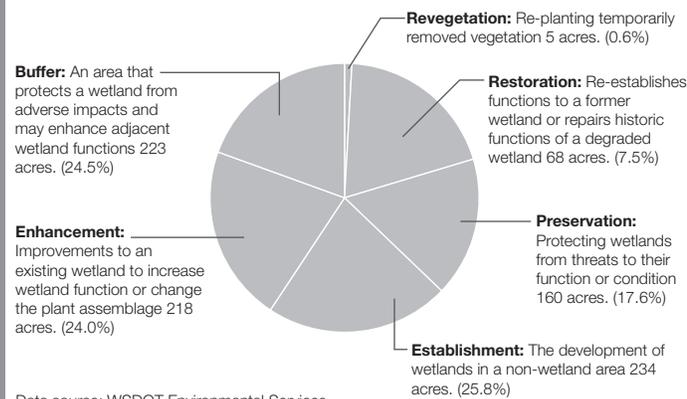
WSDOT designs transportation projects to avoid and minimize wetland disturbance. The department obtains permits from regulatory agencies when projects have unavoidable wetland disturbances. Wetlands are then enhanced, restored, established, or preserved to meet permit conditions and the state and department 'No Net Loss' policies.

WSDOT has constructed and monitored 183 wetland mitigation sites on 908 acres since 1988. WSDOT is responsible for these sites in perpetuity. The inventory of 183 total wetland mitigation sites includes:

- 67 actively monitored wetland mitigation sites, including six sites on 112 acres that were added in 2010. Data collection and reporting is performed on 76 separate areas, since some mitigation sites have more than one unit. For example, see the map of Springbrook Bank on page 45.
- 57 sites that have completed their monitoring period and have been or are being evaluated by the Corps.
- Nine sites that are past their original monitoring period, but did not meet all permit conditions.
- 50 sites that have not been monitored since 2000. These sites performed acceptably before there was a completion process with the Corps.

WSDOT replacement wetlands, 1988 – 2010

Total acreage (and percentage) of wetland sites
183 wetland sites on 908 acres



Map: WSDOT wetlands protection sites, 1988–2010



Wetland monitoring and evaluation

Replacement wetlands are typically monitored for 10 years to evaluate their progress towards intended goals and complying with federal, state, and local permit conditions. Projects resulting from the 2003 Nickel and the 2005 Transportation Partnership Account (TPA) funding packages increased the wetland monitoring workload starting in 2006. The monitoring workload will continue to increase over the next several years as projects are completed, and will remain at a high level for at least 10 years. To keep pace with the growing workload, WSDOT's monitoring group continued to increase its efficiency in 2010 by:

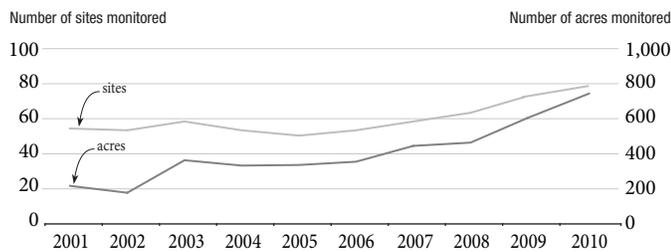
- Focusing on the most important attributes at each site,
- Purchasing hand-held computers for data collection, analysis and processing,
- Increasing the number of interns and extending the length of the monitoring season,
- Using temporary help from the WSDOT technical and clerical on-call pools.

Completing Wetland Mitigation

WSDOT started tracking the wetland monitoring workload in 2001. The 2010 workload includes 67 wetland mitigation sites and three mitigation bank sites. The number of areas monitored increases to 79 when sites that have more than one unit contributing to the workload are included.

WSDOT wetland mitigation site monitoring workload, 2001 – 2010

Number of sites monitored and number of acres monitored



Data source: WSDOT Environmental Services.

WSDOT completes 90% of recommended site management activities in 2010

Wetland management activities such as weed control, irrigation, mulching, and supplemental planting can improve long-term environmental outcomes. WSDOT implements management activities in response to needs identified during monitoring visits. For sites monitored in 2009, 90% of recommended management activities (98 of 109) were implemented in 2010.

WSDOT's site management activities by region

As of December 31, 2010

WSDOT Region	Sites	Recommended actions	Completed	Percent complete
Eastern	3	3	3	100
Northwest	35	55	55	100
Southwest	9	13	2	15
Olympic	11	20	20	100
NorthCentral	4	7	7	100
SouthCentral	4	4	4	100
Mega Projects	4	7	7	100
Total	70	109	98	90

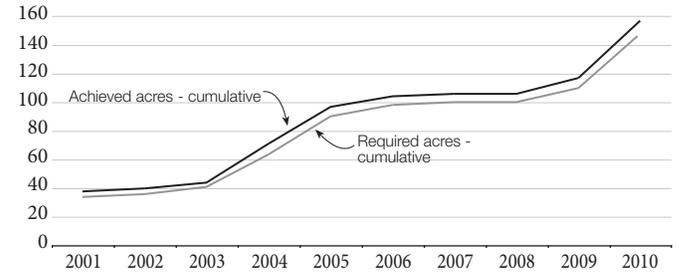
Data source: WSDOT Environmental Services.

WSDOT creates and enhances required wetland area

Wetland area is measured twice during the monitoring period. The first measurement, typically taken in the third year of monitoring, provides an early indication of the amount of potential wetland present. Final measurements taken at the end of the

WSDOT wetland mitigation acres achieved, 2001 – 2010

Number of acres achieved (annual and cumulative) vs. required acres (annual and cumulative)



Data source: WSDOT Environmental Services.

monitoring period determine the acreage achieved. Collectively, the 68 sites where final area has been determined have produced 9% percent more wetland than required (159 acres achieved compared to 146 acres required).

Corps determine if WSDOT met standards

Since 2006, the Corps has been providing written agreement that the department has completed its performance standards and monitoring obligations on mitigation sites they determine are successful. As of December 31, 2010, the Corps has reviewed the performance of 45 mitigation sites, and determined that 36 are satisfactory. WSDOT must protect and maintain wetland mitigation sites in perpetuity after receiving this written agreement.

Early success at meeting performance standards

The Corps can determine that WSDOT has completed permit obligations earlier than required. In these cases, mitigation sites must meet final performance targets two years in a row before the end of the monitoring period. The Corps and Ecology determined that one WSDOT mitigation site qualified for early completion in 2009 and another qualified in 2010. The second determination will save WSDOT four years of monitoring and site management. WSDOT continues to pursue meeting final performance targets before the end of the monitoring period.

Wetland sites meeting performance standards

As of December 31, 2010

Status	Number of sites
Completions requested by WSDOT	57
Requests reviewed by Corps	45
Determinations of success received by WSDOT	36
Additional information requested by the Corps	6
Decisions pending	3
Requests not reviewed yet	12

Data source: WSDOT Environmental Services.

Wetlands Protection Annual Report

Wetland Mitigation Banks

Some mitigation sites have not met all permit conditions

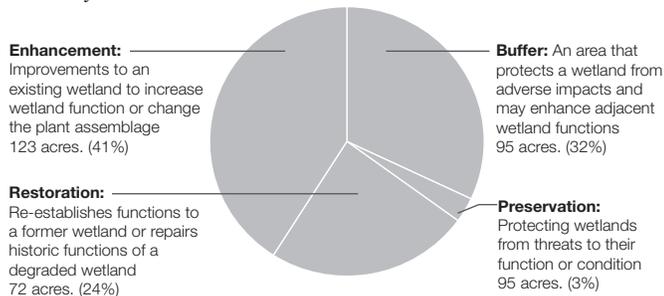
On nine sites, some permit conditions were not met by the end of the monitoring period. These sites have either not met their performance standards or not provided enough replacement wetland area, or both. Five of the nine sites have problems with growth of trees and shrubs in upland areas. WSDOT is working on solutions for four with shortfalls in wetland area. These sites are not included in the calculation of mitigation area provided, because WSDOT has not completed its obligations. More information will be included in the 2012 annual *Gray Notebook* report.

Wetland mitigation banks

The 2008 Environmental Protection Agency and Corps guidance on compensatory mitigation (p. 56, GNB 33) favors mitigation banking over traditional mitigation. Mitigation banking can be thought of as a type of “savings account” for future capital projects and mitigation needs. Mitigation banks create credits based on the number of acres and their value. These credits can be withdrawn from the account (or used) by projects as compensation for unavoidable wetland impacts within the bank’s specified service area.

Total acreage of WSDOT wetland mitigation banks

Acreage (and percentage) of mitigation banks, three banks totaling 299 acres as of December 31, 2010



Data source: WSDOT Environmental Services.

WSDOT wetland mitigation banks

Wetland mitigation bank	Service area (watershed)	Area generating credit (acres)	Potential credits	Credits used
Moses Lake	Central Columbia Basin	11	5	1.4
North Fork Newaukum	Upper Chehalis River	171	78.4	19.3
Springbrook Creek	Green and Cedar Rivers near Renton	117	44	4.6

Data source: WSDOT Environmental Services.

Since 1999, WSDOT has developed and operates three certified wetland mitigation banks, which have provided mitigation for 17 transportation projects; 100.9 credits remain for use by future projects. These banks help reduce costs for design, permits, purchasing, construction, monitoring, and maintaining mitigation sites – and reduce time needed to obtain permits for future projects.



WSDOT typically plants native willows and provides wildlife habitat structures at mitigation sites.

Moses Lake Bank (Grant)

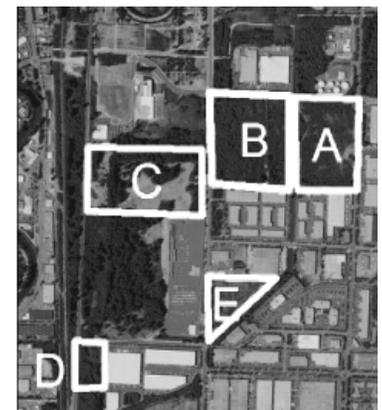
Certified in 2003, this bank restored and enhanced a degraded urban wetland and was developed in partnership with the City of Moses Lake. The bank has achieved all of its performance targets and the city will assume responsibility for site management in 2011. In 2009, the SR2/US97 passing lane project used credit from this bank.

North Fork Newaukum Bank (Lewis)

Certified in 2005, this bank is a restored and enhanced floodplain wetland. Recent projects using credits from this mitigation bank include I-5 widening between Blakeslee to Grand Mound and a railroad realignment near Blakeslee Junction. Credits also have been purchased by the US Army Corps of Engineers to make repairs to the Salzer Creek and Long Road levees.

Springbrook Creek Bank (King)

Certified in 2007, this bank is comprised of five parts (A-E) of restored and enhanced wetlands providing wildlife habitat, flood storage, improvements to water quality and educational benefits to the local community. Construction of the final unit of the Springbrook Creek Bank was completed in 2010. WSDOT used credits from this bank for projects on SR 518, SR 515, and I-405. Credits were also used for emergency repairs to the SR 169 Green River Bridge.



Springbrook Creek Mitigation Bank.

Economic Vitality

Statewide policy goal:

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

WSDOT's business direction:

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



In this section

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Federal Recovery Act-funded Projects	54
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Earlier articles concerned with economic vitality

Economic Vitality Special Report on Projects, GNB 40	
Rail Freight Semi-Annual Report, GNB 39	
Trucks, Goods & Freight, GNB 37	
CVISN, GNB 37	

Trucks, Goods, & Freight Annual Report

Freight Highlights

Truck volumes on Washington roads were higher in 2010 compared to 2009.

Container freight volumes through Washington's seaports increased 14.8% in 2010 compared to 2009, following a 12.2% decline in 2009 from 2008 volumes.

Based on STB Waybill data, freight rail traffic declined over 11% in 2009, mostly due to less import traffic passing through Washington to the Midwest on the trans-continental route.

In Washington, about 55% of all air freight tonnage is handled at the Seattle-Tacoma International Airport.

Example truck bottleneck data

I-90 Snoqualmie Pass – Tinkham Rd to Denny Creek

- Speeds below threshold 61% of the time
- Average truck speed is 37 mph
- Truck traffic averages 6,000 trucks per day
- This route is considered *Unreliable* at all measured times of day: AM, midday, PM, and night.

See pages 43 and 44 for more truck bottleneck data on T-1 and T-2 roadways in the Central Puget Sound and statewide.

Efficient, safe, and secure freight transportation is crucial to Washington's economic strength. The state's freight system is a multimodal, interconnected network of highways and local roads, mainline and branch line railroads, navigable waterways and deepwater ports, and air cargo facilities.

WSDOT supports Washington's freight systems by providing planning for all state freight investments and directly managing the state's highway and rail programs.

Washington's freight system

Three components of Washington's freight system support both the national and state economies. First, Washington is a global gateway, connecting Asian trade flows to the U.S. economy, Alaska to the lower 48 states, and Canada to the U.S. West Coast. Second, the state's manufacturers and farmers rely on the freight system to transport their products to customers worldwide as well as in-state customers. Third, Washington's distribution system is a fundamental local utility, critical to the state's economy.

A large part of Washington's economy depends on freight for its competitiveness and growth. Highly freight-dependent sectors include agriculture, mining, construction, manufacturing, wholesale, retail, transportation, and warehousing. In 2010, freight-dependent sectors accounted for about 44% of the state's jobs.

Truck Freight Performance Measurement Pilot Program: analysis helps WSDOT identify truck bottlenecks throughout the state

The Washington State Department of Transportation (WSDOT), Transportation Northwest at the University of Washington (TransNow), and the Washington Trucking Associations (WTA) have partnered in an effort to collect and analyze Global Positioning Systems (GPS) truck data from commercial, in-vehicle, truck fleet management systems. Data from this project will support a statewide Truck Freight Performance Monitoring (TFPM) program. For more information, see *Gray Notebook* 37, p. 46-47.

In 2010, the state Legislature gave the program additional funding and directed that the study area be expanded statewide from the initial Puget Sound program. Funds were used to increase the number of trucks monitored to 6,000 and widen the study area to include all state highways with freight significance – even tracking trucks in Idaho, Oregon, and British Columbia that are within 100 miles of Washington's borders. An important part of the project's second phase is the use of GPS data to identify and rank truck bottlenecks on Washington's road network.

Bottleneck identification project

The bottleneck identification process developed for the program is designed to find sections of Washington's roadways that perform poorly for trucks, then to develop quantitative measures that allow these bottlenecks to be ranked and compared. Results will be replicable and statistically valid, producing useful data that are straight-forward to use by transportation professionals and decision makers. The measures used will mesh with measures that WSDOT has already developed for evaluating congestion and roadway performance for all types of vehicles. For more information, see page 43.

Truck Bottleneck Identification Project

Selected truck bottlenecks: Inside the Central Puget Sound region

Degree of reliability, September 2009 - February 2011

Road	City	Approximate location	Below threshold speeds ¹	Average speed	Average daily trucks	Reliability ²				
						6am-9am	9am-3pm	3pm-7pm	7pm-6am	
Example T-1 roadway truck bottlenecks										
I-90	Snoqualmie Pass	Tinkham Rd to Denny Creek	61%	37 mph	6,000	U	U	U	U	
SR 99	Fife	54th Ave to Fife Heights Dr	42%	29 mph	3,600	U	U	U	S	
SR 18	Issaquah	Tiger Mtn Summit	42%	40 mph	3,600	U	U	S	U	
I-90	North Bend	436th St SE to MP 39	38%	45 mph	6,000	U	U	U	U	
SR 99	Tukwila	SR 516 to International Blvd	32%	30 mph	1,800	S	S	S	S	
Example T-2 roadway truck bottlenecks										
SR 509	Tacoma	Taylor Way to McMurray Rd	61%	22 mph	1,600	U	U	U	U	
SR 161	Puyallup/S. Hills	132nd St E to 43rd Ave SE	41%	22 mph	1,600	S/U	S/U	S/U	S/U	
SR 516	Kent	Meeker St to I-5	34%	38 mph	1,600	U	U	U	U	
SR 3	Kitsap County	SR 104 to Lofall Rd NE	19%	43 mph	1,400	U	U	U	U	
SR 99	Lynnwood	228th St SE to 204th St SW	57%	26 mph	3,300	U	U	U	F	

Data source: WSDOT Freight Office.

¹ The percentage of time truck speeds are less than 60% of posted speeds (35 mph where posted speeds are 60 mph).

² Reliability abbreviations: F = Reliably Fast, S = Reliably Slow, U = Unreliable.

Note: T-1 roadways carry an average gross truck tonnage of more than 10 million tons a year, T-2 roadways carry an average gross truck tonnage of 4 to 10 million tons a year.

Communicating results of the truck bottleneck identification project

Information reported in the tables above has been used to classify truck bottlenecks both inside and outside the Central Puget Sound. Truck speeds at these locations are performing poorly, below threshold speeds, which is defined as the percentage of time that truck speeds are less than 60% of the posted speed or 35 mph or lower on a road with a 60 mph posted speed. The average truck speeds are derived from GPS probe data and are an average over time at all times of day. The average daily truck volume is supplied by the Freight Goods Transportation System (FGTS), estimating how many trucks pass through a given segment on an average day. Reliability (or speed distribution) is also determined and categorized as reliably fast, reliably slow, or unreliable. The following is an example of how to read the information reported in the table above and on page 44.

I-90 – Snoqualmie Pass – Tinkham Rd to Denny Creek

Truck speeds on this segment are below threshold speeds about 61% of the time, with truck speeds averaging 37 mph, and an average daily truck volume of 6,000 trucks. This segment's reliability is considered 'unreliable' for all times of day (AM, midday, PM, and night).



Truck bottleneck identification process details

Bottleneck identification for Washington involved the following five tasks:

- **Segment the roadway** – Using Geographic Information Systems (GIS) software, separate WSDOT's entire roadway network into analysis segments based on the locations of ramps /major intersections and, in some cases, roadway length.
- **Add attribute information to the segments** – Assign to each analysis segment the appropriate roadway attributes (speed limits, road type classification, etc.) along with the roadway's heading information.

Trucks, Goods, & Freight Annual Report

Truck Bottleneck Identification Project – continued

Selected truck bottlenecks: Outside the Central Puget Sound region

Degree of reliability, September 2010 – February 2011

Road	City	Approximate location	Below threshold speeds ¹	Average speed	Average daily trucks	Reliability
Example T-1 roadway truck bottlenecks						
SR 501	Vancouver	I-5 to Port of Vancouver	65%	23 mph	2,100	Slow/Unreliable
SR 432	Longview	Columbia Blvd to International Way	43%	21 mph	4,000	Unreliable
I-90	West of Vantage	MP 130.88 to 132.89	50%	45 mph	3,300	Unreliable
I-82	South of Ellensburg	MP 5.14 to MP 7.13	48%	45 mph	4,400	Unreliable
US 20	Anacortes	Reservation Rd to Junction of Spur US 20	47%	37 mph	3,400	Unreliable
Example T-2 roadway truck bottlenecks						
US 2	Everett	I-5 to Snohomish River Bridge	100%	19 mph	4,400	Unreliable
US 2	Airway Heights	Garfield Road to City Limits	100%	16 mph	1,900	Slow/Unreliable
SR 542	Bellingham	I-5 to Orleans St	80%	16 mph	1,500	Unreliable
US 395	Chewelah	MP 211 to 213.9	78%	27 mph	950	Unreliable
SR 117	Port Angeles	Marine Drive to US 101	71%	19 mph	1,200	Unreliable

Data source: WSDOT Freight Office.

¹ The percentage of time truck speeds are below the severe congestion threshold, less than 60% of posted speed (35 mph where posted speeds are 60 mph).

Note: T-1 roadways carry an average gross truck tonnage of more than 10 million tons a year, T-2 roadways carry an average gross truck tonnage of 4 to 10 million tons a year.

- **Geo-locate the trucks** – Assign each probe truck’s GPS (latitude and longitude) location reads to the appropriate segments. The roadway headings from the previous task are used to account for the truck’s travel direction and to remove nearby trucks that are not traveling on the analysis segment.
- **Locate the bottlenecks** – For segments with enough truck data, all the GPS probe trucks’ travel speeds are averaged over time. The variability of the truck’s average speed is used to quantify the reliability and overall performance of each analysis segment. Those segments where trucks are performing unreliably or slowly are identified as bottlenecks.
- **Rank the bottlenecks** – The truck bottlenecks can be ranked the basis of a range of quantitative measures. WSDOT’s four ranking criteria for truck bottlenecks are: (1) Truck speed below the severe congestion threshold, which WSDOT has defined as 60% of posted speed (35 miles per hour on urban freeways), (2) Average speed, (3) Speed distribution (reliability), and (4) Truck volume.

The bottleneck can also be sorted based on geographic location, the segment’s Freight Goods Transportation System (FGTS) category, or other policy based criteria.

The technical report for truck bottleneck identification can be found online at www.wsdot.wa.gov/Freight/publications.htm

WSDOT’s commercial vehicle pass system

The commercial vehicle pass system is a new way of supporting freight movement by safely and efficiently authorizing emergency, essential, and other goods delivery to and through affected areas during highway disruptions lasting between two and seven days.

When a major freight corridor is closed, trucks can quickly overwhelm a detour route that is not built for the volume of heavy vehicles that would normally travel on an interstate highway or other major freight route. Washington has developed a program to prioritize emergency and essential goods during major disruptions and closures. Keeping freight moving during major transportation disruptions is critical to supporting the state’s economy, and ensures that the essential needs of citizens are met.

Passes will be issued based on the highway detour’s capacity and the priority of goods carried. Washington State Patrol will conduct spot inspections of bills of lading to ensure compliance.

More information is available online at www.wsdot.wa.gov/CommercialVehicle/detourpass.htm

Truck Volumes

Truck volumes increase on Washington highways from 2009 to 2010

Truck volumes in Washington have shown steady, long-term increases. Although 2009 saw an annual decrease, volumes appear to have begun to increase again in 2010. Data on truck volumes by selected mileposts show the locations with the greatest activity, as well as growth trends. The graphs show average daily truck traffic at select mileposts on three north-south routes – I-5, US 97, and SR 18 – and I-90 east-west.

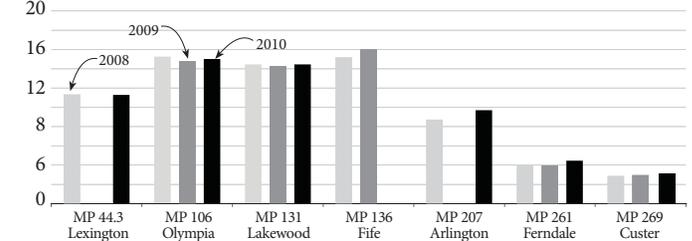
At most locations where truck data is collected, average daily truck volumes grew between 2009 and 2010. On I-5 near Olympia, annual daily truck traffic increased 3.3% from 14,784 trucks daily in 2009 to 15,290 trucks daily in 2010. On I-90 near Cle Elum, the number of trucks increased 2.3% from about 6,290 trucks a day in 2009 to 6,440 trucks a day in 2010. Growth in overall average daily truck volumes on Washington’s major highways may be a sign that economic conditions are beginning to stabilize and grow.



I-5 average daily number of trucks by milepost

2008-2010 (south to north)

Number in thousands



Data source: WSDOT Transportation Data Office.

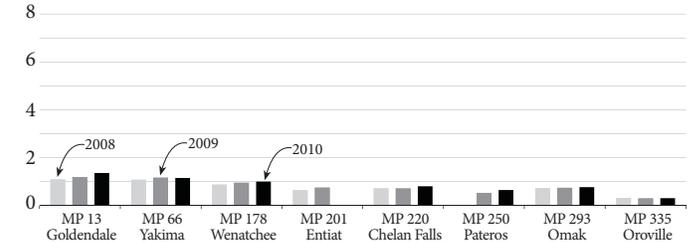
2009 data for MP 44.3 Lexington and MP 207 Arlington is unavailable.

2010 data for MP 136 Fife is unavailable.

US 97 average daily number of trucks by milepost

2008-2010 (south to north)

Number in thousands



Data source: WSDOT Transportation Data Office.

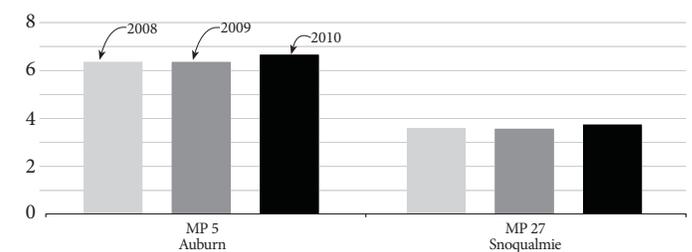
2008 data for MP 250 Pateros is unavailable.

2010 data for MP 201 Entiat is unavailable.

SR 18 average daily number of trucks by milepost

2008-2010 (south to north)

Number in thousands

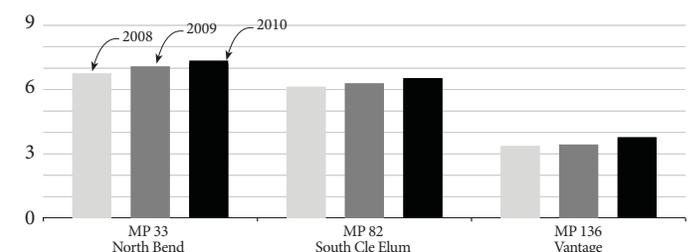


Data source: WSDOT Transportation Data Office.

I-90 average daily number of trucks by milepost

2008-2010 (east to west)

Number in thousands



Data source: WSDOT Transportation Data Office.

Trucks, Goods, & Freight Annual Report

Truck Border Crossings

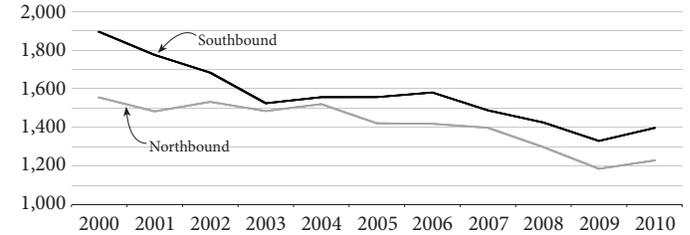
Truck crossings increase 4.4% at Western Washington border crossings

At western Washington border crossings, which handle almost 80% of all cross-border trade along Washington's northern border, total truck traffic has doubled since 1990, but declined in recent years. The number of trucks crossing at these points increased 4.4% from a combined average of 2,516 northbound and southbound trucks a day in 2009 to an average of 2,626 trucks a day in 2010.

For all Washington commercial truck crossings, the number of trucks entering Washington from Canada increased 4.65% from 558,812 total truck crossings in 2009 to 586,052 total truck crossings in 2010. This increase is likely due to the recent economic improvements.

Western Washington truck border traffic (Blaine, Lynden, and Sumas)

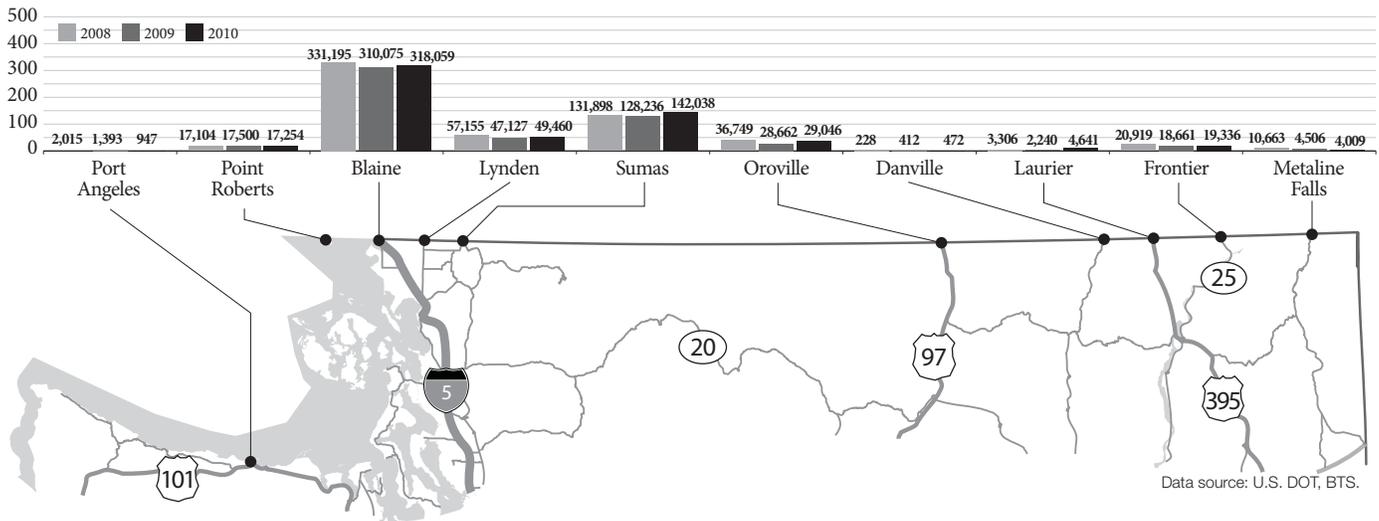
Average daily number of trucks



Data source: U.S. Customs and Border Protection, Statistics Canada; compiled by Whatcom Council of Governments.

Trucks entering Washington from Canada, 2008 – 2010

Number in thousands



Data source: U.S. DOT, BTS.



Sumas border crossing.



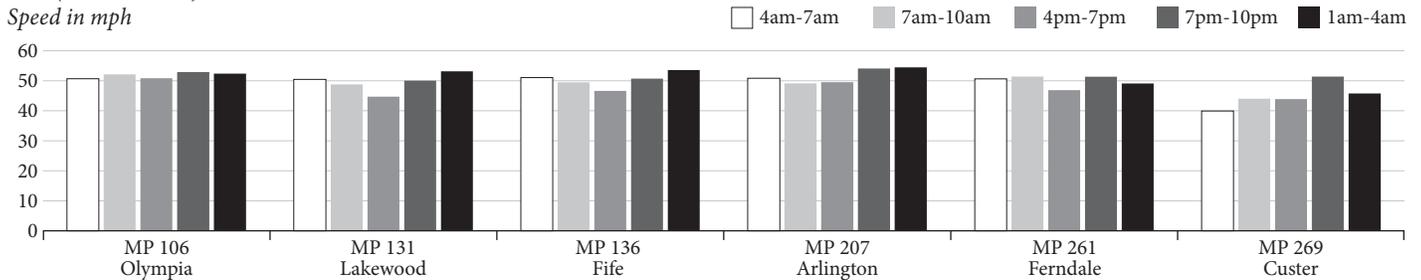
Lynden border crossing.

National Truck Freight Data

Truck speeds on Northbound I-5 near selected mileposts

2010 (south to north)

Speed in mph



Data source: FPMWeb Services - FHWA: Office of Freight Management & Operations and the American Transportation Research Institute (ATRI). ATRI is the Freight Performance Measure (FPM) initiative manager and FHWA as the FPM sponsor.

Note: Truck speeds on Northbound I-5 near selected mileposts for all days of the week, all months of the year, and selected 3 hour time intervals for 2010.

FHWA partners with ATRI to develop web-based freight performance measurement tool

The Federal Highway Administration (FHWA) Office of Freight Management and Operations has partnered with the American Transportation Research Institute (ATRI) to develop a web-based tool to track average truck operating speeds as part of the Freight Performance Measures (FPM) initiative. This tool, called FPMweb, allows users to track average truck operating speeds on 25 interstate highways across the country. Average truck speeds are calculated using GPS data from hundreds of thousands of trucks nationwide. Each GPS data point contains a unique identifier, latitude/longitude, and time/date stamp. FPMweb allows users to access truck speed data specific to location (state/corridor), day of week, day of month, and time of day for three mile segments of interstate highways. The FPMweb tool is one of many resources WSDOT is looking at as a way to measure freight performance throughout the state.

The graphic above, for illustrative purposes, shows truck speeds near selected mileposts on the Northbound I-5 corridor from MP 106 - Olympia to MP 269 - Custer near the Canadian border. The information displayed is for all seven days of the week, all months of the year, and at selected three hour time intervals in 2010.

This is a different GPS data set from that presented on page 43 and 44, and it shows only average truck speeds and does not focus on bottlenecks. However, the visualization demonstrates that at the selected locations on northbound I-5, truck speeds tend to be at or near the maximum throughput speeds: at most times of the day, average truck speeds tend to fall in the range of 70%-85% of posted speeds (about 42-51 mph). These speed conditions allow for maximum productivity in terms of vehicle volume and throughput.

While FHWA and ATRI continue to improve data quality and expand coverage, this data can be useful to WSDOT in the future, especially when trying to make comparisons over time, as the available truck speed data goes back as far as 2005.

2009 bottleneck analysis of 100 freight significant highway locations

#91 – The I-90 Floating Bridge

As part of the ongoing Freight Performance Measures (FPM) initiative, ATRI and the FHWA's Office of Freight Management and Operations are monitoring freight significant highway locations. Only one location in Washington made it on this list, the I-90 Floating Bridge across Lake Washington at number 91. For the 2010 analysis WSDOT's Freight Systems Division has submitted an additional 15 statewide locations for ATRI to study.

Additionally, WSDOT, UW TransNow, the FHWA Office of Freight Management and Operations, and ATRI are partnering on a demonstration project to identify freight bottlenecks in the state. This demonstration project serves as an addition to the Truck Freight Performance Measurement Project and will allow data sharing between parties, benchmarking, best practices, and research into the full economic cost of congestion to the trucking industry in Washington. For the full report, see www.atri-online.org/research/results/ATRI_100_Bottleneck_Report.pdf

Trucks, Goods, & Freight Annual Report

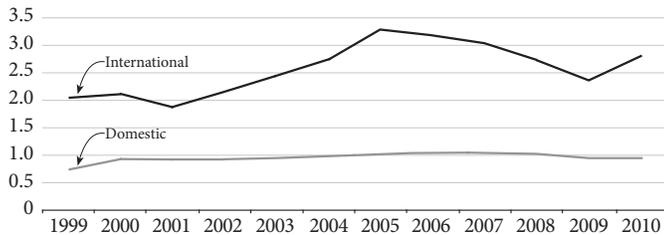
Marine Freight

Container freight through Washington's seaports increased 14.8% from 2009 to 2010

Container volumes were 14.8% higher in 2010 compared to 2009, following a 12.2% decline in 2009 from 2008 volumes. The Central Puget Sound seaports, which include the Port of Seattle and Port of Tacoma, are gateways, handling 99.7% of the state's international container traffic. Together, these two ports handled a total of 3.6 million TEUs (twenty-foot equivalent units: international and domestic) in 2010. International container traffic has increased 19% in the past year compared to a 1.4% increase for domestic container traffic. Despite the current worldwide recession, which officially began in the U.S. in December 2007, container traffic for the Ports of Seattle and Tacoma grew at a long-term average annual growth rate of 2.4% from 1998 to 2010.

Waterborne container traffic: Port of Seattle and Port of Tacoma

Number of containers (TEUs: twenty foot equivalent units)
In millions (full and empty)



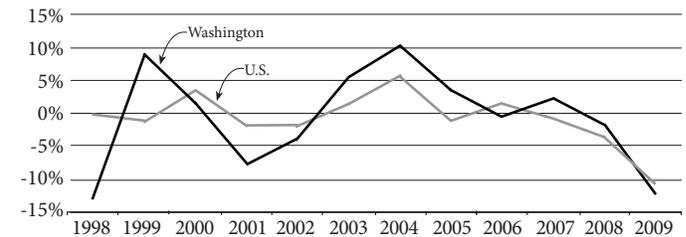
Data source: Port of Tacoma and Port of Seattle.

Washington waterborne freight: intrastate, foreign, and domestic decreases between 2008 and 2009

All waterborne commercial activity in Washington, measured by volume of freight handled in short tons, decreased from 2008 to 2009. Washington waterborne commerce totaled 107.0 million short tons of freight in 2009, compared to 122.1 million tons in 2008. (Due to processing time, 2010 tonnage will not be available until early 2012.) Washington waterborne commerce decreased by 12.3% in 2009 from 2008 tonnage, in comparison to total U.S. waterborne commerce, which decreased by 10.8%. Since 1998, Washington's foreign commerce has grown at an average annual rate of 2.9% compared to the U.S. annual growth rate of 1.3%.



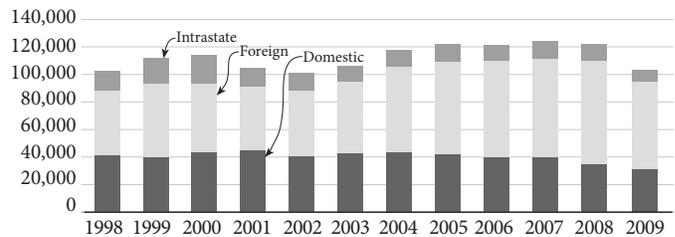
Washington and U.S. total waterborne freight tonnage



Data source: U.S. Army Corps of Engineers, Navigation Data Center.

Washington waterborne freight: intrastate, foreign, and domestic

Waterborne tonnage in 1,000's of short tons, 1998 - 2009



Data source: U.S. Army Corps of Engineers, Navigation Data Center.

Washington's strategic waterways

WSDOT has completed the designation of Washington's strategic waterways, which were adopted by the Freight Mobility Strategic Investment Board in 2010. The state legislature requires that strategic freight corridors/waterways be designated and updated every two years.

Map: Washington strategic waterways 2010



Rail Freight

Freight rail traffic down 11% in 2009

The economic downturn finally hit rail traffic in Washington, as rail traffic declined more than 11% in 2009, according to STB Waybill data. The most significant drop in rail traffic is in import traffic passing through Washington to the Midwest on the trans-continental route. Shipments terminating in Washington for export and in-state consumption increased, but not enough to offset other losses. Farm products continue to be the primary commodity of rail freight in Washington.

Washington rail freight by tonnage

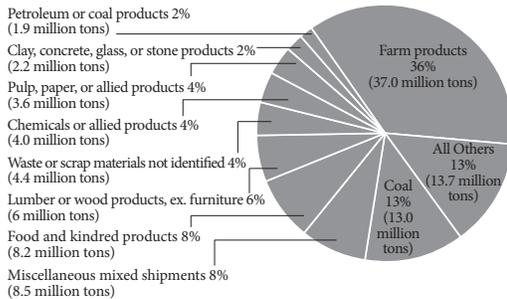
Thousands of tons, 2007-2009

	Rail tons originating in state	Rail tons terminating in state	Rail tons moving within / through state	Total rail freight	%Δ Total rail freight
2009	20,809	60,921	20,803	102,533	-11.46%
2008	19,477	59,761	36,561	115,799	-0.47%
2007	22,615	55,860	37,868	116,343	+0.98% ¹

Data source: WSDOT State Rail and Marine Office - 2009 Waybill Data Analysis.

1 Percent change in total rail freight between 2006 and 2007 based on Association of American Railroads data.

Washington freight rail volume by commodity 2009



Data source: WSDOT State Rail & Marine Office - 2009 Waybill Data Analysis.

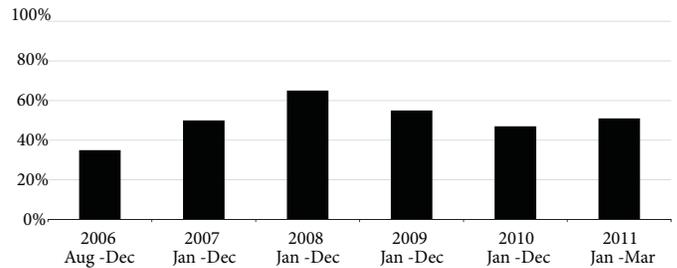
Produce rail car utilization down compared to pre-recession levels

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

A total of 828 shipments have been made since the program began in 2006, resulting in an average utilization ratio of 52%. The utilization ratio has increased from 48% in 2010 to 51% in the first three months of 2011. Unlike grain shipping, produce shipping in Washington has been affected by the recession in both the national and state economies.

Produce rail car average monthly utilization rate

Percent of time produce cars are in operation for the month
August 2006 - March 2011



Data source: WSDOT State Rail and Marine Office.

Note: Utilization rate = monthly carloads shipped/monthly cars available. 2006 and 2011 data are not for complete years.

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

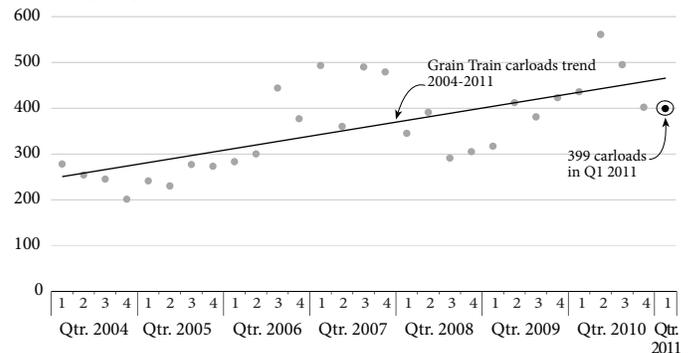
Grain Train usage improves

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.

Use of the state Grain Train cars was down in the first quarter of 2011, although this is still higher than it was in 2009. There were 399 carloads shipped in the first quarter of 2011, compared to 436 in the first quarter of 2010, and 317 for 2009. The long term upward trend for Grain Train remains intact.

Washington State Grain Train carloads

Carloads per quarter, 2004 - 2011



Data source: WSDOT State Rail and Marine Office.

Trucks, Goods, & Freight Annual Report

Air Freight

Total air cargo tonnage handled in Washington grew 5% between 2008 and 2009

In 2009, air cargo handled at Washington airports totaled 1,469,397 tons (measured in plane plus cargo weight, as reported by FAA). Between 2008 and 2009, air cargo tonnage increased 3.77%, from 1,416,036 tons to 1,469,397 tons. Air cargo activity is concentrated at a small number of Washington airports: about 55% of all air freight tonnage is handled at the Seattle-Tacoma International Airport (SEA), about 30% is handled at Boeing Field/King County International Airport (BFI), and about 15% is handled at Spokane International Airport (GEG). Total Washington air cargo data for 2010 was not available in time for this report.

Total air freight tonnage handled at Sea-Tac airport increases from 2009 to 2010

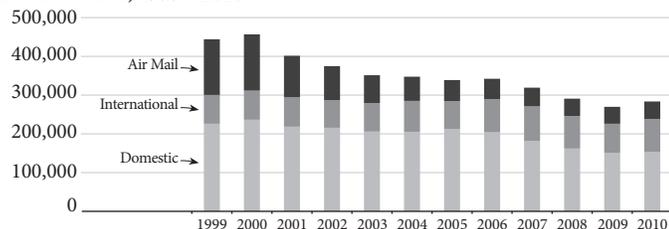
At Seattle-Tacoma, where air freight tonnage handled is reported annually, total tonnage increased 5.1% from 2009 to 2010, from 269,689 in 2008 to 283,425 metric tons in 2010.

Sea-Tac ranks sixteenth in the United States by tons of cargo handled. Washington's exporter and importer distribution facilities, logistics service providers, freight forwarders, and consolidators are concentrated in the South Puget Sound region. Shippers rely on this integrated network to deliver fast and reliable door-to-door service. Freight forwarders and consolidators must be able to consolidate multiple shipments to reduce shipping costs and obtain economies of scale. Sea-Tac and Boeing Field offer frequent flights to multiple destinations, established support networks, and strong local demand.

The last decade has seen a gradual decline in air freight moving through the Seattle Tacoma International Airport. Between 1999 and 2010, the volume of air mail fell significantly: 143,723 metric tons recorded in 1999 compared to 44,990 in 2010. International freight volumes have remained stable as domestic freight volumes have declined, with 225,898 metric tons in 1999 compared to 152,995 in 2010. Overall, air freight moving through Sea-Tac decreased by nearly 40% between 1999 and 2010.

Total Sea-Tac air freight, by category

In metric tons, 1999 - 2010



Data Source: Port of Seattle, 2010 Seattle-Tacoma International Airport Activity Report.
Data as reported to Port of Seattle by the airlines.

Air freight: Seattle-Tacoma International Airport

In metric tons, 1999 - 2010

Year	Total freight	% Change
2010	283,425	5.1%
2009	269,689	-7.2%
2008	290,768	-8.9%
2007	319,013	-6.7%
2006	341,981	1.0%

Data source: Port of Seattle, 2010 Seattle-Tacoma International Airport Activity Report.

Data as reported to Port of Seattle by the airlines, includes domestic freight, international freight, and air mail. Sea-Tac air freight is measured as freight cargo weight and does not include plane weight.

Measuring the economic value of Washington's airports

Airports provide essential links to the nation's air space, commerce, and emergency services. Washington's system of 138 public airports contributes significantly to the statewide transportation system and economy. It is important for decision makers, aviation users, and businesses to understand the value that each airport and the system as a whole brings to the state's economy.

WSDOT, with the support of the Federal Aviation Administration (FAA), is currently conducting a statewide Aviation Economic Impact Study. This effort will communicate in detail the economic value that airports bring to the state, its communities, and its wide range of users.

The outcome of the Aviation Economic Impact Study will answer a number of critical questions:

- What are the statewide economic impacts and benefits provided by the aviation system?
- What is the potential value of airport investments?
- How can airports serve as economic development tools?

The study will update economic data including the jobs, wages, and types of businesses at each airport. It will also produce an online economic calculator that will allow users to input various "what if" scenarios at individual airports. Decision makers can use this tool to explore economic development opportunities, attract businesses, and weigh investment choices. The updated information and interactive calculator will integrate with WSDOT's current Airport Information System database.

The Aviation Economic Impact Study is scheduled for completion in January 2012. For more information, see www.wsdot.wa.gov/aviation/WAEconomicStudy.htm

Commercial Vehicle Information Systems & Networks (CVISN) Annual Report

Over the years, the state of Washington has been proactive in the design, development, and deployment of technologies that improve the efficiency, safety, and security of truck freight movement throughout Washington. As part of the Intelligent Transportation Systems program, implementation of the Commercial Vehicle Information Systems and Networks (CVISN) program provides information to Washington State Patrol Commercial Vehicle Enforcement Offices allowing for more targeted inspections of commercial vehicles.

The CVISN system uses an arrangement of weigh-in-motion scales, transponders, and Automated License Plate Recognition (ALPR) technologies to electronically screen trucks as they approach weigh stations. A truck's weight, credentials, and carrier safety rating are rapidly verified, and if satisfactory, trucks are allowed to bypass weigh stations. (For more information on how the system works, please see the June 2007 *Gray Notebook* 26, p. 79.)

CVISN is a cooperative effort between the Washington State Patrol (WSP) and WSDOT. WSP operates the weigh stations and enforces laws associated with the regulation and safety of commercial vehicles, and WSDOT develops, installs, and maintains CVISN equipment. Data from the Department of Licensing (DOL) as well as other jurisdictions is used to electronically screen commercial vehicles.

Percentage of trucks using CVISN transponders increases 5.7% since 2008

In 2010, CVISN truck transponders were read about 2.2 million times at open weigh stations in Washington state. In this period, WSDOT estimates that 35.31% of all commercial vehicles moving through the state were using transponders. This is a 5.7% increase from 2008 and 1.3% more than 2009.

The percentage of transponder-equipped trucks bypassing open weigh stations declined 1.5% from 2009 to 2010. This can be attributed to two things. First, the closing of the busy Sea-Tac SB weigh station in August 2010 as a result of construction for the SR 18 Triangle Project. Second, additional violations were added to the screening criteria resulting in more vehicles being directed to report to the weigh station.

CVISN-equipped trucks save an estimated \$8.5 million for trucking industry in Washington in 2010

In 2010, CVISN saved the trucking industry in Washington about 113,000 hours and an estimated \$8.5 million. Trucks received more than 1.3 million green lights in 2010, a 24% increase since 2008.

CVISN Highlights

Trucks equipped with CVISN transponders received more than 1.3 million green lights in 2010.

Automated Infrared Roadside Screening (AIRS) will be tested at Fort Lewis weigh station in 2011.



Fort Lewis weigh station, I-5 northbound.

CVISN and transponder use statistics, 2008-2010

Commercial Vehicle Information Systems and Networks, Dollars in millions

	2008	2009	2010
Transponder-equipped trucks operating on Washington's roads			
Number of truck transponders read	1,713,678	2,152,252	2,230,546
Percent of trucks with transponders	29.60%	33.98%	35.31%
Percent bypassed at Open weigh stations	61.85%	62.48%	60.96%
Estimated time and cost savings through the use of CVISN			
Number of green lights	1,093,208	1,342,352	1,359,740
Hours of travel time saved	91,000	112,000	113,000
Amount of money saved*	\$6.8	\$8.4	\$8.5

Data source: WSDOT CVISN Office.

* Note: The amount of money saved is an estimated based on the estimated cost of operating a commercial vehicle, \$1.25 a minute.

In 2010, the process that collects and summarizes transponder usage data was rewritten. During the rewrite it was discovered that prior to 2010, the qualifying criteria did not include vehicles with Washington commercial vehicle license plates ending in "RP". As a result, data for 2008 and 2009 have been updated to correct this omission. Archived data prior to 2008 cannot be easily recompiled.

Commercial Vehicle Information Systems & Networks (CVISN) Annual Report

Innovations and Automated Systems



Automatic Vehicle Identifier (AVI) and ALPR camera.

Automated License Plate Recognition (ALPR) deployed across Washington in 2010

Automated License Plate Recognition (ALPR) was installed at the 11 CVISN-equipped weigh stations in August 2010. The ALPR system has leveled the playing field for automated sorting of commercial vehicles both with and without transponders. The ALPR camera captures an image of the license plate and translates it to machine-readable text, allowing a computerized system to verify the truck's weight, credentials, and carrier safety rating in the same manner as if the truck had a transponder. Changeable message signs display a message to drivers to either *Report* to or to *Bypass* the weigh station.

The WSDOT ALPR system gives WSP the opportunity to provide more targeted inspections by checking all commercial vehicles automatically against a commercial vehicle database as they approach the weigh station. The system then provides officers with all available vehicle information. Using the system to make more targeted decisions about which vehicles warrant closer inspection minimizes delays for vehicles with valid credentials and good safety ratings. (For more information on how the ALPR works, please see the March 31, 2010, *Gray Notebook* 37, p. 54.)

New technology automatically detects defective brakes

Weigh-in-motion, transponders, and Automated License Plate Recognition all focus on screening commercial vehicles based on credentials, weight, and carrier safety. The next technology WSDOT is exploring shifts the focus to vehicle maintenance. Funded through a federal grant, the Automated Infrared Roadside Screening (AIRS) system uses thermal imaging, automation, and machine vision technology for automated brake, tire, and bearing inspections.

In August 2009, members of the WSP Commercial Vehicle Division and WSDOT Expanded CVISN Project carried out a

statewide feasibility study for creating an unattended and fully automated infrared inspection system as an integrated component of the CVISN system. One goal of the study was to determine the optimum location for installation of the infrared camera at a weigh station. Analysis revealed that embedding the infrared camera in the ramp looking up was by far the best approach. The visibility looking up from the roadway provided a clear view of all the brakes regardless of the vehicle design or trailer fitting.

This new system automatically scans all incoming vehicles and notifies the WSDOT CVISN user only when a defect is identified, freeing up the officer to do other tasks. The system will be installed as a pilot project in 2011 at the Fort Lewis weigh station.

With these automated tools, WSP officers will help keep safe vehicles moving and identify a larger number of troubled vehicles that would have slipped by without a close, hands-on inspection. Once in full operation, this technology will help take malfunctioning commercial vehicles off Washington's roads.

Two automated systems help keep traffic flowing safely both through and past weigh stations.

Monitoring ramps for queuing trucks

Weigh station entry ramps vary in length. When too many commercial vehicles enter the weigh station, they can overwhelm the available space on the ramp, creating a queue of vehicles that extends onto the mainline and poses a hazard to motorists. The CVISN 'backup detect system' monitors ramp traffic with sensors in the roadway that detect if trucks in the ramp queue are moving continuously. When the system detects that vehicles are stopping on the ramp, it automatically closes the station and signage alerts oncoming trucks to bypass it. When the ramp queue clears, the system reverts to open status. This automated process allows officers to carry out their work without concern for causing traffic hazards on the mainline.

Congestion detect system

CVISN technology is designed to work most efficiently when traffic moves at consistent speeds of 30 mph or more. At locations where frequent heavy congestion drops speeds below 30 mph, the system becomes inefficient, especially as trucks attempt to merge back into congested traffic. WSDOT now uses software developed to monitor traffic speeds and flow for congestion. When congestion begins to form, the weigh station is automatically closed to prevent backups on the mainline and in the weigh station from worsening.



Stewardship

Statewide policy goal

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

WSDOT's business direction

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



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Earlier articles concerned with stewardship

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Special Report on Federal Recovery Act-funded Projects

Recovery Act-funded Projects Overview

Recovery Act Highlights

More than 85% of Recovery Act highway projects, 190 of 219, were completed as of March 31, 2011.

Employees have worked more than 4.1 million hours and earned more than \$160 million in payroll on Recovery Act highway projects.

WSDOT reached two key agreements to use \$735 million in Recovery Act funds for high-speed rail programs.

The I-5/SR 501 Ridgefield Interchange project was completed in January.

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

In January, WSDOT completed the I-5/SR 501 Ridgefield Interchange project to build a wider bridge over I-5, while improving the intersection and the on-and-off ramps. More than 85% of the state and local highway projects funded through the Federal Highway Administration (FHWA) are now complete. Only nine state and 20 local FHWA projects are still under way.

This quarter, Washington entered into agreements with BNSF Railway and the Federal Railroad Administration (FRA) to apply \$590 million to high speed rail projects. In addition, the state received federal authorization to use up to \$145 million in federal high speed rail funds originally designated for Ohio and Wisconsin. See page 56 for more information.

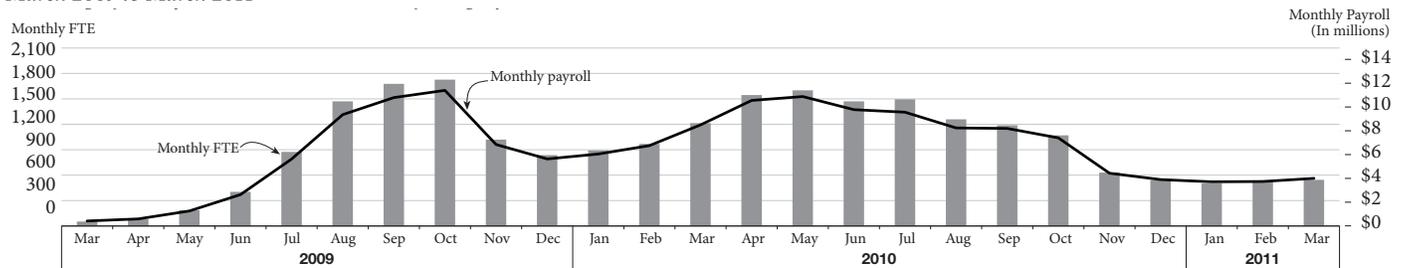
More than \$160 million paid to employees on Recovery Act projects

Between January 1 and March 31, 2011, workers on state and local highway Recovery Act projects earned almost \$11.5 million working more than 271,000 hours. To date, projects receiving FHWA stimulus funds have provided more than \$160 million in payroll to workers. Many projects also receive other state, federal, or local funds, so not all payroll funding comes directly through Recovery Act funds.

The chart at the bottom of the page shows labor hours on projects receiving stimulus funds from March 2009 through March 2011. A surge of ground-breakings in the summer of 2009 helped payroll and employment reach its peak at the end of the 2009 construction season, while the largest number of projects were under way and dozens were being completed. Employment and payroll declined in the winter months due to the weather and project completions, before rising for the 2010 peak construction season. WSDOT expects labor hours and payroll to continue to be below the previous year peaks because more than 85% of the highway Recovery Act projects have been completed.

Employment on state and local Recovery Act-funded highway projects

March 2009 to March 2011



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

* Note: Due to the nature of construction work and firms working on multiple ARRA projects, a count of the number of employees may include double counting (employees working on multiple projects) and cannot be used as a "head count" of individual employees. Federal guidelines direct states to report full time equivalents (FTE) employed by state and local Recovery Act projects. WSDOT calculated these numbers based on a standard 2,080 hour work year which is equivalent to 173 hours each month.

Special Report on Federal Recovery Act-funded Projects

Recovery Act Progress Summary

Recovery Act-funded highway projects as of March 31, 2011

Number of projects by jurisdiction; dollars in millions

Project information	State	Local	Total
Highway projects certified by the Governor ¹	51	168	219
Contracts awarded/Under construction	51	168	219
Projects completed	42	148	190
Financial information	State	Local	Total
Recovery Act dollars provided	\$340	\$152	\$492
Total cost of obligated projects ²	\$736	\$792	\$1,528
Total Recovery Act dollars spent	\$279.4	\$142.4	\$421.8

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

Note: Project totals are cumulative, for example “projects awarded/under construction” include projects already completed.

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

² Includes non-Recovery Act leveraged fund sources.

Nine state Recovery Act-funded highway projects under construction as of March 31, 2011

Completion planned in 2011

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

SR 26/Grant County Line to SR 17 – Resurfacing

I-82/Valley Mall Blvd Interchange – Rebuild Interchange

I-5/Port of Tacoma Rd to King Co Line – Add HOV Lanes

US 395/Lee Rd to Jct I-90 – Paving

Completion planned in 2012

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

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

Completion planned in 2013

SR 433/Lewis and Clark Bridge – Superstructure Painting

I-5/SR 16/EB Nalley Valley – HOV

Recovery Act project completed in Clark County.

I-5/SR 501 Ridgefield Interchange – Build Interchange Stage 1 (Clark)

Stage 1 of this project improved safety and mobility by replacing the existing I-5 interchange at SR 501 in Ridgefield with a new bridge and improved on- and off-ramps, widening SR 501 to two lanes in each direction, and added new turn lanes and sidewalks for pedestrian and bicycle travel along SR 501.

The project was completed in January, ahead of the last approved schedule. More information on this project is in the complete project section on page 72.



This project built a new wider bridge over I-5 at SR 501 and new on- and-off ramps to better handle vehicle travel to and from Ridgefield.

Special Report on Federal Recovery Act-funded Projects

High-Speed Rail and TIGER Projects

WSDOT signed agreements advancing \$735 million in high-speed rail projects

On February 26, 2011, WSDOT and the Federal Railroad Administration signed an agreement that secured \$590 million in federal stimulus money to improve the Amtrak *Cascades* rail corridor from Portland to Seattle. The agreement commits the FRA to allocate the Recovery Act funds that were first awarded in January 2010.

Separately, Amtrak, BNSF Railway, and WSDOT signed an agreement that outlines how investments will be made: they will be based on service outcomes and passenger rail performance benchmarks on rail lines shared by freight and passenger rail, such as on-time performance, faster travel times, and frequency of service.

Another agreement followed in early April, officially securing \$145 million that was originally intended for projects in Ohio and Wisconsin.

Projects will improve speeds and reliability

As a result of the initial \$590 million Recovery Act high-speed rail funding:

- Two additional daily Amtrak *Cascades* round trips will be added between Seattle and Portland, for a total of six trips, by 2017.
- On-time reliability is expected to improve from 62% to 88%.
- More consistent speeds will be possible throughout the corridor, resulting in faster travel times between Seattle and Portland.



WSDOT signed agreements to use \$735 million in Recovery Act funds on projects to improve Amtrak *Cascades* service in Washington.

- Major construction projects will be completed that include building bypass tracks and multiple upgrades to existing track.
- Several safety-related projects will be completed, including grade separations and the latest technology in advanced warning signal systems. This will reduce passenger/freight congestion, making passenger travel times shorter with more reliable on-time service.

The additional \$145 million will be used for improvements that boost the rail-line capacity and relieve mainline congestion, allowing Amtrak *Cascades* to offer more frequent and reliable passenger service between Portland and Vancouver, B.C.

In May 2011, Washington was awarded \$15 million of the \$2.4 billion in federal high-speed rail funding returned by Florida. The \$15 million award will be applied towards eliminating a congestion chokepoint near the Port of Vancouver and brings Washington state's total to approximately \$781 million in Recovery Act high speed rail funding.

More information about Amtrak *Cascades* and passenger rail is on page 29. Also, visit WSDOT's passenger rail website: www.wsdot.wa.gov/funding/stimulus/passengerrail.htm.

Construction continues on TIGER projects in Spokane and Seattle, TIGER II projects advance

Construction continued on Seattle's Mercer Corridor Project, which received a \$30 million Recovery Act-funded TIGER, or Transportation Investment Generating Economic Recovery, grant in February 2010.

The North Spokane Corridor benefited from a \$35 million Recovery Act-funded TIGER grant. The corridor is the subject of this quarter's project spotlight on page 75. The article includes in-depth information about the \$35 million Recovery Act-funded TIGER project and the role it plays in the much-larger corridor improvements currently under way in Spokane.

Three local government projects in Washington received TIGER II grants totaling \$44 million in October 2010, including a \$34 million grant for King County's South Park Bridge Replacement. The TIGER II program was modeled after the stimulus program, but is not funded by the Recovery Act.

In March, King County announced the apparent low bidder and said construction is expected to begin this spring. The \$96 million bid from Kiewit-Massman came in below the county's construction estimate of \$98 million to \$106 million.

WSDOT's Capital Project Delivery Programs

Highway Construction: Nickel and TPA Project Delivery Performance Overview

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

The 2010 Supplemental Transportation Budget signed into law by Governor Gregoire on March 30, 2010, directs WSDOT to develop and construct a specified list of projects in the course of the biennium. The greater part of these line-item projects were itemized in the original 2003 and 2005 Nickel and TPA programs. When the 2011 Transportation Budget is approved, the list and number of projects for the 2011-2013 biennium will very likely change the total project number and value of the program. Next quarter's *Gray Notebook* will include an end-of-biennium wrap up to address the previous period's results and changes for the coming biennium.

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

Capital projects executive summary of project number and value

Program element	Number of projects	Value of program (\$ in thousands)
Projects completed in earlier biennia that are <i>not</i> included in the current Transportation Budget	70	\$239,794
Projects completed that <i>are</i> included in the current Budget	230	\$3,823,354
Subtotal of completed projects	300	\$4,062,839
Projects included in the current Budget that are not yet completed	121	\$11,474,342
Total	421	\$15,537,181

Data source: WSDOT Capital Program Development & Management.

On time and on budget delivery performance on individual projects is unchanged from last quarter

WSDOT's on time and on budget results for the current highway construction program are shown on page 58. The cumulative capital program delivery performance, including 70 projects completed in earlier biennia, currently shows 89% of projects completed early or on time, down 1% from last quarter; 94% completed on or under budget, and 85% completed both on time and on budget, both unchanged from last quarter.

Eighty-six projects have been completed in the 2009-2011 biennium, including three completed in the quarter ending March 31. Of the biennium's total of completed projects, 92% were completed early or on time, 95% were on or under budget, and 88% were both on time and on budget.

Of the three projects completed within this reporting period, one was completed on time and on budget. One seismic retrofit project completed on budget; its schedule was delayed five months to accommodate staging of the work. Both the schedule and budget of one fish passage barrier project were affected by construction challenges around the replacement culvert structure.

Project Delivery Highlights

WSDOT has completed 86 projects so far in the 2009-2011 biennium, and a total of 300 projects that were shown in previous or current Transportation Budgets.

89% of all Nickel and TPA projects were completed early or on time, a decrease of 1% on last quarter.

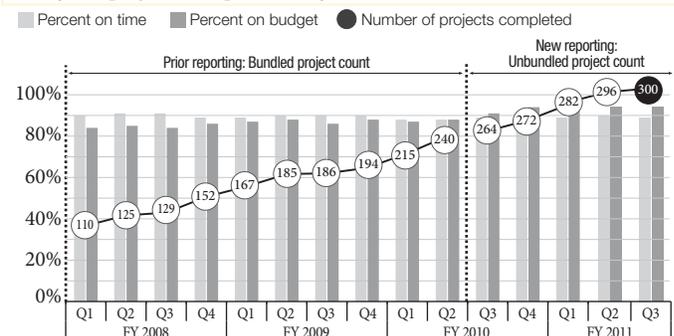
94% of all Nickel and TPA completed projects were on or under budget, no change from last quarter.

85% of Nickel and TPA completed projects were both on time and on budget, unchanged from last quarter.

For details of WSDOT's Federal Recovery Act-funded projects, please see pages 54-56.

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

300 of 421 projects completed as of March 31, 2011



Data source: WSDOT Capital Program Development & Management.

WSDOT's Capital Project Delivery Programs

Current 2011 Legislative Transportation Budget Performance Dashboard: Highways

Highway construction performance dashboard

As of March 31, 2011; Dollars in thousands

Combined Nickel and TPA programs	Number of projects	Value of program
Projects completed in earlier biennia that <i>are not</i> included in the current Transportation Budget	70	\$239,485
Projects completed that <i>are</i> included in the current Transportation Budget	230	\$3,823,354
<i>Subtotal of completed projects</i>	300	\$4,062,839
Projects included in the current Transportation Budget but not yet completed	121	\$11,474,342
Total number of projects¹ in Improvement & Preservation budget²	421	\$15,537,181

Schedule and Budget Summary: Results of completed projects in the current Transportation Budget detailed on page 60.	Combined Nickel & TPA
Number of projects in current Transportation Budget completed to date: 2003 – March 31, 2011	230
Percent completed early or on time	89%
Percent completed under or on budget	94%
Percent completed on time and on budget	85%
Baseline estimated cost at completion	\$3,823,354
Current estimated cost at completion	\$3,766,985
Percent of total program over or under budget	-1% Under
Total number of projects completed in 2009-11 biennium to date	86
Percent completed early or on time	92%
Percent completed under or on budget	95%
Percent completed on time and on budget	88%
Baseline estimated cost at completion this biennium	\$1,600,183
Current estimated cost at completion this biennium	\$1,551,482

Advertisement Record: Results of projects entering into the construction phase or under construction detailed on pages 61-64.	Combined Nickel & TPA
Total cumulative number of projects in construction phase to date, 2003 – March 31, 2011	48
Percent advertised early or on time	75%
Total number of projects advertised for construction in 2009-11 biennium to date	36
Percent advertised early or on time	69%

Projects To Be Advertised: Results of projects now being advertised for construction or planned to be advertised, detailed on page 65.	Combined Nickel & TPA
Total projects being advertised for construction bids April 1, 2011 - September 30, 2011	6
Percent on or better than anticipated advertisement schedule	67%

Budget status: 2009-2011 biennium Dollars in thousands	WSDOT biennial budget
Budget amount for 2009-2011 biennium	\$3,234,650
Actual expenditures to date 2009-2011 biennium	\$2,020,708
<i>Total 2003 Transportation Funding Package (Nickel) expenditure</i>	\$478,779
<i>Total 2005 Transportation Partnership Account (TPA) expenditure</i>	\$1,114,595
<i>Total Pre-Existing Funds (PEF) expenditure³</i>	\$427,334

Data source: WSDOT Capital Program Development & Management.

1. This project total has been updated to show "unbundled" projects which may have been previously reported in programmatic construction program buckets (such as Roadside Safety Improvements or Bridges Seismic Retrofit). See the June 30, 2010, *Gray Notebook 38*, page 55, for more details.

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

3. For full details of the PEF program, see pages 83-87.

WSDOT's Capital Project Delivery Programs

Current 2011 Legislative Transportation Budget Performance Dashboard: Rail and Ferries

Ten Nickel and six Transportation Partnership Account (TPA) rail construction projects have been delivered on time and on budget as of March 31, 2011, for \$87.8 million. Six projects (three Nickel-funded, three TPA-funded) in construction have award amounts of \$29.5 million. No additional rail projects are planned to be advertised before September 30, 2011.

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

Rail construction performance dashboard

As of March 31, 2011; Dollars in thousands

	Nickel (2003)	Transportation Partnership Account (TPA 2005)	Combined Nickel & TPA
Schedule, scope and budget summary: completed projects			
Cumulative to date, 2003 – March 31, 2011	10	6	16
% Completed early or on time	100%	100%	100%
% Completed within scope	100%	100%	100%
% Completed under or on budget	100%	100%	100%
% Completed on time and on budget	100%	100%	100%
Baseline estimated cost at completion	\$61,857	\$25,965	\$87,822
Current estimated cost at completion	\$61,857	\$25,965	\$87,822
% of total program on or under budget			
Advertisement record: projects under construction or entering construction phase			
Biennium to date, 2009-11			
Total advertised	3	3	6
% Advertised early or on time	100%	100%	100%
Total award amounts to date	\$20,769	\$8,728	\$29,534
Advertisement schedule: projects now being advertised or planned to advertise			
April 1, 2011 through September 30, 2011			
Total being advertised for construction	0	0	0
% On schedule or earlier	-	-	-

Ferries construction performance dashboard

As of December 31, 2010; dollars in thousands

	Nickel (2003)	Transportation Partnership Account (TPA 2005)	Combined Nickel & TPA
Schedule, scope and budget summary: completed projects			
Cumulative to date, 2003 – March 31, 2011	5	1	6
% Completed early or on time	100%	100%	100%
% Completed within scope	100%	100%	100%
% Completed under or on budget	100%	100%	100%
% Completed on time and on budget	100%	100%	100%
Baseline estimated cost at completion	\$18,382	\$77,000	\$95,382
Current estimated cost at completion	\$18,382	\$77,000	\$95,382
% of total program on or under budget			
Advertisement record: projects under construction or entering construction phase			
Cumulative to date, 2003 – March 31, 2011			
Total advertised	0	2	2
% Advertised early or on time	N/A	100%	100%
Total award amounts to date	\$0	\$181,397	\$181,397

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

* Note: The advertisement record includes the contract for the "144 Auto class ferry" furnished equipment. This already-purchased equipment has been accepted and currently is in storage: it will be installed during future, at-present unfunded, ship construction. The overall contract remains open to negotiate the training and installation of the equipment. The advertisement record also includes two contracts in the "64 Auto class ferry" vessel program: the first contract covers building the first ship, the second contract covers building the second and third vessels.

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

WSDOT's Capital Project Delivery Programs

Schedule and Budget Summary

Biennial summary of all projects completed 2003-2011

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

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

To view projects completed in the 2009-2011 biennium, please see *Gray Notebook* 35 for the quarter ending September 30, 2009, *Gray Notebook* 36 for the quarter ending December 31, 2009, *Gray Notebook* 37 for the quarter ending March 31, 2010, *Gray Notebook* 38 for the quarter ending June 30, 2010, and *Gray Notebook* 39 for the quarter ending September 30, 2010.

May be accessed at www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm.

3 Projects completed as of March 31, 2011

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

Project description	Fund type	On time advertised	On time completed	Baseline estimated cost	Current estimated cost at completion	On budget	Completed on time and on budget
SR 26/W of Othello - Add passing lane (Adams) This project was inadvertently left off the completed project list in <i>Gray Notebook</i> 38. The project was completed in May, 2010.	TPA	√	√	\$1,694	\$1,021	√	√
I-5/SR 501 Ridgefield Interchange - Rebuild interchange (Clark)	TPA	√	√	\$23,172	\$23,543	√	√
SR 305/Unnamed Tributary to Liberty Bay - Fish barrier (Kitsap) The project completion was delayed one quarter following construction problems while boring for the replacement culvert.	TPA	√		\$2,562	\$2,958		
I-5/236th St SW Bridge - Seismic Retrofit (Snohomish) The project completion was deferred five months to accommodate the contractor's schedule and staging of the work.	TPA	√		\$598	\$573	√	

Data source: WSDOT Capital Program and Delivery Management.

WSDOT's Capital Project Delivery Programs

Advertisement Record

48 projects in construction phase as of March 31, 2011

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

Project description	Fund type	On time advertised	Ad date	Contractor	Operationally complete date	Award amount
Cumulative to date						
Concrete Rehabilitation Program						
Nickel						
Although this budget line item is active, no projects are currently planned for construction in the 2009-2011 biennium.						
SR 285/George Sellar Bridge — Additional eastbound lane (Chelan, Douglas)	TPA	Late	Jan-09	Max J. Kuney Company	Mar-11	\$12,885
Advertisement date was delayed one month to address additional bridge analysis, design, and detailing requirements and to purchase railroad easements.						
I-405/South Renton Vicinity Stage 2 — Widening						
Nickel/ TPA						
• I-405/SR 167 to SR 169 — northbound widening (King)	TPA	√	Oct-08	I-405 Corridor Design Builders	Dec-10	\$83,599
• I-405/SR 167 to SR 169 — Add new southbound lane (King)	Nickel	√	<i>Combined with project above for construction efficiencies.</i>			
• I-405/SR 515 — New Interchange (King)	TPA	√	<i>Combined with project above for construction efficiencies.</i>			
I-405/NE 8th St to SR 520 Braided ramps — Interchange improvements (King)	TPA	√	Mar-09	Guy F. Atkinson Construction, LLC	Dec-12	\$107,500
This project received federal Recovery Act stimulus funds.						
I-90/Eastside Bridges — Seismic (King)	TPA	√	Oct-08	Imco General Construction, Inc.	Sep-11	\$5,999
This is a project within the Bridge Seismic Retrofit Program.						
SR 99/Alaskan Way Viaduct — Replacement (King)						
• SR 99/S Massachusetts St to Union St — Electrical line relocation	TPA	√	May-08	Frank Coluccio Construction	Nov-09	\$17,040
• SR 99/S Holgate St to S King St — Viaduct replacement	TPA	√	Oct-09 May-10	Signal Electric, Inc. Skanska USA Civil West	Sep-13 Sep-13	\$4,902 \$114,569
This subproject has several contract components; the contract awarded to Skanska USA in May 2010 begins removal of the southern portion of the viaduct.						
• SR 99/Battery St Tunnel — Fire and safety improvement	TPA	√	Nov-09	Signal Electric, Inc.	Nov-10	\$2,409
Additional sign-bridges have some elements that were not initially planned. New environmental right-of-way siting work and review was needed.						
SR 99/SR 518 Interchange Bridge Crossing Seismic Retrofit (King)	TPA	Late	Mar-10	Mid-Mountain Contractors, Inc.	Aug-11	\$762
This WSDOT project is tied to the Sea-Tac Airport Rental Parking Facility project, which is administered by the Port of Seattle; POS makes decisions on the overall project schedule. The project schedule has been changed several times, including a delay in advertisement date stemming from funding problems; after funding was secured, it was scheduled to advertise December 2009 but was delayed an extra quarter to March 2010. The operationally complete date has now been delayed to August 2011, based on the contractor's schedule for the car rental facility work. This is a project within the Bridge Seismic Retrofit Program.						
SR 99/Aurora Ave N Corridor — Add HOV lanes (King)	TPA	√	Jun-05		Jun-11	
This project represents WSDOT's contribution to a City of Shoreline project.						
SR 520/I-405 vicinity seismic retrofit (King)	TPA	√	Mar-10	Guy F. Atkinson Construction, LLC	Sep-11	\$4,083
This is a project within the Bridge Seismic Retrofit Program.						
I-90/Snoqualmie Pass East — Hyak to Keechelus Dam — Corridor improvement (Kittitas)						
• I-90/Snoqualmie Pass East Phase 1A Hyak to Crystal Springs — Detour (Kittitas)	TPA	Early	Feb-09	KLB Construction, Inc.	Oct-09	\$3,298
• I-90/Snoqualmie Pass East Phase 1B Hyak to snowshed vicinity — Add lanes and bridges (Kittitas)	TPA	√	Nov-09	Max J. Kuney Co.	Oct-13	\$76,699

WSDOT's Capital Project Delivery Programs

Advertisement Record

48 projects in construction phase as of March 31, 2011

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

Project description	Fund type	On time advertised	Ad date	Contractor	Operationally complete date	Award amount
I-5/Tacoma HOV Improvements (Pierce)	Nickel/TPA					
<ul style="list-style-type: none"> I-5/Port of Tacoma Rd to King Co Line — Add HOV lanes (Pierce) <p>Advertisement date was delayed due to design challenges associated with stormwater and floodplain issues; a formal consultation with US Fish & Wildlife (USFW) and National Oceanic & Atmospheric Administration (NOAA) was required. Inflation factor applied in early July 2008 added \$6.6M to project cost estimate. This project has received federal Recovery Act stimulus funds.</p>	Nickel	Late	Jun-09	Tri-State Construction, Inc.	Nov-11	\$31,015
<ul style="list-style-type: none"> I-5/SR 16 Interchange — Rebuild interchange (Pierce) 	TPA	√	Jul-08	Guy F. Atkinson Construction, LLC	Dec-11	\$119,925
I-5/Ardena Road Bridge — Upgrade bridge rail (Pierce)	Nickel	Late	Jun-09		Nov-11	
This project was combined for construction with I-5/Port of Tacoma Rd to King Co Line — HOV. This is a project within the Bridge Rail Retrofit Program.						
I-405/Kirkland Vicinity Stage 2 — Widening (Snohomish, King)	Nickel/TPA					
<ul style="list-style-type: none"> I-405/NE 195th St to SR 527 — Northbound widening (Snohomish, King) 	TPA	Early	May-09	Kiewit Pacific Co.	Jun-10	\$19,263
US 395/North Spokane Corridor — US 2 to Wandermere and US 2 Lowering — New alignment (Spokane)	Nickel	√	Aug-08		May-11	
<ul style="list-style-type: none"> NSC — US 2 to Wandermere vicinity (Spokane) 	Nickel		May-09	Graham Construction & Management, Inc.	May-11	\$37,541
<ul style="list-style-type: none"> US395/NSC — US 2 lowering (Spokane) 	Nickel		Aug-08	Graham Construction and Management, Inc.	May-11	\$42,849
US 395/North Spokane Corridor — Francis Ave to Farwell Rd — New alignment (Spokane)	Nickel	Late	Jan-04		Dec-11	
The advertisement delay on this project was due to delays in the right-of-way acquisition.						
<ul style="list-style-type: none"> NSC-Farwell Road Lowering 	Nickel		Jan-04	Max J. Kuney Company	Jul-05	\$4,976
<ul style="list-style-type: none"> NSC-Gerlach to Wandermere — Grading — Construction 	Nickel		Nov-04	KLB Construction Inc.	Sep-06	\$9,987
<ul style="list-style-type: none"> NSC-Francis Avenue to US 2 Structures — Rebid 	Nickel		May-06	Max J. Kuney Company	Jul-08	\$17,236
<ul style="list-style-type: none"> US 395/NSC-Freya to Fairview vicinity — Grading and Structures 	Nickel		Jan-07	Steelman-Duff	Apr-09	\$10,571
<ul style="list-style-type: none"> US 395/NSC-Freya St to Farwell Rd — PCCP Paving 	Nickel		Feb-07	Acme Concrete Paving	Aug-09	\$19,490
<ul style="list-style-type: none"> US 395/NSC — BNSF RR Tunnel 	Nickel		Sep-07	Scarsella Bros. Inc.	Aug-09	\$17,295
<ul style="list-style-type: none"> US 395/NSC — Freya to Farwell Rd — Southbound additional lanes 	TIGER/Nickel		Jun-10	Graham Construction & Management Inc.	Jun-10	\$21,456
This project was reported as complete in <i>Gray Notebook 35</i> - September 30, 2009. Subsequent to that date, the project received a TIGER grant from the American Recovery and Reinvestment Act. Those funds were combined with remaining Nickel funds to add the project shown above.						
I-5/Grand Mound to Maytown Stage One — Add lanes (Thurston)	Nickel	√	Dec-07	Scarsella Bros., Inc.	Jun-10	\$61,495

WSDOT's Capital Project Delivery Programs

Advertisement Record

48 projects in construction phase as of March 31, 2011

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

Project description	Fund type	On time advertised	Ad date	Contractor	Operationally complete date	Award amount
Biennium to date (2009-11)						
I-5/SR 432 Talley Way Interchanges — Rebuild interchanges (Cowlitz)	TPA	√	Sep-09	Northwest Construction, Inc.	Dec-11	\$20,529
SR 28/Jct US 2 and US 97 to 9th St, Stage 1 — New alignment (Douglas)	TPA	√	Sep-09	Selland Construction, Inc.	Oct-12	\$735
The advertisement date was advanced so that construction on the irrigation canal could occur during the 2009/10 winter while the irrigation water is shut off.						
SR 243/S of Mattawa — Install lighting (Grant)	TPA	√	Dec-10	Valley Electric Co. of Mt Vernon, Inc.	Nov-11	\$96
Lake Washington Congestion Management (King)	TPA	√	May-09	Elcon Corporation	Mar-11	\$ 34,450
SR 520/ Bridge Replacement and HOV (King)	TPA					
• SR 520 Pontoon Construction (King)	TPA	√	Aug-09	Kiewit-General, A Joint Venture	Apr-14	\$367,330
Portions of this project are now in construction, but were not previously captured in <i>Gray Notebook</i> 'Projects to be Advertised' tables. If necessary, new subprojects will be recorded in the advertisement pipeline tables in future editions.						
I-5/SR 161/SR 18 — Interchange improvements (King)	Nickel/TPA	√	Apr-10	Mowat Construction, Inc.	Oct-12	\$50,779
The award amount for this project was incorrectly reported as \$3,702 in <i>Gray Notebook 38</i> .						
US 97/Blewett Pass — Add passing lane (Kittitas)	TPA	√	May-10		Oct-10	
SR 410/214th Ave E to 234th — Add lanes (Pierce)	TPA	Late	Dec-09	J. R. Hayes & Sons	Sep-10	\$6,784
The advertisement and operationally complete dates have been delayed to allow time for continued environmental compliance issues. Right-of-way plans were revised for new pond sites, which required restarting the cultural resources process.						
SR 530/Sauk River Bank Erosion — Realign roadway (Skagit)	TPA	√	Dec-10	Trimaxx Construction Inc	Jul-12	\$2,481
SR 9/Lundeen Parkway to SR 92 — Add lanes and improve intersections (Snohomish)	TPA	√	Mar-10	Granite Construction Co.	Dec-11	\$10,921
SR 522/Snohomish River Bridge to US 2 — Add lanes (Snohomish)	Nickel	√	Apr-10	Scarsella Bros., Inc.	Nov-14	\$15,514
I-5/196th St (SR 524) Interchange — Build ramps (Snohomish)	TPA		Apr-10	Northwest Construction Inc.	Oct-11	\$18,727
The completion date has been delayed one quarter to reflect the contractor's schedule.						
SR 529/Ebey Slough Bridge — Replace bridge (Snohomish)	TPA		Apr-10	Granite Construction Co.	May-13	\$21,541
I-5/Mellen Street interchange to Grand Mound interchange — Add lanes (Thurston, Lewis)	TPA					
• I-5/Blakeslee Junction Railroad Crossing to Grand Mound interchange — Add lanes (Thurston, Lewis)	TPA	√	Feb-10	Tri-State Construction	Dec-11	\$19,731
• I-5/ Mellen Street to Blakeslee Junction — Add lanes, interchange Improvements (Thurston, Lewis)	TPA		Apr-12		Dec-14	
• I-5/Mellen St Interchange — Interchange improvements (Thurston, Lewis)	TPA			<i>Combined with project above for construction efficiencies.</i>		

WSDOT's Capital Project Delivery Programs

Advertisement Record

48 projects in construction phase as of March 31, 2011

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

Project description	Fund type	On time advertised	Ad date	Contractor	Operationally complete date	Award amount
I-5/Capitol Blvd Bridge - Upgrade bridge rail (Thurston) Advertisement date was delayed due to additional review of design elements.	Nickel		Oct-10	Cascade Bridge LLC	May-11	\$519
I-5/14th Ave Thompson PI — Add noise wall (Thurston)	TPA	√	Nov-10	Mowat Construction Company	Jul-11	\$1,654
I-5/Queets Dr E Tanglewild — Add noise wall (Thurston)	TPA	√	Nov-10	Mowat Construction Company	Jul-11	\$1,213
US 12/SR 124 Intersection — Build interchange (Walla Walla) Advertisement was delayed until land exchange with US Fish and Wildlife was completed.	TPA		Oct-10	Award pending	Oct-12	
I-5/36th St vicinity to SR 542 vicinity — Ramp reconstruction (Whatcom)	TPA	√	May-10	Vetch Construction	Oct-11	\$4,440
I-82/Valley Mall Blvd Interchange — Rebuild interchange (Yakima) This project received federal Recovery Act stimulus funds.	TPA	√	Nov-09	Apollo, Inc.	Oct-11	\$19,080
SR 22/I-82 to Toppenish — Safety improvements (Yakima) The completion date for the second stage of this project has been delayed one year due to work that could not be performed inside the irrigation window.	Nickel	√	Oct-09	Steele Trucking, Inc.	Nov-11	\$143
SR 823/Selah vicinity — Reroute highway (Yakima) The project was delayed until fall 2010 due to right of way issues. Its completion date has been delayed one year to 2012.	TPA	√	Dec-09		Jul-12	
Quarter ending March 31, 2011						
US 2/Chiwaukum Creek – Replace Bridge (Chelan)	TPA	√	Mar-11	Award pending	Dec-12	
SR 500/St Johns Blvd – Build interchange (Clark) Advertisement date was delayed due to delays in gaining environmental permitting approval.	TPA		Jan-11	Tapani Underground, Inc.	Nov-13	\$27,237
SR 14/Camas Washougal – Add lanes and build interchange (Clark) Advertisement date was delayed due to prolonged right-of-way negotiations.	TPA		Mar-11	Tapani Underground, Inc.	Nov-12	\$28,619
SR 99/Aurora Ave – George Washington Memorial Bridge – Seismic (King)	TPA	√	Jan-11	Massana Construction, Inc.	Jan-13	\$6,157
SR 518/Bridges – Seismic (King)	TPA	√	Mar-11	Award pending	Apr-12	
SR 161/24th St E to Jovita – Add lanes (Pierce) Advertisement date was delayed to coordinate with local agencies.	Nickel		Feb-11	Award pending	Jun-12	
SR 11/Chuckanut Park and Ride – Build park and ride (Skagit)	TPA	√	Jan-11	Interwest Construction, Inc.	Jul-11	\$3,199
US 2/Wagley's Creek Tributary (Sultan Mill Pond) – Fish Passage (Snohomish)	TPA	√	Mar-11	Award pending	Aug-11	
SR 542/Everson Goshen Rd Vic to SR 9 vicinity – Intersection Improvements (Whatcom)	TPA	√	Jan-11	Boss Construction, Inc.	Oct-11	\$2,549
SR 548/Terrell Creek – Fish passage (Whatcom)	TPA	√	Feb-11	KLB Construction, Inc.	Oct-11	\$672

Data source: WSDOT Capital Program Development and Management.

WSDOT's Capital Project Delivery Programs

Projects To Be Advertised

6 Projects in the delivery pipeline for April 1, 2011 through September 30, 2011

Nickel & Transportation Partnership Account (TPA) projects now being advertised for construction or planned to be advertised

Costs estimated at completion, dollars in thousands

Project description	Fund type	Original planned ad date	Current planned ad date	On schedule	Baseline estimated cost at completion	Current estimated cost at completion
US 2/Wenatchee River Bridge – Replace bridge (Chelan) Advertisement has been delayed to allow time for processing a shoreline permit..	TPA	Mar-11	May-11		\$11,739	\$7,978
I-5/NE 134th St Interchange (I-5/I-205) – Rebuild interchange (Clark)	Nickel	Apr-11	Apr-11	√	\$84,341	\$99,340
SR 503/4th Plain/SR 500 Intersection – Add turn lane (Clark)	TPA	Apr-11	Apr-11	√	\$780	\$807
US 101/Unnamed Tributary to Lower Salmon Creek – Fish barrier (Grays Harbor)	TPA	May-11	May-11	√	\$1,259	\$1,353
SR 99/Spokane St Bridge – Replace bridge approach (King)	TPA	Sep-11	Sep-11	√	\$14,069	\$14,034
SR 9/212th St SE to 176th St SE, Stage 3 – Add lanes (Snohomish) Advertisement has been delayed to allow time for utility relocation and permit approval.	Nickel	Mar-11	Apr-11		\$87,289	\$87,299

Data source: WSDOT Capital Program Development and Management.

WSDOT's Capital Project Delivery Programs

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

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

The dashboards below and on page 50 provide a status report on how WSDOT is delivering the program compared to the original Legislative intent as presented in the 2003 and 2005 LEAP (Legislative Evaluation & Accountability Program) lists. These dashboards include all budget items including preconstruction and environmental studies that were included in the original funding packages.

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

The second table presents a budget update showing original planned budgets and the current plan or actual expenditure.

In both tables, the next sets of columns break out the program by category: highways, ferries, and rail.

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

Status as of March 31, 2011

Project number and phase	Total program		Highways		Ferries		Rail	
	Number of projects	Percent of program						
Total number of projects	156		127		5		24	
Completed projects	109	70%	96	76%	1	20%	12	50%
Total projects under way	37	24%	31	24%	3	60%	3	13%
<i>In preconstruction phase</i>	19		17		2		0	
<i>In construction phase</i>	18		14		1		3	
Projects starting in the future	3	2%	0	0%	0	9%	3	13%
Projects deferred, or deleted from program	7	4%	0	0%	1	20%	6	25%
<i>Number of Legislatively approved scope changes</i>	20		18		0		2	
<i>Preconstruction starts within 6 months</i>	0		0		0		0	
<i>Construction starts within 6 months</i>	2		2		0		0	

Data source: WSDOT Capital Program Development & Management.
Note: Totals do not include Local Programs projects.

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

Status as of March 31, 2011; Dollars in thousands

	Total program		Highways		Ferries		Rail	
	Budget	Percent of total	Budget	Percent of program	Budget	Percent of program	Budget	Percent of program
Total original Legislative planned budget	\$3,887,483		\$3,380,124		\$297,851		\$209,508	
Original plan, 2003 through 2007-09 biennium	\$2,450,750	63%	\$2,102,667	62%	\$219,285	74%	\$128,798	61%
Actual expenditures, 2003 through 2007-09 biennium	\$2,641,045	68%	\$2,469,953	73%	\$80,904	27%	\$90,188	43%
Original plan through 2009-11 biennium	\$3,278,038	84%	\$2,813,701	83%	\$293,919	99%	\$170,418	81%
Current plan through 2009-11 biennium			\$3,042,352	90%				
Actual expenditures, 2003 through March 31, 2011	\$3,196,288	82%	\$2,948,911	87%	\$132,448	44%	\$127,982	61%

Data source: WSDOT Capital Program Development & Management.
Note: Expenditures are Nickel funds only. Totals do not include Local Programs projects.

WSDOT's Capital Project Delivery Programs

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

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

Status as of March 31, 2011

Project number and phase	Total program		Highways		Ferries		Rail	
	Number of projects	Percent of program						
Total number of projects	248		229		4		15	
Completed projects	151	61%	145	63%	0		6	40%
Total projects under way	78	31%	72	31%	1		5	33%
<i>In preconstruction phase</i>	39		37		1		1	
<i>In construction phase</i>	39		35		0		4	
Projects starting in the future	8	3%	4	2%	1		3	20%
Projects deferred, or deleted from program	11	4%	8	3%	2		1	7%
<i>Number of Legislatively approved scope changes</i>	23		23		0		0	
<i>Preconstruction starts within 6 months</i>	0		0		0		0	
<i>Construction starts within 6 months</i>	3		3		0		0	

Data source: WSDOT Capital Program Development & Management.

Note: Totals do not include Local Programs projects.

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

Status as of March 31, 2011; Dollars in thousands

	Total program		Highways		Ferries		Rail	
	Budget	Percent of total	Budget	Percent of program	Budget	Percent of program	Budget	Percent of program
Total original Legislative planned budget	\$6,982,128		\$6,678,468		\$185,410		\$118,250	
Original plan, 2005 through 2007-09 biennium	\$2,274,805	33%	\$2,224,451	33%	\$1,940	1%	\$48,414	41%
Actual expenditures, 2005 through 2007-09 biennium	\$1,336,628	19%	\$1,296,476	19%	-	0%	\$40,152	34%
Original plan through 2009-11 biennium	\$4,042,962	58%	\$3,886,331	58%	\$81,701	44%	\$74,930	63%
Current plan through 2009-11 biennium			\$2,790,340	42%				
Actual expenditures, 2005 through March 31, 2011	\$2,542,049	36%	\$2,411,071	36%	\$64,091	35%	\$66,887	57%

Data source: WSDOT Capital Program Development & Management.

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

Definitions

Completed projects Projects operationally complete, open to traffic.

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

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

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

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

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

Note

The column headed 'Percent of program' shows the percentage of each category represented by the raw number. For example, the Ferries columns show that of the five projects listed in the Nickel package, one has been completed, representing 20% of the total Ferries program; three Ferries projects are under way, representing 60% of the total program; and one Ferries project has been deferred or deleted, representing the remaining 20% of the total program.

WSDOT's Capital Project Delivery Programs

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

Revenue forecast update

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

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

The March 2011 forecast for gas tax receipts and licenses, permits, and fees for the Transportation 2003 (Nickel) Account is lower than the baseline forecast for the ten-year outlook by 11.6%. This reduction is due to continued lower gasoline consumption. Because Washington State's gas tax is based on gallonage rather than price, reduced consumption results in reduced revenues.

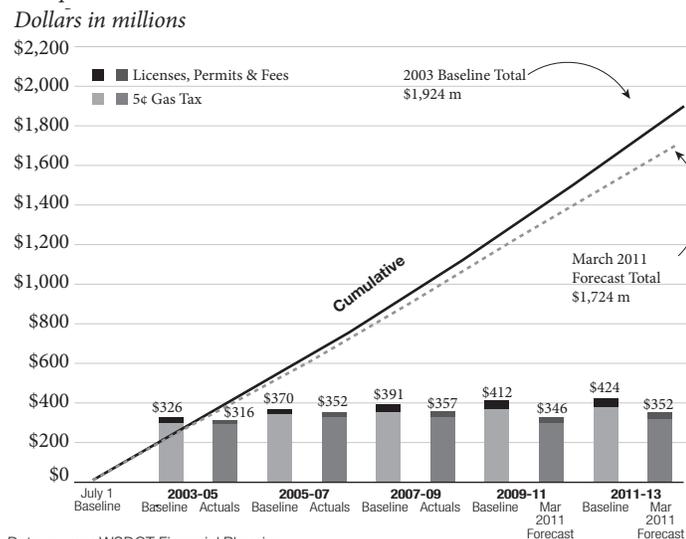
Multimodal Account projections for the vehicle sales tax are lower than the baseline forecast resulting in a decrease of 19.4% in the ten-year outlook. This decrease is primarily due to the decline in vehicle sales.

2003 Transportation Funding Package Highlights

- Deposited into the Transportation 2003 (Nickel) Account*
- 5¢ increase to the gas tax
 - 15% increase in the gross weight fees on trucks
- Deposited into the Multimodal Account (established in 2000)*
- An additional 0.3% sales tax on new and used vehicles
 - \$20 license plate number retention fee

Transportation 2003 (Nickel) account revenue forecast

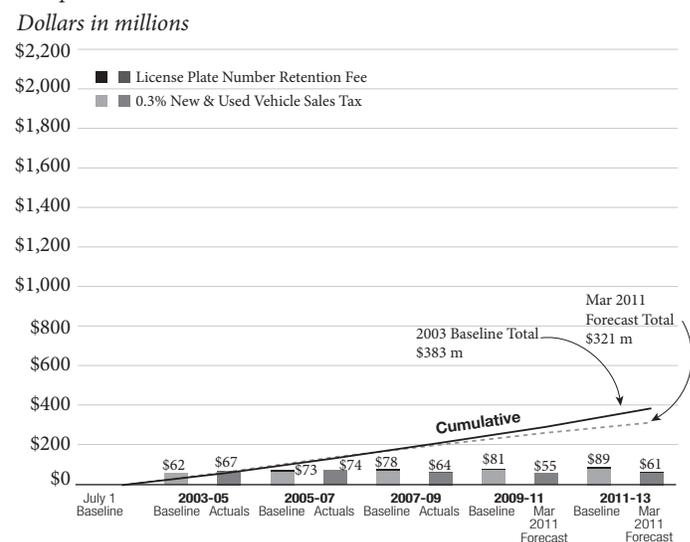
March 2003 Legislative baseline compared to the March 2011 Transportation Revenue Forecast Council



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

Multimodal Account (2003 Package) revenue forecast

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



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

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

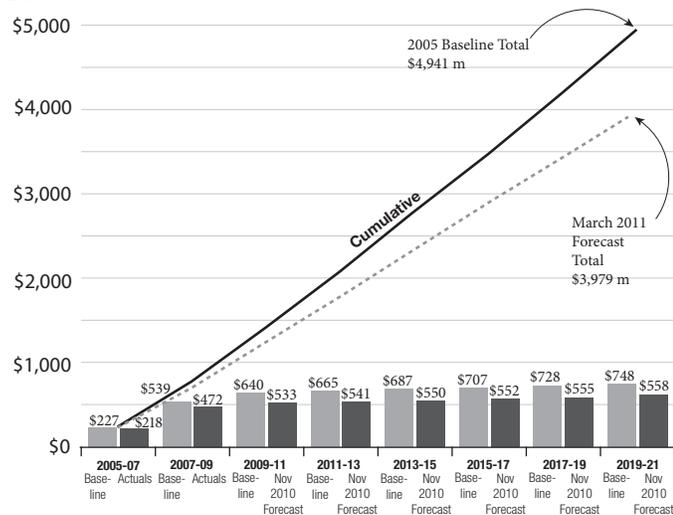
Revenue forecast update

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

The March 2011 forecast for gas tax receipts over the 16-year period decreased by 24.2% 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 March 2011 Transportation Revenue Forecast Council
Dollars in millions



Data source: WSDOT Financial Planning.

Numbers may not add due to rounding.

2005 Transportation Package Revenue Sources

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

WSDOT's Capital Project Delivery Programs

Completed Projects: Delivering performance and system benefits

Between January 1 and March 31, 2011, WSDOT completed three Nickel and Transportation Performance Account projects that built and improved bridges, paved highways, and improved fish passage. Each project faced unique challenges to be delivered on time and on budget.

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

Project delivery performance reporting regarding budget and schedule is measured against last approved budgets in accordance with criteria established by the Legislature; for this quarter, it is the 2010 supplemental budget. This report includes the original project appropriation from the 2003 and 2005 budgets to explain changes in project budgets over time. The graphs offer a visualization of the fluctuations in a project's cost from year to year and is scaled to show the dollar range in greater detail.

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

I-5/SR 501 Ridgefield Interchange – Build Interchange Stage 1 (Clark)

Stage 1 of this project improved safety and mobility by replacing the existing I-5 interchange at SR 501 in Ridgefield with a new bridge and improved on- and off-ramps, widening SR 501 to two lanes in each direction, and added new turn lanes and sidewalks for pedestrian and bicycle travel along SR 501. Construction on Stage 2, funded by local agencies, is set to begin in summer 2011 and will be a partnership with the city of Ridgefield.



Project's benefits: Stage 1 construction improved safety in the interchange vicinity by widening the bridge over I-5 to two lanes in each direction and improving the interchange with SR 501. The project also better access from I-5 to Ridgefield and surrounding Clark County and made for safer and more efficient pedestrian and bicycle travel along SR 501.

Project highlights or challenges: The first stage of the project received \$10 million in federal Recovery Act funds, which advanced construction that faced delays due to prior cost increases due to material costs and right-of-way. The project was awarded to Tapani Underground Inc. for \$15.8 million, about 27% below the engineer's estimate. As a result of the low bid, \$1.8 million in Recovery Act funds were used to help pay for additional projects.



This project built a new interchange over I-5 at SR 501 near Ridgefield. The project also received Recovery Act funds.

Budget performance: The project cost \$23.5 million, \$300,000 over the last approved budget of \$23.2 million. It is \$13.5 million above the original FY 2006 budget of \$10 million.

Schedule performance: This project was completed in January 2011, five months ahead of the original completion date of June 2011 and on target with the last approved schedule.

Completed Projects: Delivering performance and system benefits

SR 305/Unnamed Tributary to Liberty Bay – Fish Barrier (Kitsap)

This project installed new culverts to improve fish passage under SR 305. The project regraded streambeds upstream and downstream.

Project benefits: The improvements to the structure will remove the restrictions to fish passage on the tributary and improve access to upstream freshwater habitat for migratory fish to find food and reach spawning grounds.

Highlights or challenges: The fish barrier removal impacted the Puget Sound Steelhead, an endangered species. The project experienced delays and cost increases, in part due to design and also to a crushed pipe. During the boring process, two culverts were crushed, requiring crews to remove the crushed pipe. The new culverts were installed using steel bracing inside the culverts and reinforcing the culverts at the end of the pipe.

Budget performance: The project was completed at \$3 million, in line with the last approved budget. Due to the issues described above, the project's cost at completion was \$1.1 million more than the original budget expectation.



This project improved streambeds and installed new culverts under SR 305 in Kitsap County to remove restrictions to fish passage.

Schedule performance: The project was originally scheduled for completion in December 2008, but the delays discussed above delayed the operationally complete date. It was completed in January 2011, on time with the last approved schedule..

I-5/236th St SW Bridge – Seismic Retrofit (Snohomish)

This project performed seismic retrofits on the 235th Street Southwest and 228th Street Southwest bridges on I-5 in south Snohomish County.

Project's benefits: As part of its bridge preservation program, WSDOT performs seismic retrofits to strengthen bridges and structure to resist future earthquakes. This bridge was retrofitted to mitigate the potential risks associated with these events.

Highlights or challenges: Freeway station electrical work contributed to a five month delay as I-5 lane shifts had to wait until all station work was completed. An earlier delay was due to changes in the contractor's schedule and staging of the work. The project was awarded to a bid 19% below the engineer's estimate.

Budget performance: The project cost about \$573,000 at completion, on target with the last approved expectation. It was approximate \$200,000 below the original Fiscal Year 2008 estimate of \$777,000.

Schedule performance: The project was completed in March 2011, on time with the last approved schedule. The project was initially scheduled to be completed in June 2009.



Crews performed seismic retrofits on I-5 bridges in Snohomish County to mitigate earthquake risks.

WSDOT's Capital Project Delivery Programs

Completed Projects: Delivering performance and system benefits

SR 26/West of Othello – Add passing lane (Adams)

This project built a new half-mile passing lane for eastbound traffic on SR 26 in an area that has experienced numerous passing-related collisions.

Project benefits: The project provides a dedicated lane for vehicles to pass which is expected to reduce the number of collisions and improve mobility.

Highlights or challenges: The project was awarded to Selland Construction Inc. for about \$609,000, 24% under the engineer's estimate. The project was actually complete in May 2010, but was not reported complete until this quarter.

Budget performance: The project cost \$1.02 million at completion, about \$670,000 below its last approved cost.

Schedule performance: The project was completed in May 2010, on time with its approved schedule.



Project Spotlight: US 395/North Spokane Corridor

The North Spokane Corridor (NSC) is a 10.5 mile limited-access highway from the existing US 395 in the north to I-90 at its southern terminus. When completed, the corridor is expected to handle about 150,000 vehicles daily, accommodating Spokane County's growing population, which is expected to grow by 125,000 people by 2025. The new corridor and its related elements will help to promote several of WSDOT's strategic goals:

- **Safety:** Redirects commercial truck traffic off city streets and onto the new corridor, provides dedicated bicycle and pedestrian pathways and facilities, and integrates the latest highway safety design and engineering features.
- **Mobility:** Relieves congestion by creating new highway capacity, reduces travel time 60% to an estimated 12 minutes, adds new park-and-ride facilities to support increased transit and vanpool use in the area, and supports the growing use of US 395 as a freight corridor.
- **Environment:** An estimated 1.7 million gallons of fuel and 2.4 million pounds of carbon monoxide will be eliminated with more efficient highway-cruising speeds.

Project development and construction

The 2003 Nickel Transportation Funding Package funded eight contracts between the Wandermere/US 395 and Francis/Freya interchanges. WSDOT completed six contracts and opened 3.5 miles of the route to traffic in August 2009, operating with two-way traffic on one side of the ultimate freeway configuration. The initial segment has averaged 4,900 vehicles per day, including 12.6% trucks.

In July 2010, WSDOT awarded the contract for the *NSC-Freya St. to Farwell Rd. Southbound Additional Lanes Project*. Funding for this contract was secured with a \$35 million federal Transportation Investments Generating Economic Recovery (TIGER) grant. The project will construct the full six-lane configuration by building three additional lanes, seven bridges, and completing the Parksmith Interchange. WSDOT expects to finish the last two Nickel contracts and the TIGER grant southbound lanes project by late fall 2011, opening the northerly 5.7 miles of the NSC corridor to traffic.



North Spokane Corridor Highlights

The corridor's first driveable section, Francis/Freya to Farwell Road, opened to traffic in August 2009. The second link is expected to open in fall 2011.

A paved bicycle and pedestrian path parallels the North Spokane Corridor for its entire length, with sections opening once the highway segments are completed.

Construction of the Spokane River to Francis segment will begin in 2012. The first funded project is a new Francis Avenue bridge to span the NSC and the BNSF Railroad.

The first driveable section has averaged 4,900 vehicles each day, including 12.6% trucks. When the remaining Nickel and TIGER-funded projects are completed in 2011, average daily traffic is estimated to increase to 23,000.

US 395/North Spokane Corridor project updates

Project	Description	Status
Freya to Farwell (6 contracts complete)	Earthwork, bridges, railroad tunnel, PCCP paving	Complete
US 2 Lowering	Earthwork, paving, bridges, creek culvert	Under way
US 2 to Wandermere	Paving and bridges	Under way
Francis to Farwell Southbound Lanes	Earthwork, paving, and bridges	Under way
Parksmith Interchange	Earthwork and paving for new on/off ramps	In design
Spokane River to Francis	Multiple contracts	Development
Francis Street Structure Replacement	Spring 2012 construction	Development
Right of Way Acquisition	I-90 vicinity residential and throughout corridor	Ongoing

WSDOT's Capital Project Delivery Programs

Project Spotlight: US 395/North Spokane Corridor

Next sections expected to significantly expand daily traffic on North Spokane Corridor

The first driveable section has averaged 4,900 vehicles each day since its completion in 2009, including 12.6% trucks.

When the remaining Nickel and TIGER-funded projects are completed in 2011, average daily traffic is estimated to increase to 23,000.

Future extensions are being refined

Refinements to the existing designs from the Spokane River to the Francis/Freya Interchange have resulted in project savings of over \$300 million dollars. Limited right-of-way acquisitions are currently under way. Right-of-way purchases continue along the I-90 corridor, with noise wall construction expected in 2014.

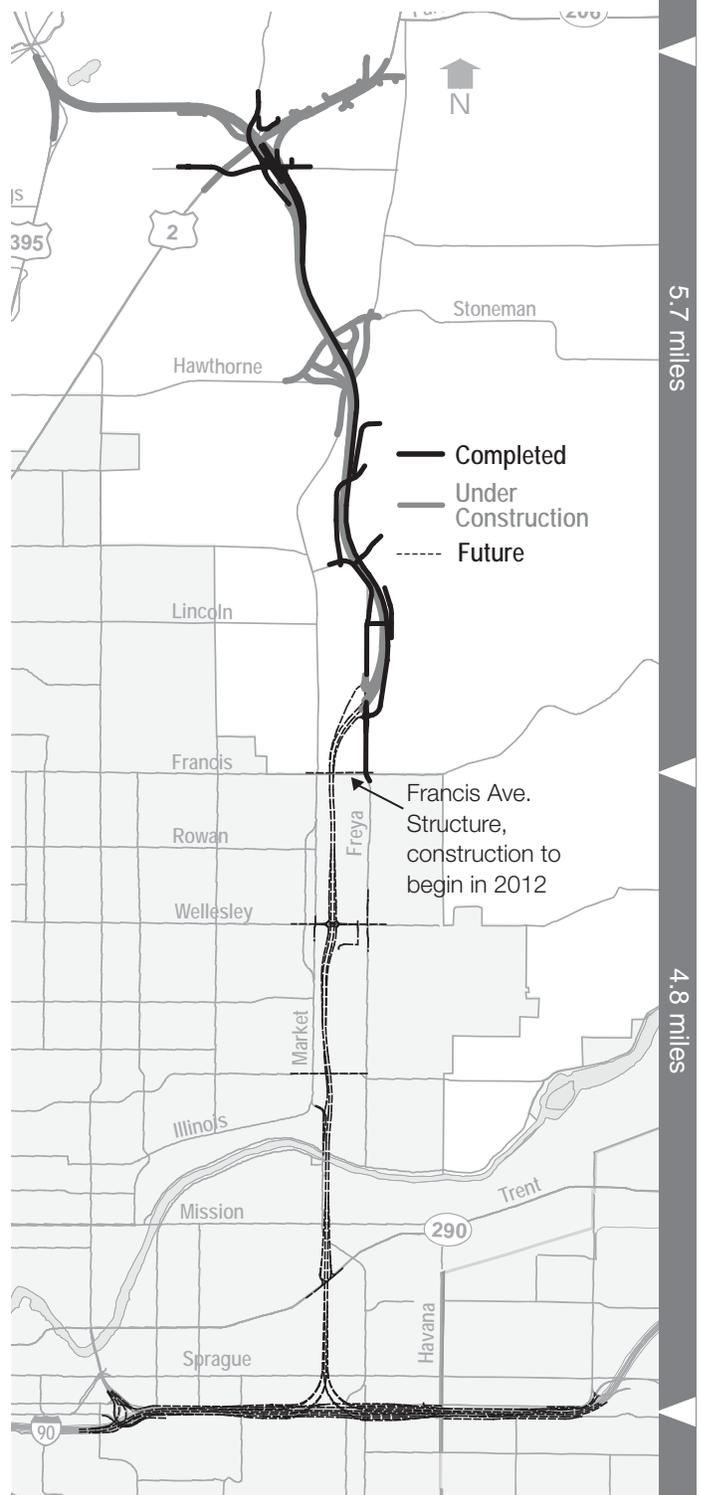


The NSC/US 2 Interchange project will open to traffic later this year.



This project is building new bridges as part of the interchange at US 395 and Wandermere in Spokane.

Map: North Spokane Corridor project (Spokane)



Special Report: New Ferry Construction

Budget performance review for new ferry construction program

WSDOT budgeted \$213.2 million to build three new, 64-vehicle Kwa-di Tabil class ferries that will begin the replacement of its aging fleet. The total final cost for the *Chetzemoka* was \$80.5 million, about 4.7% over budget. Even though the *Chetzemoka* was completed over budget, many of the lessons learned in constructing the vessel were incorporated into the contract for the *Salish* and *Kennewick*; this will allow construction of the three vessels within the budgeted amount of \$213.2 million. Both the *Salish* and *Kennewick* were under budget as of the end of March.

Chetzemoka crew gains experience through harsh winter weather

The first Kwa-di Tabil class ferry, the *Chetzemoka*, has been in service since November 15, 2010. As crews gain experience on the Port Townsend/Coupeville route, WSDOT expects the *Chetzemoka's* operating performance to improve, so it can provide safe, reliable service to customers. Its first full quarter in operation saw some on-time performance challenges that echoed those experienced by other vessels on the route during winter seasons, when the weather and tides are the most severe. For more details on *Chetzemoka* performance data, please see the Ferries Mobility article on page 26.

Vessels still in construction: *MV Salish* christened in January 2011

The second Kwa-di Tabil ferry, the *Salish*, was christened at Todd Pacific Shipyards on January 4, 2011. Senator Mary Margaret Haugen performed the ceremonial breaking of a bottle on the vessel's bulwark, with Representative Judy Clibborn, Secretary Paula Hammond, Assistant Secretary David Moseley, and others in attendance.

On February 7, the vessel was moved to Everett Shipyard for final outfitting and system testing. By the end of March, the *Salish* was 91% complete. Todd Pacific Shipyards is slated to conduct builder's sea trials scheduled for mid-April, with acceptance trials scheduled for late April. WSDOT expects to accept delivery of the vessel from Todd Pacific Shipyards in early May, in order to complete additional safety and operational outfitting. WSDOT will begin crew familiarization and training before the vessel enters service this summer on the Port Townsend/Coupeville route.

MV Kennewick rolled out to dry dock in April 2011

The third Kwa-di Tabil ferry, the *Kennewick*, was rolled out of Todd Pacific Shipyard's construction hall on April 1, 2011. By this time the *Kennewick* was 54% complete. Sections of the superstructure were transported by barge from Whidbey Island on April 2 and installed on April 6. The vessel's christening will occur in May, and the vessel will then be launched and towed to Everett Shipyard for completion of construction. Construction will continue throughout the summer and into the fall, followed by trials and crew training. The *Kennewick* will enter service in late 2011 or early 2012.



The *MV Kennewick* rolls out to dry dock from Todd Pacific Shipyards' main steel shop. The *Kennewick* will later be towed to Everett Shipyard for final outfitting and system testing.

Project Highlights

New vessel construction progress:

- *MV Salish* is 91% complete.
- *MV Kennewick* is 54% complete.

MV Kennewick rolled out of construction hall onto dry dock on April 1, with christening expected to occur in May.

MV Chetzemoka entered service during turbulent winter weather, with crews gaining operating experience on the new vessel.

Construction highlights this quarter:

- January: *MV Salish* christened by Senator Mary Margaret Haugen on January 4, 2011.
- February: *MV Salish* moved to Everett for final outfitting on February 7, 2011.
- April: *MV Kennewick* rolled out of construction hall on April 1, 2011.

WSDOT's Capital Project Delivery Programs

Special Report: Tacoma Pierce County HOV Program Quarterly Update

Project Highlights

I-5 / SR 16 westbound Nalley Valley construction nearly complete:

- 100% shafts drilled.
- 100% columns completed.
- 100% bridge caps completed.
- 100% bridge segments built.
- 100% precast concrete girders placed.
- 91% of bridge deck spans poured.
- 54% of the spans of bridge barrier are complete.

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

- Vertical clearance work completed on Portland Avenue.
- Successfully realigned SR 167.
- 100% of stone columns installed.

Design continues on I-5/SR 16: Eastbound Nalley Valley. Construction advertisement date is delayed to late May 2011.

For more information: www.tacomatraffic.com

I-5/SR 16: Westbound Nalley Valley interchange near completion

Construction of new westbound Nalley Valley structures and associated roadways is nearing completion. This quarter, crews connected all bridge panels through “concrete closure pours” on the bridge joining northbound I-5 to SR 16. Another 20 deck pours on five other bridges were also completed, bringing the total completed deck pours to 43. In addition, work wrapped up on more than half of the 50 spans of bridge barrier.

By the end of June 2011, crews expect to complete the four remaining deck pours and finish all closure pours and concrete barrier construction. They will pave the bridge from northbound I-5 to westbound SR 16, and complete all drainage and pond construction.

To tie the new northbound I-5/westbound SR 16 bridge into the roadway, WSDOT plans two extended closures: a 45-day closure of the 38th Street on-ramp to SR 16 and northbound I-5, and a 30-day detour of northbound I-5 to westbound SR 16 traffic via a temporary bridge. The closure and temporary realignment are expected to cause significant delays to motorists, especially during peak commute hours. WSDOT is communicating these closures through news releases, media tours, social media, and bulletins on its website.

The project is on schedule to open to traffic this summer.

Design work continues on I-5/SR 16: Eastbound Nalley Valley

The I-5/SR 16 Eastbound Nalley Valley project is the next contract in the Tacoma/Pierce County HOV program. The advertisement Date for the project was delayed from April 11 to May 23, 2011 to ensure project quality processes are completed according to plan, and to resolve comments received in the region review process. The extra time also allows the design, construction and plans offices more review time before project advertisement. Construction is now estimated to start in early September and continue for two years. During this project, crews will build new eastbound SR 16 structures through Nalley Valley and complete associated ramp work at the SR 16 / Sprague Avenue interchange.

Initial construction work on the I-5: Portland Avenue to Port of Tacoma Road – Northbound HOV Stage 1 project

The \$22 million Stage 1 project is the first of several to reconstruct I-5 between Portland Avenue and the Port of Tacoma Road. This project, under way since July and scheduled for completion in early 2012, finishes preliminary work for the larger northbound I-5 Puyallup River Bridge project. This quarter, crews completed the installation of 857 stone columns. Widening the I-5 bridge over Portland Avenue is well under way, and crews have begun installing 175 soil cement columns near the T Street utility pipes underneath I-5. These columns fortify the surrounding soil to support bridge piers and an embankment for the future northbound I-5 Puyallup River Bridge.



Dwarfed by a massive drill bit and crane, a worker monitors this construction work to ensure safety and efficient production. This work will strengthen and support bridge piers for a new northbound I-5 bridge over the Puyallup River.

Special Report: SR 520 Floating Bridge Replacement

SR 520 Pontoon Construction project now under way

Construction is under way on the SR 520 Pontoon Construction project, a major component of the mega-project that will replace the SR 520 floating bridge. This project includes construction of a new pontoon casting basin facility in Aberdeen, and 33 concrete pontoons at the facility. Construction begins on the first cycle of pontoons this summer, and will be complete in spring 2012; completed pontoons will be moored within Grays Harbor until they are needed. (See the September 2010 Gray Notebook 39, page 58, for more details.)

Casting basin construction update: Work began in February

WSDOT awarded a \$367 million design-build contract to Kiewit-General, a Joint Venture (K-G), in early 2010 for the Pontoon Construction project. Following release of the Environmental Impact Statement (EIS) in December and approval from the Federal Highway Administration (FHWA) in January, construction began in February 2011. Crews have driven more than 550 of 900 piles to form the foundation of the casting basin, and began excavating more than a quarter-million cubic yards of dirt. The casting facility is scheduled for completion by the end of 2011.

Design-build contract update: Change orders agreed between WSDOT and K-G

WSDOT recently modified its contract with K-G, which will help keep the project on schedule, address costs resulting from design modifications, and smooth the workflow by adding some work originally planned for a separate contract to the Pontoon Construction project. These modifications, made via 'change orders,' total \$10.3 million, which are within the established budget.

- *Schedule recovery and pontoon design changes (\$6.9 million).* In their 2009 bid proposal, K-G proposed a modified casting basin that had fewer environmental effects, used less material, and could be built more quickly than WSDOT's conceptual design. Although K-G's design was acceptable, it did require additional environmental analysis and delayed publication of the FHWA's Record of Decision by 71 days.

This change order will reduce the overall effect on the schedule to about one month. It includes a requirement for liquidated damages if the design-builder is unable to deliver pontoons on time, and covers changes to the design of the pontoons, primarily related to the amount and size of reinforcing steel.

- *Moorage and towing hardware (\$3.4 million).* This change order moves the installation of hardware needed to moor and tow the pontoons from the planned Floating Bridge project to the Pontoon Construction project. Doing so will simplify installation and eliminate drilling into the pontoons after they've left the casting basin. Together, these changes will allow for more efficient transition from pontoon construction directly to ocean towing.

How WSDOT manages budget and schedule decisions for major projects

To ensure careful consideration of budget and schedule impacts to big projects, WSDOT conducts Cost Estimate Validation Process (CEVP™) workshops for projects valued at more than \$100 million. During the workshop process, transportation projects are examined by a team of top engineers and risk managers from local and national firms and public agencies; the results are used to assess cost and schedule risk, inform design decisions, identify risk mitigation strategies, and establish reasonable project budgets. The established budgets consider the probability of estimated risks and are intended to cover the cost of project changes. As project teams evaluate and process change orders throughout construction of the project, they take into account the overall project's planned contingency and manage accordingly.

As the construction of a project progresses, WSDOT continues to use risk management processes to identify and manage risks to maintain scope, schedule, and budget.

SR 520 Pontoon Construction Project Highlights

WSDOT is building 33 pontoons for the SR 520 floating bridge replacement project.

Construction began in February on the casting basin facility in Aberdeen to build the pontoons.

The pontoons will be built in six cycles, with the first cycle set to be completed in spring 2012.

WSDOT and the contractor recently completed two change orders on the project totaling \$10.3 million. The changes will help keep the project on schedule, address costs, and smooth future workflow.

For more information on this project, visit www.wsdot.wa.gov/projects/sr520/pontoons

WSDOT's Capital Project Delivery Programs

Watch List: Projects with schedule or budget concerns

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

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

The summary on page 79 lists projects currently facing schedule or budget concerns with a reference to these over-arching descriptions; a more detailed description of the precise problem or its resolution appears on the following pages. Still more information is presented on the individual project pages on the WSDOT website at www.wsdot.wa.gov/projects. Projects paid for through Pre-Existing Funds are discussed on pages 83-87.

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

Coordination

Local concerns: Concerns raised by local communities may require additional, unanticipated, design, right-of-way, or utilities work which, if not resolved, might result in in costs or delays later in construction.

Federal requirements: Funding and project development issues with Federal Highways Administration (FHWA), Federal Transit Administration (FTA), USDOT; workload prioritization and coordination for reviews by US Fish & Wildlife Service, NOAA Fisheries, US Forest Service, etc.

Inter-agency issues: Project may require more collaboration with local jurisdictions, or may require inter-local agreements, such as Memoranda of Understanding (MOUs) or Memoranda of Agreement (MOAs).

Tribal government issues: Consultation with tribes as required by Centennial Accord and specific treaties. Where treaty rights are affected, there may be financial settlements unanticipated in the original project budget.

Environmental

Planning & analysis: Completing essential studies required to comply with the National and State Environmental Policy acts (NEPA/SEPA), the Endangered Species Act (ESA), or other programs may take longer and cost more than anticipated.

Technical issues: The time needed to resolve matters involving archeological discoveries, hazardous materials, stormwater, noise, and hydrology may cause delay.

Mitigation: Negotiating for and designing sites to compensate for impacts to wetlands, floodplains, fish habitat and migration, and so on may involve many other factors from design through construction.

Permitting: New information about a project site, changes in design, or new regulatory requirements may delay permitting. If existing permits must be reworked, it can cause delay or additional expense.

Design

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

Alternatives: Design alternatives may require unanticipated revision as the result of environmental analyses and/or public input.

Design disputes: Communities or other entities may challenge design concepts, requiring additional time spent in design.

Design element changes: Project parameters may change, requiring changes to designs in progress or under construction.

Utilities

Agreements with other jurisdictions: Agreements may take longer to obtain than anticipated.

Utility relocations: Moving power, water, gas, or other utility lines may be more complex than originally expected.

Right-of-Way

Design changes: Project revisions that may require additional land.

Land acquisition: Negotiations with landowners regarding purchase of property may take longer than anticipated.

Land appreciation: Property value increases that exceed projections.

Land use designation changes: Land previously zoned as farmland may have been converted to industrial or commercial use, raising the purchase price.

Construction

Contractor issues: Disputes with contractors or disagreements over contract parameters may delay construction at any point in the job.

Cost increase of materials: Unit costs may increase beyond the set budget due to fluctuations in the marketplace or a failure to estimate costs properly at the design phase.

Materials procurement: Unexpected demand or lack of availability of raw materials required for construction.

Site problems: Discovery of contaminated (hazardous) soils, unsuitable geological conditions, or similar unforeseen issues after construction has begun.

Timing problems: Delays at design or right of way may mean work schedules conflict with events such as fish spawning season.

Weather: Weather unsuitable for construction work will temporarily halt the project.

Litigation

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

WSDOT's Capital Project Delivery Programs

Watch List: Projects with schedule or budget concerns

Added to Watch List	Project type	Watch List issue
I-5/NE 134th St Interchange (I-5/I-205) - Rebuild interchange (Clark)	Highway	Right-of-way: Land acquisition
SR 502/I-5 to Battle Ground - Add lanes (Clark)	Highway	Right-of-way: Land acquisition
Updates to Watch List		
SR 28/E End of the George Sellar Bridge - Construct bypass (Douglas)	Highway	Right-of-way: land acquisition
I-405/Thunder Hills Creek Culvert - Emergency repair (King)	Highway	Environmental: fish passage barrier
US 97/Blewett Pass - Passing lane (Kittitas)	Highway	Construction: site problems, weather
SR 9/212th St SE to 176th St SE, Stage 3 - Add lanes (Snohomish)	Highway	Environmental: permitting; Utilities: utility relocations
US 395/NSC-US 2 to Wandermere and US 2 Lowering – New Alignment (Spokane)	Highway	Construction: site problems; timing problems
Removed from Watch List		
SR 161/24th St E to Jovita - Add lanes (Pierce)	Highway	Design: design element changes; Utilities: utility relocations
SR 9/SR 531 - 172nd St NE - Intersection improvements (Snohomish)	Highway	Right-of-way: Land acquisition; Utilities: utility relocations
SR 522/Snohomish River Bridge to US 2 - Add lanes (Snohomish)	Highway	Environmental: permitting; Design: alternatives
US 12/SR 124 Intersection – Build interchange (Walla Walla) (aka Burbank)	Highway	Right-of-way: land acquisition
Projects awaiting 2011 Legislative review*		
SR 518/Bridges - Seismic retrofit (King)	Highway	Construction: cost increase of materials
SR 99/Aurora Ave - George Washington Memorial Bridge - Seismic retrofit (King)	Highway	Design: alternatives

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

* Note: These projects were on the Watch List as reported in the September 2010 *Gray Notebook* 39. They are currently awaiting Legislative review during the 2011 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 www.wsdot.wa.gov/projects/.

WSDOT's Capital Project Delivery Programs

Watch List: Projects with schedule or budget concerns

Added to Watch List

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

This partnership project with Clark County is budgeted for \$99 million, which includes WSDOT's \$84.3 million fixed contribution. It will reconstruct the NE 134th Street Interchange at the junction of I-5 and I-205. The improvements are needed to maintain safety on I-5 and I-205, and to keep traffic moving at acceptable levels through the interchange area.

The project is in the design phase; the schedule is at risk. Acquiring right-of-way on all needed properties for the construction of the new NE 139th Street bridge and county road connections will not be possible before the scheduled advertisement in April 2011. However, not all areas of the project are equally affected, so WSDOT will split construction of the project into two stages.

The first stage, with no right-of-way issues, will add a lane in both directions on I-5 between NE 134th Street and NE 179th Street, and widen the I-205 northbound off ramp to NE 134th Street. The split makes it possible for more contractors to bid on the smaller first stage, and because stage 1 construction can begin on the original schedule this summer, it allows them to use most of the 2011 construction season.

The second stage will construct the new I-5 interchange at NE 139th Street. WSDOT will continue right-of-way negotiations for the second stage, with the intention of beginning construction in the fall of 2011. The operationally complete date for the overall project will be delayed one year to the fall of 2014. No additional funding is required.

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

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

This project is in the design phase; the schedule is at risk. The project requires right-of-way for more than 170 properties, and it is unlikely WSDOT will be able to acquire them all in time for an April 2012 advertisement. Several parcels have already been acquired to be used for stormwater treatment or wetland mitigation sites.

Construction of the project will be split into two separate stages to allow wetland and water treatment features to be established before widening the highway. Doing so provides significant savings over using temporary treatment measures, while also encouraging more contractors to bid on the smaller projects.

The first stage will be advertised in the spring of 2012, and will include wetland site construction and establishment, stormwater treatment installation, and possibly some minor utility work.

The second stage will be advertised by early 2013 and will include all remaining utility and roadway widening activities. Approximately \$12 million will be deferred from the 2011-13 biennium into the 2013-15 biennium. The operationally complete date for the overall project will be delayed one year, from fall of 2014 to fall of 2015.

Updates to Watch List

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

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

The project is in the design phase; the schedule is at risk. As reported in the December 2010 *Gray Notebook* 40, condemnation procedures were started. The Court granted the processing of "Possession and Use" documents, which were finalized with the landowners in February, allowing the project to proceed. The advertisement date has now been delayed from December 2010 to May 2011.

Over \$1 million in funding from the City of Wenatchee was added to the project to fund additional drainage work. This work may delay the advertisement date.

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

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

This part of the project is in the design phase. WSDOT has completed several design iterations at Panther Creek which have all been unacceptable to the Muckleshoot Indian Tribe Fisheries Division. Therefore, the schedule of the culvert replacement of SR 167 continues to be at risk. The design meets the requirements of the Washington Administrative Code (WAC), and downstream flooding requirements of the Federal Emergency Management

Watch List: Projects with schedule or budget concerns

Agency (FEMA), the City of Renton, and U.S. Army Corps of Engineers (USACE).

In February, following WSDOT's meeting with the U.S. Army Corps of Engineers, the tribal Fisheries Division indicated that it considers the Panther Creek culvert design itself to be fish passable, but views the entrance channel design a barrier to fish passage. At the recommendation of the USACE, WSDOT submitted the entrance channel design to an independent technical team to review and evaluate the design. A project update including the results of the technical review will be provided next quarter.

WSDOT has now delayed advertisement one year from February 2011 to February 2012 to resolve these design issues. The schedule remains at risk if the design issues at the Panther Creek location cannot be resolved, requiring WSDOT to pursue an alternative site for mitigation.

US 97/Blewett Pass – Passing lane (Kittitas)

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

The project is in the construction phase; the schedule is at risk. As reported in the December 2010 *Gray Notebook 40*, unsuitable soils had to be removed and replaced before construction could continue, and then paving was delayed by the early onset of winter weather. The return of warmer weather in spring will allow paving to resume. The operationally complete date has now been delayed from October 2010 to June 2011.

This project may be held on the Pending table until updates become available with the resumption of construction work.

SR 9/212th St SE to 176th St SE, Stage 3 - Add Lanes (Snohomish)

This project, budgeted for \$87.3 million, will widen SR 9 between 212th St SE and 176th St SE from two to four lanes, construct a raised median, and upgrade traffic signals at 180th St SE and 176th St SE. When complete, it will relieve congestion that arose following rapid local development, and improve safety on a high accident corridor. This project is in the design phase; the schedule is at risk. The project's March 2011 advertisement date

was reported at risk in the December 2010 *Gray Notebook 40* because two permits were outstanding. The hydraulic permit from the Washington Department of Fish and Wildlife (WDFW) was received at the end of March. The individual permit from the United States Army Corp of Engineers (USACE) is still outstanding. As a result, WSDOT has delayed advertisement to April 2011. The issues on the culvert design, reported in the December 2010 *Gray Notebook 40*, have been resolved. Following consultations with WDFW and the Muckleshoot Tribe, WSDOT agreed to modify the design of the culvert on SR 9 within WSDOT right-of-way to make it fish passable.

Utility relocation work was also reported as delayed in the December 2010 *Gray Notebook 40*. The work is under way but will not be completed before the start of construction. While this also contributes to the delay in advertisement, WSDOT expects the relocations to be completed without affecting the operational completion scheduled for 2013. An update will be provided next quarter.

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

This project, budgeted for \$150 million, will construct a new four-lane divided freeway between US 2 and US 395 at Wandermere, new structures at Wandermere and at US 2, and a pedestrian/bike path from US 2 to Wandermere. When complete, it will open a new two-mile section of the North Spokane Corridor.

The project is in the construction phase; the schedule is at risk. As reported in the December 2010 *Gray Notebook 40*, two delays contributed to postponing the operationally complete date to November 2011. Trenches had to be dug to drain away underground water at the site, and time was needed to test and evaluate concrete mixes for the bridge columns. WSDOT has approved the concrete mix test results, allowing the contractor to proceed with the column construction. Work resumed on the project in March 2011, following a winter shutdown.

Risks still remain for meeting the November 2011 operationally complete date. Bad weather or early winter conditions may prevent the contractor from completing the paving work late in the project. Delays in paving could delay completion to the spring of 2012.

WSDOT's Capital Project Delivery Programs

Watch List: Projects with schedule or budget concerns

Removed from Watch List

SR 161/24th St E to Jovita - Add lanes (Pierce)

This project, budgeted for \$37.6 million, will improve mobility on a busy section of SR 161 in the City of Edgewood. When completed, it will reduce congestion and allow safer, more efficient movement of people and vehicles.

The project is on advertisement for construction; the schedule was at risk. As reported in the December 2010 *Gray Notebook* 40, the advertisement was delayed to February 2011 to allow time to complete utility coordination and changes to the design that would address temporary erosion control and other construction concerns. The utility issues were resolved after an agreement was reached on the relocation. Within the last quarter, WSDOT resolved and completed the design and the project can now move forward.

The project was advertised in February 2011. Construction is scheduled to begin in the summer of 2011. The operationally complete date for the project will be delayed from March 2011 to June of 2012 to reflect delays in design and advertisement.

The project is being managed within the last Legislatively approved budget.

SR 9/SR 531-172nd St NE - Intersection Improvements (Snohomish)

This project, budgeted for \$14.7 million, will construct a roundabout at the intersection of SR 9 with SR 531 and 172nd St NE. When complete, it will relieve congestion that arose following rapid local development, and improve safety on a high accident corridor.

This project is in the design phase; the schedule is at risk. As reported in the December 2010 *Gray Notebook* 40, the advertisement date was delayed due to the length of time needed to resolve the project's storm water collection system. In turn, this delayed the right-of-way acquisitions required to relocate the utilities by mid-May. As a result, project advertisement is delayed from January to October 2011 and operational completion is delayed from fall 2011 to fall 2012.

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

This project, currently budgeted for \$182.4 million, will widen SR 522 to a four-lane highway by constructing two new lanes and five new bridges. When completed, it will improve motorist safety and reduce congestion by doubling the traffic capacity of the old two-lane roadway.

This project is being constructed in two stages. Stage 1 is constructing a new interchange flyover ramp and was awarded in June 2010. Stage 2 will build improvements from the Snohomish River Bridge to the new interchange and includes construction of a new bridge with lighter-weight steel girders due to soil conditions.

This project's Stage 2 is in the design phase; the schedule was at risk. As reported in the December 2010 *Gray Notebook* 40, WSDOT was waiting for the outstanding U.S. Army Corps of Engineers (USACE) individual permit. WSDOT has now received this permit, but not in time to advertise the project in March. Stage 2 advertisement was delayed to April 2011, with no impact to operational completion in 2014.

US 12/SR 124 Intersection - Build Interchange (Walla Walla)

This project, budgeted for \$24 million, will build a new interchange and bridge to replace two existing intersections. Removing the signal-controlled intersections will improve safety, reduce congestion, and enhance the area's economic vitality.

The project is in the construction phase. The schedule was reported to be at risk in the December 2010 *Gray Notebook* 40; the advertisement date was delayed to October 2010 to allow more time to complete a land exchange with the U.S. Fish and Wildlife Service. WSDOT finalized the land exchange in January 2011 and awarded the project in February 2011 at 26% below the engineer's estimate.

The budget was also reported as at risk. However, the low bid reduced the project total to \$1.8 million less than the 2010 budget. The bid savings are reflected in the February update to the 2011 proposed budget.

Construction started in March 2011. WSDOT anticipates the improvements will open to traffic by the scheduled July 2012 completion date.

Pre-Existing Funds (PEF) Programmatic Reporting

The Pre-Existing Funds (PEF) program funds a wide variety of capital projects to improve the safety, functionality, and longevity of the state highway system. Unlike Nickel and Transportation Partnership Account (TPA) projects, which are fixed lists of projects set by the Legislature and funded with a line item budget for each individual project, PEF projects are funded at the program level. Funding is aligned to commitments to address set priorities such as preserving pavement each biennium. Each biennium, new PEF projects are programmed based on prioritized needs and available funds, and the list of PEF projects changes each biennium.

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

PEF project performance is reported at two levels

Six individually tracked projects

Six projects are reported individually due to their size or significance (see page 87 for schedule and budget information on these projects).

All other projects

WSDOT reports on:

- Actual versus planned cash flow for the overall PEF program, see below; actual versus planned project advertisements, see page 84; advertisement record, see page 85.
- Before & After results for selected types of projects such as highway safety and congestion relief. (For examples, please see the Highway Safety Annual Report, pp. 5-10, in *Gray Notebook* 38, and the 2010 Congestion Report, pp. 8-15).

239 PEF projects advertised as of March 31, 2011

The 2009-11 Highway Construction Program includes a commitment to advertise 252 Pre-Existing Funds (PEF) projects in the current biennium, valued at \$843.7 million. From July 1, 2009, through the quarter ending March 31, 2011, WSDOT planned to advertise 224 PEF projects, valued at \$781.3 million.

Of the 224 projects planned for advertisement through this quarter, six were delayed to future quarters of this biennium, four were deferred out of the biennium, and two projects were deleted. (See the table '*PEF project advertisements schedule performance*,' on page 84.)

Of the 37 planned PEF advertisements scheduled for this quarter, 26 were advertised as scheduled. None were delayed to later in this biennium, and no projects were deferred to a future biennium. No projects were advanced from a future quarter, and no projects delayed from a previous quarter were advertised; eight emergent projects were advertised.

The original value for the projects advertised in the quarter is \$828.1 million; the current estimated cost at completion for all projects under construction is \$696.4 million. (See the table *Value of planned PEF advertisements: 2009-11 biennium*.)

WSDOT's Capital Project Delivery Programs

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

Value of planned PEF advertisements: 2009-11 biennium

July 1, 2009 through March 31, 2011; Dollars in millions

	Number	Original value	Current cost to complete
Total PEF advertisements planned 2009-2011	252	\$843.7	–
Planned advertisements through March 31, 2011	224	\$781.3	–
Actual advertisements through March 31, 2011	239	\$828.1	\$696.4*

Data source: WSDOT Capital Program Development & Management.

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

PEF project advertisements schedule performance

July 1, 2009 through March 31, 2011

	Number
Projects advertised as scheduled	159
Projects advertised Early	16
Projects advertised Late	23
Emergent projects advertised	41
Total projects advertised	239
Projects delayed (delayed within the biennium)	6
Projects deferred (delayed out of the biennium)	4
Projects deleted	2

Data source: WSDOT Capital Program Development & Management.

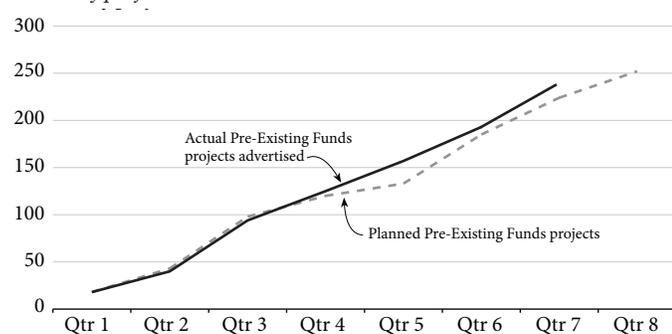
See page 86 for PEF advertisement definitions.

Pre-Existing Funds projects construction program

Planned vs. actual number of projects advertised

2009-2011 biennium, quarter ending March 31, 2011

Number of projects



Data Source: WSDOT Capital Program Development and Management.

Note: As of Quarter 7 (January 1 - March 31, 2011), Original planned project counts have been updated based on the 2010 Supplemental Budget.

Paying for the Projects: Financial information

The 2010 Supplemental Budget provides for approximately \$1,292 million in PEF expenditures through the seventh quarter of the biennium. As of March 31, 2011, actual expenditures totaled \$990 million, a variance of \$302 million, or about 22%, from the biennial plan. The variance for the Highway Construction Program was divided between the Improvement and Preservation programs.

The Preservation Program planned cash flow was \$558 million, and actual expenditures were \$479 million. This was \$80 million, or 14%, under plan.

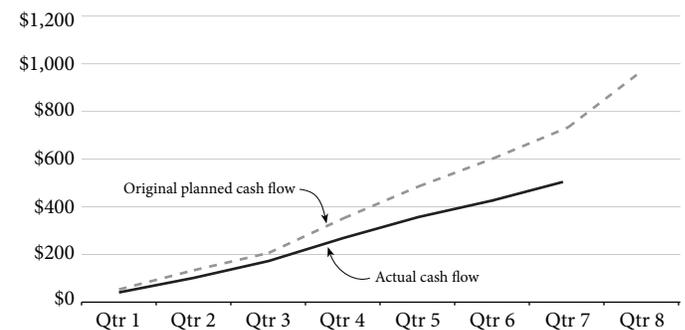
The Improvement Program planned cash flow was \$733 million, and actual expenditures were \$511 million. This was approximately \$222 million, or 30%, under plan.

Pre-Existing Funds improvement program cash flow

Planned vs. actual expenditures

2009-2011 biennium, quarter ending March 31, 2011

Dollars in millions



Data Source: WSDOT Capital Program Development and Management.

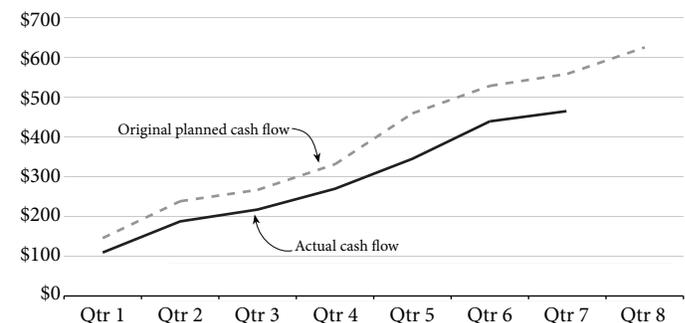
Note: As of Quarter 7 (January 1 - March 31, 2011), Original Planned Cash Flow values have been updated based on the 2010 Supplemental Budget.

Pre-Existing Funds preservation program cash flow

Planned vs. actual expenditures

2009-2011 biennium, quarter ending March 31, 2011

Dollars in millions



Data Source: WSDOT Capital Program Development and Management.

Note: As of Quarter 7 (January 1 - March 31, 2011), Original Planned Cash Flow values have been updated based on the 2010 Supplemental Budget.

WSDOT's Capital Project Delivery Programs

Pre-Existing Funds (PEF) Projects: Advertisement record

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

January 1 – March 31, 2011

Project description	Advertised as scheduled
I-5 Southbound/Snohomish River to Ebey Slough Paving	Late
Paving project combined with ITS project. Combining projects will reduce cost in bid items, maximize traffic control usage, and reduce number of working days. The combination will help to avoid project conflicts and potential claims against the state if there were two contractors working at the same time within the same milepost limits on I-5.	
I-5/Express Lane Automation	Late
Additional time was needed to complete an extensive field review of the existing wiring system and for design efforts necessary to prepare a clear set of wiring plans.	
I-82/Selah Creek North (EB) Safety Rest Area - Replace Building	√
NC Region Guardrail Update - Year 2011	Late
"Delay caused by coordination with US Bureau of Reclamation and local irrigation district coordination. An article 9 agreement with the USBR is taking longer than anticipated, to acquire."	
Region Wide Safety - Shield Redirectional Landforms - Safety	Late
Project delayed due to prioritization of ARRA-funded cable median barrier projects to be completed first.	
Southwest Region I-5 and I-205 Redirectional Land Forms	√
SR 124/1.4 Mile E of Walkley Rd to 1 Mile E of Neff Road - Chip Seal	Early
SR 165/5 Miles S of Carbonado to Pershing Ave - Chip Seal	√
SR 20/Harbor Vista Dr Vicinity to NE Narrows Ave - Paving	√
SR 21/Jct I-90 to Vic Canniwai Creek - 2011 Chip Seal	√
SR 224/Grosscup Blvd to SR 240 - Paving	√
SR 231/Fisher Rd to Jct US 395 - 2011 Chip Seal	√
SR 24/Riverside Rd to Faucher Rd - Paving	√
SR 240/Hagen-Robertson Rd I/S to Swift Blvd I/S - Paving	Late
Region intends to tie project with adjacent project 522402B for economy of scale.	
SR 241/2 Miles W of Wautoma Rd - Chip Seal	√
SR 25/Fruitland to Bossburg - 2011 Chip Seal	√
SR 28/Grant Co Line to Lamona - 2011 Chip Seal	√
SR 292/Springdale to Loon Lake - 2011 Chip Seal	√
SR 3/Judy Lane Vicinity - Major Drainage	Late
The delayed NEPA approval, and approving the work order, delayed the right of way acquisition for the project.	
SR 410/Twin Creek to Mather Memorial Park Pull-Out - Paving	Late
Additional time was needed due to a longer environmental process and schedule to complete all documents and acquire the approvals needed. Also, additional time was needed to conduct additional pavement tours and field reviews with Materials Lab, Area Maintenance, and Bridge Maintenance to re-evaluate the pavement to have the project limits defined adequately.	
SR 410/White River Bridge - Bridge Scour	√
SR 515/SR 516 to SE 232nd St vicinity - Paving	Late
The project advertisement was delayed for additional time to incorporate the design of 17 additional sidewalk ramps that need improvement to meet ADA requirements.	
SR 7/SR 702 - Install Signal	Late
The project was advertised late due to delays in acquiring SEPA approval.	
SR 821/I-82 to Selah Creek Bridge - Chip Seal	√
SR 821/Umpthamum Recreation Site vicinity to Lost Spring Br - Chip Seal	√
SR 823/SR 823 N Wye to SR 821 I/S - Chip Seal	√
US 101/E First St to Golf Course Rd - Paving	√

WSDOT's Capital Project Delivery Programs

Pre-Existing Funds (PEF) Projects: Advertisement record

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

January 1 – March 31, 2011

Project description	Advertised as scheduled
US 101/Indian Creek to Nicholas Rd - Paving	√
US 101/South Branch Big Creek - Fish Barrier	√
US 101/South Branch Big Creek Tributary - Fish Barrier	√
US 12/4.4 Miles East of SR 123 - Stabilize Slope	√
US 12/4.5 Miles East of SR 123 - Stabilize Slope	√
US 12/E of Slide Bridge - Rock Slope Scaling	√
US 12/Lewiston Rd to Waitsburg - Chip Seal	√
US 12/Messner Rd Vicinity to Tucannon River Bridge - Chip Seal	√
US 12/SR 125 I/S to Harbert Rd Vic - Paving Delay to February 2011 Ad allows region to more efficiently manage workforce & deliver project.	Late
US 2/W of Leavenworth - Slope Stabilization Ad date delayed due to delayed right of way certification. One new parcel of land owned by the Forest Service is required for this project. Real Estate Services had to wait for the US Forest Service Biological Assessment to be completed to gain environmental clearance and receive a Letter of Consent from the Forest Service.	Late
US 97/Dry Creek Rd Vic to Weigh Station - Chip Seal	√
I-5/NE 155th St Crawford Litigation Settlement	Emergent
I-5/SB Off-Ramp to 128th St. SW	Emergent
I-5/Vicinity of Joint Base Lewis McChord - Install Ramp Meters	Emergent
SR 25 & SR 20 Unstable Slopes - Rock Slope Scaling	Emergent
SR 4/4 Miles East of Cathlamet - Rock Scaling	Emergent
SR 411/Hazel Dell Rd Vicinity - Emergency Slope Stabilization	Emergent
US 2/Anderson Creek Bridge - Bridge Repair	Emergent
US 395/I-82 to W Kennewick Ave - Paving	Emergent

Data source: WSDOT Capital Program Development & Management.

A glossary of PEF advertisement terms

Advertisement date

The date that WSDOT schedules to publicly advertise a project for bids from contractors. When a project is advertised, it has a completed set of plans and specifications, along with a construction cost estimate. A √ mark in the Advertisement record indicates that a project advertised on time within the quarter.

Advanced

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

Early

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

Late

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

Emergent

A new project that addresses unexpected needs such as emergency land-slide 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.

WSDOT's Capital Project Delivery Programs

Six individually tracked Pre-Existing Funds (PEF) projects: results through March 31, 2011

Dollars in millions

Project Description	First legislative budget & year	Baseline current legislative approved & year	Scheduled date to begin preliminary engineering		Scheduled date for advertisement		Schedule date to be operationally complete	
			Date	On time	Date	On time	Date	On time
US 2/Ebey Island Viaduct and Ebey Slough Bridge (Snohomish)*	\$32.1 2002	\$6.2 2007	Dec-98	√	Nov-00	√	Dec-03	√
<ul style="list-style-type: none"> • US 2/50th Avenue SE vicinity to SR 204 vicinity – Bridge rehabilitation 		\$10.8 2007	Jul-06	√	Feb-07	√	Sept-07 complete	√
<ul style="list-style-type: none"> • US 2/43rd Avenue SE vicinity to 50th Ave SE vicinity – Bridge rehabilitation 	\$26.7 2009	\$14.0 2010	Jan-09	√	Dec-10	Late	Dec-11	
SR 202/SR 520 to Sahalee Way - Widening (King) Project operationally complete February 2008.	\$36.9 2001-03	\$81.2 2010	May-98	√	Aug-05	√	Feb-08	√ Early
SR 539/Horton Road to Tenmile Road - Widen to Five Lanes (Whatcom) Project operationally complete November 2008.	\$32.0 2001-03	\$68.3 2010	Oct-90	√	Jan-07	√	Nov-08	√
SR 28/E End of the George Sellar Bridge - Construct Bypass (Douglas) Advertisement delayed due to right of way issues.	\$9.4 2004	\$28.0 2010	May-04	√	May-11	Late	Aug-13	
US 101/Purdy Creek Bridge - Replace Bridge (Mason) Advertisement delayed due to additional design needed to bring Plans up to WSDOT Standards when they were returned from the consultant. Project operationally complete August 2009.	\$6.0 2004	\$10.2 2010	Aug-04	√	May-08	Late	Aug-09	√ Early
SR 303/Manette Bridge Bremerton Vicinity - Replace Bridge (Kitsap)	\$25.5 2002	\$82.9 2010	Sep-96	√	Mar-10	√	Jan-12	

Data source: WSDOT Capital Program Development & Management.

Cross Cutting Management Issues

Use of Consultants

Use of Consultants Highlights

WSDOT consultant spending totaled \$75.8 million between October 1, 2010 and March 31, 2011.

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

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

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

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

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

From October 1, 2010, to March 31, 2011 (quarter four of calendar year 2010 and quarter one of calendar year 2011), the net total of new consultant expenditures was \$42.6 million for task order agreements, \$9.7 million for project specific agreements, and \$23.5 million for general engineering consultant agreements. For a breakdown of the \$75.8 million in total expenditures for Q4 of CY 2010 and Q1 of CY 2011, see the consultant expenditures table on the following page.

Task order agreements

Thirty-one task order agreements had Nickel project expenditures during this period and total expenditures for services rendered were \$2.4 million for 26 prime consultant firms. One hundred three task order agreements had Transportation Partnership Account (TPA) project expenditures during this period; expenditure totals were \$18.3 million for 73 prime consultant firms. The total statewide task order agreement consultant expenditures (excluding Nickel, TPA, and general engineering consultants) for the same period were \$21.9 million. For a list of significant expenditures for consultants, see the significant authorizations for task order consultants' table on the following page.

Consultant utilization definitions & examples

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

Data source: WSDOT Consultant Services Office.

Use of Consultants

General engineering agreements

Eight high-profile general engineering consultant (GEC) projects had consultant agreements expenditures between October 1, 2010, and March 31, 2011. GEC expenditure totals were \$23.5 million, divided between five primary consultant firms, of which \$3.9 million were Nickel funds and \$19.6 million were TPA funds. For a breakdown of the projects, see the expenditures for general engineering consultants table below.

Project-specific agreements

From April 1, 2010, through March 31, 2011, new expenditures for project-specific Nickel agreements and/or supplements totaling \$1.8 million were divided between nine prime consultants. New expenditures for project-specific TPA agreements and/or supplements were \$4.9 million, divided between 23 prime consultants. All non-Nickel/TPA, project specific, consultant authorizations totaled \$3.0 million. The significant authorizations for project-specific consultants table on this page lists significant expenditures for project-specific agreements.

Consultant expenditures

October 1, 2010 and March 31, 2011, dollars in millions

Type of consultant agreement	Nickel	TPA	PEF	Total
Task order consultant agreements (including GEC agreements)	\$6.30	\$37.90	\$21.90	\$66.10
Project-specific agreements/supplements	\$1.80	\$4.90	\$3.00	\$9.70
Totals	\$8.10	\$42.80	\$24.90	\$75.80

Significant authorizations for task order consultants

October 1, 2010 and March 31, 2011, dollars in millions

Project	Consultant	Total expenditures
Columbia River Crossing Project (TPA, PEF)	David Evans and Associates, Inc.	\$9.70
SR 520 TransLake Washington Project (TPA, PEF)	Parametrix, Inc.	\$5.40
Alaskan Way Viaduct and Seawall EIS (Nickel, TPA, PEF)	PB Americas, Inc.	\$7.60

Expenditures for general engineering consultants (GEC)

October 1, 2010 and March 31, 2011, dollars in millions

Project	Consultant	Expended this period
GEC Alaskan Way Viaduct & Seawall Replacement Project	Hatch Mott MacDonald	\$5.53
GEC I-90 Snoqualmie Pass East – Hyak to Keechelus Dam	URS Corporation	\$1.48
GEC Northwest Region Mt. Baker Area	H.W. Lochner, Inc.	\$0.00
GEC Northwest Region Mt. Sno-King Area	Aecom USA, Inc..	\$0.01
GEC SR 167 Extension	Jacobs Engineering	\$0.00
GEC SR 167 Valley Freeway Corridor	Perteet, Inc.	\$0.04
GEC SR 520 Bridge Replacement and HOV Project	HDR Engineering, Inc.	\$16.44
GEC Tacoma/Pierce County HOV Program	CH2M Hill, Inc.	\$0.00
Total		\$23.50

Significant authorizations for project-specific consultants

October 1, 2010 and March 31, 2011, dollars in millions

Project	Consultant	Total expenditures
I-405 General Engineering Consultant (Nickel, TPA, PEF)	HNTB Corporation	\$5.40
I-90 Two Way Transit and HOV (TPA, PEF)	HNTB Corporation	\$0.90
I-5 Mellon Street to Blakeslee Junction (TPA)	David Evans and Associates	\$0.30

Source for all tables: WSDOT Consultant Services Office.

Cross Cutting Management Issues

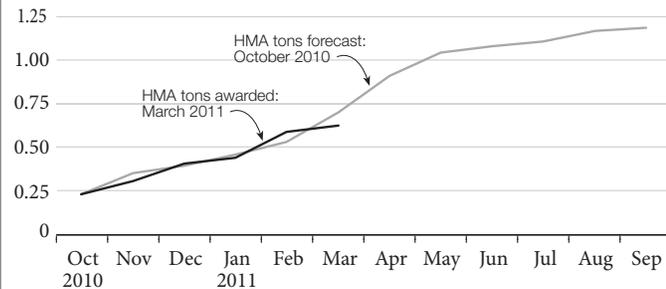
Hot Mix Asphalt

Hot Mix Asphalt Highlights

Despite the low number of awards, WSDOT still expects to award 25% more HMA in the 2011 construction season compared to 2010.

Hot mix asphalt tons awarded

Actual vs. forecasted, October 1, 2010 - September 30, 2010
Tons in millions



Data source: WSDOT Construction Office.

Hot mix asphalt, projected vs. actual tons awarded, 2002-2011

Year ¹	Projected	Actual	% Difference
2011	1,188,877	N/A	N/A
2010	995,053	949,716	-4.6%
2009	1,535,757 ²	1,402,176	-9%
2008	1,322,418	1,397,189	+6%
2007	1,297,601	1,214,544	-6%
2006	1,213,985	1,126,701	-7%
2005	1,779,826	1,685,394	-5%
2004	1,324,218	1,299,377	-2%
2003	1,417,126	1,825,442	+29% ³
2002	1,373,465 ⁴	1,364,021	-1%

Data source: WSDOT Construction Office.

¹ Awarded tons are tracked on from October through the following September, providing a better measurement of the work schedule and better planning for the paving industry than the calendar year. Construction projects awarded in the fall typically do not begin work until the next year's construction season begins in the spring.

² Projected tons awarded for 2009 includes Recovery Act projects.

³ The 2003 Nickel Transportation Funding Package was passed after the projection was made for 2003. WSDOT subsequently awarded five projects from the Nickel funding package with a combined total of 315,285 tons of HMA.

⁴ The projection for 2002 was revised in March 2002 by the Transportation Commission following budget cuts.

WSDOT compiles a yearly forecast of Hot Mix Asphalt (HMA) tons awarded to assist the paving industry in preparing to deliver the agency's annual program. This forecast allows private contractors to better anticipate future HMA volumes and manage their production of HMA. This ultimately leads to more competitive bidding and favorable prices on WSDOT contracts. In addition, the agency tracks actual tons awarded against the forecast to gauge how accurately we plan our annual paving program.

Awarded tons of hot mix asphalt is 12% below projection through March 2011

In October 2010, WSDOT forecast that 1,188,877 tons of HMA would be awarded in construction contracts through September 2011. This forecast anticipated that during the six months from October 2010 through March 2011, 55 projects would be awarded with a combined total of 702,344 tons of HMA. At the end of March, only 38 projects have been awarded, requiring a combined total of 624,346 tons of HMA, 12% under projection. WSDOT still anticipates that nearly all 1,188,877 tons of HMA included in the forecast will be awarded before the end of October 2011. Of the 90 projects that WSDOT included in the forecast, three projects are no longer scheduled to be bid before September 30, 2011.

The 2011 forecast of 1,188,877 tons of HMA is higher than last year's forecast of 995,053 tons. However, the 2011 and 2010 forecasts represent a reduced level of paving from what was typical for WSDOT in the last decade. Over the past few years, the amount of HMA awarded by WSDOT has decreased (see the table of tonnage forecast and awarded by year.)

There are a number of reasons why WSDOT is doing less paving than in the past. The amount of preservation funding for pavement has decreased, while the prices for HMA has increased. The price of HMA has increased from \$33 per ton in 2002 to \$59.60 per ton in the fourth quarter of 2010 (an 81% increase). This means that about half as much paving can be done today compared to 2002 for the same amount of money. Additionally, many of the remaining Nickel and TPA projects do not involve paving with HMA. In response to higher HMA prices and stagnant funding, WSDOT has expanded its use of chip seal pavements through the conversion of some HMA routes to chip seal routes. This also reduces the amount of HMA tons the agency awards.

For more information about WSDOT's paving program, see the Pavement Conditions Annual Report in the December 2010 *Gray Notebook 40*. Future information about WSDOT's HMA forecast can be found online at www.wsdot.wa.gov. Reporting on HMA forecasts vs. actual awarded tons will appear in the next Pavement Conditions Annual Report.

Workforce Level and Training Quarterly Update

On March 31, 2011, WSDOT employed 7,049 permanent full-time employees, 59 fewer employees than the previous quarter ending December 31, 2010. This is 210 fewer employees than at the end of March 31, 2010, due in part to an increasing number of retirements and a hiring freeze that requires the agency to only fill critical positions. The chart below shows the number of full-time employees since June 30, 2003. The total number of full-time equivalencies (FTEs) will generally exceed the number of permanent full-time employees, as seasonal, permanent part-time, and non-permanent/on-call workers are funded from FTE allocations. The total does not include consultants. For information on consultant use, see page 88.

Workforce Level and Training Highlights

WSDOT employed 7,049 permanent full-time employees on March 31, 2011, 210 fewer than at the same time in 2010.

Training compliance remains steady for most required courses

Required training compliance remained relatively steady in the quarter ending December 31, 2010, as the percent of employees in compliance did not change for four of the seven courses required for all employees due to limited training during the busy winter months. WSDOT employee compliance decreased for two courses and increased for one.

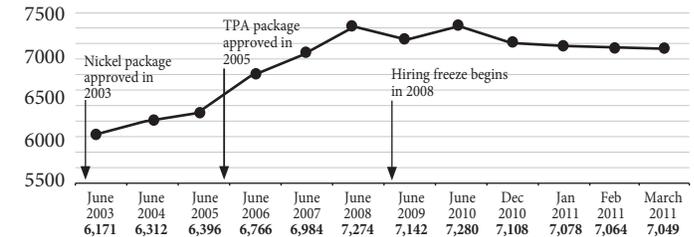
The graphs below show the compliance with the required diversity and policy courses over the last two years. Training compliance is historically lower at the end of March due to emergency work on the roadways and more difficult travel conditions. WSDOT distributes training booklets for temporary employees and a diversity newsletter to all employees to ensure the agency provides mandatory diversity information.

Diversity training compliance

On March 31, 2011, 86% of WSDOT employees were in compliance with sexual harassment/discrimination training requirements, down from 89% on December 31, 2010. The compliance fluctuates each quarter as employees come due for required refresher training. Legislation in 2008 required refresher training every three years for managers and every five years for all other employees. WSDOT plans to provide more sexual harassment/discrimination training throughout the regions in coming quarters as more employees need refresher training.

Number of permanent full-time employees

From June 2003 to March 2011



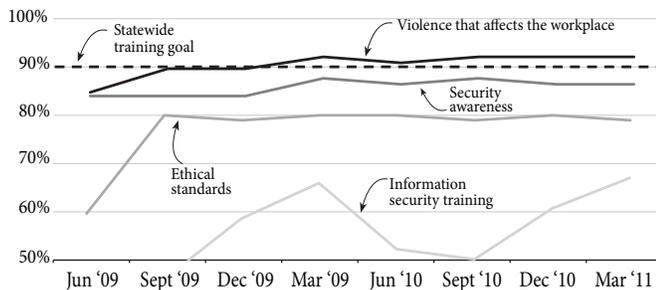
Data Source: Dept. of Personnel Data Warehouse, HRMS, WSDOT and the Ferry System payroll.

Training compliance declined in two of the seven mandatory courses in March 2011 and increased in one. Three courses met the state 90% compliance goal.

Safety and maintenance training compliance declined 3% to 81%.

Required policy training for all WSDOT employees

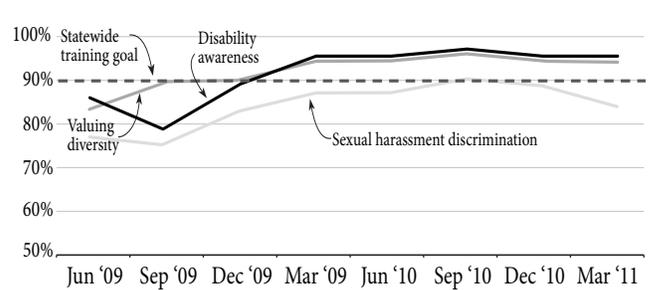
Percentage of employees in compliance, June 2009 to March 2011



Data Source: WSDOT Human Resources Office, Staff Development.

Required diversity training for all WSDOT employees

Percentage of employees in compliance, June 2009 to March 2011



Data source: WSDOT Human Resources Office, Staff Development.

Workforce Level and Training Quarterly Update

Training compliance exceeded the agency's 90% goal for valuing diversity (95%), and disability awareness (94%). Compliance for these two modules has remained at 94% or above since January 2010, when the agency no longer required refresher training. The agency's quarterly diversity newsletter provides all employees with the most up-to-date information through articles about diversity and disability issues.

Policy training compliance

More than 1,100 employees completed the mandatory information security training in the quarter ending March 31, 2011. Compliance increased from 60% in December to 66% in March. The course has the lowest compliance in part due to an annual refresher requirement.

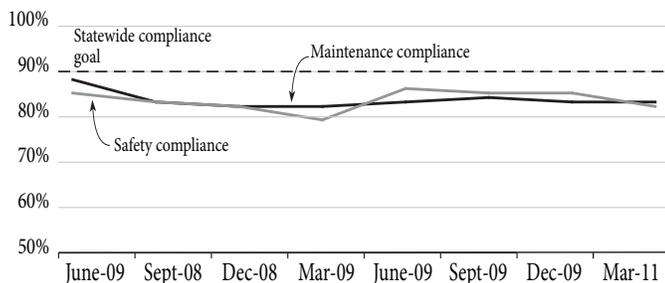
Training compliance remained steady in the quarter for violence that affects the workplace (92%), and security awareness (87%). Ethical standards compliance, which includes a refresher every three years, declined slightly from 80% to 79%.

Safety and maintenance mandatory training compliance dipped in the first quarter of 2011

Statutorily required maintenance and safety training compliance for WSDOT employees was 81% on March 31, 2011, 3% below the previous quarter. Compliance for safety courses was 81% this quarter, 3% below the previous quarter, while compliance for maintenance courses remained 82%. The graph below shows employee safety and maintenance training compliance between June 30, 2009, and March 31, 2011.

Maintenance and safety training compliance

By percentage of employees in compliance, June 2009 to March 2011



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

Maintenance and safety training compliance declined in five of seven regions

WSDOT tracks statutorily required training compliance for its maintenance workers by region. Training compliance for this quarter declined in five regions, and remained steady in two regions. The table above documents each region's compliance, with all the courses listed as a single measure. For the fourth quarter, Southwest region met the 90% goal for safety and maintenance training compliance, with 97% compliance.

Region maintenance and safety training compliance

Percentage of employees in compliance on March 31, 2011

Region	% in compliance	% change from last quarter	Biennium average	Goal met
Northwest	77%	-1%	75%	
North Central	74%	-11%	83%	
Olympic	81%	-4%	81%	
Southwest	97%	0%	95%	√
South Central	75%	-6%	84%	
Eastern	88%	0%	90%	

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

Crane operation certification compliance now above state goal of 90% compliance

WSDOT employees operate mobile cranes for maintenance and inspections on state highways and construction projects. Following the collapse of a tower crane in Bellevue in 2006, the state Legislature adopted a new crane safety law in 2007 which took effect on January 1, 2010. The law and regulations require crane operators to meet experience requirements, and pass written and hands-on exams.

As of March 31, 2011, 50 of 55 employees have received certification. The 91% compliance means more employees are authorized to operate cranes at maintenance and construction sites.

Highlights of Program Activities

For the quarter ending March 31, 2011

Project starts and updates

Project starts

I-90 widening (Spokane)

Construction began in March on the I-90/Sullivan Road to Barker Road widening project in the Spokane Valley. This \$15 million project adds a third lane in each direction through a 2.8-mile section of I-90. Crews will remove the existing asphalt pavement then rebuild the highway with a more durable Portland Cement Concrete (PCC) pavement surface. The Sullivan Road to Barker Road project is part of a much larger effort to widen I-90. In 1997, WSDOT first began widening I-90 and converting the surface to PCC near the Spokane city limits. Since then the work has continued east with a series of projects. With the completion of this job, a 10-mile section of I-90 will be fully rebuilt. Construction should take about 30 weeks, with the project planned to be complete by late fall.

SR 823 reroute (Yakima)

A \$9.3 million project to reroute traffic away from Selah's downtown streets started in February. The project relieves congestion on SR 823 by routing traffic away from the downtown area onto a new section of two-lane highway with a center turn lane, sidewalks, and traffic signals. It also improves freight movement by reconstructing and widening a section of Railroad Avenue north of East Naches Avenue with concrete pavement to better withstand frequent truck traffic. This two-season project is scheduled for completion in fall 2012.

Project updates

SR 433 bridge painting (Cowlitz)

A painting project to preserve the Lewis and Clark Bridge on SR 433 resumed March 21, after winter weather shut down work



Corrosion on the superstructure of SR 433 Lewis and Clark Bridge.

activities for nearly four months. This is the third and final contract in a series of projects to restore and preserve the mile-long historic bridge. While contractor crews repaint the steel beams above the roadway, drivers crossing the bridge can expect narrowed lanes, nighttime lane closures and minor delays for eight months. Crews will work inside the containment

platforms to sandblast away old paint and corrosion, and to apply a fresh layer of protective paint. Construction will continue during the warm weather months for the next three years. Completion is scheduled for 2013. The bridge was built in 1929 to span the Columbia River, and carries 21,000 vehicles a day between Longview, WA, and Rainier, OR.

I-405 new 12th Street bridge (King)

Crews opened the first half of the new NE 12th Street Bridge over I-405 on March 22, marking a construction milestone that allows them to tear down the old bridge in early April. The bridge removal and replacement is part of the larger Bellevue Braids project to better connect Bellevue, I-405 and SR 520. Crews will build the second half of the new bridge after tearing down the old bridge.

During the complicated removal process in early April, a large concrete piece from the old bridge hit a girder on the new bridge at the west end in an area that is not directly over I-405 lanes. Engineers inspected damage to the new NE 12th Street bridge and determined it can be opened to drivers but, as a precautionary measure, traffic will be limited to one westbound lane. The cost to repair the damaged bridge and extra traffic control measures is the responsibility of the contractor and not the state.



Crews use large crunchers to take down the old NE 12th Street Bridge over I-405. Six to eight inches of sand has been laid on the I-405 roadbed to protect it from debris.

Last August, cranes lifted eight 100-ton concrete girders over the freeway, forming the southern part of the new N.E. 12th Street Bridge. After seven months of work drivers are now using the first piece of the new structure. After the project's summer 2012 completion, the new bridge will be higher, wider and longer than the old bridge, making way for new northbound ramps headed to SR 520 and I-405. The \$107.5 million Bellevue Braids project is funded by a combination of federal American Recovery and Reinvestment Act funding and the 2005 gas tax.

Highlights of Program Activities

For the quarter ending March 31, 2011

Project completions

US 101 Simpson Avenue Bridge (Grays Harbor)

On January 10, after five months of design and construction, the US 101 Simpson Avenue Bridge – one of the primary routes between Hoquiam and Aberdeen – reopened to travelers. WSDOT closed the bridge in August 2010 after inspections revealed extensive degradation to the easterly pier. WSDOT made temporary repairs to stabilize the structure in early September, and hired Aberdeen-based Quigg Bros. Inc. in October for \$4.1 million to repair the foundation supporting the pier. The 1,978-foot-long bridge was built in 1927 and spans the Hoquiam River, carrying about 13,000 vehicles daily.



A Sound Transit bus stops to pick up passengers at the new I-5 Mountlake Terrace freeway bus station. The covered passenger bridge allows for easy access to this new station.

I-5 – Mountlake Terrace Freeway Station open for service

On March 17, WSDOT and Sound Transit celebrated the grand opening of a new freeway bus station in Mountlake Terrace. The new station is in the median of I-5 at 236th Street SW and has bus-only ramp connections to the I-5 HOV lanes, which means that Sound Transit buses no longer have to merge across freeway lanes or travel on city streets, reducing the potential for collisions. The freeway station is now connected to the third floor of the Mountlake Terrace Transit Center garage by a covered, concrete pedestrian bridge that crosses the northbound lanes of I-5. Station features include direct-access bus bays for northbound and southbound routes; fully accessible, weather-protected passenger platforms; attractive benches; and art-enhanced glass walls to minimize freeway noise. The project also brought the 236th Street bridge up to current earthquake-resistance standards. Crews are currently wrapping up minor tasks for final project completion.



Mukilteo ferry terminal preservation, March, 2011 – A new junction box mounted on new headframe hand rails. The new floating dolphin can be seen in the background. This view looks toward Whidbey Island.

Mukilteo Terminal repairs (Snohomish)

Major preservation work on the Mukilteo Ferry Terminal in March was completed ahead of time, shortening planned terminal closures from three weekends to two. Crews replaced the mechanical and electrical systems which control the transfer span and apron that links vessels with the dock. Preservation work continues through April during the evenings, but will not disrupt service on one of the busiest routes in the WSF system, carrying nearly 3.9 million passengers in 2010.

Ferries

Web site advertising pilot project begins

A one-year pilot project for banner advertising on WSDOT's Ferries Division website began January 2011. Ads are for sale on the popular ferry schedules and ferry vessel watch web pages. The web pages that contain advertising have been converted to a dot-com address instead of dot-gov because federal guidelines prohibit government agencies from selling ads in the dot-gov domain. The first advertiser on the ferries Web pages was the Hawaii Visitors and Convention Bureau. The Hawaii tourism bureau paid about \$12,800 for its banner ads on the 13 ferry pages in January. WSDOT will receive about \$7,000 of that, with the remainder going to an ad sales company.

Construction of new Port Townsend and Coupeville tollbooths

WSDOT Ferries Division is replacing and reconfiguring the oldest tollbooths at the Port Townsend and Coupeville terminals in a new side-by-side layout. This will help increase operating flexibility during busy travel times and will also help accommodate future changes to the vehicle reservations system.

For the quarter ending March 31, 2011

Sale of Passenger-only ferries

In February 2011, WSDOT sold the two remaining passenger-only ferries *Kalama* and *Skagit* to Scope Community Consultants Ltd of Port Coquitlam, B.C., for \$400,000. They will be transported to Tanzania, where they will operate between the mainland and Zanzibar. The ferries, built in 1989, have been docked and inactive since September 2009. The state Legislature directed WSDOT to end its passenger-only service in 2006. The other passenger-only ferries, the *Chinook* and *Snohomish*, were sold to Golden Gate Bridge Highway and Transportation District in 2009.



The MV Skagit approaching Pier 50 in Seattle.

Aviation

WSDOT initiates program to target airport investments more strategically

The Federal Aviation Administration (FAA) awarded WSDOT Aviation a grant to develop an annual five-year State Airport Capital Improvement Program (ACIP). This first-of-its-kind program will identify Washington's aviation system needs and prioritize airport projects. The ACIP improves accountability by ensuring strategic investments help achieve Washington's long-term aviation system goals.

Local airport sponsors will send WSDOT ACIP information derived from their airport-specific plans. WSDOT can then generate ACIP project lists and integrate them into the FAA



The Friday Harbor Airport is just one of many to be considered in the annual five-year State Airport Capital Improvement Program.

database and existing WSDOT Airport Information System database to determine the optimal allocation of federal and state airport grants.

Rail

Agreements secure \$590 million in federal passenger rail funding for Washington

WSDOT and the Federal Railroad Administration (FRA) signed an agreement allocating 2009 American Recovery and Reinvestment Act (ARRA) money to improve the Amtrak *Cascades* rail corridor from Portland to Seattle. The \$590 million was awarded in early 2010: the new agreement guarantees high-speed-rail project funding. Among the projects supported are two additional daily Amtrak *Cascades* round trips between Seattle and Portland, and the construction of bypass tracks and safety-related projects such as grade separations and advanced-warning signal systems. These improvements will provide more reliable on-time service, shorten passenger travel times, and reduce passenger/freight congestion. For more on high-speed-rail, see pp. 56.

Ridership on Amtrak Cascades hits all-time record in 2010

Ridership on Amtrak *Cascades* finished in 2010 with a 16-year high of 838,251 passengers. Total annual ridership exceeded 2009 by 76,641, a 10% increase. The 2010 final ridership total capped a record-breaking year in which eight of 12 months set new benchmarks.

Service to Vancouver, B.C., remained in high demand and contributed to Amtrak *Cascades* ridership growth. More than 138,000 riders traveled to and from Vancouver, B.C. in 2010. A second daily train to Vancouver began in August 2009, which provided more travel options for Amtrak *Cascades* passengers especially during the 2010 Winter Olympic Games.

Traveler Information and Safety

WSDOT brings four new SR 14 cameras online

Four new WSDOT traffic cameras on SR 14 were brought online in February. The cameras are located at Blanford Drive, Shorewood Drive, Cascade Park Drive and SE 164th Avenue. The new equipment helps drivers react to changing conditions and to know before they go. It also helps WSDOT and the Washington State Patrol monitor the highway and respond to incidents more quickly and efficiently. The cameras are complemented by two new electronic message boards on westbound SR 14 at Columbia House Boulevard and SE 164th Avenue.

Navigating the WSDOT Information Stream

Linking performance measures to strategic goals

The *Gray Notebook* is the basis for WSDOT performance reporting that links performance measures for the strategic plan, legislative, and executive policy directions, as well as federal reporting requirements.

Statewide transportation policy goals

In 2007, the Governor and Legislature enacted a law establishing five policy goals for transportation agencies in Washington State (Chapter 516, Laws of 2007).

The five statewide transportation policy goals are:

- **Safety:** To provide for and improve the safety and security of transportation customers and the transportation system;
- **Preservation:** To maintain, preserve, and extend the life and utility of prior investments in transportation systems and services;
- **Mobility (Congestion Relief):** To improve the predictable movement of goods and people throughout Washington;
- **Environment:** To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment; and
- **Stewardship:** To continuously improve the quality, effectiveness, and efficiency of the transportation system.

In March 2010, the Governor and Legislature added a new policy goal for transportation: **Economic Vitality**. It directs WSDOT to “promote and develop transportation systems that stimulate, support, and enhance the movement of people and goods to ensure a prosperous economy.” WSDOT is developing the necessary business direction plans through the agency's strategic planning process.

The Transportation Progress Report

Under this law, the Washington State Office of Financial Management (OFM) is responsible for setting objectives and establishing performance measures for each of the goals. OFM must report on the attainment of the goals and objectives to the Governor and Legislature each biennium. In January, 2008, OFM published a “baseline” report to get feedback from the Governor and Legislature on draft objectives and performance measures.

The most recent Attainment Report, for 2010, is available online at www.wsdot.wa.gov/Accountability/PerformanceReporting/Attainment.htm, or on OFM's performance and results website: www.ofm.wa.gov/performance/.

WSDOT Strategic Plan

WSDOT's 2011-2017 strategic plan Business Directions summarizes WSDOT's work plan based on the programs and budgets authorized by the State Legislature and the Governor. The plan describes the agency strategic directions and initiatives to address critical programs and service delivery mandates. The table on page viii illustrates this alignment. WSDOT's 2011-17 strategic plan is available online at: www.wsdot.wa.gov/Accountability/PerformanceReporting/StrategicPlan.htm.

Other performance reporting requirements Priorities of Government (POG)

POG is an investment prioritization process used to help the Governor and Legislature develop agency budgets. Every biennium, workgroups composed of government agency and private sector representatives identify results that citizens expect from government, and evaluate the performance of state agency activities and services against those expected results. Information about the 2001-13 POG process is available at: www.ofm.wa.gov/budget/pog.

Government Management Accountability and Performance program (GMAP)

GMAP is a management tool that promotes the sharing and evaluation of current performance to improve results. Under GMAP, the Governor and her leadership team meet in “GMAP forums” with agency directors to review results and develop action plans to improve results. These meetings provide an opportunity for candid conversations about what is working, what is not, and how to improve results.

WSDOT regularly reports to the Governor during the Transportation GMAP forums. WSDOT's GMAP reports can be found at: www.wsdot.wa.gov/Accountability/PerformanceReporting/GMAP.htm.

About WSDOT's Performance Dashboard

The ‘dashboard’ of performance measures on page vii offers readers a snapshot glance at WSDOT's progress against the five statewide policy goals and WSDOT's strategic plan. Some results are discussed in depth within this edition of the *Gray Notebook*, while others are in previous editions or will be updated in coming editions based on established reporting cycles. Turn to the Subject Index (pp. 99-104) to find earlier coverage; all previous editions are available online at www.wsdot.wa.gov/accountability.

Navigating the WSDOT Information Stream

Navigating the WSDOT information stream

Through more than 40 editions, in fact ten years, WSDOT has published a quarterly performance report known as the *Gray Notebook*. It presents articles in a way that makes the topics' relationship to the six Legislative policy goals – and WSDOT's own strategic business directions – more clear.

The *Gray Notebook* is organized into sections devoted to those strategic goals. Contents include quarterly and annual reports on key agency functions, providing regularly updated system and program performance information. Annual system performance updates are rotated over four quarters based on data availability and relevant data cycles, to provide in-depth analysis of topics such as capital facilities, aviation, freight, and a post-winter report on highway maintenance. Quarterly topics, such as worker safety, incident response, Amtrak *Cascades*, and Washington State Ferries, are featured in each edition since data is generally available more frequently.

Matters pertaining to WSDOT's Federal Recovery Act-funded projects, including high speed rail and TIGER grant projects, finance, capital project delivery, workforce, and agency highlights appear in the Stewardship section. The Beige Pages address the delivery of the projects funded in the 2003 Transportation Funding Package (Nickel), 2005 Transportation Funding Package (TPA), and Pre-Existing Funds (PEF).

More easily tracked business plan results

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

Business Directions reflects WSDOT's program and project delivery responsibilities with the goal of demonstrating the best possible return for taxpayers' dollars. For a copy of Business Directions, please visit: www.wsdot.wa.gov/Accountability/PerformanceReporting/StrategicPlan.htm.

Publication frequency and archiving

The *Gray Notebook* is published quarterly in February, May, August and November. This edition and all past editions are available online at www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm.

A separate detailed navigation folio is available at www.wsdot.wa.gov/Accountability/GrayNotebook/.

Gray Notebook Lite

WSDOT publishes a quarterly excerpt of selected performance topics and project delivery summaries from the *Gray Notebook*, called *Gray Notebook Lite*. The folio-style *Lite* allows

for a quick review of WSDOT's most important activities in the quarter. It can be accessed at www.wsdot.wa.gov/Accountability/GrayNotebook/navigateGNB.htm.

Navigate the WSDOT website

WSDOT prepares information for legislators, state and local officials, interested citizens, and the press on the progress of the state's three capital delivery programs, and an array of detailed information can be found on-line at the WSDOT website.

WSDOT's on-line project reporting uses several different tools, including the *Gray Notebook* (as a downloadable PDF), web-based Project Pages, and Quarterly Project Reports (QPRs). There is a Project Page on the website for each major WSDOT project, and QPRs for Nickel-funded projects in the 2003 Transportation Funding Package.

The WSDOT home page (www.wsdot.wa.gov) offers several ways to find information on projects. The Projects tab on the top navigation bar links to the WSDOT's Projects page; there, you'll find information and links to detailed descriptions of all WSDOT projects. The Accountability navigation menu offers links to several important topics (including Congestion Relief, Safety, and Preservation).

Project pages

Project pages (www.wsdot.wa.gov/projects/) report on virtually all WSDOT capital delivery program construction projects. Project pages provide details on overall project vision, funding components, financial tables, milestones, status description, problem discussions, risks and challenges, forecasting, maps, photos, links and more, which are updated regularly. Project pages cover the overall project vision, financial details and funding components, roll-up milestones, roll-up cash flow, contact information, maps and links to QPRs.

Quarterly Project Reports

The Quarterly Project Reports (QPRs) are reached by a link on the Project Page. They summarize quarterly activities such as highlights, milestones, status description, problem statement, risks and challenges, project costs, cash flow, and contact information.

Gray Notebook Subject Index

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2001	1 / Mar 31, 2001 (FY01 Q3)	2 / June 30, 2001 (FY01 Q4)	3 / Sept 30, 2001 (FY02 Q1)	4 / Dec 31, 2001 (FY02 Q2)
2002	5 / Mar 31, 2002 (FY02 Q3)	6 / June 30, 2002 (FY02 Q4)	7 / Sept 30, 2002 (FY03 Q1)	8 / Dec 31, 2002 (FY03 Q2)
2003	9 / Mar 31, 2003 (FY03 Q3)	10 / June 30, 2003 (FY03 Q4)	11 / Sept 30, 2003 (FY04 Q1)	12 / Dec 31, 2003 (FY04 Q2)
2004	13 / Mar 31, 2004 (FY04 Q3)	14 / June 30, 2004 (FY04 Q4)	15 / Sept 30, 2004 (FY05 Q1)	16 / Dec 31, 2004 (FY05 Q2)
2005	17 / Mar 31, 2005 (FY05 Q3)	18 / June 30, 2005 (FY05 Q4)	19 / Sept 30, 2005 (FY06 Q1)	20 / Dec 31, 2005 (FY06 Q2)
2006	21 / Mar 31, 2006 (FY06 Q3)	22 / June 30, 2006 (FY06 Q4)	23 / Sept 30, 2006 (FY07 Q1)	24 / Dec 31, 2006 (FY07 Q2)
2007	25 / Mar 31, 2007 (FY07 Q3)	26 / June 30, 2007 (FY07 Q4)	27 / Sept 30, 2007 (FY08 Q1)	28 / Dec 31, 2007 (FY08 Q2)
2008	29 / Mar 31, 2008 (FY08 Q3)	30 / June 30, 2008 (FY08 Q4)	31 / Sept 30, 2008 (FY09 Q1)	32 / Dec 31, 2008 (FY09 Q2)
2009	33 / Mar 31, 2009 (FY09 Q3)	34 / June 30, 2009 (FY09 Q4)	35 / Sept 30, 2009 (FY10 Q1)	36 / Dec 31, 2009 (FY10 Q2)
2010	37 / Mar 31, 2010 (FY10 Q3)	38 / June 30, 2010 (FY10 Q4)	39 / Sept 30, 2010 (FY11 Q1)	40 / Dec 31, 2010 (FY11 Q2)
2011	41 / Mar 31, 2011 (FY11 Q3)			

Edition ranges (e.g. 3-12) include first and last edition in the range. All editions can be accessed at: www.wsdot.wa.gov/Accountability/GrayNotebook/gnb_archives.htm

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- Airport Land Use Compatibility and Technical Assistance (21, 25, 29)
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*Note: Some performance measures for *Gray Notebook 35 & 39* are featured in the stand-alone annual Congestion Report, available online at www.wsdot.wa.gov/Accountability/Congestion/

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Americans with Disabilities Act (ADA) Information

Americans with Disabilities Act (ADA) Information

Persons with disabilities may request this information be prepared and supplied in alternative formats (large print, Braille, cassette tape, or on computer disk) by calling the Washington State Department of Transportation Office of Equal Opportunity (OEO) at (360) 705-7097. Persons who are deaf or hard of hearing may contact OEO through the Washington Relay Service at 7-1-1.

Civil Rights Act of 1964, Title VI Statement to Public

WSDOT ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person on the basis of race, color, national origin or sex in the provision of benefits and services resulting from its federally assisted programs and activities. For questions regarding WSDOT's Title VI Program, you may contact the Department's Title VI Coordinator at (360) 705-7098 or (509) 324-6018.

Other WSDOT Information Available

The Washington State Department of Transportation has a vast amount of traveler information available. Current traffic and weather information is available by dialing 5-1-1 from most phones. This automated telephone system provides information on:

- Puget Sound traffic conditions and travel times
- Statewide construction impacts
- Statewide incident information
- Mountain pass conditions
- Weather information
- State ferry system information, and
- Phone numbers for transit, passenger rail, airlines and travel information systems in adjacent states and for British Columbia.

For additional information about highway traffic flow and cameras, ferry routes and schedules, Amtrak Cascades rail, and other transportation operations, as well as WSDOT programs and projects, visit www.wsdot.wa.gov.

For more information about performance measurement and reporting, visit www.wsdot.wa.gov/accountability/.