



**Washington State
Department of Transportation**

Measures, Markers and Mileposts

The Gray Notebook for the quarter ending
September 30, 2004

WSDOT's quarterly report to the
Washington State Transportation Commission
on transportation programs and department management

Douglas B. MacDonald
Secretary of Transportation



What Gets Measured, Gets Managed

This periodic report is prepared by WSDOT staff to track a variety of performance and accountability measures for review by the Transportation Commission and others. The content and format of this report is expected to develop as time passes. Information is reported on a preliminary basis as appropriate and available for internal management use and is subject to correction and clarification.

The *Gray Notebook* is published quarterly in February, May, August, and November. For an online version of this or a previous edition of the *Gray Notebook*, visit www.wsdot.wa.gov/accountability.

Contributors

Project Delivery Reporting (Beige Pages)	Project Control and Reporting Office, John Anderson, Kevin Dayton, Bill Leonard, Claudia Lindahl, Regional Program Managers, Rick Smith, Jason Smith, Tom Swafford, Nancy Thompson, Megan White
Worker Safety	Sandra Pedigo-Marshall, Rex Swartz
Workforce and Employee Training	Dave Acree, Margarita Mendoza de Sugiyama, Adrienne Sanders
Highway Construction Program	Project Control and Reporting Office, Kevin Dayton, Regional Program Managers, Dave Erickson
Tacoma Narrows Bridge Project Update	Gaius Sanoy
Hood Canal Bridge Project Update	Lloyd Brown
Asset Management: Bridge Assessment	DeWayne Wilson
Highway Safety	Pat Morin, Cheryl Day, Bill Osterhout
Measuring Delay and Congestion	Mark Bandy, Matt Beaulieu, Jason Gibbens, Mark Hallenbeck, Janice Hamil, Robin Hartsell, John Ishimaru, Anna Yamada, Shuming Yan
Incident Response	Anna Yamada, Diane McGuerty, Robin Hartsell
Environmental Programs	David Moore, Jim Park
Highway Maintenance	Rico Baroga, Paul Motoyoshi
Treucks, Goods and Freight: CVISN	Jim Stuart
Commute Options	Brian Lagerberg
Washington State Ferries	Bill Greene, John Bernhard
State-Supported Amtrak Cascades Service	Kirk Fredrickson, Carolyn Simmonds
Washington Grain Train	Kirk Fredrickson, Carolyn Simmonds
Special Features	Rico Baroga, Craig Wilbur, Bob Martin
Highlights of Program Activities	Ann Briggs

GNB Production

Production Team	Robin Hartsell, Brooke Hamilton, Megan Davis, Paul Motoyoshi
Graphics	Chris Zodrow, Steve Riddle, Connie Rus
Publishing & Distribution	Frank Gardino, Linda Pasta, Dale Sturdevant
For Information Contact:	Daniela Bremmer, Director WSDOT Strategic Assessment Office 310 Maple Park Avenue SE PO Box 47374 Olympia, WA 98504-7374 Phone: 360-705-7953 E-mail: bremmed@wsdot.wa.gov

Navigating the Gray Notebook

How is the Gray Notebook Organized?

Measures, Markers and Mileposts, also called the *Gray Notebook* because of its gray cover, provides in-depth reviews of agency and transportation system performance. The report is organized into two main sections. The *Beige Pages* report on the delivery of the projects funded in the 2003 Transportation Funding Package and the *White Pages* describe key agency functions and provide regularly updated system and program performance information. The *Gray Notebook* is published quarterly in February, May, August and November. This current and all past editions are available on-line at: www.wsdot.wa.gov/accountability/

Beige Pages

The *Beige Pages* is WSDOT's project delivery performance report on the Nickel Projects and other projects designated by the legislature in its 2003 Transportation Funding Package. It contains detailed narrative project summaries and financial information supporting WSDOT's "no surprises" reporting focus. See page 1 for details.

White Pages

The *White Pages* contain three types of transportation system and agency program performance updates. The annual and quarterly updates are provided based on regularly scheduled reporting cycles. Special features change from quarter to quarter.

Annual Performance Topics

System performance updates are rotated over four quarters based on data availability and relevant data cycles. Annual updates provide in depth analysis of topics and associated issues. Examples include Pavement Conditions, Congestion and Bridge Condition.

Quarterly Performance Topics

Quarterly topics are featured in each edition as data is available more frequently. Quarterly topics include Highway Construction, Worker Safety, Incident Response, Washington State Ferries and Amtrak *Cascades*.

Special Topics

Selected Special Features and Program Highlights are provided in the back of each edition and focus on noteworthy items, special events and innovations.

Tracking *Business Directions*' Results

WSDOT's business plan, *Business Directions* outlines the agency's strategic initiatives and associated activities. It reflects WSDOT's program and project delivery responsibilities with the goal of demonstrating the best possible return for taxpayers' dollars. The *Gray Notebook* complements the plan and tracks progress of the six key initiatives. For a copy of *Business Directions*, please visit: www.wsdot.wa.gov/accountability/2003-2007_Business_Directions.pdf

Gray Notebook Lite

WSDOT publishes a quarterly excerpt of key performance topics and "Nickel Project" summaries from the *Gray Notebook*, called *Gray Notebook Lite*. *Lite* allows for a quick review and provides a short synopsis of selected topics. It is published as a four page folio with a two page *Beige Page* summary insert and can be accessed at www.wsdot.wa.gov/accountability/GNBLiteJune302004web.pdf



How to Find Performance Information

The electronic subject index gives readers access to current and archived performance information. The comprehensive index is easy to use and instantly links to every performance measure published to date. Measures are organized alphabetically within nineteen program areas. A click on the subject topic and edition number provides a direct link to that page. A copy of the subject index is also provided in the back of each edition. To access the index electronically, visit: www.wsdot.wa.gov/accountability/graybookindex.htm.

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Financial				
Highway				
Incident Response				
Information				
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Performance				
Program				
Quality				
Service				
System				
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Worksite				

Measures, Markers and Mileposts

The Gray Notebook for the quarter ending September 30, 2004
15th Edition, Published November 15, 2004

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Project Reporting on the 2003 Transportation Funding Package

Introduction

WSDOT prepares information for legislators, state and local officials, interested citizens and the press on the progress of the program funded by the 2003 Transportation Funding Package. Much of the detailed information can be found online on the WSDOT website. The *Gray Notebook*, in these special Beige Pages, highlights each quarter's progress and reports on financial and other program management topics as well as detailed information on key projects.

The Beige Pages for this quarter are organized in the following manner:

- **Project Reporting**
- **Current Project Highlights and Accomplishments**
- **Project Delivery**
- **Financial Information**
- **Program Management Information**

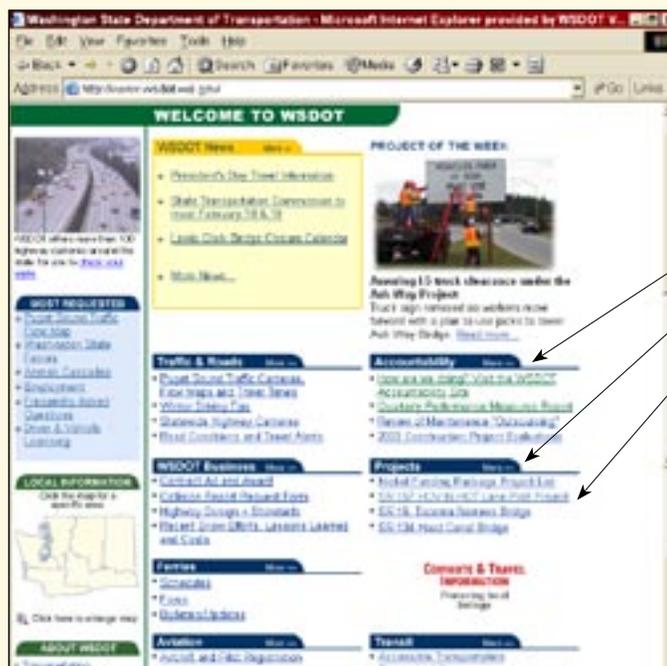
We welcome suggestions and questions that can help us strengthen this project delivery and accountability reporting.

Overall, project reporting uses several different tools, including the *Gray Notebook*, web-based Project Pages and Quarterly Project Reports (QPR). 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.

Navigation to the Home Page and the Project Pages

The Home Page (shown below) has several links that allow access to the individual Project Pages. The Accountability navigation bar provides access to "hot links" found in the online version of the *Gray Notebook*, the Projects navigation bar and direct links to several of the largest projects under the Projects Navigation page. Project pages can also be accessed from any WSDOT web page by clicking on the "projects" tab at the top of every page.

WSDOT's home page can be found at: www.wsdot.wa.gov/.



Project Reporting on the 2003 Transportation Funding Package

Project Reporting

Project Information Roadmap



Gray Notebook



Home Page

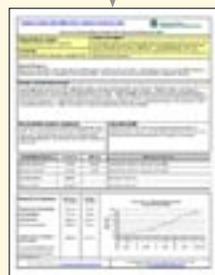
Project Page

Project Pages report on all WSDOT 2003 Transportation Funding Package (Nickel) projects. Project Pages provide detailed information updated regularly:

- Overall Project Vision
- Financial Table, Funding Components
- Roll-up Milestones
- Roll-up Cash Flow, Contact Information
- Maps and Links QPR
- Quarterly Project Reports

Quarterly Project Reports (QPRs) summarize quarterly activities:

- Highlights
- Milestones
- Status Description
- Problem Statement
- Risks and Challenges
- Project Costs/Cash Flow
- Contact Information



Project Pages

Project Pages contain information on all aspects of a specific project. An existing Project Page is shown below.

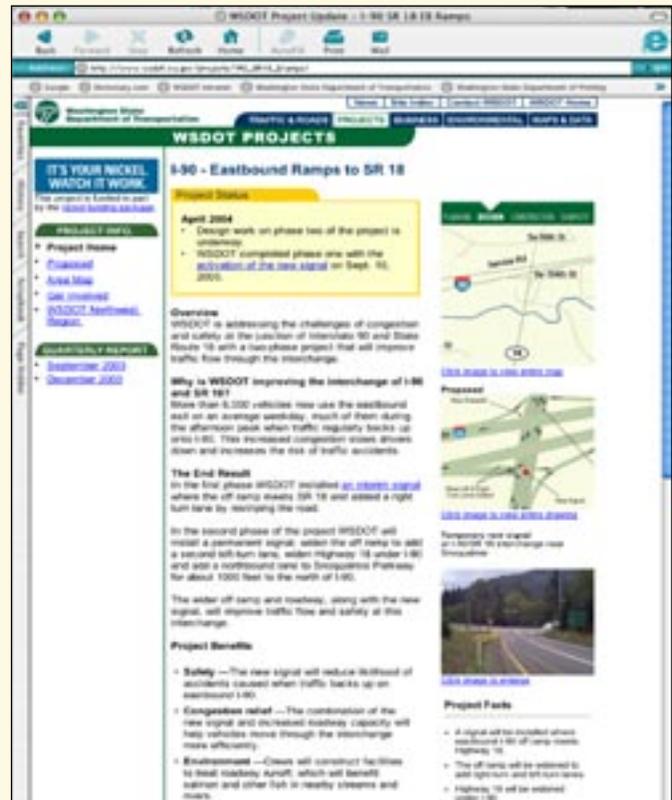
Project Pages provide details on overall project vision, funding components, financial tables, milestones, status description, problem discussions, risk and challenges, forecasting, maps, photos, links and more.

Currently, approximately 195 Project Pages, of which 111 are Nickel Projects, provide on-line updates.

The Quarterly Project Reports are accessible through a link on the Project Page.

Project Pages provide a summary of the project status to date and are updated regularly to the best of WSDOT's ability.

Project Pages can be found at: www.wsdot.wa.gov/projects/



Current Project Highlights and Accomplishments

Summary of Project Advertisements, Awards and Completions

This is WSDOT's report of quarterly developments in the delivery of the 2003 Transportation Funding Package for the quarter ending September 30, 2004. This report focuses on project delivery conforming to adjustments adopted by the Legislature and passed in the 2004 Supplemental Transportation Budget and development of the 05-07 Capital Improvement and Preservation Program.

Project information for this report is gathered from a variety of sources within WSDOT and is principally the responsibility of the regional administrators and their project teams. As

a regular part of its project management and accountability for the Legislature's 2003 Transportation Funding Package, a team of senior WSDOT managers from Olympia meets in each region every quarter to perform due diligence on progress and status for each project and to offer assistance, support, and coordination of issues or problems arising with any project. This process also facilitates the ability of headquarters staff to discuss project status with legislative members and staff and to report firsthand to the Secretary and the Transportation Commission.

Biennium To Date

Projects Advertised and Completed

As of September 30, 2004, 24 highway projects in the 2003 Transportation Funding Package have been advertised, 5 of the 24 have been completed.

Projects Completed

- 1) 97A, Entiat Park Entrance – Turn Lanes
- 2) I-90, Highline Canal to Elk Heights –Truck Climbing Lanes
- 3) I-90, Sullivan –State Line Median Barrier
- 4) SR 124, East Jct SR 12 – Reconstruction
- 5) I-182/U.S. 395 Interchange – Roadside Safety

Projects Advertised

- 6) I-5, 2nd Street Bridge – Replace Bridge
- 7) I-5, Salmon Creek to I-205
- 8) I-5, Roanoke Vicinity Noise Wall
- 9) SR 9/SR 528 Intersection – Signal
- 10) SR 18, Covington to Maple Valley Highway
- 11) SR 31, Metaline Fall to International Border
- 12) I-90, Argonne to Sullivan Road
(includes: I-90, Argonne to Pine Road)
- 13) I-90, Eastbound Ramps to SR 18 - Signal
- 14) I-90, Cle Elum River Bridge
- 15) I-90, Ryegrass Summit to Vantage –Truck Climbing Lanes
- 16) I-90, Geiger Road to US 2 Median Barrier
- 17) SR 161, 234th Street to 204th Street E
- 18) SR 203, NE 124th/Novelty Rd. Vic
- 19) U.S. 395, Kennewick Variable Message Sign
- 20) U.S. 395, NSC-Francis Avenue to Farwell Road
- 21) SR 500, NE 112th Ave. – Interchange
- 22) SR 527, 132nd St. SE to 112th St. SE

Projects Advertised But Not Awarded

- 23) SR 16, HOV - Union Ave to Jackson Avenue
- 24) SR 161, Jovita Blvd to S. 360th Street

Projects Awarded (includes completed projects)

The total of the award amounts for the 22 projects is \$142 million. The total of the pre-bid engineer's estimate for the awarded construction contracts is \$148 million. Two projects have been advertised, but not awarded. These projects have not been included in the engineer's estimate of \$148 million.

Delayed / Deferred Projects

As previously reported, five projects scheduled to be advertised prior to September 30 have not been advertised. The circumstances of these five projects are as follows (more detail is provided later in this report):

SR 7/SR 507 to SR 512 – Safety

WSDOT was requested to delay the project by local and state elected officials to allow time to pursue additional funding for landscaping and other desirable adjuncts to the project requested by the local community. The ad date is now January 2005.

SR 9, Nooksack Rd. Vic. To Cherry Street

Right of way issues as described in *Gray Notebook* for September 30, 2003 deferred the project to the 05-07 biennium.

SR 161, 204th to 176th Street

This is the second stage of a project that was split into two stages to better accommodate construction work and lessen impacts to the public in this corridor. The advertisement date is now set for November 2004.

SR 167, 15th St. SW to 15th St. NW – HOV

Funding uncertainties had caused the design of this project to sit "on the shelf" for many years, and therefore additional time has been needed for re-design of stormwater treatment, wetland mitigation and floodplain investigations to meet new environmental requirements. This project now has a planned advertisement date of October 2005.

SR 522/I-5 to I-405

As reported in *Gray Notebook* for December 31, 2003, coordinating work on this project with the City of Lake Forest Park, has caused the project to be deferred to the 05-07 biennium.

Current Project Highlights and Accomplishments

Contract Advertising and Awards 2003 Transportation Funding Package (“Nickel Funds”)

Projects Advertised:

I-5, Roanoke Noisewall

The first stage of this project was advertised on July 19, 2004 and awarded on August 20, 2004 for \$543,000. The second stage is being designed to accommodate the needs of the City of Seattle and to change the tieback anchor foundations for the noise walls. Stage two will be advertised in early 2005. This will result in a carry forward of \$200,000 in construction funds to the 2005-2007 biennium.

SR18, Covington Way to Maple Valley

This project will complete the re-vegetation work between Covington Way and Maple Valley. The contract was advertised in July 2004 and awarded in August 2004 for \$3.9 million, with major planting work expected to begin in June 2005 as plant material becomes available. The contractor is currently performing plant establishment and related activities in areas prepared during the previous roadway widening contract, and planting work is expected to be completed by summer 2006. However, monitoring of the plant establishment activities will continue through late spring 2010. WSDOT’s Northwest Region is currently evaluating the schedule for this project and may be reporting an expenditure delay during the next quarter.

Metaline Falls to International Border

Stage one of this project reconstructs the roadway to provide for all weather operations and stage two is the replacement of the Sullivan Creek Bridge. Stage one of the project was advertised on September 7, 2004 with the bid opening scheduled for October 14, 2004. The design and initial surveying for replacing the Sullivan Creek Bridge has been started on this project.

SR161, Jovita Blvd to South 360th Street

The SR 161 widening project will improve traffic flow and reduce congestion and accidents. The roadway in the residential areas between Military Road South and South 360th will be four lanes with left turn lanes at designated intersections. The roadway in the commercial areas between Milton Way and Military Road South will have four through lanes and a two-way center left turn lane. The project was advertised on September 27, 2004. Bid opening is scheduled for December 8, 2004. This project will begin during the 2005 construction season.

I90, Geiger Road to U.S. 2 Median Barrier

This project installs 2.4 miles of concrete median barrier to prevent vehicles from crossing into the opposing lanes of traffic. The project was advertised two months ahead of schedule on July 19, 2004 and awarded August 18, 2004 for \$501,000. Work on this project was started on September 13, 2004 with an estimated completion time of six to eight weeks.

Current Project Highlights and Accomplishments

Construction Highlights

Several of the highway projects funded by the Nickel Account are now under construction. More details can be found in the respective on-line Project Pages at www.wsdot.wa.gov/projects.

Highway Construction Program

I-5, Widen Each Direction from Salmon Creek to I-205

The new bridge crossing over I-5 at NE 129th Street has been completed and is now open to traffic. Over the winter, landscaping, painting the retaining walls, and minor work items will be completed. To prepare for the next stage of construction, I-5 mainline traffic has been shifted onto the detour bridge. WSDOT has completed the demolition of the I-5 bridge over Salmon Creek and new shafts and columns have been completed in part for the piers of the new bridge. Roadway excavation, embankment operations and retaining wall construction are under way to accommodate the widening of the northbound lane. To alleviate some potential conflicts in the environmental requirements, WSDOT worked with the environmental permitting agencies to realign the stream channel and redesign the retaining wall. The cost of the stream realignment and redesign will add approximately \$500,000 to the cost of this project.

I-5, 2nd Street Bridge – Replace Bridge

This \$12 million project removes and replaces the 2nd Street Bridge over I-5 in Mount Vernon. The existing bridge has the lowest clearance over I-5 between Canada and Mexico. Due to the low clearance, taller trucks are required to detour around the bridge by using city streets, resulting in city street congestion and slower freight movement. The contractor has indicated it will be using the traffic control plans set up for this contract instead of developing a new detour plan. A ground breaking ceremony for this project was held in Mt. Vernon on August 31, 2004. Construction began on August 9, 2004 and will take 11 - 15 months to complete requiring the bridge to be closed to traffic for up to a year. The planned opening of the new bridge is September 2005.

I-90, Ryegrass Summit to Vantage – Truck Passing Lanes

This project constructs a new ten-mile long truck climbing/passing lane on I-90 westbound in three stages from Vantage to the Ryegrass summit. Work on the first and second stages is now complete. Both stages (six miles in total) were opened to traffic prior to the July 4th holiday. The third stage is currently being constructed. All I-90 traffic now detours four miles

on the eastbound lanes around the third stage of construction. The eastbound lanes are configured to provide one lane eastbound and two lanes westbound, separated by a concrete median barrier. This detour configuration keeps traffic away from the work zone, providing a safer work environment and making it easier for the traveling public to navigate through the construction zone. A ribbon cutting ceremony is scheduled for November 17th to celebrate the successful completion of this project and the official opening of the new westbound lanes.

I-90, Build Lanes from Argonne to Pines Road

This project constructs one additional lane in each direction on I-90 and is approximately fifty percent complete. Work is proceeding to reconstruct the eastbound lanes, including drainage, noise walls, signage, and illumination. A significant milestone was met when eastbound traffic was routed to the second detour sequence on August 21, 2004. No additional impact to traffic is expected for the work remaining in this stage until early November 2004. At that time, eastbound traffic will be routed to a temporary configuration on the new paved sections of I-90 eastbound in preparation for the next detour sequence. The project remains within budget and on schedule with a planned open to traffic date of November 2005.

I-90, Cle Elum River Bridge

Due to an unanticipated delay caused by the worldwide reduced availability of structural steel, project work was suspended and the anticipated completion date has been delayed until sometime late in the fall of 2004. Delivery of the steel from the fabricators is expected during October 2004. In anticipation of receiving the steel, the detour route has been completed and is ready for use.

U.S. 395, Kennewick Variable Message Sign

This project installs a Variable Message Sign (VMS) and camera near the north end of the Columbia River Bridge on U.S. 395 to warn drivers of congestion and accidents. Work started July 26, 2004 and is substantially complete, except for some adjustments to the camera and the video server. The adjustments are expected to make the camera and server operational by November 2004. There will be two months of additional work to connect the VMS to the WSDOT Traffic Management System.

Current Project Highlights and Accomplishments

U.S. 395, NSC-Francis Avenue to Farwell Road

This project constructs two lanes of the North Spokane Corridor between Francis Avenue and Farwell Road and completes the grading between U.S. 2 and Wandermere. This is a multi-phased project with four contracts.

Work began on the first contract, Farwell Lowering, in late March 2004, with the construction and opening of the detour route in April 2004. Clearing of trees and brush, soil compaction, and placement of the new Kaiser outfall pipe have been completed. Girders on the mainline bridges were set and completed in September 2004. Paving of Farwell Road has begun and is scheduled to be complete by the end of October 2004. This phase of the project is approximately 51 percent complete.

Plan preparation is nearly complete for the second contract, Gerlach to Wandermere Grading. The project is on schedule for advertisement in November 2004. The right of way acquisition for this phase is being completed, with three parcels remaining to be purchased.

SR 500, NE 112th Avenue – Interchange

This project constructs a new interchange on SR 500 at NE 112th Ave/Gher Road. The project remains on schedule and within budget and is approximately 84 percent complete. Both bridges are complete and open to traffic in addition to the work on NE 112th Ave. The ramps on the south side of the interchange have been finished and the ramps on the north side of the interchange are being constructed. The interchange is expected to be fully functional, with all lanes and ramps open, by the fall of 2004.

Project Completions:

I-90, Highline Canal to Elk Heights – Truck Passing Lanes

This project constructed one truck climbing/passing lane on eastbound I-90, east of the Indian John Rest Area. The project was finished and open to traffic on August 12, 2004.

I-90, Sullivan-State Line Median Barrier (Advertised, awarded and completed in the same quarter)

This project was advertised on July 19, 2004, awarded August 18, 2004, and completed September 22, 2004. To gain more efficiency, reduce construction costs and minimize impacts to the traveling public, WSDOT combined the guardrail work with a paving project in the same area.

Other Highlights and Accomplishments

SR 202, 244th Avenue NE Intersection

This project will construct a traffic signal and a right turn lane from 244th Avenue onto SR 202. The local school district has requested an acceleration of this project because school buses have difficulty accessing SR 202 from 244th Avenue. WSDOT is exploring options to accelerate the right of way acquisition, with the goal of having the traffic signal operational and in use by September 2005. Decisions on these options will be reported next quarter.

SR 202, Preston – Fall City Road & SR 203

This project improves the intersections at the SR 202, Preston-Fall City Road and SR 202/SR 203. After further evaluation of the proposed improvements and the impact on traffic flow, it has been decided to construct a roundabout at the SR 202/SR 203 intersection and leave the SR 202, Preston-Fall City Road intersection in its current configuration. This proposal achieves the desired traffic flow benefits without adversely affecting local businesses, and therefore has received community support.

SR 270, Pullman to Idaho State Line – Additional Lanes

Due to construction cost impacts related to soil conditions and frontage roads, this project was revised from a four-lane divided highway to a four-lane highway with a continuous center turn lane. As previously reported, design work effort is focused on revising the environmental documentation, assessing right of way needs, and contract plans. These changes will maintain the original cost expectations and improve roadway safety. Due to the design changes, the advertisement date has been delayed ten months to November 2005, and the open-to-traffic date will be delayed to November 2007. Deferred spending of \$2.4 million from the 2003-2005 biennium into the 2007-2009 was approved by the Washington State Transportation Commission last quarter.

U.S. 395, NSC-U.S. 2 to Wandermere & U.S. 2 Lowering

During the design phase of this project, a geotechnical study was performed to find the best method for handling known perched water tables where U.S. 2 has to be lowered for interchange construction. While groundwater was anticipated at the site, the quantity of groundwater was a surprise. Elimination of the groundwater is required and may take a year or more to remove. The project office is reviewing solutions to address this site condition to include developing a separate

Current Project Highlights and Accomplishments

dewatering contract that would dewater the site prior to the start of construction. If this is the selected option, the contractor could begin the dewatering process in the summer of 2005 without delaying the 2008 completion of the project. Cost estimates are currently being developed for this work.

Other Capital Programs - Rail:

Tacoma R.M.D. RR Morton Line Repairs-Phase 2

This project will construct the second phase of the Tacoma Rail Mountain Division's Morton line upgrades to fully restore rail service. Five miles of the lowest quality track have been upgraded. Work has started on the trans-load facility in Morton. Full completion is anticipated by the end of the biennium.

High Speed Crossovers-Titlew

This project will construct a universal crossover near Titlew Park in Tacoma. Burlington Northern Santa Fe (BNSF) has selected a contractor and work will begin by November 2004, with completion scheduled for July 2005.

Other Capital Programs - Ferries:

Anacortes Multimodal Terminal

In 1997, WSF completed a master plan for a new Anacortes Multi-Modal Terminal. The project will modernize the existing ferry terminal, which serves four different San Juan Island destinations and WSF's international route to Sidney, B.C. Project elements over the next ten years include improving upland for improving site circulation, replacing and expanding the terminal building and relocating the tie-up slips to deeper water. One of the relocated tie-up slips will include a new access trestle capable of loading and unloading service vehicles. The design report for the tie-up element of the project was completed in August 2004. Plans and specifications are expected to be completed in November 2004. The Anacortes Multimodal project has been selected to use the General Contractor Construction Manager (GCCM) delivery method. The low GCCM bidder will assume the role of construction manager, responsibility for the constructability review of the design documents and, if necessary, function as the value engineer. WSF has received executive approval and FHWA concurrence to proceed toward procurement documents and anticipates having 30% of the design completed by the spring of 2005. Activity this biennium has been directed toward evaluating the 1997 Master Plan in comparison to WSF's

current business goals and operational needs.

Third Replacement Auto/Passenger Ferry

Total vessel acquisition costs for the four replacement vessels have not changed, however, WSDOT has discussed a revised funding strategy for the third vessel with the 2004 Legislature. Initially, in response to the Legislature's direction to use Washington shipyards, the third replacement auto/passenger ferry was to be built with Nickel revenues. Because projects that receive federal funding stipulate that contracts be advertised on a nation-wide basis, the legislative policy of "Built in Washington" precludes WSDOT from using federal funding.

WSDOT is currently working on strategies for gaining federal participation in the new vessel acquisition. The national advertisement of long lead-time items, such as propulsion systems, will be pursued separately from the shipyard contract. This would allow WSDOT to keep the shipyard construction contract in Washington, while procuring machinery eligible for federal funding. WSDOT is seeking up to \$20 million in federal funding.

Mukilteo Multimodal Terminal

This Nickel project has a companion project funded by pre-existing state revenues and federal grants. Work accomplished through June 2004 has been charged to the companion project rather than the Nickel project. The companion project is expected to receive \$5.8 million in federal funds, which fully funds WSDOT's concept for the new terminal. The Master Plan has been finalized and the City of Mukilteo Council has endorsed the preferred concept. The environmental scoping process will begin in October 2004 and value engineering will occur in November 2004. The Port is cautiously optimistic that the federal surplus tank farm property conveyance will occur by the end of 2004. The Multimodal Terminal is within budget and on track to finish as scheduled by July 2010.

Catch-Up Preservation

This project addresses the backlog of deferred Ferry System preservation work and facilitates WSF reaching the preservation performance standards established by the Legislature's Joint Task Force on Ferries. Based on continuous assessment of preservation needs, the elements of this project have been revised to include dolphins at Anacortes, Bremerton, Kingston, Lopez, Orcas, Shaw, Tahlequah, and Vashon; aprons at Anacortes, Bremerton, Lopez, and Point Defiance; a trestle replacement at Lopez; transfer span retrofits at Tahlequah and

Current Project Highlights and Accomplishments

Vashon; and upland preservation at Orcas and Point Defiance. The revised expenditure plan reflects the acceleration of work into the 2003-2005 biennium and the addition of funds newly allocated from the 2013-2015 biennium.

WSF identified two projects that accelerate ferry preservation work into the 2003-2005 biennium and which need to be performed immediately using catch-up preservation funds: the Lopez Dolphin Replacement Project and the Tahlequah Dolphin Replacement Project. Design work for both projects started in February 2004. The Lopez design is ongoing, with various alternatives under consideration, and will continue through the rest of this biennium. The Tahlequah design was completed in May 2004 and the project was advertised in June 2004. Construction at Tahlequah began in July 2004, with project completion planned for November 2004.

Highway Construction Program: Difficult Challenges Continue to be Faced by a Major Project

SR 16, HOV Improvements – Union Avenue to Jackson Avenue

As reported in the June 2004 *Gray Notebook*, this project, which completes the HOV system on a critical section of SR 16 between I-5 and the Tacoma Narrows Bridge, is one of the most important and most time-sensitive of the early Nickel account projects. This is due to the need for the completion of this project to coincide with the opening of the Tacoma Narrows Bridge.

The project was advertised in March 2004, with a scheduled bid opening in May 2004. However, the opening of the bid was delayed because of administrative procedures - one at the Department of Ecology and one at the City of Tacoma. This action was taken in response to private citizens, who challenged two of the project's key environmental permits. One challenge is rooted in a landowners' opposition to WSDOT acquiring a portion of their property necessary to support a nearby wetlands enhancement and preservation project, which had been agreed to by WSDOT, city, state, and federal regulatory officials, as compensatory mitigation for project impacts on the right of way. The second challenge contests the extent of the Department of Ecology's authority to regulate wetlands.

WSDOT has reached a tentative agreement with the citizens who initiated these challenges and is negotiating these issues

through the Attorney General's Office. WSDOT is in the process of revising the wetland mitigation plans that will be submitted to the City of Tacoma and the Army Corps of Engineers. These changes resulted in developing a new 'out-of-kind' mitigation plan acceptable to the Washington State Department of Ecology. WSDOT's goal is to have all revised plans submitted to all agencies for approval by the end of November 2004, with a hope of opening bids prior to spring 2005.

As reported last quarter, since the opening of bids was being delayed until late in 2004, WSDOT is requesting to delay \$28.8 million for the 2003-2005 biennium, moving \$16.2 million to the 2005-2007 biennium and \$12.6 million the 2007-2009 biennium. Working with engineering consultants, WSDOT has sequenced the construction of two bridges in the project to allow for acceleration of other construction activities during the 2005 construction season and delaying some construction activities until 2006. These changes were approved by the Washington State Transportation Commission last quarter.

These refinements take into account the loss of the 2004 construction season and the proposed delay of the open to traffic date by nine months, to November 2006. However, even with these delays, the plan continues to be that the project will be delivered as originally intended, in time for the opening of the new Tacoma Narrows Bridge in 2007.

Project Delivery

Proposed Adjustments to Delivery Planning

Meeting schedule, budget and scope expectations is an important element in WSDOT's delivery of the projects in the 2003 Transportation Funding Package. Planning and design activities for specific projects sometimes identify the need to make adjustments to construction delivery spending schedules. Some of these adjustments will have no impact on critical start or completion dates. Others may require adjustments to critical dates. In the 2004 Supplemental Budget, the Legislature recognized this and provided additional management flexibility to the Transportation Commission, allowing projects presenting special circumstances to be modified within the legislative guidelines.

Highway Construction Program:

I-5/SR 526 to Marine View Drive

Design-build has been selected as the procurement method to accelerate project completion by fall 2009, or earlier. The selection will result in the design work being completed by the construction firm chosen as the design-build contractor. Because of the design-build process, \$3 million of the preliminary engineering funding has been deferred from the 2003-2005 biennium to the 2005-2007 biennium. To achieve the full potential of the design-build option, many of the design activities that were underway in WSDOT have ceased, in order to concentrate efforts on developing the request for qualifications (RFQ) and the request for proposal (RFP). The request for qualifications was issued on September 20, 2004 and responses are due October 29, 2004. Advertisement of the RFP may occur as early as December 2004, once the NEPA environmental process is complete.

I-5, Rush Road to 13th Street

WSDOT is requesting to advance \$850,000 from the 2005-2007 biennium into the 2003-2005 biennium, because the preliminary engineering efforts are progressing ahead of schedule. The original spending plan was equally divided by month over the two bienniums and this did not account for variability in the expenditures that have occurred in the environmental design phase. This has resulted in the need to request the advancement of funds.

The adjustment to the spending plan will keep the project on track to meet the January 2007 scheduled advertisement date. This request will not increase the total project cost.

SR 16, 36th St to Olympic Dr NW, Core HOV

In an effort to coordinate this construction phase with the SR 16-HOV project, this project will be advanced to the 2003-2005 biennium. The widening on the west side of the Tacoma Narrows, from the new 36th Street Interchange to the Olympic Drive Interchange, is scheduled for a construction start in May 2005. The WSDOT Olympic Region is requesting to advance the construction advertisement date to November 2004 in order to provide continuous HOV lanes on either side of the Second Tacoma Narrows Bridge by spring 2006. This change will require the expenditure advancement of \$3.4 million into the 2003-2005 biennium from the 2005-2007 biennium. Advancing the projects will not change the overall project cost.

SR 24/I-82 to Keys Road

The issues between WSDOT and the City of Yakima regarding possible flooding effects downstream of the new bridge have been resolved. WSDOT rescinded the Determination of Nonsignificance (DNS) and the City of Yakima rescinded the request to the Department of Ecology to have Lead Agency Status. As a result of these actions, a joint Mitigated Determination of Nonsignificance (MDNS) in the SEPA process was issued on July 8, 2004. In the MDNS, WSDOT agrees to monitor the Yakima River for ten years and to assist the City of Yakima Wastewater Treatment Plant outfall due to the construction of the bridge over the river. Environmental permits are in negotiation and have an anticipated completion date in December 2004. Due to a gap in the current expenditure plan, an adjustment is required to advance \$4.1 million into the 2003-2005 biennium. The funding gap in the expenditure plan had been previously identified. However, due to project delay concerns associated with the DNS issues, they had not been reported until this quarter. The request to advance \$4.1 million is required to maintain the right of way acquisition timeline. The overall project cost has not increased. By advancing these funds, the project should meet the original advertisement date of April 11, 2005 and the open to traffic date in December 2007. If the present design timeline is met, a request to advance additional construction funds will be reported in the December 2004 *Gray Notebook*.

Project Delivery

Proposed Adjustments to Delivery Planning

SR 99, South 138th Street Vicinity to North of South 130th

Jurisdiction of SR 99 within Tukwila city limits was transferred to the city by recent legislative action. The jurisdictional change shifts responsibility for maintaining and improving this section of roadway to the city. As a result, the \$2.8 million Nickel funding allocated for the shoulder widening safety project will be transferred from the Highway Improvement Program to Highways and Local Programs.

SR 161, 234th Street to 204th Street

The contractor has successfully shifted planned nighttime to daytime hours with no impact to traffic. Since daytime work is more efficient the contract completion date is being advanced by three months. This will result in \$2.3 million being shifted from 2005-2007 to 2003-2005.

SR 167, 15th Street SW to 15th Street NW – HOV

The project's stormwater, wetland and flood plain mitigation issues have been resolved and the additional cost associated with this work has been identified. A Cost Risk Assessment (CRA) was performed to verify the cost estimates. On review, it was determined that the proposed ramp widening at the 15th SW interchange would not provide immediate operational benefits, and could be incompatible with future improvements on SR 167 currently being proposed by the Regional Transportation Improvement District (RTID). Deleting this ramp work, the project is able to be kept within the allocated budget. The advertisement date will also be delayed eight months, to October 2005, missing the 2005 construction season. As a result of this change, an expenditure delay of \$1.2 million is being proposed. No project cost increase is currently being proposed for these changes.

SR 202, Junction 292nd Avenue SE

This project makes a number of improvements at SR 202 and 292nd Avenue SE. One of the original features of the project was the construction of a right hand turn lane on 202nd. A number of serious problems have arisen with this project element. For example, its construction would result in the need to fill in a portion of an existing wetland and floodplain. In addition, the height of side slopes along 292nd Street requires guardrail installation to protect vehicles from the slope hazard and the existing county bridge on 292nd Street is not wide enough to accommodate the required roadway taper for the planned 150-foot right-turn lane when the guardrail installation is factored into the design. WSDOT has evaluated

the traffic data at the intersection and concluded that eliminating the right-turn lane from the project would have little or no adverse effect on traffic. It would also eliminate the need to purchase right of way and avoid impacts to the adjacent wetland. There will be no change to the signal installation at the intersection. Moreover, this change has the potential of advancing the advertisement date by six months to February 2005. These adjustments will result in a decreased cost of \$403,000 in Nickel funds and, if all funding sources are included, a total project cost reduction of \$819,000.

Pre-Existing Projects Funding Support for Nickel Projects

In developing WSDOT's 2005-2007 budget proposal, projected available funds for the improvement program from Pre-Existing funds fell short of what is needed. As part of a strategy to resolve the shortfall, WSDOT identified six projects that require funding from both Pre-Existing funds and Nickel funds and proposed to spend the Nickel funds first, delaying the spending of the Pre-Existing funds until the 2007-2009 biennium. One project was not reported in the last *Gray Notebook* - SR 20, Quiet Cove Road Vicinity to SR 20 Spur. This will shift \$548,000 from 2007-2009 into the 2005-2007 biennium. The proposed change in timing of expenditures in Pre-Existing and Nickel funds will have no impact to the overall budget or schedule of the projects being delivered. The total expenditures of all Nickel funds proposed to be advanced are approximately \$4.5 million.

Project Delivery

Opportunities and Options for Legislative Consideration

The following projects were reported as requiring legislative guidance and offered for legislative consideration.

Highway Construction Program:

Statewide Bridge Rail Retrofit

This item represents a number of projects that will update substandard bridge rail on a statewide basis to meet the current safety standards. To gain efficiencies, WSDOT is proposing to advance \$1.3 million for the replacement of bridge rail to be combined with the accelerated replacement of non-standard guardrail. There are a number of statewide bridge rail projects contained within the budgeted amount. All bridge rail projects will be combined for reporting purposes and be listed as a single project. WSDOT will provide an update on the status of this proposal in the December 2004 *Gray Notebook*.

SR 410, 214th Avenue East to 234th – Widening

As reported in the June 2004 *Gray Notebook*, the cost of this project increased significantly from the \$11 million original estimate derived from known project conditions in 1995. The project cost is now estimated to be approximately \$20 million. The two primary elements driving the cost increase are new stormwater control requirements and increases in real estate values affecting right of way acquisitions along the entire corridor. WSDOT has developed a cost and delivery schedule for phasing project construction that begins with spending the \$6 million of Nickel funds on the first priorities in the corridor, which are safety, access and widening work at the intersection of SR 410 and 234th Street. Additionally, right of way plans for widening SR 410 from 214th to 234th Street would be prepared and ready when the remaining widening work receives funding. This proposal reduces the scope of work approved by the 2003 Legislature to bring the project cost within the original approved budget amount. WSDOT is seeking Legislative approval to pursue the first phase of work at the 234th Street intersection using the available Nickel funding limit. WSDOT anticipates receiving guidance from the Legislature by spring 2005 and will provide an update on the status of this project in the June 2005 *Gray Notebook*.

WSDOT is watching some projects closely for signs that changes in cost, schedule or scope may be at risk due to developments and discoveries during the project delivery process. In some cases these changes are outside the control of WSDOT. Currently, the information regarding the changes for these projects are in the early stages and WSDOT continues to

review all aspects of the events impacting the scope, schedule or budget. WSDOT will reach re-scheduling or re-costing recommendations based on the available information.

The following table summarizes the various changes and adjustments described on pages 8 to 11 for the quarter ending September 30, 2004.

Highway Projects: Proposed Adjustments Project Delivery

Quarter Ending September 30, 2004 (Dollars in Thousands)

SR	Project	Sect.	03-05		05-07		07-09		09-11		11-13		Ten year Total	
			Budget	Adjusted Net Budget Change	Budget	Adjusted Net Budget Change								
005	I-5/SR 526 to Marine View Drive	DP	16,000	13,000 (3,000)	110,000	113,000 3,000	88,000	88,000 0	-	-	-	-	214,000	214,000 0
005	I-5, Rush Road to 13th Street	DP	2,490	3,340 850	8,410	7,560 (850)	26,000	26,000 0	4,500	4,500 0	-	-	41,400	41,400 0
016	SR 16, 36th Street to Olympic Drive NW, Core HOV	DP	49	3,443 3,394	7,696	4,302 (3,394)	-	-	-	-	-	-	7,745	7,745 0
024	SR 24/I-82 to Keys Road	DP	1,058	5,214 4,156	23,610	19,557 (4,053)	8,534	7,069 (1,465)	-	-	-	-	33,202	31,840 (1,362)
099	SR 99, South 138th St Vicinity DP to N. of South 130th	DP	-	-	557	- (557)	2,294	- (2,294)	-	-	-	-	2,851	0 (2,851)
161	SR 161, 234th Street to 204th Street East	DP	6,142	8,503 2,361	3,408	874 (2,534)	27	- (27)	38	- (38)	-	-	9,615	9,377 (238)
167	SR 167, 15th Street SW to 15th Street NW - HOV	DP	1,787	1,267 (520)	31,040	30,290 (750)	7,533	8,803 1,270	-	-	-	-	40,360	40,360 0
202	SR 202, Junction 292nd Ave SE	DP	-	-	632	229 (403)	-	-	-	-	-	-	632	229 (403)
Pre-Existing Projects funding Support for Nickel Projects														
020	SR 20, Quiet Cove Road Vicinity to SR 20 Spur	DP	-	-	766	1,314 548	6,294	5,746 (548)	-	-	-	-	7,060	7,060 0
Total of Quarter 5 projects above:			27,526	34,767 7,241	186,119	177,126 (8,993)	138,682	135,618 (3,064)	4,538	4,500 (38)	0	0	356,865	352,011 (4,854)
Approved Adjustments thru Quarter 4			532,939	505,460 (27,479)	711,386	761,293 81,828	695,120	706,853 11,733	604,205	603,823 (382)	425,233	391,877 (33,356)	2,968,883	2,969,306 423
TOTAL FOR ALL PROJECTS			560,465	540,227 (20,238)	897,505	938,419 40,914	833,802	842,471 8,669	608,743	608,323 (420)	425,233	391,877 (33,356)	3,325,748	3,321,317 (4,431)

Note: The projects listed in the "Proposed Adjustments to Project Delivery" table above reflect a small sub-set of "Nickel Projects". For a full listing of all "Nickel" projects and adjustments, see the "Summary of Proposed adjustments". Legend for Section of Gray Notebook: A/D: Contract Advertising and Awards Section, CH: Construction Highlights Section, DP: Project Delivery Section, WL: Watch List Section

Highway Projects: Options and Opportunities for Legislative Consideration

Quarter Ending September 30, 2004 (Dollars in Thousands)

SR	Project	03-05		05-07		07-09		09-11		11-13		Ten year Total		
		Budget	Adjusted Net Budget Change	Budget	Adjusted Net Budget Change	Budget	Adjusted Net Budget Change	Budget	Adjusted Net Budget Change	Budget	Adjusted Net Budget Change	Budget	Adjusted Net Budget Change	
410	Statewide Bridge Rail Retrofit SR 410, 214th Avenue East to 234th - Widening	2,030	2,325 295	2,000	3,061 1,061	2,000	2,000 0	2,000	2,000 0	2,000	2,000 0	2,000	6,000 0	
Total of projects above:			2,030	2,325 295	3,700	4,761 1,061	6,300	6,300 0	2,000	2,000 0	2,000	644 (1,356)	16,030	16,030 0

Project Delivery

“Watch List” Projects – Cost and Schedule Concerns

There are three categories of Watch List items presented in the *Gray Notebook*: Items removed from the Watch List, Up-dated Watch List Projects and New Items Added. Since information provided regarding the possible changes on these projects are in the early stages, WSDOT evaluates a variety of information beyond the project information provided in the *Gray Notebook* before reaching a conclusion or decision on adjusting the cost, scope or schedule to address the need.

Items removed from the “Watch List” since June 30, 2004

[SR 161, Jovita Blvd to South 360th Street](#)

Removed from Watch List. (See “Projects Advertised” in this issue.)

[U.S. 12/SR 124 to McNary Pool – Add Lanes](#)

Removed from Watch List. This project will construct two additional lanes on U.S. 12 south of Pasco from SR 124 to the McNary Pool. The project is scheduled to be advertised in October 2004. The U.S. Army Corps of Engineers has determined the *Talent Decision* will not affect this project. Because some lenders require 30 to 90 days to clear the title, WSDOT has pursued new, innovative ways to clear title for the remaining parcels so the project can move forward as scheduled.

[SR 270, Pullman to Idaho State Line – Additional Lanes](#)

Removed from Watch List. (See “Other Highlights and Accomplishments” on page 6 in this issue.)

Updated Projects from the “Watch List” since June 30, 2004

Highway Construction Program

[I-5, S 48th to Pacific Avenue – Core HOV](#)

Updated from the June 2004 *Gray Notebook*. WSDOT advanced the funds on this project with the intention of completing the project in three construction seasons, rather than four, as originally scheduled. The acquisition of subterranean (underground) easements from the adjacent property owners to drill diagonally under their property from the WSDOT right of way is proceeding. This will provide the anchors for the retaining walls and should be completed by December 2004. There is also an effort to provide more stormwater treatment in lieu of acquiring wetland mitigation sites. This process has been complicated by having two additional areas, totaling about a half-acre, being designated as wetlands. As a result of

changes in the wall design, moving of utilities and work zone safety needs, the project will not be advertised as planned in October 2004. However, the engineering team is confident that the contract documents will be ready for bidders by February 2005. This will allow the work to begin in April 2005 and maintain the preferred three-construction season schedule. The budget impacts of this delay will be reported in the December 2004 *Gray Notebook*.

[SR 7/SR 507 to SR 512 – Safety](#)

Updated from the June 2004 *Gray Notebook*. As reported in the June 2004 *Gray Notebook*, WSDOT is still projecting a new advertisement date of January 2005. However, most utilities will not be cleared prior to the advertisement date, and one utility company will not be cleared for several months. Utilities along the corridor were notified in June 2003 that WSDOT intended to use all of the remaining right of way to address pedestrian and vehicular safety issues from the Roy Y to SR 512. Most had selected to relocate their services underground, choosing to move into a common trench in order to minimize the costs.

In late September 2004, WSDOT was notified by Qwest that its relocation work in the south end of the corridor, from the Roy Wye to 152nd Street, could take as long as a year to finish, six to nine months past the current advertisement date. Monitoring the utility relocation work, WSDOT anticipates the north end of the project, from 152nd Street to SR 512, will be clear for construction to begin in spring 2005. WSDOT is now revising the contract plans to direct the construction work to begin on the north end of the SR 7 corridor, followed by the work on the south section, 152nd Street to the Roy Y, later in the 2005 construction season. An update on this project will be provided in the December 2004 *Gray Notebook*.

[SR 9/SR 522 to 212th Street SE \(Stages 1b & 2\)](#)

Updated from the June 2004 *Gray Notebook*. The design of this project is on a fast track schedule using consultants to ensure its completion to meet the advertisement date of February 2005. Right of way acquisition continues with good progress. Coordination with Snohomish County and the adjoining Brightwater project is ongoing. Environmental permit applications were submitted on August 30, 2004 using the Multi Agency Permit Team (MAP) to streamline permit review and approval. The short time remaining for permit approval and acquisition continues to be a concern and may cause a delay to the current advertisement date.

Project Delivery

“Watch List” Projects – Cost and Schedule Concerns

SR 106, Skobob Creek – Fish Passage

Updated from the June 2004 *Gray Notebook*. A WSDOT Cost Risk Assessment (CRA) has been completed for the cost and delivery plan prepared by a consultant originally working not for WSDOT but with the Hood Canal Salmon enhancement group. The CRA team found the project cost could be \$500,000 higher and the construction schedule a year longer than originally planned by the non-WSDOT consultant. WSDOT is reviewing these issues, in addition to the proposed detour route identified as the project element likeliest to cause the project cost estimate to be increased.

SR 543/I-5 to Canadian Border – Additional Lanes for Freight

Update from the June 2004 *Gray Notebook*. Real Estate Services’ “turnkey” consultant continued to make significant progress on parcel acquisitions and business relocations over the past six months. Sixty-five percent of the acquisitions are now complete and relocations are proceeding as expected. The current spending forecast for right of way indicates acquisition costs will be within budget. The MAP Team is working to expedite approval of one environmental permit that was resubmitted to identify wetlands within the project limits. The test shaft contract to discover if retaining wall shafts can be shortened and costs reduced was awarded in July 2004. Testing is now complete and results indicate that soil conditions are better than originally anticipated, which will allow shafts for the permanent walls to be shortened and constructed without using temporary casings. With this information, WSDOT is finalizing the retaining wall design. The project cost will be updated and made available next quarter. The project remains on schedule for advertisement in April 2005.

Other Capital Programs

Bellingham – GP Area Upgrades

Updated from the June 2004 *Gray Notebook*. This project will upgrade the existing track through Bellingham’s Georgia Pacific plant to allow for slightly higher speeds for Amtrak *Cascades* intercity trains, resulting in a travel time reduction of about 1½ minutes. Since the project scope was developed, the freight business at the Georgia Pacific plant has unexpectedly increased, so that the project’s expected use of existing tracks is now inadequate. WSDOT continues to negotiate with Burlington Northern Santa Fe Railway (BNSF) on a modified scope, with the anticipation of achieving the originally expected travel time savings.

Palouse River & Coulee City RR Acquisition

Updated from the June 2004 *Gray Notebook*. This project would purchase the 302-mile Palouse River and Coulee City RR, preserving the state’s largest short-line rail grain-hauling system. Right of way acquisition and operation lease negotiations with the owner have progressed and are expected to be concluded in fall 2004. These negotiations in part rely upon information obtained in several public outreach meetings held in Eastern Washington in spring 2004.

New Items Added to the “Watch List” since June 30, 2004

Highway Construction Program

SR 3/SR 303 Interchange (Waaga Way) – New Ramp

Work to prepare this project for advertisement in January 2005 is proceeding. WSDOT is now working to resolve the last right of way and environmental issues on the project. Negotiations for slope easements are underway. Environmental documentation and permitting work will soon be complete. Because these are being completed close to the scheduled advertisement date, it is possible that the advertisement date may be delayed, but this is not expected to interfere with the scheduled spring 2005 construction date. An update of the project outlook will be provided in the December 2004 *Gray Notebook*.

SR 4, Svensen’s Curve – Realignment

This project is experiencing significant right of way acquisition difficulties, which may affect the advertisement date and possibly delivery of the project. A parcel of land critical to the project changed ownership in August 2003. The sale of the property occurred prior to having funds available for the right of way purchase. Environmental documentation and permitting were based on the acquisition of this parcel as a mitigation site. Negotiations are ongoing; however, the compensation, terms and additional improvements being requested by the current landowner for the right of way acquisition make acquiring any portion of the parcel difficult and complex.

Depending on the outcome of negotiations with the landowner, it is possible that the 2006 advertisement could be in jeopardy, or the project may need to be delayed indefinitely. An update of the project will be provided in the December 2004 *Gray Notebook*.

Project Delivery

“Watch List” Projects – Cost and Schedule Concerns

I-5, Chehalis River Flood Control

The 2003 Transportation Funding Package sought to alleviate chronic flooding problems on I-5 in Lewis County not by a project to raise the roadway elevation, but by a less expensive approach of increasing the capacity of the Skookumchuck River Dam and building a levee system that would protect residential areas in Centralia and Chehalis as well as the I-5 highway. WSDOT expected to participate in the dam portion of this project as a partner with Lewis County and the U.S. Army Corps of Engineers. In September 2004, the Army Corps of Engineers advised WSDOT that it had no funding for its part of the project and believed that WSDOT's contribution to the dam acquisition for use as a flood control structure and modifications to increase the dam capacity would have no net benefit to flood control for I-5. As suggested by the Corps, WSDOT has agreed to fund additional hydraulic modeling to verify the previous statement. If the Corps of Engineers fails to participate in the project and WSDOT's expenditure is found not to benefit the highway, it will not be possible for WSDOT to contribute to the Skookumchuck River Dam acquisition and modification.

SR 20 – Quiet Cove Road to SR 20 Spur– Safety Improvements (Nickel)

The Cost Risk Assessment (CRA) performed in April 2004 identified a new total project cost of \$19.8 million, an increase of \$5.4 million over the plan. Based on the CRA, the right of way acquisition costs increased \$2.2 million because of a larger number of full parcel takes and more relocations. The construction estimate increased by \$2.7 million due to wetland mitigation sites, unanticipated roadside restoration costs and geotechnical survey results impacting the design of the bridge.

Also, the CRA identified that an additional \$440,000 will be needed to cover increases in preliminary engineering. The project team is evaluating design options to offset the budget shortfall. An update of this project will be provided in the December 2004 *Gray Notebook*.

Financial Information

2003 Transportation Funding Package – Paying for the Projects

The first Beige Pages (June 2003) displayed the revenue assumption underlying the Legislature’s 2003 Transportation Funding Package. The revenue forecast has undergone several updates. A minor change also resulted from a law passed in the 2004 legislative session that affected the distribution of revenue from vehicle title fees. The following information incorporates the September 2004 forecast change. Further refinements to debt service estimates have also been made.

Revenue Forecasts

2003 Transportation Funding Package Highlights: Deposited into the Transportation 2003 (Nickel) Account (established by the 2003 Legislature)

- 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
- A \$20 license plate number retention fee

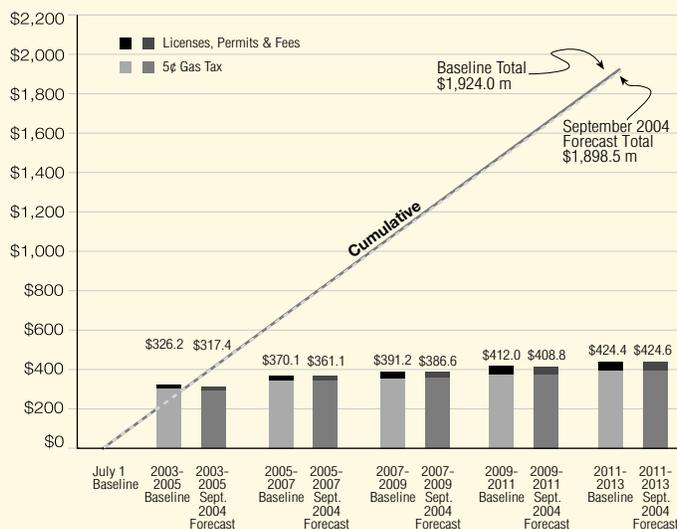
Forecast Update

The accompanying charts show the current projected revenues over the next ten years (for the new funding sources) as forecasted in September 2004 by the Transportation Revenue Forecast Council. This forecast is compared to the Legislature’s assumed ‘baseline’ projections used in the budget-making process back in March 2003. Both cumulative ten-year totals and individual biennial amounts are shown.

Forecast comparisons include actual revenue collection data to date as well as updated projections based on new and revised economic variables. September 2004 forecast includes approximately a year’s worth of actual revenue receipt information. Gas tax receipts include 15 months of actual collections and licenses, permits and fees include 11 months of receipts. Gas tax receipts for the Transportation 2003 (Nickel) Account, over the ten-year period, are projected to be lower than the June 2004 forecast (-1.9%) while the forecast licenses, permits and fees remained constant. Overall, these factors have caused a slight decrease in the ten-year look for the account. In the Multimodal Account, both vehicle sales tax projections and the plate retention fee are higher than the June forecast resulting in a slight increase in the ten-year look (+3.25%).

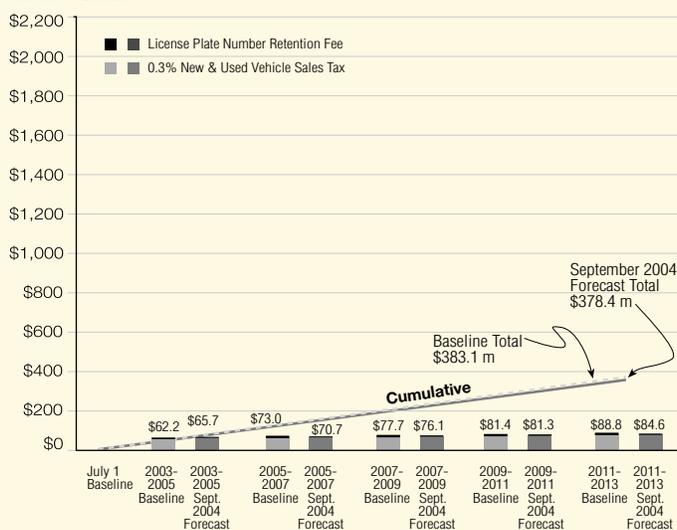
2003 Transportation (Nickel) Account Revenue Forecast

March 2003 Legislative Baseline Compared to September 2004 Transportation Revenue Forecast Council with 2004 Legislative Session Impacts
Millions of Dollars



New Sources - Multimodal Account Revenue Forecast

March 2003 Legislative Baseline Compared to September 2004 Transportation Revenue Forecast Council
Millions of Dollars



Financial Information

Bond Sales Plan for New Authorizations Provided by the 2003 Transportation Funding Package

The 2003 Transportation Funding Package contained two new bond authorizations:

- Gas tax bonds: authorization of \$2.6 billion
- State General Obligation (GO) bonds for \$349.5 million

The proceeds from the new gas tax bonds will be used to fund highway projects. The debt service will be paid by the nickel increase in the gas tax. The proceeds from the new state GO bonds will be used to fund rail and ferry projects. Debt service for these bonds will be paid from the Multimodal Account. Receipts from the new 0.3% sales tax on new and used vehicles will be deposited to the Multimodal Account and will augment rental car tax receipts and other fees already directed to this account.

2003-2005 Biennium

For the 2003-2005 biennium, the Legislature appropriated \$275 million in proceeds from the new gas tax bonds and \$47.7 million from the state GO bonds. The following table shows the bond sales to date.

The final bond sale for the biennium is scheduled for March 2005. In light of recent adjustments to the cash flow requirement needs for projects funded by the 2003 Transportation (Nickel) Account, a revision to this sale will likely be needed as well as modification to the 10-year plan. The financial plans displayed in the next section give an indication of what the bond sales are likely to be.

Date of Sale	2003 Transportation Project Bonds (Nickel Account) RCW 47.10.861	Multimodal Bonds (GO Bonds) RCW 47.10.867
August 2003	\$80,000,000	\$0
February 2004	\$25,000,000	\$20,000,000
July 2004	\$70,000,000	\$0
Total Bonds Sold to Date	\$175,000,000	\$20,000,000

Financial Information

Supporting the 2003 Funding Package

Transportation 2003 (Nickel) Account

A new account was established in the state treasury to be the repository of the nickel gas tax increase and the increases in various vehicle licenses, permits and fees. This account is called the Transportation 2003 (Nickel) Account. Proceeds of bonds issued under the \$2.6 billion gas tax bond authorization will also be deposited to this account. Uses of the account include cash funding of highway and ferry projects identified by the Legislature and for paying debt service and other associated costs for bonds sold to provide debt financing for highway projects. Since gas tax receipts are deposited to this new account, the uses of the account are restricted to highway purposes as required by the 18th Amendment to Washington's Constitution. The financial plan below brings together all of the projected sources (tax revenue, bond proceeds, interest earnings) and uses (2003-2005 expected cash flow needs, 10-year projected program expenditures, and debt service) of the new account.

The gas tax receipts forecast for the ten-year period has been reduced slightly from the June 2004 forecast (-\$33.1 million) and the forecast for licenses, permits and fees have been increased slightly (\$0.5 million). Changes to projected sources and uses of funds have been updated to reflect this most current forecast as well as the current projection of adjustments to project expenditures. As changes, either positive or negative, are incorporated into the financial plan the ending balances in the outer biennia are affected. The updated *pro forma* predicts a negative ending balance of approximately \$22.5 million by the end of the 2011-2013 biennium. The June 2004 *pro forma* predicted a positive \$15.2 million ending balance. This change is due, in part, to the decline in actual receipts and to projections of decreased gas tax receipts as well as to the adjustments to project expenditures.

Key economic variables, tax receipts, and interest rates will continue to change over time. Future updates to forecasts, including actual and revised assumptions pertaining to bond sales and debt service, will again undoubtedly continue to affect and change the projected final ending balance.

Transportation 2003 (Nickel) Account Pro Forma 2003-2005 Budget and Ten-Year Financial Plan

September 2004 Forecast

(dollars in millions)

	03-05	05-07	07-09	09-11	11-13	Ten-Year Total
Balance Forward from Previous Biennium	\$0.0	\$4.2	\$3.0	\$1.0	\$3.9	
Minimum Balance	(\$5.0)					
Sources:						
Gas Tax Revenues (new 5¢)	295.2	336.4	354.7	369.7	384.4	1,740.5
Licenses, Permits and Fees Revenues	22.2	24.7	31.9	39.1	40.2	158.0
Interest Earnings	2.8	3.0	3.0	3.0	3.0	14.8
Bond Proceeds	260.0	712.0	768.0	540.0	320.0	2,600.0
Federal Funds	0.0	0.0	0.0	0.0	0.0	0.0
Local Funds	0.0	0.0	0.0	0.0	0.0	0.0
Total Sources of Funds	\$580.2	\$1,076.1	\$1,157.6	\$951.8	\$747.6	\$4,513.3
Uses:						
Cost of Bond Issuance	0.7	1.8	1.9	1.4	0.8	6.6
Bond Sale Underwriters Discount	2.1	5.3	5.8	4.1	2.4	19.7
Debt Service Withholding	22.2	97.2	211.2	307.8	375.0	1,013.4
Highway Improvements	538.2	928.1	837.5	588.0	284.9	3,176.7
Highway Preservation	2.0	10.3	5.0	20.3	107.0	144.6
Washington State Ferry Construction	5.7	34.5	98.3	27.4	3.9	169.9
Total Uses of Funds	\$571.0	\$1,077.2	\$1,159.7	\$948.9	\$774.0	\$4,530.8
Biennium Ending Balance	\$4.2	\$3.0	\$1.0	\$3.9	(\$22.5)	(\$22.5)

Financial Information

Multimodal Transportation Account

The Multimodal Transportation Account was established in 2000 as the repository for tax revenues and operating and capital expenditures not restricted by the 18th Amendment. The 2003 Transportation Funding Package directs receipts to this account from the additional 0.3% sales tax on new and used vehicles and the license plate number retention fee. The most significant pre-existing tax deposited to this account is the rental car tax. The 2003 Funding Package also directs proceeds from the \$349.5 million state GO bond authorization to this account.

The Multimodal Account includes changes to projected sources of funds, based on eleven months of actual receipts and current forecast data. Forecasted increases to projected revenues for the new revenue sources as well as increased projections for licenses, permits and fees over the ten-year period have resulted in an increased ending balance. Previously, the projected ending balance for the 2011-2013 biennium was \$11.6 million. Now it is projected to be \$21.0 million. The table below displays the 2003-2005 current appropriations and potential supplemental adjustments. The outer-biennia displays the department's 2005-2007 submittal and ten-year plan as approved by the Transportation Commission.

Multimodal Account Pro Forma 2003-2005 Budget and Ten-Year Financial Plan*

September 2004 Forecast
(dollars in millions)

	03-05	05-07	07-09	09-11	11-13	Ten-Year Total	
Balance Forward from Previous Biennium	\$14.1	\$7.6	\$2.4	\$17.5	\$22.6		
Sources:							
Licenses, Permits Fees Distributions	21.0	16.2	16.8	17.3	17.8	89.1	
Rental car tax	41.9	47.3	52.8	57.7	62.3	262.1	
Sales Tax on New & Used Car Sales	65.1	69.9	75.4	80.5	83.9	374.8	Funding source from the 2003 Legislative Package
Miscellaneous Income	1.0	1.0	1.0	1.0	1.0	5.0	
Bond Proceeds	44.2	47.9	134.2	84.5	39.1	349.9	Bond Authorization from the 2003 Legislative Package
Federal Revenue	15.4	8.1	6.2	6.3	6.3	42.3	
Local Revenue	10.2	0.3	0.2	0.2	0.2	10.9	
Total Sources of Funds	\$198.8	\$190.7	\$286.5	\$247.5	\$210.6	\$1,134.1	
Operating Uses:							
Cost of Bond Issuance	0.1	0.1	0.3	0.2	0.1	0.9	
Bond Sale Underwriters Discount	0.4	0.4	1.0	0.6	0.3	2.7	
Debt service	1.4	8.7	20.3	38.7	49.5	118.6	
Transfers to Other Accounts & Agencies	9.9	4.5	4.5	4.5	4.5	27.9	
WSDOT Program Support & Planning	5.9	5.5	5.5	5.5	5.6	28.0	
Public Transportation	49.8	51.6	56.0	60.3	63.7	281.4	
WSF Maintenance and Operations	17.1	4.2	4.4	4.6	4.8	35.2	
Rail	34.1	38.9	39.5	40.3	41.0	193.8	
Total Operating Uses of Funds	\$118.7	\$113.9	\$131.5	\$154.7	\$169.5	\$688.3	
Capital Uses:							
Highway Preservation	1.7	16.8	2.5	0.0	0.0	21.0	Projects funded primarily from bonding authority provided in the 2003 Funding Package
WSF Construction	13.4	8.2	60.7	47.3	0.0	129.6	
Rail	51.7	38.9	76.6	40.4	42.7	250.3	
Local Programs	19.9	18.1	0.0	0.0	0.0	38.0	
Total Capital Uses of Funds	\$86.7	\$82.0	\$139.9	\$87.7	\$42.7	\$438.9	
Biennium Ending Balance	\$7.6	\$2.4	\$17.5	\$22.6	\$21.0	\$21.0	

Program Management Information

Utilities Relocation

Utility Relocation Process

The steps WSDOT takes to identify or resolve utility conflicts presented on a WSDOT project are:

1. Preliminary Designs Indicate Potential Utility Conflicts
2. Conflicts Determined
3. Subsurface Utility Engineering
4. Conflict Analysis
5. Cost Responsibility Determination
6. Relocation Needs Determined
7. Relocation Notices Issued
8. Permits and Franchises Acquired
9. Relocation Work Performed
10. Project Design Finalized – Accounting for New Utility Location
11. Utility Process Complete

Utility Relocation Process Definitions

Preliminary design—This is the earliest effort to determine the components of the project and what utilities are within the project limits.

As-built information—This information provides the designer with records of where existing utilities are located underground.

Subsurface utility engineering—This practice manages certain risks associated with the collection and depiction of underground utility information.

Conflict analysis—This analysis determines in what way proposed project elements such as drainage items, guardrail posts, traffic signal poles or bridge piers will be in conflict with existing utilities.

Coordination meetings—WSDOT designers meet with the utility companies to determine what impacts a project may have on utilities.

Cost responsibility determination—Most existing utilities located within highway right of way have the responsibility to pay for the relocation of facilities. Occasionally, WSDOT is required to pay for relocation costs.

Relocation notices—If the utilities cannot be avoided, the companies are then notified to move their facilities prior to construction.

Schedule adjustments—Sometimes utility companies cannot move prior to construction and utility work has to be coordinated with the WSDOT project work.

Agreements—Cost responsibilities and a utility work plan are documented in an agreement between WSDOT and the utility company.

Permits and franchises—These legal documents give utility companies permission to be in WSDOT's right of way.

Relocation plans—When a utility facility has to move, WSDOT must approve the new location if it is within WSDOT right of way.

Challenges in Preventing Delays to Projects

There are several utility relocation issues that can cause delays to a project. Solutions developed for specific projects are highlighted in the examples below.

Scheduling Issues

There are several ways utilities relocation can be accomplished – WSDOT can hire a contractor, the utility company can use its own work forces, or it can hire a contractor. Because utilities need time to relocate, scheduling issues can arise. These issues can cause delays to a project schedule if enough time is not allowed between the contract award date, and the critical date of the construction schedule.

Multiple Relocations

If multiple utilities have to be relocated on a project, WSDOT may face several contractors working on relocations within the same small area of right of way. Each utility company typically has its own contractor perform the work. This can create coordination and scheduling difficulties.

Scheduling Issues - Example

SR 161 Project widening from 24th to 134th

Problem: Seven different utilities including power, gas, water, cable, and telephone needed to be relocated on this project. The gas and power companies wanted to use their own work forces, and in turn, the cable, water and telephone companies wanted to hire their own contractors. Each utility needed different lengths of time to complete the work.

Solution: In order to minimize impacts to the project schedule, WSDOT put the project out for bids in the fall with a start work date for the contractor in the spring. This allowed the utility companies to relocate utility facilities out of the way of the project.

Multiple Relocations - Example

SR 7 Project from SR 512 to Roy Y

Problem: This project experienced multiple utility relocation challenges with many utility companies wanting to relocate their facilities in the same place within WSDOT right of way. This also caused a problem with coordinating the separate utility company contractor's work.

Solution: WSDOT coordinated with the numerous utility companies to place the utilities in a "joint trench" and hire one contractor to do all of the relocations for this project. The companies created a five-mile utility corridor with a shared joint trench. This innovative action eliminated project schedule delays, with the exception of Qwest, which has notified WSDOT of a delay of six to nine months past the current advertisement date. This has been reported in the "Watch List" on page 12 of this edition.

Program Management Information

Environmental Documentation, Review, Permitting, and Compliance

Compliance with the Endangered Species Act

The 2003-2005 Biennium Construction Season

Twenty Nickel projects remain to be advertised for construction this biennium according to WSDOT's delivery plan. At present, the two projects with assessments underway are informal consultations.

Compliance with the Endangered Species Act: Status for 20 Projects 2003-2005 Biennium	Number of Projects
Biological Assessment underway	2
Local project – ESA processing by local government	4
Projects moved to next biennium	3
No federal funding: No ESA Consultation	1
Endangered Species Act review complete	10

03-05 Projects Moved to the Next Biennium:

SR 522, I-5 to SR 405 Multi-Modal

This project is not far enough along in the design phase for a Biological Assessment to be written.

SR 167, 15th St. SW to 15th St. NW – HOV

Re-design of stormwater treatment; wetland mitigation and floodplain investigation will need to meet current environmental commitments for this project.

SR 9, Nooksack Road Vicinity to Cherry Street

This project is on track for meeting environmental commitments.

03-05 Projects with Completed Consultation Process:

- I-5, NE 175th St. to NE 205th St. - NB Auxiliary Lane*
- SR 240/I-182 to Richland Y to Columbia (Tri-Cities)*
- SR 240/I-182 to Richland Y -Additional Lines (Tri-Cities)*
- I- 90, Seattle to Mercer Island*
- I-90, Sullivan Rd to State Line - Median Barrier*
- SR 9/SR 522 to 212th St SE*
- SR 9/228th St SE to 212 St SE*
- SR 270, Pullman to Idaho State Line - Additional Lanes*
- SR 522/Bothell-UW Campus Access*
- SR 24, I-82 to Keys Road Additional Lanes*

The 2005-2007 Biennium Construction Season

WSDOT has started the consultation process on 16 of the 37 Nickel projects as a proactive effort to determine the environmental commitments of these projects to be constructed next biennium. Two of the projects with Biological Assessments underway, will be undergoing formal consultation. These projects are *I-5, Rush Road to 13th Street and SR 99, S 284th to S 272 Street - HOV*.

ESA Compliance Status for 37 Projects 2005-2007 Biennium	Number of Projects
Biological Assessment underway	16
Projects which lack sufficient information to start the Biological Assessment	15
Endangered Species Act review complete	6

05-07 Projects with Consultation Completed

- I-5 Core HOV – S 48th to Pacific Ave*
- SR 515, 208th and 209th Ave SE*
- SR 9, Schloman Rod. Vic-256th St. E Vic*
- I-90, Pines Road to Sullivan Road – Widening*
- I-90, Moses Lake Area – Bridge Clearance*
- SR 4, Svensen's Curve – Realignment*

Ferry and Rail Projects

Similar documentation for the Endangered Species Act compliance is submitted for ferry and rail projects. This biennium one ferry project, Tahequah Dolphin – Replacement, has not started consultation yet and one rail project, the High-Speed Crossovers-Titlow, has completed the consultation process. There are three ferry projects and three rail projects scheduled for advertisement in the 2005-2007 biennium that are not far enough along in the design phases for Biological Assessments to be written.

New Standards for Determining Allowable Flow Release Rates for Stormwater Runoff

The discussion of this issue continues and remains difficult (*Gray Notebook* June 2004, page 22). The potential intersection of the Army Corps of Engineers' Section 404 jurisdiction, as potentially expanded by the Seattle Districts' interpretations of the *Talent Decision*, with the new standard for stormwater run-off could complicate matters even more and affect project schedules and budgets by increasing WSDOT's reliance on less effective structural management techniques (e.g., closed-pipes, vault, and detention pond systems). These new standards also complicate the determination of effects on listed species under the Endangered Species Act Section 7 and could increase capital costs for construction, operations and maintenance.

Until these issues are resolved, the land cover presumption (e.g. "pre-European" settlement land cover conditions) that is used to establish the size of detention structures will involve difficult case-by-case determinations for Western Washing-

Program Management Information

Environmental Documentation, Review, Permitting, and Compliance (Cont.)

ton's highway projects. A sampling of projects potentially affected include:

SR 4, Svensen's Curve realignment
I-5, SR 502 Interchange and Corridor Widening
I-5, Rush Rd. to 13th Street
SR 20, Fredonia to SR 5
SR 9, SR 522 to 178th St. SE, Stage 1B (i.e., SR 522 to 212 St. SE)
SR 167, 15th to 180th
SR 18/Maple Valley To Issaquah/Hobart Rd
SR 543, I-5 to International Boundary
I-90, Two Way Transit & HOV Operations
SR 509 I-5 Freight and Congestion Relief
I-405 - SR520 to SR522
I-405 - SE 8th to I-90 Bellevue
SR 9, Nooksack Rd to Cherry St

Project Requirements from New Regulatory Initiatives

Clean Water Act Section 404 Requirements for Manmade Roadside Ditches (*Talent Decision*)

As reported in the *Gray Notebook* June 2004 (page 22), the Seattle District Office of U.S. Army Corps of Engineers is regulating many roadside ditches or portions of ditches as part of the Section 404 permit process. Under this new approach, the Corps is requiring WSDOT to develop non-standard information on all ditches present in project areas. In the past, these roadside ditches would not be included in the permit process.

The Corps's approach to implementing the *Talent* ruling is threatening broad impacts on highway construction and maintenance programs. To date, 23 Nickel projects have been affected by the new Corps approach. Twenty-one of the 23 projects have experienced or will soon experience permit-decision delays while new information packets are prepared for submittal to the Corps, and additional time is needed for the Corps to complete jurisdictional reviews (the remaining two projects are under review by the Corps but took place before the packets were required). There are no Nickel projects at this time that are at risk of missing the advertisement dates. Two projects, I-5, Tuwilla to Pierce Co. Line HOV of stage 4 and 97 Peshastin East Interchange, were able to obtain Corps permits dealing with impacts to roadside ditches, without project delays.

Multi-Agency Permitting Team Project Summary

The Multi-Agency Permitting Team (MAP Team) was created as a pilot project and has been managing key permits for a selected set of projects since early November 2003. The pilot program is scheduled to continue through June 2005. The MAP Team is handling the permitting process for 45 projects, 16 of which are Nickel projects.

Permits Acquired

Of the 45 projects, permits have been obtained on nine projects, of which two were Nickel projects; *SR 161, Jovita Blvd. to S. 360th St./Milton Road* and *SR 24, I-82 to Keys Road*. To date, no project advertisements for bid have been delayed because of permitting issues. The MAP Team model of collocating WSDOT and regulatory agency staff to work together on permitting has resulted in improved working relationships and better communication between the agencies. While there is not yet sufficient data to confirm faster and better quality permitting, the consensus among participating agencies is that this model is working well for all involved.

Program Management Information

Construction Safety Information

This section of the Beige Pages tracks the job site safety record on the 2003 Transportation Funding Package projects. All recordable injuries are recorded for both WSDOT personnel as well as the contractors engaged by WSDOT to perform the construction work. This information is combined into a single number indicating the total number of recordable injuries per project per quarter. A recordable injury is any work related death and work related illness and injury that result in death, loss of consciousness, days away from work, days of restricted work or medical treatment beyond first aid.



Michael White operates machinery at a Nickel project site

Number of Recordable Injuries

Project and Project Team: Contractor and WSDOT Project Engineer	April- June 2004	July-Sept 2004
I-5 /Salmon Creek to I-205 (Hamilton Construction and Donald Owings, P.E.)	0	0
SR 500/NE 112th St Gher Rd Interchange (Tapani UnderGround and Chuck Ruhsenberger, P.E.)	0	0
I-90 /Argonne Rd to Sullivan Rd (Scarsella Bros Inc. and Darrel McCallum, P.E.)	2	0
I- 90 /Highline Canal to Elk Heights (Scarsella Bros. Inc. and Paul Gonseth, P.E.)	1	0
I-90 /Ryegrass Summit to Vantage (Superior Paving Co. and Will Smith, P.E.)	0	0
I-182 / U.S. 395 I/C - Roadside Safety	Completed	0
SR 124/East JCT SR 12-Reconstruction/Curve	Completed	0
SR 9 / SR 528 Intersection- Signal (Signal Electric Inc. and Marlin Lennssen, P.E.)	0	Data Not Available
U.S. 97A, Wenatchee North-Paving (Basin Paving Co. and Terry Mattson, P.E.)	0	0
SR 395/Kennewick Variable Message Sign (Colvico Inc. and Moe Davarri, P.E.)	Prior to Start Date	0
SR 527, 132nd St. SE to 112th St. SE (KLB Construction Inc. and Marlin Lennsen, P.E.)	0	1
U.S. 395, NSC - Farewell Road Lowering (Max J. Kuney Co. and Robert Hilmes, P.E.)	0	0
SR 161/234th St "E" TO 204TH St "E" (Scarsella Bros. Inc. and Howard Diep, P.E.)	0	0
SR 16 /6th Ave to Jackson Ave - HOV (Tri-State Construction, Inc. and Dave Zeigler, P.E.)	0	0
SR 203, NE 124th / Novelty Rd. VIC Roundabout (Wilder Construction Co. and Brian Dobbins, P.E.)	0	0
I-90/Cle Elum River Bridge 90/134 N (Diamaco Inc. and Paul Gonseth, P.E.)	Prior to Start Date	0
I-5/Federal Way-S 317th St. HOV (Icon Materials and John Chi, P.E.)		Data Not Available
SR 14, West Camas Slough Bridge (Peterson Brothers Inc. and Donald Owings, P.E.)		0
I-90, Sullivan Rd to Idaho State Line- phase two (Inland Asphalt Co. and Darrel McCallum, P.E.)		0
I-5, 2nd St. Bridge Replacement (Mowat Construction Co. and Dave Chrisman, P.E.)		0
SR 543, I-5 to International (Condon- Johnson and Associates and Mark Russell, P.E.)		0
SR 21,SR 25/31 Guardrail (Peterson Brothers Inc. and Ken Olson, P.E.)		0
SR 18, Covington Way to Maple Valley (Terra Dynamics Inc. and Derek Case, P.E.)		0
I-90, Geiger Rd to U.S. 2 Median Barrier (N.A. Degerstrom Inc. and Robert Hilmes, P.E.)		0
SR 240, SR 240/Yakma River Bridge (Wildish Standard Paving Co. and Moe Davari, P.E.)		0
SR 900/Newport Way to I-90- Widening (Mowat Construction Co. and Dave Becher, P.E.)		0
SR 18/Maple Valley to Issaquah/Hobart Rd (Guy F. Atkinson Co. and Derek Case, P.E.)		0
SR 528/SR529 Paving/ Columbia Ave to 55th (Wilder Construction Co. and Marlin Lennsen, P.E.)		0

Program Management Information

Construction Employment Information

How Many Construction Workers Work on the 2003 Transportation Funding Package Projects?

We have asked contractors on the 2003 Transportation Funding Package projects in construction to provide WSDOT with a “snapshot” estimate of the “average” direct job site employment on each job over the course of the quarter. The following table captures the prime contractors’ responses for their own work and their on-site subcontractors on the projects that have already gone into construction. Of course, direct employment is only the first of the economic benefits of the construction activity. Labor economists have extensively examined the direct and indirect benefits of construction employment. A useful guide is the Associated General Contractors of Washington’s Economic Impact of the Construction Industry on the State of Washington, 2002 Update (prepared by the University of Washington).



John Freiburger, working on a Nickel project, helps ensure WSDOT projects get delivered.

Average Number of Workers Employed by Prime and Subcontractors

Project/Contractor	April- June 2004	July-Sept 2004
I-5 /Salmon Creek to I-205 (Hamilton Construction and its 43 Subcontractors)	59	59
SR 500/NE 112th St Gher Rd Interchange (Tapani UnderGround and its 29 Subcontractors)	29	29
I-90 /Argonne Rd to Sullivan Rd (Scarsella Bros Inc. and its 17 Subcontractors)	29	39
I- 90 /Highline Canal to Elk Heights (Scarsella Bros. Inc. and its 15 Subcontractors)	18	5
I-90 /Ryegrass Summit to Vantage (Superior Paving Co. and its 14 Subcontractors)	41	29
I-182 /U.S. 395 I/C - Roadside Safety	Completed	Completed
SR 124/East Jct. U.S. 12-Reconstruction/Curve	Completed	Completed
SR 9 / SR 528 Intersection- Signal (Signal Electric Inc. and its 7 Subcontractors)	11	1
U.S. 97A, Wenatchee North-Paving (Basin Paving Co. and its 8 Subcontractors)	10	No Work
SR 395/Kennewick Variable Message Sign (Colivico Inc. and its 4 Subcontractors)	Prior to Start Date	23
SR 527, 132nd St. SE to 112th St. SE (KLB Construction Inc. and its 31 Subcontractors)	11	18
U.S. 395, NSC - Farewell Road Lowering (Max J. Kuney Co. and its 18 Subcontractor)	17	3
SR 161/234th St “E” TO 204th St “E” (Scarsella Bros. Inc. and its 16 Subcontractors)	10	33
SR 16 / 6th Ave to Jackson Ave - HOV (Tri-State Construction, Inc. and its 17 Subcontractors)	23	13
SR 203, NE 124th / Novelty Rd. VIC Roundabout (Wilder Construction Co. and its 27 Subcontractors)	11	8
I-90/Cle Elum River Bridge 90/134 N (Diamaco Inc.and its Subcontractor 4)	Prior to Start Date	2
I-5/Federal Way-S 317th St. HOV (Icon Materials and its 26 Subcontractors)		26
SR 14, West Camas Slough Bridge (Peterson Brothers Inc. and its 2 Subcontractors)		10
I-90, Sullivan Rd to Idaho State Line- phase two (Inland Asphalt Co. and its 9 Subcontractors)		11
I-5, 2nd St. Bridge Replacement (Mowat Construction Co. and its 14 Subcontractors)		3
SR 543, I-5 to International (Condon- Johnson and Associates and its 2 Subcontractors)		2
SR 21, SR 25/31 Guardrail (Peterson Brothers Inc.)		18
SR 18, Covington Way to Maple Valley (Terra Dynamics Inc.)		Data Not Available
I-90, Geiger Rd to U.S. 2 Median Barrier (N.A. Degerstrom Inc. and its 4 Subcontractors)		2
SR 240, SR 240/Yakma River Bridge (Wildish Standard Paving Co. and its 33 Subcontractors)		27
SR 900/Newport Way to I-90- Widening (Mowat Construction Co. and its 36 Subcontractors)		42
SR 18/Maple Valley to Issaquah/Hobart Rd (Guy F. Atkinson Co. and its 31 Subcontractor)		76
SR 528/SR529 Paving/ Columbia Ave to 55th (Wilder Construction Co. and its 7 Subcontractors)		8

Worker Safety: Quarterly Update

Recordable Injuries for WSDOT Workers

Maintenance Workers

Over the past two years, highway maintenance workers have held work injury rates close to the national Highway and Street Construction benchmark of 8.2. There were 24 recordable injuries for July through September 2004. Fourteen of these 24 accounted for 165 lost workdays. Equipment mechanics accounted for 26% of the injuries. Guardrail and facility repair workers were 26% of the injuries. Thirty-nine percent of the injuries occurred in work zones, but none of these were caused by being struck by vehicles in work zones.

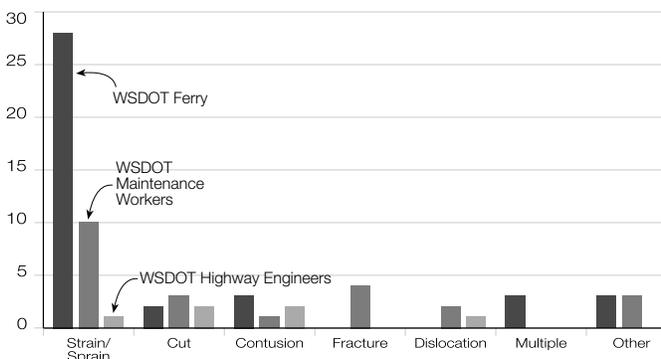
Highway Engineer Workers

Since 2002, WSDOT highway engineer workers have significantly decreased the number of worker injuries, with figures well below the 1.7 national Engineering and Architect Services Benchmark. This improved trend is seen as a result of better training and better worker conditions. There were 5 recordable injuries in July through September 2004 of which 4 accounted for 29 lost workdays.

Ferry Vessel Workers

Vessel worker injuries have increased considerably in 2004 even though crews have been educated on proper lifting technique, use of equipment, and on procedures for line handling, safety nets and wheel chocks. The reasons for the increased injuries remains under review at Washington State Ferries. The ferry system is seeking to improve its overall risk management program. WSF has hired an additional safety officer whose focus will be on the follow up of recurring accident/injury claims with the aim of recommending and implementing remedial procedures. A services contract will also be finalized with a Third Party Administrator to help handle ferry worker Jones Act claims.

Number of Work Injuries by Type July through September 2004



WSDOT Highway Maintenance Workers

Recordable Injuries* per 100 Workers per Calendar Year

	2002	2003	2004
Qtr 1	4.5	7.2	10.5
Qtr 2	7.5	6.5	7.4
Qtr 3	8.1	8.4	7.05
Qtr 4	7	6.2	
Total	27.1	28.3	24.95
Average	6.8	7.1	8.3

Benchmark = 8.2

WSDOT Highway Engineering Workers

Recordable Injuries* per 100 Workers per Calendar Year

	2002	2003	2004
Qtr 1	1.7	1.4	1.3
Qtr 2	3.5	1.3	1.4
Qtr 3	3.4	1.5	0.9
Qtr 4	2.1	1.6	
Total	10.7	5.8	3.6
Average	2.7	1.5	1.2

Benchmark = 1.7

WSDOT Ferry Vessel Workers

Recordable Injuries* per 100 Workers per Calendar Year

	2002	2003	2004
Qtr 1	12	14.2	7.9
Qtr 2	8.9	11.2	12.1
Qtr 3	8.9	9.4	16.1
Qtr 4	6.9	9.8	
Total	36.7	44.6	36.1
Average	9.2	11.2	12.0

Benchmark = 7

"Recordable Injuries and Illnesses" is a standard measure that includes all work related deaths and work related illnesses and injuries, which result in death, loss of consciousness, days away from work, days of restricted work or medical treatment beyond first aid. The U.S. Bureau of Labor Statistics provides the selected 2000 national average benchmarks.

Number of Injuries by Type

The graph to the left entitled "Number of Work Injuries by Type" shows injuries by type for WSDOT maintenance, highway engineer, and ferry workers:

- Maintenance workers: 43% of maintenance worker injuries are strains associated with the back and shoulders.
- Engineer workers: 40% of highway engineer worker injuries were contusions.
- Ferry workers: 72% of ferry worker injuries were strain or sprains.

Worker Safety: Quarterly Update

Prevention Activities

Training and Monitoring for Personal Safety

Washington, Oregon, Montana and Idaho DOTs recently renewed a reciprocity agreement on flagger training. The primary purpose of the reciprocity agreement is to establish flagging training standards for multi-state consistency. The training standards allow flaggers with a participating state flagging card to cross the state border and work in another participant state without having to get a new card. The training and standards are working so well that a reciprocity agreement for Traffic Control Supervisors is also being considered.

WSDOT conducts several types of environmental safety and health monitoring activities to promote on-site personal safety, an awareness of work hazards and compliance with applicable rules. Monitoring activities have included occupational and environmental hazard assessment of accumulated pigeon droppings on SR240/12 bridge demolition projects; assessment and awareness training on contaminated soils at the Port Angeles graving dock; monitoring isocyanates during road and bridge deck repairs; checking silica dust and noise at installation of recessed reflector buttons; and checking heavy metal exposure during steel bridge maintenance.

Lyons Ferry Bridge – Exposure Monitoring and Environmental and Safety Assessment Work

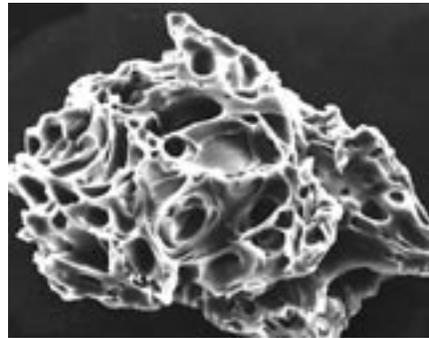
As part of a three-week project, personnel from the South Central Region “Special Crew”, the Northwest Region bridge crew, the Walla Walla maintenance crew, and the Engineering Bridge Preservation Section performed repairs on structural steel on the Lyons Ferry Bridge in Starbuck, Washington. Lead-paint systems on the Lyons Ferry Bridge based on past projects were estimated at approximately 8% to 15% lead by weight. In some instances, using needle-scaling equipment, paint was removed from the steel prior to the application of heat.

During critical periods of work when paint would be disturbed, air samples for occupational exposure to chromium, lead and zinc were collected in the breathing zones of on-site personnel. Noise monitoring was also performed on personnel working on steel removal and replacement. The exposure monitoring process involved a list of recommendations to the “Special Crews” that included information about noise levels and heavy metal exposures.

Precautions for Working in Volcanic Ash

Recent volcanic activity at Mount St. Helens raises concerns about the health affects of volcanic ash. Volcanic ash is not poisonous, but breathing it can cause symptoms such as runny or stuffy nose, sore throat, cough, chest tightness and eye irritation. These symptoms will likely go away once the ash clears. What to do when working in or around volcanic ash:

- Use dusts masks and eye protection (goggles). Dusts masks with a rating of P/N 95 to 100 - disposable dust masks with rubber face-seals and an exhalation valve are preferred over standard "surgical-like" dust masks.
- Avoid rubbing eyes; use lots of water when rinsing eyes; use lots of water to suppress the volcanic dusts.



Source: USGS. Close view of a single ash particle (.025mm) from the eruption of Mount St. Helens; image is from a scanning electron microscope (SEM). The tiny voids or “holes” are called vesicles and were created by expanding gas bubbles during the eruption of magma. SEM image provided by A.M. Sarna-Wojcicki



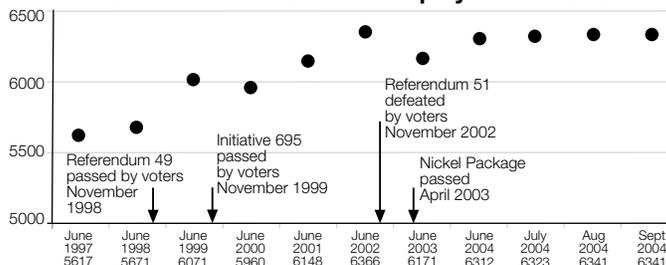
Darren Wilkens and Jim Flowers are using pneumatic tools to “bust” rivets and remove damaged steel on the Lyon’s Ferry Bridge.

Workforce and Training: Quarterly Update

WSDOT Workforce Levels

One indicator of the agency's workforce size is the current number of permanent full-time employees on staff. The accompanying chart shows that number at various points since June 1997. (The number of "FTE's" [full-time equivalents] will generally exceed the number of full-time employees, since seasonal and part-time work force must also be funded from "FTE" allotments).

Number of Permanent Full-Time Employees at WSDOT



Source: WSDOT Office of Human Resources

Training for WSDOT Highway Maintenance Employees

Safety Courses	Maintenance Workers Requiring Training June 04	Total Current Maintenance Workers Trained to Date June 04	Maintenance Workers Trained 3rd Quarter FY04	Maintenance Workers Trained 4th Quarter FY04	Compliance to date Target=90% June 04	Change In Compliance Since Last Quarter
Blood Borne Pathogens						
First Aid						
Hearing Conservation						
Personal Protective Equipment						
Fall Protection						
Flagging & Traffic Control						
Violence that Affects the Workplace						

WSDOT has decided to rework the presentation of training data for safety courses that require both an initial training course and annual refresher training. Reporting to date has not adequately reflected the status of the annual refresher training requirements in its development of "compliance" with training requirements. WSDOT expected to resume this report this quarter. However, improved data is not yet available and reporting has to be deferred once more.

Training for All WSDOT Employees

The following table reflects continued progress on important workforce training courses that help shape the department's workplace. These courses are for all permanent full-time, part-time, and temporary employees. The goal is to have 90% of our workforce trained as resources and time allow.

Training Courses	Number Requiring Training	Number Trained to Date	Number Trained this Quarter	Completion to date - (Target = 90%)	Change Since Last Quarter
Disability Awareness	7391	1376	94	19%	*
Ethical Standards	7391	6964	90	94%	0%
Security Awareness - all employees	7391	5551	101	75%	0%
Security Awareness - supervisors	3079	2338	101	76%	26%
Sexual Harassment/Discrimination	7391	3812	171	52%	*
Valuing Diversity	7391	2221	149	30%	*
Violence that Affects the Workplace	7391	5737	0	78%	0%

Report as of September 30, 2004

Highway Construction Program

Meeting WSDOT's Scheduled Advertisement Dates

Project Advertisements - Biennium to Date

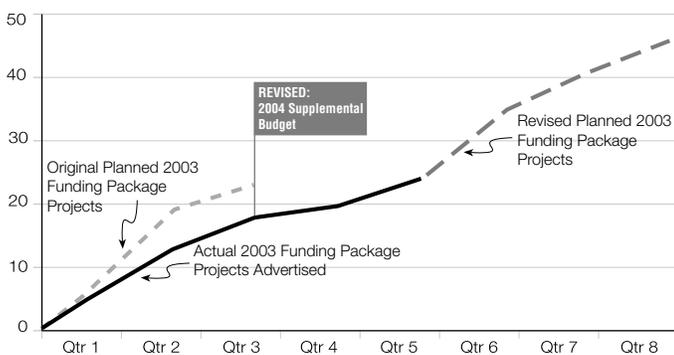
The Highway Construction Program is the largest capital program in the Transportation Budget. Planned expenditures for the 2003-2005 biennium are approximately \$2.1 billion. Overall delivery of the Highway Construction Program is tracked against schedule for advertisement dates and against projected cash flow for construction progress. Funding for the 2003-2005 Highway Construction Program includes a variety of fund sources, including Pre-Existing Funds, 2003 Transportation Funding Package (Nickel) funds, and Tacoma Narrows Bridge funds. The program includes a commitment to advertise 345 projects during the current biennium, of which 46 are Nickel projects and 299 are projects funded with Pre-Existing Funds.

To Date: 2003 Transportation Funding Package (Nickel Funds)

The graph below shows Nickel Projects advertised to date. For detailed information on Nickel Projects, see page 3, "Summary of Project Advertisements, Awards and Completions" of the Beige Pages.

Highway Construction Program Advertising 2003 Transportation Funding Package (Nickel Funds)

Planned vs. Actual Number of Projects Advertised
2003 - 2005 Biennium, Quarter 5 ending September 30, 2004
Project Count



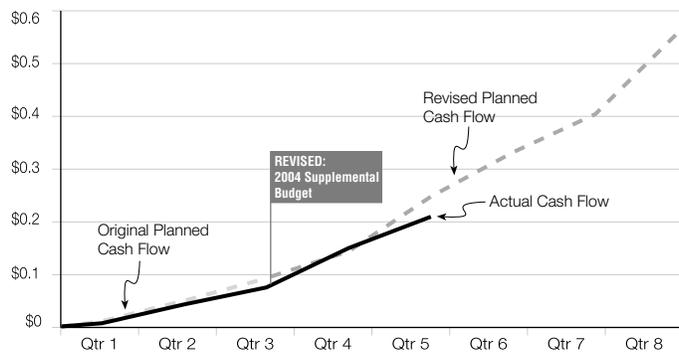
On the adoption of the 2004 Supplemental Transportation Budget Highway in April 2004, the number of projects for the biennium were adjusted. The revised line on the chart represents the change in the number of planned advertised projects for the highway construction program from the original 2003 Transportation Funding Package. Also, two Nickel projects scheduled for advertisement in the 2003-2005 biennium have been deferred to the 05-07 biennium. As a result, the original plan and revised plan show a delivery gap in the eighth quarter of the biennium.

Cash Flow on the 2003 Transportation Funding Package (Nickel Funds)

Expenditures for highway projects through the quarter ending September 30, 2004 were \$210 million of the planned \$248 million. Currently, expenditures using the 2003 Transportation Funding Package vary from planned expenditures by 15 percent. Twenty-eight percent of the entire biennium's budgeted cash flow is scheduled to occur during the eighth quarter of the biennium.

Cash Flow on Highway Construction Projects 2003 Transportation Funding Package (Nickel Funds)

Planned vs. Actual Expenditures
2003 - 2005 Biennium, Quarter 5 ending September 30, 2004
Dollars in Billions



Highway Construction Program

Meeting WSDOT's Scheduled Advertisement Dates

Pre-Existing Funds Projects

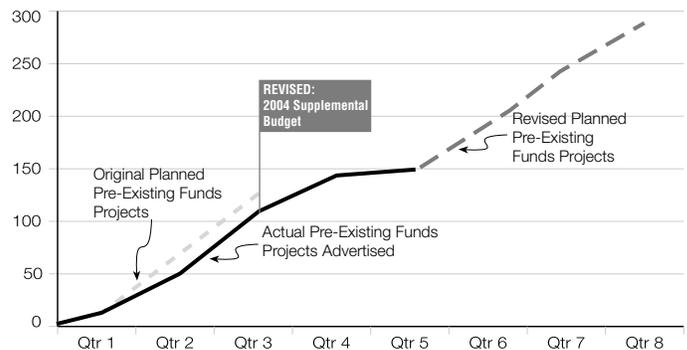
The table below summarizes the status to date (including progress in this quarter) of projects advertised this biennium that are funded with Pre-Existing Funds (as opposed to the Nickel Fund projects stipulated by the 2003 Transportation Funding Package; for those projects see the previous page and special reports in the Beige Pages).

There have been 151 projects advertised to date, which includes four contracts initiated during this biennium in response to emergencies. During this biennium, one project has been deleted and eleven projects are currently listed as delayed.

There are eight projects in the 2003 Transportation Funding Package where the contracting agency is not WSDOT and the advertisement is the responsibility of other governmental agencies. These are not counted in the total or included in the chart. An example of this type of project is one where a local government receives WSDOT funds, but WSDOT does not design or construct the project. These projects are monitored, but not shown on the table because their schedules are not in WSDOT's control.

Highway Construction Program Advertisements Pre-Existing Funds Projects

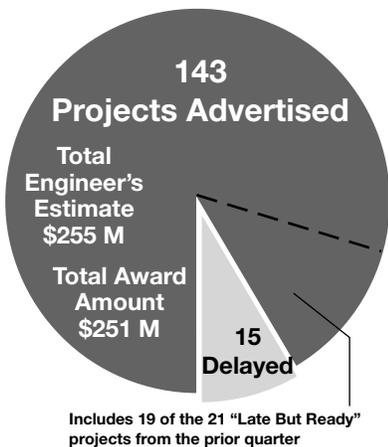
Planned vs. Actual Number of Projects Advertised
2003 - 2005 Biennium, Quarter 5 ending September 30, 2004
Project Count



Highway projects starting the fourth quarter were revised based on the adoption of the 2004 Supplemental Transportation Budget. The revised line on the chart represents the change in the number of planned projects for the highway construction program using pre-existing funds.

Pre-Existing Funds Projects: A Snapshot of Quarterly Progress and Total Progress to Date

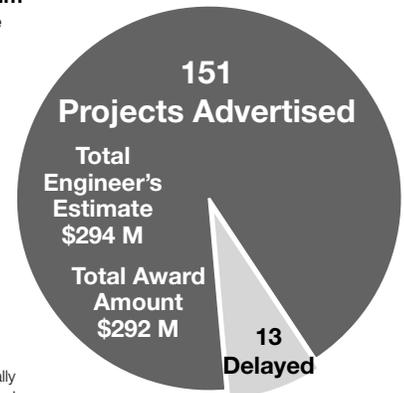
End of Last Quarter
June 30, 2004



	Projects Through Last Quarter	This Quarter's Progress	Biennium to Date Total
Projects Advertised			
As Scheduled	94	6	100
Project Ads Early	14	0	14
Project Ads Late	32	1	33
Emergency Projects	3	1	4
Total Advertised	143	8	151
Projects Delayed			
To 2005 (Still within the biennium)	12	2	11*
Out of the biennium	3	1	2*
Total Delayed	15	3	13*

*There were four projects added to the "As Scheduled" count that were actually completed by WSDOT maintenance or other governmental agencies. One delayed project was added to the "Project Ads Late" count. As a result, the numbers shown in the "Biennium to Date Total" column will not be the total of the two numbers to the left.

End of This Quarter
September 30, 2004



There were four Pre-Existing Funds projects scheduled for advertisement in 2003-2005, where the advertisement was listed as delayed or deferred by the system, but the work was completed by governmental agencies during the 2004 construction season. These commitments have been counted as work completed and added to the "As Scheduled" totals:

- US 2, Anthracite Creek Bridge - Scour
- SR 500 East Bound Off Ramp to Andresen Road
- SR 17, Soap Lake North - Drainage Improvements
- SR 532, Terry's Corner Park and Ride Lot

Highway Construction Program

Meeting WSDOT's Scheduled Advertisement Dates

Pre-Existing Funds projects scheduled and advertised for the fifth quarter:

SR 409/Ferry Dock to SR 4 – Paving

As of October 8, 2004, the pavement repair, mainline paving (with the exception of the bridge deck), shoulders, guideposts, and paint striping are finished. Most of the guardrail work is complete and the utility adjustments have been started. The remaining work includes pavement markings, expansion joint modifications, and touching up some driveway approaches.

I-5/Intelligent Transportation System

See Projects Listed in the Safety Improvements Program Section on page 31.

Five Pre-Existing Funds projects that were delayed, but advertised or completed in the fifth quarter:

SR 202/SR 520 to Sahalee Way – Widening (Delayed from the fourth quarter)

The advertisement for stage one, delayed from April 2004 to July 2004, has now occurred. The later advertisement date will not impact the start of construction and will remain on schedule to be completed by the end of 2005.

There are four Pre-Existing Funds projects scheduled for advertisement in 2003-2005, where the advertisement was listed as delayed or deferred, but the work was completed by WSDOT's workforce during the 2004 construction season. These commitments have been counted as work completed and added to the "Project Ads Late" totals:

U.S. 2, Anthracite Creek Bridge – Scour

SR 17, Soap Lake North – Drainage Improvements

SR 500, East Bound Off Ramp to Andresen Road

SR 532, Terry's Corner Park and Ride Lot

Pre-Existing Funds projects for the fifth quarter with delayed advertisements:

I-90/Argonne Road I/C Electrical Systems

The advertisement is being delayed from September 2004 to December 2004. This will not affect the actual construction schedule or completion of the project.

SR 20/Northgate Drive to Banta Road

See Projects Listed in the Safety Improvements Program Section.

Pre-Existing Funds project deferred during the fifth quarter:

US 12/Heron Street Bridge – Repair

To gain efficiencies, the repair work was combined with seismic upgrades and the project was scheduled to be advertised Sept 2004. On evaluation, the scope and cost for the repairs and upgrades had escalated beyond acceptable levels. WSDOT is working to develop a staged solution that resolves the highest priority repairs and seismic upgrades first in conjunction with the bridge priority program. The advertisement date has been moved to June 2005.

One project was added to the construction program as an emergency:

SR 104 - Hood Canal Bridge Emergency Cable Replacement

On August 11, bridge inspectors determined that an anchor cable was broken. A backup anchor cable in WSDOT's stores was available to be used as a replacement. An emergency contract to install the anchor cable was awarded on September 1, 2004 for \$118,705. The contractor began installing the anchor cable on September 24 and finished the work on September 30. Due to the long lead time for replacement cables, a new spare will be purchased and held in inventory.

Highway Construction Program

Improvement and Preservation Programs

Cash Flow on Pre-Existing Funds Projects

WSDOT submitted an expenditure plan to the Legislature for the first five quarters of the biennium totaling approximately \$684 million. As of September 30, 2004, actual expenditures totaled \$653 million, leaving a variance of approximately \$31 million or 5% from the plan. The next chart shows a revision of the planned expenditures as a result of the adoption of the 2004 Supplemental Transportation Budget.

The five percent variance as of the end of the fifth quarter for the Highway Construction Program is divided between the Improvement and Preservation programs. The Preservation program is under plan by \$21 million or contributes to approx-

imately two thirds of the current cash flow variance. The Improvement program is also under plan by approximately \$10 million contributing to about one third of the variance.

The under spending in the Preservation Program is principally due to the lag in planned expenditure for the Hood Canal Bridge brought about by the archeological activity at the Port Angeles Graving Dock site.

Sub-report on Safety Improvements Program Projects: Quarterly Update

While elements that improve safety are a part of almost every highway construction project, a special program with a sub-category established by the legislature covers projects designed to address specific issues in “high accident corridors” (HAC) and “high accident locations” (HAL). WSDOT tracks the award of these projects in order to provide a picture of program delivery in an area that is of relatively small dollar size but great public importance.

Of the two safety projects scheduled for advertisement in the fifth quarter, one was advertised on time and one has been delayed until later in the 03-05 biennium.

One safety project was advertised in the fifth quarter:

I-5/Intelligent Transportation System

This project was originally scheduled for advertisement in Sept. 2004, but WSDOT was able to advertise this project eight weeks earlier than expected. The estimated time for completion of this project is February 2005.

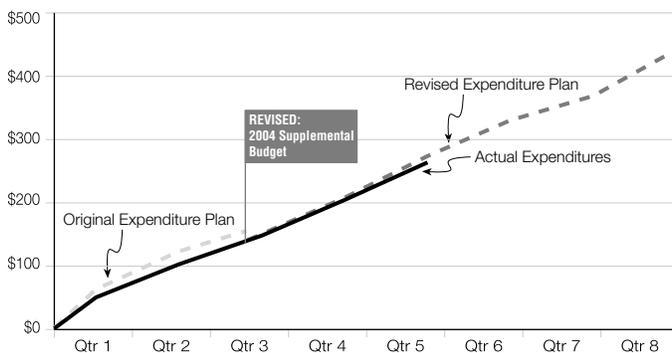
One safety project was delayed to quarter seven:

SR 20/Northgate Drive to Banta Road

Advertisement is being delayed six months from August 2004 to February 2005 because of right of way acquisition delays. The consultant hired by WSDOT to perform appraisals failed to meet its contractual obligations and has been terminated.

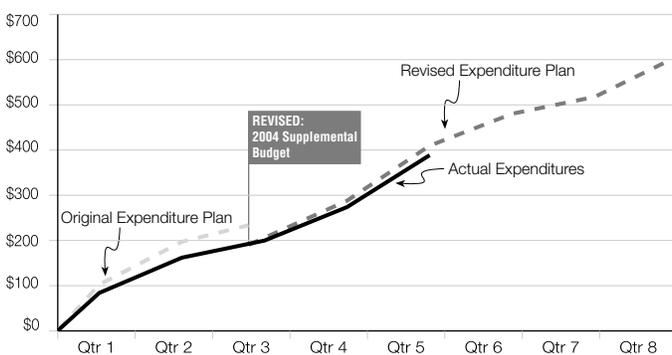
Improvement Program Cash Flow Pre-Existing Funds

Planned vs. Actual Expenditures
2003 - 2005 Biennium through September 30, 2004
Dollars in Millions



Preservation Program Cash Flow Pre-Existing Funds

Planned vs. Actual Expenditures
2003 - 2005 Biennium through September 30, 2004
Dollars in Millions



Highway Construction Program

Hot Mix Asphalt for Awarded Contracts

In October 2003, WSDOT forecasted that 1,324,218 tons of Hot Mix Asphalt (HMA) would be awarded throughout the state by September 2004. The final amount was 1,299,377 tons awarded, which was 98% of the original forecast.

The award of HMA closely matched the forecast amount for the first few months (starting in October 2003) and then in February 2004 the tons of HMA awarded lagged behind the original forecast by about 200,000 tons. One project, Union Ave. to Jackson Ave – HOV, was delayed as a result of an appeal regarding a permit and accounted for 143,000 tons of HMA. As a result of the delay, projects that were not originally planned to be awarded were advanced in the schedule. In May 2004, the awarded and advanced projects recovered 140,000 tons. By September 2004 the original forecast and the awarded tons were nearly equal.

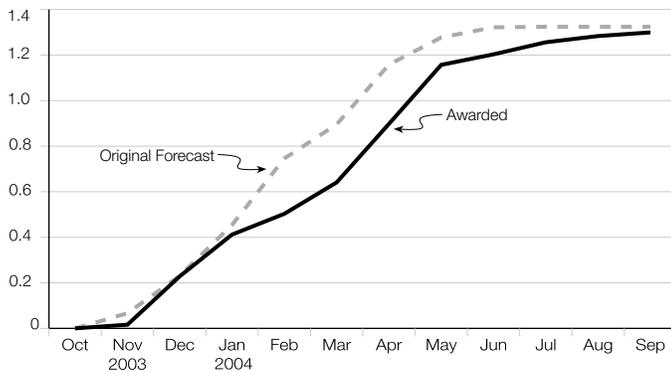


HMA being placed on a prepared base.

Hot Mix Asphalt Pavement* - Tons Awarded

October 2003 through September 2004

Tons of Asphalt in Millions



* Graph indicates when month project was awarded, not when HMA was placed.
Source: WSDOT Construction Office.

Highway Construction Program

The Rising Cost of Construction Materials

Wrestling with the Issues

WSDOT, along with other states, has observed the rapid rise in steel prices, primarily due to an unprecedented demand for steel overseas. States have been wrestling with the issue of whether or not to include an “escalation clause” into construction contracts to help insulate or share the risk with the contractors. Similar concerns focus on cement shortages and price escalation, as well as increased prices for crude oil, which drives up the market price for fuel and asphalt.

The direct effect of steel, fuel and cement escalation on the cost of work is difficult to measure. WSDOT uses unit price contracting, where the contractor is requested to provide “bid prices” for completed items of work, as opposed to prices for individual components that make up a complete item of work. For instance, the contractor provides a complete price to furnish, install and test a storm sewer pipe. Integrated in this price, are all material cost, labor cost, equipment cost and any additional cost that may be associated with the risk of doing the work. It is generally not possible from the bid to isolate the cost of the pipe itself. However, all other things remaining constant, an increase in the cost of pipe would ultimately raise the price the contractor bids.

WSDOT collected data on select items that would serve a possible measure for the effect that price escalation has had on contracts. This was done under the assumption that “all other things remained constant”. In the end analysis, the items for “Steel Reinforcing Bar” and “Hot Mix Asphalt” revealed upward price trends that illustrate WSDOT’s concern with price escalations. A consistent trend for cement was not present. The trend of increased prices for steel reinforcing bars (rebar) and hot mix asphalt on WSDOT projects is similar to what is being reported on a national scale. Engineering News-Record (ENR) magazine tracks material price indexes for rebar and PG 58, the asphalt binder in Hot Mix Asphalt, in twenty cities around the country. The ENR price index is based on the material cost and does not include the other costs that are reflected in the WSDOT bid prices. To compare WSDOT and ENR trends, the ENR price indexes have been adjusted to a baseline that is equivalent to the WSDOT bid price for the first quarter of 2002.



Steel rebar used to build the Methow River Bridge deck.



Asphalt paving on I-90 at Moses Lake.

Highway Construction Program

Escalation Measure

Steel Reinforcing Bar Analysis Indicates a 100 Percent Increase

Steel is used in WSDOT projects primarily in two major areas – structural steel, and steel reinforcing bar. The design and construction of structures using structural steel is not the most common of WSDOT bridge materials, and therefore does not have a clear and consistent bid history in which to track escalation. Steel reinforcing bar (rebar) on the other hand is used in virtually all projects with structural work. The difficulty with rebar is that it is typically embedded in other lump sum items of work such as “superstructure”. A separate item is used for rebar that is placed in walls, footings and abutments. While this item may not accurately reflect the total quantity of rebar used in WSDOT projects and does include labor and equipment costs as well as materials, it should reflect the effects of cost escalation. Since January 2002 there seems to have been over a 100 percent increase in the price bid for steel reinforcing bar. During the same period the ENR rebar index increased by 36 percent.

Hot Mix Asphalt Analysis Indicates a 20 Percent Increase

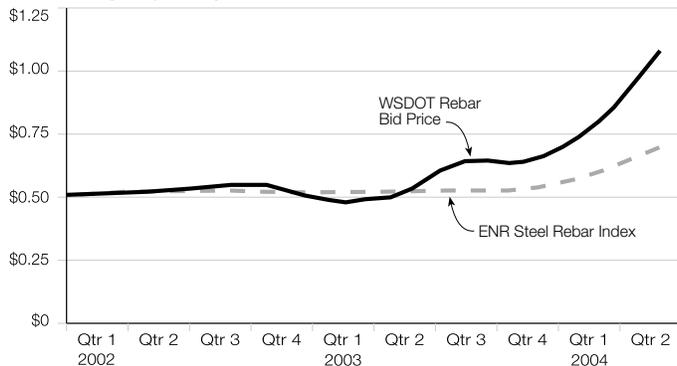
Hot Mix Asphalt prices were selected to help identify cost escalation in petroleum products. The unit cost of HMA involves the manufacturing, placement and compaction of asphalt pavement. The cost of this item is very dependent on the petroleum market, not only in the form of the liquid asphalt used in the mix, but also for the fuel cost of the plant, placement equipment, hauling vehicles and compaction train. Since January 2002 there has been a 20 percent increase in the price bid for Hot Mix Asphalt (36 percent since January 2000).

Continued Efforts to Track Cost Escalation

While it is difficult, if not impossible, to extrapolate data to predict the total cost impact from each of WSDOT’s projects, it is clear from the highlighted trend that these items and perhaps others, are having an effect on bid prices. While this has not been a significant issue to date, WSDOT will continue to monitor the situation.

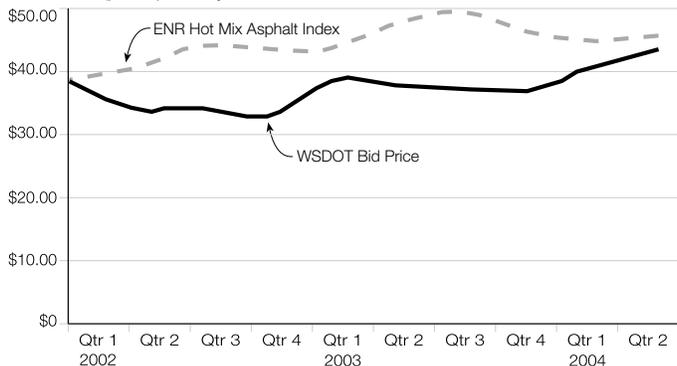
Steel Reinforcing Bar - Cost Trend

Unit Bid Price (per lb.), January 2002 - June 2004

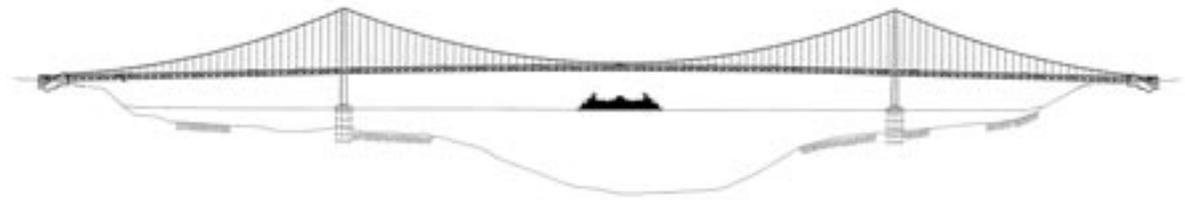


Hot Mix Asphalt - Cost Trend

Unit Bid Price (per ton), January 2002 - June 2004



Tacoma Narrows Bridge Project Update



As of September 30, design-builder Tacoma Narrows Constructors (TNC) has completed 47.8% of construction on the SR 16 Tacoma Narrows Bridge project.

TNC capped the east caisson with a final 15-foot-thick concrete “distribution cap,” marking the end of caisson construction and the start of tower construction. Crews immediately began placing rebar, forms, and concrete for the four 12-foot-high ‘pedestals,’ which are foundations for each tower leg. Once the pedestals were complete, crews began constructing the towers with 11-foot ‘starter lifts,’ followed by installing slip formwork (dubbed “birdcages”) on each tower leg. On the east anchorage, crews completed the last of ten mass concrete pours, amounting to roughly 16,000 cubic yards of concrete. They then began erecting forms for the splay chamber walls. On the west anchorage, crews finished concrete pours to construct the splay saddle-bearing walls and installed the steel anchor tubes. They are almost finished with the west anchorage mass concrete pours.

On the roadway side, over 25,000 tons of asphalt has been paved this summer. East of the bridge, new pavement was placed from the east anchorage to the new Jackson Ave. exit. West of the bridge, crews paved the new alignment for eastbound SR 16 and the toll plaza lanes. Crews have completed several more large retaining walls, and have placed concrete for toll plaza footings and the operations building slab. Traffic realignments have occurred allowing crews to begin further construction of the final mainline lanes.

Seismic upgrade work continued on the west side of the existing bridge as crews constructed scaffolding and temporary bracing for bents 1 and 2. This temporary bracing allows crews to remove existing bracing and replace it with new bracing. Work continues overseas on fabricating bridge decking and components.

For additional information, including financial information, project schedule, traffic information, photo library, live construction cameras and more, please visit:

www.tacomanarrowsbridge.com

Progress to Date

Percent Complete

Design	99.8%
Construction	47.8%
Total ¹	51.4%

¹Weighted 7% Design progress and 93% Construction progress.
Source: WSDOT Engineering and Regional Operations Division



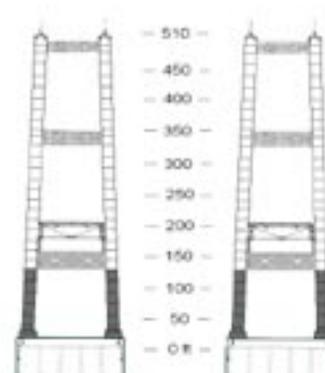
East Tower at lift 5



Progress at the East Anchorage



SR 16 new alignment - paving the eastbound lanes east of 24th St. NW.



To date, tower construction is progressing as planned, with completion of lift 5 concrete pours on the east and west tower legs. By the end of the quarter, the towers stood 128 feet in height.



Hood Canal Bridge



West end view of proposed bridge span.

Summer Construction Battens Down the Hatches

October is a transitional month for construction on the Hood Canal Bridge as crews prepare for the winter season and wrap up summer projects. Major construction on the floating section of the bridge will halt for the winter months starting in October. Work will continue in the approach sections and areas adjacent to the bridge and at the Port Angeles graving dock site. No disruption or closures of the bridge for construction are scheduled during the winter months. The speed limit on the bridge will remain at 40 mph. Motorists are advised to use caution during the winter months as bridge decks ice up more rapidly than pavement.

Motorists crossing the bridge can look forward to the traveling lanes being restored to the original 12-foot width this winter. Temporary barriers will be removed that were originally installed to create a safe work area and protect vehicles crossing the bridge during the widening on the bridge's southern edge.

In May the lanes will be again reduced to the 11-foot width as work widening the northern length begins. Permits are still required for vehicles carrying wide loads and are available through the Port Orchard Maintenance office, (360) 874-3050. In October crews are scheduled to begin building foundations for the approach spans. On the east approach to the bridge (Kitsap County side), crews will finish building north and south side temporary trestles to allow crews to build the new approach spans alongside the bridge.

All work done in the water has to be completed by Jan. 15 to comply with the Endangered Species Act regulations regarding migrating fish. Crews cannot continue to work in the waters in the Hood Canal until after the fish window ends on July 15.

Graving Dock Work Update

Port Angeles graving dock facility construction continues as WSDOT works to determine how much additional time and money must be spent at the site to meet requirements for archaeological recovery. Five agencies - WSDOT, Lower Elwha Klallam Tribe, Federal Highways Administration, US Army Corps of Engineers and the State Historic Preservation Office - signed a memorandum of agreement in April that included a "site treatment plan." That site treatment plan defines the extent of archaeological recovery that would be completed at the 22-acre site. In the site treatment plan, WSDOT agreed to



Girder Setting - With the deck removed and the crossbeams widened, crews began setting girders that eventually will support the wider west-end bridge deck. The crews work at night to limit traffic impacts across the bridge.

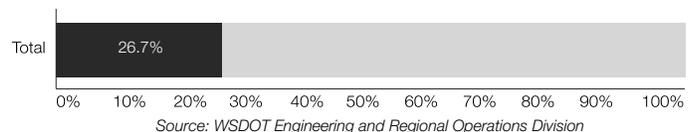


Forming and finishing a new bridge rail along the southern edge of the bridge's west half. Work will move off the bridge during the winter months.

recover all human remains uncovered during the construction process. In October, Lower Elwha Klallam Tribe officials asked that WSDOT excavate additional, deeper areas of the site which go beyond the project scope and budget.

Under a dispute resolution process contained in the memorandum of agreement, WSDOT has recently asked FHWA to settle that the required area for archaeological investigation is limited by the geometry of the construction requirements of the graving dock structure and does not extend to deeper soil elevations. WSDOT hopes that a ruling on that question will assist the project in moving toward the conclusion of the on-site archaeological work and renewal of understandings with the Tribe about next steps of the construction process. If this cannot be achieved, very difficult further obstacles to schedule and cost goals on the project will be presented.

Hood Canal Bridge Project Percent Complete



Asset Management: Bridge Assessment Annual Update

Bridge Inventory

WSDOT Structures	No. of Bridges	Square Feet
Vehicular Bridges greater than 20 feet in length*	2,967	43,063,017
Structures Less than 20 Feet in Length	257	na
Border Bridges (maintained by Border State)	6	na
Culverts greater than 20 feet in length	80	na
Pedestrian Structures	57	249,730
Tunnels and Lids	38	739,381
Ferry Terminal Structures	45	248,443
Buildings (I-5 Convention Center)	1	na
Railroad Bridges	84	na
Totals of all Structures	3,534	44,300,571

* For comparison, cities and counties own 3,929 bridges greater than 20 feet

Vehicular Bridges greater than 20 feet in length

The Federal Highway Administration has set 20 feet as the minimum length of a bridge or structure requiring inspection and being eligible for Federal Bridge repair/replacement funds. The total number (2967) includes five WSDOT owned border bridges.

Border Bridges owned by Oregon or Idaho

Oregon owns and maintains five highway bridges that carry vehicular traffic over the Columbia River between Oregon and Washington. Idaho owns and maintains one bridge on Highway 41 near Newport. Washington State has an obligation to pay one half of maintenance and preservation costs on each of these bridges.

Annual Bridge Condition Update

WSDOT reports the condition of WSDOT's bridges to the Office of Financial Management following the Governmental Accounting Standards Board (GASB) standards each year. WSDOT's policy is to maintain 95 percent of its bridges at a structural condition of at least fair. The assessment in 2004 found that state-owned bridges were within these parameters: just three percent of bridges showed a condition rating of "poor." No bridge that is currently rated as "poor" is unsafe for public travel. Bridges determined to be unsafe are closed to traffic.

Category	Description	2001	2002	2003	2004
Good	A range from no problems to some minor deterioration of structural elements	85%	87%	86%	87%
Fair	All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, etc.	11%	10%	11%	10%
Poor	Advanced deficiencies such as section loss, deterioration, etc., that seriously affect primary structural components.	4%	3%	3%	3%

Goal = 95% of all WSDOT bridges at structural condition fair or better.

Bridge Preservation Program

WSDOT's Bridge Preservation Program consists of the following four main program elements:

Inspection – Inspect one-half of all bridges every year (see page 38).

Repair, Rehabilitation, and Replace – Repair bridges with deteriorated bridge elements such as timber piles and floating bridge anchor cables. Rehabilitate mechanical and electrical operating systems on moveable bridges. Replace bridges as needed (see page 39).

Preservation – Extend bridge service life by repainting steel structures; also repair and overlay of concrete bridge decks (see page 40).

Risk reduction – Seismic retrofit of bridges and scour repair of bridge piers in rivers. This work provides a proactive approach to minimizing damage to bridges due to earthquake and higher water events (see page 40 - 41).

Asset Management: Bridge Assessment Annual Update

How Does WSDOT Manage its Bridge Assets?

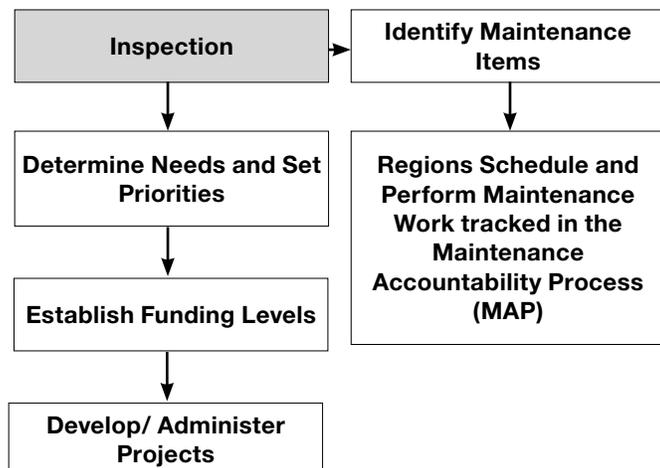
Bridge asset management begins with inspections to determine the current condition. WSDOT uses National Bridge Inspection (NBI) standards along with its own Bridge Management System procedures to inspect its bridges. The WSDOT Bridge Inspection Manual contains more details on inspection procedures. www.wsdot.wa.gov/TA/Operations/Bridge/BIC.html

Bridge inspectors identify and prioritize any items that need maintenance work. This information is then provided to Regional WSDOT maintenance offices responsible for performing the necessary repairs.

WSDOT reviews the bridge inspection information to determine needs and set priorities in the Bridge Preservation Program. The "BRIDGIT" BMS Computer software and databases are used to help organize the needs and priorities.

Each biennium this information is provided to the Transportation Commission and the Washington State legislature to assist in setting funding levels.

WSDOT develops and administers the necessary projects for bridge preservation work generally through its regional offices.



Bridge Inspection

WSDOT inspects one-half of all traffic bridges every year. Bridge engineers also inspect floating bridge cables, tunnels, ferry terminal structures, sign bridges, and make a bridge inspection response if a bridge has been damaged by a vehicle or vessel.

New Underwater Inspection Team

This year, WSDOT formed its first underwater bridge inspection dive team to enable WSDOT to perform underwater inspections and to respond quickly to underwater emergencies. Previously, this work was entirely contracted out. The dive team will begin its underwater program by inspecting eight bridges in 2004, about ten percent of the under water inspection total. The estimated savings this year will cover the start up cost of the underwater program. The team will complete about 70% of the underwater inspections in 2005. Over the next few years, the team will inspect all but the most time consuming bridges, at an expected savings to the state of at least \$100,000 per year as compared to the cost of contracted inspections.

First Deployment for Dive Team: Hood Canal

The dive team's first emergency response came sooner than expected when the Hood Canal floating bridge had a problem with one of the main anchor cables in August. WSDOT's dive team was able to mobilize within hours of the discovery of a loose cable. WSDOT's dive team and a remotely operated vehicle determined that the cable was broken at the location of the anchor in over 350 feet of water. The dive team saved several thousand dollars and expedited the beginning of repairs by making the initial assessment.



The dive team consists of three WSDOT engineers: Darren Nebergall, David Bruce, and Shawn Plichta .

Asset Management: Bridge Assessment Annual Update

Repair, Rehabilitation, and Replacement Program

Major Repair

The major repair portion of the bridge preservation program includes corrective work that cannot be accomplished within typical maintenance programs. This work addresses a specific bridge element in need of repair and is not intended to upgrade all deficiencies to current standards.

A major repair is generally valued in excess of \$50,000 and accomplished through a construction contract. A prioritized list of major repair needs for bridges is developed each biennium. An unexpected problem may develop on a bridge and need to be repaired as soon as possible – in this case an emergency contract would be used. There are currently two major bridge repair projects in progress.

I-5 Toutle River Bridge – Structural Rehabilitation

The \$1.5 million Toutle River bridge rehabilitation project, which began construction in mid-June, will strengthen the steel arch structure of the bridges, retrofit the deck joints, install a safety net between the northbound and southbound bridges, replace the existing sewer line running across the bridge and complete other minor rehabilitation work. Weather permitting, the project will be complete by November 2004. The contractor for the work is Pacific Bridge and Road Company.

SR 104 – Hood Canal Bridge Emergency Cable Replacement

Please see page 38 - First Deployment for Dive Team and page 30 for detailed description of the project.

Movable Bridge Repair

Movable bridge repairs include corrective work on electrical and mechanical systems that cannot be accomplished within routine maintenance. A prioritized list of movable bridge repair needs is developed each biennium. The following movable bridge repair projects are under construction or planned to begin construction in the 2003-05 biennium.

SR 12 – Heron Street Bridge

This repair will modify the bridge to allow proper seating of the steel swing span during the closing of the bridge. The movable span sags in hot weather during the opening operation which makes it difficult to close. The construction on this project is expected to begin in the summer of 2005.

SR 99 – First Avenue South Bridge

This \$1 million repair will modify the existing hydraulics system used for the operation of the lift spans. The work is in progress. The PCT Construction Inc. is currently ordering and prefabricating the necessary materials to rehabilitate the hydraulic and electrical work prior to beginning construction in February 2005.

Bridge Rehabilitations and Replacements

The following bridge replacements/rehabilitations are currently under construction:



SR 104 – Hood Canal Bridge

WSDOT is replacing the aging east-half floating portion and widening the west-half superstructure of the Hood Canal Bridge. See story on page 36.



SR 240 – Yakima River Bridge at Richland

This project will replace the existing bridge over the Yakima River. Updated project information is available at: www.wsdot.wa.gov/regions/southcentral/Construction/update.htm#6522

Asset Management: Bridge Assessment Annual Update

Preservation and Risk Reduction

Bridge Preservation

Steel Bridge Painting

Protective coatings painted on steel bridge elements are essential to prevent corrosion and loss of capacity to support traffic. Steel bridges typically need to be repainted every 15 to 20 years. WSDOT schedules a bridge to be overcoated with new paint when two to five percent of the existing paint has failed. Bridge painting can become a major project because of the size of the steel structures and the complexity of safety, environmental and containment system requirements

Painting the Port Washington Narrows Bridge on SR 303 in Bremerton was deferred from the spring of 2003 to the summer of 2004 to avoid the cormorants' yearly nesting cycle on the bridge. WSDOT installed bird deterrence features on the bridge to discourage the birds from re-nesting in 2004. The added cost to the project due to the year's delay in the project and the cost of the bird deterrence was approximately \$250,000. The painting project was completed in the summer of 2004.

No other steel bridge painting projects are scheduled in the current (2003-05) biennium

Bridge Deck Protection

Concrete bridge deck deterioration (from corrosion of the reinforcing steel) has been the largest single bridge-related problem throughout the country for years. WSDOT has been working since the early 1980's on a systematic program to prevent future concrete deck deterioration by using epoxy-coated rebar in new bridges and by the repair of deterioration and traffic-related wear in existing bridges with new durable protective overlays.

There are no deck repair and overlay projects scheduled in the bridge preservation program in the current (2003-05) biennium.

Risk Reduction

Seismic Retrofit

The purpose of the Seismic Retrofit program is to minimize and avoid catastrophic bridge failures by retrofitting bridges and structures. Retrofit priorities are based on seismic risk of a site, structural detail deficiencies, and route importance.

There are three seismic bridge projects in progress:

SR 99 – George Washington Bridge Seismic Stage 2

The SR 99 Aurora Avenue Bridge spans Lake Union in Seattle, connecting the Wallingford/Fremont neighborhoods and Queen Anne Hill. The bridge retrofit includes installation of new friction pendulum bearings, seismic restrainers and expansion joint modifications. This project began in July 2003 and will be completed in the spring of 2005. Updated project information is available at www.wsdot.wa.gov/projects/SR99AuroraBridge/

I-5 – North Seattle Bridges Seismic Retrofit

This project will retrofit seven bridges on Interstate 5 in the North Seattle area. Crews will retrofit the bridges by strengthening 22 concrete columns with steel jackets and adding restrainers on the end of the structures to decrease movement during an earthquake. This project began in June 2004 with completion scheduled for the spring of 2005. Updated project information is available at www.wsdot.wa.gov/projects/I5_NSeattleBridge_Retrofit/

I-90 / I-405 Vicinity Bridges - Seismic

This project will retrofit three bridges on Interstate 90 in the I-90 / I-405 Interchange vicinity. Crews will retrofit the bridges by strengthening the columns with steel jackets. This project began in the spring of 2004 with completion scheduled for the summer of 2005. Updated project information is available at www.wsdot.wa.gov/regions/northwest/King/projectlist_KING.htm

Scour

In 1995, WSDOT began to identify and repair scour-damaged bridge foundations. Scour is defined as the removal of material from a streambed usually as the result of high water flows. Scour can cause a bridge foundation to become unstable if an excessive amount of material under the foundation is removed. Historically, in Washington, 37 out of 63 documented past bridge failures were the result of scoured foundations from high water flows. There are 1,558 state bridges (over water) that have been inspected and evaluated for current and potential scour related problems. Scour potential for a bridge is determined by calculating how deep the waterway channel could get based on high water flows and existing channel conditions. A bridge is classified as being "scour critical" if the calculated depth of the projected scour is below the foundation depth for a bridge pier.

Asset Management: Bridge Assessment Annual Update

Risk Reduction (cont.)

Each biennium a list of bridges requiring some type of scour mitigation is developed. Fifty-two bridges are currently on the scour mitigation list. Engineers determine the type of scour repair needed for each bridge. Most repairs consist of adding rock “rip-rap” around bridge pier foundations to replace streambed material that has been removed over time.

Scour mitigation work requires permit approval from other government agencies including the Department of Fish and Wildlife, Department of Ecology, and the U.S. Army Corps of Engineers. One scour project, SR 2/ Anthracite Cr., has been completed so far in the 2003-05 biennium. Five scour projects are currently under construction with four projects scheduled to start later in the biennium.

U.S. 2/20/153 Emergency Bridge Scour Repair

This project repaired scour on seven existing bridges in rural areas of North Central Washington. These repairs included heavy, loose rip rap (rocks) in environmentally sensitive areas.



Before



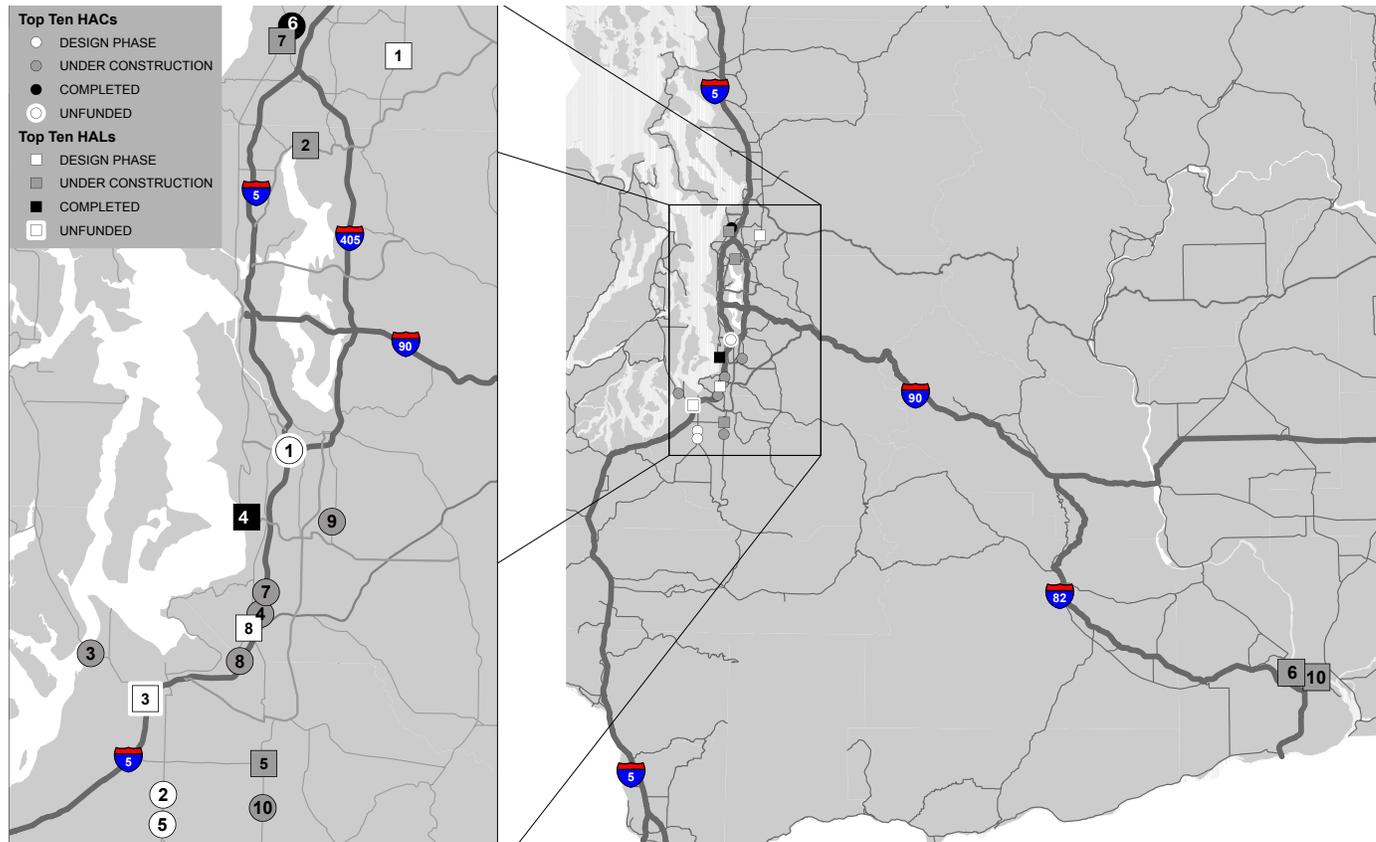
After

Permit Process for Scour Projects

The WSDOT Scour Team takes the prioritized list and identifies projects with characteristics that may raise difficulties in obtaining a construction permit from regulatory agencies. Those projects are then assigned to a resource agency team. This team is comprised of representatives of the different resource agencies that issue permits. They meet and discuss those projects that are brought before them, resolve any differing opinions or concerns and issue the Hydraulic Project Approval permit. This is generally accomplished in a day. Projects that do not need to go before the team are sent to the WSDOT regions and go through the normal permitting process. That process includes an on-site meeting between WSDOT region representatives, scour team members, maintenance personnel, and the resource agencies before any permits are obtained. This meeting results in a mutually agreed upon scope of work that will decrease misunderstandings and will also streamline the permitting process. The project is then moved forward to design and construction.

Highway Safety: Top Ten HALs and HACs

Improving Safety - Addressing High Accident Locations and Corridors



WSDOT regularly reviews the accident history of all state highways to look for locations with high accident problems. Two approaches used in these reviews are identifying High Accident Locations (HALs) and High Accident Corridors (HACs). The maps above show the top HALs and top HACs identified in the proposed 2005-2007 WSDOT budget.

High Accident Locations use the last two years of collision data to identify spot locations with a history of frequent, severe collisions. High Accident Corridors, on the other hand, look at collision frequency and severity on highway segments of a mile or longer. These evaluations also identify the specific locations where improvements will provide the greatest benefit from available funding in the next budget cycle.

Ranking by Societal Cost

The map above displays the top ten HALs and HACs. In the September 30, 2001 *Gray Notebook* ranking was done by estimated annual societal cost per year for each corridor and

location. In this report, WSDOT has made a slight change: ranking is now based on a per-mile calculation for the annual estimated societal cost. The specific locations and descriptions are found in the following tables.

Investment in Corrections for HAL / HAC

Dollars in millions

	01-03	03-05	Proposed 05-07
HALs	\$14.8	\$21.6	\$16.87
HACs	\$46.5	\$30.3	\$32.53

Identifying Locations Needing Safety Improvements

WSDOT uses other tools to identify locations in need of improvement, such as locations with the following characteristics:

- High incidence of pedestrian-vehicle collision
- High occurrence of cross-over accidents through the median
- High risk of potential pedestrians accidents, e.g. school zones and senior centers.
- High potential for accidents at un-signalized intersections
- High potential for vehicles to leave the roadway

Highway Safety

Top Ten High Accident Corridors 2005 - 2007

Rank	Location	Crashes 1999 to 2002		Estimated Societal Cost/per Mile/Year in Millions	Current Approach or Proposed Solution	Status
		Fatal and Disabling Injuries*	Total			
1	I-5 Tukwila-Vicinity South Center Blvd. to Duwamish River Bridge	19	450	\$3.8	Potential project being evaluated for scope of work.	Unfunded
2	SR 7 Parkland Vicinity 112th	9	459	\$3.7	Constructs sidewalks, retaining walls, illumination, and consolidates access points (Nickel Project)	Design Phase
3	SR 16 Vicinity Tacoma Narrows Bridge	13	276	\$3.3	Constructs HOV lanes, reconstructs and/or improves interchanges	Under Construction
4	I-5 Vicinity Federal Way Vicinity 320 St	8	189	\$3.1	Adds a direct access connection from I-5 with an elevated structure crossing the southbound lanes, connecting to S. 317th St. and 28th Ave. S. via a roundabout intersection. Provides access to a new regional transit center and will be restricted to HOV and transit traffic. Shifts the I-5 southbound S. 320th St. off-ramp to the west.	Under Construction
5	SR 7 Spanaway - Vicinity Old Military Rd	5	277	\$3.1	Constructs sidewalks, retaining walls, illumination, and consolidates access points (Nickel Project)	Design Phase
6	SR 99 Everett Vicinity-Industrial Park Vicinity	7	187	\$3.0	Combines and defines driveways, relocates affected luminaires, installs a restrictive median barrier, and installs new illumination near left turn pockets.	Completed
7	I-5 Tukwila-Vicinity S 288th	12	374	\$2.7	Constructs HOV lanes and a southbound truck-climbing lane near Tukwila. Construction will be in six stages.	Under Construction
8	I-5 Milton-King Pierce County Line Vicinity	6	161	\$2.5	Widens I-5 to provide HOV lanes, thereby reducing weaving and merging, and upgrades storm drainage and storm water treatment system.	Under Construction
9	SR 515 Kent Vicinity 240th-176th Vicinity	20	520	\$2.4	Signalizes the intersections of SR 515 with 222nd Place and SE 217th Street. Other safety work will be performed as required.	Under Construction
10	SR 161 Puyallup Vicinity/156th St E to 132nd St E	7	265	\$2.4	Improvements to SR 161 (Meridian St) from 176th St. to 128th St through South Hill, including constructing sidewalks, intersection turn lanes, new/upgraded signal systems, transit pullouts and consolidating driveways accessing the highway.	Under Construction

The fact that a location is listed in the top high accident locations or corridors does not imply that the location is unsafe or that accidents are related to the design or maintenance of the highway. Crashes are caused by many factors including driver actions, vehicle condition, and weather. For each of these locations, discretion is exercised in the development and implementation of proposed solutions on the basis of many factors, including levels of authorized and expected funding.

* Disabling injuries include permanent disability only (temporary disabilities are not included).

Highway Safety

Top Ten High Accident Locations 2005 - 2007

Rank	Location	Crashes 1999 to 2002			Current Approach or Proposed Solution	Status
		Fatal and Disabling Injuries*	Total	Estimated Societal Cost/per Mile/Year in Millions		
1	SR 9 Clearview Vicinity - 164th St, Shopping Center Vicinity	5	20	\$29.5	Installs a traffic signal and illumination at the intersection of SR 9 and 164th St. SE, allows protected left turns and extends existing right turn pockets and tapers to 165 feet. Widens this section of SR 9 by 12 feet to connect the existing channelization and two-way left turn lane at either side of the project limits at 172nd St. SE. Adds a southbound lane on SR 9 near SR 96. Adds sidewalks in some places on both sides of SR 9. (Nickel Project)	Under Construction
2	SR 522 Bothell -Vicinity 73rd Avenue	5	103	\$10.4	Constructs transit queue jumps at selected intersections along SR 522 and provides signal priority at these intersections, possible relocation of existing bus stops to optimize the benefits of the transit queue jumps, constructs sidewalks, improves crosswalks, and manages access by constructing medians where the two-way left turn lane exists, installs left turn pockets and locates U-turns where suitable. (Nickel Project)	Under Construction
3	I-5 Tacoma-Vicinity 72nd St Interchange to Vicinity SR 16	6	234	\$9.6	Widens 1.8 miles of I-5 between 72nd St Interchange and the 38th St. Interchange in Tacoma to provide HOV lanes in each direction. Reconstructs the 56th St. interchange and replaces the 48th St. under crossing. Completes some elements of other Tacoma HOV projects, including the 38th St to southbound I-5 connections, and the 56th St to northbound I-5/northbound I-5 to 38th St. connections.	Unfunded
4	SR 516 Covington Vicinity-Vicinity SR 18	3	72	\$8.5	Access Management project consolidates/restricts access from milepost 9.15 to 9.63 and from milepost 11.86 to 12.18	Completed
5	SR 161 Puyallup-Meridian Street Vicinity	3	105	\$8.3	Removes crosswalks, two traffic islands, and pedestrian buttons, relocates a crosswalk, adds signs directing pedestrians to alternate crossings.	Completed
6	SR 240 Hanford Vicinity-SR 24 Vicinity	4	13	\$5.8	Reconstructs interchange and widens roadway, increases capacity, mobility, and safety. (Nickel Project)	Under Construction
7	SR 99 Lynnwood Vicinity	3	74	\$5.4	Widens two general-purpose lanes from the King/Snohomish county line to SR 525. Improves access for the adjacent property and bicyclists; will be a right turn only lane at intersections with signs to allow buses/HOV to queue jump the normal traffic	Under Construction
8	SR 18 Federal Way-I-5 Vicinity	3	176	\$4.7	Installs overhead "Freeway Ends" signs and rumble strips across lanes approaching the I-5 interchange.	Design Phase; Short term fix
9	SR 18 Federal Way-I-5 Vicinity	3	176	\$4.7	Environmental and design analysis phase is underway to provide modifications to improve traffic safety and operations in the SR 18, SR 161, I-5 Triangle. (Nickel Project)	Long term fix
10	SR 395 Kennewick Vicinity-Columbia Drive Vicinity	3	131	\$4.1	Installs a Variable Message Sign and camera to reduce the number and severity of accidents. (Nickel Project)	Under Construction

The fact that a location is listed in the top high accident locations or corridors does not imply that the location is unsafe or that accidents are related to the design or maintenance of the highway. Crashes are caused by many factors including driver actions, vehicle condition, and weather. For each of these locations, discretion is exercised in the development and implementation of proposed solutions on the basis of many factors, including levels of authorized and expected funding.

* Disabling injuries include permanent disability only (temporary disabilities are not included).

Measuring Delay and Congestion: Annual Update

Traffic delay and highway congestion are major topics for WSDOT. Measuring delay and congestion, a much more complicated matter than might at first be guessed, is an indispensable part of understanding and developing an array of remedies. In the past two annual updates (March 2002 and 2003), the report described how congestion robs roadways of their productivity. Similarly, the impacts from inclement weather and traffic accidents also affect the efficiency of roadways.

While the information described in earlier updates proved informative, WSDOT found there was a need to move toward a new way of measuring delay and congestion. Measuring lost productivity should be based on factors such as the amount of people and freight that can use the roadway during various travel times (throughput), system reliability (efficiency/productivity), and the amount of time it takes people to make needed trips (travel times). Evaluating system efficiency and lost productivity allows WSDOT to better determine how its current tools are working and what other strategies might be useful.

Key Commute Routes—Changes in Travel Time Performance: 2002 to 2003

Route	Route Description	Peak time	Length in Miles	Peak Travel Time				95% Reliable Travel Time				Number of Days When Travel Times Exceeded Twice the Time Associated with Freeflow	
				2002 (minutes)	2003 (minutes)	Change (minutes)	Percent Change	2002 (minutes)	2003 (minutes)	Change (minutes)	Percent Change	2002 (days)	2003 (days)
SR 167	Renton to Auburn	5:20 PM	9.8	19	16	-3	-16%	37	27	-10	-27%	92	53
I-5	Seattle to SeaTac	3:40 PM	13.0	19	18	-1	-5%	28	22	-6	-21%	30	4
I-405/I-90	Bellevue to Issaquah	5:30 PM	9.3	15	15	0	0%	19	19	0	0%	22	14
I-5	Seattle to Everett	4:20 PM	23.7	42	42	0	0%	60	60	0	0%	65	63
I-405/I-90	Bellevue to Tukwila	5:25 PM	13.5	25	25	0	0%	34	31	-3	-9%	78	79
I-5	SeaTac to Seattle	7:40 AM	13.0	23	23	0	0%	18	17	-1	-6%	-	50
I-90/I-5	Issaquah to Seattle	7:45 AM	15.5	23	23	0	0%	31	32	1	3%	13	12
I-5/I-90	Seattle to Issaquah	5:35 PM	15.7	22	22	0	0%	32	32	0	0%	21	13
I-405/I-90/I-5	Bellevue to Seattle	8:30 AM	10.7	15	15	0	0%	20	25	5	25%	7	16
I-5/I-90/I-405	Seattle to Bellevue	5:35 PM	10.6	17	17	0	0%	27	27	0	0%	49	45
I-405/SR 520	Bellevue to Redmond	5:35 PM	6.8	12	12	0	0%	16	17	1	6%	48	58
I-5/SR 520/I-405	Seattle to Bellevue	5:35 PM	10.1	18	18	0	0%	28	27	-1	-4%	68	74
I-5	Everett to Seattle	7:15 AM	23.7	43	44	1	2%	63	66	3	5%	86	79
I-405	Tukwila to Bellevue	7:40 AM	13.5	30	31	1	3%	1	42	1	2%	178	204
SR 520/I-5	Redmond to Seattle	7:45 AM	14.8	21	22	1	5%	28	29	1	4%	7	13
I-90/I-405	Issaquah to Bellevue	7:50 AM	9.5	16	17	1	6%	24	24	0	0%	50	65
I-405/SR 520/I-5	Bellevue to Seattle	7:50 AM	10.5	17	18	1	6%	23	24	1	4%	26	39
SR 167	Auburn to Renton	7:30 AM	9.8	15	16	1	7%	21	24	3	14%	18	27
I-5/SR 520	Seattle to Redmond	5:30 PM	14.7	25	27	2	8%	34	37	3	9%	63	70
SR 520/I-405	Redmond to Bellevue	7:50 AM	7.2	9	10	1	11%	11	12	1	9%	1	4

Peak Travel Times

If you travel at the peak time of the weekday commute, how long on average does your trip take? Was the average for 2003 better or worse than for 2002? From information fed into computers every five minutes, 24 hours a day, from in-highway loop counters, WSDOT now determines the average peak commute travel times each way for several typical commuting routes in the Central Puget Sound area.

There is considerable variation in performance among these routes. In 2003, the commuting route showing the greatest improvement was the 9.8 mile afternoon commute from Renton to Auburn where the average peak time fell from 19 minutes in 2002 to 16 minutes in 2003. The route with the worst deterioration was the morning commute from Redmond to Bellevue via SR 520, which rose to 10 minutes in 2003 from 9 minutes in 2002 (an 11 percent increase). Results are shown in more detail on the table below.

Routes in this table are ranked by this column from the largest percent improvement to the largest percent deterioration.

Number of Days When Travel Times Exceeded Twice the Time Associated with Freeflow

Source: WSDOT Traffic Operations

Measuring Delay and Congestion: Annual Update

Travel Time Reliability

Do you know the time it will take you to get to work on time, or for a trucker to make a delivery or meet a peak hour pick up schedule? If you want to be reasonably sure of getting there on time, then you want to know about the “worst case scenario.”

WSDOT computes the commute time for the peak hour that you would meet or beat on 95% of work day commutes. This is called the 95% Reliable Travel Time. Ten typical commuting routes (both directions) have been studied and compared from 2002 to 2003. For example, on the Renton to Auburn afternoon commute where average peak hour travel time showed slight improvement (from 18 minutes to 16 minutes) as described above, the 95% Reliable Travel Time fell dramatically from 37 minutes in 2002 to 27 minutes in 2003. In other words, in 2003, allowing 27 minutes at peak period, you would have arrived home from work on time 19 days out of 20 and on the average day you would have 12 minutes to spare to pick up a child from day care or see batting practice before the little league game. But not so on Seattle to Redmond via SR 520, where the 95% Reliable Travel Time deteriorated from 34 minutes to 37 minutes between 2002 to 2003. Results on this measure are shown on the same table as the Peak Travel Time to permit easy side-by-side comparison (previous page).

Really Bad Days – or the “Two Times Free Flow” Measure

We know that some of the worst traffic tie-ups and delays result from a disabled vehicle, an accident, severe weather or the special circumstances of large community events. If we isolate the number of days when the actual peak travel time is twice as long as when traffic is flowing freely, are there more or fewer of those days?

This is particularly important to WSDOT because it helps to measure the actual benefits, for example, of maintaining roving Incident Response trucks on the principal corridors to help clear accidents and assist disabled vehicles. We are first to admit that while some of the causes of changes in the corridor are pretty clear (for example, major benefits were seen on southbound I-5 from opening the HOV lane extension to Federal Way in September 2002), others factors are somewhat mystifying. On the afternoon commute on I-5 from Seattle to Sea-Tac, there were only four days when the peak commute time was “Two Times Free Flow” in 2003 as contrasted to 30 days in 2002. But on the Bellevue to Seattle morning SR 520

commute, the days when the peak travel time was worse than the “Two Times Free Flow” time climbed from 26 days in 2002 to 39 days in 2003. For more information on WSDOT’s recurrent vs. non-recurrent analysis (including two times free flow), see page 55 of this update.

How does WSDOT get traffic delay data?

In King County and a small part of Snohomish County the freeways have traffic detection loops embedded in the roadway. WSDOT collects this loop data at five minute intervals, 24 hours a day, seven days a week. The data includes volumes and traffic density that are used to calculate speed, delay and travel time.

Traffic and roadway data also comes from WSDOT’s Transportation Information and Planning Support (TRIPS) system. TRIPS data comes from field reviews, and information captured from completed construction contract plans. The data covers all state highways and includes State Route Milepost (SRMP), Accumulated Route Mileage (ARM), roadway geometrics, highway classifications, surface type, and more.

In Spokane, the Spokane Regional Transportation Council has a monitoring program that uses transponders and readers to collect speed and travel time on major regional freeways and arterials. Everywhere else, the data comes from a traffic model that uses standard relationships to convert roadway capacity information and volume counts into speeds, delay and travel times.

WSDOT’s Congestion Measurement Principles:

- Use real time measurements (rather than modeling) whenever possible.
- Measure congestion due to incidents as distinct from congestion due to inadequate capacity.
- Show whether reducing congestion from incidents will improve travel time reliability.
- Use plain English to describe congestion measures.
- Demonstrate both long-term and short-to-intermediate term results.
- Communicate about possible congestion fixes using an “apples to apples” comparison with the current situation (for example, if the trip takes 20 minutes today, how many minutes shorter will it be if we improve the interchanges?)

Measuring Delay and Congestion: Annual Update

Comparison of Conditions - 2002 to 2003

How Extensive is the Daily Breakdown of Freeway Traffic Speeds?

In order to better examine travel time data, WSDOT has used the loop data to create a picture for each commute that charts for each five minute interval of the morning and afternoon commute period, *the number of days in the year when, at that precise time, traffic was moving on average for the whole route at less than 35 mph.* Two samples at right show whether 2003 was worse than 2002, and vice versa. On the full array of 20 graphs (following page), most show very little change from one year to the next. But some do show significant change from 2002 to 2003. Why? We looked at several possible factors.

Did traffic volumes increase substantially on routes where performance declined?

Generally, we found only very small variations in traffic from one year to the next, even where speed performance changed.

Did people change the timing of their commute period trips?

Generally we did not see evidence of such shifts. Comparing the intensity of traffic congestion on the morning commute charts to the afternoon commute charts does show that the morning commute period tends to be shorter than it is in the afternoon. People are all trying to get to their destination at about the same time.

Were there increases in capacity?

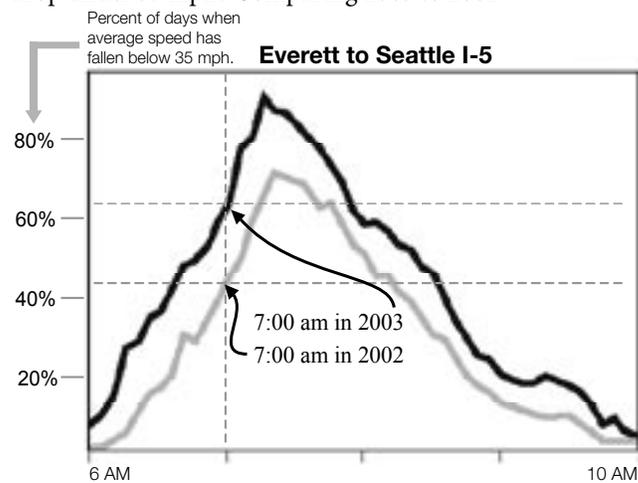
WSDOT made some spot capacity improvements on several routes that delivered encouraging benefits. Four projects are highlighted in this update and provide before and after results of these improvements. Even though these were small projects, they resulted in much improved travel times (see page 45 for highlighted improvements).

Were there changes in performance as a result of fewer or shorter "incidents?"

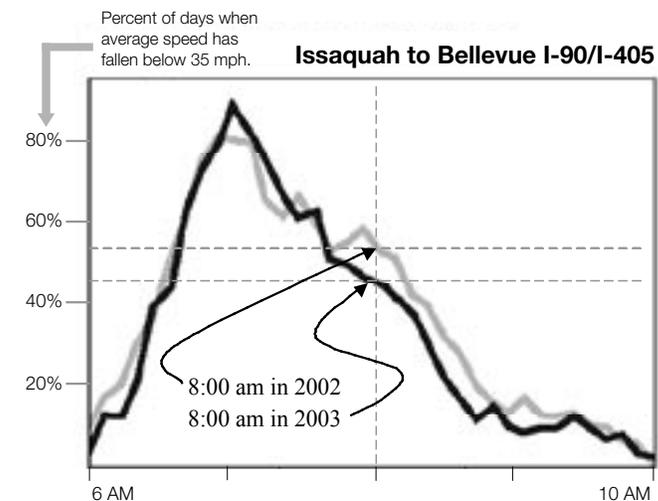
Let us assume, for purposes of guesstimation, that a time when the speed of traffic would produce a travel time greater than "two times free flow" results from an incident of some kind. This allows us to construct a ratio that compares the number of days "with incident" to the number of days "without incident." The data presented in the table on page 45, shows a high correlation. But the correlation is inadequate to illuminate the cause and effect connection between a particular kind of incident and a severe breakdown of traffic flow.

Percent of Days When Speeds Were Less Than 35 MPH – Twenty Puget Sound Commutes

How frequently (and when) did the average freeway speed drop under 35 mph? Comparing 2003 to 2002



At 7:00 am in 2002, you had about a 45% chance that traffic would be moving at less than 35 mph. In 2003, the situation became worse (black line above the gray line); your chance that traffic would be moving slower than 35 mph was about 65% at 7:00 am.



At 8:00 am in 2002, you had about a 55% chance that traffic would be moving at less than 35 mph. In 2003, the situation was better (black line below the gray line); your chance that traffic would be moving slower than 35 mph was about 45%.

Measuring Delay and Congestion: Annual Update

The graphs below reveal at a glance, whether freeway speed on a given commute route has worsened or improved from 2002 to 2003. Where the black line is above the gray line, 2003 was worse than 2002 and vice versa. The vertical axis measures the percent of days at each time of the segment commute where

speed was less than 35 mph, starting with “0%” at the bottom, ending with “100%” at the top. The time scale represents the hours of the peak commute period.

■ 2002 ■ 2003

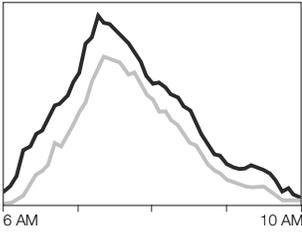
Morning

Afternoon

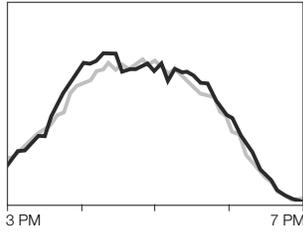
Morning

Afternoon

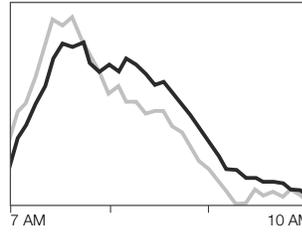
Everett to Seattle I-5



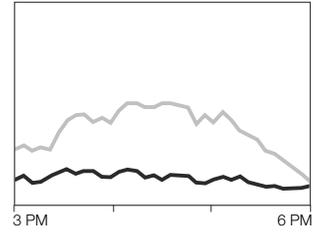
Seattle to Everett I-5



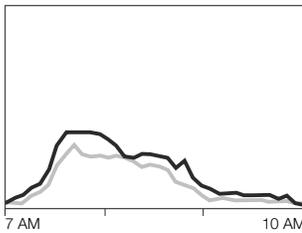
SeaTac to Seattle I-5



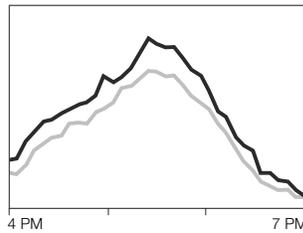
Seattle to SeaTac I-5



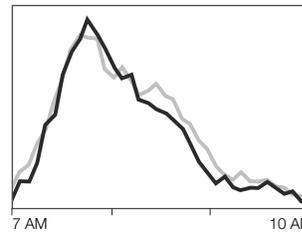
Redmond to Seattle SR 520/I-5



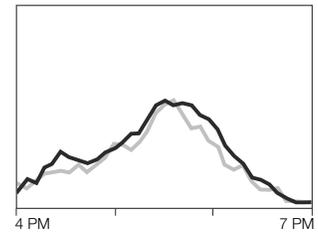
Seattle to Redmond I-5/SR 520



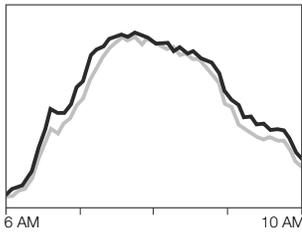
Issaquah to Bellevue I-90/I-405



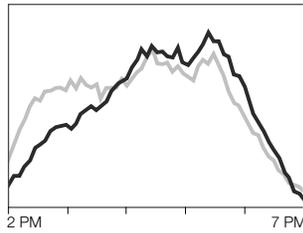
Bellevue to Issaquah I-405/I-90



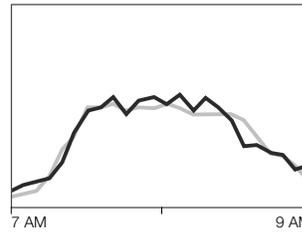
Tukwila to Bellevue I-405



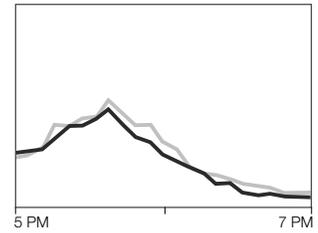
Bellevue to Tukwila I-405



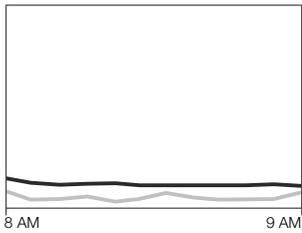
Issaquah to Seattle I-90/I-5



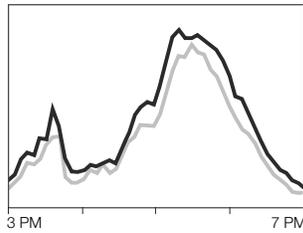
Seattle to Issaquah I-5/I-90



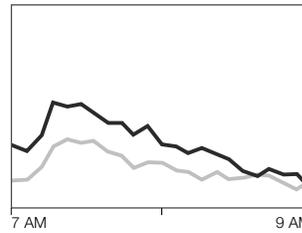
Redmond to Bellevue SR 520/I-405



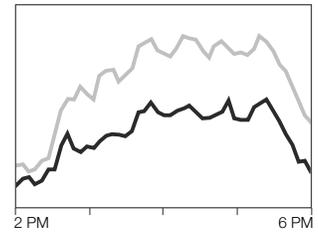
Bellevue to Redmond I-405/SR 520



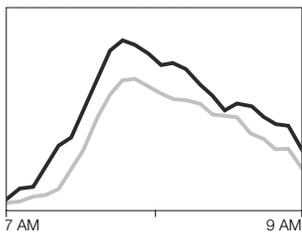
Auburn to Renton SR 167



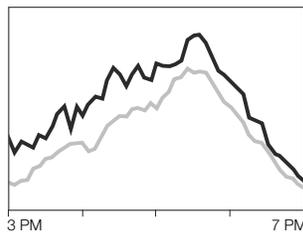
Renton to Auburn SR 167



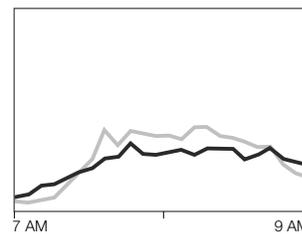
Bellevue to Seattle SR 520



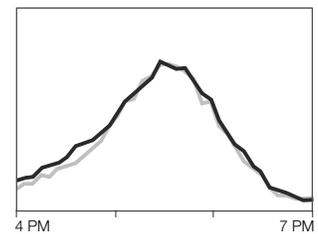
Seattle to Bellevue SR 520



Bellevue to Seattle I-90



Seattle to Bellevue I-90



Measuring Delay and Congestion: Annual Update

Measuring Travel Delay

Travelers on the roadway system experience congestion as delay. Delay is measured based on the difference between travel times and what the travel time would have been if traffic had been going the speed limit.

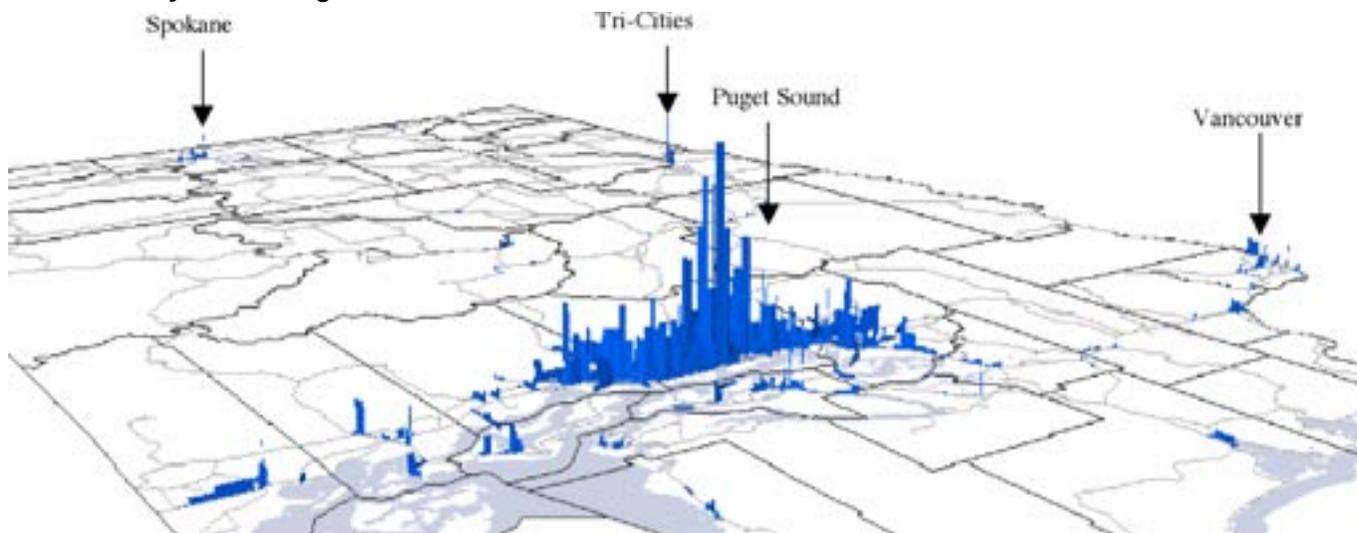
The sum of vehicle delay across an average twenty-four hour day is in WSDOT's view the most basic and accessible measure for describing congestion. It indicates which roadways are congested, and gives a rough comparative indication of the severity of congestion and how long it lasts. The average vehicle hours of delay per day, mile by mile on state highways is plotted on the map below.

The change in delay between 2002 and 2003 on the major freeways in the Puget Sound region was a mixture of increases and decreases with an overall negligible 2 percent reduction in delay accompanying a 1.5 percent decrease in vehicle miles traveled (see table below).

The overall delay declined on three corridors: I-5 from SeaTac to Everett; SR 167 from Renton to Auburn; and SR 520 from Redmond to Seattle. Corridors experiencing increased delay include I-90 from Seattle to Issaquah and I-405 from Tukwila to Lynwood. A good portion of the reduction on SR 167 can be attributed to a WSDOT spot capacity improvement project which added an additional lane to the SR 18 interchange (see page 53 in this update).

The delay numbers for the individual corridors and the total Puget Sound Freeway system are shown in the table below. Data for the table was compiled from loop detectors. The corridors do not exactly correlate to the routes identified in the Travel Time table (shown on page 45). The commute routes used for calculating travel times include a combination of highway segments that a commuter would use to get from Redmond to Seattle, for example. The SR 520 segment used in the table below is a small piece of that entire commute route.

Relative Delay in Washington's Urban Areas



Puget Sound Freeway Delay and Vehicle Miles Traveled: 2002 and 2003

State Route	Vehicle Hours of Delay / Day				Vehicle Hours of Delay / Mile			Vehicle Miles Traveled			
	2002	2003	Change	% Change	2002	2003	Change	2002	2003	Change	% Change
I-5	14,150	13,750	-400	-2.8%	168	164	-4	6,969,350	6,815,500	-153,850	-2.2%
I-90	1,300	1,450	150	11.5%	42	48	6	1,581,750	1,590,600	8,850	0.6%
SR 167	1,950	1,700	-250	-12.8%	100	87	-13	946,600	957,300	10,700	1.1%
I-405	9,250	9,450	200	2.2%	178	182	4	3,302,400	3,308,250	-5,850	0.2%
SR 520	2,500	2,250	-250	-10.0%	99	89	-10	1,063,350	987,150	-76,200	-7.2%
Total	29,150	28,600	-550	-1.9%	138	136	-2	13,863,450	13,658,800	-204,650	-1.5%

Source: WSDOT Urban Corridors Office

Measuring Delay and Congestion: Annual Update

The Cost of Delay

Transportation system delay imposes costs due to lost time of travelers, and higher vehicle operating costs from wasted fuel, increased oil use, and other effects of stop and go driving. Truckers and shippers and their customers also bear large costs from traffic delay. In 2003, the cost of total delay on weekdays on these major Puget Sound freeways, by one measure, was estimated at \$164 million. About two thirds was from lost time and one third from higher vehicle operating costs.

Key Insight – The Relationship Between Congestion and Lost Throughput Efficiency

For most roadways, basic day to day maintenance activities such as snow plowing, picking up debris, controlling vegetation, and patching potholes are the activities needed to keep the road available for optimal use. Each roadway has an optimal capacity where throughput is maximized. The scatter graph (upper right), where each dot represents a specific moment's observation of speed and throughput, is typical for a freeway and represents real data from I-405. It shows maximum throughput at about 2000 vehicles per lane per hour.

Maximum freeway throughput should typically be achieved when freeway traffic is flowing at about 45 mph. System throughput drops dramatically when traffic volume forces speeds to drop below 40 mph, as also shown by the scatter graph.

The Productivity Lost Due to Delay graph (lower right) shows that during the peak period on I-405 at NE 24th Street, congestion reduces the throughput of the two general purpose lanes in Renton to the capacity of one free-flowing lane.

WSDOT's goal is to stay on top of the curve, working toward improving productivity of the system by investing in opportunities that provide optimal throughput.

WSDOT currently has about twenty projects scheduled for construction in the 05-07 biennium that are designed to improve productivity of the system. A few examples are:

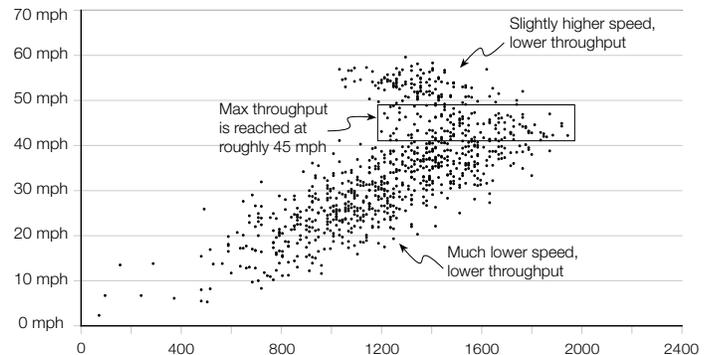
- [SR 99/S 284th to S 272nd St - HOV](#)
- [I-5/SR 526 to Marine View Drive - HOV Lanes](#)
- [SR 167/15th St SW to 15th St NW - HOV](#)

In addition to tracking efficiency and delay in the Puget Sound region, WSDOT will work to create a baseline in other areas of the state that are also experiencing congestion (e.g., Spokane, Vancouver).

Relating Speed and Volume

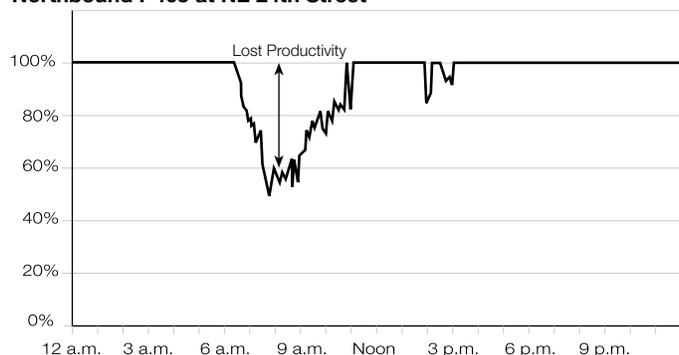
I-405 Northbound at 24th NE, 6-11 AM Weekdays in May 2001

Hourly Volume/Lane



Source: WSDOT Urban Corridors Office

Percent of Productivity Lost Due to Delay Northbound I-405 at NE 24th Street



Source: WSDOT Urban Corridors Office

Measuring Delay and Congestion: Annual Update

Case Studies – Before and After Results

Case Study 1 - Ramp Metering

Smoother Merging, More Throughput, and Higher Speeds

Reducing highway traffic congestion is the primary goal of ramp metering. Ramp meters respond to actual traffic conditions, linking computers with sensors embedded in the ramps and on the freeways near the ramps. These act as metal detectors, registering when a car or motorcycle passes over the sensor. This information is fed to a central computer, that in turn adjusts the rate at which the ramp meter signal releases drivers to enter the mainline. If cars start to back up onto the city street, the ramp meter automatically speeds up to clear the

queue. If traffic is light on the highway, the meter also speeds up to allow more cars to merge. If traffic is heavy everywhere, which is often the case during peak hours, the computer optimizes the flow. Ramp meters help smooth traffic flow. The Transportation Management Center in Seattle monitors over 150 freeway ramp meters, and one in Vancouver, during congested hours on all days. Ramp metering reduces congestion while increasing throughput and freeway speeds.

How do we know ramp meters reduce congestion?

The following chart shows traffic conditions on SR 520 between I-5 and the floating bridge on a typical morning (July 25, 2001) without ramp metering.

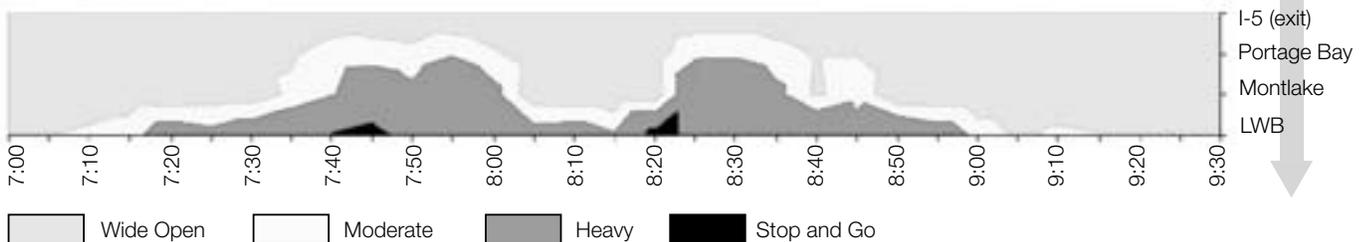
Before Ramp Metering:

SR 520 Eastbound Morning Congestion, I-5 (exit to SR 520) to Lake Washington Blvd. (LWB)
Wednesday July 25, 2001



After Ramp Metering:

SR 520 Eastbound Morning Congestion, I-5 (exit to SR 520) to Lake Washington Blvd. (LWB)
Thursday September 6, 2001



Source: WSDOT NWR Traffic Operations

Before

Reading the top graph, the black shading shows stop-and-go traffic from 7:30 a.m. to 9:30 a.m., extending back to I-5 at different times. At 8:00 a.m. on this day, traffic flow on SR 520 eastbound was at a rate of 2,780 vehicles per hour.

After

The bottom graph shows a typical morning (Sept. 6, 2001) after ramp metering was activated along the corridor. Stop-and-go traffic was limited to a total duration of about 15 minutes and never extended west of Montlake Blvd. NE. At 8:00 a.m. on this day, traffic flow on SR 520 was at a rate of 3,265 vehicles per hour.

Measuring Delay and Congestion: Annual Update

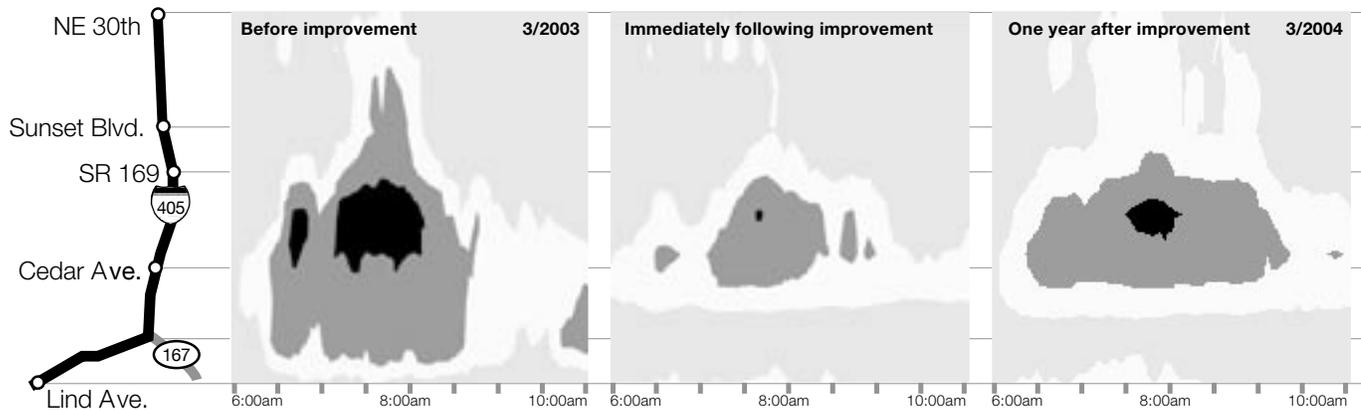
Case Study 2 - I-405/SR 167 Ramp Separation Project

Spot Capacity Improvement

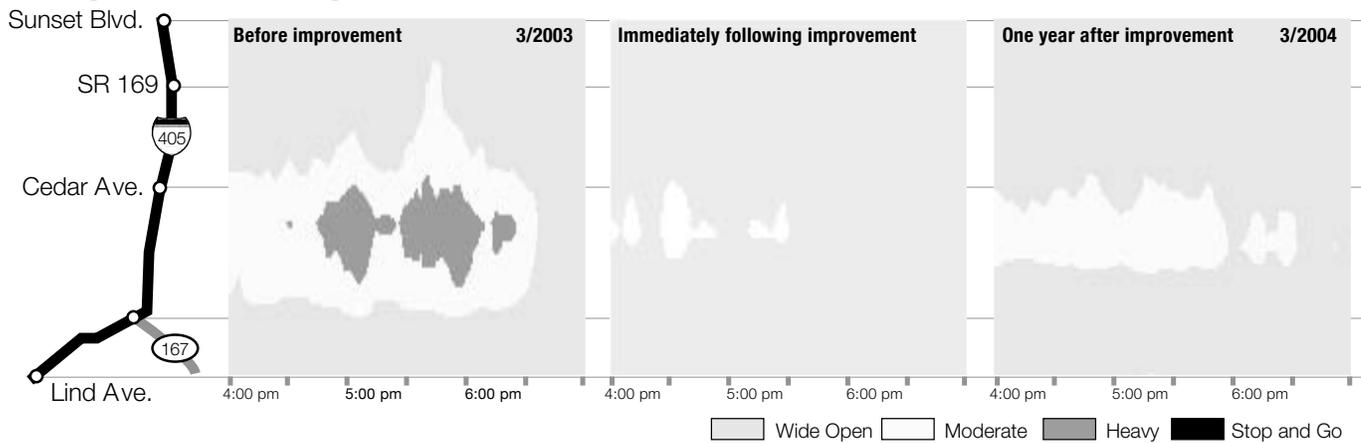
The March 2003 *Gray Notebook* published an evaluation several weeks after the opening of the I-405 / SR 167 Ramp Separation (flyover ramp) project in Renton that showed, for the short-term, a significant reduction in congestion and delay. No one was sure, however, whether the improvement would be sustained as drivers adjusted to the new situation.

WSDOT now has “one year later” data to compare with the “before” and the “shortly after” data earlier shown. The results are very encouraging in that the delay relief benefits from the improvement have in fact been sustained. These comparisons shown below, first for the weekday situation and second for the weekend situation, are particularly noteworthy because in the March 2003 to March 2004 period, the daytime volumes on I-405 increased by 3.6 percent, and on SR 167 increased by 5.3 percent. On weekends, I-405 traffic volumes have increased about 10 percent.

Average Weekday Congestion I-405 Southbound



Average Weekend Congestion I-405 Southbound



Source: WSDOT NWR Traffic Operations

Measuring Delay and Congestion: Annual Update

Travel Delay Assessment – Over \$4 Million in Delay Savings on I-405 Southbound

The change in travel delay was evaluated using loop data from April 2001 and April 2003. WSDOT evaluated weekdays only between the hours of 4 am – 10 pm. An assumed three percent truck volume was used for the monetization of delay reduction benefits. Fifty work weeks/year was used for the calculation (except ten weekday holidays) and weekends were not included. The results showed a savings of \$4.3 million in travel delay savings.

Travel Time Savings

I-405/SR 167 Interchange (2.58 mile study area – 4:00 am to 10:00 pm)

	Truck	Passenger Vehicle	Total
Travel time savings Vehicle-hours / Weekday	34	1,102	1,136
Dollar Equivalent Savings Per Weekday	\$1,917	\$15,503	\$17,420
Annual Dollar Equivalent of Delay Savings Annually	\$479,247	\$3,875,728	\$4,354,975

Case Study 3 – SR 167 Restripe Project

Spot Capacity Improvement

Driving on southbound SR 167 drivers routinely experienced significant congestion at its worst during the mid-afternoon commute around the Boeing afternoon shift change in Renton. One short section of SR 167 with only two southbound lanes at a point just north of the SR 18 interchange, was a major contributor to the backup.

WSDOT Listens

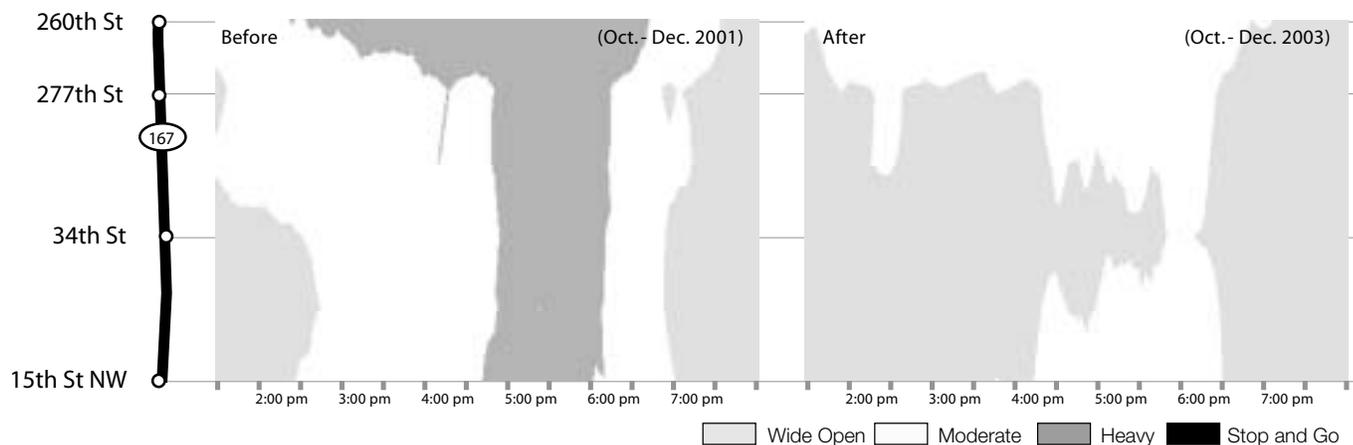
A commuter pointed out to WSDOT via a website e-mail, that this limited chokepoint could be improved at very reasonable cost to provide much better traffic flow if WSDOT reconfigured roughly 3,500 feet of SR 167 (vicinity of the 15th St. NW interchange). This would require extending the existing three

lanes to the SR 18 interchange where almost a third of the southbound motorists were departing from SR 167.

WSDOT reviewed this suggestion from the viewpoints of capacity, safety and roadside risk, and agreed that this suggestion offered very positive operational benefits. The cost of this project was approximately \$42,000 for construction only. All work was performed by WSDOT workforce.

As shown in the table on page 45, the reduction in travel time for this route (for the afternoon commute) has been dramatic.

Average Weekday Congestion SR 167 Southbound



Source: WSDOT NWR Traffic Operations

Measuring Delay and Congestion: Annual Update

Case Study 4 – I-5 HOV Extension Project

Spot Capacity Improvement

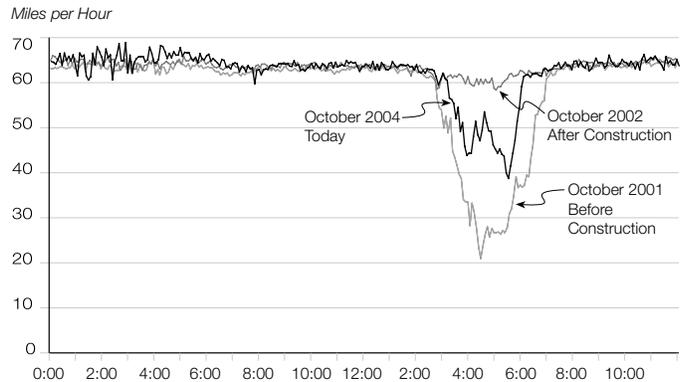
WSDOT's resurfacing work on three I-5 bridges in south King County included a six-mile extension of the southbound I-5 High Occupancy Vehicle (HOV) lane, increasing the capacity of the freeway from four lanes to five on one of the region's busiest stretches of freeway.

Traffic conditions on southbound I-5 have improved dramatically following the HOV lane extension between SR 516 and S 320th Street. The evening congestion that typically extended from Midway to Southcenter prior to the project has been largely eliminated. As expected with such a significant reduction in congestion, average speeds in the Southcenter Hill area have risen sharply during the evening peak.

As the graph to the upper right shows, southbound speeds prior to the HOV project (October 2001) decreased considerably each afternoon at about 2:30 and did not fully recover until approximately 7:00 pm. Following the project (October 2002), the speed reduction during the evening peak no longer occurs. Between 4:00 and 6:00 pm, average speeds increased 25 – 35 mph since the HOV lane extension. Recent data (October 2004) shows that speeds have dropped slightly yet the duration is not as long and average vehicle speeds are still 15 - 20 MPH faster than pre-project conditions.

The shaded graphs below illustrate the level of congestion approaching the project area, which begins just south of S 178th St. This area also showed an improvement in travel times since the extension was completed in September 2002.

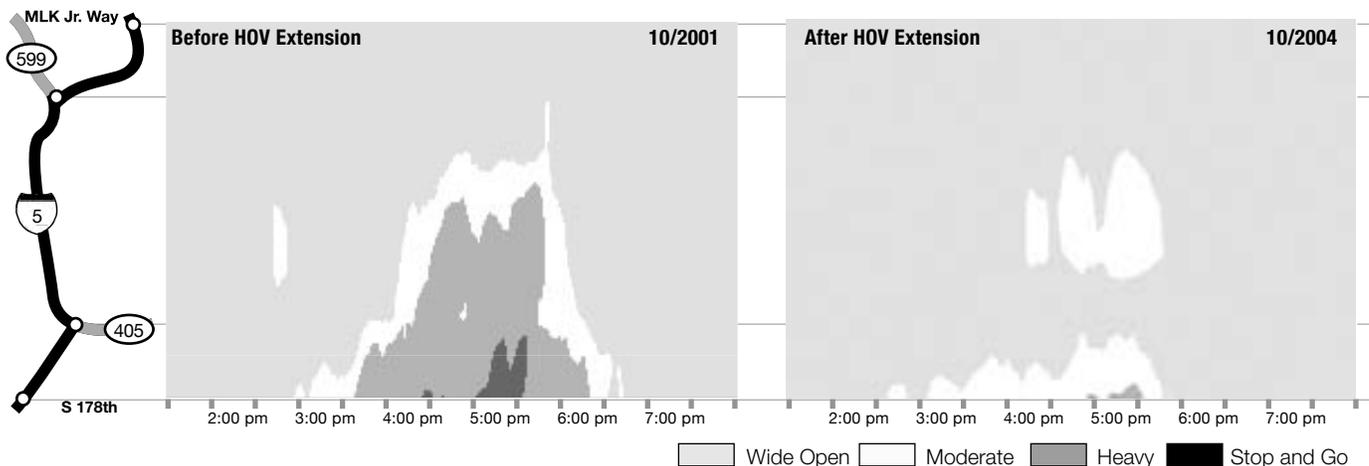
Southbound Speeds at S 184th St (Average Weekday)



What once took 28 minutes (95% Reliable Travel Time) now takes 22 minutes – a 21% reliable travel time savings.

As the before graph below illustrates, heavy to stop-and-go congestion previously developed approaching Southcenter Hill at about 3:30 and did not dissipate until after 6:00 pm. The after graph shows conditions in the same area one year later, following the HOV lane extension. Under typical conditions, heavy congestion approaching S 178th St no longer develops and congestion between S 188th St and SR 516 is generally moderate.

It should be noted that the only loop data available for this area of I-5 for the time frame needed to display before and after results, was the section of I-5 just north of the HOV extension project, between Martin Luther King Jr. Way and S 178th St.



Source: WSDOT NWR Traffic Operations

Measuring Delay and Congestion: Annual Update

More Work on Measuring and Understanding Recurrent and Non-Recurrent Congestion

Incidents that affect highway system performance are so varied in kind (roadway debris, a thunderstorm, a big concert or sports event) that it is difficult to come up with a direct way of linking the overall effects of incidents to specific incidents that may, for example, be spotted from time to time on the freeway system traffic cameras. A new, more accurate methodology is needed in order to distinguish, characterize and quantify recurrent versus non-recurrent congestion.

Preliminary Approach

In early 2002, WSDOT set out to determine if a high correlation could be found between the existence of incidents (collision, disabled vehicle, enforcement activity, weather, debris, etc.) and the condition along a traffic corridor that caused travel times to be twice as long as would be observed under “free flow” conditions. Transportation Center (TRAC) researchers under the direction of Mark Hallenbeck examined a sample of the “Two Times Free Flow” data, and were disappointed at the difficulty they found in identifying actual incidents (from the WSP logs, for example) that seemed to be creating the Two Times Free Flow situations. In recent months researchers began looking at a significant refinement of this approach. Their direction was to determine a “baseline” set of traffic conditions that appeared to prevail when traffic volumes were at the median of generally experienced levels.

Phase One - Percent of Lane Occupancy

The first phase of this analysis was to determine the median, or routine operating condition. This analysis was restricted to data collected during September – October 2002, Tuesday through Thursday, from 6:00 to 9:00 am, 9:00 am to 3:00 pm, 3:00 to 7:00 pm, and at night. Geographically, the study included the mainlines of five separate, connected freeways and roughly 100 center-line miles of roadway in the Puget Sound area.

The percentage of lane occupancy, aggregated at 5-minute intervals across all lanes, was used as the measure of the highway’s operating condition, along with volume, and speed. Non-recurring congestion was mathematically defined as occurring when lane occupancy is five or more percentage points higher than the median operating condition (expressed in percentage of lane occupancy) that does not contain a lane blocking incident. In other words, if the roadway routinely operates with a median lane occupancy of ten percent between 6:00 and 6:05 at milepost 100, non-recurring congestion only exists when measured lane occupancy exceeds 14.9 percent.

Summary of Findings

The first phase looked at the two basic types of congestion (recurrent/non-recurrent) which showed that 40 to 70 percent of delay experienced in most freeway corridors was caused by non-recurrent congestion (incidents) rather than by recurrent congestion (too many vehicles routinely using the freeway). Even during peak periods when recurrent congestion is most common, 30 to 50 percent of the delay was caused by non-recurrent events (see table below). This would indicate that active traffic management during these time periods can substantially reduce the delays experienced by the traveling public.

Vehicle Hours of Delay At Travel Speeds Below 50 MPH	Renton to Auburn SR 167 Southbound	Seattle to SeaTac I-5 Southbound	Redmond to Seattle SR 520 Westbound	Everett to Seattle I-5 Southbound
Total Vehicle Hours of Delay per Day	1474	860	1086	5947
Recurring Vehicle Hours of Delay per Day	35%	30%	40%	48%
Non-recurring Vehicle Hours of Delay per Day	65%	70%	60%	52%

Source: Transportation Center

Phase Two - Examining Non-Recurrent Factors

TRAC’s research to develop methods to analyze the amount of freeway delay contributed by specific types of non-recurring traffic disruptions is continuing. Non-recurring event categories being analyzed are:

- Incidents that block lanes,
- Incidents that do not block lanes (e.g., debris in the roadway, stalled cars on the shoulder),
- Incidents on one corridor producing congestion that spills over and affects a connecting corridor,
- Special events with large concentrated traffic impacts (e.g., sporting events)
- Weather (specifically, rain or snow amounts)

Refining and Creating New Tools

Existing software that is used to compute estimated travel times is being supplemented with new tools to estimate recurrent and non-recurrent congestion delay based on incident logs and other traffic data. The resulting analytical method will be applied to selected Seattle-area freeway corridors that feature a variety of congestion patterns, using two months of 2003 incident and traffic data. The anticipated completion date is December 2004.

Measuring Delay and Congestion: Annual Update

Sources of Congestion

According to the Federal Highway Administration's 2004 report *Traffic Congestion and Reliability: Linking Solutions to Problems*, the majority of congestion is caused by bottlenecks (see graph to right). Traffic incidents are the next highest contributor followed by inclement weather.

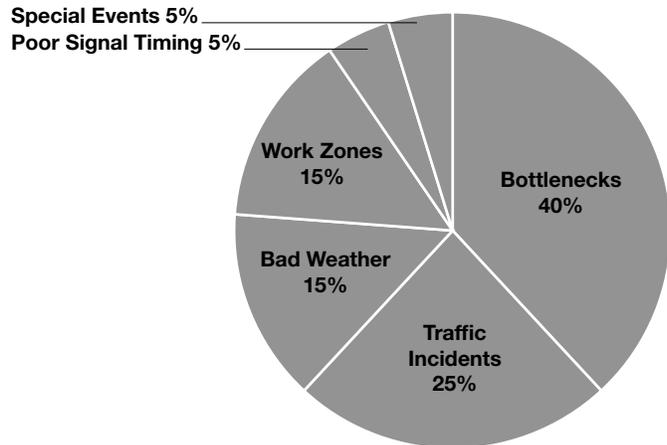
WSDOT's Work Addressing the Major Sources of Congestion

WSDOT is currently developing, in connection with the preparation of the Washington Transportation Plan, a list of bottlenecks in the Puget Sound area, Vancouver, and the Spokane area. This list will be used to create strategies to address congestion in these specific areas.

WSDOT's Incident Response Team has shown positive results in reducing non-recurrent congestion. Although the number of incidents WSDOT responded to has doubled since July 2002, the average clearance time for all incidents has remained constant (see Incident Response Quarterly Update on the following page).

The Sources of Congestion

National Summary



Source: Federal Highways Administration

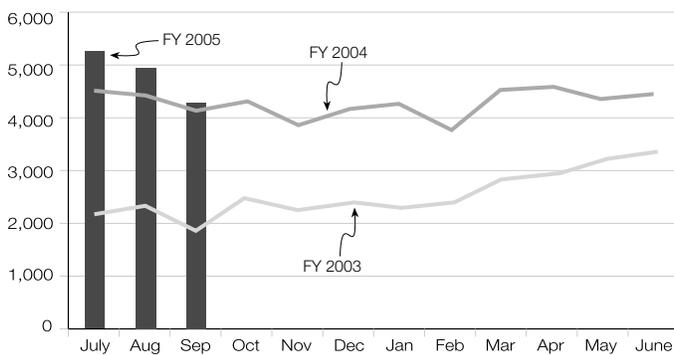
Incident Response: Quarterly Update

Program Trends

Since July 2002, the number of incident responses each quarter has increased. During quarter 3 of 2004 the total number of responses was 14,499 - the highest quarterly total to date - for an average of 1,115 responses per week.

Total Number of Responses by Month

July 2002 to September 2004*



Source: WSDOT Traffic Office

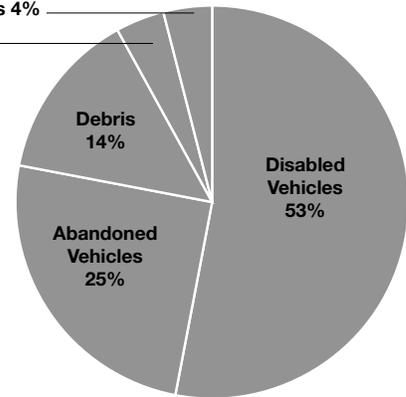
*FY 2003 numbers do not include non-IRT responses in the



A semi-truck hauling a large backhoe hit the underside of the 13th Street overpass on I-5 near Exit 76 in Lewis County. The impact sent chunks of concrete flying across the southbound lanes.

Incidents Lasting Less Than 15 Minutes (9,151)

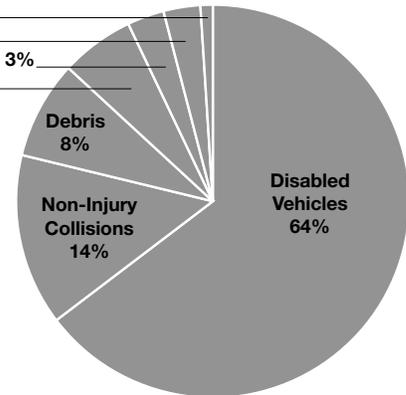
Non-Injury Collisions 4%
Other 4%



Fire, Injury Collisions, and Hazardous Material Incidents were less than 1% and are not shown in the above pie chart.

Incidents Lasting 15 to 90 Minutes (5,113)

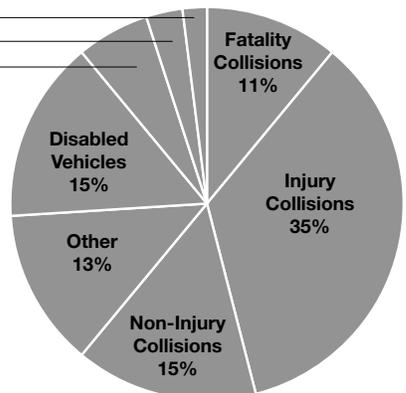
Fire 1%
Other 3%
Abandoned Vehicles 3%
Injury Collisions 6%



Hazardous Material, Fatal Collisions were less than 1% and are not shown in the above pie chart.

Incidents Lasting 90 Minutes and Longer (235)

Haz-Mat 2%
Debris 3%
Fire 6%



Source for all graphs:
WSDOT Incident Tracking System

Abandoned vehicles were less than 1% and are not shown in the above pie chart.

Incident Response: Quarterly Update

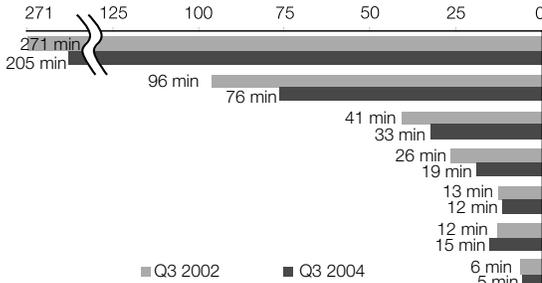
Response Comparisons - 2002 and 2004

The chart below compares incident response types with average clearance times for July - September 2002 to July - September 2004. Since 2002, the number of responses has increased in all categories except fatal collisions (38 in quarter 3, 2002 and 30 in quarter 3, 2004). The least common types of incidents are the most time consuming to clear. Clear-

ance times for all types of incidents have remained steady or decreased (the slight increase in the non-blocking disabled vehicle category is not part of an increasing trend over the two years.) During quarter 3, 2004 there were more disabled or abandoned vehicles on the roadside (i.e., not directly blocking travel lanes) than any other type of incidents. The charts categorize data in "primary" incident types only. All incidents are divided into these seven categories.

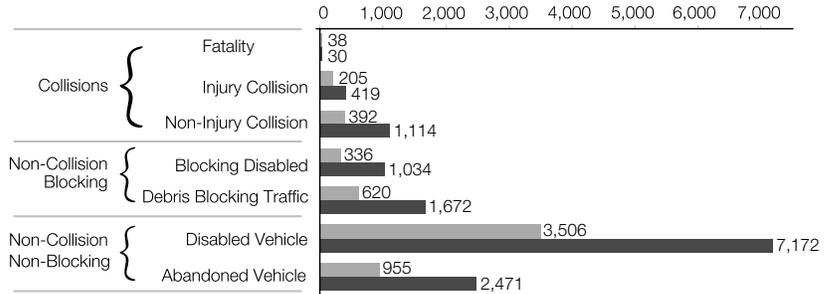
Average Clearance Time

By Type of Incident
Comparing 3rd Quarter of 2004 to 2002



Number of Responses

By Type of Incident
Comparing 3rd Quarter of 2004 to 2002



Blocking Disabled Vehicles and Debris – Trends

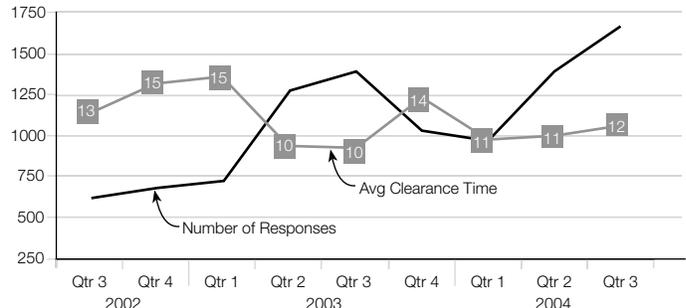
Of special concern to motorists are blocking incidents such as debris and disabled vehicles. These blocking incidents slow or stop traffic flow and pose safety hazards to travelers. The charts to the right show the growth in the number of IRT responses to these two types of blocking incidents and the average clearance times achieved for each quarter since July 2002.

Incidents involving removal of debris blocking travel lanes increased by 170 percent over the two years even though the average time for clearing debris has decreased slightly. This kind of incident often includes calling in for assistance to clear the debris, making improving clearance time especially challenging.

Over two hundred percent more disabled vehicles blocking traffic were removed from the roadways last quarter compared to two years ago. Because of better coordination between responding agencies/departments, and improved work practices through training and experience, the average time to clear blocking disabled vehicles shortened from 26 minutes in 2002 to 19 minutes in 2004.

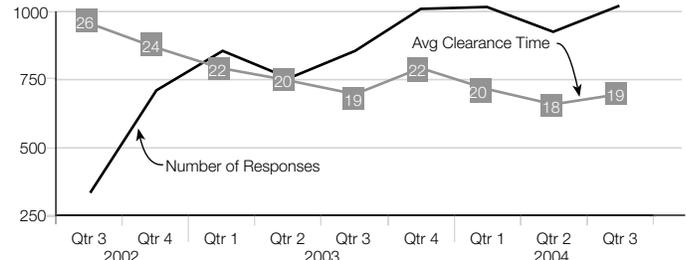
Debris Blocking Traffic

July 2002 - September 2004
Number of Responses and Average Clearance Time



Blocking Disabled Vehicles

July 2002 - September 2004
Number of Responses and Average Clearance Time



Source for all Graphs: WSDOT Incident Tracking System

Incident Response: Quarterly Update

Incident Response Program Activities on Urban Commute Routes

I-5 Between Everett and SeaTac

When comparing 2003 travel time data to 2002 (see page 45 in this edition), the Everett to Seattle AM peak travel time increased by two percent while the Seattle to SeaTac PM peak travel time decreased five percent (attributed in part to the completion of the I-5 HOV Extension project). Both commutes are on I-5, and involve travel to and from Seattle. Availability of almost two years of incident response data (January 2003 to September 2004) allowed for a closer look at this commute corridor.

Three distinct segments were identified based on the number of incident responses for the I-5 Everett to SeaTac corridor. They are: 1) Everett to NE 65th St. (just after the merge with SR 522), 2) NE 65th St. to Boeing Field/Swift Ave., and 3) Boeing Field/Swift Ave. to SeaTac.

Incidents on Interstate 5 - Everett to SeaTac

The bar graph on page 61 shows the I-5 corridor from Everett (at the top) to SeaTac (at the bottom). Each bar represents the cumulative number of incidents at 1-mile intervals during the 21-month period for both the southbound and northbound lanes. Interestingly, the bars (number of incidents) for the southbound lanes show little increase until N 145th St, where a slow increase continues until NE 65th St. At the location represented by the next bar, NE 45th St (just prior to the exit to SR 520), the number of incidents spikes, more than doubled (the northbound lanes virtually mirror the southbound lanes).

Forty-one percent of all collisions responded to by WSDOT's Incident Response program on the entire 276 miles of I-5 last quarter occurred in the nine-mile portion of downtown Seattle.

This increase is due in part to a high number of primary, and secondary collisions (a collision resulting from sudden stops or backups due to a collision ahead).

This suggests that a good portion of the primary and secondary collisions occurring in this segment, result from stop-and-go traffic caused by congestion at the exit to SR 520, and the bottleneck at the Convention Center / I-90 Interchange.

In the near future, WSDOT will further analyze collision data on I-5 and will attempt to quantify secondary collisions in the vicinity of this, and other bottleneck locations.

Incident Types

The three bar graphs stacked on the following page, compare, for both northbound and southbound, the average clearance times for each incident type with the corresponding number of incidents for each of the identified segments. Except for fatal collisions, which are rare, clearance times do not vary greatly. That is, injury collisions take approximately twice as long as non-injury collisions. Blocking disabled vehicles take about 20 minutes to clear, and 15 minutes or so is needed to clear non-blocking disabled vehicles. Only several minutes were needed for abandoned vehicles, and it takes between 10-13 minutes on average to remove Debris from the travel lanes.

Are the Current Deployment Areas Effective?

This is a question that WSDOT will visit periodically to ensure the effectiveness of the program.

In downtown Seattle where incidents are more frequent, multiple incident response units are deployed. As the distance from the downtown area increases, fewer incidents occur, and there are less numbers/types of IR units deployed (see graph on page 61). Considering varying factors along I-5, such as highway geometry (number of lanes, and width of shoulders) and travel volume, these stable clearance times indicate that the WSDOT IR responders are strategically deployed at locations where they can be most effective.

WSDOT is currently mapping the areas where IR responders are deployed and is overlaying that information with all incidents since June 2002. This is one tool WSDOT will use to identify any gaps in the deployment areas and will help WSDOT determine if additional units are needed or adjustments need to be made.

WSDOT Incident Response Team - Number of Collisions				
Interstate 5 - Washington/Oregon Border to the Washington/Canadian Border				
July 2004 to September 2004				
I-5 Segments	Number of Collisions	Percent of I-5 Total	Daily Average	Number per Mile
Everett to Washington/Canadian Border (86 mi.)	59	7%	1	1
NE 45th St to Everett (19 mi.)	125	15%	1	7
Swift/Albro to NE 45th St (9 mi.)	337	41%	4	37
SeaTac to Swift/Albro (10 mi.)	63	8%	1	6
Oregon/Washington Border to SeaTac (152 mi.)	238	29%	3	2
Total Number of Collisions	822			

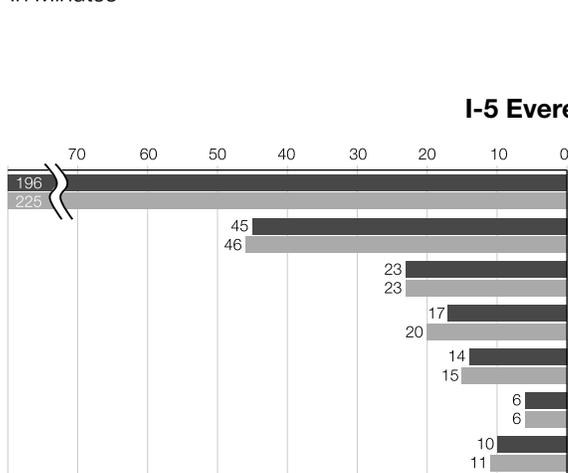
Source: WSDOT Incident Tracking System

Incident Response: Quarterly Update

Average Clearance Time

January 2003 to September 2004

In Minutes

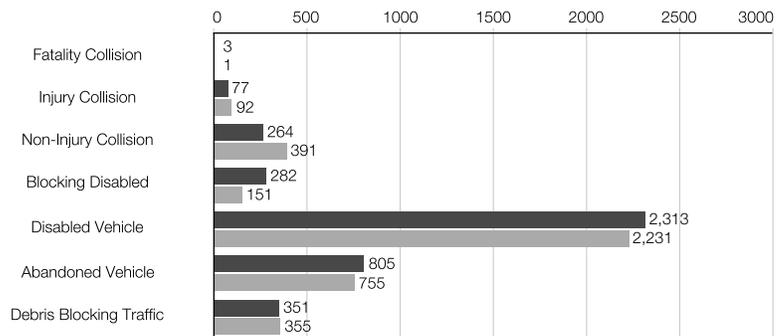


Number of Responses

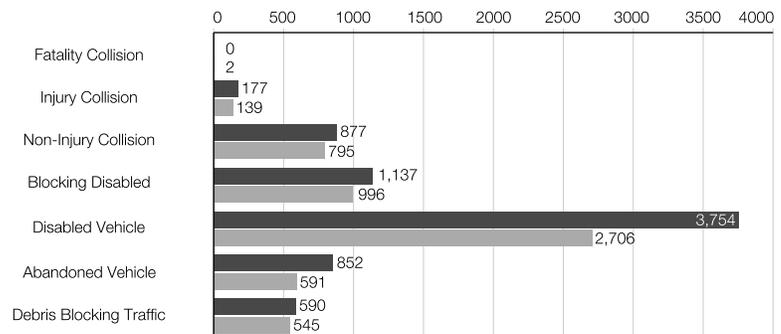
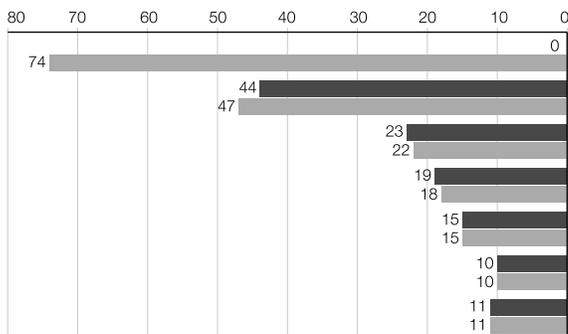
January 2003 to September 2004

Northbound
Southbound

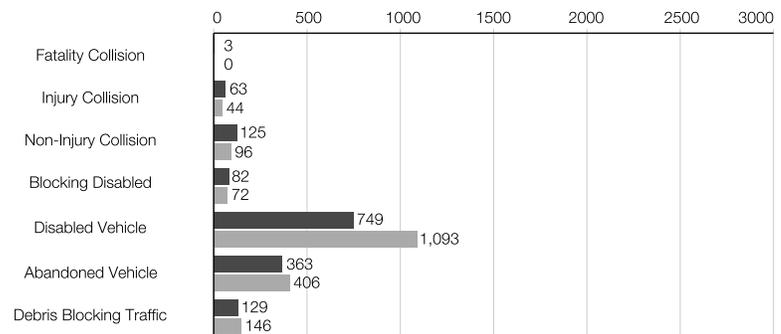
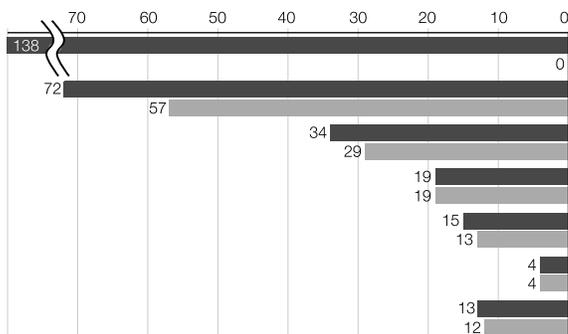
I-5 Everett - Seattle (NE 65th Street)



I-5 Downtown Seattle (Swift Ave/Albro PI - NE 65th Street)

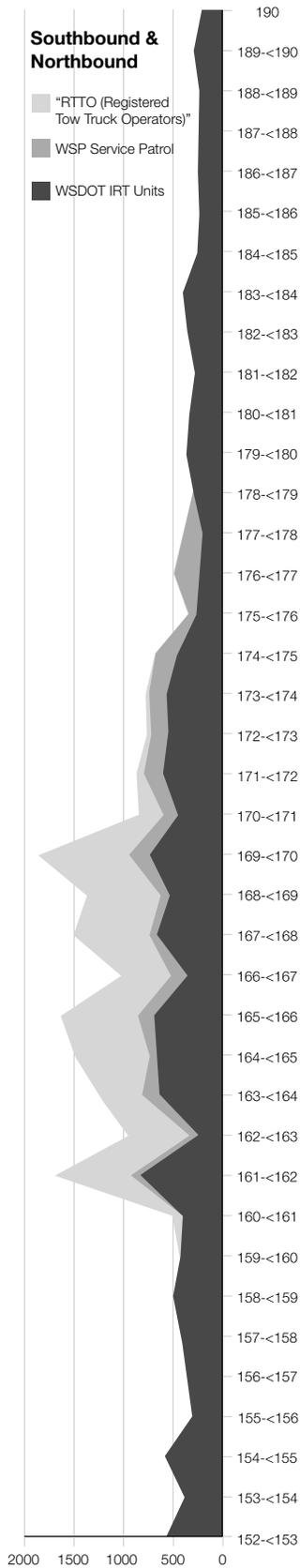


I-5 Seattle (Swift Ave/Albro PI) - SeaTac



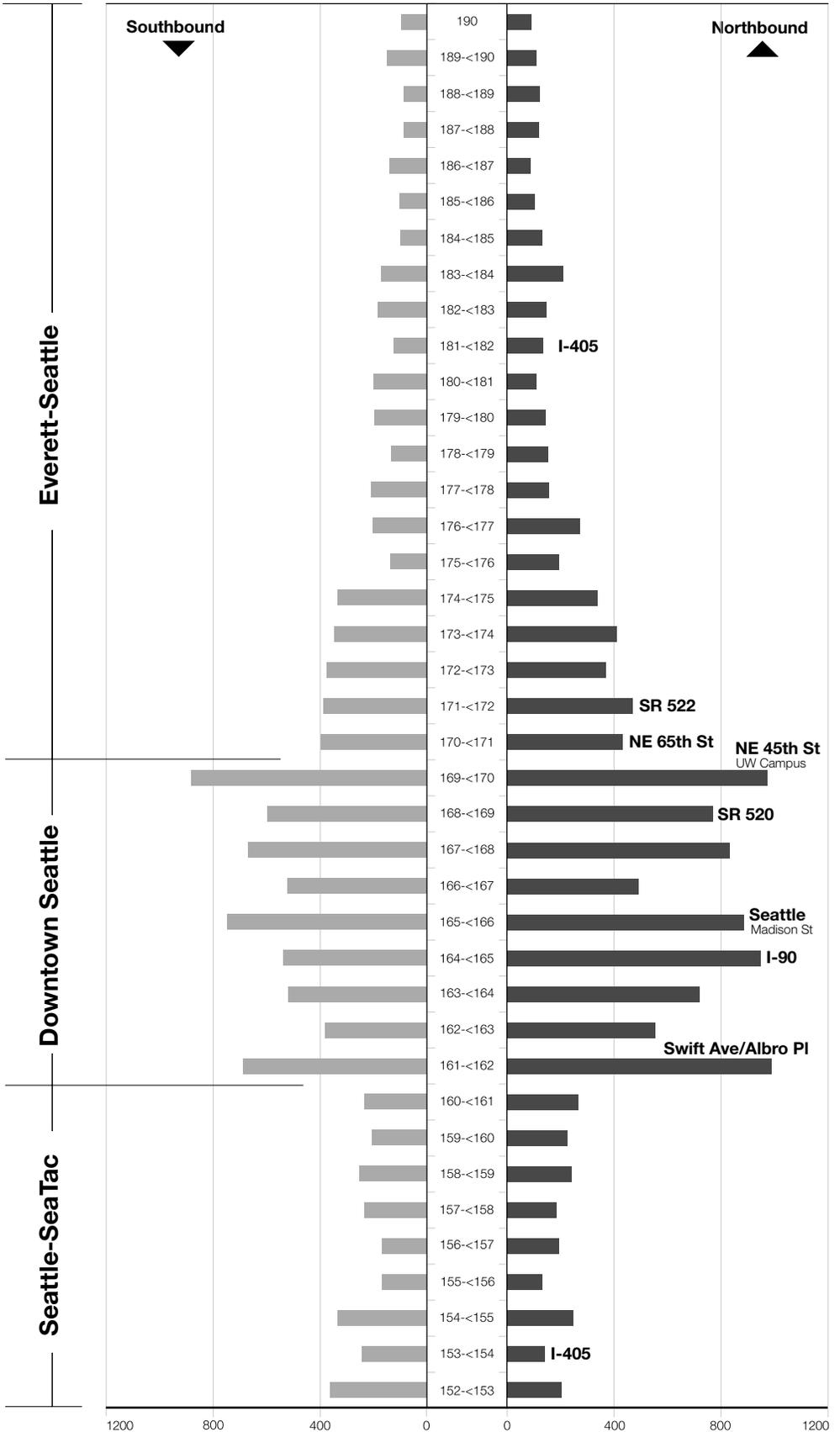
Number of Responses by Response Unit Type I-5: Between SeaTac and Everett

January 2003 - September 2004



Number of Responses to Incidents by Milepost and Direction of Travel I-5: Between SeaTac and Everett

January 2003 - September 2004



Highway Maintenance

WSDOT Avalanche Control

Keeping the Passes Open

Winter travelers crossing the mountain passes are accustomed to seeing WSDOT trucks plowing snow and applying sand or anti-icing chemicals on the highways. A lesser known but critical part of snow and ice removal is avalanche control work. Thousands of avalanches occur in the mountains of Washington every winter; numerous avalanche-prone locations present the threat of highway closures or, worse, danger to motorists' lives. Avalanche zones at Snoqualmie Pass and Stevens Pass require regular attention. The average annual snowfall at Snoqualmie Pass is 432 inches per year.

Avalanche Control Teams

As snow accumulates this winter, specially trained WSDOT avalanche control teams are prepared to intentionally trigger avalanches before they thunder uncontrolled onto the highway. Avalanche control uses a variety of methods ranging from explosive charges, to an avalanche team member's ski tracks to break away compacted snow. Explosives use depend upon the topography and accessibility of the avalanche chute to be cleared. Explosives can be placed by hand, by special trams (guided on pre-positioned cableways to a precise location at the avalanche zone) or by use of surplus military artillery. To be most effective, avalanche control work is performed when the snow accumulation starts to become unstable, but before it would naturally slide. When possible, this work is scheduled during non-peak traffic hours to minimize travel disruptions.

Closures Due to Avalanche Control

In the 2003-04 season, nine westbound avalanche control related closures at Snoqualmie Pass lasted a total of 3 hours and 22 minutes. Nine eastbound closures lasted a total of 4 hours and 49 minutes.

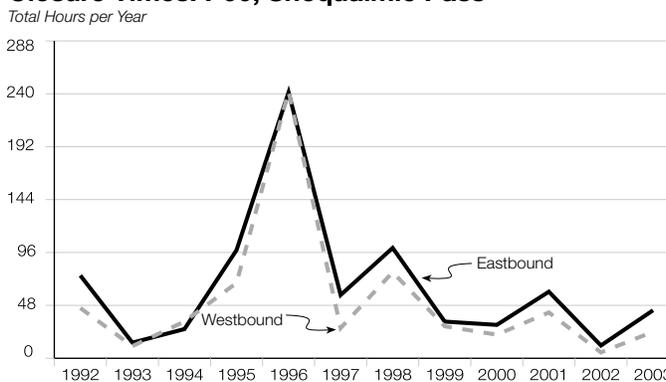


A surplus military tank is used by WSDOT in North Central Washington to fire explosives at a slope to trigger an avalanche before it becomes dangerous to the public.



A carefully placed explosion intended to trigger an avalanche above I-90 near Snoqualmie Pass.

Closure Times: I-90, Snoqualmie Pass



This is not an avalanche control tram. But it works on the same principle.

Highway Maintenance

Litter Update

The Problem With Litter

During the last fiscal year (July 2003 through June 2004), WSDOT disposed of an estimated 5,359 tons of litter and debris that was removed from its roadsides. This equates to approximately 26,800 cubic yards of litter, or the volume of over 2,600 large dump trucks. To put it in perspective, in ten short years, the litter collected on our highways would form a rectangular stack nearly the same height as the Space Needle (see representation to the right).

New Litter Assessment Method

The FY 2001 through FY 2003 roadside litter disposal amounts reported in the *Gray Notebook* were significantly under estimated at 1,500 tons per year. Previously, the amount of litter disposed was estimated comparing the local landfill disposal fees to the total annual litter disposal expenditures. Many of the expenditures were also captured in general utility expenditures that could not be separated from such items as electricity and water expenditures. Since late 2003, WSDOT maintenance personnel began documenting the actual number of cubic yards of litter disposed. Beginning with the next litter update, WSDOT will report litter amounts using this new method.

Litter Is Slow to Go Away

If litter were not picked up, most of it would remain along the highway indefinitely, taking anywhere from one month to one million years to decompose.

Litter Decomposition Rate

Styrofoam Container	1 million years +
Plastic Container	1 million years +
Aluminum Can	200-500 years
Disposable Diaper	550 years
Cigarette Butt (Acetate Plastic Filters)	550 years
Leather Shoe	45 years
Fast Food Wrapper / Paper Bag	1 month

Ten Years Accumulation of Highway Litter



After Ten Years...

107 million pounds of highway litter would collect along our roadsides.

Litter would stack up to almost the same size as the Space Needle. 5,149 pounds of litter per mile would collect along Washington's highways (there are 7,063 centerline miles of state highways).

650 tons of cigarette butts would collect along our state highways. The cleanup cost would be approximately \$150 million.

Litter Violations and Penalties

- Potentially dangerous litter (including lit debris) - \$1025
- Littering an amount less than or equal to 1 cubic foot - \$103
- Littering an amount greater than 1 cubic foot but less than 1 cubic yard - up to \$1000 and up to 90 days in jail
- Littering an amount greater than 1 cubic yard - up to \$5000 and up to 1 year in jail
- Failure to secure load - \$194
- Uncovered load - controlled through local ordinances

The state has a toll-free hotline: 866-LITTER-1 that lets citizens contribute to the anti-litter fight. Callers speak with live operators, and those who are reported receive letters with warnings about penalties.

Environmental Programs: Quarterly Update

Hazardous Materials Removal – Protecting the Environment

Many WSDOT construction projects are located in areas where soil and groundwater have been contaminated from land uses such as gas stations or factories. Contaminants in these soils may include petroleum products, industrial chemicals, and metals such as lead and arsenic. These soils require special consideration for removal and disposal. In addition WSDOT routinely removes asbestos and lead based paints in building materials prior to demolition of acquired properties. The handling and disposing of contaminated soil and other materials must comply with stringent state and federal regulations.

Recorded Soil Removal Amounts

Every year, WSDOT construction projects remove many tons of contaminated soil and replace it with clean soil. Over the past five years, nearly 8,000 tons of contaminated soils were removed and disposed of during the course of 23 WSDOT construction projects. This is roughly equivalent to 500 standard dump truck loads. Not included in this figure is the amount of contaminated soil removed from two of the largest projects – the Hood Canal Bridge Replacement and new Tacoma Narrows Bridge, where nearly 36,000 tons (over 2000 dump truck loads) of soils contaminated with lead and arsenic were removed in the last two years alone. Once removed, contaminated soils must be disposed of at licensed landfills that can accept the soil based on the type and level of contamination.



Contaminated soil excavation at the new Tacoma Narrows Bridge project. At this project and the Hood Canal Bridge site, WSDOT has removed nearly 36,000 tons of contaminated soils.

Controlling Clean-up Costs

WSDOT investigate potentially contaminated properties prior to acquisition to minimize expense by assuring that appropriate removal plans are in place. This is accomplished in part by conducting the following hazardous material investigations:

Site Reconnaissance: physical observation of a property and its structures to identify recognized environmental conditions.

Initial Site Assessment: analysis of land use history that determines whether sampling (Preliminary Site Investigation) should be performed.

Preliminary Site Investigation: sampling of soil/water/sediments to determine the nature and extent of contamination.

Discipline Studies: provide supporting information to environmental documentation such as comparisons of long and short term effects to projects and mitigation measures of those effects.

Depending on the results of the investigation WSDOT may sometimes avoid acquiring contaminated property by re-designing a project to avoid the property. Sometimes contaminated property cannot be avoided and WSDOT takes on the responsibility for the cleanup of the property. In other cases, WSDOT can utilize several strategies during property acquisition to sizably reduce, recover, or eliminate cleanup costs entirely.

Purchasing Strategy Minimizes Cleanup Liability

WSDOT typically uses the “Property Purchased Clean” real estate acquisition method when hazardous materials are known to exist on a property. This method requires owners to clean up the property prior to receiving final payment (funds are placed in escrow). The I-5 Bridgeport Way Interchange project is a recent example where acquisitions were made using this method.

Environmental Programs: Quarterly Update

WSDOT Finds Solution for Chronic Riverbank Erosion

Case Study: The Hoh River on U.S. 101

The Northwest coast along U.S. 101 is known for its scenic beauty, but it also serves as a critical economic lifeline to the communities located in the most Northwestern part of the state. For over 20 years these communities and WSDOT have struggled with the Hoh River eroding portions of U.S. 101. The worst erosion site is located about 15 miles south of the town of Forks, on the east bank of the river.

Repeated attempts to stabilize the site under emergency conditions have failed to provide a long-term solution. This alarming trend has resulted in the site being identified as a top priority under WSDOT's Chronic Environmental Deficiencies Program (CEDP). The purpose of the program is to develop permanent solutions to repetitive erosion repair sites that compromise the integrity of the roadway and harm aquatic habitat.

Under the CEDP, a reach analysis was conducted for this site as well as five other repetitive erosion sites within the Hoh watershed where portions of U.S. 101 lie within the erosion hazard zone. The analysis determined that the erosion site at milepost 174 was the location at the greatest risk. A conceptual design, fundamentally different from previous bank protection strategies attempted at the site, was developed from the analysis. Instead of relying on rock to armor and deflect heavy flows away from the bank (a previous strategy), a series of ten engineered logjams was proposed, to split the flow of the river, diffuse higher energy flows while also deflecting erosive flows away from the bank. The engineered logjams reduce environmental mitigation costs, and provide fish habitat enhancements. Major flooding in October 2003 caused further damage at the site and opened up a funding opportunity using federal disaster recovery funds.

To take advantage of the relatively small window of opportunity to construct this project prior to the next flood event, a high level of collaboration between WSDOT staff, consultants, contractors, and regulatory agencies was needed. Construction on this project began during the summer of 2004 and was completed within a few short months. This is one of the largest engineered logjam projects ever undertaken by WSDOT for infrastructure protection purposes.

Project Costs

Over the last 20 years WSDOT has spent approximately \$2.2 million for repair work at this site.

One alternative considered was to realign U.S. 101. Estimated project costs were \$10.0 million and did not include mitigation costs for major environmental impacts.

Total project costs were approximately \$7 million. Eighty-seven percent of the project costs were paid by the Federal Highway Administration.



Before Construction - Flooding at the Hoh River erodes the shoulder of U.S. 101



July 2004 - Beginning of Construction



August 30, 2004 - Logjam construction progress



September 28, 2004 - Hoh River After Construction

Trucks, Goods and Freight: CVISN Annual Update

Commercial Vehicle Information Systems and Networks (CVISN)

CVISN Continues to Expand

Commercial Vehicle Information Systems and Networks (CVISN) is a cooperative program between WSDOT, the Washington State Patrol, the Department of Licensing, the Washington Trucking Association, and the Federal Motor Carrier Safety Administration. CVISN provides a means to electronically check commercial vehicles for safety, size, weight, and credentials, and allows safe and legal trucks to bypass scales while maintaining freeway speeds.

The CVISN program is continuing to expand along the interstate roadways of Washington. By May 2005 there will be a new CVISN capable scale at the Plymouth Port of Entry (POE) along I-82 in southeast Washington and another at the Kelso weigh station along I-5 in southwest Washington. During the 05-07 biennium it is planned to introduce the CVISN concept to the new weighing facility near Prosser along I-82 and also to the current eastbound I-90 scale at Cle Elum in central Washington. During the 07-09 biennium, it is hoped a new POE can be constructed at Spokane that will utilize the CVISN technology.

Program Results:

The CVISN program continues to contribute to freight mobility and safety. Trucks that are part of this program save time and money by being able to bypass scales. Safety is improved for everyone as trucks are not slowing down to pull off the roadway into a weighing facility or merging back onto a busy highway.

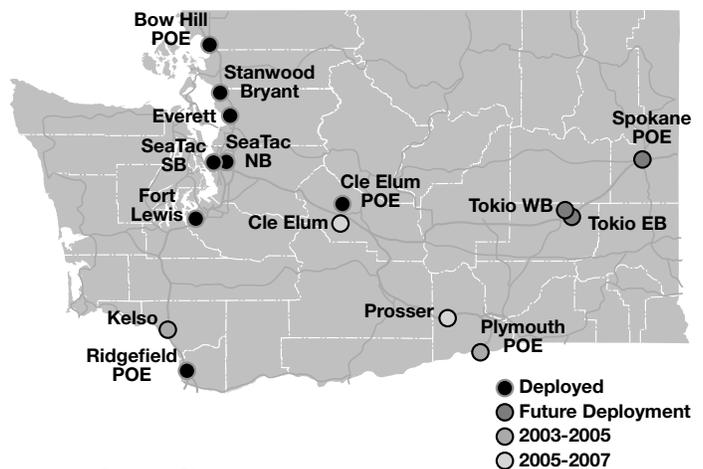
During the period of September 2003 – September 2004, truck visits to weigh stations totaled 6.4 million, of which 2.8 million were tallied as CVISN by-passes. Of those, 591,000

were transponder-related, and the remainder were weigh-in-motion (WIM) by-passes (for more information on WIM, see the *Gray Notebook* for June 30, 2003). Using an industry figure of \$1.25 per minute to operate a truck and an average five-minute delay per scale visit, those truck by-pass events saved a combined total of 292,000 hours of time, cumulatively valued at \$17.5 million.

Other CVISN Uses

The CVISN system is used to test container and trailer intrusion seals. It is also being used in a Border Crossing Project, which allows vehicles with transponders to move in bond containers from the Ports of Seattle and Tacoma to Canada with reduced delay at the border. The containers are tracked along the route through the use of transponders read by CVISN equipment. The data is electronically forwarded to the border for use by U.S. and Canadian authorities.

Eight CVISN Sites Deployed, Seven More Planned



Transponder Usage- CVISN Weigh Stations

	Sept 2003	Sept 2004	Change	Percent Change	Sep 2004 Percent Bypassed	Last 12 months	Percent Change from previous 12 months
Total Number of Trucks w/ Transponders 12.35%	55,699	84,192	28,493	51.16%	86.64%	848,096	44.1%
WA Interstate Trucks w/ Transponders 4.44%	20,039	30,262	10,223	51.02%	87.33%	304,546	43.0%
WA Intrastate Trucks w/ Transponders 1.04%	4,403	7,110	2,707	61.48%	86.86%	66,087	46.6%
Out-of-State Trucks w/ Transponders 6.87%	31,257	46,820	15,563	49.79%	86.16%	477,463	44.5%

Commute Options: Quarterly Update

Statewide Vanpool Usage

Vanpooling Increases in Second Quarter

Despite a decrease in April, vanpooling increased statewide by over 20 vehicles per month during the second quarter of 2004. One third of this growth was in the Puget Sound region. Between January and June, the statewide operating vanpool fleet increased over 4.4 percent. Much of the increase is attributable to increased state investment in vanpooling during the biennium.

Expansion of the vanpool system last quarter exceeded the planned rate due to increased demand and the successful development of a van brokerage system. As reported in earlier editions of the *Gray Notebook*, WSDOT owns 37 vehicles that are made available for short-term operator needs. Currently all of these vehicles are in use. To continue to meet immediate needs WSDOT developed a vehicle brokerage system.

Through the new brokerage system, WSDOT made 42 vehicles owned by other vanpool systems available to four operators in order to meet immediate needs. Brokering vehicles in this way allows for more timely expansion of the operating vanpool system than would be possible through purchasing vehicles.

Quarter Highlights

- Vanpooling at Ben Franklin Transit in Benton County grew rapidly, increasing 25 percent during the 2nd quarter of 2004 to a total of 176 operating vans.
- Spokane Transit grew by 16 percent to 36 operating vans.
- Island Transit experienced nearly a 10 percent increase with 46 vans on the road.
- Intercity Transit grew by 5 percent with 81 vans currently in operation.

2004 Program Highlights

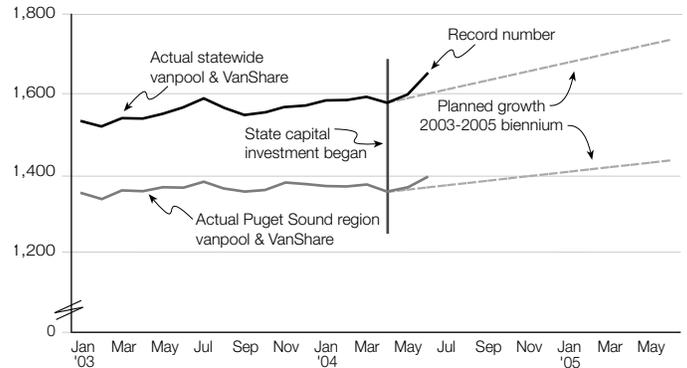
- Purchased 65 vans; 61 are already in operation.
- Operating vehicles set all-time high of 1,651 in June.
- Thirteen operators worked with WSDOT to develop the investment plan. Eight have expanded vanpooling as a result of the program.
- WSDOT worked with two agencies to start new vanpool programs (Grant Transit Authority & Grays Harbor Transportation Authority)
- WSDOT worked with two agencies to revive vanpool programs (Mason Transit & Link Transit)
- An innovative brokerage program was developed: WSDOT facilitates the movements of vehicles between vanpool systems to meet short-term capital needs.

2005 Program Plans

- Purchase 109 or more vans
- Expand Rideshare Online statewide to improve employee access and provide incentives.
- Launch public Awareness and Promotions Campaign
- Develop Peer Review and Mentoring Programs

Public Vanpools Operating in Washington

January 2003 to June 2004



Source: WSDOT Vanpool Database.
Six operators in the Puget Sound Region and 15 statewide.

VanShare: An efficient use of public resources

As of June 2004, 4.5 percent of vans operating in the Puget Sound region were VanShare vehicles.

King County Metro began the VanShare program in 2001 to help employees travel from public transportation stations (Sounder, WSF, park and rides, etc.) to their work site (see *Gray Notebook* – December 31, 2002, page 23). In June 2004, 62 VanShare vehicles were operating in the region. This program serves multiple functions: 1) provides commuters a link to their worksite, 2) extends the functional life of an otherwise surplus vehicle, and 3) reduces the need for parking at stations.

Vanpool Investment Program Update

The goal of the Vanpool Investment Program is to increase highway efficiency by doubling vanpooling in ten years. During this biennium, the legislature is investing \$4 million in the Vanpool Investment Program for grants to public transit agencies' vanpool capital costs or for employee and employer incentives. The goal for this biennium is to expand vanpooling by 10 percent or 160 operating vehicles statewide. The investment plan recognizes the need to purchase vehicles and to make investments that spark demand such as incentives and marketing.

Commute Options

Vanpools and Highway Efficiency

Increasing the number of vans on the road creates efficiencies because high occupancy vehicles reduce the number of vehicles traveling during peak traffic hours. Vanpool passenger miles as a share of total vehicle miles traveled (VMT) is an indicator of the magnitude of this effect. In the Puget Sound Region, vehicles travel nearly 80 million miles per day. Vanpool passenger miles are 0.8 percent of daily VMT, a relatively small percent. During both the morning and evening peak periods, vehicles travel slightly more than 14 million miles. During these peak travel times vanpool passenger miles represent 2.4 percent VMT. In the June 30, 2001 *Gray Notebook*, WSDOT noted that vanpool passenger miles represented nearly two percent of peak VMT in 1998. While VMT in the region has increased since 1998, vanpool passenger miles are increasing more rapidly. The significance of vanpooling is accentuated, as these vehicles typically travel on the major congested highways in the region.

Another way to assess vanpooling's effect on system efficiency is to focus on congested corridors. There are 274 vans that operate on the I-405 corridor (20 percent of the vanpools operating in the region). These vehicles carry over 3,000 passengers each peak period. Future plans for this corridor include specific investments to dramatically expand vanpooling over the next 20 years. The goal is to support a core increase of 680 vans in the corridor over 20 years of investment. The 274 vehicles currently operating in this corridor will be the baseline used to track the impact of vanpool corridor efficiencies.

Opportunities for Commuters

Become a Participant

Everyone in Washington has a stake in the efforts to manage congestion. Take the opportunity to explore the various available options and information, from vanpooling/carpooling, to travel times, the new 511 system, and WSDOT's reliability page. Many major employers in congested areas also provide options and incentives for efficient employee commuting. Check to see if these options work for you by visiting WSDOT's Traffic and Roads website for traveler information and available commuter options at: www.wsdot.wa.gov/traveler.htm

Recurrent Congestion Happens

Areas prone to recurrent congestion, such as bottlenecks, present challenges for commuters. WSDOT is currently preparing a list of these locations that will soon be available on-line. Avoiding bottlenecks at peak commute times can reduce the time it takes to arrive at your destination.

Consider Adjusting Your Commute

A commuter can save anywhere from 6 to 25 minutes by avoiding the peak commute time. Resources for adjusting your commute can be found at: www.wsdot.wa.gov/traffic/seattle/traveltimes/commutes/

Share Your Insights

Some very good ideas come from commuters like you (see page 54 in the Measuring Congestion update for an example). Many commuters experience the same delays every day and can see first hand what may be causing the delays, as well as what might work to minimize or eliminate the problem. Share your insights at: www.wsdot.wa.gov/contact/default.htm

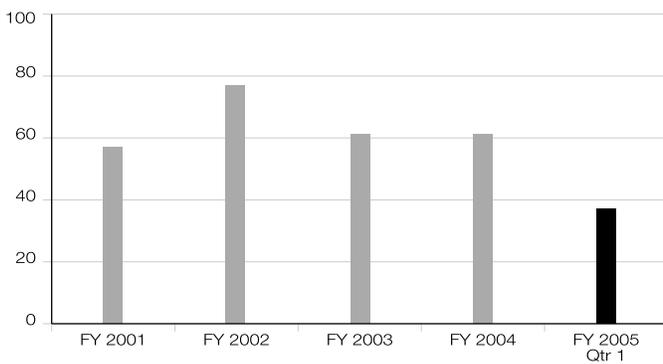
Washington State Ferries: Quarterly Update

Customer Feedback

The WSDOT Ferry System collects customer complaints, compliments, comments, and suggestions. This information is recorded in the Automated Operating Support System (AOSS) database for measurement and action, based on data base cross tabulation and analysis.

The charts show trends in the data for the last four fiscal years and the first quarter of fiscal year 2005.

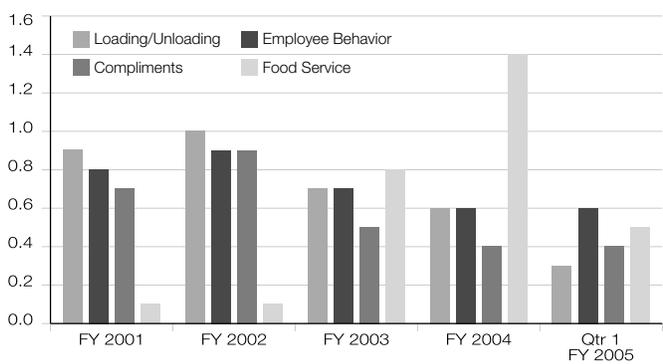
Total Number of Complaints Per 100,000 Customers



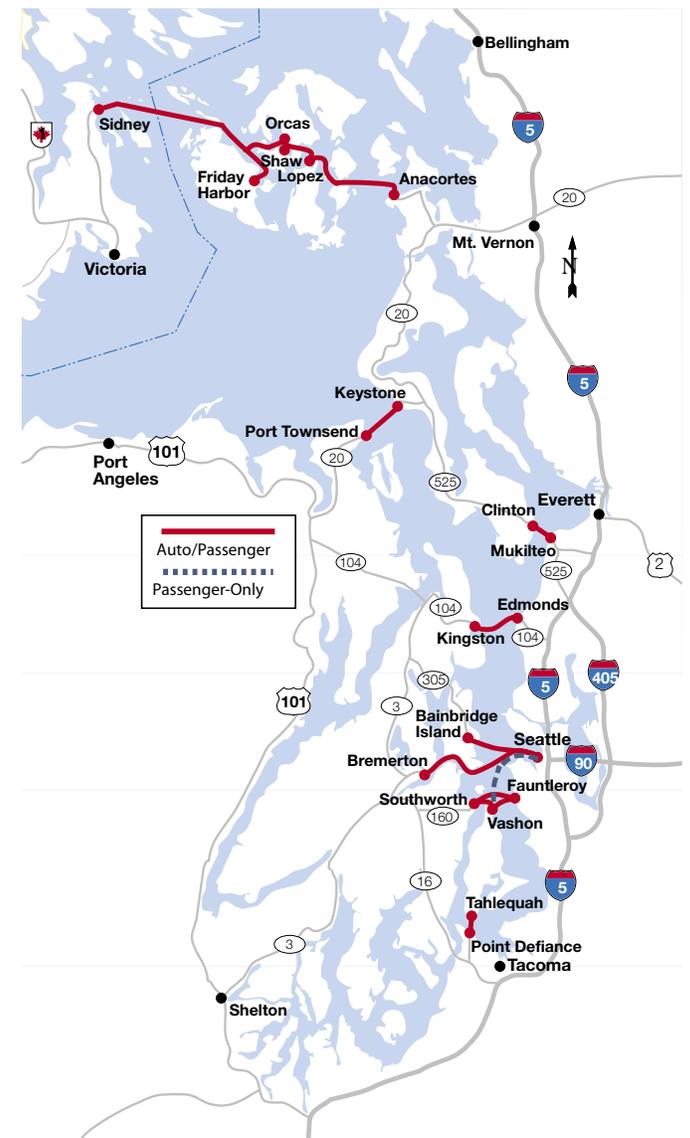
Source: WSDOT Ferries

Customer complaints were up 14 percent from the preceding quarter. The preceding quarter was the best performance on record and this quarter is the second best on record.

Common Complaints Rate Per 100,000 Customers



Top Four Comment Types per 100,000 Customers
Source: WSDOT Ferries



Washington State Ferries: Quarterly Update

Trip Reliability

The WSDOT Ferry System scheduled 43,812 trips during the first quarter of fiscal year 2005. Of these trips, 174 were cancelled. The graph to the right shows a system-wide average reliability index. Assuming that a commuter worked 200 days per year and made 400 trips on the ferry system, the statistical likelihood is that 1.6 ferry trips would be cancelled. This represents a 6 percent improvement over the same period from fiscal year 2004.

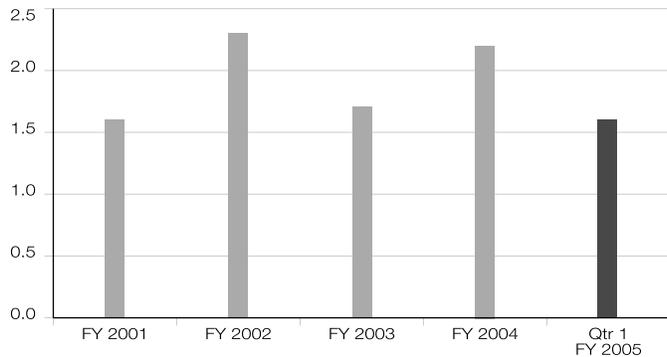
A total of 54 trips were cancelled on the Port Townsend – Keystone route due to weather/tides. The Keystone terminal configuration is the cause of the tide related cancellations. WSDOT is currently engaged in a study requested by the legislature to examine options for the Keystone location that will improve trip reliability.

On Time Performance

On-time performance data have been collected since June, 2001. The table below compares on-time performance across the system for the first quarters of fiscal year 2004 and 2005. Overall, performance was greatly improved as compared to last year. Systemwide performance improved 6 percent. The San Juan Domestic, International, and Keystone-Port Townsend routes all experienced 15-16 percent performance improvement. A trip is considered to be on time if it departs within ten minutes of the published scheduled sailing time. Missed trips are not reported in this measure. They are included in the Trip Reliability measure above.

Trip Reliability Index

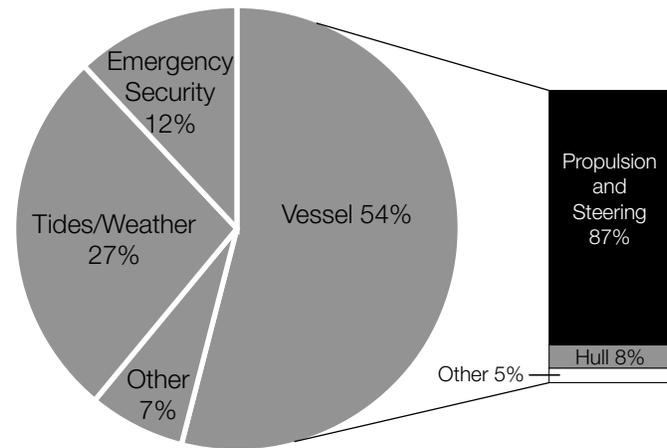
Missed Trips per 400 Sailings



Source: WSDOT Ferries

Most Common Trip Cancellations

First Quarter, Fiscal Year 2005



Ferries	1st Quarter FY 2004			1st Quarter FY 2005		
	Number of Trips	Percent of Trips Within 10 Minutes of Schedule	All Trips Average Delay From Scheduled Sailing Time	Number of Trips	Percent of Trips Within 10 Minutes of Schedule	All Trips Average Delay From Scheduled Sailing Time
San Juan Domestic	6,797	62%	11.2 Minutes	7,198	72%	8.3 Minutes
International Route	343	70%	9.5 Minutes	338	81%	5.8 Minutes
Edmonds-Kingston	4,505	91%	4.3 Minutes	4,554	87%	5.0 Minutes
Pass-Only Seattle - Bremerton	1,564	97%	2.8 Minutes	N/A	N/A	N/A
Pass-Only Seattle - Vashon	1,042	97%	1.8 Minutes	957	98%	1.7 Minutes
Fauntleroy - Vashon - Southworth	10,786	84%	5.1 Minutes	10,412	91%	3.4 Minutes
Keystone - Port Townsend	2,541	77%	6.7 Minutes	2,596	89%	4.2 Minutes
Mukilteo - Clinton	6,634	97%	2.8 Minutes	6,701	96%	2.7 Minutes
Pt. Defiance - Tahlequah	2,589	87%	5.3 Minutes	2,932	96%	3.0 Minutes
Seattle - Bainbridge Island	4,010	93%	3.7 Minutes	4,051	94%	3.8 Minutes
Seattle - Bremerton	2,523	96%	3.1 Minutes	2,531	95%	3.3 Minutes
Total	43,334	85%	5.3 Minutes	42,270	89%	4.3 Minutes

Washington State Ferries: Quarterly Update

Capital Expenditure Performance

WSDOT makes capital investments in the Ferry System through the Washington State Ferries Construction Program. The program preserves existing and builds new ferry terminals and vessels, supporting the Ferry System capability to deliver responsible and reliable services.

The 2004 legislature increased biennial spending authority from \$183 million to \$198 million. The original spending plan and allotment of \$124 million for the period of July 2003 to September 2004 was adjusted in July 2004 to a revised spending plan of \$94 million for that period. Actual expenditures are \$89 million. WSDOT expects to catch up with the planned expenditures by June 2005.

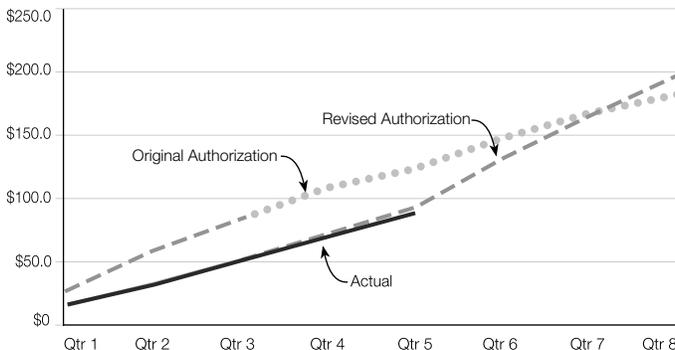
Terminals: Biennium-to-date Terminal Construction activities are under-spending the plan by \$0.6 million. Variance from plan by location in excess of \$750,000 is concentrated at Mukilteo (\$1.8 million under plan due to delayed initiation of consultant contracts) and Friday Harbor (\$2.6 million over plan due to accelerated construction).

Vessels: Biennium-to-date Vessel Construction activities are under-spending the plan by \$2.7 million. Variance from plan by location in excess of \$750,000 include work in two locations. The *MV Spokane* is \$0.8 million under plan due to billings not yet received. Also, the vessel has required three additional weeks of sea trials and vendor payments have not been completed pending final acceptance of the propulsion system. The System-wide Vessel Physical Security Infrastructure Project is \$2.0 million under plan due to difficulty in scheduling vessels for planned physical security enhancements.

Emergency Repair activities are under-spending the biennium-to-date plan by \$1.4 million.

WSF Construction Program Expenditures

5th Quarter, 2003-2005 Biennium
Cumulative Dollars in Millions
Authorized vs. Actual



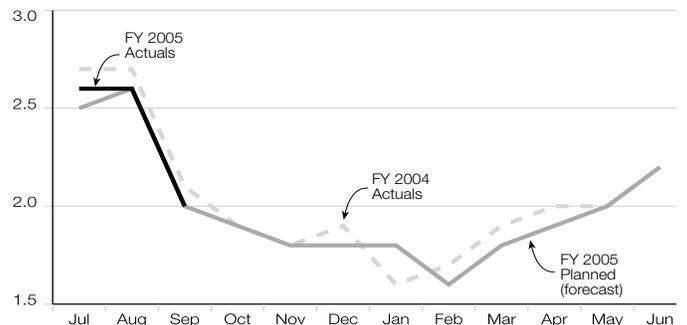
Ridership and Revenues

The Legislature's Joint Task Force on Ferries (JTFF), comprised of legislators, citizens, ferry management, and ferry workers was formed in 2000. The Task Force reviewed the workings of the ferry system and made recommendations including tariff increases designed to raise the farebox recovery rate. The Transportation Commission instituted this recommendation and approved tariff increases of 20 percent in June 2001 and 12.5 percent in May 2002.

In the fall of 2003, WSDOT management developed a new strategic plan aimed at balancing revenue generation necessary to capitalize the aging fleet. The new plan reduced the size of the tariff increases for fiscal years 2003-2004. In the spring of 2003, the Transportation Commission adopted fare increases of 5 percent in May, 2003 and an additional five percent in May, 2004.

Ridership by Month

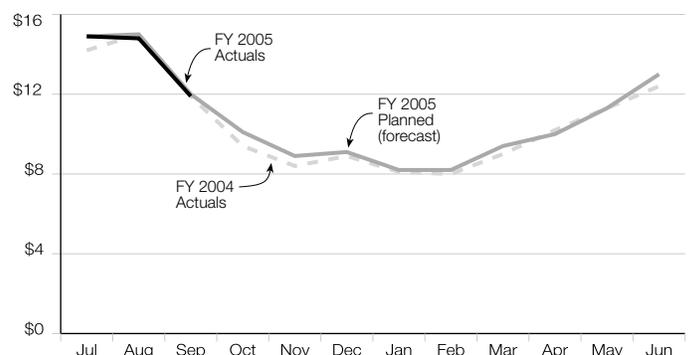
In Millions



Fiscal year-to-date, ridership is slightly below plan (-57,000 riders or 0.8%). However, revenues are exceeding the June plan by \$979,000 or 2.4%. This is because vehicle traffic is exceeding plan by 5.6% or 161,000 vehicles and vehicle revenues are exceeding plan by 3.5% or \$1 million. Passenger revenues and ridership are slightly below forecast.

Farebox Revenues by Month

Dollars in Millions



Source for all charts: WSDOT Ferries

Washington State Ferries: Quarterly Update

Life Cycle Preservation Performance

Washington State Ferry System terminals and vessels consist of hundreds of discrete physical systems. Each of these components should be refurbished or replaced prior to its end of life cycle services. This assures that the ferry system has the infrastructure needed to provide reliable service.

The original plan was to replace or refurbish 133 Category 1 systems and 54 Category 2 systems during the 2003-2005 Biennium. Those targets have been revised to 120 Category 1 systems and 43 Category 2 systems. Through the fifth quarter of the biennium 74 Category 1 systems and 34 Category 2 systems have been replaced or refurbished.

The work plan addresses the backlog of systems that are past due and on-going deterioration of remaining systems. It measures the impact of its investments by life cycle ratings. Based on the authorized level of investment originally approved by the 2003 Legislature the life cycle rating for Category 1 terminal and vessel systems is projected to increase from 77 percent at the beginning of the biennium to 81 percent at the end of the biennium. The life cycle rating for Category 2 systems is projected to decline from 58 percent to 54 percent.

Explanation of key terms:

Systems Preserved. This measure focuses on performance in terms of work planned and work delivered. The work measured is the number of terminal and vessel systems that are refurbished or replaced.

Life Cycle Rating. A life cycle rating is a percent calculated by dividing the number of systems structures weighted by their costs that are within their life cycle by the total inventory of systems weighted by costs. This measure focuses on program performance. It reflects the favorable impact of the organization's work plan offset by the unfavorable impacts of deferred preservation backlogs and on-going deterioration of the infrastructure.

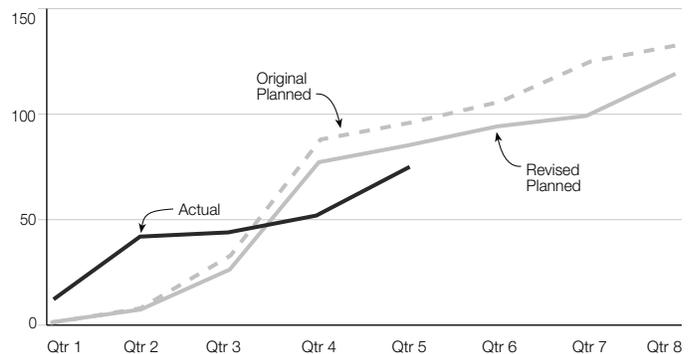
In January 2001, the Legislature's Joint Task Force on Ferries recommended that WSF work toward the objective of achieving a life cycle rating for Category 1 systems of between 90 percent and 100 percent and for Category 2 systems of between 60 percent and 80 percent. The Task Force set FY 2011 as the target year for achieving this objective.

Category 1 systems are those designated by regulatory agencies as "vital" to the protection of people, the environment and infrastructure. Included are those vessel and terminal systems necessary to start, keep in motion, stop, land and unload a vessel.

Category 2 systems are all other terminal and vessel systems.

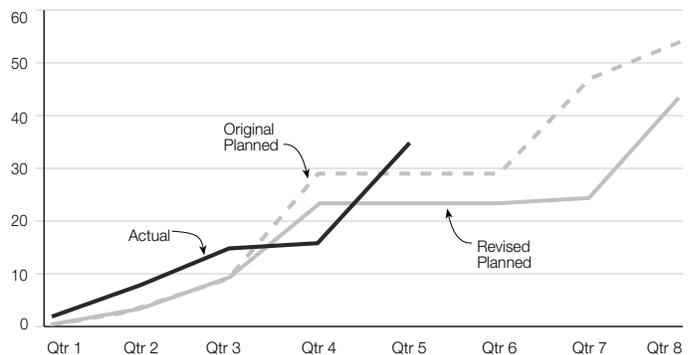
Category 1 Terminal and Vessel Preservation Performance

*Cumulative Original and Current Plan Projects vs. Actual Systems/Structures Preserved
Change in Life Cycle Cost Rating
5th Quarter, 2003-2005 Biennium*



Category 2 Terminal and Vessel Performance Measures

*Cumulative Original and Current Plan Projects vs. Actual Systems/Structures Preserved
Change in Life Cycle Cost Rating
5th Quarter, 2003-2005 Biennium*



State-Supported Amtrak Cascades Service: Quarterly Update

Ridership

Ridership on state-supported Amtrak *Cascades* trains was 111,404 in the third quarter of 2004. This represents a slight increase when compared to the same period in 2003 and is the highest third quarter ridership total in program history. Factors contributing to this quarterly ridership increase include higher fuel prices for automobile travel and the growing popularity of the Seattle-Bellingham trains.

RailPlus Program Begins

On September 17, Sound Transit, Amtrak, and WSDOT reached an agreement to begin a new pilot program that will allow cross ticketing between Amtrak *Cascades* and Sound Transit. The RailPlus program will be offered on the six weekday Amtrak *Cascades* and Sounder trains connecting Everett, Edmonds, and Seattle and will provide rail travelers with more weekday travel times and options. WSDOT anticipates that the new program will increase Amtrak *Cascades* ridership. Initial performance results from RailPlus, which went into effect on October 1, will be included in the December 2004 *Gray Notebook*.

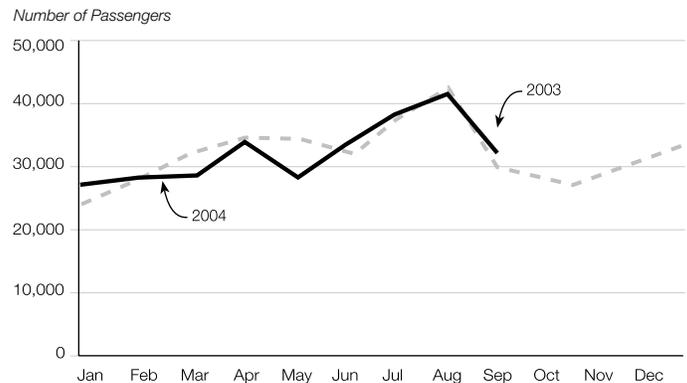
On-Time Performance

On-time performance for state-supported Amtrak *Cascades* trains was 72.4 percent in the third quarter of 2004. This is four percentage points higher than the 2003 quarterly average. September's average of 81.3 percent represents the first time state-supported Amtrak *Cascades* trains achieved the monthly goal of 80 percent on-time since May 2003. Freight rail traffic interference continued to be the primary cause of delays in the third quarter, but the total minutes of delay caused by freight traffic throughout the corridor has fallen steadily in recent months. Even though a number of trains continue to be more than ten minutes late at their final destination, fewer are experiencing the excessive delays seen earlier in 2004 as a result of improved freight rail dispatching and operations management.

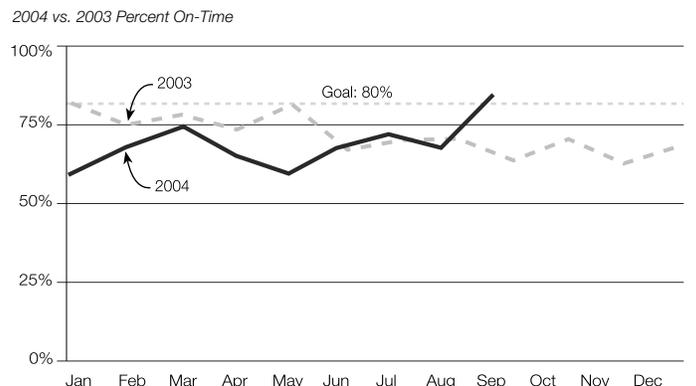
Other Amtrak Cascades News

Since 1999, one of the five Amtrak *Cascades* trainsets has had a different paint scheme than the standard evergreen, cream, and Castilian copper scheme of the other four. In September, this WSDOT-owned trainset was taken out of revenue service and sent to Tacoma for repainting. WSDOT anticipates that this trainset will go back into service in early November under its new name, the *Mt. Adams*.

State-Supported Amtrak Cascades Monthly Ridership



State-Supported Amtrak Cascades On-time Performance



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



Repainting of WSDOT's *Mount Adams* trainset started in Tacoma in late September.

State-Supported Amtrak Cascades Service: Quarterly Update

Station Updates

King Street Station

WSDOT recently awarded a construction contract for the second piece of the \$16.8 million Phase I rehabilitation at King Street Station in Seattle. Upon completion of this work, the travelers will encounter a completely restored Compass Room entry hall; replacement doors and re-opened, long-boarded-over windows which will make the waiting room lighter and brighter; replacement exterior canopies and improved lighting on the south and west sides of the station; and a cleaned and refurbished main entrance to the station. This work is expected to be finished in June 2005.

Skagit Transportation Center

On August 24, a ceremony was held in Mount Vernon commemorating the opening of the new Skagit Transportation Center. The \$7.7 million station will host Amtrak *Cascades*, local transit service, and the Mount Vernon Chamber of Commerce. Amtrak *Cascades* trains began stopping at the new facility on September 13th, and WSDOT anticipates that the new station will stimulate increased ridership.



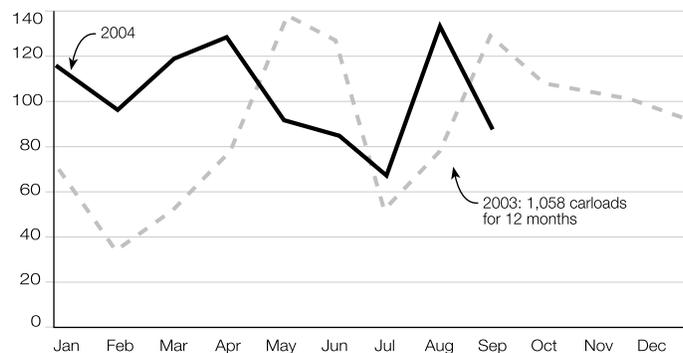
Amtrak *Cascades* trains began stopping at the new Skagit Transportation Center on September 13th.

Washington Grain Train Update

The Washington Grain Train carried 287 carloads of grain to Columbia River ports in the third quarter of 2004. This represents an 11 percent increase when compared to the third quarter of 2003. Greater use of the grain train shuttle serving the barge terminal at Wallula and aggressive fleet management by the Port of Moses Lake drove this increase in quarterly carload usage.

Washington Grain Train Carloads

Carloads per month 2004 vs. 2003



The Washington Grain Train is a financially self-sustaining transportation program that supports the state's agricultural community while helping short line railroads maintain a sufficient customer base for long-term financial viability. The 94-car fleet is jointly owned by WSDOT (76 cars) and the Port of Walla Walla (18 cars). The ports of Walla Walla, Moses Lake, and Whitman County share fleet management responsibilities.

Source: WSDOT Rail Office.

Special Features

Eruption Watch – Putting WSDOT on Alert

On September 29, 2004, the United States Geological Survey (USGS) reported that small earthquakes occurring on Mount St. Helens over recent days had increased in severity. WSDOT maintenance crews, many of whom experienced the 1980 eruption first hand, quickly shut down a culvert repair job on State Route 504 as a precaution. On Friday October 1, the first steam and ash explosion occurred and WSDOT staff quickly mobilized.

On Saturday morning October 2, volcano enthusiasts started lining the shoulders of State Route 504. Around noon that day, the U.S. Forest Service decided to close the Johnston Ridge Observatory and evacuate all trails and roads within five miles of the crater as the mountain continued to rumble.

WSDOT Actions:

- Assisted with the closure of SR 504 at milepost 43 near Coldwater Lake. Around 1 pm, WSDOT closed the eastbound lane of SR 504.

- The amount of traffic coming off the mountain on SR 504 was high and progress was slow at times, but traffic kept moving and eventually cleared out. The last remaining stragglers made it out at 7:30 pm and WSDOT closed the westbound gates.

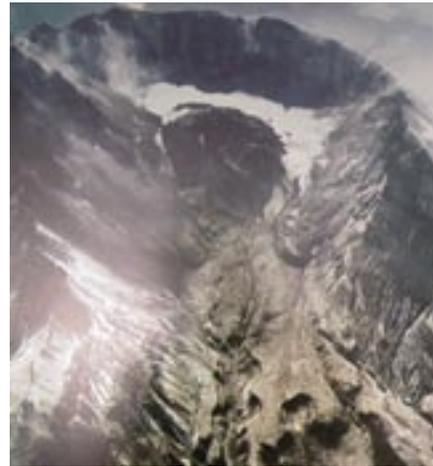
- WSDOT continually patrolled SR 504 over the weekend and made sure motorists didn't park or stop in the travel lanes of the highway.

- WSDOT staff in Vancouver kept the public and media informed about the closure and traffic issues through the Joint Information Center press conferences and media contacts.

During the week of October 4, two more steam and ash explosions occurred and covered parts of U.S. 12 and SR 131 in Lewis County with a very light coating of ash.

SR 504 will remain closed at Coldwater Lake until the US Forest Service says it's safe to reopen.

Mount St. Helens, Washington, 2004 Crater, Dome, and Eruption Images can be viewed at: <http://vulcan.wr.usgs.gov/Volcanoes/MSH/Images/MSH04/framework.html>



Aerial view of Mount St. Helens' crater, dome, and glacier, from the northwest.



On October 2, a multi-agency Joint Operations Center and Joint Information Center were activated in Vancouver, WA and were staffed by WSDOT employees.



Plume from Johnston Ridge Observatory. USGS photograph taken on October 1, 2004, by Gene Iwatsubo.



Aerial view of Mount St. Helens' crater rim and recent plume, from the south. USGS Photograph taken on October 5, 2004 at 09:29:21 PDT, by Steve Schilling.

West Nile Virus – Update 2004



West Nile Virus (WNV) most frequently spreads to people by the bite of an infected mosquito. WNV can be a serious, even fatal illness, affecting people, horses, certain types of birds, and other animals.

In 2004, Washington had no cases of the West Nile Virus reported for humans, horses, or birds.

The foundation of the department's WNV program is education, surveillance, and control. Identifying mosquito species found in our stormwater features is part of the Integrated Pest Management (IPM) process.

WNV Reminders

WSDOT would like to remind the general public to continue to look for dead birds (crows, ravens, magpies, jays and raptors). Dead birds are a good indicator of WNV activity and ought to be reported. For WSDOT personnel, protocol can be viewed at: <http://www.wsdot.wa.gov/biz/maintenance/pdf/westnile.pdf>.

Changes to WSDOT's WNV Program

WSDOT began controlling mosquito larvae earlier in the season this year. Larviciding early with frequent applications, has been shown to keep initial breeding populations low, thus reducing overall mosquito populations throughout the year. Larvicide can be applied when one larvae is found per every three sample dips taken. The first applications of larvicide occurred in March of this year compared to July 2003. WSDOT will use *Bacillus thuringiensis* (Bti) and *Bacillus sphaericus* (Bs) larvicides this year for WNV control.

WSDOT uses an Integrated Pest Management (IPM) approach for all areas of control. Mosquito larvae control will focus on reducing standing water that lasts more than three days when possible. The following recommendations apply:

- Pump out problem catch basins. This removes standing water and organic material located in the catch basin. Work with adjacent land owners in problem areas to reduce water from running onto WSDOT right of way creating potential mosquito breeding areas.
- Prioritize maintenance on stormwater Best Management Practices where proper maintenance can reduce prime mosquito breeding habitat.

Special Features

Build a Better Mousetrap

Guardrail Sign Mount

WSDOT won an award this year at the Maintenance Technology Expo for improving safety and cost effectiveness with the guardrail sign mount. Some of the state's steep, twisting, two-lane highways have sufficient guardrail but barely enough roadway width for traffic to get by. When standard, four-foot work signs are placed inside the guardrail, the room remaining for traffic to safely pass through becomes even narrower. The alternative of placing signs behind the guardrail or at periodic wide spots in the road was shown to be ineffective.

Jeff Brodhead, Maintenance Technician in the Walla Walla maintenance area designed and built a sign standard that mounts the sign in a visible location on the guardrail and also maintains the width of the existing roadway by being off the roadway (see photos at right). The sign mount was built for \$25 and attaches to the guardrail with the simple pull of a friction lever. Adjustable, free-standing sign mounts that are normally used cost \$100 and require several minutes of set up per sign. For operations requiring multiple sign set-ups and take downs during a day (e.g., rockfall removal), Jeff's guardrail mount has made a big difference.



Guardrail sign mount set up on a demonstration guardrail.



The sign mount is held securely to the guardrail using a friction lever.

Highlights of Program Activities

Project Starts, Completions, or Updates

Major progress was made on **SR 240 Tri-Cities Added Lanes** project in Richland with completion of the project's first stage – a new four-lane bridge crossing the Yakima River, connecting Richland and Kennewick. This allows crews to shift traffic onto the new structure, begin demolition of the old bridge and start construction of a second, parallel four-lane bridge. The second bridge will be completed in 2005.

A project to repair erosion damage on **U.S. 12** approximately three miles west of White Pass in Lewis County began in late September. Originally scheduled to start construction in July, WSDOT postponed the project until a separate U.S. 12 paving project completed work in the area. Construction will be complete in December 2004.

A pavement repair project on **I-90 in Adams County** got underway in early September. Crews will grind out and resurface a number of rough pavement sections in the 16-mile stretch, where the underlying asphalt layer deteriorated over the last few years. The roadway is rough and potholes were a problem for drivers last winter. Mid-October is the targeted date for completion on the \$1.2 million project.

A slide repair project on **SR 4 in Wahkiakum County** started in September. The project restores a section of eastbound shoulder two miles west of Bjornsgard Road on KM Mountain that was damaged by a slide in early winter 2002. A temporary fix was put in place after the slide occurred while WSDOT evaluated the need for a permanent repair project. Work will repair the damaged area and help prevent future slides. Construction will be complete by mid-October 2004, weather permitting.

Crews began work on **SR 26 west of Colfax** to repair highway slope erosion and improve the highway's drainage capabilities. Water flow from the Union Flat Creek eroded the slope next to the roadway and undermined the guardrail supports. Crews will stabilize several hundred linear feet of the creek channel, then re-shape the highway slope and repair the guardrail. The \$113,000 project was completed in late September.

Chuckanut Drive (State Route 11) closed completely for one week in September while crews removed and replaced the Edison Slough culvert with a new culvert that is 100 square feet larger. The new culvert will help prevent flooding and improve fish passage.



There's no such thing as a simple project. In replacing the I-5 northbound and southbound bridges that cross **Salmon Creek** with new bridges as part of the I-5 widening project, the crane's rigging snagged the bracing of the girder next to it. This caused the second girder to bend backwards onto the crane's rigging. The crew had to halt operations, reroute traffic, and pull off the second girder from the crane in order to finally stabilize the second girder. The photo shows the work in progress. New bridges meeting current design and seismic standards will replace existing bridges. The project is funded by the 2003 Legislative Transportation Package, and will increase capacity and allow motorists to move more safely and efficiently through the I-5 corridor.

Repairs at a nearly year-old slide on **SR 112 near Neah Bay** began in September. Crews will stabilize the slopes and return the roadway to two lanes. The slide took place in October 2003, and a temporary repair provided a single-lane road past the slide.

A section of **SR 112** was closed in the Jim Creek vicinity for approximately six weeks beginning September 7 for a culvert replacement project. The aging culvert was a major fish barrier on this salmon-bearing stream and had been identified as the Department of Fish and Wildlife's top fish culvert replacement priority in WSDOT's Olympic Region.

In August, workers activated a new traffic signal at the intersection of **U.S. 101 and State Route (SR) 401** on the Washington side of the Astoria-Megler.

Highlights of Program Activities

Crews installed new guardrail on both sides of the **SR 14** West Camas Slough Bridge in Clark County. This will help bring the rail system on this bridge up to current design standards. The bridge crosses the Camas Slough to Lady Island just east of Exit 12.

WSDOT completed a \$500,000 paving project in Tacoma that improves southbound **I- 5 between the Pacific Avenue/I-705 interchange to the SR 16/38th Street off-ramp**. This is one of the busiest sections of freeway in the state system with an average of more than 200,000 daily trips.

Crews began a paving and bridge repair project on **SR 409** through the city of Cathlamet in Wahkiakum County. The project resurfaces the entire length of SR 409 between SR 4 and the Columbia River ferry dock, replaces the bridge expansion joints on the Julia Butler Hanson Memorial Bridge and resurfaces the north half of the bridge's deck.

Workers replaced a culvert under a portion of **SR 527 (Bothell-Everett Highway)** near Silver Lake in south Snohomish County. The old culvert was replaced with a longer box culvert that will help prevent flooding during storms, improve the environment, and allow fish passage for spawning. Work is part of the current SR 527 widening project.

A two-lane roundabout at the intersection of **State Route 203 and Northeast 124th Street** was opened to traffic in Duvall. An average of 12,500 vehicles travel through this portion of SR 203 on weekdays. This is the first time WSDOT has built a roundabout on a rural highway in western Washington.

Public Transportation and Commute Trip Reduction

The sale and impending development of former Department of Natural Resources property near Interstate 5 and Marvin Road forces the closure of a popular 147-stall park and ride lot this December. In anticipation of the closure, Intercity Transit discontinued transit service to the lot in September. WSDOT had leased a portion of the 36-acre DNR site, which was sold earlier this year to First Development Corp.

This summer WSDOT staged its 28th annual Public Transportation Conference in Yakima, attracting 500 participants, over 50 exhibitors, and notable media coverage. The conference highlighted strategies for improving connections between and within our communities and better integrating modes of transportation. Workshops were offered on planning, all

forms of rail, urban and rural transit, tribal transportation, grants, and safety and security.

Ferries

Michael G. Thorne, Chief Executive Officer of Washington State Ferries (WSF), announced in September his decision to resign, effective October 1. Secretary MacDonald appointed Mike Thorne to his position in January 2002 following an intensive nationwide recruitment effort. MacDonald will serve as interim director for the ferry system during the recruitment period for a new director until a replacement is found.

WSF's fall schedule went into effect on Sept. 19. Along with the schedule change were a number of other adjustments: WSF will make only one roundtrip sailing per day between Anacortes and Sidney, British Columbia; the parking fees at the lots in Anacortes were eliminated, as was the free shuttle service from the outlying park and ride lot on March Point Road; and, the summer surcharge was eliminated on October 10.

WSDOT opened the new Terry's Corner park and ride lot on Camano Island. Located at the intersection of State Route 532, North Camano Drive and Sunrise Boulevard, the new lot provides commuters an option to park close to home and join their carpool or vanpool, or ride Island Transit. Island Transit service to the lot started in September. Approximately 80 parking spaces opened during the first phase of a three-phase project to build more than 300 parking spaces in the next few years.

Highlights of Program Activities

Aviation

WSDOT's Aviation Division is now broadcasting images from Easton State Airport on its web site. This new camera joins five other Washington State airport web cameras providing pilots with a real-time look at weather and airport conditions. The Easton State airport web camera and others can be viewed at <http://www.wsdot.wa.gov/aviation/webcam/default.htm>

The 10th annual Mountain Flying Clinic took place on September 25-26 at Wings of Wenatchee in Wenatchee, Washington. The free course teaches pilots with little or no mountain flying experience how to safely navigate through Washington's mountainous terrain.



Easton Airfield

Improved Motorist Information

New camera locations and more modern equipment are providing better traffic monitoring on I-90 in Spokane. The I-90/Intelligent Transportation system (ITS) project included the installation of six new cameras along the I-90 corridor in Spokane. New camera units were installed at Freya Street, near the Sprague Avenue Interchange, Broadway Interchange, Park Road, Argonne Interchange and at Fancher Road. In addition, five existing cameras-on Sunset Hill, at Division, Arthur, Hamilton, and near Havana Street were replaced with the new, more weather resistant models that provide a sharper picture. These cameras are monitored at the Spokane Regional Transportation Management Center, 24 hours per day, seven days a week.

WSDOT unveiled a new and improved Seattle Area Traffic Web site in September to excellent reviews. The new site is easier to navigate and puts all the most popular and sought-after information right on the front page. Users will find data and maps are now only one click away - and WSDOT wants feedback to make it even better. WSDOT Web Managers invited local traffic reporters to try the site out Wednesday, September 22. Their reaction was positive.

Celebrations and events

Sound Transit and WSDOT joined with local, state and federal officials to celebrate two projects that will bring relief to commuters and drivers in Federal Way. Sound Transit hosted the "Start of Construction Celebration" at the site of the new Federal Way Transit Center in September. Less than a half-mile from the transit center site, construction is underway on an HOV Direct Access project at South 317th Street on I-5. On- and off-ramps are being built in the I-5 median and a new overpass above the southbound lanes to connect I-5 HOV lanes directly to South 317th Street and the new Federal Way Transit Center. The direct access interchange should open to traffic in fall 2005.

Grants

WSDOT awarded a \$106,000 grant to the Napavine School District under the Safe Routes to Schools Program. The Napavine School District grant will build new sidewalks and join them with existing sidewalks to provide a continuous safe route for children walking and biking to school. The grant also leverages additional federal grant funding to complete a pedestrian/bicycle overpass. Pedestrian, bicycle and railway safety programs will be conducted in grades pre-school through 12. Local police will assist with school route law and safety enforcement programs.

Awards

WSDOT's Highways and Local Programs and Federal Highways Administration (FHWA) selected four local agency projects for the Award of Excellence honors. The awards program formally recognizes federally funded local agency projects that have achieved excellence in safety enhancements, construction, innovative design, environmental compatibility, and public involvement and satisfaction. The award categories and winners were: "Best City Project" - City of Stevenson, SR 14 Couplet Project; "Best County Project" - Clark County Padden Parkway Project; "Best Special Project" - Douglas County Chief Joseph Dam Bridge Rehabilitation Project; "Director's Award"- City of Tonasket SR 20/SR 97 Sidewalk Improvements Project.

WSDOT won two national communications awards from the National Transportation Public Affairs Workshop, a subcommittee of the American Association of State Highway and Transportation Officials. The first award was for excellence in Web communications for the Tacoma Narrows Bridge History Web site (<http://www.wsdot.wa.gov/TNBhistory>). The second

Highlights of Program Activities

award, for Issue Management, was given for the communication plan regarding the Hood Canal Bridge Graving Dock construction site, after Native American artifacts and remains were discovered in the construction area. The plan called for an active outreach strategy including community meetings to discuss the findings, project status and long-term impacts the discovery could have on construction. Details about the project can be viewed at <http://www.wsdot.wa.gov/projects/sr104hoodcanalbridgeeast>.

WSDOT's Eastern Region exhibit at the Spokane Interstate Fair received one of three "Best Commercial Display" awards given at the annual event. The Region's entry received the nod as the best display in an auxiliary building. The Region featured three-dimensional depictions of the North Spokane Corridor (NSC) freeway and the NSC Farwell Rd./U.S. 2 Interchange. This is the 8th year that the Eastern Region has had a presence at the Spokane Fair.

The Washington State Ridesharing Organization presented Washington State Ferries and its transit partners (King County Metro, Sound, Pierce, Everett, Community, and Kitsap transit) with an award for the development of an annual regional pass for federal employees. The award is "In recognition of leadership and commitment to encouraging policy makers, employers, and commuters to support the use of alternative transportation, and energy consumption throughout Washington State and the Northwest. The annual pass program will be offered again starting in October, with revenue for the upcoming year expected to exceed \$776,000.

Gray Notebook

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Americans with Disabilities Act (ADA) Information

Persons with disabilities may request this information be prepared and supplied in alternate formats by calling the Washington State Department of Transportation at (360) 705-7097. Persons who are deaf or hard of hearing may call access Washington State Telecommunications Relay Service by dialing 7-1-1 and asking to be connected to (360) 705-7097.

Civil Rights Act of 1964, Title VI Statement to Public

Washington State Department of Transportation (WSDOT) hereby gives public notice that it is the policy of the department to assure full compliance with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and related statutes and regulations in all programs and activities. Persons wishing information may call the WSDOT Office of Equal Opportunity at (360) 705-7098.

Other WSDOT Information Available

The Washington State Department of Transportation has a vast amount of traveler information available (including Puget Sound area traffic, mountain pass reports, highway closures, ferry schedules, and more).

Call the WSDOT statewide toll-free number: 1-800-695-ROAD.
In the Seattle area: (206) DOT-HIWAY [368-4499].

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

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