Washington State
Department of Transportation

Measures, Markers and Mileposts

The Gray Notebook for the quarter ending
March 31, 2003

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

Douglas B. MacDonald
Secretary of Transportation

Measures, Markers and Mileposts
The Gray Notebook for the quarter ending March 31, 2003

9th Edition
Published May 21, 2003

"What gets measured, gets managed."

This periodic report is prepared by WSDOT staff to track a variety of performance and accountability measures for routine 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.

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A Note from Doug MacDonald

The ninth quarterly Gray Notebook *includes a couple of noteworthy new features.*

First, three sections (pages 32 to 36) provide annual reporting on transportation system benchmarks specifically requested and directed by the legislature in January 2002. These requirements are now set forth in RCW 47.01.012. We are pleased that these topics are now added to the variety of performance measures and reports that have already found their way into the Gray Notebook *on WSDOT's own initiative.*

Second, the section on Measuring Congestion (pages 10 to 13) shows the efforts WSDOT is now making to quantify and describe the important issues of highway performance in the areas of travel times, congestion and delay. Explanatory notes accompanying those sections describe our aims, what we have achieved to date, and what we must continue to do. It is probably true that, to a greater extent than any other Gray Notebook *section, this material is on the cutting edge of transportation system performance measurement. There is much, however, to be done, as you will see.*

We hope you find the Gray Notebook *interesting and useful. For other aspects of WSDOT's accountability efforts, see* www.wsdot.wa.gov/accountability*. And much more will be forthcoming, as we work to meet the accountability and reporting expectations that the legislature has incorporated in the recent 2003 Transportation Funding Package.*

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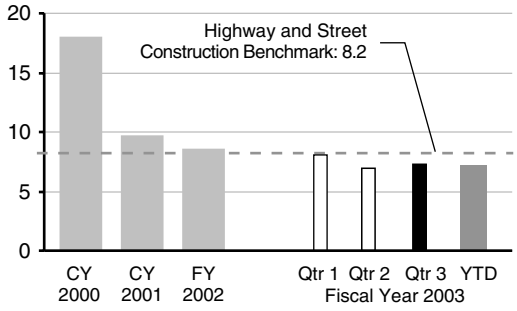
Worker Safety: Quarterly Update

Continuing updates on *Gray Notebook* safety topics – data is shown for calendar years (CY) 2000 and 2001, fiscal year (FY) 2002, and FY 2003 by quarter and by Year-to-Date (YTD).

WSDOT Highway Maintenance Workers

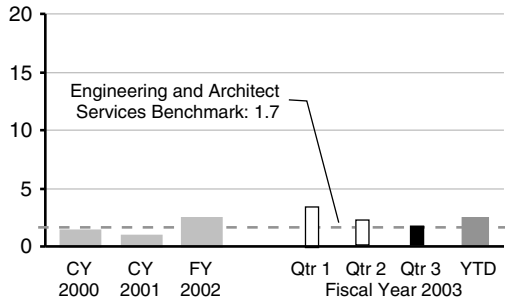
Recordable Injuries per 100 Workers per Fiscal Year



The third quarter recordable injury rate for maintenance was 7.23 injuries per 100 maintenance workers. There were 26 recordable injuries during the third quarter of which 13 were lost workday cases. These lost workday cases accounted for 169 lost workdays during the quarter. This averages 56 lost workdays per lost workday case and a lost workday incident rate of 47 days per 100 maintenance workers per fiscal year. Through three quarters of FY 03, there have been 27 (30%) back injuries. Back injuries continue to be the most frequently injured part of body. Strains accounted for 45% of the total injuries.

WSDOT Highway Engineer Workers

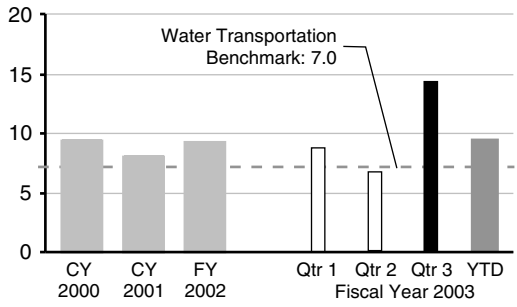
Recordable Injuries per 100 Workers per Fiscal Year



The third quarter recordable injury rate for engineer workers was 1.43 recordable injuries per 100 engineer workers, of which only three injuries resulted in lost workdays. These three lost workday injuries resulted in a total of 25 lost workdays. The average is 8.3 lost workdays per lost workday case and a lost workday incident rate of 5.1 lost workdays per 100 engineering workers per fiscal year. In FY 03, there were nine (23%) back injuries. The second most frequent claim filed was hearing loss. Sprains/strains (33%) were the most frequent nature of injury followed by occupational illness, e.g., Carpel Tunnel Syndrome.

WSDOT Ferry Vessel Workers

Recordable Injuries per 100 Workers per Fiscal Year



The third quarter recordable injury rate for WSF vessel workers was 14.2 recordable injuries per 100 vessel workers. Several injuries reported during the third quarter occurred in previous quarters, increasing the rate for this update. Twenty-nine of the 34 recordable injuries reported during the quarter were lost workday cases. These lost workday cases resulted in 215 lost workdays for an average of 7.4 lost workdays per lost workday case. This is a lost workday incident rate of 89.6 lost workdays per 100 vessel workers per fiscal year. A total of 74 recordable injuries for 1,290 lost workdays have accumulated through three quarters of FY 03. Strains/sprains were the most frequent nature of injury (74%) of all vessel worker injuries through three quarters of FY 03. Back injuries were the most frequent part of body injured (28%).

Source for all charts: WSDOT Safety Office

Accident Prevention Activities

Third Quarter FY 2003

- WSF began safety awareness seminars with all deck crews.
- The Southwest Region's "Special Safety Buddy" system has significantly reduced the region's injuries.
- The WSF conducted ergonomic reviews to identify workstation configuration and tasks, which could result in an injury or occupational illness. Safety inspections were also conducted at random.
- Awarded contract on high visibility clothing to enhance highway and WSF worker visibility.
- WSDOT has begun an agency-wide campaign to educate workers on West Nile Virus (WNV) and how to protect themselves from the virus. Maintenance personnel in all regions are implementing WNV surveillance and control activities in support of the state Department of Health.

Reading the Charts

"Recordable injuries and illnesses" is a standard measure that includes all work related deaths and work related illnesses and injuries, which result in loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid.

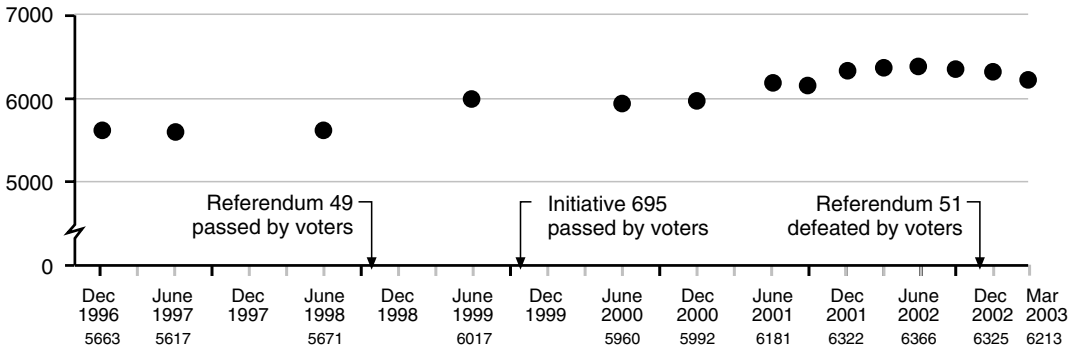
The U.S. Bureau of Labor Statistics provides the selected 2000 national average benchmarks. After discussion with the National Bureau of Labor Statistics, the following benchmarks were selected to provide a more relevant and consistent benchmark.

Maintenance: "Highway and Street Construction" Standard Industry Classification (SIC) 161 (rate 8.2)
Engineering: "Engineering and Architect Services" SIC 871 (rate 1.7)
Ferry vessel workers: "Water Transportation" SIC 44 (rate 7.0)
One worker equals 2,000 hours per year.

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 the end of 1996. (The number of "FTEs" [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.

WSDOT Employee Training Requirements

Maintenance and Safety Training Required by Law

Progress toward achieving training goals for maintenance employees is reported below. The number of required courses and the number of individuals required to complete a given course change periodically. This table shows the status of training completed for eleven of the 24 courses required this quarter.

	Maintenance Workers Requiring Training Mar 03	Total Current Maintenance Workers Trained to Date Mar 03	Maintenance Workers Trained 2nd Quarter FY03	Maintenance Workers Trained 3rd Quarter FY03	Compliance to Date: Target = 90%	Change Since Last Quarter
Safety Courses						
Blood Borne Pathogens	1221	1011	67	43	83%	+4%
First Aid	1456	1397	23	14	96%	+3%
*Hearing Conservation	1340	1211	15	0	90%	-1%
Personal Protective Equipment	1312	561	81	85	43%	+8%
Fall Protection	745	367	60	13	49%	+3%
Flagging & Traffic Control	1121	1085	10	4	97%	+2%
Maintenance Courses						
Drug Free Workplace	353	282	11	45	80%	+13%
Forklift	1183	988	33	12	84%	+1%
*Hazardous Materials Awareness	1022	465	133	1	45%	-2%
Manlift Operations	574	313	99	11	55%	+4%
Excavation, Trenching & Shoring	393	144	8	24	37%	+4%

** The number of workers requiring all training courses increased this quarter, causing the percent completion in these two courses to fall.*

Training for All WSDOT Employees

The following table reflects continued progress on five important workforce courses that are now receiving special emphasis.

	Number Requiring Training**	Number of Employees Trained	Number Trained 2nd Quarter FY03	Number Trained 3rd Quarter FY03	Compliance to Date: Target = 90%	Change Since Last Quarter
Training Courses						
Disability Awareness	7063	2186	199	191	31%	+4%
Ethical Standards	7063	6898	40	58	98%	+2%
Sexual Harassment/Discrimination	7063	3456	397	560	49%	+9%
Valuing Diversity	7063	2731	389	384	39%	+7%
Violence that Affects the Workplace	7063	5410	577	20	77%	+2%

***Courses shown are mandatory for all permanent full-time, part-time, and temporary employees.*
Diversity training previously offered and completed by 63% of our workforce (1992 to 2002) has been revised and replaced with three separate courses, Valuing Diversity, Sexual Harassment, & Disability Awareness. The new courses are offered as refresher training and first time training. The goal is to have 90% of our workforce trained as resources and time allow. *Source: WSDOT Office of Human Resources.*

Highway Construction Program: Quarterly Update

Meeting WSDOT's Scheduled Advertisement Dates

For the biennium to date, WSDOT has advertised 376 improvement and preservation projects. This represents a 92% delivery rate based on the revised plan of 407 projects. WSDOT's project delivery schedule, according to the Capital Improvement and Preservation Program (CIPP) is shown on the adjacent chart for the quarter ending March 31, 2003. The chart also shows the revision to the planned line, with 429 projects originally scheduled to be advertised to date. This is the result of the $76 million Current Law Budget reduction to the CIPP, from the 2002 Supplemental Budget*.

In quarter seven, 30 projects were not advertised as planned. This can be attributed to the following factors:

- Projects deferrals caused by including insufficient time for design work and delayed scoping and preliminary engineering of projects. This accounted for 11 of the deferrals and one deletion this quarter. Two examples:

  Prosser's I-82 pavement project in a slide area. Additional subsurface testing indicated a more complicated and costly solution would be required to repair the slide area. The project was deleted until an appropriate solution is developed and additional funding is approved

  SR 20, Sidney St. Vicinity to Scenic Heights, south of Oak Harbor. This project would provide better sight distance by modifying the highway alignment and removing trees and utility poles. Further analysis determined the addition of left turn lanes at two locations was needed, which increased right of way acquisition time. Also, additional environmental effort is needed as a result of including Federal funds in this project. The Ad date was delayed two years.

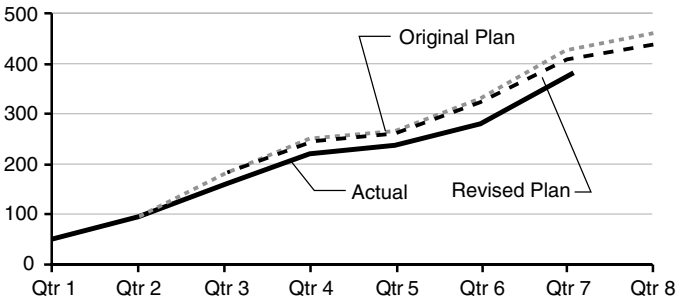
- Projects deferrals as a result of coordination with partner agencies. This accounted for nine of the deferrals this quarter. Two examples:

  Bothell's SR 527 pavement project consists of 2.5 miles of asphalt paving. The City of Bothell requested changes to the project resulting in a two-month delay.

  Waitsburg's SR 12 pavement project, including safety improvements. Delayed three months to address citizen's opposition to project.

Highway Construction Program Delivery

Planned vs. Actual Number of Projects Advertised
2001-2003 Biennium, Quarter 7 Ending March 31, 2003



- Project deferrals as a result of changing project priorities, to eliminate possible conflicts with adjoining projects and adjusting work to available funding. These accounted for nine of the deferrals this quarter. Two examples:

  SR 16, Tacoma Narrows Bridge Electrical. This project makes major electrical repairs to the existing bridge. Because of likely conflict with new second Narrows Bridge this project is deferred to 2005-07 biennium.

  SR 112, Jim Creek Culvert Repair, 30 miles west of Port Angeles. This project repairs a failing culvert, while removing a fish barrier. The Makah Tribe got BIA funds to advertise a paving project in this locale, conflicting with this project. Deferred to the 2003-05 biennium.

These projects will continue to receive focused management attention to ensure project delivery during the remainder of the biennium.

***Adjustments to Original Plan**

Projects deferred or deleted as a result of the Current Law Budget reduction account for nine deferred and one deleted project this quarter. Two examples:

SR 7 Elbe Safety Interchange Facility. *40 miles south of Tacoma. The project constructs a rest area facility. Although the project has Federal earmark available, there is no future I3 subprogram allocation. No new Ad date is proposed.*

SR 3/305 Interchange Vicinity, near Poulsbo. *The project installs signals and adjusts alignment to the interchange. This WSDOT contribution to a developer project was deleted with the program reduction. The developer has since funded the entire project and it is currently under construction.*

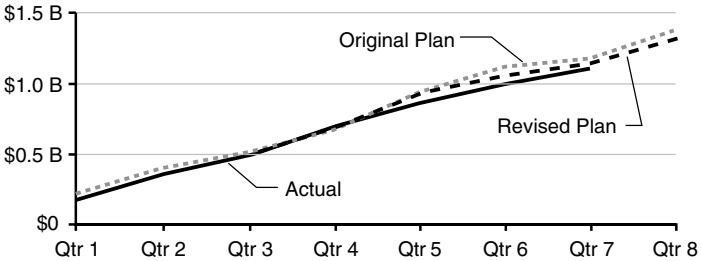
Highway Construction Program Cash Flow

Expenditures through the quarter ending March 31, 2002, are slightly above plan, achieving over 97% of budgeted cash flow. Historically, WSDOT's cash flow for this program is 92% to 95%. The chart reflects the revised plan due to the budget reduction explained above. The expenditure rate reflects the high delivery rate of projects to advertisement in the highway improvement program. This expenditure rate also reflects:

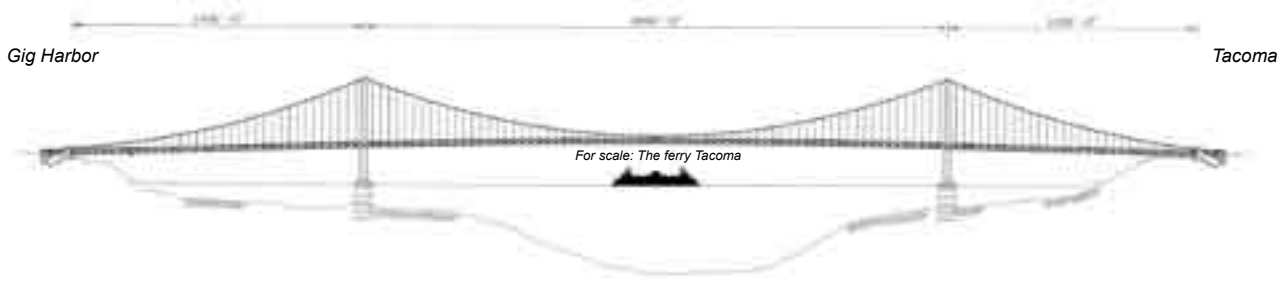
- A Highway Construction Program that included a large number of new construction starts in spring 2001. While these projects were actually started in the last quarter of the 1999-2001 biennium, this work has driven expenditure levels in the current biennium.
- The emphasis in getting projects to advertisement. This has been an important management focus and has been reported throughout the year in the *Gray Notebook*.
- Activity in the regions, often with direct encouragement and support of customer communities, in moving projects "to ad" given the prospects for project deferrals or cancellation in a period of expected budgetary stringency.
- Favorable construction weather, encouraging contractors to speed their work.

Highway Construction Program Cash Flow

Planned vs. Actual Expenditures
2001-2003 Biennium, Quarter 7 Ending March 31, 2003
Dollars in Billions



Sources for all charts: WSDOT Program Management Office.



Tacoma Narrows Bridge Project Update

As of March 31, 2003, design/builders Tacoma Narrows Constructors (TNC) have completed 5.2% of the physical construction activity for the new State Route 16 Tacoma Narrows Bridge. Todd Pacific Shipyards Corporation, TNC's subcontractor recently launched two completed giant steel "cutting edges" that will form the bottom of two caissons (bridge foundations) on which the bridge towers will be built. Each cutting edge measures 131 feet long, 81 feet wide and 18 feet high, and weighs about 750 tons. After launch in Seattle, each cutting edge was towed to the Port of Tacoma for caisson wall construction — building up the sides of the cutting edges with reinforced concrete. When the caissons reach 40 feet in height, they will be towed to the new bridge site in June and late July. Once at the site, the construction will continue on the caissons until they are properly embedded into the Narrows seabed. Crews will then begin constructing the bridge towers. In the meantime, dredging, trenching and riprap placement are being done in the Narrows seabed to prepare the caisson landing area.

This complete caisson "cutting edge" slid gracefully into Elliott Bay during a recent launch. It was later towed to the Port of Tacoma for caisson construction. Later this summer it will be moved to the bridge site for further construction.

Other work on the overall project is also continuing. Construction is underway at 24th Street NW in Gig Harbor (seen at right) where crews are building a new overpass and half-diamond interchange. Work is also occurring in the 36th Street NW and 22nd Avenue NW vicinities as crews relocate utilities and do other preparation work to realign local roads, widen and improve intersections, create bicycle facilities, and widen State Route 16 to accommodate future HOV lanes. Concurrent design work also continues. For more information, visit *www.wsdot.wa.gov/projects/sr16narrowsbridge/*.

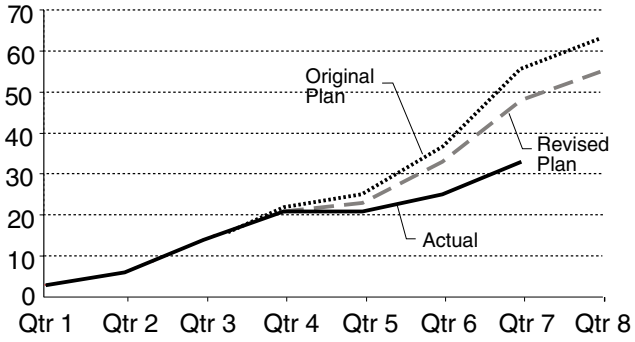
24th Street Bridge north pier is shown in this recent photo. Bridge girders will be placed on top of the wall.

Highway Safety: Quarterly Update

The highway safety projects tracked on this page are a portion of the construction projects that were described on page three. Of the 56 safety improvement projects originally planned to be advertised by the 7th quarter of the 01-03 biennium, eight projects have been removed due to the Supplemental Budget reductions, for a revised plan of 48 project advertisements. Through the 7th quarter, 33 projects have been advertised. In the 7th quarter, 15 projects were scheduled for Ad under the revised plan. A total of eight projects went to Ad during that period: five originally scheduled projects, one previously delayed project, one project advanced from the 03-05 biennium, and one addition to the program to construct safety improvements with a new federal grant.

Safety Improvement Program Delivery

Planned vs. Actual Number of Projects Advertised
2001-2003 Biennium, Quarter 7 Ending March 31,2003



From the revised plan of scheduled projects for advertisement in the 7th quarter, 10 were deferred:

- Seven projects were deferred due to design, scoping, right-of-way or environmental issues.

  SR 20, Sidney St. Vicinity to Scenic Heights, south of Oak Harbor. This project would provide better sight distance by modifying the highway alignment and removing trees and utility poles. Further analysis determined the addition of left turn lanes at two locations was needed, which increased right of way acquisition time. Also, additional environmental effort is needed as a result of including Federal funds in this project. The Ad date was delayed two years.

  SR 539, King Tut Road and Bartlett Road, south of Lynden. This project would construct a northbound left turn lane at the King Tut Road intersection. At the Bartlett Road intersection, the project would construct a northbound left turn lane, a northbound right turn pocket, and a southbound left turn lane. Project is delayed to minimize construction impacts to the Guide Meridian Water Association. Right of way acquisition is in process with a project Ad date of February 2004.

  SR 532, at 102nd Ave. NW, in Stanwood. This project would install traffic signals and improve existing sidewalks. During the design phase of the project, it was discovered that county right-of-way plans were not consistent with field conditions and local property owners had encroached on state right of way. Project is delayed one year to update existing right-of-way plan.

  SR 202, near Riverside Park, in Fall City. This project would construct two roundabouts. The portion of the project enhancing pedestrian safety by replacing and installing sidewalks is to be completed as part of another project. The main project will be delayed until 2005-2007 biennium pending acquisition of additional right-of-way when funding is available.

  SR 20, Oak Harbor NCL to Frostad Road, north of Oak Harbor. This project would add a two-way left turn lane from the vicinity of NE Narrows Avenue to Oak Harbor north city limits, add left turn lanes and illumination at Cemetery Road/NE 16th Avenue, Sleeper Road, and Frostad Road, and add passing lanes in the westbound direction. To reduce cost for wetland mitigation, the needs of four projects were designed into one site. The additional time needed to compile environmental documentation and obtain permits for the four projects delayed the Ad date nine months.

  SR 20, near Frostad Road, north of Oak Harbor. This project would add guardrail where needed throughout the project area. Project delayed nine months over issues concerning the wetland mitigation site.

  SR 542, Scenic Viewpoint to Excelsior Trail, on the Mount Baker Highway. This project would install guardrail as needed throughout the project area. Project delayed five months to complete environmental documentation for a biological assessment not previously scoped.

- Three projects were deferred for additional partnership coordination needs.

  I-5, Northbound Ramps at SR 532, east of Stanwood. The original project would have provided a one-lane roundabout at the intersection of the northbound I-5 ramps and SR 532. To accommodate design suggestions from the public and elected officials, the project was delayed. The northbound ramps roundabout is now included in a new revenue project that will also make improvements at the intersection of old SR 99 and SR 532. The expanded project Ad date is Spring 2006

  SR 531, in front of Lakewood High School, west of Arlington. This project would provide a sidewalk in front of Lakewood High School. The delay allowed the school district to deed right of way to the state and locate sidewalks away from the highway. Ad date will be in 2003.

  SR 522, 83rd Place NE, west of Bothell. This project would signalize the intersection at 83rd Place NE and provide an eastbound left turn lane at this intersection. Project delayed to 2005-2007 biennium to enable it to be packaged with other lane-widening projects in the corridor to minimize rework and traffic disruption.

Intersection Improvements Save Lives

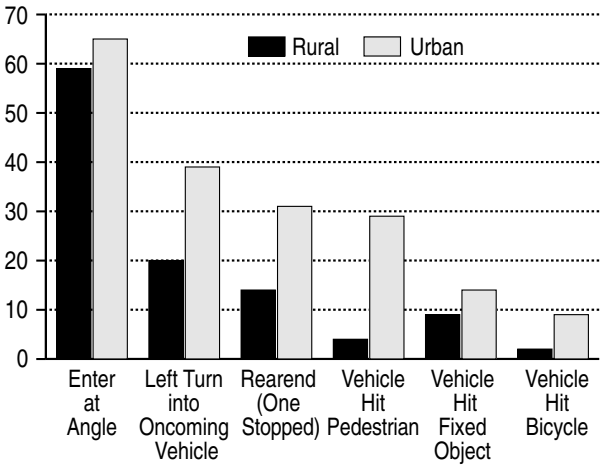
Collisions in intersections are a leading cause of urban and rural traffic fatalities and disabling injuries. The six most frequent types of fatal and disabling collisions related to state highway intersections are shown in the chart.

More than 1,582 rural and urban collisions occurred at state highway intersections in 2001. More than a third of these rural and urban crashes included drivers entering the intersection and colliding at an angle. Other collision types at intersections include sideswipe collisions, head-on collisions, rear-end collisions, and hitting fixed objects.

Physical or operational changes or improvements to a roadway or intersection can make a big difference in safety and also be low cost.

An example of an operational safety intersection improvement using low cost enhancements in the Olympic Region is a re-striping project at the intersection of U.S. 101 and SR 112 completed in 2002.

Most Frequent Types of Fatal and Disabling Collisions at Intersections on State Highways
Number of Collisions 1999-2001, Average per Year



Re-striping intersections are effective operational improvements that are low cost interim safety solutions. Numerous low cost safety enhancement projects are taking place across the state.

Before re-striping

After re-striping

A low cost enhancement at the intersection of U.S. 101 and SR 112.

Reducing Bicyclist Fatalities

Washington ranked 16th lowest in bicyclist fatality rates in 2001, compared to other states. Eight bicyclists were killed on Washington state highways in 2001. In addition, there were more than 200 reported accidents involving bicyclists, including disabling injury accidents. This may be the tip of the iceberg: a recent FHWA study of hospital emergency department data indicates that between 40 and 60 percent of all bicycle accidents are not captured in highway reporting data.

Consistent with accident trends for pedestrians (see the *Gray Notebook* for the quarter ending December 31, 2002), State Route 99 appears to be the corridor with the largest concentration of bicycle-related accidents from 1995 to 2001. Some of the risk factors at work on SR 99 include vehicle traffic volumes, vehicle speeds, shoulder configurations and illumination conditions.

Traffic Safety Near Schools

In 1999, WSDOT began administering a grant program called Traffic Safety Near Schools. This program has now funded more than 70 projects statewide designed to improve bicyclist and pedestrian safety near schools. However, the program has not been able to fund nearly 90 additional project proposals. The legislature's new transportation budget provides an additional $1.5 million to fund 10 to 12 more projects, leaving about 80 unfunded.

Some of these grants have already had significant impacts on safety. For example, the 155th Street crossing in Kenmore was defined as a high accident area. Since receiving the Traffic Safety Near Schools grant in 2000 to improve sidewalk and pedestrian safety, Kenmore has not had an accident at this location.

Federal Benchmarking Progress

The Federal Highway Administration (FHWA) recently completed a benchmarking study of all states and their bicycle and pedestrian programs. Washington met all pedestrian benchmarking standards and all but one bicycle benchmark, ranking Washington second nationally.

Scoring on Eight Performance Benchmarks

- ☑ Bike/Ped Plan exists
- ☐ Bicycle Plan meets FHWA guidance
- ☑ Accomodates bicycles in highway projects
- ☑ Includes sidewalk in new urban highway projects
- ☑ Includes sidewalks in re-construction projects
- ☑ Sidewalks are generally included in urban projects
- ☑ Statewide Safe Routes Program
- ☑ Other Statewide programs

2001 Bicyclist Fatality Rates by State

Fatalities per 100,000 Population
Source: National Highway Traffic Safety Administration

Ranked lowest fatality rate to highest

Rank	*State*	*Bicyclists Killed*	*Fatality Rate*
1	North Dakota	0	0.00
2	Vermont	0	0.00
3	Arkansas	1	0.04
4	Oklahoma	2	0.06
5	Connecticut	2	0.06
6	Kansas	2	0.07
7	New Hampshire	1	0.08
8	Tennessee	5	0.09
9	Rhode Island	1	0.09
10	Iowa	3	0.10
11	Missouri	6	0.11
12	Montana	1	0.11
13	Pennsylvania	14	0.11
14	Utah	3	0.13
15	South Dakota	1	0.13
16	**Washington**	**8**	**0.13**
17	Alabama	6	0.13
18	Minnesota	7	0.14
19	Ohio	16	0.14
20	Massachusetts	9	0.14
21	Idaho	2	0.15
22	Alaska	1	0.16
23	Wisconsin	9	0.17
24	West Virginia	3	0.17
25	Virginia	13	0.18
26	Nevada	4	0.19
27	Indiana	12	0.20
28	Kentucky	8	0.20
29	Wyoming	1	0.20
30	Maryland	11	0.20
31	New York	41	0.21
32	Texas	46	0.22
33	Illinois	27	0.22
34	Georgia	20	0.24
35	Michigan	24	0.24
36	Colorado	11	0.25
37	Delaware	2	0.25
	U.S. Average		**0.26**
38	Mississippi	8	0.28
39	Nebraska	5	0.29
40	North Carolina	24	0.29
41	California	105	0.30
42	New Jersey	26	0.31
43	Maine	4	0.31
44	New Mexico	7	0.38
45	Oregon	15	0.43
46	Louisiana	23	0.51
47	Arizona	28	0.53
48	Hawaii	7	0.57
49	South Carolina	24	0.59
50	Florida	127	0.78

Highway Maintenance: Quarterly Update
Safety Rest Areas

Roadside Havens for Weary Travelers

When you need to take a break after slurping down your 32 ounce soft drink and driving another 100 miles on the highway ... when your kids are asking "are we there yet?" when you still have miles to go ... These might be good times to pull into one of Washington's 43 Safety Rest Areas.

Nearly 39 million visitors (more than six visits for every state resident, on average) each year take advantage of these rest areas to use the restroom, take a nap, walk their canine companions, stretch their legs, or unpack their own picnic lunch.

For example, on a typical summer day, the Indian John Hill Safety Rest Area, west of Ellensburg, serves approximately 10,000 visitors, equivalent to twice the student population of Central Washington University in Ellensburg.

How Are We Doing/Public Feedback

Periodically we ask the public "how are we doing?" In 1997, 6,700 questionnaire forms were returned from our rest areas survey. Ninety-one percent of the respondents rated WSDOT's facilities "good" or "excellent." WSDOT learned that travelers spend on average thirty minutes or less at our facilities, with the heaviest use between 9 am and noon and 2 pm and 6 pm. Restroom cleanliness is most important to customers. Most rest area users are traveling for vacation or pleasure, and more visitors stop at rest areas in the summer months.

A 2000 telephone survey of 600 citizens concluded that most rest area customers were "satisfied" to "extremely satisfied."

WSDOT will conduct another Safety Rest Area customer survey during the summer and fall of 2003. It will provide valuable customer feedback to ensure that we are focusing on and responding to our customers' needs.

Safety Rest Area Locations and Amenities

WSDOT owns and operates 43 safety rest area facilities. Most facilities provide restrooms, picnic tables, drinking water, telephones, pet areas, motorist information and snack machines. Free coffee is available at some rest areas. For more information on rest area locations and amenities go to www.wsdot.wa.gov/biz/restareas/restareamap.

The Custer Rest Area on Interstate 5 near Bellingham and the Canadian border. Safety Rest Areas started out as highway beautification projects and over time the emphasis has switched to highway safety.

Safety Rest Area Maintenance

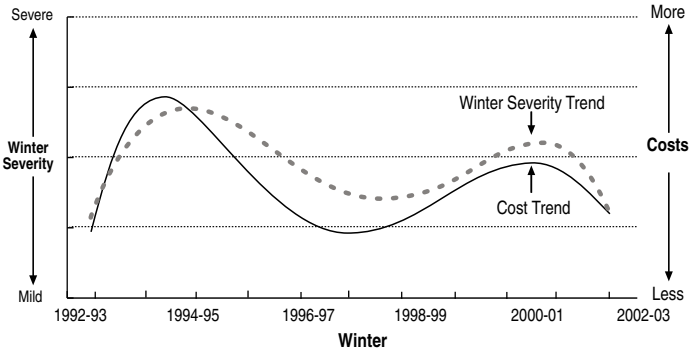
Once a rest area is located and built, WSDOT is responsible for facility and landscape maintenance, garbage disposal, cleaning, and provision of electric, water and sewage treatment utilities. Water and sewer service at remote rest areas can be difficult. In some cases, WSDOT maintains water wells, pumps, delivery systems and water quality monitoring to keep a rest area open to the public. Sewage disposal systems may involve pump stations, surface lagoons, infiltration designs, and/or several-mile-long pipelines connected to offsite treatment facilities.

Highway Maintenance: Quarterly Update
Snow Removal

A Mild Winter Resulted in Lower Snow and Ice Removal Costs

The statewide winter severity and snow and ice operations chart documents the correlation between winter weather conditions and winter maintenance expenditures over time. Maintenance crews, equipment and materials were ready to do winter storm battle, but overall, it was a mild winter without major incidents and costs were down.

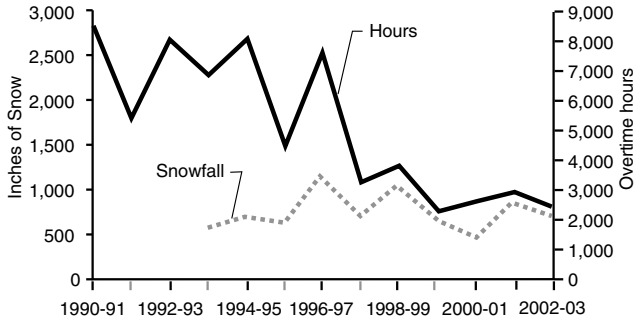
Statewide Winter Severity and Snow and Ice Operations Costs



Wenatchee Maintenance Area Measures Overtime Hours and Snowfall

The Wenatchee maintenance area is tracking the trend of significant reduction in winter overtime hour levels made possible by advances in technology, work shift efficiencies, and the effective application of anti-ice chemicals.

Snow and Ice Control
Overtime Hours per Snowfall Amount
North Central Region, Wenatchee Maintenance Area
Winter Seasons, 1990 to 2003

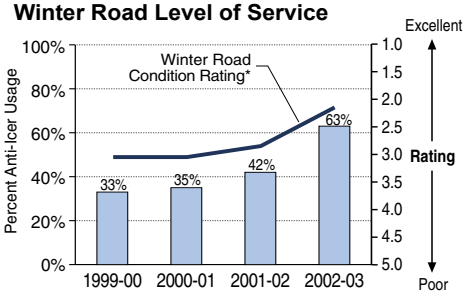


**Accumulated snowfall measured at six shed locations in the Wenatchee Maintenance Area.*

Winter Roadway Condition Level of Service and Anti-Icer Chemicals

WSDOT tracks winter roadway conditions from November 1 to March 31 every year. Maintenance areas assess road conditions during this period every week at 160 different locations throughout the state. Highways are rated for bare pavement and other factors that enhance safe winter driving conditions. This chart shows a correlation between increased anti-icer use and better roadway conditions.

Statewide Anti-icer Use and Winter Road Level of Service



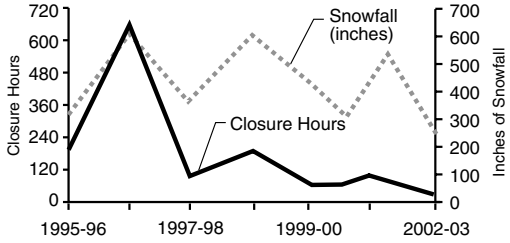
**Performance rating from WSDOT's Maintenance Accountability Process (MAP)*

Keeping Mountain Pass Highway Closures to a Minimum

Interstate 90 Snoqualmie Pass Winter Closure Hours and Snowfall

This chart shows that pass closure hours have decreased while snowfall levels have followed a steady trend. This winter Snoqualmie Pass received 255 inches of snowfall and was closed a total of 11 hours, 31 minutes (8 hours, 59 minutes eastbound; 2 hours, 32 minutes westbound). Snoqualmie Pass normally receives 442 inches of snow a year (based on the 53-year average) and is typically closed for winter snow and ice removal operations 66 hours eastbound and 55 hours westbound (based on the 10-year average).

Snoqualmie Pass Winter Closure Hours
Accumulated Annual Hours and Inches of Snowfall
Interstate 90 Winter Seasons, 1995 to 2003



Footnote: WSDOT is analyzing field data from this winter's salt pilot project and will report findings in a future Gray Notebook. *See September 30, 2002 for other* Gray Notebook *winter measures.*

Measuring Congestion: Annual Update

As many highway users have correctly suspected, the drop in regional employment is linked with a lessening of traffic congestion on many Central Puget Sound highways. The trend lines for employment and for average weekday traffic volumes are generally very similar. They each showed rapid growth during the 1990s that has tailed off in the last couple of years. The traffic volume pattern does vary somewhat from location to location. For example, a significant reduction since 2000 has occurred on the highways crossing Lake Washington, while the number of commuters on SR 167 in King County has actually increased during the same period. Other interesting stories in the data:

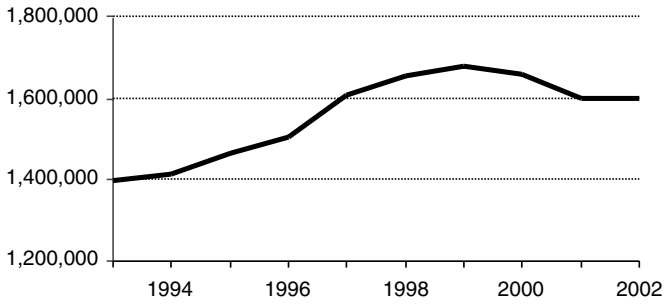
- The recent trends have affected all modes. HOV lane volumes are generally down. Transit ridership is down. Ferry ridership is down. (Details of this data have not been included in this Gray Notebook but are separately available from WSDOT.)
- The number of accidents have decreased significantly, accompanying the slackened traffic volumes. We don't know the extent to which congestion has been lessened because of fewer accidents, or how much the drop in accidents has resulted from reduced congestion. Each tendency clearly reinforces the other.
- Examples of recently completed highway projects are clearly shown to have benefited traffic conditions.

Peak period congestion is still prevalent in many corridors, especially in the peak direction. The freeway system in the Puget Sound region has little if any surplus capacity around the peak periods. An economic rebound will likely result in a resumption of the trends toward increased congestion experienced through much of the 1990s. This is why *now* is when improvements must be taken in hand to deal with future conditions.

Traffic and Employment

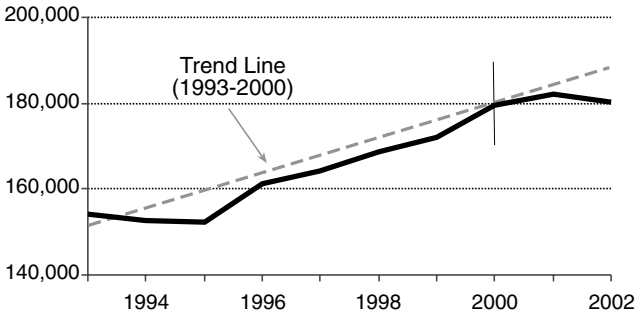
It should not come as a surprise that the levels of Puget Sound region traffic have been affected by the trends in regional employment. The graph to the right shows that employment in the Puget Sound region grew at a brisk pace during the latter part of the 1990s, peaking in 1999. Since then, employment has fallen by nearly 80,000. Fewer individuals are now traveling to work on the region's highways during peak periods.

Total Employment - Puget Sound Region



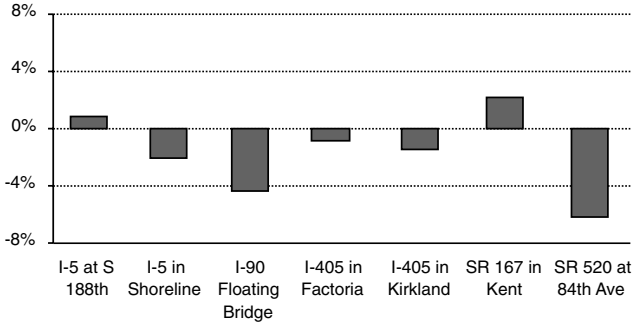
WSDOT analyzed several years of traffic volumes from the month of March for several locations in King, Pierce and Snohomish Counties. Traffic volumes on Puget Sound regional highways generally peaked in 2000 or 2001 following nearly a decade of rapid growth. Since then, the traffic volumes have remained relatively flat or have slightly decreased as shown on the typical graph depicting traffic volume on I-5 at Fife. This diminished growth of volume is found on a number of corridors; some corridors, in fact, have experienced actual decreases.

March Average Weekday Traffic Volumes
I-5 at HWY 99 in Fife



A snapshot of the weekday volumes for the month of March, comparing 2000 with 2003 for seven locations in King, Pierce and Snohomish Counties indicates a reduction in volumes on all but two of the seven locations (see the graph to the right).

March Average Weekday Volumes
Percent change: 2000 to 2003

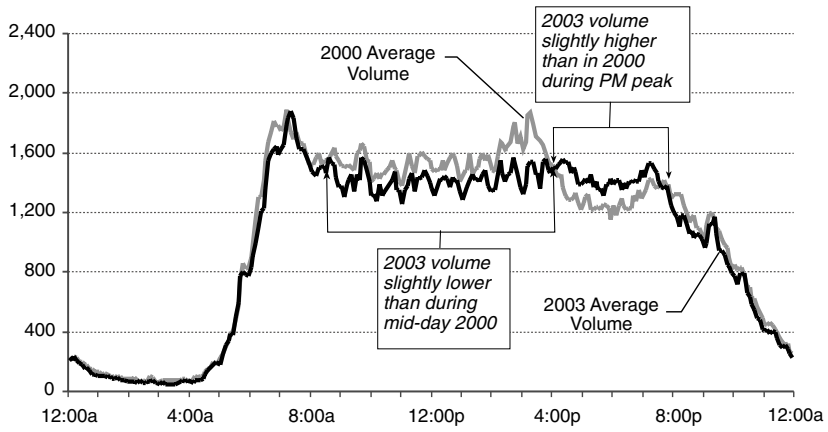


Traffic Volumes and Speed on SR 520: Comparing March 2003

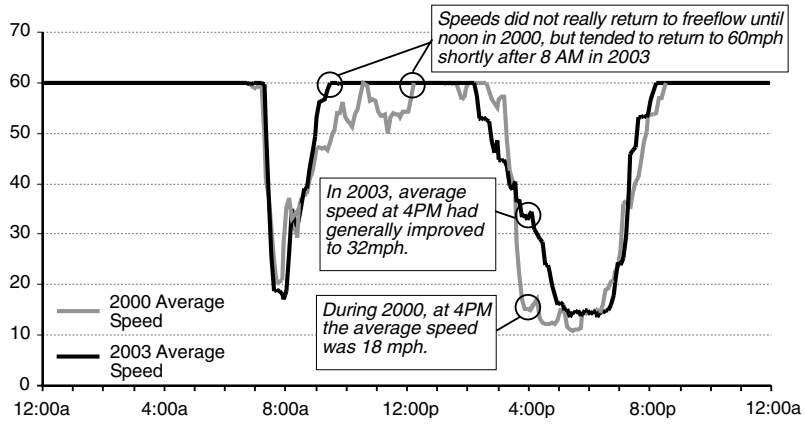
The two graphs to the right display data for SR 520 in the vicinity of the high rises, to use the traffic reporter's venacular. The top graph charts average traffic volumes across 24 hours for 2000 and 2003. The bottom graph, in turn, charts the speed of traffic. On westbound SR 520 travel speeds have increased throughout much of the day. This facility is still congested, but the duration of afternoon peak is shorter. Increased travel speeds allow more vehicle throughput, which results in higher traffic volumes as evident during the PM Peak in the volume graph to the above right.

Travel speeds have improved in many corridors, with mid-day slowdowns reduced or eliminated, and peak periods are shorter and less severe.

Average Weekday Travel Volumes
SR 520 Westbound Approaching the Floating Bridge



Average Weekday Travel Speeds
SR 520 Westbound Approaching the Floating Bridge



Traffic Accidents on I-405: Comparing 2002 to 2001

Between 2001 and 2002 WSDOT determined that there has been a reduction in traffic accidents on I-405. Higher traffic congestion generally leads to a greater frequency of accidents. The greater the number of accidents, the worse congestion becomes. Were accidents down because congestion was down? Or was congestion down because accidents were down? The adjacent table shows that the total number of accidents in both directions, except northbound during the AM peak period, on I-405 between Bellevue and Tukwila decreased significantly from 2001 to 2002.

Accident Comparison
I-405 (Tukwila to Bellevue)

Northbound	2001	2002	% Change
AM Peak Period (Tu,W,Th)	90	90	0%
PM Peak Period (Tu,W,Th)	73	49	-33%
All Day (Tu,W,Th)	278	203	-27%

Southbound	2001	2002	% Change
AM Peak Period (Tu,W,Th)	45	32	-29%
PM Peak Period (Tu,W,Th)	105	71	-32%
All Day (Tu,W,Th)	232	180	-22%

Distribution of Traffic Between Freeways and Arterials 1999-2003

Traffic trends between 1999 – 2003 at the following locations show that volumes on other highways and major arterials has generally held steady since 1999, similar to trends found throughout the Puget Sound region. This suggests that travel demand around the region has moderated rather than shifting from freeways to arterials or vice versa.

Location	1999	2000	2001	2002	2003
Rucker Ave, 42nd St in Everett	33,504	32,213	–	35,190	–
Hwy 99 at Raye St in Seattle	–	82,283	84,114	82,253	82,247
148th Ave in Bellevue	35,200	36,600	33,900	35,700	–

Highway Improvements Have Reduced Congestion

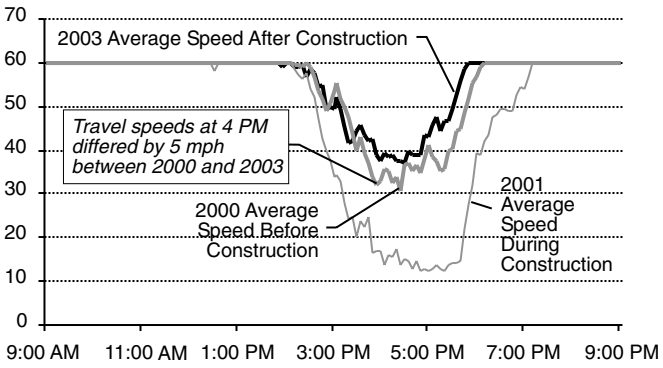
Two examples of how traffic conditions change as a result of highway improvement projects can be seen from the new HOV lane on southbound I-5 from the vicinity of Southcenter to Federal Way, completed in late 2002, and the new off ramp from southbound I-405 to southbound SR 167, completed in April 2003. Unfortunately, construction itself often slows traffic, as plainly demonstrated in this section of I-5 in 2001.

I-5 Southbound HOV Lane

The project added a HOV lane to I-5. The graph to the right shows that in the year 2000 before construction travel speeds at 4 pm averaged 33 mph. In the following year 2001 during construction travel speeds at 4 pm averaged 17 mph. The travel speeds at 4 pm after project completion have increased to approximately 38 mph.

Average Weekday Travel Speeds

I-5 SB near SeaTac

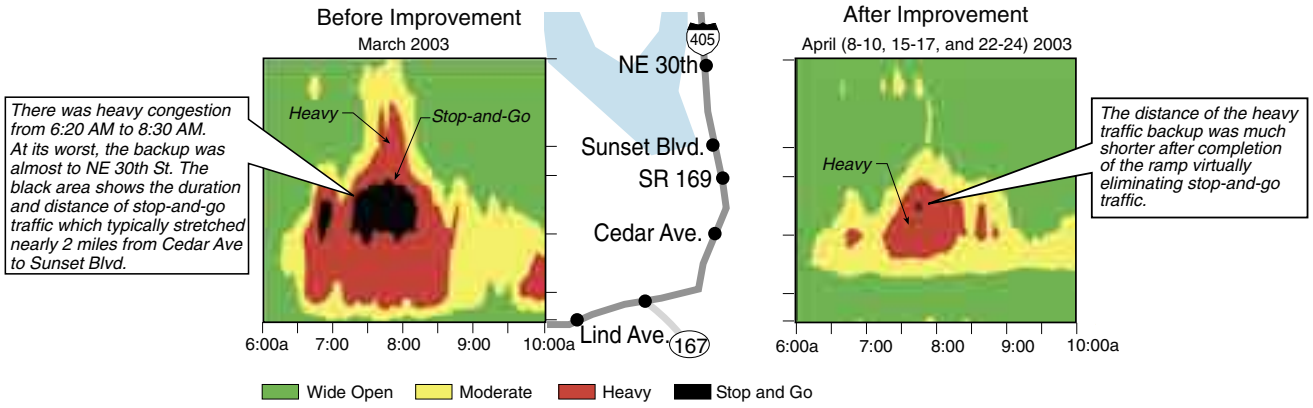


I-405 – SR 167 Ramp Separation

The new off ramp from southbound I-405 to southbound SR 167 opened to traffic Sunday, April 6. Three weeks after opening to traffic, the conditions on southbound I-405 had generally improved during the morning peak. Highway speeds on I-405 increased and back-ups decreased. Vehicle throughput on the ramp has increased by about 13% and on the mainline by about 8%.

Average Weekday Congestion

I-405 Southbound



Ramp: Average Weekday Hourly Volumes

Southbound I-405 to Southbound SR 167 Ramp

Daytime volume increased by about 13 %

Ramp throughput increased between 6-10 AM.

Time	Before Ramp Opening*	After Ramp Opening	Improved Throughput
6:00	1,239	1,271	32
7:00	1,187	1,425	237
8:00	1,138	1,279	141
9:00	1,136	1,243	107
10:00	1,129	1,279	150

Mainline: Average Weekday Hourly Volumes

Southbound I-405 at Benson Road

Daytime volume increased by about 8 %

Mainline throughput increased between 6-10 AM.

Time	Before Ramp Opening	After Ramp Opening	Improved Throughput
6:00	4,075	4,202	126
7:00	4,314	4,647	333
8:00	4,183	4,240	57
9:00	3,803	3,859	56
10:00	3,577	3,829	252

** September and October 2001 ramp data.*

Travel Time Measures: Annual Update

In May 2002, WSDOT launched its first dynamic, real travel time information website for eleven commute routes in the Puget Sound region (find at: *www.wsdot.wa.gov/pugetsoundtraffic/traveltimes/*). This popular service has since been widely used by commuters and TV and radio news programs. The averages of real travel time data has been compiled for 2002 and compared against travel time data archived from 2001.

Improved Travel Times

Small but significant decreases in average peak travel times in 2002 as compared to 2001 occurred on four of the most heavily traveled routes. These changes have been summarized in the table below. Another noticeable improvement on these four routes was in the measure of 95% Reliable Travel Time. This is probably the most important measure for everyday commuters. It uses data from days throughout the year to compute a good approximation of "worst case" travel. Ninety-five percent of the days, travel time equals or betters this marker. If commuters allow for their trip to equal the 95% reliable travel time, they can expect to travel the route on time, on 95 percent of their trips, or 19 working days out of 20.

On these particular routes, traffic volumes during commute hours remained almost unchanged in the two comparison years. Why then, did travel times improve? One possible explanation, although not easy to prove with the existing data resources, is the expansion of WSDOT's Incident Response Program on these routes (see the September 30, 2002 *Gray Notebook*). Among other things, the Incident Response Program has helped to speed the clearance of disabled vehicles – about half of all incidents affecting the roadways. These and other incidents are what cause "Non-Recurrent Congestion" (the back-ups resulting from factors other than the inherent roadway capacity limitations - which, by contrast, is regarded as "Recurrent Congestion"). WSDOT has postulated that roadways are very likely operating under the influence of incidents or other causes of Non-Recurrent Congestion (severe bad weather, for example) when travel times exceed twice the free flow travel time. On these routes, the 2001 to 2002 comparison shows significant decreases in the daily peak commute times when the roadway is experiencing two times free flow congestion status. Smarter, more attentive highway management – *like the Incident Response Program and the Joint Operations Policy Statement (national-model operating agreement between WSDOT and the Washington State Patrol) – are almost surely contributing benefits to travelers in reduced delay.*

2001 & 2002 Peak Travel Times – Highlighted Improvements

			Average Peak Travel Time			Number of Days When Peak Travel Times Exceeded 2 X Freeflow			*95% Reliable Travel Time		
Route	Route Description	Miles	2001	2002	Change	2001	2002	Change	2001	2002	Change
I-5	SeaTac to Seattle (AM)	13	24 min.	23 min.	-1 min.	84	44	-16%	31 min.	28 min.	-3 min.
I-405	Tukwila to Bellevue (AM	13.5	31 min.	30 min.	-1 min.	198	178	-10%	43 min.	41 min.	-2 min.
I-405	Bothell to Bellevue (AM)	9.7	20 min.	19 min.	-1 min.	142	127	-7%	27 min.	26 min.	-1 min.
SR-167	Renton to Auburn (PM)	9.8	22 min.	19 min.	-3 min.	133	92	-18%	39 min.	37 min.	-2 min.

**95% Reliable Travel Times: You can expect to be on time for work 19 out of 20 working days a month (or 95% of your trips,) if you allow for the 95% Reliable Travel Time.*

The travel times in the above table are the highest recorded travel times measured during the AM or PM peak period. These travel times represent the worst case congested condition.

New Dynamic 95 Percent Reliable Travel Time Service – Now Available On-line

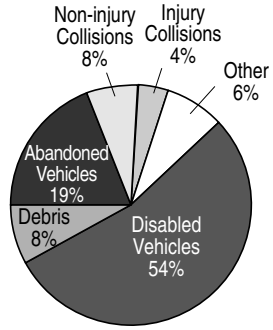
Over the past year, WSDOT has continued to refine and enhance real time commuter information and has developed a new web page that provides a specific 95% Reliable Travel Time. It allows the commuter to pick one of 11 Puget Sound commute routes, the direction of travel and the time they need to arrive. The result will be the suggested time needed to begin the commute in order to arrive on time 95% of the time. The 95% Reliable Travel Times are available in 5-minute intervals (from 6 am to 7 pm). The commuter will need to add the time necessary to travel to the chosen commute route from their point of origin, and again for when they leave the commute route to their destination.

To calculate the 95% Reliable Travel Time for your commute, visit: www.wsdot.wa.gov/pugetsoundtraffic/traveltimes/reliability.

Incident Response: Quarterly Update

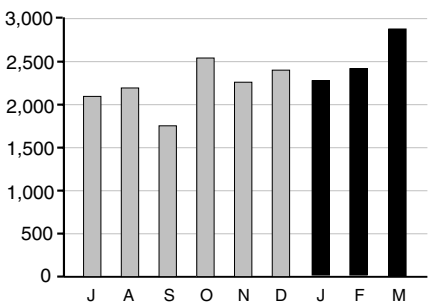
Program Totals

The Incident Response (IR) Program Totals graph shows the first quarter of 2003 compared to the baseline that began in July 2002, with the rollout of the expanded Incident Response program. The IR Program Totals includes all types of responses and incident durations.



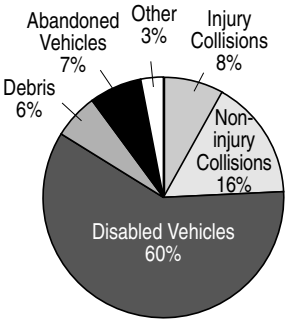
Fatal Collisions are less than 1%

Total Number of Responses by Month
July 2002 to March 2003

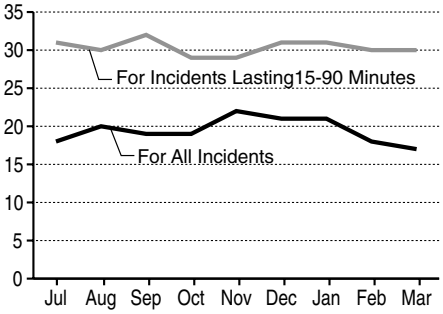


Incidents Lasting 15 to 90 Minutes

Incidents that last more than 15 minutes typically have multiple responders and/or other jurisdictions (e.g., WSP, Registered Tow Truck Operators, etc.) working collaboratively to clear the scene. WSDOT is taking a closer look at these types of incidents in order to find ways to further reduce the time it takes to clear these incidents.

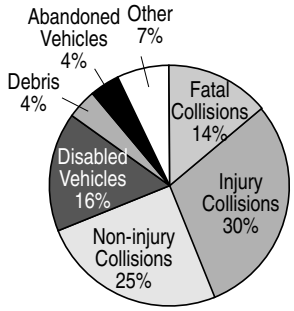


Incident Response:
Average Clearance Time (Minutes)
July 2002 to March 2003

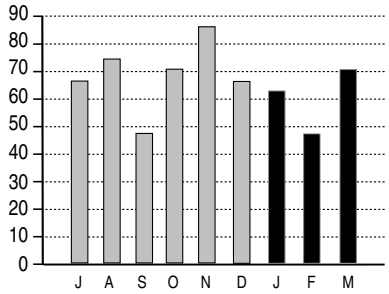


Clearing Incidents Within 90 Minutes

Incidents that last 90 minutes and longer are the most severe and often involve collisions. These incidents are being monitored as required in the Joint Operations Policy Statement between WSDOT and the WSP in order to find ways to further reduce the time it takes to clear these incidents.



Number of Over 90-Minute Incidents
July 2002 to March 2003



Examples of Incidents Over 90 Minutes

- January 6 – A semi traveling east on SR 14 near Forest Hill ran into the ditch causing the truck and trailer to come apart. It took 12 hours and 22 minutes to clear the scene.
- January 18 – A vehicle traveling west on SR 164 (Enumclaw Rd. near Auburn) collided with a power pole, closing lanes in both directions. The pole was damaged enough to need replacement. A WSDOT Incident Response unit performed traffic control until the power company flaggers arrived. It took 7 hours and 37 minutes for WSDOT to clear the scene.
- January 30 – A vehicle northbound on SR 7 near 224th St. sideswiped 2 vehicles and collided with a third, ran over the signal controller, blacking out the intersection, and came to rest after hitting the gas pumps at the Shell station. Injured driver indicated there was a bomb in the vehicle. WSDOT evacuated the area and closed the highway until the WSP bomb squad arrived and cleared the vehicle. It took 8 hours to clear the scene. No bomb was found.
- March 3 – A semi hauling a low boy trailer with an oversized load traveling north-bound on I-5 just South of Chehalis broke loose and high-centered on the left side of the off ramp. WSDOT was not notified for almost 10 hours that the incident had occurred. Total clearance time was 18 hours and 30 minutes.
- March 9 – A vehicle lost control traveling southbound on I-5 near Chehalis hit the median barrier displacing it into the northbound lanes. A semi traveling northbound collided with it and rolled. Numerous vehicles hit the resulting debris. It took 12 hours and 21 minutes to clear the scene.

Non-Collision Responses

Stopped vehicles on freeways and major highways – in a travel lane or even on a shoulder – distract approaching drivers, delay traffic, cause back-ups, and pose safety hazards for approaching traffic and for the occupants of the stopped vehicles. Problems on the roadway that lead to stopped vehicles range from major pile-ups to minor stalls. Incident response is a continual task that WSDOT provides with the Washington State Patrol, local fire departments, and others. Every incident response helps limit delay and increase safety. "Helping drivers, clearing roads," the motto of incident response, is a cost-effective highway management strategy – and WSDOT's routine efforts also free up WSP resources for the enforcement activities uniquely in its competence.

Snapshot of Service Actions for Non-Collision Responses

January to March 2003

Total Incident Responses = 7,527

- 929 Collisions
- 6,598 Non-Collisions

Service Actions Taken for Non-Collision Responses

January to March 2003

	Jan	Feb	Mar
Traffic Control	539	435	478
Provided Fuel	200	247	241
Changed Flat Tire	179	167	185
Minor Repair	81	111	102
Pushed Vehicle	121	120	152
Towed Vehicle	58	33	56
Cleared Debris	204	237	306

New Service Patrol and Motorist Assistance Van Contracts Awarded

The Registered Tow Truck Operators (RTTO) Service Patrols rolled into action on March 24, 2003 with a new contract that replaced the Service Patrol Pilot Project contract that began in July 2000. The new contract creates a partnership between WSDOT and the private tow industry in order to augment the roving Incident Response Teams during peak traffic periods.

The Mixx 96.1 Motorist Assistance Van (MAV) also rolled into action in Olympia under a new service contract for the MAV Pilot Program, which also began on March 24, 2003. The Mixx 96.1 MAV will obtain and report traffic flow information to WSDOT and will provide media coverage for WSDOT's Incident Response program.

Hansen's Towing deploys two trucks in the Seattle area and Bill's Towing deploys one truck in the Tacoma area.

Jack Archer and his Mixx 96.1 Freeway Hero MAV.

Separately, WSDOT also contracts with the Washington State Patrol to deploy two Cadet Service Patrol units in the Seattle area and one in the Tacoma area, both during peak traffic periods.

WSP Cadets and RTTO Service Patrols responded to more than 4,000 Incidents during the 2002 phase of the pilot program.

Incident Management Assessment Identifies Areas for Improvement

The Federal Highways Administration (FHWA) recently initiated a national "self-assessment" of multi-agency programs, which manage traffic incidents. The Traffic Incident Management Self-assessments were conducted in the 75 most congested metropolitan areas throughout the country – the Seattle / Tacoma region being number 13 on the national list. WSDOT led local agencies in a regional self-assessment in March 2003.

The purpose of the self-assessment tool is to identify areas for improvement; to identify areas for which FHWA can provide training, guidance or funding, and to give FHWA a baseline for future re-measurement. The local assessment overall program score was 63.2 percent, which is very good compared with many other states, but shows that there is room for improvement.

Environmental Programs: Management System

A formal Environmental Management System (EMS) is a tool used by enterprises across the country and around the world to improve environmental performance and compliance. An EMS generally is made up of seven building blocks specifically focused on a particular line of business or activity. These seven building blocks are:

- Written procedures
- Training
- Monitoring
- Corrective Action
- Record Keeping
- Performance Measurement
- Auditing

In the EMS now being constructed at WSDOT, current focus is on assembling the seven fundamental blocks in relation to construction, maintenance and operations, the materials lab and modal programs such as Washington State Ferries, aviation, and rail.

Environmental Compliance Assurance: Tracking Violations and Corrective Actions

As an important step in developing a full-scale EMS, WSDOT in September 2002 began an agency-wide effort to consolidate information on environmental violations and compliance activities. This will supplement prior practice where this information was maintained within regional or program offices, which allowed little opportunity to note trends and develop performance measures to strengthen the agency's overall environmental compliance and performance.

The effort that began in 2002 included data collection for a 2001 and 2002 agency baseline, and relied on localized record-keeping and personal interviews with managers around the agency. The resulting baseline information is shown on the next page.

Violations and Compliance: Whence the Rules?

Laws

Many laws establish (either through statute or administrative regulation) prescriptive requirements and prohibitions to protect the environment. When they apply to WSDOT, they generally apply to everyone else, too. It is, for example, a violation of the Clean Water Act for any person (including the Washington State Ferries) to allow hydraulic oil or diesel fuel to be spilled into the navigable waters of the United States. The law is violated when such an event occurs; serious legal consequences can follow.

Example of an activity — operating ferry terminal ramps — where WSDOT is not required to have an environmental permit, but is required to comply with environmental regulations to protect water quality.

Permits

WSDOT does not require a permit to load fuel on the ferries. But it does require a permit for the routine discharge of stormwater into streams or other water bodies from a highway drainage conduit. State and federal permit requirements cover everything from maintenance activities in streams and wetlands to the cutting of trees for highway construction and the management of stormwater runoff from highways. Many permits are issued with specific terms and conditions (for example, stream protection conditions for placing of rip rap around a bridge abutment). Some permit conditions are "boilerplate;" others are intensively negotiated on a situation-by-situation basis. In any event, the permit condition is violated if WSDOT fails to meet the requirement. Again, serious legal consequences can follow.

Example of a maintenance activity — work in waters — where WSDOT is required to have a permit.

Environmental Compliance Assurance: Tracking Violations

WSDOT self-monitors for "non-compliance events," whether or not such matters are actually taken up as formal "violations" by regulatory agencies or officials.

In 2001, WSDOT had 17 non-compliance events, with 15 of those events resulting in a formal violation. In 2002, WSDOT had 29 non-compliance events, although only 14 of those events resulted in a formal violation. This data includes reporting from construction, maintenance, and the ferry service.

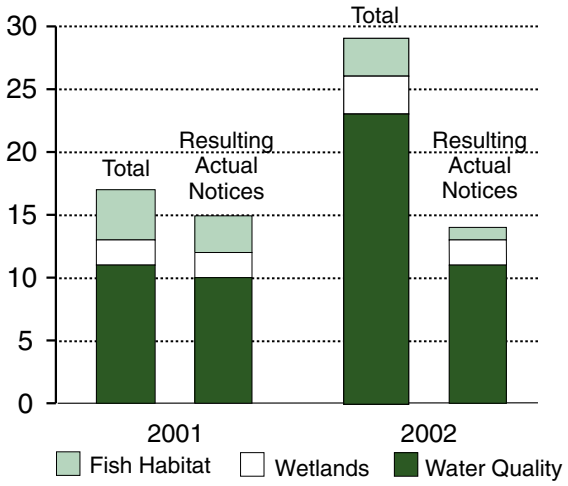
Most of the non-compliance events involved water quality regulations (11 in 2001 and 23 in 2002). Wetland regulations were associated with two of the non-compliance events in 2001 and three of the events in 2002. The balance of non-compliance events was related to regulations protecting fish habitat (four in 2001 and three in 2002).

The 2002 data shows a significant increase in total non-compliance events over those reported in 2001. Most of the increase is related to water quality violations associated with road construction projects, including both accidental spills and violation of water quality standards. The number of non-compliance events at Washington State Ferries dropped slightly from 2001 to 2002.

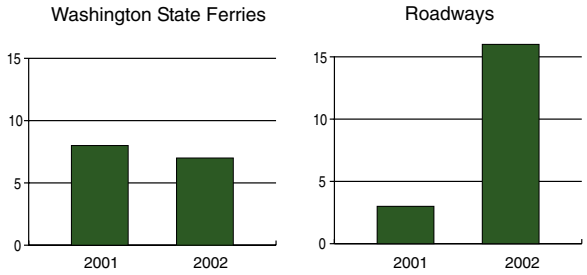
Non-compliance events related to wetlands and fish habitat remained relatively stable from 2001 to 2002.

Data for 2001 and 2002 were obtained through an interview process initiated in September 2002. Since these data represent project managers' "best memory" of the occurrence of a particular event, the increase in reported events in 2002 could be related, in part, to people's ability to recall more recent events.

Non-Compliance Events
2001-2002



State Water Quality Standards and Clean Water Act Non-Compliance Events



Source: WSDOT Environmental Affairs Office

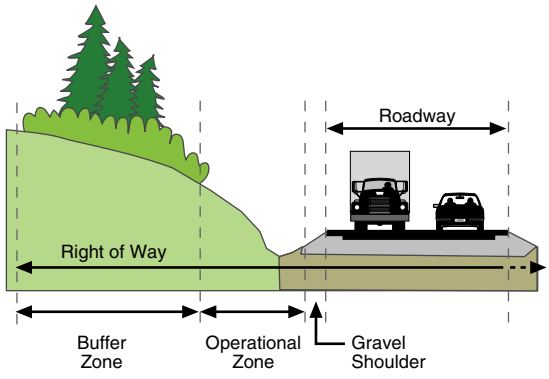
Integrated Vegetation Management

In addition to the compliance measures described above, WSDOT also tracks compliance with herbicide and pesticide application laws covering the products and procedures used to maintain roadsides and wetland mitigation sites. Over the last two years there were nine non-compliance events (all formal notices), three of which were overspray violations affecting upland vegetation. The remaining non-compliance events were failures that did not impact the environment (inaccurate record keeping, failure to use gloves during application, failure to post correct phone numbers on equipment). WSDOT believes that none of the non-compliance events directly affected wetlands, fish habitat, or water quality.

In 2002, the number of violations dropped by one from 2001, although as shown in the table below, the number of herbicide applications actually increased.

All of these matters are under close review as WSDOT intensifies its Integrated Vegetation Management program for 2003 with the intention, among other things, of relying on no greater quantities of herbicide than necessary for vegetation management purposes.

	2001	2002
Non-Compliance Events	5	4
# Product Applications	2,271	3,399



Gravel Shoulder – Vegetation Free Area
Maintained with herbicides where necessary to allow surface water drainage off the pavement and into the ditch.

Operational Zone – Grass or Small Trees and Shrubs
Herbicides are used very selectively for control of noxious weeds, and sometimes for brush control.

Buffer Zone – Natural/Native Vegetation
The IVM approach encourages stable self-sustaining vegetation with limited use of mowing, herbicides, tree removal and other methods as necessary.

EMS Compliance Assurance Procedures

Four components of the EMS approach have received special attention as WSDOT has worked toward EMS implementation in recent months.

Written Procedures

In March 2003, Environmental Compliance Assurance Procedures were issued for construction, maintenance, and Washington State Ferries. These procedures provide guidance to help employees recognize, avoid and correct non-compliance events. The procedures outline for everyone, from field staff to executive management, a clear, consistent process for reporting and managing non-compliance events.

Unauthorized placement of fill below the ordinary high water mark of Issaquah Creek (right side of photo) under the Sunset Interchange.

Training

Training in the new compliance assurance procedures will be incorporated into 21 courses offered to different levels of staff throughout the agency and to our liaisons at the resource agencies. Ten of the 21 courses are already being offered, and five additional courses are in development. Six more needed courses have been identified; they will be developed soon. Since issuance of the compliance procedures, 850 of approximately 1,200 regional engineering and environmental staff have received instruction on the procedures.

Record Keeping (Tracking)

Paper tracking of compliance events will be replaced by an interim, on-line database in May 2003. This interim database is expected to be upgraded in October to an Environmental Permit Compliance System (EPCS), which will enable WSDOT to track environmental permit features (such as time required to obtain permits, monitoring and condition requirements, etc.) and correlate permit conditions and requirements with non-compliance events.

Auditing

WSDOT is working with the resource agencies to develop an auditing procedure that would include an annual audit of both open and recently closed WSDOT construction sites, and an annual evaluation and comparison of non-compliance event data recorded by WSDOT and the resource agencies.

See Protecting Streams from Construction Site Erosion and Runoff, *page 20, for an update on the inspection of 29 WSDOT construction sites.*

Environmental Programs: Environmental Impact Statement (EIS) Tracking

WSDOT and others analyze impacts of proposed transportation projects under the National Environmental Policy Act (NEPA), and its state counterpart, the State Environmental Policy Act (SEPA). Particularly over the last decade, NEPA processes have presented many challenges: what should be their scope and level of detail? how much should they cost? how long should they take?

While projects sometimes can be processed under NEPA by an "Environmental Assessment" or categorical exclusion, projects that may result in significant adverse impacts to the environment trigger preparation of a NEPA *Environmental Impact Statement* (EIS). The essentials of a project – including measures to avoid impacts and the major environmental as well as transportation features – are defined in the EIS documents. The process covers potential environmental impacts (not only on water and air quality or on endangered species, but also on cultural resources and on low income or minority communities,) and how those impacts might be avoided, minimized or mitigated. Resource and regulatory agencies, tribes, other governmental entities and the public at large are all involved in developing EISs.

Important Step in Project Delivery

Before finalizing a project's design, environmental assessment and documentation including an EIS if required, must be completed. Delays in completing these documents stall other activities required to deliver the project. This is evident in FHWA's findings in a national study of experience around the country that it takes nine to 19 years to plan, gain approval for, and build a new federally-funded project with significant environmental impacts ("Timely Completion of Highway Construction Projects," GAO-02-1067T, 2002).

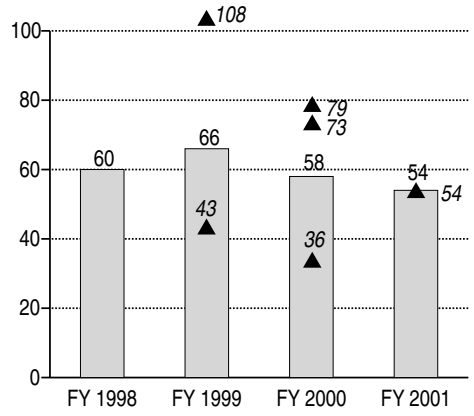
In Washington, EIS processing times are longer than the national medians compiled by FHWA. This, however is a common experience among the other western states (FHWA, Berger Baseline Studies, 2003). Endangered species issues also complicated project delivery in this state.

Next Steps

WSDOT is working to implement a tracking system for environmental documents under development. To improve EIS completion times, WSDOT's next step is to negotiate timelines with the key resource and regulatory agencies.

National Median Processing Times for Environmental Impact Statements

Number of Months



▲ *WSDOT Actuals for completed EISs each year*

Source: FHWA 2002 Milepost Report

By 2007, FHWA hopes to achieve two performance goals demonstrating improved timeliness of environmental process:

- Decreasing the median EIS completion times from 54 to 36 months.
- Negotiating and meeting 90% of EIS production schedules.

FHWA Analysis

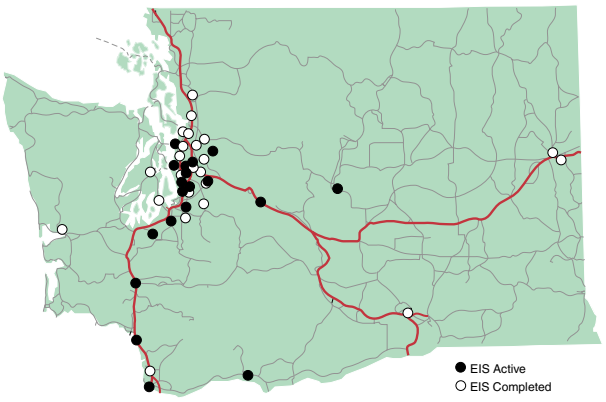
NEPA-Related Factors Contributing to Delay of Transportation Projects:

- Lack of funding for EIS, or low priority;
- Local controversy;
- Complex project, no specific reason.

Other delay factors included: Resource agency reviews and tribal consultation, wetlands, environmental justice issues, changes in project scope, and poor consultant work.

Source: September 2000 FHWA review of 89 EIS Projects in progress 5 years or more without a Record of Decision (ROD)

WSDOT Active and Completed EISs



Since 1989, WSDOT has completed 24 NEPA EISs. In addition, 19 EISs are in development (or active status) at this time.

Environmental Programs: Protecting Streams from Construction Site Erosion and Runoff

Erosion control at construction sites is an important WSDOT responsibility for stream protection. Previous editions of the *Gray Notebook* have included information on assessing construction site erosion control efforts and monitoring stormwater runoff. In the fall of 2002, all 29 moderate and high-risk construction sites were visited and assessed for the thoroughness of erosion plans, plan implementation, and effectiveness of protection measures.

Compliance

The following table shows compliance with minimum requirements that the Department of Ecology requires WSDOT to include in its erosion control plans, plus internal performance measures* from WSDOT's erosion control program.

Erosion and Sediment Control Requirements	Percent of 29 projects that are in compliance
* Contractor trained in proper use of erosion/sediment control measures	100%
Clearing limits/sensitive area boundaries identified and respected by contractor	100%
Utility trenches excavated in a manner to reduce erosion risk	100%
Water removal processes minimize erosion and sedimentation risks	100%
Construction access routes stabilized to prevent tracking of mud onto streets	98%
Effectiveness of sediment trapping measures	96%
Effectiveness of erosion control measures	91%
Sediment trapping measures installed prior to soil disturbing activities	90%
Stormwater conveyance channels stabilized	90%
Flow controlled to minimize offsite erosion	87%
* Would runoff meet water quality standards if storm occurred (no last-minute changes needed)	86%
Would adjacent property and water bodies be protected if storm occurred (no last-minute changes needed)	83%
Erosion and sediment control measures removed when no longer needed	81%
Protect storm drains from sediment	74%
Erosion and sediment control measures properly maintained	70%
Protect cut & fill slopes from concentrated stormwater runoff	67%
* Amount of disturbed soil actually covered with erosion control measures	65%
* Erosion control plans are on site and up to date	56%

Assessment Results

Of the 29 projects assessed, 23 successfully prevented erosion. Four had minor problems that were corrected without regulatory agency involvement or significant repair costs. Two had major problems triggering regulatory agency involvement.

There is room for improvement. With a baseline established, WSDOT is focusing training, planning, and contract enforcement on issues most needing improvement. Future results will be compared to this baseline. WSDOT will also use water quality monitoring data (see the *Gray Notebook* from December 31, 2001, page 21) to verify that the assessment program accurately reflects the effectiveness of plans in protecting water quality.

Example Sites

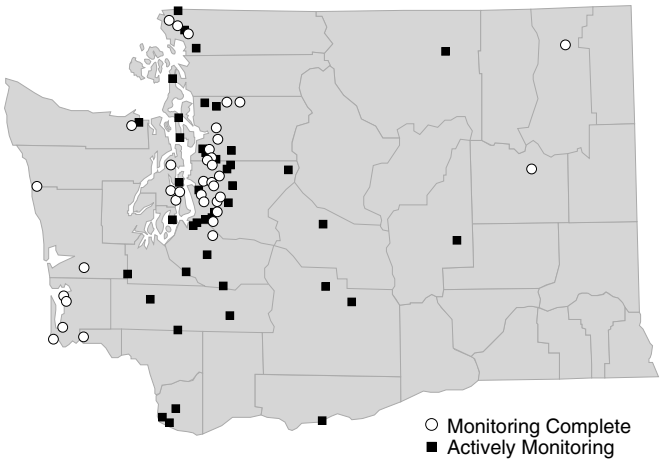
This steep slope near Mukilteo is typical of sites that can cause minor erosion problems. Erosion blankets made of plant fibers and grass seeding can prevent problems. The rock channel conveys water away preventing further erosion.

WSDOT experienced major challenges removing this bridge over the Spokane River. Pier removal activities noticeably muddied the water and heightened concern among regulators. Water quality monitoring data (like that shown in the December 31, 2001 *Gray Notebook*), however, showed that the project met water quality standards.

Environmental Programs: Replacement Wetlands

WSDOT has been mitigating for unavoidable wetland loss with replacement wetlands for more than a decade. The state's Executive Order 89-10 mandates that the actions of state agencies result in no net loss of wetlands. During the permitting process for replacement wetland sites, *success standards* are developed and the *monitoring period* is determined. After construction, data is collected and analyzed to determine if success standards are being met. If regulatory requirements are met at the end of the monitoring period, the replacement wetland is considered successful, and *monitoring is complete*. Monitoring and reporting on the status of replacement wetlands is critical to the success of the program as seen by both the public and the resource protection agencies.

WSDOT Replacement Wetlands
1988 - 2002



Types of Mitigation

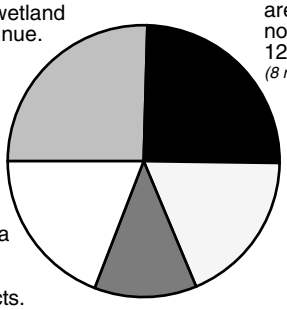
When impacts to wetlands are unavoidable, wetlands are enhanced, restored, created, or preserved to achieve the no net loss policy. In this effort, WSDOT uses a variety of strategies including mitigation banking and advance mitigation. Mitigation banking compensates for many small impacts in one mitigation site in advance of a transportation project. Advance mitigation is building replacement wetlands before unavoidable impacts take place.

Since 2001, monitoring has begun on 5 recently constructed replacement wetlands comprising 16 acres in total. For additional detail on monitoring replacement wetlands and pictures of the different types of projects, see *The Gray Notebook* for the quarter ending March 31, 2002, page 14.

WSDOT Replacement Wetlands: 1988-2002
Total Acreage of Wetland Projects
101 Sites, 476 Acres

Preservation
Protecting wetlands from future development insures that valuable wetland functions continue.
117 Acres
(same as March 2001)

Creation
The establishment of wetland area and functions, where none previously existed.
122 Acres
(8 more acres since March 2001)



Buffer
An upland area that protects a wetland from adverse impacts.
91 Acres
(3 more acres since March 2001)

Enhancement
Improvements to an existing degraded wetland to increase or augment wetland function.
89 Acres
(4 more acres since March 2001)

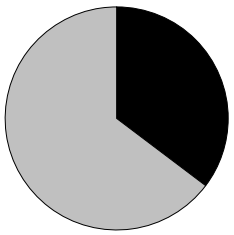
Restoration
Reestablishes a wetland area and/or function, where wetlands previously existed but were no longer present.
57 Acres
(1 more acre since March 2001)

Meeting Standards in 2002

In 2002, biologists monitored a total of 46 *active* replacement sites, ranging from one to seven years in age. Of these, 17 sites had a total of 56 individual success standards to be met in 2002. See the next page for the success rate of sites that have *completed monitoring*.

Replacement Wetlands: 2002 Standards
Number of Sites: 17

11 Sites Met Some Standards
31.02 Acres



6 Sites Met All Standards
15.22 Acres

WSDOT reported to regulators the results of sites with standards to be met in 2002 on a site by site basis in the 2002 Annual Monitoring reports. Visit www.wsdot.wa.gov/environment/eao/wetmon/#2002%20Sites for more information about the 2002 results.

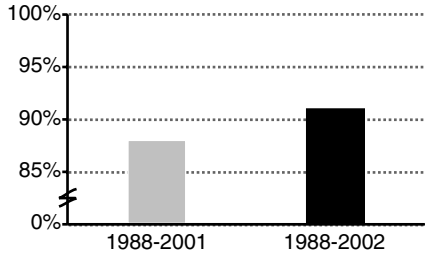
Measuring the Success of Replacement Wetlands

In 2002, WSDOT completed five years of monitoring the highly successful State Route (SR) 18 Pumpkin Patch replacement wetland constructed in 1997 to compensate for improvements to SR 18. The goal was to restore 0.8 acres of wetland that had been converted to agricultural use. Improvement actions included excavating a better connection to an existing wetland associated with the Green River and planting native shrubs and trees. All of the final success standards were met or exceeded during the five-year monitoring period. The chart at right shows WSDOT's overall success rate for sites that have completed monitoring.

Developing success standards for replacement wetlands is an integral part of the wetlands permitting process between WSDOT, the Department of Ecology (DOE), the Department of Fish and Wildlife, the U.S. Army Corps of Engineers (USACE), tribes, cities, and counties. Historically, the most common standards have included water presence and saturated soil, vegetation characteristics (especially for native plant species), and wildlife habitat diversity. Meeting *success standards* is one goal, but achieving planned wetland *functions* is another, as shown in the example on the next page. WSDOT continues to work closely with DOE, USACE and others to develop reliable and ecologically meaningful functions-based success standards.

Replacement Wetlands*: Monitoring Complete

Success Rate



** Includes acreage not yet designated for mitigation credit.*

Source: WSDOT Environmental Affairs Office.

Successful sites have met their regulatory requirements. For unsuccessful sites, it is unlikely that all success standards will ever be met.

From 1988 through 2001, monitoring was completed for 34 sites, of which 30 sites (222 acres) met regulatory requirements and are considered successful.

Four sites (5 acres) had hydrology problems and only met some success standards. There are no practical solutions to "fix" the hydrology at these sites. Hydrology is the most difficult factor of a replacement wetland to predict. For example, one site near Patterson Creek in King County was constructed, and then its source of water was reduced. Another nearby site has experienced more water than expected, and planted woody vegetation has been unable to survive.

In 2002, monitoring was completed on 13 additional sites (23 acres). These sites met their regulatory requirements, bringing the success rate to 43 of 47 sites from 1988 to 2002.

New Directions in Wetland Mitigation

The U.S. Army Corps of Engineers (USACE) recently released new guidance for compensatory mitigation projects, and in conjunction with the Environmental Protection Agency, crafted the National Wetlands Mitigation Action Plan. Both can be viewed at *www.usace.army.mil/inet/functions/cw/hot_topics/corps_epa.htm.*

The action plan's purpose is to improve the performance and results of replacement wetlands. One area of emphasis is increased reliance on functions assessment. Fortunately, WSDOT has anticipated this progression of wetland mitigation science and is already largely in step with the new criteria for measuring and monitoring performance. Examples include:

- WSDOT's *Wetland Functions Characterization Tool for Linear Projects*, developed in 2000, has been recommended for use by resource agencies and the Society of Wetland Scientists to determine the functions of impacted wetlands and replacement wetlands.
- An interdisciplinary team, including federal, state, and local agencies and private consultants, contributed to the widely recognized WSDOT document, *Success Standards for Wetland Mitigation Projects – A Guideline.*
- WSDOT participates in technical committees, such as the recent effort to update the Washington State Wetland Rating System, and the development of the Wetland Functional Assessment Methods, Vol. 1 and 2.

Case Study: Blaine Replacement Wetland

The Blaine replacement wetland illustrates the need for WSDOT and the Wetland Mitigation Technical Group to continue development of functions-based success standards. In 2001 the WSDOT Blaine replacement wetland achieved its planned functions, but did not meet two of its success standards.

The table shows the 2001 success standards for the Blaine site. One success standard required 75 percent cover by native vegetation in the forested and scrub-shrub zones on the site by the fifth year, but the site achieved only 57 percent woody cover. On average, by the fifth year, such WSDOT replacement wetlands sites achieve about 50 percent woody cover. So this site, while not yet meeting the high standard set for it, is still above average. A recent WSDOT study found that most sites do not achieve 75 percent woody cover until the eighth year. The full report, *Benchmarks for Stand Development of Forested and Scrub-Shrub Plant Communities*, can be found at *www.wsdot.wa.gov/eesc/design/roadside/default.htm#sos*. The Blaine replacement wetland should achieve 75 percent woody cover within a few years.

Blaine Replacement Wetland Success

Fifth Year Success Standards	*2001 Results*
Less than 10% cover of reed canarygrass	Not met (21%)
75% native vegetation cover in forested and scrub-shrub zones	Not met (57%)
80% native vegetation cover in emergent zone	Nearly met (79%)
Provide storm-water storage capacity	Standard met
Ponding or saturation to the surface in the spring	Standard met
80% cover by wetland species in emergent zone	Standard met (93%)
50% aerial cover by woody species in forested and scrub-shrub zones	Standard met (57%)
Differences in height between forested and scrub-shrub zones	Standard met

Success standards need to be measurable, achievable and meaningful. Complex natural processes determine how replacement wetlands develop. A decade of experience shows that some standards are not feasible, even for very promising sites. WSDOT continues to work with regulatory agencies to refine approaches for replacement wetlands and has conducted research on older mitigation sites to provide a scientific basis for determining appropriate success standards.

Another success standard required that the site show less than 10 percent cover by reed canarygrass, a widespread invasive grass. The control of tenacious invasive plants is important in replacement wetlands, especially during the period of plant establishment. Despite aggressive weed control efforts, the site in the fifth year had 21 percent cover of reed canary-grass. Where the tree and shrub canopy is developing dense shade, the reed canarygrass is very thin and is not competing successfully with the woody vegetation. This trend is expected to continue. While this success standard was not met, reed canarygrass nevertheless can make a substantial contribution to water-quality enhancement functions in a wetland.

Despite not achieving all of its standards, wetland functions that have been successfully created at the Blaine site include:

- Depressions to hold stormwater runoff, which can lessen downstream flooding.
- General suitability for wildlife habitat, especially for invertebrates, amphibians and wetland dependent birds.
- The potential to improve water quality by removing sediment, nutrients, and toxicants.

For more information about the Blaine replacement wetland, see the WSDOT 2001 Rail Report at *www.wsdot.wa.gov/environment/eao/wetmon/default.htm#2001%20Sites*.

Blaine Replacement Wetland Costs

The costs to build and maintain a replacement wetland can vary greatly, depending on several factors. One variable is the price of land purchased to build a new site. Land is more expensive in Renton than in Skykomish, for example.

Site terrain also makes a difference. When excavation is needed to create wetland in an upland area, the construction cost is greater. The costs of the completed Blaine replacement wetland are shown as an example.

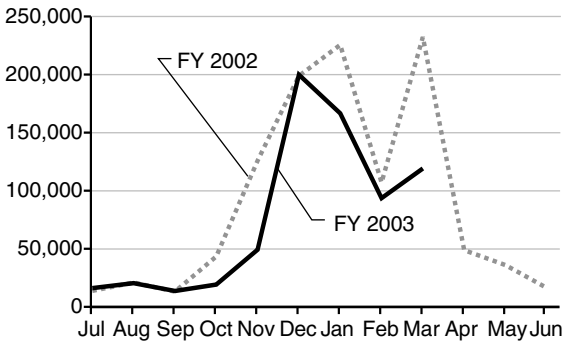
Cost Detail: Blaine Replacement Wetland

Activity	*Cost*
Land purchase	$80,000
Construction and plant establishment	$338,000
Site management and monitoring	$30,500
Total	**$448,500**

Traveler Information

WSDOT supplies traveler information in several formats, including on the Web, via changeable message signboards, highway advisory short-wave radio, and over the phone at 1-800-695-ROAD. Nearly all the traveler information on television and radio news statewide is based on WSDOT information. For an overview, see the September 30, 2002 edition of the *Gray Notebook*.

Number of Calls to 1-800-695-ROAD
Fiscal Years 2002 and 2003

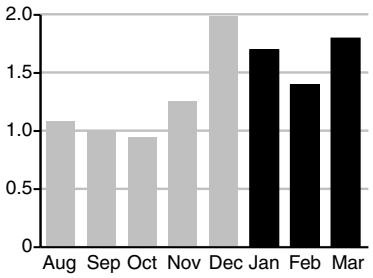


The volume of calls to 1-800-695-ROAD spikes in winter months.

On the Web

WSDOT continues to monitor and establish a baseline of customer usage of WSDOT's traveler information on the Internet. As expected, usage increased with winter storms.

Traveler Website Daily Usage
Average Daily Page Views, in Millions



Milder mountain weather in February meant less use than in the other two months this quarter. The highest number of daily page views (5.4 million) for the quarter came on March 7. The highest number of page views on a Sunday recorded to date happened on January 12 with 2.2 million page views. The camera at Snoqualmie Pass West Summit had more than three times the normal use for a Sunday. Usage was highest from 6 to 11 a.m. in the morning. A possible contributing factor may have been Washington State University students returning to school in Pullman to begin classes the next day.

Source for all charts: WSDOT Communications Office.

Advanced Traveler Information System Case Study

A 1999 case study in the Washington, DC metropolitan area found that travelers using an Internet-based Advanced Traveler Information Service (ATIS) improved their on-time reliability by 5% to 16% compared to travelers not using the service. The study simulated the experience of commuters with a need to be on time using a prospective pre-trip traveler information system. Results from the case study include:

- Peak-period commuters who did not use ATIS were three to six times more likely to arrive late than counterparts who used ATIS.
- Peak-period commuters who used ATIS were more frequently on time than nonusers who scheduled conservatively.
- Late shock, the surprise of arriving late, was reduced by 81% through ATIS use.

More information on this case study is available at www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE/index.html#Table2.7.1.

WSDOT Web Site Feedback

Below is a sample of recent traveler website feedback:

January 4, 2003
I need to thank you for your excellent web pages! So much information! Easy to get around! VERY WELL DONE!!!!!

January 8, 2003
This site is great, it's clear, easy to navigate and has all the info I need. I go from Wenatchee to Seattle every week for business and need pass info in the winter. This site has made getting this info quickly. Thanks for getting it right.

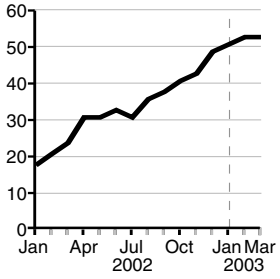
January 12, 2003
Today was the first time I had to send my son back to WSU in the winter and found your website very helpful to know what condition Snoqualmie Pass was in.

January 20, 2003
Just wanted to say the information provided and format is proving to be an excellent tool for a traveler deciding whether to assault the mountain pass roadways or not. This is one of the most useful websites I've ever seen. Thanks.

Commute Trip Reduction: Quarterly Update

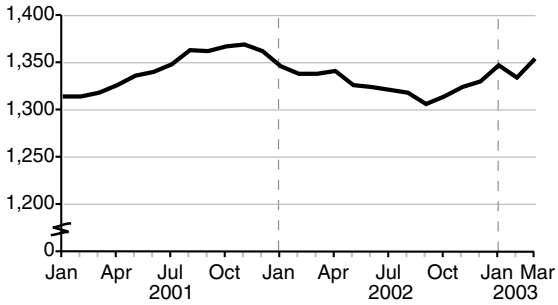
Vanpools in the Puget Sound Region

The number of public vanpools on the road in the Puget Sound Region has increased 3.7 percent since September 2002. In the first quarter of 2003, the King County Metro *VanShare* program continued its upward trend from 2002, while Kitsap Transit added its first *VanShare* group.



***VanShare* Trends**
Number of VanShare *Groups*
January 2002 to March 2003

Source: WSDOT TDM Office.



Puget Sound Vanpool Trends
Number of Operating Vans
January 2001 to March 2003

Source: WSDOT Transportation Demand Management Office.

Quarterly Regional Vanpool Highlights

- WSDOT maintains a fleet of 42 vans intended to help vanpool systems meet short- and long-term needs. At the end of the quarter, 95% of the vans were in use: 20 eight-passenger and 20 15-passenger vehicles were under contract.
- King County Rideshare Operations completed a 12-month Duwamish Rideshare Plus project at the end of March, sponsored by the Manufacturing Industrial Council. Rideshare Plus staff provided personalized ridematching services and promotional incentives to Duwamish commuters and formed one Vanpool group, 7 *VanShare* groups and 23 carpools.
- At the end of the quarter, 213 of Pierce Transit's 216 vans were in operation (98.6 percent use). PT anticipates 100 percent of the vans will be in operation in April and will use reserve fleet vehicles for vanpooling in May while it awaits the arrival of 20 new vans.
- Community Transit finished its vanpool promotion "1.2.3 Free" in March. Fourteen new vanpool groups are on the road and 36 new riders were added to existing vans.

CTR Data Collection Aids Local Jurisdictions and Private Utilities

- Avista Utilities receives a special operating order allowing them to run a thermal energy generating plant beyond the permitted hours. The special order required Avista to develop and implement an environmental project to offset the emissions produced during the additional operating time. As part of this effort, Avista provided funding to Spokane County to expand its CTR program.
- Local governments have made use of the CTR performance measurement to assess the impacts of growth on transportation facilities. The City of Bellevue, for example, calculates that it saves between $40,000 and $50,000 annually because of the data it receives from employers implementing CTR. Without CTR data and the program's collection tools, the City would need to create and manage a different mechanism to monitor its transportation concurrency program required under the Growth Management Act.

Eastgate Park and Ride Expansion

Park and ride lots on the Interstate 90 corridor at Issaquah, Eastgate, South Bellevue, and Mercer Island are frequently full; lack of additional park and ride capacity deters many commuters from making greater use of transit service in the corridor. In 2000, WSDOT partnered with transit agencies in Snohomish, King, Pierce, and Kitsap Counties to determine current and future park and ride needs. The *Puget Sound Park and Ride System Update* projected that the I-90 corridor had the biggest deficit, with demand exceeding supply by more than 1,200 stalls. King County Metro has since revised that number to 2,000 based on current ridership trends and growing demand.

In April 2003, King County Metro began construction of a five-story park and ride garage located at the WSDOT-owned Eastgate facility. WSDOT was also part of the original design team. The surface lot contained 724 parking spaces prior to construction. When the new garage is completed in June 2004, there will be nearly 1,700 spaces on the site – 350 surface stalls plus 1,321 stalls in the new five-story structure. Access, safety, and security features will reflect the suggestions made by users from local communities. Some parking will remain open at the permanent Eastgate lot throughout construction.

Favorable economic conditions for public works projects have already made their mark on the project. Metro budgeted $33 million, including the costs of environmental analysis, site redesign, construction, and other parts of the project. Construction was estimated at $18 million. The winning low bid contractor's bid price for construction was only $13.2 million. The project is expected to take one year.

For more information visit www.metrokc.gov/kcdot/alts/eastgate/easthome.htm.

Construction began as scheduled on April 14, 2003. After erecting construction fencing, the crew from contractor Baugh-Skanska removed old paving from the majority of the site. Much of the pavement will be crushed and reused.

The interim parking lot is being fully utilized.

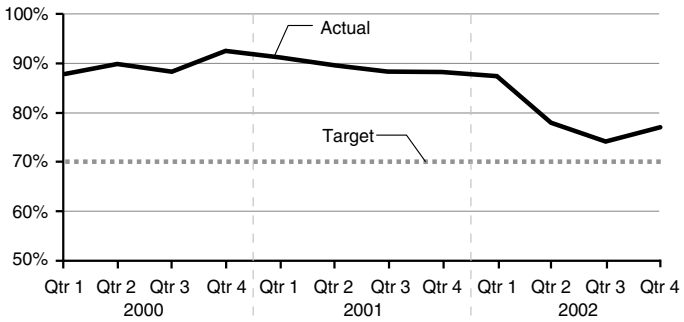
Park and Ride Lot Occupancy at WSDOT-Owned Sites in King County

During the fourth quarter of calendar year 2002, occupancy of the 8,500 parking spaces in the 32 WSDOT lots in King County averaged 77%, marking a slight upswing in usage after several quarters of decline. About 59% of WSDOT's park and ride lots in King County surpassed the target of 70% occupancy during the quarter, up from 53% last quarter. Parked cars regularly exceeded maximum capacity at six lots.

**Data availability has a lag of three months to allow the transit systems to collect and analyze the data. Data for the first quarter of 2003 will be available in the next* Gray Notebook.

WSDOT-Owned King County Park and Ride Lots

*Percent of Capacity Used: 2000-2002**



Source: WSDOT analysis of King County Metro data.

Washington State Ferries: Quarterly Update

Customer Feedback

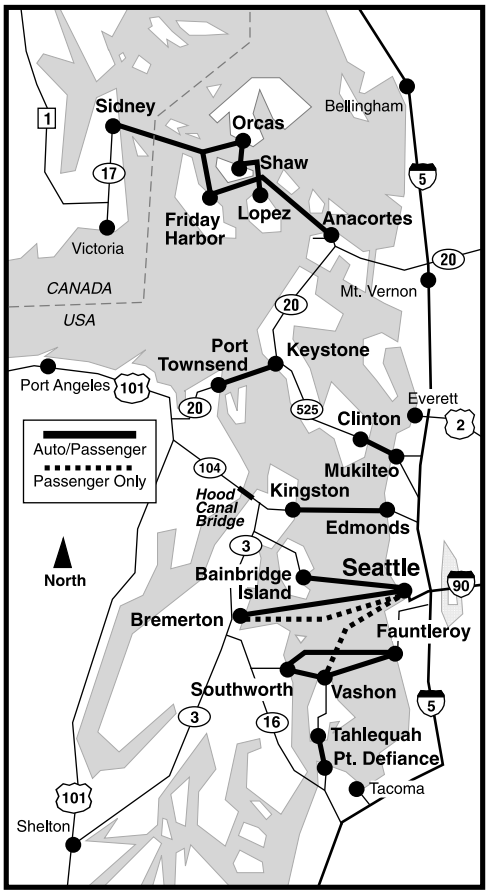
WSF collects customer complaints, compliments, comments, and suggestions. This information is recorded in the Automated Operating Support System (AOSS) database for measurement and action, based on date base cross tabulation and analysis.

The charts show trends in the data for the last four fiscal years and the first three quarters of fiscal year 2003 (July 1 – March 31, 2003).

Customer complaints were down for the second consecutive quarter and down 19 percent from the preceding quarter.

Complaints were down in nearly every category. Bicycle issues were down 70 percent, food service complaints down 68 percent, and facilities / vessel issues were down 74 percent from the preceding quarter. Numbers of ticket-related complaints were very similar to last quarter.

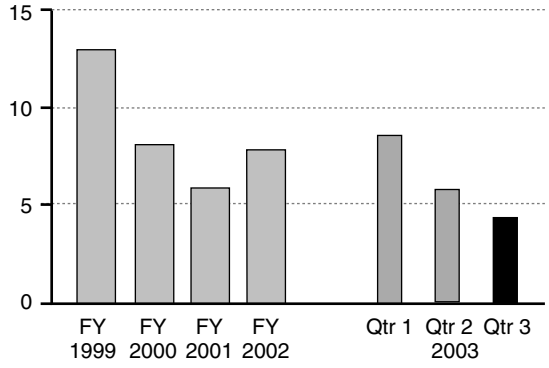
In one category not shown below, complaints regarding smoking issues were up 139 percent over the preceding quarter. A total of 13 smoking issue complaints were received in this quarter.



The ferry Wenatchee

Total Customer Complaints

*Complaints per 100,000 Customers**

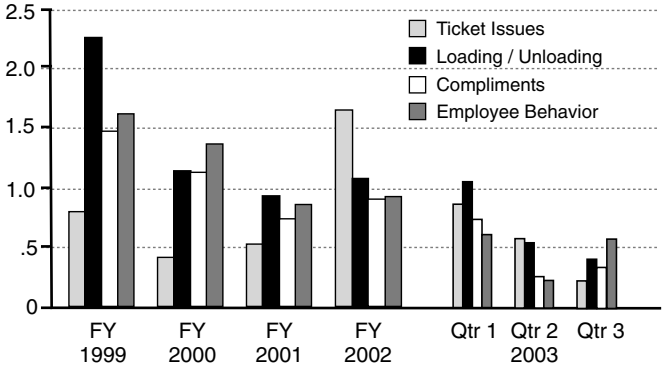


**Does not include compliments or suggestions.*

Source for all charts: WSF.

Most Common Customer Comments

Top Four Comment Types per 100,000 Customers



On-Time Performance

The table below compares WSF on-time performance for the third quarters of fiscal years 2002 and 2003. Overall performance improved over last year for two major reasons. On-time performance, the most important factor influencing customer satisfaction, has been increasingly emphasized since 2000. Also, a drop in the number of ferried vehicles reduced loading times.

The almost two-minute improvement on the international run is due to reduced processing time for Canadian Customs and U.S. Immigrations in Sidney, B.C. resulting from recent security improvements. Improvement on the Point Defiance-Tahlequah run is due to the *Quinault* (10 knot vessel) replacing the *Rhododendron* (8 knot vessel) for 30 days while the slower vessel was in maintenance.

On-Time Performance Delivery

	Third Quarter Fiscal Year 2002			Third Quarter Fiscal Year 2003		
Route	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	6,443	94%	2.7 minutes	5,057	90%	2.5 minutes
International Route	176	84%	3.7 minutes	59	93%	1.9 minutes
Edmonds/Kingston	4,564	94%	3.1 minutes	4,384	97%	2.5 minutes
Passenger-Only: Seattle/Bremerton	1,564	95%	2.8 minutes	1,634	97%	2.5 minutes
Passenger-Only: Seattle/Vashon	1,041	94%	2.4 minutes	982	98%	1.9 minutes
Fauntleroy/Vashon/Southworth	9,534	91%	4.3 minutes	10,197	94%	3.2 minutes
Keystone/Port Townsend	1,852	96%	2.4 minutes	1,701	96%	2.4 minutes
Mukilteo/Clinton	6,178	98%	2.0 minutes	5,450	99%	1.8 minutes
Point Defiance/Tahlequah	2,708	93%	4.0 minutes	2,702	95%	3.2 minutes
Seattle/Bainbridge Island	4,031	96%	2.8 minutes	3,806	97%	2.7 minutes
Seattle/Bremerton	2,563	98%	2.7 minutes	2,449	98%	2.2 minutes
Total	40,654	94%	3.0 minutes	38,421	95%	2.6 minutes

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 following measure (Trip Reliability).

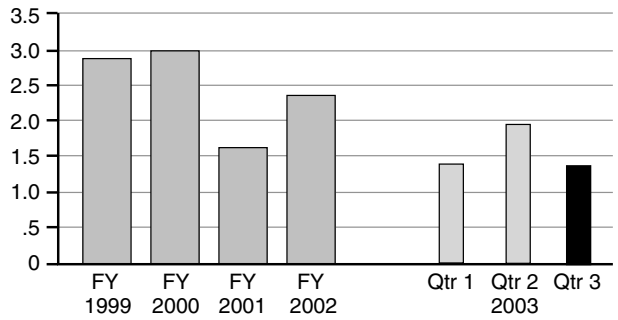
Trip Reliability

WSF scheduled 42,627 trips during the third quarter of fiscal year 2003. Of these trips, 161 were cancelled.

The chart below shows a system-wide average reliability index. Assuming that a commuter worked 200 days per year and made 400 trips on WSF, the statistical likelihood is that 1.5 ferry trips would be cancelled. This rating represents a 22% higher reliability rating than the preceding quarter. Additionally, this rating represents a 43% increase in reliability over the same period in fiscal year 2002. The increase in trip reliability is directly related to high vessel reliability. There have only been 2 other FY quarters in the last 17 quarters with fewer trips cancelled due to vessel failures.

Trip Reliability Index

Missed Trips per 400 Sailings

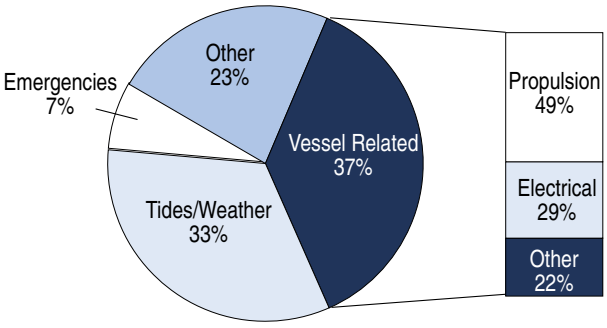


$$\text{Trip Reliability Index Number} = \frac{\text{Cancelled Trips}}{\text{Total Scheduled Trips}} \times 400 \text{ (Average Annual Number of Commute Trips)}$$

Source: WSDOT / Washington State Ferries.

Most Common Trip Cancellation Causes

Third Quarter, Fiscal Year 2003



Total cancellations were down 52% compared to the same period last year. Two Evergreen state class vessels serving the busy Fauntleroy – Vashon – Southworth routes accounted for approximately one half of all electrical related trip cancellations. Electrical problems on the Tillikum (Jan 11) and the Evergreen State (Jan 24) were repaired quickly, but due to the trip volumes on this route resulted in a total of 16 missed trips. This triangular route annually accounts for ¼ of all trips system wide.

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 WSF system and made recommendations including tariff increases designed to raise the farebox recovery rate to 80 percent of operating costs over six years. The Transportation Commission instituted this recommendation and approved tariff increases of 20 percent in June 2001 and 12.5 percent in May 2002.

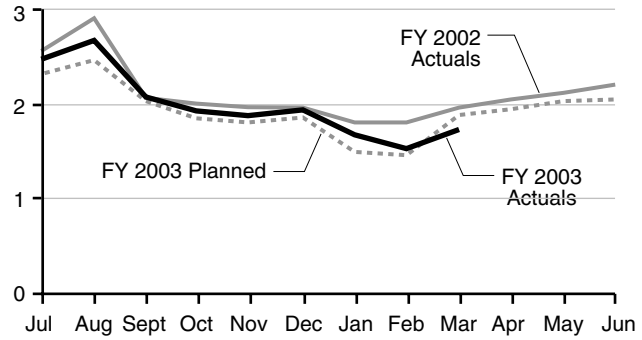
New tariffs were designed to recover higher total revenues even though the number of riders might fall slightly when the price of the trip went up. WSF anticipates ridership will fall from the previous year because of the fare increase and that the amount of total fares would go up.

Fiscal year to date, ridership has exceeded the plan by 4 percent or 737,000 riders. Revenues have exceeded the plan by 4.2 percent or $3.5 million (based on June, 2002 forecast).

Although actual ridership has exceeded the plan for the first nine months of fiscal year 2003, March 2003 was the first month in two years where the actuals were lower than the plan. Actual ridership was 3.6 percent lower than plan and nearly 10 percent lower than the same month last year. Contributing factors include weekend service disruptions at Mukilteo due to construction and the fact that Easter Sunday (a high volume weekend) occurred in April this year and March last year.

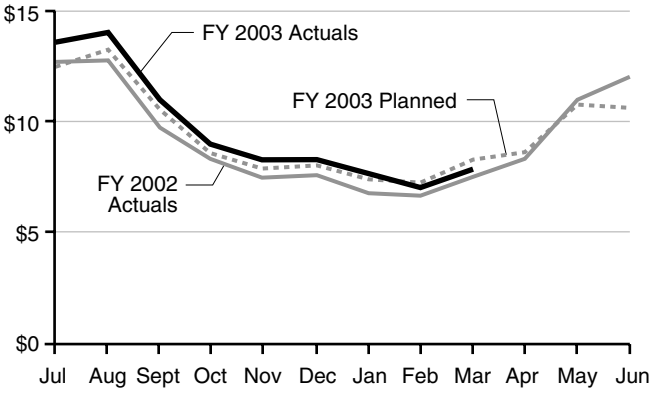
Ferries Ridership by Month

In Millions



Ferries Farebox Revenues by Month

Dollars in Millions



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. This infrastructure program supports the ferry system's delivery of responsible and reliable marine transportation services.

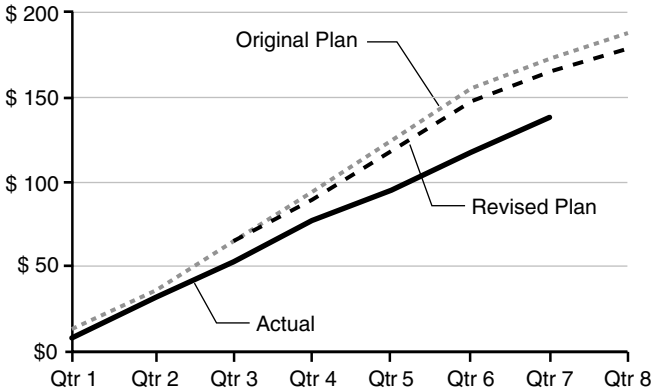
At the end of the 7th quarter of the 2001-2003 biennium, the program has spent $139.3 million (84%) of its planned biennial expenditures of $165.8 million. The program's projected under spending is due to the decision not to acquire a replacement vessel for the *MV Kalama* and *MV Skagit*, cancellation of the project to upgrade the *MV Chelan*, and deferral of the *MV Elwha* Propulsion Control Project to the 2003-2005 biennium.

"Original Funds Available" are based on the Capital Improvement and Preservation Program adopted by the Transportation Commission in October 2001.

"Planned Biennial Expenditures" reflect a $10 million appropriation reduction enacted by the 2002 Legislature.

WSF Construction Program Expenditures

2001-2003 Biennium, Quarter 7, ending March 31, 2003
Planned vs. Actual



Program expenditures are grouped into spending on terminal construction, vessel construction, and emergency repairs of terminals and vessels.

Sources for all charts: WSDOT / Washington State Ferries.

State-Supported Amtrak *Cascades* Service: Quarterly Update

Ridership

Ridership on state-supported Amtrak *Cascades* trains was 84,009 for the first three months of 2003. This is essentially no change from the same period in 2002. The steady ridership level occurred despite the region's ongoing economic recession and traveler concerns stemming from international events.

WSDOT's Schools on Trains program made a significant contribution to ridership. More than 2,500 students from 56 schools rode the Amtrak *Cascades* in January, February and March 2003.

Other actions taken to support ridership and market visibility for the Amtrak *Cascades* in the first three months of 2003 included cooperative promotions with Snohomish County Tourism, the Seattle King County Convention and Visitors Bureau, the Tacoma Rainiers, and the Washington State History Museum.

On-time Performance

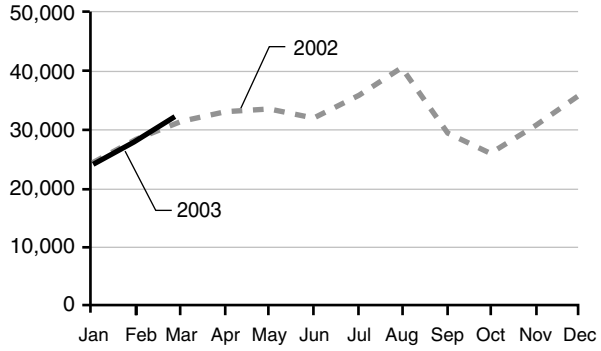
On-time performance for state-supported Amtrak *Cascades* trains averaged 78.4 percent for the first three months of 2003. This represents an improvement over the first three months of the preceding year, when the on-time performance averaged 72.2 percent. The majority of the delays were caused by interference with freight trains and speed restrictions through areas where rail line repair and upgrade work was taking place.

Customer Satisfaction

Amtrak's Customer Satisfaction Index (CSI) is based on surveys of riders using the service. The scores represent three-month rolling averages. The CSI goal for the Amtrak *Cascades* is a score of 92 or better. In the most recent survey period, the average score for the Amtrak *Cascades* was 89, which was the same score for the preceding survey period and one of the highest scores in the nation. Customers expressed high degrees of satisfaction with the trains' smooth and comfortable ride, the friendliness and helpfulness of train conductors, and information provided on train services and safety. Areas needing improvement include the quality and variety of on-board food.

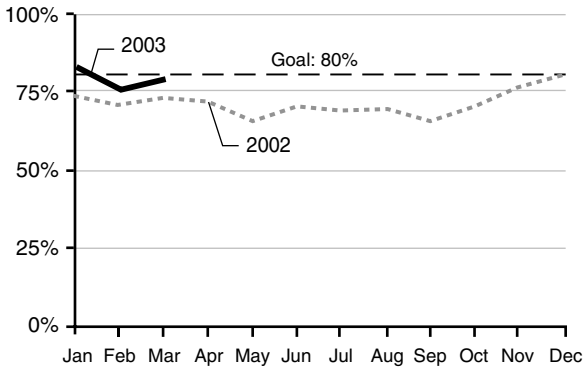
WSDOT also gathers information directly from Amtrak *Cascades* riders through on-board customer comment cards. Feedback taken from these comment cards during the first quarter of 2003 included

State-Supported Amtrak *Cascades*
Monthly Ridership
Number of Passengers



Source: Amtrak and WSDOT Rail Office.

State-Supported Amtrak *Cascades*
On-Time Performance
2003 vs. 2002 Percent On-Time
2002 Average: 70.8%



The on-time performance goal for the 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.

numerous requests for more service between major cities, better on-time performance, and smoother reservation and ticketing processes. WSDOT is working with Amtrak and others to address these issues.

The Future of Amtrak

WSDOT partners with Amtrak to operate Amtrak *Cascades* service between Portland, Seattle, Bellingham, and Vancouver, BC. Amtrak is also responsible for long-distance routes that serve Washington State, including the *Coast Starlight* and the *Empire Builder*. In February 2003, Congress and the Bush Administration approved $1.05 billion in funding for Amtrak through September 2003. As part of the funding agreement and the railroads' ongoing reform activities, Amtrak is required to provide extensive reports to Congress and the Administration, including detailed business plans.

It is anticipated that improved information-sharing between the railroad and the federal government will help Congress and the Administration gain a better understanding of the nation's passenger rail network and the investments necessary to make it a more viable transportation option for the traveling public.

This same funding package approved by Congress and the Bush Administration included $31.8 billion for federal highways, $13.6 billion for aviation, and $7.2 billion for transit through September 2003.

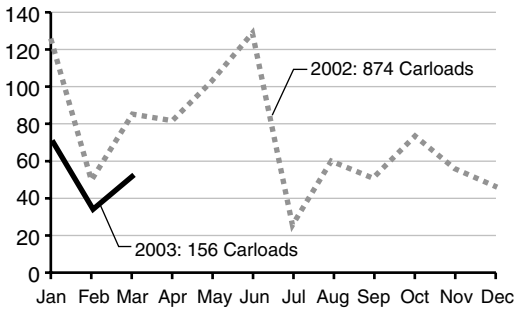
Washington Grain Train Update

In the first three months of 2003, the Washington Grain Train carried 156 carloads of grain to Columbia River ports. This represents a 39.5 percent decline over the same period in 2002.

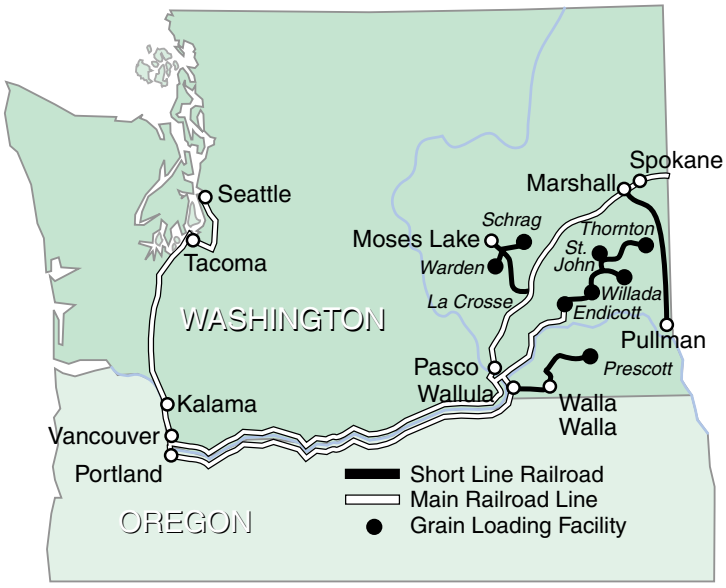
The decline in grain train car loadings was caused by the Union Pacific Railroad taking longer than usual to cycle full 25-car sets between eastern Washington and Columbia River deep water ports. Corrective measures have been implemented and grain train car loads are beginning to rebound. WSDOT continues to work with the Union Pacific Railroad to ensure that grain train cars are being fully optimized by shippers using the service.

Washington Grain Train Carloads

Carloads Per Month, 2002 vs. 2003



Source: WSDOT Rail Office.



In March, rail cars for the third Washington Grain Train began arriving in eastern Washington after being delivered free of charge by the Burlington Northern and Santa Fe Railway. The full 29-car set began service between Pullman and the main line connection at Marshall, southwest of Spokane, in April 2003.

The communities that will be served by the third Washington Grain Train are Plaza, Rosalia, Oakesdale, Palouse, and Fallon, Washington.

Benchmark: Administrative Efficiency

RCW 47.01.012 establishes a policy goal that WSDOT's administrative costs as a percentage of transportation spending should fall into the lowest 25 percent ("most efficient quartile") among all 50 states. The Transportation Commission has incorporated this suggested benchmark for national comparison and established an internal administrative cost benchmark for WSDOT.

WSDOT's Benchmark

WSDOT's *internal* administrative benchmark reflects the agency's administrative cost in relation to its total expenditures. For FY 2002, WSDOT's administrative allocation was 3.8 percent — $59,862,950 of the agency's total expenditures of $1,568,546,491.

National Comparisons

For national comparison, WSDOT uses the Federal Highway Administration's (FHWA) annual *Highway Statistics* report, which compiles expenditure and performance information from the states. To develop a benchmark, the Transportation Commission and WSDOT referred to FHWA's guidance and *Item A.4.a. General administration and miscellaneous expenditures*.

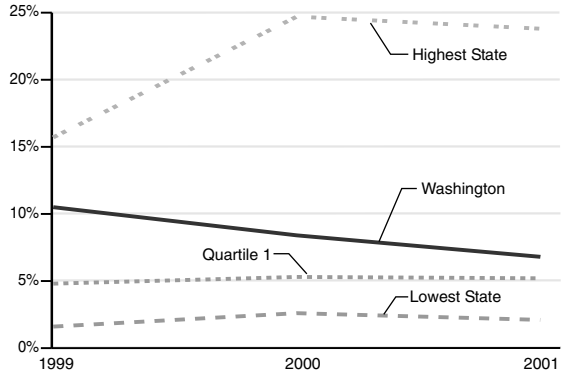
State DOTs use different methods to track and report data to FHWA and differ widely in structure and function. For example, some state transportation departments include driver licensing, which in Washington is part of the Department of Licensing (DOL). Some states report lower administrative costs than WSDOT by allocating certain expenses to specific projects and excluding miscellaneous non-DOT expenses from their administrative cost reports. Other states generally also include information from non-DOT transportation agencies in their FHWA reports, but the mix is inconsistent and may include law enforcement, safety, interest payments, and bond retirement.

WSDOT's national benchmark compares each state's reported *A.4.a.* administrative cost to the total of that state's capital outlay, maintenance, and operations expenditures (core functions of a state department of transportation.). The table at right shows that using this national comparison, Washington ranks as the 21st lowest state with 6.8 percent administrative costs for 2001.

In past years, WSDOT included administrative costs for other transportation agencies, such as the County Road Administration Board and DOL, in FHWA administrative cost reports. Following FHWA guidance, some of these non-WSDOT costs will be moved out of *A.4.a.* in WSDOT's FY 2002 report.

Washington Administrative Cost Target

Percent of Capital Outlay, Maintenance, and Operations Expenditures, 1999-2001



This chart shows Washington's nationally-reported administrative cost percentage for 1999, 2000, and 2001. Washington is showing progress toward meeting the first quartile target set by the Legislature in 2002. The agency has moved from the top of the last quartile for 1999 to the middle of the second quartile for the 2001 report, at 6.8%.

Source: WSDOT analysis of FHWA data.

A number of variables affect administrative costs from year to year. Increases or decreases in the size of the WSDOT construction program affects the percentage of administrative costs compared to total agency cost. In addition, the costs of services provided by other state agencies have been increasing in recent years. Most of these services are mandatory and beyond WSDOT's control. Self-insurance costs continue to increase dramatically.

2001 National Administrative Cost Comparison

State	Admin. Percent	Rank
Colorado	2.1%	1
Arkansas	2.2%	2
Indiana	2.4%	3
Wyoming	2.7%	4
New Mexico	2.8%	5
Kentucky	3.0%	6
Missouri	3.2%	7
Pennsylvania	3.9%	8
Maine	4.2%	9
Maryland	4.5%	10
West Virginia	4.6%	11
Florida	4.8%	12
Iowa	5.1%	13
Alabama	5.2%	14
Georgia	5.6%	15
Michigan	5.6%	16
Virginia	5.9%	17
Alaska	6.5%	18
Idaho	6.6%	19
New York	6.7%	20
Washington	**6.8%**	**21**
New Hampshire	6.8%	22
Illinois	6.9%	23
North Carolina	6.9%	24
Kansas	7.0%	25
Median	**7.2%**	
Texas	7.5%	26
Vermont	7.5%	27
Mississippi	8.2%	28
Massachusetts	8.3%	29
Oklahoma	8.3%	30
Nevada	8.6%	31
Minnesota	8.8%	32
South Carolina	8.9%	33
Oregon	9.1%	34
Utah	9.1%	35
South Dakota	9.2%	36
Delaware	9.5%	37
Rhode Island	9.8%	38
Nebraska	9.9%	39
Tennessee	10.3%	40
Ohio	10.6%	41
Wisconsin	11.6%	42
Connecticut	11.8%	43
New Jersey	12.2%	44
California	13.0%	45
Montana	13.8%	46
Arizona	16.0%	47
North Dakota	16.6%	48
Louisiana	23.4%	49
Hawaii	23.8%	50

Source: WSDOT analysis of FHWA data.

Benchmark: Transit Efficiency

RCW 47.01.012 also requires the Washington State Transportation Commission to establish a cost efficiency benchmark for the state's public transit agencies.

To address this mandate, the Commission's Benchmark Committee worked with the Washington State Transit Association (WSTA). WSTA proposed the following four measures that address cost efficiency, cost effectiveness, and service effectiveness.

- Operating cost per total hour
- Operating cost per passenger mile
- Boardings per revenue hour
- Operating cost per boarding

Efficiency and effectiveness measures evaluate the ability of a transit agency to provide service and meet the demand for transit services given existing resources.

Distinguishing between different types of services and system sizes is essential for valid benchmarking. The four adopted benchmarks compile statewide averages for fixed-route (scheduled) service at urban, small urban, and rural transit agencies, and statewide averages for demand response (on-call paratransit) and vanpool services. The performance of individual systems can be compared to these benchmarks.

The results for six urban transit systems are used below to highlight the differences that exist between systems. The six systems are Community Transit (CT), Clark County (C-TRAN), King County's Metro Transit Division, Everett Transit, Pierce Transit, and Spokane Transit Authority.

For more information about transit in Washington, see WSDOT's Annual Summary of Public Transportation Systems. *The latest summary is available at* www.wsdot.wa.gov/transit/library/2001_summary/2001_summary.cfm.

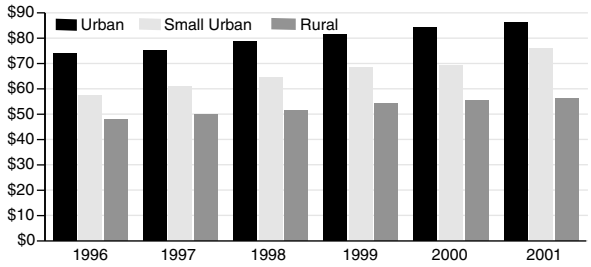
Operating Cost Per Total Hour: Cost Efficiency

Costs are related to the size of the transit system and the nature of the area served. Larger transit systems are more complex and incur costs for fixed facilities (transit centers, park and ride lots, etc.), security, and other costs that smaller systems do not have. They also operate larger equipment in metropolitan areas with higher wages.

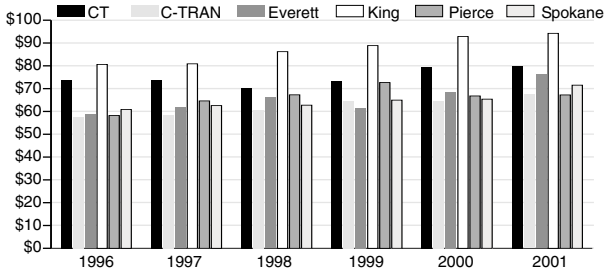
The average cost per hour for the rural and urban systems increased approximately 17% from 1996 to 2001, in line with inflation over this period. Average cost per hour for the small urban systems increased at a higher rate (31.9%). This appears to be due to significant service reductions by these systems in 2000 and 2001, resulting in fixed costs being spread over fewer service hours.

The highest costs in urban transit systems are experienced by King County Metro. Metro operates a fleet of articulated and electric trolley buses as well as the bus tunnel, park-and-ride lots, and numerous other fixed facilities.

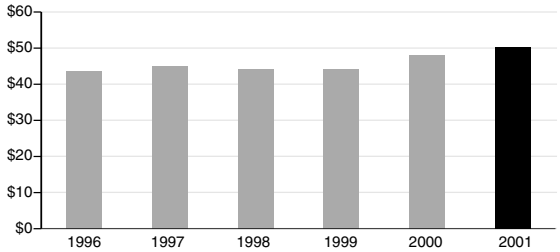
Average Fixed Route Cost per Total Hour
Washington State Average by Transit System Size, 1996-2001



Fixed Route Cost per Total Hour for Six Systems
Six Urban Transit Systems in Washington, 1996-2001



Demand Response Service: Average Cost per Total Hour
Washington State Average for All Transit Systems, 1996-2001



The statewide average cost for demand response service is significantly lower than the fixed-route average cost. This is primarily due to the lower wage rates of demand response drivers. First, this service is contracted out by many systems to private or private non-profit agencies, who often pay less in wages and benefits than the public systems. Second, some transit systems pay their demand response drivers a lower compensation than their fixed-route drivers.

Boardings Per Revenue Hour: Service Effectiveness

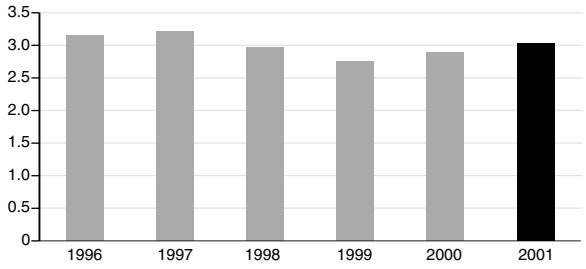
Boardings per revenue hour are the number of passenger boardings for every hour a transit vehicle is transporting passengers. This measure increases with population density and the type of service — urban local service, for example, shows higher boardings per revenue hour than express service.

Performance has been relatively constant for the urban and small urban systems but has dropped among rural systems. The loss of both sales tax equalization and Motor Vehicle Excise Tax funding and the general economic downturn in rural Washington has forced rural systems to reduce service levels and increase fares, resulting in fewer passengers while spreading fixed costs over fewer hours of service.

King County Metro, with more than 30 boardings per revenue hour, exceeds the other urban systems in this measure. C-TRAN has seen this measure decline as a function of the increase of express service in its service mix.

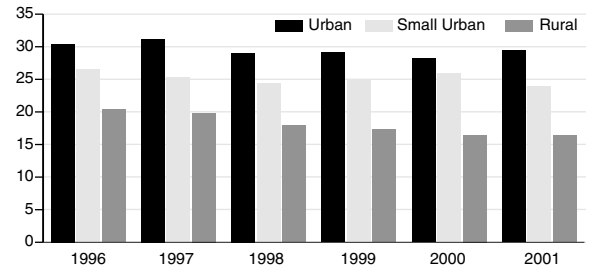
Demand Response Service: Average Boardings per Revenue Hour

Washington State Average for All Transit Systems, 1996-2001



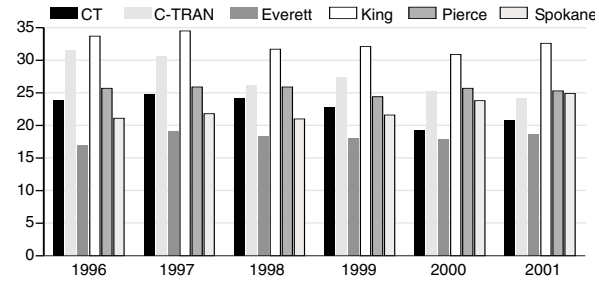
Average Fixed Route Boardings per Revenue Hour

Washington State Average by Transit System Size, 1996-2001



Fixed Route Boardings per Revenue Hour for Six Systems

Six Urban Transit Systems in Washington, 1996-2001



Increases in this measure for demand response service since 1999 are related to service area reductions and the elimination of the least productive services by some transit agencies. As these least productive services, usually serving low-density suburban or rural areas, are eliminated, the associated demand response service is also discontinued. Demand responsive trips in these areas tend to have long trip lengths and are difficult to group with other rides.

Operating Cost Per Passenger Mile: Cost Effectiveness

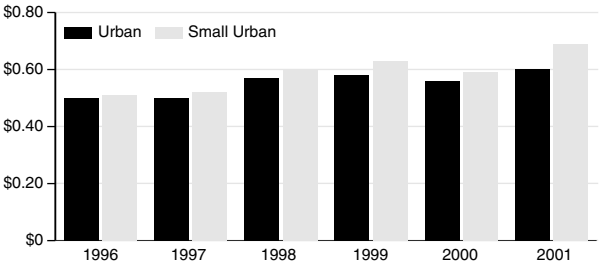
Passenger miles are the transit parallel to vehicle miles traveled. Passenger mile information is not collected for rural systems. Also, this measure does not apply to demand response service.

The trend for this measure generally reflects inflationary cost increases. The cost per passenger mile increased sharply for small urban systems from 2000 to 2001 due to significant service reductions and fare increases during 2000 by several systems in this category.

The chart illustrates the low cost per passenger mile rate of Community Transit — a system with a high level of express service — while Everett Transit, a system with little express service and short average trip length, has a higher cost per passenger-mile. Spokane's cost per passenger-mile reflects its lack of an extensive express route system such as those operated by the Puget Sound area systems.

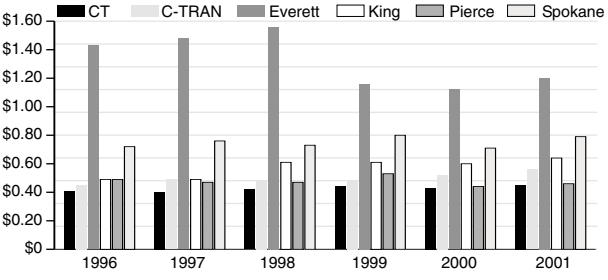
Average Fixed Route Cost per Passenger Mile

Washington State Average by Transit System Size, 1996-2001



Fixed Route Cost per Passenger Mile for Six Systems

Six Urban Transit Systems in Washington, 1996-2001



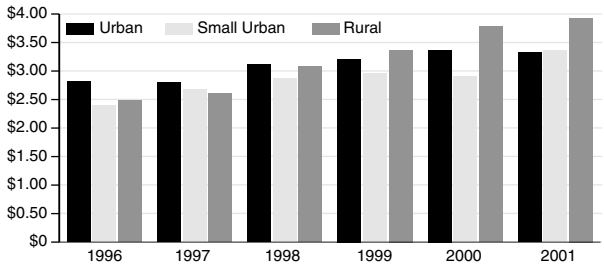
Operating Cost Per Boarding: Cost Effectiveness

Operating cost per boarding measures the cost of carrying one passenger on a single bus trip. An important consideration is that passenger trips can vary greatly in distance. On some systems the average trip length is three miles. On other systems the average trip length is 11 miles. It is reasonable to expect that the latter system would have a higher cost per boarding. Rural transit service will generally be more expensive on a per passenger basis than urban service, largely due to lower population densities and longer trip lengths.

The cost has increased per boarding at approximately the rate of inflation for urban systems, while rural and small urban systems have seen the cost per boarding increase at a much higher rate. Small urban systems saw a significant increase from 2000 to 2001 because service reductions increased the cost per hour of service; also, increased fares led to fewer passengers. Rural systems faced these issues as well, and their cost effectiveness in this measure was hit particularly hard by increased health care and other employee costs.

Average Fixed Route Cost per Boarding

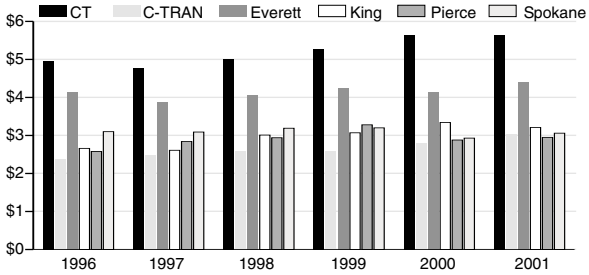
Washington State Average by Transit System Size, 1996-2001



This chart illustrates the effect of the type of service on cost per boarding and the limitations of using a single measure to determine the effectiveness of a transit system. Community Transit has a significantly higher cost per boarding than other systems due to the high level of express service it operates. Express service experiences fewer boardings per hour than local service but has much longer trip lengths. Despite the high cost per boarding, Community Transit has the lowest cost per passenger mile of any of the urban systems. The overall cost per boarding has been held relatively constant over this period among the large urban systems.

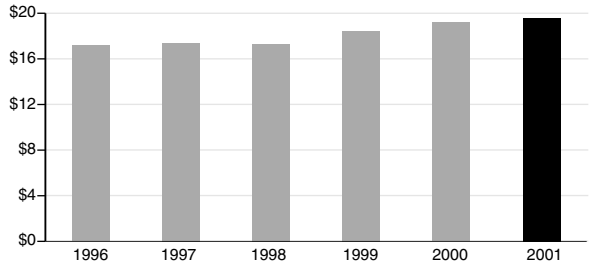
Fixed Route Cost per Boarding for Six Systems

Six Urban Transit Systems in Washington, 1996-2001



Demand Response Service: Average Cost per Boarding

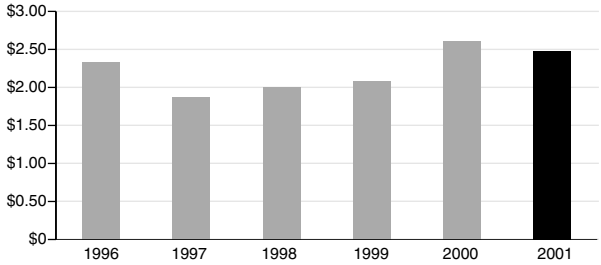
Washington State Average for All Transit Systems, 1996-2001



The cost per boarding for demand response service is approximately six times the cost per boarding for fixed-routes service. This measure was constant from 1996 to 1998 with costs increasing due to inflation and increased employee costs since 1999.

Vanpool Service: Average Cost per Boarding

Washington State Average for All Transit Systems, 1996-2001



Operating cost per boarding is the only statewide benchmark for vanpool service. The cost-effectiveness of the vanpool program is particularly impressive, considering average trip lengths and that vanpool passenger fares cover a substantial portion of the program's operating and capital costs in many systems. Some systems choose to subsidize vanpool fares to make the service as attractive as possible.

Benchmark: Vehicle Miles Traveled Per Capita

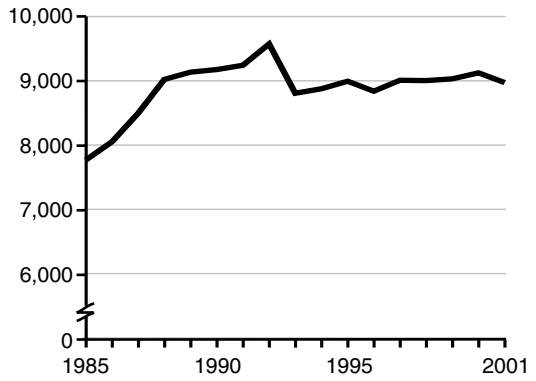
RCW 47.01.012 requires tracking the state's vehicle miles traveled (VMT) per capita, with a goal that it be maintained at 2000 levels. In 2000, the state's population traveled 9,133 vehicle miles per person on all roadways.

The chart shows that VMT per capita dipped below the 2000 level in 2001 to 8,982 miles per person — a decline of 1.7 percent. In the last twenty years, VMT has grown faster than the population (Washington's population has grown about 40 percent, while VMT has grown 60 percent). However, since the late 1980s, VMT per capita in Washington state has hovered very close to 9,000 miles per person per year (the apparent drop from 1992 to 1993 is actually due to a change in the way VMT is calculated)*. Statistics for 2002 will be available in July 2003.

Washington has less vehicle travel per capita than most other states, ranking 41st highest in 2001.

Washington State Travel Growth

*Annual Vehicle Miles Traveled per Capita, 1985 to 2001**



** Vehicle miles traveled for 1993 and later years reflects a change in VMT data calculation, accounting for the drop from 1992 to 1993.*

Source: WSDOT Transportation Data Office.

2001 VMT per Capita by State

Rank	State	VMT per Capita
1	Wyoming	17,445
2	Vermont	15,686
3	Georgia	12,870
4	Alabama	12,716
5	New Mexico	12,701
6	Mississippi	12,592
7	Oklahoma	12,580
8	Missouri	12,013
9	Tennessee	11,783
10	Indiana	11,713
29	Texas	10,139
30	Michigan	9,908
31	Oregon	9,905
32	New Hampshire	9,780
33	Colorado	9,723
34	Maryland	9,673
35	Arizona	9,583
36	Florida	9,494
37	Ohio	9,372
38	Louisiana	9,221
39	California	9,006
40	Connecticut	9,005
41	**Washington**	**8,962**
42	Nevada	8,693
43	Pennsylvania	8,383
44	Massachusetts	8,310
45	Illinois	8,255
46	New Jersey	8,100
47	Rhode Island	7,546
48	Alaska	7,436
49	Hawaii	7,101
50	New York	6,876

Note: The slight difference between the results for Washington by WSDOT's Transportation Data Office (at left) and this table reflect data adjustments by FHWA.

Source: Federal Highway Administration and the U.S. Department of Commerce.

***How VMT is Calculated**

Statewide VMT is based on sample data gathered and reported for the Highway Performance Monitoring System (HPMS).

VMT is estimated for the non-sampled mileage. In 1991, new federal legislation required a complete system inventory as the Federal Aid highway system changed and the National Highway System (NHS) was created. At the same time, HPMS data reporting increased to include all principal arterials and NHS routes. This additional data allowed actual calculations on mileage that had been estimated in previous years.

For 1993, the first reporting year for HPMS which reflected the system re-inventory and NHS, the VMT was more accurate than had been possible in the past. Current annual VMT calculations are based on more actual data than was available before 1993, since the calculations now include the total principal arterial mileage and NHS.

Special Features

Hot Mix Asphalt Pavement Delivery Update

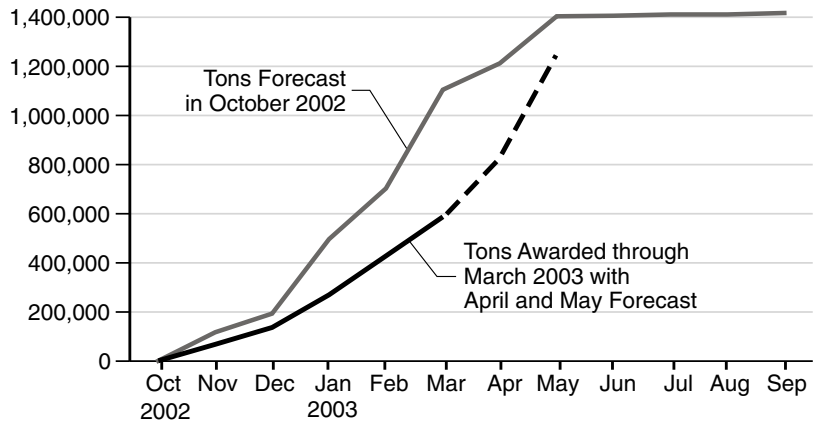
In October of 2002, WSDOT forecasted that 1,417,126 tons of Hot Mix Asphalt (HMA) would be awarded to contractors from October 2002 through September 2003. During the first six months, October 2002 through March 2003, 63 projects were forecast to be awarded with a combined total of 1,104,753 tons of HMA.

Tons of HMA awarded has not kept up with the forecast. The actual tally at the end of March is 43 projects awarded with 587,182 tons of HMA. This trails the forecast by 517,571 tons. The reduction of awarded projects and consequently the reduction of tons of HMA awarded are in part related to highway construction program advertisement delays (see details on "Meeting WSDOT's Scheduled Advertisement Dates" on page 3 of this edition).

The gap between forecast and actual tons awarded is projected to catch up in the coming months. By the end of May the gap should be reduced by about two thirds as the number of tons awarded should be within approximately 150,000 tons of the forecast. The final October tally of tons awarded is anticipated to be very close to the forecast.

In previous editions of the Gray Notebook*, this item has been referred to as Asphalt Concrete Pavement Delivery. The name change brings WSDOT in line with terminology used by other state DOTs.*

Hot Mix Asphalt Pavement Tons
Projected and Awarded Tons Delivered
October 2002 through March 2003



Source: WSDOT Construction Office.

Innovative and Cost Effective Maintenance Practices: Living Snow Fence Planted on State Route 25

This spring the WSDOT Davenport Maintenance Area and the U.S. Department of Agriculture's Natural Resource Conservation Service joined forces to plant a "Living Snow Fence" adjacent to State Route (SR) 25 in Lincoln County. Blowing and drifting snow creates hazardous conditions and increases maintenance costs. Sometimes drifting snow even causes miles of roadways to be closed. Snow fences reduce these impacts. The living snow fence, made of plant materials such as grasses, shrubs and trees, effectively reduces snow drifts. The snow fence is 800 feet long and consists of twin staggered rows of Rocky Mountain juniper trees, growing through a fabric mulch material that will control weeds and keep moisture in the ground. More than 500 trees were planted. The live fence should be fully effective in 5 to 7 years. Another approach is a temporary (plastic) snow fence that was installed this year on SR 547 near Sumas. The Bellingham maintenance operations superintendent reported, tongue-in-cheek: "It did a great job of keeping snow off the road! It didn't snow."

State Route 25: Davenport Maintenance Superintendent Dale Luiten walks behind the equipment tamping down the soil around the little trees.

On the planting machine feeding the little trees into the mechanism is Maintenance Lead Tech Tom Page. Rocky Mountain juniper trees with good site preparation will grow one foot a year.

Highlights of Program Activities

Quarter Ending March 31, 2003

Project Starts, Completions, Updates

- The Puget Sound Regional Council of Governments contributed $1.2 million toward planning activities and environmental studies of the Alaska Way Viaduct and seawall in Seattle. These funds, along with $2 million secured by Sen. Patty Murray and $5 million committed by the City of Seattle, prevented a shut down of the project at the end of the year. The project needs at least $15 million more to finish the environmental analysis and select the best option for the project. Substantial additional funding is required for further design and construction. For more information, visit the project website at: *www.wsdot.wa.gov/projects/viaduct*.
- Crews began deck replacement for the 73-year old Lewis & Clark Bridge, on State Route (SR) 433 between Longview, Washington, and Rainier, Oregon. The contractor for the project, Max J. Kuney Company, submitted a bid $10.8 million below the engineer's estimates, a potential saving of $5.4 million each for Washington and Oregon taxpayers. The bridge will be closed some nights and weekends during construction. Project information is available on the Web at *www.wsdot.wa.gov/projects/lewisclarkbridge*. The project is scheduled for completion in December 2004.

Lewis and Clark Bridge

- The first half of the I-90 Sunset Way Interchange opened to traffic in January. Two new roadways and a new ramp from Sunset Way to westbound I-90 provide much needed access to the Sammamish Plateau, Issaquah Highlands, and the new Microsoft Campus. This is one of three separate, but interrelated projects being constructed. The full interchange is scheduled for completion in August 2003.
- A new ramp opened from Interstate 405 to SE 8th Street in Bellevue, two months ahead of schedule. The project is part of a series of projects, called Access Downtown, to improve access to Bellevue along the I-405 corridor. The new elevated-ramp will draw drivers away from other heavily used interchanges at NE 4th and NE 8th Streets. Project partners include the City of Bellevue, Sound Transit, Federal Highway Administration and WSDOT.

New ramp on I-405, Bellevue

- A project to reconstruct a section of Interstate 5 in Bellingham that was delayed a year due to higher than acceptable contractors' bids, was successfully re-advertised, with bids coming in nearly $1 million less than the lowest bid received a year ago. The $6.9 million project will improve I-5 between Samish Way and Sunset Drive (State Route 542). Work begins this spring.
- The U.S. 12 Wishkah Bridge in Aberdeen was reopened to traffic after a 35-day complete closure. A detour was in place while the steel grate bridge deck was removed and rebuilt. The pedestrian walkways, maintenance ladders, steps and platforms were also replaced, and the bridge has been strengthened for resistance to seismic forces.
- Workers will begin installing advance-warning beacons at three intersections on U.S. 2 and U.S. 97 between Cashmere and Leavenworth this spring with a goal of completing the project before the summer tourist season. The beacons increase safety by alerting motorists that they are approaching a signalized intersection. Locations of the beacon systems are at the Cotlets Street and Aplets Street intersections with U.S. 2 & 97 in Cashmere, and at the Main Street intersection with U.S. 2 at Peshastin.
- With limited ability to expand major corridors, making the most efficient use of existing pavement is critical. For this reason, the Transportation Commission changed a long-standing policy by implementing WSDOT recommendations to open some Central Puget Sound freeway high-occupancy-vehicle (HOV) lanes to all users from 7 p.m. to 5 a.m. as a two-year demonstration project, and to explore allowing single drivers to buy into under used HOV lanes during the day (known as HOT lanes). The goal is to improve the usage of these HOV lanes, while not harming transit or carpool travel times. The nighttime opening will be implemented by late summer, while a HOT lane proposal will be developed by fall 2003.

- The HOV Pilot Project in Vancouver was extended for another 24 months, following a careful review of four evaluation reports compiled between October 31, 2001 and October 31, 2002. The reports indicated that between July 2002 and October 2002 the number of people in the HOV lane jumped from 70 percent of those in the general-purpose lanes to 90 percent. WSDOT's decision took into consideration the recommendations of the Southwest Regional Transportation Council, C-Tran's Board, the Port of Vancouver, and a national HOV lane peer review panel.

Legal matters

- The U.S. Army Corps of Engineers fined WSDOT and its contractor, Kiewit Construction Company, for violations of the Federal Clean Water Act, stemming from work on the I-90 Sunset Interchange in Issaquah. A $25,000 civil penalty was assessed to each party for conducting unapproved work in sensitive waters within the work zone. WSDOT cooperated fully during the Corps investigation and was already implementing a new environmental compliance process to prevent similar occurrences in the future.

Savings and Efficiencies

- WSDOT's digital production of aerial photography images is more efficient since switching from Digital Linear Tape technology to Digital Video Disc (DVD). The old technology required considerable time to transfer images to tape, due to the large file size. As an example, a transfer of five images was a nearly two-hour process. With the DVD technology, the same data can now be transferred in 30 minutes. The result is lower production costs and faster delivery of products to WSDOT's clients.

Innovations and Awards

- Kim Willoughby, Pavement Structures Engineer for WSDOT's Materials Lab in Tumwater, was part of a multi-agency team honored with the K.B. Woods Award by the Transportation Research Board in Washington, D.C. The K.B. Woods award is given annually for the best research paper in the area of design and construction of transportation facilities. Willoughby's team demonstrated the feasibility of an online web database for monitoring the lifetime performance of hot-mix asphalts.
- WSDOT's Tacoma Project Office earned an honorable mention in the state's "Partnership for Excellence Contract Administration" award program for its work in administering the City of Tacoma's Museum of Glass Bridge project. The annual awards, sponsored by WSDOT and the Associated General Contractors of Washington, recognize achievements in Contractor-WSDOT partnerships that result in the delivery of transportation projects in a timely, professional and responsive manner.

New WSDOT Information Sources

- WSDOT introduced a new handbook, *Building Projects that Build Communities*, to help local agencies and WSDOT deliver successful transportation projects. The handbook implements the Context Sensitive Solutions initiative which encourages partnering to develop a transportation facility that fits its surroundings and preserves scenic, aesthetic, historic, and environmental resources and community values, while maintaining safety and mobility. *Building Projects that Build Communities* was distributed to all public transportation agencies in the state and is available on-line at *www.wsdot.wa.gov/biz/csd*.

Grants Received and Grants Awarded

- Federal and State transportation grants of over $1 million helped pay for safety improvements on Irondale Road, between SR 19 and SR 16 north of Port Hadlock in Jefferson County. The roadway shoulder was widened to improve sight distance for motorists and provide a safer area for bicyclists and pedestrians.

Special Events

- WSDOT's Aviation Division hosted the annual Aviation Hall of Fame Awards banquet during the 20th annual Northwest Aviation Conference and Trade Show in Puyallup. Aviation Director John Sibold presented a number of awards, including Airport of the Year, Airport Manager of the Year, and Airport Volunteer of the Year. The conference drew over 10,000 participants and provided an opportunity for pilots to register with the Aviation Division.
- Tribal Employment Rights Office (TERO) Conferences were held in Lakewood and Spokane, with contractors, tribal representatives, union representatives, and state and federal transportation officials attending. The meetings were to draw attention to tribal employment rights when construction contracts are within reservation lands.

Gray Notebook Subject Index

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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 ADA Accommodation Hotline collect (206) 389-2839. Persons with hearing impairments may access Washington State Telecommunications Relay Service at TTY 1-800-833-6388, Tele-Braille 1-800-833-6385, Voice 1-800-833-6384, and ask 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-HIWY [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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