Washington State
Department of Transportation

Measures, Markers and Mileposts

The Gray Notebook for the quarter ending September 30, 2001

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

Douglas B. MacDonald
Secretary of Transportation

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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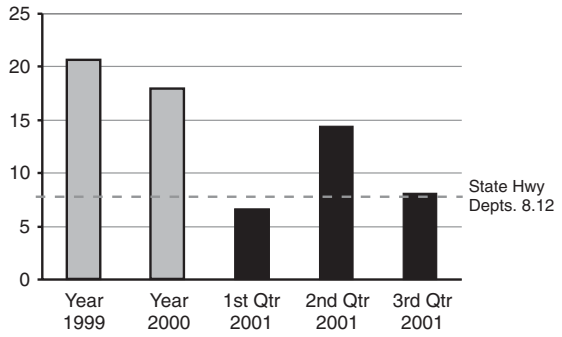
Worker Safety

Continuing updates on Gray Notebook safety topics – data is shown on a calendar year basis but may be revised to fiscal year basis in future Gray Notebook presentations.

WSDOT Highway Maintenance Workers

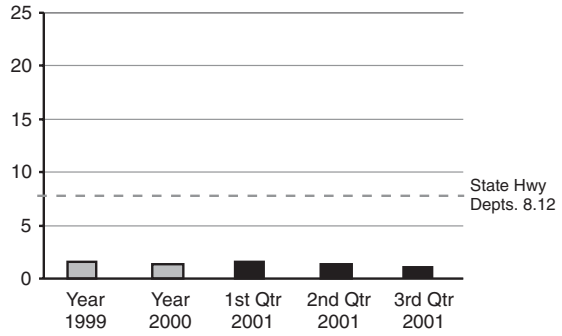
Recordable Injuries per 100 Workers per Year



- Maintenance reduced the recordable injury rate to 8.16 for the 3rd quarter. This has resulted in a 7.78 cumulative recordable injury rate for year 2001 to date.
- Sprains are still the most common type of injury and were 40% of the injuries in the 3rd quarter. The sprains most often resulted from lifting or falling.

WSDOT Highway Engineer Workers

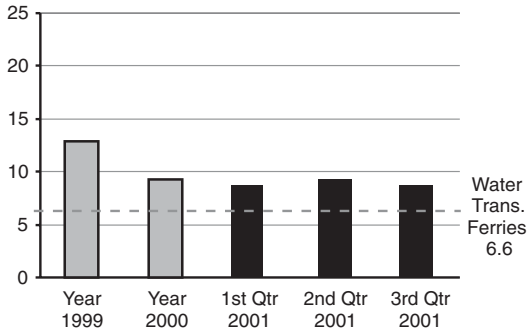
Recordable Injuries per 100 Workers per Year



- The cumulative recordable injury rate for 2001 year to date is .94 recordable injuries per 100 engineering workers.
- The low injury rate is the result of good work practices, a medium degree of risk, and the large number of work hours per quarter in these work classes.

WSDOT Ferry Vessel Workers

Recordable Injuries per 100 Workers per Year



- The injury trends are slightly down from the second quarter.
- 20% of the recordable injuries were attributed to not wearing prescribed personal protective equipment while pumping sewage from the vessels, an event that occurred in three separate instances in the 3rd quarter.

Accident Prevention Activities

3rd Quarter

- The reduction in recordable accidents correlates with increased safety awareness through in-depth safety and staff meeting discussions on safe work procedures
- The WSF reviewed written procedures for safety.
- Eastern, Southwest, and Olympic Regions targeted vehicle-backing accidents. Activities included:
  - ✔ Placing chock blocks or cones behind vehicles,
  - ✔ Drug tests for maintenance CDL drivers involved in accidents,
  - ✔ Accident debriefing among the crew,
  - ✔ Regional Administrator's meeting with the worker and supervisor on preventable accidents.
  - ✔ Re-issuing backing directives.
- Distributed the WSDOT Accident Report – Executive Summary to all executives.
- More detailed accident statistics are found in the quarterly WSDOT Accident Report – Executive Summary.
- See page 22 for highlights of North American Association of Transportation Safety and Health Officials Meeting.

Scheduled Activities – January to March 2002:

- Supervisor Safety Awareness and Advocacy Training
- Revised Accident Reporting and Review Process

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 selected national average benchmarks are adapted from National Safety Council computations made after-the-fact for each year (most recently 1999) from data published by the U.S. Bureau of Labor Statistics.
- The maintenance and engineering charts benchmark against a classification for State Highway Departments.
- The ferry vessel worker chart benchmarks against a classification for Water Transportation, Ferries.
- One worker equals 2,000 hours per year.

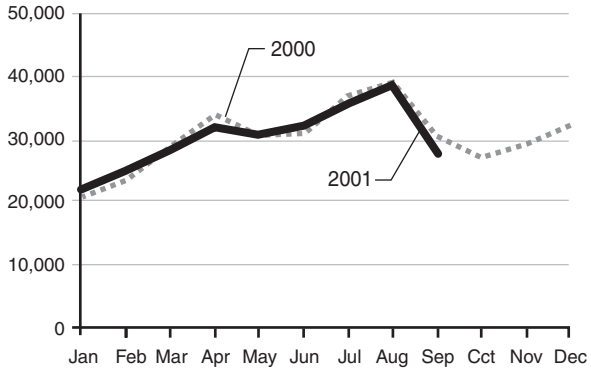
State-Supported Amtrak Cascades Service

Ridership

Through the end of September, ridership was 273,239, which is less than a 1 percent decline over the same period in 2000. It is now likely that the Amtrak Cascades will fall short of the 5 percent annual ridership gain originally projected for 2001. Reasons for this ridership result include the slowing state economy, ticket price increases, and the events of September 11th.

In September 2001, ridership for the month on state-supported trains was 28,804, which is a 6 percent decline from September 2000. The most obvious reason for this decline was the September 11 security crisis and the accelerated adverse developments in the state's economy. Amtrak's long distance trains – such as the *Coast Starlight* and the *Empire Builder* – experienced increases in ridership of approximately 17 percent in the days immediately after September 11. The Amtrak Cascades, however, showed overall ridership declines, as demand for discretionary intercity travel fell. The exception was the midday Portland-Seattle train 752, which showed a 13 percent ridership increase over September 2000.

Monthly Ridership Chart
State-Supported Amtrak Cascades Service
Number of Passengers



Amtrak Cascades trains 760 and 763 cross the U.S./Canadian international boundary and serve Vancouver, BC daily. Train 760, which had seen a ridership decline of 3 percent for the first 10 days of the month when compared to September 2000, experienced a total monthly ridership decline of 5.3 percent. Train 763, which had seen a modest 1.2 percent decline in ridership for the first 10 days of the month when compared to September 2000, experienced a total monthly ridership decline of 0.5 percent.

Background: WSDOT supports the development of Amtrak Cascades intercity passenger rail service. This service provides the traveling public with an alternative to automobile transportation on the Interstate 5 corridor. WSDOT's goal is to increase ridership, reduce travel times, and increase the number of trains operating between Seattle and Portland and Seattle and Vancouver, BC. These goals will be realized through the completion of a sequence of capital projects along the Pacific Northwest Rail Corridor, the purchase of new train equipment, and aggressive marketing. WSDOT partners with Amtrak, the Burlington Northern Santa Fe Railway, the Union Pacific Railroad, the Oregon Department of Transportation (ODOT), and local jurisdictions to provide Amtrak Cascades service. Currently, there are 12 trains in operation, eight of which are financially supported by WSDOT. Since 1994, ridership has nearly tripled on the Amtrak Cascades. The program's ultimate goals are 13 daily roundtrips between Seattle and Portland, with a travel time of 2:30 hours, and 3 to 4 daily roundtrips between Seattle and Vancouver, BC, with a travel time of 2:57 hours. WSDOT anticipates that the Amtrak Cascades will carry 2.2 million riders per year at program build-out.

U.S. Customs and Immigration halted rolling inspections between Blaine and Bellingham for train 763 on September 11. These on-board inspections have not been reinstated, and the train is being delayed 10 to 30 minutes per trip at the border. In addition, U.S. agents at Blaine are now inspecting train 760 as it leaves the United States, causing similar delays. These delays are likely to have an adverse impact on ridership if they continue indefinitely. The solution sought by WSDOT and Amtrak calls for customs and immigration inspections at Pacific Central Station in Vancouver, which is not permitted under the current U.S./Canadian inspection treaty. WSDOT is working with Amtrak and federal policymakers

to increase U.S. agent staff levels and to develop new procedures so that Amtrak Cascades international service will continue to be attractive to the traveling public.

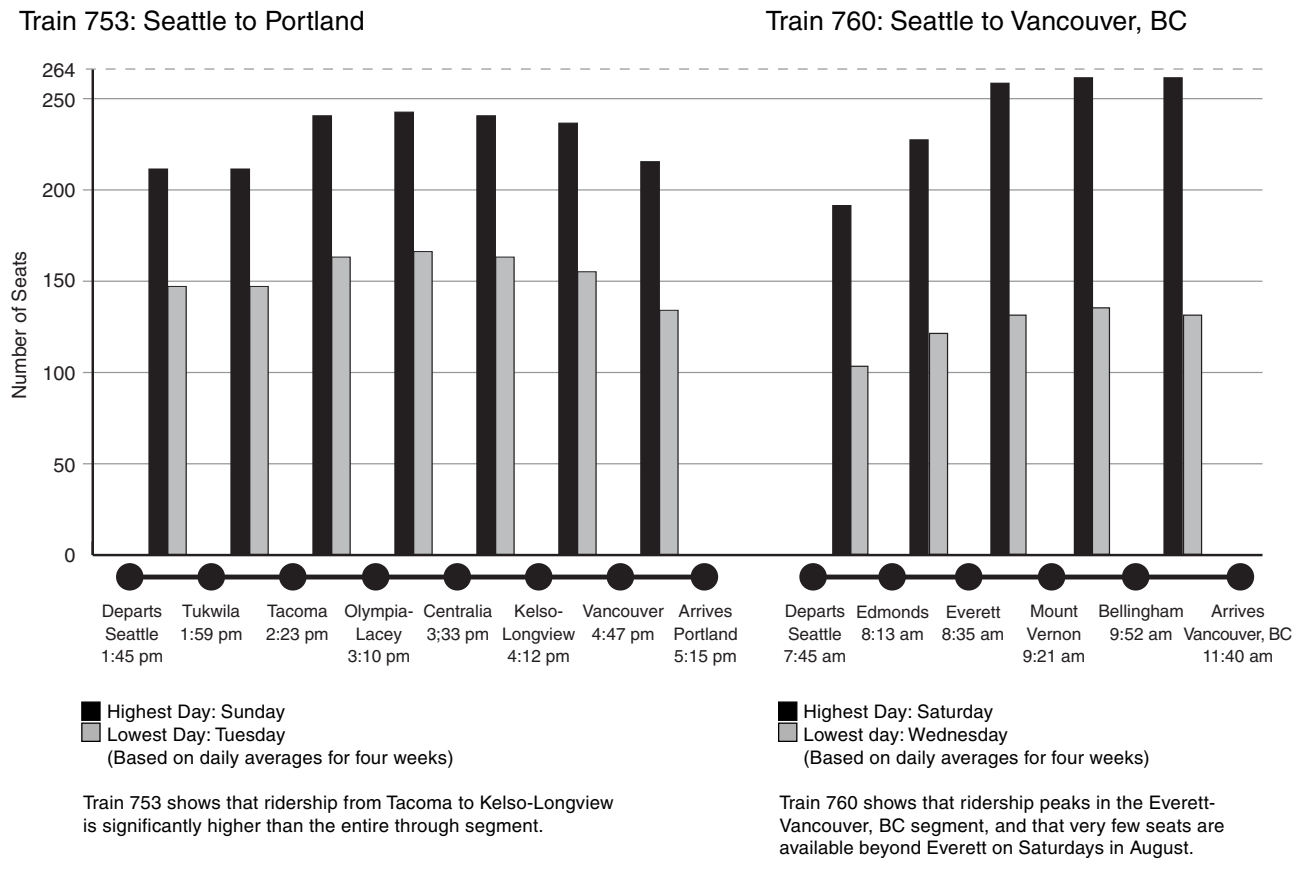
Seats Sold per Segment: Sample Data for August 2001

Seats sold per segment reveals the "fullness" of the train as it moves along its daily route. Two trains have been selected for a one-time city-segment ridership analysis to help determine the usefulness of this data tool. Train 753 travels south from Seattle to Portland and train 760 travels north from Seattle to Vancouver, BC. August is typically the highest ridership month on the Amtrak Cascades.

- **Train 753:** Every week, the train was fullest on Sundays, carrying travelers returning home to Portland at the end of the weekend. This train continues through to Salem, Albany, and Eugene, Oregon. Tuesday every week is the day with the lowest ridership. This pattern appears to be true for all months of the year.
- **Train 760:** This train shows an even greater discrepancy between peak days and less popular days of the week. Train 760 has particularly high ridership on August weekends, reflecting increased leisure travel in the summer.

Segment Ridership Patterns

August 2001: Highest and Lowest Seat Sales by Days of the Week
Maximum number of seats available: 264



Train 753 shows that ridership from Tacoma to Kelso-Longview is significantly higher than the entire through segment.

Train 760 shows that ridership peaks in the Everett-Vancouver, BC segment, and that very few seats are available beyond Everett on Saturdays in August.

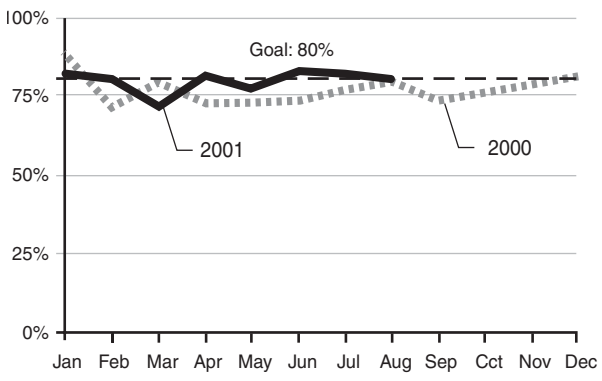
The seats sold per segment analysis performed for August 2001 reveals the unique characteristics of each train for each day of the week. As a result, WSDOT will be gathering segment-based ridership data on a monthly basis from this time forward. The next summary of findings will be included in the March 31, 2002 Gray Notebook.

The information gleaned from this type of analysis will help WSDOT and its partners refine marketing and pricing programs to attract additional ridership on the less popular days. Strategies under consideration include fine-tuning of existing off-peak pricing schemes, expansion of WSDOT's *"Schools on Trains"* program, and web-based relationship marketing directed at the Amtrak Cascades' most frequent customers.

On-Time Performance

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

On-time performance for state-supported Amtrak Cascades service averaged 78 percent in July 2001 and 76 percent in August 2001. September results are not yet available. Slow orders issued by the railroads for track maintenance and passenger loading delays led to the drop in on-time performance in July and August 2001.



WSDOT's 2001-2002 operating contract with Amtrak will include on-time performance incentives and disincentives for the first time. Starting in October 2001, the overall goal of 80 percent on-time performance remains, but a financial assessment against Amtrak will be made by WSDOT if on-time performance falls below 75 percent. Conversely, WSDOT will pay Amtrak a bonus if on-time performance exceeds 83 percent. Either party will make no payments if the average on-time performance for the Amtrak Cascades falls between 75 and 83 percent for the 2001-2002 contract period.

The construction of a new crossover south of Tacoma – scheduled for June 2003 – will help improve schedule reliability between Seattle and Portland. Additional crossovers will be constructed throughout the Pacific Northwest Rail Corridor when funding becomes available in future biennia.

Customer Satisfaction

Amtrak's Customer Satisfaction Index (CSI) is based on surveys of riders using the service. The scores are three-month rolling averages. The CSI goal for the Amtrak Cascades is 92 or better. The most recent scores for the Amtrak Cascades show a slight decline over the same period in 2000 and from the preceding quarterly measurements.

- For service north of Seattle, the average is 92, compared to 95 last year, and 94 from the preceding quarter.
- For service south of Seattle, the score is 91, compared to 93 for the previous year and for the preceding quarter.

The greatest declines were in the areas of complaint handling by Amtrak staff, friendliness and helpfulness of on-board personnel, information on problems/delays, cleanliness of the trains, and availability of food.

Quarterly Customer Comment Card Summary

WSDOT, ODOT, and Amtrak post blank customer comment cards on all Amtrak Cascades trains. The qualitative data derived from these cards supplements the CSI surveys. 217 Amtrak Cascades customer comment cards were returned to WSDOT from April through June of 2001. The majority of the cards indicated overall satisfaction with the service. Suggested areas of improvement include: better seat assignment procedures, better on-time performance, better bistro car service, and cleaner exterior windows.

WSDOT staff is working with Amtrak management in Seattle to implement these suggestions, and on the service issues identified through the CSI surveys. WSDOT is also working with Amtrak to make the information gleaned from customer comment cards available to Amtrak Cascades riders. This information will be featured in a new on-board publication that is under development – and anticipated to be on all trains for the 2001 holiday season.

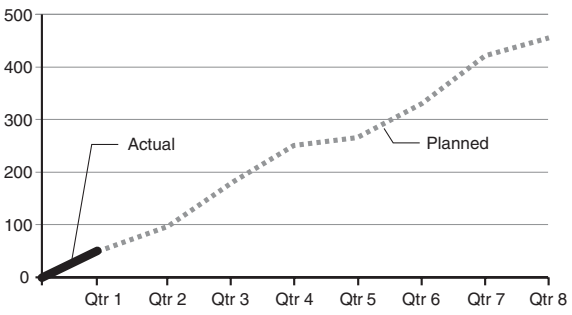
Highway Construction Program Delivery

Meeting WSDOT's Scheduled Advertisement Dates

This chart sets a new plan for the 2001-2003 biennium that reflects the project delivery commitments made in the Capital Improvement and Preservation Program and shows WSDOT's progress in meeting scheduled highway construction project bid advertisement dates for the quarter ending September 30, 2001.

It is important to note that this level of performance is expected during the first quarter. This can be attributed to the fact that the program is being developed at this time. Since it is under development, it is easier to predict these advertisement dates.

Program Delivery: Number of Actual vs. Planned Advertising Highway Construction Projects
2001-2003 Biennium, Quarter 1 Ending September 30, 2001

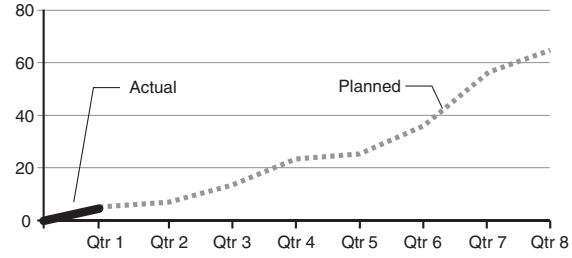


Delivering a Safer Transportation System

This chart reports on the timeliness of achieving highway construction safety projects, a sub-program of the overall Highway Construction Program. The reason this sub-program is highlighted is to improve WSDOT's performance in delivering these projects. Last biennium, only 79 percent of the scheduled advertisement dates were delivered, and only 84 percent of the allocated funds were expended. Delivery of safety projects is very important. This will be given special emphasis throughout the biennium.

In addition to capital projects in the safety program, safety deficiencies are also addressed by traffic operations. Where capital projects typically involve geometric infrastructure (sight distance and new turn lanes), traffic operations emphasize low cost enhancements (information and enforcement). It is important to note that system improvements need both types of projects working in coordination to maximize the benefits. See page 10 of this Gray Notebook for these types of traffic operation improvements and how they are being implemented.

Program Delivery: Number of Actual v. Planned Advertising Highway Construction Projects – Safety Program
2001-2003 Biennium, Quarter 1 Ending September 30, 2001



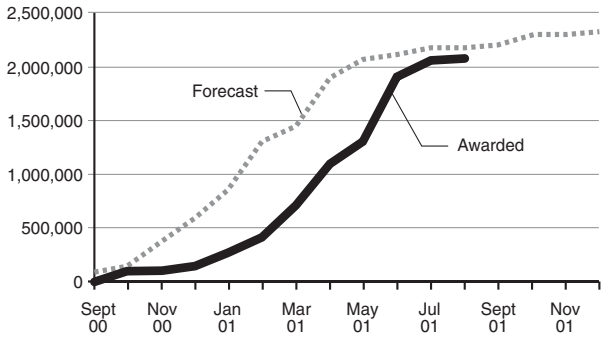
Asphalt Concrete Pavement Delivery

Another indicator of highway construction program delivery is the forecast and delivery of asphalt concrete pavement. This chart shows the total number of tons of asphalt concrete pavement that the Department plans to advertise for bids in a calendar year. This forecast helps the paving industry make business decisions related to materials, equipment, and personnel and assists WSDOT in monitoring the delivery of asphalt concrete tonnage across the state.

As shown, WSDOT eventually achieved the total tonnage by the end of the construction year, but the path of award tonnage does not always follow the forecast tonnage.

The amount of Tonnage Delivered measures the total tons of asphalt awarded on projects, and does not differentiate between our Preservation Program (rehabilitation) and our Improvement Program. Asphalt concrete pavement is used on 10,630 (60 percent) lanes miles compared to 4,920 (27 percent) lanes miles of chip seal and 2,280 (13 percent) lane miles of concrete pavement.

Program Delivery: Asphalt Concrete Pavement
Tonnage Delivered – September 2000 to Date



Commute Trip Reduction

Employer Participation in CTR

From July to September the overall number of employers participating in the Commute Trip Reduction (CTR) program remained about the same as the previous quarter. However, this consistency hides some significant participation trends:

- Nearly equal numbers of employers left as entered the program during recent months.
- The number of employers reducing staff and approaching the point of leaving the program is as high as it has ever been in the history of the program.

Employers continue to urge tax credit reinstatement as a way to keep these worksites participating in the program.

Changes to Participation Anticipated in the Coming Quarter

The number of employers participating in CTR is anticipated to decrease if adverse economic trends continue in the state, especially as large Boeing Company layoffs occur.

Monthly Vanpooling in the Puget Sound Region

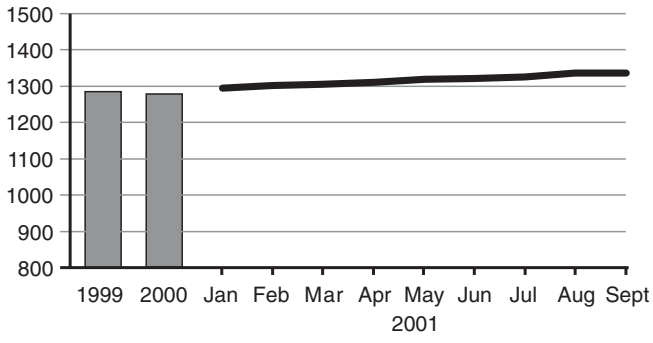
Public vanpooling continues to grow with approximately 10,134 daily riders (2.3 percent higher than January 2001) in the region. Since January, the number of vanpool vans on the road has increased by an average of 1.5 percent per quarter. Operators plan on increasing the number of vans on the road by 13 percent this biennium. However, growth has not been equally dispersed throughout the region. Some operators have already achieved their annual growth targets and will not expand their fleets again until 2002. Other operators have not yet seen growth this year but should see expansion during the coming quarter.

Commute Trip Reduction

Washington law requires employers located in nine Washington counties who have more than 100 employees to participate in a program to decrease energy consumption, improve air quality and reduce traffic congestion by reducing commute vehicle trips.

WSDOT supports this program with direct and indirect assistance to the employers to encourage voluntarily participation in the program. A tax credit was available in the years 1994-1999 which acted as an incentive for non-obligatory participation. Many employers involved in the program report economic benefits from the program, for example, reduced costs of providing parking for commute vehicles.

Number of Operating Vans



Changes in Vanpooling Anticipated in the Coming Quarter

Of the over 1,340 vanpools on the road in the Puget Sound region today, 30 percent take employees to The Boeing Company's worksites. Significant

These King County park and ride lots in south Bellevue are filled to over capacity. Note that the users are parked on the roadway.

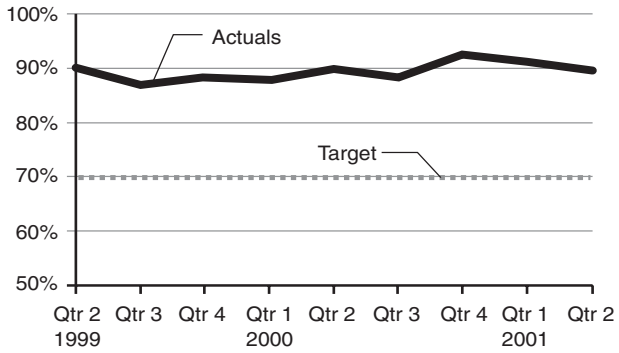
layoffs at Boeing may affect ridership. On the other hand, new subsidies encouraging vanpooling among federal employees may provide some additional ridership.

Park and Ride Occupancy Rates in King County

Tracking the occupancy of the park and ride lots shows that limited parking capacity is a constraint on ridesharing. In King County, WSDOT owns 31 lots providing nearly 8,000 parking spaces. The average occupancy of these spaces in the first quarter of the biennium was nearly 91 percent. Eleven lots have occupancy at or exceeding 100 percent capacity.

WSDOT-Owned Park and Ride Lots in King County

31 Owned or Partnership Lots with Approximately 8,000 Spaces
Percent of Capacity Used



As occupancy surpasses the target of 70 percent, reliability of finding parking spaces becomes an issue for potential users and discourages expanded use of vanpooling and transit.

Third quarter 2001 data is being collected and will be available in the next Gray Notebook.

Park and Ride Data Highlights:

- The majority of state-owned park and ride lots in King County are fully utilized.
- Nearly three-quarters of these lots have met their occupancy target.
- Almost one-third of the state lots have daily parking in excess of their parking capacity.

King County operates 53 permanent and 57 leased park and ride lots with a combined capacity of 17,495 spaces (the 31 state-owned and partnerships lots are included in this total.) The average occupancy for all lots operated by King County in the second quarter of 2001 was 79 percent.

Next Quarter

Data on park and ride lots outside of King County will be presented. In addition, WSDOT will attempt to develop data on safety and crime at park and ride lots, a matter of importance to ridership confidence.

Highway Safety

WSDOT Studies Crashes

WSDOT analyzes crashes on the state highway system and looks for solutions at both spot and corridor locations. The top ten spot and corridor locations, based on 1999-2000 data, with proposed solutions are listed below. The ranked order is based on "Estimated Societal Cost" per year, calculated as a function of crash frequency and severity.

High Accident Locations

Rank	Location	Crashes: Fatal & Disabling Injuries*	Crashes: Total	Estimated Societal Cost $M/Yr	Proposed Solution	Funded	Unfunded
1	I-5 Northbound at the Tacoma Dome vicinity in Tacoma	11	611	$ 11.5	Using the highest design standards, rebuild ramps and interchanges as part of Core HOV project. Capacity improvements will be an additional benefit.		✔
2	SR 522 from 61st Ave NE to 73rd Ave NE in Kenmore	11	259	$ 8.5	Entering/leaving driveways accounted for 34% of all collisions. Striping of transit lanes, additional signing for right turns and widening project are proposed.	✔	
3	SR 7 from 122nd St S. to 104th St S in Parkland	6	330	$ 7.0	Implement better access control for driveways; provide illumination, sidewalks and retaining walls.		✔
4	SR 161 from 128th St to 35th Ave in Puyallup	3	405	$ 5.8	Implement better access control for driveways; provide sidewalks, illumination, and pedestrian crossings.		✔
5	US. 2 from Kelsey St to Ann St in Monroe	8	181	$ 5.5	Rear end collisions accounted for 47% of crashes. Implement better access control for driveways and improve traffic signal operations. Construct Monroe bypass.	✔ Partial	✔ Partial
6	I-5 at SR 16 in Tacoma	3	200	$ 3.4	Rebuild ramps and interchanges to high design standards, including collector distributor, as part of Core HOV project.		✔
7	SR 515 from SE 212th to north of SE 208th in Kent	5	69	$ 3.0	Driveway related collisions accounted for 28% of total. Also five bicycle and two pedestrian collisions were recorded. Driveway access management was implemented. Evaluation continues.	✔ Partial	
8	SR 7 from 182nd St S to 171st Ave S in Spanaway	3	131	$ 3.0	Implement better access control for driveways and provide illumination, sidewalks and retaining walls.		✔
9	SR 525/Paine Field Blvd. from Beverly Park-Edmonds Rd. to Harbor Pt. Blvd. in Mukilteo	3	153	$ 3.0	Rear end collisions accounted for 61% of total. Widening (to 4 lanes) project is scheduled for February 2001.	✔	
10	SR 7 from 154th St S to 145th Ave S between Spanaway and Parkland	2	140	$ 2.6	Implement better access control for driveways and provide illumination, sidewalks and retaining walls.		✔

*Disabling injuries include permanent disabilities only, i.e., temporary disabilities are not included.

High Accident Corridors

Rank	Location	Crashes: Fatal & Disabling Injuries*	Crashes: Total	Estimated Societal Cost $M/Yr	Proposed Solution	Funded	Unfunded
1	SR 500 from Vancouver north city limits to NE Anderson Rd vicinity	10	273	$ 3.4	Construction of a new interchange.		✔
2	SR 167 from Puyallup River Bridge to SR 410	9	173	$ 2.6	Improvements in signal operations have been implemented with signing and striping low cost enhancements. Evaluation continues.	✔	
3	SR 515 from SE 232nd vicinity to SE 211th vicinity in Kent	14	330	$ 2.2	Better access control for driveways was implemented in 1999/01, low cost enhancement project. Project to signalize intersections at SR 515, 222nd Place and 217th St are programmed.		✔
4	SR 99 from S 146th St to North of 130th in Tukwila	12	189	$ 2.1	Access management, widen to six lanes, add curb and sidewalk.		✔
5	SR 9 from SR 204 to 42nd St NE East of Everett	19	424	$ 2.0	Intersection signal operations will improve safety with better traffic signal timing and channelization. New traffic signals are scheduled in 2004. Modifying the U.S. 2/SR 9 interchange is scheduled for next year. Illumination improvements.	✔ Partial	✔ Partial
6	SR 512 from SR 161 to SR 167 in Puyallup	19	407	$ 1.9	Improving ramps by lengthening the deceleration/acceleration lanes at interchanges is scheduled for 2003-2005 biennium.		✔
7	SR 502 from I-5 to NE 199th vicinity near Battleground exit	8	56	$ 1.9	Improving turn lanes and traffic signals is proposed. Possible new interchange at NE 219th Street.		✔
8	I-5 near Nisqually River at DuPont	7	75	$ 1.9	Recent improvements at the Mounts Road Weigh Station have reduced congestion in this area. Evaluation continues.	✔	
9	SR 14 from Clark County line to Belle Center Rd between Washougal and Skamania	7	52	$ 1.7	A minor realignment of the road is proposed.		✔
10	SR 99 from Porter Way to King County Line in Milton	6	88	$ 1.6	A two-way left-turn lane and better access control for driveways is under construction.	✔	

The fact that a location is listed in the top 10 high accident locations or corridors does not imply that the location is unsafe or that accidents are related to the design or maintenance of the highway. Crashes are caused by many factors including driver actions, vehicle condition, and weather.

For each of these locations, discretion is exercised in the development and implementation of proposed solutions on the basis of many factors, including levels of authorized and expected funding.

*Disabling injuries include permanent disabilities only, i.e., temporary disabilities are not included.

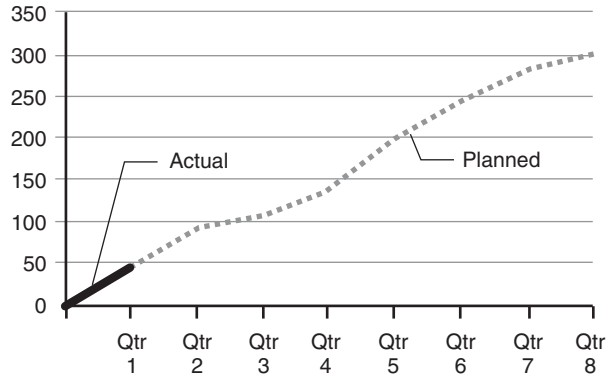
The Gray Notebook will provide periodic analysis of "High Accident Locations" and "High Accident Corridors," as well as the proposed solutions that are being developed and programmed in response to the data.

Delivery of Projects to Improve Safety

There are two major programs that concentrate on the delivery of safety projects. The Safety Construction program is discussed in the section on Highway Construction Program Delivery (see page 5). The Low Cost Enhancement program is managed by WSDOT's regional traffic operation offices and delivers safety enhancement projects that are low cost, often interim, "spot" investments, to provide immediate improvement to the operational safety and efficiency of the highway system.

The chart below shows WSDOT's progress in meeting the target of 300 Low Cost Enhancement projects for the biennium ending June 30, 2003.

Low Cost Enhancement Safety Projects
Number of Projects – 2001-2003 Biennium



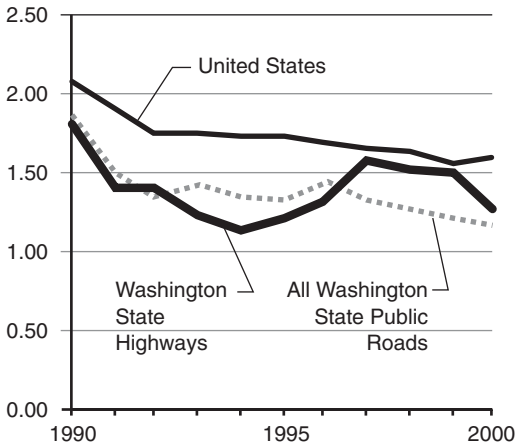
Below are a few examples of Low Cost Enhancement Safety Projects:

- Re-striping roadways to add a left-turn lane.
- Adding a warning sign.
- Adding illumination at a dark intersection.
- Installing signal detection to reduce rear-end crashes.
- Installing rumble strips.
- Re-striping for a no pass area.
- Changing the speed limit.
- Up-grading guide signing.
- Improving sight distance at an intersection.
- Install a warning device for wrong-way movements.

Washington State Highway Safety

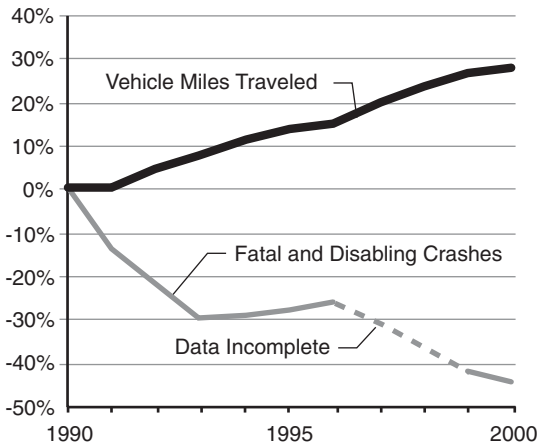
State and local traffic safety officials with the Washington Traffic Safety Commission, the Washington State Patrol, and WSDOT are partners in the strategic vision called *Target Zero*, setting a goal to reduce and eliminate deaths and disabling injuries.

Traffic Fatality Rates Compared to U.S.
All Washington Public Roads and Washington State Highways
Fatalities per 100 Million Vehicle Miles



Since 1990, accident rates on highways everywhere have fallen. Washington continues to do better than the national average.

Fatal and Disabling Crashes and Vehicle Miles Traveled (VMT)
Percent Change – Washington State



Since 1990, the number of fatal and disabling injuries have fallen by almost 50 percent, while the VMT has increased by almost 30 percent.

Highway Maintenance Program Delivery

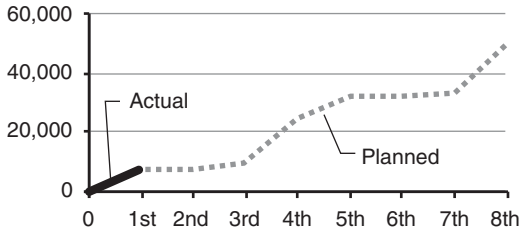
Activities in the program protect the public infrastructure as well as provide services necessary for daily operation of the highway system. Typical maintenance activities include patching potholes, cleaning ditches, painting stripes on the roadway, fixing damage to guardrail, and controlling noxious weeds. Operations services include plowing snow, cleaning rest areas, and operating traffic signal systems.

WSDOT maintenance crews removing snow on State Route 20 – the North Cascades Highway.

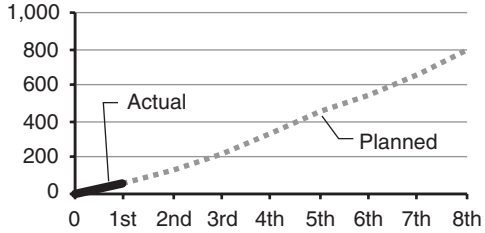
Selected Maintenance Activity Measures

The following charts show planned production and actual production related to select maintenance activities for the 2001-2003 biennium. These measures will continued to be tracked and similar types of measures will be developed for other maintenance activities.

Pavement Striping
Miles of Roadstripe Painted
(First Quarter Actual Identical to Plan)



Repairs of Sign Bridges*
Number of Sign Bridges Repaired
(First Quarter Actual Identical to Plan)



*Sign Bridges are arched metal structures over highways upon which signs are attached. $1.6 million will be spent during the 2001-2003 biennium to catch up on the backlog of repairs needed on sign bridges.

Customer Survey Results

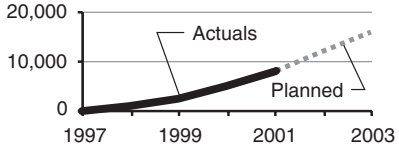
In September 1999, WSDOT conducted a survey of Washington citizens to evaluate customer satisfaction levels related to highway maintenance activities. Some survey results are as follows:

- 77 percent of respondents were satisfied with highway maintenance.
- 93 percent stated that state highways are maintained equally or better than local roads.
- 89 percent stated that state highways are maintained equally or better than highways in other states.
- 97 percent stated that WSDOT maintenance crews do an average to excellent job in handling emergencies.

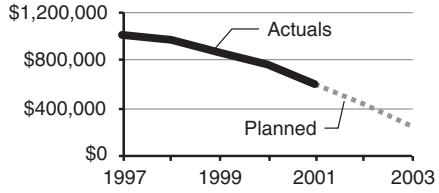
Cost Savings in Signal Operations

WSDOT is lowering power bills and reducing maintenance costs by changing signal lights from 135-watt incandescent bulbs to 11-watt light-emitting-diode (LED) bulbs. The new LED bulbs are warranted for five years and will increase the life cycle of the bulbs from one year to five years. The associated energy savings is estimated at 75 percent statewide over six years. The savings in energy costs will pay for the new LED units within 1.5 years.

Number of Incandescent Bulbs in Traffic Signals Converted to LED Units



Annual Energy Costs for the Operation of WSDOT Traffic Signals
(1997-2003)

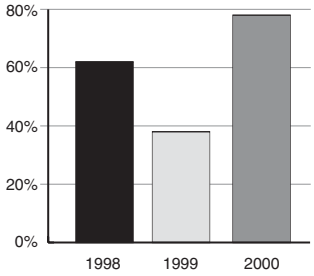


Biennial Maintenance Targets

The Maintenance Accountability Process (MAP), developed by WSDOT and the state legislature, measures and communicates the outcomes of 34 distinct highway maintenance activities. Maintenance results are measured via field condition surveys and reported as Level of Service (LOS) ratings. LOS targets are defined in terms of the condition of various highway features (i.e., percent of guardrail on highway system that is damaged) and are set after consideration of level of funding decisions made in the budget process by the legislature. The table shows 1999-2001 LOS targets for highway maintenance activities (in prioritized order), those targets which WSDOT achieved (*Pass)*, and those targets which WSDOT failed to achieve (*Fail*) during calendar year (CY) 2000. LOS targets for CY 2001 and 2002 and CY 2001 performance data (actuals) will be available for the December 31, 2001 Gray Notebook.

Maintenance Activity	Did WSDOT Achieve the Target Level for Highway Conditions Funded by the Legislature? Pass	Fail	1999-2001 Target Levels* for Highway Conditions Funded by the Legislature
Pavement Patching & Repair	✔		2
Snow & Ice Control Operations	✔		3
Traffic Signal System Operations		✔	3
Movable & Floating Bridge Operations	✔		3
Urban Tunnel Systems Operations	✔		3
Keller Ferry Operations	✔		2
Guardrail Maintenance	✔		2
Noxious Weed Control	✔		3
Structural Bridge Repair	✔		4
Intelligent Traffic System Operations		✔	3
Control of Vegetation Obstructions		✔	4
Permits/Franchises	✔		2
Maintain Culverts	✔		4
Regulatory Sign Maintenance	✔		4
Slope Repairs		✔	4
Crack Sealing	✔		4
Bridge Deck Repair	✔		4
Safety Patrol	✔		3
Rest Area Operations	✔		2
Highway Lighting Systems Operations	✔		2
Pavement Striping Maintenance		✔	3
Maintain Catch Basins & Inlets	✔		4
Raised/Depressed Pavement Markers		✔	4
Sweeping and Cleaning	✔		2
Nuisance Vegetation Control	✔		3
Maintain Ditches	✔		3
Shoulder Maintenance	✔		3
Detention/Retention Basins	✔		3
Litter Pickup		✔	4
Guide Sign Maintenance	✔		3
Landscape Maintenance	✔		3
Guidepost Maintenance		✔	4
Bridge Cleaning	✔		3
Pavement Marking Maintenance	✔		4

Percentage of Legislatively Funded Targets Achieved for 1998-2000



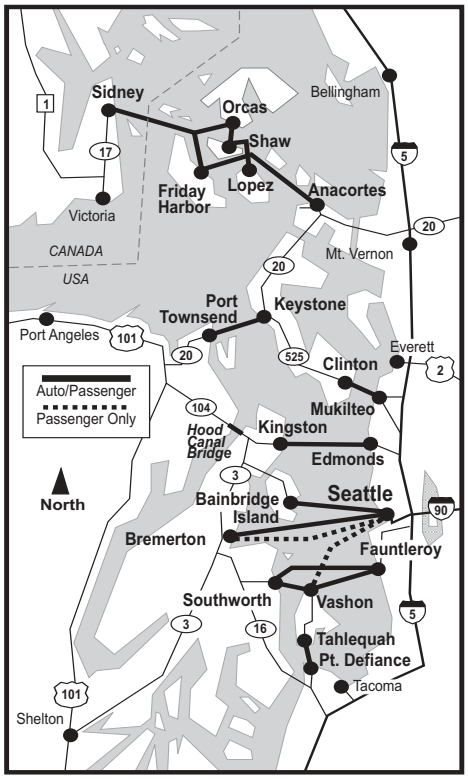
1999 delivery was adversely impacted by expected budget reductions from Initiative 695.

*Targets are described as the condition of highway features as follows:
- "1" is *excellent* condition – all systems are operational and users experience no delays.
- "2" is *good* condition – all systems are operational and users may experience occasional delays.
- "3" is *fair* condition – systems may occasionally be inoperable and not available to users, short-term delays may be experienced.
- "4" is *poor* condition – systems failures occur regularly because it is impossible to react in a timely manner to all problems, occasional delays may be significant.

Washington State Ferries

WSF operates the largest ferry system in North America. WSF serves eight counties within Washington as well as Vancouver Island, B.C.

Colman Dock in Seattle is the busiest WSF terminal.

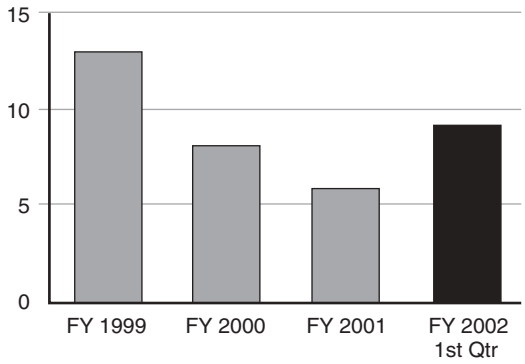


Customer Feedback

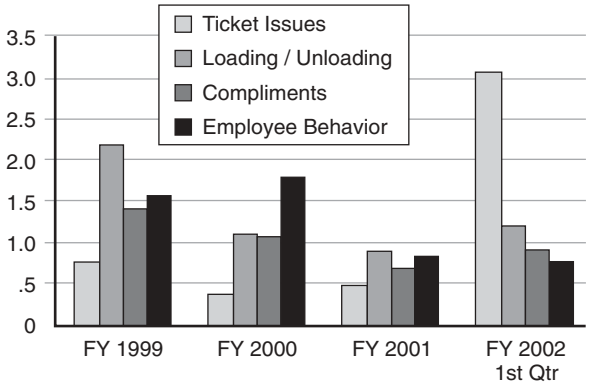
WSF collects customer complaints, comments, and suggestions. This information is recorded in the Automated Operating Support System (AOSS) database for measurement and action.

The charts below show trends in the data for the last three fiscal years and for the first quarter of fiscal year 2002 (July 1, 2001 through September 30, 2001).

Total Customer Complaints
Complaints per 100,000 Customers*



Most Frequent Customer Complaints
Top Four Comment Types per 100,000 Customers
Fiscal Year 2002, First Quarter



*Does not include compliments or suggestions.

The most significant trend for the quarter just completed is the rise in complaints about ticketing. On June 3, 2001, WSF increased fares and introduced significant complexities across the system (i.e., established new fare – route structure and eliminated refunds through a complex grand fathering procedure). One third of all complaints received during the last quarter were related to ticket issues.

On-Time Performance

Real-time trip data has been recorded since June 1, 2001. The recording system is still in the testing phase, and testing and quality control for the system is still being carried out.

The table below displays on-time performance on two of WSF's busiest commuter routes, Seattle/ Bainbridge Island and Mukilteo/Clinton.

On-time Performance Delivery

For period July 1, 2001 through September 30, 2001

Route	Number of Trips	Percent of Trips within 10 Minutes of Schedule	All Trips: Average Delay from the Scheduled Sailing Time
Seattle/Bainbridge Island	4,317	85%	5.5 minutes
Mukilteo/Clinton	7,013	96%	2.5 minutes

WSDOT is continuing to refine its ability to measure on-time performance. Benchmarks to other ferry systems and modes are being researched. We expect to report on each of our routes in the future.

The Seattle/Bainbridge Island service schedule operates more reliably during the fall, winter, and spring as traffic emanating from Seattle is reduced during the non-tourist oriented seasons.

A trip is considered to be on time if it departs within 10 minutes of the published scheduled sailing time. Missed trips are not reported in this measure. They are included in the following measure (Trip Reliability).

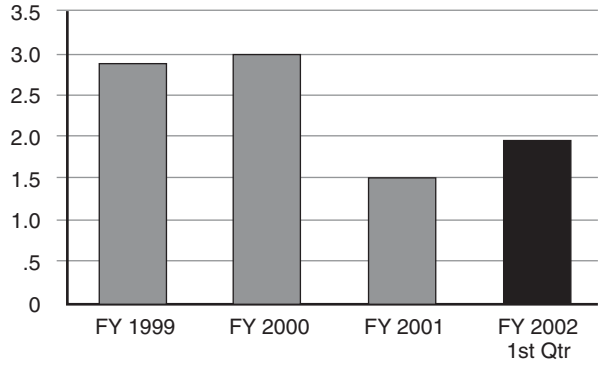
Trip Reliability

WSF scheduled 48,203 trips during the first quarter of fiscal year 2002. Of these trips, 235 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 two ferry trips would be cancelled. This is a significant improvement from the record in FY 1999 and FY 2000, but not as good as the record achieved for FY 2001.

Trip Reliability Index

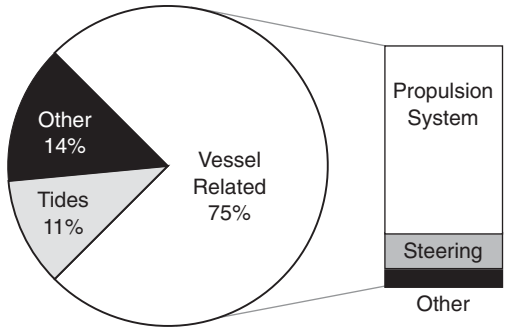
Missed Trips per 400 Sailings



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

Most Common Trip Cancellation Causes

First Quarter Fiscal Year 2002



Propulsion Systems: The most common vessel-related problems for the first quarter of fiscal year 2002 are propulsion system related. WSF is systematically addressing vessel propulsion system reliability through the capital preservation program.

Tides: The Port Townsend/Keystone route accounted for all of the trip cancellations due to unfavorable tide conditions. A new class of maneuverable vessels is being proposed to replace the aging Steel Electric class vessels on this route. These new vessels would virtually eliminate missed trips due to tide conditions on this route. The request for the new vessels will be part of the WSDOT New Law budget request in 2002.

Ridership and Revenues

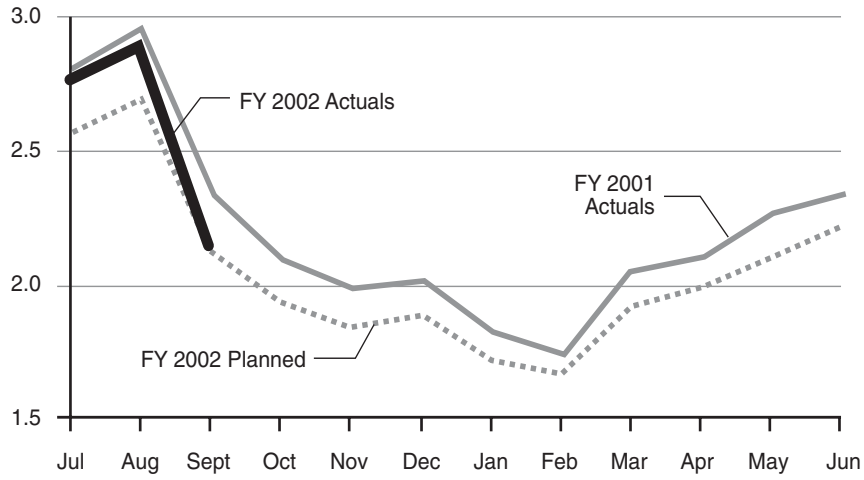
The Legislature's Joint Task Force on Ferries, made up of legislators, citizens, ferry management, and ferry workers was formed in 2000. The Task Force recommended incremental tariff increases to raise the farebox recovery rate to 80 percent of operating costs over six years. The Transportation Commission instituted this recommendation and WSF implemented the first tariff increase on June 3, 2001.

New tariffs were designed to recover higher total revenues even though the number of riders would be expected to fall slightly when the price of the trip went up. As shown, WSF predicted that ridership would fall from the previous year because of the fare increase and that the amount of total fares would go up. In fact, ridership has fallen somewhat less than expected and revenues have run slightly ahead of the forecast in 2002.

These results, however, do not fully reflect the possible long-term implications from the September 11 events.

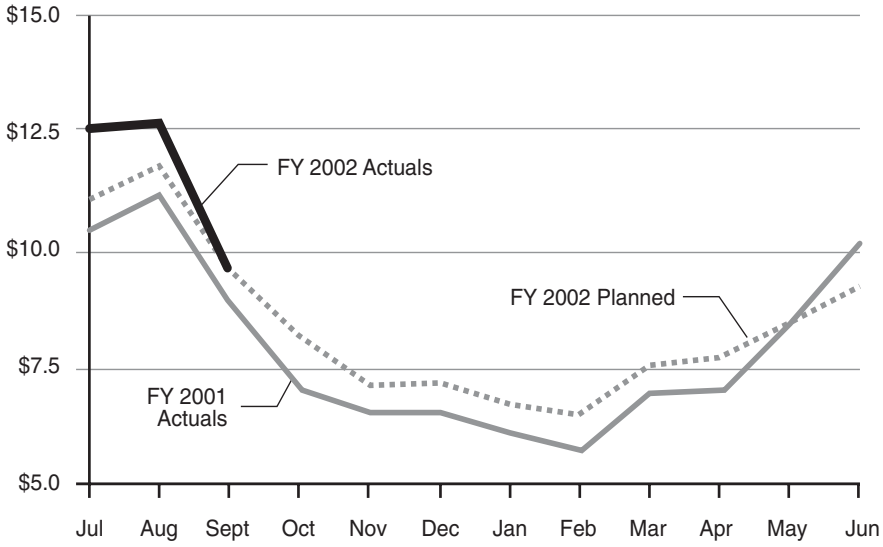
Ridership by Month

In Millions



Farebox Revenues by Month

In $ Millions



Fiscal year-to-date ridership through September 30, 2001 has exceeded the plan by 6 percent or 400,000 riders. Revenues have exceeded the plan by 8 percent or $2.6 million.

Comparison to Other Ferry Systems

The Federal Transit Administration (FTA) collects performance data on transit agencies, including ferry systems, that receive FTA financial assistance. This information is compiled and published annually in the FTA National Transit Database (NTD) Transit Profile Report. The most recent report available is for 1999, from which the accompanying comparison has been drawn. The data purports to provide a comparison of U.S. ferry systems in terms of cost per passenger and revenue mile.

The table shows the difficulty of benchmarking against other ferry systems on the basis of the FTA data. System-to-system "Operating Costs per Vessel Revenue Mile" vary by a factor of ten in this sample when the small boats used in San Francisco are compared to the Staten Island Ferry (New York City DOT). "Cost per Passenger Mile" varies even more widely, reflecting the number of passengers on the routes (compare the Staten Island Ferry with WSF, for example) as well as other factors. This table is more useful in highlighting the differences among ferry systems than for benchmarking WSF performance.

Ferry System Comparisons

	Total passenger Miles	Operating Cost per Vessel Revenue Mile	Cost per Passenger Mile
San Francisco/Vallejo	16,576,000	$ 23	$ 0.29
New York City DOT	103,231,000	$ 230	$ 0.39
San Francisco/Golden Gate	18,755,000	$ 82	$ 0.77
Washington State Ferries	**200,933,000**	**$ 115**	**$ 0.79**
San Francisco/Alameda	3,691,000	$ 49	$ 0.85
Port Authority (PATH-NY, NY)	4,016,000	$ 60	$ 1.33
San Juan Port Authority	1,751,000	$ 66	$ 3.97
New Orleans/Crescent City	1,351,000	$ 142	$ 4.16

Data from 1999 NTD report for all other systems. WSF information from 2001 actuals.

List ranked by cost per passenger mile
All cost amounts adjusted to 2001 dollars
Cost per revenue mile equals total operating costs divided by vessel miles while in revenue service.

Cars disembark from the WSF ferry Spokane

Freeway Operational Efficiency Strategies: Incident Response Teams and Service Patrols

In our major urban areas, over 50 percent of freeway congestion is the result of incidents that affect the optimal operation of the freeway rather than simply the volume of traffic*. Quicker Incident Response Teams and a new program called Service Patrols can significantly reduce non-recurring congestion and pay major dividends in time savings for the traveling public.

A WSDOT Incident Response Team renders assistance on Interstate 5 near Tumwater.

Incident Response Teams

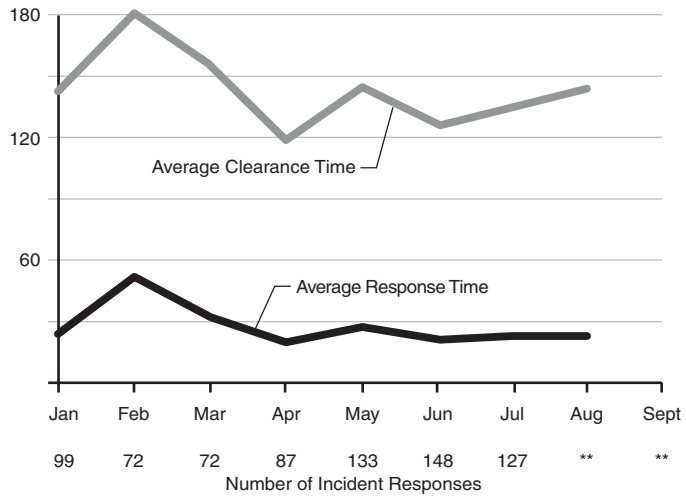
WSDOT Incident Response Teams are specially equipped people and vehicles available at all hours to respond immediately to crashes or other incidents that require on-the-spot traffic control and coordination with Washington State Patrol (WSP) and other emergency services.

*Urban Mobility Report, Texas Transportation Institute, Texas A&M University System, May 2001.

Operations Initiative

WSDOT will team up with the Washington State Patrol and other emergency responders to implement strategies to enhance incident response. For more information on this initiative, see page 21.

Response Time and Clearance Time for the WSDOT Incident Response Teams
In minutes, 2001*



*Benchmark levels have not yet been developed for this critical performance indicator.

**Incident response field data for August and September is being collected and processed and will be available in the next Gray Notebook.

A database has recently been developed to provide Incident Response Teams with a consistent method of storing the incident data collected. The data allows teams to review their performance, make improvements on the basis of documented examples, and implement techniques that have proven to be most time and cost effective.

Average response time is the monthly average time from when an Incident Response Team received a call to when that team arrived on the scene.

Average clearance time is the monthly average time from when the Incident Response Team gets a call to when the incident is cleared from the roadway and all lanes are again free for traffic flow.

Response time is consistent but is limited based on available resources.

Clearance time varies greatly depending on the type of incident and the emergency response partners involved.

Service Patrols

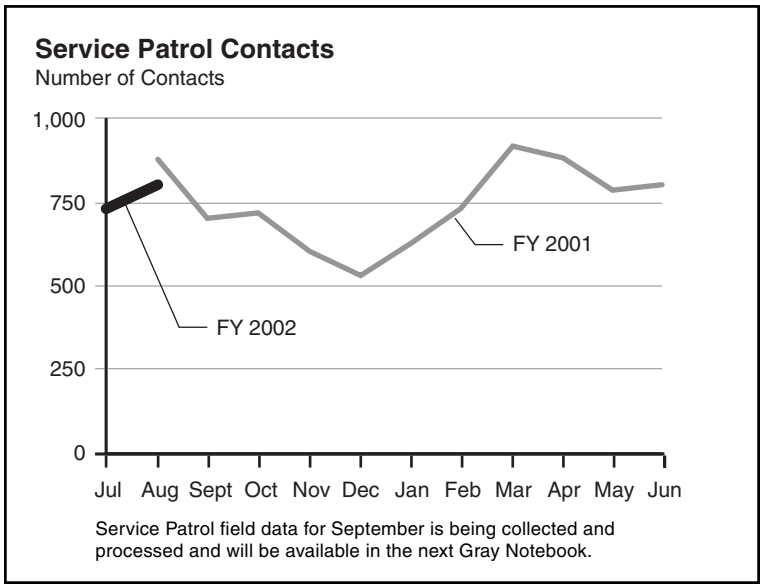
Unlike Incident Response crews that get called out from a fixed base, Service Patrols are roving the freeway and often arrive at incidents shortly after they have occurred. They have an average response time of 3 minutes (compared to 23 minutes for Incident Response crews). Service Patrols locate, assist, and or relocate a disabled vehicle in the traffic lane and/or shoulder on designated highway segments, as well as assist public agencies or law enforcement as requested, with a crash or other emergency. During the Service Patrol pilot project months, the patrols were able to aid 54 percent of the incidents recorded by the Washington State Patrol. The service patrols detect these incidents through:

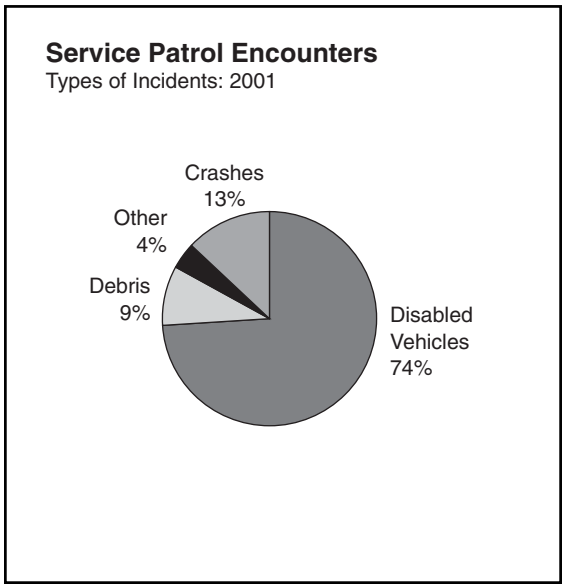
- Washington State Patrol radio – 15%
- Detected by roving Service Patrol – 83%
- Other – 2%

Washington State Patrol cadets serve as part of the Service Patrol.

Current funding provides for four service patrol zones that cover approximately 20 miles of congested freeway. There are two zones in Tacoma and two zones in Seattle on Interstate 5. These service patrols are operated by WSP cadets and by contracted tow truck services. In addition, the Department has operated a variation of service patrols on the Interstate 90 and State Route 520 floating bridges for over 20 years. These tow trucks wait at each end of the bridge until called.

The number of contacts made and service provided has been consistent and varied only with the normal variation in traffic during the lower traffic months.





Highlights of Program Activities

Quarter Ending September 30, 2001

July 2001

- Design upgrades will keep State Route (SR) 231 north of Spokane open year-round. This highway normally closes in the winter because the pavement cannot support heavy truck traffic.
- New pedestrian bridge in Wenatchee connects the city's downtown with riverfront parks and also connects the convention center to the parks and Apple Capital Loop Trail.
- *Hyak* crew rescues pair from waters off Orchard Point while en route from Bremerton to Seattle.
- U.S. 101 earthquake stabilization repairs were completed at the SR 8 junction west of Olympia. This section of U.S. 101 collapsed during the February 28 earthquake.

August 2001

- Ramp metering began on the ramps from Lake Washington Boulevard and Montlake Boulevard NE to eastbound SR 520 during morning commute hours.
- The reconfiguration of the traffic flow around the site of the rock slope stabilization at Ruby Creek on the north side of Blewett Pass on U.S. 97 is complete.
- A ceremony was held to celebrate completion of the Port of Tacoma Road overpass at SR 509. The project elevated the Port of Tacoma Road over SR 509, added interchange connections with SR 509, and provided a grade separation for the Port of Tacoma Road with rail operations.
- Crews began work on improvements to the Interstate 90/Sullivan Road interchange in the Spokane Valley. A new on-ramp will be added to the interchange helping traffic move more smoothly in this extremely congested area.
- Washington State Ferries (WSF) recognized the Bremerton/Seattle and Colman Dock personnel for the rescue of a distraught woman who ran onto a Colman Dock slip and jumped into the water.
- Secretary MacDonald presented a $124,000 Rural Mobility Grant to Ben Franklin Transit. Funds will be used to purchase two 21-passenger paratransit buses equipped with wheelchair lifts and bike racks.
- A ribbon-cutting event was held on the improved Bremerton Gateway Project. This project improves long-standing congestion, safety and pedestrian needs.
- WSF reported a successful external audit on the *Elwha* (Anacortes to Sidney, B.C., route), meeting the International Safety Management Code.
- WSDOT held a groundbreaking ceremony on the first section of what will become the North Spokane Corridor. The 10-mile long freeway section will link Interstate 90 with U.S. 395 near the Wandermere Golf Course in North Spokane.
- To address lengthy traffic delays, Olympic Region provided better roadside information with the Highway Advisory Radio (HAR) and installed a permanent advisory sign located on southbound Interstate 5 in Lacey.
- WSDOT provided portable changeable message signs, barricades and flagging assistance to the Incident Command for the forest fires burning in North Central Washington.

- The northbound lanes of SR 529 between Everett and Marysville opened to traffic one week ahead of schedule, which was in time for the Labor Day weekend. This three-week maintenance project caused extensive traffic disruptions.

- WSDOT unveiled the likely preferred alternative for Interstate 405 corridor improvements at a press conference in Bellevue. King County's *Eastside Journal* stated that WSDOT's plan needs review, not dismissal, and supported this view in an editorial.

September 2001

- WSDOT celebrated the completion of the visitors' facilities at Deception Pass (SR 20) with a ceremonial ribbon-cutting event. The completed facilities include four sets of stairs with handrails, walking path, and a handicapped accessible viewpoint.
- The innovative construction approach on the U.S. 395 intersection project in Kennewick earned WSDOT a part in the Innovative Pavement Research Foundation's research program video and report and was featured in Federal Highway Administration's *Focus* newsletter.
- The WSDOT *Traffic and Weather Information* Website was awarded 2nd place in a field of 35 entries in the Geospatial Solutions' Second Annual Applications Contest.
- WSDOT notified the media/public of local transportation issues resulting from the terrorist attacks on September 11. Hourly news releases alerted of ferry delays and restrictions, airport restrictions, and traffic tie-ups around military bases. Information was updated on the department's toll-free phone line, website, and Highway Advisory Radios.
- A fatality occurred in the construction zone on SR 410 between the SR 167 interchange to Traffic Avenue. A contracted construction worker (pedestrian) was struck and killed by a dump truck.
- Construction activities for the new bike/pedestrian tunnel under Sleater-Kinney Road in Lacey restricted traffic to a single-lane in each direction. The tunnel project provides the missing link to the bicycle trail that parallels Interstate 5 between Lacey and Olympia.
- A shipment of 2,000 boxes of donated Washington State apples and pears left Chelan for New York City, via the new *Washington Fruit Express* service, to support the terrorist attack relief effort.
- A ribbon-cutting ceremony was held in Spokane to open the final section of improvements on Interstate 90 from Havana Street to Argonne Road, and the Sprague Avenue Interchange on September 28th. This $45 million project was finished well ahead of schedule and on budget.

Gray Notebook Special Features

Freeway Operations Efficiency Initiatives

Washington is a one of the leading states in installation of technology like traffic cameras and roadway in-pavement electronic sensors to provide real-time information on traffic flows and conditions on our freeways. Many drivers already use this information by accessing the traffic cam sites. Others may not know that the system is also the source of real-time information utilized by radio and TV traffic reporters.

Now we must apply these state of the art technologies in a more aggressive way to assist roadway crews in clearing accidents, freeing traffic jams, and directing motorists around trouble spots. The public needs new benefits and new efficiencies from these important opportunities brought to us by technology.

One of WSDOT's leading Internet websites, Puget Sound Traffic Cameras, receives 120,000 visitor sessions a month! During the winter, the Mountain Pass Report website gets up to 200,000 visitor sessions a month.

The Washington State Department of Transportation and the Washington State Patrol (WSP) have agreed to begin a special operations initiative to help relieve freeway and highway traffic congestion created by non-recurring incidents. The organizations work together on a plan that puts an emphasis on clearing accidents and reopening lanes, removing stalled vehicles, providing better traveler information and minimizing the effects of rush hour construction and maintenance work. The plan includes enhancements and improvements to current programs and a few new activities as well.

Beef Up Our Road Response Program

A new "Road Rangers" program would combine the current "service patrol" and "incident response" programs. This program would provide better roadside assistance and traffic control during incidents.

Clear Accidents More Quickly

Vehicles must be cleared from the roadway. WSDOT and WSP will work to reduce lane and highway closures due to crashes and crash investigations. Both agencies will sponsor a funding request for a traffic helicopter to speed the arrival and the work of crash investigators. WSDOT will expand *No Parking* zones on freeways and develop policies to remove damaged freight from the roadway. Better hazardous material spills removable activities are also a priority along with a coordinated Emergency Response Communications Statewide Workshop including cities, counties and emergency response agencies.

Schedule More Off-Peak Construction and Maintenance Work

WSDOT does more and more maintenance and construction work at night every year on our highways. The agency needs to strive even harder to find every possible way to avoid rush hours lane closures for highway work.

Improve Traffic Light Synchronization

An old idea! But a good one to which more attention should be paid. The highest priority should be given immediately to many state and interstate routes throughout the state.

Improve Winter Maintenance Activities in North Central Washington

WSDOT will improve snow and ice operations by using new methods to detect and predict where snow and ice will impact travelers. Crews will then prioritize responses and resources to areas most in need.

Keep Trucks Moving

Long lines at truck weigh stations should be a thing of the past. WSDOT and WSP have been installing weight-in-motion devices to evaluate trucks as they drive over pavement. This eliminates problems of trucks pinching traffic when re-entering highways.

Provide Better Traveler Information

In addition to the existing centers in Seattle and Tacoma, WSDOT is opening new traffic management centers in Spokane, Vancouver and Yakima on October 1st. The centers collect information from traffic cameras and road sensors for technicians to communicate with the public through radio stations, electronic highway signs, hot lines, the web and WSDOT highway radios.

Next Quarter

In the next Gray Notebook, WSDOT will present potential performance measures to track efficiency gains for these programs.

The WSDOT Website

WSDOT is working to improve its website. The web team achieved an early strike for efficiency by eliminating over 9,000 seldom-used pages. The remaining 28,000 pages will continue to be streamlined and reorganized, including the creation of new navigation, to make it easier for customers to find information. This overhaul improves network efficiency, saves server space, and lowers staff maintenance time, while making the WSDOT website more user-friendly.

North American Association of Transportation Safety and Health Officials Meeting

Best Practices Shared

- WSDOT shared information from August 20th through the 24th, 2001 with national and Canadian DOT safety managers on best management practices, accident prevention initiatives, and benchmarks. WSDOT highlighted the *Measures, Markers and Mileposts* report and the *Accident Report*. As a result, WSDOT was asked to take the lead in assisting other states with the standardization of reporting methods and timeframes for recordable injury rates and presentation of refined benchmarks.
- The National Institute of Occupational Safety and Health (NIOSH) requested an additional joint WSDOT/NIOSH project to study two construction projects within the state to identify the hazards and best practices for protecting the workers. WSDOT is currently in a joint project with NIOSH testing several vehicle collision systems.

Best Practices Learned

- Reviewing Texas DOT Mobile Work Zone training package for possible use within WSDOT to train workers on mobile operations.
- Evaluating the *123 Safe Days Of Summer* campaign utilized by several other states for a potential summer 2002 campaign.
- Shared Illinois public service announcements on work zone safety with WSDOT Communications Office for possible adaptation for use in Washington.