



**Washington State
Department of Transportation**

Measures, Markers and Mileposts

Gray Notebook Lite

for the quarter ending September 30, 2006

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

Douglas B. MacDonald
Secretary of Transportation



**Washington State
Department of Transportation**

This *Gray Notebook Lite* is the eleventh edition of relevant highlights and performance topics selected from the *Gray Notebook*. This quarter's edition of the *Lite* includes excerpts from Highway Safety, Incident Response, Commute Options, Ferries, Maintenance Best Practices, and Rail. An excerpt from the annual Measuring Delay and Congestion report, which has been expanded this year to include 15 new commute routes, shows congestion worsening statewide.

The beige insert contains a quarterly summarized roll-up of WSDOT's Capital Project Delivery Program.

The full *Gray Notebook* can be found at www.wsdot.wa.gov/accountability/graynotebook.pdf

Please let us continue to hear your thoughts about what you would like to see in the *Gray Notebook Lite*. Send me an e-mail at macdond@wsdot.wa.gov.

Doug MacDonald



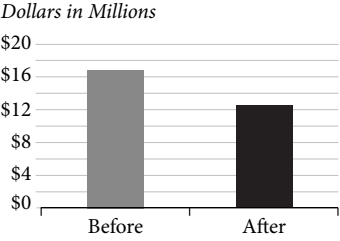
Highway Safety: Quarterly Update

The quarterly highway safety update contains updates on motorcycle fatalities, highway speeds report, the Joint Program to Reduce Speeding, and the Corridor Safety Program.

From fiscal year 1997 to 2005, motorcycle registrations increased 74%, from 94,081 to 163,304. While motorcycle fatalities account for only 11.4% of all state traffic fatalities, motorcycle fatalities have increased sharply in the past two years, from 57 in 2003 to 74 in 2005. The *Gray Notebook* report contains conclusions from a task force about this increase.

The annual report on driving speeds shows that the average annual speeds across different types of state highways stayed roughly the same. More than 15% of drivers are going above the speed limit on all roads. A complementary report describes the Joint Program to Reduce Speeding (JPRS). Started in October 2006, the focus of the “Slow Down or Pay Up” program is on enforcement and awareness of speed limits. The project is coordinated by Washington State Traffic Safety Commission and Washington State Patrol, and includes the

Corridor Safety Program Before and After Summary: Average Societal Costs of Collisions



Source: WSDOT Highways and Local Programs Office

participation of WSDOT and local law enforcement agencies.

Additionally, 23 Corridor Safety Program projects, which focus on community-based programs using low-cost, quick solutions to improve safety, have shown a 6% decrease in total collisions, a 19% decrease in alcohol-related collisions, and a 33% decrease in fatal and disabling injury collisions. These improvements in roadway safety also translate into dollar benefits for Washington State citizens (see graph on right).

For more information on highway safety and what is being done to improve it, please see pages 82-85 of this quarter’s *Gray Notebook*.

Incident Response: Quarterly Update

During the third quarter of 2006, the WSDOT Incident Response (IR) Program responded to 16,167 incidents, an 11% increase from the previous quarter (14,505 responses). The increase in the number of responses and incidents is due to summertime peak travel activities. The third quarter of 2006 had a 1.8% increase over the same quarter in 2005.

Major blocking incidents are analyzed in this edition. When travel lanes are blocked, an incident becomes extremely hazardous to traffic and congestion begins to build immediately. Blocking incidents tend to be more serious, and take longer to clear. Incident management (early detection, swift response, and removal of blockage from travel lanes) is critical both for highway safety and traffic operations to prevent congestion (see table to the right for details on incident response types).

For more information on incident response and related issues, please see pages 75-77 of this quarter’s *Gray Notebook*.

Incident Response Types

Total Incident Responses = 16,167
1,810 Collisions (11%)
13,417 Non-Collisions (83%)
940 Unable-to-Locate (6%)

Primary Reason	July	August	September
Fatality Collisions	17	16	13
Injury Collisions	139	167	168
Non-injury Collisions	338	464	488
Disabled Vehicles	2,578	3,028	2,861
Debris	473	559	555
Other	210	201	184
Supplemental Reason¹	July	August	September
Fire	51	47	37
Hazardous Materials	10	6	7
Other Contacts	210	204	191

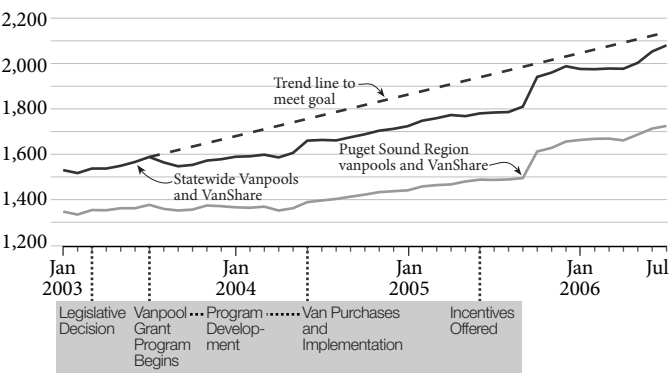
Source: WSDOT Incident Response Tracking System
¹Supplemental Reasons are in addition to or as a result of Primary Incident Types

Commute Options: Annual Update

Washington’s overall drive-alone commute rate declined slightly from 1990 to 2000 (one of two states where the percentage dropped). As of August 31, 2006, Washington had 2,117 vanpools operating statewide, representing the largest public vanpool fleet in the nation. The goal of WSDOT’s Vanpool Grant Program is to double the number of operating vanpools from July 2003 to June 2013.

For more information on the Commute Trip Options, including the Commute Trip Reduction Program, Park and Ride Lots, and commuting options and construction mitigation, please see pages 78-81 of this quarter’s *Gray Notebook*.

Public Vanpools Operating in Washington January 2003 to July 2006



WSDOT'S Capital Project Delivery Programs

Executive Summary: Roll-Up of Performance Information

Each quarter WSDOT provides a detailed update on the delivery of the highway capital programs through the *Gray Notebook*, and via the web through the Project Pages and Quarterly Project Reports. As WSDOT's primary delivery report, the *Gray Notebook* includes the *Beige Pages* for the purpose of providing the current status of the Capital Improvement and Preservation Programs: major Pre-Existing Fund (PEF) projects, the projects funded by the 2003 5-cent gas tax (Nickel), and the 2005 9 1/2-cent gas tax (Transportation Partnership Account, TPA).

Since PEF projects are budgeted by program for improvement and preservation of the highway system, the delivery of the work included in the 727 PEF projects is reported programmatically for six program categories. By contrast, each of the 124 Nickel and 165 TPA projects funded in the 2005-07 biennium has a line item budget and is monitored and reported at the individual project level. Note the program budgets for PEF, Nickel, and TPA have been updated from previous *Gray Notebook* editions based on the 2006 Supplemental Budget.

Performance Information <i>As of September 30, 2006, Dollars in Thousands</i>	Nickel (2003)	Transportation Partnership Account (TPA, 2005)	Combined Nickel & TPA	Pre-Existing Funds
Total Biennial Number of Projects (2005-07)	124	165	289	727
Total Biennial Program (2005-07)	\$1,162,457	\$384,106	1,546,563	\$1,036,798
Schedule, Scope and Budget Summary: Results of Completed Projects				
	See Pages 3-6	See Pages 3-6	See Pages 3-6	
Cumulative to Date, 2003 – September 30, '06				
Total Completed	39	17	56	-
% Completed Early or On-Time	95%	88%	93%	-
% Completed Within Scope	100%	100%	100%	-
% Completed Under or On-Budget	92%	82%	89%	-
% Completed On-Time and On-Budget†	87%	71%	82%	-
Current Legislative Expectation (Baseline)	\$302,652	\$9,393	\$312,045	-
Current Estimated Cost to Complete (WSDOT)	\$300,201	\$9,998	\$310,199	-
Biennium to Date, 2005-07				
Total Completed	20	17	37	221
% Completed Early or On-Time	90%	88%	89%	-
% Completed Within Scope	100%	100%	100%	-
% Completed Under or On-Budget	95%	82%	89%	-
% Completed On-Time and On-Budget†	85%	71%	78%	-
Current Legislative Expectation (Baseline)	\$184,077	\$9,393	\$193,470	\$448,064
Current Estimated Cost to Complete (WSDOT)	\$181,753	\$9,998	\$191,751	\$481,386
Advertisement Record: Results of Projects Under Construction or Entering into the Construction Phase				
	See Pages 5-6	See Pages 5-6	See Pages 5-6	See Pages 5-6
Biennium to Date, 2005-07				
Total Advertised	25	4	29	158
% Advertised Early or On-Time	88%	75%	86%	84%
Total Award Amounts to Date	\$137,682	\$18,459	\$156,141	NA
Advertisement Schedule for Projects in the Pipeline: Results of Projects Now Being Advertised for Construction or Planned to be Advertised				
	See Pages 7-8	See Pages 7-8	See Pages 7-8	See Page 7-8
July 1, 2006 through December 31, 2006				
Total in Pipeline	18	23	41	99
% On or Better than Schedule	89%	100%	95%	-
†New Measure: Reflects Draft Cabinet Strategic Action Plan Measure				

WSDOT's Capital Project Delivery Programs

Fifty-Six Projects Completed as of September 30, 2006

Funded with Nickel and Transportation Partnership (TPA) Accounts, Dollars in Thousands

	% On-Time Advertised	% On-Time Completed	% Within Scope	Current Legislative Expectation (Baseline)	Current Estimated Cost to Complete (WSDOT)	% of Projects On Budget	% of Projects On- Time and Budget
Totals Current Quarter (September 30, 2006)	92%	100%	100%	\$54,380	\$53,349	67%	67%
7 Nickel Projects	100%	100%	100%	\$49,997	\$48,297	86%	86%
5 TPA Projects	80%	100%	100%	\$4,383	\$5,052	40%	40%
Totals Biennium to Date (2005-07)	95%	89%	100%	\$193,470	\$191,751	89%	78%
20 Nickel Projects	95%	90%	100%	\$184,077	\$181,753	95%	85%
17 TPA Projects	94%	88%	100%	\$9,393	\$9,998	82%	71%
Totals Cumulative to Date**	96%	93%	100%	\$312,570	\$310,199	89%	82%
39 Nickel Projects	97%	95%	100%	\$312,045	\$300,201	92%	87%
17 TPA Projects	94%	88%	100%	\$9,393	\$9,998	82%	71%

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

**Based on cost at Operationally Complete milestone; will be updated based on final contract close-out cost, to be reported in future quarters.

†New Measure: Reflects Draft Cabinet Strategic Action Plan Measure

Source: WSDOT Project Control and Reporting Office

Forty-Seven Projects Now in Construction Phase as of September 30, 2006

Nickel Program and Transportation Partnership Account (TPA) Projects, Dollars in Thousands

	On-Time Advertised	Award Amount
Totals current Quarter (September 30, 2006)	100%	\$130
1 Nickel Projects	100%	\$130
0 TPA Projects	100%	\$0
Totals Biennium to Date (2005-07)	86%	\$156,141
25 Nickel Projects	88%	\$137,682
4 TPA Projects	75%	\$18,459
Totals Cumulative to Date (Projects Underway)	89%	\$959,909
42 Nickel Projects	90%	\$737,450
6 TPA Projects	83%	\$222,459

Source: WSDOT Project Control and Reporting Office

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

Forty-One Projects in Delivery Pipeline for October 1, 2006, through March 31, 2007

Nickel and Transportation Partnership Account (TPA) Projects Now Being Advertised for Construction or Planned to be Advertised, Dollars in Thousands

	On Schedule	Current Legislative Expectation (Baseline)	Current Estimated Cost to Complete (WSDOT)
Total (October 1, 2006, through March 31, 2007)	95%	\$820,761	\$845,374
18 Nickel Projects	89%	\$493,295	\$520,801
23 TPA Projects	100%	\$327,466	\$325,573

Source: WSDOT Project Control and Reporting Office

*As established by the 2006 Legislative Evaluation and Accountability Program (LEAP) committee. However, dollars shown are for all fund types, not just Nickel or Transportation Partnership Account funds.

Detailed project narratives are available in the September 30, 2006 *Gray Notebook* on pages 12-21.

Measuring Delay and Congestion: Annual Report

This edition of the *Gray Notebook* published WSDOT’s annual congestion report. Findings from the report include:

Critical Commute Routes: On 34 of the 35 commute routes analyzed, travel times increased at peak periods, speeds slowed, peaks became longer, and reliability of travel times worsened. All of these factors have resulted in reduced productivity of the freeway system, which means the system is less successful at meeting the need of people and freight to move around the region at the peak use hours.

Evening Commutes: Data and analysis indicates evening commutes are generally worse – lasting longer, with lower speeds and less reliable travel times – than morning commutes, possibly because more non-commuting trips are also accessing the highways. Also, peak periods are getting longer. Statewide, total hours of delay have increased but commuters already suffering from congestion have seen even higher increases in delay.

Commute Corridors: For I-5, specifically north from Federal Way and south from Everett, data and analysis indicates generally corridor commuters continue to experience the longest peak period congestion. Meanwhile, in general, more people are using HOV lanes, providing more capacity for use of the general purpose lanes. Usage for all but one HOV lane has gone up.

Measuring Travel Delay

The table below compares average weekday delay between 2003 and 2005 on all state highways, estimated from traffic counts collected on state highways. Statewide delay, relative to posted speed limits and relative to optimal flow speeds, increased by 11% and 21%, respectively. The higher percentage increase relative to optimal flow speeds indicates that many congested highways got even more congested from 2003 to 2005.

WSDOT’s Congestion Measures

Average Peak Travel Time. The average travel time on a route during the peak travel period.

The 95% Reliable Travel Time. An estimated travel time with 95% certainty

Vehicle Throughput. A measure of the number of vehicles that can pass through a roadway segment during a given time period, typically measured for one hour.

Lost Throughput Productivity. Percentage of a highway’s throughput lost due to traffic congestion.

Delay. The average total daily hours of delay per mile based on 85% of the posted speed. When calculating total delay, WSDOT uses annual total vehicle hours of delay.

Severe Congestion. Percent of days below 35 mph.

Before and After Measures. Before and After analysis of performance of selected highway projects (case studies).

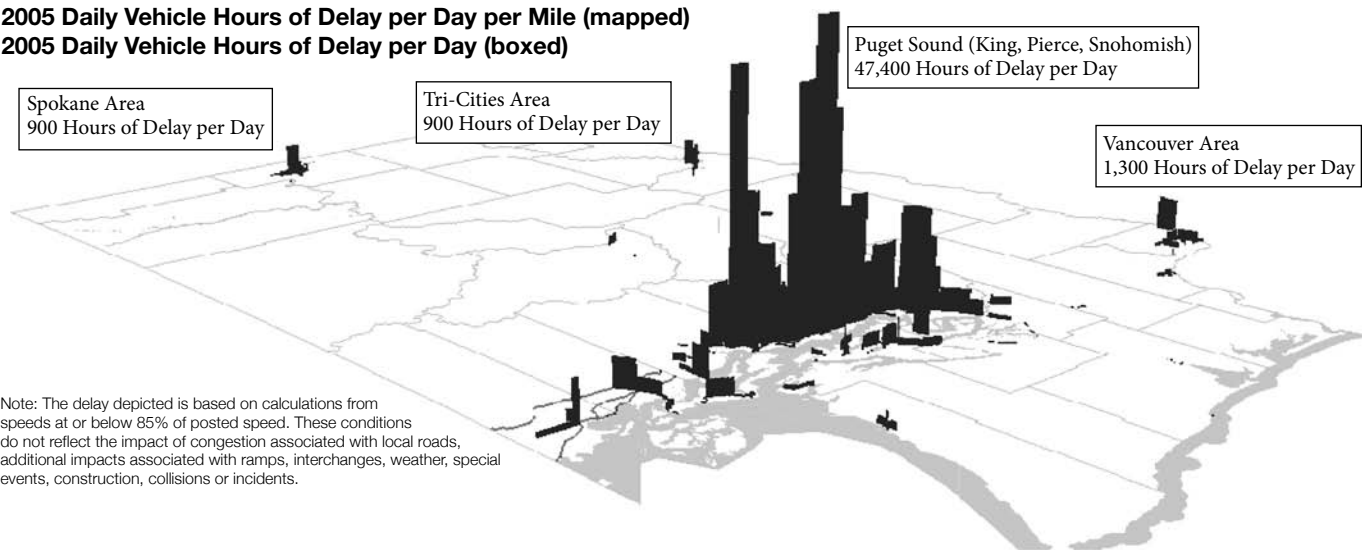
New Measures in This Edition

Duration of Congestion. This period is defined as the period in which average weekday speed on a highway fell below 70% of posted speeds.

Maximum Throughput Travel Time Index (MT³I) Ratio of Peak Travel Time to Maximum Throughput Travel Time.

For the complete congestion report, covering reliability, highway productivity loss, travel delay, HOV lane performance, case studies, safety and congestion, and data gathering on arterials roads, see pp. 54-74 of this edition of the *Gray Notebook*.

2005 Daily Vehicle Hours of Delay per Day per Mile (mapped)
2005 Daily Vehicle Hours of Delay per Day (boxed)



All State Highways: Average Weekday Delay Comparison (Daily and Annual) and Estimated Cost of Delay on State Highways (Annual), 2003 and 2005

Actual Travel Compared to	DAILY Average Vehicle Hours of Delay (Weekdays)			ANNUAL Average Weekday Hours of Vehicle Delay (in thousands)			ANNUAL Cost of Delay on State Highways (in Millions of 2005 dollars)		
	2003	2005	Change	2003	2005	Change	2003	2005	Change
Optimal Flow Speeds (Approx 51 mph)	82,200	99,400	21%	20,550	24,850	21%	\$486	\$598	23%
Posted Speeds	156,300	173,800	11%	39,075	43,450	11%	\$920	\$1,043	13%

Source: WSDOT Urban Planning Office

Ferries: Quarterly Update

This quarter's update of WSDOT's Ferry System performance gives an in-depth look at several performance measures including customer feedback, capital expenditure performance, and ridership and revenues. This quarter, the Ferry System scheduled 43,348 trips. Of these trips, 140 were cancelled, but 39 make-up trips were made. The total completed trips were 43,247. The table at the right shows the system-wide average reliability index. Using the index, for a commuter making 400 trips annually, 1.0 trips may be cancelled during the course of a year.

For more information on Ferry System performance, please see pages 89-92 of this quarter's *Gray Notebook*.

Reliability Index

Average Annual Missed Trips
per Commuter

FY 2001	1.6
FY 2002	2.3
FY 2003	1.7
FY 2004	2.2
FY 2005	1.5
FY 2006	1.6
FY 2006 Qtr 4	1.4
FY 2007 Qtr 1	1.0

Source: WSDOT Ferry System

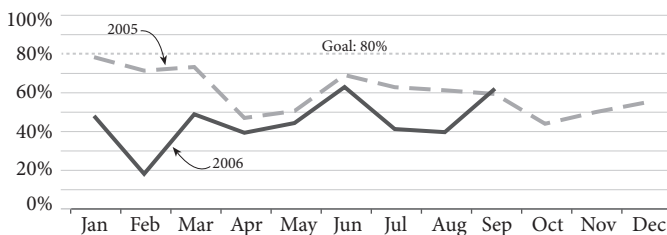
A total of 50 trips for the Port Townsend-Keystone route were cancelled due to weather and/or tides. Excluding trips lost to tidal conditions at Keystone, WSF completed 99.9% of trips and had a reliability index of 0.5, per legislation direction. WSF continues to study alternatives and in harbor options at Keystone.

Rail: Quarterly Update

Ridership on state-supported Amtrak *Cascades* trains was 126,351 in the third quarter of 2006, showing a 4.3% increase in ridership over the third quarter of 2005. The on-time performance for state-supported Amtrak *Cascades* trains averaged 47.6% in the third quarter of 2006. The quarterly average was slightly less than in the preceding quarter, but on-time performance rose to 62% in September, which was the second highest monthly average in 2006 (see graph below).

State Supported Amtrak *Cascades* On-Time Performance

Percent on Time



Source: Amtrak and WSDOT Rail Office.

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

Also included in this edition is an update on Washington's Grain Train program. Use of the grain cars remains strong: carloads for the third quarter of 2006 increased 95% over the third quarter of 2005.

For more information on Amtrak *Cascades* and the Grain Train, please see pages 93-94 of this quarter's *Gray Notebook*.

Maintenance Best Practices

WSDOT's maintenance report this quarter focuses on best practices in roadkill-composting, road closures, and bridge suspender cable painting. The entire report can be found in the *Gray Notebook*. An excerpt focusing on suspender cable painting is included here.

New Money-Saving Suspender Cable Painting Method

WSDOT helped develop an innovative, money and time-saving bridge cable painting method for the Tacoma Narrows Bridge. The normal industry method for removing cable paint is a long, costly, and potentially dangerous process, especially since some of the paint contains lead. The Tacoma Narrows Bridge maintenance crew invented a specialized cable-painting-stripping device, about the size of a five-gallon bucket, which saved \$3.6 million.

WSDOT's New Roadkill-Composting System

Approximately 3,000 deer die each year from motor vehicle collisions on Washington highways (about 13% of all roadkill). WSDOT maintenance managers in the Colville and Goldendale area are using an innovative technique known as carcass composting. This new technique decreases public health and nuisance issues created by the old system of burying carcasses, where odors and scavengers created a nuisance and potential public safety hazard. Carcass composting, which has been used successfully in other states, works very much like a home composting bin. When managed properly, carcass composting bins are not problematic in terms of odors or scavengers. WSDOT will evaluate the operation of these initial carcass compost bins for use in other parts of the state.

For more details on these two innovative practices, please see pages 86-87 of this quarter's *Gray Notebook*.

How to Find Performance Information

The electronic subject index gives readers access to current and archived performance information. This comprehensive index is easy to use and instantly links to every performance measure published to date. Measures are organized alphabetically within program areas. A click on the subject topic and edition number provides a direct link to that page. A copy of the subject index is also provided in the back of each edition.

To access the index electronically, visit: www.wsdot.wa.gov/accountability/graybookindex.htm.

The information presented here is a snapshot of what you'll find in the full version of the *Gray Notebook*. The full version for the quarter ending September 30, 2006 is available on line at: www.wsdot.wa.gov/accountability/graynotebook.pdf.

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