



**Washington State
Department of Transportation**

Measures, Markers and Mileposts

Gray Notebook Lite

for the quarter ending June 30, 2006

Excerpts and highlights from 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 10th edition of relevant highlights and performance topics selected from the *Gray Notebook*. This edition includes excerpts from Highway Safety, Construction Contracts, Transportation Benchmarks, Ferries, and Incident Response, along with a follow up feature on Incident Response Screens.

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

The complete *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: Annual Update

Over the past decade, Washington State has experienced a downward trend in traffic fatalities on highways, city streets, county roads, and other public roadways. Washington experienced a low point in fatalities in 2003 and 2004, with 600 and 567 deaths, respectively. However, preliminary 2005 data shows an increase. In 2005, total fatalities on Washington's roads increased from 567 in 2004 to 649, approximately 14%. Of the 82 additional fatalities, county roads accounted for 32 (39%), state highways accounted for 30 (37%), city streets accounted for 23 (28%); other roadways experienced a decrease of 3 (-4%). WSDOT takes this increase in highway fatalities very seriously and is examining ways to keep the fatality trend continuing downward.

The increase in deaths on public roadways in 2005 is troubling. An initial analysis by WSDOT indicates that impaired driving (alcohol and drug influence), speeding, and failure to wear seatbelts are major contributing factors. In an examination of 2,429 fatal highway collisions from 2000-04, 1,880 (77%) were attributable to at least one of

these three major factors. Frequently, more than one of these factors were involved in serious injury and fatal collisions. In 1,106 (46%) of these highway deaths, two or more of these factors were involved; 390 deaths, or 16%, involved all three of these factors.

To decrease fatality rates, WSDOT is pursuing short-term safety improvements such as cable barriers, guardrails, left-side turn-out pockets, improved lighting, and better pavement markings. WSDOT is also pursuing long-term safety improvements such as widening roadways and adding new lanes, subject to approval by the Legislature. For more information on safety improvements, please see pages 50-53 of this quarter's *Gray Notebook*.

Washington State Traffic Fatalities, 2000-05

2000	2001	2002	2003	2004	2005
631	649	659	600	567	649
					(Preliminary data) ¹

Source: Fatal Accident Reporting System (FARS)

¹Pending verification, WSDOT counts 6 additional deaths in 2005. See gray box on p. 50 of the *Gray Notebook*.

Seatbelt Use in 2005

Not wearing a seatbelt is one of three key factors driving fatality rates in Washington State. Seatbelts increases the chance of surviving a collision by up to 70%. Seatbelt use in Washington increased by 1%, from 94.2% in 2004 to 95.2% in 2005.

Twenty two states, including Washington, have primary enforcement laws: motorists can be stopped solely for not wearing seatbelts. The national average seatbelt use among states with enforcement laws was 85%, with the average among non-primary enforcement states being 75%. For more information about seatbelt use in Washington, please see page 55 of this quarter's *Gray Notebook*.

Percent of Seatbelt Usage

Top Six Ranking States for 2004 and 2005

Rank	State	2005	2004 ¹
1	Hawaii	95.3%	95.1%
2	Washington	95.2%	94.2%
3	Nevada	94.8%	86.6%
4	Arizona	94.2%	95.3%
5	Oregon	93.3%	92.6%
6	Michigan	92.9%	90.5%

Source: Traffic Safety Facts: Research Note, DOT-HS 809 907 and DOT-HS 809 932 (USDOT NHTSA)

¹Not in ranking order, for comparison purposes only.

Roundabouts

From 1997 to 2005, approximately 14 roundabouts were built on the state highway system. Roundabouts cost between one and five million dollars to design and build, and are often considered one of the safest intersection control devices. Their use on the public roadway system is replacing the traditional approach of stop signs and traffic signals.

Based on analysis of nine WSDOT roundabouts, fatal and disabling injuries dropped 80%. In fact, there have been no fatality collisions in these intersections since installation of the roundabouts. Evident injuries dropped an average of 73% at the nine locations. Many of the roundabout intersections in the study have also shown reduced average wait times for drivers at the intersection. For more information on roundabouts, see p. 54 of this edition of the *Gray Notebook*.

Total Collisions in WSDOT Study of Nine Roundabouts by Type of Collision

Before and After Installation of Roundabouts

Type of collision	Collisions Before Installation	Collisions After Installation	Percent Change
Fatal and disabling	5	1 ¹	-80%
Evident injury ²	15	4	-73%

Source: WSDOT Traffic Office

¹This was a disabling collision. There have been no fatality collisions in any of the nine intersections after installation of the roundabouts.

²An evident injury is an injury that is verifiable by the police officer when arriving at the crash location and interviewing occupants of the vehicles (i.e. Lacerations, broken bones, and incapacitation)

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 923 PEF projects is reported by program-matically for six categories of work. By contrast, each of the 145 Nickel and 178 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 June 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)	145	178	323	923
Total Biennial Program (2005-07)	\$1,192,198	\$409,727	1,601,925	\$1,061,010
Schedule, Scope and Budget Summary: Results of Completed Projects				
	See Pages 3-4	See Pages 3-4	See Pages 3-4	NA
Cumulative to Date, 2003 – June 30, 2006				
Total Completed	23	12	35	-
% Completed Early or On-Time	87%	100%	91%	-
% Completed Within Scope	100%	100%	100%	-
% Completed Under or On-Budget	91%	100%	94%	-
Current Legislative Expectation (Baseline)	\$249,158	\$5,009	\$254,167	-
Current Estimated Cost to Complete (WSDOT)	\$249,155	\$5,066	\$254,221	-
Biennium to Date, 2005-07				
Total Completed	10	12	22	190
% Completed Early or On-Time	80%	100%	91%	-
% Completed Within Scope	100%	100%	100%	-
% Completed Under or On-Budget	100%	100%	100%	-
Current Legislative Expectation (Baseline)	\$132,403	\$5,009	\$137,412	\$424,249
Current Estimated Cost to Complete (WSDOT)	\$132,295	\$5,066	\$137,361	\$492,944
Advertisement Record: Results of Projects Entering into the Construction Phase				
	See Pages 5-6	See Pages 5-6	See Pages 5-6	See Pages 23-24
Biennium to Date, 2005-07				
Total Advertised	17	7	24	143
% Advertised Early or On-Time	59%	71%	63%	80%
Total Award Amounts to Date	\$139,160	\$6,714 (1 pending award)	\$145,874 (1 pending award)	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 22 (graph)
July 1, 2006 through December 31, 2006				
Total in Pipeline	9	17	26	73
% On or Better than Schedule	100%	94%	96%	-

WSDOT's Capital Project Delivery Programs

Thirty-Five Projects Completed as of June 30, 2006

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

	On-Time Advertised	On-Time Completed	Within Scope	Current Legisla- tive Expectation (Baseline)	Current Estimated Cost to Complete (WSDOT)	On- Budget**
Total Completed Current Quarter	100%	80%	100%	\$22047	\$22073	100%
1 Nickel Project	100%	0%	100%	\$20,933	\$20,959	100%
4 TPA Projects	100%	100%	100%	\$1,114	\$1,114	100%
Totals Biennium to Date (2005-07)	95%	91%	100%	\$137,412	\$137,361	100%
10 Nickel Projects	90%	80%	100%	\$132,403	\$132,295	100%
12 TPA Projects	100%	100%	100%	\$5,009	\$5,066	100%
Totals Cumulative to Date**	97%	91%	100%	\$254,167	\$254,221	94%
23 Nickel Projects	96%	87%	100%	\$249,158	\$249,155	91%
12 TPA Projects	100%	100%	100%	\$5,009	\$5,066	100%

Source: WSDOT Project Control and Reporting Office

*Based on cost at operationally complete stage; will be updated based on final contract close-out cost, to be reported in future quarters.

**No Transportation Partnership Account projects were complete prior to the 2005-07 biennium, therefore, cumulative to date totals are the same as biennium to date..

Forty Projects Now in Construction Phase as of June 30, 2006

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

	On-Time Advertised	Award Amount
Totals Current Quarter (June 30, 2006)	50%	\$14,878
2 Nickel Project	50%	\$10,051
4 TPA Projects	50%	\$4,827
Totals Biennium to Date (2005-07)	63%	\$145,874
17 Nickel Projects	59%	\$139,160
7 TPA Projects	71%	\$6,714
Totals Cumulative to Date (Projects Underway)	68%	\$849,114
32 Nickel Projects	66%	\$638,401
8 TPA Projects	75%	\$210,714

Twenty Six Projects in Delivery Pipeline for July 1, 2006 through December 31, 2006

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

	On Schedule	Current Legislative Expectations (Baseline)	Current Estimated Cost to Complete (WSDOT)
Total (July 1, 2006 - December 31, 2006)	96%	\$503,550	\$503,435
9 Nickel Projects	100%	\$359,534	\$360,216
17 TPA Projects	94%	\$144,016	\$143,219

Tacoma Narrows Bridge Construction

As of June 30, 2006, design-builder Tacoma Narrows Constructors (TNC) has completed 79.5% of construction on the SR 16 Tacoma Narrows Bridge project. On June 8, the semi-submersible ship the *Swan* arrived in Commencement Bay with the first 16 deck sections from South Korea. After a fit-out to install winches and remove sea fasteners, it anchored under the west side span on June 29. Its sister ship (the *Teal*) will carry the second of three shipments and is scheduled to arrive in July. For more information, see page 26 of the *Gray Notebook*.



The *Swan* arrived with the first shipment of deck sections on June 8, 2006.

Construction Contracts: Annual Update

WSDOT completed 114 highway construction contracts in Fiscal Year 2006. For every completed contract, WSDOT tracks final construction costs compared to the original engineers estimate and the award amount.

WSDOT's goal for final construction costs is to be less than 10% above the award amount. The total final cost of contracts completed in FY 2006 was \$225, 445,739. This exceeds the total award amount of \$201, 782, 248 by 11.7%.

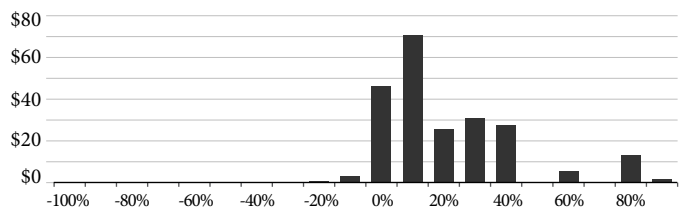
The final cost for 92 contracts (81%) was less than 10% above the award. Twenty-two completed contracts were 10% above the award amount. On average, the final contract costs were 3.4% above the original award amount (see top right graph).

Final Cost Exceeds Estimates by 1%

The final contract costs in FY 2006 totaled \$225,445,739. This exceeds the total engineer estimate of \$223,751,551 by 1% (see bottom right graph). For more information, please see pages 44-46 of this quarter's *Gray Notebook*.

Distribution of Contract Value Over/Under Final Costs to Award Amount

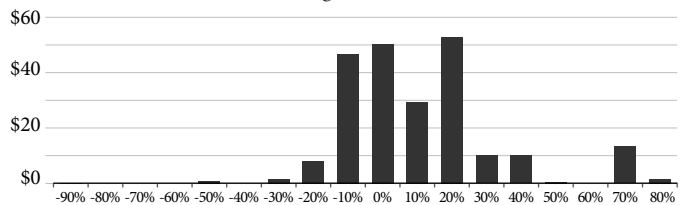
Percent Final Cost Above or Below Award Amount, Dollars in Millions



Source: WSDOT Construction Office

Distribution of Contract Value Over/Under Final Costs to Engineer's Estimate

Percent Final Cost Above or Below Engineer's Estimate, Dollars in Millions



Source: WSDOT Construction Office

Transportation Benchmarks: Annual Update

This update includes the latest results for the transportation benchmarks first introduced two years ago (RCW 47.01.012). These include policy goals in areas of safety, pavement condition, bridge condition, traffic congestion and driver delay, per capita vehicle miles traveled, non-auto share of commute trips, administrative efficiency, and transit cost efficiency. Below is a brief summary of three of the nine benchmarks. For more information, see pages 75-82 of this quarter's *Gray Notebook*.

Per Capital Vehicle Miles Traveled Goal

Washington State citizens traveled 8,869 vehicle miles per person on all roadways, down from 9,026 in 2004, and below the benchmark level of 9,133 miles per person. Since the late 1980s, annual VMT per person in Washington has stayed at roughly 9,000 miles per person. (see graph on top right).

Administrative Efficiency Goal

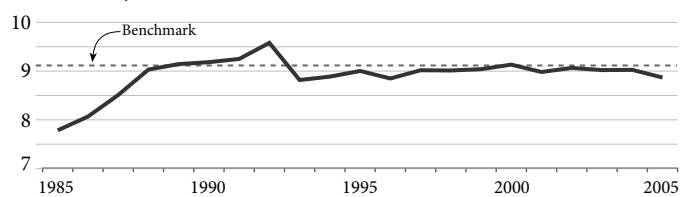
In 2004, WSDOT's administrative cost was 4.8%, putting it at ninth-lowest nationally and inside the first quartile, as required. This is down from 5.9% in 2003 (see graph on bottom right).

Non-Auto Share Commute Trip Goals

Washington's 2004 commute trends, according to the American Community Survey, showed a statistically significant growth in walking as a means of traveling to work from 2000 to 2004, while carpooling, transit, and other means showed a statistically significant

Annual Vehicle Miles Traveled per Capita

In Thousands, 1985 to 2005*

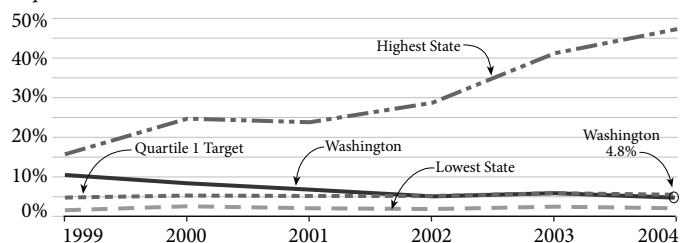


Source: WSDOT Transportation Data Office and Office of Financial Management

* The method for calculating VMT changed in 1993 as more complete data became available. This accounts for the decrease shown in the graph from 1992 to 1993.

WSDOT Administrative Cost Comparison

Percent of Capital Outlay, Maintenance, and Operations Expenditures, 1999-2004



Source: Federal Highway Administration Highway Statistics (FHWA) 2004

cant decrease. The drive-alone share of commuting in 2004 was not significantly different than the share in 2000 (see table below).

Washington State Commuting Patterns – Workers 16 and Over, 2000-2004

	2000	2001	2002	2003	2004	Change from 2000-2004	Statistically Significant?
Total Workers 16 yrs & Older	2,753,377	2,739,113 ¹	2,760,912	2,793,978	2,800,303	1.7%	N/A
Drive Alone	73.8%	74.4%	74.7%	73.8%	75.3%	1.5%	no
Carpool	11.5%	11.5%	11.4%	11.3%	10.3%	-1.2%	yes
Public Transportation	5.1%	5.5%	4.6%	5.0%	4.3%	-0.8%	yes
Walked	2.4%	3.1%	3.0%	3.2%	3.2%	0.8%	yes
Other Means	2.4%	1.8%	1.8%	2.2%	1.7%	-0.7%	yes
Worked at Home	4.8%	3.8%	4.5%	4.6%	5.2%	0.4%	no

Source: U.S. Census Bureau, American Community Survey, 2001 to 2004

Washington 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 42,060 trips. Of these trips, 188 were cancelled, but 43 make-up trips were made. Total completed trips were 41,915. The table at the right shows the system-wide average reliability index. Using the index, for a commuter making 400 trips annually, 1.4 trips may be cancelled during the course of a year. For more information of Ferry System performance, please see pages 68-71 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

Source: WSDOT Ferry System

A total of 81 trips for the Port Townsend-Keystone route were cancelled due to the weather or tides. Excluding trips lost to tidal conditions at Keystone, the Ferry System completed 99.1% of all trips and had a reliability index of 0.4. For FY 2006, the Ferry System performance adjusted for Port Townsend-Keystone was 99.94% trip delivery and a reliability index of 0.2.

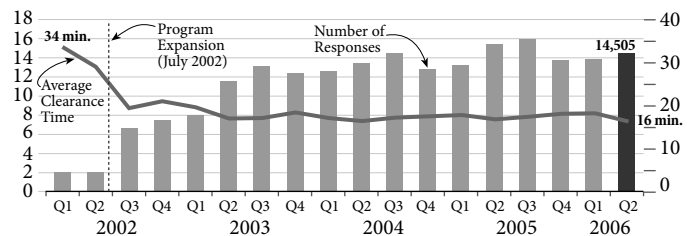
Incident Response: Quarterly Update

In the second quarter of 2006, WSDOT Incident Response (IR) teams responded to 14,505 incidents, an increase of 689 (5%) from the first quarter (13,816). Second quarter data historically follows a seasonal pattern that begins in the summer, when the number of incidents tends to increase. Overall, the increase to responses this quarter was due to non-collision responses. Responses to collisions decreased by 81 from the first quarter of 2006 (1,688 responses in January-March and 1,607 responses in April-June). In the second quarter, the total number of over-90-minute incidents was 204. This is a 16% decrease from 243 responses in the previous quarter. For more information on the Incident Response program, please see pages 56-58 of this quarter's *Gray Notebook*.

Number of Responses and Overall Average Clearance Time

January 2002 - June 2006

Number in Thousands



Source: WSDOT Incident Response Tracking System

Note: Program-wide data is available since January 2002. Prior to Quarter 3 of 2003, the number of responses by IRT are shown. Beginning Quarter 3 of 2003, responses by Registered Tow Truck Operators and WSP Cadets have been reported in the total.

Special Feature: Incident Response Screens

Portable incident response screens are designed to block incidents from the view of traffic and decrease traffic delays. As noted in the December 31, 2005, issue of the *Gray Notebook* (p. 73), WSDOT's Eastern Region planned to test a portable traffic incident response screen system. The pilot test, held on April 27, 2006, indicated that the portable incident screen design had significant operational problems and would not be practical for general deployment. The need to reduce set-up time and improve wind stability are critical design elements to address in order to move this initiative forward. Acceptance by emergency services, WSP, and WSDOT Incident Response staff also presents challenges to using portable screens. WSDOT's conclusion is that this particular prototype cannot be



Portable screen is blown over from wind during April 27, 2006 test.

effectively deployed, and further development of portable incident screens is not planned. For more information, please see page 74 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 June 30, 2006 is available on line at: www.wsdot.wa.gov/accountability/graynotebook.pdf.

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