Washington State
Department of Transportation

Measures, Markers and Mileposts

Gray Notebook Lite

for the quarter ending December 31, 2007

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

This *Gray Notebook Lite* is the sixteenth edition of relevant highlights and performance topics selected from the *Gray Notebook*, WSDOT's quarterly performance report. This quarter's edition of the *Lite* includes annual excerpts from the Pavement Assessment, Highway Safety, Highway Maintenance, and the Environmental Program, along with quarterly excepts from Ferries and Incident Response.

The beige insert contains a quarterly summarized roll-up of WSDOT's Capital Project Delivery Program and a project delivery performance overview for the 2003 Nickel Program and the 2005 Transportation Partnership Account.

The complete edition of the *Gray Notebook* can be found at http://www.wsdot.wa.gov/Accountability/GrayNotebook/default.htm.

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

WSDOT's Capital Project Delivery Programs

Executive Summary: Highway Construction Roll-Up of Performance

Each quarter WSDOT provides a detailed update on the delivery of the highway capital programs through the *Gray Notebook*, and on 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 on the PEF projects is reported programmatically in six categories of work. By contrast, each of the 153 Nickel and 238 TPA projects funded has a line item budget and is monitored and reported at the individual project level. Program budgets for PEF, Nickel, and TPA in this edition of the *Gray Notebook* are based on the 2007 Budget.

Performance Information *As of December 31, 2007, Dollars in Thousands*	**Nickel (2003)**	**Transportation Partnership Account (TPA, 2005)**	**Combined Nickel & TPA**	**Pre-Existing Funds**
Total Cumulative Number of Projects[1]	153	238	391	-
Total Cumulative Program Value[2]	$3,965,112	$8,870,540	$12,835,652	-
Schedule, Scope and Budget Summary: Results of Completed Projects				
Cumulative to Date, 2003 – December 31, 2007	See Pages 5-8	See Pages 5-8	See Pages 5-8	See pages 33-38
Total Number of Projects Completed	89	36	125	-
% of Projects Completed Early or On-Time	90%	94%	91%	-
% of Projects Completed Within Scope	100%	100%	100%	-
% of Projects Completed Under or On-Budget	89%	75%	85%	-
% of Projects Completed On-Time and On-Budget	81%	69%	78%	-
Current Legislative Expectation (Baseline)	$1,213,975	$88,646	$1,302,621	-
Current Estimated Cost to Complete (WSDOT)	$1,210,338	$88,018	$1,298,356	-
% of Total Program On or Under Budget	100.3%	100.7%	100.3%	-
Biennium to Date, 2007-09				
Total Number of Projects Completed	20	13	33	130
% of Projects Completed Early or On-Time	85%	100%	91%	-
% of Projects Completed Within Scope	100%	100%	100%	-
% of Projects Completed Under or On-Budget	90%	85%	88%	-
% of Projects Completed On-Time and On-Budget	80%	85%	82%	-
Current Legislative Expectation (Baseline)	$459,333	$73,727	$533,060	$348.401
Current Estimated Cost to Complete (WSDOT)	$456,302	$73,037	$529,339	$359,769
Advertisement Record: Results of Projects Advertised During 2003-07 and Currently in the Construction Phase				
Cumulative to Date, 2003 - December 31, 2007	See Pages 9-13	See Pages 9-13	See Pages 9-13	See Pages 33-38
Total Number of Projects In Construction Phase	25	32	57	N/A
% of Projects Advertised Early or On-Time	56%	75%	67%	-
Total Award Amounts to Date	$486,661	$557,780	$1,044,441	-
Biennium to Date, 2007-09	See Pages 9-13	See Pages 9-13	See Pages 9-13	See Pages 33-38
Total Number of Projects In Construction Phase	4	15	19	54
% of Projects Advertised Early or On-Time	100%	80%	84%	83%
Total Award Amounts to Date	$9,851	$46,387	$54,865	N/A
Advertisement Schedule for Projects in the Pipeline Results of Projects Now Being Advertised for Construction or Planned to be Advertised				
January 1, 2008 through June 30, 2008	See Pages 14-16	See Pages 14-16	See Pages 14-16	NA
Total Projects Being Advertised for Construction	7	36	43	87
% On Schedule or Early	86%	97%	95%	-

Data Source: WSDOT Project Control and Reporting
[1]The total number of reportable projects with construction phases.
[2]The total number of dollars in the total expenditure plan for all projects, listed by type of funding. These dollars do not necessarily align with the projects counted in the row above.

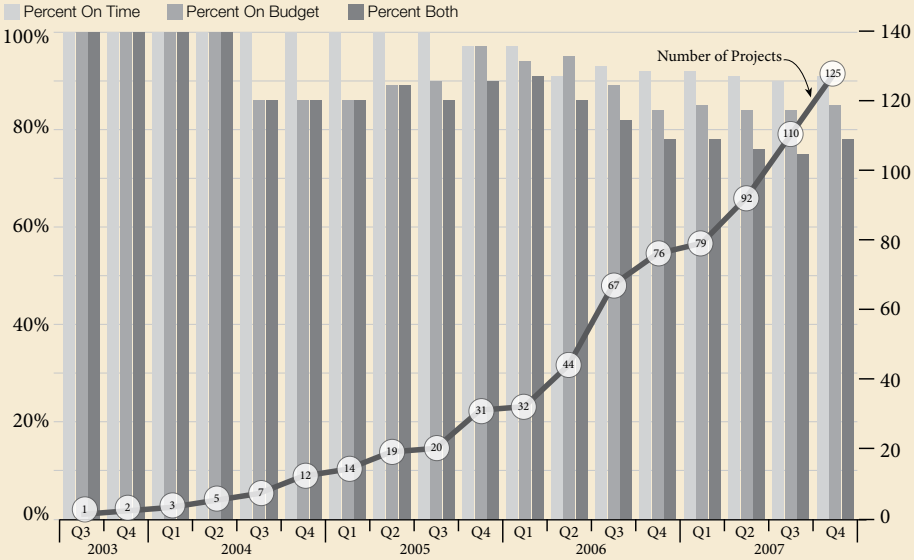
WSDOT'S Capital Project Delivery Programs

Nickel and TPA Project Delivery Performance Overview

Project Delivery Highlights for Nickel and TPA Combined:

- Both Nickel and TPA Programs are 100% on or under their total legislative baseline of $1.303 Billion to date.
- 91% of Nickel and TPA projects combined are early or on-time-- up 1% from last quarter.
- 85% of Nickel and TPA projects combined are under or on-budget-- up 1% from last quarter.
- 78% of Nickel and TPA projects combined were on-time and on-budget-- up 3% from last quarter.

Cumulative Performance of Nickel and TPA Projects



Data Source: WSDOT Project Control and Reporting.

WSDOT has Successfully Delivered 125 Nickel and TPA Projects Under the $1.303 Billion Legislative Budget

Since 2003, WSDOT has delivered a total of 125 Nickel and TPA projects for $1.298 billion – almost $4 million less than the $1.303 billion legislative budget expectation. By March 31, 2008, more than half of the projects funded by the Nickel and TPA accounts will either be under construction or completed.

WSDOT Delivers 15 Nickel and TPA Projects During the 2nd Quarter of FY 2008

WSDOT's capital program delivery performance continues to show improvement in delivering projects on-time and on-budget through the second quarter of FY 2007, as another 15 Nickel and TPA projects were completed. The projects were all completed within scope, and 13 were completed both on-time and on-budget. Nine of the projects completed had budgets that were more than $20 million and, all were completed within budget. In total, the 15 highway projects were completed for $276.3 million, $2.5 million less than the total legislative budget of $278.8 million.

On-Time and On-Budget Performance on Individual Projects Improves

For the 125 highway projects completed through December 31, 2007,

- Cumulative on-time delivery performance is 91%, a 1% improvement from the previous quarter.
- Cumulative on-budget performance is currently 85%, a 1% improvement over the previous two quarters.
- Cumulative on-time and on-budget project delivery performance improved by 3%, from 75% last quarter to 78% this quarter.

57 Nickel and TPA Projects are Either Currently Under Construction or Have Been Advertised for Construction

This quarter, 14 new projects were advertised for construction. Six projects are pending contract awards, and will be reported next quarter. Eight projects have been awarded for a cumulative construction contract total of $41.5 million. Delays in the issuance of permits affected two projects' ability to meet their advertisement dates on-time.

An Additional 43 Projects Totaling $400 Million are Expected to be Advertised Over the Next Six Months

Five significantly sized projects have budgets over $20 million, while another eight have budgets between $10 million and $20 million.

All but two of these projects are on their original schedule. The advertisement date for the widening of SR 900 in the vicinity of SE 78th Street in King County has been delayed to allow time to redesign retaining walls in a potential landslide area. The advertisement date for intersection improvements to SR 902 near the Medical Lake Interchange has also been delayed due to a change in design analysis caused by the rapid development growth and increased traffic in the area.

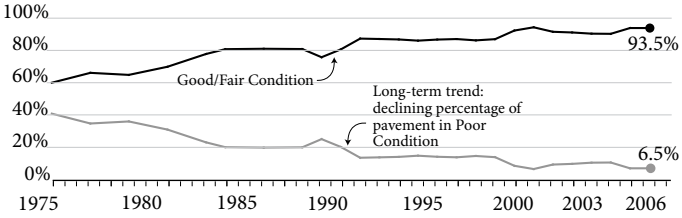
Pavement Assessment Annual Update

WSDOT Accomplishes Cabinet Strategic Action Plan Pavement Condition Goal

The Governor's Cabinet Strategic Action Plan goal for pavement is to maintain 90% of all state highway pavements in good or fair condition. According to this 2006 pavement condition survey, WSDOT again exceeded the goal with the percentage of all pavements in good/fair condition at 93.5%, the same percentage as in 2005. The high percentage of pavements in good or fair condition is the result of past investments, and is not likely to continue due to funding constraints. In 2000, there were 1,068 lane miles (6.1%) of pavements in poor condition, while in 2006 the total in poor condition was 1,162 lane miles (6.5%).

State Highway Pavement Trends

1975-2006



Data Source: WSDOT Materials Lab

For the complete Pavement assessment see pages 53-57 of the December 31, 2007 *Gray Notebook*.

Pavement Type	Total Lane Miles[1]	Annual VMT[3] 2007 (Billions)[2]	Rating	2005	2006	2007-09 Dollars Programmed (Millions)[2]		2009-11 Dollars Programmed (Millions)[2]	
Chip Seal Pavements or Bituminous Surface Treatments (BST) A chip seal or BST is a durable surface that provides six to eight years of performance life at approximately $20,000 per lane-mile.[4]	4,365 (23.7%)	1.2 (3.8%)	Good/Fair	91%	91%				
			Poor	9%	9%	$23.1	9.5%	$35.0	12.6%
Hot Mix Asphalt Pavements Hot mix asphalt pavements surface life, between rehabilitation treatments, ranges from 6 to 18 years (based on actual pavement performance) at approximately $200,000 to $250,000 per lane mile.[4]	11,624 (63.3%)	21.8 (68.6%)	Good/Fair	95%	94%				
			Poor	5%	6%	$172.3	70.7%	$218.5	78.7%
Portland Cement Concrete (PCC) Pavements WSDOT has experienced Portland Cement Concrete pavement life ranging from 25 to 45 years with an approximate cost of $600,000 per lane mile for dowel bar retrofit and $2.5 million per lane mile for full replacement.[4]	2,384 (13.0%)	8.8 (27.7%)	Good/Fair	91%	93%				
			Poor	9%	7%	$48.4	19.8%	$24.3	8.7%
			Good/Fair	16,617 (93.5%)	16,474 (93.5%)				
Total	18,373	31.8	Poor	1,162 (6.5%)	1,152 (6.5%)	$243.8		$252.5	

[1]Data Source: State Highway Log Planning Report 2005- includes all lane miles
[2]Data Source: Transportation Data Office - excludes ramps, collector - distributors or frontage roads
[3]Vehicle Miles Traveled: A measure of the amount of vehicular travel. One vehicle traveling one mile = 1 VMT
[4]These numbers are approximations and do not include other improvements that may be planned for roadway sections, such as safety enhancements: They cannot be used for budgeting specific projects.

Highway Maintenance: Annual Update

WSDOT Achieves 17 of 32 Maintenance Activity Targets

The Maintenance Accountability Process (MAP) measures the Level of Service (LOS) provided in 32 highway maintenance activities. During 2007, 17 of the 32 MAP activity targets were achieved; a 53% achievement rate. This is a continuation of a downward trend over the past few years, as inventories and the cost of doing business increase, while funding levels remain steady. In 2007, WSDOT introduced a new MAP scoring method. Using the previous method, WSDOT would have missed five fewer targets in its 2007 assessment for a total of 10. For more information on the new scoring method, please see the gray box on page 74.

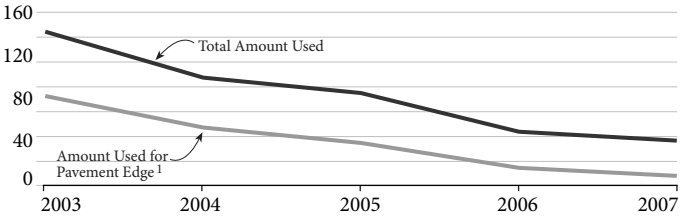
Herbicide Use Decreases by 20% in 2007

The primary measurement for WSDOT herbicide use is pounds of active ingredient. Herbicide use along state highways has decreased for the fourth straight year since 2003. In 2007, the agency's statewide herbicide use for roadside maintenance decreased by 20% from 2006. The majority of this reduction continues to come from the decreased reliance on annual spraying of a vegetation-free strip along the edge of pavement throughout the state. Prior to 2004, when this shift in practice began, the maintenance of a vegetation-free strip along the edge of pavement accounted for over 60% of all herbicide use. Herbicide use for maintenance of vegetation at the pavement edge between 2003 and 2007 has decreased by 86%. Overall, herbicide use during this same period is down by 70%.

For more information on the Maintenance Accountability Process, as well as the Integrated Vegetation Management Program, see pages 74-76 in the December 31, 2007 *Gray Notebook*

WSDOT Herbicide Use Trends 2003-2007

Pounds of Active Ingredients (In Thousands)



Source: WSDOT Maintenance Office

[1] Included in "Total Amount Used" line

Environmental Programs: Annual Update

Environmental Management Systems

WSDOT's Environmental Management Systems are integrated into everyday operations such as construction, maintenance, and ferry system activities. There are seven core EMS activities that WSDOT is working to have substantially in place. As of December 31, 2007, six of the seven elements are fully developed and implemented, while the seventh is being improved.

Erosion Control Preparedness

WSDOT works to prevent erosion at active construction sites by developing on-site plans (Temporary Erosion Sediment Control/ TESC) that manage activities and prepare for future rain. Annually, WSDOT surveys sites with plans to evaluate their effectiveness across thirteen different assessment measures. Every category (13 total) in 2007 received a score of 80% compliance or higher, earning at least a "good" rating. This is an improvement over 2006, when only six of the 13 measures scored 80% or higher.

Construction Site Water Quality

WSDOT is required to sample waters at construction sites to determine its compliance with in-stream water quality permit requirements. During construction, WSDOT inspectors collect stream samples from sites where compliance with state standards is thought to be most challenging. In 2007, WSDOT met water quality standards in 87% of the in-stream samples collected (73 out of 84). The majority of non-compliance events occurred during stream diversions and re-introduction of streams into channels.

WSDOT Had 25% More Non-Compliance Events Reported In 2007 Than In 2006

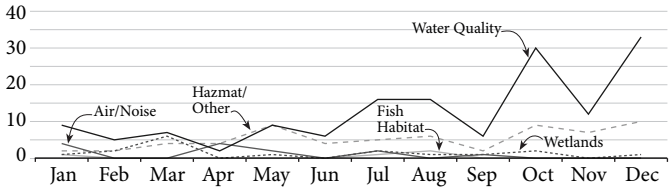
As part of its Environmental Management System efforts, WSDOT tracks its compliance with environmental requirements for construction, maintenance, and ferry activities.

In 2007, WSDOT had 25% more non-compliance events reported than in 2006. WSDOT saw moderate changes in the distribution of non-compliance events associated with water quality, tubidity, or sediment issues (down 21%) and hazardous material (up 16%). The remaining areas, wetlands and fish habitat, changed very little (up 2% and down 3% respectively). Of the hazardous materials events, 1% involved water contact and the remaining 99% involved soil or pavement contact that was cleaned according to WSDOT specifications.

For more detail on these and other annual environmental program topics, see pages 63-73 of the December 31, 2007 *Gray Notebook*.

2007 Non-Compliance Events

By Type of Event and Month of Occurance



Data Source: WSDOT Environmental Services

Highway Safety: Annual Update

Forty-Nine Before and After Projects Result in a 19% Reduction in all Injury and Fatal Collisions

Analysis shows that implementing these 49 projects have reduced all injury/fatal incidents by 19% (97 collisions) and fatal/serious injury collisions by 14% (5 collisions). There were 26 fatal and serious injury collisions in the After period versus 31 in the Before period. Although the reduction figure for the "All Types" category is low, and the "Property Damage Only" category experienced an increase, the reduction in injury and fatal collisions, and more specifically the serious and fatal collisions, are in the 14% to 19% reduction range.

Before and After Results for All 49 Safety Projects

Collisions Per Year For All Projects

	All Types	Property Damage Only	All Injury/ Fatal	Serious Injury/ Fatal
Before Period	1190.8	687.2	503.7	30.5
After Period	1117.5	710.5	407.0	26.3
Percent Change	-6.2%	3.4%	-19.2%	-13.7%

Source: WSDOT Transportation Data Office

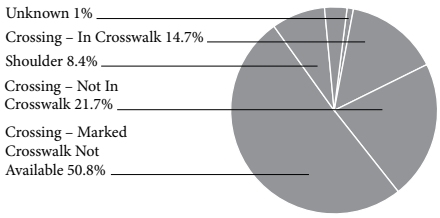
70% of Pedestrian Fatalities Occur in Urban Areas

Between 1999 and 2006, over 70% of these pedestrian fatalities occurred in urban areas, with approximately 38% of these on state highways or federal highways under state control. Close to 66% of crashes involving pedestrians occurred on city streets, and 74% of these crashes occurred on state routes within larger cities. These rates are consistent with national trends.

Of the fatal pedestrian involved traffic crashes that occurred at intersections between 1999 and 2006, half occurred at locations where no crosswalk was available. Only about 15% of all pedestrian collisions occurred in marked crosswalks.

For the complete Highway Safety Report, see pages 58-62 of the December 31, 2007 *Gray Notebook*.

Pedestrian Incident Locations at Intersections, 1999-2006



Data Source: WSDOT Highways and Local Programs

Washington State Ferries: Quarterly Update

On-Time Performance Improves 13% Over Previous Quarter

Washington State Ferries' quarterly on-time performance rating improved 13% over the previous quarter, with 94% of recorded trips being on-time. Last quarter, WSF achieved a 83% overall on-time performance average. WSF calculates its on-time performance rating using an automated tracking system on each of its terminals to determine when a vessel leaves the dock. If a vessel is recorded as leaving the dock within 10 minutes of the scheduled departure time, the trip is then 'on-time'. WSF on-time performance rating is calculated based on the number of recorded trips from its automated tracking system.

Sailing Delay Time Improves 46% over Previous Quarter

During the quarter Washington State Ferries reduced the average sailing delay time from 5.7 minutes to 3.1 minutes, an improvement in the average delay time of 2.6 minutes over the previous quarter. The average sailing delay is the duration between the 10 minute on-time "window" and when a vessel is detected as leaving its terminal. This performance improvement is a reduction of 46% in the average delay on sailings throughout the ferry system.

For more information on WSF performance, see pages 81-84 of the December 31, 2007 *Gray Notebook*.

On-Time Performance Comparison on Select Routes

	Second Quarter, Fiscal Year 2007			Second Quarter, Fiscal Year 2008		
Route	Number of Actual Trips[1]	Percent of Trips Within 10 Minutes of Schedule[2]	Average Delay from Scheduled Sailing Time (Minutes)	Number of Actual Trips[1]	Percent of Trips Within 10 Minutes of Schedule	Average Delay from Scheduled Sailing Time (Minutes)
Edmonds-Kingston	4,530	93%	3.7	4,264	94%	3.3
Keystone-Port Townsend	1,804	85%	5.4	1,068	88%	5.0
Mukilteo-Clinton	6,501	98%	2.4	6,453	99%	2.1
Pt. Defiance-Tahlequah	3,048	96%	3.2	2,909	95%	3.6
Seattle-Bainbridge Island	4,092	96%	2.3	3,898	96%	1.9
Seattle-Bremerton	1,095	97%	3.3	2,405	96%	3.1

Data Source: WSDOT Ferry System
[1]Number of Actual Trips represents trips detected by the Automated Tracking System. It does not count all completed trips during the quarter, nor are all trips counted as 'On-Time'.
[2]These percentages were rounded to the nearest whole percentage number, and may be different from the percentages reported in the December 31, 2006 *Gray Notebook*, which showed tenths of a percentage point

Incident Response: Quarterly Update

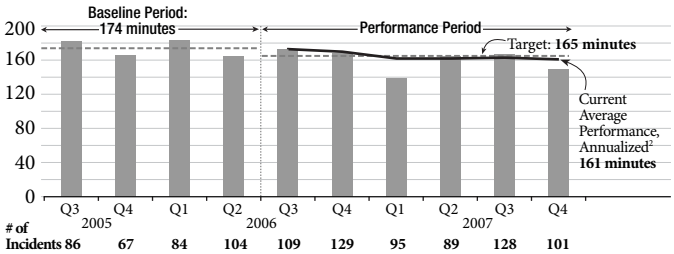
WSDOT and WSP Meet Governor's Goal to Reduce the Duration of Incidents Lasting 90 Minutes or Longer

WSDOT and the Washington State Patrol (WSP) reduced the average duration of over-90-minute incidents on nine key highway segments by 7%, surpassing the Governor's 5% goal. In the baseline period, between July 1, 2005 and June 30, 2006, the average duration of these incidents was 174 minutes; between July 1, 2006 and December 31, 2007, the average duration was reduced to 161 minutes.

This particular measure tracks the duration of the time between detection of the incident and all lanes open for traffic. The incident clearance time is calculated based on when all response vehicles have left the scene of the incident, but currently this data is not available for all incidents.

Cabinet Strategic Plan Goal: Reducing the Average Time for Incidents Lasting 90 Minutes or Longer on Nine Key Highway Segments[1]

In Minutes



Data Source: WSDOT Traffic Office and WSP
Baseline Data Source: 2005--WSDOT Incident Response Tracking System; 2006--WSP-Computer Aided Dispatch System
[1]*Selected Key Highway Segments*--I-5 (Oregon to Canadian Border), I-90 to North Bend, I-405, SR 18 to I-90, SR 16 to Purdy, SR 167, SR 520, SR 512, and I-205
Clearance Time (for this measure only) is the time between first recordable awareness of an incident and all lanes open
[2]Current Average Performance, annualized is the average quarterly duration of incidents lasting over 90 minutes for the performance tracking period for this measure

For more information on the Incident Response Quarterly Update see pages 77-79 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: http://www.wsdot.wa.gov/Accountability/GrayNotebook/SubjectIndex.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 December 31, 2007 is available on line at: http://www.wsdot.wa.gov/Accountability/GrayNotebook/default.htm

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