



Washington State  
Department of Transportation

# The Gray Notebook

# Lite

Excerpts from WSDOT's  
quarterly performance report  
on transportation systems,  
programs and department  
management

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## GNB 32 Excerpts

Quarter ending  
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This *Gray Notebook Lite* provides highlights and performance topics selected from the *Gray Notebook*, WSDOT's quarterly performance report. This quarter's edition of the Lite includes excerpts from the Highway Pavement Conditions Annual Report, Highway Safety Annual Report, the Maintenance Accountability Program Annual Report, as well as selected environmental program annual reports.

The Beige-page insert contains a 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 electronic copy of the *Gray Notebook Lite* as well as the complete edition of the *Gray Notebook* can be found at <http://www.wsdot.wa.gov/Accountability/GrayNotebook/default.htm>

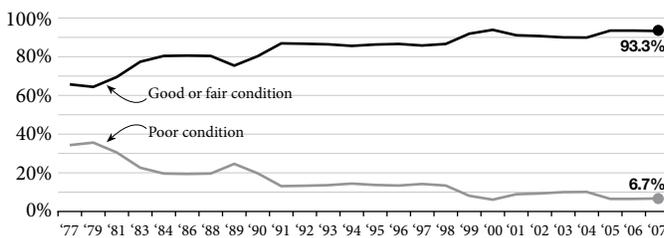
## Pavement Assessment Annual Report

### Pavement conditions see slight decline in 2007

According to the 2007 pavement condition survey, road conditions continued to be good in Washington State. More than 93% of state-owned roads were rated as fair or better. The percentage of all state pavements in poor condition increased slightly to 6.7% in 2007, compared to 6.5% in 2006. In 2000, there were 1,068 lane miles (6.1%) of pavements in poor condition, while in 2007 the total was 1,162 lane miles. (pp. 12-15)

### State highway pavement trends, 1977-2007

All pavement types; 1977-2007



Data Source: WSDOT Materials Lab.

### Pavement conditions and funding programmed by pavement type (pre-stimulus)

Pavement Type	Total lane miles <sup>1</sup>	Annual VMT <sup>3</sup> 2007 (Billions) <sup>2</sup>	Rating		2007-09 dollars programmed (Millions) <sup>4</sup>		2009-11 dollars programmed (Millions) <sup>4</sup>		
			2006	2007					
<b>Chip Seal Pavements or Bituminous Surface Treatments (BST)</b> A chip seal is a durable surface that provides six to eight years of performance life at an initial cost of approximately \$25,000 - \$50,000 per lane-mile. <sup>4</sup>	4,434 (24%)	1.2 (3.9%)	Good/Fair	91%	92%				
			Poor	9%	8%	\$47.6	18.9%	\$53.9	22.1%
<b>Hot Mix Asphalt Pavements</b> The life of an asphalt pavement surface is typically 10 to 16 years, depending on climate and traffic factors. Initial construction cost is approximately \$200,000 per lane-mile. <sup>4</sup>	11,558 (63%)	21.9 (68.4%)	Good/Fair	94%	94%				
			Poor	6%	6%	\$166.2	65.9%	\$158.9	65.2%
<b>Portland Cement Concrete (PCC) Pavements</b> New concrete pavements are designed for a life of 50 years at an initial cost of \$2.5 million per lane-mile. Dowel bar retrofit is a concrete pavement rehabilitation that has an initial construction cost of approximately \$600,000 per lane-mile. <sup>4</sup>	2,416 (13%)	8.9 (27.8%)	Good/Fair	93%	93%				
			Poor	7%	7%	\$38.2	15.2%	\$30.8	12.7%
<b>Total</b>	18,424	32.0	Good/Fair	93.5%	93.3%	\$252.0		\$243.6	
			Poor	6.5%	6.7%				

<sup>1</sup>Data Source: State Highway Log Planning Report 2005- includes all lane miles.

<sup>2</sup>Data Source: Transportation Data Office - excludes ramps, collector - distributors or frontage roads.

<sup>3</sup>Vehicle Miles Traveled: A measure of the amount of vehicular travel. One vehicle traveling one mile = 1 VMT.

<sup>4</sup>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. These costs do not reflect the total Life Cycle Costs of a pavement structure.

## Highway Maintenance Annual Report

### Half of highway maintenance activity targets achieved in 2008

Sixteen of the 32 Maintenance Accountability Process (MAP) targets (50%), were achieved in 2008, continuing a downward trend due to increased inventories of highway features and reduced buying power resulting from inflation. Seventeen (53%) of the targets were achieved in 2007.

### Infrastructure additions continue to increase maintenance needs as inflation erodes spending power

The 2003 Nickel Package and the 2005 Transportation Partnership Account (TPA) provided funding for 391 construction projects over multiple years. As of December 31, 2008, 185 of these projects have been completed, along with many projects funded with pre-existing funds, increasing the number of infrastructure components requiring maintenance, for example:

- 219 lane miles (99 mainline and 120 ramp), requiring striping each year, along with snow plowing, de-icing, pavement markings, pavement patching, and crack sealing as needed.
- 616 Intelligent Transportation Systems, requiring between two and 12 preventive maintenance tasks each year, depending on the type of ITS component.

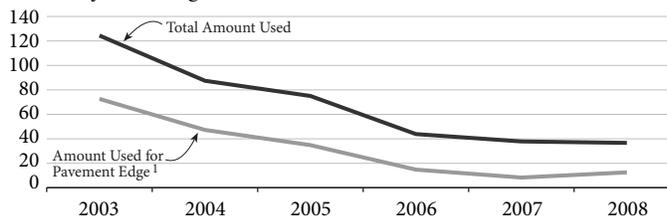
Coupled with the increase in inventories is the sharp rise in material costs. The price for materials needed to maintain highway systems continues to climb, reducing buying power.

### Integrated Vegetation Management program helps to reduce WSDOT's annual herbicide usage

The primary measurement for WSDOT herbicide use is pounds of active ingredient. Herbicide use along state highways has decreased each year since 2003. Overall, there has been a 70% decrease in pounds of active ingredient over the past four seasons. Use of a vegetation-free strip at the edge of the pavement accounts for the largest portion of this reduction. (pp. 17-20)

### WSDOT herbicide use trends, 2003-2008

Pounds of Active Ingredients (In Thousands)



Data Source: WSDOT Maintenance Office.

<sup>1</sup>Included in "Total Amount Used" trendline.

Data Note: This same graph in the December 31, 2007, Gray Notebook showed the "Total amount used" in 2007 as approximately 36,718 pounds of active ingredients. The correct amount was actually 36,862 pounds and is reflected in the graph above.

## Highway Construction: Nickel and TPA Project Delivery Performance Overview

### WSDOT has successfully delivered 185 Nickel and TPA projects on target with the \$1.937 billion Legislative budget

Since 2003, WSDOT has delivered a total of 185 Nickel and Transportation Partnership Account (TPA) projects for \$1.937 billion, on target with the Legislative budget expectation.

#### Gray Notebook may report on stimulus funding

Progress on these construction packages is reported on quarterly in the 'Beige Pages' of the Stewardship section of the *Gray Notebook*. WSDOT is ready and committed to apply the same high Nickel and TPA accountability and reporting standards to any potential federal transportation stimulus funding. Future *Gray Notebook* beige pages may be expanded to accommodate these goals.

#### WSDOT delivers 16 projects during the second quarter of FY 2009

During the second quarter of FY 2009, four Nickel and 12 TPA projects were completed. WSDOT delivered 81% of these projects on-time and on-budget.

#### On-time and on-budget performance on individual projects remains steady

For the 185 highway projects completed through December 31, 2008, changes from the previous quarter are:

- On-time delivery performance improved slightly to 90%;
- On-budget performance improved slightly to 88%;
- On-time and on-budget project delivery performance also improved slightly to 79%.

#### 60 Nickel and TPA projects under construction or advertised for construction

This quarter, 18 new projects were advertised for construction. Four projects were advertised earlier than scheduled, two projects were advertised late, and the rest were on time. Six projects are pending contract award, but the remaining projects have been awarded for a cumulative construction contract total of \$1.3 million.

#### 34 projects totaling an estimated \$1.64 billion at completion are scheduled to advertise by June 30, 2009

Five significantly sized projects have budgets of \$20 million or more, while another five have budgets between \$10 and \$20 million. All but seven are on their original schedule, and one has been advanced to advertise earlier.

#### Project information in Schedule, Scope & Budget tables

The beige pages report the agency's project delivery performance against the most recent Legislative baseline (currently the 2008 supplemental budget). The *Gray Notebook* also includes the amount originally appropriated in the 2003 Nickel and 2005 TPA funding packages.

WSDOT also notes (with a check mark or an asterisk in the Schedule, Scope, & Budget tables) the delivery of project scope against the scope described in the original budget. The *Gray Notebook* reports "on scope" as compared to last Legislative expectations.

### Project Delivery Highlights for Nickel and TPA:

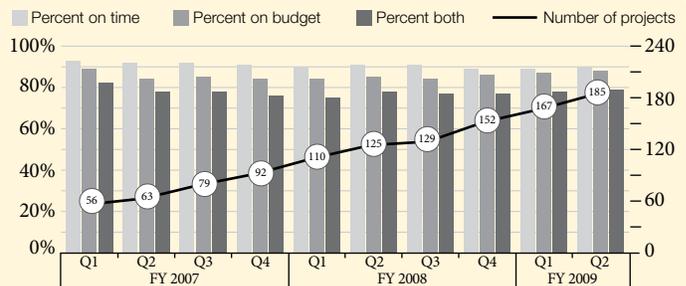
Both Nickel and TPA programs are 100% on or under their total legislative baseline of \$1.937 billion to date.

90% of the 185 Nickel and TPA projects completed to date were delivered early or on time.

88% of the 185 Nickel and TPA projects completed to date were delivered under or on budget.

79% of Nickel and TPA projects combined were delivered both on-time and on-budget.

**Cumulative performance of Nickel and TPA projects As of December 31, 2008**



Data Source: WSDOT Project Control and Reporting.

## Highway Construction Performance Dashboard

Each quarter, WSDOT provides a detailed update on the delivery of the highway capital programs in the *Gray Notebook* and on the web (at [www.wsdot.wa.gov](http://www.wsdot.wa.gov)) through the Project Pages and Quarterly Project Reports. The *Gray Notebook's* Beige Pages generally do not include planning studies or projects that do not have a construction phase. PEF projects are budgeted by program for the improvement and preservation of the highway

system, and the delivery of the work is reported programmatically in six categories.

Each of the 153 Nickel and 238 TPA projects has a line item budget, and are reported at an individual project level. Budgets for PEF, Nickel, and TPA in this edition of the *Gray Notebook* are based on the 2008 Supplemental Budget.

<b>Highway construction performance dashboard</b>				
<i>Dollars in thousands</i>				
	<b>Nickel (2003)</b>	<b>TPA (2005)</b>	<b>Combined Nickel &amp; TPA</b>	<b>Pre-Existing Funds (PEF)</b>
<b>Total number of projects</b>	153	238	391	752
<b>Total program budget *</b>	\$3,946,466	\$9,415,872	\$13,362,338	\$4,285,911
<b>Schedule, Scope, and Budget Summary:</b> Results of completed projects				
Cumulative to date, 2003 – December 31, 2008				
	For Nickel and TPA details, see pages 51-57		See pages 93-96	
<b>Total cumulative number of projects completed</b>	<b>108</b>	<b>77</b>	<b>185</b>	
% Completed early or on time	89%	91%	90%	
% Completed within scope	100%	100%	100%	
% Completed under or on budget	91%	83%	88%	
% Completed on time and on budget	82%	74%	79%	
Baseline estimated cost at completion	\$1,699,976	\$244,043	\$1,944,019	
<b>Current estimated cost at completion</b>	<b>\$1,700,034</b>	<b>\$237,328</b>	<b>\$1,937,362</b>	
% of total program over or under budget	0.0% over	2.8% under	0.3% under	
Biennium to date, 2007-09				
<b>Total biennium number of projects completed</b>	<b>39</b>	<b>54</b>	<b>93</b>	<b>281</b>
% Completed early or on time	85%	91%	88%	-
% Completed within scope	100%	100%	100%	-
% Completed under or on budget	90%	87%	88%	-
% Completed on time and on budget	79%	78%	78%	-
Baseline estimated cost at completion	\$946,073	\$229,124	\$1,175,197	\$1,568,364
<b>Current estimated cost at completion</b>	<b>\$945,376</b>	<b>\$222,614</b>	<b>\$1,167,990</b>	<b>\$1,576,622</b>
<b>Advertisement Record:</b> Results of projects entering into the construction phase or under construction				
Cumulative to date, 2003 – December 31, 2008				
	For Nickel and TPA details, see pages 59-62		See pages 93-96	
<b>Total number of projects in construction phase</b>	<b>18</b>	<b>42</b>	<b>60</b>	<b>N/A</b>
% Advertised early or on time	83%	90%	88%	-
Total award amounts to date	\$577,298	\$724,059	\$1,301,357	-
<b>Biennium to date, 2007-09</b>				
Total advertised	12	33	45	164
% Advertised early or on time	92%	91%	91%	95%
Total award amounts to date	\$308,737	\$273,907	\$582,644	N/A
<b>Advertisement Schedule for projects in the pipeline:</b> Results of projects now being advertised for construction or planned to be advertised				
January 1, 2009 through June 30, 2009				
	For Nickel and TPA details, see pages 63-65		See pages 96-97	
<b>Total projects being advertised for construction bids</b>	<b>3</b>	<b>31</b>	<b>34</b>	<b>82</b>
% on or better than schedule	100%	68%	71%	-

Data Source: WSDOT Project Control & Reporting. \* per 2005-2007 Transportation Budget, Section 603.

## Highway Safety

### Forty-seven safety projects reduced the number of serious injury and fatal collisions by 20%

Implementing these 47 projects reduced fatal and serious injury collisions by 20% (15 collisions): 59 fatal and serious injury collisions in the After period compared to 74 in the Before period. Although the “all types” and “property damage only” categories increased, injury and fatal collisions, and more specifically the serious injury and fatal collisions, decreased. These 47 projects recorded a 3% increase (76 collisions) for all types of collisions (2,331 compared to 2,225), and an 11% increase (152 collisions) in property-damage-only collisions (711 from 687). The same 47 projects showed a 9% reduction (76 collisions) in all injury/fatal collisions (896 compared to 820).

### Highlights from the most recent Before & After study SR 20 & Oak Harbor NCL to Frostad Road (Island)

By improving an intersection where, for the three years before construction, an average of 39.3 collisions took place annually,

### Before and After safety results for 47 highway safety projects

Collisions per year for all projects: 24-36 months before and after construction

	All types	Property damage only	All injury/fatality	Serious injury/fatality
Before period	2254.7	1359	895.7	73.7
After period	2331.0	1511.3	819.7	58.7
Percent change	3.4%	11.2%	-8.5%	-20.4%

Source: Transportation Data Office.

WSDOT achieved a 20% reduction in the number of collisions, to 31.5, while injury collisions decreased by 28%.

### SR 14 & 32nd Street – Intersection improvements (Clark)

This cost-effective project improved an intersection that had previously averaged eight collisions a year, nearly 30% of which were at-angle crashes linked to five of the six injury collisions. Post-construction, total collisions were reduced by 33%, injury collisions by almost 43%, and at-angle collisions by more than 70%. (pp. 5)

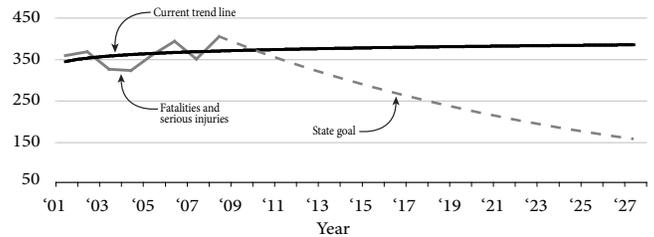
## Pedestrian & Bicyclist Safety

WSDOT is committed to improving conditions for biking and walking and has set an aggressive target to reduce serious injuries and fatalities statewide. However, the number of serious injuries and fatalities for pedestrians and cyclists has not declined significantly, averaging 358 between 2001 and 2008. Washington’s rankings among other states improved for pedestrian safety, from 15<sup>th</sup> in 2006 to 13<sup>th</sup> in 2007, and declined for bicycle safety. WSDOT and partners at the state, regional, and local levels have set a goal of reducing the number of bicyclists killed or injured in traffic crashes by 5% each year while doubling the percentage of trips made by bicycle over the next 20 years. Washington was recognized by the League of American Bicyclists as the nation’s number one “Bicycle Friendly State” in 2008. Beyond looking at collision rates, LAB evaluates states on how they encourage cycling via legislation, policies, education, planning, and places to ride. The

### Average annual fatal & injury traffic collisions

#### Involving bicyclists and pedestrians

2001 actual collisions to 2027 goal,  
For all state and city-owned highways and streets



Data Source: WSDOT Project Control & Reporting Office.

2008-2027 Washington State Bicycle Facilities and Pedestrian Walkways Plan will help identify needs (\$1.6 billion in state and local projects) that would improve bicycle and pedestrian safety and mobility across the state. (pp. 8-9)

## Mobility

### Incident Response Quarterly Update

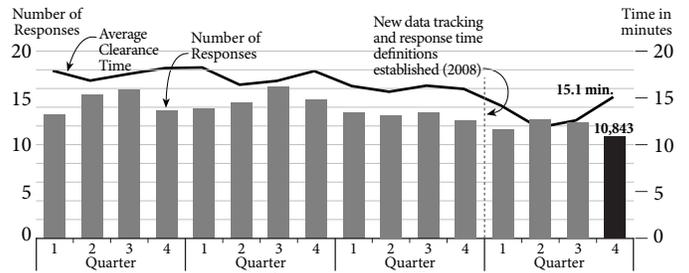
#### Statewide average clearance time increased due to winter weather

In Quarter 4, 2008, the average clearance time for all incidents was 15.1 minutes. This is up 19.8% (2.5 minutes) from last quarter’s average clearance time of 12.6 minutes, and up 10.2% (1.4 minutes) from the 13.7 minute average clearance time in the same quarter of 2007. The Quarter 4, 2008 clearance time was impacted by unusually high clearance times in December, when major snowstorms hit Washington State. In addition to causing conditions that provide potential for more incidents, the storms also hindered quick clearance when responders, emergency personnel, and tow trucks were overwhelmed by the number of incidents on the roadways. The resulting congestion affected responders’ ability to quickly reach the scene of incidents. (pp.30-32)

### Number of responses and overall average clearance time

January 2005 - December 2008

Number in thousands, clearance time in minutes



Data Source: Washington Incident Response Tracking System, WSDOT Traffic Office.

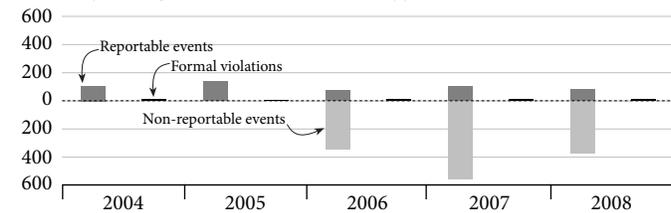
Note: Program-wide data is available since January 2002. Prior to Q3 of 2003, the number of responses by the IR program are shown. From Q3 2003 to Q2 2007, responses by Registered Tow Truck Operators and WSP Cadets have been reported in the total. From Q1 2002 to Q4 2007, Average Clearance Time do not include “Unable-to-Locate” (UTL) responses into calculation. Average number of responses does include UTLs, because this represents work performed on behalf of the Incident Response Program. In Q1 2008, WSDOT’s Incident Response Program moved to a new database system and began calculating average clearance time in a different way. This accounts for the apparent decrease in the average clearance time value.

## Environmental Compliance

WSDOT tracks its compliance with environmental requirements for construction, maintenance, and ferry activities. In 2008, WSDOT had a 10% decrease in the number of reportable, non-compliance events. Most of these non-compliance events are addressed through on-site remedies, and very few rise to the level of a formal violation. There were 11 formal violations received in 2008, none with financial penalties. WSDOT also tracks its performance with internal measures (non-reportable events), and reduced the amount of internally-tracked events by 33% in 2008. (pp.38-39)

## WSDOT's environmental compliance events, 2004-2008

Number of non-reportable events vs. number of formal violations received<sup>1</sup>



Data Source: WSDOT Environmental Services Office.

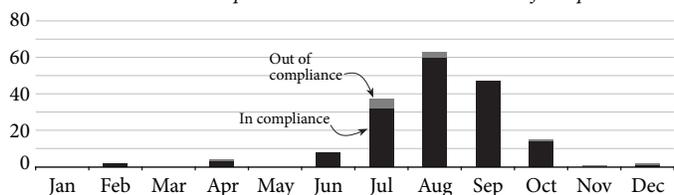
<sup>1</sup> Ultimate goal is zero reportable events and formal violations, however, the nature and scale of work WSDOT performs makes this difficult. Interim goal is an annual reduction in overall number and severity of reportable events and formal violations.

## Construction Site Water Quality

Water quality issues are a major priority for WSDOT. All of the formal violations received for environmental compliance in 2008 were for water quality issues. WSDOT takes samples of water for both in-water work (for active construction sites) and for adjacent water sources near infrastructure that is either constructed or under construction. For in-water work, WSDOT recorded a 93% compliance rate for state water quality standards for permitted construction activities. For activities that may affect nearby water sources (NPDES-permits), WSDOT's samples demonstrated an annual compliance rate of 97%. The 2008 ratings are improvements over 2007. (pp. 43)

## 2008 Statewide water quality monitoring results

167 recorded events in compliance and 12 recorded events out of compliance



Source: WSDOT Environmental Services Office.

## Stormwater Treatment Facilities

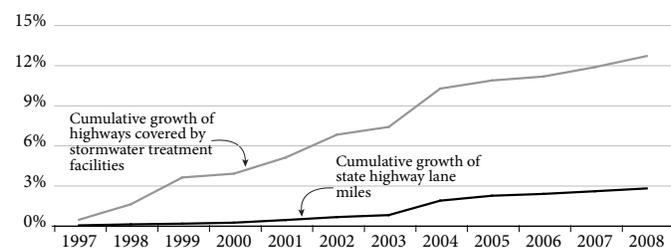
WSDOT is required to construct stormwater treatment facilities to handle the pollutants and discharges that are generated from the impermeable surfaces it maintains (highways, ferry terminals, parking lots, etc). In 2008, there were 866 facilities in urbanized locations statewide, with most in Clark, King, Pierce, and Snohomish counties. Together, these 866 facilities provide water quality treatments to roughly 12% of the state's highway system. (pp. 40-41)

### Additional environmental program coverage

The December 31, 2008, *Gray Notebook* also includes coverage of Environmental Documentation, Erosion Control Preparedness, and a special feature on the SR 530/Sauk River erosion control project. (pp. 33-46)

## More of the state highway system is being covered by stormwater treatment facilities, 1997-2008

Cumulative growth of the percentage of state highways covered by stormwater treatment facilities versus the growth in total highway lane miles



Data Source: WSDOT Environmental Services Office, WSDOT Traffic Data Office.

## 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 *Gray Notebook* 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, 2008 is available on line at: <http://www.wsdot.wa.gov/Accountability/GrayNotebook/default.htm>

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