



**Washington State
Department of Transportation**

Measures, Markers and Mileposts

Gray Notebook Lite

for the quarter ending December 31, 2005

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 eighth edition of relevant highlights and performance topics selected from the *Gray Notebook*. This quarter's edition of the *Lite* includes excerpts from the Annual Highway Safety update, the Annual Pavement report, the Annual Environmental Program update, as well as the Annual Highway Maintenance update.

The beige insert contains an expanded quarterly update on WSDOT's Capital Delivery Program. In addition to the traditional Nickel Project reporting, it now includes descriptions of Pre-Existing Funds projects and the 2005 Transportation Partnership Account.

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 Improvement Projects: Annual Update

The Annual Safety Report covers before and after analyses of highway safety projects, the Top Ten High Accident Locations and Corridors in Washington State, cable median barrier performance, and pedestrian and bicycle safety. The complete report is available in the *Gray Notebook* on pages 45-55. Below are three excerpts.

2004 Before and After Safety Project Study

Each year, WSDOT completes a variety of safety improvement projects throughout the state highway system, ranging from adding turn lanes and signals to installing median barriers and rumble strips.

As part of a continuing effort to determine the effect of these projects on reducing the number and severity of traffic collisions,

Combined Average for all 32 Before and After Study Projects

Collisions per Year

	Before Period	After Period	% Reduction
All Types	16.2	10.5	35%
Property Damage Only	8.8	6.2	30%
Injury/Fatal	7.4	4.2	43%

Source: WSDOT Transportation Data Office

an ongoing Before-and-After study confirms the results of the 21 projects originally cited two years ago in the December 31, 2003 *Gray Notebook* (p. 36), as well as those that have been added to the program since.

Median Barrier Performance Comparison

WSDOT uses three main types of traffic barriers: beam guardrail, concrete barrier, and cable barrier. To assess the relative effectiveness of different types of median barriers, WSDOT engineers analyzed 11,457 median barrier collisions that occurred on Washington State highways between 1999 through 2004 (see table). These collisions were identified as incidents in which a barrier was either the first

or second object that was struck. This six-year period represents the most recent highway collision data available.

The comparison of the different barriers' performance did not include I-5 in Marysville because this cable barrier section is performing differently than other sections around the state. (See page 53 of the *Gray Notebook* for a more complete discussion on I-5 in Marysville.)

The percentage of median crashes that result in injury or death is significantly lower for cable barriers (16%, not including I-5 in Marysville) than for concrete barrier (41%) or W-beam guardrail (41%). The percentage of disabling and fatal crashes, the least frequent but most serious type of crash, is lowest for concrete barriers (2.1%) followed by cable barrier (2.6%) and beam guardrails (4.4%).

Barrier Performance by Type

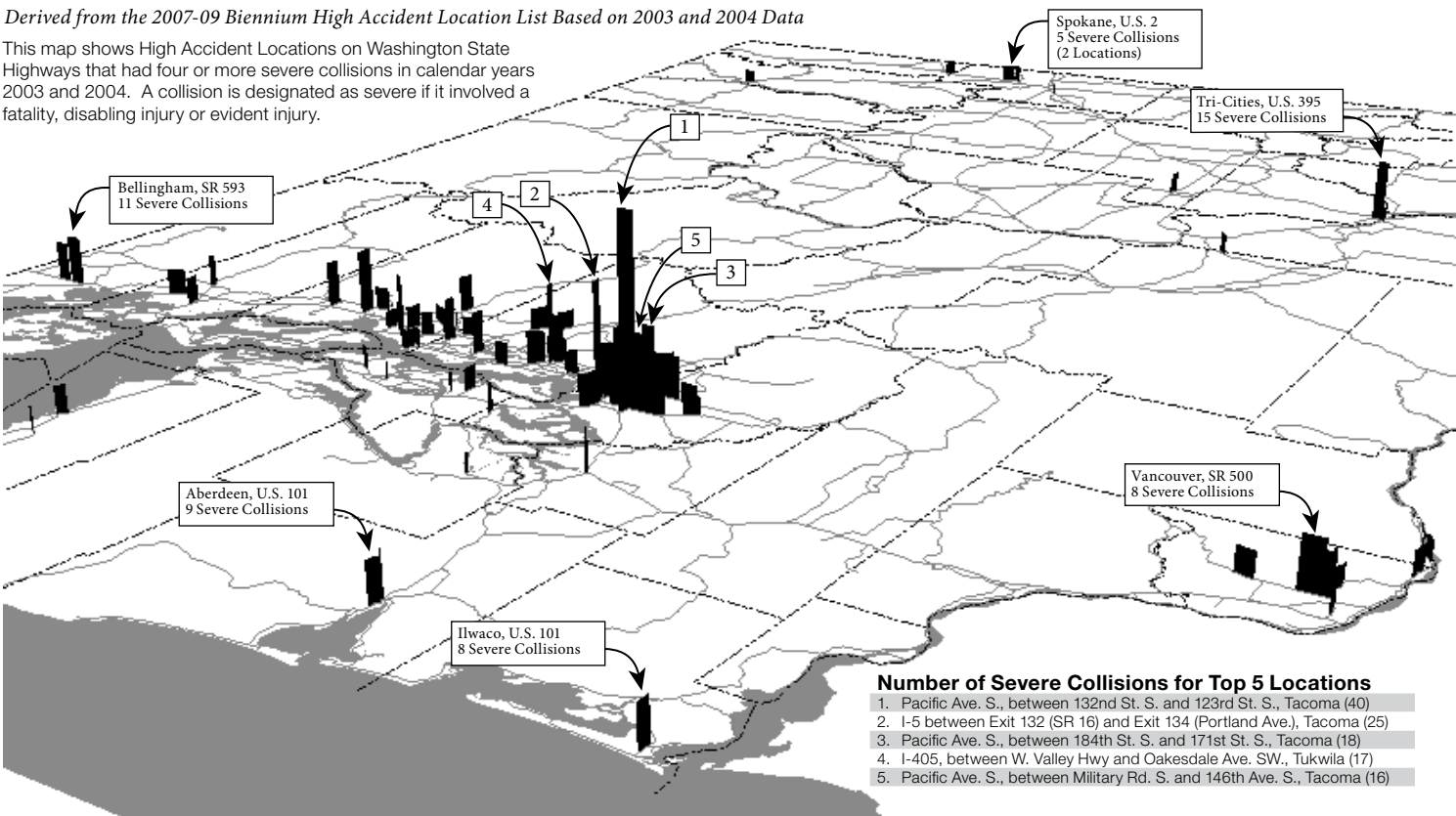
Barrier type	Total Collisions	No Injury/Injury Unknown	%	All Injuries	%
Concrete barrier	7,585	4459	58.8%	3,126	41.2%
W-beam guardrail	2,579	1520	58.9%	1,059	41%
Cable, without I-5 Marysville	152	127	83.5%	25	16.4%
Cable, with I-5 Marysville	171	135	79%	36	21%
All cable barrier	323	262	81.1%	61	18.8%
Bridge rail	970	622	64.1%	348	35.9%

Source: Washington State Highways, 1999-2004

State Highway Locations Containing at Least Four Severe (Fatal, Disabling, or Evident Injury) Collisions

Derived from the 2007-09 Biennium High Accident Location List Based on 2003 and 2004 Data

This map shows High Accident Locations on Washington State Highways that had four or more severe collisions in calendar years 2003 and 2004. A collision is designated as severe if it involved a fatality, disabling injury or evident injury.



Number of Severe Collisions for Top 5 Locations

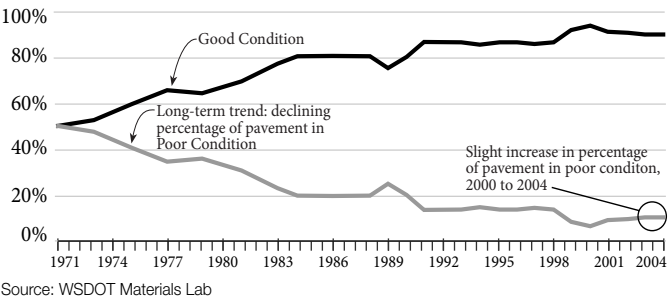
1. Pacific Ave. S., between 132nd St. S. and 123rd St. S., Tacoma (40)
2. I-5 between Exit 132 (SR 16) and Exit 134 (Portland Ave.), Tacoma (25)
3. Pacific Ave. S., between 184th St. S. and 171st St. S., Tacoma (18)
4. I-405, between W. Valley Hwy and Oakesdale Ave. SW., Tukwila (17)
5. Pacific Ave. S., between Military Rd. S. and 146th Ave. S., Tacoma (16)

Asset Management: Pavement Annual Update

2004 Pavement Condition Rating

According to the 2004 pavement condition survey rating, pavements in “poor” condition increased slightly in 2004 to 10.1%, up from 10.0% as reported in the 2003 pavement survey. Over the last five years, WSDOT has seen an increase of 729 lane miles in “poor” condition. The slight increase in “poor” condition pavements between 2003-04 (graph to the right) is attributable to an increase of an additional 166 lane-miles of poor Portland Concrete Cement (PCC) conditions, an increase of an additional 21 lane-miles of poor condition chip seal pavements, and a reduction of 162 lane-miles of hot mix asphalt pavements in poor condition. WSDOT recognizes this increase in “poor” PCC pavement ratings and is researching options to develop an appropriate method to better predict PCC pavement life cycles. More information about these studies and other aspects of WSDOT’s pavement program are available on pages 37-39 of the *Gray Notebook*.

Pavement Condition Trends
Percent of Pavements



Pavement Type	Total Lane Miles ¹	Annual VMT ³ 2004 (Billions) ²	Pavement Rating	2003	2004	2005-07 Dollars Programmed (Millions) ²		2007-09 Dollars Programmed (Millions) ²	
Chip Seal Pavements A chip seal is a durable surface that provides six to eight years of performance life at approximately \$12,000 per lane-mile	4,337	1.2	Good	86%	86%				
	21.7%	3.7%	Poor	14%	14%	\$26.5	12.6%	\$21.0	9.0%
Hot Mix Asphalt Pavements Hot mix asphalt pavements surface life, between rehabilitation treatments, ranges from six to 18 years (based on actual pavement performance) at approximately \$123,000 per lane mile for due miles and \$156,000 for past due miles	13,153	21.7	Good	91%	92%				
	65.8%	68.9%	Poor	9%	8%	\$174.2	83.1%	\$179.0	77.2%
Portland Cement Concrete (PCC) Pavements WSDOT has experienced PCC pavement life ranging from 25 to 45 years with an approximate cost of \$330,000 per lane mile for dowel bar retrofit and \$1 million per lane mile for full replacement.	2,497	8.6	Good	93%	85%				
	12.5%	27.4%	Poor	7%	15%	\$8.9	4.3%	\$32.0	13.8%
Total	19987	31.5	Good	18021	17954	\$209.6		\$232.0	
			Poor	1965	2033				

¹Source: State Highway Log Planning Report 2005 - includes all lane miles
²Source: Transportation Data Office - excludes ramps, collector-distributors or frontage roads
³Vehicle Miles Traveled: A measure of the amount of vehicular travel (per capita). One vehicle traveling one mile = 1 VMT.

Environmental Programs Annual Update

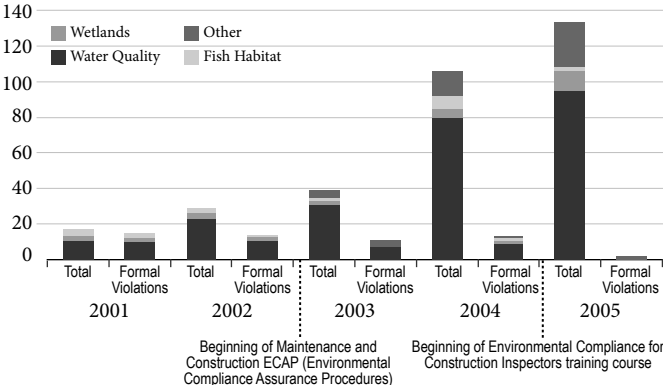
WSDOT continues to develop its Environmental Management System (EMS) to help support the department’s environmental efforts and integrate those efforts into everyday operations. The reports in the December 31, 2005 *Gray Notebook* provide updates on established programs within the framework of WSDOT’s EMS: Erosion Control (p. 57), Water Quality (p. 58), Stormwater (p. 59), Wetland Monitoring (pp. 60-62), and Compliance (p. 63). A highlight from the Compliance report is included below.

Environmental Compliance

WSDOT self-monitors for “non-compliance events” whether or not such events are considered formal violations by resource agencies. In 2005, WSDOT recorded 134 non-compliance events, with two leading to issuance by a regulatory agency of a formal Notice of Violation (NOV). There were 29 more non-compliance events than in 2004; however, the number of formal NOV’s dropped by 11 from 2004. WSDOT believes this is an indicator of two things. One, WSDOT is

capturing more non-compliance events than before. Two, most of the non-compliance events are being fixed when they are relatively minor, *before* they rise to the level of formal violations.

Non-Compliance Events 2001-2005

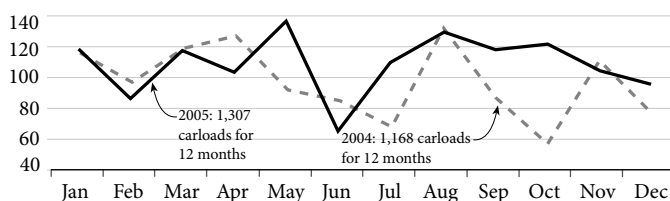


Demand for Grain Train Cars Remains High

WSDOT and the Port of Walla Walla own 89 grain cars to help Washington farmers move grain to market. Peak demand periods for rail grain cars are export-driven and seasonal. The state's grain cars are in high demand as their price is set at constant tariff rates, and during the 2005 harvest season private grain cars traded at up to \$700 above tariff rates on the secondary market. Carloads for the fourth quarter increased 31.8% over the fourth quarter 2004. In 2005, 1,307 carloads were shipped compared to 1,168 in 2004, an 11% increase. Demand for Grain Train cars should remain high for the foreseeable future. More information on the rail program can be found in the *Gray Notebook* on pages 69-72.

Washington Grain Train Carloads

Carloads per month 2005 vs. 2004



Source: WSDOT Rail Office.

The Washington Grain Train is a financially self-sustaining transportation program that supports the state's agricultural community while helping short line railroads maintain a sufficient customer base for long-term financial viability.

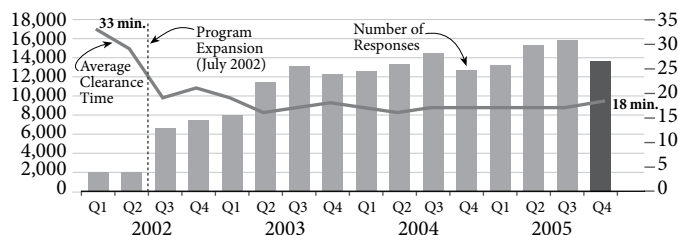
Incident Response: Quarterly Update

During the fourth quarter of 2005, WSDOT Incident Response team members responded to 13,705 incidents. This was down 14% from last quarter's summertime peak of 15,881 responses. However, when compared with the same period in 2004, the number of incidents continues to increase consistent with a steady upward trend since program expansion in 2002 (see chart). The average clearance time for all responses to incidents was 18 minutes. All response types, except non-injury collisions, decreased in the overall number of responses to an off-peak season level. Responses to non-injury collisions increased moderately by 10%.

For more information on the Incident Response Program, see page 44 in the *Gray Notebook*.

Number of Responses and Overall Average Clearance Time

January 2002 - December 2005



Source: WSDOT Incident Response Tracking System

Note: Program-wide data is available since January 2002. Prior to Q3 of 2003, number of responses by IRT are shown. From Q3-2003, responses by Registered Tow Truck Operators and WSP Cadets have been reported in the total.

WSDOT Tests Portable Incident Screens to Reduce Slowdowns and Enhance Safety

WSDOT is rolling out a "Portable Incident Screen" pilot project in the Spokane area. These are custom-built screens that are put up at traffic incident sites to shield the view of the accident scene from motorists driving by. The intent is to stop rubberneckers from slowing down traffic, and to prevent possible secondary accidents: Nothing to see but a screen? Then there's nothing to gawk at.

WSDOT has built two sets of screens made of different screening material for testing purposes, but, due to weather conditions, has not had the chance to try them out yet. Reports from other states and countries using the "gawk screens" indicate issues with the screens blowing down, and weights are being used to reduce that possibility. Developing screens that will not blow over is a definite challenge in eastern Washington.

Other concerns include the screens distracting drivers who are not familiar with them, as well as the safety of emergency responders



The top of a WSDOT Incident Response Truck peaks over one of the new Portable Incident Screens. Materials to build this unit cost about \$500. The units are about 30 feet in length.

behind the scenes, since the screens will prevent them from seeing traffic. These are examples of the many questions the pilot project should help WSDOT answer so it can evaluate the effectiveness of the screens. For more information, visit the *Gray Notebook* (p. 73).

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 December 31, 2005 is available on line at: www.wsdot.wa.gov/accountability/graynotebook.pdf.

For more information contact:

Daniela Bremmer
WSDOT Strategic Assessment Office
310 Maple Park Avenue SE
P.O. Box 47374
Olympia, WA 98504-7374
Phone: 360-705-7953
E-mail: bremmed@wsdot.wa.gov

An Excerpt from the Beige Pages: Project Reporting on WSDOT's Capital Delivery Program

WSDOT prepares information for legislators, state and local officials, interested citizens, and the press on the progress of the capital delivery program, including the 2003 Transportation Funding Package, the 2005 Transportation Funding Package, and the Pre-Existing Funds Program. Much of the detailed information can be found on-line at the WSDOT website. The *Gray Notebook*, within these special *Beige Pages*, highlights each quarter's progress and reports on financial and other program management topics as well as detailed information on key projects. The complete project delivery record

for this quarter is available in the *Gray Notebook's Beige Pages* (p. 1-32), including:

- Executive Summary
- Overview of the Three Capital Delivery Mandates
- 2003 Transportation Funding Package
- 2005 Transportation Funding Package
- Pre-Existing Funds
- Special Project Updates
- Cross-Cutting Management Issues

Executive Summary of Project Delivery

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 (Partnership Program).

Performance Information	Partnership		
<i>As of December 31, 2005, Dollars in Thousands</i>	Nickel (2003)	Program (2005)	Pre-Existing Funds
Total Biennial Number of Projects (2005-07)	40	65	329
Total Biennial Program (2005-07)	\$1,285,000	\$461,000	\$1,659,000
Schedule, Scope and Budget Summary: Results of Completed Projects			
	See Page 3	See Page 12	NA
Cumulative to Date, 2003 – Dec. 31, 2005			
Total Completed	20	2	-
% Completed Early or On-Time	95%	100%	-
% Completed Within Scope	100%	100%	-
% Completed Under or On-Budget	95%	100%	-
Total Planned Project Costs	\$142,336	\$2,400	-
Total Actual Project Costs	\$140,006	\$1,089	-
Biennium to Date, 2005-07			
Total Completed	7	2	111
% Completed Early or On-Time	100%	100%	-
% Completed Within Scope	100%	100%	-
% Completed Under or On-Budget	100%	100%	-
Total Planned Project Costs	\$98,758	\$2,400	\$212,600
Total Actual Project Costs	\$99,280	\$1,089	\$218,800
Advertisement Record: Results of Projects Entering into the Construction Phase			
	See Page 4	See Page 12	See Page 18
Biennium to Date, 2005-07			
Total Advertised	7	12	39
% Advertised Early or On-Time	43%	100%	75%
Total Award Amounts to Date	\$19,691	\$6,210	NA
(4 pending bid or award)			
Advertisement Schedule for Projects in the Pipeline: Results of Projects Now Being Advertised for Construction or Planned to be Advertised			
	See Page 5	See Page 13	See Page 18 (graph)
January 1, 2006 through June 30, 2006			
Total in Pipeline	13	7	108
% On or Better than Schedule	69%	71%	-

Nickel Program: 2003 Transportation Funding Package

The completion record is building for the 2003 Transportation Funding Package (Nickel Program) projects. The table below highlights the projects completed biennium to date, and for the current reporting quarter. No Nickel projects were completed in the first quarter of the 2005-07 biennium, therefore, results for the current quarter are the same as biennium to date. For more information on Nickel Projects, see pages 3-11 in the *Gray Notebook's Beige Pages*.

Project Description	On-Time Advertised	On-Time Completed	Within Scope	On-Budget <i>(Dollars in Thousands)</i>		
				Planned	Actual*	% Over/Under*
Biennium to Date (2005-07)/Current Quarter (Ending December 31, 2005)						
I-5, 2nd Street Bridge - Replace Bridge	✓	Early	✓	14,679	14,333	✓
SR 161, 204th Street to 176th Street	Late ¹	Early	✓	16,754	16,789	✓
SR 161, 234th St to 204th Street E	✓	Early	✓	17,060	17,248	✓
U.S. 12/SR 124 to McNary Pool - Add Lanes	✓	✓	✓	12,203	12,244	✓
I-90, Pines Road to Sullivan Road - Widen	Early	✓	✓	17,894	17,894	✓
I-90, Argonne Road to Pines Road - Widen	Early	✓	✓	18,389	18,996	✓
SR 106, Skobob Creek - Fish Passage	✓	✓	✓	1,779	1,776	✓
Totals this Quarter	86%	100%	100%	\$98,758	\$99,280	
Totals Biennium to Date	86%	100%	100%	\$98,758	\$99,280	
Totals Cumulative to Date	95%	95%	100%	\$142,336	\$140,006	

Definitions:

"On-Time Advertised": the project was advertised within the quarter as planned.

"On-Time Completed": the project was operationally complete within the quarter as planned in the 2003-05 Budget.

"Within Scope": the project was completed within the specific functional intent of a project as approved by the Legislature.

"On-Budget": within +/- 5% of the baseline budget.

Section 603 of the 2005 Supplemental Budget provides the Transportation Commission flexibility to balance project cost increases and decreases between Nickel

projects, and to balance cash flow between biennia near biennial lines, as long as the adjustment does not impact the overall delivery of the ten-year program and does not involve changing the scope of any Nickel funded project.

Project Details:

¹ This project is the 2nd stage of a two stage project. The advertisement date has been delayed to better accommodate construction work and lessen impacts to the public.

Partnership Program: 2005 Transportation Funding Package

The completion record is building for the 2005 Transportation Funding Package (Partnership Program) projects. The following table lists the two projects completed to date (December 31, 2005) in the current fiscal year. There were no projects completed at the close of fiscal year 2005. For more information on the TPA projects, see pages 12-16 in the *Beige Pages* of the *Gray Notebook*.

Project Description	On-Time Advertised	On-Time Completed	Within Scope	On-Budget (Dollars in Thousands)		
				Planned	Actual	% Over/Under
I-90, Silica Road to East of Adams Road - Median Cross Over Protection	✓	Early	✓	1,200	312	74% Under
I-90, SR 17 to Grant/Adams County Line - Median Cross Over Protection	✓	Early	✓	1,200	777	35% Under
Totals this Quarter, Biennium and Cumulative to Date	100%	100%	100%	\$2,400	\$1,089	

Pre-Existing Funds Program: Programmatic Reporting

Biennium to Date (2005-07)

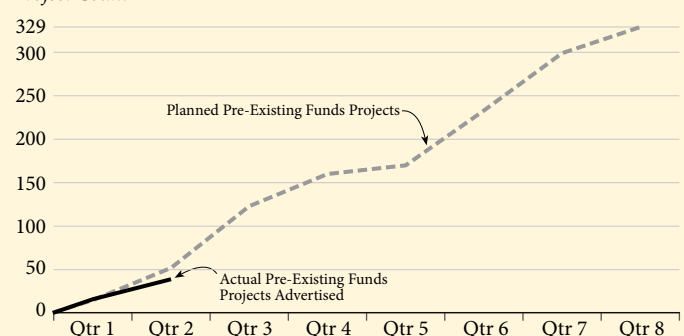
The 2005-07 Highway Construction Program includes a commitment of 329 advertisements. Of the 36 planned advertisements for the second quarter, 24 were advertised as scheduled, one was advertised last biennium, ten were delayed to later in the biennium, and one was deferred to the 2011-13 biennium. Therefore, a total of 25 projects scheduled for the second quarter have been advertised and are now in the construction phase.

For more information on the Pre-Existing Funds program, see the *Beige Pages* in the *Gray Notebook*, 17-21.

Highway Construction Program Advertisements Pre-Existing Funds Projects

Planned vs. Actual Number of Projects Advertised
2005-2007 Biennium, Quarter 2 ending December 31, 2005

Project Count



Source for all graphs: WSDOT Project Control and Reporting Office