



**Washington State  
Department of Transportation**

# Measures, Markers and Mileposts

## ***Gray Notebook Lite***

for the quarter ending September 30, 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 fifteenth 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 excerpts from the annual reports on Congestion, Commute Options, Intelligent Transportation Systems, and Highway Safety. Also included are quarterly updates on Rail, Worker Safety, 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](mailto:hammonp@wsdot.wa.gov).



## Measuring Delay and Congestion: Annual Update

The 2007 annual update on congestion highlights WSDOT's effort to deploy effective strategies to lessen the duration of congestion, making trips more reliable and safe and improving overall traffic flow. Examples of how WSDOT's balanced strategies are working to improve congested conditions in the central Puget Sound region include:

- **Keeping traffic moving during construction.** WSDOT managed demand on I-5 northbound to remove over 57,000 vehicles during construction to maintain maximum throughput by working extensively with local governments, businesses, and transit agencies.
- **Synchronizing signals to improve travel times.** WSDOT retimed lights along SR 532 in Stanwood improved travel times during the morning commute by 2 minutes, and by 6 minutes during the evening commute.
- **Strategically adding capacity to relieve chokepoints and bottlenecks.** WSDOT completed the new eastbound span of the Tacoma Narrows Bridge on July 16, 2007, which has improved speeds during peak congestion from 30-40 MPH to the posted speed limit of 60 MPH.
- **Providing options to commuters.** The new HOV lanes on I-5 from Federal Way to the Pierce County line allow vehicles that travel in those lanes to cut the time it takes to 6-8 minutes, compared to the 14-16 minutes it takes commuters who choose to use the general purpose lanes to complete the same segment.

- **Using intelligent transportation systems to shift travelers away from congested highways.** WSDOT is planning to use Integrated Corridor Management practices between SeaTac and downtown Seattle, which will facilitate shifting travelers from congested highways to parallel routes and transit lines in order to reduce congestion.

**Congestion Report Results Summary: Commute Times** have increased on Many of the Most Congested Routes Despite WSDOT's efforts, congestion has grown between 2004 and 2006. The Puget Sound transportation system has absorbed 107,000 new residents and 91,000 new jobs. Some of the impacts are:

- The average commute time during peak congestion increased on 32 (84%) of the 38 commute routes tracked, ranging from a 1 minute to a 7 minute increase.
- Thirty three (87%) of the routes show a decrease in reliability as the 95% reliable travel time increased, ranging from 1 minute to 10 minute increase.
- Congested periods (duration of peak period) last longer on 34 (89%) of the commute routes, ranging from 5 minute to 1 hour and 35 minute increase.
- Compared to maximum throughput speeds, commuter experienced an average of over 3 million additional hours of delay (18% increase from 2004 to 2006).

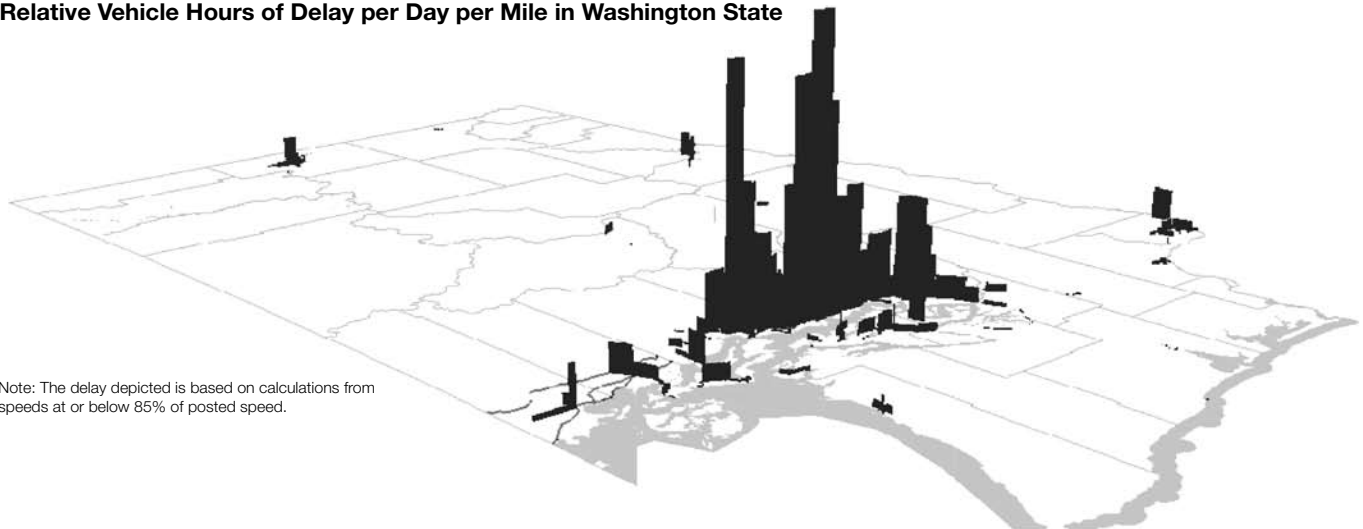
For the complete Congestion report see pages 57-86 of this quarter's *Gray Notebook*.

## MORNING: Key Commute Routes: Changes in Travel Time Performance, 2004 to 2006 Excerpt

												Ratio of Peak Travel Time to Maximum Throughput Travel Time		Traffic Volume Peak Period	Duration of Congestion  (hours and minutes that average speed falls below 70% of posted speeds)			
Travel Time (in min.)					Average Peak Travel Time, Based on Peak Time (in minutes)			95% Reliable Travel Time (in minutes)										
Route		Route Description	Peak time	Length (Miles)	At Peak Efficiency	At Posted Speed	Change (%)			Change (%)			MT <sup>3</sup> I		Change (%)	change (in minutes)		
To Seattle																		
I-5	Everett to Seattle		7:25 AM	23.7	28	24	45	50	11%	73	81	11%	1.62	1.80	-3%	1:55	2:30	0:35
I-5	Federal Way to Seattle		7:20 AM	21.8	26	22	40	46	15%	56	66	18%	1.56	1.80	-1%	2:15	2:50	0:35
I-90/I-5	Issaquah to Seattle		7:40 AM	15.5	18	15	22	26	18%	30	39	30%	1.21	1.43	+4%	*	1:20	1:20

Data Source: WSDOT Traffic Operations and the Washington State Transportation Center (TRAC) at the University of Washington  
 Note: An asterisk (\*) indicates that speeds did not fall below 70% of posted speed on a route; and n/a means that no information is available for a route.  
 2004 figures have been recalculated since their last publication in the 2005 annual congestion update, using a more refined data quality control process.

## Relative Vehicle Hours of Delay per Day per Mile in Washington State



Note: The delay depicted is based on calculations from speeds at or below 85% of posted speed.

# 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 (Transporta-

tion 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 1251 PEF projects is reported programmatically in six categories of work. By contrast, each of the 154 Nickel and 238 TPA projects funded in the 2007-09 biennium 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 <i>As of September 30, 2007, Dollars in Thousands</i>	Nickel (2003)	Transportation Partnership Account (TPA, 2005)	Combined Nickel & TPA	Pre-Existing Funds
Total Cumulative Number of Projects <sup>1</sup>	154	238	392	1251
Total Cumulative Program Value <sup>2</sup>	\$3,978,015	\$6,945,697	\$10,923,712	\$20,612,376
<b>Schedule, Scope and Budget Summary: Results of Completed Projects</b>				
<b>Cumulative to Date, 2003 – September 30, 2007</b>	See Pages 5-6	See Pages 5-6	See Pages 5-6	N/A
Total Number of Projects Completed	80	30	110	-
% of Projects Completed Early or On-Time	89%	93%	90%	-
% of Projects Completed Within Scope	100%	100%	100%	-
% of Projects Completed Under or On-Budget	89%	70%	84%	-
% of Projects Completed On-Time and On-Budget	80%	63%	75%	-
Current Legislative Expectation (Baseline)	\$966,499	\$57,235	\$1,023,824	-
Current Estimated Cost to Complete (WSDOT)	\$965,934	\$58,034	\$1,023,968	-
% of Total Program On or Under Budget	100.1%	98.8%	100.0%	-
<b>Biennium to Date, 2007-09</b>				
Total Number of Projects Completed	11	7	18	73
% of Projects Completed Early or On-Time	73%	100%	83%	-
% of Projects Completed Within Scope	100%	100%	100%	-
% of Projects Completed Under or On-Budget	91%	71%	83%	-
% of Projects Completed On-Time and On-Budget	73%	71%	72%	-
Current Legislative Expectation (Baseline)	\$211,857	\$42,406	\$254,263	\$112,522
Current Estimated Cost to Complete (WSDOT)	\$209,742	\$42,880	\$252,622	\$113,341
<b>Advertisement Record: Results of Projects Advertised During 2003-07 and Currently in the Construction Phase</b>				
<b>Cumulative to Date, 2003 - September 30, 2007</b>	See Pages 7-11	See Pages 7-11	See Pages 7-11	See Pages 7-11
Total Number of Projects In Construction Phase	32	26	58	N/A
% of Projects Advertised Early or On-Time	59%	73%	66%	-
Total Award Amounts to Date	\$588,831	\$555,285	\$1,144,116	-
<b>Biennium to Date, 2007-09</b>	See Pages 7-11	See Pages 7-11	See Pages 7-11	See Pages 7-11
Total Number of Projects In Construction Phase	2	3	5	7
% of Projects Advertised Early or On-Time	100%	67%	80%	71%
Total Award Amounts to Date	\$75	\$3,525	\$3,600	N/A
<b>Advertisement Schedule for Projects in the Pipeline</b>				
Results of Projects Now Being Advertised for Construction or Planned to be Advertised				
<b>October 1, 2007 through March 31, 2008</b>	See Pages 12-14	See Pages 12-14	See Pages 12-14	NA
Total Projects Being Advertised for Construction	6	36	42	107
% On Schedule or Early	100%	94%	95%	-

Data Source: WSDOT Project Control and Reporting

<sup>1</sup>The total number of reportable projects with construction phases.

<sup>2</sup>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

### WSDOT Has Successfully Delivered 110 Nickel and TPA Projects within the \$1.024 Billion Legislative Budget Expectation

Overall capital project delivery program performance has remained strong. The current cost for the 110 projects completed to date is within 0.01% (\$144,000) of the \$1.024 billion that the legislature budgeted for these projects. By March 31, 2008, over 50% of the projects funded by the Nickel and TPA programs will be completed, under construction or advertised.

### On-Time and On-Budget Performance On Individual Projects Remains Steady

For the 110 capital projects delivered as of September 30, 2007,

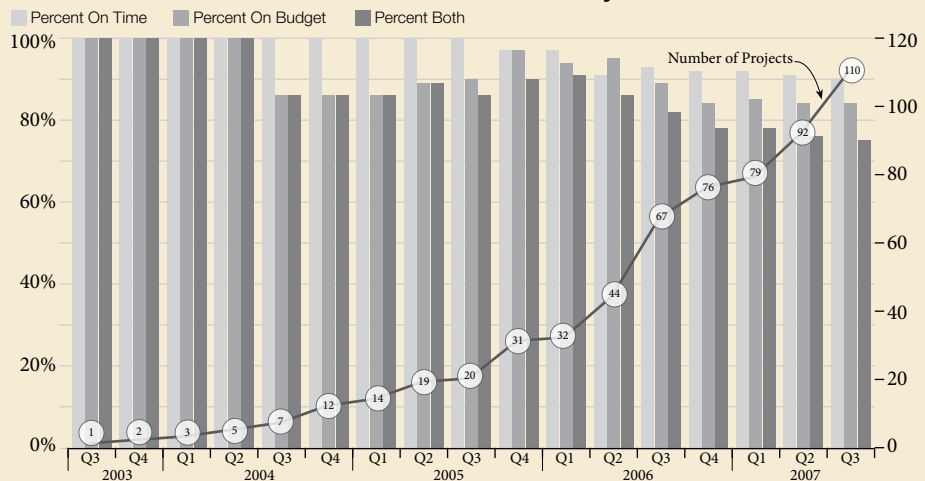
- Cumulative on-time project delivery performance is currently 90%, a 2% decrease from previous quarter.
- Cumulative on-budget project delivery performance is currently unchanged from last quarter at 84%
- Cumulative on-time and on-budget project delivery performance decreased slightly to 75%, a 1% decrease from last quarter.

### WSDOT Delivers 18 Nickel and TPA Projects During the 1st Quarter of FY 2007

During the first quarter of the 2007-09 biennium ending September 30, 2007, 18 Nickel and TPA projects were completed. Of the 18 projects, 15 projects were completed on time and 15 projects were completed on or under budget.

The total cost of the 18 projects that were delivered was \$253 million. The project delivery highlight for the quarter ending September 30, 2007 include completion of the \$139.9 million project to add HOV

### Cumulative Performance of Nickel and TPA Projects



Data Source: WSDOT Project Control and Reporting.

lanes on I-5 in Pierce County between the county line and Tukwila. While this project was not completed on-time, it was approximately \$3 million under budget.

### 58 Nickel and TPA Projects Are Under Construction

As of September 30, 2007, 58 projects with a cumulative award value of \$1.102 billion are under construction. Five projects with a cumulative award value of \$3.6 million began construction during the quarter ending September 30, 2007. The largest of these five projects was a project to stabilize the foundation of SR 99 as part of the Alaska Way Viaduct Replacement. Overall, 66% of the 58 projects under construction were advertised early or on-time.

Of the five projects that began construction this quarter, the project on SR 515 to construct a traffic island was the only project that was not advertised on time. The reason that the advertisement of the project was delayed is due to utility relocation issues.

### 42 Additional Nickel and TPA Projects Set for Advertisement Over the Next Six Months

In the next six months, WSDOT intends to advertise 42 additional Nickel and TPA projects with a cumulative estimated cost to complete of \$584 million. Major construction projects include adding lanes on I-5 between Grand Mound and Maytown and widening SR 539 from Tenmile Road to SR 546.

All but one of these capital projects are still on their original schedule. The advertisement date for a roadside safety project on SR 241 in the vicinity of Rattlesnake Hills is delayed due to environmental permitting issues. The advertisement date to build an interchange on SR 522 near the University of Washington at Bothell is also delayed due to environmental permitting issues.



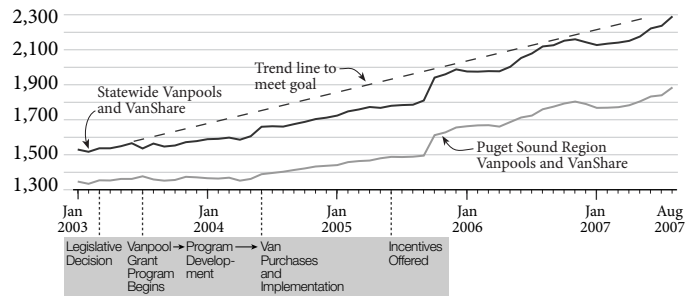
## Commute Options: Annual Update

### Nation's Largest Vanpool Program Sees 44% Ridership Growth Since 2003

With 2,291 vanpools in operation as of August 2007, Washington's vanpool program is the largest and most successful in the nation, accounting for more than 40% of public vanpools in the US. This number includes 577 vans recently purchased by WSDOT, which represents a 46% increase in the number of operating vanpools over 2003. The number of commuters in vans has also increased to 18,636 average daily riders, an increase of 44% since 2003. In 2006, vanpools carried 6.9 million passenger trips, eliminated an estimated 23.8 million drive-alone miles, and 9.5 million gallons of fuel were conserved because of the use of public vanpools statewide.

## Number of Public Vanpools Operating in Washington State

January 2003 to August 2007



Data Source: WSDOT Vanpool Database

For the complete Commute Options Annual Update see pages 92-95 of this quarter's *Gray Notebook*.

## Intelligent Transportation Systems: Annual Update

### WSDOT Did Not Meet Target for ITS Maintenance in 2006

While some significant improvements have been made in the information management system used to track maintenance needs and accomplishments for ITS components, challenges remain regarding system maintenance and operations. WSDOT's current Maintenance Accountability Process (MAP) performance measure for ITS is based on the number of repairs per system per year. The definition of a repair is work done to correct a malfunctioning system. The current Level of Service (LOS) Target for ITS is a "B-," which translates to one repair per system per year. WSDOT missed this target in 2006, with a LOS score of C+.

### ITS Inventory Increases

Rapid growth of the ITS inventory is a major reason for missing the target. For example, in WSDOT's Eastern Region, the ITS inventory went from 67 items to 99 items during 2006. The same level of growth is projected for 2007.

For the complete Intelligent Transportation Systems Report see pages 101-102 of this quarter's *Gray Notebook*.

## Intelligent Transportation Systems Elements Inventory

As of October 2007, WSDOT Owned Elements

Device Type	Number of Devices or Sites	Approximate Cost per Device or Site
Closed Circuit Television Cameras (CCTVs)	521	\$15,000-\$30,000
Variable Message Signs (VMSs)	179	\$100,000
Highway Advisory Radio Transmitters (HARs)	70	\$50,000
Road/Weather Information Systems (RWIS)	94	\$25,000-\$50,000
Metered Ramps	137	\$10,000-\$100,000
Traffic Data Stations	530	\$10,000-\$20,000
Traffic Management Centers (TMCs)	8 <sup>1</sup>	N/A

Data Source: WSDOT Traffic Operations Office

<sup>1</sup> This includes one winter operations site at Snoqualmie Pass

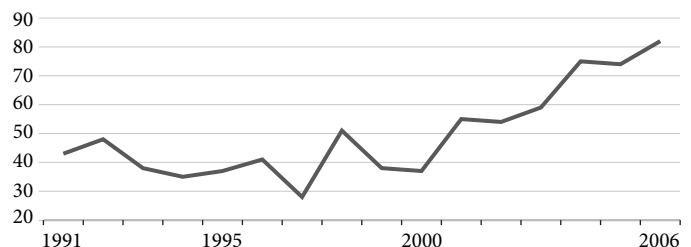
## Highway Safety

### 2006 Motorcycle Fatalities

Trends in motorcycle registrations indicates more Washington State residents are riding motorcycles now than in any time in the state's history. Since 1997 motorcycle registrations increased from 94,081 to 175,000. In 2006, there were 82 motorcycle fatalities. Motorcycle fatalities in 2006 accounted for 13% of all traffic fatalities on Washington State highways. Last year, a motorcycle task force recommended a combination of education and enforcement strategies to address the rise in fatalities.

In October 2007, the Governor was presented with a comprehensive Government Management, Accountability, & Performance (GMAP) report on traffic safety that indicates that motorcycle fatalities may drop in 2007. The report stated motorcycle fatalities totaled 57 for the first three quarters of the 2007 calendar year. This is down from 70 fatalities recorded during the same period in 2006.

## Washington State Motorcycle Fatalities by Year 1991-2006



Note: Helmet Law was reinstated in 1990

Data Source: Motorcycle Rider Safety Task Force

For the complete Highway Safety Report, including additional coverage of at risk drivers, the corridor safety program, highway speeds, and roundabouts, see pages 96-100 of this quarter's *Gray Notebook*.

## Rail: Quarterly Update

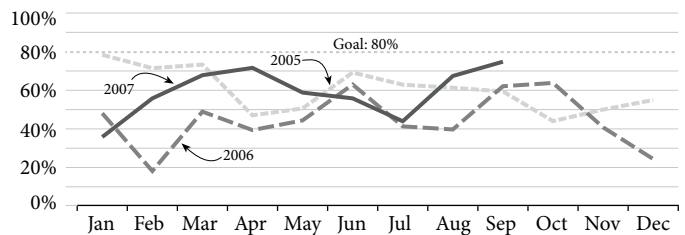
### On-Time Performance Improves, But Still Below Target

On-time performance for state-supported Amtrak *Cascades* trains averaged 62% in the third quarter of 2007. While still below the 80% goal, it is more favorable than the 47.6% on-time rate during the same period in 2006.

In July, only 43.95% of the trains operated on-time due to slower train speeds and rail congestion in areas where track maintenance and upgrades were taking place. On time performance in August and September improved as track work was completed. September's on time performance of 74.8% marked the best monthly performance for state-supported Amtrak *Cascades* trains in almost three years.

## State Supported Amtrak Cascades On-Time Performance

Percent on Time



Data 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.

For more information on the Rail Quarterly Update, see pages 109-110 of this quarter's *Gray Notebook*.

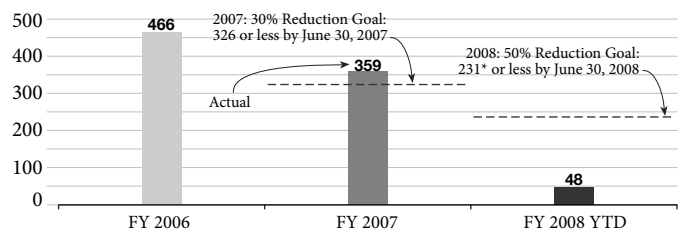
## Worker Safety: Quarterly Update

### WSDOT Sustains 48 OSHA-Recordable Injuries and Illnesses this Quarter

WSDOT reduced its OSHA-recordable injuries and illnesses by 23% in FY 2007 compared to FY 2006. The goal for FY 2008 is to reduce OSHA-recordable injuries and illnesses by 50% (231 or less injuries/illnesses) from the FY 2006 baseline (466 injuries/illnesses).

At the end of the first quarter of FY 2008, WSDOT has sustained 48 OSHA-recordable injuries and illnesses; this compares favorably with the 116 injuries/illnesses sustained last quarter.

## Goal to Reduce OSHA-Recordable Injuries and Illnesses for 2006-2008



Data Source: WSDOT Safety Office.

\*231 represents half of each region's FY 2006 injury total rounded down and added together.

For more information on the Worker Safety Quarterly Update, see pages 51-53 of this quarter's *Gray Notebook*.

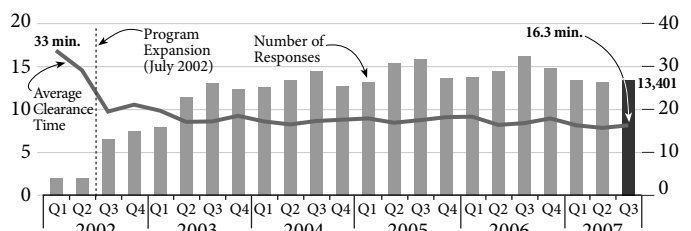
## Incident Response: Quarterly Update

### Number of Responses Statewide Decreases by 17% From Same Quarter Last Year

In Quarter 3 of 2007, the WSDOT Incident Response Program responded to 13,401 traffic incidents. This is an increase of 1.3% from last quarter, and a decrease of 17.2% from the same quarter last year. It should be noted that the 15,227 responses by the program in Quarter 3 of 2006 was the largest number of responses in a quarter ever. The average clearance time was 16.3 minutes this quarter, a 4.2% increase from the 15.7 minute-average last quarter, and a 3.0% decrease from the 16.8 minute-average from the third quarter of 2006.

## Number of Responses and Overall Average Clearance Time

January 2002 - September 2007, Number in Thousands



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. Average Clearance Time do not include "Unable-to-Locate" responses into calculation.

For more information on the Incident Response Quarterly Update see pages 87-91 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 September 30, 2007 is available on line at: <http://www.wsdot.wa.gov/Accountability/GrayNotebook/default.htm>

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