



**Washington State
Department of Transportation**

Measures, Markers and Mileposts

Gray Notebook Lite

for the quarter ending June 30, 2005

WSDOT's quarterly report to the Governor and 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 sixth edition of relevant highlights and performance topics selected from the *Gray Notebook*. This quarter's edition of *Lite* includes information that demonstrates WSDOT's record in delivering the Nickel program. The beige insert provides a summary describing the on-time, on-budget and on-scope delivery of the 13 Nickel projects completed to date and progress on projects underway. Also included in this edition is an analysis of contract management and delivery performance comparing the final cost of 155 contracts to the original engineer's estimate. A Before and After analysis of safety strategies, the annual update of Transportation Benchmarks and a new annual report on Capital Facilities asset management performance is included as well. 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 *Gray Notebook Lite*. Send me an e-mail. at macdond@wsdot.wa.gov.

Doug MacDonald



Highway Construction Contracts: Annual Update

FY 2005 Completed Contracts: Final Costs to Engineer's Estimate

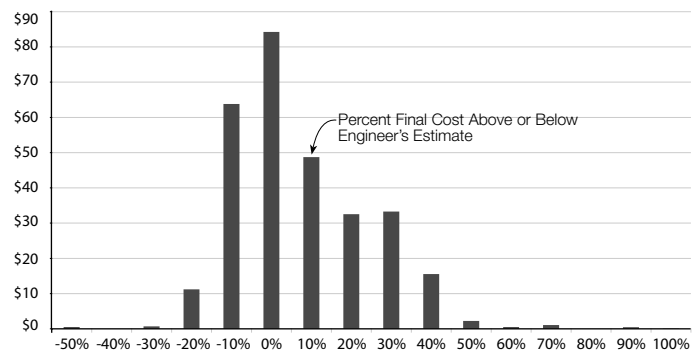
This quarter's *Gray Notebook* analyzes the Fiscal Year 2005 construction projects for three areas: award amount to engineer's estimate, final cost to award amounts and final cost to engineer's estimate. WSDOT completed 155 highway construction contracts between July 1, 2004 and June 30, 2005. WSDOT generally estimates the final cost to be no more than 10% above the engineer's estimate.

The final cost of 118 contracts (76%) was less than 10% above the engineer's estimate. The final total cost of all contracts (\$294,988,233) was 0.2% above the total engineer's estimate (\$294,440,780).

The table below is an excerpt from the *Gray Notebook*. For more information and analysis see pages 35-38 of this quarter's *Gray Notebook*.

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

Total Value Final Cost, Dollars in Millions



Source: WSDOT Construction Office

Completed Contracts: Final Costs to Engineer's Estimate - Year to Year Comparison

	FY2002	FY2003	FY2004	FY2005
Total engineer's estimates for highway construction contracts completed during the fiscal year	\$215,000,000	\$393,078,777	\$277,017,902	\$294,440,780
Total final cost for highway construction contracts completed during the fiscal year (excluding sales tax)	\$213,953,975	\$375,244,919	\$294,482,387	\$294,988,233
Average percent that the final cost of contracts exceeded the engineer's estimate	-4.7%	-5.6%	-2.6%	0.7%
Percent that the total final cost exceeded the engineer's estimate	-0.5%	-4.5%	6.3%	0.2%
Percent of combined contract value with final cost less than 10% above the engineer's estimates	75.7%	87.1%	42.8%	74%
Number of contracts with final cost less than 10% above engineer's estimates	99	151	111	118
Percent of contracts with final cost less than 10% above the engineer's estimate	81.10%	86.30%	75.50%	76.10%

Highway Safety Strategies: Before and After Analysis

Roundabouts

Single-lane roundabouts are valuable traffic control devices to reduce collisions at intersections. The lower number of collisions is a result of lower speeds in and around the intersection and the elimination of angle collisions which are the most serious type of collisions at an intersection. Before and after trials have shown a marked improvement in safety as shown in the chart below. See page 52 of the latest *Gray Notebook* for a more detailed discussion.

Collisions in Four Single Lane Roundabouts

Collisions per year

	All Types per Year	Injury Collisions per Year
Before Totals	6.7	2.7
After Totals	3.4	0.5
Percent Reduction	50%	81%

Source: WSDOT Transportation Data Office

Rumble Strips

The June 30, 2004 *Gray Notebook* presented data on the performance of centerline rumble strips in reducing crossover collisions on a section of U.S. 12 between the Tri-Cities and Walla Walla. As a follow up, WSDOT recently reviewed the performance of 98 miles of centerline rumble strips on undivided highways. A reduction of 38% in centerline crossover collisions took place, and an 18% reduction in all injury accidents.

Washington highways currently have 110 miles of centerline rumble strips in place, and the 2005 Transportation Funding Package provides for hundreds of additional miles.

This information can be found with a more detailed discussion in the latest *Gray Notebook* on page 52.

WSDOT Wins 2005 AASHTO Safety Award

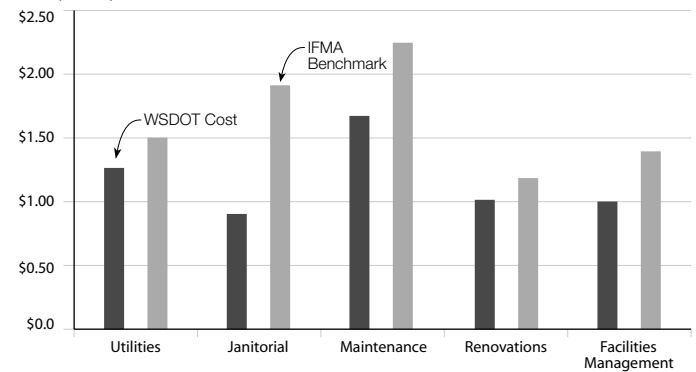
WSDOT was recently recognized for its proactive approach to safety by the American Association of State Highway and Transportation Organizations (AASHTO). In May 2005, AASHTO presented WSDOT with its Safety Leadership Award. Working with other safety agencies, WSDOT adopted a strategic safety plan, called Target Zero. As an outcome, the state has had a 56% decrease in fatal and disabling crash rates since 1990 even though vehicle miles traveled over that period have increased by 35%”

Asset Management: Capital Facilities

WSDOT's first report on Capital Facilities management performance follows a suggestion by the Transportation Performance Audit Board (TPAB). The latest *Gray Notebook* (GNB) for the quarter ending June 30, 2005, reports that WSDOT owns nearly 800 buildings and related sites, with a replacement value of almost one-half billion dollars. These buildings are workplaces for staff and facilities to house equipment and materials. There are also over 130 maintenance facilities and 40 mountaintop radio communications sites across the state. The high cost of renovations per square foot is indicative of the age and condition of WSDOT's buildings. But as shown in the chart at right, WSDOT spends 16% less for utilities than average government facilities due to carrying out various cost-saving and conservation measures. For more information on facility condition rating and capital facilities construction projects see pages 46-48 in this quarter's *Gray Notebook*.

2003-05 Biennium O&M Benchmark Comparison

Cost per Square Foot



Transportation Benchmarks: Annual Update

On August 20, 2003, the Washington State Transportation Commission adopted a set of benchmarks for measuring the performance of the state's transportation system. Benchmark development was guided by the requirements of the Revised Code of Washington 47.01.012, which established policy goals in the areas of safety, pavement condition, bridge condition, traffic congestion and driver delay, per capita vehicle miles traveled, and transit cost efficiency. Highlights of three of the goals are presented below:

Safety

The 2004 fatality rate was 1.02 deaths per 100 million vehicle miles traveled (VMT) on all Washington roadways. The fatality count has generally been trending downward in recent years. Some of the reasons include enforcement, highway engineering, driver education, and better vehicle design. In addition, there has been significant air bag and vehicle crash improvements. WSDOT has focused on DUI reduction, seatbelt usage, and safety improvement projects. A more detailed discussion is available in the latest edition of the *Gray Notebook* on page 70.

Pavement Condition

The benchmark law enacted in 2002 established a goal that no interstate highways, state routes, or local arterials be in "poor" condition. Pavement rated in "poor" condition is characterized by cracking, patching, roughness and rutting. The chart on the right shows pavement trends from 1973 to 2004. An in-depth review of how WSDOT is doing in achieving the Pavement Condition goal is in the latest edition of the *Gray Notebook* on page 72.

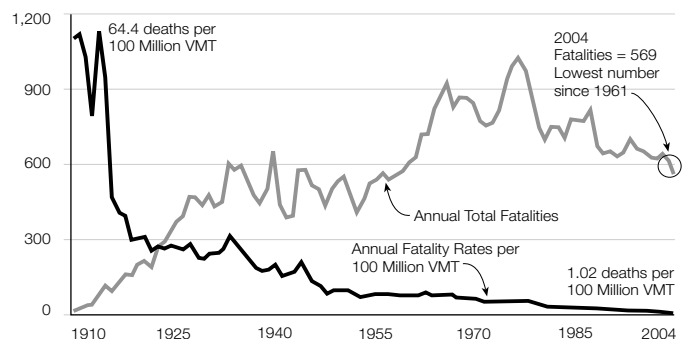
Bridge Condition

In 1991 a total of 937 bridges were classified as needing retrofitting and included in the Seismic Retrofit Program. Retrofit priorities are based on seismic risk of a site, structural detail deficiencies, and route importance. From 1991 to the end of June 2005, WSDOT has fully or partially retrofitted 368 bridges: 191 are completely retrofitted, 162 are partially retrofitted, and 15 are under contract to be retrofitted.

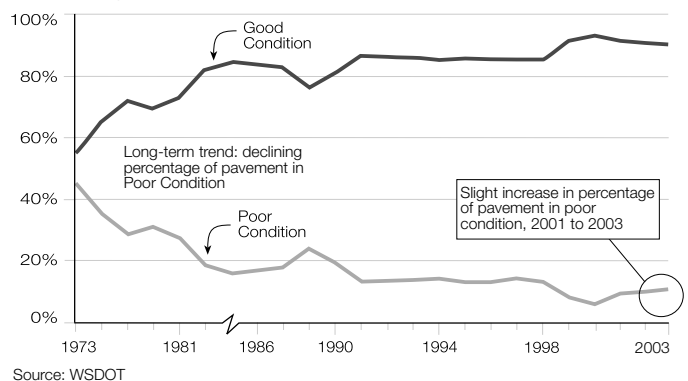
For the 2005-07 biennium, seismic work is planned for 28 bridges over seven retrofit projects. The 2005 Transportation Funding Package includes funding for the retrofit of 172 bridges that are located on major routes in the Puget Sound area. For more detailed information on these and other Transportation Benchmarks, see pages 70 - 78 in the *Gray Notebook*.

Washington Motor Vehicle Total Fatalities and Fatality Rates

1910-2004



State Highway Pavement Trends, 1973 - 2004



Source: WSDOT

Bridges in the Seismic Retrofit Program (1991-2005)

Completely retrofitted	191
Partially retrofitted	162
No work done to date	569
Under contract for work	15
Total	937
Planned 2005-2007 Biennium ¹	172

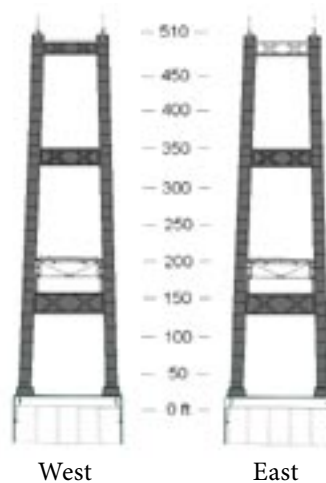
¹ These are planned under the 2005 Transportation Funding Package

Source: WSDOT Bridge Office

Tacoma Narrows Bridge Update

Bridge and Roadway Construction

As of June 30, 2005, construction work on the Tacoma Narrows Bridge project (SR 16) is 70.6% complete. The bridge design-builder (Tacoma Narrows Constructors) readied the bridge's towers and anchorages for spinning some 19,000 miles of wire that will comprise the suspension cables. This effort is scheduled to be completed by year's end. Read about this and other milestones such as reaching the final tower height of 505 feet (see drawing at the right) on page 44 of the latest *Gray Notebook*.



Washington State Ferries: Quarterly Update

Trip Reliability

This quarter's update of WSDOT's Ferry System performance gives an in-depth look at a number of performance measures including customer feedback, capital expenditure performance, and ridership and revenues. This quarter, from April through June 2005, the Ferry System scheduled 42,062 trips. Of these trips, 168 were cancelled but 22 make-up trips were made. Total completed trips were 41,916. The chart at the right shows a system-wide average reliability index. Using this index, 1.4 ferry trips may be cancelled during the course of a year for a commuter. This suggests an average of 3.47 trips cancelled per one thousand trips made. More is available in the latest *Gray Notebook* on pages 61 -66.

Average Missed Trip per Commuter

FY 2001	1.6
FY 2002	2.3
FY 2003	1.7
FY 2004	2.2
FY 2005 Qtr 1	1.6
FY 2005 Qtr 2	1.9
FY 2005 Qtr 3	1.3
FY 2005 Qtr 4	1.4
FY 2005 Qtr 4¹	0.7
FY 2005 Avg	1.5

A total of 82 trips were cancelled on the Port Townsend – Keystone route due to weather/tides. Excluding trips lost to tidal conditions at Keystone, 99.82% of all trips were completed, and a reliability index of 0.7 was attained. Washington State Ferries is continuing to study alternative, in-harbor options at Keystone.

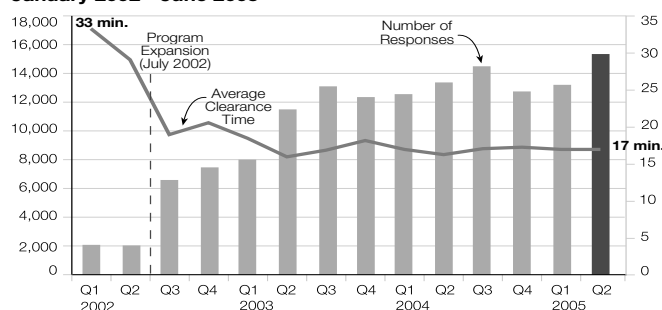
¹ without Keystone-Pt. Townsend

Incident Response: Quarterly Update

Incident Response Program Trends

In Quarter 2 of 2005, the total number of responses to incidents was a record high since the beginning of the Incident Response program - 15,354 total responses (16.2% more responses than the previous quarter). The increase was likely due to seasonal incident increases, as no significant changes were made in program size or schedule during this period. Despite the large number of responses, the overall average clearance time remained at 17 minutes. See page 56 in the latest *Gray Notebook* for more details.

Number of Responses and Overall Average Clearance Time January 2002 - June 2005



Source: WSDOT Incident 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.

How to Find Performance Information

The electronic subject index gives readers access to current and archived performance information. The 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, 2005 is available on line at: www.wsdot.wa.gov/accountability/graynotebook.pdf.

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Beige Pages: Project Reporting on the 2003 Transportation Funding Package

For the quarter ending June 30, 2005

WSDOT's website provides information on almost every project at www.wsdot.wa.gov/projects. The *Beige Pages* begin with guidance and instruction on how to navigate WSDOT's online project pages where you can find more detailed project information. The online project information is updated regularly.

Summary of 2003 Transportation Funding Package (Nickel Package)

Project Advertisements, Awards and Completions

Biennium to Date

As of June 30, 2005, 39 highway projects have been advertised.
Of those, 13 have been completed.

On Time, Scope and Budget Update of Nickel Projects Completed as of June 30, 2005

Project Description	On Time Advertised	On Time Completed	Within Scope	On Budget (Dollars in Thousands)		
				Planned	Actual	
I-5 Roanoke Noise Wall	✓	✓	✓	\$3,500	\$1,166	✓ ¹
SR 9/SR 528 Intersection – Signal	✓	✓	✓	\$ 710	\$ 565	20% Under
I-90, Cle Elum River Bridge	✓	✓	✓	1,272	784	38% Under
I-90, Geiger Road to U.S. 2 Median Barrier	Early	Early	✓	781	781	✓
I-90, Highline Canal to Elk Heights – Truck Climbing Lanes	Early	Early	✓	4,200	4,483	2% Over ²
I-90, Ryegrass Summit to Vantage – Truck Climbing Lanes	Early	Early	✓	8,389	8,389	✓
I-90, Sullivan – State Line Median Barrier	Early	Early	✓	1,040	973	6% Under
SR 97A, Entiat Park Entrance– Turn Lanes	✓	Early	✓	196	136	31% Under
SR 124, East Jct SR 12 – Reconstruction	✓	✓	✓	295	295	✓
I-182/U.S. 395 Interchange – Roadside Safety	✓	Early	✓	76	59	22% Under
SR 203, NE 124th/Novelty Road Vicinity	✓	Early	✓	1,487	1,487	✓
U.S. 395, Kennewick Variable Message Sign	✓	Late	✓	332	308	7% Under
SR 500, NE 112th Ave. – Interchange	Early	Early	✓	21,300	21,300	✓
Cumulative Cost to Date				\$ 43,578	\$ 40,726	

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 03-05 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 503 2004 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. Stage 1 complete, Stage 2 under construction
2. During excavation for the new lane, a large amount of saturated clay was found; this increased the cost of construction.

Biennium To Date

Completed projects (13) - see recap above

Projects Advertised and Awarded (23)

I-5, 2nd Street Bridge – Replace Bridge
I-5, Salmon Creek to I-205
I-5, Pierce County Line to Tukwila – HOV
I-5, South 48th to Pacific Avenue – Core HOV
I-5, NE 175th Street to NE 205th Street – NB Lane
I-5, SR 526 to Marine View Dr.
U.S. 12/SR 124 to McNary Pool – Add Lanes
SR 16, 36th Street to Olympic NW – HOV
SR 16/I-5 to Tacoma Narrows Bridge – HOV

SR 18, Covington to Maple Valley Highway
SR 24, I-82 to Keys Road
SR 31, Metaline Falls to International Border
I-90, Pines Road to Sullivan Road – Widen
I-90 Argonne Road to Pines Road – Widen
I-90, Eastbound Ramps to SR 18 – Signal
SR 106, Skobob Creek – Fish Passage
SR 161, 204th to 176th Street
SR 161, 234th Street to 204th Street E
SR 161, Jovita Blvd. to South 360th Street
SR 240/I-182 to Richland Y – Add Lanes
SR 240, Richland Y to Columbia Center Interchange
SR 395, NSC – Francis Ave. to Farwell Rd.
SR 527, 132nd Street SE to 112th Street SE

Projects Advertised, Pending Award (3)

SR7/SR 507 to SR 512 – Safety
SR 9/SR 522 to 228th Street SE – Widening
SR 9, 228th Street SE to 212th Street SE (SR 524)

Awarded Projects

The total Contract Award value for the 36 awarded projects is \$589 million, \$3.7 million below the pre-bid engineer's estimate of \$593 million. Three projects have been advertised and are pending award. These projects are not included in the engineer's estimate of \$593 million.

Delayed/Deferred Projects

Eight projects that were scheduled to be advertised prior to June 30, 2005 have not been advertised.

Progress on Projects to Date

Several of the highway projects funded by the Nickel Account are now under construction or have reached other important milestones. Details can be found in the respective on-line Project Pages at www.wsdot.wa.gov/projects.

I-5, Salmon Creek to I-205 – Widening

This project adds lanes on a two mile bottleneck segment of I-5 between NE 99th Street and NE 134th Street in Vancouver, including the replacement of two bridges over I-5. One of the new bridges has been completed and is now open to traffic. Challenges to construction have been presented by wet soils and an unexpected underground spring, adding to the project cost by an as-yet-undetermined amount. The schedule is being maintained for an open all lanes to traffic date of January 2007.

U.S. 12/SR 124 to McNary Pool – Add Lanes

This project constructs two additional lanes on 3.6 miles of U.S. 12, and a frontage road. It is the second of five phases that will provide a four-lane section on U.S. 12 from SR 124 to the Wallula vicinity. This is part of an overall, long-range plan to complete a four-lane highway from Burbank to Walla Walla. Work began in January 2005 and is currently 85% complete. On May 31, 2005, the two new U.S. 12 eastbound lanes were opened to traffic, five months ahead of schedule. Work continues towards installing permanent signals at the Humorist Road and Hanson Loop intersections with U.S. 12, installing signs, pavement markings, fencing and other miscellaneous work. Work is likely to be suspended in late July or early August until seeding operations can be done in October. Overall, the project is on schedule and within the proposed budget.

Watch List Projects

WSDOT is giving special attention to projects where cost, schedule or scope expectations may be at risk in the project delivery process, sometimes for reasons outside of WSDOT's control. See pages 14 - 16 of the *Gray Notebook* for details on all the Watch List projects.

SR 4, Svensen's Curve – Realignment

Update from the March 31, 2005 *Gray Notebook*. This project continues to experience difficulties with right of way acquisition. Appraisals for all parcels necessary for the project have been completed. Currently, WSDOT has acquired one parcel, is in active negotiations with a property owner. Right of Way acquisition/negotiations continues to be the project's highest risk activity. The cost increases associated with Right of Way reflect inflation and high-risk property acquisition. WSDOT anticipates construction costs will increase due to increased costs associated with oil prices (i.e. equipment operation costs and asphalt) and new wetland mitigation requirements. This project will remain in the *Gray Notebook* Watch List as WSDOT proceeds with right of way acquisition.

SR 9, 268th Street Intersection

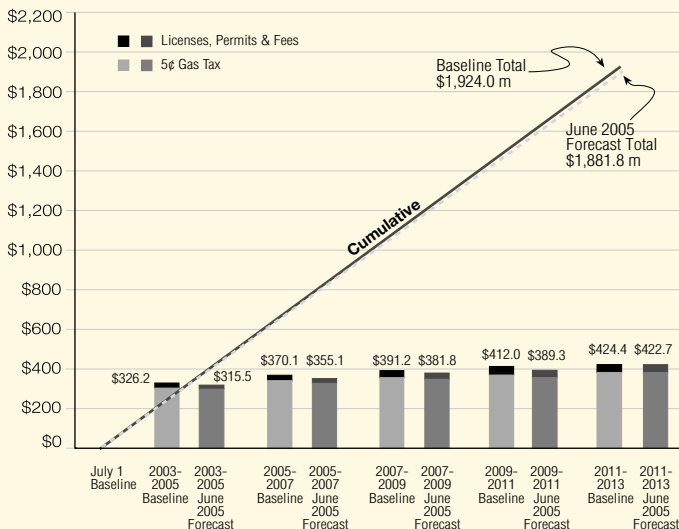
Update from the March 31, 2005 *Gray Notebook*. The value engineering review in June identified alignment and wall design changes that could result in a revised construction cost of \$1.39 million. The current budget for this intersection is \$1.31 million. The project team expects to meet the full funding need from cost savings also identified in the value engineering study for the Schloman Road to 256th St. segment of the project.

Revenue Forecast

The 2003 Transportation Funding Package enacted by the 2003 Legislature included tax and fee increases. The accompanying charts show the current projected revenues over the next ten years (for the 2003 Funding Package sources) as forecasted in June 2005 by the Transportation Revenue Forecast Council.

Transportation 2003 (Nickel) Account Revenue Forecast

March 2003 Legislative Baseline Compared to June 2005 Transportation Revenue Forecast Council
Millions of Dollars



Multimodal Account (New Sources) Revenue Forecast

March 2003 Legislative Baseline Compared to June 2005 Transportation Revenue Forecast Council
Millions of Dollars

