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WSDOT measures and reports on:

Highway Project Delivery

**Citizens – and our
public officials – ask
WSDOT:**

***“Are you competently
spending our money
delivering these
highway projects?”***



Parameters of Success:

Delivery of Expected Transportation Benefits

Project Schedule

Project Cost

Project Construction Quality

Success of Traffic Management

Appropriate Environmental Benefits and Mitigation

Environmental Compliance in Construction

Lifecycle Cost

Integration with Other Transportation Programs and Projects

Do highway projects make a difference?

Safer Roads

“Safety Enhancement” Projects

Before and after analysis of 21 sample safety improvement projects across the state

- Projects range from adding turn lanes and signals to installing median barriers and rumble strips
- The 24 months “after” analysis of the same 21 projects indicated an overall, average reduction of 47%
- A final, third year “after analysis” is planned for December 2005.

**Combined Average for 21 Safety Projects
Collisions per Year (24 months “after” data)**

	Property Damage Only Accidents	Injury/Fatal Accidents
Before Totals	8.6	6.6
After Totals	5.2	3.5
Percent Reduction	40%	47%

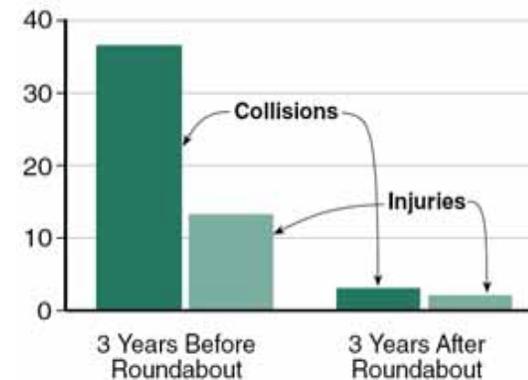
Source: *Gray Notebook*, December 31, 2004

A typical roundabout



Port Orchard -
Bethel Ave. and
Mile Hill Drive
Intersection

**Number of Collisions and Injuries
Before and After Roundabout: Comparison**



Source: *WSDOT Engineering and Regional Operations Division*.

Expected Safety Benefits from Newly-Funded Projects*

Selected Examples

2005 Median Cross-Over Protection Projects - Statewide

Install cable median barrier and other protections to lessen risk and severity of median crossing incidents. Statewide program of projects.

Expected reduction in injury accidents: From 11 to 5 per year.

I-5 Interchange Improvements at SR 161 and SR 18 (Federal Way)

Improvements include freeway to freeway ramps to reduce the “weaves” on and off I-5 at one of the highest accident locations in the state.

Expected reduction in injury accidents: From 34 to 21 per year.

I-5 HOV Improvements between 38th St. and Port of Tacoma Road

HOV lanes will improve traffic flow and reduce lane-change and other vehicle conflicts.

Expected reduction in injury accidents: From 80 to 55 per year.

I-5 Widening from Mellen Street to Grand Mound (Thurston County)

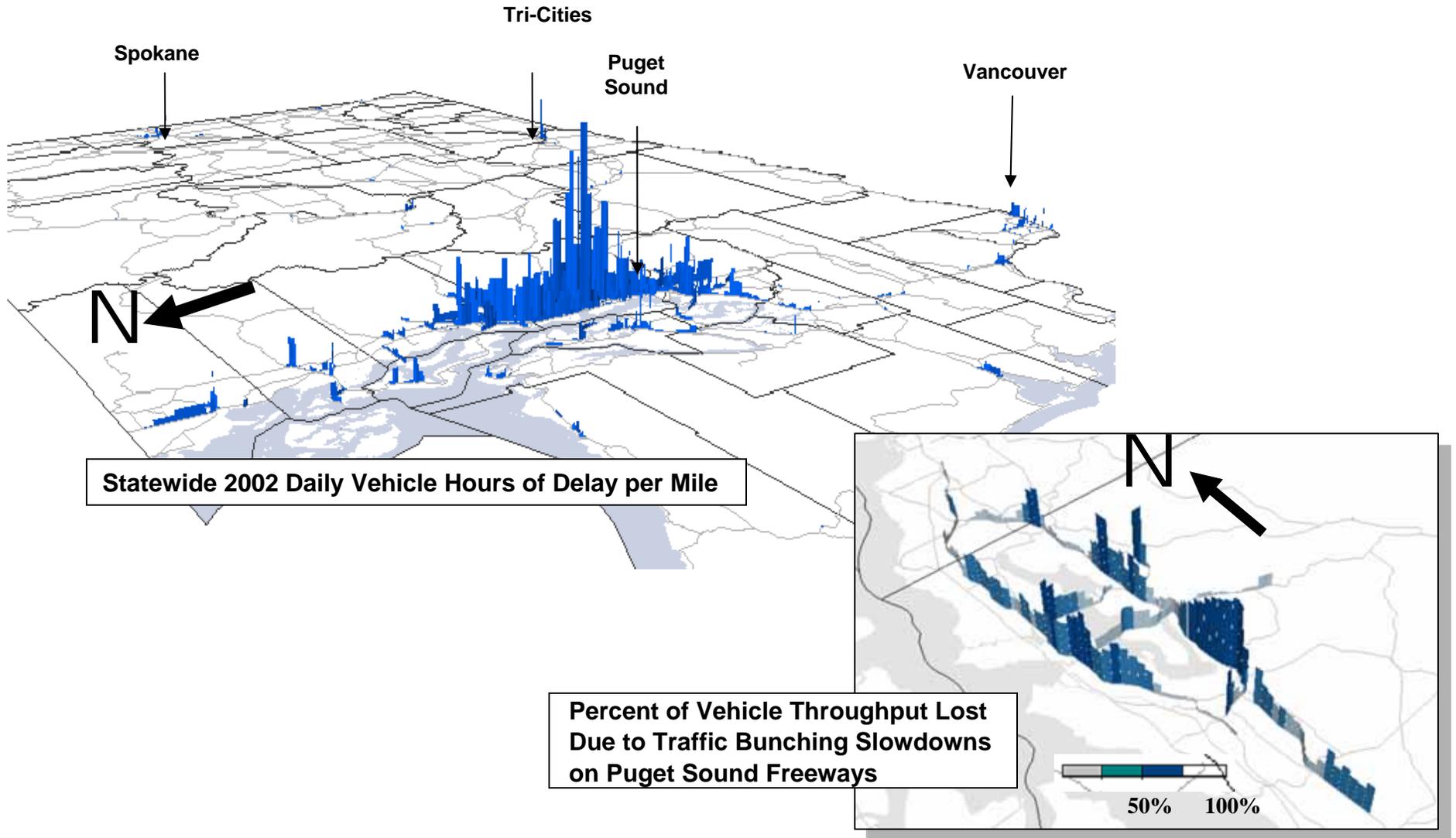
7 mile addition of new lanes will improve traffic flow

Expected reduction in injury accidents: From 23 to 12 per year.

** Using conservative estimating methods*

Do highway projects make a difference?

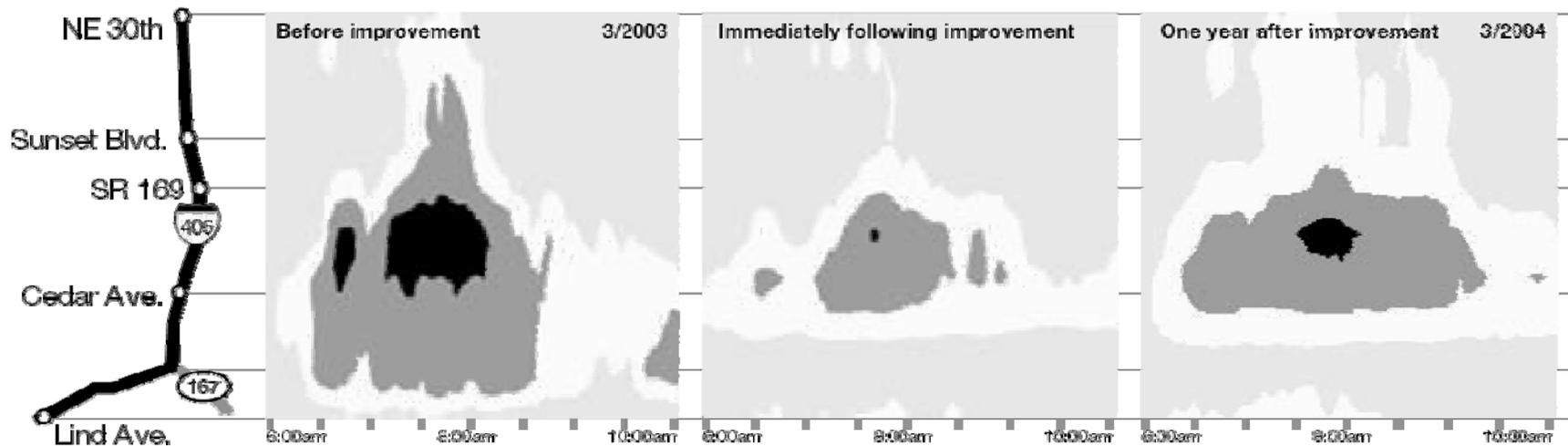
The delay problem



Reducing Bottlenecks and Chokepoints

I-405/SR 167 Ramp Separation Project Congestion Benefits: Before and After Analysis

Average Weekday Congestion I-405 Southbound



Based on this performance measure analysis, citizens would recover the cost of this project (\$10M) in the value of avoided travel delay in just over two years.

WSDOT has been able to develop this kind of “before” and “after” congestion reduction benefits demonstration for only a very small number of projects.

Source: Gray Notebook September, 2004

More on Bottlenecks and Chokepoints

Comparison of Conditions HOV Lane Application

The graphs at right reveal at a glance, whether delay conditions in 2003 were worse than 2002 (black line above gray) by comparing the percent of days when freeway speeds dropped below 35 mph.

The I-5 commutes between Everett and Seattle (above 2 graphs) did not see new projects. Delay conditions in 2003 had worsened (S/B in the morning) or stayed the same (N/B in the afternoon) in comparison to 2002.

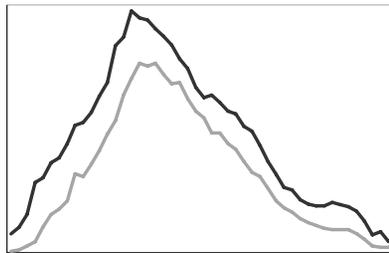
On the other hand, the commutes on S/B I-5 between Seattle and SeaTac and on S/B SR 167 between Renton and Auburn benefited from projects that added HOV lanes. Speed conditions clearly improved in 2003 *after* the highway projects were opened to traffic as compared to the level in 2002 (*before projects*).

Speeds Less Than 35 mph, Percent of Days

Commutes With and Without HOV Highway Improvement Projects
2002 - 2003

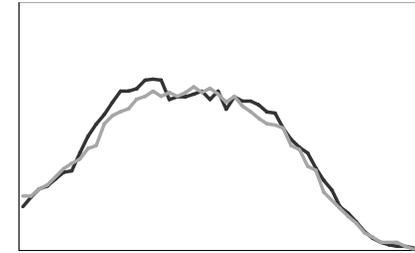
No Projects: Speed performance the same or worse

Everett to Seattle I-5



6 AM 10 AM

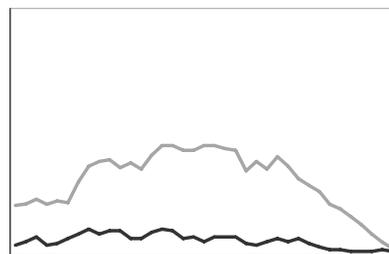
Seattle to Everett I-5



3 PM 7 PM

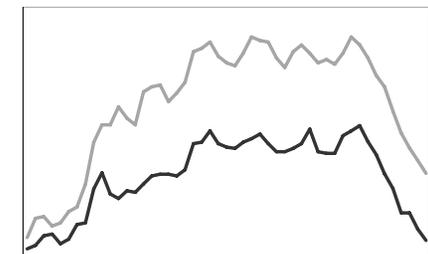
HOV Projects opened: Speed performance improved

Seattle to SeaTac I-5



3 PM 6 PM

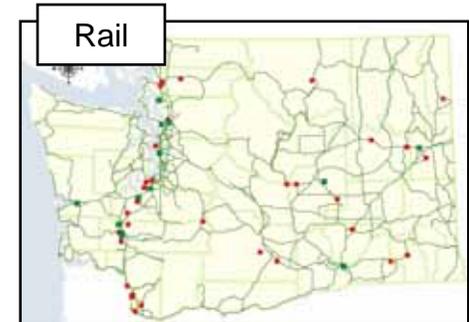
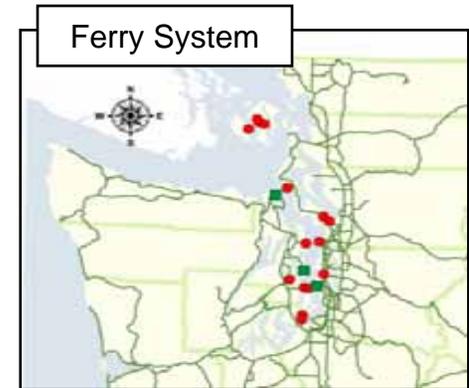
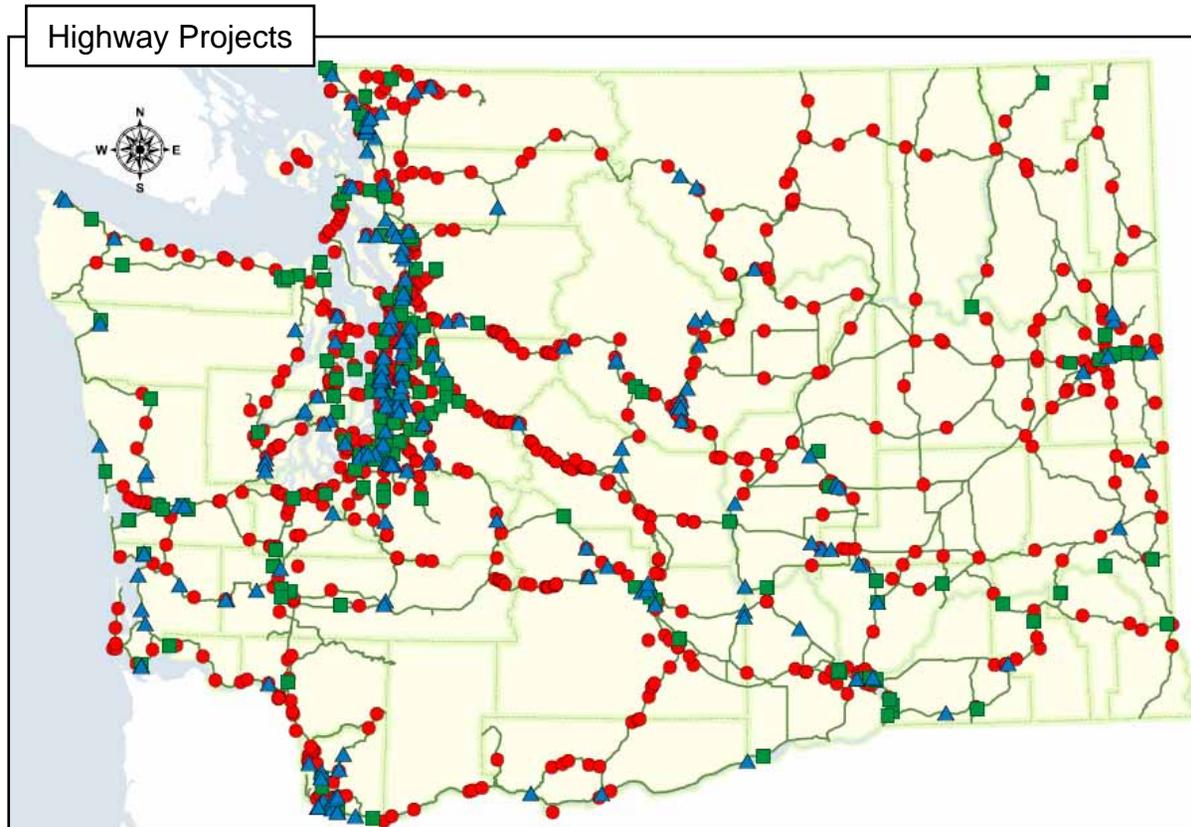
Renton to Auburn SR 167



2 PM 6 PM

— 2002 — 2003

How many highway projects are there?



Project Identification Numbers (PIN) tallied for Legislative Project Book

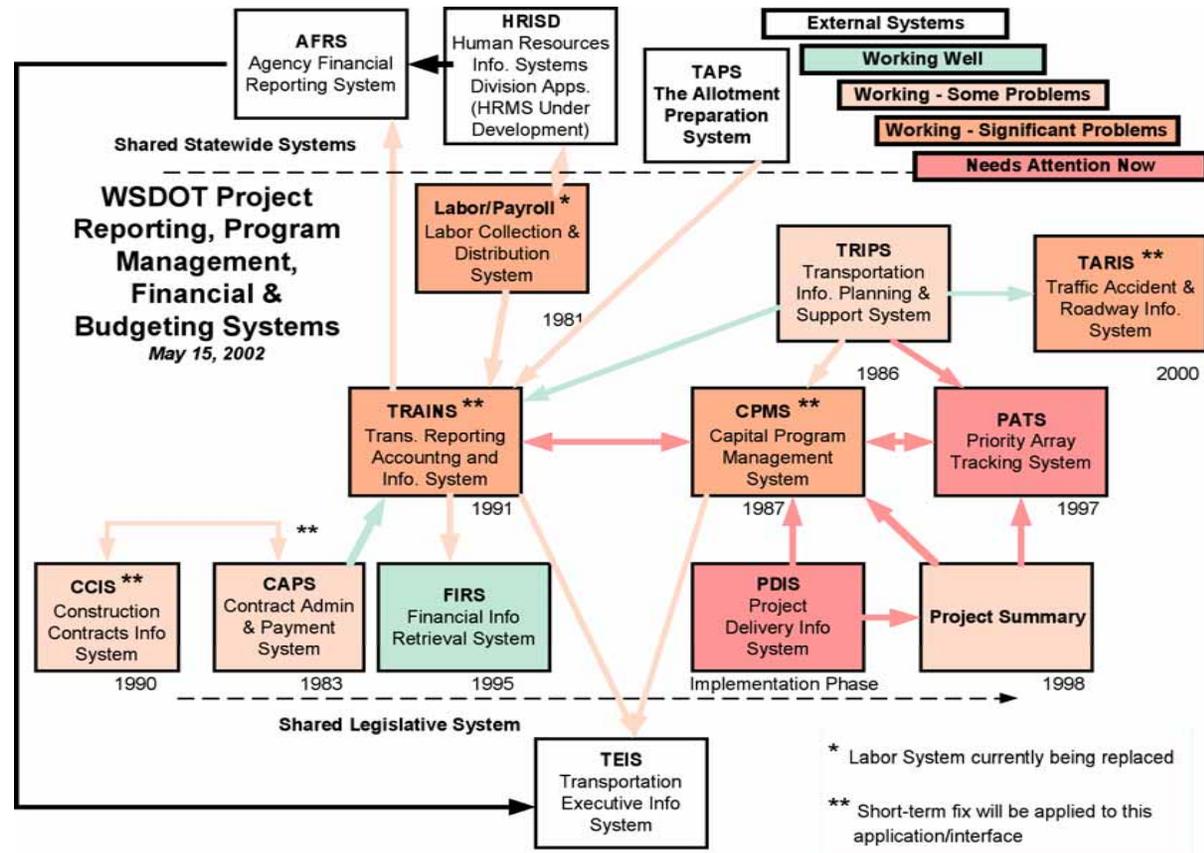
	Preliminary Engineering	Right of Way	Construction
● PreExisting Funds (2 years)	688	99	703
▲ Nickel Funds (8 years)	119	57	145
■ 2005 Partnership (16 years)	221	104	245
05-07 Expenditures			
Private Consultants, Property Owners, and Private Contractors	\$411 M 45%	\$311 M 85%	\$1,895 M 90%
State Workforce	\$503 M 55%	\$ 56 M 15%	\$ 211 M 10%
Total	\$914 M	\$366 M	\$2,106 M

For Example, Our Project Management Information Systems Lag Far Behind Our Needs

WSDOT's project reporting, program management and financial budgeting management systems and data sources

2002 Inventory

- The current systems are fragile and outdated – both hardware and software
- Multiple data tracking systems create confusion and errors



Project Status Report - WSDOT Highway Construction Projects - 2003 Transportation Funding Package (Nickel)

Highway Project Delivery Summary Through March 31, 2004

(Dollars in Thousands - Nickel Funds Only)

SR7/SR 507 to SR 512 - Safety (Expenditure Delay)

PIN: 300708B

	03-05	05-07	07-09	09-11	11-13	Total
Baseline Budget *	9,300	0	0	0	0	9,300
Adjusted Budget	0	9,300	0	0	0	9,300
Net Change	-9,300	9,300	0	0	0	0

Pierce Transit, one of WSDOT's funding partners, added federal funds to the project requiring WSDOT to produce the federal environmental documentation. The added federal environmental documentation process is being paid for by Pierce Transit. This will result in a delay of the advertisement to June 2005 and require shifting the remaining \$974,000 from the 03-05 biennium to the 05-07 biennium. This Quarter 7 adjustment is in addition to adjustments approved by the Transportation Commission in Quarter 4.

SR 16, Burley Olalla Interchange (No Change)

PIN: 301632A

	03-05	05-07	07-09	09-11	11-13	Total
Baseline Budget *	0	925	2,355	11,786	0	15,066
Adjusted Budget	0	925	2,355	11,786	0	15,066
Net Change	0	0	0	0	0	0

SR 16/I-5 to Tacoma Narrows Bridge - HOV (Expenditure Delay)

PIN: 301636A

	03-05	05-07	07-09	09-11	11-13	Total
Baseline Budget *	51,488	31,292	0	0	0	82,780
Adjusted Budget	35,036	47,734	0	0	0	82,770
Net Change	-16,451	16,442	0	0	0	-10

Although the project was advertised in March 2004, bid opening has been delayed due to an appeal of the environmental permit involving property acquisition. With the appeal resolved, bid opening is scheduled for February 2005. Construction is now anticipated to begin in April 2005. Previously it was assumed that the permitting issue would not be resolved in time to accomplish any construction in this biennium. Final projected completion date currently remains unchanged for the spring of 2007.

SR 16, 36th St to Olympic Dr NW, Core HOV (Expenditure Advancement)

PIN: 301638B

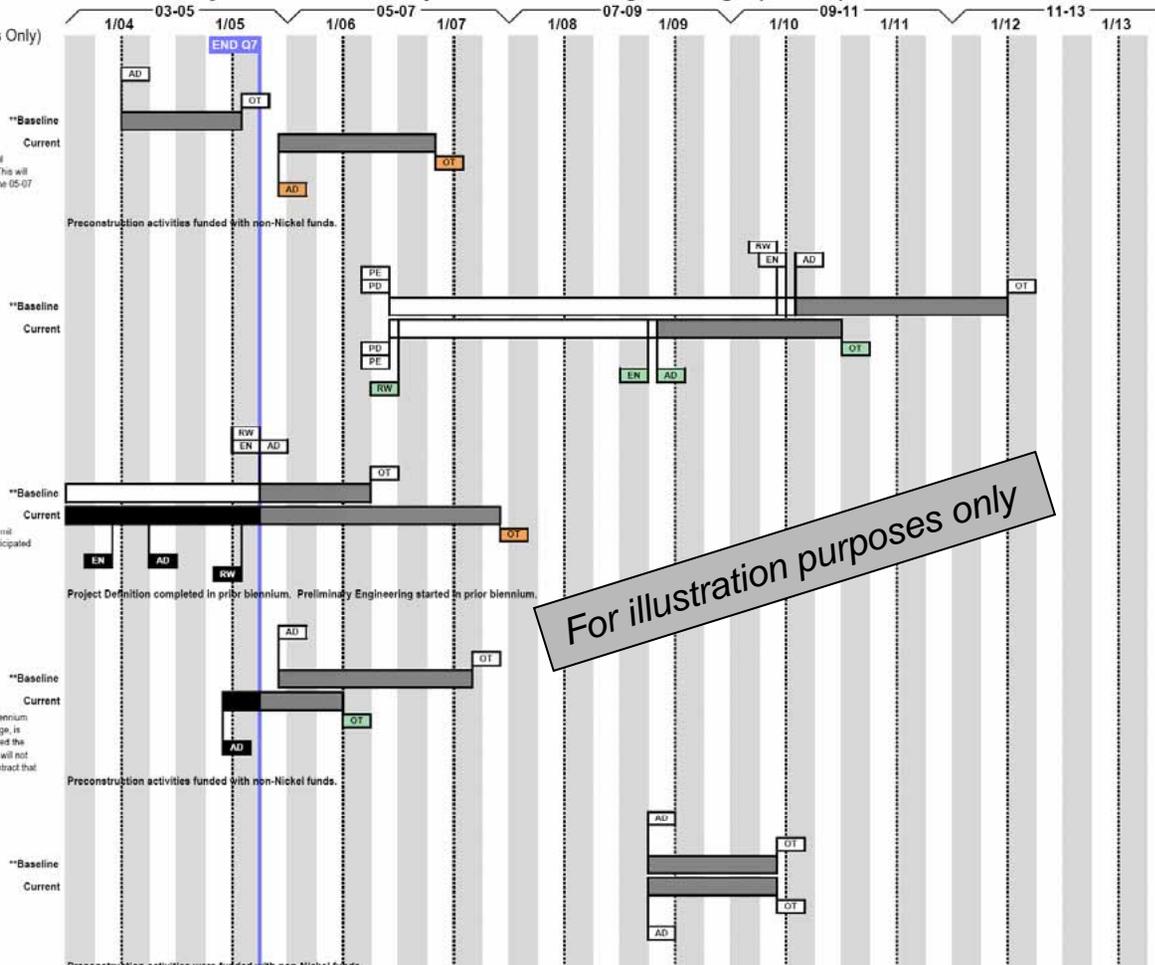
	03-05	05-07	07-09	09-11	11-13	Total
Baseline Budget *	49	7,696	0	0	0	7,745
Adjusted Budget	3,443	4,302	0	0	0	7,745
Net Change	3,394	-3,394	0	0	0	0

In an effort to coordinate this construction phase with the SR 16-HOV project, this project was advanced to the 2003-2005 biennium. The widening on the west side of the Tacoma Narrows, from the new 36th Street Interchange to the Olympic Drive Interchange, is scheduled for a construction phase start in May 2005. WSDOT advanced this project in November 2004. This change required the expenditure advancement of \$3.4 million into the 2003-2005 biennium from the 2005-2007 biennium. Advancing the projects will not change the overall project cost. Bids were opened in December 2004. Minor changes to milepost limits were made to the contract that will now match the revised end-milepost limits of the new Tacoma Narrows Bridge project.

US 101, Dawley Road Vicinity to Blyn Hwy (No Change)

PIN: 310101F

	03-05	05-07	07-09	09-11	11-13	Total
Baseline Budget *	0	0	600	1,273	0	1,873
Adjusted Budget	0	0	600	1,273	0	1,873
Net Change	0	0	0	0	0	0



For illustration purposes only



NOTE:
 - Baseline budget is the 2004 Supplemental Budget (Nickel funds only).
 ** Baseline milestones are based on the 2003 Legislative Transportation Package (Nickel funds only).

Milestones	
PD	Project Definition Complete
PE	Preliminary Engineering
EN	Environmental Documentation Complete
RW	Right of Way Certification
AD	Advertisement
OT	Open to Traffic

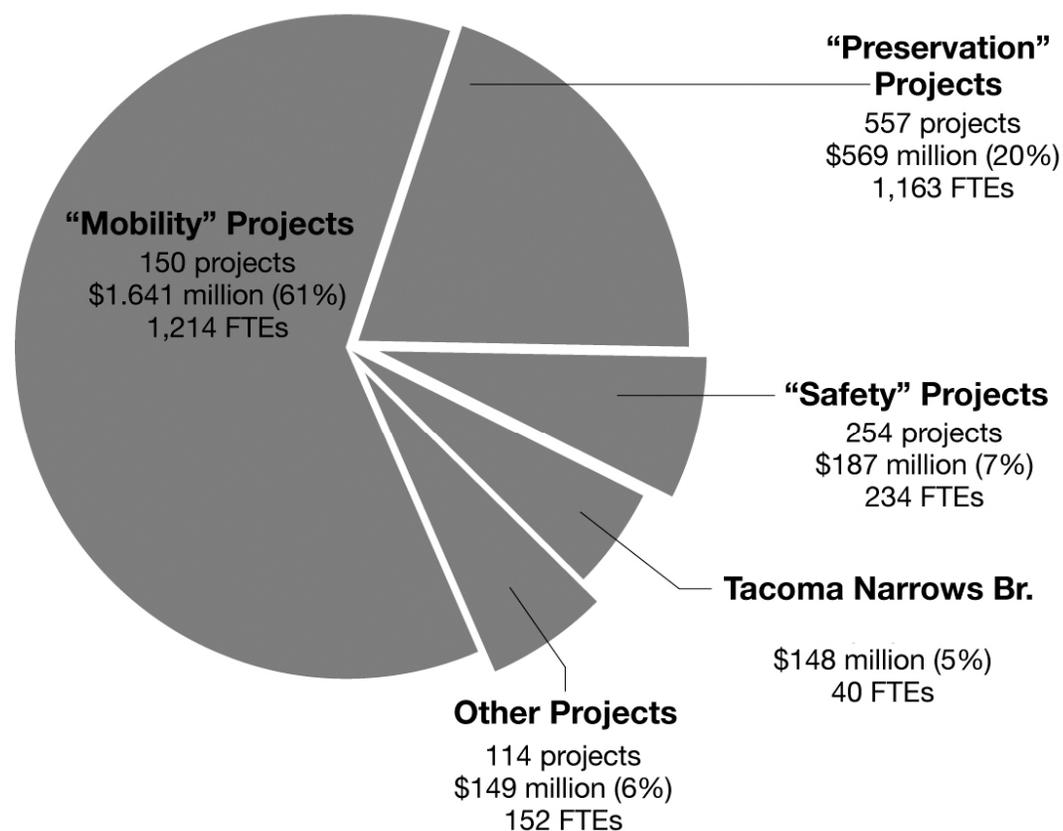
Legend	
White Box	Preconstruction Phase
Grey Box	Construction Phase
Black Box	Work Complete
Green Box with AD	Milestone Advance
Orange Box with AD	Milestone Delay
Black Box with AD	Milestone Complete

- Narrative and data reporting requires manual data collection. "Reports" are often hand-stitched.
- Project managers lack modern, reliable budget and schedule management and control tools.

Highway construction program spending overview

WSDOT Highway Capital Projects for 2005-07*

1,076 Active Highway Capital Projects = \$2.7 Billion *



We would like to go to categorization systems that allow these project benefits to be highlighted.

- Improve Safety
- "Fix it first"
- Fix Bottlenecks and Chokepoints
- Support Economic Development and Freight Movements

* Does not include other-source funding, such as Sound Transit

14.5 Miles of I-5: Seven Separate Major Construction Projects, Nine Construction Seasons

Interim HOV Project (1992-1993)
Installed on portions of the corridor

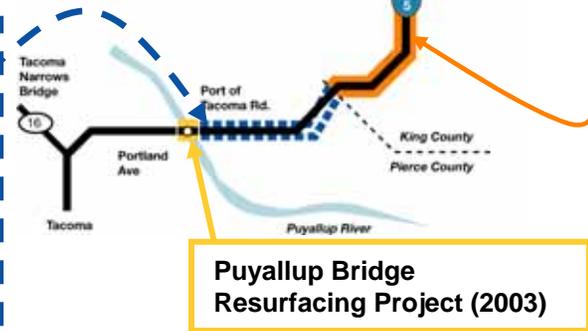
I-405 to 188th St. (1995) SB HOV lanes and trucking lanes. Constructed up the Southcenter Hill. Improvements were also made to on-ramps from I-405 and SR 510 to ease the flow of traffic entering I-5.

SR 516 to 320th St. (2002) Constructed the SB HOV lane from SR 516 to S 320th Street.

I-5 Federal Way - S. 317th Street (current)
WSDOT constructing overpass and direct access ramps to connect the HOV lanes to the new Transit Center, plus mainline improvements. Contractor is Icon Materials for \$22.4 million, largely funded by Sound Transit. Began June 2004 and is scheduled to be completed October 2005.

Planned HOV Extension: I-5 Port of Tacoma Road to Pierce County

- Widen I-5 and extend the HOV lane from Port of Tacoma Road to the King County Line.
- Funded in 2003 Nickel Project for \$33.6M
- Scheduled by Legislature to begin in 2009



Why Should We Expect the Public to Be Happy? Every year since 1992 has seen construction activity on this corridor, where average daily traffic is about 180,000 vehicles per day.

I-5 Pierce County Line to 320th St.
May 2005 - December 2006

I-5 HOV as of May 2005: segment before construction began

I-5 HOV as of June 2005: median cleared in preparation for construction.

I-5 HOV as of late 2006:
(artist's rendering)

Construct new HOV lanes north and south from 320th Street to vicinity of SR 18. Funded in Nickel Package (2003) for 2005 start. Contract awarded in May 2005 for \$35.8 Million

Accounting to the Public and the Legislature:

The Web:

Quarterly Project Reports on WSDOT's website

SR 16 HOV Improvements - Olympic Drive to Union Avenue

Quarterly Project Report Update for Quarter Ending March 2005

Project Title & Location

- 1) 8th Avenue/Pearl Street to Jackson Ave., Tacoma
- 2) SR 16 HOV - Union Ave. to Jackson Ave., Tacoma
- 3) 36th Street to Olympic Drive, Gig Harbor

Contractor/Consultant
 Stage One: Tri-State Construction, Inc. Stage Two: Woodworth and Company, Stage Three: Tri-State Construction, Inc.

Recent Progress
 Construction is substantially complete—only minor incidental work remains—on the first phase of this project, 8th Avenue/Pearl Street to Jackson Avenue. The second phase, Union to Jackson Avenue, was awarded Feb. 7, 2005, to Tri-State Construction, Inc. for a low bid of \$43.7 million. Construction activities began March 11. Work continues on relocating utilities in the corridor in preparation for the contract work. The final phase of the project, 36th Street to Olympic Drive, has been accelerated seven months; bids for the work were opened in December 2004. Construction is expected to begin in early April.

Design Construction Impacts
 Maintaining compatible work zones has been the result of ongoing coordination between SR 16 HOV construction and the adjacent Tacoma Narrows Bridge project.

Environmental Impacts / Compliance
 For phase two of this project, 32 acres at Leach Creek mitigation site is in WSDOT possession. An alternate mitigation plan has been submitted which includes stormwater treatment at Leach Creek and funding of improvements at China Lake.

For the entire project Temporary Water Discharge, Erosion Control Plans, Spill Prevention, Control Plans, and Health and Safety Plans have been developed and are being implemented. All necessary permits have been secured. All necessary permits have been secured. All necessary permits have been secured.

Milestone Outlook

Activity	Start Date	End Date	Description
Design	February 2004	December 2004	Design Documentation is complete for all three phases of the project.
Permits	October 2004	December 2004	Environmental permits for phase one and phase two were approved. Environmental permits for phase three are complete. Environmental permits for phase two were approved and the project is delayed.
Advertisement	October 2004		All three contracts have been awarded.
Ground Breaking	April 2004		Construction is nearly complete for stage one; stage two construction has started. The third and final stage is expected to begin construction in April 2005.
Open to Traffic	Spring 2007		The goal is to complete all significant construction activities on this project spring 2007, coordinating with the scheduled opening of the new Tacoma Narrows Bridge.

Project Cost Summary:

Category	Dollars in millions	Percent of Total
Preliminary Engineering	\$ 9.4	9.2%
Right-of-Way	\$ 7.2	7.1%
Construction	\$ 85.4	83.7%
Funded Project Costs	\$102.0	100.0%
Nickel funds included in above costs	\$ 90.5	88.7%

Planned vs. Actual Expenditures (Total Project Cost)

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 -Substance will not be discussed-**

The Story:

Gray Notebook Beige Page narrative excerpt

SR 16, HOV Improvements - Union Avenue to Jackson Avenue

As reported in the June 2004 Gray Notebook, this project, which completes the HOV system on a critical section of SR 16 between I-5 and the Tacoma Narrows Bridge, is one of the most important and most time-sensitive of the early Nickel account projects. This is due to the need for the completion of this project to coincide with the opening of the Tacoma Narrows Bridge.

The project was advertised in March 2004, with a scheduled bid opening in May 2004. However, the opening of the bid was delayed because of administrative procedures - one at the

Department of Ecology action was taken in respect to the project's key is rooted in a landowner a portion of their project wetlands enhancement been agreed to by WSDOT officials, as compensation the right of way. The Department of Ecology

WSDOT has reached a who initiated these changes

Attorney General's Office. WSDOT is in the process of revising the wetland mitigation plans that will be submitted to the City of Tacoma and the Army Corps of Engineers. These changes resulted in developing a new 'out-of-kind' mitigation plan acceptable to the Washington State Department of Ecology. WSDOT's goal is to have all revised plans submitted to all agencies for approval by the end of November 2004, with a hope of opening bids prior to spring 2005.

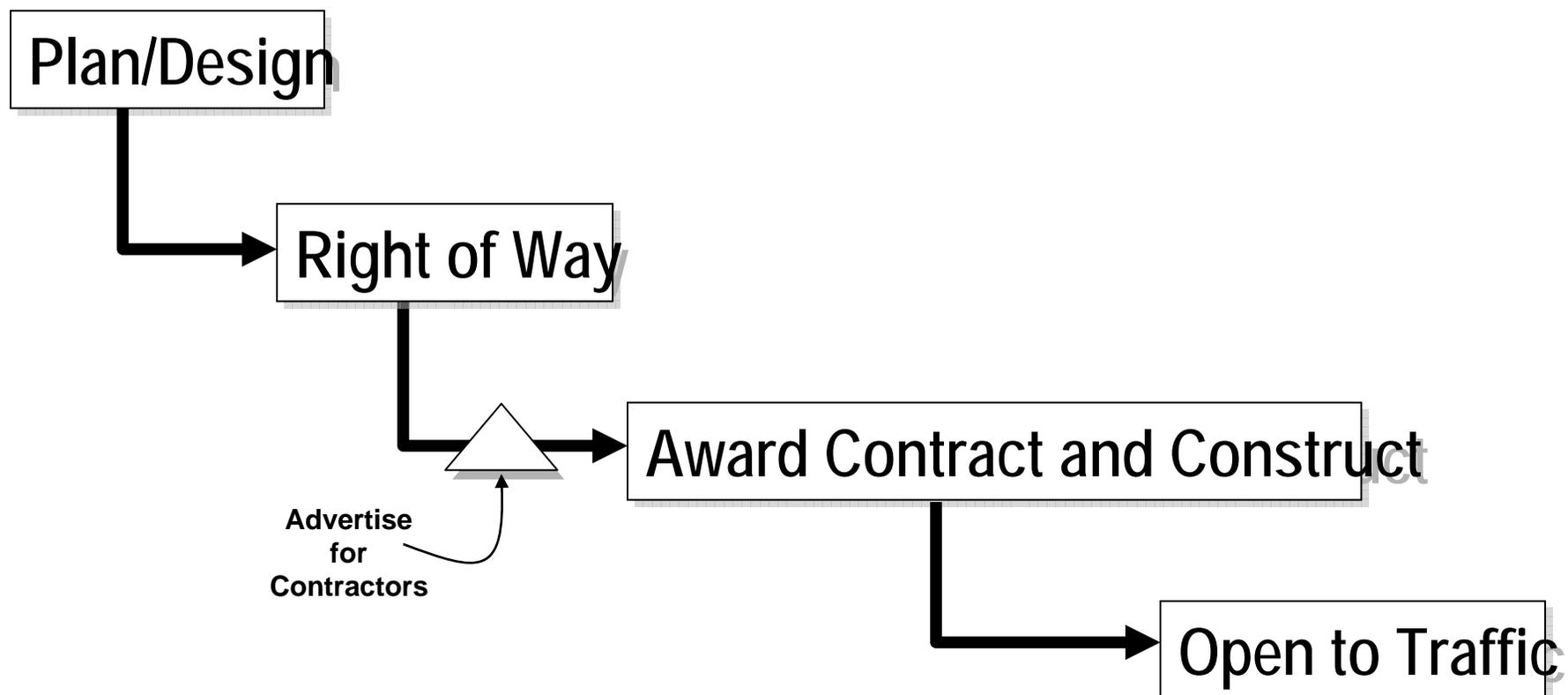
Current Project Highlights and Accomplishments

As reported last quarter, since the opening of bids was being delayed until late in 2004, WSDOT is requesting to delay \$28.8 million for the 2003-2005 biennium, moving \$16.2 million to the 2005-2007 biennium and \$12.6 million the 2007-2009 biennium. Working with engineering consultants, WSDOT has sequenced the construction of two bridges in the project to allow for acceleration of other construction activities during the 2005 construction season and delaying some construction activities until 2006. These changes were approved by the Washington State Transportation Commission last quarter.

These refinements take into account the loss of the 2004 construction season and the proposed delay of the open to traffic date by nine months, to November 2006. However, even with these delays, the plan continues to be that the project will be delivered as originally intended, in time for the opening of the new Tacoma Narrows Bridge in 2007.

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 -Substance will not be discussed-**

The scheme of project delivery seems simple

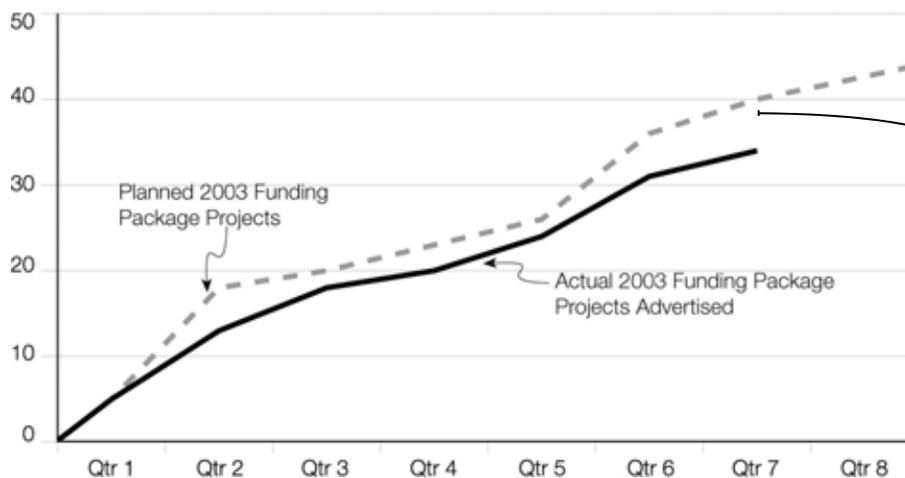


Do we deliver the projects when we say we will?

Highway Project Bid Advertisements (Nickel Funding)

Highway Construction Program Advertising 2003 Transportation Funding Package (Nickel Funds)

Planned vs. Actual Number of Projects Advertised
2003 - 2005 Biennium, Quarter 7 ending March 31, 2005
Project Count



Gray Notebook narrative detail accounts for the gap.

For example:

SR 3/SR 303 Interchange (Waaga Way) – New Ramp

Project redesign and remaining work on the environmental permits has delayed the advertisement of this project from December 2004 to May 2005.

SR 7/SR 507 to SR 512 – Safety

Local and state elected officials requested that WSDOT delay the project to allow time to pursue additional funding for landscaping and other desirable adjuncts to the project requested by the local community. The ad date is now May 2005.

SR 167, 15th St. SW to 15th St. NW – HOV

Because funding uncertainties had caused the design of this project to sit “on the shelf” for many years, additional time was needed for redesign of stormwater treatment, wetland mitigation and floodplain investigations to meet today’s applicable environmental requirements. This project now has a planned advertisement date of October 2005.

SR 9/SR 522 to 228th St. SE – Widening SR 9, 228th St. SE to 212th St. SE (SR 524) (Projects combined for efficiency)

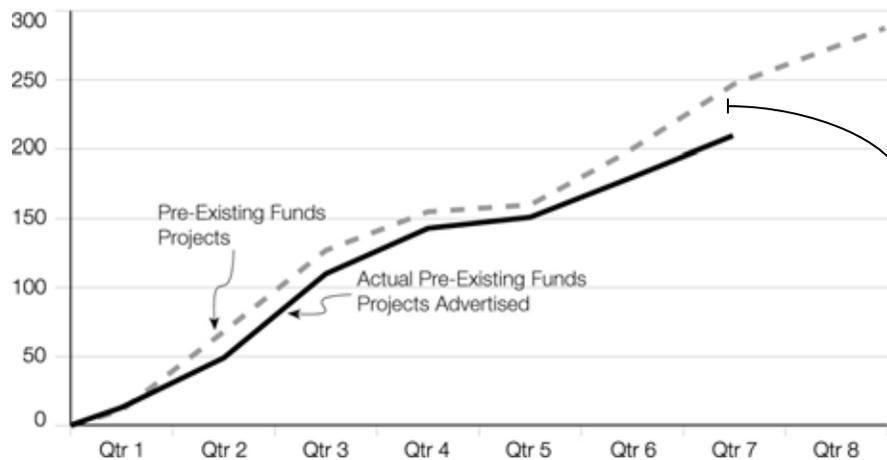
Delays in completing the design, receiving environmental permits and obtaining right of way have resulted in a three month project advertisement slip from February to May 2005.

Highway Project Bid Advertisements (Pre-Existing Funding)

Highway Construction Program Advertisements Pre-Existing Funds Projects

Planned vs. Actual Number of Projects Advertised
2003 - 2005 Biennium, Quarter 7 ending March 31, 2005

Project Count



Gray Notebook narrative detail accounts for the gap. For example:

SR 164/SE 436th Street to High Point Street – Paving

This advertisement is being delayed four months from January 2005 to May 2005. Additional time is needed to obtain King County approval for acquiring a wetland mitigation parcel. The parcel is required in order to receive an environmental permit from the U.S. Army Corps of Engineers. This delay should not affect the construction schedule for this project.

SR 524/I-5 to Floral Hills Cemetery Vicinity – Paving

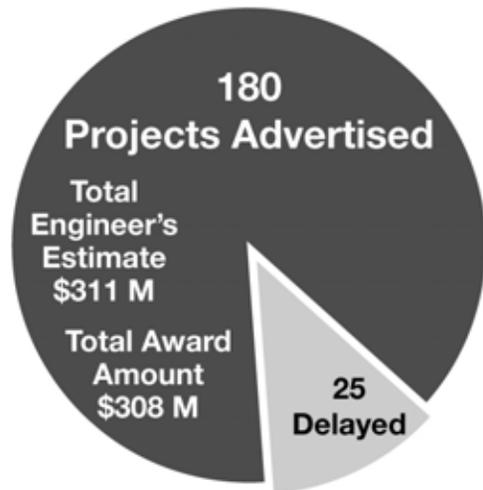
This advertisement is being delayed two months from February 2005 to April 2005. Additional time is needed to analyze bridge rail options and complete necessary local agency agreements. However, the construction schedule will be completed in 2006 which is one year earlier than originally planned because only one construction season is needed to complete this project.

SR 524/Floral Hills Cemetery to Richmond Road Vicinity – Paving

The advertisement is being delayed three months from January 2005 to April 2005. The delay is due to issues with companion project SR 524/I-5 to Floral Hills Cemetery Vicinity – Paving and local agency agreement coordination delays. This delay should not affect the construction schedule for this project.

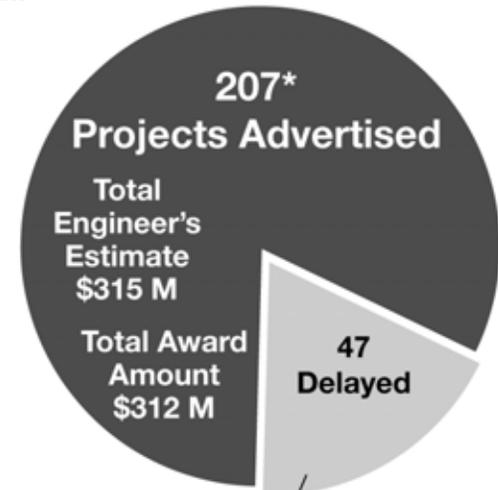
Pre-Existing Funds Projects: A snapshot of quarterly progress and total progress to date

End of Last Quarter
December 31, 2004



	Projects Through Last Quarter	This Quarter's Progress	Biennium to Date Total
Projects Advertised			
As Scheduled	124	21	145
Project Ads Early	14	1	15
Project Ads Late	38	5	43
Emergency Projects	4	0	4
Total Advertised	180	27	207
Projects Delayed			
Still within the biennium	17	5	22
Out of the biennium (deferred)	8	17	25
Total Delayed	25	22	47
Projects Deleted			
Projects Deleted	3	1	4
Total Deleted	3	1	4

End of This Quarter
March 31, 2005



These projects have been delayed due to challenges with:

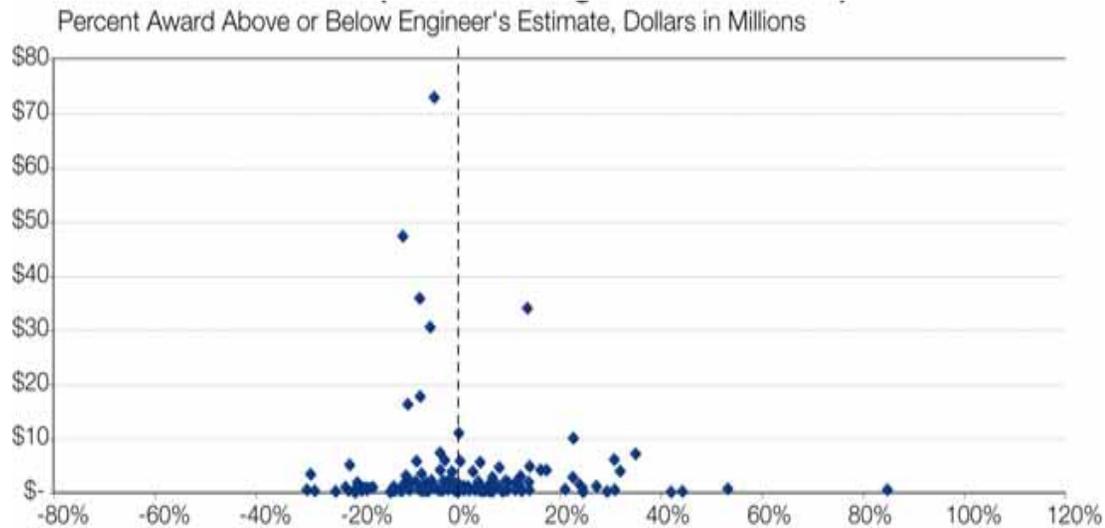
- Environmental Permitting
- Right of Way Acquisition
- Changes in Design
- Consolidating Projects for Efficiency

*Total includes I-405/NE 44th St. Vicinity project that was originally planned for advertisement in quarter 7 but was completed in quarter 1.

Do the projects cost what we expect?

Comparing bid award amount to estimate

Individual Contracts (Award to Engineer's Estimate) Gray Notebook Report for July 1, 2004 to June 30, 2005

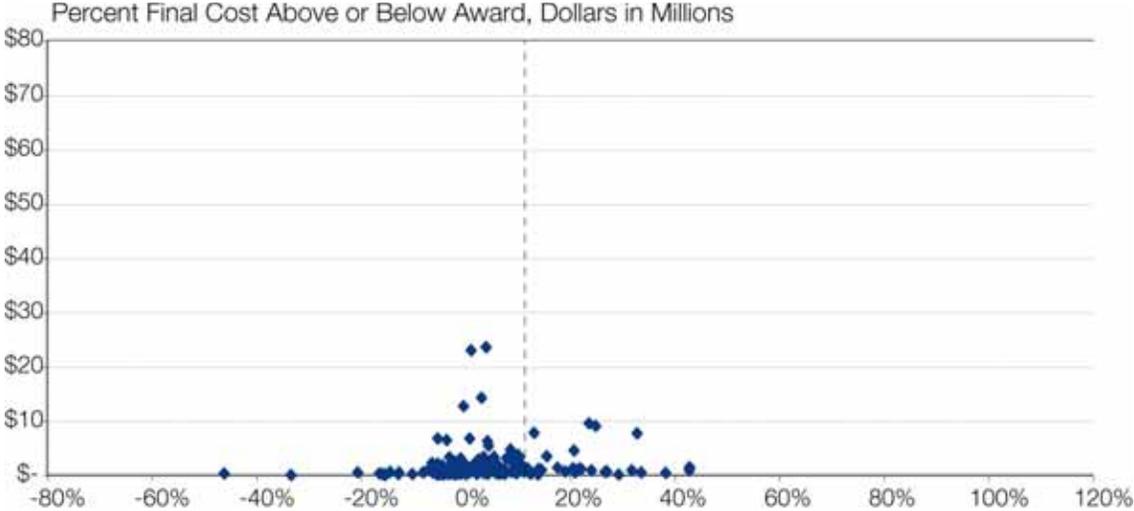


Awarded Contracts: Year-to-Year Comparison	FY2002	FY2003*	FY2004	FY2005
Number of construction contracts awarded during the fiscal year	177	176	129	133
Total of the engineer's estimates for highway construction contracts during the fiscal year	\$277,091,361	\$355,420,644	\$398,923,582	\$469,945,722
Total award amount for highway construction contracts during the fiscal year	\$250,561,516	\$314,534,831	\$389,592,349	\$460,607,742
Percent that the total award amount fell below the engineer's estimate	9.6%	11.5%	2.3%	2.0%

*Does not include Tacoma Narrows Bridge or the Hood Canal Bridge Contract.

Comparing Final Contract Costs to Contract Award Value

Individual Contracts (Final to Award) *Gray Notebook* Report for July 1, 2004 to June 30, 2005



Final Cost: Year-to-Year Comparison	FY2002	FY2003	FY2004	FY2005
Number of highway contracts completed during the fiscal year	122	175	147	155
Total award amount for highway construction contracts completed during the fiscal year	\$196,000,000	\$351,525,709	\$274,495,656	\$280,396,785
Total final cost for highway construction contracts completed during the fiscal year	\$213,953,965	\$375,244,919	\$294,482,387	\$294,988,223
Percent that the total final cost exceeded the total award amount	9.2%	6.7%	7.3%	5.2%

Recap of twelve Nickel Projects completed as of March 31, 2005

Project Identification	On Time Advertised	On Time Completed	Within Scope	On Budget (Final Construction Cost Dollars in Thousands)		
				Planned	Actual	
1) SR 9/SR 528 Intersection – Signal	✓	✓	✓	\$ 710	\$ 565	20% Under
2) I-90, Cle Elum River Bridge	✓	✓	✓	1,272	784	38% Under
3) I-90, Geiger Road to U.S. 2 Median Barrier	Early	Early	✓	781	781	✓
4) I-90, Highline Canal to Elk Heights – Truck Climbing Lanes	Early	Early	✓	4,200	4,483	2% Over ¹
5) I-90, Ryegrass Summit to Vantage – Truck Climbing Lanes	Early	Early	✓	8,389	8,389	✓
6) I-90, Sullivan – State Line Median Barrier	Early	Early	✓	1,040	973	6% Under
7) SR 97A, Entiat Park Entrance– Turn Lanes	✓	Early	✓	196	136	31% Under
8) SR 124, East Jct SR 12 – Reconstruction	✓	✓	✓	295	295	✓
9) I-182/U.S. 395 Interchange – Roadside Safety	✓	Early	✓	76	59	22% Under
10) SR 203, NE 124th/Novelty Road Vicinity	✓	Early	✓	1,487	1,487	✓
11) U.S. 395, Kennewick Variable Message Sign	✓	Late	✓	332	308	7% Under
12) SR 500, NE 112th Ave. – Interchange	Early	Early	✓	21,300	21,300	✓
Cumulative Cost to Date				\$ 40,078	\$ 39,560	

Additional table is being prepared on Schedule to Advertisement and Award Contract to Engineers Estimate on 29 Nickel projects currently in construction but not yet completed.

Construction Traffic Management

WSDOT does not yet have measures for construction traffic management.

Initiatives to minimize and mitigate construction traffic impacts:

Public Information

- Exhaustive media outreach; regular media and traffic reports
- HARs, 511, Website, Variable Message Signs

Maintain number of lanes

Use nighttime and weekend construction (at cost premium!)

Total short-term closures to eliminate long-term inconvenience: “Get in, get out, stay out.”

A + B Bidding and Contractor incentives

Focused Incident Response program in work zones

Improved physical protection (barriers) for workers

Targeted traffic violation enforcement in work zones to minimize accidents and backups

“Give ‘em a Brake” campaign

Work Zone Safety Statistics

Total miles of state highways:	7,048
Work zone deaths from 1999 – 2003:	41
Work zone injuries from 1999 – 2003:	3,709
Number of work zone accidents involving alcohol from 1996-2000:	772
Number of work zone accidents involving property damage from 1999-2003:	5521
Number of work zone collisions WSDOT’s IR program responded to in 2004:	745

Note: Trend information now being developed



Achieving project cost efficiency gains

Efficiency Gains for Hot Mix Asphalt Pavements

Hot mix asphalt surface life has improved by 14 percent (statewide) over the last six years, while over the same time period the vehicle miles traveled on asphalt paved roadways has increased by approximately 10 percent.

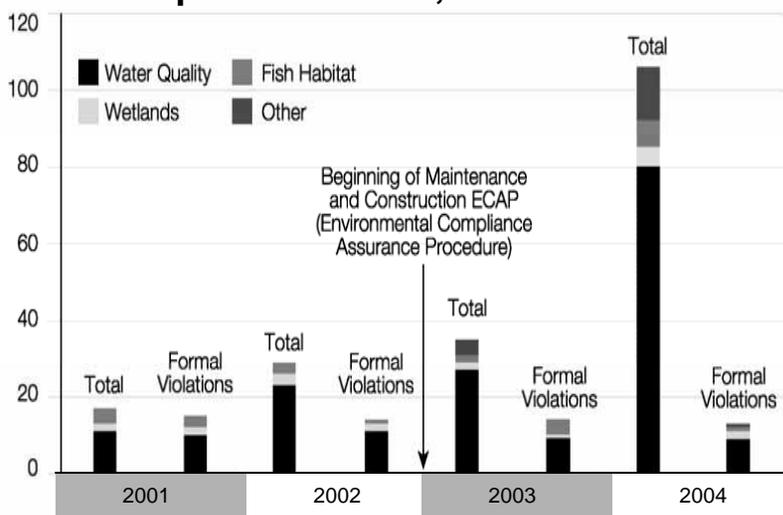
Factors include:

- Paving specification for use of performance grade binders selected for expected climate and traffic conditions
- Use of Superpave mix designs keyed to temperature and traffic expectations
- Improved asphalt pavement repair and asphalt placement techniques
- Better attention to construction details and inspection
Increased experience with LLCC rehabilitation programming

Gray Notebook, December 31, 2003, p. 40

Meeting Environmental Construction permit requirements

Water Quality Compliance Measures Non Compliance Events, 2001-2004



Source: WSDOT Environmental Services Office.

Erosion and Sediment Assessment Result Trends

Achieved on what percentages of projects?

	Assessment Measure	2002	2003	2004	Status
Excellent	Delineate clearing limits	100%	100%	100%	stable
	Sediment control BMPs installed on time	90%	90%	100%	improved
	Control other pollutants from impacting water quality			100%	new measure
	Control flow rates	87%	84%	100%	improved
	Removal of water	100%	71%	100%	improved
Good	Access routes prevent tracking of mud onto streets	98%	69%	91%	improved
	Protect cut & fill slopes	67%	50%	89%	improved
	Storm drain inlet protection	74%	82%	83%	stable
Fair	Manage project erosion/sediment control BMPs proactively	56%	75%	80%	improved
	Channels for temporary stormwater conveyance are stabilized	90%	64%	73%	improved
Poor	Erosion control BMPs installed on time			67%	new measure
	Amount of disturbed soil covered with erosion control BMPs	65%	45%	65%	improved
	Site preparedness to resist erosion	86%	80%	48%	decreased*
	Maintain BMPs	70%	70%	50%	decreased

* In previous years, only the potential to discharge sediment to receiving water bodies was considered during assessments, which suggested a high level of performance. In 2004, the scope of site vulnerability was broadened to include site damage, resulting in a perceived decrease in performance.

Design Quality

- WSDOT has not yet developed performance measures for the design quality of its projects
- One aspect of design quality is the performance of WSDOT’s Value Engineering Program
- WSDOT does not use “change orders as percent of contract cost” as a design quality performance standard because of the confounding variable presented by WSDOT's risk optimization strategies where WSDOT intentionally retains the risk of most unforeseen differing site conditions
- Design quality evaluation is becoming more complex because of new expectations for non-standard “Context Sensitive Solutions.”

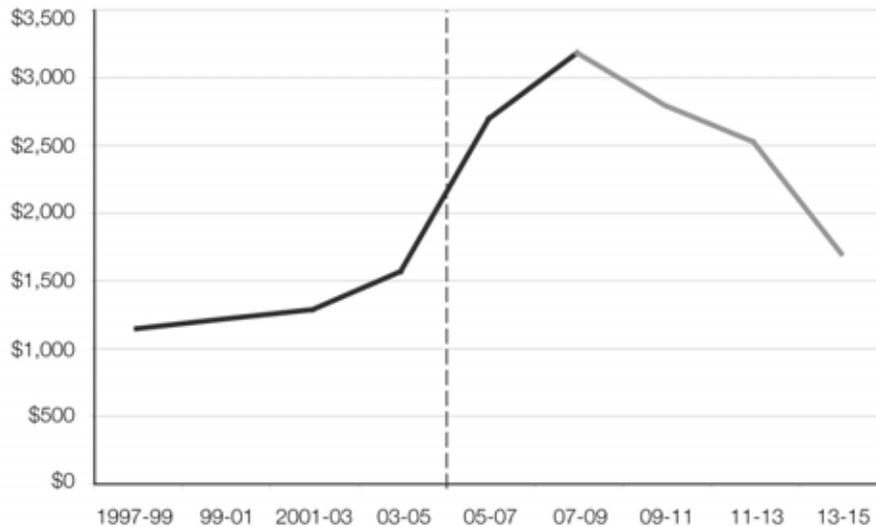
Value Engineering Performance Trends				
Value Engineering Performance Measures	2001	2002	2003	2004
Net project savings in millions	\$57	\$71	\$41	\$81
Recommendations implements	74%	80%	77%	84%
Recommendations that reduced right-of-way or environmental impacts	41%	39%	46%	61%
Recommendations that enhanced operational performance	46%	56%	46%	55%
Recommendations that improved constructability	37%	38%	63%	74%
Recommendations that compressed delivery schedule	35%	24%	63%	53%
Recommendations that developed partners or consensus	51%	58%	29%	45%

Graph on increased size of construction program and budget for WSDOT construction program workforce

Trend for Highway Capital Expenditures

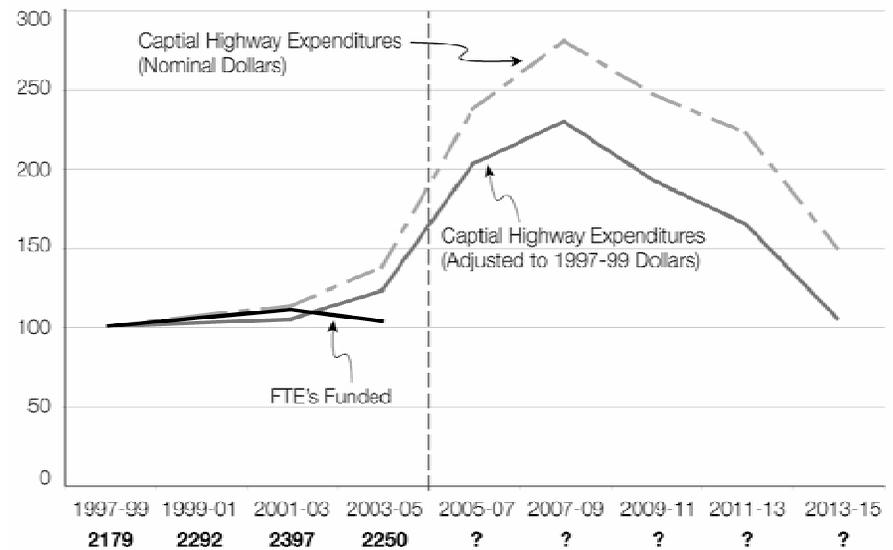
Actual and Projected 1997-2015

Dollars in Millions (Nominal Dollars)

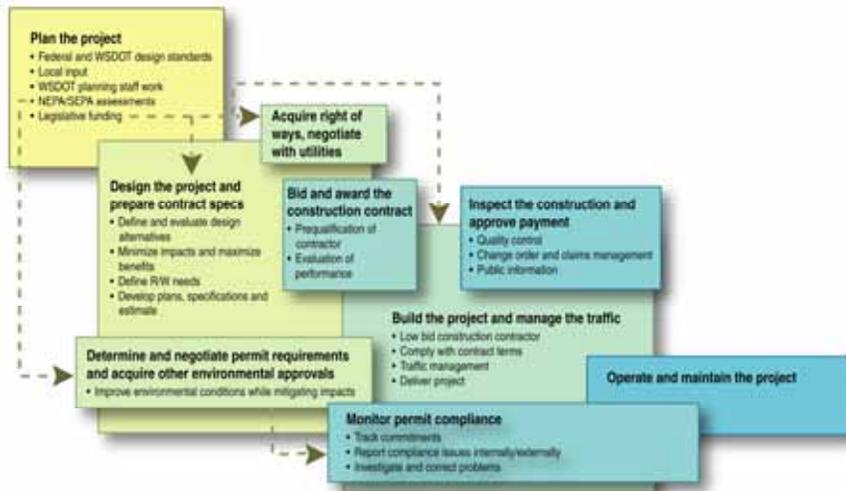


Capital Highway Expenditures and FTE's 1997-2015

Change Relative to 1997 equals base 100



Issues for WSDOT's Optimum Project Delivery Effectiveness



Internal Needs

- Modern project delivery management information systems
- Recruitment, retention and skill-building for project delivery, management and engineering professionals
- Predictability and stability of capital funding
- Greater flexibility in procurement requirements and procedures

External Issues

- Contractor capacity
 - Scale of resources
 - Bonding capacity
 - Competitiveness of bidding environment
- Engineering consultant capacity
 - Availability and suitability of personnel
 - High cost; issues of coordination
- Exposure to inflation in material and labor costs
- Delay, complexity and cost escalation for right-of-way acquisition and utilities coordination
- Process and cost burdens of environmental assessment and permitting, especially for Federal ESA
- Difficulty of achieving public consensus on *almost anything* involving major issues of transportation investment