

Washington State Department of Transportation
Capital Project Delivery Reporting

Transportation Working Group

Report

by the

Transportation Performance Audit Board

March 30, 2006

Transportation Working Group

Joint Legislative Audit and Review Committee
Transportation Performance Audit Board
House Transportation Committee
Senate Transportation Committee
Office of Financial Management
Governor's Office
Washington State Department of Transportation

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EXECUTIVE SUMMARY

SECTION I: Charge

The Washington Department of Transportation (WSDOT) capital construction program is one of the largest in the nation. The FY 05-07 capital construction program includes 1,576 projects in the ten-year investment plan and \$19.7 billion in planned expenditures.

In June 2005 the Transportation Performance Audit Board (TPAB) and the Joint Legislative Audit and Review Board (JLARC) convened a Transportation Working Group (TWG) composed of entities (JLARC, TPAB, House and Senate Transportation Committees, the Governor's Office and the Office of Financial Management) with oversight responsibility for the WSDOT capital program and WSDOT.

TWG's objective is to streamline accountability for the capital program by creating:

- 1) *Coherent instructions and requests from the entities charged with oversight of the WSDOT capital program.*
- 2) *A standardized set of reporting information on the capital program to be collected and reported by WSDOT that meets the needs of the entities charged with oversight of the WSDOT capital program. The TWG acknowledged a need to develop both a short and a long-term vision for WSDOT project reporting – with the short term vision constrained by WSDOT computer and management systems.*

TWG's efforts were necessary because of legislative requirements for increased accountability initiated with passage of ESHB 2474 in 2004, requiring project reports on Nickel-funded projects. In the 2005 legislative session further changes were made, including: the passage of RCW 47.01.070 making WSDOT a cabinet-level agency reporting to the Governor; the mandate to TPAB to create performance measures and benchmarks for the Transportation Performance Account (TPA) projects; the Governor's Government Management Accountability Performance program; the passage of ESSB 6091 and the 2005 Transportation Partnership Act, which included provisions for reporting against specifically identified project lists for the transportation improvements, transportation preservation and Washington State Ferries construction programs. At the same time WSDOT was re-vamping its project management system through Executive Order and increasing its reporting on capital projects through the Gray Notebooks, its web site and the Transportation Executive Information System.

SECTION II: TWG AGREEMENTS

TWG found the oversight entities and WSDOT were in agreement about the need for consistent and reliable information on projects, on the need to answer two key project questions for each project (Is the project on budget and on schedule?), and that WSDOT's antiquated management information systems constrain their ability to provide capital project reports. They also found that there were areas of confusion generated by

the lack of common definitions of capital projects and capital project reporting, and by disagreements about which budget or schedule to use as the baseline for reporting. TWG made eleven (11) consensus agreements:

1. Project and project reporting definitions

These agreements—including what a project is, what project phases are, what schedule milestones are, what it means to say a project is on time and on schedule—will serve as the foundation of the project tracking and reporting system. Importantly, it will allow legislative intent to be tracked to construction in the field.

2. How projects should be budgeted

Projects should be established to fund correction of deficiencies in the highway system and be budgeted at the appropriate level (mega/major project, project group, or corridor/sub-corridor level), as shown in Figure 1 on page 11.

3. Entire project reporting

All projects will be reported in their entirety without regard to fund source. Previously WSDOT had understood the oversight entities to want project budget and schedule reporting by fund source (i.e., the Nickel reports only provided information on the Nickel funded portion of the projects).

4. Schedule milestone reporting

Six schedule milestones were identified. As shown on the summary chart (p. 4), schedule information for Previously Existing Funding (PEF) projects will be reported on only three of the milestones, given the limitations of the WSDOT management information systems.

5. Project budget reporting

Three phases of all projects were identified. As shown on the summary chart (p. 4), the budget for all projects will be reported at the phase and total project level.

6. Baseline for reporting

The original baseline budget and schedule will be retained for all phases of a project, but the budget and schedule will be measured against the last legislatively approved budget and schedule on the same report.

7. Baseline for TPA projects

Consensus was reached on a baseline for TPA projects for budget and schedule reporting.

8. Summary reporting

As shown on the summary chart, a summary report will be provided that rolls-up all projects on a project list to provide information on completed projects and projects underway as to their actual and/or projected budget and schedule status.

9. PEF project and program reporting

For PEF funded projects WSDOT will report some exceptional projects on a project basis and others on a program basis.

10. Nickel and TPA project reporting

Reporting on Nickel and TPA is intended to be on a project basis unless otherwise agreed to by the Legislature.

11. Reporting Frequency

Project reports will be provided quarterly, including at the summary level in the Gray Notebook. Links will be provided from the Transportation Executive Information System (TEIS) and WSDOT project pages to more detailed project reports.

SECTION III: IMPLEMENTATION

A. Sample Reports

WSDOT has developed sample reports using the TWG agreed-upon phases and schedule milestones for FY 2003-05 projects. The sample reports include 799 PEF projects and 108 Nickel projects.

B. Budget Process and Performance Tracking

The 2005-07 biennia capital project tracking will be in partial conformance with the new project definitions and reporting consensus. In some cases projects will not correspond to the new definition because of previously let multiple contracts. WSDOT will, in developing its FY 07-09 budget submittal, conform to the revised project definition and groupings for all project starts and to the extent possible for existing projects.

SECTION IV: OUTSTANDING ISSUES

Outstanding performance issues are:

- 1. Washington State Ferries:** How to meet the requirements of ESSB 6091 for similar reporting on ferry projects.
- 2. Other capital projects:** Should other capital programs, such as rail and facilities, have similar reporting.
- 3. Project scope:** ESSB 6091 and ESHB 2474 both required reporting on project scopes. How to consistently report on scope compliance has not been determined.
- 4. Future additional performance reporting:** TWG reached consensus that future performance reporting should include earned value reporting; quality reporting on whether the correct project is being done and on the construction quality; and estimate at completion data.

SUMMARY TWG PROJECT REPORTING CONSENSUS

Key Definitions:

Project: A construction phase that provides a functional element of the highway system

Phase: Three phases – preliminary engineering, right-of-way, construction

Milestone: Six key events within the phases – project definition complete, begin preliminary engineering, environmental documentation complete, right-of-way certification approved, advertisement date, operationally complete data

On-time: For advertisement date and operationally complete – within the quarter planned in the biennial budget; for all others +or- six weeks of the date planned in the biennial budget

On-budget: 5% + or – of the estimate the project had when it appeared on the last budget list

Project Funding Source	Project Status	Budget Reporting Baseline & Most Recent Legislative Budget	Summary Budget Reporting Most Recent Budget	Schedule Reporting Baseline & Most Recent Legislative Schedule	Summary Schedule Reporting Most Recent Schedule
PEF	Completed projects	1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	# & % of projects under, on budget or over 1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	1) Begin prel. engineering 2) Advertisement date 3) Operationally complete	# & % of projects early, on time, late 1) Begin prel. engineering 2) Advertisement date 3) Operationally complete
	Projects underway	1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	# & % of projects decreased, on plan or increased 1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	1) Begin prel. engineering 2) Advertisement date 3) Operationally complete	# & % of projects advanced, on schedule, delayed 1) Begin prel. engineering 2) Advertisement date 3) Operationally complete
Nickel & TPA	Completed projects	1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	# & % of projects under, on budget or over 1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	1) Project definition 2) Begin prel. engineering 3) Environmental doc. complete 4) Right-of-way cert. 5) Advertisement date 6) Operationally complete	# & % of projects early, on time, late 1) Project definition 2) Begin prel. engineering 3) Environmental doc. complete 4) Right-of-way cert. 5) Advertisement date 6) Operationally complete
	Projects underway	1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	# & % of projects decreased, on plan or increased 1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	1) Project definition 2) Begin prel. engineering 3) Environmental doc. complete 4) Right-of-way cert. 5) Advertisement date 6) Operationally complete	# & % of projects advanced, on schedule, delayed 1) Project definition 2) Begin prel. engineering 3) Environmental doc. complete 4) Right-of-way cert. 5) Advertisement date 6) Operationally complete

Reporting: Quarterly through Gray Notebook summaries, WSDOT web site, quarterly GMAP reports and TEIS

SECTION I: CHARGE

The Washington State Department of Transportation (WSDOT) capital construction program is one of the largest in the nation with over 1,300 projects in the FY 2003-05 ten-year investment plan and \$9.5 billion in planned expenditures. The FY 2005-07 capital construction program is larger, with 1,576 projects in the ten-year investment plan and \$19.7 billion in planned expenditures. The highway capital construction program, divided into a preservation program and an improvement program, is the largest of the WSDOT capital programs. Other capital programs include ferry vessels and terminals; rail projects; facilities; advanced technology (ITS); local programs; and the Tacoma Narrows Bridge. Funding of these projects includes a variety of fund sources, primarily Pre-Existing Funds (PEF), 2003 Transportation Funding Package (Nickel) funds and, in FY 2005-07, the 2005 Transportation Partnership Funding Package (TPA) funds.

In June 2005 the Transportation Performance Audit Board (TPAB) and the Joint Legislative Audit and Review Board (JLARC) convened a Transportation Working Group (TWG) composed of entities with oversight responsibility for the WSDOT capital program. In addition to TPAB and JLARC staff, representatives of the staffs of the House and Senate Transportation Committees (HTC and STC), the Governor's Office, the Office of Financial Management (OFM), and WSDOT participated. The TWG held a series of meetings through January 2006.

TWG's objective is to streamline accountability for the capital program by creating:

- 1) *Coherent instructions and requests from the entities charged with oversight of the WSDOT capital program.*
- 2) *A standardized set of reporting information on the capital program to be collected and reported by WSDOT that meets the needs of the entities charged with oversight of the WSDOT capital program. The TWG acknowledged a need to develop both a short and a long-term vision for WSDOT project reporting – with the short term vision constrained by WSDOT computer and management systems.*

The legislature required increased accountability from WSDOT with passage of the Nickel Funding package in 2003 which named specific projects to be built. ESHB 2474, adopted with the 2004 supplemental budget, required specific reporting on the Nickel projects.

“The Department shall work with the transportation committees of the Legislature to agree on report formatting and elements. Elements shall include, but not be limited to, project scope, schedule and costs. The Department shall also provide the information required under this subsection via the Transportation Executive Information System.” (ESHB 2474 Sections 302, 303 and 304)

Oversight responsibilities for WSDOT were significantly changed by the 2005 legislative session and subsequent administrative actions:

- RCW 47.01.070 removed responsibility from the Washington Transportation Commission (WTC) to hire and fire the Secretary of Transportation, approve the WSDOT biennial budget and legislative policy packages, and provide detailed administrative oversight of WSDOT and its program delivery. The Secretary now serves at the pleasure of the Governor, and WSDOT is a cabinet agency with a new relationship with the Governor's Office and the Office of Financial Management.
- TPAB was mandated to create performance measures and benchmarks for the evaluation of expenditures of the transportation partnership account. (ESSB 6103 Section 104 subsection 3).
- Under the direction of JLARC, a preliminary report was issued to assist TPAB in developing an approach for ongoing reviews of WSDOT's capital improvement and preservation program in June 2005. (*Assessment Approach for Washington State Department of Transportation Capital Project Delivery Preliminary Report*, June 2005, Gannet Fleming Inc.)
- The Governor's Office initiated a Government Management Accountability Performance program (GMAP), which required reports from WSDOT on capital project delivery.
- ESSB 6091 and the 2005 Transportation Partnership Act included provisions for reporting against specifically identified project lists for the Transportation Improvements, Transportation Preservation, and Washington State Ferries construction programs.

“The department shall, on a quarterly basis beginning July 1, 2005, provide to the legislature reports providing the status on each project in the project lists submitted pursuant to this act and on any additional projects for which the department has expended funds during the 2005-07 biennium. The department shall work with the transportation committees of the legislature to agree on report formatting and elements. Elements shall include, but not be limited to, project scope, schedule and costs. The department shall also provide the information under this subsection via the transportation executive information system (TEIS).” (ESSB 6091 Sections 305, 306, 308)

Concurrently WSDOT was re-vamping its project management systems to meet its expanding capital responsibilities. On July 1, 2005 Secretary McDonald issued Executive Order Number # 1032.00 on refinements to WSDOT's project management process for delivering capital transportation projects. The principle established in the Order is: “We shall manage the resources taxpayers and the legislature entrust to us for the highest possible return of value. We shall be disciplined in our use of both time and money. We shall account for our achievements, our shortcomings, and our challenges to citizens, elected officials and to other public agencies.”

WSDOT was also increasing its reporting on capital projects including, developing white and beige pages of its quarterly Gray Notebooks to report on capital projects and providing project reports on its web site and through the TEIS.

SECTION II: TWG AGREEMENTS

A. Findings

1) Areas of Agreements

TWG found general agreement that:

- a. The oversight entities and WSDOT want to have consistent and reliable information on projects that track from adopted legislation to constructed projects.
- b. The key capital project questions to be answered are:
 - a. Is the project on budget?
 - b. Is the project on time?
- c. WSDOT's antiquated management information systems constrain their ability to provide capital project reports.

JLARC's report *Overview of Washington State Department of Transportation Capital Project Management* and TPAB's report *Review of WSDOT's Use of Performance Measurement* both included recommendations to conduct an assessment of the effectiveness of current information systems and options for addressing deficiencies. The 2004 legislative session provided funding to study this issue.

In August 2005 WSDOT contracted with Eclipse Solutions Inc. to perform the WSDOT Critical Applications Modernization and Integration Strategy Assessment. TWG did not review the study as part of its scope. It should be noted, however, that the study, which was completed in December 2005 and looked at eleven core computer applications, recommends that all systems be retooled to meet WSDOT's reporting needs.

"WSDOT will only achieve significant, long term improvements in transportation investment decision making and day-to-day capital project, capital program, and financial management by replacing all eleven of its critical applications with efficient business support systems to address capital project delivery, capital program management and financial management." (*Critical Applications Modernization & Integration Strategy, Draft Final Report Version 1.0*, December 2005, p. 12)

2) Areas of Confusion

TWG found confusion and frustration between the oversight entities and WSDOT generated by:

- a. The lack of common definitions of capital projects and capital project reporting.

The number of entities with accountability oversight of transportation projects and programs has grown over the years, each with its own specific needs depending on whether accountability is measured from a budgetary or a contract delivery perspective. Prior to the TWG, there had not been a clear understanding how a budget item approved by the legislature translates to design and construction contracts. As a result definitions of common terms have evolved based on different perspectives and expectations.

- b. The lack of a common understanding about which budget and schedule to use as a baseline against which projects will be measured.

WSDOT has historically reported against the last legislatively mandated budget and schedule. Oversight entities have requested information against the first legislatively mandated budget and schedule creating confusion between the oversight entities and WSDOT.

B. Consensus Agreements

1) Agreement on project and project reporting definitions

TWP agreed on definitions of key project and project reporting definitions to serve as the foundation for consistent and reliable reporting. Agreement on these definitions will support budget, project, contract and program item (PIN) alignment for project data tracking and reporting. A complete list of draft definitions is included in Appendix A.

a. What is a “Project”

A project is defined as having a construction phase that provides a functional element of the highway system when completed.

The definition of a project is based on equating the item that is budgeted to address a deficiency in the transportation system to what is ultimately constructed. That is, a project included on a budget list will be the same as the project constructed in the field through the construction phase, a contract. This means that when projects are submitted to support a budget or they are created through the legislative process they can have only one primary construction phase. It also means that if it is necessary to split a project into stages, a new project must be created for the new stage. This requires the oversight bodies to be aware that this can occur and that the work program is remaining the same and not increasing. It also means that WSDOT should minimize splitting projects into stages after the project is programmed to avoid the appearance of expanding the program.

In recognition of the varying size and complexity of projects, they are categorized as:

1. Projects
2. Major projects
3. Mega-projects

Major projects and mega-projects require multiple sub-projects to be completed to address the deficiency and provide a functional transportation element. Mega-projects are a special type of major project that are of sufficient size, complexity and individual political importance to warrant special legislative consideration. The Tacoma Narrows Bridge is an example of a mega-project and the replacement of the Hood Canal Bridge is an example of a major project.

Projects can be further grouped as:

1. Stand-alone projects
2. Within a corridor
3. Within a sub-corridor
4. Within a project group

b. What are the phases of a project?

There are three phases necessary to deliver a completed project or sub-project:

1. Preliminary engineering (design)
2. Right-of-way
3. Construction (contract)

c. What are the schedule milestones of a project?

Schedule milestones are defined as specific events that mark the beginning or end of an activity within a preliminary engineering, right-of-way, or construction phase or the phase itself. There are six schedule milestones:

1. Project Definition Complete
2. Begin Preliminary Engineering
3. Environmental Documentation Complete
4. Right-of-way Certification Approved
5. Advertisement Date
6. Operationally Complete Date

d. What does it mean to say a project is on time?

1. *Advertisement Date:* Within the quarter planned in the biennial budget.
2. *Operationally Complete Date:* Within the quarter planned in the biennial budget.
3. *All Other Milestones:* + or – six weeks of the date planned in the biennial budget.

e. What does it mean to say a project is on budget?

Within + or – 5% of the budget estimate the project had when it appeared on the last budget list.

2) Agreement on how projects should be budgeted

TWG reached consensus that budgets should be established to fund correction of deficiencies on the highway system based on type and priority. To provide adequate management flexibility to efficiently and effectively address the deficiencies, the transportation capital programs should be budgeted at the level the projects are grouped and the project lists developed using those groups, i.e., the mega/major project level, project group level, or the corridor/sub-corridor level as show in Figure 1 on the next page.

3) Agreement on entire project reporting

TWG reached consensus that projects, when reported as individual projects, would be reported in their entirety without regard to fund source. Previously WSDOT had interpreted legislative direction on the Nickel projects to require budget and schedule information only on those phases funded by the Nickel funds. Nearly 60% of all Nickel funded projects also include funding from PEF funds (Legislative 2003 Transportation Project List – New Law). The inclusion of all fund sources in reporting on these projects will provide a more complete understanding of the project status and is desired by the oversight entities.

4) Agreement on schedule milestone reporting

As noted above there are six schedule milestones. However, it is not practical, given the state of available data and the limitation of their management information system, for WSDOT to provide schedule reporting on all six milestones for the PEF funded projects. The oversight entities are in agreement that they will be satisfied with reporting on three milestones for these projects rather than six.

Agreement on Schedule Milestone Reporting		
Type of Project	Project Status	Schedule Reporting
PEF	Completed projects and projects underway	1) Begin preliminary engineering 2) Advertisement date 3) Operationally complete
Nickel & TPA	Completed projects and projects underway	1) Project definition 2) Begin preliminary engineering 3) Environmental documentation complete 4) Right-of-way certification 5) Advertisement date 6) Operationally complete

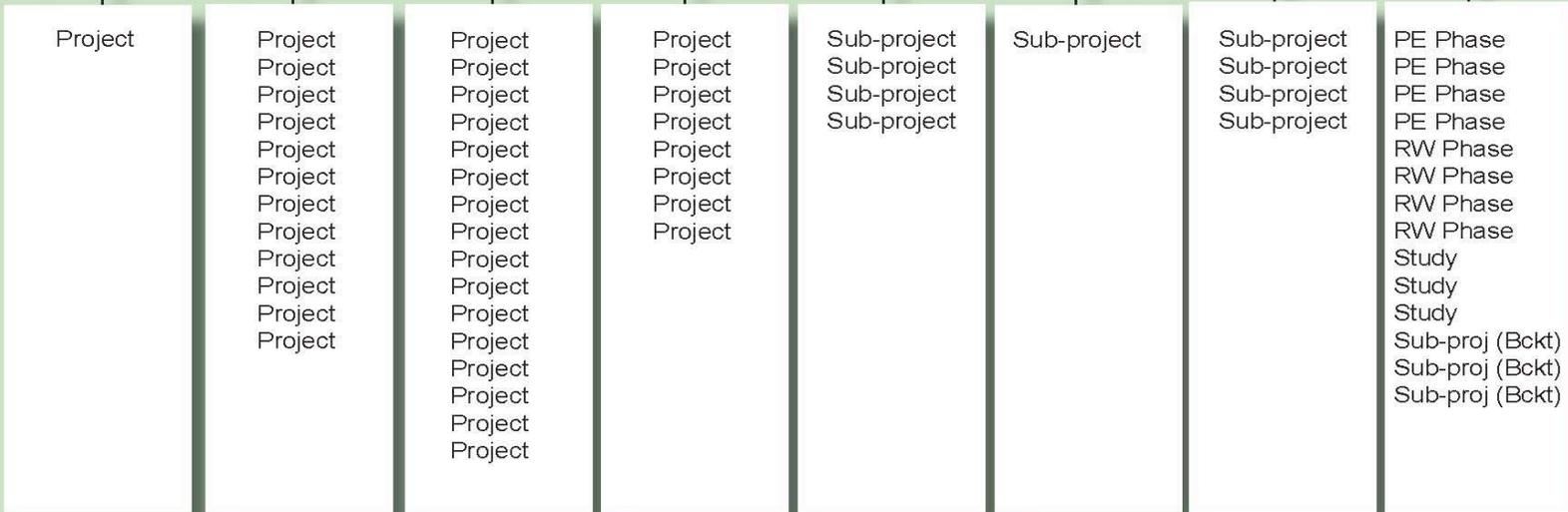
Budgeted By Appropriation

Figure 1
Improvement & Preservation Programs

Budget Level



Delivery Accountability



Project Phases



Project Milestones
(All six for Nickel & TPA. Three bolded for all other projects.)



5) Agreement on project budget reporting

As noted above there are three phases for each project. For budgetary reporting all three phases and the total budget status will be reported.

Agreement on Project Budget Reporting		
Type of Project	Project Status	Budget Reporting
PEF/ Nickel & TPA	Completed projects and projects underway	1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project

6) Agreement on baseline for reporting

TWG reached consensus that the original baseline budget and schedule will be retained for all phases of a project. This baseline will be the budget and schedule established in the first ten-year investment plan that includes the project. Although this baseline will be displayed, the budget and schedule will be measured against the last legislatively approved budget and schedule in the same report.

7) Agreement on summary reporting

TWG reached consensus that the milestone and budget reporting will include summary information that provides data for all projects within the listing by phase and by milestone.

Summary Level Budget and Schedule Reporting Agreement			
Type of Project	Project Status	Summary Budget Reporting	Summary Schedule Reporting
PEF	Completed projects	# & % of projects under, on budget or over 1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	# of projects early, on time, late 1) Begin preliminary engineering 2) Advertisement date 3) Operationally complete
PEF	Projects underway	# & % of projects decreased, on plan, increased 1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	# of projects advanced, on schedule, delayed 1) Begin preliminary engineering 2) Advertisement date 3) Operationally complete
Nickel & TPA	Completed projects	# & % of projects under, on budget or over 1) Preliminary engineering phase	# of projects early, on time, late 1) Project definition

Summary Level Budget and Schedule Reporting Agreement			
Type of Project	Project Status	Summary Budget Reporting	Summary Schedule Reporting
		2) Right-of-way phase 3) Construction phase 4) Total project	2) Begin preliminary engineering 3) Environmental documentation complete 4) Right-of-way certification 5) Advertisement date 6) Operationally complete
Nickel & TPA	Projects underway	# & % of projects decreased, on plan, increased 1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	# of projects advanced, on schedule, delayed 1) Project definition 2) Begin preliminary engineering 3) Environmental documentation complete 4) Right-of-way certification 5) Advertisement date 6) Operationally complete

8) Agreement on a baseline for TPA projects

TWG reached agreement on the baseline to be used for TPA projects for both budget and schedule reporting. This represents the first such agreement on a major funding source and should provide a solid basis for TPA reporting and accountability. The TPA information is available in the TEIS.

9) Agreement on PEF project and program reporting

A listing of which projects will be reported as a project and which will be reported programmatically is to be developed by WSDOT and agreed to by the oversight entities. A draft list of projects to be reported on a project basis from highway improvement and preservation projects is attached as Appendix B.

A list of programs and which projects will be reported under these program categories is to be developed by WSDOT and agreed to by the oversight entities.

10) Agreement on Nickel and TPA project reporting

Reporting on Nickel and TPA is intended to be on a project basis unless otherwise agreed to by the legislature.

11) Agreement on reporting frequency

TWG reached consensus that reporting should be provided quarterly, including at the summary level in the Gray Notebook. Project reports will be available on the WSDOT web site with links to the TEIS system.

SUMMARY TWG PROJECT REPORTING CONSENSUS

Key Definitions:

Project: A construction phase that provides a functional element of the highway system

Phase: Three phases – preliminary engineering, right-of-way, construction

Milestone: Six key events within the phases – project definition complete, begin preliminary engineering, environmental documentation complete, right-of-way certification approved, advertisement date, operationally complete data

On-time: For advertisement date and operationally complete – within the quarter planned in the biennial budget; for all others +or- six weeks of the date planned in the biennial budget

On-budget: 5% + or – of the estimate the project had when it appeared on the last budget list

Project Funding Source	Project Status	Budget Reporting Baseline & Most Recent Legislative Budget	Summary Budget Reporting Most Recent Budget	Schedule Reporting Baseline & Most Recent Legislative Schedule	Summary Schedule Reporting Most Recent Schedule
PEF	Completed projects	5) Preliminary engineering phase 6) Right-of-way phase 7) Construction phase 8) Total project	# & % of projects under, on budget or over 5) Preliminary engineering phase 6) Right-of-way phase 7) Construction phase 8) Total project	2) Begin prel. engineering 2) Advertisement date 3) Operationally complete	# & % of projects early, on time, late 2) Begin prel. engineering 2) Advertisement date 3) Operationally complete
	Projects underway	5) Preliminary engineering phase 6) Right-of-way phase 7) Construction phase 8) Total project	# & % of projects decreased, on plan or increased 5) Preliminary engineering phase 6) Right-of-way phase 7) Construction phase 8) Total project	4) Begin prel. engineering 5) Advertisement date 6) Operationally complete	# & % of projects advanced, on schedule, delayed 4) Begin prel. engineering 5) Advertisement date 6) Operationally complete
Nickel & TPA	Completed projects	1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	# & % of projects under, on budget or over 1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	1) Project definition 2) Begin prel. engineering 3) Environmental doc. complete 4) Right-of-way cert. 5) Advertisement date 6) Operationally complete	# & % of projects early, on time, late 1) Project definition 2) Begin prel. engineering 3) Environmental doc. complete 4) Right-of-way cert. 5) Advertisement date 6) Operationally complete
	Projects underway	1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	# & % of projects decreased, on plan or increased 1) Preliminary engineering phase 2) Right-of-way phase 3) Construction phase 4) Total project	1) Project definition 2) Begin prel. engineering 3) Environmental doc. complete 4) Right-of-way cert. 5) Advertisement date 6) Operationally complete	# & % of projects advanced, on schedule, delayed 1) Project definition 2) Begin prel. engineering 3) Environmental doc. complete 4) Right-of-way cert. 5) Advertisement date 6) Operationally complete

Reporting: Quarterly through Gray Notebook summaries, WSDOT web site, quarterly GMAP reports and TEIS

SECTION III IMPLEMENTATION

A. Sample Reports

WSDOT has developed sample reports implementing these recommendations. The reports on the Nickel projects, on schedule milestones for PEF projects and on budget status for PEF projects are included in Appendix C.

1) PEF Reports

WSDOT provided two PEF reports: one on budget status and one on schedule status. WSDOT noted that the information provided in these draft reports is preliminary.

“The development of these reports represents our good faith effort to meet the requests of the TWG. ... the attached reports should be considered drafts. While we have used the advertisement dates of projects as indicators of program delivery of the pre-existing program in the quarterly *Gray Notebook*, project managers were not asked to use this tool to manage projects. As such, PEF project baselines or milestones were not established at the start of the biennium. As a result, when responding to this request for the TWG, the attached reports were developed using a retroactive baseline and estimated milestones for the project data. The estimated milestones were developed by substituting budget level phase start and end dates for Preliminary Engineering, Right-of-way and Construction. ... the estimated schedule milestones shown in this report do not exactly correlate with the reported budget phases. The result of this misalignment makes it difficult to identify a cost or value associated with schedule performance” (Paula Hammond transmittal letter November 29, 2005)

The PEF reports include information for FY 2003-05 on seven hundred and seventy-nine (799) projects included in the highway improvement and highway preservation budget categories. These projects are funded exclusively with PEF funds. Both reports provide the project name, PIN, and budget category.

PEF Project Report (FY 03-05)		
Project type	Budget Group	# of projects
Mobility Improvements	I1	53
Safety Improvements	I2	127
Economic Init	I3	10
Env Retrofit	I4	21
Roadway Preservation	P1	304
Structures	P2	150

Preservation		
Other Facilities Preservation	P3	134
Total		799

a. Budget Report

The draft budget report includes:

- 1) Information on all three phases as agreed (preliminary engineering, right-of-way, and construction) for completed projects.
- 2) The report does not yet provide information on the budget status of projects that are underway (all of which are labeled under construction in this report.) 52% of all projects included in the report were underway.
- 3) Baseline information is provided along with project against the current budget, as agreed.
- 4) The summary below is for the project totals broken down by type of project.

PEF Projects FY 03-05 Project Total						
PEF Projects	Budget category	# projects	on budget	over budget	under	under const.
Mobility Improvements	I1	53	40%	6%	2%	53%
Safety Improvements	I2	127	10%	13%	16%	61%
Economic Initiative	I3	10	40%	10%	10%	40%
Environmental Retrofit	I4	21	10%	19%	5%	67%
Roadway Preservation	P1	304	17%	12%	26%	46%
Structures Preservation	P2	150	11%	9%	23%	57%
Other Facilities Preservation	P3	134	13%	14%	22%	51%
Total		799	16%	12%	20%	52%

b. Schedule Report

The draft schedule report includes:

- 1) Information on all three project milestones (begin preliminary engineering, advertisement date and operationally complete) as agreed.
- 2) Information is divided and available for projects that are completed and underway as agreed.

- 3) Information is summarized as agreed, with completed projects summarized in actual summary tables and projects underway summarized in a planned summary.
- 4) The table below summarizes information from the report on the operationally complete status and projections.
- 5) Schedule information for the baseline and latest schedule is provided as agreed.

2) Nickel Report

WSDOT provided a consolidated schedule and budget report on one hundred and eight (108) Nickel projects. This report provides the project title, but not the PIN or budget category as was provided with the PEF reports.

a. Budget Information

The Nickel report includes the following on project budgets:

- 1) Information on all three phases as agreed (preliminary engineering, right-of-way, and construction).
- 2) Information is provided for projects that are completed and underway, as agreed.
- 3) Information is summarized, as agreed, for projects that are completed in actual summary tables and for projects that are underway in planned summary tables.
- 4) Baseline information for the original budget is provided as well as budget against the last budget, as agreed.

b. Schedule information

The Nickel report includes the following on project schedules:

- 1) Information on all six project milestones (project definition, begin preliminary engineering, environmental documentation complete, right-of-way certification, advertisement date, and operationally complete).
- 2) Information on the six project milestones, as agreed, is provided for projects that are completed and projects that are underway.
- 3) Information is summarized as agreed, with completed projects summarized in actual summary tables and projects underway summarized in planned summary tables.
- 4) The schedule information is only for the Nickel funded portion of the project. Ultimately the oversight entities would like to see total schedule information for the project without regard to fund source.
- 5) Baseline information for the original schedule is provided as well as budget against the last budget, as agreed.

B. Budget Process and Performance Tracking

Most projects budgeted in the FY 2005-07 ten-year investment plan are aligned with the recommended projection definition. There are several program items, however, that are not, and have multiple major construction contracts instead of a single primary contract. This will require a transitional approach to implementation of the new standard project definition for tracking and milestone reporting, with these projects continuing to be tracked differently.

Due to these existing budgeting structures and tracking limitations, the following two-phased approach is being implemented:

1) 2005-07 Biennia (transitional tracking method)

For the 05-07 biennium, projects are being tracked and reported using the new definition with the exception where a PIN is to be constructed with multiple construction contract Work Items (WIN). In this case, the PIN will be counted as one project and used for budget performance tracking. For milestone tracking, however, the primary construction contract WIN will be used and applied to the PIN for project schedule milestone progress tracking. This will allow the accounting process to be consistent with the current budget.

2) 2007-09 Biennia Project Starts and Budget

The alignment of projects budgeted by the legislature to a single primary contract and project definition is desired. This alignment is planned for all new project starts for FY 2007-09.

The TWG reached consensus that budget appropriations should continue to be made at the program level. As part of the 2007-09 budget submittal, WSDOT will include a proposal detailing how the projects are to be grouped for budgeting, presentation and reporting purposes. Projects will be summarized at the project group, corridor, sub-corridor, major or mega-project level. Select projects will be presented individually. Budget level reporting will occur based on the groupings presented and will be consistent with the TWG reporting consensus.

SECTION IV OUTSTANDING ISSUES

Issues left unresolved by the TWG process include:

A. Ferry Capital Projects

TWG focused its efforts on the largest elements of WSDOT's capital program, the highway improvement and preservation program. The legislature in ESSB 6091 specifically required the same type of reporting on ferry projects.

B. Other Capital Projects

Although not mandated by the legislature, WSDOT may want to consider similar reporting on the other elements of its construction elements of its capital program such as rail and facilities.

C. Project Scope

The legislature in ESSB 6091 and in the 2004 Nickel Package required information on project scope as well as project budget and schedule. To date a consistent method of tracking project scopes has not been agreed upon.

D. Future Additional Performance Reporting

TWG also reached consensus that future performance reporting should consider earned value, quality measures and methods for system reporting of estimate at completion data.

1) Earned value reporting

Earned Value Management is a methodology used to measure and communicate the real physical progress of a project taking into account the work complete, the time taken and the costs incurred to complete that work. The *Assessment Approach for Washington State Department of Transportation Capital Project Delivery* prepared by Gannett Fleming Inc. under the direction of JLARC recommended that WSDOT "move toward the use of use of earned value as a department standard measure."(p. 9) At present earned value management systems are used in some WSDOT sections such as the Terminal Engineering Group.

2) Quality Reporting

TWG reached consensus that some means to assess if the correct project is being done as well as the quality of the project upon completed should be developed. (i.e., the right job and the job done right.) This would require that during the project definition phase the

purpose of the project is specified in measurable ways and subsequently tracked and reported.

3) Estimate at Completion

Estimate at completion means what is the best estimate at any given time of the final cost and operationally complete date for projects. There is a need for system reporting of “Estimate at Completion” data for individual projects and, as appropriate, on a program-wide and state-wide basis. This information could be compared to budgeted cost and estimated completion dates, providing valuable information for oversight and accountability.

APPENDIX A

DRAFT DEFINITIONS

1) Project Definitions

Phase: One of three project development processes necessary to deliver a completed project or sub-project:

1. Pre-Construction Engineering Phase
2. Right-of-way Phase
3. Construction Phase

Project: A capital improvement or preservation enhancement to the transportation system that corrects a deficiency or group of deficiencies at either a specific location or along a subset of a corridor. The project has a single primary construction phase (contract), a preliminary engineering phase and, if necessary, a right-of-way phase. When completed, a project provides a functional transportation element.

Sub-Project: A capital improvement necessary to construct a portion of a Major or Mega Project. The sub-project has a single primary construction phase (contract), a preliminary engineering phase and, if necessary, a right-of-way phase. When all sub-projects are completed, the Major or Mega-Project is completed, which provides a functional transportation element. Each sub-project alone does not correct a system deficiency or provide a functional transportation element to the transportation system.

Major Project: A capital improvement to the transportation system of sufficient size and complexity to require multiple sub-projects over one or two biennia to correct a deficiency or group of deficiencies at a specific location and provides a functional transportation element (i.e., section of highway, ferry terminal, etc.) when all sub-projects are completed.

Mega Project: A Major Project of significant political visibility and complexity to require individual funding consideration by the Legislature. It requires multiple sub-projects over multiple biennia to correct a deficiency or group of deficiencies at a specific location and provides a functional transportation element when all sub-projects are completed. (i.e., section of highway, ferry terminal, etc.).

Example:

Alaskan Way Viaduct Replacement

Alaskan Way Viaduct - EIS
Alaskan Way Viaduct - ROW
SR 99/Alaskan Way Viaduct - Des/Early RW
SR 99 - Alaskan Way Viaduct & Seawall Replacement Project

Project Group: A set of non-contiguous projects grouped within an administrative or geographical region that corrects a common deficiency or group of deficiencies at either specific locations or along sections of the transportation system.

Example:

Bridge Replacement

- US 2/Wenatchee River Bridge
- US 2/Chiwaukum Creek
- US 2/Barclay Creek Br. - Replace Bridge
- SR 6/Willapa Rover-Lilly Wheaton
- SR 6/Rock Creek (6/103)
- SR 6/Rock Creek (6/102)
- SR 6/So. Fork Chehalis River Bridge-Replacement
- SR 9/Stillaguamish River (Haller Bridge)
- US 12/Tieton River West Crossing

2) Corridor Definitions

Corridor: A standalone section of the transportation system between two points usually defined by a common geographic or political boundary that is comprised of a series of projects to correct a deficiency or group of deficiencies.

Example:

US 12 Improvements Burbank to Walla Walla (corridor)

- US 12 Improvement Wallua to Walla Walla(sub-corridor)
- US 12 Improvements Burbank to Wallua (sub-corridor)

Sub-Corridor: A sub-section of a Major Corridor that is comprised of a series of two to four projects with a common strategy to correct a deficiency or group of deficiencies.

Example:

US 12 Improvement Wallua to Walla Walla(sub-corridor)

- Walla Walla to Wallula Planning Study

US 12 Mcdonald Road to Walla Walla – Add Lanes

US 12 Improvements Burbank to Wallua (sub-corridor)

- US 12/SR 124 TO MCNARY POOL - ADD LANES
- US 12/ATTALIA VIC. TO US 730 - ADD LANES
- US 12/ATTALIA VIC. - ADD LANES

3) Program Definitions

Programs: Major categories of general deficiencies on the transportation system; Programs are used to correct deficiencies, monitor system performance and fund corridors, project groups, and individual projects.

Sub-Program: A subset of the general programs defined by specific types of deficiencies. Deficiencies are addressed regionally, on corridors and sub-corridors with project groups and individual projects.

Sub-Category: A subset of specific sub-programs to address specific types of deficiencies. Deficiencies are addressed by geographic regions, on corridors, and sub-corridors, with project groups, and individual projects.

4) Other Definitions

Milestones: Specific events that mark the beginning or end of an activity within a preliminary engineering, right-of-way, or construction phase or the phase itself.

- **Nickel and TPA Milestones:**
 - 1) Project Definition Complete
 - 2) Begin Preliminary Engineering
 - 3) Environmental Documentation Complete
 - 4) Right-of-way Certification Approved
 - 5) Advertisement Date
 - 6) Operationally Complete Date

- **PEF Milestones**
 - 1) Project Definition Complete
 - 2) Advertisement Date
 - 3) Operationally Complete Date

On Time

- Advertisement Date: Within the quarter planned in the biennial budget
- Operationally Complete Date: Within the quarter planned in the biennial budget
- All Other Milestones: + or – six weeks of the date planned in the biennial budget

On Budget

- Within + or – 5% of the budget estimate the project had when it appeared on the last budget list.

APPENDIX B PEF PROJECT REPORTS

Eight PEF funded projects to be reported at the project level:

US 101 Purdy Creek Bridge Replacement
USC 2/Ebey Island Viaduct/Ebey Sl Bridge
SR 529 Ebey Sl Bridge
Manette Bridge Replacement
SR 104 Hood Canal Bridge East Half
Replacement
SR 28 - East End of George Sellar Bridge
SR 539 - Horton to Tenmile Road
SR 202 - SR 520 to Sahalle Way

APPENDIX C SAMPLE REPORTS

1. Nickel Project Status Report
2. 2003-05 PEF Project Schedule Milestone Status Report
3. 2003-05 PEF Project Budget Phase Status Report