



January 2, 2018

The Honorable Steve Hobbs
Chair, Senate Transportation Committee
PO Box 40444
Olympia, WA 98504-0444

The Honorable Duane Davidson
Treasurer, Office of the State Treasurer
PO Box 40200
Olympia, WA 98504-0200

The Honorable Judy Clibborn
Chair, House Transportation Committee
PO Box 40600
Olympia, WA 98504-0600

Subject: Semi-Annual Practical Design Savings Report required by RCW 47.01.480

Dear Chairman Hobbs, Chair Clibborn, and Mr. Davidson:

On behalf of the Washington State Department of Transportation (WSDOT), this letter summarizes practical design savings to date on Connecting Washington (CW) funded projects. This report was prepared in a manner consistent with the requirements outlined in RCW 47.01.480.

This report identifies savings remaining at the completion of a Connecting Washington project for which the State Treasurer will transfer from the Connecting Washington Account to the Transportation Future Funding Program Account. Once funding is transferred to the new account, beginning in fiscal year 2024, the Legislature may select additional projects to be delivered through the budget development process.

Since our last report in July 2017, two Connecting Washington projects have been completed. Both projects, funded through the Highway Improvement Program, resulted in savings of \$185,080 to be transferred to the Transportation Future Funding Program Account. ***Based on the requirements found in RCW 47.01.480, WSDOT has identified \$185,080 in project savings that must be transferred by the State Treasurer's Office from the Connecting Washington Account to the Transportation Future Funding Program account.***

Background

As part of the Connecting Washington transportation revenue package passed by the Legislature and signed by the Governor in July 2015, Engrossed Substitute House Bill (ESHB) 2012 was enacted and codified as RCW 47.01.480 and RCW 47.01.485. This law provides direction on performance and reporting expectations on implementing practical design for CW-funded projects. The law requires two reports to be prepared; a semi-annual report that was initially submitted July 1, 2016 identifying practical design savings, retired risk and unused contingencies. The second report is required

annually with the department's budget submittal and includes the savings mentioned above plus the addition of savings generated through scope changes, associated impacts on risk and changes in the cost of materials.

This letter is in response to the semi-annual report requirement, which requires information on practical design savings, unused risk reserves, unused contingency, and identification of savings for the State Treasurer to transfer from the Connecting Washington Account to the Transportation Future Funding Program Account. If no savings are identified to be transferred at the time of reporting, an estimated date for savings to materialize is provided. The specific language for the semi-annual report is as follows:

RCW 47.01.480 (2)(b) - Beginning July 1, 2016, the department must submit a report to the state treasurer and the transportation committees of the legislature once every six months identifying the amount of savings attributable to the application of practical design, retired risk, and unused contingency funding, and report when the savings become available. The state treasurer must transfer the available amounts identified in the report to the transportation future funding program account created in RCW 46.68.396.

Furthermore, the law outlines the basic methodology associated with how the practical design savings element of the report should be calculated. The following is an excerpt from the law:

RCW 47.01.480 (1)(c) - To determine the savings attributable to practical design, each connecting Washington project must be evaluated. For design-bid-build projects, the evaluation must occur at the end of the project design phase. For design-build projects, the evaluation must occur at the completion of thirty percent design...

Given the above direction, the reporting requirements associated with this semi-annual report include elements which are to be reported at the completion of the project design phase (savings attributable to practical design) and project construction (retired risk and unused contingency funding). Since WSDOT often delivers legislative line-item projects using multiple construction contracts, the final reporting element (savings available to transfer) will not be available until the last construction contract to deliver the legislative line-item project has been completed.

It should be noted that this report does not convey a complete summary of events associated with the quality, efficiency, and/or challenges of project delivery. For example, the report does not include information comparing the winning project bid to the engineers estimate at contract award and the risks, which are either mitigated or materialized. WSDOT assumes that other existing reporting mechanisms will provide this additional information on project delivery.

The report includes Connecting Washington line-item projects in the following programs: Highway Construction Improvement and Preservation, Washington State Ferries Capital, Rail Capital, Facility Capital and Local Programs Capital as reflected on the latest legislative project list once design is completed. Programmatic items included in the legislative project list such as the Highway System Preservation, fish barrier removal, ferry vessel and terminal preservation, grant programs for bicycle/pedestrian, transit and rail projects are assumed to be fixed levels of investment intended to deliver as much of the identified work as possible over the 16-year period. Therefore, programmatic entries will not be included in this report. Additionally, to capture the savings attributable to practical design decisions, WSDOT will remove the impact of inflation from the calculation of project savings. The detailed information in these reports will capture practical design savings based on a constant dollar comparison between the original (uninflated) legislative project budget and the (uninflated) project estimate at the time of advertisement. Furthermore, WSDOT assumes that the issuance of the Request for Proposal (RFP) represents completion of 30 percent design for calculating the savings attributable to practical design on design-build projects. Additional assumptions associated with this report include:

- Projects that have already been designed using non-CW funding and have only construction funded through CW will not have any practical design savings reported. Savings from these projects will be reflected in other currently required reporting elements.
- Projects where CW does not complete the design will be reported at the end of the design phase, or when available funding is used. Other required reporting elements will not be reported on until construction funding becomes available.
- Planning studies for which there is unused funding will be included in this report at the conclusion of the study.
- Local projects will be self-reported by the local jurisdiction to WSDOT's Local Programs Office and will be compared to the most recent available project cost estimate.

Report Details

Attachment A provides a summary of the conversion of the legislative project budget to constant dollars for comparison to the engineer's estimate at the time of construction advertisement. To keep the report from becoming too lengthy, projects previously reported on this attachment have been removed. The report shows those projects that have been advertised or authorized for construction from May 1, 2017 to October 31, 2017. The report will still show cumulative practical design savings.

Attachment B provides a summary of the active CW projects, which have completed design and have one or more required reporting elements available to report. At this early stage of CW project delivery, most projects are in construction with only the savings attributable to practical design identified for reporting. However, two projects

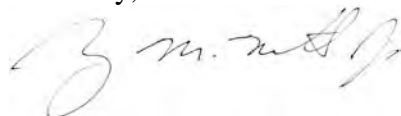
have been completed in this reporting period. The SR 162 Study/Design was completed under budget by \$141,300 and the Schouweiler Road Improvements project, was completed \$43,780 under budget.

Implementing Practical Solutions throughout WSDOT

Practical solutions strategies (which included practical design) are applied throughout the project development and delivery process. Where practical solution refinements are identified in the process will determine if savings are the result of cost avoidance (i.e. an initial lower project estimate to be funded than otherwise anticipated) or a reduction to a project budget (i.e. project savings that occurred after the initial project estimate was funded). Practical design applications begin during the scoping and pre-design stage of project development. During this stage, agency pre-design efforts are funded from non-project resources rather than from a specific project budget. Practical design savings through cost avoidance are removed from the project estimate prior to establishing the initial project budget. After the initial project budget is established and design begins on that project, practical design can result in reduced costs to deliver the project. Assuming no inflationary increases on the project over its delivery schedule, and assuming no unforeseen project challenges, the reduced delivery cost should result in project savings. It is important to recognize that greater savings are often generated through practical solution and practical design efforts during the earlier stages of project development, prior to the project receiving funding. This concept has been documented, in part, in the 2010 JLARC report on WSDOT scoping and cost estimating for highway construction projects. As WSDOT continues to refine its approach to implementing practical solutions and practical design, we expect to observe a diminishing level of savings. This is due to future projects being developed from their inception utilizing these principles. In other words, we will not have potentially over-designed projects to compare to those projects that were developed using practical design. This will result in fewer savings being available over time from funded projects.

Please contact Jay Alexander, Director of Capital Program Development and Management at (360) 705-7121 or alexanja@wsdot.wa.gov if you have any questions about this report.

Sincerely,



Roger Millar, PE, AICP
Secretary of Transportation

RM:gl
Enclosure

Attachment A

**Constant Dollar Conversion Assumptions
for Calculating Savings Attributable to Practical Design**

Program	Legislative BIN ¹	Project Title ²	Legislative Project Cost Estimate in YOE \$ (inflated) ³	Cost in 2014 \$ (uninflated) ⁴	Engineers Estimate at Advertisement in 2014 \$ (uninflated) ⁵	Practical Design Savings ⁶
Highway Construction - Improvement Program						
		Previously Reported Practical Design Savings				2,736,000
	L1100069	SR 162 Study/Design	450,000			N/A ⁹
	M00100R	I-5 JBLM Corridor Improvements	494,400,000	438,900,000		
		I-5/Mounts Rd to Center Dr - Auxiliary Lane Extension		13,113,000	12,629,000	0 ¹⁰
		I-5/Mounts Rd Vicinity - VMS		669,000	669,000	0
		I-5/Steilacoom-Dupont Rd to Thorne Ln - Corridor Improvements		282,000,000	299,400,000	0
		Additional construction packages yet to be determined		143,118,000		
	M00600R	SR 167/SR 509 Puget Sound Gateway	1,875,500,000	1,481,959,000		
		SR 509/28th/24th Ave S - City of SeaTac Lead		3,340,000	3,340,000	0 ⁷
		Additional construction packages yet to be determined		1,478,619,000		
	T20700SC	I-5/116th Street and 88th Street Interchanges - Improvements	50,000,000	43,970,000		
		I-5/116th St NE Interchange - Tulalip Tribe Lead		15,639,000	15,639,000	0
		Additional construction packages yet to be determined		28,331,000		
	L2000058	US 195/Colfax to Spangle - Add Passing Lane	11,650,000	10,806,000	10,806,000	0
		US 195/Colfax to Spangle - Add Passing Lane Stage 1		5,632,000	5,632,000	0
		US 195/Colfax to Spangle - Add Passing Lane Stage 2		5,174,000	5,174,000	0
Highway Construction - Preservation Program						
	G2000055	Land Mobile Radio (LMR) Upgrade	35,000,000	31,810,000	31,810,000	0
Ferry Capital Program						
	900010L	Seattle Tml Preservation	349,500,000	316,311,000	316,340,000	
		SR 519/Seattle Trm - Terminal Bldg & N. Trestle Replacement		273,115,000	273,144,000	0
		SR 519/Seattle Trm Slip 3 - OHL & Transfer Span Replacement		25,275,000	25,275,000	0
		SR 339/Seattle Trm - Passenger-Only Ferry Facilities Replacement		17,921,000	17,921,000	0
Facilities Capital Program						
No projects advertised during this reporting period						
Rail Capital Program						
No projects advertised during this reporting period						
Program	Legislative BIN ¹	Project Title ²	Legislative Project Contribution			Local Jurisdiction Self-Reported Savings ⁸

Local Programs⁸

L2000133	228th & Union Pacific Grade Separation (City of Kent)	15,000,000
	228th & Union Pacific Grade Separation - Stage 1	1,200,000
	228th & Union Pacific Grade Separation - Stage 2	420,000
L2000132	Duportail Bridge	20,000,000
L2000181	South Lander Street	7,000,000
L2000065	SR 502 Main Street/Widening	7,700,000
	SR 502 Main Street/Widening Stage 1	1,560,000
L2000064	Ridgefield Rail Overpass	7,470,000
L2000182	Street Improvements near School for the Blind	50,000

Summary

Practical Design Savings in this Report	0
Cumulative Practical Design Savings by Program	
Highway Construction - Improvement Program	2,736,000
Ferry Capital Program	0
Facilities Capital Program	0
Rail Capital Program	0
Local Programs ⁸	0

NOTE: This semi-annual report reflects delivery information for those projects advertised in the reporting cycle, May 1, 2017 through October 31, 2017. Summary Practical Design Savings will be reflected in each report.

Footnotes:

¹ Legislative project identification number.

² Project title from the 2015 Legislative Budget is shown in bold. The legislative project may be delivered using multiple construction projects. In this case, the construction projects are shown below the bolded legislative project. This additional detail is provided as construction projects are advertised.

³ Total project cost from the 2015 Legislative project list in Year of Expenditure (YOE) dollars.

⁴ Project cost portrayed in 2014 dollars.

⁵ Engineer's estimate of total project cost at advertisement in 2014 dollars.

⁶ Practical Design Savings are reported following construction advertisement in nominal dollars; prior to the completion of construction. Practical solutions are calculated by comparing the legislative uninflated project cost estimate with the uninflated project estimate at advertisement or release of a Request for Proposal (RFP) for design-build projects. The two uninflated project estimates are stated in the same year current dollars for calculating the practical design savings exclusive of inflationary impacts.

⁷ Connecting WA funded the construction phase only. No Practical Design Savings are calculated for construction only projects.

⁸ Information on Connecting WA projects managed by local jurisdictions is self-reported by the local jurisdiction.

⁹ Study only. Practical Design Savings are not calculated for studies.

¹⁰ Previously reported.

Attachment B

Semi-Annual Project Savings Report to the State Treasurer and Legislative Transportation Committees Active Projects

Program	Legislative BIN ¹	Project Title ²	Practical Design Savings ³	Unused Contingency ⁴	Retired Risk Savings ⁵	Total Savings Available ⁶	Estimated Savings Available Date ⁷
Highway Construction - Improvement Program							
	T104000	I-82 West Richland - Red Mountain Interchange					
		SR 224/SR 225 - Benton City - Construct Intersection Improvements	0 ⁸	TBA ⁹	TBA ⁹	0 ⁹	6/30/2021
	M00900R	I-405 Renton to Lynwood - Corridor Widening					
		I-405/SR 167 Direct Connector - Widening	0 ⁸	TBA ⁹	TBA ⁹	0 ⁹	6/30/2029
		I-405/NE 30th St & NE 44th St - Ramp Improvements	0 ⁸	TBA ⁹	TBA ⁹	0 ⁹	6/30/2029
	N01200R	Schouweiler Road Improvements¹²	0	37,937	N/A	43,780	9/30/2017
	M00100R	I-5 JBLM Corridor Improvements					
		I-5/Mounts Rd to Center Dr - Auxiliary Lane Extension	484,000	TBA ⁹	TBA ⁹	0 ⁹	6/30/2027
		I-5/Mounts Rd Vicinity - VMS	0	TBA ⁹	TBA ⁹	0 ⁹	
		I-5/Steilacoom-Dupont Rd to Thorne Ln - Corridor Improvements	0	TBA ⁹	TBA ⁹	0 ⁹	
	T32800R	SR 518 Des Moines Interchange Improvement	259,000	TBA ⁹	TBA ⁹	0 ⁹	6/30/2021
	L2200092	SR 150/No-See-Um Road Intersection - Realignment	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2021
	L2000176	SR 3/SR 304 Interchange Modification	1,985,000	TBA ⁹	TBA ⁹	0 ⁹	6/30/2021
	L2000223	I-5/Rebuild Chamber Way Interchange Improvements					
		I-5/Chamber Way Bridge - Emergency Repair and Replacement	0 ⁸	TBA ⁹	TBA ⁹	0 ⁹	6/30/2027
	L2000163	Dolarway Intersection Improvements	8,000	TBA ⁹	TBA ⁹	0 ⁹	6/30/2021
	L2000058	US 195/Colfax to Spangle - Add Passing Lane					
		US 195/Colfax to Spangle - Add Passing Lane Stage 1	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2021
		US 195/Colfax to Spangle - Add Passing Lane Stage 2	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2021
	M00600R	SR 167/SR 509 Puget Sound Gateway					
		SR 509/28th/24th Ave S - City of SeaTac Lead	0 ⁸	TBA ⁹	TBA ⁹	0 ⁹	6/30/2033
	L1100069	SR 162 Study/Design¹²	0 ¹¹	TBA ⁹	TBA ⁹	141,300	9/30/2017
	T20700SC	I-5/116th Street and 88th Street Interchanges - Improvements					
		I-5/116th St NE Interchange - Tulalip Tribe Lead	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2025

Highway Construction - Preservation Program

	G2000055	Land Mobile Radio (LMR) Upgrade	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2023
Ferry Capital Program							
	L2000109	#4 - 144 capacity vessel	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2019
	900010L	Seattle Tml Preservation					
		SR 519/Seattle Trm - Terminal Bldg & N. Trestle Replacement	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2025
		SR 519/Seattle Trm Slip 3 - OHL & Transfer Span Replacement	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2025
		SR 339/Seattle Trm - Passenger-Only Ferry Facilities Replacement	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2025

Program	Legislative BIN ¹	Project Title ²	Practical Design Savings ³	Unused Contingency ⁴	Retired Risk Savings ⁵	Total Savings Available ⁶	Estimated Savings Available Date ⁷
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Facilities Capital Program							
	L2000079	Euclid Ave Administration Facility Consolidation Project	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2019

Rail Capital Program							
	L2000112	Palouse Rail Loadout Improvements	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2019
	L1000144	Point Defiance Rail Bypass - Lakewood Safety	0 ⁸	TBA ⁹	TBA ⁹	0 ⁹	6/30/2019
	L1100082	West Vancouver Freight Access	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2019
	L2000172	West Whitman Railroad Improvement District	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2019

Local Programs¹⁰							
	NRUCKER	41st St Rucker/Ave Freight Corridor in Everett	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2019
	L2000200	28th/24th Street Sea-Tac	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2019
	L1000133	Lyon Creek Culvert	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2019
	L2000218	Jovita Seismic Wall	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2019
	L1000092	SR 99/Burlington N Overpass Replacement	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2019
	L2000133	228th & Union Pacific Grade Separation (City of Kent)					
		228th & Union Pacific Grade Separation - Stage 1	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2021
		228th & Union Pacific Grade Separation - Stage 2	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2021
	L2000065	SR 502 Main Street/Widening					
		SR 502 Main Street/Widening Stage 1	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2023
	L2000132	Duportail Bridge	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2023
	L2000181	South Lander Street	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2023
	L2000064	Ridgefield Rail Overpass	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2021
	L2000182	Street Improvements near School for the Blind	0	TBA ⁹	TBA ⁹	0 ⁹	6/30/2021

Funds to transfer to the Transportation Future Funding Program Account for this reporting period **\$185,080**

Previously Identified Funds for Transfer **\$14,400**

Cumulative Funds identified for transfer to the Transportation Future Funding Program Account **\$199,480**

NOTE: This semi-annual report reflects delivery information for those projects advertised in the reporting cycle, May 1, 2017 through October 31, 2017. Summary Practical Design Savings will be reflected in each report.

Footnotes:

¹ Legislative project identification number.

² Project title from the 2015 Legislative Budget is shown in bold. The legislative project may be delivered using multiple construction projects. In this case, the construction projects are shown below the bolded legislative project. This additional detail is provided as construction projects are advertised.

³ Practical design savings are reported shortly following construction advertisement; prior to the completion of construction. Practical solutions are calculated by comparing the legislative uninflated project cost estimate with the uninflated project estimate at advertisement or release of a Request for Proposal (RFP) for design-build projects. The two uninflated project estimates are stated in the same year current dollars for calculating the practical design savings exclusive of inflationary impacts. Full details of uninflated estimates will be included in the report that accompanies the annual agency budget request.

⁴ Contingency funds established with each construction project consistent with WSDOT policy and standard industry practice. Unused contingency funds will be reported at the completion of the project.

⁵ Risk reserves are established for larger construction projects for identified potential construction delivery risks, consistent with WSDOT policy and standard industry practice. Risks that are unrealized are retired and the funding remains on the legislative identified project until completion of the entire legislative scope of work is completed. Unused risk reserves will be reported at the completion of the project.

⁶ Total savings available represents the unused funding available at the completion of the entire legislative scope of work on a project. This amount reflects the funding that the treasurer must transfer from the Connection Washington Account or the Multimodal Transportation Account to the Transportation Futures Funding Program Account.

⁷ Estimate savings available date reflects the anticipated date in which the savings will be available for transfer. It is based on the date in which the project is anticipated to be complete.

⁸ Connecting WA funded the construction phase only. No Practical Design Savings are calculated for construction only projects.

⁹ The project is currently in construction. Actual savings for unused contingency, unused risk, and savings available to transfer will be known when project is completed.

¹⁰ Information on Connecting WA projects managed by local jurisdictions is self-reported by the local jurisdiction.

¹¹ Study only. Practical Design Savings are not calculated for studies.

¹² Project is complete.