



# Joint Transportation Committee

## Efficiencies in the Construction and Operation of State Transportation Projects

Presentation to the JTC, October 9, 2013

# October 9 Meeting Objectives

- Provide an update on progress and next steps
- Preview initial findings to date
- Discuss next steps

# Study Objectives

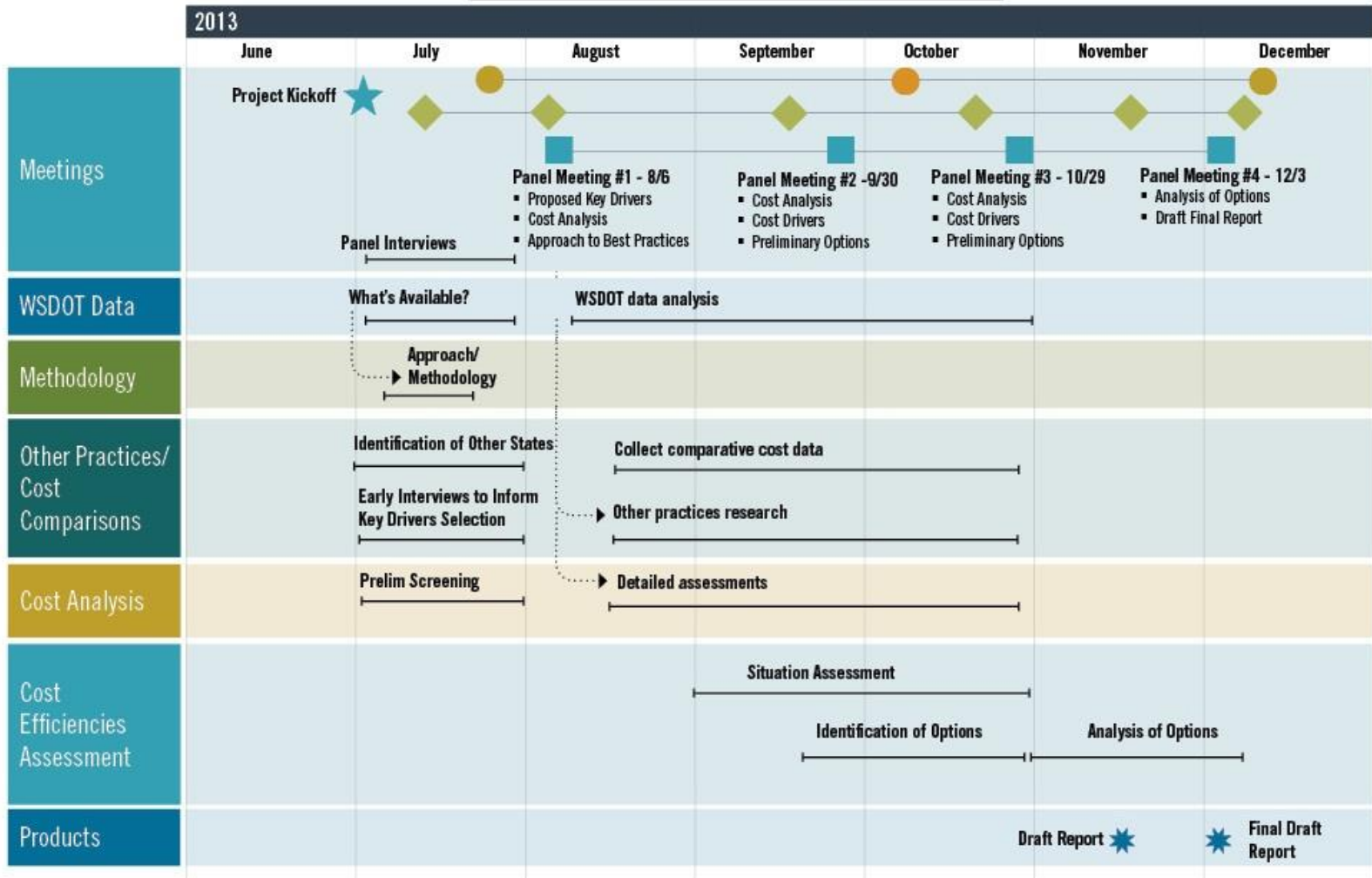
- To develop a broad understanding of the costs of transportation projects and what drives these costs
- To identify potential efficiency measures or reforms
- Results of this effort will support policy discussions regarding potential transportation funding package

# Study

## Key Questions

- Do transportation projects in Washington State cost more than they do in other states?
  - If yes, why?
- What can we do?
  - Legislative action
  - WSDOT action

# Project Status Update



# Project Status Update



Advisory Panel 2 – Sept 30	Advisory Panel 3 – Oct 29	Advisory Panel 4 – Dec 3
<ul style="list-style-type: none"> <li>• Cost Analysis               <ul style="list-style-type: none"> <li>- WSDOT historical expenditures</li> <li>- Mitigation</li> </ul> </li> <li>• Sales &amp; Use Tax</li> <li>• Prevailing Wage</li> </ul>	<ul style="list-style-type: none"> <li>• Contracting               <ul style="list-style-type: none"> <li>- Method</li> <li>- Risk assignment</li> <li>- Closure windows</li> <li>- OMWBE/DBE</li> </ul> </li> <li>• Permitting, Environmental Review and Mitigation</li> <li>• Funding               <ul style="list-style-type: none"> <li>- Method</li> <li>- Federal requirements</li> <li>- Availability</li> </ul> </li> <li>• Right of Way Acquisition</li> <li>• Comparative Costs</li> </ul>	<ul style="list-style-type: none"> <li>• Review final assessment</li> <li>• Discuss potential policy choices and implications</li> <li>• Discuss potential recommendations related to changes in practice</li> </ul>

# Cost Analysis Introduction



- Understand how highway construction funds have been spent over the last decade
  - What are the biggest expenditure areas?
  - How have expenditures changed over time?
- A broad understanding of spending patterns will allow us to drill down into the costs behind specific drivers (for example, payments to prime contractors)
- This analysis focuses on the Preservation and Improvement Programs at WSDOT, which encompass the majority of highway construction projects

# Cost Analysis

## Available Information

- To begin to understand the potential impact of individual cost drivers, an assessment of historical WSDOT spending was conducted
- Foundation for this analysis is a database provided by WSDOT:
  - The database includes all projects in the Preservation and Improvement Programs that were marked as operationally complete from 2003-2012
  - The database does not includes expenditures on projects that are not yet complete, such as the 520 bridge
- The database includes a total of 2,293 projects and \$10.5 billion in expenditures

Project Cost		Number of Projects	Percent of Projects	Project Expenditures	Percent of Expenditures
Min	Max				
Less than \$1 M		1,308	57%	\$ 522.2 M	5%
\$ 1.0 M	\$ 5.0 M	718	31%	\$ 1,594.3 M	15%
\$ 5.0 M	\$ 25.0 M	198	9%	\$ 2,199.9 M	21%
\$ 25.0 M	\$ 100.0 M	53	2%	\$ 2,597.3 M	25%
\$100 M or more		16	1%	\$ 3,560.2 M	34%
<b>TOTAL</b>		<b>2,293</b>	<b>100%</b>	<b>\$ 10,473.9 M</b>	<b>100%</b>

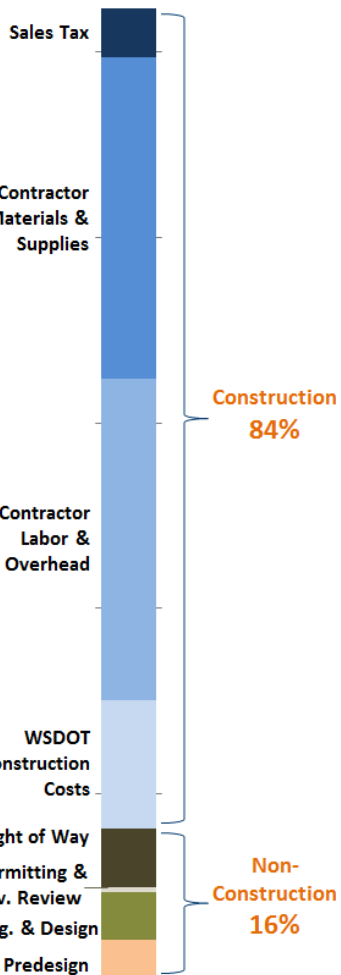


# Cost Analysis

## Costs by Component



Total: \$10.5 B



### *Project Costs by Major Project Phase*

- Approximately 84% of expenditures (\$8.8 billion) in the database were spent on construction
  - Construction as a proportion of total project costs decreased from 91% in 2003 to 77% in 2012, primarily due to the impact of larger projects with greater right-of-way and predesign costs
  - Within construction costs there are payments to contractors (including sales tax, materials, supplies, labor, and overhead) and costs incurred by WSDOT on construction, oversight, testing, and inspection.
- Non-construction costs were 16% of expenditures (\$1.6 billion)
  - Right of way (6%, or \$638 million) and Engineering & Design (5%, or \$513 million) were the largest non-construction expenditures
- These definitions and costs are still being refined to better align WSDOT's cost tracking systems with the questions being asked in the study

# Cost Analysis

## Available Information

- BERK has worked with WSDOT to align expenditure categories with the phases that the JTC is interested in analyzing
  - In some cases, WSDOT categories align well with expenditure areas we are interested in, such as right of way acquisition
  - In other cases, it is challenging to identify and summarize certain types of expenditures.
  - Mitigation is one example where the data has been supplemented by WSDOT case studies. Mitigation costs are included in many project phases, from predesign up through construction

# Mitigation Introduction



- Defining mitigation can be a subjective exercise that generates disagreement about what should or should not be considered mitigation. Mitigation, depending on how it is defined, can include many aspects of a project:
  - Mitigation can take the form of **design changes** during the environmental review or permitting process to avoid environmental impacts. Sometimes these design changes add to overall project costs. These mitigation costs are difficult to track in a database
  - Some projects have **impacts that need to be mitigated**, which become requirements of the project. Since they are done in concurrence with other project design and construction activities, it is difficult to separate these costs from general project costs
  - WSDOT also does some projects where the **whole project can be considered mitigation-like**, even though the project may not be mitigating a specific concurrent project

# Mitigation WSDOT Case Studies

- 46 projects totaling almost \$2 billion in project costs were evaluated in four separate studies. Within the selected sample, 16% of project expenditures went to mitigation elements, with a significant range among individual projects of between 2% and 45%

Study Period	Projects Analyzed	Total Project Cost	Total Mitigation Cost	Average Mitigation Percent	Range of Mitigation Percents	
					Low	High
2003	14	426,868,000	78,304,000	18%	2%	34%
2006	7	641,277,610	111,057,000	17%	2%	24%
2009	14	670,290,000	105,214,400	16%	5%	35%
2013	11	241,940,000	31,331,807	13%	2%	45%
<b>TOTAL</b>	<b>46</b>	<b>1,980,375,610</b>	<b>325,907,207</b>	<b>16%</b>	<b>2%</b>	<b>45%</b>

Study Period	Types of Mitigation							Total
	Stream Protection	Wetlands Restoration	Stormwater Facilities	Dust Control	Noise Walls	Aesthetics & Temporary		
2003	17,915,000	19,859,000	30,180,000	950,000	4,650,000	2,470,000	2,280,000	78,304,000
2006	5,574,000	14,206,000	54,538,000	0	36,739,000	0	0	111,057,000
2009	7,567,000	19,330,000	70,712,400	0	4,942,000	2,663,000	0	105,214,400
2013	2,571,447	14,597,147	11,750,563	0	1,360,000	936,774	115,876	31,331,807
<b>TOTAL</b>	<b>33,627,447</b>	<b>67,992,147</b>	<b>167,180,963</b>	<b>950,000</b>	<b>47,691,000</b>	<b>6,069,774</b>	<b>2,395,876</b>	<b>325,907,207</b>
<i>Percent of Total</i>	<i>10.3%</i>	<i>20.9%</i>	<i>51.3%</i>	<i>0.3%</i>	<i>14.6%</i>	<i>1.9%</i>	<i>0.7%</i>	

# Mitigation

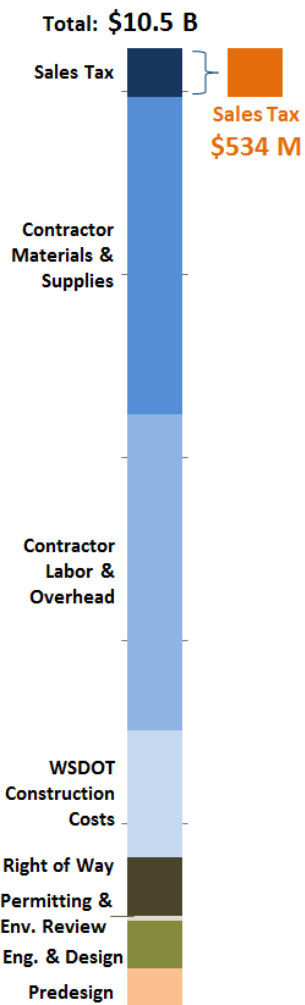
## Overall Cost Implications

- The table below shows a preliminary estimate of how the different components of mitigation we have looked at so far add up over the last decade

	<b>Expenditures (in YOE \$)</b>
Mitigation w/in 2006-13 Case Study Projects	\$ 248 M
Expenditures on Mitigation-like Projects	\$ 100 M
<b>Subtotal: Identified Mitigation Expenditures</b>	<b>\$ 348 M</b>
<i>Expenditures not included in above categories</i>	<i>\$ 7,906 M</i>
<i>Assumed portion spent on mitigation</i>	<i>16%</i>
<b>Subtotal: Estimated Mitigation on Other Projects</b>	<b>\$ 1,260 M</b>
<b>Estimated Total Mitigation Expenditures</b>	<b>\$ 1,608 M</b>
<i>Total project expenditures included in analysis</i>	<i>\$ 9,559 M</i>
<i>Implied percent spent on mitigation</i>	<i>17%</i>

- This table assumes that the average case study mitigation percentage of 16% applies to projects for which we do not have specific mitigation cost data
- Overall, about 17% or \$1.6 billion of total project expenditures from 2003-2012 may be related to mitigation. This estimate is preliminary and will be refined for the next phase of mitigation conversation at the Advisory Panel meeting

# Sales & Use Tax Introduction



*Construction cost driver – state and local sales & use tax on projects on state-owned highways – tax on:*

- Prime contractor full contract price
- Prime and sub-contractor purchases of materials consumed during construction

Estimated Sales & Use Tax Collected on Projects Completed in 2003-12	Sales & Use Tax Deferred
\$541 million	Tacoma Narrows Bridge - \$57.6 million
	520 - \$140.9 million (estimated)

*Policy considerations*

- General fund revenue from state sales & use tax
- Local government revenue from local option sales & use taxes
- Sales tax deferrals – Tacoma Narrows Bridge and 520
- Ability to tax federal construction contracts

# Sales & Use Tax Application

*Based on ownership of the highway – higher tax for projects on state-owned highways*

Tax	State-owned Highways - No Exemption	City, County, Political Subdivision, & Federal-owned Highways Public Road Construction Exemption
Sales & Use tax	<ul style="list-style-type: none"> <li>▪ Applied to full contract price</li> <li>▪ Materials that become part of the structure are not taxed</li> <li>▪ Materials used by contractor during construction (i.e. not part of the structure) are taxed at purchase</li> </ul>	<ul style="list-style-type: none"> <li>▪ Not applied to full contract price</li> <li>▪ All materials taxed at purchase</li> </ul>
B&O tax	<ul style="list-style-type: none"> <li>▪ Retail classification prime contractor– 0.00471</li> <li>▪ Wholesaling classification for subcontractors – 0.00484</li> </ul>	<ul style="list-style-type: none"> <li>▪ Public road classification</li> <li>▪ For both prime contractors &amp; subcontractors – 0.00484</li> </ul>
State tax cost* for \$1 million contract	Sales tax - \$71,500 <u>Prime B&amp;O tax - \$4,710</u> Total - \$76,210	Sales tax - \$32,500 <u>Prime B&amp;O tax - \$4,840</u> Total - \$37,340
*State sales tax rate of 6.5%	Labor & other – 50% Consumed materials – 10% Installed materials – 40% (estimate cost distribution from contractor)	

# Sales & Use Tax

## Other States



*Variation in sales & use tax application – affects cost comparison with WSDOT projects*

Other states - statewide sales & use tax (or equivalent excise tax)	44 (5 states no state sales tax)		WA - projects on state-owned highways	
Tax full contract amount	Yes	No		Yes
	4	40 35 – no projects 4 – no public 1 – no highways/bridges		
Tax materials	All	No tax	Consumed	Materials consumed
	25	7	12	

### Other state taxes

- Alabama – 5% tax on gross receipts from state highway projects (funds pensions & mental health)
- Delaware – No state sales tax – 0.006537 tax on contractor gross receipts over \$100,000/month (excludes sub-contractor payments)
- Mississippi – 3.5% tax on prime contractors >\$10,000 in lieu of sales & use tax
- Montana – No state sales tax – 1% license fee on publicly funded projects

### Directing sales & use tax collected on state highway projects to transportation fund

- West Virginia directs sales & use tax collected on state highway projects – only collected on all materials not full contract amount – to transportation fund



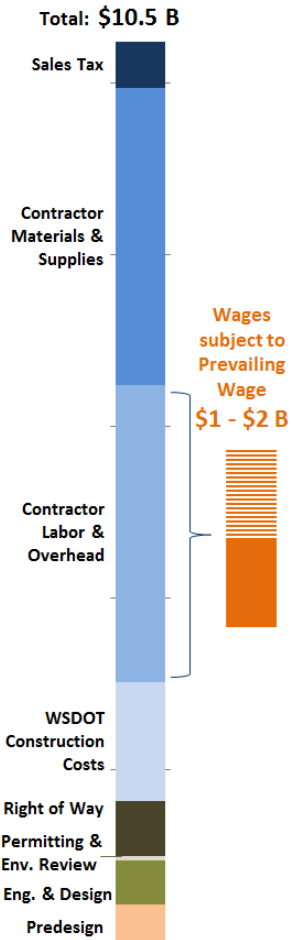
# Sales & Use Tax Alternatives & Policy

## Policy Considerations

- General fund – loss of revenue
- Local governments – loss of revenue (Streamlined Sales & Use Tax Agreement requires same tax basis)
- Ability to tax federal contractors – Supreme Court decision can tax federal contractors on materials if not higher than tax on state contractors
- Tax deferrals – Tacoma Narrows Bridge \$57.6 million due 11<sup>th</sup> year of operation/520 estimate of \$140 million deferred until 5<sup>th</sup> year of operation of the bridge – deferred taxes to be paid by tolls

Alternative – Sales & Use Tax	Cost \$ in millions (based on \$ collected 2003-12)			Federal Risk
	General Fund	Local	WSDOT	
1. Exempt projects on state-owned highways (all materials & total contract amount)	-\$396	-\$238	+\$534	Higher
2. Extend public road construction exemption to state-owned highways (tax all materials – no tax on total contract amount)	-\$202	-\$70	+272	No change
3. Direct sales & use tax receipts to transportation	-\$396	No change	+\$396	No change

# Prevailing Wage Application



## Based on funding

- State rates – apply to state-funded projects with no federal aid
- Federal rates - apply to federal-aid projects
- State requirement – pay state rate if higher than federal rate on federal-aid projects

## Difficult to compare state and federal rates

- State rates – holiday & overtime rates
- Federal rates – zone differentials

### General Laborer Rate (per hour)

County	State Rate	Federal Rate – Highway Category (also building & heavy)
Adams	Wage \$34.81 Holiday 7B Overtime 1M	Wage \$24.10 Fringes \$10.65 Zone 2 (>45 miles from Pasco, Spokane, Lewiston) + \$2.00
King	Wage \$41.69 Holiday 7A Overtime 2Y	Wage \$31.75 Fringes \$9.85 Zone 2 (w/in 25-45 miles of Seattle or Kent City Hall) + \$1.00 Zone 3 (> 45 miles from Seattle or Kent City Hall ) +\$2.00

# Prevailing Wage Other States

18 states – no state prevailing wage law

1 state with a prevailing wage law, does not have a state rate

2 states that set a state prevailing wage rate, exempt state transportation department

Practices	Washington	28 states that set state prevailing wage for transportation projects
Threshold below which the wage is not in effect	No threshold	17 – thresholds of \$25,000 to \$500,000 3 – thresholds of \$1,000 - \$2,000 8 – no threshold
State rate used if higher than federal on federal-aid projects	Yes – must use higher rate	14 – higher rate 9 – federal rate 4 – use federal rate as state rate
State basis for determining rates	Survey every 3 years (goal - actually less frequently) & collective bargaining agreements	4 – use federal rate as state rate 9 – collective bargaining agreements 13 – annual survey (1 of which – new law to use survey, or federal or a combination)
Highway worker category	No	20 – yes (some combined with heavy) 8 – no

# Prevailing Wage Alternatives & Policy

## *Policy – Dept. of Labor & Industries Prevailing Wage Handbook*

- Protect employees of public works contractors from substandard earnings
- Preserve local wages

Alternative	Policy (projects & \$ based on 2003-12 experience)	Cost Savings
1. Exempt WSDOT projects from state prevailing wage act (retain federal prevailing wage on federal-aid projects)	82% of projects have federal funding 18% would have no federal or state rate	N/A Studies vary widely
2. Exempt WSDOT federal-aid projects from state prevailing wage act (federal rate only on federal-aid projects)	All projects would have either federal or state prevailing wage rate	JLARC 1998 study State rates higher
3. Set threshold for WSDOT projects below which no state prevailing wage	If \$500,000 threshold: <2% of total project cost 9% of projects – no federal or state prevailing wage	N/A Studies vary widely
4. Use federal rate as state rate	Retain state prevailing wage – alter how wage is set	0.44% state highway program – 1998 JLARC
5. Other alternatives to set state rate a) Annual survey b) Collective bargaining agreements c) Highway category	Retain state prevailing wage – alter how wage is set	N/A

# Other Cost Drivers

## Next Steps

- Contracting
  - Method
  - Risk assignment
  - Closure windows
  - OMWBE/DBE
- Permitting, Environmental Review and Mitigation
- Funding
- Right of Way Acquisition
- **Comparative Costs**

# Comparative Costs Approach

- A key question posed in this study is whether, and to what degree, WSDOT projects are more costly than those in other states
- Given the challenges of ensuring that project comparisons reflect truly comparable projects, we have chosen to address this question in two ways:
  - Identify key driver-level differences which could lead to significant cost differences between WSDOT projects and projects elsewhere
  - Conduct literature review and where appropriate provide a high level assessment of comparable project costs across states
- The driver-level analysis will explore how each cost driver impacts project costs overall and puts this into a broader state to state comparison
- Since data availability will be an issue in the driver-level analysis, we will ensure that every driver includes a comparison with Oregon and Utah to provide a complete top-to-bottom review with two western peer states

# JTC Study Next Steps

- Continue analysis of costs and cost drivers
- Identify policy options
- October 29: Advisory Panel Meeting #3
- December 3: Advisory Panel Meeting #4
- December 12: Presentation to the JTC – DRAFT final report
- January 8: Publish final report