

WSDOT Project Cost Drivers

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Cost Drivers of Interest

- **Utilities**
- **Right-Of-Way (Real Estate Services)**
- **Bicycle and Pedestrian Facilities**
- **Environmental**

Utility Cost Drivers

Utilities in City Streets

Acquiring replacement property for utilities

Sequential relocation can take more time

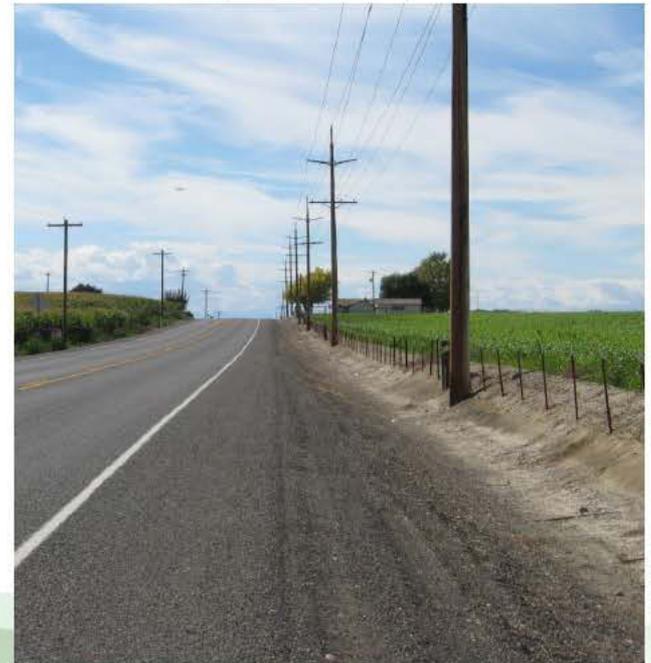
Response Strategies to Mitigate Cost Impacts

Early coordination

Cooperative agreements

Collaboration with utility interests

Advance relocation of utilities

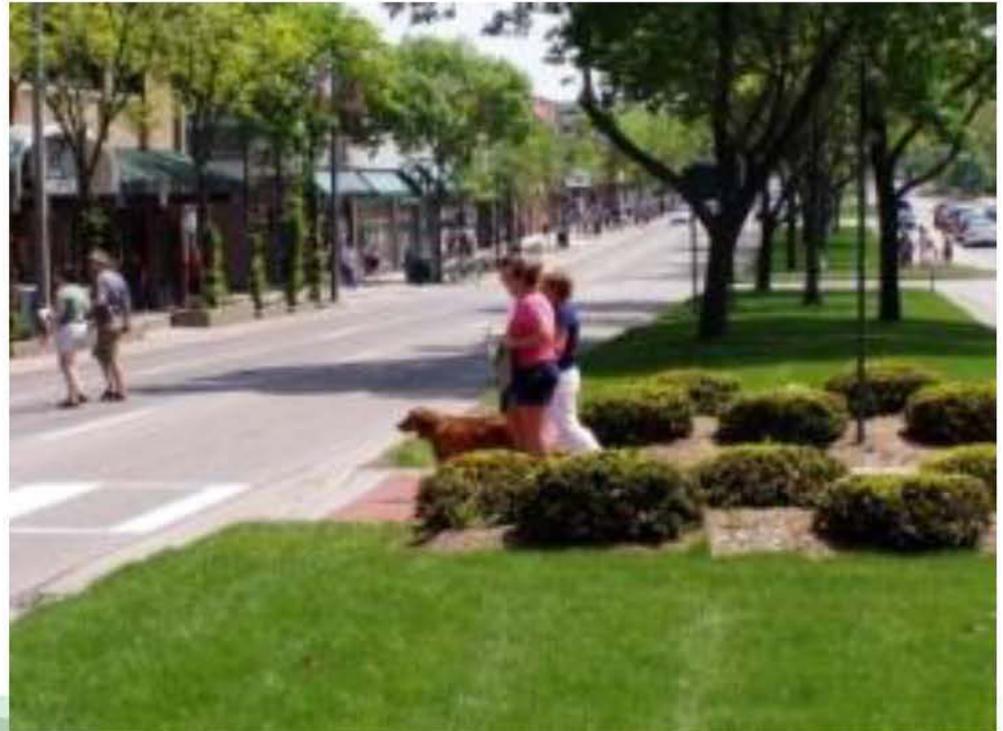


Real Estate Cost Drivers

- Land use and zoning considerations
- Properties with multiple owners (time)
- Special properties require more work
- Relocation requirements (time and costs)
- Litigation issues (time and costs)

Bicycle/Pedestrian Facilities

- Requirements
- City Streets as State Highways



Protecting the Environment

WSDOT's sustainability ethic guides our work as we improve and operate the state's transportation system.

WSDOT's Environmental Approach:

Avoid Impacts → Minimize Impacts → Mitigate Impacts

WSDOT seeks to:

- Meet regulatory requirements
- Support efficient project delivery
- Choose good investments for Washington
- Offer clear natural resource benefits

Environmental Transportation Project Mitigation

- Typical permanent mitigation involves:
 - Stormwater treatment
 - Stream enhancements
 - Noise reduction



Environmental Mitigation

From WSDOT's 2009 mitigation cost study:

Average cost of mitigation is about 16% (including permits)

Costs vary by project

Majority of mitigation costs is due to Stormwater treatment followed by wetland, stream and noise mitigation

Prevailing Wage

A worker must be paid prevailing wage on public works contracts

Establishing Wages

- ✓ The Washington State Department of Labor & Industries determines the prevailing wage rates.
- ✓ Rates should represent the rate that the majority of workers in the same occupation and the same geographic area are paid.

Federal and State Wage Requirements

- ✓ About half WSDOT's projects are federally funded and must contain Federal prevailing wage requirements.
- ✓ The other half of WSDOT's projects are only subject to prevailing wage requirements due to Washington's state wage laws.

When appropriately set, prevailing wages do not add costs to the WSDOT construction program and serve to level the playing field for all contractors.

Apprentice Utilization

State law requires 15% apprentice utilization

- The intent of the program is to maintain a skilled workforce for public works projects.
- For union contractors, there is no added cost to use apprentices. Open shop contractors may spend up to \$5,000 per year per apprentice, which is passed along to WSDOT in their bids.
- Requirements on Federally funded projects often conflict with the requirement, limiting a contractor's ability to meet the requirement.
- WSDOT and contractors spend more money on overhead due to apprentice utilization reporting requirements.



An apprentice assembles an anchor bolt for Hood Canal Bridge

Sales Tax

WSDOT loses gas tax money to the general fund

WSDOT must pay sales tax

- ✓ Although WSDOT projects are funded by gas taxes and other accounts separate from the general fund, WSDOT pays sales tax on its projects that go into the general fund, which WSDOT does not benefit from.

Calculating tax rate on payments increases WSDOT overhead costs

- ✓ For each project WSDOT constructs, the agency must calculate sales taxes.
- ✓ Unlike most other types of construction, road projects can span multiple tax areas, requiring multiple rates to be applied to different parts of the project.

Erosion and Sediment Control Costs

High costs during construction

Construction Costs

- ✓ Each year, temporary erosion and sediment control costs add about \$15.5 million in costs to WSDOT construction contracts. This does not include added costs in WSDOT staff time, or contract changes.
- ✓ These costs are for work needed to prevent erosion and keep water clean during construction only and they do not include the cost to build permanent structures to improve water quality or prevent erosion.



A water filtration system used to treat stormwater on a construction project

Examples of Environmental Costs During Construction

Notable WSDOT projects

I-5/ SR 18 / SR 161 Triangle

- The current allocation for construction costs related to environmental requirements is \$6.7 million.
- \$6 million is allocated for erosion and water pollution control during construction.
- This does not include costs for permanent items.
- The total contract cost is \$52 million.

I-5 Blakeslee to Grand Mound

- \$3.3 million has been spent on construction costs related to environmental requirements on this contract.
- The estimate for these items was \$773 million.
- This project is substantially complete.
- The total contract cost is \$22 million.

I-90 Hyak to Snowshed

- The current allocation is \$4.1 million for construction costs related to environmental requirements.
- \$2.1 million has been paid to date on these items.
- This contract is about 70% complete.
- The total contract cost is \$81 million.

Examples of Environmental Costs During Construction

Notable WSDOT projects

North Spokane Corridor – US 2 Lowering

- The amount paid to date for construction costs related to environmental requirements is \$489 thousand.
- The estimated cost for these expenses was \$164 thousand.
- This contract is substantially complete.
- The total contract cost is \$46 million.

SR 9, 212th to 176th Widening

- This project is about 50% complete.
- The current allocation for construction costs related to environmental requirements is \$2.8 million.
- \$1.3 million has been paid to date.
- The total contract cost is \$84 million.

SR 522, Snohomish River Bridge to US 2 Widening

- This project is just over 50% complete.
- The current allocation for construction costs related to environmental requirements is \$6 million.
- \$4.1 million has been paid to date.
- The total contract cost is \$73 million.

Federal Funding Requirements

Contracts with federal funding have higher project costs and higher contract administration costs

Federal requirements cost WSDOT more money in both contractor's bids and agency overhead costs. The exact amount is difficult to quantify.

- Disadvantaged Business Enterprise (DBE) requirements: There is evidence that there is an additional cost to using the DBEs, however WSDOT cannot quantify the exact amount.
- Buy America: Studies have suggested that the cost of steel in contracts with Buy America requirements costs 50% more than in contracts that can use foreign steel.
- Davis Bacon: The Federal Davis Bacon wage requirement costs WSDOT extra staff time because certified payrolls must be checked by staff on these contracts.

WSDOT's best estimate is that contracts with federal funds may cost an average of 5% more to construct than contracts without.

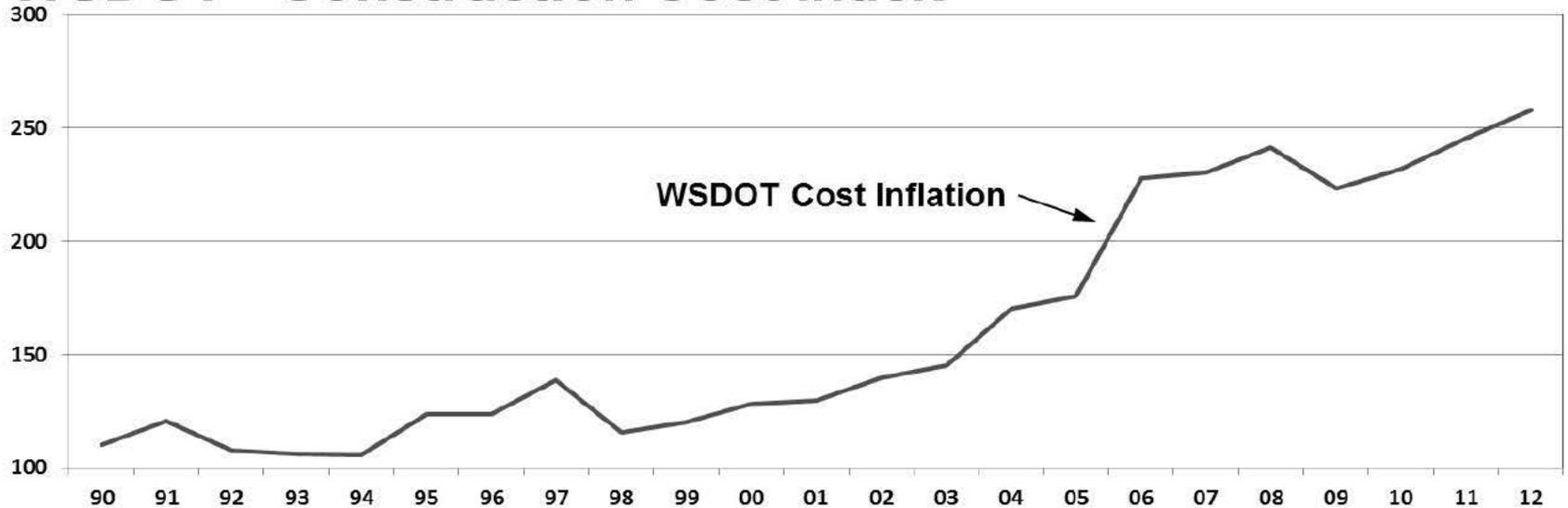
Inflation

A cost driver that WSDOT cannot control

Measuring inflation indicates changes in material and labor costs between initial budget, various points in the design process and the point when the contract is bid.

WSDOT has experienced a 12% increase in construction costs in the past 5 years and an 85% increase in the past 10 years.

WSDOT - Construction Cost Index



The Unexpected Costs

Not common, but potentially very costly

Hazardous Materials

- ✓ Although hazardous materials are not an issue on every contract, they can be expensive to dispose of or can affect other work on the contract when they are present.

Unknown Utilities

- ✓ The risk of finding unknown utilities is decreasing, but it is very costly when it happens
- ✓ Recently, WSDOT paid \$400 thousand to a water company in Bellingham due to a contractor striking a water main that was not known to WSDOT. The contractor is also seeking additional costs from WSDOT around \$20 thousand.

Risk Allocation and Change Management

WSDOT allocates risk to the party best able to manage it and takes responsibility for necessary changes

Risk Allocation

- ✓ WSDOT allocates risk to the party best able to manage and take responsibility for necessary changes. We do this in close conjunction with our industry partners.
 - Changed Conditions/Differing Site: WSDOT will always own the site conditions.
 - Weather: Impacts on weather, especially on multi-year projects, can significantly impact a project
 - Design Errors: WSDOT is responsible unless the project is Design-Build.

Change Management

- ✓ WSDOT has a well established system of change accountability.
- ✓ The goal is to settle disputes quickly and move on with the project.
- ✓ In the past five years, project cost growth averaged 6.8% per year.

Tort - Risk and Liability

A cost to WSDOT during and after construction

Insurance

- ✓ On WSDOT projects, contractors are required to carry various insurance policies during the construction period. It is normal practice for contractors to include the cost of these policies in their bids on a project.

Liability during construction

- ✓ Even with insurance, it is possible for WSDOT to be held financially responsible for accidents that take place during construction. In one recent case, WSDOT ended up paying \$2.25 million on top of what was paid by the various insurance companies for one accident on I-405.

Liability after construction

- ✓ Even with insurance, it is possible for WSDOT to be held financially responsible for accidents that occur after construction, such as the incidents with cable median barrier near Marysville. Incidents such as these, cost WSDOT around \$15.5 million each year.

Questions?

For additional information regarding cost drivers on WSDOT projects, please contact

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