Alaskan Way Viaduct & Seawall Replacement Program

Seattle City Council
January 18, 2011
Managing Cost and Risk

• Project budget accounts for inflation and risk.
• Agencies and project benefit from outside expertise.
• Design-build contracting.
• Managing construction risk.
• Understanding the construction area.
• Program oversight.
## State Project Delivery
### 2010 Cost Estimate

<table>
<thead>
<tr>
<th>State Projects</th>
<th>2010 Cost Estimate ($ in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Holgate Street to S. King Street Viaduct Replacement (South End)</td>
<td>$483 million</td>
</tr>
<tr>
<td>S. King Street to Roy Street Viaduct Replacement (Central – proposed bored tunnel)</td>
<td>$1,960 million</td>
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<tr>
<td>Central Waterfront Viaduct Removal and New Alaskan Way</td>
<td>$290 million</td>
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<tr>
<td>Central Waterfront Construction Mitigation</td>
<td>$30 million</td>
</tr>
<tr>
<td>Other Moving Forward Projects</td>
<td>$181 million</td>
</tr>
<tr>
<td>Prior Environmental Impact Statements, Right of Way and Design Costs</td>
<td>$164 million</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3,108 million</strong></td>
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</table>
Strategic Technical Advisory Team

• Governor’s 2006 Expert Review Panel recommended WSDOT draw on national experts to provide program management and technical oversight, support and advice for project implementation.

• Eight members with 80 additional experts who can be called upon.

• Assisted WSDOT with:
  • Qualifying teams.
  • Technical expertise.
  • RFP evaluation.
  • Special exercises such as Cost Estimate Validation Process (CEVP).
Independent Cost Review Process

**Process:** Enhanced CEVP based on extensive cost and risk workshops and value engineering, which includes outside subject matter experts.

**Oversight:** Independent tunnel construction and cost experts reviewed and validated cost estimate, funding plan and assignment and management of risks (required by Legislature).

- Dick Sage, Sound Transit construction manager.
- Donald Hilton, independent consultant.
- Robert Goodfellow, Black & Veatch director of tunneling.

**Outcome:** Updated cost estimate submitted to Washington State Legislature in 2010. Risk management plan incorporated into request for proposals for design-build contractor.
Risk Issues

• Soils:
  • Mitigated: Boring program and contractual requirements.
  • Assigned/shared risk: Expected interventions and contingency funds.
  • Incentives: Contractor receives 75 percent of remaining contingency fund.

• Deformation:
  • Mitigated: Analysis of soils and buildings, discussions with property owners and contractual requirements.
  • Assigned/shared risk: Assignment for expected risk and contingency funds.
  • Incentives: Contractor receives 75 percent of remaining contingency fund.
Managing Cost and Risk

- Project management
- Partnering
- Alignment
- Change management / issue resolution
- Disputes resolution
- Risk management
- Industry outreach
- Third party outreach

WSDOT used the design-build model to build the Tacoma Narrows Bridge.
Design-Build Contract Development

• SR 99 Bored Tunnel Alternative Design-Build Project contract developed with guidance from Strategic Technical Advisory Team.
  • Identified, allocated and shared risks, and incorporated incentives.
  • Early partnering with contractor.
  • Two-step RFP process.
  • Structured management approach for success.
  • Construction review board and task forces.
# Bored Tunnel Costs

<table>
<thead>
<tr>
<th>SR 99 Bored tunnel costs</th>
<th>Cost ($ in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design-build contract price limit</td>
<td>$1,090 million</td>
</tr>
<tr>
<td>Design-build contract – allowance for inflation</td>
<td>$110 million</td>
</tr>
<tr>
<td>Design-build contract – allowance for bonding and insurance</td>
<td>$100 million</td>
</tr>
<tr>
<td>Transfer of scope from south access contract</td>
<td>$50 million</td>
</tr>
<tr>
<td>WSDOT-controlled risk pool (during construction)</td>
<td>$205 million</td>
</tr>
<tr>
<td>Engineering, right of way, and north and south portal roadway connections</td>
<td>$455 million</td>
</tr>
<tr>
<td>City reimbursement for utility relocation</td>
<td>($50 million)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,960 million</strong></td>
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The design-build contract signed Jan. 6 includes the amounts highlighted in gray. Included in the design-build contract is utility work which will be reimbursed by the City of Seattle.
WSDOT-Managed Risk Pool

- $205 million for WSDOT-controlled risk pool. Items could include:
  - Deformation mitigation and repair.
  - Shared contingency.
  - Schedule acceleration incentive.
  - Other unknown risks such as:
    - Third party approvals.
    - Unknown contaminated materials.
City-State Agreements Protect City’s Interests

- Proposed bored tunnel project is in a dense urban environment with impacts to City traffic, noise, urban design, existing City infrastructure and private property.

- Streets and sidewalks constructed as part of project at the north and south portals ultimately will be owned and operated by the City.

- City is responsible for utility relocations at north and south tunnel portals and will own and operate utilities relocated as part of project.

- Provisions for State’s responsibility for infrastructure protection and remedying damage if it occurs.
Utilities Coordination

- Significant policy agreement and core responsibilities in State and SCL / SPU agreements:
  - State will identify utility relocation plan with City participation.
  - State will perform portions of utility relocation work to City design and construction standards with City reimbursement.
  - State will implement portions of SPU and SCL utility relocation obligations with City authorization and reimbursement.
Previous South Portal Design Concept
Updated South Portal Design Concept
Previous South Portal Design Concept
Updated South Portal Design Concept
Alaskan Way Viaduct and Seawall Replacement Program

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