

Mega Project Assessment

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Mega Project Assessment

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Alaskan Way Viaduct



SR 520



Columbia River Crossing

(March – October 2013)

Scope of Review

AWV & SR 520

- Organizational Structure
- Lessons Learned
- Delivery Methods/Selection
- Workforce / Project Staffing
- Quality Assurance
- Other Considerations



Organizational Structure

History of Mega Projects / Re-organizations 2009

- Cultural Barriers
- Recommendations
 - Mega Projects should operate independently from Regions
 - Mega Projects should report directly to the Chief Engineer with support from the highest levels of the organization
 - Office of the Chief Engineer re-organized & added Deputy Chief Engineer
 - Regional Operations
 - Mega Project Delivery
 - Traffic Operations, Maintenance Operations, Development and Construction Divisions at Headquarters

❖ Accomplished

Lessons Learned

Mega Projects provide significant development opportunities

Transfer Knowledge

- Central clearing house
- Online repository
- Regular training
- Annual conferences

Recommendations

- Collect and share
- Rotational assignments
- Liaison with other states



Delivery Methods

Contracting Methods

- Design Bid Build
- Construction Management At Risk / General Contractor Construction Mgmt
- Design Build hybrids
 - Design Build With Options (additive or deductive alternatives)
 - Design Build Task Orders (Scope is defined by Task Orders – add or deduct)
 - Progressive Design Build
- Lump Sum Design Build
- Design Build Operate Maintain

Alternative Contracting Approaches considered for: Mega Projects, significant risk projects, complex or technically challenging, need of innovation, time-sensitive

Delivery Methods

Contracting Tools

- Incentive / Disincentive
 - User travel time delay
 - Lane rental
 - Fuel costs
 - Crash rates
 - Detour road impact costs
- Cost Plus Time (A+B)
- Lane Rental
- Quality Based Methods
 - Performance Specification
 - Long Term Warranties



Delivery Methods Selection

Recommendations

- Risk Based Delivery Method Selection
 - Perform a thorough risk analysis to identify and quantify all project risks
 - Consider the amount of risk that should be retained versus transferred to the contractor
 - Delivery Method for complex or large projects requires team endorsement and approval of the Chief Engineer
- Pursue Legislative Authority for Alternate Delivery Methods
 - General Contractor Construction Manager (GCCM)
 - Public Private Partnerships

Workforce / Project Staffing

Nickel & TPA increased WSDOT Staffing

- Traditional delivery methods
- Limited consultant capacity on the eastern side of the state
- Cost concerns

Successful Delivery - currently managing downsizing

Mega Projects organized with General Engineering Consultant's

- Strong owner role
- Staffed with mix of consultants and WSDOT employees
- Current Reduction in Force has put pressure on the mega projects
 - Utilize WSDOT employees to the greatest extent possible
 - Turmoil due to Reduction in Force actions

Workforce / Project Staffing

Recommendations

- Even with New Revenue – WSDOT should limit “staffing up”
- WSDOT should avoid cyclical hiring and reductions and drive to a stable work force
- Need a collaborative statewide effort
 - Overall management of WSDOT workforce
 - Staffing of mega projects
 - Utilization of consultant resources
- Focus on Leadership Succession Planning

Quality Assurance

WSDOT Quality Focus

- WSDOT is one of six states that participated in the National Cooperative Highway Research Program (NCHRP) scanning tour on best quality practices in design
- SR 520 & AWW Programs have detailed Project Management Plans
 - Includes both design and construction QA programs and are considered State of the Art
- High Quality Design on Mega Projects
 - Good communication between consultants and in-house design
 - Regularly schedule review meetings for all disciplines involved
 - Third party consultant reviews
 - Single-point data system

Quality Assurance

Observations on development of SR 520 design-build contract

- Office project document control system not used by all team members
- Program quality reviews not used by all team members
- Independent third party review of bridge design may have been helpful
- Late delivery of RFP technical requirements did not leave sufficient time to sufficiently modify prescriptive specifications for design build delivery

Recommendations

- WSDOT has sufficient processes in place on mega programs but needs to follow them
- Lessons Learned from SR 520
- Process review by the Chief Engineer, especially design QA

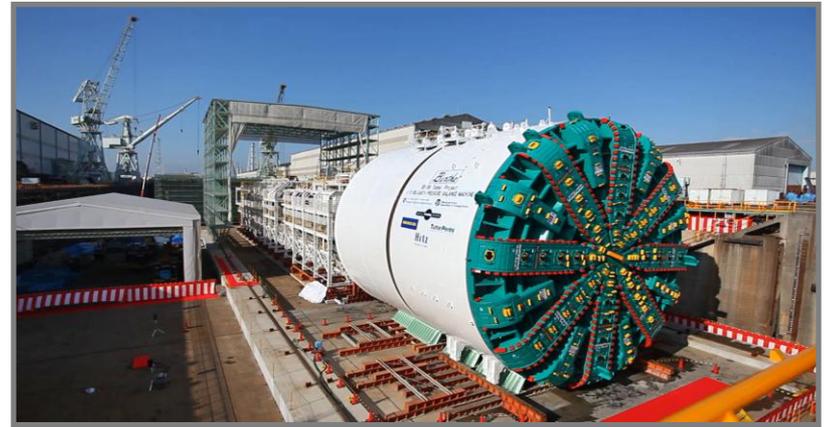
Other Considerations

Concerns from legislative leadership regarding oversight

- Expert Review Panels established for various purposes
 - 2006 Expert Review Panel (AWV & 520) 2009 AWV Independent Cost Estimate Report
 - 2011 – 2013 AWV Expert Review Panel 2013-2015 AWV Expert Review Panel
 - AWV Executive Oversight Committee AWV Strategic Advisory Committee
- AWV and SR 520 employ subject matter experts from outside of team
- WSDOT has established pattern of quarterly program reviews
- I-405 team proposed a standing internal mega project panel

Recommendations

- Establish standing committee for mega projects staffed with internal and external experts
- Update Design Build Guidance Manual and include other alternative delivery methods to provide guidance and best practices regarding design build and mega projects



Questions?