

**Central Waterfront**

# Environmental Process

Alaskan Way Viaduct and Seawall Replacement Program Elements	SDEIS Project Level Analysis	SDEIS Program Level Analysis only
Bored tunnel and portals	X	
Viaduct removal	X	
Battery Street Tunnel	X	
Alaskan Way surface street		X
Transit		X
Mercer underpass and 6 <sup>th</sup> Avenue	X	
Other surface street improvements (including Mercer West)		X
Waterfront promenade		X
Seawall		X

Central Waterfront

# 2009 Activities and Milestones

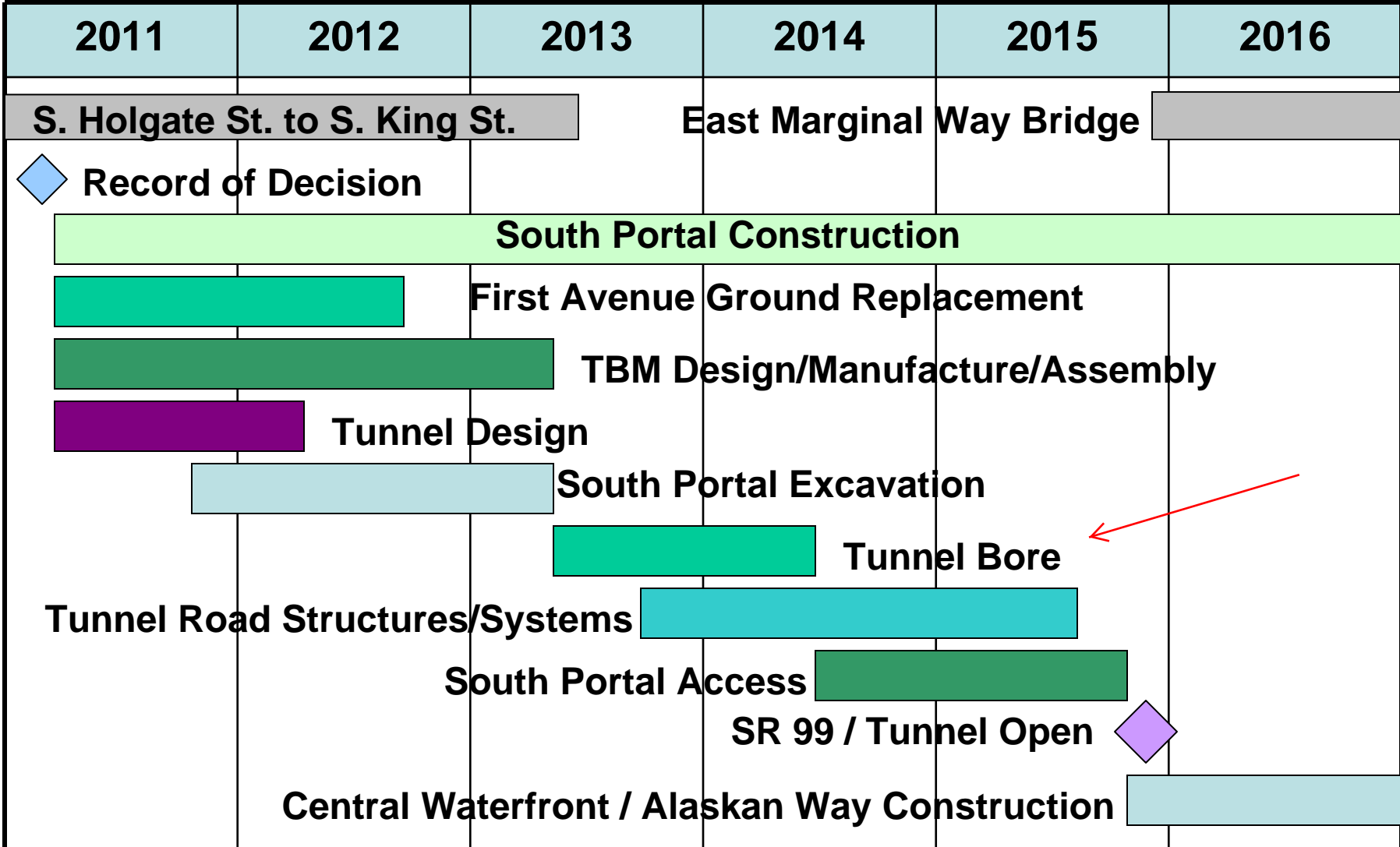
Q1	Q2	Q3	Q4
<b>Relocate electrical lines between S. Massachusetts Street and Railroad Way S.</b>			
Replace the viaduct between S. Holgate and S. King streets			
Implement Moving Forward transit enhancements and other improvements			
Mercer Street construction from I-5 to Dexter Avenue			
S. Spokane Street Viaduct Project construction			
		Initiate bored tunnel contracting	
<b>Environmental review and preliminary design</b>			



The Alaskan Way Viaduct & Seawall Replacement Program

Central Waterfront

Preliminary Construction Timeline



## **Alaskan Way Viaduct and Seawall Replacement Program**

### **Holgate to King Stage 2 and Bored Tunnel Interface Options and Decisions Workshops 1 & 2**

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#### **MEETING MINUTES**

##### **ATTENDEES:**

2-17-09	2-20-09	ATTENDEE	2-17-09	2-20-09	ATTENDEE
✓	✓	Ali Amiri, WSDOT	✓	✓	Vic Oblas, VOSK
✓		Bob Chandler, SDOT	✓	✓	Bill Ott, OTT
		Wally Chen, PB	✓	✓	Don Phelps, PB
✓	✓	Gordon Clark, PB	✓	✓	Mike Rigsby, PB
✓	✓	Mike Colyn, PB	✓	✓	Jim Robison, HMM/PMAC
✓	✓	Rick Conte, PB	✓		Kevin Sakai, OTT
✓	✓	Ken Fiorentino, Jacobs	✓		Jim Struthers, WSDOT
✓	✓	Theresa Greco, WSDOT		✓	Bob Valenti, PB
✓	✓	Mike Johnson, SDOT	✓	✓	Alec Williamson, WSDOT
✓		Einer Handeland, PB	✓		Laura Wojcicki, PB
✓	✓	Asvin Mandadi, PB			

**SUBJECT:** Holgate to King (H2K) Stage 2 and Tunnel Interface Options and Decisions Workshop

**DATE/TIME:** Workshop 1 - February 17, 2009 / 1:00 p.m. – 4:00 p.m.  
Workshop 2 - February 20, 2009 / 1:00 p.m. – 3:00 p.m.

**LOCATION:** AWVSRP Office, 23<sup>rd</sup> Floor Training Room South

**DISTRIBUTION:** Attendees, plus:  
Matt Preedy, WSDOT; John White, WSDOT; Chris Wellander, PB; AWVSRP DCC; GEC Document Control

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#### **2-17-09 WORKSHOP 1**

##### **MEETING AGENDA**

1. Goals
2. Workshop Objective
3. Presentation of H2K Stage 2 Transition Area Staging Alternatives
  - Assumptions
  - Walk Thru Alternatives and Construction schedules
  - Present Pros and Cons independent of the Bored TunnelBaseline Alternative 1 – 60% PS&E Design – WOSCA Detour  
Alternative 2 – Inline Transition Structures with SR99 Closure  
Alternative 3 – Side Connection Transition Structures with SB SR 99 Closure  
Alternative 4 – Inline Transition Structures with Modified WOSCA Detour  
Alternative 5 – Side Connection Transition Structures with Modified WOSCA Detour
4. Interface with the Bored Tunnel and South Portal Construction
  - Bored Tunnel team responses to the Transition Area Alternatives for H2K
  - Pros and Cons for each for Bored Tunnel Construction
5. Discussions, Pros & Cons Evaluation, and Conclusion
  - Choose preferred alternative or develop Hybrid alternative

# **Alaskan Way Viaduct and Seawall Replacement Program**

## **Holgate to King Stage 2 and Bored Tunnel Interface Options and Decisions Workshops 1 & 2**

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### **MEETING MINUTES**

#### **DISCUSSION:**

#### **1. Goals**

- The stated goals for this workshop:
  - Proceed with H2K design to meet September, 2009 Ad Date
  - Minimize traffic disruptions on SR 99 as well as on City streets
  - Address constructability issues during contract overlaps between H2K and Bored Tunnel
  - Discuss transition area north of Royal Brougham and reconnection to the Existing Viaduct

#### **2. Workshop Objectives**

- Objectives stated as follows:
  - Begin construction of H2K as soon as possible; complete as much work as possible before heavy construction for the Bored Tunnel begins.
  - Address Bored Tunnel impacts
  - Discuss the H2K Transition Area Alternatives, and develop pros and cons for each alternative relative to each contract.
  - Collective decision on recommendations on detour strategy for H2K
  - Select transition structure connection; strategy must meet ad date, minimize delays to construction of the Bored Tunnel

#### **3. Presentation of H2K Stage 2 Transition Area Staging Alternatives**

- Assumptions
  - Vacating the Whatcom Lead could save 8 months in the H2K schedule
  - SR99 Traffic would be detoured to 1<sup>st</sup> Avenue during closures. The minimum closure would be 1 month. A different profile would tie in to transition structures.
  - Alaskan Way South would be closed between S. King Street and Atlantic Street for the first 8 months of the project. It could then re-open, with 2-lanes/2 way traffic. This would provide a 3 month gain in schedule to build the U-Tube,
  - The WOSCA staging area would be shared between the Bored Tunnel and H2K contractors.
  - The south end portal construction begins April 2011.
  - The assumption that the Tunnel Boring Machine (TBM) will be set up starting Nov 2011 was revised to June 2012.
- Asvin Mandadi walked through Alternatives and Construction schedules
  - Alternative 1 was presented as the baseline scenario (WOSCA detour with Inline Transition Structures) that was progressed beyond the 60% PS&E design and work was stopped on the WOSCA detours in January 2009 pursuant to the Bored Tunnel announcement.
  - Alternative 2 presented the most advantage for the Bored Tunnel contractor in terms of use of WOSCA staging area, and the schedule for completing the Transition Structures by August 2011. This alternative does not meet the objective of minimizing traffic disruptions on SR 99 and City streets.
  - Alternative 3 has the same staging area and schedule advantages as Alternative 2 for the Bored Tunnel contractor. This alternative on one hand does not meet the

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#### **MEETING MINUTES**

objective of minimizing traffic disruptions on SR 99 and City Streets, and on the other hand requires several spans of the mainline Viaduct be retrofitted.

- Alternatives 4 and 5 were removed from consideration. WOSCA detour via 1<sup>st</sup> Ave and Railroad Way Ramps in both alternatives presents a challenge to access the Staging area constrained by the detour on one side, and by the Railroad Ramps on the other.
- Alternative 6 was introduced for further study. This alternative would re-align WOSCA detour in two stages from its connection to the RR Ramps in Alternative 1 to a direct connection to the newly built SB mainline with the Viaduct removed. This would become the long-term detour for H2K until the Bored Tunnel construction is complete. The Transition Structures would not be built.
- Ken Fiorentino presented the following as considerations for the Bored Tunnel work:
  - The assumption for Tunnel Boring Machine setup in Nov 2011 was removed
  - Between WOSCA and S King St. the method of construction chosen was to build secant walls on either sides of the excavation pit, support the utilities, deck the surface at about 8 feet below ground, relocate the utilities and back fill. Excavation then takes place between the shafts before the TBM is launched in June of 2012.
  - Construction for the South Portal in all cases would begin on 1<sup>st</sup> Ave from S King St. to the South and proceed south into the WOSCA property. Contractor would need Railroad Way ramps removed to proceed into WOSCA.
  - Once the South Portal work is complete within WOSCA, the entire WOSCA site is needed for the Tunnel contractor to stage for the TBM.
  - The length required to assemble the TBM is 250 feet. Fabrication takes 16 months. The actual time to bore the tunnel is 11 months. It will take 5 months to set up machines, construction office, cages, slurry plant etc., requiring an approximate area with dimensions 120' X 1,300'.

The comparison matrix for each alternative was updated to develop Pros and Cons for the Bored Tunnel. The matrix updated during 2-20-09 Workshop 2 is attached.

#### **DECISIONS 2-17-09:**

- Alternatives 1, 4 and 5 were removed from further consideration, leaving 2-3 and the 6 for further consideration.

#### **ACTIONS for 2-10-09:**

- The H2K Team will develop Alternative 6.
- The Bored Tunnel team will assess WOSCA staging for Alternative 6.
- A follow-up workshop will be held February 20, 2009, from 1:00 P.M. to 3:00 P.M. in the 23<sup>rd</sup> Floor Training Rooms.

**Alaskan Way Viaduct and Seawall Replacement Program**  
Holgate to King Stage 2 and Bored Tunnel Interface Options and Decisions  
Workshops 1 & 2

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**MEETING MINUTES**

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**2-20-09 WORKSHOP 2**

**MEETING AGENDA**

1. Present Alternative 6
2. Present Alternative 3A – Developed new by Project Team
3. Discuss Pros and Cons of remaining Alternatives
4. Select remaining alternatives for Sr. Management Decision making

**DISCUSSION:**

**Goals and Objectives are the same as set on 2-17-09**

**Presentation:**

- Alternative 6 and 3A were presented with Pros and Cons.
- Alternative 6 was presented and the staged construction of WOSCA detour from its alignment in Alternative 1 to the final location was discussed.
- RR Ramps can be removed in Nov 2011 as soon as NB WOSCA detour is tied-in.
- Construction of a the relocated WOSCA detour is very constrained in Stages 3 & 4
- Approximately 1.25 Ac of WOSCA in the NW corner is not available to the Bored Tunnel contractor. The final alignment of WOSCA detour occupies this space.
- The initial reaction to Alternative 6 was that the Tunnel Team would need all of WOSCA
- Closing RR Ramps to all traffic to facilitate accelerated WOSCA detour construction to its final location was considered. Project team responded as follows:
  - SB SR99 must be detoured first on to WOSCA as soon as the SB mainline bridge and west 1/3<sup>rd</sup> of the south approach fill are complete
  - The central 1/3<sup>rd</sup> of the south approach fill is completed with SB SR99 on WOSCA detour
  - The Viaduct has to be demolished to build NB WOSCA detour
  - NB WOSCA detour must then be completed and detoured on to the SB mainline bridge
  - This sequence must be followed for any alignment of WOSCA. With the Viaduct in place, SB WOSCA detour to be closer to its final location would require several geometric deviations rendering the movement very constrained and unsafe.
- Alternative 3A was developed by the Project Team as a variation to Alternative 3 with a 25 MPH design speed for the Transition Structure tie-in to the Ex Viaduct
  - The SB transition structure tie-in connects north of the NB transition structure tie-in
  - The mainline traffic is always maintained on SR 99 before it is diverted on to the Transition Structures
  - The number of frames that need to be retrofitted drops from 6 to 4.

## ***Alaskan Way Viaduct and Seawall Replacement Program***

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#### **MEETING MINUTES**

- The SB SR 99 traffic in 2 x 11' lanes has to snake through the existing columns at a lowered design speed.
- Barriers would be placed on both sides of the traffic lanes to protect columns
- The entire WOSCA site is available to the Bored Tunnel contractor as early as Jan 2011
- RR ramps can be removed by Oct 2011 as soon as the replacement ramps are built
- This alternative was favored by all due to the fact that it meets the objective of not disrupting SR99 and City street traffic, maintains traffic on SR 99 at all times, maintains the Bored Tunnel construction schedule, and the entire WOSCA site is available to the Bored Tunnel contractor in Jan 2011.

The comparison matrix was updated for alternatives 3A and 6. For all alternatives to the team developed considerations in lieu of pros and cons for the Bored Tunnel. The matrix is attached (updated to 2-20-09 discussions).

#### **DECISIONS:**

- Alternative 3 was eliminated and replaced with Alternative 3A which would be considered in the decision making
- Baseline Alternative 1 will be shown for comparison purposes

#### **ACTIONS:**

- Alternatives 2, 3A and 6 will be presented to Ali Amiri for furthering to Sr. Management for Decision making week of 2/23/09