

South Holgate Street to South King Street Viaduct Replacement Project SE-10 Construction Flowchart Integrated with Bored Tunnel- South Portal

ALASKAN WAY VIADUCT
AND
SEAWALL REPLACEMENT
PROGRAM

Durations Assume
NO RISK

January 30, 2009

DRAFT
WORKING PAPER
PRE-DECISIONAL
NOT FOR PUBLIC RELEASE

SE-10 South Holgate Street to South King Street Viaduct Replacement Project
Integrated with South Portal of Bored Tunnel

CONTRACT #1 UTILITY RELOCATION
SR 99 Traffic: NB traffic is unchanged on existing AWW
SB traffic is unchanged on existing AWW
AW Traffic: Surface traffic is unchanged
Construction:
24kV Electrical Relocation
Water, Communication, Storm Drain & Sewer Relocation

CONTRACT #2 HEAVY-CIVIL
Stage 1
SR 99 Traffic: NB traffic is unchanged on existing AWW
SB traffic reduced to 2 lanes
1st Avenue South - OPEN
AW Traffic: Surface traffic - CLOSED
Construction:
SIG Track Relocation
Exist Tail Track Modifications
Soil Improvement SB SR99
Contract SB-1 Mainline SB
Contract West Half/Seaward U'Xing at Royal Brougham-Shoring Only
Soil Improvement - West Half
Contract West Half SB Retained Fill
Contract SB-5, SB-6, SB-7 Structures
Contract New Entrance for T-46
Road Modifications and Utilities for Colorado Avenue, South Atlantic (Partial)
Utilities Installation: Water, Sewer, Storm Drain

Stage 2
SR 99 Traffic: NB traffic is diverted onto 1st Avenue South via Railroad Ramps
SB traffic is diverted onto 1st Avenue South via Railroad Ramps
1st Avenue South - Closed Railroad Ramps to King Street
AW Traffic: Surface traffic - Closed
Construction:
Demo Existing Viaduct - Holgate to King
Contract Transition connection w/ on-off ramps
Contract Pedestrian SB-8 Structure
Relocate SIG Track
Temporary Ferry Holding
Contract U'Xing - Shoring Only
Road Modifications and Utilities for Royal Brougham, South Atlantic
Utilities Installation: Water, Sewer, Storm Drain

Stage 3
SR 99 Traffic: NB traffic on SB-1 Mainline SB
SB traffic on SB-1 Mainline SB
1st Avenue South - Closed Railroad Ramps to King Street
AW Traffic: Surface traffic - Open
Construction:
Soil Improvement - East Half
Complete Removal of Existing AWW south of Dearborn Street
Contract SB-1 Mainline - NB
Contract East Half NB Retained Fill
Contract U'Xing Shoring East Half, Excavation, Concrete Pavement, Fascia and parapet walls
Road Modifications and Utilities for Alaskan Way
Utilities Installation: Water, Sewer, Storm Drain

Stage 4
SR 99 Traffic: NB traffic on SB-1 Mainline SB
SB traffic on SB-1 Mainline SB
1st Avenue South - Open
AW Traffic: Surface traffic - Open
Construction:
Complete SB-1 Mainline - NB
Complete East Half NB Retained Fill
Complete U'Xing Shoring East Half, Excavation, Concrete Pavement, Fascia and parapet walls

Stage 5
SR 99 Traffic: NB traffic on SB-1 Mainline NB
SB traffic on SB-1 Mainline SB
1st Avenue South - Open
AW Traffic: Surface traffic - Open
Construction:
Project Closeout - Surface Restoration

BORED TUNNEL CONTRACT
Stage 1
SR 99 Traffic: NB traffic is unchanged on existing AWW
SB traffic reduced to 2 lanes
1st Avenue South - OPEN
AW Traffic: Surface traffic - CLOSED
Construction:
Begin Utility Relocation Effort

Stage 2
SR 99 Traffic: NB traffic is diverted onto 1st Avenue South via Railroad Ramps
SB traffic is diverted onto 1st Avenue South via Railroad Ramps
1st Avenue South - Closed Railroad Ramps to King Street
AW Traffic: Surface traffic - Closed
Construction:
Complete Utility Relocation
South Portal Cut & Cover Shoring Installation, Excavation
WOSCA Yard Setup

Stage 3
SR 99 Traffic: NB traffic on SB-1 Mainline
SB traffic on SB-1 Mainline
1st Avenue South - Closed Railroad Ramps to King Street
AW Traffic: Surface traffic - Closed
Construction:
Receive and Setup TBM
Complete South Portal Cut & Cover Shoring Installation and Excavation

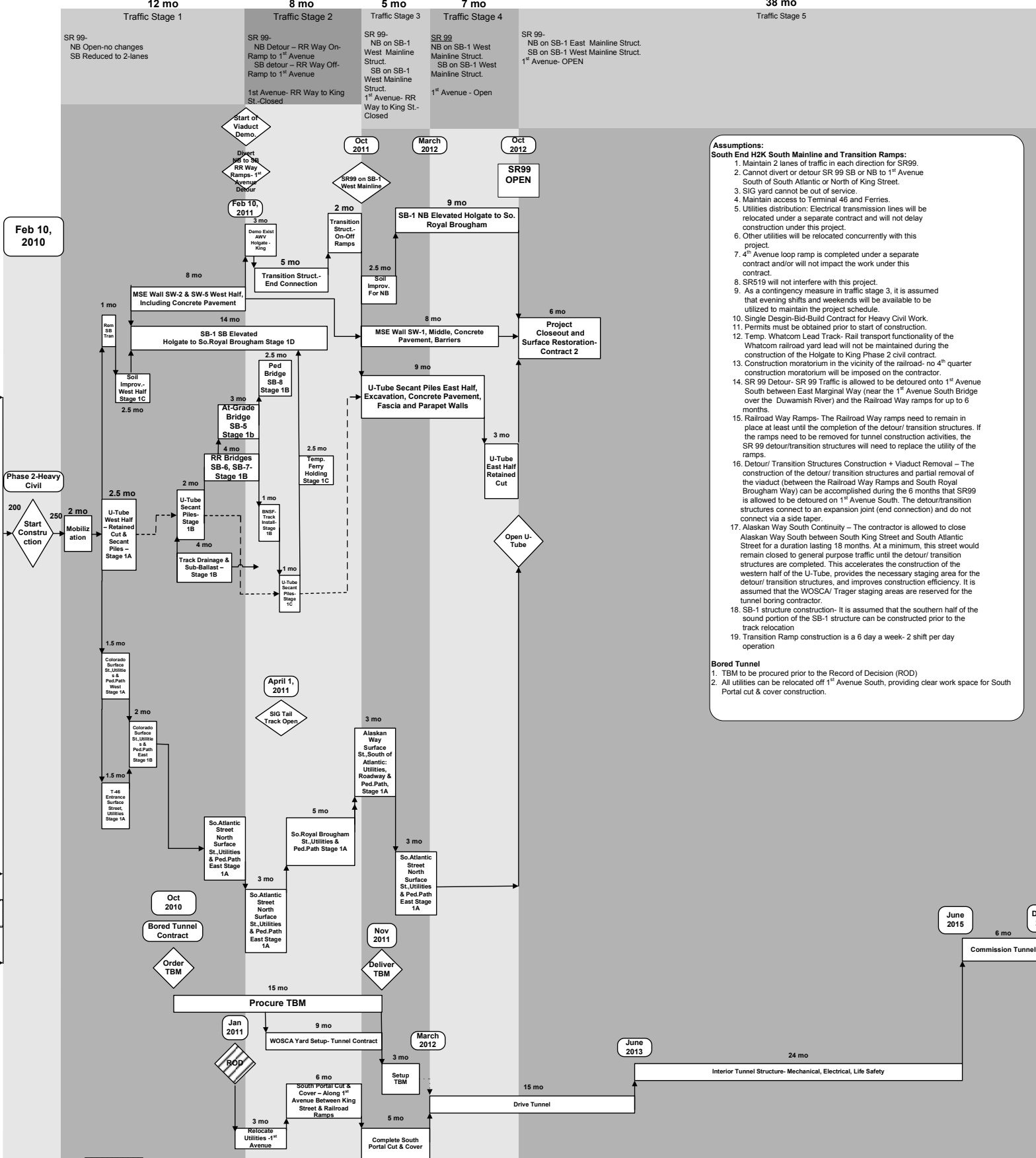
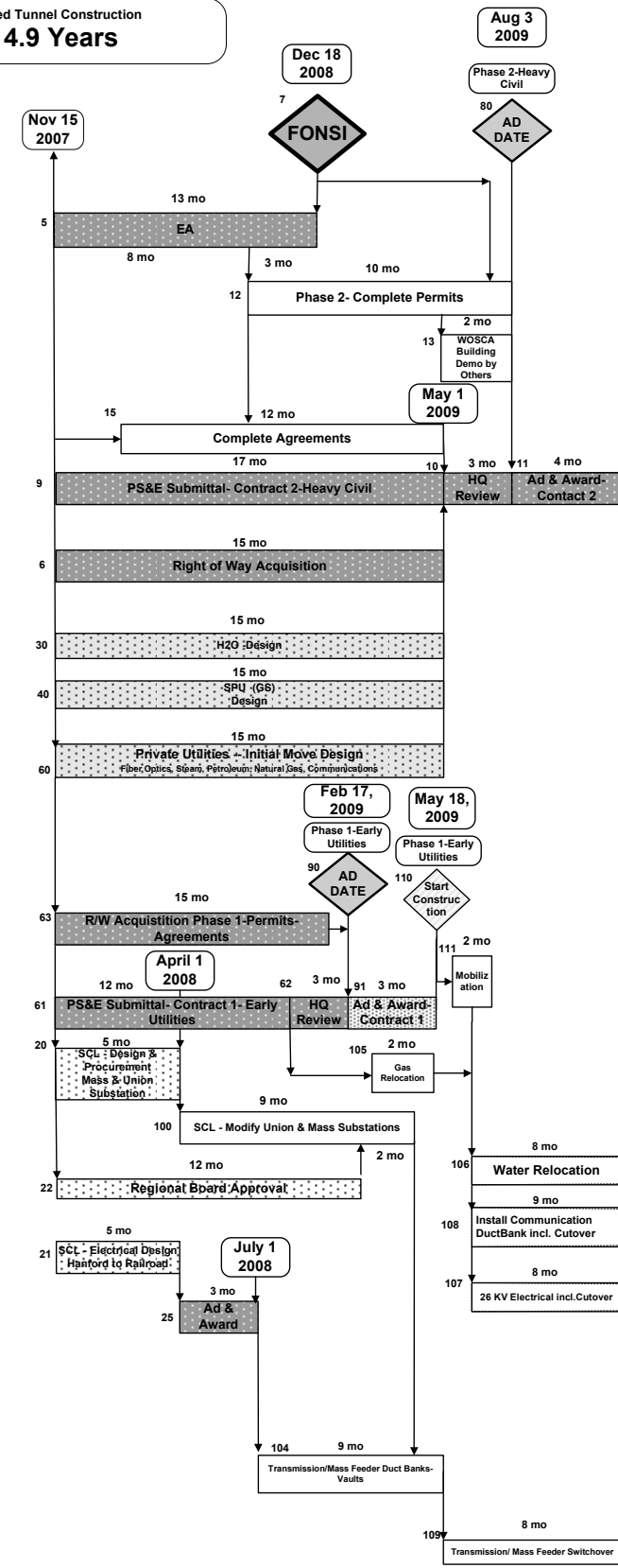
Stage 4
SR 99 Traffic: NB traffic on SB-1 Mainline SB
SB traffic on SB-1 Mainline SB
1st Avenue South - Open
AW Traffic: Surface traffic - Open
Construction:
Drive Tunnel

Stage 5
SR 99 Traffic: NB traffic on SB-1 Mainline NB
SB traffic on SB-1 Mainline SB
1st Avenue South - Open
AW Traffic: Surface traffic - Open
Construction:
Tunnel Interior - Electrical, Mechanical, Commissioning

Holgate to King Construction
Stage 1,2,3,4,5 (Phase 2)
3.2 Years

Corridor Closed
0 Years

Bored Tunnel Construction
4.9 Years



- Assumptions:**
South End H2K South Mainline and Transition Ramps:
1. Maintain 2 lanes of traffic in each direction for SR99.
2. Cannot divert or detour SR 99 SB or NB to 1st Avenue South of South Atlantic or North of King Street.
3. SIG yard cannot be out of service.
4. Maintain access to Terminal 46 and Ferries.
5. Utilities distribution: Electrical transmission lines will be relocated under a separate contract and will not delay construction under this project.
6. Other utilities will be relocated concurrently with this project.
7. 4th Avenue loop ramp is completed under a separate contract and/or will not impact the work under this contract.
8. SR99 will not interfere with this project.
9. As a contingency measure in traffic stage 3, it is assumed that evening shifts and weekends will be available to be utilized to maintain the project schedule.
10. Single Design-Bid-Build Contract for Heavy Civil Work.
11. Permits must be obtained prior to start of construction.
12. Temp. Whatcom Lead Track- Rail transport functionality of the Whatcom railroad yard will not be maintained during the construction of the Holgate to King Phase 2 civil contract.
13. Construction moratorium in the vicinity of the railroad- no 4th quarter construction moratorium will be imposed on the contractor.
14. SR 99 Detour- SR 99 Traffic is allowed to be detoured onto 1st Avenue South between East Marginal Way (near the 1st Avenue South Bridge over the Duwamish River) and the Railroad Way ramps for up to 6 months.
15. Railroad Way Ramps- The Railroad Way ramps need to remain in place at least until the completion of the detour/ transition structures. If the ramps need to be removed for tunnel construction activities, the SR 99 detour/transition structures will need to replace the utility of the ramps.
16. Detour/ Transition Structures Construction + Viaduct Removal - The construction of the detour/ transition structures and partial removal of the viaduct (between the Railroad Way Ramps and South Royal Brougham Way) can be accomplished during the 6 months that SR99 is allowed to be detoured on 1st Avenue South. The detour/transition structures connect to an expansion joint (end connection) and do not connect via a side taper.
17. Alaskan Way South Continuity - The contractor is allowed to close Alaskan Way South between South King Street and South Atlantic Street for a duration lasting 18 months. At a minimum, this street would remain closed to general purpose traffic until the detour/ transition structures are completed. This accelerates the construction of the western half of the U-Tube, provides the necessary staging area for the detour/ transition structures, and improves construction efficiency. It is assumed that the WOSCA/ Trager staging areas are reserved for the tunnel boring contractor.
18. SB-1 structure construction- It is assumed that the southern half of the sound portion of the SB-1 structure can be constructed prior to the track relocation.
19. Transition Ramp construction is a 6 day a week- 2 shift per day operation.
- Bored Tunnel**
1. TBM to be procured prior to the Record of Decision (ROD)
2. All utilities can be relocated off 1st Avenue South, providing clear work space for South Portal cut & cover construction.

South Holgate Street to South King Street
Viaduct Replacement Project Integrated
with South Portal of Bored Tunnel Contract
Flowchart SE- 10

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