

Bored Tunnel South Alignment

Selection of a 1st Avenue Alignment:
Discussion and Considerations

Alignments Considered

1. WOSCA to 1st Avenue – Direct Bore from WOSCA
2. WOSCA to 1st Avenue – Bore from King St. Vic. w/Top Down Cut/Cover South
3. WOSCA to 1st Avenue – Direct Bore from WOSCA w/ Profile 30' Lower
4. WOSCA to Alaskan Way – Bore from King St. Vic. w/Top Down Cut/Cover South
5. WOSCA to Occidental Ave/2nd Ave

WOSCA to 1st Avenue – Direct Bore from WOSCA

- Original Bored Tunnel Concept
- Not feasible due to insufficient depth of stable soil at north edge of WOSCA site
- Would require extensive jet grouting in 1st Avenue
- Would result in high risk of severe settlement along 1st Avenue
- High risk of TBM encountering Starbucks wall tie-backs in 1st Avenue

WOSCA to 1st Avenue – Bore from King St. Vic. w/Top Down Cut/Cover South of King

- Mitigates tie-back and settlement problems in 1st Avenue
- Creates a more stable environment for TBM launch
- Requires a very deep (100'+) excavation supported by secant piles along the 1st Ave area ways
- Requires lane closures during secant pile and new 1st Ave slab construction (6-12 months)

WOSCA to 1st Avenue – Direct Bore from WOSCA w/ Profile 30' Lower

- Allows direct boring with TBM from WOSCA site
- Not feasible because it would cause a complete redesign of Holgate to King

WOSCA to Alaskan Way – Bore from King St. Vic. w/Top Down Cut/Cover South

- Allows for larger staging and laydown area than 1st Avenue
- More space for retained cut stabilization
- Creates difficulty for contractor access at south end
- Causes severe disruption to “transition” detour structure (mainline SR 99) due to direct conflict in alignment
- High risk of viaduct settlement due to close proximity and direct conflict in alignment

WOSCA to Occidental Ave/2nd Ave

- High impacts to 1st Avenue and Railroad ramps
- Creates poor tunnel alignment and geometry
- Runs immediately under the Elliott Bay Interceptor for a long distance – not feasible

Conclusions/Recommendations

- Based on flaws in other options, continue forward with 1st Avenue alignment
- Stabilize 1st Avenue and launch TBM at King Street vicinity
- Develop PS&E package for TBM launch site preparation – WOSCA to King Street ASAP