

Summary of Meeting Notes for the Conceptual Alternatives Meeting

Meeting Date and Time: January 15, 2015, 2:00 pm to 4:00 pm

Attendees:

Snohomish County: Logan Daniels, Sharon Swan, Kathleen Hermann (via conf. call), Tom Teigen, Doug Dailer, Tom Murdoch, Frank Leonetti, Dave Lucas, James Yap

Consultant Team: Peter Hummel (Anchor QEA), Kathy Ketteridge (Anchor QEA), Paul Schlenger (Confluence Environmental), Matthew Christensen (TKDA – conf. call), Matthew Gibson (Shannon & Wilson – conf. call)

Purpose: The purpose of this meeting was for the Consultant to present initial Conceptual Alternatives to County staff. The designs were based on both input received at the December stakeholder meetings; and input from the Railroad Consultant regarding site and railroad restrictions.

Goal: The goal of the meeting was to select three (3) Alternatives that would be vetted under the feasibility evaluation criteria and be the subject of the final Feasibility Study.

Presentation and Discussion of Alternatives:

The Consultant prepared Exhibits for seven alternatives which are described below:

Alternative 1: Minimal 3-span bridge opening that would meet fish and sediment passage at location of existing culvert. Includes passage for pedestrians to beach within abutment span.

Alternative 2: Larger 3-span bridge opening) to provide more room for creek meander and additional room for pedestrian pathway.

Alternative 3: Use existing culvert for pedestrians. Additional minimum bridge opening for creek to the north with creek re-aligned.

Alternative 4: Use new culvert for pedestrians. Additional larger bridge opening for creek.

Alternative 5: One additional box culvert for the creek/sediment. Additional box culvert for pedestrians only.

Alternative 6: Full restoration, bridge (approximately 400 feet) across entire park area including areas for pedestrian access to beach.

Alternative 7: Pedestrian Overpass with minimal bridge/box culvert opening at existing culvert.

Input from Railroad and Geotechnical Consultants on Alternatives 1 - 5

- Bridge openings that could be considered from the perspective of the BNSF standard designs include the following:
 - Three span concrete bridge; where the middle span is a clear span of between 20 and 40 feet (approximately) and the left and right spans would be used to construct the armor slope abutments required for the design (1.5H:1V typical side slope). Pedestrian access could potentially be placed within one of the “abutment” spans.
 - Additional clear spans could be added to the minimum three span bridge to increase the size of the opening; however adding spans can significantly increase costs for the structure. In addition, BNSF approval may be more difficult to obtain beyond the standard 3 span bridge.
 - Vertical clearance between the lowest structural member and the bottom of any proposed pedestrian walkway would be dependent on span length. Spans around 20 feet would require approximately 4 feet from the top of rail to the bottom of lowest structural member for the bridge. Spans around 40 feet would require approximately 6 feet from top of rail to lowest structural member. This is an important consideration in choosing span length in order to maximize head room for pedestrians.
- The costs for increasing the length of the bridge span from 20-feet wide up to a 40 foot-wide opening do not increase linearly. Therefore, there may be benefit to providing a larger span than the minimum suggested in Alternative 1 in terms of costs/benefits for the project.
- Older trestles, armor rock, or other debris could exist within the railroad berm and would be challenging. But it would be the same challenge for all proposed alternatives. Cost impacts would be proportional to the length of railroad berm disturbed by construction processes.
- Building box culverts through the railroad prism at this location would require more time than the 6-hour shut down period/work window currently allowed by BNSF at this location along the line. It is possible to request a longer work window, but it is challenging and costly.
- It would likely be more cost effective to construct a single bridge (3-span) than two separate box culverts, and may provide a longer clear opening than the two box culverts combined together.

Input from Railroad and Geotechnical Consultants on Alternative 6

- This alternative would be very costly. It would be difficult to get approval from BNSF for such a long bridge, especially if a shorter bridge could meet most of the project objectives. BNSF will have long term maintenance concerns for any alternative other than the 3 span minimum.
- Deep foundations would likely be required to support the bridge and would be difficult to construct with short work windows.

Input from Railroad and Geotechnical Consultants on Alternative 7

- The overpass would be required to follow ADA guidelines, which would require ramps (with a minimum slope possible) or other means of access that meet stated ADA guidelines. Many existing overpass structures do not meet current ADA requirements.
- The structure would need to span the 100' (approximate) railroad right-of-way (clear span) and would need to be approximately 22 feet above the rail elevation to meet design requirements for the structure.
- Combination of ADA slope requirements and railroad vertical clearance requirements would result in a large structure that would be land intensive and costly to construct.
- The entrance to the structure (due to its potential height and location) on the park side would be a considerable distance from the destination point for users including those with disabilities.
- The structure would need to be built above high tide elevation at the point of ingress/egress from the beach which would require the use of some highly coveted beach area.
- Locating the foundation for the overpass upland on the steep slopes would likely require extensive stabilization to mitigate for historical slope instability.

Discussion with County Staff and Consultants:

- The group discussed the benefits of including a minimum alternative (Alternative 1) in the evaluation, specifically the importance of including the lower bound alternative for a cost benefit comparison to other alternatives and to ensure we have evaluated a reasonable spectrum of viable options.

The group discussed the benefit of looking at the full restoration (Alternative 6; 400 foot wide bridge) versus a larger 4 span bridge. The group decided that the 4 span bridge would be an appropriate upper bound for the alternatives evaluation due to the potential cost, construction difficulty, and the likelihood that the full restoration option would not be supported by the Railroad.

- There was feedback from both the community and agency/organization stakeholders that separating the creek physically from the pedestrian access is preferable. Due to the challenges of building box culverts within allowable BNSF work windows (see comments on Alternatives 4 and 5); the group discussed how keeping the existing culvert for pedestrians and re-aligning the creek to the north, if site constraints allow, may be one of the only viable options to significantly separate the pedestrian access from the creek without using an overpass.
- The pedestrian overpass was discussed at length, and the group determined that it would not be evaluated as one of the three concepts moving forward. The overpass structure would not address the flooding, maintenance or sediment load issues occurring at the existing

culvert. Therefore, a separate bridge structure would be required in addition to the overpass to address those issues, creating the likelihood that pedestrians will just use the bridge opening to access the beach instead of the overpass. If the existing culvert is left in place with just an overpass, pedestrian safety is still a concern, as the access point for an overpass would most likely be located far upland in order to meet ADA slope requirements so from a convenience standpoint pedestrians may be inclined to use the flooded culvert or cross the tracks. Locating the foundation on the upland slopes is problematic with the history of slides in this area, and finally the structure would be very land intensive and the necessity to build two structures very costly.

- Three concepts (in terms of opening locations and approximate sizes) were outlined to move forward into the evaluation phase of the project:
 - Minimum opening 3 span bridge at current location with pedestrian access within bridge abutment span (Proposed Alternative 1)
 - Leave culvert at current location for pedestrian access and add new 3 span bridge to north; relocating Lund's Gulch Creek (Proposed Alternative 3)
 - Maximum opening 4 span bridge at current location with pedestrian access within bridge abutment span (Proposed Modified Alternative 2)

Next Steps

1. The consultant team will move forward with the hydraulic modeling and preliminary habitat evaluation in order to narrow in on the minimum required bridge opening (clear span) to provide adequate sediment and fish passage.
2. The consultant team will move forward with developing conceptual drawings (plan views and "bubble diagrams") of the three concepts for the County's review.
3. A second County/Consultant meeting will be scheduled in mid-February to discuss design considerations other than railroad requirements relating to the three alternatives prior to moving them forward in the feasibility study.