

of  
Interest  
Items

**From:** Ziegler, Jennifer (GOV) [Jennifer.Ziegler@gov.wa.gov]  
**Sent:** Thursday, March 12, 2009 10:41 AM  
**To:** Grotefendt, Amy (Consultant); Dye, Dave; Paananen, Ron  
**Subject:** Q&A

I just had a couple other thoughts or questions.

- i like the addition of travel times on the freight question, but I'm wondering if it seems glaring that we don't have tunnel travel times.
- Is the four-year closure number for a complete closure? Ron and I have been saying 4-7 years--we probably just made that up, but I thought there was a difference between partial and complete closure time. A  
made  
up
- I'd like to rephrase the question regarding other projects. People with project that have been pushed-out argue that the Viaduct is held harmless while their projects are not. So, they can argue that agreeing to the bored tunnel does mean that their projects go unfunded. Instead, could we say does agreeing from to the tunnel require the legislature to shift funding from other projects?

I think this is going to be extremely helpful as we meet with members. We have a couple of meetings tomorrow, but start a bunch on Monday, so if there is any way to start using it by Monday that would be great. Thank you.

*Jennifer Ziegler, Transportation Policy Advisor  
Governor's Executive Policy Office  
PO Box 43113  
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Office-(360) 902-0643  
Cell-(360) 239-5892*

**From:** Arany, Sally (Consultant)  
**Sent:** Wednesday, May 13, 2009 4:36 PM  
**To:** White, John; Paananen, Ron  
**Cc:** Bandy, Mark  
**Subject:** FW: hall items needing follow up

Mark needs an answer today/tonight. Ron, can you respond since John is at an early evening briefing? Thanks.

**From:** Bandy, Mark  
**Sent:** Monday, May 11, 2009 3:24 PM  
**To:** Paananen, Ron, White, John  
**Subject:** hall items needing follow up

Hi guys,

Since I was only able to catch for 10 seconds, here is a follow up e-mail on the items I was mentioning:

*Traffic Systems Mgmt Ctr.*

1. TSMC - I know you have committed to funding the next phase of design development and we're looking forward to getting started on that. The questions for you (Ron) is: what steps do we need to take to finalize decision to move forward with this on our way funding construction in the 11-13 biennium? Do we simply need freshen up our brief writeup to reflect that our tunnel operations strategy will be based upon operating out of the TSMC, couple that with a funding plan (from AWW and 520 I presume), and get endorsement from ? (Lenzi or Dye or Paula?)

2. Tolling of AWW - as I've mentioned to you both, I'm concerned that a rough approach has not been put forth before you (that I'm aware of) because we need to start the modeling process. It appears that there is a strategic meeting this Friday morning, but that Ron nor Dave will be there. It appears that Craig will be there so if that is sufficient check-in/exec buy-in, we can try to target that. Please advise. If we don't use Friday, then we need a special meeting. *DDK*

3. O & M - McCormick and I are ready to share our proposal. Similar to the tolling subject, the question is who needs to be there? I suspect at least Ron should be there and perhaps Dave, so we may need to do a special subject meeting if the Friday strategy sessions continue to be hit and miss.

4. AWW Program Planning - I mentioned the north portal and 6th through the Gates Foundation. Tweit gave me a heads up that WSDOT involvement was being sought. Not having heard anything is why I brought it up. I'm foreseeing a departmental and program need to support some of these type of activities, which are not directly tied to the delivery of the bored tunnel. It's kind of like a planning and strategic advising role, and one that I think I can help out with. Central waterfront, two-way Mercer west, etc. are other activities that may fall into the same category. Anyway, something to think about.

5. Transit - an fyi that I spoke with Chris O'Claire at the county about my concern with showing one of three lanes being restricted to transit/HOV and that a transit shoulder on 99 was a more viable option which our design had been accommodating. I also asked her about their expectations for reflecting the tunnel hybrid transit components within the SDEIS. We need to make an assumption about what to put in our modeling is the first reason I asked, but we also will need to know how they will want them written up. She was going to talk internally a bit and get back to me.

Give me a call to discuss as needed or shoot me an e-mail.  
 Mark

6/23/2009

**VandenBerghe, Alissa (Consultant)**

**From:** Struthers, James  
**Sent:** Thursday, January 22, 2009 2:48 PM  
**To:** Tobin, Thomas  
**Cc:** Williamson, Alec  
**Subject:** FW: guesses for next biennium for AWW geotech  
**Follow Up Flag:** Follow up  
**Flag Status:** Red

Below is our extremely rough take on potential upcoming funding needs for geotech. Please note that these rough numbers are based on the single bored tunnel concept. If a second bore is carried forward in machine work, the numbers will be low.

James R. Struthers, C.E.G.  
Assistant Chief Foundation Engineer  
Special Projects Manager  
WSDOT Engineering and Environmental Programs  
(360) 791-2847

**From:** Nykamp, Monique (Consultant)  
**Sent:** Thursday, January 22, 2009 2:44 PM  
**To:** Struthers, James  
**Cc:** 'Gerard Buechel'; Red Robinson; Mike Kucker  
**Subject:** guesses for next biennium for AWW geotech

Hi Jim

UCO needs some rough numbers from us today to try and predict pots of money for the next biennium. Here are my rough guesses

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Remainder of 07-09 biennium for work that is NOT tasked yet:

Phase 1 Drilling for Bored Tunnel (3,000 feet)  
S&W = \$500,000 (not including drilling subcontract)  
Drilling (Boart Longyear or WSDOT) = \$350,000

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I wish I had a crystal ball for the 2009 to 2011 biennium, but here goes:

Phase 2 Drilling for Bored Tunnel and GEDR (7,000 feet):  
S&W = \$1,200,000 (not including drilling subcontract)  
Drilling (Boart Longyear or WSDOT) = \$1,100,000 (double sampling deep)

Bored Tunnel Preliminary Engineering  
S&W = \$500,000

Bored Tunnel Tender GBR  
S&W = \$100,000

Bored Tunnel Support (meetings, plans, specs, estimate, etc.)

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Assume 0.5 FTE (\$150/hr) from 6-09 to 6-11  
S&W = \$300,000

Holgate to King modifications - updated engineering  
S&W = \$300,000

Continued in-house support for all aspects of AWW project  
Assume 1.5 FTE (\$150/hr) from 6-09 to 6-11  
S&W = \$900,000

Total S&W for 09-11 biennium for AWW = \$3,300,000

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Currently we have about \$1,800,000 available contractually between Y9593, Y9594, and Y10393 that has not been tasked. These contracts end on December 31, 2009.

Based on the above, my estimate for what will be needed beyond December 31, 2009 for the remainder of the 09-11 biennium just to support the AWW project (not counting other WSDOT projects), would be about \$2,000,000

These are very rough guesses based on a very unpredictable future. This also assumes a single large-diameter bored tunnel.

Thanks

Monique

Monique A. Nykamp, P.E.  
Associate - Shannon & Wilson Inc.  
Assistant Geotechnical Engineer for the AWVSRP project

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4 McGinn  
Re Risks of Proj  
Important doc  
Also - demonstrate  
that tunnel  
work was all  
progressed along

**VandenBerghe, Alissa (Consultant)**

**From:** Struthers, James  
**Sent:** Tuesday, January 27, 2009 11:10 AM  
**To:** Williamson, Alec  
**Subject:** FW: The South End of the Tunnel  
**Follow Up Flag:** Follow up  
**Flag Status:** Red

I concur with Gordon that a top-down would be the least risk approach. It should be noted that depressurization of the excavation base (groundwater control) will be required even with a water-tight wall system. A groundwater recharge system will likely be required in order to avoid excessive settlement of adjacent soils. Because the cut and cover tunnel would be very close to existing buildings/structures, the recharge system would need to inject through the tunnel walls. This type of setup is not typical but is thought to be feasible by dewatering specialists to whom I have recently spoken.

James R. Struthers, C.E.G.  
Assistant Chief Foundation Engineer  
Special Projects Manager  
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**From:** Clark, Gordon T. (Consultant)  
**Sent:** Tuesday, January 27, 2009 11:03 AM  
**To:** Williamson, Alec; Rigsby, Mike (Consultant); Preedy, Matt; White, John; Conte, Rick (Consultant)  
**Cc:** Struthers, James  
**Subject:** RE: The South End of the Tunnel

Alec,

We discussed this with Lee several days ago and I think came to the same conclusion – that is we need to do a top down approach. I agree with Lee that boring the first 600 feet is not the way to go. I do not think hand mining is a reasonable approach given the ground conditions, obstructions, and need to support utilities in place. We also discussed the potential to modify the ground with jet grout but this does not address the tiebacks and still leaves the TBM starting on a curve in a mixed face condition. We are studying the opportunity to lower the alignment and it appears we can come down about 10 feet but lowering more than this does not look promising at this point.

A few thoughts on the top-down approach... this would involve building a secant pile wall on either side of First Ave from approximately the RR way ramps to King Street or about 750 feet. The walls would be topped with a slab at grade such that traffic could be restored and the excavation performed beneath the slab. The walls would range from 70 to 130 feet deep which will be a challenge but is thought feasible. Use of the oscillator type machine would be recommended to be able to cut through any timbers, tiebacks, or other obstructions. Constructing the walls would take 3 to 6 months depending on the number of drill rigs mobilized for the effort. During this time relocation of some utilities could be accomplished. It is thought that many of the utilities – such as electrical transmission and distribution – could be suspended in place from the top slab. It is thought that constructing the walls could be done while one lane of traffic is maintained in each direction. This would be followed by a closure of First Avenue for approximately 1 month to cast the top slab. Once this initial work is completed the surface would be restored to normal function.

Gordon T. Clark, PE  
Chief Engineer - Consultant  
Alaskan Way Viaduct and Seawall Replacement Project  
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6/24/2009

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**From:** Williamson, Alec  
**Sent:** Monday, January 26, 2009 12:56 PM  
**To:** Clark, Gordon T. (Consultant); Rigsby, Mike (Consultant); Preedy, Matt; White, John  
**Subject:** FW: The South End of the Tunnel

Thoughts from Lee Abramson on the south portal....

**From:** Abramson, Lee (Consultant)  
**Sent:** Friday, January 23, 2009 11:16 AM  
**To:** Struthers, James  
**Cc:** Robison, Jim (Consultant); Jarnagan, Harry (Consultant); Nykamp, Monique (Consultant); Williamson, Alec  
**Subject:** The South End of the Tunnel

Jim:

I gave some additional thought to our discussions yesterday and offer the following:

1. Using a closed-face TBM to bore the first 600 feet of the tunnel will be exceedingly risky, difficult and expensive. Reasons for this include:

- Loose, wet sand with high amounts of lumber and wood pieces in the upper half of the bore and above
- Mixed face conditions with the above and glacial soils below
- Tiebacks remnant from previous building excavations and shoring
- Deep pile bridge foundations under the Railroad Way structure
- Shallow ground cover above the tunnel
- Dense utilities
- Seattle Area Ways
- Initiating tunneling (learning curve) in these conditions
- Curvature of alignment
- Potential adverse impacts on adjacent buildings
- Probable clogging of the TBM and support equipment
- Dangerous working conditions out ahead of the TBM cutting head
- Significant ground improvement (grouting, etc.) requirements
- Etc.

2. Initially, I see four alternative ways to tunnel this portion of the project including:

- **"Top-Down" cut and cover with decking over 1st Ave.** This would require excessive and difficult utility relocations in 1st Ave, disruptions to traffic, structural underpinning of adjacent buildings, ground improvement, etc. However, the cost of this type of construction could be somewhat less than bored tunnel and less risky
- **Hand mining the first 600 feet.** This could be done with some combination of ground improvement and excavation support consisting of steel sets, spiling, lagging, breasting the face, etc. This part of the tunnel would need to be larger to accommodate installation of the TBM from within the starter tunnel. Hand mining

might seem more difficult and expensive than boring but not really that much given the issues and significant difficulties anticipated above. This would be less risky than trying to bore through but might take a little longer schedule wise.

- **Tunnel jacking.** This involves prefabricating a concrete tunnel box in the access pit and then jacking it forward with a series of large hydraulic jacks. Typically, these boxes are about 300 feet long so two would be needed. A cutting shield is placed on the front of the first box. This would require additional ground improvement. The improved ground could be excavated with hydraulic spades or road headers. This type of tunneling would probably take the longest to carry out.
- **Lower the vertical tunnel profile.** I'm inclined to think this would cost just as much as hand mining or jacking but would be very disruptive to the presently accepted designs and assumptions to the south. This would also increase the length of bored tunneling and the depth and volume of the access pit excavation.

3. In all of these scenarios, the TBM would be assembled, skidded and started further down the alignment and more room for full assembly of the TBM trailing gear would be provided.

I think **top-down** would be the way to go if you can tolerate the utility and traffic issues. If not, **hand mining** would be my first choice although it might have higher cost and schedule impacts.

**I do not recommend boring the first 600 feet of the tunnel.** That would be a very, very bad way to start the tunneling off.

This is just a first cut. Please let me know if you would like me to evaluate these or other options further.

Thanks.

Lee

lost creep

**VandenBerghe, Alissa (Consultant)**

**From:** Tobin, Thomas  
**Sent:** Wednesday, February 25, 2009 8:49 AM  
**To:** Williamson, Alec  
**Subject:** RE: Phase 1 bored tunnel geotechnical program  
**Follow Up Flag:** Follow up  
**Flag Status:** Red

So it is a go it seems... thanks.

Thomas Tobin  
Urban Corridor Office WSDOT  
999 Third Avenue, #2400  
Seattle, WA 98104

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**From:** Williamson, Alec  
**Sent:** Wednesday, February 25, 2009 8:22 AM  
**To:** Tobin, Thomas  
**Subject:** Fw: Phase 1 bored tunnel geotechnical program

Fyi

**From:** Greco, Theresa  
**To:** Williamson, Alec  
**Cc:** White, John; Struthers, James; Phelps, Don (Consultant); Preedy, Matt  
**Sent:** Tue Feb 24 15:42:22 2009  
**Subject:** RE: Phase 1 bored tunnel geotechnical program

Alec -- you are approved to proceed with the preparation of the geotechnical baseline for the bored tunnel project at the revised amount. We need to make sure we are in strong coordination with our environmental team on the borings -- since we have historic structures located along any alignment.

Thanks.

Theresa

**From:** Williamson, Alec  
**Sent:** Tuesday, February 24, 2009 2:58 PM  
**To:** Greco, Theresa; Preedy, Matt  
**Cc:** White, John; Struthers, James; Phelps, Don (Consultant)  
**Subject:** Phase 1 bored tunnel geotechnical program

\* Theresa/Matt- please note that the total dollar amount for this task exceeds our original estimates by about \$100,000 (estimate was \$850 initially and now is \$950). I think we can adjust the remaining central waterfront interesting cost creep 12% increase within mo. or two at proj start-future?

scope/budget to make this fit. Please advise if you see any problems with proceeding or if we should discuss. My plan was to give the ok and execute the contract.

Thanks,  
Alec

**From:** Nykamp, Monique (Consultant)  
**Sent:** Tuesday, February 24, 2009 12:23 PM  
**To:** Williamson, Alec  
**Cc:** 'Phelps, Don'; Tobin, Thomas; Bronson, Curtis; Struthers, James  
**Subject:** RE: Task AC Y-10393 revised scope

Hi Alec

The final scope and cost is attached.

Thanks

Monique

Monique A. Nykamp, P.E.  
*Associate - Shannon & Wilson Inc.*  
*Assistant Geotechnical Engineer*  
Alaskan Way Viaduct and Seawall Replacement Program

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**From:** Williamson, Alec  
**Sent:** Tuesday, February 24, 2009 12:21 PM  
**To:** Nykamp, Monique (Consultant)  
**Cc:** 'Phelps, Don'; Tobin, Thomas; Bronson, Curtis; Struthers, James  
**Subject:** RE: Task AC Y-10393 revised scope

Monique-

I have not seen the final cost estimate and scope yet. Please forward to me and I will review it right away. I don't anticipate any problems in moving forward with this task, although I will need to do a final quick check through.

Alec

**From:** Nykamp, Monique (Consultant)  
**Sent:** Tuesday, February 24, 2009 10:02 AM  
**To:** Williamson, Alec  
**Cc:** 'Phelps, Don'; Tobin, Thomas; Bronson, Curtis; Struthers, James  
**Subject:** FW: Task AC Y-10393 revised scope

Alec

Per Curtis' email below, are you in agreement with our scope of work and costs? If so, could you please reply to this

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email to all so that Tom can get our paperwork started?

Thanks

Monique

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**From:** Bronson, Curtis  
**Sent:** Tuesday, February 24, 2009 9:59 AM  
**To:** Nykamp, Monique (Consultant)  
**Cc:** Tobin, Thomas  
**Subject:** RE: Task AC Y-10393 revised scope

**Monique,**  
**I am good with the scope and costs, I would just like to hear from Alec that it is acceptable to him since he is the PE.**

**Thank you,**  
*Curtis Bronson*  
UCO Consultant Liaison Office  
Rates and Scope Verification Analyst  
206-716-1139

**From:** Nykamp, Monique (Consultant)  
**Sent:** Tuesday, February 24, 2009 9:53 AM  
**To:** Bronson, Curtis  
**Cc:** Tobin, Thomas  
**Subject:** FW: Task AC Y-10393 revised scope

Hi Curtis

Could you also give Tom your confirmation if everything looks good to you? I'd like to get the paperwork going since we need to start drilling in less than 2 weeks - a lot of prep work to do.

Thanks.

Monique

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6/24/2009

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**From:** Phelps, Don (Consultant)  
**Sent:** Tuesday, February 24, 2009 9:51 AM  
**To:** Nykamp, Monique (Consultant); Bronson, Curtis; Tobin, Thomas  
**Cc:** Struthers, James; 'Phelps, Don'; Williamson, Alec  
**Subject:** RE: Task AC Y-10393 revised scope

All

I am in agreement with the revised scope.

Don

**From:** Nykamp, Monique (Consultant)  
**Sent:** Monday, February 23, 2009 1:39 PM  
**To:** Bronson, Curtis; Tobin, Thomas; Phelps, Don (Consultant)  
**Cc:** Struthers, James; 'Phelps, Don'  
**Subject:** revised scope

All

Attached please find the revised scope based on today's negotiation meeting. Please let me know if you have **any** comments. I will send the revised cost estimate shortly.

Thanks

Monique

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*Associate - Shannon & Wilson Inc.*  
*Assistant Geotechnical Engineer*  
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6/24/2009

## VandenBerghe, Alissa (Consultant)

**From:** Clark, Gordon T. (Consultant)  
**Sent:** Thursday, May 07, 2009 2:48 PM  
**To:** Greco, Theresa  
**Cc:** Everett, Susan; Williamson, Alec; Rigsby, Mike (Consultant); Conte, Rick (Consultant); Greengard, Mark (Consultant)  
**Subject:** Design Viz Budget Request and City Graphics Feedback - April 28  
**Follow Up Flag:** Follow up  
**Flag Status:** Red

Theresa,

Here is the estimate to complete the graphics I promised to send you. The demand for graphics has been greater than anticipated and the budget set aside for on-call work has been all used up. What I have forwarded is an email from Jay that covers both the feedback from the city on changes they want to the video and his estimate of the amount we will expend thru June 30. Looks like 900 additional hours (about \$90K). We are currently out of budget but are proceeding in an effort to get the video out to assist the public process. Please let me know if I should stop or if there is anything else you need to adjust the budget for task CE.12.

Thanks

Gordon

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1. over budget  
2. public percept.

**From:** Mezher, Jay  
**Sent:** Wednesday, April 29, 2009 2:59 PM  
**To:** Clark, Gordon T.  
**Cc:** Rigsby, Mike (Consultant)  
**Subject:** AWV Visualization/Graphics Feedback - April 28

Gordon,

Here's the list of comments that we got from our visualization review meeting yesterday with the City of Seattle (Bob Chandler, Steve Pierce and Mike Johnson):

### Reader Friendly Plain View:

#### South End

- Change the service road to be a lighter color so it is not confused with an actual road
- Add trees on the West of Railroad tracks (I will check with Asvin to make sure what we show is coming from ROMA's drawings)
- Show bike trail in the South End (I will check with Asvin to make sure what we show is coming from ROMA's drawings)
- Add bicyclists on the bike trail
- Fix cars that appear to be bumping into each other
- Fog lines on renderings should not be disconnected (internal comment)
- Remove Diamond Lanes from the South End (to be confirmed- Steve P. will send an email to clarify)

#### North End

- Remove park south of SR99, show as a gray tiled area 'future development'
- Remove trees from the 'future development' sites
- Move cross walks off 6<sup>th</sup> Ave to align with SB Onramp
- Widen Republican St
- Show proposed Mercer St all the way down to 9<sup>th</sup>
- Fix optical illusion on North Portal rendering
- Fix Fog lines on ramps (internal comment)
- Add grass to the median next to King 5

### Waterfront Video:

- @ 0:33 sec - Get rid of the curb on the left
- @ 0:33 sec - No signal over the ped bridge
- @ 0:33 sec - Add bollards to the ped bridge
- @ 0:33 sec - Check on the scale of the guard rails

- @ 0:42 sec – Check curb width on the west side
- @1:44 sec – Curb cut should be modified for the drive way

**Bored Tunnel Video:**

- Move text boxes out a little bit to show more of the streets
- Update Logos with Hi-resolution images
- Confirm which logos should appear on the introduction screen
- Change last scene so that the camera flies over surface of SR99 to Denny way and the zoom out to see the city skyline
- Add train over the U-Tube
- Cross check the number of trees with ROMA's drawings
- Check on the slope of the North Portal exit

We have been working on all of the above tasks for the past 8 weeks. On average, we have been spending 80 – 100 hours every week. In order for us to continue working and finish the videos and updates, I anticipate the same rate through the end of July, which amounts to 800 – 900 hours.

Please let me know that's OK.

Thanks,  
Jay

Jay Mezher  
Manager, Design Visualization

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