

Local
Access

G. Hoglund

VandenBerghe, Alissa (Consultant)

From: Conte, Rick (Consultant)
Sent: Friday, January 02, 2009 11:02 AM
To: Rigsby, Mike (Consultant); Paananen, Ron; White, John
Cc: Williamson, Alec; Clark, Gordon T. (Consultant); Rodenbough, Ben P. (Consultant); Fiorentino, Ken (Consultant)
Subject: RE: Ramps to Ballard
Follow Up Flag: Follow up
Flag Status: Red

Ron, when do you need it? None of the smart people are here today.

Rick

From: Rigsby, Mike (Consultant)
Sent: Friday, January 02, 2009 10:40 AM
To: Paananen, Ron; White, John
Cc: Williamson, Alec; Clark, Gordon T. (Consultant); Rodenbough, Ben P. (Consultant); Fiorentino, Ken (Consultant); Conte, Rick (Consultant)
Subject: RE: Ramps to Ballard

Ben Rodenbough is already working on a conceptual design. I think we looked at something like this back in 2002. Ken Fiorentino is also aware of the requirement. We are on it. Happy New Year!

Mike Rigsby
Alaskan Way Viaduct and Seawall Replacement Project
206-382-6352

From: Paananen, Ron
Sent: Fri 1/2/2009 10:24 AM
To: White, John; Rigsby, Mike (Consultant)
Subject: Ramps to Ballard

Need a rough estimate of what it would cost to build ramps from the bored tunnel to Elliot / Western.

AWay - Multiple
Freight Route
Coapt Opposition

From: White, John
Sent: Thursday, January 22, 2009 11:05 AM
To: Dye, Dave; Lenz, KaDeena (Consultant); Paananen, Ron
Cc: Grotefendt, Amy (Consultant); Van Ness, Kristy (Consultant)
Subject: Re: Concerns from Warren Aakervik

Got it. Spoke to Geri at the Port about it this morning, will follow up with her and the City on aligning messages and getting the word out.

From: Dye, Dave
To: Lenz, KaDeena (Consultant); Paananen, Ron; White, John
Cc: Grotefendt, Amy (Consultant); Van Ness, Kristy (Consultant)
Sent: Thu Jan 22 10:58:16 2009
Subject: RE: Concerns from Warren Aakervik

KaDeena and John - this is why getting the word out soon with our intent for the formation of a freight advisory committee for the project is very critical - we need to keep engaged Peter Phillips, Warren Aekervik, Gene Hoaglund, John Odlund (and others on the SAC that were freight people) along with some new blood (Major and minor trucking companies et al) and the Port to sweat out the devil in the details for how to get a decent freight route from SODO to Ballard...John please amp this up so by Monday the word will be spreading so we can say we've been working on this in the Senate...thanks.

-dave

From: Lenz, KaDeena (Consultant)
Sent: Thursday, January 22, 2009 9:04 AM
To: Dye, Dave; Paananen, Ron; White, John
Cc: Grotefendt, Amy (Consultant); Van Ness, Kristy (Consultant)
Subject: Concerns from Warren Aakervik

Just got off the phone with Warren Aakervik. He called Amy a couple days ago and Amy asked me to call him back. He wanted to know if the SAC will be reconvened. I told him there were no plans to meet again at this time. He thinks the committee should continue to meet regularly to discuss all the issues associated with the bored tunnel. He thinks it's the committee's job to help identify issues and resolve them. He wants to be able to ask the difficult questions to Dave, Grace and Harold. He said he's willing to accept the bored tunnel, but believes there is a lot to work out in order for it to work for the maritime industry. He wanted to know if he should call Dave and/or Jennifer Zeigler directly. I told him to let me pass on his concerns first. Does someone want to give Warren a call back?

Let me know how you'd like me to proceed, if at all

Thanks,
KaDeena

KaDeena Lenz
Communications and Public Involvement
Alaskan Way Viaduct and Seawall Replacement Program
(206) 267-3836
lenzk@wsdot.wa.gov

For current program information, visit www.wsdot.wa.gov/projects/viaduct/.

From: Schuster, Chad (Consultant)
Sent: Friday, February 06, 2009 4:58 PM
To: Grotefendt, Amy (Consultant); Paananen, Ron; White, John; Preedy, Matt; Greco, Theresa
Subject: New freight group

I got a call from Dave Gering this afternoon that I thought you should know about, in case you haven't heard about this already. Apparently he and several members of the freight community are disillusioned with SDOT and, by extension, FMAC, and are planning to form a new freight group in support of the bored tunnel. The group will consist of several north end freight leaders. Dave said they weren't going to be the typical players, though the names he mentioned to me -- John Odland, Warren, Eugene -- were mostly familiar.

He said their intent is to develop a "non-confrontational" dialogue with Ron Paananen and others at WSDOT regarding access to the northwest neighborhoods, and to act in an advisory role as design progresses.

He called me asking if someone from the program could brief him and Marni Heffron early next week, prior to the group's first meeting on Thursday morning at 8 a.m. They want to be able to relay the latest information to those in attendance, but don't want WSDOT to attend until later meetings, after they're more organized.

I told him I would pass along the information and someone would get back to him on Monday. He said he's spoken some with Ron about this topic, but I don't know how much detail he went into. Please let me know if you have any questions.

Chad Schuster
Communications and Public Involvement
Alaskan Way Viaduct and Seawall Replacement Program
(206) 267-3830
schustc@consultant.wsdot.wa.gov

TO: Alec Williamson
FROM: Gordon Clark
SUBJECT: Scenario Hybrid O – Single Bore Tunnel
Preliminary Cost for Ballard Connection
DATE: January 12, 2009

Per your request, we have prepared a conceptual configuration and cost estimate for a SB/NB connection from Elliott & Western Avenues to the 54' single bore tunnel.

The connection tunnel would have approximate outside dimensions of 42 feet wide by 48 feet tall and 2,700 feet long. The planning level cost estimate of \$770 million is a very preliminary number based on limited engineering and no geotechnical information. We believe a good range of cost would be \$650-\$850 million at this early stage. The planning level cost estimate includes risk, escalation and contingency see attached.

The intent of this concept was to provide direct access to the large bored tunnel, to and from Ballard via Elliott and Western Avenues. It is thought that one lane in each direction would have enough capacity for these movements. Further traffic analysis would be needed to confirm this assumption. A rough cross section was developed that assumed a Sequential Excavation Method (SEM) construction technique that involves the extensive use of grouting to stabilize the ground, followed by sequential mining and application of shotcrete and ribs to support the longitudinal cavern. This was thought to be the most economical approach given the short alignment. The cost was estimated based on an alignment that connects to the proposed single bore tunnel at approximately Union Street with a dual level roadway to match the proposed large diameter tunnel. The SEM section would stack single lanes and shoulders and would unbraided at Virginia Street. The SEM tunnel would require a vent shaft to be located near Union Street and Post Alley that would be approximately 230 feet deep. The SEM tunnel would be ventilated using jet fans at 300 feet on center in conjunction with the vent shaft.

This concept will require a SB on-ramp portal in Elliott Avenue south of Bell Street. Elliott Avenue would be three lanes southbound prior to the portal, with one lane diverging to the on-ramp to the tunnel and two lanes merging to one lane as a surface through lane to downtown. South of the portal on Elliott Avenue one lane would expand back to three surface lanes southbound. The NB off-ramp portal would be located in Western Avenue north of Bell Street. Western Avenue would be two lanes northbound

prior to the portal, with one lane merging from the off-ramp of the tunnel and two lanes merging to one lane as a surface through lane just prior to the portal. North of the portal, Western Ave would expand to be three lanes northbound. Please advise if there is any additional information or further explanation needed on this subject.

CC: Mike Rigsby
Rick Conte
Norm Petersen
Ranga Pottabathni
Mike Morrison

DRAFT

VandenBerghe, Alissa (Consultant)

From: Conte, Rick (Consultant)
Sent: Monday, February 23, 2009 10:58 AM
To: Grotefendt, Amy (Consultant); White, John; Williamson, Alec; Rigsby, Mike (Consultant)
Cc: Preedy, Matt; Bandy, Mark; Reilly, John; Clark, Gordon T. (Consultant)
Subject: RE: Ballard Spur Idea
Follow Up Flag: Follow up
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Amy, this was a pretty high level look, but we feel confident the tunnel would be not more than 5% grade and the tunnel portal could be in the vicinity of the opera house. It would take a lot more engineering to work through the exact portal and interchange configurations on both ends. It may be difficult to create a portal on Mercer do to the presence of a drainage tunnel under Mercer.

Rick

From: Grotefendt, Amy (Consultant)
Sent: Monday, February 23, 2009 8:24 AM
To: Conte, Rick (Consultant); White, John; Williamson, Alec; Rigsby, Mike (Consultant)
Cc: Preedy, Matt; Bandy, Mark; Reilly, John; Clark, Gordon T. (Consultant)
Subject: RE: Ballard Spur Idea

Rick,

Before I draft a response, I had a couple of quick questions --

When you say "end the drive on Mercer" do you mean near the Opera House?
Do we have anything to say about the grades at either end? Bob made an assumption that it would be between three and five percent on the east end - is that correct?

Thanks.
AJG

From: Conte, Rick (Consultant)
Sent: Fri 2/20/2009 3:07 PM
To: White, John; Williamson, Alec; Rigsby, Mike (Consultant)
Cc: Preedy, Matt; Grotefendt, Amy (Consultant); Bandy, Mark; Reilly, John; Clark, Gordon T. (Consultant)
Subject: RE: Ballard Spur Idea

Gentlemen, with regard to Bob Donegan's Ballard Spur concept, below is the quick assessment of the tunnel team. Please let me know if you have any questions.

Rick

Length of route is about 1.0 miles assuming mid point of Kinnear park for start of drive to approximately 4th and Mercer.

Assuming a similar stacked single bore tunnel, required length to configure from normal city street configuration to the bored geometry is approx 1000 to 1500 feet at each end. Total project length required is about 1.5 miles.

Park area would appear to be sufficient to drive from but ending the drive on Mercer would require an extensive cut and cover section for TBM retrieval and roadway connection work. Other than the park area limited available site for ventilation and control structures.-

Using our current cost data, cost could be in the range of 1.0 to 1.5 B\$.

From: White, John

Sent: Thursday, February 19, 2009 12:05 PM

To: Williamson, Alec; Rigsby, Mike (Consultant); Conte, Rick (Consultant)

Cc: Preedy, Matt; Grotefendt, Amy (Consultant); Bandy, Mark; Reilly, John

Subject: RE: Ballard Spur Idea

Alec,

Thanks, but I don't think we need a report on this one. Mark Bandy has already put substantial effort into the new and upcoming materials that describe the Elliott/Western users, their travel patterns today, and what their options in the future will be. I think that all we really need is a short summary from the civil team on the basic order of magnitude costs and challenges related to the proposed Mercer tunnel. We'll pair that up with the traffic work already done and basic messages regarding our budget and probably respond by e-mail.

John

From: Williamson, Alec

Sent: Thursday, February 19, 2009 11:54 AM

To: White, John; Rigsby, Mike (Consultant); Conte, Rick (Consultant)

Cc: Preedy, Matt; Grotefendt, Amy (Consultant); Bandy, Mark; Reilly, John

Subject: RE: Ballard Spur Idea

John/Amy-

We will get a briefing paper put together for this for you to share with Bob and others.

The focus will be on a few key points:

1. Traffic demand in the Elliott/Western corridor vs. Mercer and how people will use the facilities
2. What the key travel routes will be for NW Seattle residents and businesses (using the city maps would be useful here)
3. How the Elliott/Western arterials will function as compared to today
4. How the Belltown neighborhood look and feel as compared to today with a focus on viaduct removal
5. Finally, a quick analysis on what the impacts and cost would be to implement a Mercer tunnel

Let me know if you would like to see other issues/topics covered. Let me know what your expectation for timing of a draft report would be.

Thanks,

Alec

6/24/2009

From: White, John
Sent: Thursday, February 19, 2009 11:44 AM
To: Rigsby, Mike (Consultant); Conte, Rick (Consultant); Williamson, Alec
Cc: Preedy, Matt; Grotefendt, Amy (Consultant); Bandy, Mark; Reilly, John
Subject: RE: Ballard Spur Idea

We're on the same page, no way no how does it pencil out. As I said, that part of our response will be brief, the focus will be on educating Bob related to the anticipated traffic distribution of the Elliott/Western users.

Thanks,

John

From: Rigsby, Mike (Consultant)
Sent: Thursday, February 19, 2009 11:34 AM
To: White, John, Conte, Rick (Consultant), Williamson, Alec
Cc: Preedy, Matt; Grotefendt, Amy (Consultant); Bandy, Mark; Reilly, John
Subject: RE: Ballard Spur Idea

John,

Below is a quick back of the envelope look I did yesterday. We'll confirm my quick math and get something very brief pulled together.

Very quick look. It looks like about 4,000 feet of tunnel. Assume 4 lanes: Compare to our bored tunnel at approximately 10,000 feet and a cost of \$2B (round numbers): $.4 \times \$2B = \$800M$ or about the same general range as the spur tunnel concept. Doesn't look like it pencils out or am I missing something?

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Alaskan Way Viaduct and Seawall Replacement Program
206-382-6352

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Hey guys,

Have another short fire drill for you. Please read Bob Donegan's below e-mail and the idea he puts forth for a tunnel to help get traffic to the SR 99 tunnel. We need to put together some basic thoughts on cost and issues related to the idea, but nothing extravagant. Our response will be structured around the financial limitations related to taking on new scope within our budget, combined with some info that better explains where the 35,000 Elliott/Western vehicles are coming from and going to (and shows that they all won't be on Mercer and bottle-necking at Mercer Place). We do need some content responding to his idea...any additional bored tunnels clearly does work within the budget, and one like this is probably not much less (if any) than the stub tunnel idea. By his statement of 'avoiding the 2-3 lane Mercer Place', I assume he is suggesting this tunnel be 4 lanes total...how you bring that into Mercer at the location described I do not know.

From: Amy Grotefendt [mailto:agrotefendt@enviroissues.com]
Sent: Thursday, February 19, 2009 11:05 AM

6/24/2009

To: Reilly, John; White, John; bobd@keepclam.com
Subject: RE: Ballard Spur Idea

Bob,

Just to let you know that John Reilly forwarded this idea to John White who is having the project team put together some thoughts -- what it would take, range of costs, etc. We'll get something back to you as quickly as we can.

Thanks,
AJG

----- Original Message -----

From: Bob Donegan

To: John Reilly

Sent: Friday, February 13, 2009 10:31 AM

Subject: Ballard Spur Idea

The issue of 35,000 vehicles a day that enter the viaduct at Western or exit at Battery street is becoming a huge issue for the freight guys in Ballard and NW Seattle. We have talked about a tunnel spur off the main tunnel toward 15-Elliott as an option, which the project team prices at \$77M to \$1B. When I ask for details, they explain the cut and cover portion where the spur connects to the main tunnel will be expensive.

Here is an alternative. Can this work?

At 15th and Mercer Place on the west end, there is a public park cut into the rapidly rising slope of Queen Anne hill. How about boring a tunnel there to the ESE and bringing it out of the ground on Mercer between the Opera House, KCTS TV and the parking garage? Mercer is downward sloping to the east there--probably 3-4-5% slope.

This avoids having to do a cut and cover connection.

This avoids the narrow Mercer Place 2-3 lane street.

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Is this possible?
What would it cost?

6/24/2009

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What would it cost?

From: White, John
Sent: Tuesday, March 10, 2009 3:18 PM
To: Carpine-Cazzanti, Joy; Hopkins, David A.; Paananen, Ron
Cc: Leiste, Willy; Smith, Helena Kennedy
Subject: Leg staff contact - 3/5
Attachments: plan view of elliott and western ave tunnel ramps.pdf; elliottwestern1.pdf

My apologies in being a few days late on this. Planning for this week's tunnel expert panel has been a bit of a distraction.

3/5/09 - Christie Parker, House Trans, phone discussion

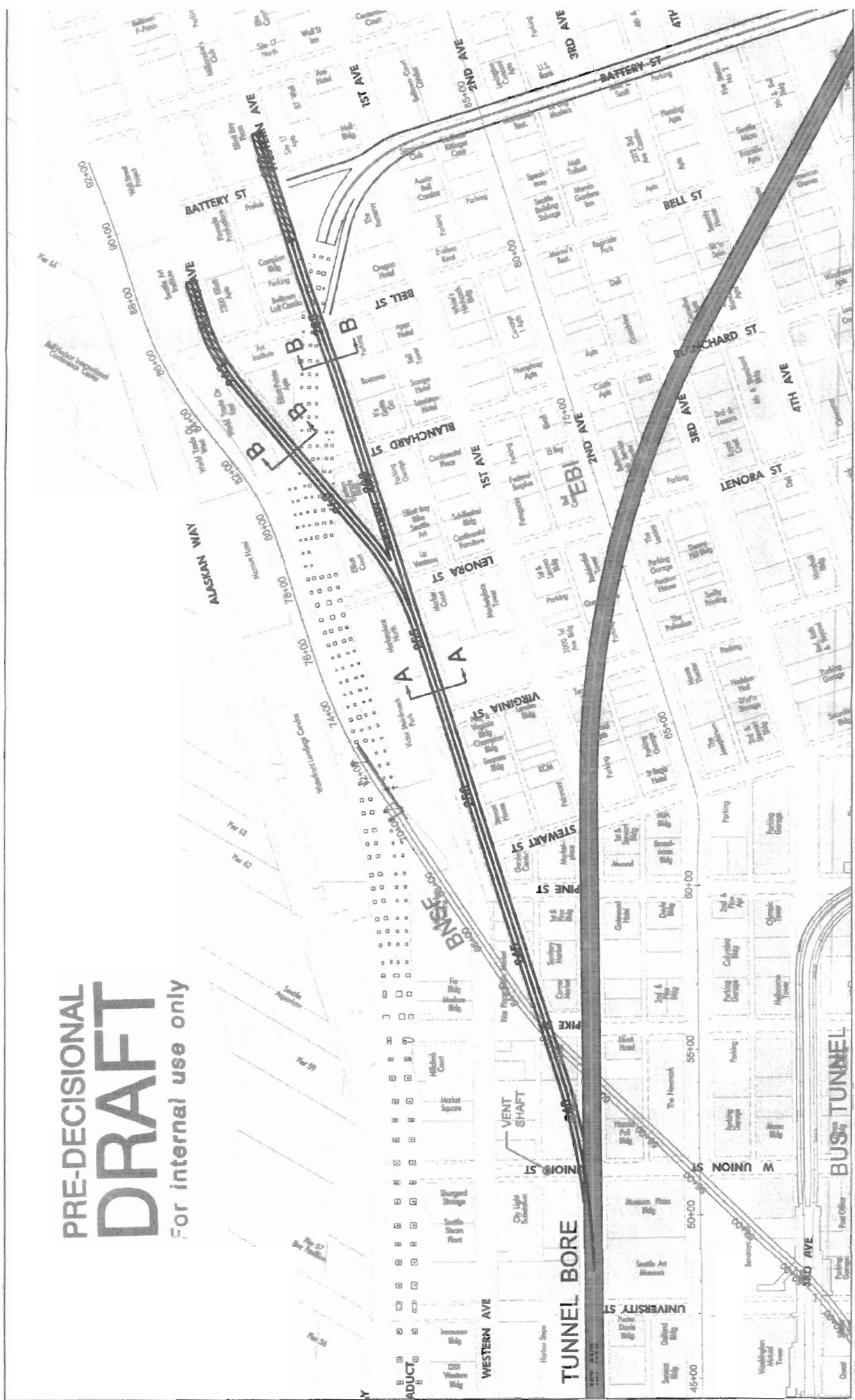
Spoke to Christie last Thursday primarily about Elliott/Western connections to the bored tunnel. She had heard that we might still be considering options for spur connections from the tunnel to Elliott/Western. I informed her that we had assessed the cost and constructability/risk issues related to making a of mined and cut/cover tunnel connection to the single bore tunnel. I informed her that due to the complexity of making that type of connection, as well as the scope required to make the connection at reasonable grades, the estimated \$700 - \$800 million cost comes close to the cost of the bored tunnel itself. I informed her that we had also looked at other alternates for NW tunnel connections, such as a Mercer Place tunnel that emerges in Mercer near the Seattle Center. This was also found to be cost prohibitive. I also mentioned our efforts in preparing graphics that illustrate people's options in connecting to the tunnel and getting to or through downtown. We also discussed changes to the BST program with the bored tunnel. I described that BST would not be part SR 99 (and thus not under State responsibility), and that it most likely would end up closed. With that, our current plans call for us to maintain and repair the current tunnel as necessary to keep it safe until the bored tunnel is open, along with carrying the cost to decommission it later.

Christie asked if I could follow up with some back-up info on the Elliott/Western connection idea, in case members asked further questions, my thought had been to send her the two attachments included here.

John

Unilaterally decide internally what stays + what goes
 compare cost \$/time ^{quality of life} of bridge structure proposed
 at Elliott + Away Road St. to cost of tunnel access proj.
 and - use of Away as Freight corridor w/ limited use by
 All others

PRE-DECISIONAL
DRAFT
For internal use only



ELLIOTT / WESTERN AVE RAMP TO S4 EBIC

Send to Gene or refact + Gene + Consultant BCS

PR Strategy "Story"

- Scheduling \$1.9 million

From: White, John
Sent: Tuesday, March 24, 2009 5:49 PM
To: Dye, Dave; Paananen, Ron
Cc: Reilly, John; 'harveyparker@compuserve.com'; Preedy, Matt; Greco, Theresa; Phelps, Don (Consultant); Van Ness, Kristy (Consultant); 'Brenda Bohlke'
Subject: Tunnel estimating and validation story, new folios
Importance: High
Attachments: Tunnel_Experience_foliov4_Mar09.pdf; BoredTunnel_CostFunding_foliov5_Mar09.pdf; Bore Tunnel Estimating v1.doc

Dave and Ron,

Per Dave's request, I have taken a cut at the estimating story and justification for our confidence in the current tunnel estimate. I am attaching the Word document for those who wish to suggest edits in Word, and am pasting it into this e-mail for those like Ron who might need to respond from a Blackberry. I have also attached what we believe are the final drafts of our two folios which address the estimating subject. We would like to hear from you regarding the folios as well, since we hope to start using these publicly ASAP.

John

Tunnel Cost Estimating & Validation Approach

Throughout the evolution of the bored tunnel cost estimates, the WSDOT project management team has consistently engaged highly experienced professionals in the world of underground construction and tunnels. The initial estimate was for a dual bore tunnel, and was developed by the lead estimator for the General Engineering Consultant Parsons Brinkerhoff (PB), Ken Fiorentino, who is with Jacobs Engineers. Ken has over 32 years of tunneling experience, including 27 years as a contractor estimating and building tunnels in the US and around the world. In order to ensure confidence in the initial estimate, the owner's Program Management Consultant Hatch Mott MacDonald (HMM) was asked to prepare a parallel independent estimate for the dual bore tunnel design. HMM are involved in tunnel planning, design and construction around the world, and utilized staff not directly involved with the project, ultimately producing an independent estimate that was within 5% of the PB estimate. WSDOT's lead Program Estimator, Mike Morrison, independently reviewed and validated the estimates prepared by both PB and HMM, in order to ensure consistency in approach and key assumptions. Mike is an independent consultant with over 43 years of experience specializing in estimating and value engineering, including 14 years as the chief estimator at CH2M HILL.

In December, WSDOT developed a single bore tunnel proposal as a way to save time and money over the dual bore proposal, along with an estimate that accounted for changes from the previous design. This occurred very close to the time that the Stakeholder Advisory Committee (SAC) announced their preference towards a bored tunnel. In announcing their preference, the SAC consulted with the Cascadia Center for Regional Development, a regional transportation policy organization who had retained a number of independent bored tunneling experts and had issued a letter advocating that a bored tunnel could be built for less cost and time than had been initially presented by WSDOT. This led to a mid-December SAC workshop on bored tunnel construction where WSDOT engaged John Reilly and Harvey Parker, in addition to PB and HMM. John and Harvey are both independent consultants with over 45 years of underground construction and tunneling experience across the world, with Harvey being a past president of the International Tunneling Association and John being a past

president of the national Underground Construction Association. At the SAC workshop, Cascadia and their primary independent tunneling experts from Arup, who are an international consulting firm specializing in tunneling, shared their thoughts on the bored tunnel planning and estimates with WSDOT, focusing on areas where they said our estimates appeared high. After review of the dual and single bore tunnel estimates at the workshop, all parties agreed to the approximate overall expected construction cost of the bored tunnel.

Subsequent to the SAC workshop, in early January WSDOT held a bored tunnel estimate review and validation workshop focused on the single bore tunnel plan. Present at this workshop were WSDOT management and all of WSDOT's bored tunnel experts previously referenced (Ken Fiorentino from Jacobs, Mike Morrison, Don Phelps from HMM, John Reilly, and Harvey Parker). The focus of the workshop was specifically to review the detailed estimate, including all critical assumptions behind the baseline estimate and the risk, contingency, and escalation components that added to the baseline estimate comprise the basis for the current \$1.9 billion tunnel estimate. Don Phelps from HMM was present at this point, bringing over 35 years of tunneling experience to the estimate review. As advisory consultants to WSDOT, Don, John and Harvey had Ken and his team break down the estimate for them, reviewed risk and contingency specific to each key component of the estimate, then they built the estimate back up to the summary level, concurring as a group that the single bored tunnel could be built within the \$1.9 billion allocated (assuming that the scope is adequately maintained and the schedule is not allowed to extend significantly).

PDR

Re Tight Schedule

~~**~~ In mid-March WSDOT commissioned an independent panel of seven tunneling experts from around the nation and world, all of whom had between 30 and 50 years of experience in tunneling and underground construction, with most of the panel having worked as contractors responsible for building hundreds of existing tunnels around the nation and world (including more recent 47 to 50 foot diameter tunnels in Germany and China that compare well with the proposed single bore tunnel). They were specifically tasked with providing input towards WSDOT's implementation plan (number and types of contracts, schedule, risks, important considerations, etc), and not asked to review and weigh in on the detailed construction estimate. The basics of the \$1.9 billion estimate, key assumptions, and the estimate review and validation process and participants were presented to them. Per Dr. Brenda Bohlke, who chaired the panel and is the current President of the national Underground Construction Association: "During the construction strategy workshop, the expert industry panel had the opportunity to learn about the projected project cost and the basis of its development. They were confident in the approach that had been used, and that those instrumental in the development of the costs had the experience and proper estimating methods for large complex urban tunneling programs. Three separate reviews of the cost estimates lent additional confidence to the cost estimates."

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