

## VandenBerghe, Alissa (Consultant)

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**From:** Lacy, Paul  
**Sent:** Thursday, January 29, 2009 9:24 AM  
**To:** Williamson, Alec  
**Subject:** RE: BST Report Out paper.doc  
**Follow Up Flag:** Follow up  
**Flag Status:** Red  
**Attachments:** BST Report Out paper.doc

Alec,

Here this is again with lots of changes.

When you have time, I would like to talk a bit about some of the assumptions/comments below.

Paul

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**From:** Williamson, Alec  
**Sent:** Wednesday, January 28, 2009 7:55 AM  
**To:** Lacy, Paul  
**Subject:** Re: BST Report Out paper.doc

Paul-. This is a really tough problem to solve and I see you've put quite a bit of thought into it . A couple of suggestions- describe how you arrived at these conclusions and what options were considered. How do these fit with the ideas and issues brought forward by your team, especially the SFD?

A couple of specific comments-

The original emergency repair contract was designed to last about 5 to 6 years, while your latest contract was a 10 to 15 year solution.

How do you see any different results from your proposal to evaluate needed repairs and develop a repair contract? We've already done that twice. Seems to me we should be making that recommendation now based on what we know now.

Testing the detectors seems like a waste of time since we know that half don't work. What happened to DeWitts idea to install a low cost detector wire system along the walls?

How are you addressing the SFD request to put warnings on the doors?

if you do the following:

- Install a low impact low cost wire based heat detection system
- Install warnings on the doors
- Close the ramps to gp traffic

Then perhaps you would not need to do soot cleaning at all and would still meet basic safety reqs.

Putting this basic pse together could be done quickly.

That would be my recommendation.

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**From:** Lacy, Paul  
**To:** Williamson, Alec  
**Sent:** Tue Jan 27 16:48:05 2009  
**Subject:** BST Report Out paper.doc

Alec,

Please take a look at this and comment.

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## **Battery Street Tunnel Report Out**

### **Introduction**

The Battery Street Tunnel is a 55 year old WSDOT Structure on City of Seattle Right of Way. The lid of the tunnel is the Battery Street surface road, and the overcrossing for 1st, 2nd, 3rd, 4th, 5th and 6th streets and Denny way. The structure has mechanical and electrical systems for ventilation, fire detection, fire suppression and lighting and other systems. Many of the system elements are old and failing. The replacement parts are difficult to obtain.

An emergency repair contract was developed to repair the failing systems to keep the systems operating for a 10 year life. This contract was shelved during the Moving Forward phase of the program in favor of a more extensive repair and upgrade project that would extend the useful life out 25 years. The BST Repairs Project Stage 1 included replacement of systems and earthquake upgrades that were estimated to take 18 months of nighttime closures and cost in the vicinity of \$41 million.

The decision to support a bored tunnel changed the situation. The bored tunnel will bypass the BST so the BST will no longer be a state route and the City of Seattle expects the tunnel to be taken out of service and decommissioned. There is no longer a need to extend the Battery Street Tunnel life out past the opening of the bored tunnel, and doing so would not be the most efficient use of tax dollars.

The Battery Street Tunnel needs to have a repair and maintenance program to keep it operating safely for the next few years with minimum disruption of traffic and minimum expenditure of funds.

### **The recommended course of action is as follows.**

- **Conduct Soot Cleaning Test contract in early 2009.** This will help to determine the most cost effective method of cleaning the potentially hazardous soot from the tunnel ceiling, cross beams, upper walls and system surfaces. This will require a week end closure for the southbound tunnel bore. The estimated cost is \$50,000
- **Conduct a test of the fire suppression sprinkler system during the spring 2009 scheduled closure.** This will test the detection system and the valve system to measure the dependability of the existing system. The expected cost is \$10,000

- **Contract to have the tunnel cleaned and painted in summer 2009 to remove soot and encapsulate what remains.** This will decrease the amount of down time it will take to make repairs in the event of a future system failure. It should allow a more cost effective cleaning than an emergency contract, and eliminates the issue of cleaning the potentially hazardous soot prior to decommissioning the tunnel. The current estimated cost is \$1.87 million for the soot cleaning and \$1.1 million for painting the lower walls. The painting allows us to use prequalified painting contractors for the work, and will dress up the tunnel making it appear brighter. The estimated price does not include mobilization, construction engineering or contingencies. The cleaning and painting contract is expected to be in the range of \$3 million plus mobilization, construction engineering and contingencies. This contract could include striping, and replacing existing signs, and may include closing the ramps at the south end.
- **Develop a plan for repairing the tunnel.** The tunnel may need only maintenance to continue safe operation until 2015, or it may need some repairs. During the inspection in spring 2009 the deficiencies need to be noted and those that require some specific repair work should be included in a repair contract. This plan should include funding the purchase of repair parts and increased maintenance expense. Estimated cost is \$250,000.
- **Monitoring Program with ad ready contracts in the event of a system failure.** Based on the results of the Spring 2009 inspection and fire suppression system test, develop a program of frequent inspection of the BST to coincide with the inspection of the Viaduct. Acceptable operation limits will be researched. Plan sets to repair the systems that are most critical and most vulnerable will be developed and shelved. If a system failure closes the tunnel, or a system drops below the acceptable limits, the repair plan will be implemented.
- It is recommended we do not continue with new control room or egress and not acquire any right of way

## Concerns

- The maintenance heavy future could result in a system failure that could close the tunnel.
- Current City position is to decommission the tunnel. In the next 6 years that may change with the discovery of a use for the structure.
- The tunnel is also an overcrossing structure for 7 city streets, and supports Battery Street between the surface streets.
- The tunnel has many utility crossings that may require future access making it difficult to decommission