

## VandenBerghe, Alissa (Consultant)

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**From:** Hammond, Paula  
**Sent:** Monday, May 11, 2009 5:12 PM  
**To:** 'dwestneat@seattletimes.com'  
**Cc:** Dye, Dave; Paananen, Ron; Larsen, Chad; Aldridge, Jo  
**Subject:** WSDOT Response to Your Column in Sunday's Seattle Times

May 11, 2009

Dear Mr. Westneat:

I read with interest your column in Sunday's *Seattle Times* about cost overruns on large infrastructure projects and your reference to the 2002 and more recent research papers published by Dr. Flyvbjerg about cost overruns on a very significant number of infrastructure projects.

WSDOT has long strived to improve its project cost estimating accuracy. These efforts were renewed again in 2002 when, in response to industry experience like that referenced by Dr. Flyvbjerg and considering the large Seattle projects that were then in the planning phase, we developed the Cost Estimate Validation Process (CEVP®).

We believe this process more accurately captures the range of potential costs for these large infrastructure projects than the traditional cost estimating approach. It takes into account many of the factors that contribute to cost overruns, including escalation of labor and material, inflation, right-of-way costs, schedule, construction phasing, normal risks and very real potential risks that are outside the control of the public agency. It also involves independent experts so that we take into account recent experiences from around the world.

The cost of the bored tunnel was developed using an approach similar to CEVP and recognized the early stage of design of the bored tunnel. We are advancing the design of the bored tunnel and plan to conduct a full CEVP evaluation this summer. Our approach for estimating the costs of the bored tunnel takes several steps:

- We began by estimating the base cost, or cost of construction materials and labor. The base cost of building the bored tunnel plus the north and south portals is approximately \$1.1 billion. This base cost assumes that the project goes as planned.
- A workshop was then held with members of the project team and independent experts to validate the base cost and identify and quantify potential uncertainties. Uncertainties are made up of risks and opportunities, including elements that are at an early stage of design. In the workshop experts estimate the range of probable costs and schedule impacts of the potential uncertainties.
- The final step was to calculate the affect that the identified risks and their probable costs and schedule impacts would have on the base costs of the project. This step developed a potential range of costs for the bored tunnel ranging from \$1.2 billion to \$2.2 billion. The \$2.2 billion, or high end of the range, is the estimated cost of the bored tunnel if many things that can go wrong do go wrong on the project. The \$1.2 billion or low end of the range is the predicted cost if very few things go wrong. We believe the most likely cost of the bored tunnel is \$1.9 million.

We will be identifying strategies for addressing the risk items that could affect the cost and schedule of the project as we proceed. For example, the cost of delay on this project is estimated to be \$10 million per

month. Focusing on things that could lengthen the schedule – such as not getting necessary permits on time or problems that could slow down construction – and identifying ways to avoid those delays is one way for us to minimize cost overruns.

We agree that how costs are estimated and managed on this project warrants a watchful eye from the public and elected officials. Our track record, the recent record of several tunnel projects around the world, the current economic environment, and the work done using CEVP<sup>®</sup> since 2002 gives us reason to believe that it is not only possible but probable to manage this project and deliver it within the estimated cost range. Still, your vigilance and skepticism is welcomed. Even though I'm not from Missouri, I guess we'll "just have to show you" we can do this. "Some" pressed us to lower the cost estimate. Our mantra of transparency and my personal ethic of integrity call for clear accountability on the progress of this project, ever step of the way.

A recent survey by Arup, an independent international tunnel firm, found that several comparable tunnels recently completed around the world have been delivered for costs significantly less than the cost estimate per lane mile of the SR 99 tunnel. To date, a number of independent experts and contractors have reviewed the SR 99 tunnel range estimate and have responded that the estimate appears reasonable for this early stage of design for budgeting purposes. And finally, an independent panel of engineering experts will be convened this summer in accordance with the requirements of ESSB 5768 to review the project cost estimate as it is updated this summer, with findings reported back to the Legislature this fall.

We would welcome the opportunity to meet with you to discuss in more detail how we estimate costs for the Alaskan Way Viaduct and other projects in the Puget Sound region. Ron Paananen, Deputy Urban Corridors Administrator, will be contacting you to set up a briefing time or you may contact him directly at 206-267-0499. In the meantime, I have attached a presentation made in December 2008 to the viaduct stakeholder advisory committee, which presents the concerns we have had since 2001 about cost overruns and our process for addressing them.

Thank you,

Paula Hammond  
Secretary of Transportation