From: Greco, Theresa

Sent: Wednesday, March 18, 2009 1:11 PM

To: Paananen, Ron; Dye, Dave

Cc: White, John

Subject: FW: TBM Costs

FYI. I received a call from Kathryn Leathers this morning that a member was asking for TBM cost information. She did not think it would come up during the hearing today but John and I provided the email below in response to her request.

Break a leg.

Theresa

From: Greco, Theresa Sent: Wednesday, March 18, 2009 1:09 PM To: Leathers, Kathryn Cc: Smith, Helena Kennedy; White, John Subject: TBM Costs

Good afternoon, Kathryn.

What we recently learned from credible tunneling sources (including tunnel contractors and boring machine manufacturers) is the cost of the tunnel boring machine (TBM) can range from \$60-85 million depending on the type of machine -- slurry or earth pressure balance (EPB). We anticipate that a design/build contractor would purchase the TBM as part of a larger fixed price contract to build the main tunnel structure. Given that the experienced tunnel contractors have established relationships with the TBM manufacturers worldwide, they would negotiate the final price and design terms with the manufacturer, based on performance requirements stipulated by WSDOT.

We anticipate bringing the tunneling contractor on early to work with us as they would determine the type of machine (based on soil conditions from core samples), and would work directly with the TBM manufacturer on the design and construction of the machine. In recent weeks, we have spoken and met with several TBM manufacturers and tunnel contractors that have the ability to construct and operate a 54" TBM. There appear to be four companies worldwide that have the proven ability to construct this large of a TBM, and two of them have said that we should expect 16 - 18 months total for design, construction, shipping and on-site assembly of the machine. Per our current draft scheduling efforts, this would have the TBM on-site and operating in 2012.

Take care and have a good afternoon.

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