

# TUNNEL AT TYSONS

A JOINT VENTURE OF  
DR. G. SAUER CORPORATION,  
ARUP, & KGP DESIGN STUDIO



560 Herndon Parkway, Suite 310

Herndon, VA 20170-5240

Tel: (703) 707 0700

Fax: (703) 707 0703

January 30, 2007

Mr. Scott A Monett  
TysonsTunnel, Inc. (dba TysonsTunnel.org)  
1390 Chain Bridge Road, #65  
McLean, Virginia 22101

## **RE: Dulles Corridor Metrorail Project – Tysons Tunnel Alternative Cost Estimate**

Dear Mr. Monett:

The following materials outline our team's cost estimate and schedule for the Phase I Dulles Corridor Metrorail Project based upon our preliminary engineering for the Tysons Corner Segment, including the 3.4-mile single-bore tunnel beneath Tysons Corner, the four (4) related stations, and associated work. Our design team which in addition to the three joint venture partners, includes international companies such as Earth Tech and Intecsa, prepared this estimate based upon the significant engineering work we have completed to-date and upon our experience and knowledge of the market from other relevant projects. In addition, we have peer reviewed this estimate with qualified third party estimators. Our estimate shows that the single-bore tunnel cost is competitive with the STV and DTP elevated rail estimates for the Phase I Dulles Corridor Metrorail Project, and we anticipate that tunneling has fewer risks of project delays during construction than the aerial structure.

There are also value engineering opportunities with associated cost savings which we have not included in our estimate and, if properly accounted for, could provide significant savings without compromising criteria. We also see major opportunities and potential costs savings in the following:

- Early delivery of a refurbished TBM (for instance, the Malaysia SMART tunnel TBM is available and can be shipped within several months) saving nearly a year from the schedule.
- Early procurement of the vehicles could reduce the project costs as much as \$33 million.
- Capital cost, operational savings, and schedule advantages for utilizing portions of the tunnel for yard functions in lieu of the West Falls Church rail yard – a possible net savings in excess of \$50 million. We believe the potential for underground storage at Tysons for up to 80 vehicles will increase operational efficiency for start up in the morning rush hour while Wiehle Ave is a terminal station.
- The reuse of excavated material from the tunnel for necessary fill elsewhere in the project (e.g. in portions of the median of the Dulles Access Road).

- Present value of lower operating and maintenance costs associated with tunnels in the Metro system (savings on maintenance costs alone were estimated at \$100+ million by the 2006 ASCE panel).
- The present value of lower lifecycle costs of the tunnel compared to the aerial structures (double the lifespan).
- The present value of reduced business disruption costs over four years (currently being estimated by others).

As summarized in the table below, our estimate of the total Phase I project with the single-bore tunnel is approximately \$2.4 billion with a construction duration of 54 months (about 6 months shorter than the comparable duration for the aerial alternative) – not taking into account the potential savings above. We have applied the same unallocated contingency and escalation rate as the April 2006 STV estimate so that these represent dollars escalated to the midpoint of construction in 2010. We have also based our estimate for the work outside of the Tyson’s corner area, the systems work, and soft costs on the April 2006 STV estimate. We believe, however, based on previous contractor pricing of these components that these costs could be as much as  $\pm$ \$209 million lower, as noted below, if subjected to a proper competitive bid.

	<b>Estimate Year 2010</b>	<b>Possible Reductions</b>	
Tyson's Segment Direct Cost	\$1,024.0	(\$51)	3.4 miles / 4 stations
Non-Tyson's Segment Direct Cost	\$384.2	(\$50)	8.2 miles / 1 station
Systems Direct Cost	\$294.4	(\$24)	
Vehicles	\$195.1		63 vehicles
Soft Costs, Finance Charges, R.O.W	\$332.3	(\$84)	
Unallocated Contingency	\$88.8		
Previous PE Expenditures	\$67.8		
<b>TOTAL</b>	<b>\$2,386.6</b>	<b>(\$209)</b>	

Note: \$ in millions

If the single-bore tunnel alternative were competitively bid and the potential cost benefits and savings were properly accounted for, the net comparable cost of the Phase I single-bore tunnel project would reduce from \$2.4 billion to \$2.0-\$2.1 billion, clearly highlighting the cost-efficiency of the single-bore tunnel alternative over the elevated rail. We are ready to discuss the cost estimate and cost saving opportunities with you and appropriate State, local, and agency officials in detail as soon as you wish.

Very truly yours,



Tunnel @ Tysons  
Walter Mergelsberg (Dr. G. Sauer Corporation)



Don Phillips (Ove Arup & Partners)



Bill Gallagher (KGP Design Studio)