



REASONS FOR ELIMINATING TUNNEL ALTERNATIVE BETWEEN BRIGHTON BOULEVARD AND COLORADO BOULEVARD

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The I-70 East Corridor Environmental Impact Statement (EIS) continues to look at alternatives to improve safety and mobility and address congestion along I-70 from I-25 to Tower Road. As part of the alternatives analysis, over 170 different ideas have been suggested to address these concerns. Through an extensive alternative screening process that took place between February 2004 and February 2005, those alternatives have been reduced down to those that are the most reasonable and feasible and best meet the project needs.

One of the alternatives evaluated was to construct I-70 in a tunnel between Brighton Boulevard and Colorado Boulevard. This alternative examined lowering I-70 beginning 700 feet west of Brighton Boulevard to just east of Colorado Boulevard, a distance of approximately 0.8 miles. This alternative was eliminated from further consideration in February 2005 based on several reasons including:

- **Safety** – The tunnel alternative does not allow for safe access from I-70 to Steele Street/Vasquez Boulevard because it does not provide adequate sight distance for the ramps. Cars entering and exiting I-70 from the ramps would not be able to see the cars on I-70 or the frontage road, thus creating a safety concern. Another safety concern is with the potential for catastrophic accidents and the limited emergency access and escape routes.
- **Access** – To address the safety issue mentioned above, the project team looked at eliminating access from I-70 to Steele Street/Vasquez Boulevard. Eliminating that access would significantly impact both the Brighton Boulevard and Colorado Boulevard interchanges as well as 46th Avenue.
- **Cost** – The tunnel alternative has substantially higher construction and operations and maintenance costs than other alternatives because of the cover, and required lighting, and extensive ventilation and drainage systems. Detailed screening analysis found that the tunnel alternative would cost between \$160 to \$370 million more to build than other alternatives. Also, the tunnel would cost between \$3 to \$7 million more per year to operate and maintain than other alternatives.
- **Security** – Because I-70 is a national defense highway, the security of the highway was also considered in the analysis of alternative. Given the enclosed nature of the tunnel and the required ventilation and electrical systems, it would be easier to cause a closure of a tunnel than any other alternatives.
- **Property Effects** – As part of the detailed screening analysis, potential property effects were considered for all of the alternatives that were under consideration. That analysis showed that all of the alternatives along the existing I-70 alignment had similar potential effects except the at-grade option, which was higher. Additional analysis completed for

the tunnel alternative shows that the tunnel would have more potential effects than a below-grade or bridge alternative because it would have to be wider to accommodate columns, emergency access, and ventilation system requirements.

- **Environmental** – Since the tunnel would include significant excavation, it has the potential for disturbing or encountering soils or waters that may have elevated concentrations of heavy metals such as lead or arsenic. Deep excavations would entail the proper management of these waters to provide for both public and worker health and safety as well as environmental safeguards, and may involve an elaborate dewatering operation that would require the storage and treatment for an unknown duration and quantity of water to ensure environmental protection.

While this alternative may reduce noise, local and regional air quality will not be improved by the construction of a tunnel. Vehicle exhaust expelled from ventilation structures becomes a concentrated point source in the community where the exhaust expelled. In fact, 200 more residential properties are within close proximity (1,500 feet) of the existing alignment alternatives when compared to the realignment alternatives.

In comparison to other alternatives that were evaluated during the screening process, the tunnel alternative creates additional safety concerns, has substantially higher construction and operations and maintenance costs, may be a higher security risk, affects the same amount of properties, and has the potential for disturbing or encountering soils or waters that may have elevated concentrations of heavy metals.

There are four highway alternatives that are still being considered. They include two alternatives on the existing alignment and two alternatives along a realignment of I-70 between Brighton Boulevard and Colorado Boulevard. Visit the project website at www.i-70east.com or call the project team at (303) 294-9300 for more information.

**Design Option Comparison: Detailed Screening
Tunnel, Below Grade, Existing Grade, At Grade**

Criteria	Design Option			
	Tunnel	Below Grade	Existing Grade	At Grade
Number of residential properties acquired	32-34	32-34	32-34	57-65
Number commercial/industrial properties acquired	12-15	12-15	12-15	12-17
Capital cost (\$ million, 2004 dollars)	724-733	563-573	456-465	355-370
Annual operation and maintenance cost (\$ million, 2004 dollars)	10	3	7	4
Cost per lane mile (\$ million, 2004 dollars)	65	50-51	41-42	32-33