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## C-470 Corridor FAQs

7-20-05

**Q. What are the two build alternatives under consideration?**

- A. The environmental assessment is analyzing two build alternatives:
- General Purpose Lanes Alternative: adding four non-tolled general purpose lanes to the existing lanes.
  - Express Lanes Alternative: adding four tolled express lanes to the existing lanes.
  - Both alternatives include reconstruction of the Santa Fe interchange and adding a southbound to eastbound flyover ramp.
  - Both alternatives address congestion from Kipling to I-25, reduce traveler delay, and improve reliability for C-470 users.

**Q. How do the economic, social, and environmental impacts compare for each of the two build alternatives?**

- A.
- From an economic and social perspective, both build alternatives would provide congestion relief resulting in decreased delay to destinations along the corridor.
  - Both build alternatives can be accomplished without requiring business or residential relocations, as all right-of-way needs would be partial parcel acquisitions.
  - The most notable environmental effects include right-of-way acquisition, higher noise levels, relocating the C-470 trail, wetland impacts, and black-tailed prairie dog habitat loss.
  - Generally the effects (both positive and negative) between the two build alternatives are very similar, due to the limited difference in the design footprint.
  - A detailed description of all the economic, social, and environmental factors analyzed will be included in the Environmental Assessment document, to be distributed to the public in Fall 2005.

**Q. What is the economic impact of the build alternatives to the business community?**

- A. The project team has been working with the South Metro Chamber, the Southeast Business Partnership, and the Jefferson Economic Council on this issue. Generally, all three groups, from an economic development perspective, are in support of any capacity improvements on C-470 as soon as possible.

**Q. What is a best-case implementation schedule for each of the build alternatives?**

- A. In order for FHWA to issue a FONSI on a state or federally funded project, the funding must be identified in the MetroVision 2030 Fiscally Constrained Regional Transportation Plan. The fastest implementation scenario, for either alternative, is for the project to be included in DRCOG's 2005 Regional Transportation Plan Amendment.
- November 2005 - project included in RTP.



- December 2005 to February 2006 – prepare and NEPA decision document. If FONSI;
- February 2006 – begin right-of-way acquisition, and final design or design/build procurement process. Construction start dates could vary depending on availability of funds:
  - Santa Fe Interchange, Phase I – Referenda C&D programmed for Fiscal Year 2008, (begins July 2007)
  - C-470 – design build could begin shortly after FONSI, if funding is secured (either alternative). Conventional design/bid/build would push the construction start date out no earlier than summer 2007.

**Q. Is phased construction a possibility with either of the two build alternatives? What about phasing the Santa Fe interchange?**

A. Yes.

- The General Purpose Lanes Alternative could be implemented in two phases. Phase I would construct one additional lane in each direction, and Phase II (needed in 2013), would construct the second additional lane in each direction.
- For the Express Lanes Alternative, phased construction of the different access points into the facility could be considered. This opportunity would be analyzed as part of the investment grade study to be completed.
- The Santa Fe interchange could be constructed in three phases, as follows. Phase I would construct the southbound to eastbound flyover and add capacity from Blakeland Drive to County Line Road(\$30M from Ref C&D). Phase II would construct the Blakeland Drive and County Line Road intersection improvements, and would be needed by 2012 (\$10M in 2005 dollars). Phase III would construct the remaining interchange improvements including replacing the existing structure and ramps, and would be needed by 2020 (\$15M in 2005 dollars). Constructing the interchange in two phases is another option if funds are made available.

**Q. Explain the price differences between the two build alternatives, including all life-cycle costs.**

A. CAPITAL COSTS:

Santa Fe interchange estimated capital costs:	\$ 60M (2005 dollars)
General Purpose Lanes project estimated capital costs:	\$195M* (2005 dollars)
Express Lanes project estimated capital costs:	\$313M*# (2005 dollars)

\* Santa Fe interchange costs are not included with mainline projects. # The EL estimate was recently reduced by \$12M to more closely match estimated construction engineering costs for a design/build project. If the GPL project used a design build delivery method, the cost estimate could be reduced by approximately \$5-8M.

DIFFERENCES:

Kipling to I-25:	\$28M	additional barriers, drainage features, and 9% more pavement
W. of Yosemite to I-25:	\$60M	direct access ramps to I-25 and E-470



Quebec	\$16M	braided ramps west of Quebec
Colorado	\$12M	T-ramp east of Colorado
ITS/Tolling Infrastructure	\$10M	
Inflation	\$ 4M	3% of difference in '04 dollars
Construction Engineering	(\$12M)	
<b>TOTAL</b>	<b>\$118M</b>	

**LIFE CYCLE COSTS:**

These costs include annual operation and maintenance costs for liability insurance, highway patrol, roadside assistance, and annual maintenance; interest costs; and a general capital reserve for pavement reconstruction, structure rehabilitation, and sign replacement.

**Q. What are the options for the excess toll revenue, after bonds have been paid and ultimately expired?**

A. Excess toll revenue can be:

- Reinvested in corridor improvements.
- Used to repay any loans investors may have issued.
- Used towards the CTE tolling system.
- Used towards making improvements to the roadway network surrounding the tolled corridor.
- The tolls could be removed after the bonds are expired.
  - More than likely, a sinking fund for O&M would be established.
  - This would be a policy decision made by the CTE.

**Q. What are the projected traffic operations for each of the alternatives?**

A.

- No Action: C-470 is projected to operate at LOS F both eastbound and westbound during both the AM and PM peak periods. Peak hour travel times on C-470 are expected to range from 29 to 36 minutes. This equates to 8-10 hours of congestion daily.
- Express Lanes Alternative: The express lanes along C-470 are projected to operate at LOS D or better in each direction during peak periods and the general purpose lanes are projected to operate at LOS E/F. Projected peak hour travel times in the express lanes are expected to range from 11-14 minutes and in the general purpose lanes 22-32 minutes. This equates to no congestion in the express lanes, and approximately 4-hours of congestion in the general purpose lanes daily.
- General Purpose Lanes Alternative: C-470 is projected to generally operate at LOS D or better during each of the peak periods in both directions. Peak hour travel times on C-470 are expected to range from 15-19 minutes. This equates to no congestion.



**Q. Will the congestion in the existing lanes improve or worsen with the implementation of express lanes, over No-Action?**

A. Although the existing lanes are projected to experience some congestion for the Express Lanes Alternative, traffic operations on the existing general purpose lanes are projected to improve for the Express Lanes Alternative as compared to No-Action.

- Travel times along the existing lanes are projected to improve by 11-17% in the eastbound and 11-29% in the westbound direction for the Express Lanes Alternative as compared to No-Action.
- Total daily congestion and high demand (peak) conditions for the C-470 facility is projected to reduce from 8 hours for No-Action to 3 hours for the Express Lanes Alternative.

**Q. What affects do the build alternatives have on the arterial street network?**

A.

- Compared to No-Action, both build alternatives result in higher volumes on the adjacent arterials during the peak hours in year 2025. Compared to No-Action, the duration of those peak hours is dramatically decreased. The arterials have sufficient through lane capacity to accommodate the additional volumes, as the bottlenecks are at the intersections.
- Delay increases at some of the arterial street intersections during the peak hours (compared to No-Action). Both build alternatives will include mitigation at the impacted intersections.

**Q. What percentage of express lanes volume is forecasted from my county?**

A. The attached exhibit shows the percentage of volume originating from the three counties, for three different areas along C-470.

**Q. Will there be congestion in the express lanes?**

A. Under the concept of managed lanes, the volume and thus congestion on the entire corridor is regulated by charging a variable toll rate. The level of traffic will be regulated to ensure better than LOS D operations throughout the corridor.

**Q. How would the Colorado Blvd. T-Ramps for the EL Alternative affect the surrounding area?**

A.

- The Colorado Blvd. T-ramps are projected to carry approximately 1,800 vehicles during the PM peak hour.
- The intersections adjacent to the T-ramps operate similar to the No-Action or General Purposes Lanes Alternative despite carrying higher volumes on Colorado Blvd.



- Traffic analysis indicates that most of the trips served by the Colorado Blvd. T-ramps are oriented to/from parcels in the vicinity of Colorado Boulevard and do not induce any “cut-through” or out of way trips.
- Presence of an access point to the express lanes at Colorado Blvd. provides additional travel options for westbound traffic from I-25 to south of C-470 between University Blvd. and Quebec Street. The T-ramp not only provides an alternative route to busy streets like University Blvd. or Quebec St. but also creates additional opportunities for other traffic to share the same route by distributing demand and reducing out of way trips.

**Q. Do either of the build alternatives preclude a light rail transit line from being implemented along the C-470 Corridor in the future?**

A. No, both build alternatives:

- Leave approximately 50’ of CDOT right-of-way south of the highway for possible future transportation enhancements, including light rail transit.
- Accommodate FasTracks’ Southwest Light Rail Transit Extension from the existing Mineral Station to a new end-of-line station at C-470 and Lucent Blvd.
- Provide improved reliability both alternatives bring to mainline C-470, better opportunity for commuter bus service is provided within the corridor.

**Q. What will happen to the C-470 Trail?**

A. With both build alternatives, a C-470 trail will exist:

- The General Purpose Lanes alternative relocates 7.5 miles of the trail to a sufficient distance outward from the new roadway to allow for the widening
- The Express Lanes alternative relocates 8.1 miles of the trail to the same approximate distance outward.
- New grade separations will be constructed at Santa Fe Drive, Colorado Boulevard, and Quebec Street. All trail relocation costs and grade separation costs are included as part of both build alternatives’ estimates.