

REQUEST FOR DESIGN EXCEPTION

Number 3

County: Dallas
CSJ: 1068-04-126
Project: I-30 Managed Lanes
Highway/ Limits: I-35E to Tarrant County Line

Proposed Project

I-30 is currently under reconstruction to widen from a 6 lane freeway to an 8 lane freeway. As part of the project, a wider median than normal was built to add a single reversible barrier separated HOV at a later date. Since the reconstruction of I-30 began, the single reversible HOV lane project has changed into a multilane managed lane (ML) project. The project has been approved as part of FHWA's Value Pricing Pilot Program.

The proposed ML project will add managed lanes in the median of the current construction project. The managed lane project will be constructed with a 4-2R-4 (4 freeway lanes-2 reversible managed lanes-4 freeway lanes) typical section from the Tarrant County Line to the west side of the I-30 Trinity River Bridge. There will also be two wishbones or flyover ramps constructed. One wishbone will be for SH 161 at Belt Line Road and the second will be between Cockrell Hill and Westmoreland.

The project also includes two transitions. One transition widens the Beckley and I-30 Trinity River Bridges, which provides traffic control for the ultimate I-30 signature bridge and provides an extra lane for the managed lane eastbound exit slip ramp. The other transition widens I-30 in Tarrant County, which allows us to transition from a 4-2R-4 section in Dallas County to match the current 3-3 section in Tarrant County.

Another important fact, the I-30 managed lane project is a Transportation Control Measure in the Dallas Fort Worth nonattainment area. This project must open as a managed lane facility with a HOV incentive by July 2007.

Justification

1. What are the minimum design values that cannot be attained?
 - 10' outside freeway shoulders
2. Why the minimum design values can not be attained?

The proposed widening from Sylvan to I-35E is the initial stage for the construction of the I-30 "Signature Bridge" over the Trinity River. The ultimate design for this section of

roadway will be constructed as part of the Pegasus project. The minimum design values cannot be obtained because the widening is for construction staging purposes. The district wants to keep costs on temporary bridges used during construction phasing at a minimum. The I-30 Trinity River Bridge project and the I-30 managed lane project are barely funded as it stands now.

3. What are the values that can be attained by the proposed design?

- 2' Outside Shoulder
 - On Beckley Avenue Bridge
 - On Trinity River Bridge

4. Summary and analysis of the crash history at this location.

Crash data for the existing facility was available for three full calendar years from 1998 to 2000. The geometry of I-30 during this 3 year cycle was undergoing reconstruction and rehabilitation efforts along a significant portion of the freeway section in question. The freeway as mentioned elsewhere is currently undergoing reconstruction intended to add additional lanes in each direction and improve roadway geometrics which includes horizontal and vertical alignment alterations, improved ramp merges and desirable inside and outside shoulders. While some sections of the freeway have been completed to the new desirable section, a majority is still under construction and it is therefore difficult to draw any conclusions concerning the impacts of reduced shoulder and lane widths when paired with the new proposed geometric design and additional lanes.

Year	Fatal Crashes	Incapacitated	Non-Incapacitated	Injury Crashes	Non-Injury Crashes	Total Crashes
1998	4	29	84	208	182	507
1999	9	18	80	208	195	510
2000	4	21	83	243	252	603

Table 1. Crash Data

We do not feel the requested design exception will increase the traffic crashes as compared to the existing facility. When completed, the overall geometric improvements to this facility are expected to improve the capacity and safety of this roadway section.

5. Brief description of alternatives considered and the reasons for eliminating each alternative.

A. No Build

The no build alternative assumes that there would be no managed lane constructed in the I-30 corridor and the I-30 "Signature Bridge" over the Trinity River is never built.

This alternative was eliminated because the I-30 Trinity River Bridge must be reconstructed at some point.

B. Wider Interim Trinity River Bride

A wider interim I-30 Bridge was considered. Widening the bridge would require less than minimum horizontal design values at the current design speed. The horizontal curves will be sharp under the current design, because the temporary bridge will be constructed to the south of the existing bridge. This alternative was eliminated, because the district wanted the keep the cost at a minimum, because it is a temporary or throw away bridge.

6. What is the percentage and total dollar difference between the proposed construction cost and the cost of construction necessary to obtain minimum values?

Managed Lane Project Alternatives	Project Cost
Proposed	\$75 Million
Meet minimum design values	\$250 Million
Cost Difference	\$175 Million
Percentage Difference	230%

Table 2. Project Cost Comparisons

The total cost difference and the percentage difference between the proposed project and if the project was constructed to meet minimum design standards is given in Table 2. The alternative that would provide a 10' inside shoulder and 12' freeway lanes, and 12' managed lanes is 230% more expensive than the proposed project.

7. Does the design conform with adjacent roadway section?

Yes, the project does conform with the adjacent roadway sections.

Over the Trinity River Bridge, I-30 eastbound must transition from 4 freeway lanes and 2 managed lanes into the 4 lane split, two lanes to I-35E north and two lanes to I-35E south. The four freeway lanes are reduced to 3 freeway lanes by ending a lane at the Beckley exit ramp. The two managed lanes will be narrowed to one managed lane before exiting at the end of the managed lane into its own freeway lane. The remaining four lanes (3 lanes from the freeway and 1 lane from the managed lanes) will be continued to the I-35E split by building a temporary 4 lane eastbound Trinity River Bridge.

Westbound I-30 will have four lanes coming from I-35E. Two lanes each will come from the northbound and southbound directions. The four lanes will transition into two managed lanes and three freeway lanes. After a managed lane entrance ramp, a fourth

freeway lane will be added to complete the transition into the 2 managed lanes and four freeway lanes in the westbound direction.

8. What would be the project delay and consequences as a result of meeting the minimum values?

We would not be able build the ultimate I-30 Trinity River Signature Bridge, which meets design values without building the interim bridge widening project. The interim job provides a transition for the managed lanes and provides room to construct the ultimate "Trinity River Signature Bridge" project.

9. Short narrative of why you feel this design exception should be approved.

This design exception required for the I-30 managed lane project should be approved for several reasons. TxDOT must open two I-30 managed lanes by July 2007 to meet the air quality Transportation Control Measures (TCMs) in the Dallas/Fort Worth (DFW) Ozone Nonattainment Area. The DFW region has committed to certain measures to the Environmental Protection Agency (EPA).

The I-30 managed lanes project is one of these commitments. We know the entire managed lane project cannot be built by July 2007, but if this design exception is approved we can open two reversible HOV lanes and create construction zones as the first stage construction. By opening in July 2007 two managed lanes, we will reduce the threat that Federal transportation dollars will be lost by the DFW area.

Approval of the design exception should also be granted because the corridor is currently undergoing a massive construction effort to upgrade an existing six-lane freeway facility. The planning, design and construction of this corridor will be nearing 20 years when construction is completed. Approval of this exception will allow the installation of the managed lanes to be done at considerably less cost and will limit the amount of future work and public inconvenience due to the managed lane construction.

The use of the 10' outside shoulders, 11' freeway lanes, 11' managed lanes, and below minimum inside shoulders provides the best operational characteristics without constructing a massive widening project.