

County: Dallas
CSJ: 1068-04-126
Project: IH 30
Limits: From: Duncan Perry Road (Tarrant County Line)
To: Sylvan Avenue

Request For Design Exception

Number 7

Proposed Project

IH 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 IH 30 began, the single reversible HOV lane project has changed into a multilane Managed HOV lane (ML) project. The project has been approved as part of FHWA's Value Pricing Pilot Program.

The proposed ML project will add Managed HOV lanes in the median of the current construction project. The Managed HOV lane project will be constructed with a 4-2R-4 (4 freeway lanes-2 reversible Managed HOV lanes-4 freeway lanes) typical section from the Tarrant County Line to the west side of the IH 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 IH 30 Trinity River Bridges, which provides traffic control for the ultimate IH 30 signature bridge and provides an extra lane for the Managed HOV lane eastbound exit slip ramp. The other transition widens IH 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.

IH 30 Managed HOV lane project is also a Transportation Control Measure in the Dallas Fort Worth nonattainment area. This project must open as a Managed HOV lane facility with a HOV incentive by July 2007. The first construction phase of the proposed IH 30 Managed High Occupancy Vehicle (HOV) lane project is programmed for letting in January, 2007. The construction of the first phase generally consists of adding Managed HOV lanes in the center of IH 30 using the existing roadway profile from Ballpark Way in Tarrant County to Sylvan Avenue in Dallas County.

Justification

1. What are the minimum design values that can not be attained?

16' 6" clearance under the Ft. Worth Avenue Bridge

2. Why can the minimum design values not be attained?

Fort Worth Avenue Bridge and the IH 30 pavement was just reconstructed in the past two years. It was found after construction that the bridge did not provide the minimum vertical design clearance. In order to attain the minimum design vertical clearance value, either the new roadway would have to be lowered or the new bridge would have to be raised. Both reconstruction options would require additional funding, which is not available. It is also not feasible in this phase of construction, because the Managed HOV lanes must be completed by July of 2007 to match the Air Quality Conformity Plan. The Fort Worth Avenue Bridge and IH 30 pavement could not be designed and reconstructed in that amount of time.

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

Minimum existing posted bridge clearance of 15' 8" under Ft. Worth Avenue. The actual minimum Fort Worth Avenue clearance is measured at 15'11".

4. What is the accident history at this location?

Crash data for the existing facility was available for three full calendar years from 1998 to 2000. The geometry of IH 30 during this 3 year cycle was undergoing reconstruction and rehabilitation efforts along a significant portion of the freeway section in question.

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 traffic crashes as compared to the existing facility. The previous Fort Worth Avenue Bridge had a minimum vertical clearance of 14'8". The newly constructed Fort Worth Avenue Bridge is one foot three inches higher than the previous bridge and therefore decreases the potential for tall vehicles hitting the beams. As of this date, there has been no incidents of vehicles hitting the beams of the bridge because of the below minimum design vertical clearance. It should also be noted that six bridges between Ballpark Way and Duncan Perry Road in Tarrant County on I-30 do not provide a 16'6" vertical clearance. The lowest clearance provided is 14'9" at the Union Pacific Railroad Bridge.

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

Alternative 1: Do not add the Managed HOV lane facility in the January 2007 project letting. This was eliminated as an option as the Managed HOV facility for IH 30 is listed as a portion of the approved air quality conformity plan for the DFW area. Failing to meet the Transportation Control Measures (TCM) commitments for the Dallas-Fort Worth (DFW) 1-hour ozone nonattainment area could mean the loss of Federal matching transportation funds for the DFW area.

Alternative 2: Increase the vertical clearance by lowering the profile of the existing freeway. Lowering the profile would require the removal and replacement of the new existing concrete underneath the Fort Worth Avenue Bridge and associated storm drainage impacts. The freeway needs to be lowered at least 7" in order to obtain a vertical clearance of 16'6". This alternative was eliminated because the additional construction would cause more inconvenience to the public and there is no funding at this time to correct the vertical clearance.

Alternative 3: Increase the vertical clearance by raising the existing Fort Worth Avenue Bridge. The bridge must be raised at least 7" in order to obtain a posted vertical clearance of 16' 6". Fort Worth Avenue on either side of the bridge would also have to be raised to match the modified bridge profile. There is no funding to reconstruct the new Fort Worth bridge and the adjacent pavement recently constructed. It would also be an inconvenience to close Fort Worth Avenue to raise the bridge.

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

Reconstruction of the Fort Worth Avenue bridge is estimated to cost around \$3 million. The proposed project would not rebuild the bridge and therefore has no cost.

7. Does this design conform to adjacent roadway sections?

The roadway underneath the Ft. Worth Avenue bridge was recently constructed in a project that was built from Chalk Hill to Sylvan. So, yes the project conforms to adjacent roadway sections.

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

Alternatives 2 and 3 could not be designed, constructed, and opened by July, 2007. The project would take at least two years to design and construct if funding was available. The consequences of the delay would mean traffic congestion would continue to grow on I-30 and there would be no Managed HOV lane provided as a traveling option to the public. The Dallas and Fort Worth area would not meet the air quality Transportation Control Measures (TCMs) commitments in the Dallas/Fort Worth (DFW) Ozone Nonattainment Area.

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

The main concern of bridge with low vertical clearances is the potential for accidents caused by tall vehicles hitting the bridge. The Fort Worth Avenue bridge has not been involved in an incident since it was reconstructed. The bridge does not have the lowest vertical clearance on I-30 between Dallas and Fort Worth. In Tarrant County, there are six bridges between Ballpark Way and Duncan Perry Road, which do not provide a 16'6" vertical clearance. The lowest clearance provided is 14'9" at the Union Pacific Railroad Bridge.

It would also be costly to reconstruct the Fort Worth Avenue Bridge. With limited funding and the fact the bridge is new, it would seem reconstruction is not a viable option. Reconstruction of the Fort Worth Avenue bridge is estimated to cost around \$3 million.

The reason this project is needed is TxDOT must open two IH 30 Managed HOV 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). TxDOT knows the entire Managed HOV lane project cannot be built by July 2007, but if this design exception is approved we can open two reversible Managed HOV lanes and create construction zones as the first stage construction. By opening in July 2007 two Managed HOV lanes, we will reduce air pollution and the threat that Federal transportation dollars will be lost by the DFW area.