# U.S. Highway 380 Issues Paper

*The Texas Department of Transportation (TxDOT ) is conducting a feasibility study for improvements to US Highway 380 through Collin County. The TxDOT study will analyze potential roadway alignments, including the current alignments and new proposed alignments for US Highway 380. The issues presented in this paper are drawn from various studies and need to be considered and included in the discussion.*

## A. Upgrade Existing US Highway 380 to a Freeway

1. AECOM was contracted by TxDOT to conduct a study in 2016 that could serve as a baseline for future studies. The study undertaken was to identify short-term and long-term improvements along the US Highway 380 corridor within Collin County. The 9-mile section of US Highway 380 from Custer Road (FM 2478) to New Hope Road W (FM 1827) is the subject of this discussion.[1]

    1.1. Upgrading US Highway 380 in McKinney to an 8-lane freeway is estimated to require a total of 266.58 additional acres required from 394 parcels, and would result in 111 displacements: 91 Business/Commercial, 10 residential, and 10 gas stations. The number of displacements may be greater today (2018).

    1.2. It appears less than 1/3 of the 394 parcels required for the 6-lane or 8-lane freeway will require business/commercial or residential displacement.

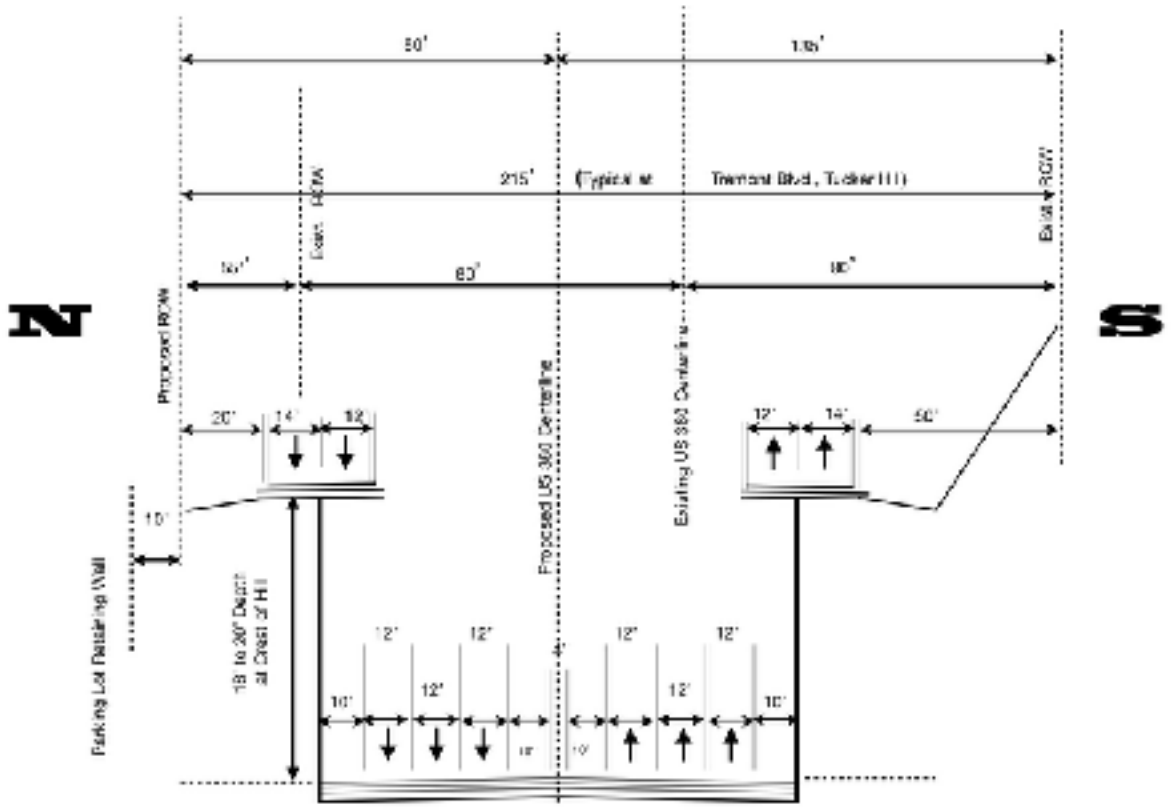
2. US Highway 380 between Custer Road (FR 2478) and Ridge Road can be designed to minimize right-of-way (ROW) requirements, eliminate displacements, and mitigate noise impacts. See Figure 1.

    2.1. Six-Lane Freeway

    Lowering the freeway eighteen (18+) feet and cantilevering one lane of the east and westbound service road over the freeway would reduce the (ROW) requirement for a 6-lane freeway from 278 feet to 215 feet. The required additional ROW, 55 feet, would be taken from the north side of University Drive to within 10 feet of the Tucker Hill commercial development's parking lot retaining wall. Another 20-foot buffer would be retained between the service road and the northern ROW. However, a highway barrier may be required along the parking lot retaining wall for safety reasons.

    The ROW for the southern lane of US Highway 380 would remain unchanged and a 50 foot buffer would be retained.Eight-Lane Freeway

[1] *US 380 Feasibility Study* by AECOM, August 2016, Commissioned by TxDOT



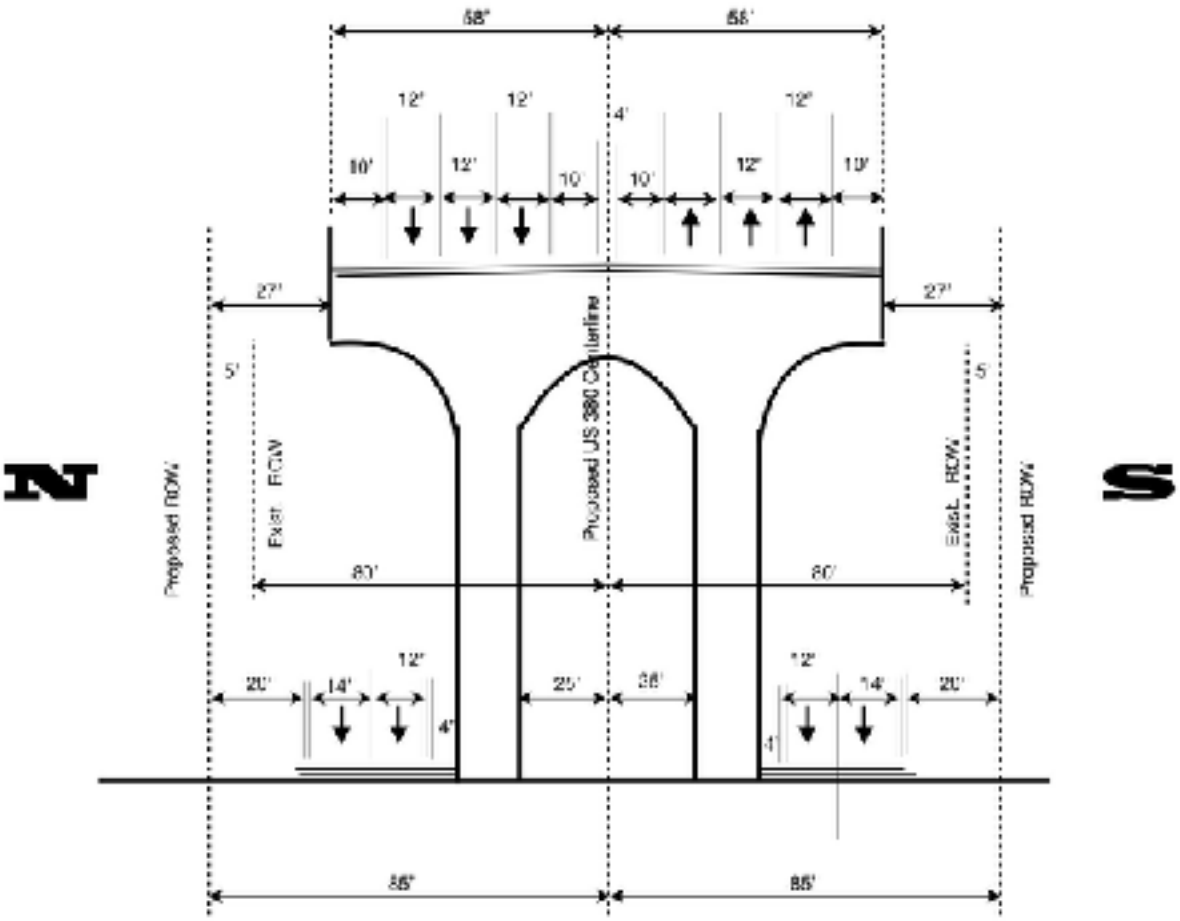

US 380 Cross Section at Tremont Blvd. (Tucker Hill Entrance) Looking East.

**FIGURE 1**

The ROW requirement for an 8-lane freeway could remain the same as a 6-lane freeway even with the added two 12-foot freeway lanes and two 12-foot service road lanes.

The proposed center line in Figure 1 would shift 12 feet to the south to accommodate the additional west bound lane, and the proposed freeway retaining wall (freeway width) would move 24 feet to the south to accommodate both the additional east and west bound freeway lanes.

Both of the cantilevered service roads would be extended 6 feet over the freeway to one and a half lanes, or 18+ feet. The 20 foot buffer on the north side of US Highway 380 would be reduced to accommodate the additional west bound service road lane, which will require a highway barrier along the Tucker Hill commercial development parking lot for safety reasons. The east bound service road would move 36 feet south to accommodate the two 12-foot freeway lanes (1




**US 380 Cross Section East of Community Ave. and West State Highway 5.**

**FIGURE 2**

east and 1 west) and 12 feet for the eastbound service lane. The 50-foot buffer on the southern ROW would be reduced to approximately 15 feet.

3. US Highway 380 between Community Ave. and west of State Highway 5 (1.4 miles) can be designed to minimize right-of-way (ROW) requirements and displacements. See Figure 2Six-Lane Freeway

   Elevating and cantilevering the freeway over the east and westbound service roads could reduce the (ROW) requirement for a 6-lane freeway from 278 feet to 170 feet, and require an additional 10 feet of ROW.

   The transition to an elevated freeway would begin at Community Avenue and transition back to grade level west of State Highway 5. The ROW requirement for the elevated section would be reduced to 170 feet, and required an additional

10 feet of ROW which significantly reduces displacements of commercial properties west of US 75. The existing ROW between Rosebud Blvd. and Church Street narrows from 160 feet to 120 feet, which will require an additional 50 of ROW for a 6-lane or 8-lane freeway.

The ROW requirement for the US 380 and US 75 interchange would require a larger footprint. However, the freeway transition ramp's could be designed to minimize ROW impacts. The transition ramp from southbound North Dallas Tollway traveling over the southbound Dallas Parkway (the service road) is an example of how the interchange footprint can be minimized. See Figure 3.

**FIGURE 3**

3.1. Eight-Lane Freeway

An elevated 8-lane freeway west of US Highway 75 would require an additional 50 feet of ROW (220 feet). The total additional ROW beyond the existing ROW is approximately 35 feet. As with the 6-lane freeway, the 8-lane freeway interchange with US 75 would require a larger footprint.

The additional ROW requirement between Rosebud Boulevard and Church Street would likely increase to approximately 100 feet.

4. The design and cost of a 9-mile, 6-lane freeway, was estimated in 2016 to cost approximately $550 million, or $61 million per mile in 2018 dollars. An elevated freeway may add to construction and engineering costs, but the estimated cost is offset by reduction in ROW and displacement costs. The 8-lane freeway estimate is $684 million, or $76 million per mile in 2018 dollars.[2]

5. The Perryman Group completed a study on the *Potential Economic Effects of Converting Portions of US 380 in Collin County to a Limited Access Roadway*.[3] The study was completed in 2017 and presented to the County Court, McKinney City Council, and other interested groups.

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[2] *US 380 Feasibility Study* by AECOM, August 2016, Commissioned by TxDOT, Design and Costs, page 50.

[3] *Potential Economic Effects of Converting Portions of US 380 in Collin County to a Limited Access Roadway*, by The Perryman Group, January 2017, Summary of Study Findings, page 2

5.1. The Perryman Group stated in its Summary of Study Findings that "The results of this study clearly indicate that converting US 380 into a limited access roadway has significant economic benefits…" The study estimates the annual fiscal benefits for the City of McKinney to be $166.9 million ($173 million in 2018 dollars).

6. An examination of home sale prices along US 75 in Dallas from 1979 to 1997 "[r]evealed significant price effects of the corridor improvement phases. During the pre-planning phase, housing prices in the immediate vicinity of the freeway were negatively affected, while those further away were positively affected. During the planning phase, houses in the corridor appreciated at twice the rate of other Dallas properties. Prices declined more rapidly than those elsewhere in Dallas during the early construction phases (from 1987-1994). However, prices again improved during the final construction phase, as sections of the freeway began to reopen, and access improved."[4]

**B. <u>US 380 Proposed By-pass</u>**

1. The utility relocation, design, construction and right way acquisition for a 12-mile by-pass is estimated to cost $500 to $700 million for a 8-lane freeway. The estimate is based on previous studies and construction progress reports.

1.1. The AECOM study estimated US 380 freeway construction cost, including utility relocation and ROW acquisition, to be $76 million per mile in 2018 dollars.[5] Using the $76 million per mile cost estimate, the 12-mile 8-lane US Highway 380 by-pass is estimated to cost $900 million dollars. Construction requirements (overpasses, underpasses, etc.) are very similar to US Highway 380. However, the 8-lane freeway bypass will require an estimated 740 acres, which is close to three time the additional acreage requirement for upgrading US Highway 380 to a limited access freeway.

1.2. State Highway 130's 28 mile 4-lane northern segment was estimated in 2002 to cost $1.5 billion, or $54 million per mile - $76 million per mile in 2018 dollars. The State Highway 130 project's costs would have been much greater if a 6-lane or 8-lane limited access highway had been constructed, and the service roads completed for the 28-mile segment.[6] The proposed US Highway 380 by-pass estimated cost is $54 million per mile or $650 million.

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[4] *Cost of Right of Way Acquisition: Methods and Models for Estimation; Journal of Transportation Engineering 131 (3)*:193-204,2005

[5] *US 380 Feasibility Study* by AECOM, August 2016, Commissioned by TxDOT, Design and Costs, page 50.

[6] Texas State Highway 130, Current Route, Wikipedia; https://en.m.wikipedia.org/wiki/Texas_State_Highway_130

1.3. President George Bush Turnpike (State Highway 161) - Western Extension from State Highway 183 to I-20; 11.5 miles. The estimated cost at completion was $547 million, or $46 million per mile - $51 million per mile in 2018 dollars.[7] The proposed US Highway 380 proposed by-pass estimated cost is $51 million per mile or $610 million.

1.4. Chisholm Trail Parkway - I-30 to US Highway 67; 27.6 miles. The estimated cost at completion was $860 million plus $537 million for work by others. Total estimated cost is $1.4 billion, or $51 million per mile - $57 million per mile in 2018 dollars[7]. The proposed US Highway 380 proposed by-pass estimated cost is $57 million per mile or $680 Million.

2. The Acquisition of required ROW for the proposed by-pass may delay the much-needed project for several years. Administrators (both urban and rural) report that the time interval to acquire the needed ROW is typically three years, but it may stretch to seven years in some cases (Kockelman, et al., 2003).[8]

## C. Collin County

1. Collin County's economic success is well documented. The foundation of this success is the cooperation and partnerships which are necessary as Collin County continues to grow and prosper. Upgrading US Highway 380 is just one of many issues the county will confront in the future. The results will be judged on how well the communities work together to resolve their issues without imposing unreasonable demands on its neighbors.

2. The proposal to extend the proposed bypass alignment west of Custer Road adjacent to 1st Street in the Town of Prosper has pitted the residents of one community against another. While one can appreciate the City of McKinney's interest in minimizing any impacts on its residents, transferring the impacts to a adjoining community which pits one community against another erodes the regional successes for which Collin County is known.

[7] North Texas Tollway Authority, Semi-Annual Progress Report #2, 04/18/2012

[8] Cost of Right of Way Acquisition: Methods and Models for Estimation; Journal of Transportation Engineering 131 (3):193-204,2005

## D. SUMMARY

US Highway 380 has been in its current alignment for over forty years. The communities adjacent to US Highway 380 realized that at some point the highway would need to be expanded based on studies for future growth of the region. Some cities allow residential properties to be built along an existing highway – and some do not. Some people choose to buy homes along existing highways – and some do not.

Collin County is known for its partnerships. In fact, the well-documented success of the region rests on this foundation of cooperation. Regional and County plans for moving future traffic are well documented. Communities in the region and their citizens have made choices based on those plans. To drastically change regional transportation plans in a way that pits adjacent communities against one another breaks trust and erodes the regional success for which Collin County is known.

The preceding analysis shows that the existing alignment of US Highway 380 can be maintained while protecting residential communities that have located along its existing pathway. Building a by-pass that deviates from the existing alignment of US Highway 380 delays much needed improvements, increases costs, transforms neighborhoods, and creates division between communities in the region.

We, the citizens of Prosper, support the residents of Tucker Hill and Stonebridge by insisting that solutions such as those proposed in this paper be instituted to protect the quality of life for these citizens in McKinney. We strongly oppose any solution that moves the current alignment of US Highway 380 by building a by-pass to the West of the City of McKinney's current boundaries.