



US 377 Relief Route

TIGER FY 17 Grant Application

October 2017

City of Cresson, Hood and Johnson Counties, Texas

CSJs: 0080-11-001 and 0080-12-001

Texas Department of Transportation

Fort Worth District



Type of Application: Construction

Project Type: Highway

Grant Applicant: Texas Department of Transportation

Project Contact:

John Cordary, Jr.
Director of Transportation Planning & Development
Texas Department of Transportation
Fort Worth District Office
2501 SW Loop 820, Fort Worth, TX 76133
Phone: 817-370-6541
Email: John.Cordary@txdot.gov

DUNS Number: 8067825530000

Type of Applicant: Department of Transportation

Project Location:

City: Cresson
County: Hood
State: Texas

Urban or Rural Area: Rural

Requested Grant Funds: \$16,000,000

Table of Contents

SECTION I: PROJECT DESCRIPTION	1
1.1 Project Summary	1
1.2 Funding Request	3
1.3 Project Background.....	3
1.4 Detailed Project Description.....	8
SECTION II: PROJECT LOCATION	9
SECTION III: GRANT FUNDS, SOURCES AND USES OF PROJECT FUNDS.....	10
SECTION IV: MERIT CRITERIA.....	11
4.1 Primary Selection Criteria	12
4.1(a). Safety.....	12
4.1(b) State of Good Repair	12
4.1 (c) Economic Competitiveness	13
4.1 (d) Environmental Sustainability	14
4.1 (e) Quality of Life	14
4.2 Secondary Selection Criteria	15
4.2. (a) Innovation.....	15
4.2. (b) Partnership.....	15
SECTION V: PROJECT READINESS.....	17
5 (A) Technical Feasibility.....	17
5 (B) Project Schedule.....	18
5 (C) Environmental Permits and Reviews.....	18
5 (D) Assessments of Project Risks and Mitigation.....	18
SECTION VI: BENEFIT COST ANALYSIS.....	19
SECTION VII: COST SHARE	20
SECTION VIII: FEDERAL WAGE RATE CERTIFICATION.....	20
APPENDIX A: FINDING OF NO SIGNIFICANT IMPACT (FONSI)
APPENDIX B: LETTERS OF SUPPORT.....
APPENDIX C: BENEFIT COST ANALYSIS SUMMARY REPORT
APPENDIX D: FEDERAL WAGE RATE CERTIFICATION

List of Figures

Figure 1 - Project Location.....	1
Figure 2 - Existing traffic congestion at FWWR crossing.....	3
Figure 3 - Project Area Projected Population	4
Figure 4 - Region's Employment Growth by Industry (2016-2017).....	4
Figure 5 - Existing road conditions and at-grade railroad crossing	6
Figure 6 - Projected growth in traffic	7
Figure 7- Project site conditions	8
Figure 8 - US 377 Relief Route Diagram	9
Figure 9 - Location Map.....	10
Figure 10 - Development in the area.....	14
Figure 11 - US 377 Project Schedule	18

List of Tables

Table 1: Accidents Reported on US 377 and SH 171.....	6
Table 2: Estimated Total Project Costs	11
Table 3: Funding Amounts	11
Table 4: Benefit Cost Analysis Summary.....	20

SECTION I: PROJECT DESCRIPTION

1.1 Project Summary

The Texas Department of Transportation (TxDOT) **US 377 Relief Route** project is a critical new transportation route to improve mobility and safety along the US 377 and State Highway (SH) 171 corridors in the **rural** community of the City of Cresson. It will provide a much needed grade-separated railroad crossing over the Fort Worth and Western Railroad (FWWR) tracks. The proximity of the existing FWWR at-grade railroad crossing, 200 feet north of the US 377/SH 171 intersection, impedes traffic flow and causes excessive queuing of vehicles, particularly during peak travel periods. Notably, this particular crossing is the second most likely railroad crossing to have an accident in the State of Texas¹, furthering the need for project funding and delivery. Furthermore, US 377 is part of the Texas Highway Trunk System, but does not meet the TxDOT design criteria which states that Trunk routes should be at least four-lane divided highways with grade-separated railroad crossings.

*The FWWR at grade railroad crossing north of the US 377/SH 171 intersection is the **second** most likely railroad crossing to have an accident in the State of Texas.*

To improve mobility and safety on US 377 through the City of Cresson, a long term viable solution is the construction of a 3.02-mile Relief Route west of the existing US 377 that includes a grade separation over both the FWWR and SH 171 (Figure 1). The proposed roadway is a four-lane divided roadway with two 12-foot wide lanes in each direction. This improvement provides a long-term solution to reduce the identified traffic issues at the US 377/SH 171 intersection and FWWR at-grade crossing.

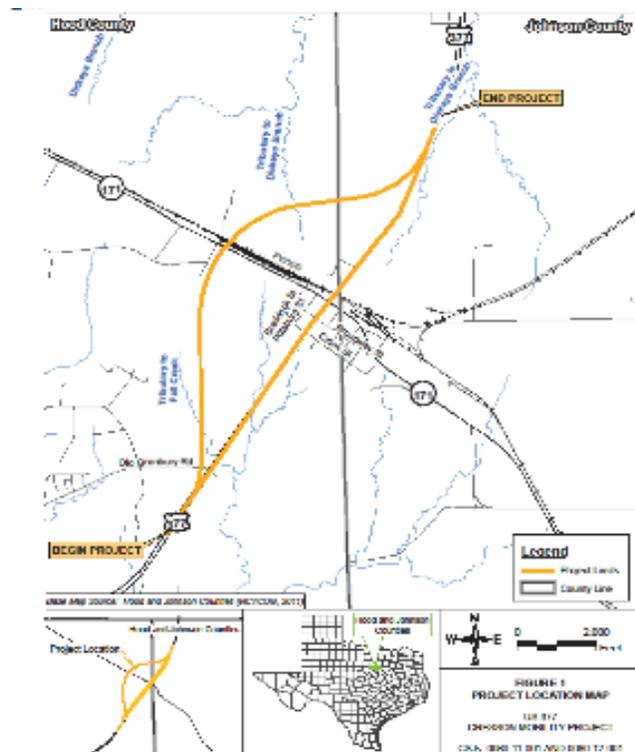


Figure 1 - Project Location

¹ Accidents Prediction Report, FHWA, January 1, 2008.

When completed the US 377 Relief Route will achieve the following primary objectives:

- Positively impact on the region by effectively improving access to a **reliable and safe** new transportation route for a **rural area**
- **Enhance reliability** and timely access to employment centers and job opportunities in the rapidly growing Dallas-Fort Worth-Arlington, Texas Metropolitan Statistical Area (the “Metroplex”)
- Provide a **grade-separated railroad crossing** for US 377 traffic
- Promote **regional connectivity**
- **Improve infrastructure** conditions on existing US 377
- **Reduce traffic congestion** on US 377 and SH 171
- **Improve safety** and reduce accidents by eliminating vehicle backups at US 377 and SH 171
- **Improve emergency response times** for first responders
- **Facilitate economic growth and competitiveness** by allowing for better access to jobs and more efficient movement of goods throughout the region

The benefits of constructing a US 377 Relief Road over 20 years has a benefit cost ratio (BCR) of 1.73:1 (discounted at 7%) and a Net Present Value (NPV) of \$53 million.

With **strong collaboration and partnership** from numerous stakeholders, including the City of Cresson, Hood County, the North Central Texas Council of Governments (NCTCOG), various federal, state and local officials, and public and private stakeholders; **innovative** ability for efficient and effective **project delivery**; **the availability of significant non-federal resources**; and direct project benefits for a rural area, the project strongly meets the goals and criteria of the TIGER grant program.

Strong collaboration and partnership makes this project a success.

An Environmental Assessment was prepared and the project has been environmentally cleared at the state level², meets all state and federal requirements, and is in the final design phase. In addition, TxDOT is working with the utility companies to relocate and clear the new right-of-way (ROW) corridor as it is acquired. The proposed action is supported by the NCTCOG and is consistent with the NCTCOG's financially constrained Mobility 2040 and the 2017–2020 Transportation Improvement Program (TIP)³.

² Finding of No Significant Impact (FONSI), September 20, 2017

³ North Central Texas Council of Governments 2017-2020 Transportation Improvement Program, Page 35

The project relieves congestion and safety hazards from the US 377/SH 171 intersection providing the measureable benefits of safety, state of good repair, economic competitiveness, environmental sustainability and quality of life. If this project is not constructed, the transportation network in this area will continue to show increased congestion and significantly hinder transportation access throughout the region in the future.



Figure 2 - Existing traffic congestion at FWWR crossing

1.2 Funding Request

TxDOT is seeking \$16.0 million of TIGER FY17 funding for the construction of the US 377 Relief Route. The TIGER funding requested will complete the funding package and enable the project to proceed. The total project cost is \$80.1 million which includes all costs including land acquisition, design engineering, utility relocation, and construction.

1.3 Project Background

The City of Cresson is located at the intersection of US 377 and SH 171. The city's municipal boundaries are in three counties: Hood, Johnson, and Parker counties. The City of Cresson was incorporated in 2001 and has a population of 786 (2016 Census estimate). Cresson is a rural community surrounded by ranchland and fallow pasture and home to 386 jobs, primarily in the areas of transportation and warehousing, retail trade, and waste management and remediation. WakeSport Ranch and Motorsport Ranch are two recreational businesses that are located in Cresson that attract many motorsport and surfing hobbyists traveling from outside the area.

Cresson is located between the City of Granbury and the City of Fort Worth along the US 377 corridor. Granbury, the county seat of Hood County, has a population of 7,978 and is located approximately 12 miles to the southwest. Fort Worth, located 24 miles to the northeast, is the 16th largest city in the United States and the fifth largest city in the State of Texas with a population of 741,206 (2010).

The study area is in the Dallas-Fort Worth-Arlington, TX Metropolitan Statistical Area (The Metroplex). The Metroplex serves as the economic and cultural hub of the region, commonly called North Texas. The US Census Bureau reports the population in the Metroplex as 7,102,796 (2015). The area's population has increased by about 250,000 people over the last two years, the third largest population increase in the nation behind Houston and New York and is expected to continue to grow significantly⁴. Population for Fort Worth is expected

⁴ Dallas-Fort Worth Metroplex, Wikipedia, October 6, 2017

to increase by 67% between 2010 and 2040 from 741,206 to 1,236,870. Population in the counties in the project area, Parker, Johnson, and Hood Counties, also are projected to grow exponentially between 2010 and 2040, by 78%, 96%, and 138% respectively.⁵ See Figure 3.

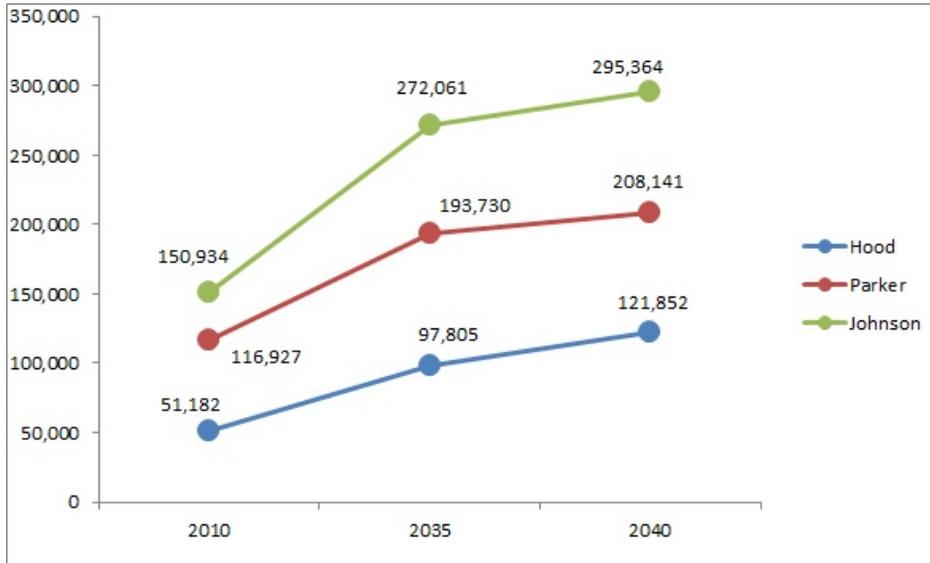


Figure 3 - Project Area Projected Population

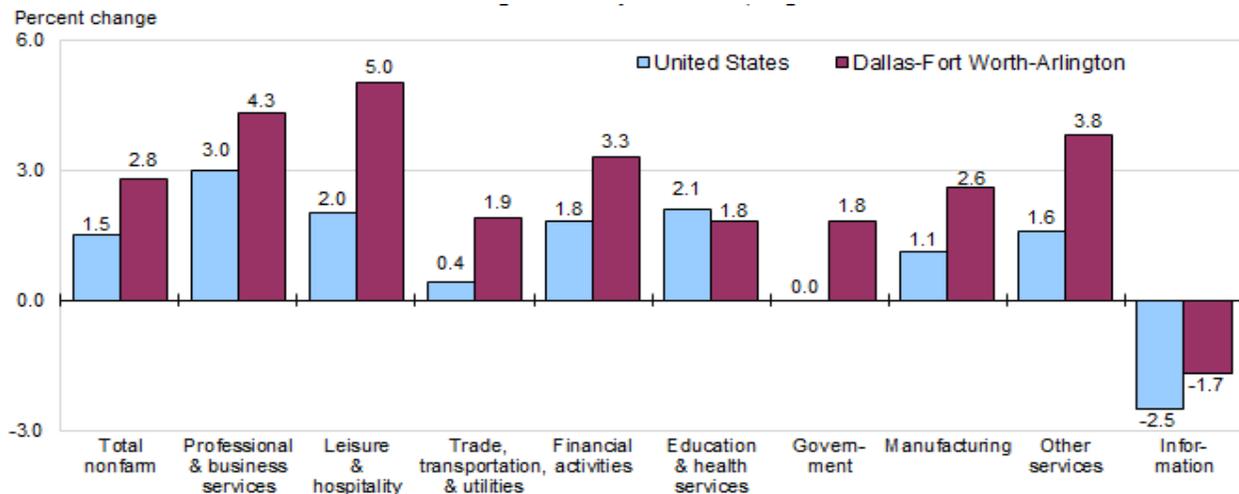
Employment in the area is also significant; in Hood, Johnson and Parker Counties, there are 23 major employers that each employ over 250 people. Total nonfarm employment in the Metroplex reached 3,612,900 in August 2017, up 96,700 jobs over the past year. From August 2016 to August 2017, local nonfarm employment rose 2.8 percent, above the national increase of 1.5 percent.⁶

Figure 4 - Region's Employment Growth by Industry (2016-2017)

⁵ Final Environmental Assessment of US 377 Relief Route, August 2017.

⁶ Bureau of Labor Statistics, US Department of Labor:

https://www.bls.gov/regions/southwest/news-release/areaemployment_dallasfortworth.htm



Source: U.S. Bureau of Labor Statistics.

US 377 provides regional access for those commuting to Fort Worth from “bedroom communities” and for commercial vehicles providing goods and services to Hood, Johnson and Parker counties, and the rest of the Metroplex region. US 377 is a four-lane divided highway that extends south from Interstate Highway (IH) 20 in the City of Fort Worth to just north of the City of Cresson. The highway transitions to a four-lane undivided highway as it passes through Cresson and widens back to a four-lane divided highway south of Cresson. From Cresson, US 377 continues through Hood County toward Granbury and cities in southwest Texas, ultimately ending at the Texas border town of Del Rio, Texas. The existing right-of-way (ROW) width ranges from 80 feet within the City of Cresson to 300 feet at the southern project limit with a typical width of 120 feet. The posted speed limit is 45 miles per hour (mph) on the undivided highway and 55 mph on the divided highway. US 377 provides regional access for those commuting to Fort Worth. The current (2015) average daily traffic (ADT) is 24,400 vehicles per day (vpd) through Cresson. Approximately 7% of the vehicles on US 377 in this area are heavy duty trucks.

Within the City of Cresson, US 377 intersects SH 171. The US 377/SH 171 intersection is signalized. SH 171 is a regional transportation route and southeast to northwest state route that starts at US Highway 84 in Mexia at the southern part of the State and ends at an intersection with US Highway 180 in Weatherford in the northern part of the State. The 2015 ADT on SH 171 within the City of Cresson is estimated to be 10,400 vehicles per day.

Approximately 200 feet to the north of the US 377 and SH 171 intersection is the FWR at-grade railroad crossing. The crossing is regulated by warning lights and gates. Traffic along US 377 is stopped numerous times per day by trains traveling through Cresson or trains switching tracks to enter



the yard located immediately to the west of the intersection, subsequently blocking the crossing. This results in excessive queuing along the roadways, particularly during peak periods. The primary cause of excessive queue delay is the result of the at-grade crossing coupled with the inefficiency of the US 377/ SH 171 intersection. This intersection does not have the capacity to discharge the queue build-ups efficiently following train crossings. A significant level of truck traffic also increases the congestion at the intersection.

Figure 5 - Existing road conditions and at-grade railroad crossing

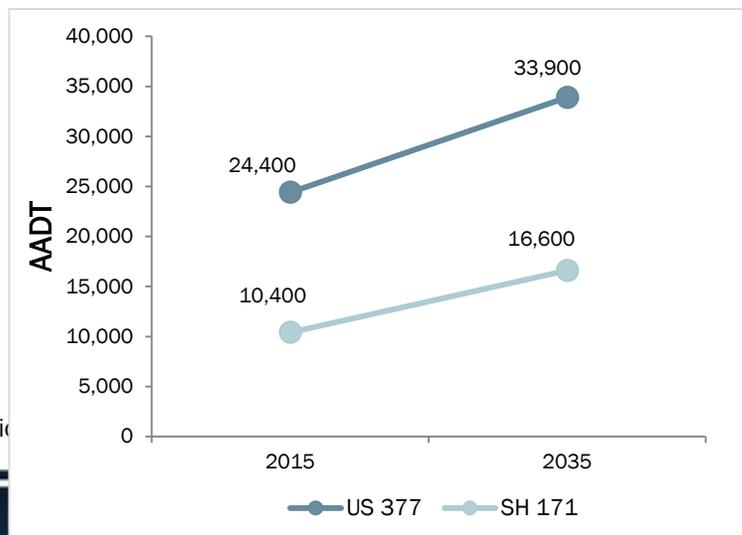
A study by the Texas Transportation Institute (TTI) (May 2008) reported findings that four FWWR through moves and nine switching moves were typical for that crossing each day. Some of these movements occur during peak traffic periods and cause extended travel delays and pose a safety risk to motorists. According to the Federal Highway Administration’s (FHWA) January 1, 2008 *Accidents Prediction Report*, this particular crossing is the second most likely railroad crossing to have an accident in the state of Texas. As shown in Table 1, there were 34 to 37 annual accidents along these roadway over a period of four years, some of which resulted in injury.

Table 1: Accidents Reported on US 377 and SH 171

		Number of Accidents by Year and Injury							
County	Roadway	2009		2010		2011		2012	
		Injury	Non-Injury	Injury	Non-Injury	Injury	Non-Injury	Injury	Non-Injury
Hood County	US 377	4	19	6	18	8	19	5	19
	SH 171	1	5	3	2	0	2	2	5
Johnson County	US 377	2	2	1	3	1	6	0	5
	SH 171	0	1	2	1	0	0	0	1
Total Per Year		34		36		36		37	

Source: TxDOT, April 2013.

Some of the accidents could be considered to be the result of motorists’ impatient movements in response to a lengthy queue time at the train crossing (i.e. disregarding a traffic light or following too closely). Of the total number of accidents reported, 51 occurred during peak travel times (i.e. 5:00 a.m. to 8:30 a.m. and 4:00 p.m. to 7:30 p.m.).



The best long term solution would be to provide a US 377 grade-separated railroad crossing.

Vehicular traffic on the US 377 and SH 171 corridors will continue to increase in line with population growth. The current ADT of 24,400 vpd on US 377 is expected to increase by 39% to 33,900 by 2035. The ADT on SH 171 is estimated to increase from 10,400 to 16,600 vpd, an increase of 60% over the 20 years.⁷ This growth will continue to put pressure on the US 377 and SH 171 corridors, causing significantly more congestion and increased safety concerns at the US 377/SH 171 intersection. The intersection analysis indicates that the intersection will operate at a Level of Service (LOS) E in 2035 for both the AM and PM peak hours given a “No Build” condition.⁸ A LOS E is considered to be unstable flow near capacity levels with poor levels of comfort and convenience.

In 2008, the NCTCOG and the TTI studied the US 377/SH171/FWWR intersection and provided short and long-term suggestions for the existing traffic *Figure 6 - Projected growth in traffic* problems. It was suggested that the best long-term solution would be to provide a US 377 grade-separated railroad crossing. In 2010, the TxDOT Fort Worth District began the process of developing conceptual alternatives for a proposed solution. Conceptual alternatives including a bridge over the railroad along the existing corridor, a tunnel under the railroad along the existing corridor, two relief routes along the western side of the City of Cresson and one relief route along the east side of the City of Cresson were studied.

Three public meetings and one public hearing were held for the proposed project. The public meetings were on May 13, 2010, December 12, 2011, and July 28, 2015 and the Public Hearing was held on February 25, 2014. After public review and comment, the preferred alternative was identified. Among the comments received for support for the project were⁹:

- 69 commenters expressed concerns regarding existing and potential impacts to emergency services if a US 377 Relief Route was not constructed.
- 31 commenters acknowledged that the proposed US 377 Relief Route is the less costly of the alternatives presented and many support this alternative for that reason.

⁷ *Finding of No Significant Impact (FONSI)*, September 20, 2017

⁸ *US 377 Mobility Study Project-Traffic Operational Analysis of Alternatives*, Civil Associates, Inc., July 30, 2010

⁹ *Public Meeting Documentation, US 377 Cresson Relief Route*, July 28, 2015

- The Elevated Through-Town Option that proposed a bridge over the railroad along the existing corridor would result in the displacement of six commercial structures and the acquisition of approximately four acres of additional ROW. This would directly impact the existing businesses the City of Cresson relies on for sales tax income and subsequently was not supported by the public.



1.4 Detailed Project Description

The US 377 Relief Route is 3.02 miles in length and begins approximately one mile south of the intersection of US 377 and SH 171 and ends approximately one mile north of the intersection. The US 377 Relief Route is designed as a four-lane divided roadway with two 12-foot wide lanes in each direction, 10-foot wide outside shoulders, and a 48-foot wide median including four-foot wide inside shoulders. The US 377 Relief Route would bridge over both SH 171 and the FWR, providing a grade-separated crossing of the railroad. An approximate total of 115 acres of ROW is required for the project; the proposed US 377 Relief Route requires a width of 240 feet of new ROW at locations where cut and fill are required for slopes, and ROW near intersections with US 377 at the beginning and end of the project. The required ROW property is currently zoned as agriculture and planned development.

Figure 7- Project site conditions

At the project termini, grade-separations with 14-foot wide ramps would provide connectivity to existing US 377. At the southern limit, the US 377 Relief Route would bridge over Old Granbury Road and ramps would allow access to the existing highway. At the northern project limit, the US 377 Relief Route would pass under a proposed access road and ramps would provide access. Travel on the proposed access road would be necessary for motorists continuing south on existing US 377 or those who have traveled north on the US 377 Relief Route and then want to travel south on existing US 377. Old Granbury Road and the proposed access road would include two 12-foot wide lanes in each direction and 10-foot wide shoulders.

The existing section of US 377 would remain in place and be re-categorized as Business 377. Mainly local traffic is expected to travel on that section of the roadway through the City of Cresson. See Figure 8.

An Environmental Assessment (EA) was prepared for the project and was approved by the FHWA on June 6, 2016 for further processing. The Finding of No Significant Impact (FONSI) was signed on September 20, 2017. (See Appendix A).

TxDOT has already engaged with property owners regarding land acquisition and has agreed to construct overpasses as a mitigation effort to link disconnected parcels. Coordination with utility companies is also underway.



Figure 8 - US 377 Relief Route Diagram

SECTION II: PROJECT LOCATION

The US 377 Relief Route will have a substantial impact at a regional level. US 377 is a major transportation corridor providing access from rural communities to the City of Fort Worth and the Metroplex. The Metroplex serves as the economic and cultural hub of the North Texas region. The project is necessary to meet the travel demand caused by the explosive population and employment growth in the Metroplex region. This growth will continue to put pressure on the US 377/SH 171 intersection, causing significantly more congestion and increased safety concerns.

The project is located near Cresson, Texas which borders Hood, Johnson and Parker Counties and is southwest of Fort Worth, Texas.

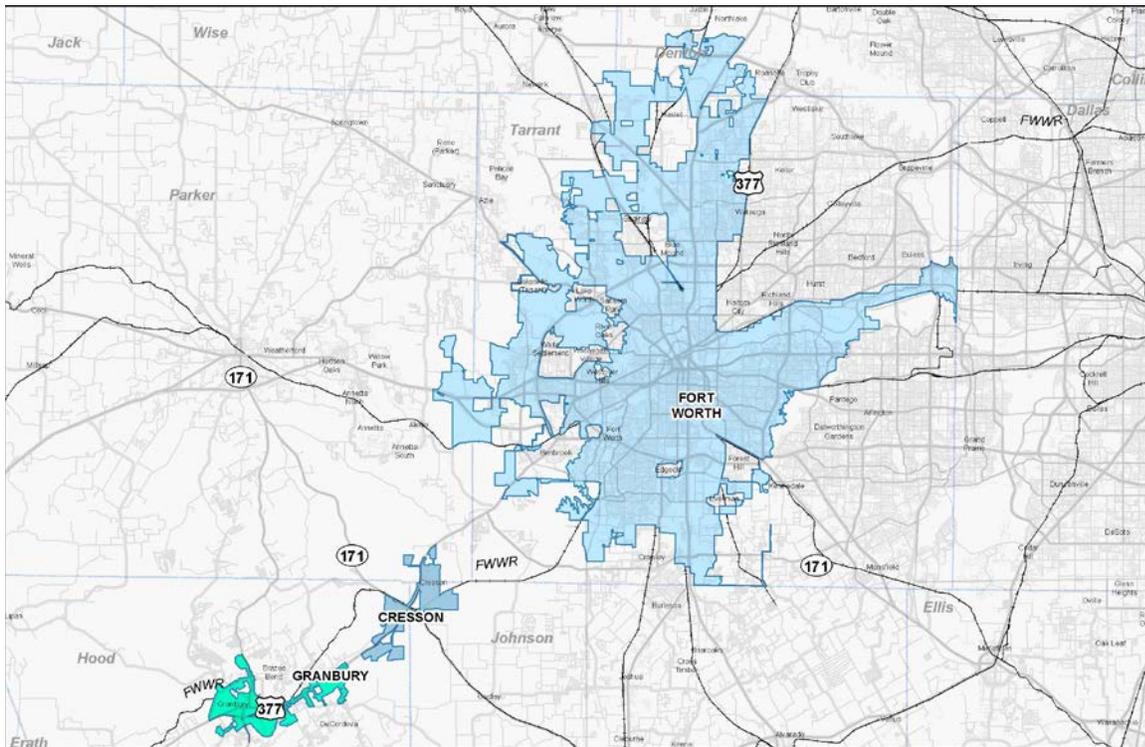


Figure 9 - Location Map

The project has been approved by the NCTCOG which is the Metropolitan Planning Organization (MPO). All projects need MPO approval prior to funding. This project is listed in the 2018 TxDOT Unified Transportation Program (UTP)¹⁰. The UTP is a 10-year planning process that guides the development of the state's transportation projects and outlines the priority projects which are necessary to allow safe and efficient travel for the motoring public.

SECTION III: GRANT FUNDS, SOURCES AND USES OF PROJECT FUNDS

TxDOT is seeking \$16.0 million of TIGER FY17 funding for the construction of the US 377 Relief Route. TxDOT is the lead project party and will act as the grant recipient. The TIGER funding being requested is required to complete the funding package and enable the project to proceed. The total project cost is \$80.1 million and includes land acquisition, design engineering, utility relocation and construction. The major budget line items are listed below in Table 2. Construction is estimated at approximately \$67 million.

¹⁰ 2018 Unified Transportation Program, TxDOT, Pages 107, 108

Table 2: Estimated Total Project Costs

	Construction CSJ		Total
	0080-11-001	0080-12-001	
Administrative and legal expenses	\$104,200	\$302,800	\$407,000
Land, structures, appraisals	\$2,584,700	\$1,045,300	\$3,630,000
Engineering fees	\$3,444,000	\$1,007,800	\$4,451,800
Construction	\$51,991,000	\$15,412,000	\$67,403,000
Utility	\$2,714,800	\$1,497,600	\$4,212,400
	\$60,838,700	\$19,265,500	\$80,104,200

The funding breakdown is shown in Table 3 below. State funding will be \$10.3 million and local funding from Hood County is \$11 million. The amount of local funds of almost \$22 million obligated to this project demonstrates the **significant non-federal resources** allocated to this project.

Table 3: Funding Amounts*

Description	Federal	State	Local
0080-11-001	\$29,600,000	\$7,400,000	\$11,000,000
0080-12-001	\$11,469,140	\$2,867,285	0
Total	\$41,069,140	\$10,267,285	\$11,000,000
TIGER Grant Amount Request	\$16,000,000		

* Total Project Cost is estimated

**As shown in the 2018 UTP approved August 2017.

SECTION IV: MERIT CRITERIA

The US 377 Relief Road project meets the TIGER 2017 primary and secondary criteria by providing the long-term benefits of safety, state of good repair, economic competitiveness, environmental sustainability, and quality of life. It is innovative in its project delivery and is supported by a broad range of federal, state, and local public and private stakeholders.

4.1 Primary Selection Criteria

4.1(a). Safety

The construction of the new US 377 Relief Route will provide safety improvements for the traveling public. The new bypass road and grade-separated railroad crossing will alleviate the congestion and queuing of vehicles at the US 377/SH 171 intersection with the expected effect of a reduction in accidents, including accidents with serious injuries. The FWWR crossing is considered to be the second most likely railroad crossing to have accidents in the State of Texas and introducing an alternative grade-separated railroad crossing will alleviate the amount of crossing vehicles, reduce the number of accidents and minimize the likelihood of vehicles going around lowered crossing gates. In addition, the new road will be a divided highway resulting in no “head-on” collisions.

The construction of the new US 377 Relief Route will provide needed safety improvements for the traveling public.

The US 377 Relief Route will also provide a safer and more efficient facility for emergency public services to use in the performance of their essential duties. Ambulance services come from the surrounding cities of Aledo, Weatherford, and Granbury. The need to cross the intersection when there is a train blocking the crossing or soon after has recently been causing problems with ambulance response times. The estimated response time is typically 20 minutes with no congestion issues at the US 377/ SH 171 intersection; however, when there are congestion issues, the response time could increase upwards to an hour due to the delays in crossing the railroad tracks. These delays have also caused the fire department and law enforcement agencies to extend their response times. Providing a bypass road will enable emergency responders a reliable and faster transportation route to respond to emergencies on either side of the problematic intersection.

4.1(b) State of Good Repair

The US 377 Relief Route project is consistent with the State of Good Repair goals of the US Department of Transportation, (i.e. “Maintain or improve the availability, reliability, and performance of the Nation’s transportation infrastructure, equipment, and facilities by ensuring that they are functioning as designed within their useful lives”). This project is consistent with the State’s efforts to maintain transportation facilities and address current and project vulnerabilities. Left unimproved, the existing operational and capacity issues of

Left unimproved, the existing operational and capacity issues of the US 377/SH 171 intersection will threaten the future transportation network's efficiency and mobility.

the US 377/SH 171 intersection will threaten the future transportation network's efficiency, the mobility of goods and people, and the economic growth in the Metroplex region.

If the No Build condition remains, the US 377/ SH 171 intersection would eventually be reduced to a LOS E, causing more trucks and vehicles to divert to other roadways in the study area, increasing traffic and maintenance issues. The US 377 Relief Route will reduce maintenance costs of the existing alignment of the US 377 roadway (i.e. Business 377); the amount of vehicular and truck traffic on Business 377 will decrease, reducing the maintenance cost of the 2.68-mile section.

The State of Good Repair goals also require a strategic approach to asset management by grantees. The US 377 Relief Road project is listed in the 2018 TxDOT UTP, a 10-year planning process that guides the development of the State's transportation projects. It sets out the priority projects necessary to allow safe and efficient travel for the motoring public.

4.1 (c) Economic Competitiveness

The study area is in the the Metroplex. The Metroplex encompasses 13 counties (including Hood, Johnson and Parker) and serves as the economic and cultural hub of the region, commonly called North Texas. The US Census Bureau reports the population in the Metroplex as 7,102,796 (2015). The area's population has increased by about 250,000 people over the last two years alone, the third largest population increase in the nation behind Houston and New York. The Metroplex region is expected to continue to grow significantly. Population for Fort Worth is expected to increase by 67% between 2010 and 2040. Population in the counties in the project area, Parker, Johnson, and Hood Counties, also are projected to grow exponentially between 2010 and 2040, by 78%, 96%, and 138% respectively. Employment in the area is also significant; in Hood, Johnson and Parker Counties, there are 23 major employers that each employ over 250 people. Total nonfarm employment in the Metroplex region reached 3,612,900 in August 2017, up 96,700 over the past year. From August 2016 to August 2017, local nonfarm employment rose 2.8 percent, higher than the national increase of 1.5 percent.

The area's population has increased by 250,000 people over the last two years alone. The region is expected to continue to grow exponentially.

The cities of Dallas and Fort Worth are the two central cities of the Metroplex. The Metroplex contains the largest Information Technology (IT) industry base in the State with a large number of corporate IT projects, computing and telecommunication firms. The Texas

farming and ranching industry is based in Fort Worth. Other major employers, including American Airlines and Southwest Airlines, are located in these cities.

Maintaining accessibility in the region is as critical as keeping the roadways functioning in an efficient manner. Proactively correcting projected vulnerabilities in the roadway network is key. The communities southwest of Fort Worth need reliable and timely access to employment centers. Reliable access will allow the area to continue to grow economically, resulting in additional growth in residential areas and employment centers.



Figure 10 - Development in the area

The preferred alternative also protects the economic competitiveness of the City of Cresson. The public rejected the Elevated Through-town Option as they felt it would be detrimental to displace six viable businesses. The preferred alternative would not result in any direct commercial displacements and any existing or future business located along Business 377 would be visible from the US 377 Relief Route. Motorists using SH 171 would maintain their existing movements at the US 377/SH 171 intersection and would continue to pass through downtown Cresson as would vehicles that choose to stay on Business 377. This would maintain existing commerce activities within Cresson. Based on 2035 traffic projections, approximately 9,000 to 15,000 vehicles per day (vpd) would continue to use Business 377 through town to either access local streets or businesses while approximately 20,000 to 22,000 vpd would divert to the US 377 Relief Route.

4.1 (d) Environmental Sustainability

The introduction of a US 377 Relief Route will result in a reduction in delays and will substantially improve air quality and energy efficiency. The project will allow for continued travel in the region without occurrence of excessive queuing at the US 377/SH 171 intersection. The benefits of a project that allows for greater mobility for a high volume of truck traffic also results in greater air quality benefits.

An Environmental Assessment was prepared for the project¹¹. The engineering, social, and environmental investigations conducted indicate that the proposed project would have no significant impact on the quality of the human environment. A FONSI was received and is in Appendix A.

4.1 (e) Quality of Life

¹¹ Final Environmental Assessment US 377 Relief Route, August 2017

The project improves connectivity, reduces commuter times, and reduces driver frustration with long wait times at the railroad crossing, improving the drivers' quality of life. There also is a positive impact on the lives of Cresson residents who currently cope with long lines of traffic on the two major arterials that bisect their community. This traffic impedes the residents' travel patterns restricting them from doing errands or navigating within the city limits.

The US 377 Relief Route allows for better and quicker access to jobs, health care, and other critical destinations in the Metroplex. It will allow for another transportation option for commuters to use when commuting from a rural environment to a place of work, a health care facility, or a recreational destination. The greatest benefit calculated in the benefit cost analysis is the time savings drivers and passengers of vehicles using the proposed US 377 relief route will enjoy. A US 377 Relief Route with a grade separation over SH 171 and FWWR tracks, manifests in reduced traveling and idling time. The Relief Road will also reduce transportation costs as it will reduce idling time and less gasoline consumption.

4.2 Secondary Selection Criteria

4.2. (a) Innovation

TxDOT has initiated an innovative and strategic approach to project development and delivery due to land owner challenges. In order to mitigate land acquisition with landowners whose property will be bisected by the US 377 Relief Road, the project will construct overpass structures to provide a physical linkage between divided parcels. This mitigation strategy has been supported by the land owners.

In order to remain on schedule, project construction can be phased and concentrated in certain sections of the project area. If necessary, TxDOT will acquire certain parcels of land first and construct in that area while land acquisition in other parts of the study area is taking place. This improves the project delivery and efficiency of the construction, resulting in the project staying on schedule. Land acquisition negotiations are already underway in targeted sections of the study area. Land acquisition is expected to be completed by July 2018.

4.2. (b) Partnership

The project is part of a statewide focused effort to improve the roadway infrastructure in Texas, and has a positive benefit to rural communities. The US 377 Relief Road project has demonstrated strong support from the traveling public among a broad range of stakeholders, including those from federal, state, regional and local jurisdictions, the FWWR, and private partners. These partners understand the benefits of improving access to jobs and other critical destinations in the region.

TxDOT is the grant level participant and will be responsible for the construction of this project. This project is listed in the 2018 TxDOT UTP which identifies the priority projects which are necessary to allow safe and efficient travel for the motoring public. TxDOT has actively engaged the local agencies and private companies impacted by this project throughout the

NEPA process and is continuing engagement through the design and ROW acquisition process.

Private Partnering: Because of the at-grade crossing, TxDOT has coordinated with the FWWR on the crossing and the new bridge location including assistance with the design concepts for the various alternatives. FWWR will be cooperating with TxDOT during the construction of the project.

The project has letters of support from:

Steve F. Berry, Commissioner, Precinct 4, Hood County

Darrell Cockerham, Hood County

The Honorable W.R. (Bob) Cornett, City of Cresson

Ike Thomas, Cresson Crossroads

Letters of support are included in Appendix B.



SECTION V: PROJECT READINESS

The US 377 Relief Road project is in the final design stage with letting planned for August 2018 and construction starting in November 2018. Property owners have been contacted and negotiations have started; it is expected that land acquisition will be completed by July 2018. Utility coordination has also been initiated. Project completion will be November 2021. The project schedule meets the timeframe of the TIGER spending agreement.

5 (A) Technical Feasibility

The US 377 Relief Route is 3.02 miles in length and begins approximately one mile south of the intersection of US 377 and SH 171 and ends approximately one mile north of the intersection. The US 377 Relief Route is designated as a four-lane divided roadway with two 12-foot wide lanes in each direction, 10-foot wide outside shoulders, and a 48-foot wide median which includes four-foot wide inside shoulders. The US 377 Relief Route would bridge over both SH 171 and the FWR, providing a grade separated crossing of the railroad. An approximate total of 115 acres of ROW is required for the project; the proposed US 377 Relief Route requires a width of 240 feet of new ROW at locations where cut and fill are required for slopes, and ROW near intersections with US 377 at the beginning and end of the project. The required ROW is on property currently zoned as agriculture and planned development.

At the project termini, grade-separations with 14-foot wide ramps would provide connectivity to existing US 377. At the southern limit, the US 377 Relief Route would bridge over Old Granbury Road and ramps would allow access to the existing highway. At the northern project limit, the US 377 Relief Route would pass under a proposed access road and ramps would provide access. Travel on the proposed access road would be necessary for motorists who want to continue south on existing US 377 or those who have traveled north on the US 377 Relief Route and then want to travel south on existing US 377. Old Granbury Road and the proposed access road would include two 12-foot wide lanes in each direction and 10-foot wide shoulders.

The existing section of US 377 would remain and be re-categorized as Business 377. It is expected that mainly local traffic would travel on that section of the roadway through the City of Cresson.



5 (B) Project Schedule

The schedule in Figure 11 shows key milestone dates. The schedule meets the statute of obligating TIGER funds within three years of the end of the fiscal year for which they are authorized (i.e. by September 30, 2020).

Phases	2018							2019	2020	2021
	May	June	July	August	September	October	November	---->	---->	November
PS & E Complete	█									
Right of Way Acquisition		█	█	█						
Project Letting				█						
Utilities Relocated					█	█				
Construction							█	█	█	█

Figure 11 - US 377 Project Schedule

5 (C) Environmental Permits and Reviews

The project has been environmentally cleared. An Environmental Assessment was completed (August 2017) and a Finding of No Significant Impact (FONSI) was received.

The project followed the environmental approval process in obtaining the FONSI. The Public Meeting and Hearing and detailed information on this effort can be found at the following website address:

<http://www.txdot.gov/inside-txdot/projects/studies/fort-worth/us-377-171.html>

The proposed action is consistent with the NCTOG's financially constrained Mobility 2040 and the 2017–2020 TIP, as amended, both of which were initially found to conform to the Texas Commission on Environmental Quality (TCEQ) State Implementation Plan (SIP) by FHWA and the Federal Transit Administration (FTA) on September 7, 2016.

5 (D) Assessments of Project Risks and Mitigation

A key factor in the success of this project is the identification of project risks and mitigation strategies. TxDOT is well aware of the responsibilities of a TIGER grant, ensuring that the project schedule is reasonable, and that there are no risks of delays in satisfying federal requirements.

Although there are project risks related to all construction projects and projects requiring land acquisition, TxDOT has initiated measures to reduce the risks identified. TxDOT has started negotiations with property owners, offering incentives such as overpass structures, to mitigate any negative impact the project may have on private property. TxDOT has also identified a construction phasing scheme that can be coordinated with the status of the land acquisition as necessary. The land acquisition will be completed in areas targeted for the first phases of construction so that the project can remain on schedule.

As the project goes to construction, the Project Manager and the project inspectors will be responsible for direct oversight of the project and the ongoing risk identification process. The risk management process consists of five phases which are to Identify, Analyze, Respond, Track, and Control project risks. The process allows the project partners to assess the identified risks, determine the probability and impacts of identified risks, develop mitigating strategies, develop contingency plans, implement strategies and plans, and monitor risk status. A risk list will be used for tracking risks throughout the project.

SECTION VI: BENEFIT COST ANALYSIS (BCA)

The 2.68-mile stretch of US 377 through Cresson, Texas—an undivided, four-lane roadway—creates a bottleneck in the commuter corridor between Granbury and the Fort Worth Metroplex, largely due to the proximity of an at-grade railroad crossing to the signaled intersection with SH 171. Furthermore, US 377 is part of the Texas Highway Trunk System, but does not meet the Texas Department of Transportation (TxDOT) design criteria which states that Trunk routes should be at least four-lane divided highways with grade-separated railroad crossings. The State has analyzed alternatives for increasing the vehicular capacity in this area and determined that a 3.02-mile, access-controlled highway Relief Route for US 377 west of Cresson is the most viable option.

The greatest benefit calculated in this analysis is the time savings drivers and passengers of vehicles using the proposed US 377 Relief Route will enjoy. A US 377 Relief Route with a grade separation over SH 171 and FWR tracks, as well as over Old Granbury Road and under a proposed access road, manifests in reduced traveling and idling time and fewer vehicle-train crashes. These benefits are partially offset with additional costs (“disbenefits”) related to a longer—albeit faster—route, such as increased vehicular operating costs, and higher emissions due to greater miles traveled. While a US 377 Relief Route will improve emergency response times when slow-moving trains occupy the FWR at-grade crossing, those benefits and a few others are not readily translated into dollars (“monetized”), so are mentioned, but not directly incorporated in the BCA.

The costs associated with a US 377 Relief Route include not only the cost of the infrastructure itself, but also environmental review (already completed), engineering design (in process), and traffic control during construction. Total cost of the project is \$80.1 million.

All monetary values are stated in 2016 dollars, as directed by the U.S. Department of Transportation (USDOT) in its Benefit-Cost Analysis Guidance for TIGER and INFRA Grants. Benefits were estimated over a 20-year period beyond the 4-year period to complete design and construction of the project. The Relief Route and related structures will have a longer effective life, likely about 75 years, so at the end of the analysis period, a residual value was estimated as one final benefit. USDOT guidelines for benefit-cost analyses were followed, including guidelines for valuing travelers' time, injuries, and emissions, for discounting future cash flows, and for categorizing benefits

The BCA suggests that the benefits associated with the proposed Relief Route for US 377 through Cresson, Texas, exceed the costs.

Table 4: Benefit Cost Analysis Summary (\$ in Millions)

Description	Estimate (20-Year Summary)	Benefit	Discounted (7%)
Net Benefits	\$355		\$125
Costs	\$80		\$72
B-C Ratio	4.44 : 1		1.73 : 1
Net Present Value			\$53

The Benefit Cost Analysis Summary Report is included in Appendix C.

SECTION VII: COST SHARE

\$58.1 million of funding will be from federal sources and almost \$22.0 million in funding will be provided by the State of Texas and Hood County. The amount of matching funds obligated to this project demonstrates the significant non-federal resources allocated to this project

SECTION VIII: FEDERAL WAGE RATE CERTIFICATION

TxDOT follows federal wage rate requirements and the federal wage rate certification is provided in Appendix D.

APPENDIX A: FINDING OF NO SIGNIFICANT IMPACT (FONSI)



Finding of No Significant Impact for a FHWA Project

Proposed Action: US 377 Relief Route

Project Limits: Approximately one mile south of SH 171 to approximately one mile North of SH 171

City: Cresson **County:** Hood and Johnson **State:** Texas

TxDOT CSJ(s): 0080-11-001 & 0080-12-001

In accordance with 23 CFR Section 771.119 and Section 771.121, the Texas Department of Transportation (TxDOT) has determined that US 377 Cresson Relief Project will not have a significant impact on the human or natural environment.

This Finding of No Significant Impact (FONSI) for the Preferred Alternative is based on the final Environmental Assessment dated August 2017 and the entire project record. This decision documents the selection of Alternative B1, presented in the final EA as the Preferred Alternative, which is described as:

The proposed project is a 3.02-mile, four-lane relief route west of US 377 and the City of Cresson in Hood and Johnson Counties, Texas. The proposed project begins approximately one mile south of the intersection of US 377 and SH 171 and ends approximately one mile north of the same intersection. The proposed roadway would be a four-lane divided roadway with two 12-foot wide lanes in each direction, 10-foot wide outside shoulders, and a 48-foot wide median which includes four-foot wide inside shoulders. The proposed relief route would bridge SH 171 and the Fort Worth and Western Railroad. The proposed roadway would be constructed over SH 171 and the railroad on two parallel bridges which would each consist of two 12-foot wide lanes, four-foot wide inside shoulders, and 10-foot wide outside shoulders.

At the project limits, the proposed relief route would be grade-separated with 14-foot wide ramps connecting to existing US 377. At the southern limit, the relief route would bridge over Old Granbury Road and the ramps would allow access to the existing highway. At the northern project limit, the relief route would pass under a proposed access road and the ramps would provide access. Travel on the access road would be necessary for motorists who want to continue south on existing US 377 or those who have traveled north on the relief route and then want to travel south on existing US 377. Old Granbury Road and the proposed relief route would be constructed with two 12-foot wide lanes in each direction and 10-foot wide shoulders. Reconstruction of Old Granbury Road would begin at the existing US 377 and extend for 0.1 mile under the proposed relief route.

A Notice of Availability of the draft EA was issued on January 26, 2014.

A public hearing for this project was held on February 25, 2014.

As a result of a post-Public Hearing Public Meeting on July 28, 2015, Section V. (Public Involvement) of the EA was amended to reflect said meeting. Some editorial revisions and updates to several resource sections were made to reflect the latest available data and standards. All other information from the original EA remained the same.

Public Hearing Documentation has been prepared and is available for review on request.



Finding of No Significant Impact for a FHWA Project

The final EA, Public Hearing documentation, July 28, 2015 Public Meeting documentation, and reports contained in the file of record have been independently evaluated by TxDOT and determined to adequately and accurately discuss the need, purpose, alternatives, environmental issues, impacts of the proposed project, and appropriate mitigation measures. These documents provide sufficient evidence and analysis for determining that preparation of an Environmental Impact Statement is not required. These documents are incorporated by reference into this decisional document.

Based upon TxDOT's review and consideration of the analysis and evaluation contained in the EA for this project, and after careful consideration of all social, economic, and environmental factors, including input from the public involvement process, TxDOT hereby issues this Finding of No Significant Impact for the US 377 Relief Route project from approximately one mile south of SH 171 to approximately one mile north of SH 171.

TxDOT will ensure adherence and completion of all project commitments described in the final EA. TxDOT will ensure that any and all local, state, or federal permit requirements and conditions are met and otherwise complied with.

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by TxDOT pursuant to 23 U.S.C. 327 and the Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

TxDOT Environmental Affairs Division Director

9/20/17

Date

APPENDIX B: LETTERS OF SUPPORT



STEVE F. BERRY
COMMISSIONER, PRECINCT 4
HOOD COUNTY
1410 West Pearl Annex I
GRANBURY, TEXAS 76048
817-579-3300, FAX 817-579-0396



H. REGIONAL OFFICE - FW
TXDOT MAILROOM

OCT 17 2013

October 16, 2013

Brian Barth
TXDOT Ft Worth District Office
2501 SW Loop 820
Ft Worth Tx 76133

Brian

I am excited to attach the Hood County/TXDOT MOU for the Hwy 377/I1wy 171 interchange at Cresson TX. I know this railroad crossing and interchange have been a very busy and public interest area for 7 years I have been in office and many of us have worked on a permanent solution. Hood Co and TXDOT have looked at interchanges, complets, bypasses, railroad safety arms and long awaited environmental studies for the current relief route plan. I sincerely hope this project finds support (internally at TXDOT and politically from City, County and State leadership) as well as funding methods from all involved. We already have developed a partnership with Michael Morris at NCTCOG in Arlington for funding in Johnson County and for this much needed project. Hood County is supportive of this project both financially and for quality of life issues. This crossing and intersection have long been a delay and headache to TXDOT, Hood County, and Ft Worth Western Railroad, Cresson, Granbury and all of our citizens.

Please let me know if and how I can assist you in moving this project forward as soon as possible and look forward to the date of the Public Meeting.

Respectfully

Steve Berry
Hood Co Commissioner Pet 4

Cc- State Senator Brian Birdwell
State Representative Jim Keffer
TXDOT Director Phil Wilson



**HOOD COUNTY
COUNTY JUDGE**

DARRELL COCKERHAM

October 4, 2017

100 E. Pearl Street
Granbury, TX 76048

817-579-3200
817-579-3213 Fax
dcockerham@ju.hood.tx.us

The Honorable Elaine Chao
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue SE
Washington, DC 20590

RE: TxDOT's FY2017-2018 TIGER application for US 377 Cresson Relief Route in Hood County, Texas

Dear Secretary Chao,

I would like to express our support for the Texas Department of Transportation's TIGER Grant application for the US 377 Cresson Relief Route project in Hood County, Texas.

As population and industry continue to boom in Texas, it is crucial not to overlook the rural areas contributing to that growth. In order to keep traffic moving and businesses operating efficiently, the Texas Department of Transportation (TxDOT) is developing plans for a relief route on US 377 around the City of Cresson and to bypass an at-grade railroad crossing and a highway intersection at SH 171. To complete the funding needed for this urgent project, TxDOT has submitted a TIGER Grant application for \$16 million. I strongly support this project and respectfully request you give the application careful consideration.

US 377 in Hood County carries heavy commuter traffic into the Dallas Fort Worth Metroplex from Granbury as well as truck traffic related to freight and energy sector activities. This traffic is frequently impacted by switching movements at the railroad freight yard in Cresson and hinders the quality of life for the citizens of Hood County. A strong collaborative effort from a broad range of stakeholders is underway to deliver this project, including input from state and federal elected officials, mayors, county officials, ranch owners, land developers, and commuters. Additionally, the US 377 Cresson Relief Route project is environmentally cleared and will soon be shovel ready.

Total costs for this project amount to \$79 million, with \$52 million already identified by the state and \$11 million already identified by Hood County. The TIGER Grant award of \$16 million will complete the funding needed to begin executing this project.

I understand you have received many strong applications; however, rural projects such as these have a ripple effect throughout Texas and therefore our entire nation's economy. Thank you for your consideration.



City of Cresson

P.O. Box 619
Cresson, Texas 76035

October 9, 2017

The Honorable Elaine Chao
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue SE
Washington, DC 20590

RE: TxDOT's FY2017-2018 TIGER application for US 377 Cresson Relief Route in Hood County, Texas

Dear Secretary Chao,

The City of Cresson would like to express our support for the Texas Department of Transportation's TIGER Grant application for the US 377 Cresson Relief Route project in Hood County, Texas.

As population and industry continue to boom in Texas, it is crucial not to overlook the rural areas contributing to that growth. In order to keep traffic moving and businesses operating efficiently, the Texas Department of Transportation (TxDOT) is developing plans for a relief route on US 377 around the City of Cresson and to bypass an at-grade railroad crossing and a highway intersection at SH 171. To complete the funding needed for this urgent project, TxDOT has submitted a TIGER Grant application for \$16 million. I strongly support this project and respectfully request you give the application careful consideration.

US 377 in Hood County carries heavy commuter traffic into the Dallas-Fort Worth Metroplex from Granbury as well as truck traffic related to freight and energy sector activities. This traffic is frequently impacted by switching movements at the railroad freight yard in Cresson and hinders the quality of life for the citizens of Hood County. A strong collaborative effort from a broad range of stakeholders is underway to deliver this project, including input from state and federal elected officials, mayors, county officials, ranch owners, land developers, and commuters. Additionally, the US 377 Cresson Relief Route project is environmentally cleared and will soon be shovel ready.

Total costs for this project amount to \$79 million, with \$52 million already identified by the state and \$11 million already identified by Hood County. The TIGER Grant award of \$16 million will complete the funding needed to begin executing this project.

I understand you have received many strong applications; however, rural projects such as these have a ripple effect throughout Texas and therefore our entire nation's economy. Thank you for your consideration.

The City of Cresson emphasize our support of this regionally and nationally important project and thank you for your consideration and hopeful selection of the US 377 Cresson Relief Route project for the TIGER program.

Sincerely,

W.R. Cornett
Mayor

TXDOT-- FTW
OCT 10 2017
DISTRICT MAIL ROOM



October 4, 2017

The Honorable Elaine Chao
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue SE
Washington, DC 20590

RE: TxDOT's FY2017-2018 TIGER application for US 377 Cresson Relief Route in Hood County, Texas

Dear Madam Secretary Chao:

Cresson Crossroads, LLC would like to express its support for the Texas Department of Transportation's TIGER Grant application for the US 377 Cresson Relief Route project in Hood County, Texas.

As population and industry continue to boom in Texas, it is crucial not to overlook the rural areas contributing to that growth. In order to keep traffic moving and businesses operating efficiently, the Texas Department of Transportation (TxDOT) is developing plans for a relief route on US 377 around the City of Cresson and to bypass an at-grade railroad crossing and a highway intersection at SH 171. To complete the funding needed for this urgent project, TxDOT has submitted a TIGER Grant application for \$16 million. Cresson Crossroads, LLC and its managers strongly support this project and respectfully request you give the application careful consideration.

US 377 in Hood County carries heavy commuter traffic into the Dallas-Fort Worth Metroplex from Granbury as well as truck traffic related to freight and energy sector activities. This traffic is very often impacted by switching movements at the railroad freight yard in Cresson and hinders the quality of life for the citizens of Hood County. A strong collaborative effort from a broad range of stakeholders is underway to deliver this project, including input from state and federal elected officials, mayors, county officials, ranch owners, land developers, and commuters. Additionally, the US 377 Cresson Relief Route project is environmentally cleared and will soon be shovel ready.

P.O. Box 2337
110 N Crockett St.
Granbury, TX 76048

817.243.8130

APPENDIX C: BENEFIT COST ANALYSIS SUMMARY REPORT

(Note: Submitted as a separate document)

APPENDIX D: FEDERAL WAGE RATE CERTIFICATION