

U.S. Department of Transportation

National Infrastructure Investments Grant Program

“2012 TIGER Discretionary”

GRANT APPLICATION

Project Name: US 77 at La Parra Avenue Overpass

Project Type: Rural Road and Bridge

Funds Requested: \$ 5,653,201 (50% of total project)

Project Cost: \$11,306,403

DUNS #: 806782553

EIN / TIN: 74 6000170

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Supporting Documentation can be found at: <http://www.txdot.gov/business/rail/tiger2012.htm>

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I. Project Description

A. Introduction

The proposed project would construct an overpass along US 77 at La Parra Avenue in the town of Sarita, Kenedy County, Texas. This would convert an at-grade intersection to a grade-separated intersection, with US 77 crossing over La Parra Avenue. The limits of the project are from 0.87 miles south of La Parra Avenue to 0.71 miles north of La Parra Avenue, having a total length of 1.578 miles.

US 77 will be upgraded to national interstate highway design standards within the project limits. It will become a controlled access freeway consisting of main lanes and frontage roads. A frontage road in the northbound direction will be constructed to give access to La Parra Avenue. The existing southbound roadway will remain in place as a frontage road once the overpass is completed, and will be overlaid as part of the project. The main lanes will consist of two 12-foot travel lanes with a 4-foot inside shoulder and a 10-foot outside shoulder in both the northbound and southbound directions. Entrance and exit ramps will be constructed north and south of the project termini, which will serve to merge the new main lanes with the existing travel lanes. Additionally, La Parra Avenue will also be improved within the existing US 77 right-of-way (ROW), from an existing 24-foot roadway section to a proposed 44-foot roadway section with two 14-foot travel lanes and 8-foot shoulders. The existing US 77 median crossover at Cuellar Avenue will be removed, but traffic will have access to frontage roads. All construction would be contained within existing ROW and no additional ROW would be required.

The US 77 corridor serves as a critical link in the regional network as well as the state and national transportation networks. On the regional level, US 77 is a major arterial for the city of Sarita serving local trips to and from work, school, shopping, etc. On the state and national level, US 77 serves as a principal route for vehicular traffic and heavy cargo trucks traveling between Mexico and the United States. The highway connects Matamoros, Mexico with Brownsville, Harlingen, Sarita, and Corpus Christi, Texas; as well as several smaller communities along the route. US 77 is included in planning for the future Interstate 69 facility, and US 77 connects to the existing, short segment of I-69 located near Corpus Christi. I-37 also connects to US 77 and I-69 near Corpus Christi. The corridor also serves vacation traffic headed to or from beaches and other tourist destinations in the Lower Rio Grande Valley.

Currently, the at-grade intersection located at La Parra Avenue is signalized with a flashing yellow light and Average Annual Daily Traffic (AADT) counts range from 9,800 to 10,000. This intersection provides access to the community of Sarita, including the Kenedy County Courthouse, the US Post Office, Sarita Elementary School, and other public buildings and businesses. Students are bused in from surrounding ranches and school traffic is forced to mingle with highway traffic without the benefit of dedicated entrance/exit ramps. This situation results in slower traffic speeds along US 77, reduced overall mobility, and an increased potential for conflicts between through traffic on US 77

and local traffic on La Parra Avenue. The safety and mobility concerns are further complicated by the presence of heavy trucks on the facility.

The above improvements are needed to enhance safety and mobility and to minimize the potential for accidents within the project area. This will be accomplished as previously described; by constructing continuous, controlled-access main lanes, continuous frontage roads, entrance/exit ramps, and a grade-separated interchange at La Parra Avenue. It is estimated that the project will save over \$25.5 million over a 20 year period and has a benefit-cost ratio of 2.26 to 1 for that period.

A map of the state location of the project is shown in Figure 1. The project area is shown in Figure 2. An aerial photograph of the location is shown in Figure 3. Maps and photographs are also available at <http://www.txdot.gov/business/rail/tiger2012.htm>.

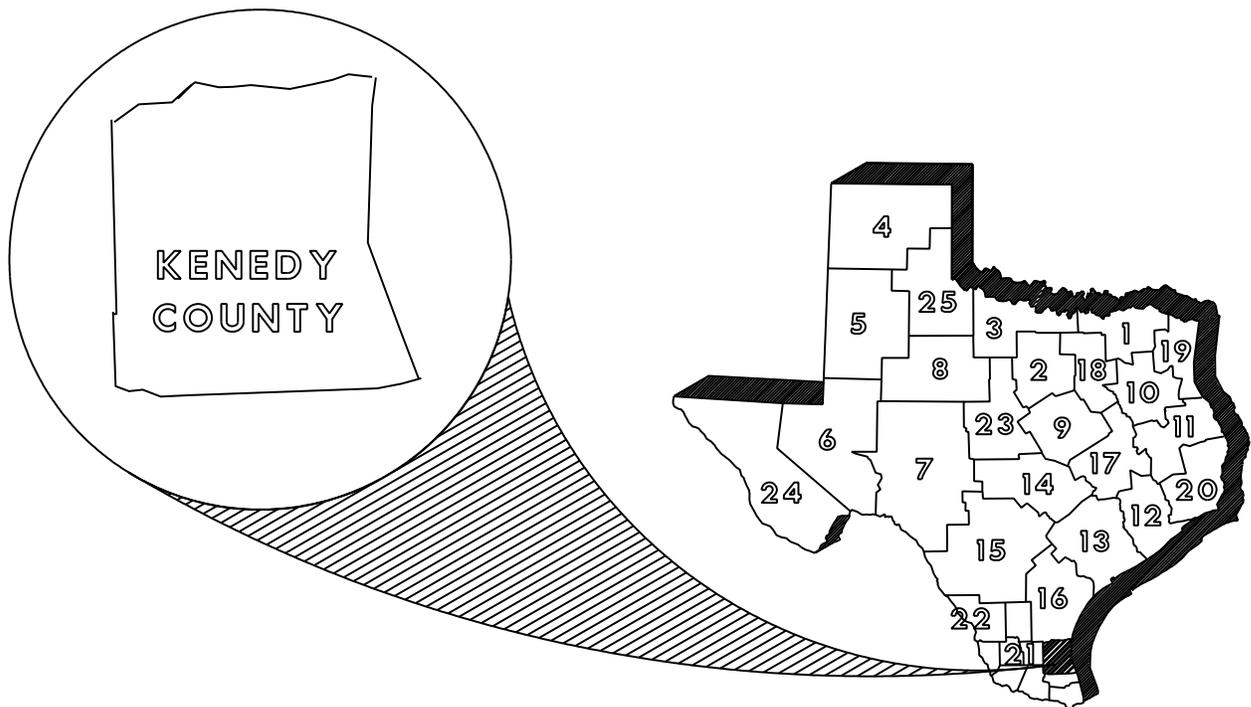


Figure 1: Project Location

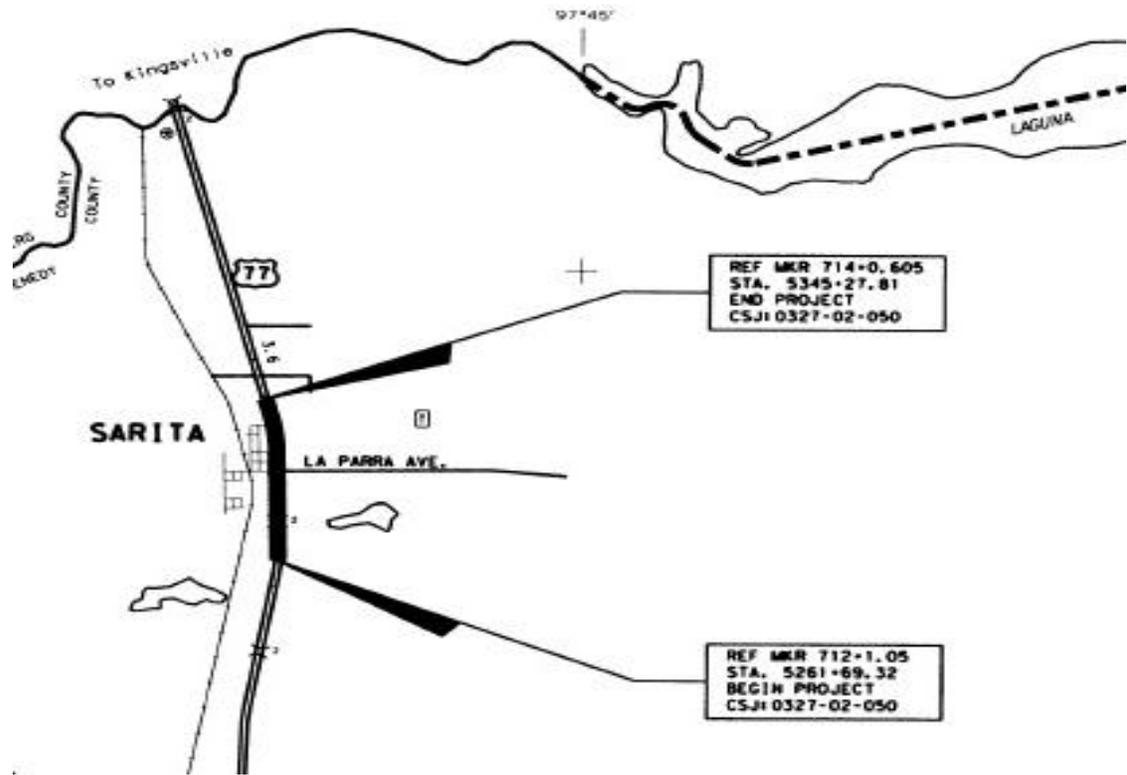


Figure 2: Project Area



Figure 3: Aerial of Project Location

B. Project Components

i. Existing Facility

The project is wholly within Kenedy County and is designed to construct a grade separated crossing of US 77 and La Parra Avenue in the city of Sarita, Texas. The project limits are from 0.87 miles south of the US 77 – La Parra Avenue intersection to 0.71 miles north of the US 77 – La Parra Avenue intersection, for a total project length of 1.578 miles.

US77 is a four-lane divided highway with a 194 foot wide grassy median. The northbound lanes consist of two 12 foot wide lanes with a 4 foot wide inside shoulder and an 8 foot wide outside shoulder (Figure 4). The southbound lanes consist of two 12 foot wide lanes with a 4 foot wide inside shoulder and a 10 foot wide outside shoulder (Figure 5). La Parra Avenue crosses US77 at grade and provides major access to the city of Sarita. La Parra Avenue consists of two 12 foot wide lanes (one in each direction) with no median or shoulders (Figure 6). Another local roadway, Cuellar Avenue, intersects the west side of US77 and terminates at the northbound lanes. The right-of-way varies within the project limits from 300 – 460 feet wide.

Drainage within the project limits is conveyed through open ditches, with cross drainage located primarily 0.45 miles south of La Parra Avenue through a series of reinforced concrete pipe and box culvert structures. Average daily traffic within the project limits for 2011 was 10,800 vehicles per day with a posted speed limit of 65 mph.



Figure 4: Northbound Mainlanes Facing North toward La Parra Avenue



Figure 5: Southbound Mainlanes, Facing North toward La Parra Avenue



Figure 6: La Parra Avenue from US77 Median Crossover facing Sarita (west)

ii. Proposed Facility

The proposed project would construct an overpass along US77, converting the existing at-grade crossing to a US77 grade separation over La Parra Avenue. Within the project limits, US77 would be a controlled access freeway consisting of mainlanes with two 12 foot wide lanes in each direction with 10 foot wide outside shoulders and 4 foot wide inside shoulders in both the northbound and southbound directions. La Parra Avenue would be improved within the US77 right-of-way to include two 14 foot wide lanes in each direction with 8 foot wide shoulders. The Cuellar Avenue median crossover of US77 would be removed.

In accomplishing these improvements, the existing southbound lanes would become the southbound frontage road; the proposed northbound frontage road would be constructed east of the current northbound lanes; and the proposed northbound lanes would be constructed in the existing 300 – 460 foot wide median (Figure 7). A northbound entrance ramp would be constructed south of the La Parra Avenue overpass and a southbound entrance ramp would be constructed north of the overpass. Exit ramps for the mainlanes would be constructed at the north and south project limits, merging the new mainlanes with the existing travel lanes located north and south of the project area. All construction would occur within existing right-of-way and existing drainage will be used in accordance with the project design. US77 will be upgraded to national interstate highway standards and have a design speed of 70 mph on the mainlanes, 50 mph on the ramps, and 45 mph on the frontage roads. The projected 2031 average daily traffic within the project limits is approximately 15,200 vehicles per day.

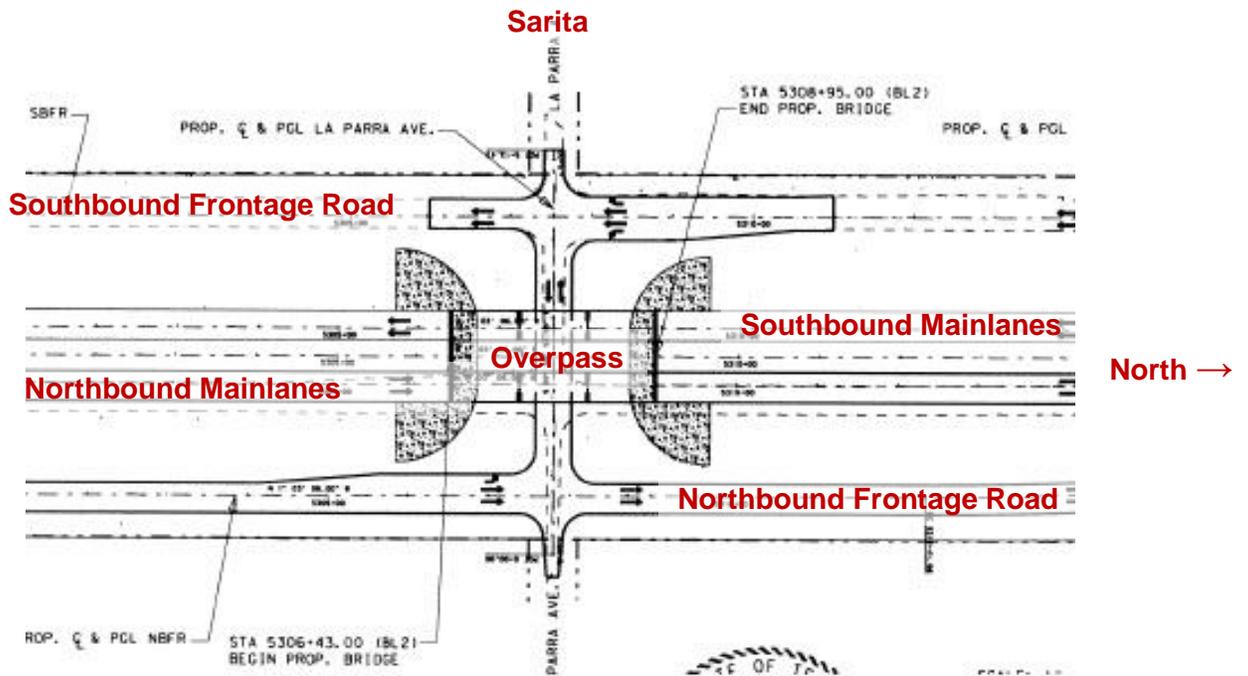


Figure 7: Proposed US77 – La Parra Avenue Intersection

C. Geospatial Data

The geospatial data for the beginning and end of the project as well as the specific bridge and crossing locations where work will be performed is shown in Table 1. The table also gives a general description of the type of work to be performed.

Location	Latitude	Longitude	Major Components of Work
Project Begins	27.20911	-97.78893	Begin main lane construction in existing median Begin northbound frontage road construction Begin southbound frontage road resurfacing
US77 – La Parra Ave. Intersection	27.22174	-97.78898	Construct Overpass Continue main lane construction Continue northbound frontage road construction Continue southbound frontage road resurfacing
Project Ends	27.23181	-97.79066	End main lane construction in existing median End northbound frontage road construction End southbound frontage road resurfacing

Table 1: Project Geospatial Data

II. Project Parties

This is a TxDOT project that has the support of Kenedy County, the city of Sarita, and other local public and private interests. TxDOT has a workforce of more than 12,000 employees and is headquartered in Austin, Texas, with 21 divisions and offices in the capital area. Four regional support centers provide operational and project delivery support for the agency's 25 geographical districts located around the state. TxDOT has vast experience managing federal and state infrastructure projects and rail rehabilitation/construction projects.

III. Grant Funds and Sources/Uses of Project Funds

The cost of developing plans, specifications, estimates, and environmental clearances for the project has been absorbed by TxDOT. The actual construction and project management costs would be funded by a 50% contribution in state funds from TxDOT and 50% in TIGER Grant Funds.

The project estimate and uses of funds is shown in Table 2 and the source of funds is shown in Table 3.

Item	Total
Engineering	\$443,450
Project Management, Inspection	\$423,609
Right of Way	-0-
Road Construction	\$4,070,984
Bridge Construction	\$1,448,638
Drainage	\$346,074
Traffic Controls	\$1,069,024
Environmental Controls	\$77,525
Site Prep, Dirt Work	\$1,389,239
Utilities	-0-
Subtotal	\$9,268,543
Contingencies	\$270,271
Mobilization	\$637,692
Indirect Costs	\$724,038
Other	\$405,859
Total	\$ 11,306,403

Table 2: Project Estimate and Uses of Funds

Funding Source	Participation	Total
TxDOT	50%	\$ 5,653,202
TIGER	50%	\$ 5,653,201
TOTAL	100%	\$ 11,306,403

Table 3: Source of Funds

IV. Selection Criteria

A. Long-Term Outcomes

i State of Good Repair

The upgrading of US77 to national interstate highway design standards will provide a dramatically improved facility, bringing this section of the roadway to a state of good repair. The project will provide for a grade separation at La Parra Avenue which is a key component of the improvements necessary for the future designation of I-69 in this

corridor. This will result in an efficient, effective, and safe intersection at this location, improving traffic flows and access to both US77 and local streets. The project would be appropriately capitalized up-front via partnership between the federal government and TxDOT.

TxDOT has an effective asset management approach that optimizes the long-term cost structure and viability of the project, which includes:

- an extensive NEPA clearance process in coordination with state agencies & FHWA,
- a robust public outreach program,
- contractor pre-qualification requirements,
- a competitive bidding process,
- daily inspection and review of contractor work activities and material approvals,
- direct supervision of contractors during construction activities,
- periodic inspections of state-owned transportation infrastructure, and,
- an effective planning process for maintenance and upgrades of facilities.

ii. Economic Competitiveness

The project will improve the long-term efficiency, reliability, and cost-competitiveness of freight movements to and from south Texas and the Matamoros, Mexico region by providing a safe and efficient roadway with national linkages. The improved US77 will increase the efficiency and effectiveness of the existing transportation system as a whole by eliminating at-grade conflicts and improved connections to local and regional roads as well at I-69 and I-37 near Corpus Christi. The economic stability and growth of the region relies on the improvement of this main north-south highway.

iii. Livability

US77 runs through five counties in south Texas between Mexico and Corpus Christi: Cameron, Willacy, Kenedy, Klebert, and Nuecesy. For the purposes of this application the funding will be used for construction of the grade separation and roadway improvements in Kenedy County. Kenedy County has a largely minority population that earns less than the per capita average income that is seen in many other Texas regions.

According to the US Census Bureau, the Texas per capita income was \$24,870 in 2010. Kenedy County has a per capita income of \$16,655 with 14.9% of the population living below the poverty level. The county is sparsely populated and US77 is the only major roadway in the county.

The grade separation of US 77 and La Parra Avenue will benefit the livability of the region and have a positive impact on community life by improving vehicular mobility and safety at a major road crossing while reducing vehicular conflicts on roadways in the region. Traffic to/from Sarita Elementary School must travel through the existing at-grade intersections without the benefit of traffic signals. School and local traffic must mingle

with through traffic without the use of dedicated entrance/exit ramps. School and local traffic is traveling slower on local roadways and must stop before crossing or merging with traffic on US77, which may be traveling at the posted speed of 65 mph. This situation results in an increased potential for conflicts between local and through traffic which is exacerbated by the presence of heavy trucks on the US77 roadway.

The proposed project will enhance safety and mobility in the region by separating through traffic from local traffic and effectively addressing these issues.

iv. Sustainability

The US77 grade separation at La Parra Avenue will improve energy efficiency by reducing vehicular idling time at the existing crossing. Traffic moving east or west on La Parra Avenue must wait for north and south bound traffic on US77 to clear before crossing the highway or before turning on to the highway. Similarly, vehicles moving north or south bound on US 77 that are turning on to La Parra Avenue must wait for the opposing traffic on US77 to clear. Grade separating these roadways will reduced idle time and provide some environmental benefits for many generations from air quality improvements and reductions in the emission of greenhouse gas hydrocarbons.

v. Safety

The US77 grade separation at La Parra Avenue will provide safety improvements for the traveling public as well as the commercial vehicle by diverting through traffic on US77 from the existing at-grade crossing to an overpass of La Parra Avenue. This will reduce vehicular conflicts at the intersection and resultant accidents. Crash statistics show an average of 1.5 collisions annually at the existing US77 and La Parra Avenue intersection. TxDOT estimates that 38 crashes would occur over the next 20 years at a minimum cost of \$25,504,587 if the grade separation is NOT built.

B. Job Creation & Near Term Economic Activity¹

The project promotes job creation by providing for the construction of an overpass and other highway improvements. According to the project schedule and manning estimates, a total of 675 construction related job positions will be manned during the 17 month construction period. Any entry-level laborer positions may be manned from the local communities, creating employment and on-the-job training.

The project's procurement plan is likely to create follow-on jobs and near-term economic activity for manufacturers and suppliers. All materials and capital equipment used on the project will be purchased from U.S. manufacturers, creating additional jobs. The project's

¹ See BCA attachment "US77 Benefit-Cost Workbook" or at <http://www.txdot.gov/business/rail/tiger2012.htm>

job creation impact from the construction expenditures on the economy of the United States was estimated, based on the employment impact multiplier recommended by the Council of Economic Advisors (CEA), which estimates that 1 job year is created for every \$76,923 in transportation infrastructure spending.

Based upon that methodology, the indirect job benefits created was estimated by dividing \$11,306,402 (project expenditures) by \$76,923

CEA Job Creation Impact: $\$11,306,402 / \$76,923 = 147$ job years created.

The project will be managed by TxDOT, which has a solid track record of complying with Federal labor laws regarding safety and equitable treatment of workers. The contractor will be required to comply with these regulations and equal opportunity laws in the hiring of workers.

C. Innovation

There are no definitive technological benefits from this project as described in the NOFA.

D. Partnership

The project is supported from the Sarita Independent School District Board and local citizens. Due to local funding constraints, TxDOT will be the sole financial partner investing with the federal government through the TIGER program.

E. Results of Benefit-Cost Analysis

It is difficult to quantify some of the benefits of many rural transportation projects and determine an actual monetary value of the improvements. This particular project does provide significant safety benefits for the region as well as the state. The discounted avoided costs total over \$23.7 million for the 20 year period. The project has a Return-On-Investment (ROI) of 126% and a benefit cost ratio of 2.26/1. The discounted project benefits are shown in Table 4. The detailed benefits and costs are shown in Table 5. The benefit-cost calculations are available in the US77 Benefit-Cost Workbook, available at <http://www.txdot.gov/business/rail/tiger2012.htm>.

Economic Indicators	Total	Discounted 7%	Discounted 3%
Total Costs	\$ 11,306,403	\$ 10,514,955	\$ 10,967,211
Total Benefits	\$ 25,504,587	\$ 23,719,266	\$ 24,739,449
NPV	\$ 14,198,184	\$ 13,204,311	\$ 13,772,238
ROI	126%	126%	126%
B/C	2.26 / 1	2.26 / 1	2.26 / 1

Table 4: Discounted Project Benefit/Cost Summary

Description	Category	Effects	Benefit	Cost
Project Construction	State of Good Repair	Preservation of Service, increased track speed		\$11,306,403
Safety	Safety	Avoided 20 yr highway safety impacts	\$25,504,587	
Total		Benefit/Cost = 2.26 / 1	\$ 25,504,587	\$11,306,403

Table 5: Benefit – Cost Calculations

V. Project Readiness and NEPA

A. Project Schedule

The project is ready to proceed rapidly upon receipt of a TIGER Grant as evidenced by the fact that TxDOT has completed the project development process for the project and the plans and specifications for that portion of the project are complete.

The project is in the State Transportation Improvement Plan² (STIP) and has tentatively been scheduled for letting in August 2012 with an anticipated completion in December 2013. That date may be set back based upon the time needed to complete the federal funding agreement. Any delays in the TIGER approval and appropriation process would result in similar delays in project implementation.

The project schedule is dependent upon the timing of the TIGER grant award. The project is virtually “shovel ready” and could go to letting and construction quickly after all agreements were finalized and the grant was approved. Assuming the TIGER grant is approved for \$ 5,653,201 as requested and the agreement is finalized by the end of June 2012, the project would be completed within 17 months of letting, as shown in Table 6.

² November 2011, STIP revision: http://ftp.dot.state.tx.us/pub/txdot-info/tpp/stip/rev/fy_11_14/nov_11/highway/pharr_hwy_110411.pdf

Task	Drainage			Northbound Frontage				Main Lanes								La Parra		Total
	1	2	Construct Detour	4	5	6	Construct Detour	8	9	10	11	12	13	14	15	16	17	
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Superintendent	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
Traffic Control	4	2	4	4	4	4	2	4	4	4	4	4	4	4	4	4	4	64
Drainage Crew	5	5	5															15
Surveyors	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	51
Road Crew			16	20	20	20	20	20	25	25	25	25	25	25	25	20	20	331
Striping Crew							4	4						5	5			18
Bridge Crew								12	12	12	12	12	12	12			5	89
MBGF Crew														4	4			8
Project Manager	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
Inspectors	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	48
Record Keeper	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
Monthly Jobs	17	15	33	33	33	33	35	49	50	50	50	50	50	59	47	33	38	675

Table 6: Project Schedule & Construction Jobs Created

B. Environmental Approvals – NEPA

This proposed project would construct an overpass along US77 at La Parra Avenue in Kenedy County, converting the at-grade intersection to a grade-separated intersection. US77 would be upgraded to national interstate design standards and would cross over La Parra Avenue. The Programmatic Categorical Exclusion document was completed in January 2012. The documentation is available for review on the web site at <http://www.txdot.gov/business/rail/tiger2012.htm>. Environmental clearance is expected by April 30, 2012.

VI. Federal Wage Rate Certification

TxDOT follows federal wage rate requirements and the federal wage rate certification is provided as an attachment to the application.

VII. Changes from Pre-application

The total project cost has been updated from \$9,032,175 to \$11,306,402 in order to include engineering, contingencies, mobilization, and indirect costs. The total state participation has been increased to 50%, reducing the TIGER grant request to 50% of total project costs.

VIII. Summary

The upgrading of US77 to national interstate highway design standards will provide a dramatically improved facility, bringing this section of the roadway to a state of good repair. The project will provide for a grade separation at La Parra Avenue which is a key component of the improvements necessary for the future designation of I-69 in this corridor. This will result in an efficient, effective, and safe intersection at this location, improving traffic flows and access to both US77 and local streets. The project will have positive direct and indirect impacts on the economy, employment levels, tax revenues, and highway costs. The discounted economic indicators are shown in Table 7.

Economic Indicators	Total	Discounted 7%	Discounted 3%
Total Costs	\$ 11,306,403	\$ 10,514,955	\$ 10,967,211
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It is estimated that the project will save over \$25.5 million over a 20 year period and has a benefit-cost ratio of 2.26 to 1 for that period.