BUILD GRANT APPLICATION

Farm to Market (FM) 1593 Widening and Rehabilitation Project

Limits: FM 616 to State Highway (SH) 35

May 2020

Lolita, Jackson County, Texas

City of Point Comfort, Calhoun County, Texas

CSJ: 1090-04-016

CSJ: 1090-05-020

Texas Department of Transportation

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TABLE OF CONTENT

APPENDIX

LIST OF FIGURES

LIST OF TABLES

1.0 PROJECT DESCRIPTION

The economy of Texas is the second largest in the United States. Manufacturing is a vital component in Texas' diverse economy. Chemical, high tech, automotive and other advanced manufacturing operations thrive across the state. The Texas Department of Transportation (TxDOT) is requesting a Better Utilizing Investments to Leverage Development (BUILD) grant for the Farm to Market (FM) 1593 Widening and Rehabilitation Project. FM 1593 is a rural corridor in Jackson and Calhoun Counties in Texas that connects Lolita with the City of Point Comfort and provides access to major employers within the corridor as well as access to the Gulf of Mexico via the port on Matagorda Bay. The approximately 11-mile stretch of FM 1593 between FM 616 and State Highway (SH) 35 experiences higher congestion and accident rates than desired, largely attributed to high traffic north of the intersection of FM 1593 and SH 35. Formosa Plastics Company (FPC) has a plant in the northeast quadrant of this intersection with six entrances off FM 1593 and another off SH 35 that contributes to the traffic on both roadways. A planned expansion of FPC will only increase traffic.

The purpose of this project is to add additional lanes to meet the capacity needs, install turning lanes, add traffic signals, and add illumination to improve the operational aspects of the FM 1593. Overall, this project would lead to a tremendous improvement in safety and congestion relief for the traveling public and freight movement in this rural corridor. The FM 1593 Widening and Rehabilitation Project meets the United States Department of Transportation (USDOT) Rural Opportunities to Use Transportation for Economic Success (ROUTES) initiative, an initiative to address disparities in rural transportation infrastructure[1]. The Benefit-Cost Analysis Report in Appendix A indicates that the project expects to achieve a benefit-cost ratio (BCR) of 2.09:1 with a net present value (NPV) of $25.3 million.

> The project meets the US DOT ROUTES initiative with a Benefit-Cost Ratio of 2.09, illustrating that the project is competitive for a BUILD grant.

Table 1: *Benefit-Cost Analysis Summary ($ in Thousands)*

Description	Estimate	Discounted (7%)
Net Benefits	$120,949	$48,650
Costs	$26,000	$23,320
	Benefit-Cost Ratio (BCR)	**2.09 : 1**
	Net Present Value (NPV)	**$25,330**

FM 1593 is currently a two-lane undivided roadway with typical 12-foot wide lanes, 10-foot wide shoulders and open ditches. The posted speed limit is between 50 mph at the southern limits of the study area to 70 mph at the northern limits of the study area. Average Daily Traffic (ADT) in the southern area of the corridor near the Formosa Plastics Corporation (FPC) is 12,700 (2018) with a projected increase of 74% to 22,100 by 2045. North of the FPC, the current ADT is 7,070; the projected increase on the two-lane road segment is 10,900 by 2045 (54%).

1 https://www.transportation.gov/rural

FM 1593 provides access to several companies, including Ballinger, Alamo Concrete Products, IBS Interplant, and FPC. A key focus of the corridor and generator of the necessary improvements is FPC, a petrochemical complex located at the northeast corner of the intersection of SH 35 and FM 1593. FPC generates the majority of the traffic on FM 1593. A significant portion of the vehicles travel between FPC and the City of Port Lavaca, located to the west of the City of Point Comfort. FPC has been undergoing construction since 2016 to expand its 2,500-acre plant. Ongoing construction projects are expected to last into 2021 with future expansion projects already being planned. The current $5 billion expansion will add 340 permanent jobs; current estimates show that at least 2,600 employees and contractors travel to the plant daily. Due to the existing issues with traffic congestion and crashes, as well as forecasted traffic conditions related to the expansion of the plant, there is a need to widen the road in the vicinity of FPC and to make other infrastructure improvements.

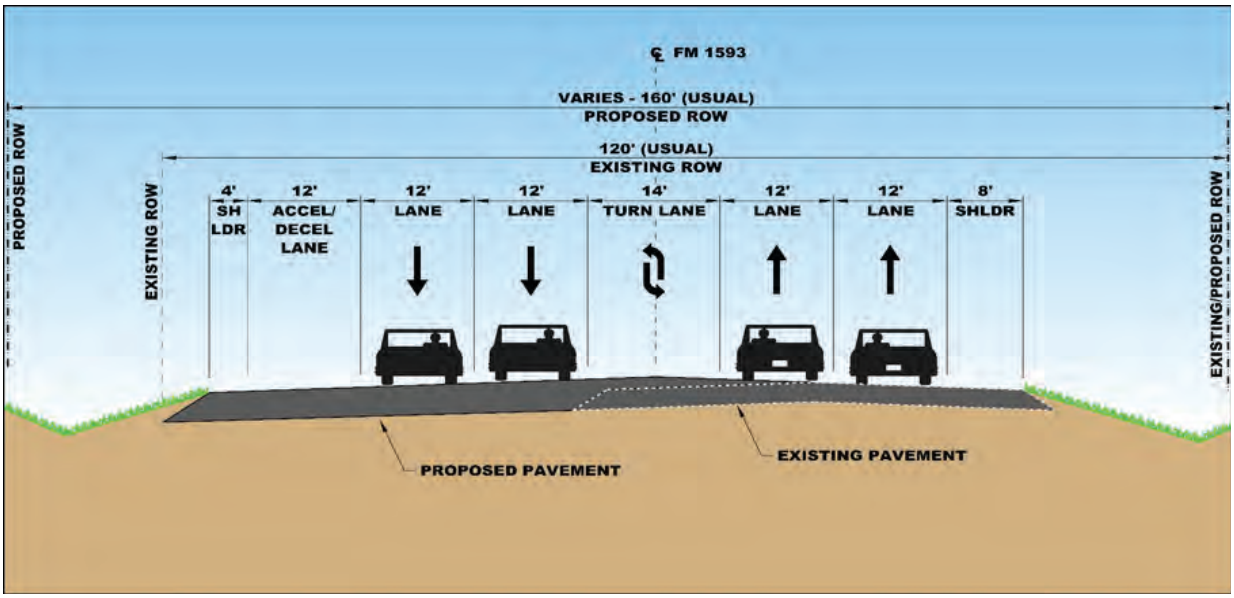
> This project will fulfill three of TxDOT's goals: i.e. *enhance safety*, *optimize movement of people and goods*, and *preserve infrastructure*.

The proposed FM 1593 improvements will widen the existing roadway from two lanes to a five lane cross section with a bi-directional center turn lane and an acceleration/deceleration lane for the southern three miles of the study area from SH 35 to FCP Gate 8 (see Figure 1). Improvements also include adding traffic signals and illumination to Gates 3, 5, and 8. Forty feet of right-of-way (ROW) from one property owner on the east side of the FM 1593 corridor in the vicinity of the widening will be required. A left turn lane and right turn lane at Gate 6 on SH 35 are also part of the improvements.

In addition, due to the condition of the roadway pavement, the project includes milling and overlay of the FM 1593 roadway surface north of Gate 8 to FM 616. This milling and overlay construction will also include rumble strips on the shoulders and centerline to improve safety for the traveling public.

Besides providing improvements to the companies and towns between FM 616 and SH 35, this improvement is also expected to improve access to Port Calhoun (Calhoun County Navigation District) located to the south of SH 35. Port Calhoun serves as a gateway to world markets for the Texas mid-coast region. The Port plays a vital role in supporting Texas chemical manufacturing industries and in building a stable economic foundation for Calhoun County. It is served by the Matagorda Ship Channel and the Gulf Intracoastal Waterway. Primary cargo loads handled at the port include chemicals, petrochemicals, crude oil, agricultural fertilizer and much more. A key part of this mix also includes very high-value chemicals produced by area industries and sold for export to markets around the world. Once the SH 35/FM 1593 intersection operates more efficiently and safer with the improvements, access to the Port will be improved. Port of Calhoun currently receive 50 vessel calls per year, with an additional 20 calls anticipated after project completion, i.e. a 40% increase in vessel traffic.

Figure 1: *Proposed Typical Cross-Section in Front of Formosa Plastics Corporation*



Note: Looking South on FM 1593 towards SH 35

2.0 PROJECT LOCATION

The project is on FM 1593 located in Calhoun and Jackson Counties, from FM 616 on the northern limits of Lolita (28°50'26.9"N 96°32'32.7"W) to State Highway (SH) 35 in the City of Point Comfort on the south end (28°40'38.2"N 96°33'10.1"W), a distance of 11.5 miles (see Figure 2). The study area is considered to be in rural[2] Texas; current population estimates are: Calhoun County - 21,290, Jackson County - 14,760, Lolita[3] - 555 and the City of Point Comfort - 721.[4]

The northern limit of the study area, FM 616, is a relatively significant two-lane east-west road in southeastern Texas providing a linkage to other towns to the east and west of Lolita. To the west of Lolita, FM 616 provides a crossing over the Lavaca River, and continues southwesterly to the City of Bloomington where it terminates as a local street at SH 185. To the east, it extends to City of Blessing where it terminates at SH 35.

SH 35, at the south end of the corridor, is a largely north–south highway in southeastern and southern Texas extending between Corpus Christi to the southwest where it terminates at I-37 and to the northeast where it connects with I-45 in Houston. See Figure 3.

Due to the rural nature of the study area, there are not many local roads intersecting the corridor. County Road (CR) 432 intersects FM 1593 in a north-south direction providing a connection to CR 426. CR 426 travels in an east-west direction and crosses FM 1593 farther north. To the west, CR 426 terminates at the Lavaca River. To the east, it continues a mile or so where it then turns 90 degrees to the north and continues north- south.

2 Under 200,000 in population. Source: US Department of Transportation, Notice of Funding Opportunity for the Department of Transportation's National Infrastructure Investments Under the Consolidated Appropriations Act, 2020.
3 Lolita is a census-designated place (CDP) in Jackson County.
4 Population source: US Census 2019.

Figure 2: *Project Location Map*

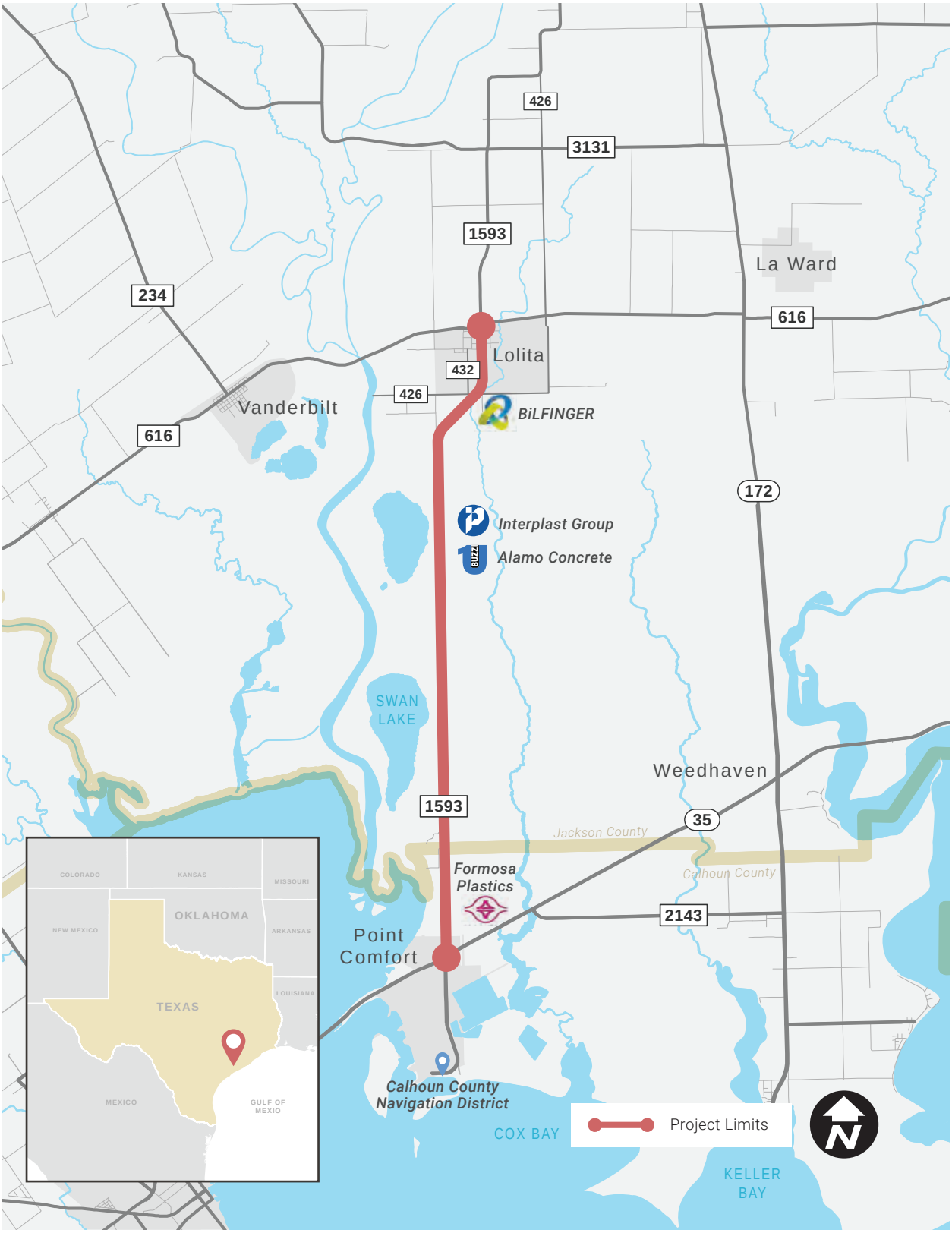
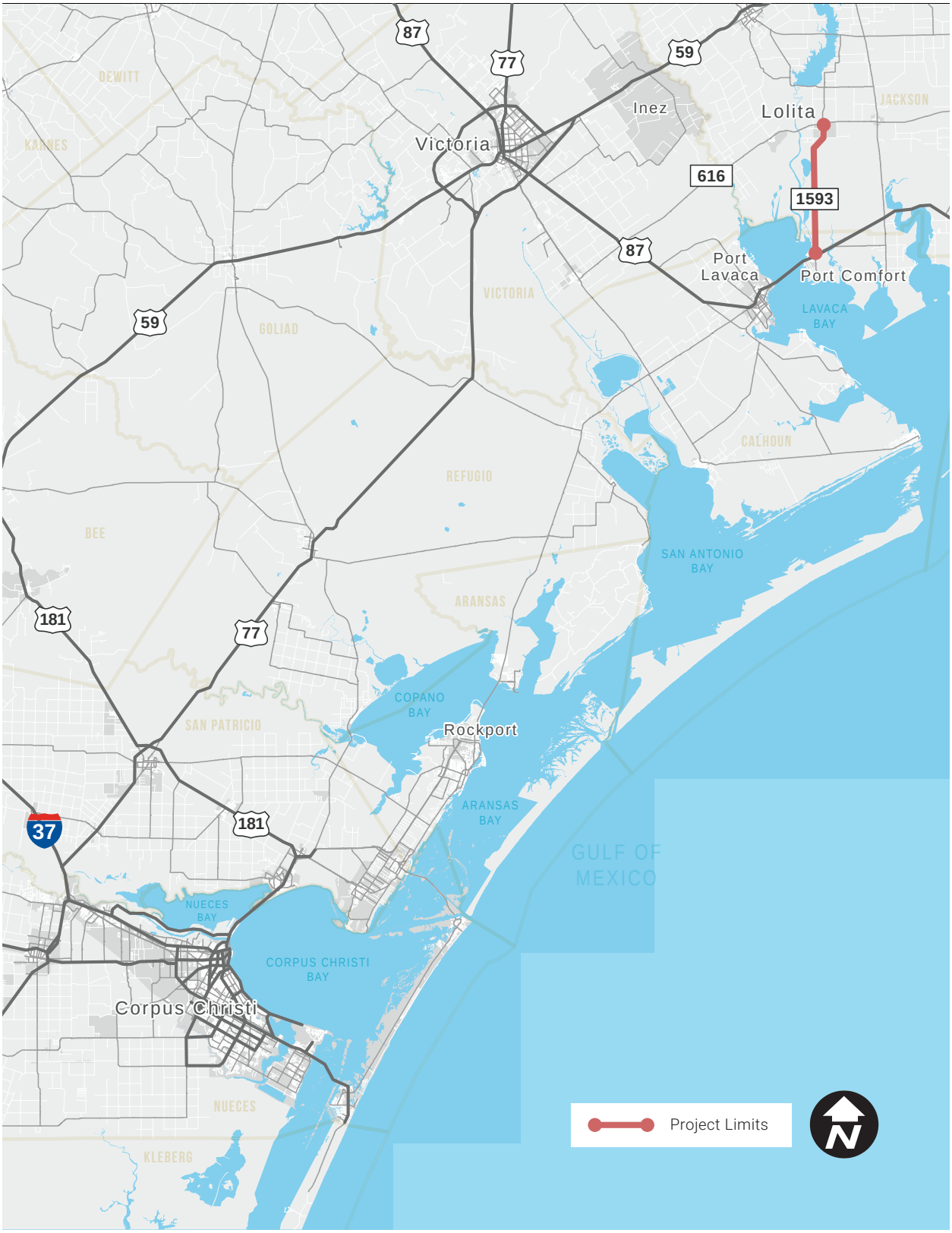


Figure 3: *Regional Map*



3.0 GRANT FUNDS, SOURCES, AND USES OF ALL PROJECT FUNDING

TxDOT in partnership with the Formosa Plastics Corporation (FPC) is requesting $9.5 million in BUILD FY 2020 Discretionary Grant funds to widen and repave FM 1593. The BUILD Grant would fund 36.5% percent of the $26 million total project cost as shown in Table 2 and in Appendix B. TxDOT will utilize approximately $13.35 million in state transportation funds (51.4%). FPC is contributing $3.15 million (12.1%) as part of a public-private partnership. Table 3 shows the funding breakdown. Appendix C provides information on the source of some TxDOT funding.

Table 2: *Cost Estimate*

Item	Amount
Survey	$ 150,000
Right-of-way	$ 500,000
Utility Relocations	$ 9,350,000
Construction	$16,000,000
TOTAL	**$26,000,000**

Table 3: *Funding Breakdown*

Funding	Amount	Funding Source	Percent (%) of Total Funding
Non-Federal (State)	$ 13,350,000	TxDOT	51.4%
Non-Federal (Other)	$ 3,150,000	Formosa Plastics Corporation	12.1%
BUILD Grant	$ 9,500,000	Federal	36.5%
TOTAL	**$ 26,000,000**		**100%**

4.0 SELECTION CRITERIA

(1) Primary Selection Criteria

(a) Safety

Safety is always at the forefront in both evaluating transportation investment decisions and determining what project strategies will be implemented when planning a new project. *Enhance safety* is a major goal of TxDOT. Nearly 22,100 vehicles are anticipated to travel daily on FM 1593 by the year 2045, an increase of 74% over existing traffic volumes. The current traffic volumes cause extreme daily congestion on the two-lane roadway, particularly between the hours of 5 to 8:30 a.m. and 3 to 6:30 p.m. Monday through Friday, causing back-ups, traveling illegally on the shoulder, and a significant number of crashes (see Figures 4 and 5). Additional traffic will only exacerbate the problem. FM 1593 was initially developed as a local rural route, not as the major, economic arterial it currently serves as for the region.

During the AM peak hour, there is heavy inflow of vehicles from the west on SH 35 to the FPC driveways on FM 1593. During the PM peak hour, there is heavy outflow of vehicles from the FPC driveways to the west on SH 35. Existing traffic problems in the vicinity of FPC vary by driveway entrance, but in general, cars entering FPC have difficulty negotiating the intersection due to poor lighting (before sunrise/after sunset) and entering/exiting due to heavy conflicting cross traffic on FM 1593.

Figure 4: *FM 1593 Traffic Conditions in Front of Formosa Plastics Corporation*

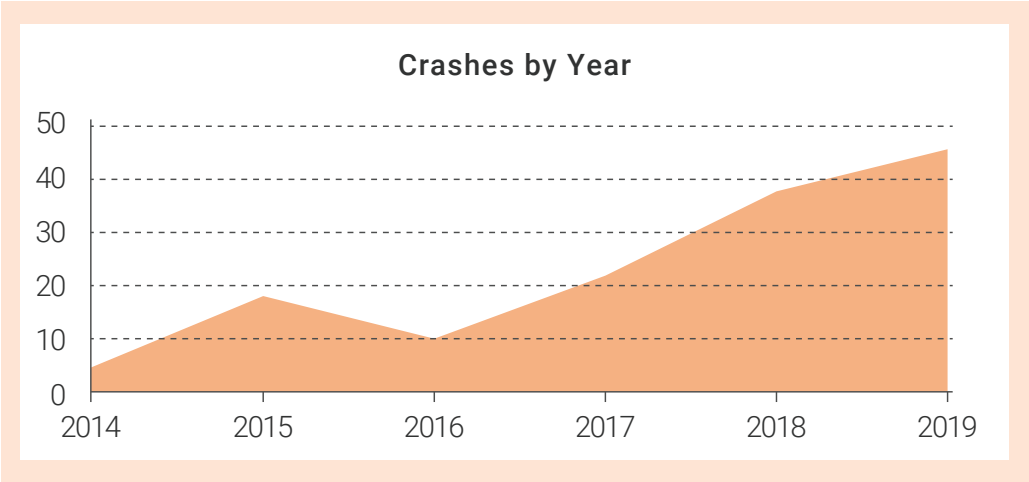
Figure 5: *Traffic Conditions at FM1593 and SH 35 Intersection*

The vehicle classification data analyzed as a part of the study indicated a high percentage of heavy vehicles within the study area. The average vehicle classification split estimated on FM 1593 was 36 percent of cars and trailers, 52 percent of 2-axle trucks and 12 percent of 3-to 6-axle trucks. The average vehicle classification split estimated on SH 35 was 44 percent of cars and trailers, 46 percent of 2 axle trucks and 10 percent of 3-to-6 axle trucks.

Crash data by severity and type of crashes has been analyzed by roadway segment (in front of FPC and north of FPC). Note that crash rates for the segment in front of the FPC plant have increased substantially between 2014 and 2019; there was a total of 138 crashes. Most of the crashes were intersection and driveway access related crashes which contributed to about 60% of the overall crashes. The top three crash types for this study corridor are rear end, angle/left turn, and straight/stopped which account for 21.7%, 19.5% and 18.1%, respectively.

Figure 6 shows the trend of increase in crashes and Figure 7 shows the crash heat map for FM 1593 in front of FPC between SH 35 and Gate 8. As indicated, the highest crash locations are at Gates 1, 5 and 8 and the FM1593/SH 35 intersection. Note that TxDOT recently made improvements at the FM1593/SH 35 intersection so it is expected that future crash rates at the intersection will decrease. See Appendix D for the Operational and Safety Analysis - FM 1593 from SH 35 to Formosa Gate 8.

Figure 6: *Crashes per Year on FM 1593 in front of FPC*



For the segment north of Gate 8 to FM 616, there were 66 crashes in a 5-year time period (2014-2019). About a third of the crashes involved a single vehicle who struck an object off-road (e.g. a fence) or an animal on-road. Another third of the crashes were rear-end crashes. The final third were either head on or angle crashes involving vehicles traveling in opposite directions.

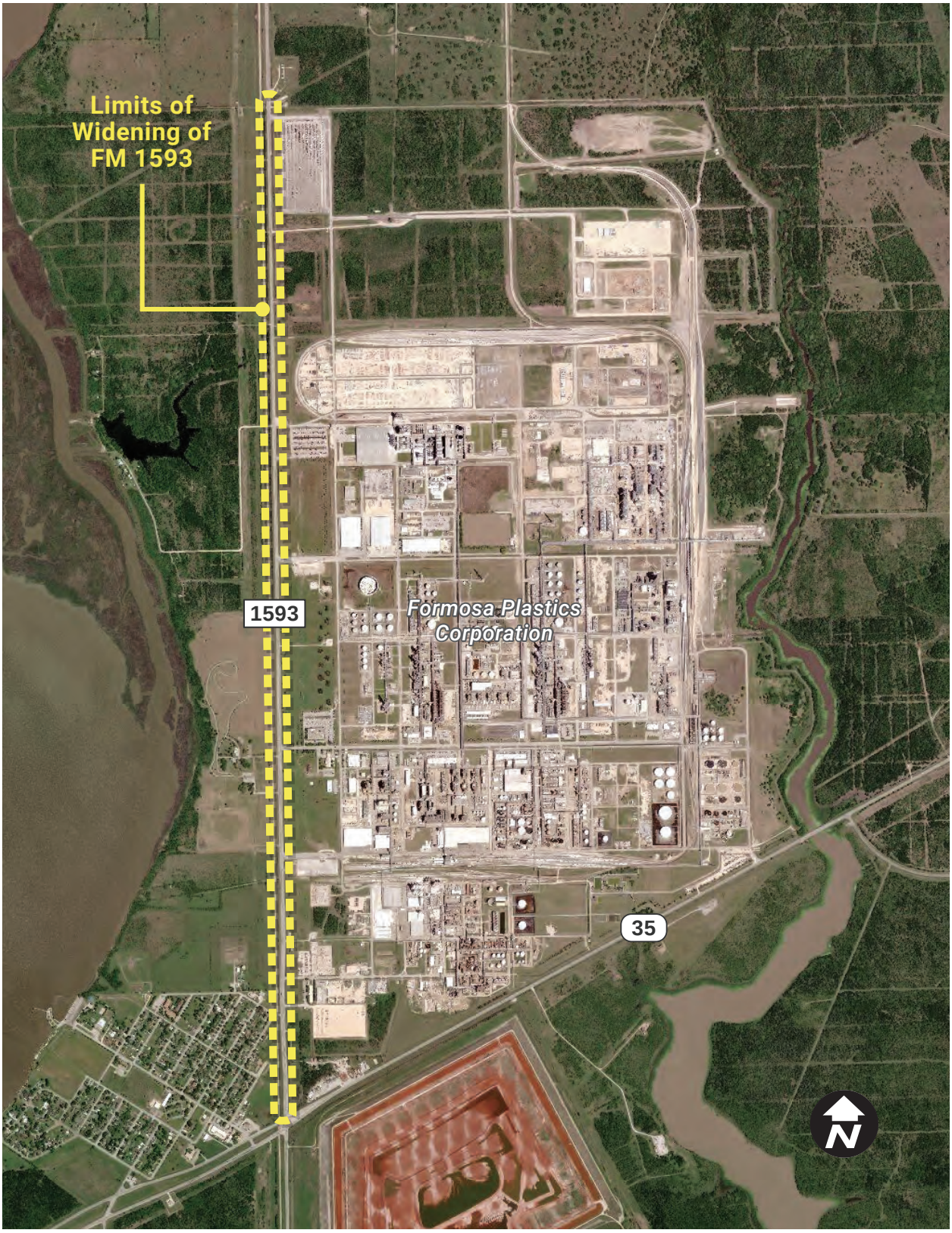
Many different improvements and countermeasures included with the FM 1593 widening and rehabilitation replacement plan propose to reduce the number and severity of crashes within the project limits. These treatments include a combination of operational and geometric strategies focused on improving both the critical crash locations and the types identified in the existing crash data analysis. Proposed treatments focus on elements that have a proven track record of providing quantifiable crash reductions. Actions that will improve safety significantly in the area in front of FPC, from SH 35 to Gate 8, will include the widening of the roadway with the bi-directional turn lane and the acceleration/deceleration lane (see Figure 8).

The conversion to a divided roadway with the acceleration/deceleration lane is expected to reduce crash rates for rear end collisions, sideswipes, crashes where one vehicle is going straight while another in the same direction is turning or stopped, and collisions of vehicles going in opposite directions. The removal of turning vehicles from the through-lanes will also alleviate congestion for those traveling past FPC to other destinations. A combination of traffic signals, turning lanes (including the recommend bi-directional center lane and acceleration/ deceleration lane), as well as illumination will greatly enhance safety at each of the major FPC driveways.

Figure 7: *FM 1593 Crash Density Heat Map*

Widening of FM 1593 is expected to reduce crash rates and congestion issues.

Figure 8: *Widening Limits*



A summary of the proposed treatments follow. Note that the recommendations to reduce crashes and improve traffic flow are made for each driveway. See Figure 9 and Table 4 for specific improvements for driveways or gate entrances based on safety and traffic operation analysis.

Figure 9: *FPC Gates and Driveways*

Table 4: *Traffic Issues and Mitigation Measures*

Driveway/Gate	Traffic Operation Issue	Recommended Mitigation
Driveway 1(Gate 8)	Vehicles exiting Driveway 1 had difficulty negotiating the intersection due to poor lighting and heavy conflicting cross traffic on FM 1593. The southbound through vehicles were observed using the shoulder lane on the south side to pass the queue on the shared left-turn/through lane. Many near miss crashes were observed at this intersection during field study.	Provide a southbound FM 1593 left-turn lane at the intersection Install a traffic signal at the intersection Install luminaries at the intersection
Driveway 3 (Gate 5)	Vehicles exiting Driveway 3 had difficulty negotiating the intersection due to poor lighting and heavy conflicting cross traffic on FM 1593. Also interference with Driveway 4 traffic due to close proximity.	Provide a southbound FM 1593 left-turn lane at the intersection Install a traffic signal at the intersection Existing Driveway 4 traffic volumes with left turn conflicts at FM 1593 should be diverted to Driveway 3 Install luminaries at the intersection
Driveway 4	Turning movements from the driveway onto FM 1593 were impeded by heavy through volumes and vehicles have difficulty making safe crossing maneuvers. Also interference with Driveway 3 traffic due to close proximity.	Driveway 4 should be converted to a right-turn entrance-exit only driveway
Driveway 5 (Gate 4)	Driveway 5 is a truck only driveway. Turning movements from the driveway onto FM 1593 were impeded by heavy through volumes and vehicles have difficulty making safe crossing maneuvers.	Provide a southbound FM 1593 left-turn lane at the intersection
Driveway 6 (Gate 3)	Southbound left-turning volumes as well as exiting vehicles had difficulty negotiating the intersection due to heavy conflicting cross traffic on FM 1593.	Provide an additional northbound FM 1593 through lane at the intersection. Install a traffic signal at the intersection.
Driveway 7 (Gate 2)	Driveway 7 is a truck only driveway. The southbound left-turns on FM 1593 were impeded by the northbound through volume and had difficulty making safe crossing maneuvers. The northbound right-turning vehicles were observed to use the shoulder lane as a deceleration Lane.	Provide an additional northbound FM 1593 through lane at the intersection. Provide a southbound FM 1593 left-turn lane at the intersection

Driveway/Gate	Traffic Operation Issue	Recommended Mitigation
Driveway 8 (Gate 1)	The southbound left-turns on FM 1593 were impeded by the northbound through volume and had difficulty making safe crossing maneuvers.	Provide a southbound FM 1593 left-turn lane at the intersection. Provide a northbound FM 1593 right-turn deceleration lane at the intersection.
Driveway 9	The southbound left-turns on FM 1593 were impeded by the northbound through volume and had difficulty making safe crossing maneuvers.	Provide an additional northbound FM 1593 through lane at the intersection. Provide a southbound FM 1593 left-turn lane at the intersection.

Overall Improvements

The road will be milled and resurfaced from Gate 8 to FM 616. This replacement will allow for a smoother, safer roadway surface. Centerline rumble strips will be added to help prevent vehicles from crossing the centerline. In addition, shoulder rumble strips would be added for the entire length of the project to reduce off-road accidents.

Transportation Demand Management (TDM) Options

In addition to roadway improvement, FPC has also made changes that can be considered to lessen traffic congestion in order to improve safety. They have staggered plant shift times, coordinated busing and offsite parking, and started construction of new parking lots to move expansion workers to less congested locations.

(b) State of Good Repair

TxDOT completed an inspection of the FM 1593, which identified pavement condition in need of rehabilitation. The current surface is a seal coat surface that was placed in 2010, exceeding its useful life. The pavement has cracks, depressed spots due to poor drainage conditions in certain areas, and cracking on the edges due to the lack of curb and gutter. The milling and replacement of the roadway will fulfill TxDOT's goal to "*Preserve our Infrastructure*" and "*Provide roads that are smooth and structurally sound.*" By rehabilitating the roadway surface, it is expected that the roadway expected state of good repair will last for the next 10 to 12 years. If left unimproved, the poor condition of FM 1593 will threaten the future transportation network in this important employment corridor, hindering efficient movement of goods and people.

(c) Economic Competitiveness

Texas' Transportation Code 22.053 (a) defines an economically disadvantaged county as a county that has 1) below average per capita taxable property value, 2) below average per capita income, and 3) above average unemployment. Calhoun County is considered to be an economically disadvantaged county. Subsequently, any roadway infrastructure improvements in Calhoun County will improve its economic competitiveness by facilitating better access to jobs. The improvements meet another one of TxDOT's goals, i.e., to "*Optimize Movement of People and Goods*" by reducing congestion through both traditional and alternative strategies and improving travel time reliability. The widening and rehabilitation project will improve the long-term efficiency, reliability in the movement of goods and workers.

The FM 1593 improvements are particularly critical for access to FPC as well as the other businesses along the corridor. Founded in 1978, Formosa Plastics Corporation, U.S.A. is a vertically integrated supplier of plastic resins and petrochemicals with annual revenues of more than $5 billion. It is a critical employer in the region with what is estimated to be over 2,000 jobs and is continuing to grow. The ongoing expansion of FPC's plant will cause a significant increase in its manufacturing capacity. Currently FPC produces a total of 67,779.63 short tons and 50 ships. Once the new plant is up and running, FPC is expected to produce about 500,000 short tons leading to approximately 20 more ships per year.

Figure 10: *Formosa Plastics Corporation (FPC)*

In addition to FPC, other significant businesses need efficient access for the movement of goods and services. The Port of Calhoun states they currently receive 50 vessel calls per year, with an additional 20 calls anticipated after project completion. A 40% increase in vessel traffic is a significant benefit to the region with the improved FM 1593 access.

As the traffic operations report has indicated, backups on the two-lane road are significant, particularly due to the expansion at FPC. Commuting times that used to take 20 minutes, reportedly can now take up to 1 ½ hours. Crash rates continue to increase; crashes not only cause significant injuries in some cases but even minor accidents will cause traffic backups. The 64 percentage of trucks (2 axles or more) traveling down FM 1593 is a safety and congestion issue. By widening the roadway, adding traffic signals, adding turn lanes and the extra passing lane, as well as illumination, the improvement of this road will increase the efficiency of movement and subsequently reduce the costs of doing business. By having a consistent and reliable path of travel, employees will be more reliable when reporting to work.

(d) Environmental Sustainability

The goal of the widening project is to minimize and mitigate congestion issues along the FM 1593. By alleviating congestion with this roadway improvement project, there will be a reduction in energy consumption and air pollution due to less slow moving and standing vehicles. This will provide environmental benefits in a manner that benefits both the natural and built environment.

(e) Quality of Life

The FM 1593 widening project will improve the quality of life for the commuters as well as the residents of nearby Point Comfort and the residents of Lolita. Point Comfort is a community with a population of 781 residents located northwest of the SH 35/FM 1593 intersection. Due to the congestion issues on FM 1593, vehicles have been cutting through the residential neighborhoods, affecting the quality of life for the residents. The city has started to place barricades on certain streets and issue citations for vehicles cutting through town as a detour. In addition, volunteer firefighters from Point Comfort respond to the numerous crashes in the study area, causing them to be overworked. On the north end of the study area, Lolita residents are also impacted by the congestion. Although they are not in the immediate problem area, residents who wish to travel down FM 1593 to get to SH 35 to go to points west and east are delayed by the congestion. Commuters have stated that “it’s sometimes faster to take a 43-mile northern detour through three counties to get home instead of taking FM 1593”. By making the roadway improvements, transportation choices for residents in both communities are expanded, improving access for the rural communities and better travel opportunities.

(2) Secondary Selection Criteria

(a) Innovation

(iii) Innovative Financing

Innovative financing will allow this project to move forward with secure funding based on the Texas Mobility Fund[5] and Rider 38[6] of the Texas Legislature General Appropriations Act for the 2020-21 Biennium. In 2001, Proposition 15 (Texas' constitutional amendment), an enactment of legislation by the 77th Legislature, created the Texas Mobility Fund within the treasury of the State of Texas. The creation of the Mobility Fund allowed TxDOT to issue bonds secured by future revenue. This allowed the acceleration of mobility projects throughout the state. The Mobility Fund is administered by the Texas Transportation Commission (the Commission) as a revolving fund to "*provide a method of financing for the construction, reconstruction, acquisition and expansion of state highways, including costs of any necessary design and costs of acquisition of rights-of-way, as determined by the Commission in accordance with standards and procedures established by law*".

In addition to the Texas Mobility Fund, the General Appropriations Act for the 2020-2021 Biennium, adopted by the Texas legislature, states that "*out of amounts appropriated to the Department of Transportation, an amount not to exceed $20,000,000 in each fiscal year of the 2020-21 biennium from any available source of revenue and/or balances in Texas Mobility Fund No. 365 shall be allocated to provide funding for public roadway projects selected by the Port Authority Advisory Committee and approved by the Texas Transportation Commission to improve connectivity to Texas ports.*" TxDOT Maritime Division has allocated $2 million in funding this project, as this improvement would help with the Calhoun County Navigation District access. The Navigation District has a Port located to the south of the SH 35. Once the SH 35/FM 1593 intersection operates more efficiently and safer with the improvements, then their access is improved expanding business to the Port.

Finally, the project exemplifies a public-private partnership with FPC; FPC has contributed over $3 million towards the project, which represents over 12% of the overall project cost.

(b) Partnership

TxDOT has partnered with FPC to deliver this project. Both entities have pledged financial commitments to ensure that this project will be completed in the time required by BUILD grant requirements. In addition, Lolita, and the City of Point Comfort are working collaboratively with TxDOT to get the project expedited due to the regional importance of this project. Refer to Appendix E for letters of support.

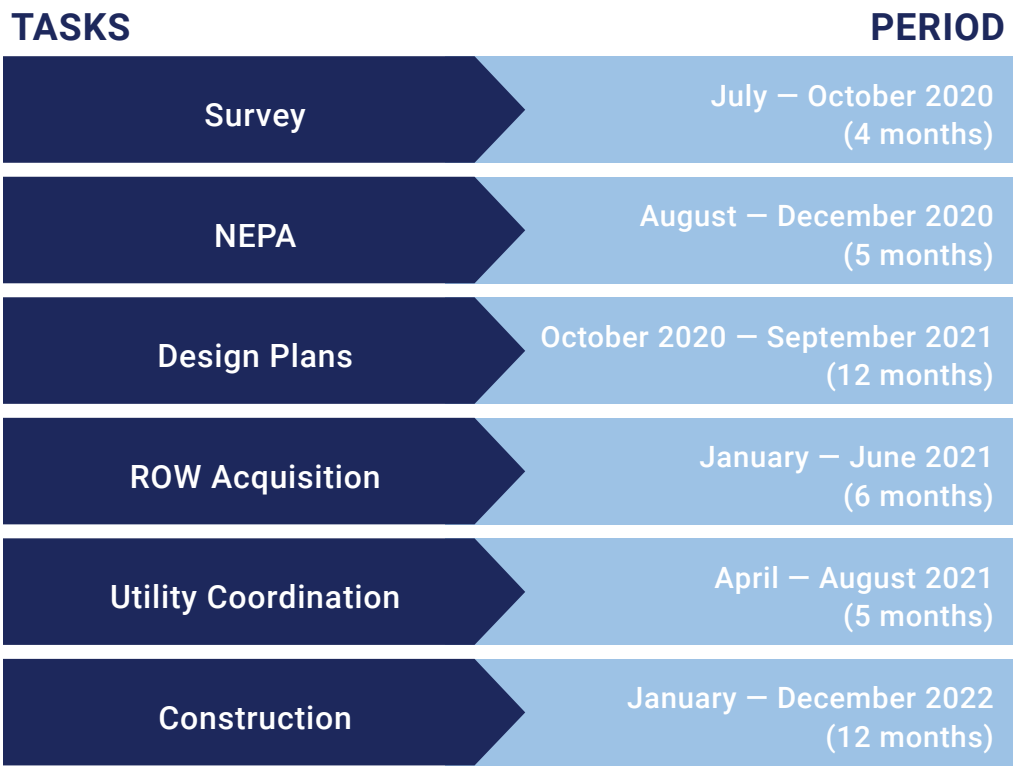
5 Source: Article III, Section 49-k of the Texas Constitution, https://www.txdot.gov/inside-txdot/division/debt/mobility-fund.html
6 Source: GENERAL APPROPRIATIONS ACT FOR THE 2020-21 BIENNIUM, Eighty-sixth Texas Legislature, Regular Session, 2019; https://www.lbb.state.tx.us/Documents/GAA/General_Appropriations_Act_2020_2021.pdf

5.0 ENVIRONMENTAL RISK REVIEW

(a) Project Schedule

As the project schedule in Figure 11 indicates, BUILD funds will be obligated within two years of FY 2020. As indicated in the project schedule, NEPA preparation of a Categorical Exclusion (CE) document is expected later in 2020. Right-of-way acquisition is expected to be completed in 2021 and negotiations with the single property owner have begun. Design plans will begin in 2020 and conclude in 2021. Construction is planned in 2022.

Figure 11: *Proposed Project Schedule*



(b) Environmental Risks

TxDOT has already begun discussions related to environmental permitting. It is expected that the project will be a "Categorical Exclusion", i.e. the environmental class of action determined by the federal review agency. In addition, discussions with the one property owner in the area where right-of-way is required have begun. Except for the BUILD grant, all other funding identified is in place.

(c) Financial Capacity Review

The budget has been detailed to show all sources of funding including the BUILD fund request, federal funds, state funds and private funds. Private funds from FPC and the state funds have already been identified and secured; a total of 64% of the funding.

All necessary activities will be complete to allow BUILD Transportation grant funds to be obligated sufficiently in advance of the statutory deadline (September 30, 2022). It is also expected that the funds will be spent expeditiously once construction starts, with all funds will be expended by September 30, 2023. Due to the fact that only one property owner is involved, right-of-way acquisition will be completed in a timely manner per federal statutes.

6.0 BENEFIT COST ANALYSIS

The Project will generate three major benefits: reductions in accidents, travel time savings related to level of service (LOS) on FM 1593, and reduction in delays exiting and entering the FPC facility at peak traffic hours. The Project will help prevent roadway crashes in the Project area, a benefit drivers and passengers of vehicles along this stretch of FM 1593 will enjoy. Conversion of a two-lane roadway to a four-lane divided roadway (1.8 miles), dividing a four-lane roadway (1.1 miles) and introduction of rumble strips on the centerline and shoulder (8.0 miles) will manifest in lower crash rates. Travelers will also enjoy faster travel with the added capacity on FM 1593. The third major benefit, delays in and out of FPC, manifest not only in time savings, but also in fuel savings and reduced emissions. The Benefit-Cost Ratio (BCR) is 2.09: 1(refer to Table 1 and Appendix A).

APPENDIX A: BENEFIT-COST ANALYSIS

APPENDIX B: COST ESTIMATE

APPENDIX C: TxDOT FUNDING SOURCE

APPENDIX D: OPERATIONAL & SAFETY ANALYSIS

APPENDIX E: LETTERS OF SUPPORT