City of La Vernia

WATER, WASTEWATER & DRAINAGE CAPITAL IMPROVEMENT PLAN AND IMPACT FEE STUDY

May 2025
SWE Project No. 0200-051-25

STATE OF TEXAS
CLARENCE LITTLEFIELD
30994
REGISTERED
PROFESSIONAL ENGINEER
5-14-25

The seal appearing on this document was authorized by Clarence Littlefield, P.E. (Texas Serial #30994) on the date indicated. Alteration of this sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.

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The Honorable Martin Poore, Mayor
Lindsey Wheeler, City Administrator

STATE OF TEXAS
AARON B. PESEK
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The seal appearing on this document was authorized by Aaron Pesek, P.E. (Texas Serial #93959) on the date indicated. Alteration of this sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.

Prepared by:

Southwest Engineers
Engineering Texas Since 1978

Public Infrastructure
Land Development
Land & ROW Acquisition

TBPELS No. F-1909

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Introduction

The City of La Vernia continues to expand and aims to maintain adequate infrastructure and means to provide water and wastewater services.

The City of La Vernia has authorized Southwest Engineers, Inc. to amend the previously approved Impact Fee Study to meet current demand and add stormwater drainage to minimize the need for bonds to fund projects created by new development. The following report will identify system improvements and facility expansion that are necessary for the next 10 years. The previous *Impact Fee Study* was completed and adopted by the city in 2023, for the water and wastewater systems. A Preliminary Drainage Report was prepared in April 2022 by Southwest Engineers and provided a basis for the Stormwater Drainage Impact Fee Analysis. Due to the increased number of service requests and increased construction costs, the Impact Fees have been reevaluated and proposed in the following sections.

Impact fees are charged based on capital improvements deemed necessary due to the projected increase in the number of connections over a developmental period not to exceed 10 years. The term “capital improvements” refers to the improvements made to water, wastewater, and drainage systems (including facility expansions) with a life expectancy of three or more years and the corresponding engineer, whether or not located within the service area.

Water

Methodology and Project Growth

The water service area for the City of La Vernia is bounded by their current CCN, which encompasses approximately 4,750 acres (of which approximately 1,850 acres are located with the FEMA 100-year floodplain). It is projected that the majority of the growth will occur due to development in the form of residential subdivisions, with some retail/commercial developments and schools to serve the growing population. Growth within the next ten years is expected to be located on the west and southeast side of town, where large tracts are being purchased by potential developers. The water and wastewater land use exhibit in Exhibit A shows the areas of potential large development, including areas with active service requests. All existing infrastructure has sufficient capacity to provide service to the current customers, however additional infrastructure will be necessary to serve the proposed developments. Historically a 3% growth rate has been expected, however new growth projects show that the city can expect a >10% growth rate in the area south of FM 775 on the south side of La Vernia. Service request received by the city indicates a similar growth rate west of FM 1346 on the west side of the city. Neighboring water systems have seen growth rates of 15% in recent years with the development moving towards La Vernia.

The water and wastewater Capital Improvement fees are determined based on the portion of the capital expense that would serve one Living Unit Equivalent (LUE). A LUE is defined as the typical flow that would be produced by a small single-family residence and is assumed to represent three people living in a residence.

Area North of Cibolo Creek

The area north of Cibolo Creek includes approximately 1,700 acres with 850 acres located outside of the floodplain. Although the area is within La Vernia's CCN, there are currently no existing customers served or requests for service north of Cibolo Creek. For La Vernia to provide this area with water service it would require significant improvements. At this time, the area as shown on *Exhibit A* is not being studied. An impact fee assessment would be completed upon a service request in the area.

Existing Water Infrastructure

The existing infrastructure remains unchanged from the previously impact fees study except for the completion of the following projects from the previous impact fee study. The current infrastructure serves the City's existing 836 meter or 1,337 LUEs. Below is the status of the water improvements from the previous study:

Improvement 1: Woodcreek Elevated Storage Tank – Complete
Improvement 2: 12-Inch Main from Filter Plant to Old Elevated Tank- Complete
Improvement 3: 16-Inch Main from Filter Plant to Elevated Tank – Not Complete
Improvement 4: Well #8 – Not Complete
Improvement 5: 12- Inch Pipeline from Well #8 to Well #7– Not Complete
Improvement 6: Filter Plant Upgrade – Not Complete

Capital Improvements Projects

The City of La Vernia will need to make several improvements to their water system to be able to serve the projected growth of their service area over the next ten years. While the existing infrastructure has sufficient capacity for current customers, water mains, well, and filter plant will be necessary to serve areas of growth outside the city limits. A 10-year Capital Improvements Plan was developed to identify the projects that will need to be completed to accommodate the proposed growth. The subsequent paragraphs provide the details of each of these projects, followed by a summary of this list and the associated costs in Table 1, a full breakdown of costs in *Exhibit B* and a location map of these improvements can be found in *Exhibit C*.

Project 1 - Woodcreek Elevated Storage Tank

Project 1 is the 500,000-gallon Elevated Tower located in the Woodcreek Subdivision off Woodcreek Drive. The elevated tank provides adequate water pressure to the entire City of La Vernia including flows required for fire flow. This tower was completed in 2020 and was oversized as part of the Capital Improvement Plan to serve future development. The Elevated Tower provides capacity for 2,500 LUEs without the need for ground storage capacity.

Project 2 - 12-Inch Main from Filter Plant to Old Elevated Tank

Project 2 is the 12" water main supply line from the filter plant to the Old Elevated Tank. The original 6" parallel main is limited to about 300 gpm and a bottleneck in the City of La Vernia's water supply. The 12" main increased the water supply to the city by allowing more water to be pumped from the filter plant and available to handle the additional supply from future wells once drilled.

Project 3 - 16-Inch Main from Filter Plant to Elevated Tank

Project 3 is a proposed 16" water main from the end of the 12" water line at the old elevated storage tank in Project 2 directly to the Woodcreek elevated tank. This supply line will be installed in private easement and public Right of Way (ROW) to allow for increased flows to the elevated tank. This line will also reduce the pumping pressure at the filter plant and alleviate any future pressure issue during pumping. This waterline would service the LUEs served by the Elevated Tower.

Project 4 - Well #8

Project 4 is the installation of Well #8. This project includes the acquisition of land and water rights, installation of an approximately 400gpm well, and permitting through Evergreen Underground Water Conservation District. It is proposed for the water well will be placed on the Aultman's property, located between current wells #6 and #7. The water well will provide water for an additional 1,000 LUEs.

Project 5 - Well #9

Project 4 is the installation of Well #9. This project includes the acquisition of land, installation of an approximately 400gpm well, and permitting through Evergreen Underground Water Conservation District. It is proposed for the water well will be placed on the Callaway's property, the same tract of land as existing well #7. Well #9 will be located approximately 900' off the

county road, requiring a line extension to tie the well into the existing 10" line along County Road 342. The water well will provide water for an additional 1,000 LUEs.

Project 6 - Filter Plant Expansion

Project 6 is the expansion of the current filter plant to treat the proposed Well #8 and Well #9. The current operation at the plant is limited to about 885 gpm with 2- 7' diameter filters and 2- 8' diameter filters. It is recommended to add 2- 10' diameter filters at 400 gpm per filter for 800 gpm of additional treatment capacity (Wells #8 & #9). These filters would serve an additional 2,000 LUEs.

Project 7 - Alternate Well Capacity Study

Project 7 is the completion of an Alternate Well Capacity Study with TCEQ. Based on preliminary studies it appears La Vernia utilizes 0.4gpm per LUE instead of the TCEQ standard 0.6gpm. A granted alternate capacity study by TCEQ would allow La Vernia to serve an additional 650 connections utilizing the existing wells.

Project 8 - 16-Inch Main from Woodcreek Elevated Storage Tank to FM 775

Project 8 is the installation of a 16" water main from the Woodcreek Elevated Storage Tank north to FM 775. A proposed 16" line will allow greater flows into town and to the development on the west side of town.

Project 9 - 8-Inch Loop Completion on US 87 at 1346

Project 9 is the completion on the 8" loop along US 87 on the west side of town. The current water distribution system has an 8" line on either side of FM 1346, however there is no crossing of the FM road. The proposal is to complete the loops allowing for additional flows west of town as development continues. This line will allow additional flows to serve 1,500 LUEs.

Project 10 - 12-Inch Line Extension on US 87 West of 1346

Project 10 is a 12" line extension on US 87 extending west from the existing 8" and 10" lines west of FM 1346. Currently there is no water infrastructure that serves west of HEB on US Hwy 87. The proposed 12" line will provide service to the west side of La Vernia's CCN and allow for service to the planned new developments.

Project 11 - Emergency Water Source

Project 11 is to secure a new emergency water source for the City of La Vernia. The current CRWA contract expires in 2030, although the City will be able to provide water for all proposed connections with the 2 proposed well emergency water will be required. Emergency water would be used if there is an issue with a well reducing the flow, and issue with the 10" well transmission pipeline or an issue at the filter plant. The new water source would be secured to provide emergency water for the city.

Project 12 - New Meter Infrastructure

Project 12 the city plans to install new AMR meters and meter infrastructure. The meter infrastructure is a capital improvement, although the individual meter cost is not included. The infrastructure will allow city field staff to be better allocated time to maintenance and repairs of the water system and not reading meters. This will allow the city to provide service for additional customers without requiring more staff.

Water Impact Fee Summary

The twelve (12) projects identified above were used to calculate the proposed Water Impact Fee for the City of La Vernia. The opinion of probable cost for each project was determined, detailed cost estimates can be seen in Exhibit B. Based on the LUEs identified to be served by each project the costs were divided into a proposed Impact Fee. Table 1 below shows the total project costs, LUEs served by the improvement and the Impact Fee (Price per LUE) of the project.

Table 1: Water Capital Improvement Summary

Water Impact Fee Summary Table			
Improvement	**Cost**	**LUEs served by Improvement**	**Price per LUE**
Project 1: Woodcreek Elevated Storage Tank	$ 1,419,420	2500*	$ 567.77
Project 2: 12-Inch Main from Filter Plant to Old Elevated Tank	$ 371,478	2500*	$ 148.59
Project 3: 16-Inch Transmission Main to Woodcreek Elevated Tank	$ 1,700,800	2500	$ 680.32
Project 4: Well #8	$ 1,213,250	1000	$ 1,213.25
Project 5: Well #9	$ 1,342,250	1000	$ 1,342.25
Project 6: Filter Plant Expansion	$ 1,267,000	2000	$ 633.50
Project 7: Alternate Capacity Exception for Well Capacity (TCEQ)	$ 5,000	650	$ 7.69
Project 8: 16-Inch Line extension from Woodcreek Elevated Tank to FM 775	$ 368,100	2500	$ 147.24
Project 9: Complete 8-Inch loop on 87 at FM 1346	$ 310,800	1500	$ 207.20
Project 10: 12-Inch Line extension on US 87 W	$ 648,000	1500	$ 432.00
Project 11: Emergency Interconnect	$ 1,191,100	2000	$ 595.55
Project 12: New AMR meter infrastructure	$ 10,484	1000	$ 10.48
		Total Water Impact Fee	**$ 5,990**

** The improvement can provide 2,500 connections under the current operation; ground storage can be added to allow for more connections but will be an additional cost.*

Based on the expected growth, the anticipated expenditures for associated capital improvements, and the number of LUEs each capital improvement will serve, The City of La Vernia would need to collect approximately $5,985.85/LUE from all new water meters.

Wastewater

Methodology and Project Growth

The current City of La Vernia wastewater service area is not bounded by a CCN and rather the City Limits & ETJ, it is understood that the city plans to provide wastewater to all water customers, with a wastewater CCN proposed to include all future developments served by the water infrastructure. The same land use and projected growth population apply for wastewater as explained above for Water.

There are no neighboring sewer CCNs that will limit the bounds of the sewer service area, based on topography a future proposed sewer service area what is shown in *Exhibit B* The wastewater impact fees are developed to only service the current water CCN with wastewater and Impact fees for the additional future sewer service area will be calculated at the time of the request. Like the water impact fees the area north of Cibolo creek although included in the Water CCN is not being studied at this time. This area would require significant improvements to the wastewater infrastructure to serve and an impact fee assessment will be completed upon a service request in the area.

Existing Wastewater Infrastructure

Similar to the water the existing infrastructure remains unchanged from the previously impact fees study except for the completion of the following projects from the previous impact fee study. The current wastewater treatment plant and infrastructure is at 85% of capacity. Below is the status of the wastewater improvements from the previous study:

Improvement 1: 12-Inch Gravity Main from US 87 to WWTP- Not Complete
Improvement 2: 12-Inch Gravity Main US 87 South East – Not Complete
Improvement 3: West Side Improvements – Not Complete

Capital Improvements Projects

The City of La Vernia will also need to make several improvements to their wastewater system to be able to serve the projected growth of their current water service area over the next ten years. While the existing infrastructure has sufficient capacity for current customers, a new wastewater treatment plant, expansion of the current wastewater treatment plant and new and upsized gravity mains will be necessary to serve areas of growth. A 10-year Capital Improvements Plan was developed to identify the projects that will need to be completed to accommodate the proposed growth. The subsequent paragraphs provide the details of each of these projects, followed by a summary of this list and the associated costs in Table 2, a full breakdown of costs in *Exhibit D* and a location map of these improvements can be found in *Exhibit E*.

Project 1 – Upgrade Gravity Line from 87 to the Plant

The first project is the installation of a 15-inch gravity main in easement from Hwy 87 to the wastewater treatment plant. This sewer line will replace the existing 10-inch gravity main serving the plant. The current line is at approximately 75% capacity and is the only line to the current WWTP. With the proposed growth the gravity line will not be able to handle the increased flows. The proposed line will serve an additional 1,500 LUEs over the current line capacity.

Project 2 – Upgrades to the existing WWTP

The current WWTP in the City is permitted to 500,000 GPD however the plant is not built to the maximum discharge flow. The current plant is running at approximately 85% of the capacity with expansion required for any large development. To meet the maximum plant capacity expansions of the Aeration basin and clarifier are required. With the proposed development this capacity is critical to serving all the additional connections. The proposed improvement will allow for 1,500 additional LUEs to be served by the existing WWTP.

Project 3 – CCN Updates

As previously stated in this report the Wastewater CCN does not match the area the city plans to serve. As service requests are received in order to service these areas the city will need to update their CCN.

Project 4 – Gravity Main South on 87 to the Chamber

Project 4 is the installation of a 15-inch gravity main south of US 87. This main will extend sewer to service the existing residences and businesses along US Hwy 87 that currently do not have sewer service as well as provide sewer service for the new developments in this area. This main will tie into the new gravity main to the plant described above in Project 1. This main will serve 1,500 LUEs.

Project 5 – West End Wastewater Treatment Plant

Project 5 is a new wastewater treatment plant west of the city to serve all development west of FM 1346. The wastewater treatment plant will be built in phases corresponding with development, but the first plant is recommended to be sized for 175,000 GPD. The process will include permitting, design and construction of the new plant. Additionally, the new plant will elevate the need for additional capacity at the HEB lift station. The first phase of this project will serve 1,000 LUEs.

Project 6 – 15- Inch Gravity across US 87 on West End

Project 6 is a new gravity main feeding into the new WWTP proposed in project 5. The gravity main will extend from the proposed plant location south across US 87. This will provide service to the development south of 87. This gravity main is being sized to serve 1,000 LUEs.

Wastewater Impact Fee Summary

As seen in the project descriptions above, due to the addition of the new WWTP on the west end all of the improvements do not serve development across the entire city. Due to this we have separated out the impact fees by area. The areas are shown on the map in Exhibit E. The Central district includes the city center and much of the area that is already developed needing minimal upgrades to serve future growth, the East district is largely undeveloped by will be served utilizing the existing WWTP. The west district is all the new development that will be served by the proposed new plant in Project 5.

The opinion of probable cost for each project was determined, full cost estimates can be seen in Exhibit D. Based on the LUEs identified to be served by each project the costs were divided into a proposed Impact Fee. Table 1 below shows the total project costs, LUEs served by the improvement and the Impact Fee (Price per LUE) of the project.

Table 2: Wastewater Capital Improvement Summary

Waste Water Impact Fee Summary Table			
Improvement	**Cost**	**LUEs served by Improvement**	**Price per LUE**
Central			
Project 1: Upgrade Gravity Main from 87 to plant to a 15-Inch	$ 1,103,800	1500	$ 735.87
Project 2: Upgrades to Wastewater Treatment Plant	$ 3,944,500	1500	$ 2,629.67
Project 3: CCN Updates	$ 50,000	5000	$ 10.00
Total Central Area Wastewater Impact Fee			**$ 3,380**
East			
Project 1: Upgrade Gravity Line from 87 to plant to a 15-Inch	$ 1,103,800	1500	$ 735.87
Project 2: Upgrades to Wastewater Treatment Plant	$ 3,944,500	1500	$ 2,629.67
Project 3: CCN Updates	$ 50,000	5000	$ 10.00
Project 4: Gravity Main South on 87 to Chamber	$ 996,100	1500	$ 664.07
Total East Area Wastewater Impact Fee			**$ 4,040**
West			
Project 3: CCN Updates	$ 50,000	5000	$ 10.00
Project 5: West End Wastewater Treatment Plant	$ 5,599,500	1000	$ 5,599.50
Project 6: 15- Inch Gravity Main across 87	$ 473,600	1000	$ 473.60
Total West Area Wastewater Impact Fee			**$ 6,085**

Based on the expected growth, the anticipated expenditures for associated capital improvements, and the number of LUEs each capital improvement will serve (Table 2), The City of La Vernia would need to collect $3,380, $4,040 or $6,085/LUE from all new developments' dependent on their location within the city.

Stormwater/ Drainage

Stormwater Impact Fee Analysis

As the City of La Vernia grows, the addition of buildings, parking lots, and roadways will increase stormwater runoff during rainfall events. This increase directly impacts the City's stormsewer network. Stormwater impact fees allow a city to budget and allot money towards stormsewer upgrades required to keep the city stormsewer system of an adequate size to reduce and/or eliminate flooding risks within the City Limits. This impact analysis considers known drainage improvements as well as modifications and expansions to existing funded improvements that offer additional flood capacity to the City of La Vernia system.

Stormwater Demand

Stormwater is not a demand-based utility like water, wastewater, electricity, and gas. Therefore, impact fees must be based upon the impact of impervious cover to the public drainage system. Existing and future land use projections are helpful in determining the impact of new developments as impervious cover percentages vary widely depending on land use. Higher percentages of impervious cover, as found in commercial developments, create more runoff during storm events and, therefore, have a greater impact than low-density single-family lots. Appendices F and G show the City's Existing Landuse Map and Future Landuse Plans, respectively.

Service Units

Drainage improvements are directly related to the amount of runoff which is directly related to the amount of impervious cover constructed. Therefore, service units should be based upon the correlation between impervious cover and the capacity of the stormwater system. The City's service units for stormwater will be one (1) service unit per one thousand (1,000) square feet of impervious cover. The drainage impact fee will be assessed for any impervious cover over 20% of the land area as requested by the City of La Vernia.

Stormwater Capital Improvements

The improvements described within this report are based on the April 2022 Overall Preliminary Drainage Report by Paul Viktorin, PE with Southwest Engineers. The methods and programs from that study were modified for this Impact Study to determine the size of improvements needed to serve the future full build-out of the City of La Vernia to a level of containing the 25-yr storm event. Only the areas of concern in the 2022 study were addressed in this study. A map of the projects can be seen in Exhibit H. The following is a brief description of the projects included for this study:

CIP D-1A – US87 Culvert Crossing West of HEB*

Replacing culvert under US87 at HEB to contain the 25yr storm runoff.

CIP D-2A – City Park/ISD Channel

Construction of a 6' wide concrete bottom drainage channel with earthen sides at 12:1 slope within the City Park and La Vernia ISD property between FM1327 and San Antonio Road.

CIP D-2B – San Antonio Low Water Crossing
Reconstruction of the San Antonio Road low water crossing to a 25yr storm capacity structure.

CIP D-2C – San Antonio to US87 Channel
Construction of a concrete trapezoidal channel from the San Antonio Road crossing to the US87 culverts that contains the 25yr storm flow within a 30' easement.

CIP D-2D – US87 Culvert Crossing @ Chihuahua Street*
Replacing culvert under US87 at the Eastern intersection of Chihuahua Street to contain the 25yr storm runoff.

CIP D-2E – Channel Downstream of US87
Construction of a concrete trapezoidal channel that conveys the 25yr storm flow through the Hughes property to the north of US87 between Industrial Drive and W. Chihuahua Street.

CIP D-5A – Channel to POA#1
Construction of a 100' wide grass-lined trapezoidal channel that conveys the 25yr storm flow through the Workman property and to the culvert approximately 600ft north of Wiseman Lane.

CIP D-5B – POA1 US87 Culvert*
Replacing culvert under US87 approximately 600ft north of Wiseman Lane with a culvert system that contains the 25yr storm runoff.

CIP D-5C – POA#1 to CR342 Channel
Construction of a concrete trapezoidal channel that conveys the 25yr storm flow through the La Vernia Interests and Clausewitz property between US87 and CR342.

CIP D-5D – POA#2 US87 Culvert*
Replacing culvert under US87 approximately 120ft south of Wiseman Lane with a culvert system that contains the 25yr storm runoff.

** Note: There is potential for NFIP money from the TXDoT NFIP program to replace the culverts under US87 to the 25yr capacity or higher, however, that is a process that can take months or years to negotiate. At the date of this study, those negotiations had not yet started. The costs of the projects within TXDoT rights-of-way have not accounted for any TXDoT assistance. A re-evaluation of stormwater impact fees will be required if an agreement is made with TXDoT for the sharing of the cost of those improvements.*

Stormwater Improvements Summary

The ten (10) projects identified above were used to calculate the proposed Stormwater Impact Fee. The opinion of probable cost for each project was determined, full cost estimates can be seen in Exhibit F. Table 3 below shows the total project costs, utilization at full build out, available Development Service Units (DSU) to be served by the improvement and the Impact Fee (Price per DSU) of the project.

Table 3: Stormwater Impact Fee Summary Table

Stormwater Impact Fee Summary Table				
Improvement	**Cost**	**Utilization % Full Build out**	**Allotment for Available DSUs**	**Price per DSU**
CIP D-1A - Culvert Under US87 @ HEB	$ 1,445,600.00	18.25%	$ 263,787.98	$ 7.92
CIP D-2A - City Park/ISD Channel	$ 438,600.00	28.41%	$ 124,614.21	$ 3.74
CIP D-2B - San Antonio Low Water Crossing	$ 182,000.00	28.41%	$ 51,709.50	$ 1.55
CIP D-2C - San Antonio to US87 Channel	$ 355,400.00	29.07%	$ 103,311.02	$ 3.10
CIP D-2D - US87 Culvert	$ 1,093,360.00	29.07%	$ 317,828.17	$ 9.54
CIP D-2E - Channel Downstream of US87	$ 284,754.00	29.07%	$ 82,774.97	$ 2.48
CIP D-5A - Channel to POA#1	$ 797,000.00	21.65%	$ 172,576.44	$ 5.18
CIP D-5B - POA1 US87 Culvert	$ 1,272,960.00	21.65%	$ 275,637.28	$ 8.27
CIP D-5C - POA#1 to CR342 Channel	$ 812,390.00	21.65%	$ 175,908.88	$ 5.28
CIP D-5D - POA#2 US87 Culvert	$ 1,912,640.00	4.99%	$ 95,470.19	$ 2.86
	Total Stormwater Impact Fee		$ 50.00	per 1,000sf

Assumptions

Certain assumptions must be made when preparing for the future growth of La Vernia. The assumptions made about the drainage impacts are as follows:

- Future build-out for La Vernia has been assumed to be the City's annexation of the current ETJ. This includes partial count of lots that have areas both inside and outside the ETJ.
- Areas to the north of Dry Hollow and Cibolo Creeks are not included in the landuse/impervious cover counts since they do not contribute directly to the drainage areas feeding the noted improvements. Those areas can be addressed in a later assessment if development occurs in that watershed and a need for public stormsewer improvements is observed.
- Vacant areas within the 100-yr floodplain along Dry Hollow and Cibolo Creeks are assumed to be either agricultural and/or single-family rural use in the future. The impervious cover in this area is negligible against the city-wide impervious cover.
- Known changes in uses and known future projects have been included in the future landuse plan.
- Future commercial areas will be built along main thoroughfares and at main intersections. A 400' depth was assumed for future commercial areas.
- All areas within the current ETJ, but outside the current City limits, have been designated as single-family use except along main thoroughfares as stated above.

- Single family subdivisions are assumed to decrease in density further out from the center of town with 1/3 acre lots being the smallest single-family lot and ½ acre lots being the average size lot. Single-family areas are estimated at an average of 25% impervious cover at full buildout.
- Non-Single-Family uses include multi-family, commercial, municipal, and industrial uses and have been estimated to have an average impervious cover of 70%. Parkland has been estimated to have 5% impervious cover.

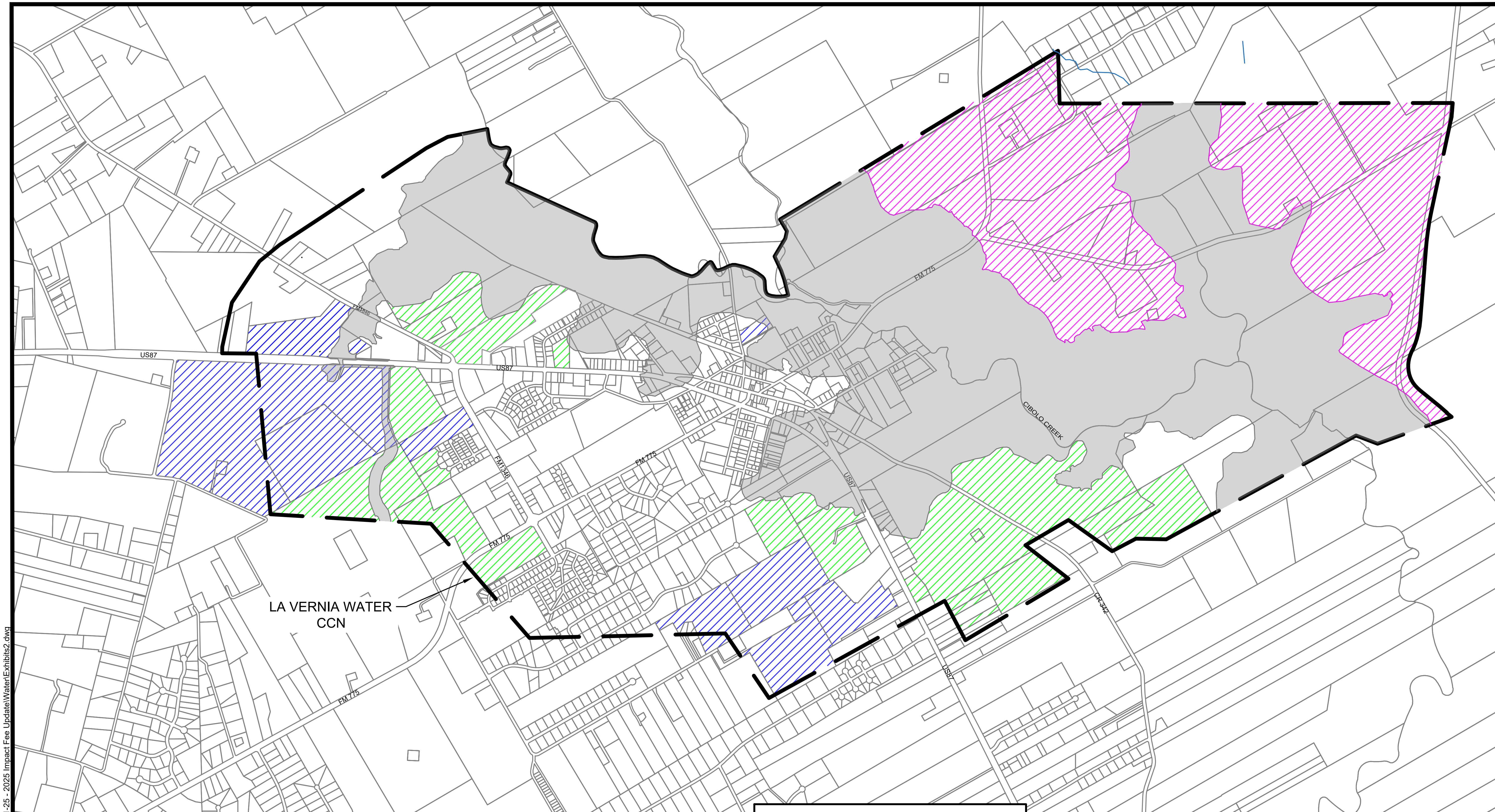
Conclusion and Recommendations

A stormwater impact fee of $50 per 1,000sf of impervious cover over 20% is recommended based on the current La Vernia impervious cover and projected future impervious cover potential. This fee is based the comparison of the existing impervious cover and stormflow rates within the La Vernia City Limits to the increased impervious cover of the future ETJ-based prediction of land use, impervious cover, and that area's projected contribution to overall stormflows. The summary tables used to calculate the Drainage Impact Fee Summary is in Exhibit I. Example calculations of the Stormwater Impact Fee (SIF) and Stormwater Service Units (SSU) are in Exhibit J.

Additional Recommendations

- If the City wants to collect Stormwater Impact Fees during the subdivision platting process, the developer should be required to reaffirm the impervious cover during subdivision improvements plan review as well as any subsequent related permits.
- The City should require a statement of the proposed impervious cover on the cover sheet for projects within the City Limits.
- The Project's Engineer should be required after construction, and before a certificate of occupancy is released, to produce a statement certifying that the project was constructed as permitted and no additional impervious cover was added during construction or a statement that additional impervious cover was required during construction and the amount of impervious cover that was added.

Exhibit A – Water and Wastewater Land Use Map



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2000' 1000' 0 2000'

SCALE: 1" = 2000'

LEGEND

- AREAS OF KNOWN FUTURE DEVELOPMENT
- AREA NORTH OF CIBOLO CREEK
- AREA FOR POTENTIAL LARGE FUTURE DEVELOPMENT
- FLOODPLAIN
- EXISTING SERVICE AREA

CITY OF LA VERNIA

EXHIBIT A - WATER & WASTEWATER LAND USE

MAY 2025

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Exhibit B – Water Preliminary Cost Estimates

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City of La Vernia
Project 1: Woodcreek Elevated Storage Tank
La Vernia, TX
Preliminary Cost Estimate
April 2025

Item #	Item	Quantity	Unit		Unit Cost		Cost
1	500,000 Gallon Elevated Tank	1	LS	$	1,280,220	**$**	**1,280,220**
2	Engineering	1	LS	$	139,200	**$**	**139,200**
					TOTAL COST	**$**	**1,419,420**

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City of La Vernia
Project 2: 12-Inch Main from Filter Plant to Old Elevated Tank
La Vernia, TX
Preliminary Cost Estimate
April 2025

Item #	Item	Quantity	Unit		Unit Cost		Cost
1	12" Main to Old Elevated Tank Construction	1	LS	$	331,478	**$**	**331,478**
2	Engineering	1	LS	$	40,000	**$**	**40,000**
					TOTAL COST	**$**	**371,478**

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City of La Vernia
Project 3: 16-Inch Transmission Main to WoodCreek Elevated Tank
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	16" PVC Water Line	7,400	LF	$ 100	**$ 740,000**
2	Bored Steel Casing	400	LF	$ 600	**$ 240,000**
3	Slick Bore	500	LF	$ 450	**$ 225,000**
4	Misc. Valves, Fittings and Appurtances	1	LS	$ 40,000	**$ 40,000**
				20% Contingency	**$ 249,000**
				Preliminary Construction Total	**$ 1,494,000**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 124,000.00**
2	Surveying	**$ 25,000**
3	Permitting	**$ 2,500**
4	Storm Water Pollution Prevention Plan	**$ 1,500**
5	Easement Acquistion Services	**$ 20,800**
6	Easement Acquistion Compensation	**$ 33,000**
	Preliminary Non-Construction Total	**$ 206,800**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 1,494,000**
Subtotal Non-Construction Costs	**$ 206,800**
Total Project Preliminary Cost Estimate	**$ 1,700,800**

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City of La Vernia
Project 4: Well #8
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	Well Pilot Hole and Completion	1	LS	$ 850,000	**$ 850,000**
2	System Tie-In	1	LS	$ 50,000	**$ 50,000**
				20% Contingency	**$ 180,000**
				Preliminary Construction Total	**$ 1,080,000**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 92,000**
2	Surveying	**$ 1,250**
3	Permitting	**$ 30,000**
4	Water Rights Negotiation Services	**$ 10,000**
	Preliminary Non-Construction Total	**$ 133,250**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 1,080,000**
Subtotal Non-Construction Costs	**$ 133,250**
Total Project Preliminary Cost Estimate	**$ 1,213,250**

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City of La Vernia
Project 5: Well #9
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	Well Pilot Hole and Completion	1	LS	$ 850,000	**$ 850,000**
2	System Tie-In	1	LS	$ 150,000	**$ 150,000**
				20% Contingency	**$ 200,000**
				Preliminary Construction Total	**$ 1,200,000**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 101,000.00**
2	Surveying	**$ 1,250**
3	Permitting	**$ 30,000**
4	Water Rights Negotiation Services	**$ 10,000**
	Preliminary Non-Construction Total	**$ 142,250**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 1,200,000**
Subtotal Non-Construction Costs	**$ 142,250**
Total Project Preliminary Cost Estimate	**$ 1,342,250**

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City of La Vernia
Project 6: Filter Plant Expansion
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	2- 10' Diameter Gravity Filters	2	LS	$ 350,000	**$ 700,000**
2	Yard Piping	1	LS	$ 50,000	**$ 75,000**
3	Filter Foundation	1	LS	$ 45,000	**$ 50,000**
4	Electrical & Controls	1	LS	$ 125,000	**$ 125,000**
				20% Contingency	**$ 190,000**
				Preliminary Construction Total	**$ 1,140,000**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 97,000.00**
2	Asbuilts and O&M Manuals	**$ 5,000.00**
3	Surveying	**$ 5,000**
4	Geotech	**$ 20,000**
	Preliminary Non-Construction Total	**$ 127,000**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 1,140,000**
Subtotal Non-Construction Costs	**$ 127,000**
Total Project Preliminary Cost Estimate	**$ 1,267,000**

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City of La Vernia
Project 7: Alternate Capacity Exception for Well Capacity (TCEQ)
La Vernia, TX
Preliminary Cost Estimate
April 2025

Item #	Item	Quantity	Unit		Unit Cost		Cost
1	Engineering for TCEQ submittal Package	1	LS	$	5,000	**$**	**5,000**
					TOTAL COST	**$**	**5,000**

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City of La Vernia
Project 8: 16-Inch Line extension from Woodcreek Elevated Tank to FM 775
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	16" PVC Water Line	2,000	LF	$ 100	**$ 200,000**
2	Bored Steel Casing	80	LF	$ 600	**$ 48,000**
3	Misc. Valves, Fittings and Appurtances	1	LS	$ 20,000	**$ 20,000**
				20% Contingency	**$ 53,600**
				Preliminary Construction Total	**$ 321,600**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 34,000.00**
2	Surveying	**$ 10,000**
3	Permitting	**$ 2,500**
	Preliminary Non-Construction Total	**$ 46,500**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 321,600**
Subtotal Non-Construction Costs	**$ 46,500**
Total Project Preliminary Cost Estimate	**$ 368,100**

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City of La Vernia
Project 9: Complete 8-Inch loop on 87 at FM 1346
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	8" PVC Water Line	1,000	LF	$ 85	**$ 85,000**
2	Bored Steel Casing	200	LF	$ 350	**$ 70,000**
3	Misc. Valves, Fittings and Appurtances	1	LS	$ 20,000	**$ 20,000**
				20% Contingency	**$ 35,000**
				Preliminary Construction Total	**$ 210,000**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 24,000.00**
2	Surveying	**$ 10,000**
3	Permitting	**$ 2,500**
4	Storm Water Pollution Prevention Plan	**$ 1,500**
5	Easement Acquistion Services	**$ 20,800**
6	Easement Acquistion Compensation	**$ 42,000**
	Preliminary Non-Construction Total	**$ 100,800**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 210,000**
Subtotal Non-Construction Costs	**$ 100,800**
Total Project Preliminary Cost Estimate	**$ 310,800**

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City of La Vernia
Project 10: 12-Inch Line extension on US 87 W
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	12" PVC Water Line	3,200	LF	$ 95	**$ 304,000**
2	Slick bore	150	LF	$ 450	**$ 67,500**
3	Misc. Valves, Fittings and Appurtances	1	LS	$ 40,000	**$ 40,000**
				20% Contingency	**$ 82,300**
				Preliminary Construction Total	**$ 493,800**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 49,000.00**
2	Surveying	**$ 10,000**
3	Permitting	**$ 2,500**
4	Storm Water Pollution Prevention Plan	**$ 1,500**
5	Easement Acquistion Services	**$ 31,200**
6	Easement Acquistion Compensation	**$ 60,000**
	Preliminary Non-Construction Total	**$ 154,200**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 493,800**
Subtotal Non-Construction Costs	**$ 154,200**
Total Project Preliminary Cost Estimate	**$ 648,000**

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City of La Vernia
Project 11: Emergency Interconnect
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	16" PVC Water Line	3,500	LF	$ 100	**$ 350,000**
2	Bored Steel Casing	350	LF	$ 600	**$ 210,000**
3	Tie-In	1	LS	$ 20,000	**$ 20,000**
3	Meter & Meter Vault	1	LS	$ 50,000	**$ 50,000**
4	Misc. Valves, Fittings and Appurtances	1	LS	$ 25,000	**$ 25,000**
				20% Contingency	**$ 131,000**
				Preliminary Construction Total	**$ 786,000**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 69,000.00**
2	Surveying	**$ 20,000**
3	Permitting	**$ 2,500**
4	Contract Negotiations	**$ 10,000**
5	Easement Acquistion Services	**$ 93,600**
6	Easement Acquistion Compensation	**$ 210,000**
	Preliminary Non-Construction Total	**$ 405,100**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 786,000**
Subtotal Non-Construction Costs	**$ 405,100**
Total Project Preliminary Cost Estimate	**$ 1,191,100**

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City of La Vernia
Project 12: New AMR Meter Infrastructure
La Vernia, TX
Preliminary Cost Estimate
April 2025

Item #	Item	Quantity	Unit		Unit Cost		Cost
1	New Meter Infrastructure Purchase	1	LS	$	10,484	**$**	**10,484**
					TOTAL COST	**$**	**10,484**

Exhibit C – Proposed Water Capital Improvements Map

NOTE:
AREAS NORTH OF CIBOLO CREEK WERE EXCLUDED FROM THIS IMPACT FEES STUDY. IMPACT FEES WILL BE DETERMINED UPON RECEIPT OF A SERVICE REQUEST.

(9) COMPLETE 8-INCH LOOP

(10) 12-INCH MAIN EXTENSION.

(8) 16-INCH MAIN FROM EST TO FM 775

OLD ELEVATED TANK (NOT IN SERVICE)

(2) 12-INCH MAIN FROM FILTER PLANT TO OLD ELEVATED TANK

(3) 16-INCH MAIN TO EST

LA VERNIA WATER CCN

(1) ELEVATED TANK

FILTER PLANT & WELL #6

(6) FILTER PLANT EXPANSION

(4) WELL #8

(5)WELL #9

WELL #7

US87

FM1336

FM775

ADDITIONAL PROJECTS NOT SHOWN VISUALLY

(7) ALTERNATE CAPACITY EXCEPTION FOR WELL CAPACITY
(11) EMERGENCY INTERCONNECT
(12) NEW AMR METER INFRASTRUCTURE

2000' 1000' 0 2000'

SCALE: 1" = 2000'

CITY OF LA VERNIA

EXHIBIT C - WATER CAPITAL IMPROVEMENTS

MAY 2025

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Exhibit D – Wastewater Preliminary Cost Estimates

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City of La Vernia
Project 1: Upgrade Grvaity Line from 87 to Plant to a 15-Inch
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	15" PVC Gravity Main	3,400	LF	$ 100	**$ 340,000**
2	Bored Steel Casing	250	LF	$ 600	**$ 150,000**
3	Concrete Manholes	6	Each	$ 6,000	**$ 36,000**
4	Misc. Valves, Fittings, Manholes and Appurtances	1	LS	$ 40,000	**$ 40,000**
				20% Contingency	**$ 113,200**
				Preliminary Construction Total	**$ 679,200**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 61,000.00**
2	Surveying	**$ 25,000**
3	Permitting	**$ 2,500**
4	Storm Water Pollution Prevention Plan	**$ 1,500**
5	Easement Acquistion Services	**$ 145,600**
6	Easement Acquistion Compensation	**$ 189,000**
	Preliminary Non-Construction Total	**$ 424,600**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 679,200.00**
Subtotal Non-Construction Costs	**$ 424,600.00**
Total Project Preliminary Cost Estimate	**$ 1,103,800.00**

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City of La Vernia
Project 2: Upgrades to Wastewater Treatment Plant
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	Aeration Basin Upgrade	1	LS	$ 1,500,000	**$ 1,500,000**
2	Clarifier Upgrade	1	LS	$ 1,000,000	**$ 1,000,000**
3	Yard Piping	1	LS	$ 250,000	**$ 250,000**
4	Electrical	1	LS	$ 250,000	**$ 250,000**
5	Site Work	1	LS	$ 50,000	**$ 50,000**
				20% Contingency	**$ 610,000**
				Preliminary Construction Total	**$ 3,660,000**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 273,000.00**
2	Asbuilts and O&M Manuals	**$ 5,000.00**
3	Surveying	**$ 5,000.00**
4	Storm Water Pollution Prevention Plan	**$ 1,500.00**
	Preliminary Non-Construction Total	**$ 284,500**

Total Project Preliminary Cost

Subtotal Construction Cost	**$**	**3,660,000.00**
Subtotal Non-Construction Costs	**$**	**284,500.00**
Total Project Preliminary Cost Estimate	**$**	**3,944,500.00**

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City of La Vernia
Project 3: CCN Update
La Vernia, TX
Preliminary Cost Estimate
April 2025

Item #	Item	Quantity	Unit	Unit Cost	Cost
1	Engineering	1	LS	$ 30,000	**$ 30,000**
2	Legal	1	LS	$ 20,000	**$ 20,000**
				TOTAL COST	**$ 50,000**

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City of La Vernia
Project 4: Gravity Main South on 87 to Chamber
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	12" PVC Gravity Main	4,000	LF	$ 85	**$ 340,000**
2	Bored Steel Casing	200	LF	$ 450	**$ 90,000**
3	Concrete Manholes	8	Each	$ 6,000	**$ 48,000**
4	Misc. Valves, Fittings, and Appurtances	1	LS	$ 40,000	**$ 40,000**
				20% Contingency	**$ 103,600**
				Preliminary Construction Total	**$ 621,600**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 56,000.00**
2	Surveying	**$ 25,000**
4	Storm Water Pollution Prevention Plan	**$ 1,500**
5	Easement Acquistion Services	**$ 52,000**
6	Easement Acquistion Compensation	**$ 240,000**
	Preliminary Non-Construction Total	**$ 374,500**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 621,600**
Subtotal Non-Construction Costs	**$ 374,500**
Total Project Preliminary Cost Estimate	**$ 996,100**

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City of La Vernia
Project 5: New Wastewater Treatment Plant
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	175K-GPD - Equipment, lift station & electrical	1	LS	$ 3,600,000	**$ 3,600,000**
2	Site Work, Drainage & Roads	1	LS	$ 550,000	**$ 550,000**
3	Equipment Rentals	1	LS	$ 75,000	**$ 75,000**
				20% Contingency	**$ 845,000**
				Preliminary Construction Total	**$ 5,070,000**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Discharge Permit	**$ 65,000**
2	Engineering	**$ 373,000**
3	Asbuilts and O&M Manuals	**$ 5,000.00**
4	Floodplain Revisions through FEMA	**$ 50,000**
5	Land Acquisition	**$ 20,000**
6	Surveying	**$ 5,000**
7	Geotechincal	**$ 10,000**
8	Storm Water Pollution Prevention Plan	**$ 1,500**
	Preliminary Non-Construction Total	**$ 529,500**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 5,070,000**
Subtotal Non-Construction Costs	**$ 529,500**
Total Project Preliminary Cost Estimate	**$ 5,599,500**

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City of La Vernia
Project 6: Upgrade Grvaity Line from 87 to Plant to a 15-Inch
La Vernia, TX
Preliminary Cost Estimate
April 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit	Unit Cost	Total Cost
1	15" PVC Gravity Main	1,500	LF	$ 100	**$ 150,000**
2	Bored Steel Casing	200	LF	$ 800	**$ 160,000**
3	Concrete Manholes	3	Each	$ 6,000	**$ 18,000**
4	Misc. Valves, Fittings, Manholes and Appurtances	1	LS	$ 20,000	**$ 20,000**
				20% Contingency	**$ 69,600**
				Preliminary Construction Total	**$ 417,600**

Preliminary Non-Construction Cost

No.	Task	Cost
1	Engineering	**$ 42,000.00**
2	Surveying	**$ 10,000.00**
3	Permitting	**$ 2,500.00**
4	Storm Water Pollution Prevention Plan	**$ 1,500.00**
	Preliminary Non-Construction Total	**$ 56,000**

Total Project Preliminary Cost

Subtotal Construction Cost	**$ 417,600.00**
Subtotal Non-Construction Costs	**$ 56,000.00**
Total Project Preliminary Cost Estimate	**$ 473,600.00**

Exhibit E – Proposed Wastewater Capital Improvements Map

NOTE:
AREAS NORTH OF CIBOLO CREEK WERE EXCLUDED FROM THIS IMPACT FEES STUDY. IMPACT FEES WILL BE DETERMINED UPON RECEIPT OF A SERVICE REQUEST.

(3) CCN UPDATE

(5) WEST END WWTP

LIFT STATION

LIFT STATION

WASTEWATER TREATMENT PLANT

(2) UPGRADES TO WWTP

(1) UPGRADE GRAVITY LINE FROM 87 TO PLANT

(6) 15-INCH GRAVITY MAIN ACROSS 87

WEST

CENTRAL

EAST

(4) GRAVITY MAIN SOUTH ON 87

LA VERNIA WASTE WATER CCN

US87

FM 775

FM 3346

CR 342

N

2000' 1000' 0 2000'

SCALE: 1" = 2000'

CITY OF LA VERNIA

EXHIBIT E - WASTEWATER CAPITAL IMPROVEMENTS

MAY 2025

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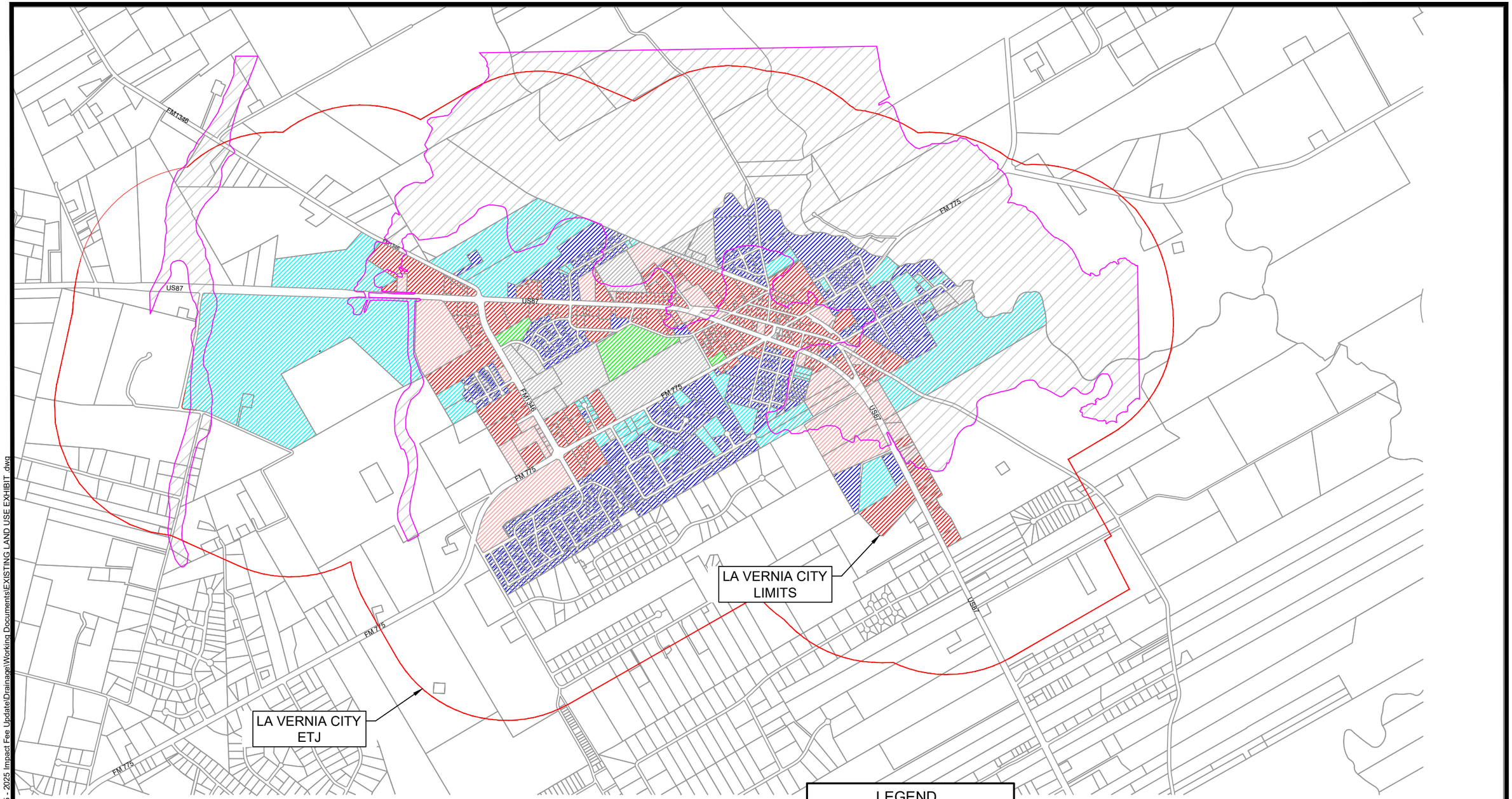
Exhibit F – Existing Land Use Plan



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2000' 1000' 0 2000'

SCALE: 1" = 2000'

LEGEND

- NON SINGLE FAMILY
- NON SINGLE FAMILY (VACANT)
- PARKLAND
- SINGLE FAMILY
- SINGLE FAMILY (VACANT)
- MUNICIPAL/ISD
- FEMA 100 YR FLOODPLAIN

CITY OF LA VERNIA
EXHIBIT F - CURRENT LAND USE

MAY 2025

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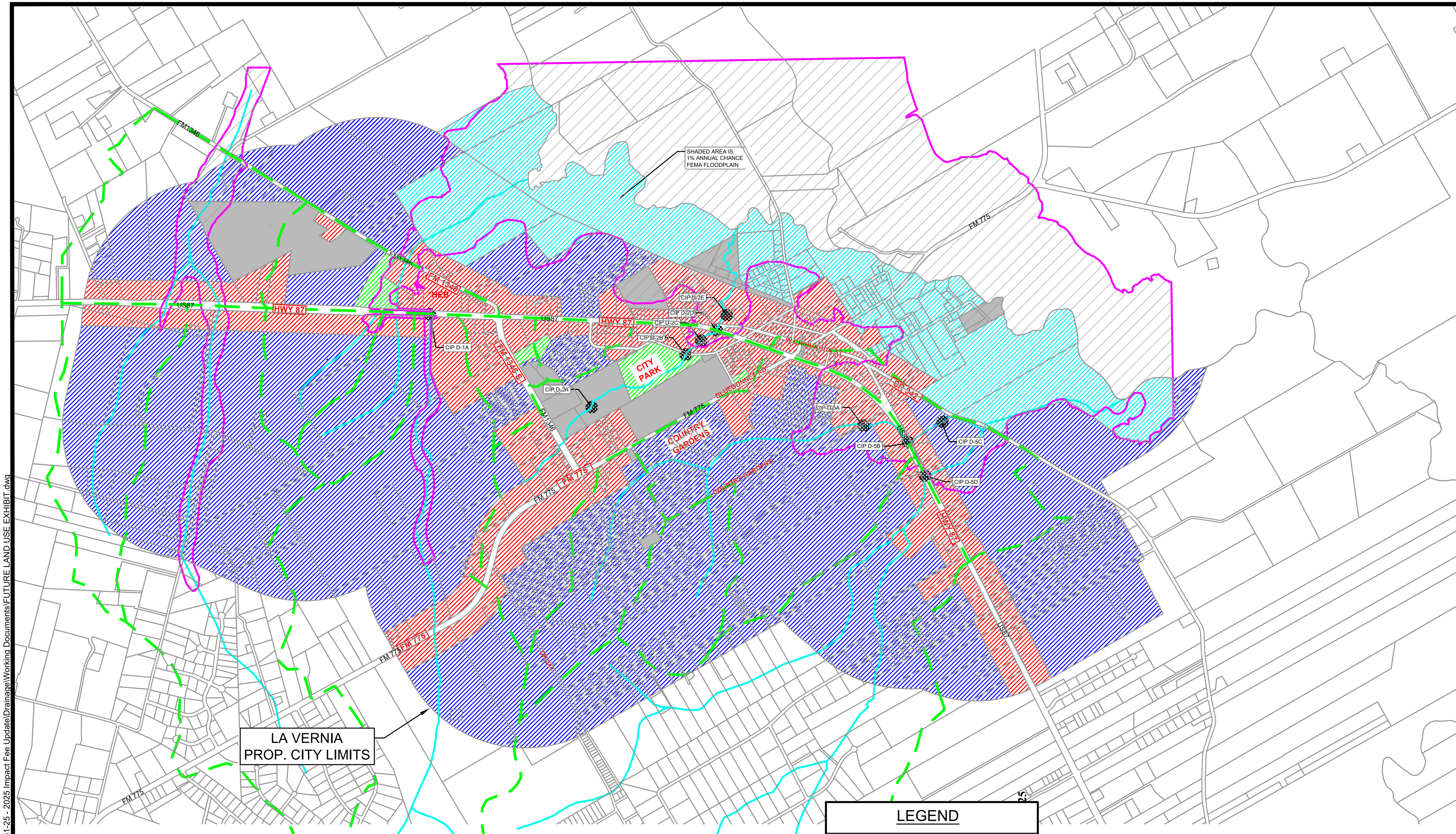
Exhibit G – Future Land Use Plan (2035)



2000' 1000' 0 2000'

SCALE: 1" = 2000'

LEGEND

- NON SINGLE FAMILY
- NON SINGLE FAMILY (VACANT)
- PARKLAND
- SINGLE FAMILY
- SINGLE FAMILY (VACANT)
- MUNICIPAL/ISD
- FEMA 100 YR FLOODPLAIN

CITY OF LA VERNIA
EXHIBIT G - FUTURE PLAN LAND USE

MAY 2025

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Exhibit H – Proposed Stormwater Capital Improvements Map

SHADED AREA IS 1% ANNUAL CHANCE FEMA FLOODPLAIN

FM 1346

HWY 87

*HEB

HWY 87

CIP D-2E

CIP D-2D

CIP D-2B

CIP D-1A

FM 1346 S

CIP D-2C

W CHIHUAHUA ST.

CITY PARK

CIP D-2A

CR 342

BLUEBONNET RD.

CIP D-5A

COUNTRY GARDENS

CIP D-5B

CIP D-5C

FM 775

COUNTRY GARDENS

CIP D-5D

HWY 87

FM 775

CR 344

N

1600' 800' 0 1600'

SCALE: 1" = 2000'

LEGEND

- ISSUE AREA
- PROPERTY BOUNDARIES
- CHANNEL CENTERLINE
- DRAINAGE AREA BOUNDARY
- MAJOR CULVERT/CROSSING
- 100-YR FEMA FLOODPLAIN

CITY OF LA VERNIA

EXHIBIT H - STORMWATER CAPITOL IMPROVEMENTS

MAY 2025

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Exhibit I – Drainage Impact Fee Summary

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Exhibit I - Stormwater Drainage Impact Fee Summary
La Vernia, TX
May 2025

Stormwater Service Unit Breakdown Estimate

	IC Area (Ac)	DSU
Existing Impervious Cover above 20% within the City Limits	168	7,318
Full Buildout Impervious Cover above 20% out to ETJ	933	40,641
	Available DSU	33,323

*1 Drainage Service Unit (DSU) per 1000sf of impervious cover above 20% as per City

Stormwater Utilization Ratio Summary Table

Improvement	25yr Storm Flowrates (cfs)		Utilization	
	Existing	Full Buildout	% Existing	% Fullbuildout
CIP D-1A: Culvert Under US87 @ HEB	2258	2762	81.75%	18.25%
CIP D-2A: City Park/ISD Channel	897	1253	71.59%	28.41%
CIP D-2B: San Antonio Low Water Crossing	897	1253	71.59%	28.41%
CIP D-2C: San Antonio to US87 Channel	998	1407	70.93%	29.07%
CIP D-2D: US87 Culvert	998	1407	70.93%	29.07%
CIP D-2E: Channel Downstream of US87	998	1407	70.93%	29.07%
CIP D-5A: Channel to POA#1	2142	2734	78.35%	21.65%
CIP D-5B: POA1 US87 Culvert	2142	2734	78.35%	21.65%
CIP D-5C: POA#1 to CR342 Channel	2142	2734	78.35%	21.65%
CIP D-5D - POA#2 US87 Culvert	4492	4728	95.01%	4.99%

Stormwater Impact Fee Summary Table

Improvement	Cost	Utilization % Full Build out	Allotment for Available DSUs	Price per DSU
CIP D-1A - Culvert Under US87 @ HEB	$ 1,445,600.00	18.25%	$ 263,787.98	$ 7.92
CIP D-2A - City Park/ISD Channel	$ 438,600.00	28.41%	$ 124,614.21	$ 3.74
CIP D-2B - San Antonio Low Water Crossing	$ 182,000.00	28.41%	$ 51,709.50	$ 1.55
CIP D-2C - San Antonio to US87 Channel	$ 355,400.00	29.07%	$ 103,311.02	$ 3.10
CIP D-2D - US87 Culvert	$ 1,093,360.00	29.07%	$ 317,828.17	$ 9.54
CIP D-2E - Channel Downstream of US87	$ 284,754.00	29.07%	$ 82,774.97	$ 2.48
CIP D-5A - Channel to POA#1	$ 797,000.00	21.65%	$ 172,576.44	$ 5.18
CIP D-5B - POA1 US87 Culvert	$ 1,272,960.00	21.65%	$ 275,637.28	$ 8.27
CIP D-5C - POA#1 to CR342 Channel	$ 812,390.00	21.65%	$ 175,908.88	$ 5.28
CIP D-5D - POA#2 US87 Culvert	$ 1,912,640.00	4.99%	$ 95,470.19	$ 2.86
		Total Stormwater Impact Fee	$ 49.92	per 1,000sf

Exhibit J – Example Calculations for Stormwater Impact Fees

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Exhibit J - Example Stormwater Impact Fee Calculations
Stormwater Drainage Impact Fee Summary
May 2025

Commercial Stormwater Impact Fee Examples

Large 5 acre Commercial Site with 80% Impervious Cover

80%-20% =	60% over 20%
5 ac =	217,800sf
217,800 X 0.60 =	130,680sf
130,680sf/1000sf =	130.68 Stormwater Service Units (SSU)
130.98 SSU X $50/SSU =	$6,534 Stormwater Impact Fee

1.5 acre Commercial Site with 85% Impervious Cover

85%-20% =	65% over 20%
1.5 ac =	65,340sf
65,340 X 0.65 =	42,471sf
42,471sf/1000sf =	42.471 Stormwater Service Units (SSU)
42.471 SSU X $50/SSU =	$2,123.55 Stormwater Impact Fee

Single-Family Stormwater Impact Fee Examples

Large 100 acre Commercial Site with 30% Impervious Cover

30%-20% =	10% over 20%
100 ac =	4,356,000
4,356,000 X 0.10 =	435,600sf
435,600sf/1000sf =	435.6 Stormwater Service Units (SSU)
435.6 SSU X $50/SSU =	$21,780 Stormwater Impact Fee

1 acre Commercial Site with 25% Impervious Cover

25%-20% =	5% over 20%
1 ac =	43,560sf
43,560 X 0.05 =	2,178sf
2,178sf/1000sf =	2.178 Stormwater Service Units (SSU)
2.178 SSU X $50/SSU =	$108.90 Stormwater Impact Fee

Exhibit K – Stormwater Preliminary Cost Estimates

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City of La Vernia
CIP D-1A - US87 Culvert Crossing West of HEB
La Vernia, TX
Preliminary Cost Estimate
May 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit		Unit Cost		Total Cost
1	Exacvation (roadway)	1,776	CY	$	20	$	**35,600**
2	6'x3' Culverts	1,600	LF	$	520	$	**832,000**
3	Wingwall	2	EA	$	15,000	$	**30,000**
4	Rock Riprap	40	CY	$	50	$	**2,000**
5	Grading/backfill/embankment	178	CY	$	42	$	**7,500**
6	Cut & Repair Asphalt Paving	888	SY	$	195	$	**173,200**
7	Guardrail	281	LF	$	30	$	**8,500**
8	Guardrail End Treatment	4	EA	$	2,500	$	**10,000**
9	Erosion Control (Rock Berm)	130	LF	$	14	$	**1,900**
10	Traffic Control	3	MO	$	1,500	$	**4,500**
11	Hydromulch Seeding	288	SY	$	1	$	**300**
					20% Contingency	$	**221,100**
					Preliminary Construction Total	$	**1,326,600**

Preliminary Non-Construction Cost

No.	Task		Cost
1	Engineering	$	**100,000**
2	Survey	$	**8,500**
3	Permit (TXDoT)	$	**8,000**
4	Storm Water Pollution Prevention Plan	$	**2,500**
	Preliminary Non-Construction Total	$	**119,000**

Total Project Preliminary Cost

Subtotal Construction Cost	$	**1,326,600**
Subtotal Non-Construction Costs	$	**119,000**
Total Project Preliminary Cost Estimate	$	**1,445,600**

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City of La Vernia
CIP D-2A - City Park/ISD Channel
La Vernia, TX
Preliminary Cost Estimate
May 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit		Unit Cost		Total Cost
1	Clear/Grub	7	AC	$	6,000	$	**44,100**
2	Rock Berm	50	LF	$	14	$	**700**
3	Excavation	4,500	CY	$	18	$	**81,000**
4	Concrete & Rebar	19,200	SF	$	6	$	**115,200**
5	Hydromulch Seeding	33,422	SY	$	1	$	**33,500**
					20% Contingency	$	**54,900**
					Preliminary Construction Total	$	**329,400**

Preliminary Non-Construction Cost

No.	Task		Cost
1	Engineering	$	**32,000**
2	Survey	$	**62,500**
3	Permits (None - City)	$	**-**
4	Storm Water Pollution Prevention Plan	$	**2,500**
5	Easement Acquistion Services & Survey Esmt Doc	$	**12,200**
6	Easement Acquistion Compensation (ISD)	$	**-**
	Preliminary Non-Construction Total	$	**109,200**

Total Project Preliminary Cost

Subtotal Construction Cost	$	**329,400**
Subtotal Non-Construction Costs	$	**109,200**
Total Project Preliminary Cost Estimate	$	**438,600**

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City of La Vernia
CIP D-2B - San Antonio Low Water Crossing
La Vernia, TX
Preliminary Cost Estimate
May 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit		Unit Cost		Total Cost
1	Exacvation (roadway)	78	CY	$	20	$	**1,600**
2	6'x3' Culverts	120	LF	$	520	$	**62,400**
3	Wingwall	2	EA	$	15,000	$	**30,000**
4	Rock Riprap	13	CY	$	50	$	**700**
5	Grading/backfill/embankment	8	CY	$	42	$	**400**
6	Cut & Repair Asphalt Paving	78	SY	$	195	$	**15,200**
7	Guardrail	91	LF	$	30	$	**2,800**
8	Guardrail End Treatment	4	EA	$	2,500	$	**10,000**
9	Erosion Control (Rock Berm)	42	LF	$	14	$	**600**
10	Traffic Control	3	MO	$	1,500	$	**4,500**
11	Hydromulch Seeding	93	SY	$	1	$	**100**
					20% Contingency	$	**25,700**
					Preliminary Construction Total	$	**154,000**

Preliminary Non-Construction Cost

No.	Task		Cost
1	Engineering	$	**17,000**
2	Design Survey	$	**8,500**
3	Permits (none - City)	$	-
4	Storm Water Pollution Prevention Plan	$	**2,500**
	Preliminary Non-Construction Total	$	**28,000**

Total Project Preliminary Cost

Subtotal Construction Cost	$	**154,000**
Subtotal Non-Construction Costs	$	**28,000**
Total Project Preliminary Cost Estimate	$	**182,000**

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City of La Vernia
CIP D-2C: San Antonio to US87 Channel
La Vernia, TX
Preliminary Cost Estimate
May 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit		Unit Cost		Total Cost
1	Clear/Grub	1	AC	$	6,000	$	**3,800**
2	Rock Berm	20	LF	$	14	$	**300**
3	Excavation	66	CY	$	18	$	**1,200**
4	Concrete & Rebar	26,343	SF	$	6	$	**158,100**
5	Hydromulch Seeding	73	SY	$	1	$	**100**
					20% Contingency	$	**32,700**
					Preliminary Construction Total	$	**196,200**

Preliminary Non-Construction Cost

No.	Task		Cost
1	Engineering	$	**20,500**
2	Survey	$	**8,500**
3	Permits (none - City)	$	**-**
4	Storm Water Pollution Prevention Plan	$	**2,500**
5	Easement Acquistion Services	$	**48,600**
6	Easement Acquistion Compensation ($3/sf)	$	**79,100**
	Preliminary Non-Construction Total	$	**159,200**

Total Project Preliminary Cost

Subtotal Construction Cost	$	**196,200**
Subtotal Non-Construction Costs	$	**159,200**
Total Project Preliminary Cost Estimate	$	**355,400**

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City of La Vernia
CIP D-2D: US87 Culvert
La Vernia, TX
Preliminary Cost Estimate
May 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit		Unit Cost		Total Cost
1	Exacvation (roadway)	867	CY	$	20	$	**17,400**
2	6'x3' Culverts	1,260	LF	$	520	$	**655,200**
3	Wingwall	2	EA	$	15,000	$	**30,000**
4	Rock Riprap	27	CY	$	50	$	**1,400**
5	Grading/backfill/embankment	87	CY	$	42	$	**3,700**
6	Cut & Repair Asphalt Paving	520	SY	$	195	$	**101,400**
7	Guardrail	187	LF	$	30	$	**5,700**
8	Guardrail End Treatment	4	EA	$	2,500	$	**10,000**
9	Erosion Control (Rock Berm)	55	LF	$	14	$	**800**
10	Traffic Control	3	MO	$	1,500	$	**4,500**
11	Hydromulch Seeding	192	SY	$	1	$	**200**
					20% Contingency	$	**166,060**
					Preliminary Construction Total	$	**996,360**

Preliminary Non-Construction Cost

No.	Task		Cost
1	Engineering	$	**78,000**
2	Design Survey	$	**8,500**
3	Permits (TXDoT))	$	**8,000**
4	Storm Water Pollution Prevention Plan	$	**2,500**
	Preliminary Non-Construction Total	$	**97,000**

Total Project Preliminary Cost

Subtotal Construction Cost	$	**996,360**
Subtotal Non-Construction Costs	$	**97,000**
Total Project Preliminary Cost Estimate	$	**1,093,360**

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City of La Vernia
CIP D-2E: Channel Downstream of US87
La Vernia, TX
Preliminary Cost Estimate
May 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit		Unit Cost		Total Cost
1	Clear/Grub	1	AC	$	6,000	$	**3,900**
2	Rock Berm	20	LF	$	14	$	**300**
3	Excavation	65	CY	$	18	$	**1,200**
4	Concrete & Rebar	23,068	SF	$	6	$	**138,500**
5	Hydromulch Seeding	548	SY	$	1	$	**600**
					20% Contingency	$	**28,900**
					Preliminary Construction Total	$	**173,400**

Preliminary Non-Construction Cost

No.	Task		Cost
1	Engineering	$	**19,000**
2	Survey	$	**8,500**
3	Permits (none - City)	$	**-**
4	Storm Water Pollution Prevention Plan	$	**2,500**
5	Easement Acquistion Services	$	**12,150**
6	Easement Acquistion Compensation ($3/sf)	$	**69,204**
	Preliminary Non-Construction Total	$	**111,354**

Total Project Preliminary Cost

Subtotal Construction Cost	$	**173,400**
Subtotal Non-Construction Costs	$	**111,354**
Total Project Preliminary Cost Estimate	$	**284,754**

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City of La Vernia
CIP D-5A: Channel to POA#1
La Vernia, TX
Preliminary Cost Estimate
May 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit		Unit Cost		Total Cost
1	Clear/Grub	5	AC	$	6,000	$	**27,600**
2	Rock Berm	60	LF	$	14	$	**900**
3	Excavation	3,704	CY	$	18	$	**66,700**
4	Concrete & Rebar	-	SF	$	6	$	**-**
5	Hydromulch Seeding	22,222	SY	$	1	$	**22,300**
					20% Contingency	$	**23,500**
					Preliminary Construction Total	$	**141,000**

Preliminary Non-Construction Cost

No.	Task		Cost
1	Engineering	$	**16,000**
2	Survey	$	**39,100**
3	Permits (none - City)	$	**-**
4	Storm Water Pollution Prevention Plan	$	**2,500**
5	Easement Acquistion Services	$	**10,400**
6	Easement Acquistion Compensation ($3/sf)	$	**588,000**
	Preliminary Non-Construction Total	$	**656,000**

Total Project Preliminary Cost

Subtotal Construction Cost	$	**141,000**
Subtotal Non-Construction Costs	$	**656,000**
Total Project Preliminary Cost Estimate	$	**797,000**

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City of La Vernia
CIP D-5B: POA1 US87 Culvert
La Vernia, TX
Preliminary Cost Estimate
May 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit		Unit Cost		Total Cost
1	Exacvation (roadway)	1,365	CY	$	20	$	**27,300**
2	6'x3' Culverts	1,365	LF	$	520	$	**709,800**
3	Wingwall	2	EA	$	15,000	$	**30,000**
4	Rock Riprap	47	CY	$	50	$	**2,400**
5	Grading/backfill/embankment	137	CY	$	42	$	**5,800**
6	Cut & Repair Asphalt Paving	910	SY	$	195	$	**177,500**
7	Guardrail	328	LF	$	30	$	**9,900**
8	Guardrail End Treatment	4	EA	$	2,500	$	**10,000**
9	Erosion Control (Rock Berm)	50	LF	$	14	$	**700**
10	Traffic Control	3	MO	$	1,500	$	**4,500**
11	Hydromulch Seeding	336	SY	$	1	$	**400**
					20% Contingency	$	**195,660**
					Preliminary Construction Total	$	**1,173,960**

Preliminary Non-Construction Cost

No.	Task		Cost
1	Engineering	$	**80,000**
2	Design Survey	$	**8,500**
3	Permits (TXDoT))	$	**8,000**
4	Storm Water Pollution Prevention Plan	$	**2,500**
	Preliminary Non-Construction Total	$	**99,000**

Total Project Preliminary Cost

Subtotal Construction Cost	$	**1,173,960**
Subtotal Non-Construction Costs	$	**99,000**
Total Project Preliminary Cost Estimate	$	**1,272,960**

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City of La Vernia
CIP D-5C: POA#1 to CR342 Channel
La Vernia, TX
Preliminary Cost Estimate
May 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit		Unit Cost		Total Cost
1	Clear/Grub	1.95	AC	$	6,000	**$**	**11,700**
2	Rock Berm	20	LF	$	14	**$**	**300**
3	Excavation	124	CY	$	18	**$**	**2,300**
4	Concrete & Rebar	67,880	SF	$	6	**$**	**407,300**
5	Hydromulch Seeding	1,886	SY	$	1	**$**	**1,900**
					20% Contingency	**$**	**84,700**
					Preliminary Construction Total	**$**	**508,200**

Preliminary Non-Construction Cost

No.	Task		Cost
1	Engineering	**$**	**45,000**
2	Survey	**$**	**16,600**
3	Permits (none - City)	**$**	**-**
4	Storm Water Pollution Prevention Plan	**$**	**2,500**
5	Easement Acquistion Services	**$**	**36,450**
6	Easement Acquistion Compensation ($3/sf)	**$**	**203,640**
	Preliminary Non-Construction Total	**$**	**304,190**

Total Project Preliminary Cost

Subtotal Construction Cost	**$**	**508,200**
Subtotal Non-Construction Costs	**$**	**304,190**
Total Project Preliminary Cost Estimate	**$**	**812,390**

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City of La Vernia
CIP D-5D - POA#2 US87 Culvert
La Vernia, TX
Preliminary Cost Estimate
May 2025

Preliminary Construction Cost

No.	Item	Quantity	Unit		Unit Cost		Total Cost
1	Exacvation (roadway)	2,210	CY	$	20	$	**44,200**
2	6'x3' Culverts	2,040	LF	$	520	$	**1,060,800**
3	Wingwall	2	EA	$	15,000	$	**30,000**
4	Rock Riprap	76	CY	$	50	$	**3,800**
5	Grading/backfill/embankment	221	CY	$	42	$	**9,300**
6	Cut & Repair Asphalt Paving	1,473	SY	$	195	$	**287,300**
7	Guardrail	530	LF	$	30	$	**16,000**
8	Guardrail End Treatment	4	EA	$	2,500	$	**10,000**
9	Erosion Control (Rock Berm)	225	LF	$	14	$	**3,200**
10	Traffic Control	3	MO	$	1,500	$	**4,500**
11	Hydromulch Seeding	544	SY	$	1	$	**600**
					20% Contingency	$	**293,940**
					Preliminary Construction Total	$	**1,763,640**

Preliminary Non-Construction Cost

No.	Task		Cost
1	Engineering	$	**130,000**
2	Design Survey	$	**8,500**
3	Permits (TXDoT))	$	**8,000**
4	Storm Water Pollution Prevention Plan	$	**2,500**
	Preliminary Non-Construction Total	$	**149,000**

Total Project Preliminary Cost

Subtotal Construction Cost	$	**1,763,640**
Subtotal Non-Construction Costs	$	**149,000**
Total Project Preliminary Cost Estimate	$	**1,912,640**