

PUBLIC NOTICE

**City of Lockhart
Impact Fee Advisory Committee
6:30 PM, Wednesday April 12, 2023
Municipal Building — Glosserman Room
308 W. San Antonio St.**

AGENDA

1. Call meeting to order.
2. Consider the Minutes of the February 22, 2023, meeting.
3. Discussion and possible action on recommendation of approval for draft Water/Wastewater and Roads impact fee updates.
6. Adjourn.

Posted on the bulletin board in the Municipal Building, 308 W. San Antonio St., Lockhart, Texas, at 12:00 PM on the 6th day of April, 2023.

City of Lockhart
Impact Fee Advisory Committee
Wednesday, February 22, 2023

MINUTES

COMMITTEE MEMBERS PRESENT: Philip Ruiz, Ron Peterson, Manual Oliva, Larry Metzler

COMMITTEE MEMBERS ABSENT: Phil McBride, Rick Arnic, Brad Lingvai, Chris St. Leger

STAFF PRESENT: David Fowler, Christine Banda

VISITORS/CITIZENS ADDRESSING THE COMMITTEE: None

1. Call meeting to order. Chair Ruiz called the committee to order at 7:17 p.m.

2. Consider the Minutes of the December 14, 2022, meeting.

Member Oliva moved to approve the minutes as submitted, and Member Peterson seconded. The motion passed by a vote of 4-0.

3. Presentation by Freese and Nichols and possible action on Draft Final Report Roadway Impact Fee Program Update.

Eddie Haas came forward to give his presentation. He gave a thorough overview of what goes into calculating roadway service units. He mentioned that they follow Chapter 395 of the Texas Local Government for the impact fee guidelines. He said the city's population will grow by an estimated 8,000 over the next 10 years and roughly over 3,000 jobs would be added to the city. The CIP is based on the city's thoroughfare plan and also includes signals and bridges as well in their cost estimates. The cost for the new CIP for the city is \$44 million. There would still be two service areas used in the cost per service unit area. He showed a comparing the impact fees to peer communities and where they would be compared to other surrounding areas if adopted. The graphs showed the city as currently lower than the others, while the proposed rates would bring the city towards the middle of other cities/utilities in the region. In the past the city has taken the lower of the two proposed roadway impact fee service areas and used it across both service areas for all uses. The committee can recommend how they would prefer to handle the different rates proposed in the two service areas. City staff said they think it would not be burdensome to collect the computed rate for each area, rather than just using the lower of the two service area rates.. Another question is whether the city want to collect the whole \$44 million in capital costs or collect 50% of the total cost. Historically the city has credited the 50%.

4. Presentation by TRC Engineering, Inc. and possible action on Water and Wastewater Impact Fee Analysis Capital Improvements Plan Draft.

Jeff Meadows with TRC presented how his firms arrived at the new proposed water and wastewater impact fees. He gave historical information on usage and how the usage would grow when adding 8,000 people. There would be a 56% increase in water usage. He mentioned that our wastewater plant is in good standing with TCEQ in terms of capacity. There will be numerous new lines installed to provide for the new developments and new lift

stations needed. He stated that the proposed impact fees for water would be \$4,500 and wastewater would be \$5,400 for a total of estimated cost of \$10,000 per LUE. These fees would place the city near the regional average in comparison to other peer cities.

5. Discussion of combined roads and water and wastewater impact fees.

Mr. Fowler stated that at this time he wanted the committee's feedback on the information given this evening. This feedback would be incorporated into the final draft before a letter of recommendation is approved at a meeting in April.

There was discussion on how to proceed with collecting fees for the two different roadway service areas and that having two different fees would not be an issue in terms of calculating and assessing fees. Ultimately, it's up to the committee to decide if they want to apply the two different fees or continue the current practice of assessing the lower of the two like they have done before.

Mr. Haas said that Mr. Fowler will draft a letter of recommendation for approval of the LUA's, CIP's and the cost per service unit to Council for approval at the next committee meeting.

The consensus of the committee is to take the recommendation from Freese and Nichols to charge the maximum allowed at 50% for the road impact fees in each service area. They agree with the proposed new water and wastewater impact fees given from TRC.

6. Adjourn.

Member Peterson moved to adjourn, and Member Metzler seconded. The motion passed by a vote of 4-0, and the meeting adjourned at 8:03 p.m.

Approved: _____
Philip Ruiz, Chair

Date

MEMORANDUM

TO: Impact Fee Advisory Committee
FROM: David Fowler, Planning Director
DATE: April 6, 2023
SUBJECT: April 12 meeting

This meeting of the Impact Advisory Committee will be for the purpose of approving the final drafts of the water/wastewater and roads impact fee reports, including land use assumptions, capital projects and proposed fee levels. The public hearing for the Impact Fee Updates has been scheduled for the May 2, 2023 City Council meeting. The draft reports are posted on the city website and hard copies of both reports are available for review at City Hall. A letter from the Committee to City Council recommending approval is included in the meeting packet for approval if the Commission feels the recommendations from the February 22, 2022, meeting have been incorporated in the report.



TO: Mayor and City Council
FROM: Philip Ruiz, Chairman, *Impact Fee Advisory Committee (IFAC)*
DATE: April 12, 2023
SUBJECT: IFAC Recommendation – Water/Wastewater and Roadway Impact Fee Program Update and Collection Rates

In accordance with Texas Local Government Code, the Lockhart Impact Fee Advisory Committee (CIAC), which consists of members from the Planning and Zoning Commission has been conducting meetings with City staff and the City’s consultants for the update of the impact fee program for roads in Lockhart, Texas. Over the course of study, the CIAC has received data regarding Land Use Assumptions (2022-2032), water/wastewater and roadway impact fee Capital Improvements Plans and associated costing, and the resultant cost per service unit calculations for determining impact fees.

After review and comment of the information, the IFAC recommends the following:

- Approval of the Land Use Assumptions and associated population and employment growth forecasts over the ten-year planning period 2022-2032,
- Approval of the Water/wastewater impact fee Capital Improvements Plan and the calculated Land Use Equivalents (LUE), and
- Approval of the Road impact fee Capital Improvements Plan, and the calculated cost per service unit for each service area for roads, and
- Approval of the calculated maximum collection rate per LUE or service unit, as outlined in the tables below.

The IFAC believes that continuation of collecting up to the maximum allowable collection rate under law would continue to benefit the city in the development and implementation of specific capital improvements over the long-term within the city. The following represents the calculated maximum collection rate for the potential impact fee programs:

Water/Wastewater

Utility Type	Maximum Collection Rate (Per LUE) *
Water	\$4562.36
Wastewater	\$5792.42
TOTAL	10,354.32

*Base cost per LUE with 50% credit.

Roads

ROADWAY Service Area	Maximum Collection Rate (Per Service Unit) *
1	\$1,501.00
2	\$1,806.00

*Base service unit per vehicle-mile with 50% credit.

The IFAC came to these conclusions after deliberation and considered the cost of needed infrastructure to address continued growth of the city, cost impacts to Lockhart citizens, and that a fair share cost should be borne by new development. (Even with the impact fee program, Lockhart citizens would be contributing at least 50% of the cost of future infrastructure.) As a continued funding mechanism of the city, the IFAC recommends that the City Council approve the Land Use Assumptions Report, Capital Improvements Plan, and the Water/Wastewater and Roadway Impact Fee Programs with a collection rate up to the maximum allowable.

Respectfully,

Philip Ruiz
Chair, Impact Fee Advisory Committee

Lockhart Impact Fee Advisory Committee

Rick Arnic
Bradley Lingvai
Philip McBride, Chair
Larry Metzler
Manuel Oliva, Vice-Chair
Dr. Ronald Peterson
Philip Ruiz, Chair
Chris St. Leger



Land Use Assumptions and Roadway Impact Fee Schedule

March 8, 2023

		<u>Meeting/Action</u>
✓	July 13	Project Kick-off Meeting City Staff (Virtual Meeting)
✓	July 29	Data Needs from City City Staff
✓	Aug. 2	Resolution by City Council calling for impact fee update and appointment of IFAC Committee. City Council
✓	Aug. 23	Data Collection: Traffic Counts between Tues-Thursday; GRAM week of August 22 nd or 29 th (ISD school start Aug. 17 th) FNI
✓	Sept. 14	IFAC Mtg. 1: Study overview; direction of growth rates for Land Use Assumptions (LUA) IFAC (No. 1)
✓	Nov. 11	Draft LUA calculations delivered to City FNI
✓	Nov. 29	City Staff Mtg. 1: Review of LUA, development of roadway CIP City Staff (Virtual Meeting)
✓	Dec. 2	City comments due of LUA calculations. City Staff
✓	Dec. 7	Draft LUA/CIP to City for IFAC FNI
✓	Dec. 14	IFAC Mtg. 2: Review/Approval of Draft LUA, discussion of preliminary CIP/direction by IFAC and City Staff IFAC (No. 2)
✓	Feb. 10	City Staff Mtg. 2: Discussion of cost per service unit fee and benchmarking City Staff (No. 1)
✓	Feb. 15	Presentation materials (impact fee calculations and benchmarking) to IFAC City Staff
✓	Feb. 22	IFAC Mtg. 3: Cost per service unit calculations IFAC (No. 3)
	Mar. 1	Draft Final Roadway Impact Fee Report to City FNI



Impact Fee Program Update
Schedule of Important Dates

Mar. 21 (42 days)	Resolution by City Council establishing Public Hearing date for update of roadway impact fee program (PH within 60 days of resolution; May 2nd)	City Council
Mar. 24	Final sealed Report to City	FNI
Mar. 31	Publish Notice of Public Hearing on impact fee (at least 30 days before PH; Report made available to public)	City Staff
Apr. 3	Draft Impact fee written recommendation to City Staff	IFAC
Apr. 12	IFAC Meeting to discuss final written recommendation to Council	IFAC
Apr. 24	IFAC recommendation due to City Secretary/Council (at least 5 business days prior to PH)	City Staff
May 2	Public Hearing on Impact Fee; Resolution/Ordinance approving update of impact fee program (<i>adoption within 30 days of PH</i>)	City Council
May 16	Last regular schedule meeting day to adopt updated Ordinance*	City Council

****Ordinance must be adopted within 30-days of the close of the public hearing, otherwise a new public hearing process is required.***

Public Notice:

- *By certified mail to anyone with written requests 2 years prior to the plan process*
- *1 or more newspapers in county where the municipality resides (Caldwell County)*

City Council Meetings: 1st and 3rd Tuesdays, 7:00pm

IFAC Meetings: 2nd and 4th Wednesdays, 6:30pm



Impact Fee Program Update
Schedule of Important Dates

January						
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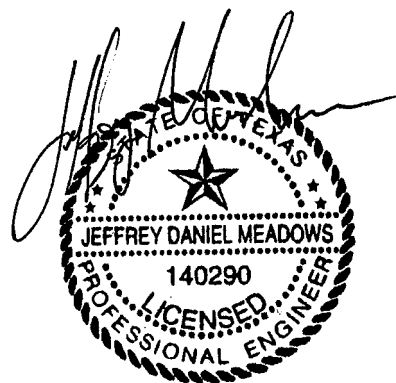
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CITY OF LOCKHART

WATER AND WASTEWATER IMPACT FEE ANALYSIS CAPITAL IMPROVEMENTS PLAN

MARCH 2023



03-17-2023

Prepared By:
TRC Engineering, Inc.
T.B.P.E. Firm No. F-8632
TRC Project No. 496995

TABLE OF CONTENTS

1.0 Introduction 1

2.0 ANALYSIS OF WATER & WASTEWATER SYSTEMS..... 1

 2.1 Present Water Demands 1

 2.2 Water Supply..... 3

 2.3 Water Treatment Plant 4

 2.4 Storage, High-Service Pumps, and Distribution Mains..... 4

 2.5 Future Water Use 5

 2.6 Water Supply Improvements 5

 2.7 Future Water Treatment Needs..... 5

 2.7.1 Treatment Capacity..... 5

 2.8 Ground Storage Improvements 6

 2.9 High Service Pump Improvements 6

 2.10 Elevated Storage Improvements 6

 2.11 Distribution System Improvements 6

 2.12 Cost Estimates 7

 2.13 Present Wastewater Flows 8

 2.14 Collection System 10

 2.15 Wastewater Treatment Plants..... 10

 2.15.1 WWTP NO. 1 (Larremore WWTP) 10

 2.15.2 WWTP NO. 2 (FM 20 WWTP) 10

 2.16 Future Wastewater Flows 10

 2.17 Collection System Improvements..... 11

 2.18 Future Wastewater Treatment Needs 12

 2.19 Cost Estimate 12

3.0 Calculation of Fee..... 13

 3.1 Unit Usage Statistics 13

 3.2 Conversion Table 13

 3.3 Projected Service Units for New Development 15

 3.4 CIP Development for Existing and Future Needs 15

4.0 Summary 25

Figure 1 26

Figure 2 27

LIST OF TABLES

Table 1 – Historical Water Usage Data 2

Table 2 – Water Well Production..... 4

Table 3 – Projected Water Usage..... 5

Table 4 – Proposed Water System Improvements 7

Table 5 – Historical Wastewater Usage Data 8

Table 6 – Projected Future Wastewater Flows..... 11

Table 7 – Proposed Wastewater System Improvements 12

Table 8 – Capacity Demand for Each New Water LUE 16

Table 9 – Capacity Demand for Each New Wastewater LUE 16

Table 10 – LUE Equivalencies for Various Types and Sizes of Water Meters 17

Table 11 – Current Meter Count and Estimation of LUE 17

Table 12 – Estimated Water Service Demand by Facility Type 18

Table 13 – Estimated Wastewater Service Demand by Facility Type 19

Table 14 – Cost of Existing Facilities with Excess Capacity 19

Table 15 – Water CIP Inventory and Costing 21

Table 16 – Wastewater CIP Inventory and Costing 23

Table 17 – Water and Wastewater Capital Cost Summary..... 25

LIST OF FIGURES

Figure 1 26

Figure 2..... 27

1.0 INTRODUCTION

Chapter 395 of the Texas Local Government Code requires the following elements be included in the Capital Improvements Plan (CIP) to be used as the basis for impact fees:

- Table of service usage for each category of capital improvements and a conversion table of service units per acre (or other measure) of at least residential, commercial, and industrial land uses
- Projections of total service units for new development, within the service area
- Description of existing capital improvements, including:
 - Existing capital improvements within the service area.
 - Analysis of total capacity of existing improvements.
 - Analysis of current usage of existing improvements.
 - Cost to upgrade, update improvements, expand or replace facilities for existing needs.
- Description of capital improvements needed to serve new development within the next ten (10) years or less (based upon adopted service area, land use and unit usage assumptions), including:
 - All or portions of the existing CIP.
 - All or portions of the future CIP.
 - Costs associated with both existing and future CIP facilities needed for new development.

2.0 ANALYSIS OF WATER & WASTEWATER SYSTEMS

2.1 PRESENT WATER DEMANDS

The yearly and monthly water consumption for the City of Lockhart over the past five (5) years is shown in **Table 1 – Historical Water Usage Data**. The average and peak demand over this time frame was 1.47 MGD and 2.55 MGD, respectively.

The Lockhart water system currently serves approximately 5,294 customers and has two (2) interconnections to the Polonia water system. The Polonia water system connections have not been used in recent years and have historically used a small quantity of water compared to the City of Lockhart. The per capita average and peak water demands are 96 gal/capita/day and 155 gal/capita/day, respectively.

Table 1 – Historical Water Usage Data

2018		
Month	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)
January	1.45	1.63
February	1.36	1.50
March	1.43	1.79
April	1.45	1.59
May	1.61	1.89
June	1.80	2.07
July	1.85	2.21
August	2.04	2.26
September	1.47	2.04
October	1.35	1.49
November	1.34	1.41
December	1.32	1.44
Average	1.54	
Maximum		2.26

2019		
Month	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)
January	1.36	1.50
February	1.34	1.41
March	1.40	1.55
April	1.39	1.51
May	1.40	1.58
June	1.43	1.67
July	1.65	1.98
August	1.85	2.14
September	1.70	1.94
October	1.55	1.90
November	1.40	1.63
December	1.39	1.50
Average	1.49	
Maximum		2.14

2020		
Month	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)
January	1.35	1.49
February	1.35	1.53
March	1.39	1.50
April	1.43	1.73
May	1.51	1.68
June	1.55	1.82
July	1.86	2.20
August	1.92	2.12
September	1.41	1.87
October	1.53	1.89
November	1.51	1.73
December	1.38	1.56
Average	1.52	
Maximum		2.20

2021		
Month	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)
January	1.34	1.46
February	1.70	2.52
March	1.29	1.54
April	1.46	2.55
May	1.14	1.63
June	1.29	1.56
July	1.18	1.36
August	1.26	1.50
September	1.42	1.63
October	1.18	1.34
November	1.19	1.32
December	1.17	1.31
Average	1.30	
Maximum		2.55

2022		
Month	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)
January	1.25	1.51
February	1.36	1.71
March	1.38	1.62
April	1.44	1.67
May	1.39	1.62
June	1.59	1.91
July	1.84	2.13
August	1.73	2.00
September	1.57	2.06
October	1.52	1.71
November	1.39	1.54
December	1.43	2.17
Average	1.49	
Maximum		2.17

AVERAGE FOR JAN 2018 THROUGH DEC 2022
1.47 MGD

MAXIMUM FOR JAN 2018 THROUGH DEC 2022
2.55 MGD

2.2 WATER SUPPLY

The City of Lockhart currently has seven (7) producing wells in the southeast well field. Their capacities are shown in **Table 2 – Water Well Production**. These wells pump water from the Wilcox Aquifer through 7.5 mile long parallel 12-inch, 14-inch and 18-inch transmission mains to the raw water pump station. The raw water pump station collects the water from the wells and pumps it to the water plant on the southeast side of the City. The raw water pump station consists of a 300,000 gallon storage reservoir and three (3) pumps rated at 1,800 gpm each. The raw water pipelines are capable of transporting 5 MGD.

In 2005, the Guadalupe-Blanco River Authority, City of Lockhart and the City of Luling put into service the Luling/Lockhart Water Transmission Main. This project consisted of a pump station at the Luling surface Water Treatment Plant and a 16-mile 14-inch transmission main to the City of Lockhart Water Treatment Plant. The contract between the three (3) entities allows for the delivery of one (1) million gallons of treated surface water per day to the Lockhart Water Treatment Plant.

In 2022, construction began on the Carrizo Groundwater Supply Project which will provide the City of Lockhart with an additional 3,000-acre feet per year of firm drinking water capacity (2.67 MGD) when complete. The project is set to be completed in early 2023. This project will increase the City’s access to raw water by an additional 65%. Although the City of Lockhart currently has a contract for this raw water, delivery of the raw water to the City is not guaranteed during times of conservation or drought. It is recommended that the City consider the development of additional local wells once their peak water usage rates begin to approach the 4.62 MGD well field capacity.

Table 2 – Water Well Production

Well No.	Capacity (gpm)	Capacity (MGD)
3	375	0.54
4	330	0.48
5	225	0.32
9	550	0.79
10	550	0.79
11	525	0.76
12	650	0.94
Total	3,205	4.62

2.3 WATER TREATMENT PLANT

The Lockhart Water Treatment Plant (WTP) receives and treats the well water from the well field, located southeast of the City. Each of the wells pump into the 300,000 gallon raw water storage tank, which has booster pumps to pump the water to the WTP. The WTP was upgraded in 2000 to provide a capacity of 5.7 MGD, increased from the previous 2.9 MGD.

The plant consists of raw water metering, forced draft aeration, clarification, filtration, chemical feed, clearwell, ground storage reservoir, high service pumps, treated water metering and backwash/sludge reclamation basin. The plant upgrade in 2000 included the addition of a second forced draft aerator; two (2) new filter units; rehabilitation of two (2) existing filters; new chemical feed equipment; the backwash/sludge reclamation basin; flow meters; water system Supervisory Control and Data Acquisition (SCADA) system to provide complete automated monitoring and control of the entire water system including the plant, wells, distribution operations, and miscellaneous plant improvements.

Although the facility has always treated ground water exclusively, it provides treatment well above ground water requirements by the TCEQ. This is primarily due to the high content of iron found in the raw water.

2.4 STORAGE, HIGH-SERVICE PUMPS, AND DISTRIBUTION MAINS

A 300,000 gallon and 2,000,000 gallon ground storage reservoir are located at the Water Treatment Plant. Three (3) high service pumps with a total capacity of 4.32 MGD pump water out of the reservoirs through two (2) 12-inch and 18-inch mains into the City distribution system. The distribution system consists of approximately 101 miles of 2-inch, 4-inch, 6-inch, 8-inch, 10-inch, 12-inch and 18-inch mains.

In 2022, a design to increase the capacity of the high service pump station was completed. Improvements included replacing the existing 600 gpm jockey pump with a 1,200 gpm constant speed pump, and adding a fourth 1,200 gpm pump on a variable frequency drive

(VFD) giving the pump station an increased total capacity of 6.92 MGD. In addition to the pump station improvements, two (2) new generators are being provided as a part of this project. Construction is anticipated to be completed by Spring of 2024.

2.5 FUTURE WATER USE

The future water use projections shown in **Table 3 – Projected Water Usage** were derived from the future population projections and the per capita water demands shown in **Table 1 – Historical Water Usage Data**. These projections are used for making recommendations for future improvements to the water system.

Table 3 – Projected Water Usage

Year	Population	Water Usage Average ⁽¹⁾ (MGD)	Water Usage Peak ⁽²⁾ (MGD)
2022	15,210	1.47	2.36
2032	23,832	2.30	3.69

⁽¹⁾ Based upon average per capita water usage of 96 gal/day

⁽²⁾ Based upon peak per capita water usage of 155 gal/day

2.6 WATER SUPPLY IMPROVEMENTS

Presently, the source of water for Lockhart is ground water from the Wilcox Aquifer and surface water from the Luling WTP. The Wilcox Aquifer has been a reliable source of water for Lockhart for the past sixty (60) years. The Ground Water Resources of Caldwell County report prepared by the U.S. Geological Survey indicates that the quantity of water on a perennial basis that can be withdrawn from the Carrizo sand and Wilcox group in Caldwell County without depleting the aquifer is about 20 MGD. At the present time, these formations in Caldwell County are practically untapped with only a small percentage being used for public supply, irrigation, domestic, and stock purposes.

There are currently seven (7) wells in the southeast well field that pump into 14-inch and 18-inch transmission mains. These mains transport the water to the water treatment plant on the southeast side of the City.

The reliable capacity of the well field is 4.62 MGD which will provide sufficient capacity through the year 2032.

2.7 FUTURE WATER TREATMENT NEEDS

2.7.1 Treatment Capacity

The current treatment capacity of 5.7 MGD will provide adequate water supply for the projected average and maximum daily water usage through the year 2032.

2.8 GROUND STORAGE IMPROVEMENTS

The present ground storage capacity at the water treatment plant is 2,300,000 gallons consisting of one (1) underground concrete reservoir with the capacity of 300,000 gallons and one (1) above ground steel reservoir with the capacity of 2,000,000 gallons. Present ground storage capacity is adequate through the Year 2032.

2.9 HIGH SERVICE PUMP IMPROVEMENTS

The City currently has three (3) high service pumps with a total combined capacity of 4.32 MGD. Once the high service pump station improvements project is completed in 2023, the City will have four (4) pumps with a total pumping capacity will be increased to 6.92 MGD. It is estimated that the City will need to further increase the overall pumping capacity by the year 2024 or request an exception to the minimum pumping requirements from the TCEQ. It is recommended that the City attempt to request an exception since their current pumping capacity of 6.92 mgd is far greater than their current peak water usage of 2.36 mgd and future estimated peak usage of 3.69 mgd.

2.10 ELEVATED STORAGE IMPROVEMENTS

The elevated storage capacity requirements are based upon the Texas Commission on Environmental Quality Standard of 200 gallons per connection. Elevated storage provides water stored in above ground elevated tanks for use by customers and for fire protection without the need for additional pumping. The capacity of the four (4) existing elevated tanks is 1,550,000 gallons. An additional elevated storage tank will be required by the Year 2032.

The new storage tank will need to be constructed in the upper pressure plane to help meet the increasing growth demands in that region, as shown in **Figure 1 – Water System Capital Improvements Plan**.

2.11 DISTRIBUTION SYSTEM IMPROVEMENTS

The City's present distribution system consists of water mains ranging in size from 2-inch to 18-inch in diameter. The Texas Commission on Environmental Quality (TCEQ) requires that a residual pressure of 35 psi be maintained during peak water use periods and a residual pressure of 20 psi be maintained during fire flow situations. Indicated in **Figure 1 – Water System Capital Improvements Plan** are the major pipelines needed to meet requirements for future development of the city based upon the City's Annexation Plan. The majority of the water mains proposed in this Capital Improvements Plan are within the City's Water Service Area certified by TCEQ.

Unlined iron pipe has not been used in water distribution systems for several decades because of its lack of resistance to corrosion and deterioration. It is recommended that the City eventually replace the remaining 75,000 linear feet of unlined iron pipe. A long-range program of line replacement should be considered because of the high cost associated with replacing these lines. Detailed records should also be kept on line repairs

and condition to aid in setting replacement priorities. The cost of replacing these existing mains is not included in the impact fee analysis.

2.12 COST ESTIMATE

Cost estimates for all the improvements proposed, based upon today's cost, including construction and engineering are shown in **Table 4 – Proposed Water System Improvement**.

Table 4 – Proposed Water System Improvements

Name	Quantity	Description	Unit Price ⁽¹⁾	Cost
W-1	15,000 Feet	12" Pipe from Hidden Path Rd. to 2720	\$175	\$2,625,000
W-2	7,000 Feet	12" Pipe along the West side of 130	\$175	\$1,225,000
W-3	4,700 Feet	12" Pipe along Silent Valley Rd. from SH 130 to Stueve Ln.	\$175	\$822,500
W-4	3,000 Feet	12" Pipe from Silent Valley Rd to N. Mockingbird Ln.	\$175	\$525,000
W-5	1,200 Feet	12" Pipe along W. San Antonio St. from S. Mockingbird Ln. to Borchert Loop	\$175	\$210,000
W-6	2,000 Feet	12" Pipe along W. San Antonio St. from Borchert Loop to Windsor Blvd.	\$175	\$350,000
W-7	1,700 Feet	12" Pipe from W. San Antonio St. to Borchert Loop on the E. side of SH 130	\$175	\$297,500
W-8	2,200 Feet	12" Pipe from W. San Antonio St. to Borchert Dr. on the W. side of SH 130	\$175	\$385,000
W-9	3,000 Feet	12" Pipe from Borchert Dr. to Maple St. on the W. side of SH 130	\$175	\$525,000
W-10	4,000 Feet	12" Pipe S. of Maple St. on the W. side of SH 130	\$175	\$700,000
W-11	3,500 Feet	12" Pipe from City Line Rd. to State Park Rd.	\$175	\$612,500
W-12	2,200 Feet	12" Pipe along State Park Rd.	\$175	\$385,000
W-13	7,000 Feet	12" Pipe from State Park Rd. to W. Martin Luther Kng Jr Industrial Blvd.	\$175	\$1,225,000
W-14	1,600 Feet	12" Pipe along Cunningham	\$175	\$280,000
W-15	1,400 Feet	12" Pipe S. of Cunningham	\$175	\$245,000
W-16	3,400 Feet	12" Pipe S. of the Lockhart Municipal Airport	\$175	\$595,000
W-17	4,800 Feet	12" Pipe along Lovers Ln. to Brazos St.	\$175	\$840,000
W-18	3,000 Feet	12" Pipe from Lovers Ln. to Blackjack St.	\$175	\$525,000
W-19	4,200 Feet	12" Pipe from Water Plant to Blackjack St.	\$175	\$735,000
W-20	2,000 Feet	12" Pipe along Shady Ln.	\$175	\$350,000
W-21	3,000 Feet	12" Pipe from Mockinbird Ln to Stueve Ln	\$175	\$525,000
W-22	3,500 Feet	12" Pipe from Stueve Ln to SH 130	\$175	\$612,500
W-23	3,700 Feet	12" Pipe along SH 130 to Horseshoe Rd	\$175	\$647,500
W-24	4,700 Feet	12" Pipe along SH 130 to N Colorado St.	\$175	\$822,500

Name	Quantity	Description	Unit Price ⁽¹⁾	Cost
W-25	2,000 Feet	12" Pipe from County View Rd to Payne Ln	\$175	\$350,000
W-26	10,000 Feet	12" Pipe along Hidden Path Rd connecting to Cypress Rd	\$175	\$1,750,000
W-27	10,000 Feet	12" Pipe on N. side of SH 130 E of Hidden Path Rd.	\$175	\$1,750,000
W-28	1 Each	Pressure Reducing Valve	\$35,000	\$35,000
W-29	1 Each	Pressure Reducing Valve	\$35,000	\$35,000
W-30	1 Each	Pressure Reducing Valve	\$35,000	\$35,000
W-31	1 Each	Elevated Storage Tank	\$1,750,000	\$1,750,000
		TOTAL		\$21,770,000

⁽¹⁾ Unit prices are today's prices include engineering and surveying.

2.13 PRESENT WASTEWATER FLOWS

The Lockhart collection and treatment system currently collects and treats essentially all of the domestic wastewater generated by the citizens of Lockhart. The wastewater collection system serves approximately 5,250 residential and commercial customers. A review of the wastewater flow records shown in **Table 5 – Historical Wastewater Usage Data**, indicates the average amount of wastewater flow received at the treatment plants is 71 gallons per capita per day and the peak flow is 259 gallons per capita per day.

Table 5 – Historical Wastewater Usage Data

2018		
Month	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)
January	0.99	1.16
February	1.02	1.29
March	1.19	4.31
April	1.06	1.28
May	1.10	1.41
June	1.06	1.31
July	1.05	1.34
August	1.05	1.47
September	1.07	1.99
October	1.04	2.41
November	0.76	1.00
December	0.99	3.91
Average	1.03	
Maximum		4.31

2019		
Month	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)
January	0.94	2.94
February	0.85	1.09
March	0.90	1.20
April	1.06	1.95
May	1.12	2.71
June	1.21	2.76
July	1.03	1.20
August	1.07	1.76
September	1.04	1.44
October	1.01	2.04
November	0.93	1.26
December	0.91	1.12
Average	1.01	
Maximum		2.94

2020		
Month	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)
January	0.94	1.45
February	0.92	1.26
March	1.04	1.83
April	1.09	2.30
May	1.21	3.24
June	1.03	1.44
July	1.04	1.32
August	0.98	1.27
September	1.10	3.70
October	0.97	1.23
November	0.97	1.21
December	0.98	1.93
Average	1.02	
Maximum		3.70

2021		
Month	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)
January	0.97	1.40
February	1.10	1.85
March	0.93	1.16
April	1.08	4.11
May	1.45	4.48
June	1.17	2.28
July	1.38	3.30
August	1.04	1.34
September	1.05	1.93
October	1.21	3.86
November	1.02	1.97
December	0.98	1.20
Average	1.11	
Maximum		4.48

2022		
Month	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)
January	1.00	2.78
February	1.11	2.00
March	1.13	2.82
April	1.01	1.29
May	0.99	1.30
June	1.03	1.21
July	0.98	1.27
August	1.05	1.70
September	1.02	1.37
October	0.98	1.30
November	1.02	1.71
December	1.15	3.38
Average	1.04	
Maximum		3.38

AVERAGE FOR JAN 2018 THROUGH DEC 2022
1.04 MGD

MAXIMUM FOR JAN 2017 THROUGH DEC 2022
4.48 MGD

2.14 COLLECTION SYSTEM

The existing sewage collection system that serves the City of Lockhart was initiated in early 1900, and has been extended as necessary through the years to keep pace with the City's growth. The majority of the older system is constructed of vitrified clay tile sewer pipe. The recently installed collector mains (mains installed in the past 30 years) are constructed of heavy weight PVC pipe. Collector line sizes are generally 6-inch and 8-inch and interceptor lines range from 10-inch to 24-inch in diameter. The depth of the collection system ranges from 3-feet to 18-feet below the ground surface, with a median depth of 6-7 feet for the majority of the lines. Most of the lines in the collection system have sufficient grades to maintain self-cleaning velocities. The majority of the collection system is in good condition.

The existing collection system is divided into two major drainage areas. Treatment Plant No.1 located on Larremore Street serves the northern drainage area and Treatment Plant No. 2 on FM 20 West serves the southern drainage area.

2.15 WASTEWATER TREATMENT PLANTS

2.15.1 WWTP NO. 1 (Larremore WWTP)

WWTP No. 1 was the only treatment facility to serve the City until WWTP No. 2 was constructed and placed into service in the spring of 1999. WWTP No. 1 received major upgrades in 1950 and 1986. The 1986 upgrade included construction of a number of process basins and replacement of the majority of process equipment within the existing concrete structures. The plant has a design capacity of 1.1 MGD and a peak capacity of 4.0 MGD. The aeration process is operated in the contact stabilization mode of the activated sludge process.

2.15.2 WWTP NO. 2 (FM 20 WWTP)

Construction was complete on WWTP No. 2 in 1998. The plant has a design capacity of 1.5 MGD and a peak capacity of 4.5 MGD, but the site layout was designed to allow expansion of the facilities to 4.5 MGD design and 13.5 MGD peak. The screenings and grit removal units will handle a capacity of 3.0 MGD design and 9.0 MGD peak. The facility is located on a 20.9-acre site on FM 20, southeast of town. The plant consists of raw sewage screening, grit removal, aeration basin, clarification, ultraviolet disinfection, sludge handling, and dewatering with a belt filter press. The two (2) treatment facilities have a combined capacity of 2.6 MGD design and 8.5 MGD peak.

2.16 FUTURE WASTEWATER FLOWS

The future wastewater flows are given in **Table 6 – Projected Future Wastewater Flows**. These flows are based upon an average flow of 71 gallons per capita per day and a peak flow of 259 gallons per capita per day for the projected population.

Table 6 – Projected Future Wastewater Flows

Year	Population	Wastewater Usage Average ⁽¹⁾ (MGD)	Wastewater Usage Peak ⁽²⁾ (MGD)
2022	15,210	1.08	3.94
2032	23,832	1.69	6.17

⁽¹⁾ Based upon average per capita water usage of 71 gal/day

⁽²⁾ Based upon peak per capita water usage of 259 gal/day

2.17 COLLECTION SYSTEM IMPROVEMENTS

The existing collection system is in relatively good condition but has a number of problems related to broken and deteriorated clay sewer mains.

There is approximately 122,000 linear feet of clay tile sewer pipe in the system. The probability is very high that a large percentage of the remainder of the clay tile pipe is in deteriorated condition and allows storm water flow to enter into the wastewater collection system. It is recommended that the City enter into a line televising program to determine which lines are in the most deteriorated condition and to assist in setting priorities for line replacements.

Indicated in **Figure 2 – Wastewater System Capital Improvements Plan** are the proposed improvements needed to serve the future development of the City. Major trunk mains and lift stations are shown to provide service within the service area. Lift stations are expensive to construct, maintain, and operate, but are required in some instances to move the wastewater from one drainage area to another. Additional lift stations are required to provide service for future growth in Lockhart, including:

1. FM 20 East
2. Pecan Branch
3. Boggy Creek
4. Plum Creek
5. South Commerce

The proposed FM 20 East Lift Station will serve the area between FM 20 East and County Road 208. The proposed Pecan Branch lift station will serve portion of the Pecan Branch drainage basin. The Boggy Creek Lift Station will serve a portion of the Boggy Creek drainage basin north of County Road 218 between County Road 219 and the service area boundary. The proposed Plum Creek Lift Station will serve the area within the northern City limits along Highway 183 North. The South Commerce Lift Station will serve the area along South Commerce St.

The proposed sewer corridor lines were laid out in accordance with findings of the Northwest Sewer Capacity Study dated June of 2022. The lines around the Plum Creek and South Commerce lift stations were laid out in accordance with the findings of the Lockhart Regional Lift Station Study dated July of 2022.

2.18 FUTURE WASTEWATER TREATMENT NEEDS

The City of Lockhart has two (2) wastewater treatment facilities to receive and treat the raw sewage production from the City residences and businesses. WWTP No. 1 was upgraded in 1986 and WWTP No. 2 was initially placed into operation in February, 1999. Both plants are operated by the Guadalupe-Blanco River Authority, who has the responsibility for meeting the effluent requirements imposed by the TCEQ. The combined plant capacity is 2.6 MGD design flow and 8.5 MGD peak flow, which is adequate to meet the City's needs through the year 2032.

2.19 COST ESTIMATE

Cost estimates for all the proposed wastewater system improvements based on today's cost including construction and engineering are shown in **Table 7 – Proposed Wastewater System Improvements**.

Table 7 – Proposed Wastewater System Improvements

Name	Quantity	Description	Unit Price ⁽¹⁾	Cost
S-1	12,000 Feet	12" Pipe extension past SH 130 to Hidden Path Rd	\$200	\$2,400,000
S-2	3,300 Feet	12" Pipe between SH 130 and Windridge	\$200	\$660,000
S-3	1,500 Feet	12" W of SH 130 to San Antonio St.	\$200	\$300,000
S-4	7,000 Feet	12" Pipe along County Ln.	\$200	\$1,400,000
S-5	9,300 Feet	18" Pipe along SH 130 and San Antonio St.	\$250	\$2,325,000
S-6	5,000 Feet	18" Pipe under SH 130 S of Maple St.	\$250	\$1,250,000
S-7	3,500 Feet	18" Pipe from State Park Rd. to Old Fentress Rd.	\$250	\$875,000
S-8	1,700 Feet	12" Pipe S of Old Fentress Rd.	\$200	\$340,000
S-9	1,500 Feet	12" Pipe along State Park Rd.	\$200	\$300,000
S-10	1,700 Feet	12" Pipe N of State Park Rd.	\$200	\$340,000
S-11	5,500 Feet	12" Pipe along Cunningham Rd	\$200	\$1,100,000
S-12	4,300 Feet	18" Pipe along Clear Fork Plum Creek	\$250	\$1,075,000
S-13	1,500 Feet	12" Pipe E of 183	\$200	\$300,000
S-14	3,200 Feet	18" Pipe along railroad W of Stueve Ln.	\$250	\$800,000
S-15	2,200 Feet	18" Pipe along Stueve Ln.	\$250	\$550,000
S-16	7,000 Feet	24" Pipe along Tank St.	\$300	\$2,100,000
S-17	2,500 Feet	30" Pipe along railroad	\$350	\$875,000
S-18	12,000 Feet	12" Pipe under SH 130 to N Colorado St.	\$200	\$2,400,000

Name	Quantity	Description	Unit Price ⁽¹⁾	Cost
S-19	2,200 Feet	12" Pipe S of SH 130 to N Colorado St.	\$200	\$440,000
S-20	6,000 Feet	12" Pipe E of Plum Creek Lift Station	\$200	\$1,200,000
S-21	5,200 Feet	12" Pipe along Lovers Ln.	\$200	\$1,040,000
S-22	3,900 Feet	12" Pipe W of Century Oaks Lift Station	\$200	\$780,000
S-23	2,800 Feet	10" Pipe E of Century Oaks Lift Station	\$180	\$504,000
S-24	5,000 Feet	18" Pipe along S Commerce St.	\$250	\$1,250,000
S-25	1,800 Feet	12" Pipe E of S Commerce St.	\$200	\$360,000
S-26	2,500 Feet	18" Pipe along S Commerce St.	\$250	\$625,000
S-27	4,300 Feet	12" Pipe W of Pecan Branch Lift Station	\$200	\$860,000
S-28	2,000 Feet	12" Pipe W of FM 20 East Lift Station	\$200	\$400,000
S-29	1 Each	Boggy Creek Lift Station	\$1,500,000	\$1,500,000
S-30	1,300 Feet	Boggy Creek Force Main	\$150	\$195,000
S-31	1 Each	Plum Creek Lift Station	\$1,500,000	\$1,500,000
S-32	5,500 Feet	Plum Creek Force Main	\$150	\$825,000
S-33	1 Each	South Commerce Lift Station	\$1,500,000	\$1,500,000
S-34	10,400 Feet	South Commerce Force Main	\$150	\$1,560,000
S-35	1 Each	Pecan Branch Lift Station	\$1,500,000	\$1,500,000
S-36	6,200 Feet	Pecan Branch Force Main	\$150	\$930,000
S-37	1 Each	FM 20 East Lift Station	\$1,500,000	\$1,500,000
		TOTAL		\$37,859,500

⁽¹⁾ Unit prices are today's prices including engineering and surveying.

3.0 CALCULATION OF FEE

3.1 UNIT USAGE STATISTICS

Design standards (unit usage statistics) for the water and sewer systems have been developed by TRC Engineers, Inc. Those standards are shown in **Table 8 – Capacity Demand for Each New Water LUE** and **Table 9 – Capacity Demand for Each New Water LUE**.

3.2 CONVERSION TABLE

Section 395.014(a)(4) of the Impact Fee Act requires:

...an equivalency or conversion table establishing the ratio of a service unit to various types of land used, including residential, commercial, and industrial....

Water meter size, expressed in the common units of living unit equivalents (LUE's), was determined to be the most appropriate measure for calculating the fees due from any individual customer. Water meter size was selected as the unit determinant for fee collection for the following reasons:

- It allows the use of an American Water Works Association (AWWA) published standard.
- This standard includes both safe continuous flow and safe maximum flow which will thereby accommodate all requests for service.
- These standards are those used by building owners, professional engineers and architects, and City staff for sizing meters and plumbing fixtures.
- Meters are a physical element which can be maintained and controlled by the City, thus allowing the monitoring of the accuracy of meter sizing. The City can require any necessary replacement of meters which can be shown to have been sized too small for a development and collect additional impact fees required by the change in meters.
- Particularly in the larger meter sizes, the builder may have to pay for more capacity than needed for the development, thus resulting in a potential payment above actual costs. However, these large-meter customers will be able to use that excess capacity if later building expansions occur or if use patterns change. Moreover, the capacity purchased would be a marketable amenity which would add value to the property.
- The use of water meter size allows equitable cost assignment to each of the three (3) customer classes identified in Chapter 395 (residential, commercial and industrial).

Since water meter size is the basis for calculation of both water and wastewater fees, the base fee should be applied to the smallest meter used by the City. The following policies are suggested:

- The standard used for the ratio of the continuous duty maximum flow rate should be derived from AWWA C700-C703 (in gpm).
- The City's smallest water meter (3/4") should be the base unit for impact fee assessment.
- The Impact Fee Ordinance should have the schedule published as shown in **Table 10 – LUE Equivalencies for Various Types and Sizes of Water Meters**, which includes both compound and turbine meters.
- The use of a turbine meter, in connection with displacement meters in a compound meter installation, would require the use of the turbine meter schedule.

Table 10 – LUE Equivalencies for Various Types and Sizes of Water Meters shows a conversion table for various types and sizes of water meters in the Lockhart water system. Because the fee calculation was based on water meter size, the LUE/meter conversion table applies equally to all land used. **Table 11 – Current Meter Count and Estimation of LUE** shows the current number of LUE's on the Lockhart water system.

Typically, some concern is expressed that water meters are not always a reasonable means of calculating wastewater flows, particularly for certain consumptive types of commercial uses (car washes, restaurants) or industrial processes. Additionally, any land use might have a large meter for irrigation purposes, thus overrepresenting its wastewater flows. However, experience has indicated that few such exceptional customers choose to have a separate wastewater meter because of the installation and maintenance expense incurred. Because no alternative means for assessing flow is practical, it is recommend that the water meter also be adopted as the basis for wastewater impact fees.

However, given the potential that some consumptive commercial and industrial customers may be considerably overcharged for sewer capacity demand when water meter size is used for calculating wastewater impact fees, it is also recommends that the ordinance provide for exceptions. Specifically, the ordinance should permit individual wastewater customers to present data, prepared by a professional engineer, documenting expected wastewater flow below that which is indicated by meter-size determinations for a lower sewer fee. For irrigation-only water meters, the ordinance should provide for a water-only impact fee.

3.3 PROJECTED SERVICE UNITS FOR NEW DEVELOPMENT

The estimated demand per LUE shown in **Table 8 – Capacity Demand for Each New Water LUE** and **Table 9 – Capacity Demand for Each New Wastewater LUE** was applied to the existing population of 15,210 and projected population of 23,832 in 2032 to yield the estimated water and wastewater service demands shown in **Table 12 – Estimated Water Service Demand by Facility Type** and **Table 13 – Estimated Wastewater Service Demand by Facility Type**.

3.4 CIP DEVELOPMENT FOR EXISTING AND FUTURE NEEDS

Facility unit statistics shown in **Table 8 – Capacity Demand for Each New Water LUE** and **Table 9 – Capacity Demand for Each New Wastewater LUE** were used to project facility needs for both existing and future customers. **Table 12 – Estimated Water Service Demand by Facility Type** and **Table 13 – Estimated Wastewater Service Demand by Facility Type** show current needs and deficiencies, if any, for existing customers, as well as projected capacity needs for growth. Although not shown in **Table 12 – Estimated Water Service Demand by Facility Type** and **Table 13 – Estimated Wastewater Service Demand by Facility Type**, both the water and sewer system will require additional lines by 2032, which are addressed in the capital improvements program (see **Table 15 – Water CIP Inventory and Costing** and **Table 16 – Wastewater CIP Inventory and Costing**).

Table 15 – Water CIP Inventory and Costing and **Table 16 – Wastewater CIP Inventory and Costing** present the inventory of facilities as required in Chapter 395. They show the required allocation of existing and future CIP facility needs for existing development; future development within the next ten (10) years; and excess capacity for subsequent future development. For each generation of utility customers, these tables show facility needs which will be met by Existing Facilities and Future Facilities.

Cost allocations are also shown in **Table 15 – Water CIP Inventory and Costing** and **Table 16 – Wastewater CIP Inventory and Costing**. Cost estimates for each facility were taken from actual cost of existing facilities which have excess capacity (see **Table 14 – Cost of Existing Facilities with Excess Capacity**) and projected costs of future facilities (see **Table 4 – Proposed Water System Improvements** and **Table 7 – Proposed Wastewater System Improvements**). An appropriate cost share was attributed to 2022-2032 growth, as determined from capacity allocations shown. Finance cost was added by increasing the construction cost by fifty (50) percent. Finally, costs were expressed on a per-LUE basis. Total capital costs for 2022-2032 growth were then summed for each utility.

Table 8 – Capacity Demand for Each New Water LUE

Facility	Basis	Capacity Per LUE
Wells ^(a)	0.6 gal/min per connection	712 gallons/day
Raw Water Transmission	0.6 gal./min. per connection	712 gallons/day
Treatment ^(c)	0.6 gal/min per connection	712 gallons/day
Booster Pumps ^(b)	0.6 gal/min per connection	712 gallons/day
Elevated Storage ^(b)	200 gal per connection	165 Gallons

(a)TCEQ Standard 290.45(b)(1)(D)(i)

(b)TCEQ Standard 290.45(b)(1)(D)(ii)

(c)TCEQ Standard 290.45(a)(6)

Table 9 – Capacity Demand for Each New Wastewater LUE

Facility	Basis	Capacity Per LUE
Treatment	TCEQ Standards Average Day	167 gallons/day

Based on an average per capita use of 71 gpd/capita and 2.35 people per LUE per Tables 6 and 11

Table 10 – LUE Equivalencies for Various Types and Sizes of Water Meters

Meter Type	Meter Size	Continuous Duty Maximum Rate (gpm)	Ratio To 3/4" Meter
Simple	5/8" x 3/4"	10	0.667
Simple	3/4"	15	1.000
Simple	1"	25	1.667
Simple	1-1/2"	50	3.333
Simple	2"	80	5.333
Compound	2"	80	5.333
Turbine	2"	100	6.667
Compound	3"	175	11.667
Turbine	3"	220	14.667
Compound	4"	300	20.000
Turbine	4"	420	28.000
Compound	6"	675	45.000
Turbine	6"	865	57.667

SOURCE: AWWA Standards C700, C701, C702, C703.

Table 11 – Current Meter Count and Estimation of LUE

Meter Size	Number Of Meters ^(a)	LUEs Per Meter ^(b)	Number Of LUEs ^(c)
3/4"	4,950	1	4,950
1"	157	1.667	262
1-1/2"	20	3.333	67
2"	131	5.333	699
3"	26	11.667	303
4"	10	20.000	200
TOTAL	5,294		6,481
Population			15,210
Population/LUE			2.35

(a) SOURCE: City of Lockhart

(b) See Table 10

(c) January 2022 estimate

Table 12 – Estimated Water Service Demand by Facility Type

Facility Type	Volume	
	2022	2032
LUE'S (a)	6,481	10,154
WELLS MGD:		
Estimated Demand (b)	4.61	7.23
Estimated Demand minus Carrizo Supply (g)	1.94	4.56
Existing Capacity	4.60	4.60
<i>Excess/(Deficiency)</i>	2.66	0.04
RAW WATER TRANSMISSION:		
Estimated Demand (c)	4.61	7.23
Estimated Demand minus Carrizo Supply (g)	1.94	4.56
Existing Capacity	5.20	5.20
<i>Excess/(Deficiency)</i>	3.26	0.64
WATER TREATMENT PEAK MGD:		
Estimated Demand (c)	4.61	7.23
Estimated Demand minus Carrizo Supply (g)	1.94	4.56
Existing Capacity	5.70	5.70
<i>Excess/(Deficiency)</i>	3.76	1.14
BOOSTER PUMP MGD:		
Estimated Demand (d)	4.61	7.23
Existing Capacity (f)	6.92	6.92
<i>Excess/(Deficiency)</i>	2.31	(0.31)
ELEVATED WATER STORAGE MGD:		
Estimated Demand (e)	1.07	1.68
Existing Capacity	1.55	1.55
<i>Excess/(Deficiency)</i>	0.48	(0.13)

- (a) 2022 LUE's based on count of equivalent meters. 2032 LUE's determined by 2022 persons per LUE and projected 2032 population of 23,832 people per the Sept 2022 LUA meeting.
- (b) Capacity Demand = 712 gallons/LUE/day.
- (c) Capacity Demand = 712 gallons/LUE/day.
- (d) Capacity Demand = 712 gallons/LUE/day.
- (e) Capacity Demand = 165 gallons/LUE.
- (f) Assumes completion of HSPS expansion project.
- (g) Carrizo Water Supply assumed to be 3,000 acre-ft/year (2.67 mgd)
- (h) Table does not include 1.0 MGD from Luling

Table 13 – Estimated Wastewater Service Demand by Facility Type

Facility Type	Volume	
	2022	2032
LUE'S (a)	6,481	10,154
WASTEWATER TREATMENT PEAK MGD:		
Estimated Demand (b)	1.08	1.69
Existing Capacity	2.60	2.60
Excess/(Deficiency)	1.52	0.91

(a) Wastewater LUE's same as water.

(b) Capacity demand based on 167 gallons/LUE/day

Table 14 – Cost of Existing Facilities with Excess Capacity

WATER			
SUPPLY			
Well	3B	\$169,148	
	4A	\$118,917	
	5A	\$96,025	
	9A	\$623,902	
	10	\$623,902	
	11	\$412,793	
	12	\$402,258	
	TOTAL		\$2,446,945
RAW WATER TRANSMISSION			
Raw Water Pump Station		\$296,495	
Well 9 Transmission Main		\$300,415	
Plum Creek Raw Water Main		\$349,246	
Ethridge Raw Water Main		\$394,413	
Well 12 Transmission Main		\$146,183	
18" Raw Water Main		\$49,353	
Carrizo Water Supply		\$3,075,277	
	TOTAL		\$4,611,382
TREATMENT			
Water Plant			\$2,310,484
BOOSTER PUMPS			
High Service Pump Station Expansion			\$989,000
ELEVATED STORAGE			
City Line Rd Pump Station		\$1,025,000	
0.5 MG Elevated Storage		\$1,716,000	
	TOTAL		\$2,741,000

TRANSMISSION MAINS			
18" MLK Water Main		\$460,601	
18" SH 130 Main Phase 1		\$217,666	
18" SH 130 Main Phase 2		\$606,143	
Bufkin Water Main		\$294,685	
	TOTAL		\$1,579,095
TOTAL WATER			\$14,677,906

WASTEWATER			
TREATMENT			\$3,653,000
COLLECTION LINES			
FM 20 Trunk Main		\$1,827,000	
Borchert Lane 12" Sewer		\$133,349	
	TOTAL		\$1,960,349
TOTAL WASTEWATER			\$5,613,349

(a) Costs are all original capital construction costs.

Table 15 – Water CIP Inventory and Costing

FACILITY		CONSTRUCT COST	CONSTRUCT COST PLUS INTEREST	FACILITY CAPACITY (mgd or gals)				NEXT 10-YEAR CAPITAL COST TOTAL	NEXT 10-YEAR COST PER LUE
TYPE	NAME			TOTAL	FOR CURRENT CUST	EXCESS <10 YEARS	EXCESS >10 YEARS		
SUPPLY									
EXISTING FACILITIES									
	Wells	\$2,446,945	\$3,670,418	4.60	1.94	2.62	0.04	\$2,086,958.34	\$568.12
	Subtotal Existing Wells	\$2,446,945	\$3,670,418	4.60	1.94	2.62	0.04	\$2,086,958.34	\$568.12
	TOTAL WELL	\$2,446,945	\$3,670,418	4.60	1.94	2.66	0.04	\$2,086,958.34	\$568.12
RAW WATER TRANSMISSION									
EXISTING FACILITIES									
	Raw Water Main	\$1,536,105	\$2,304,158	5.20	1.94	2.62	0.64	\$1,158,950.70	\$315.49
	Subtotal Existing Raw Water	\$1,536,105	\$2,304,158	5.20	1.94	2.62	0.64	\$1,158,950.70	\$315.49
	TOTAL RAW WATER	\$1,536,105	\$2,304,158	5.20	1.94	2.62	0.64	\$1,158,950.70	\$315.49
TREATMENT									
EXISTING FACILITIES									
	Water Treatment Plant	\$2,310,484	\$3,465,726	5.70	1.94	2.62	1.14	\$1,590,287.01	\$432.91
	Subtotal Existing Treatment	\$2,310,484	\$3,465,726	5.70	1.94	2.62	1.14	\$1,590,287.01	\$432.91
	TOTAL WATER TREATMENT	\$2,310,484	\$3,465,726	5.70	1.94	2.62	1.14	\$1,590,287.01	\$432.91
PUMPING									
EXISTING FACILITIES									
	HSPS Expansion	\$989,000	\$1,483,500	6.92	4.61	2.31	0	\$494,357.65	\$134.58
	Subtotal Existing Facilities	\$989,000	\$1,483,500	6.92	4.61	2.31	0	\$494,357.65	\$134.58
	TOTAL WATER PUMPAGE	\$989,000	\$1,483,500	6.92	4.61	2.31	0	\$494,357.65	\$134.58
ELEVATED STORAGE									
EXISTING FACILITIES									

FACILITY		CONSTRUCT COST	CONSTRUCT COST PLUS INTEREST	FACILITY CAPACITY (mgd or gals)				NEXT 10-YEAR CAPITAL COST TOTAL	NEXT 10-YEAR COST PER LUE
TYPE	NAME			TOTAL	FOR CURRENT CUST	EXCESS <10 YEARS	EXCESS >10 YEARS		
	Elevated Storage	\$2,741,000	\$4,111,500	1.55	1.07	0.48	0	\$1,275,214.88	\$347.14
	Subtotal Existing Facilities	\$2,741,000	\$4,111,500	1.55	1.07	0.48	0	\$1,275,214.88	\$347.14
NEW FACILITIES									
	Elevated Storage Tank (W-21)	\$1,750,000	\$2,625,000	0.5	0.00	0.02	0.48	\$105,000.00	\$28.58
	Subtotal New Facilities	\$1,750,000	\$2,625,000	0.5	0.00	0.02	0.48	\$105,000.00	\$28.58
	TOTAL ELEVATED STORAGE	\$4,491,000	\$6,736,500					\$1,380,214.88	\$375.73
MAJOR TRANSMISSION LINES									
EXISTING FACILITIES									
	Major Transmission Lines	\$4,654,372	\$6,981,558	8	4.00	3.00	1.00	\$2,618,084.25	\$712.70
	Subtotal Existing Transmission	\$4,654,372	\$6,981,558	8	4.00	3.00	1.00	\$2,618,084.25	\$712.70
NEW FACILITIES									
	Major Transmission Lines (W-1 to W-30)	\$20,020,000	\$30,030,000	10	0.00	8.00	2.00	\$24,024,000.00	\$6,539.87
	Subtotal New Facilities	\$20,020,000	\$30,030,000	10	0.00	8.00	2.00	\$24,024,000.00	\$6,539.87
	TOTAL TRANSMISSION LINES	\$24,674,372	\$37,011,558					\$26,642,084.25	\$7,252.57
	FEE UPDATE COST (Water Portion)							\$16,485.00	\$4.49
	MASTER PLAN (Water Portion)							\$150,000.00	\$40.83
	TOTALS	\$36,447,906	\$54,671,859					\$33,519,337.83	\$9,124.71

(a) Interest assumed to be 50% for all categories.

Table 16 – Wastewater CIP Inventory and Costing

FACILITY		CONSTRUCT COST	CONSTRUCT COST PLUS INTEREST	FACILITY CAPACITY (mgd or gals)				NEXT 10-YEAR CAPITAL COST TOTAL	NEXT 10-YEAR COST PER LUE
TYPE	NAME			TOTAL	FOR CURRENT CUST	EXCESS <10 YEARS	EXCESS >10 YEARS		
TREATMENT									
EXISTING FACILITIES									
	FM 20 WWTP	\$3,653,000	\$5,479,500	2.60	1.08	0.61	0.91	\$1,292,310.62	\$351.80
	Subtotal Existing Facilities	\$3,653,000	\$5,479,500	2.60	1.08	0.61	0.91	\$1,292,310.62	\$351.80
	TOTAL WASTEWATER TREATMENT	\$3,653,000	\$5,479,500	2.60	1.08	0.61	0.91	\$1,292,310.62	\$351.80
PUMPING									
EXISTING FACILITIES									
	Airport Lift Station expansion	\$658,482	\$987,723	1.40	0.50	0.80	0.10	\$564,413.14	\$153.65
NEW FACILITIES									
	Boggy Crk Lift Station (S-29)	\$1,500,000	\$2,250,000	0.70		0.35	0.35	\$1,125,000.00	\$306.25
	Plum Crk Lift Station (S-31)	\$1,500,000	\$2,250,000	2.00		1.00	1.00	\$1,125,000.00	\$306.25
	South Commerce Lift Station (S-33)	\$1,500,000	\$2,250,000	2.80		1.40	1.40	\$1,125,000.00	\$306.25
	Pecan Branch Lift Station (S-35)	\$1,500,000	\$2,250,000	0.30		0.15	0.15	\$1,125,000.00	\$306.25
	FM 20 East Lift Station (S-37)	\$1,500,000	\$2,250,000	0.30		0.15	0.15	\$1,125,000.00	\$306.25
	Subtotal New Facilities	\$7,500,000	\$11,250,000	6.10		3.05	3.05	\$5,625,000.00	\$1,531.25
	TOTAL WASTEWATER PUMPING	\$7,500,000	\$11,250,000	6.10		3.05	3.05	\$5,625,000.00	\$1,531.25
MAJOR COLLECTION LINES									
EXISTING FACILITIES									
	FM 20 Trunk Main & Borchert Lane 12" Sewer	\$1,960,349	\$2,940,524	1.00	0.35	0.45	0.20	\$1,323,235.58	\$360.21
	Subtotal Existing Facilities	\$1,960,349	\$2,940,524	1.00	0.35	0.45	0.20	\$1,323,235.58	\$360.21
NEW FACILITIES									
	Major Collection Line (S-1 to S-28 and S-30,32,34,36)	\$30,359,000	\$45,538,500	8	0	6.00	2	\$34,153,875.00	\$9,296.49

FACILITY		CONSTRUCT COST	CONSTRUCT COST PLUS INTEREST	FACILITY CAPACITY (mgd or gals)				NEXT 10-YEAR CAPITAL COST TOTAL	NEXT 10-YEAR COST PER LUE
TYPE	NAME			TOTAL	FOR CURRENT CUST	EXCESS <10 YEARS	EXCESS >10 YEARS		
	Subtotal New Facilities	\$30,359,000	\$45,538,500	8	0	6.00	2	\$34,153,875.00	\$9,296.49
	TOTAL MAJOR COLLECTION LINES	\$30,359,000	\$45,538,500	8	0	6.00	2	\$34,153,875.00	\$9,296.49
	FEE UPDATE COST (Wastewater Portion)							\$16,485.00	\$4.49
	MASTER PLAN (Wastewater Portion)							\$150,000.00	\$40.83
	TOTALS	\$43,472,349	\$65,208,524					\$42,560,906.20	\$11,584.84

(a) Interest assumed to be 50% for all categories.

4.0 SUMMARY

Table 17 – Water and Wastewater Maximum Impact Fees shows the remainder of the fee calculation process. A credit of fifty (50) percent of the total calculated fee is required by recent legislative changes to Chapter 395 if a credit for ad valorem tax and utility service revenues is not applied.

The maximum total water impact fee, with credits is \$4,562.36 per LUE. For wastewater, the maximum fee, with credits, is \$5,792.42 per LUE. The maximum total for the two utilities is \$10,354.32 for one LUE of service.

Higher fees will be charged for larger meter sizes, according to the fee multipliers shown in **Table 10 – LUE Equivalencies for Various Types and Sizes of Water Meters**.

Table 17 – Water and Wastewater Capital Cost Summary

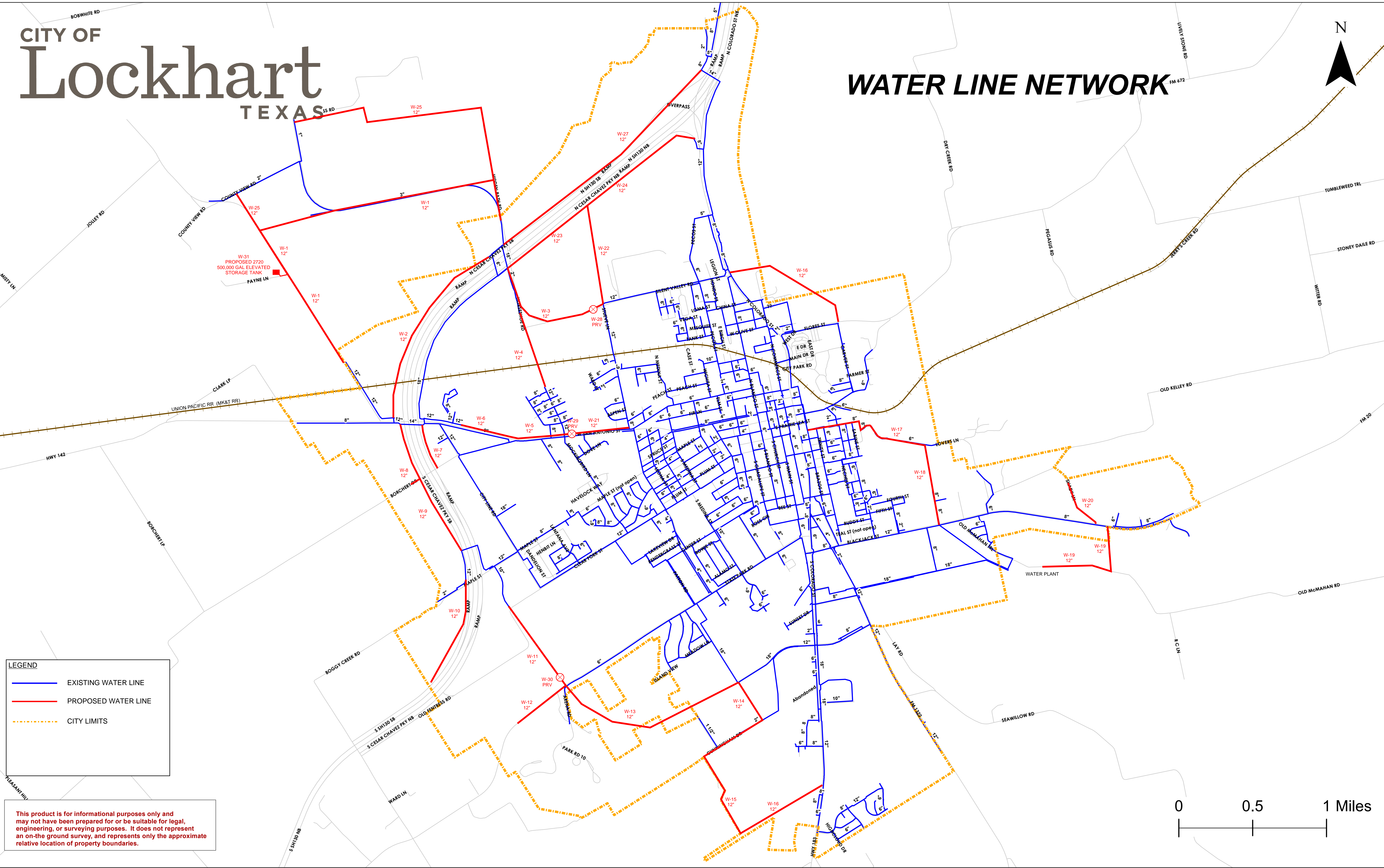
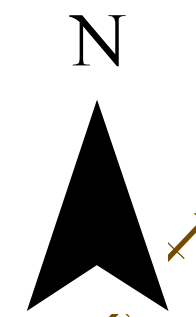
Utility	Facility	Cost/LUE	Credit/LUE	Maximum Fee/LUE
WATER	Wells	\$568.12	\$284.06	\$284.06
	Raw Water Transmission	\$315.49	\$157.75	\$157.75
	Treatment	\$432.91	\$216.46	\$216.46
	Pumping	\$134.58	\$67.29	\$67.29
	Elevated Storage	\$375.73	\$187.86	\$187.86
	Major Transmission	\$7,252.57	\$3,626.29	\$3,626.29
	Fee Update Cost	\$4.49	\$2.24	\$2.24
	Master Plan	\$40.83	\$20.42	\$20.42
	TOTAL WATER CAPITAL COSTS		\$9,124.71	\$4,562.36
WASTEWATER	Treatment	\$351.76	\$175.88	\$175.88
	Lift Stations (a)	\$1,531.09	\$765.55	\$765.55
	Major Collection	\$9,296.49	\$4,648.25	\$4,648.25
	Fee Update Cost	\$4.49	\$2.24	\$2.24
	Master Plan	\$40.83	\$20.42	\$20.42
	TOTAL WASTEWATER CAPITAL COSTS		\$11,584.84	\$5,792.42
TOTAL WATER AND WASTEWATER CAPITAL COSTS		\$20,708.64	\$10,354.32	\$10,354.32

FIGURE 1

Water System Capital Improvements Plan

CITY OF Lockhart TEXAS

WATER LINE NETWORK



LEGEND

- EXISTING WATER LINE
- PROPOSED WATER LINE
- - - - - CITY LIMITS

This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey, and represents only the approximate relative location of property boundaries.

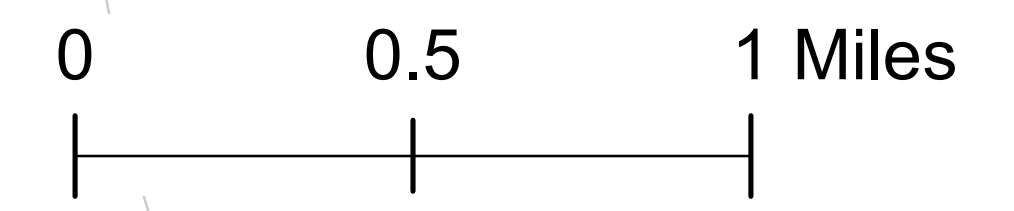
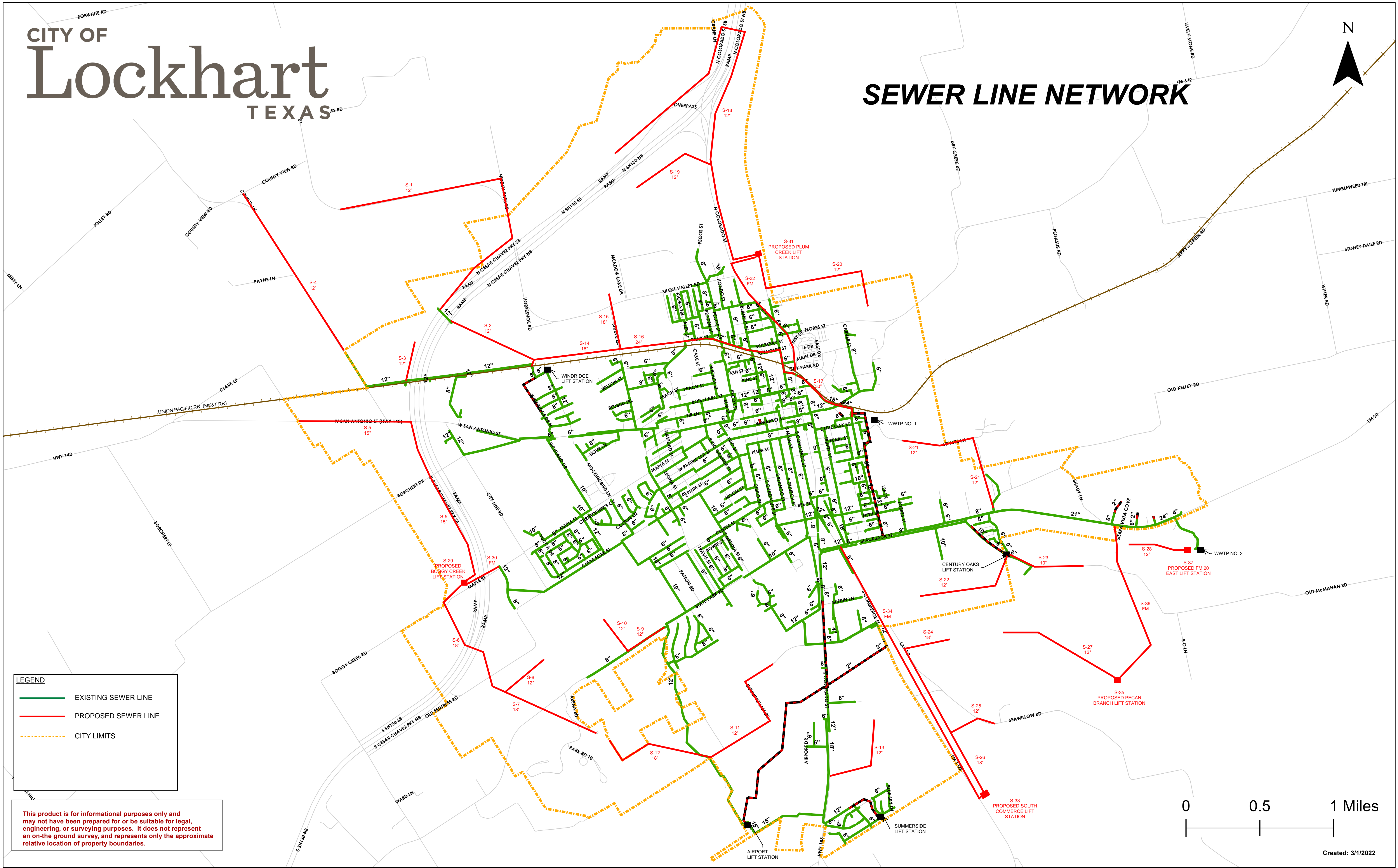
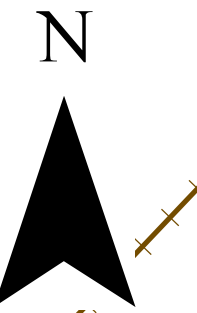


FIGURE 2

Wastewater System Capital Improvements Plan

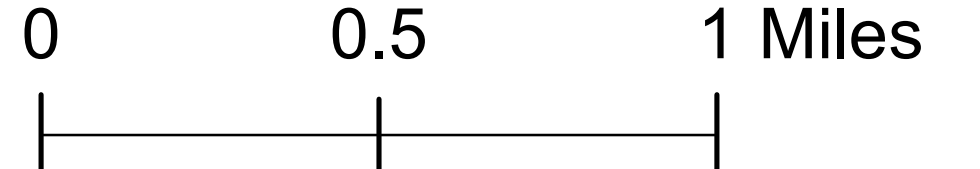
SEWER LINE NETWORK



LEGEND

- EXISTING SEWER LINE
- PROPOSED SEWER LINE
- CITY LIMITS

This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey, and represents only the approximate relative location of property boundaries.





Innovative approaches
Practical results
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TECHNICAL REPORT



Final Report Roadway Impact Fee Program Update



FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

City of Lockhart, Texas

March 1, 2023

TABLE OF CONTENTS

Table of Contents

Chapter 1 Introduction	3
Methodology	4
Chapter 2 Service Areas	5
Chapter 3 Land Use Assumptions Summary	7
Base Year Data	7
Growth Assumptions	7
Population Growth Rate	8
Ten-Year Projection	8
Ultimate Land Area Capacity for Population Growth	10
Chapter 4 Roadway Impact Fee Service Units	11
Service Units	11
Service Units for New Development	12
Trip Generation	12
Chapter 5 Existing Conditions Analysis	21
Existing Conditions	21
Roadway Service Capacities	21
Existing Volumes	22
Vehicle-Miles of Existing Capacity (Supply)	22
Vehicle-Miles of Existing Demand	23
Vehicle Miles of Existing Excess Capacity or Deficiencies	23
Chapter 6 Projected Conditions Analysis	24
Projected Growth	24
Projected Vehicle-Miles of New Demand	24
Capital Improvements Plan	25
Eligible Projects	25
Eligible Costs	25

TABLE OF CONTENTS

Staff Input and Project Achievability _____	27
Capital Improvements Plan _____	27
Projected Vehicle-Miles Capacity Available for New Growth _____	31
Cost of Roadway Improvements _____	31
Chapter 7 Calculation of Impact Fees _____	32
Cost per Service Unit _____	32
Calculation of Roadway Impact Fees _____	33
Chapter 8 Conclusion _____	34
Appendices _____	36
Appendix A: Roadway Impact Fee Definitions _____	37
Appendix B: Existing Capital Improvements _____	40
Appendix C: Calculation Of Vehicle-Miles of New Demand _____	43
Appendix D: Roadway Improvement Plan Projects _____	45
Appendix E: Roadway improvement Plan Cost Analysis _____	48
Appendix F: Roadway Service Area Analysis Summary _____	71
Appendix G: Land Use Assumptions Report _____	73

Chapter 1 Introduction

Chapter 395 of the Texas Local Government Code prescribes the process which Texas cities must follow in the update of impact fees. Statutory requirements mandate that impact fees be updated (at least) every five years. This analysis of roadways serves as the fourth generational update to the initial system adopted in 2001. Since its inception, the roadway impact fee system has been updated in 2007, 2012, and 2017. There was a formalized no change of program in 2012.

Land use assumptions serve as the basis from which travel demands over the ten-year planning period are developed. This analysis is based on data (ten-year planning period 2022-2032) contained in the “Land Use Assumption for the Impact Fees” report dated January 2023, which was presented to the Impact Fee Advisory Committee (IFAC) in December 2022.

As a funding mechanism for roadway improvements, impact fees allow cities to recover the costs associated with new or facility expansion to serve future development. Legislatively, roadway impact fees may consider arterial and collector status roads on the City’s official Thoroughfare Plan. Statutory requirements mandate that impact fees be based on a specific list of improvements identified in the program and only the cost attributed (and necessitated) by new growth over a ten-year period may be considered. As projects in the program are completed, planned costs are updated with actual costs to more accurately reflect the capital expenditure of the program. Additionally, new capital improvement projects may be added to the system.

Initially authorized by the Texas Legislature in 1987, impact fees have undergone several technical and administrative changes, most notably since 2001. These include:

- Expansion of the service area structure for roadway facilities from three to six miles;
- A credit for the portion of ad valorem tax revenues generated by improvements over the program period, or the credit equal to 50% of the total projected cost of implementing the capital improvements plan;
- A city's share of costs on the federal or Texas highway system, including matching funds and costs related to utility line relocation, the establishment of curbs and gutters, sidewalks, drainage appurtenances, and rights-of-way;
- Increase in the time period of update of impact fee land use assumptions and capital improvements plan from a three to a five year period;
- Changes in compliance requirements related to annual reporting;
- Consolidation of the land use assumptions and capital improvements plan hearings; and
- The exemption of schools districts and federal housing from paying impact fees.

INTRODUCTION

METHODOLOGY

To update roadway impact fees for the City of Lockhart, a series of work tasks were undertaken. These tasks are described below.

1. Meetings were held with the City of Lockhart Staff and the Impact Fee Advisory Committee (IFAC) to discuss the methodology to be used in the update.
2. The existing roadway service area structure was divided into two service areas to reach the extent of the current city limits.
3. Vehicle-miles of travel in the PM peak hour retained as the service unit measure for roadway impact fee calculations.
4. A roadway conditions inventory was conducted to update lane geometries, roadway classifications and segment lengths, as necessary, of facilities in the impact fee program. Using updated traffic volumes collected while school was in session in late August 2022, any service area deficiencies were identified within the network.
5. Projected growth (service units) by service area over the ten-year planning period was determined using the 2023 Land Use Assumptions Report in conjunction with the revised Land Use Equivalency Table. Projected growth between the years 2022 and 2032 of population and employment are detailed in the land use assumptions report.
6. The previous roadway impact fee capital improvements program (IFCIP) was reviewed to ensure excess capacity remained in the program as well as to incorporate revised growth figures for the service area. Potential project additions were identified by City Staff based on growth needs and the city's anticipated future projects. Projects that have been fully recouped were removed.
7. Roadway cost data of construction, engineering, and right-of-way for impact fee projects were updated and compiled by service area based on data provided by the City. For recently completed projects, actual costs were incorporated into the system database.
8. The cost of capacity provided, maximum cost per service unit, and cost attributable to new development was calculated for each service area.
9. The Land Use Equivalency Table (service unit generation for specific land uses) was updated to incorporate new trip rate. Trip rate data was obtained from *Trip Generation, Eleventh Edition* by the Institute of Transportation Engineers (ITE). Trip length statistics of the city were retained from the previous program.
10. A report was prepared to document the procedures and findings of the analysis.

SERVICE AREAS

Chapter 2 Service Areas

Chapter 395 requires that service areas be defined for roadway impact fees to ensure that facility improvements are located in close proximity to areas generating needs. Legislative requirements stipulate that roadway service areas be limited to a six-mile maximum and must be located within the current city limits. Roadway service areas are different from water and wastewater systems, which can include the city limits and its extra-territorial jurisdiction (ETJ) or other defined service area. This is primarily because roadway systems are "open" to both local and regional (non-city) use as opposed to a defined level of utilization from residents within a water and wastewater system. The result is that new development can only be assessed an impact fee based on the cost of necessary capital improvements within a specific service area.

For this program update, the service area structure was adjusted to incorporate annexations that were not part of the previous study. In the 2017, several annexations encroached on the six-mile limit leading to a revised service area structure that split the city in two. A combination of street and railroad facilities are used to divide the city into Service Area 1 in the north and Service Area 2 in the south, including Maple Street, San Jacinto Street, San Antonio Street, Market Street, and the Union Pacific Railroad. The amended structure aimed to provide greater flexibility in the program for future further annexations.

As part of this update, the service area structure was amended to include annexations since 2017 and is illustrated in **Figure 2-2**.

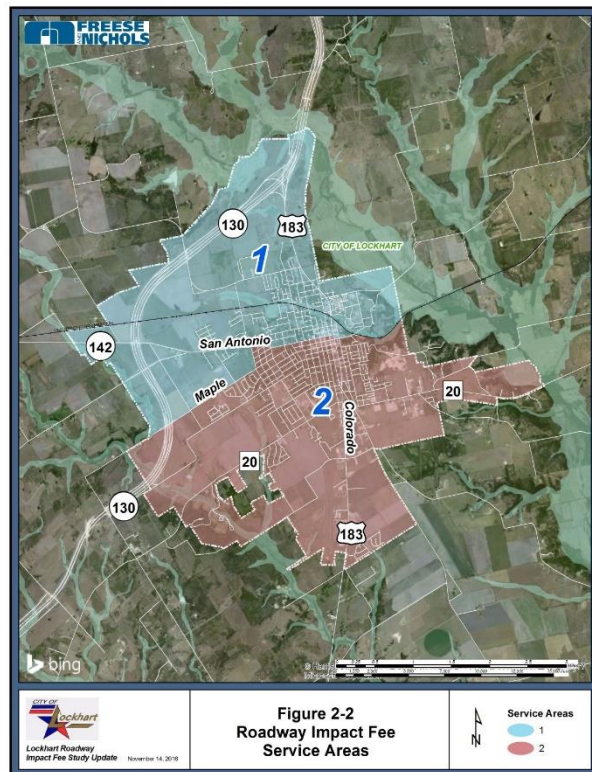


Figure 2-1: 2017 Roadway Service Area

SERVICE AREAS

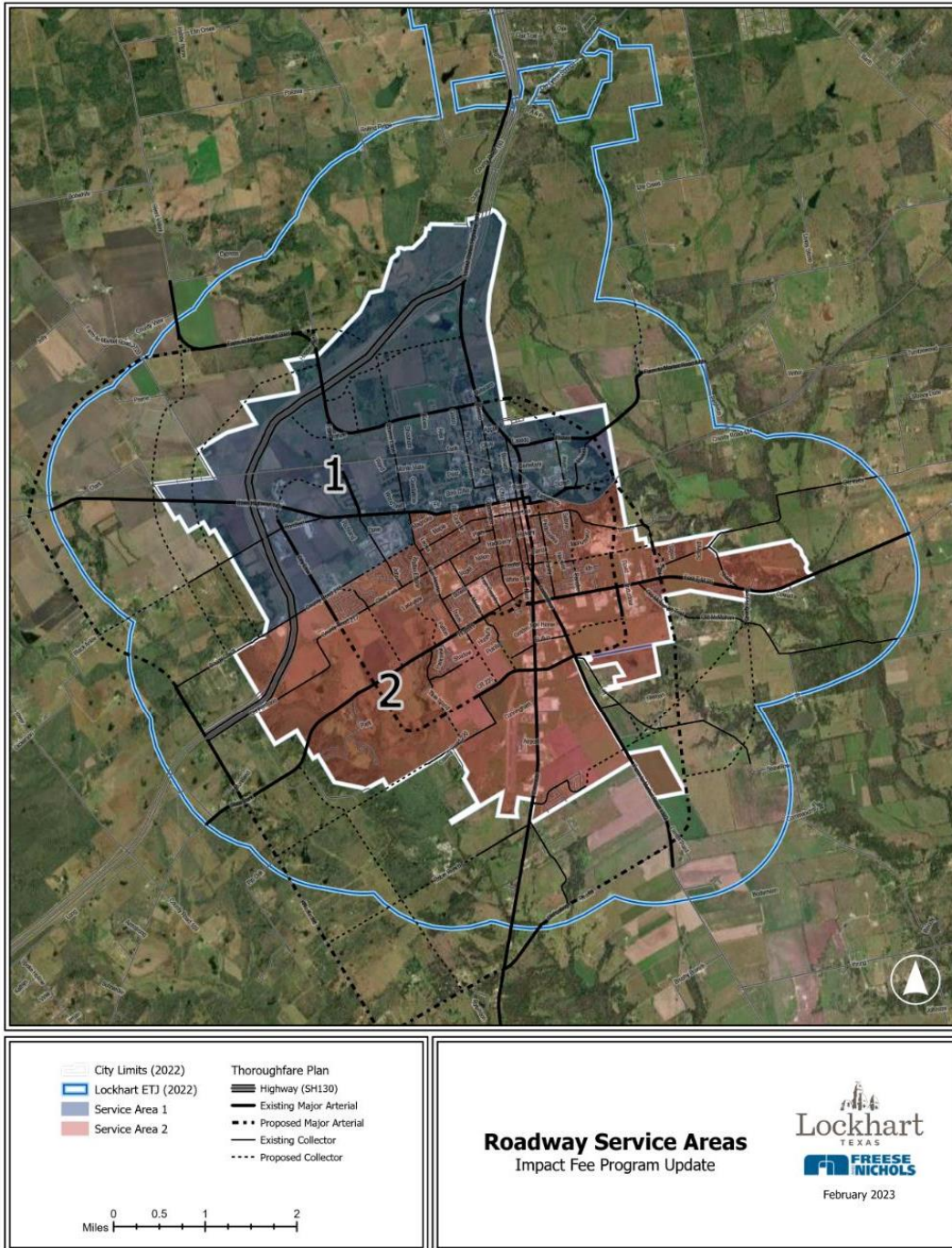


Figure 2-2: Roadway Service Areas

LAND USE ASSUMPTIONS SUMMARY

Chapter 3 Land Use Assumptions Summary

Population and land use assumptions are important elements in the analysis of water, wastewater, and roadway systems. To assist the City of Lockhart in determining the need and timing of capital improvements to serve future development, a reasonable estimation of future growth is required. Growth and future development projections were formulated based on assumptions pertaining to the type, location, quantity, and timing of various future land uses within the community. These land use assumptions, which include population projections, will become the basis for the preparation of impact fee capital improvement plans for water, wastewater, and roadway facilities. **Appendix G** contains the full Land Use Assumptions Report and is summarized in this chapter.

BASE YEAR DATA

Using the City's historical growth trends and data, the 2022 base year population estimate for the City of Lockhart and future growth rate were derived. This "benchmark" information provides a starting basis of data for the ten-year growth assumptions. A full description of this analysis is provided in Appendix G, the Land Use Assumption Report.

For the purposes of documenting changes in population, land use, density, and intensity, the data format to be used as a basis to formulate the land use assumptions will be principally population and employment. **Table 3-1** represents a summary of existing population and employment for Lockhart.

Table 3-1: Existing Population and Employment 2022

Housing Units ⁽¹⁾	5,877
Population ⁽²⁾	15,600
Total Employment ⁽³⁾	6,420
<i>Basic</i>	1,639
<i>Service</i>	3,760
<i>Retail</i>	1,021

⁽¹⁾ Estimated derived from 2020 Census, City of Lockhart database

⁽²⁾ Estimate derived from Census, ACS, and City database

⁽³⁾ Estimate derived from ACS, CAMPO data

GROWTH ASSUMPTIONS

Growth is characterized in two forms: population (residential) and employment (nonresidential). A series of assumptions were made to arrive at reasonable growth rates for population and

LAND USE ASSUMPTIONS SUMMARY

employment. The following assumptions have been made as a basis from which ten-year projections could be initiated.

1. Future land uses will occur as identified on the Future Land Use Plan in the approved Comprehensive Plan,
2. The City will be able to finance the necessary improvements to accommodate growth,
3. School facilities will accommodate increases in population, and
4. Densities will be in alignment with land uses of the Comprehensive Plan.

Population Growth Rate

An approximate 4.25% average annual growth rate was determined by the Impact Fee Advisory Committee (IFAC) to be a reasonable rate at which Lockhart's population could be expected to grow. Between 1990 and 2000, Lockhart's compound annual growth rate was approximately 1.37%. Between 2000 and 2010 the average annual growth rate was approximately 0.83%. Based upon anticipated and committed residential construction, development of additional industrial facilities, and anticipated City annexations, a 4.25% percent growth rate should be feasible and reasonable for planning purposes.

If population growth in Lockhart occurs at an average rate of 4.25% per year, a population of approximately 23,695 people could be expected by the year 2032 (ten years). With known development information, it is also reasonable to assume that the City limits will grow by at least 300 acres. This scenario uses similar land use proportions as the existing land use, and accounts for anticipated geographic and population growth of the City.

TEN-YEAR PROJECTION

The ten-year forecast considered 1) approved and/or anticipated development within the city, 2) the policies and growth rate established in the Comprehensive Plan, as well as growth patterns within the city limits as documented in the U.S. Census, ACS, and CAMPO data. Figure 3 illustrates development activity within the city as of August 2022. New development activity within the city includes subdivisions listed below (depicted in the supporting graphic) such as:

- **Service Area 1:** Centerpoint Meadows, Vintage Springs, Hansford, Lockhart Farms, Kelly Villas, The Stanton, Lockhart Gateway
- **Service Area 2:** Maple Park, Main Springs, Clear Fork, Heritage Place, Lockhart Place (TH), Cavalry, Ramendu at Lockhart, Spyglass, Golden Eagle, Summerside, and Seawillow.

LAND USE ASSUMPTIONS SUMMARY

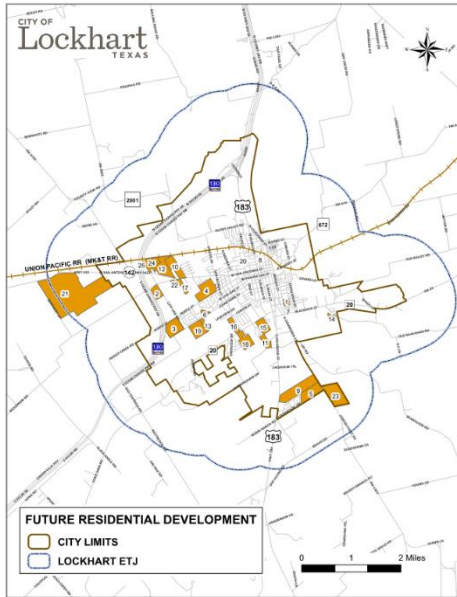


Figure 3: Future Residential Development

Outside the city (within ETJ), Juniper Springs will bring large-scale residential housing to the west, south of SH 142. **Table 3-2** lists ten-year compound annual growth projections of population for the roadway impact fee service areas. While growth is anticipated to occur in both service areas, slightly more residential growth will occur in Service Area 2. **Table 3-3** shows a summary of the employment projections for the roadway impact fee service areas. Currently, most of the employment is in Service Area 2; however, the SH-130 toll road will provide opportunities for employment growth in Service Area 1.

Table 3-2: Ten-Year Projections for the Roadway Service Area

	2022	2032	Net Growth (2022-2032)
	Population	Population	Population
Service Area 1	6,004	8,930	2,926
Service Area 2	9,596	14,765	5,169
Total	15,600	23,695	8,095

Table 3-3: Employment Projections for the Roadway Service Area

	2022				2032				Net Growth (2022-2032)
	Employment (Persons)				Employment (Persons)				
	Basic	Service	Retail	Total	Basic	Service	Retail	Total	
Service Area 1	573	1,316	357	2,247	849	1,948	529	3,326	1,079
Service Area 2	1,065	2,444	664	4,173	1,577	3,618	983	6,178	2,005
Total	1,638	3,760	1,021	6,420	1,490	1,961	6,053	9,504	3,084

LAND USE ASSUMPTIONS SUMMARY

ULTIMATE LAND AREA CAPACITY FOR POPULATION GROWTH

As currently developed, the city has 4,749 acres of agriculture/open space within the city limits. Assuming a majority of that acreage is developable and 1) two-thirds this acreage develops as residential (densities for single-family, two-family, and multi-family reasonably applied), 2) a 98 percent occupancy rate, 3) 4.0 dwelling units per acre, and 4) approximately 2.79 persons per household, the vacant acreage within the city could support approximately 34,279 persons. Including the existing population within the city, the ultimate holding capacity of the city limits is 49,879. Based on current growth rates, it is not anticipated that this population would not be reached until beyond 2050.

Summary

- Lockhart presently contains approximately 10,022 acres within the city limits.
- Existing estimated population of Lockhart in 2022 is 15,600 persons with 6,420 employed persons in the city.
 - The population in the water and wastewater service areas is 15,675 and 15,600, respectively.
- An average annual growth rate of 4.25% was used to calculate the Lockhart ten-year (2022-2032) population growth projection.
 - The ten-year growth projection for the roadway program (within the Lockhart City Limits) is an increase from 15,600 to 23,695 persons, representing a net growth of 8,095 persons total.
 - The ten-year growth projection for the water service area is forecasted to increase from 15,675 to 23,810, for a total net growth of 8,135 persons.
 - The ten-year growth projection for the wastewater service area is forecasted to have no increase in population outside the city limits and will be 23,695.
- An average annual growth of 4.00% was used to calculate the Lockhart ten-year employment growth projection.
 - The ten-year employment is to grow from 6,420 to 9,504 jobs, representing a net growth of 3,084 jobs total.

The ultimate holding capacity for population growth within the city (roadway service areas 1 and 2) is expected to accommodate the projected 10-year growth.

Chapter 4 Roadway Impact Fee Service Units

Service units establish a relationship between roadway projects and demand placed on the street system by development, as well as, the ability to calculate and assess impact fees for specific development proposals. As defined in Chapter 395, "Service unit means a standardized measure of consumption, use, generation, or discharge attributable to an individual unit of development in accordance with generally accepted engineering or planning standards for a particular category of capital improvements or facility expansions."

To determine the roadway impact fee for a particular development, the service unit must accurately identify the impact that the development will have on the major roadway system (i.e., arterial and collector roads) serving the development. This impact is a combination of the number of new trips generated by the development, the particular peaking characteristics of the land-use(s) within the development, and the length of each new trip on the transportation system.

The service unit must also reflect the capacity, which is provided by the roadway system, and the demand placed on the system during the time in which peak, or design, conditions are present on the system. Transportation facilities are designed and constructed to accommodate volumes expected to occur during the peak hours (design hours). These volumes typically occur during the peak hours as motorists travel to and from work.

The vehicle-mile during the PM peak hour serves as the service unit for impact fees in Lockhart. This service unit establishes a more precise measure of capacity, utilization and intensity of land development through the use of published trip generation data. It also recognizes legislative requirements with regards to trip length.

Service Units

Service units create a link between supply (roadway projects) and demand (development). Both can be expressed as a combination of the number of vehicles traveling during the peak hour and the distance traveled by these vehicles in miles.

Service Unit Supply

For roadway capital project improvements, the number of service units provided during the peak hour is simply the product of the capacity of the roadway in one hour and the length of the product. For example:

Given a four-lane divided roadway project with a 600 vehicle per hour per lane capacity and a length of two miles, the number of service units provided is:

$$600 \text{ vehicles per hour per lane} \times 4 \text{ lanes} \times 2 \text{ miles} = 4,800 \text{ vehicles-miles}$$

ROADWAY IMPACT FEE SERVICE UNITS

Service Unit Demand

The demand placed on the system can be expressed in a similar manner. For example, a development generating 100 vehicle trips in the PM peak hour with an average trip length of two miles would generate:

$$100 \text{ vehicle-trips} \times 2 \text{ miles/trip} = 200 \text{ vehicle-miles}$$

Similarly, demand placed on the existing roadway network is calculated in the same manner with a known traffic volume (peak hour roadway counts collected in August 2022) on a street and a given segment length.

SERVICE UNITS FOR NEW DEVELOPMENT

An important objective in the development of the impact fee system is the development of a specific service unit equivalency for individual developments. The vehicle-miles generated by a new development are a function of the trip generation and average trip length characteristics of that development. The following describes the process used to develop the vehicle-equivalency table, which relates land use types and sizes to the resulting vehicle-miles of demand created by that development.

Trip Generation

Trip generation information for the PM peak hour was based on data published in the Eleventh Edition of *Trip Generation* by the Institute of Transportation Engineers (ITE). *Trip Generation* is a reference publication that contains travel characteristics of over 100 land uses across the nation and is based on empirical data gathered from over 3,400 studies that were reported to the Institute by public agencies, developers, and consulting firms. Transportation engineers throughout the nation universally accept data contained in this publication for use in studies.

Pass-by and Diverted Trips Adjustments

The actual "traffic impact" of a specific site for impact fee purposes is based on the amount of traffic added to the street system. To accurately estimate new trips generated by a new development, adjustments must be made to trip generation rates and equations to account for pass-by and diverted trips. The added traffic is adjusted so that each development is assigned only for a portion of trips associated with that particular development, reducing the possibility of over-counting by counting only primary trips generated.

Pass-by trips are those trips that are already on a particular route for a different purpose and simply stop at a particular development on that route. For example, a stop at a convenience store on the way home from the office is a pass-by trip for the convenience store. A pass-by trip does not create

ROADWAY IMPACT FEE SERVICE UNITS

an additional burden on the street system and therefore should not be counted in the assessment of impact fees of a convenience store.

A diverted trip is a similar situation, except that a diversion is made from the regular route to make an interim stop. For example, a trip from work to home using Colorado Street would be a diverted trip if the travel path were changed to Commerce Street for the purpose of stopping at the courthouse. On a system-wide basis, this trip places a slightly additional burden on the street system but in many cases, this burden is minimal.

Trip generation rates were reduced by the percentages presented in **Table 4-1** in an effort to isolate the primary trip purpose. Adjustments were based on studies conducted by ITE and other published studies.

The resulting recommended trip rates are illustrated as part of the Land Use/Vehicle Mile Equivalency Table illustrated later in this chapter. Rates were developed in lieu of equations to simplify the assessment of impact fees by the City and likewise, the estimation of impact fees by persons who may be required to pay an impact fee in conjunction with a development project.

ROADWAY IMPACT FEE SERVICE UNITS

Table 4-1: Trip Reduction Estimates (PM Peak Hour)

ITE Land Use	ITE Code	Dev. Unit	Avg. Trip Rate	Pass-By Rate	Diverted Trips	Avg. Trip Rate w/ Deductions
INDUSTRIAL						
* General Light Industrial	110	1,000 sq. ft.	0.65	0%	0%	0.65
Industrial Park	130	1,000 sq. ft.	0.34	0%	0%	0.34
Manufacturing	140	1,000 sq. ft.	0.74	0%	0%	0.74
Warehousing	150	1,000 sq. ft.	0.18	0%	0%	0.18
Mini-Warehouse	151	1,000 sq. ft.	0.15	0%	0%	0.15
High-Cube Fulfillment Center Warehouse	155	1,000 sq. ft.	0.16	0%	0%	0.16
Data Center	160	1,000 sq. ft.	0.09	0%	0%	0.09
RESIDENTIAL						
* Single-Family Detached Housing	210	DU	0.94	0%	0%	0.94
Multifamily Housing (Low-Rise)	220	DU	0.51	0%	0%	0.51
Multifamily Housing (Mid-Rise)	221	DU	0.39	0%	0%	0.39
Mid-Rise Residential with 1st-Floor Commercial	231	DU	0.17	0%	0%	0.17
Senior Adult Housing - Detached	251	DU	0.3	0%	0%	0.30
Continuing Care Retirement Community	255	DU	0.19	0%	0%	0.19
COMMERCIAL						
Hotel	310	Rooms	0.59	0%	0%	0.59
Golf Course	430	Holes	2.91	0%	0%	2.91
Miniature Golf Course	431	Holes	0.33	0%	0%	0.33
Golf Driving Range	432	Driving Positions	1.25	0%	0%	1.25
Batting Cages	433	Cages	2.22	0%	0%	2.22
Multipurpose Recreational Facility	435	1,000 sq. ft.	3.58	0%	0%	3.58
Movie Theater	444	Screens	0	15%	0%	0.00
Health/Fitness Club	492	1,000 sq. ft.	3.45	0%	0%	3.45
INSTITUTIONAL						
Elementary School	520	Students	0.16	0%	0%	0.16
Middle School/Junior High School	522	Students	0.15	0%	0%	0.15
High School	525	Students	0.14	0%	0%	0.14
Private School (K-8)	530	Students	0.26	0%	0%	0.26
Junior/Community College	540	Students	0.11	0%	0%	0.11
Place of Worship	560	1,000 sq. ft.	0.49	0%	0%	0.49
Day Care Center	565	Students	0.79	75%	0%	0.20
Hospital	610	1,000 sq. ft.	1.69	0%	0%	1.69
Clinic	630	1,000 sq. ft.	3.69	0%	0%	3.69
Animal Hospital/Veterinary Clinic	640	1,000 sq. ft.	3.53	0%	0%	3.53
Free-Standing Emergency Room	650	1,000 sq. ft.	1.52	0%	0%	1.52
OFFICE						
* General Office Building	710	1,000 sq. ft.	1.44	0%	0%	1.44
Small Office Building (<5,000 Sq Ft GFA)	712	1,000 sq. ft.	2.16	0%	0%	2.16
Medical-Dental Office Building	720	1,000 sq. ft.	3.93	0%	0%	3.93
Research and Development Center	760	1,000 sq. ft.	0.98	0%	0%	0.98
Small Office Building (<5,000 Sq Ft GFA)	712	1,000 sq. ft.	2.16	0%	0%	2.16
Medical-Dental Office Building	720	1,000 sq. ft.	3.93	0%	0%	3.93
Research and Development Center	760	1,000 sq. ft.	0.98	0%	0%	0.98
General Office Building	710	1,000 sq. ft.	1.44	0%	0%	1.44
Small Office Building (<5,000 Sq Ft GFA)	712	1,000 sq. ft.	2.16	0%	0%	2.16

ROADWAY IMPACT FEE SERVICE UNITS

Medical-Dental Office Building	720	1,000 sq. ft.	3.93	0%	0%	3.93
Research and Development Center	760	1,000 sq. ft.	0.98	0%	0%	0.98
RETAIL						
* Shopping Center	820	1,000 sq. ft.	3.71	34%	26%	1.48
Hardware/Paint Store	816	1,000 sq. ft.	2.98	26%	28%	1.37
Shopping Center	820	1,000 sq. ft.	3.71	34%	26%	1.48
Supermarket	850	1,000 sq. ft.	8.95	36%	38%	2.34
Convenience Market	851	1,000 sq. ft.	49.11	63%	26%	5.40
Discount Club	857	1,000 sq. ft.	4.19	30%	30%	1.68
Home Improvement Superstore	862	1,000 sq. ft.	2.29	48%	24%	0.64
Office Supply Superstore	867	1,000 sq. ft.	2.77	30%	0%	1.94
Pharmacy/Drugstore w/ Drive-Through Window	881	1,000 sq. ft.	10.25	49%	13%	3.90
Furniture Store	890	1,000 sq. ft.	0.52	53%	31%	0.08
Drive-in Bank	912	Drive-in Lanes	21.01	47%	26%	5.67
Hair Salon	918	1,000 sq. ft.	1.45	25%	0%	1.09
Drinking Place	925	1,000 sq. ft.	0	50%	0%	0.00
Food Cart Pod	926	Food Carts	6.16	25%	0%	4.62
Fast Casual Restaurant	930	1,000 sq. ft.	12.55	43%	26%	3.89
Quality Restaurant	931	1,000 sq. ft.	7.8	44%	27%	2.26
High-Turnover (Sit-Down) Restaurant	932	1,000 sq. ft.	9.05	43%	26%	2.81
Fast-Food Restaurant w/ Drive-Through Window	934	1,000 sq. ft.	33.03	50%	23%	8.92
Coffee/Donut Shop w/ Drive-Through Window and No Indoor Seating	938	1,000 sq. ft.	15.08	50%	23%	4.07
Quick Lubrication Vehicle Shop	941	Service Positions	4.85	25%	0%	3.64
Automobile Parts Service Center	943	1,000 sq. ft.	2.06	0%	0%	2.06
Gasoline/Service Station w/ Convenience Market	945	1,000 sq. ft.	88.35	56%	31%	11.49
Car Wash and Detail Center	949	Wash Stalls	13.6	47%	26%	3.67
* Others Not Specified		1,000 sq. ft.				0.47

A local study may also be conducted to confirm rates in *Trip Generation* or to change rates reflecting local conditions. In such cases, a minimum of three similar sites should be counted. Selected sites should be isolated in nature with driveways that specifically serve the development and no other land uses. The results should be plotted on the scatter diagram of the selected land use contained in *Trip Generation* for comparison purposes. It is recommended that no change be approved unless the results show a variation of at least fifteen percent across the range of the sample size surveyed.

Trip Length

Trip lengths (in miles) are used in conjunction with site trip generation to estimate vehicle-miles of travel. Trip length data was retained from the previous impact fee study and was based on information from travel surveys conducted by the Capital Area Metropolitan Planning Organization, and travel characteristics from the U.S. Census Workplace Survey. A cross examination was made in relation to the current size of each service area and it was determined that the trip lengths, as defined, were a general representation of travel characteristics in Lockhart.

ROADWAY IMPACT FEE SERVICE UNITS

Table 4-2 summarizes the average trip lengths. These trip lengths represent the average distance that a vehicle will travel between an origin and destination of which either the origin or destination contains the land-use category identified below. Data compiled from data sources represents the best available information on trip lengths for this area.

Origin and Destination Adjustments

The assessment of an individual development's impact fee is based on the premise that each vehicle-trip has an origin and a destination and that the development end should pay for one-half of the cost necessary to complete each trip. To prevent the potential of double charging, trip lengths were divided by two to reflect half of the vehicle trip associated with development. **Table 4-2** illustrates the adjusted trip length.

Finally, as the service area structure was based on a six-mile boundary, those land uses that exhibited trip lengths greater than six miles would be capped to this threshold.

ROADWAY IMPACT FEE SERVICE UNITS

Table 4-2: Trip Lengths and Adjustments

ITE Land Use	ITE Code	Modeled Trip Length	Adjusted Trip Length
INDUSTRIAL			
* General Light Industrial	110	2.38	1.19
Industrial Park	130	2.38	1.19
Manufacturing	140	2.38	1.19
Warehousing	150	2.40	1.20
Mini-Warehouse	151	2.00	1.00
High-Cube Fulfillment Center Warehouse	155	2.40	1.20
Data Center	160	2.40	1.20
RESIDENTIAL			
* Single-Family Detached Housing	210	2.32	1.16
Multifamily Housing (Low-Rise)	220	2.32	1.16
Multifamily Housing (Mid-Rise)	221	2.32	1.16
Mid-Rise Residential with 1st-Floor Commercial	231	2.32	1.16
Senior Adult Housing - Detached	251	2.00	1.00
Continuing Care Retirement Community	255	2.00	1.00
COMMERCIAL			
Hotel	310	2.00	1.00
Golf Course	430	2.00	1.00
Miniature Golf Course	431	2.00	1.00
Golf Driving Range	432	2.00	1.00
Batting Cages	433	2.00	1.00
Multipurpose Recreational Facility	435	2.00	1.00
Movie Theater	444	2.00	1.00
Health/Fitness Club	492	2.00	1.00
INSTITUTIONAL			
Elementary School	520	1.60	0.80
Middle School/Junior High School	522	2.00	1.00
High School	525	2.00	1.00
Private School (K-8)	530	2.00	1.00
Junior/Community College	540	2.00	1.00
Place of Worship	560	2.00	1.00
Day Care Center	565	1.60	0.80
Hospital	610	2.00	1.00
Clinic	630	2.00	1.00
Animal Hospital/Veterinary Clinic	640	2.00	1.00
Free-Standing Emergency Room	650	2.00	1.00
OFFICE			
* General Office Building	710	2.32	1.16
Small Office Building (<5,000 Sq Ft GFA)	712	2.00	1.00
Medical-Dental Office Building	720	2.00	1.00
Research and Development Center	760	2.32	1.16
Small Office Building (<5,000 Sq Ft GFA)	712	2.00	1.00
Medical-Dental Office Building	720	2.00	1.00
Research and Development Center	760	2.32	1.16
General Office Building	710	2.32	1.16
Small Office Building (<5,000 Sq Ft GFA)	712	2.00	1.00

ROADWAY IMPACT FEE SERVICE UNITS

Medical-Dental Office Building	720	2.00	1.00
Research and Development Center	760	2.32	1.16
RETAIL			
* Shopping Center	820	2.00	1.00
Hardware/Paint Store	816	2.00	1.00
Shopping Center	820	2.00	1.00
Supermarket	850	2.00	1.00
Convenience Market	851	1.60	0.80
Discount Club	857	2.00	1.00
Home Improvement Superstore	862	2.00	1.00
Office Supply Superstore	867	2.00	1.00
Pharmacy/Drugstore w/ Drive-Through Window	881	2.00	1.00
Furniture Store	890	2.00	1.00
Drive-in Bank	912	2.00	1.00
Hair Salon	918	2.00	1.00
Drinking Place	925	2.00	1.00
Food Cart Pod	926	2.00	1.00
Fast Casual Restaurant	930	2.00	1.00
Quality Restaurant	931	2.00	1.00
High-Turnover (Sit-Down) Restaurant	932	2.00	1.00
Fast-Food Restaurant w/ Drive-Through Window	934	2.00	1.00
Coffee/Donut Shop w/ Drive-Through Window and No Indoor Seating	938	2.00	1.00
Quick Lubrication Vehicle Shop	941	2.00	1.00
Automobile Parts Service Center	943	2.00	1.00
Gasoline/Service Station w/ Convenience Market	945	0.00	0.00
Car Wash and Detail Center	949	2.00	1.00
* Others Not Specified		2.00	1.00

Service Unit Equivalency Table

The result of combining the trip generation and trip length information is an equivalency table which establishes the service unit rate for various land uses. These service unit rates are based on an appropriate development unit for each land use. For example, a dwelling unit is the basis for residential uses, while 1,000 gross square feet of floor area is the basis for office, commercial, and industrial uses. Other less common land uses use appropriate independent variables.

Separate rates have been established for specific land uses within the broader categories of residential, commercial, industrial, and institutional to reflect the differences between land uses within the categories. However, even with these specific land use types, information is not available for every conceivable land use; so, limitations do exist. The updated equivalency table is illustrated in **Table 4-3**.

Service units for respective land uses were affected as a result of updated trip generation data in the latest ITE *Trip Generation* manual. Also, contributing to the change in service units was updated discount of trip generation for pass-by and diverted trips.

ROADWAY IMPACT FEE SERVICE UNITS

Table 4-3: Land Use Vehicle-Mile Equivalency

ITE Land Use	ITE Code	Dev. Unit	Avg. Trip Rate w/ Deductions	Avg. Trip Length	Veh-Mi Per Dev Unit
INDUSTRIAL					
* General Light Industrial	110	1,000 sq. ft.	0.65	1.19	0.77
Industrial Park	130	1,000 sq. ft.	0.34	1.19	0.40
Manufacturing	140	1,000 sq. ft.	0.74	1.19	0.88
Warehousing	150	1,000 sq. ft.	0.18	1.20	0.22
Mini-Warehouse	151	1,000 sq. ft.	0.15	1.00	0.15
High-Cube Fulfillment Center Warehouse	155	1,000 sq. ft.	0.16	1.20	0.19
Data Center	160	1,000 sq. ft.	0.09	1.20	0.11
RESIDENTIAL					
* Single-Family Detached Housing	210	DU	0.94	1.16	1.09
Multifamily Housing (Low-Rise)	220	DU	0.51	1.16	0.59
Multifamily Housing (Mid-Rise)	221	DU	0.39	1.16	0.45
Mid-Rise Residential with 1st-Floor Commercial	231	DU	0.17	1.16	0.20
Senior Adult Housing - Detached	251	DU	0.30	1.00	0.30
Continuing Care Retirement Community	255	DU	0.19	1.00	0.19
COMMERCIAL					
Hotel	310	Rooms	0.59	1.00	0.59
Golf Course	430	Holes	2.91	1.00	2.91
Miniature Golf Course	431	Holes	0.33	1.00	0.33
Golf Driving Range	432	Driving Positions	1.25	1.00	1.25
Batting Cages	433	Cages	2.22	1.00	2.22
Multipurpose Recreational Facility	435	1,000 sq. ft.	3.58	1.00	3.58
Movie Theater	444	Screens	0	1.00	0.00
Health/Fitness Club	492	1,000 sq. ft.	3.45	1.00	3.45
INSTITUTIONAL					
Elementary School	520	Students	0.16	0.80	0.13
Middle School/Junior High School	522	Students	0.15	1.00	0.15
High School	525	Students	0.14	1.00	0.14
Private School (K-8)	530	Students	0.26	1.00	0.26
Junior/Community College	540	Students	0.11	1.00	0.11
Place of Worship	560	1,000 sq. ft.	0.49	1.00	0.49
Day Care Center	565	Students	0.20	0.80	0.16
Hospital	610	1,000 sq. ft.	1.69	1.00	1.69
Clinic	630	1,000 sq. ft.	3.69	1.00	3.69
Animal Hospital/Veterinary Clinic	640	1,000 sq. ft.	3.53	1.00	3.53
Free-Standing Emergency Room	650	1,000 sq. ft.	1.52	1.00	1.52
OFFICE					
* General Office Building	710	1,000 sq. ft.	1.44	1.16	1.67
Small Office Building (<5,000 Sq Ft GFA)	712	1,000 sq. ft.	2.16	1.00	2.16
Medical-Dental Office Building	720	1,000 sq. ft.	3.93	1.00	3.93
Research and Development Center	760	1,000 sq. ft.	0.98	1.16	1.14
Small Office Building (<5,000 Sq Ft GFA)	712	1,000 sq. ft.	2.16	1.00	2.16
Medical-Dental Office Building	720	1,000 sq. ft.	3.93	1.00	3.93
Research and Development Center	760	1,000 sq. ft.	0.98	1.16	1.14
General Office Building	710	1,000 sq. ft.	1.44	1.16	1.67
Small Office Building (<5,000 Sq Ft GFA)	712	1,000 sq. ft.	2.16	1.00	2.16

ROADWAY IMPACT FEE SERVICE UNITS

Medical-Dental Office Building	720	1,000 sq. ft.	3.93	1.00	3.93
Research and Development Center	760	1,000 sq. ft.	0.98	1.16	1.14
RETAIL					
* Shopping Center	820	1,000 sq. ft.	1.48	1.00	1.48
Hardware/Paint Store	816	1,000 sq. ft.	1.37	1.00	1.37
Shopping Center	820	1,000 sq. ft.	1.48	1.00	1.48
Supermarket	850	1,000 sq. ft.	2.34	1.00	2.34
Convenience Market	851	1,000 sq. ft.	5.40	0.80	4.32
Discount Club	857	1,000 sq. ft.	1.68	1.00	1.68
Home Improvement Superstore	862	1,000 sq. ft.	0.64	1.00	0.64
Office Supply Superstore	867	1,000 sq. ft.	1.94	1.00	1.94
Pharmacy/Drugstore w/ Drive-Through Window	881	1,000 sq. ft.	3.90	1.00	3.90
Furniture Store	890	1,000 sq. ft.	0.08	1.00	0.08
Drive-in Bank	912	Drive-in Lanes	5.67	1.00	5.67
Hair Salon	918	1,000 sq. ft.	1.09	1.00	1.09
Drinking Place	925	1,000 sq. ft.	0.00	1.00	0.00
Food Cart Pod	926	Food Carts	4.62	1.00	4.62
Fast Casual Restaurant	930	1,000 sq. ft.	3.89	1.00	3.89
Quality Restaurant	931	1,000 sq. ft.	2.26	1.00	2.26
High-Turnover (Sit-Down) Restaurant	932	1,000 sq. ft.	2.81	1.00	2.81
Fast-Food Restaurant w/ Drive-Through Window	934	1,000 sq. ft.	8.92	1.00	8.92
Coffee/Donut Shop w/ Drive-Through Window and No Indoor Seating	938	1,000 sq. ft.	4.07	1.00	4.07
Quick Lubrication Vehicle Shop	941	Service Positions	3.64	1.00	3.64
Automobile Parts Service Center	943	1,000 sq. ft.	2.06	1.00	2.06
Gasoline/Service Station w/ Convenience Market	945	1,000 sq. ft.	11.49	0.00	0.00
Car Wash and Detail Center	949	Wash Stalls	3.67	1.00	3.67
* Others Not Specified		1,000 sq. ft.	0.47	1.00	0.47

Chapter 5 Existing Conditions Analysis

Chapter 395 identifies specific requirements in the capital improvements plan for impact fees. The existing condition, including defining the existing roadway system, analysis of the total capacity, the level of current usage, and commitments for usage of the existing roadway, are required as part of the capital improvements plan. This chapter discusses the existing conditions.

EXISTING CONDITIONS

An inventory of the collector and arterial roadway facilities was conducted to determine capacity provided by the existing roadway system, the demand currently placed on the system, and the potential existence of deficiencies on the system. Data for the inventory was obtained from field reconnaissance, peak hour traffic volume count data, and city staff input.

Roadway Service Capacities

The roadways were divided into segments based on changes in lane configuration, major intersections, or area development that may influence roadway characteristics. For individual segment assessment, lane capacities were assigned to each segment based on roadway functional class and type of cross-section as shown in **Table 5-1**. Roadway hourly volume capacities are based on general carrying capacity values and reflect level-of-service “D” operation, which is typically identified as the minimum acceptable traffic operational condition by cities.

EXISTING CONDITIONS ANALYSIS

Table 5-1: Roadway Facility Vehicle Lane Capacities

ROADWAY FACILITY	DESIGNATION	HOURLY VEHICLE CAPACITY PER LANE-MILE OF ROADWAY FACILITY
Undivided Collector	UC	500
Divided Collector	DC	550
Special Collector *	SC	550
Undivided Arterial	UA	600
Divided Arterial	DA	700
Special Arterial *	SA	700

*Roadway with continuous two-way left turn lane

Existing Volumes

Current directional PM peak hour volumes were obtained from traffic counts collected at fifteen locations in late August 2022. Care was taken to ensure school was in session to represent a more accurate reading of typical week PM peak hour travel in the city. These traffic counts were collected on major roadways throughout the city. For segments not counted, existing volumes were used or estimates were developed based on data from adjoining roadway counts.

This data was compiled for roadway segments throughout the city and entered into the database for use in calculations. A summary of volumes by roadway segment is included in the **Appendix B** as part of the existing capital improvements database.

Vehicle-Miles of Existing Capacity (Supply)

An analysis of the total capacity for each service area was performed. For each roadway segment, the existing vehicle-miles of capacity supplied were calculated using the following:

$$\text{Vehicle-Miles of Capacity} = \text{Link capacity per peak hour per lane} \times \text{No. of Lanes} \times \text{Length of segment (miles)}$$

A summary of the current capacity available on the roadway system is shown in **Table 5-2**. It is important to note that the roadway capacity depicted in **Table 5-2** is system-wide for all roadways and not restricted to those roadways proposed in the impact fee capital improvements plan. For a detailed listing of vehicle-miles of capacity by roadway segment, refer to **Appendix B**.

EXISTING CONDITIONS ANALYSIS

Vehicle-Miles of Existing Demand

The level of current usage in terms of vehicle-miles was calculated for each roadway segment. The vehicle-miles of existing demand were calculated by the following equation:

$$\text{Vehicle-Miles of Demand} = \text{PM peak hour volume} \times \text{Length of segment (miles)}$$

Table 5-2 also lists total vehicle-miles of demand. **Appendix B** includes a detailed listing of vehicle-miles of demand by directional roadway segment.

Vehicle Miles of Existing Excess Capacity or Deficiencies

For each roadway segment, the existing vehicle-miles of excess capacity and/or deficiencies were calculated. Each direction was evaluated to determine if vehicle demands exceeded the available capacity. If demand exceeded capacity in one or both directions, the deficiency is deducted from the supply associated with the impact fee capital improvement plan. A summary of peak hour excess capacity and deficiencies is also shown in **Table 5-2**. A detailed listing of existing excess capacity and deficiencies by roadway segment is also located in the **Appendix B**.

Table 5-2: Peak Hour Vehicle-Miles of Existing Capacity, Demand, Excess Capacity and Deficiencies

SERVICE AREA	CAPACITY	DEMAND	EXCESS CAPACITY	EXISTING DEFICIENCIES
1	21,115	9,051	12,064	0
2	31,826	11,845	19,981	0
Total	52,941	20,896	32,045	0

Chapter 6 Projected Conditions Analysis

Chapter 395 requires a description of all capital improvements or facility expansions and their costs necessitated by and attributable to new development within the service area. This section describes the projected growth, vehicle-miles of new demand, capital improvements program, vehicle-miles of new capacity supplied, and costs of the roadway improvements.

PROJECTED GROWTH

The projected growth for each roadway service area is represented by the increase in the number of new vehicle-miles generated over the 10-year planning period. The basis for the calculation of new demand is the population and employment projections that were prepared as part of the Land Use Assumptions Report for Impact Fees. Estimates of population and employment were prepared for the years 2022 and 2032.

Population data was provided in terms of the number of dwelling units and persons. Employment data was broken into three classes of employees that include basic, retail, and service, with institutional employment being included under service employment, and comprise a variety of employment groupings. Basic employment generally encompasses the industrial and manufacturing uses; retail employment includes commercial and retail uses; and service employment generally encompasses government and office uses. A summary of the projected growth is summarized in **Table 3-4**.

Projected Vehicle-Miles of New Demand

Projected vehicle-miles of demand were calculated based on the net growth expected to occur over the 10-year planning period and the service unit generation for each of the population and employment data components (basic, service and retail). Separate calculations were performed for each data component and were then aggregated for the service area. Vehicle-miles of demand for population growth were based on dwelling units (residential), and vehicle-miles of demand for employment were based on the number of employees and estimates of square footage per employee (industrial, office and retail uses). **Table 6-1** lists the 10-year projected vehicle-miles of demand by service area for Lockhart. **Appendix C** details the derivation of the projected demand calculations.

In 2007 and 2017, the ten-year VMT was 3,270 and 3,868, respectively. This ten-year VMT of 4,151 for 2022 correlates with the continued growth in the community.

PROJECTED CONDITIONS ANALYSIS

Table 6-1: 10-Year Projected Service Units of Demand

SERVICE AREA	PROJECTED 10-YEAR GROWTH (VEHICLE-MILES)
1	1,257
2	2,894
TOTAL	4,151

CAPITAL IMPROVEMENTS PLAN

The impact fee capital improvements plan is aimed at facilitating long-term growth in Lockhart. Considerations in the development of the impact fee IFCIP include community growth (land use assumptions), financial considerations, project achievability, the Thoroughfare Plan, and City Staff input.

Eligible Projects

Legislative mandate stipulates that the impact fee IFCIP contain only those roadways which are included on the City's official Thoroughfare Plan that are classified as *arterial* or *collector* status facilities. A review of the Thoroughfare Plan identified projects which were eligible for consideration by impact fees. Impact fee legislation also allows for the recoupment of costs for previously constructed facilities. Only costs incurred by the City may be considered for impact fees. Roadways constructed with private funding cannot be included for impact fee consideration. Additionally, state facilities are eligible for inclusion to the impact fee system, however, only costs incurred by the City may be eligible for consideration.

Eligible Costs

In general, those costs associated with the design, right-of-way acquisition, and construction and financing of all items necessary to implement the roadway projects identified in the capital improvements plan are eligible. It is important to note that upon completion of the capital improvements identified in the IFCIP, the city must recalculate the impact fee using the *actual* costs and make refunds if the actual cost is less than the impact fee paid by greater than 10 percent. To prevent this situation, conservative estimates of project cost are considered.

Chapter 395.012 identifies roadway costs eligible for impact fee recovery. The law states that:

"An impact fee may be imposed only to pay the cost of constructing capital improvements for facility expansions, including and limited to the construction contract price, surveying and engineering fees, land acquisition costs, including land purchases, court awards and costs, attorney fees, and expert witness fees; and fees actually paid or contracted to be paid

PROJECTED CONDITIONS ANALYSIS

to an independent qualified engineer or financial consultant preparing or updating the capital improvements plan who is not an employee of the political subdivision.”

“Projected interest charges and other finance costs may be included in determining the amount of impact fees only if the impact fees are used for the payment of principal and interest on bonds, notes, or other obligations issued by or on behalf of the political subdivision to finance the capital improvements or facility expansions identified in the capital improvements plan and are not used to reimburse bond funds expended for facilities that are not identified in the capital improvements plan.”

The following details the individual cost components of the impact fee IFCIP.

Construction: Construction costs include those costs which are normally associated with construction, including: paving, dirt work (including sub-grade preparation, embankment fill and excavation), clearing and grubbing, retaining walls or other slope protection measures, and general drainage items which are necessary to build the roadway and allow the roadway to fulfill its vehicle carrying capability. Individual items may include bridges, culverts, inlets and storm sewers, junction boxes, man holes, curbs and/or gutters, and channel linings and other erosion protection appurtenances. Other items included in cost estimates may include: sidewalks, traffic control devices at select locations (initial cost only), and minimal sodding/landscaping.

Engineering: These are the costs associated with the design and surveying necessary to construct the roadway. Because the law specifically references fees, it has generally been understood that in-house City design and surveying cannot be included. Only those services that are contracted out can be included and it may be necessary to use outside design and surveying firms to perform the work. For planned projects, a percentage (7%) based on typical engineering contracts was used to estimate these fees.

Right-of-Way: Any land acquisition cost estimated to be necessary to construct a roadway can be included in the cost estimate. For planning purposes, only the additional amount of land needed to bring a roadway right-of-way to thoroughfare standard was considered. For example, if a 80' right-of-way for an arterial road was needed and 60' of right-of-way currently existed, only 20' would be considered in the acquisition cost. A conservative cost of \$1.00 per square foot was assumed in the cost of ROW acquisition.

Debt Service: Predicted interest charges and finance costs may be included in determining the amount of impact fees only if the impact fees are used for the payment of principal and interest on bonds, notes, or other obligations issued by the city to finance capital improvements identified in the impact fee capital improvements plans. They cannot be used to reimburse bond funds for other facilities. Debt service of 3% over 10-years was assumed.

PROJECTED CONDITIONS ANALYSIS

Study Updates: The fees paid or contracted to be paid to an independent qualified engineer or financial consultant preparing or updating the capital improvements plan who is not an employee of the political subdivision can be included in the impact fees.

Only the cost necessitated by new development will be considered for impact fee consideration. For example, if only 60% of the capacity provided by the impact fee CIP is needed over the ten-year window, then only 60% of the cost associated with those facilities will be considered.

Staff Input and Project Achievability

City Staff contributed to the identification of potential projects based on historic and projected growth and known/anticipated development activity within the city. An initial project list was compiled and reviewed with Staff prior to presentation to the IFAC. City Staff identified several projects that were recently completed or are anticipated to be funded and built by an upcoming bond program.

The proposed impact fee capital improvements plan was presented to the IFAC for discussion and consideration on December 14, 2022.

Capital Improvements Plan

During this programmatic update, several projects were added and removed from the impact fee capital improvement plan (IFCIP). The projects removed were those that were completed and have now been fully funded or projects that are no longer seen as likely projects to be implemented. The projects removed include:

- Maple (San Jacinto to Mockingbird; built)
- Maple (Mockingbird to about Lantana Avenue; built)
- Market (Carver to FM 672)
- McMillen/R.E. Lee (End of existing McMillen to MLK Jr. Industrial Blvd.)

Projects that were added include:

- Mockingbird (N. of Shenandoah Tr. to FM 2001/Silent Valley)
- Horseshoe Road (Mockingbird Ext. to FM 2001/Silent Valley)
- Old Fentress Road (City Line to SH130)
- CR220/Cunningham (MLK Jr. Industrial to W. City Limit)
- Old Kelley Road (FM20/Blackjack to Shady Lane)
- Shady Lane (Old Kelley to FM20/Blackjack)
- Lovers Lane (Old Kelley to Existing Lovers Lane)

The updated IFCIP consist of seventeen project segments. Only those segments of projects lying within or along the city limits were included in the impact fee capital improvements plan.

PROJECTED CONDITIONS ANALYSIS

Project costs were updated based on unit cost estimates compiled by Freese and Nichols. Individual project cost estimates can be found in **Appendix E**. These construction estimates included all appurtenances called for in the city construction standards. Other costs were updated for engineering, right-of-way, construction, and debt service based on the following:

- Engineering/surveying - 7% of construction costs
- Right-of-way acquisition - \$1.00/s.f.
- Debt service - 3% compounded annually over ten-years

Additionally, impact fee study update costs were included to the project costs at a rate of two five-year updates at \$50,000 each. The cost for the revised IFCIP program totals approximately \$44.0 million. **Figure 6-1** and **Table 6-2** illustrate and list the capital improvement projects and their associated total cost for the impact fee system.

PROJECTED CONDITIONS ANALYSIS

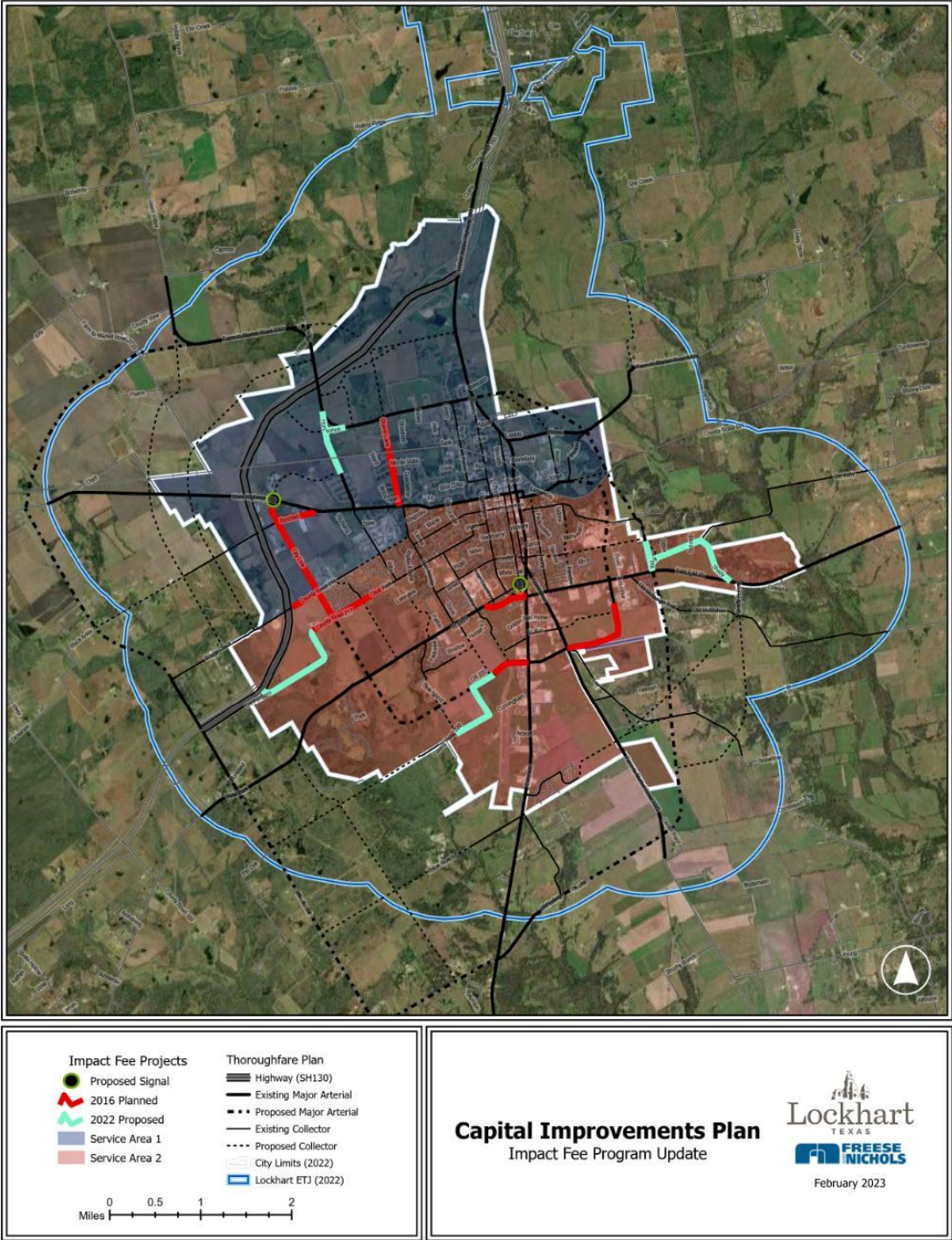


Figure 6-1: Roadway Impact Fee Projects

PROJECTED CONDITIONS ANALYSIS

Table 6-2: Roadway Impact Fee Project Listing

Serv Area	Shared Svc Area	Project Type	Roadway	From	To	Length (mi)	Lanes	Type	Pct. in Serv. Area	Total Project Cost
1		N	Stueve Lane	W. San Antonio	FM 2001 (Silent Valley)	0.85	2	UC	100%	\$ 3,749,391
1		N	Borchert	City Line	W. San Antonio	0.37	2	UC	100%	\$ 1,477,100
1	2	N	Maple	City Line	SH 130	0.28	3	SC	50%	\$ 570,603
1		N	City Line	Maple	W. San Antonio	0.98	4	UA	100%	\$ 5,962,908
1		N	Mockingbird Ext.	N. of Shenandoah Tr.	FM 2001 (Silent Valley)	0.59	4	UA	100%	\$ 3,876,876
1		N	Horseshoe Rd.	Mockingbird Ext.	FM 2001 (Silent Valley)	0.16	4	UA	100%	\$ 888,757
Sub-Total Service Area 1						3.23				\$ 16,525,634
2		N	Old Fentress Rd	City Line Rd	SH130	1.21	2	UC	100%	\$ 4,851,400
2		N	Clear Fork St	City Line Rd	250' W. of Creek Bridge	0.59	2	UC	100%	\$ 2,352,816
2	1	N	Maple	City Line	SH 130	0.28	3	SC	50%	\$ 570,603
2		N	Main	State Park	Blackjack	0.11	3	SC	100%	\$ 803,274
2		N	FM 20 Realignment	W. of Guadalupe	Colorado	0.41	2	UA	100%	\$ 2,018,994
2		N	MLK Jr Industrial Blvd.W	Colorado	Cunningham	0.59	4	UA	100%	\$ 3,353,255
2		N	MLK Jr Industrial Blvd. E	Commerce	E MLK Jr Industrial	0.82	2	UA	100%	\$ 3,740,810
2		N	City Line	Clear Fork	Maple	0.29	4	UA	100%	\$ 1,655,996
2		N	CR220/Cunningham	MLK Jr Industrial Blvd.	W. City Limit	0.64	2	UC	100%	\$ 2,800,911
2		N	Old Kelley Rd	FM20/Blackjack St	Shady Ln	0.59	2	UC	100%	\$ 2,388,289
2		N	Shady Ln	Old Kelley	FM20/Blackjack St	0.49	2	UC	100%	\$ 1,957,863
2		N	Lovers Ln	Old Kelley	Existing Lovers Ln	0.23	2	UC	100%	\$ 1,018,045
Sub-Total Service Area 2						6.26				\$ 27,512,257
Totals:						9.21				\$ 44,037,891

x-check \$ 44,037,891

Summary:	Engineering Cost	\$ 2,215,647
	Right-of-Way Cost	\$1,646,918
	Construction Cost	\$31,652,100
	Finance Cost	\$7,923,226
	TOTAL NET COST	\$44,037,891
	Future IF Study Update Cost	\$100,000
	TOTAL IMPLEMENTATION COST	\$44,137,891
	50% Percent Credit	\$22,068,946

Notes:

UA - Undivided Arterial

UC - Undivided Collector

SC - Special Collector with two-way left turn lane (TWLTL)

PROJECTED CONDITIONS ANALYSIS

Projected Vehicle-Miles Capacity Available for New Growth

The vehicle-miles of new capacity supply were calculated like the vehicle-miles of existing capacity supplied. The equation used was:

$$\text{Vehicle-Miles of New Capacity} = \text{Link capacity per peak hour per lane} \times \text{No. of Lanes} \times \text{Length of segment (miles)}$$

Vehicle-miles of new supply provided by the IFCIP are listed in **Table 6-3**. While the project has not been built, there are system deficiencies (by service area) that have been removed from the total supply as existing utilization to properly account for new “net” availability. **Table 6-3** depicts net availability of supply by the IFCIP. **Appendix D** details capacity calculations provided by the IFCIP program.

Table 6-3: Capacity, Net Capacity and Projected Needs of the Road IFCIP

SERVICE AREA	VEH-MILES OF NEW CAPACITY SUPPLIED	VEH-MILES OF EXISTING UTILIZATION	VEH-MILES OF DEFICIENCIES	VEH-MILES OF NET CAPACITY SUPPLIED	PROJECTED 10-YEAR VEH-MILES OF GROWTH	PCT. OF IFCIP ATTRIBUTABLE TO 10-YR GROWTH
1	5,516	367	0	5,149	1,260	24.5%
2	7,631	474	0	7,157	2,897	40.5%
Total	13,147	841	0	12,306	4,156	33.8%

Cost of Roadway Improvements

The total IFCIP cost, including study update costs, with 50% credit and cost of net capacity supplied to implement the roadway improvements plan projects by service area is shown in **Table 6-4**. If traffic exists on proposed IFCIP project roadways or there are any deficiencies present in each respective service area, the total system cost is adjusted to reflect the net capacity being made available by the impact fee program. In other words, only the unused portion of the IFCIP and its associated costs are considered eligible. A detailed listing by project segment in each service area can be found in **Appendix E**. **Appendix F** details system costs by service area.

Table 6-4: Summary of Roadway Improvements Plan Cost Analysis

SERVICE AREA	TOTAL COST OF IFCIP PROJECTS (INCLUDING IMPACT FEE UPDATE COST)	TOTAL COST OF IFCIP PROJECTS (WITH 50% IFCIP CREDIT)	COST OF NET CAPACITY SUPPLIED (WITH 50% IFCIP CREDIT)	PCT. OF IFCIP ATTRIBUTABLE TO GROWTH	IFCIP COST ATTRIBUTABLE TO GROWTH
1	\$16,567,590	\$8,283,795	\$7,732,643	24.5%	\$1,892,237
2	\$27,570,301	\$13,785,151	\$12,928,885	40.5%	\$5,233,335
Total	\$44,137,891	\$22,068,946	\$20,661,529	33.8%	\$7,125,573

CALCULATION OF IMPACT FEES

Chapter 7 Calculation of Impact Fees

This chapter discusses the calculation of the cost per service unit and the calculation of roadway impact fees. The roadway impact fee will vary by the specific land use, service area, and size of the development. Examples are included to better illustrate the method by which the roadway impact fees are calculated.

COST PER SERVICE UNIT

The cost per service unit is calculated by dividing the cost of the IFCIP necessitated and attributable to new demand (net cost) by the projected service units of growth over the 10-year planning period.

Generally, the cost per service unit varies by service area because of; the net capacity being provided by the proposed projects, variations in cost of IFCIP and, the number of service units necessitated by new growth in each impact fee service area. Where net capacity supplied is greater than demand, the cost per service unit is simply the cost of the net capacity divided by the number of service units provided. In this case, only the portion of the IFCIP necessitated by new development is used in the calculation. If net capacity supplied is *less* than projected new demand, then the cost per service unit is calculated by dividing the total cost of net supply by the portion of new demand attributable and necessary by development. The result is a decrease in the cost per service unit, because such cost is spread over the larger number of service units of growth.

Table 7-1 lists the results of the cost per service unit calculation by service area. The actual cost per service unit reflects the true burden to the City for the implementation of the roadway capital improvements program. As per state law, a credit for the portion of ad-valorem tax revenues generated by improvements over the program period, or a credit equal to 50% of the total projected cost of implementing the capital improvements plan must be given. Based on this analysis, the maximum collection rate reflects the maximum amount per service unit that can be charged to be in compliance with the state statute. **Appendix F** details the maximum fee per service unit calculation for each service area.

Table 7-1: Cost per Service Unit Summary

SERVICE AREA	ACTUAL COST PER SERVICE UNIT	MAXIMUM ALLOWABLE (50%) COST PER SERVICE UNIT
1	\$3,002	\$1,501
2	\$3,612	\$1,806

CALCULATION OF IMPACT FEES

CALCULATION OF ROADWAY IMPACT FEES

The calculation of roadway impact fees for new development involves a two-step process. *Step One* is the calculation of the total number of service units that will be generated by the development. *Step Two* is the calculation of the impact fee due by the new development.

Step 1: Determine number of service units (vehicle-miles) generated by the development using the equivalency table.

$$\begin{array}{rcccl} \text{No. of Development} & \times & \text{Vehicle-miles} & = & \text{Development's} \\ \text{Units} & & \text{per development unit} & & \text{Vehicle-miles} \end{array}$$

Step 2: Calculate the impact fee based on the fee per service unit for the service area where the development is located.

$$\begin{array}{rcccl} \text{Development's} & \times & \text{Fee per} & = & \text{Impact Fee due} \\ \text{Vehicle-miles} & & \text{vehicle-mile} & & \text{from Development} \end{array}$$

Examples: The following fees would be assessed to new developments in Lockhart in Service Area 1 if the cost per service unit were \$1,501.00

Single-Family Dwelling

$$1 \text{ dwelling unit} \times 1.09 \text{ vehicle-miles/dwelling unit} = 1.09 \text{ vehicle-miles}$$

$$1.09 \text{ vehicle-miles} \times \$1,501.00/\text{vehicle-mile} = \$1,636.09$$

10,000 square foot (s.f.) Office Building

$$10 \text{ (1,000 s.f. units)} \times 1.67 \text{ vehicle-miles/1,000 s.f. units} = 16.70 \text{ vehicle-miles}$$

$$16.70 \text{ vehicle-miles} \times \$1,501.00/\text{vehicle-mile} = \$22,064.70$$

20,000 s.f. Retail Center

$$20 \text{ (1,000 s.f. units)} \times 1.47 \text{ vehicle-miles/1,000 s.f. units} = 147.00 \text{ vehicle-miles}$$

$$147.00 \text{ vehicle-miles} \times \$1,501.00/\text{vehicle-mile} = \$44,129.40$$

CONCLUSION

Chapter 8 Conclusion

Chapter 395 authorizes the assessment and collection of impact fees in Texas for road, water, and wastewater related capital improvements. This study was conducted to fulfill the requirements of Chapter 395 in updating the roadway impact fee system for the City of Lockhart.

Two (2) roadway service areas serve Lockhart and were amended to address recent annexations in the city. This service area structure was configured so that no two points are greater than six miles apart, as set forth by law. The six-mile limit ensures that roadway improvements are near the development paying the fees that it serves.

Vehicle-miles of travel in the PM peak hour was retained as the service unit for calculating and assessing impact fees. Vehicle-miles establish a relationship between the intensity of land development and the demand on the roadway system using published trip generation data and average trip length. The PM peak hour is used as the time for assessment because typically the greatest demand for roadway capacity occurs during this hour. Additionally, roadways are sized to meet this demand and roadway capacity can more accurately be defined on an hourly basis.

The service units (vehicle-miles) for new development are a function of trip generation and the average trip length for specific land uses. Trip generation information was based on data published by the Institute of Transportation Engineers. Where appropriate, trip generation rates were adjusted to reflect the primary trip purpose. This ensures that new development is assigned for the portion of trips associated with that specific development. Average trip length data retained from the previous study and was based on information from travel surveys conducted by the Capital Area Metropolitan Planning Organization, and travel characteristics from the U.S. Census Workplace Survey.

The result of combining trip generation and trip length information is an equivalency table that establishes a service unit rate for various land uses. Separate rates were established for specific land uses within the broader categories of residential, office, commercial/retail, industrial and institutional uses.

An analysis of existing conditions revealed that the current roadway system provides 52,941 vehicle-miles of capacity. The existing demand placed on the system was determined to be 20,896 vehicle-miles. Evaluation of the existing roadway system found no deficiencies on the existing roadway network.

Projected growth, in terms of vehicle-miles over the 10-year planning period, was based on population and employment data that was prepared in the Land Use Assumptions for Impact Fees. Based on this growth, the projected vehicle-miles of demand calculated to be 4,151.

CONCLUSION

Lockhart City Staff identified the roadway impact fee capital improvements program for the 10-year planning period. Projects eligible for this IFCIP include arterial and collector streets that have been designated on the officially adopted Thoroughfare Plan of the City. Developer funded roadways are not eligible for inclusion in calculating impact fees. Fourteen projects totaling \$44.1 million, were identified for impact fee consideration based on need, projected growth, project affordability and achievability, financial considerations, jurisdictional issues, the Thoroughfare Plan, and staff recommendation. The credited (50%) cost attributable to new growth is \$7.1 million and represents 33.7% of the net capacity made available for development by impact fee roadway projects. The recommended IFCIP program will provide 12,306 vehicle-miles of new net capacity.

The *actual* cost per service unit was calculated to be \$3,002.00 in Service Area 1 and \$3,612 in Service Area 2 and was based on the total cost of net capacity supplied by the IFCIP and the demand attributable to new development over the ten-year planning period. State legislation requires that a credit for the portion of ad-valorem tax revenues generated by improvements over the program period, or a credit equal to 50% of the total projected cost of implementing a roadway impact fee capital improvements program be given. Based on a 50% credit, the cost per service unit is \$1,501.00 in Service Area 1 and \$1,806 in Service Area 2.

The determination of fees due from new development is based upon the size of development, its associated service unit generation (equivalency table) and the cost per service unit derived or adopted for each service area.

APPENDICES

APPENDIX A: ROADWAY IMPACT FEE DEFINITIONS

APPENDICES

ROADWAY IMPACT FEE DEFINITIONS

Average Trip Length - the average actual travel distance between two points. The average trip length by specific land use varies.

Diverted Trip - similar to pass-by trip, but a diversion is made from the regular route to make an interim stop.

Impact Fee - a charge or assessment imposed by a city against new development to generate revenue for funding or recouping roadway improvements necessitated and attributable to new development.

Maximum Fee Per Service Unit - the highest impact fee that may be collected by the city per vehicle-mile of supply. Calculated by dividing the costs of the capital improvements by the total number of vehicle-miles of demand expected in the ten-year planning period.

Pass-by Trip - a trip made as an intermediate stop on the way from an origin to a primary trip destination. For example, a stop at a convenience store on the way to office from home.

PM Peak Hour - the hour when the highest volume of traffic typically occurs. Data collection revealed the peak hour of travel to be between 5:00 and 6:00 pm.

PM Peak Hour Traffic Counts - the number of vehicles passing a certain point during the peak hours of travel. Traffic counts are conducted during the PM peak hour because the greatest demand for roadway capacity occurs during this hour.

Primary Trip - a trip made for the specific purpose of visiting a destination; for example, from home to office.

Roadway Demand - the demand placed on the roadway network as a result of development. Determined by multiplying the trip generation of a specific land use by the average trip length.

Roadway Supply (or Capacity) - the number of service units provided by a segment of roadway over a period of time. Determined by multiplying the lane capacity by the roadway length.

Service Area - the area within the city boundaries to be served by capital improvements. Criteria for developing the service area structure include: 1) restricted to six-mile limit by legislation (to ensure proximity of roadway improvements to development), 2) conforms to census or forecast model boundaries, 3) projects on IFICP as boundaries, 4) effort to match roadway supply with projected demand, and 5) city limit boundaries.

Service Unit - a measure of use or generation attributable to new development for roadway improvements. Also used to measure supply provided by existing and proposed roadway improvements.

Trip - a single, one-direction vehicle movement from an origin to a destination.

Trip Generation - the total trip ends for a land use over a given period or the total of all trips entering and exiting a site during that designated time. Used in the development of ten-year traffic demand projections and the equivalency table. Based primarily on data prepared by the Institute of Transportation Engineers (ITE).

APPENDICES

Vehicle - for impact fee purposes, any motorized appurtenance that carries passengers and/or goods on the roadway system during peak periods of travel.

Vehicle-mile - a unit used to express both supply and demand provided by, and placed on, the roadway system. A combination of the number of vehicles traveling during a given time period and the distance which those vehicles travel in miles.

APPENDIX B: EXISTING CAPITAL IMPROVEMENTS

APPENDICES

Definitions

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): DA = divided arterial UA = undivided arterial DC = divided collector UC = undivided collector SC = special collector (roadway with continuous left turn) SA = special arterial (roadway with continuous left turn)
PK-HR VOLUME	The existing volume of cars on the roadway segment traveling during the afternoon (P.M.) peak hour of travel. A and B indicate the two directions of travel. Direction A is a northbound or eastbound and direction B is southbound or westbound. If only one half of the roadway is located within the service area (see % in service area), the opposing direction will have no volume in the service area.
% IN SERVICE AREA	If the roadway is located on the boundary of the service area (with the city limits running along the centerline of the roadway), then half of the roadway is inventoried in the service area and the other half is not. This value is either 50% or 100%.
VEH-MI SUPPLY TOTAL	The number of total service units (vehicle-miles) supplied within the service area, based on the length and established capacity of the roadway type.
VEH-MI TOTAL DEMAND PK-HR	The total service unit (vehicle-mile) demand created by existing traffic on the roadway segment in the afternoon peak hour.
EXCESS CAPACITY PK-HR VEH-MI	The number of service units supplied but unused by existing traffic in the afternoon peak hour.
EXISTING DEFICIENCIES PK-HR VEH-MI	The number of service units of demand more than the service units supplied.

NOTE: Excess capacity and existing deficiencies are calculated separately for each direction. It is possible to have excess capacity in one direction and an existing deficiency in the other. When both directions have excess capacity or deficiencies, the total for both directions are presented.

APPENDICES

Lockhart Roadway Impact Fee Study Update 2022 Capital Improvements Analysis

Serv Area	Shared Svc Area	Roadway	From	To	No. of Lanes	Type	A	B	Total	VTM Supply Pk Hr Total	VTM Demand Pk Hr Total	Excess VMT Capacity	Exist. VMT Deficiency
1		Colorado (US183)	N. City Limits	Silent Valley	4	UA	651	728	1,378	4,488	2,578	1,910	0
1		Colorado (US183)	Silent Valley	UP RR	4	UA	676	756	1,432	1,872	1,117	755	0
1		Colorado (US183)	UP RR	Pecan St	4	UA	750	1100	1,850	264	204	61	0
1		Colorado (US183)	Pecan St	San Antonio (SH142)	5	SA	777	1125	1,902	308	209	99	0
1	2	Colorado (US183)	San Antonio (SH142)	Market	5	SA	835	0	835	84	50	34	0
1		Silent Valley (FM2001)	N. City Limits	Stueve Lane	2	UA	170	213	383	948	303	645	0
1		Silent Valley (FM2001)	Stueve Lane	Colorado (US183)	2	UA	166	208	374	1,056	329	727	0
1		Flores (FM 672)	Colorado (US183)	E. City Limit	2	UA	86	61	147	1,188	146	1,042	0
1		San Antonio (SH142)	W. City Limits	Borchert	2	UA	409	545	954	1,836	1,460	376	0
1		San Antonio (SH142)	Borchert	San Jacinto	2	UA	557	554	1,111	1,020	944	76	0
1	2	San Antonio (SH142)	San Jacinto	Colorado (US183)	2	UA	0	472	472	636	500	136	0
1		Commerce	Colorado (US183)	San Antonio (SH142)	2	UC	41	39	80	590	47	543	0
1		Blanco	San Antonio (SH142)	Olive	2	UC	120	185	305	550	168	382	0
1		Blanco	Olive	Colorado (US183)	2	UC	170	232	402	400	161	239	0
1		Pecos	Bois D'Arc	Silent Valley	2	UC	60	75	135	760	103	657	0
1		Stueve Lane	San Antonio (SH142)	Silent Valley	2	UC	81	83	164	850	139	711	0
1		City Line Road	Borchert	San Antonio (SH142)	2	UA	77	89	166	300	42	259	0
1		FM 2720	San Antonio (SH142)	N. City Limit	2	UC	108	144	252	630	159	471	0
1		Pecan	Colorado (US183)	Blanco	2	UA	136	94	230	300	57	243	0
1		Bois D'Arc	Blanco	Medina	2	UC	98	64	162	540	87	453	0
1		Bois D'Arc	Medina	San Antonio (SH142)	2	UC	78	44	122	300	36	264	0
1		Borchert	San Antonio (SH142)	W. City Limit	2	UC	81	83	164	900	148	752	0
1		Carver	Market	End	2	UC	28	12	40	360	14	346	0
1	2	Market	Colorado (US183)	RR	2	UC	0	19	19	135	5	130	0
1		Market	RR	Flores	2	UC	37	19	56	800	45	755	0
Sub-Total Service Area 1										21,115	9,051	12,064	0
2	1	Colorado (US183)	San Antonio (SH142)	Market	5	SA	0	1,151	1,151	84	69	15	0
2		Colorado (US183)	Market	Hickory	5	SA	835	1100	1,935	728	503	225	0
2		Colorado (US183)	Hickory	S. Commerce St.	5	SA	855	1075	1,930	1,036	714	322	0
2		Colorado (US183)	S. Commerce St.	FM 20/Blackjack St.	5	SA	904	958	1,862	784	521	263	0
2		Colorado (US183)	FM 20/Blackjack St.	CR 220	5	SA	904	958	1,862	2,548	1,694	854	0
2		Colorado (US183)	CR 220	S. Walmart Drive	5	SA	904	958	1,862	1,131	752	379	0
2		Colorado (US183)	S. Walmart Drive	S. City Limit	4	UA	850	900	1,750	2,020	1,473	547	0
2	1	San Antonio (SH142)	San Jacinto	Colorado (US183)	2	UA	378	0	378	636	401	235	0
2		FM 20/State Park	W. City Limits	San Jacinto	2	UA	114	130	245	1,428	291	1,137	0
2		FM 20/State Park	San Jacinto	Colorado (US183)	2	UA	347	395	742	960	594	366	0
2		FM 20/Blackjack St.	Colorado (US183)	S. Commerce St.	2	UA	471	286	757	168	106	62	0
2		FM 20/Blackjack St.	S. Commerce St.	Old McMahan Trail	2	UA	412	264	676	1,044	588	456	0
2		FM 20/Blackjack St.	Old McMahan Trail	E. City Limit	2	UA	346	158	504	1,715	720	995	0
2		S Commerce/FM 1322	San Antonio (SH142)	Live Oak	2	UC	130	133	263	190	50	140	0
2		S Commerce/FM 1322	Live Oak	Colorado (US183)	2	UC	122	127	249	530	132	398	0
2		S Commerce/FM 1322	Colorado (US183)	FM 20/Blackjack St.	2	UA	114	123	237	300	59	241	0
2		S Commerce/FM 1322	FM 20/Blackjack St.	S. City Limit	2	UA	83	106	189	2,064	325	1,739	0
2		Main	State Park	Live Oak	2	UC	140	108	248	660	164	496	0
2		Main	Live Oak	San Antonio (SH142)	2	UC	208	203	411	190	78	112	0
2		Guadalupe	State Park	Center	2	UC	11	40	51	310	16	294	0
2		Guadalupe	Center	San Antonio (SH142)	2	UC	50	62	112	600	67	533	0
2		Medina	FM 20/State Park	Clear Fork	2	UC	161	144	305	610	186	424	0
2		San Jacinto	FM 20/State Park	Clear Fork	2	UC	253	270	523	630	300	300	0
2		San Jacinto	San Antonio (SH142)	Maple	2	UC	134	163	297	300	89	211	0
2		San Jacinto	Maple	Clear Fork	2	UC	104	133	237	290	69	221	0
2		Mockingbird	San Antonio (SH142)	Clear Fork	2	UC	70	73	143	290	41	249	0
2		City Line Road	Clear Fork	Maple	2	UC	56	66	122	290	35	255	0
2		Prairie Lea	Colorado (US183)	Guadalupe	2	UC	240	212	452	330	149	181	0
2		Prairie Lea	Guadalupe	San Jacinto	2	UC	147	112	259	770	199	571	0
2		Live Oak	Guadalupe	Colorado (US183)	2	UC	225	296	521	330	172	158	0
2		Live Oak	Brazos	Monument	2	UC	113	148	262	340	89	251	0
2		Clear Fork	Frio	San Jacinto	2	UC	128	183	311	560	174	386	0
2		Clear Fork	San Jacinto	City Line Road	2	UC	77	107	184	990	182	808	0
2		Center	Main	Medina	2	UC	161	144	305	590	180	410	0
2		Center	Medina	San Jacinto	2	UC	154	76	230	250	58	193	0
2		Trinity	FM 20/Blackjack St.	Pin Oak	2	UC	65	107	172	320	55	265	0
2		Trinity	Pin Oak	Live Oak	2	UC	85	96	181	450	81	369	0
2		Pancho	FM 20/Blackjack St.	Fifth	2	UC	21	39	60	130	8	122	0
2		Torres	FM 20/Blackjack St.	Fifth	2	UC	9	12	21	140	3	137	0
2	1	Market	Colorado (US183)	RR	2	UC	28	0	28	135	8	127	0
2		Pin Oak	Colorado (US183)	Trinity	2	UC	18	12	30	140	4	136	0
2		E. MLK Jr Industrial Blvd	Colorado (US183)	S Commerce/FM 1322	2	UC	59	60	119	270	32	238	0
2		W. MLK Jr Ind. Blvd/CR220	Cunningham	S Commerce/FM 1322	2	UC	9	12	21	1,010	21	989	0
2		Old McMahan Tr (CR208)	FM 20/Blackjack St.	S. City Limit	2	UC	49	28	77	370	28	342	0
2		City Line Road	Maple	Borchert	2	UC	56	66	122	770	94	676	0
2		Mockingbird	Maple	San Antonio (SH142)	2	UC	70	73	143	500	72	429	0
2		Maple St/Boggy Creek Rd	W. City Limits	City Line Road	2	UC	33	27	60	641	38	602	0
2		Maple Street	City Line Road	Mockingbird	2	UC	84	72	156	690	108	583	0
2		Old Kelley Rd	FM 20/Blackjack St.	E. City Limit	2	UC	28	12	40	564	23	541	0
Sub-Total Service Area 2										31,826	11,845	19,981	0
Total										52,941	20,896	32,045	0

UA - Undivided Arterial
SA - Special Arterial with two-way left turn lane (TWLTL)
UC - Undivided Collector

APPENDIX C: CALCULATION OF VEHICLE-MILES OF NEW
DEMAND

APPENDICES

Vehicle-Mile Trip Generation by Service Area, Lockhart Impact Fee Update

Based on 2022-2032 Land Use Assumptions dated January 2023

Service Unit Equivalency

Residential	1.09	Service Emp	1.67
Basic Emp	0.77	Retail Emp	1.47

Estimated Residential Growth Vehicle-Mile Trip Generation

Conversion Factor: 2.80 2020 persons/household

Service Area	Added Population	Added Dwelling Units	Vehicle-Miles per DU	Total Vehicle-Miles
1	2,926	1,045	1.09	431
2	5,169	1,846	1.09	1,358

Estimated Basic Employment Growth Vehicle-Mile Trip Generation

Conversion Factor: 1,205 square feet/employee

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
1	276	332,580	0.77	256
2	512	616,960	0.77	475

Estimated Service Employment Growth Vehicle-Mile Trip Generation

Conversion Factor: 350 square feet/employee

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
1	632	221,200	1.67	369
2	1,174	410,900	1.67	686

Estimated Retail Employment Growth Vehicle-Mile Trip Generation

Conversion Factor: 800 square feet/employee

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
1	172	137,600	1.47	202
2	319	255,200	1.47	375

Total Vehicle-Mile Generation Summary

Service Area	Residential Growth Vehicle-Miles	Basic Emp Growth Vehicle-Miles	Service Emp Growth Vehicle-Miles	Retail Emp Growth Vehicle-Miles	Total Growth Vehicle-Miles
1	431	256	369	202	1,258
2	1,358	475	686	375	2,894
Total	1,788	731	1,055	577	4,151

LUA Data - City Limits

Residential (Persons)

Service Area	2022	2032	Growth (2022-2032)
1	6,004	8,930	2,926
2	9,596	14,765	5,169

Basic (Employees)

Service Area	2022	2032	Growth (2022-2032)
1	573	849	276
2	1,065	1,577	512

Service (Employees)

Service Area	2022	2032	Growth (2022-2032)
1	1,316	1,948	632
2	2,444	3,618	1,174

Retail (Employees)

Service Area	2022	2032	Growth (2022-2032)
1	357	529	172
2	664	983	319

APPENDIX D: ROADWAY IMPROVEMENT PLAN PROJECTS

APPENDICES

Definitions

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): DA = divided arterial UA = undivided arterial DC = divided collector UC = undivided collector SC = special collector (roadway with continuous left turn) SA = special arterial (roadway with continuous left turn)
PK-HR VOLUME	The existing volumes of cars on the roadway segment traveling during the afternoon (P.M.) peak hour of travel.
% IN SERVICE AREA	If the roadway is located on the boundary of the service area (with the city limits running along the centerline of the roadway), then half of the roadway is inventoried in the service area and the other half is not. This value is either 50% or 100%.
VEH-MI SUPPLY TOTAL	The number of total service units (vehicle-miles) supplied within the service area, based on the length, and established capacity of the roadway type.
VEH-MI TOTAL DEMAND PK-HR	The total service unit (vehicle-mile) demand created by existing traffic on the roadway segment in the afternoon peak hour.
EXCESS CAPACITY PK-HR VEH-MI	The number of service units supplied but unused by existing traffic in the afternoon peak hour.

APPENDICES

Lockhart Roadway Impact Fee Study Update 10 Year Roadway CIP

Proj No.	CIP Origin	Service Area	Roadway	From	To	Length (mi)	Lanes	Type	Pct. In Serv. Area	Peak Hour Volume			Total	VMT Supply		VMT Demand	Excess VMT Capacity	CIP VMT Deficiency
										A	B	Total		Pk Hr Total	Pk Hr Total			
1	2001	1	Stueve Lane	W. San Antonio	FM 2001 (Silent Valley)	0.85	2	UC	100%	81	83	164	849	140	709	0	0	
3	2017	1	Borchert	City Line	W. San Antonio	0.37	2	UC	100%	76	80	156	367	57	310	0	0	
5	2007	1	2 Maple	City Line	SH 130	0.28	3	SC	50%	0	27	27	156	8	148	0	0	
6	2007	1	City Line	Maple	W. San Antonio	0.98	4	UA	100%	77	84	161	2,360	159	2,201	0	0	
A	2022	1	Mockingbird Ext.	N. of Shensandoah Tr.	FM 2001 (Silent Valley)	0.59	4	UA	100%	0	0	0	1,409	0	1,409	0	0	
B	2022	1	Horseshoe Rd.	Mockingbird Ex.	FM 2001 (Silent Valley)	0.16	4	UA	100%	8	12	20	375	3	372	0	0	
Sub-Total Service Area 1						3.23							5,516	367	5,151	0	0	
7/C	2017	2	Old Fentress Rd	City Line Rd	SH130	1.21	2	UC	100%	44	52	96	1,210	116	1,094	0	0	
8	2001	2	Clear Fork St	City Line Rd	250' W. of Creek Bridge	0.59	2	UC	100%	77	107	184	587	108	479	0	0	
5	2007	2	1 Maple	City Line	SH 130	0.28	3	SC	50%	33	0	33	156	9	147	0	0	
10	2017	2	Main	State Park	Blackjack	0.11	3	SC	100%	183	180	363	123	40	83	0	0	
11	2017	2	FM20 Realignment	W. of Guadalupe	Colorado	0.41	2	UA	100%	0	0	0	489	0	489	0	0	
12	2017	2	MLK Jr Industrial Blvd.W	Colorado	Cunningham	0.59	4	UA	100%	51	51	102	1,423	60	1,363	0	0	
13	2017	2	MLK Jr Industrial Blvd. E	Commerce	E MLK Jr Industrial	0.82	2	UA	100%	0	0	0	980	0	980	0	0	
14	2007	2	City Line	Clear Fork	Maple	0.29	4	UA	100%	35	79	114	703	33	670	0	0	
D	2022	2	Cr220/Cunningham	MLK Jr Industrial Blvd.	W. City Limit	0.64	2	UC	100%	0	0	0	645	0	645	0	0	
E	2022	2	Old Kelley Rd	FM20/Blackjack St	Shady Ln	0.59	2	UC	100%	50	50	100	595	60	535	0	0	
F	2022	2	Shady Ln	Old Kelley	FM20/Blackjack St	0.49	2	UC	100%	50	50	100	487	48	439	0	0	
G	2022	2	Lovers Ln	Old Kelley	Existing Lovers Ln	0.23	2	UC	100%	0	0	0	233	0	233	0	0	
Sub-Total Service Area 2						6.26							7,631	474	7,156	0	0	
Totals:						8.97							13,147	841	12,306	0	0	

APPENDIX E: ROADWAY IMPROVEMENT PLAN COST
ANALYSIS

APPENDICES

Definitions

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): DA = divided arterial UA = undivided arterial DC = divided collector UC = undivided collector SC = special collector (roadway with continuous left turn) SA = special arterial (roadway with continuous left turn)
% IN SERVICE AREA	If the roadway is located on the boundary of the service area (with the city limits running along the centerline of the roadway), then half of the roadway is inventoried in the service area and the other half is not. This value is either 50% or 100%.
TOTAL SEGMENT COST	The estimated cost (in dollars) of the entire segment of the proposed improvement.
TOTAL COST IN SERVICE AREA	The estimated cost (in dollars) of the portion of the proposed roadway improvement within the service area.

APPENDICES

Lockhart Roadway Impact Fee Study Update 10 Year Roadway CIP

Proj No.	CIP Origin	Service Area	Roadway	From	To	Length (mi)	Lanes	Type	Pct. in Serv. Area	Engineering	ROW	Construction	Signal	Finance	Total Project Cost
1	2001	1	Stueve Lane	W. San Antonio	FM2001 (Silent Valley)	0.85	2	UC	100%	\$ 198,121	\$ 44,850	\$ 2,830,300	\$ -	\$ 676,120	\$ 3,749,391
3	2017	1	Borchert	CityLine	W. San Antonio	0.37	2	UC	100%	\$ 77,938	\$ 19,400	\$ 1,113,400	\$ -	\$ 266,362	\$ 1,477,100
5	2007	1	2 Maple	CityLine	SH 130	0.28	3	SC	50%	\$ 30,107	\$ 7,500	\$ 430,100	\$ -	\$ 102,896	\$ 570,603
6	2007	1	CityLine	Maple	W. San Antonio	0.98	4	UA	100%	\$ 287,126	\$ 207,720	\$ 4,101,800	\$ 300,000	\$ 1,066,262	\$ 5,962,908
A	2022	1	Mockingbird Ext.	N. of Shandarah Tr.	FM2001 (Silent Valley)	0.59	4	UA	100%	\$ 191,667	\$ 248,000	\$ 2,738,100	\$ -	\$ 699,109	\$ 3,876,876
B	2022	1	Horseshoe Rd.	Mockingbird Ext.	FM2001 (Silent Valley)	0.16	4	UA	100%	\$ 46,039	\$ 24,750	\$ 657,700	\$ -	\$ 160,268	\$ 888,757
Sub-Total Service Area 1										\$ 830,998	\$ 552,220	\$ 11,871,400	\$ 300,000	\$ 2,971,016	\$ 16,525,634
7/C	2017	2	Old Fenitress Rd	CityLine Rd	SH130	1.21	2	UC	100%	\$ 255,969	\$ 63,888	\$ 3,656,700	\$ -	\$ 874,843	\$ 4,851,400
8	2001	2	Clear Fork St	CityLine Rd	250 W. of Creek Bridge	0.59	2	UC	100%	\$ 124,138	\$ 31,000	\$ 1,773,400	\$ -	\$ 424,278	\$ 2,352,816
5	2007	2	1 Maple	CityLine	SH 130	0.28	3	SC	50%	\$ 30,107	\$ 7,500	\$ 430,100	\$ -	\$ 102,896	\$ 570,603
10	2017	2	Main	State Park	Blackjack	0.11	3	SC	100%	\$ 24,038	\$ -	\$ 343,400	\$ 300,000	\$ 135,836	\$ 803,274
11	2017	2	FM 20 Realignment	W. of Guadalupe	Colorado	0.41	2	UA	100%	\$ 97,013	\$ 172,000	\$ 1,385,900	\$ -	\$ 364,081	\$ 2,018,994
12	2017	2	MLK Jr Industrial Blvd W	Colorado	Cunningham	0.59	4	UA	100%	\$ 173,670	\$ 93,900	\$ 2,481,000	\$ -	\$ 604,685	\$ 3,353,255
13	2017	2	MLK Jr Industrial Blvd E	Commerce	E MLK Jr Industrial	0.82	2	UA	100%	\$ 178,038	\$ 344,800	\$ 2,543,400	\$ -	\$ 674,572	\$ 3,740,810
14	2007	2	CityLine	Clear Fork	Maple	0.29	4	UA	100%	\$ 85,764	\$ 46,410	\$ 1,225,200	\$ -	\$ 298,622	\$ 1,655,996
D	2022	2	CR220/Cunningham	MLK Jr Industrial Blvd.	W. City Limit	0.64	2	UC	100%	\$ 136,829	\$ 204,300	\$ 1,954,700	\$ -	\$ 505,082	\$ 2,800,911
E	2022	2	Old Kelley Rd	FM20/Blackjack St	Shady Ln	0.59	2	UC	100%	\$ 126,014	\$ 31,400	\$ 1,800,200	\$ -	\$ 430,675	\$ 2,388,289
F	2022	2	Shady Ln	Old Kelley	FM20/Blackjack St	0.49	2	UC	100%	\$ 103,306	\$ 25,700	\$ 1,475,800	\$ -	\$ 353,057	\$ 1,957,863
G	2022	2	Lovers Ln	Old Kelley	Existing Lovers Ln	0.23	2	UC	100%	\$ 49,763	\$ 73,800	\$ 710,900	\$ -	\$ 183,582	\$ 1,018,045
Sub-Total Service Area 2										\$ 1,384,649	\$ 1,094,698	\$ 19,780,700	\$ 300,000	\$ 4,952,210	\$ 27,512,257
Totals:										\$ 2,215,647	\$ 1,646,918	\$ 31,652,100	\$ 600,000	\$ 7,923,226	\$ 44,037,891

Summary:

Engineering Cost	\$2,215,647
Right-of-Way Cost	\$1,646,918
Construction Cost	\$31,652,100
Finance Cost	\$7,923,226

TOTAL NET COST	\$44,037,891
Future IF Study Update Cost	\$100,000
TOTAL IMPLEMENTATION COST	\$44,137,891

Notes:

- UA - Undivided Arterial
- UC - Undivided Collector
- SC - Special Collector with two-way left turn lane (TWLTL)

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Stueve Lane

W. San Antonio St. to FM 2001 (Silent Valley)

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	4,485
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Construction of thoroughfare standard roadway section

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	45	STA	\$ 1,800.00	\$ 81,000
2	Unclassified Street Excavation	10,300	CY	\$ 18.00	\$ 185,400
3	HMAC Type D (2")	18,500	SY	\$ 12.00	\$ 222,000
4	8" Flex Base	22,500	SY	\$ 37.00	\$ 832,500
5	Prime & Tack Coat	3,700	GAL	\$ 4.25	\$ 15,725
6	Lime Subgrade	22,400	SY	\$ 3.00	\$ 67,200
7	Lime for Stabilization (43lbs/SY)	480	TON	\$ 150.00	\$ 72,000
8	6" Monolithic Concrete Curb & Gutter	8,970	LF	\$ 21.00	\$ 188,370
9	Block Sodding and Topsoil	9,500	SY	\$ 5.00	\$ 47,500
Paving Estimate Subtotal:					\$ 1,711,695
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	34,300
10	Traffic Control		5%	\$	85,600
11	Erosion Control		3%	\$	51,400
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	342,400
Other Components Estimate Subtotal:					\$ 513,700
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	1 Small Crossing	\$ 75,000	\$	75,000
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	At-Grade RR Crossing Widening	\$ 150,000	\$	150,000
Special Components Estimate Subtotal:					\$ 225,000
I, II, & III Construction Subtotal:					\$ 2,450,395
				Mobilization	5% \$ 122,600
				Contingency	10% \$ 257,300
Construction Cost Estimate Total:					\$ 2,830,300

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance		Item Cost
Construction		-	\$	2,830,300
Engineering/Survey/Testing		7%	\$	198,121
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 44,850	\$ 44,850
Impact Fee Project Cost Estimate Total: \$ 3,073,271				

Freese and Nichols, Inc.

Updated: 2/2023

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

BORCHERT

City Line Rd. to W. San Antonio St.

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	1,940
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Construction of thoroughfare standard roadway section

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	20	STA	\$ 1,800.00	\$ 36,000
2	Unclassified Street Excavation	4,500	CY	\$ 18.00	\$ 81,000
3	HMAC Type D (2")	8,000	SY	\$ 12.00	\$ 96,000
4	8" Flex Base	9,700	SY	\$ 37.00	\$ 358,900
5	Prime & Tack Coat	1,600	GAL	\$ 4.25	\$ 6,800
6	Lime Subgrade	9,700	SY	\$ 3.00	\$ 29,100
7	Lime for Stabilization (43lbs/SY)	210	TON	\$ 150.00	\$ 31,500
8	6" Monolithic Concrete Curb & Gutter	3,880	LF	\$ 21.00	\$ 81,480
9	Block Sodding and Topsoil	4,100	SY	\$ 5.00	\$ 20,500
Paving Estimate Subtotal:					\$ 741,280
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	14,900
10	Traffic Control		5%	\$	37,100
11	Erosion Control		3%	\$	22,300
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	148,300
Other Components Estimate Subtotal:					\$ 222,600
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 963,880
				Mobilization	5% \$ 48,200
				Contingency	10% \$ 101,300
Construction Cost Estimate Total:					\$ 1,113,400

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance		Item Cost	
Construction		-	\$	1,113,400	
Engineering/Survey/Testing		7%	\$	77,938	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 19,400	\$ 19,400	
Impact Fee Project Cost Estimate Total:					\$ 1,210,738

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

MAPLE STREET
San Jacinto St. to Mockingbird Ln.

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	1,738
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Construction of new roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	18	STA	\$ 1,800.00	\$ 32,400
2	Unclassified Street Excavation	4,000	CY	\$ 18.00	\$ 72,000
3	HMAC Type D (2")	7,200	SY	\$ 12.00	\$ 86,400
4	8" Flex Base	8,700	SY	\$ 37.00	\$ 321,900
5	Prime & Tack Coat	1,440	GAL	\$ 4.25	\$ 6,120
6	Lime Subgrade	8,700	SY	\$ 3.00	\$ 26,100
7	Lime for Stabilization (43lbs/SY)	190	TON	\$ 150.00	\$ 28,500
8	6" Monolithic Concrete Curb & Gutter	3,480	LF	\$ 21.00	\$ 73,080
9	Block Sodding and Topsoil	3,700	SY	\$ 5.00	\$ 18,500
Paving Estimate Subtotal:					\$ 665,000
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	13,300
10	Traffic Control		5%	\$	33,300
11	Erosion Control		3%	\$	20,000
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	133,000
Other Components Estimate Subtotal:					\$ 199,600
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	Drainage Ditch Relocation*	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 864,600
Mobilization					5% \$ 43,300
Contingency					10% \$ 90,800
Construction Cost Estimate Total:					\$ 998,700

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance			Item Cost
Construction		-	\$		998,700
Engineering/Survey/Testing		7%	\$		69,909
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$	-	\$ -
Impact Fee Project Cost Estimate Total:					\$ 1,068,609

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

MAPLE STREET
City Line Rd. to SH 130

Roadway Information:	
Roadway Type:	3-Lane Undivided Collector w/ TWLTL
Length (lf):	1,500
Right-of-Way Width (ft.):	60
Median Type:	TWLTL
Pavement Width (BOC - BOC):	41
Description:	Widening of roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	15	STA	\$ 1,800.00	\$ 27,000
2	Unclassified Street Excavation	3,500	CY	\$ 18.00	\$ 63,000
3	HMAC Type D (2")	6,200	SY	\$ 12.00	\$ 74,400
4	8" Flex Base	7,500	SY	\$ 37.00	\$ 277,500
5	Prime & Tack Coat	1,240	GAL	\$ 4.25	\$ 5,270
6	Lime Subgrade	7,500	SY	\$ 3.00	\$ 22,500
7	Lime for Stabilization (43lbs/SY)	160	TON	\$ 150.00	\$ 24,000
8	6" Monolithic Concrete Curb & Gutter	3,000	LF	\$ 21.00	\$ 63,000
9	Block Sodding and Topsoil	3,200	SY	\$ 5.00	\$ 16,000
Paving Estimate Subtotal:					\$ 572,670
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	11,500
10	Traffic Control		5%	\$	28,700
11	Erosion Control		3%	\$	17,200
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	114,600
Other Components Estimate Subtotal:					\$ 172,000
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 744,670
				Mobilization	5% \$ 37,300
				Contingency	10% \$ 78,200
Construction Cost Estimate Total:					\$ 860,200

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance			Item Cost
Construction		-	\$		860,200
Engineering/Survey/Testing		7%	\$		60,214
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$	15,000	\$ 15,000
Impact Fee Project Cost Estimate Total:					\$ 935,414

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

MAPLE STREET
Mockingbird Ln. to Lantana Ave.

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	1,662
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	47
Description:	Construction of new roadway to thoroughfare standard

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	17	STA	\$ 30,600
2	Unclassified Street Excavation	4,400	CY	\$ 79,200
3	HMAC Type D (2")	8,000	SY	\$ 96,000
4	8" Flex Base	9,500	SY	\$ 351,500
5	Prime & Tack Coat	1,600	GAL	\$ 6,800
6	Lime Subgrade	9,400	SY	\$ 28,200
7	Lime for Stabilization (43lbs/SY)	200	TON	\$ 30,000
8	6" Monolithic Concrete Curb & Gutter	3,330	LF	\$ 69,930
9	Block Sodding and Topsoil	2,500	SY	\$ 12,500
Paving Estimate Subtotal:				\$ 704,730
II. Non-Paving Construction Components				
Item No.	Item Description		Pct. Of Paving	Item Cost
9	Pavement Markings & Signage		2%	\$ 14,100
10	Traffic Control		5%	\$ 35,300
11	Erosion Control		3%	\$ 21,200
12	Landscaping		0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$ 141,000
Other Components Estimate Subtotal:				\$ 211,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	Drainage Ditch Relocation*	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 916,330
Mobilization				5% \$ 45,900
Contingency				10% \$ 96,300
Construction Cost Estimate Total:				\$ 1,058,600

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$ 1,058,600	
Engineering/Survey/Testing		7%	\$ 74,102	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ -	\$ -
Impact Fee Project Cost Estimate Total:				\$ 1,132,702

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

CITY LINE ROAD
Maple St. to W. San Antonio St.

Roadway Information:	
Roadway Type:	4-Lane Undivided Arterial
Length (lf):	5,193
Right-of-Way Width (ft.):	80
Median Type:	None
Pavement Width (BOC - BOC):	61
Description:	Widening of roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	52	STA	\$ 1,800.00	\$ 93,600
2	Unclassified Street Excavation	17,600	CY	\$ 18.00	\$ 316,800
3	HMAC Type D (2")	32,900	SY	\$ 12.00	\$ 394,800
4	8" Flex Base	37,600	SY	\$ 37.00	\$ 1,391,200
5	Prime & Tack Coat	6,580	GAL	\$ 4.25	\$ 27,965
6	Lime Subgrade	37,500	SY	\$ 3.00	\$ 112,500
7	Lime for Stabilization (43lbs/SY)	810	TON	\$ 150.00	\$ 121,500
8	6" Monolithic Concrete Curb & Gutter	10,390	LF	\$ 21.00	\$ 218,190
9	Block Sodding and Topsoil	11,000	SY	\$ 5.00	\$ 55,000
Paving Estimate Subtotal:					\$ 2,731,555
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	54,700
10	Traffic Control		5%	\$	136,600
11	Erosion Control		3%	\$	82,000
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	546,400
Other Components Estimate Subtotal:					\$ 819,700
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 3,551,255
				Mobilization	5% \$ 177,600
				Contingency	10% \$ 372,900
Construction Cost Estimate Total:					\$ 4,101,800

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance		Item Cost	
Construction		-	\$	4,101,800	
Engineering/Survey/Testing		7%	\$	287,126	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$	207,720	
Impact Fee Project Cost Estimate Total:					\$ 4,596,646

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Mockingbird Ln Ext.
 N. of Shenandoah Tr. To FM 2001 (Silent Valley)

Roadway Information:	
Roadway Type:	4-Lane Undivided Arterial
Length (lf):	3,100
Right-of-Way Width (ft.):	80
Median Type:	None
Pavement Width (BOC - BOC):	61
Description:	Construction of new roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	31	STA	\$ 1,800.00	\$ 55,800
2	Unclassified Street Excavation	10,600	CY	\$ 18.00	\$ 190,800
3	HMAC Type D (2")	19,700	SY	\$ 12.00	\$ 236,400
4	8" Flex Base	22,400	SY	\$ 37.00	\$ 828,800
5	Prime & Tack Coat	3,940	GAL	\$ 4.25	\$ 16,745
6	Lime Subgrade	22,400	SY	\$ 3.00	\$ 67,200
7	Lime for Stabilization (43lbs/SY)	480	TON	\$ 150.00	\$ 72,000
8	6" Monolithic Concrete Curb & Gutter	6,200	LF	\$ 21.00	\$ 130,200
9	Block Sodding and Topsoil	6,600	SY	\$ 5.00	\$ 33,000
Paving Estimate Subtotal:					\$ 1,630,945
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	32,700
10	Traffic Control		5%	\$	81,600
11	Erosion Control		3%	\$	49,000
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	326,200
Other Components Estimate Subtotal:					\$ 489,500
III. Special Construction Components					
Item No.	Item Description	Notes		Allowance	Item Cost
15	Drainage Structures	None		\$ -	\$ -
16	Bridge Structures	None		\$ -	\$ -
17	Traffic Signals	None		\$ -	\$ -
18	Other	RR Crossing		\$ 250,000	\$ 250,000
Special Components Estimate Subtotal:					\$ 250,000
I, II, & III Construction Subtotal:					\$ 2,370,445
				Mobilization	5% \$ 118,600
				Contingency	10% \$ 249,000
Construction Cost Estimate Total:					\$ 2,738,100

Impact Fee Cost Estimate Summary					
Item Description	Notes		Allowance	Item Cost	
Construction			-	\$ 2,738,100	
Engineering/Survey/Testing			7%	\$ 191,667	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 248,000	\$ 248,000	
Impact Fee Project Cost Estimate Total:					\$ 3,177,767

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Horseshoe Rd.

Mockingbird Ln Ext. To FM 2001 (Silent Valley)

Roadway Information:	
Roadway Type:	4-Lane Undivided Arterial
Length (lf):	825
Right-of-Way Width (ft.):	80
Median Type:	None
Pavement Width (BOC - BOC):	61
Description:	Widening of roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	9	STA	\$ 1,800.00	\$ 16,200
2	Unclassified Street Excavation	2,800	CY	\$ 18.00	\$ 50,400
3	HMAC Type D (2")	5,300	SY	\$ 12.00	\$ 63,600
4	8" Flex Base	6,000	SY	\$ 37.00	\$ 222,000
5	Prime & Tack Coat	1,060	GAL	\$ 4.25	\$ 4,505
6	Lime Subgrade	6,000	SY	\$ 3.00	\$ 18,000
7	Lime for Stabilization (43lbs/SY)	130	TON	\$ 150.00	\$ 19,500
8	6" Monolithic Concrete Curb & Gutter	1,650	LF	\$ 21.00	\$ 34,650
9	Block Sodding and Topsoil	1,800	SY	\$ 5.00	\$ 9,000
Paving Estimate Subtotal:					\$ 437,855
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	8,800
10	Traffic Control		5%	\$	21,900
11	Erosion Control		3%	\$	13,200
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	87,600
Other Components Estimate Subtotal:					\$ 131,500
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 569,355
				Mobilization	5% \$ 28,500
				Contingency	10% \$ 59,800
Construction Cost Estimate Total:					\$ 657,700

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance		Item Cost
Construction		-	\$	657,700
Engineering/Survey/Testing		7%	\$	46,039
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 24,750	\$ 24,750
Impact Fee Project Cost Estimate Total:				\$ 728,489

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Old Fentress Rd
City Line Rd to SH130

Roadway Information:	
Roadway Type:	4-Lane Undivided Colletor
Length (lf):	6,389
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Widening of roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	64	STA	\$ 1,800.00	\$ 115,200
2	Unclassified Street Excavation	14,600	CY	\$ 18.00	\$ 262,800
3	HMAC Type D (2")	26,300	SY	\$ 12.00	\$ 315,600
4	8" Flex Base	32,000	SY	\$ 37.00	\$ 1,184,000
5	Prime & Tack Coat	5,260	GAL	\$ 4.25	\$ 22,355
6	Lime Subgrade	31,900	SY	\$ 3.00	\$ 95,700
7	Lime for Stabilization (43lbs/SY)	690	TON	\$ 150.00	\$ 103,500
8	6" Monolithic Concrete Curb & Gutter	12,780	LF	\$ 21.00	\$ 268,380
9	Block Sodding and Topsoil	13,500	SY	\$ 5.00	\$ 67,500
Paving Estimate Subtotal:					\$ 2,435,035
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	48,800
10	Traffic Control		5%	\$	121,800
11	Erosion Control		3%	\$	73,100
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	487,100
Other Components Estimate Subtotal:					\$ 730,800
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 3,165,835
				Mobilization	5% \$ 158,300
				Contingency	10% \$ 332,500
Construction Cost Estimate Total:					\$ 3,656,700

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance		Item Cost	
Construction		-	\$	3,656,700	
Engineering/Survey/Testing		7%	\$	255,969	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 63,888	\$ 63,888	
Impact Fee Project Cost Estimate Total:					\$ 3,976,557

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

CLEAR FORK ROAD

City Line Rd to 250' W. of Creek Bridge

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	3,100
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Widening of roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	31	STA	\$ 1,800.00	\$ 55,800
2	Unclassified Street Excavation	7,100	CY	\$ 18.00	\$ 127,800
3	HMAC Type D (2")	12,800	SY	\$ 12.00	\$ 153,600
4	8" Flex Base	15,500	SY	\$ 37.00	\$ 573,500
5	Prime & Tack Coat	2,560	GAL	\$ 4.25	\$ 10,880
6	Lime Subgrade	15,500	SY	\$ 3.00	\$ 46,500
7	Lime for Stabilization (43lbs/SY)	330	TON	\$ 150.00	\$ 49,500
8	6" Monolithic Concrete Curb & Gutter	6,200	LF	\$ 21.00	\$ 130,200
9	Block Sodding and Topsoil	6,600	SY	\$ 5.00	\$ 33,000
Paving Estimate Subtotal:					\$ 1,180,780
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	23,700
10	Traffic Control		5%	\$	59,100
11	Erosion Control		3%	\$	35,500
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	236,200
Other Components Estimate Subtotal:					\$ 354,500
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 1,535,280
				Mobilization	5% \$ 76,800
				Contingency	10% \$ 161,300
Construction Cost Estimate Total:					\$ 1,773,400

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance		Item Cost
Construction		-	\$	1,773,400
Engineering/Survey/Testing		7%	\$	124,138
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 31,000	\$ 31,000
Impact Fee Project Cost Estimate Total:				\$ 1,928,538

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

MAIN STREET
 State Park Rd. to Blackjack St.

Roadway Information:	
Roadway Type:	3-Lane Undivided Collector w/ TWLTL
Length (lf):	590
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Widening of roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	6	STA	\$ 1,800.00	\$ 10,800
2	Unclassified Street Excavation	1,400	CY	\$ 18.00	\$ 25,200
3	HMAC Type D (2")	2,500	SY	\$ 12.00	\$ 30,000
4	8" Flex Base	3,000	SY	\$ 37.00	\$ 111,000
5	Prime & Tack Coat	500	GAL	\$ 4.25	\$ 2,125
6	Lime Subgrade	3,000	SY	\$ 3.00	\$ 9,000
7	Lime for Stabilization (43lbs/SY)	60	TON	\$ 150.00	\$ 9,000
8	6" Monolithic Concrete Curb & Gutter	1,180	LF	\$ 21.00	\$ 24,780
9	Block Sodding and Topsoil	1,300	SY	\$ 5.00	\$ 6,500
Paving Estimate Subtotal:					\$ 228,405
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	4,600
10	Traffic Control		5%	\$	11,500
11	Erosion Control		3%	\$	6,900
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	45,700
Other Components Estimate Subtotal:					\$ 68,700
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 297,105
				Mobilization	5% \$ 14,900
				Contingency	10% \$ 31,300
Construction Cost Estimate Total:					\$ 343,400

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance		Item Cost	
Construction		-	\$	343,400	
Engineering/Survey/Testing		7%	\$	24,038	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$	-	
Impact Fee Project Cost Estimate Total:					\$ 367,438

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate
FM 20 (State Park Road) Realignment
W. of Guadalupe St. to Colorado St.

Roadway Information:	
Roadway Type:	2-Lane Undivided Arterial
Length (lf):	2,150
Right-of-Way Width (ft.):	80
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Realignment of roadway

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	22	STA	\$ 1,800.00	\$ 39,600
2	Unclassified Street Excavation	4,900	CY	\$ 18.00	\$ 88,200
3	HMAC Type D (2")	8,900	SY	\$ 12.00	\$ 106,800
4	8" Flex Base	10,800	SY	\$ 37.00	\$ 399,600
5	Prime & Tack Coat	1,780	GAL	\$ 4.25	\$ 7,565
6	Lime Subgrade	10,800	SY	\$ 3.00	\$ 32,400
7	Lime for Stabilization (43lbs/SY)	230	TON	\$ 150.00	\$ 34,500
8	6" Monolithic Concrete Curb & Gutter	4,300	LF	\$ 21.00	\$ 90,300
9	Block Sodding and Topsoil	9,400	SY	\$ 5.00	\$ 47,000
Paving Estimate Subtotal:					\$ 845,965
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	17,000
10	Traffic Control		5%	\$	42,300
11	Erosion Control		3%	\$	25,400
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	169,200
Other Components Estimate Subtotal:					\$ 253,900
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	Utility Relocation	\$ 100,000	\$	100,000
Special Components Estimate Subtotal:					\$ 100,000
I, II, & III Construction Subtotal:					\$ 1,199,865
				Mobilization	5% \$ 60,000
				Contingency	10% \$ 126,000
Construction Cost Estimate Total:					\$ 1,385,900

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance		Item Cost	
Construction		-	\$	1,385,900	
Engineering/Survey/Testing		7%	\$	97,013	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 172,000	\$ 172,000	
Impact Fee Project Cost Estimate Total:					\$ 1,654,913

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate
Martin Luther King Jr. Industrial Boulevard
Colorado St. to Cunningham St.

Roadway Information:	
Roadway Type:	4-Lane Undivided Arterial
Length (lf):	3,130
Right-of-Way Width (ft.):	80
Median Type:	None
Pavement Width (BOC - BOC):	61
Description:	Widening of roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	32	STA	\$ 1,800.00	\$ 57,600
2	Unclassified Street Excavation	10,700	CY	\$ 18.00	\$ 192,600
3	HMAC Type D (2")	19,900	SY	\$ 12.00	\$ 238,800
4	8" Flex Base	22,700	SY	\$ 37.00	\$ 839,900
5	Prime & Tack Coat	3,980	GAL	\$ 4.25	\$ 16,915
6	Lime Subgrade	22,600	SY	\$ 3.00	\$ 67,800
7	Lime for Stabilization (43lbs/SY)	490	TON	\$ 150.00	\$ 73,500
8	6" Monolithic Concrete Curb & Gutter	6,260	LF	\$ 21.00	\$ 131,460
9	Block Sodding and Topsoil	6,700	SY	\$ 5.00	\$ 33,500
Paving Estimate Subtotal:					\$ 1,652,075
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	33,100
10	Traffic Control		5%	\$	82,700
11	Erosion Control		3%	\$	49,600
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	330,500
Other Components Estimate Subtotal:					\$ 495,900
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 2,147,975
Mobilization					5% \$ 107,400
Contingency					10% \$ 225,600
Construction Cost Estimate Total:					\$ 2,481,000

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance		Item Cost	
Construction		-	\$	2,481,000	
Engineering/Survey/Testing		7%	\$	173,670	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 93,900	\$ 93,900	
Impact Fee Project Cost Estimate Total:					\$ 2,748,570

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate
Martin Luther King Jr. Industrial Boulevard
Commerce Street to E. MLK Jr. Industrial Blvd.

Roadway Information:	
Roadway Type:	2-Lane Undivided Arterial
Length (lf):	4,310
Right-of-Way Width (ft.):	80
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Construction of new roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	44	STA	\$ 1,800.00	\$ 79,200
2	Unclassified Street Excavation	9,900	CY	\$ 18.00	\$ 178,200
3	HMAC Type D (2")	17,800	SY	\$ 12.00	\$ 213,600
4	8" Flex Base	21,600	SY	\$ 37.00	\$ 799,200
5	Prime & Tack Coat	3,560	GAL	\$ 4.25	\$ 15,130
6	Lime Subgrade	21,600	SY	\$ 3.00	\$ 64,800
7	Lime for Stabilization (43lbs/SY)	460	TON	\$ 150.00	\$ 69,000
8	6" Monolithic Concrete Curb & Gutter	8,620	LF	\$ 21.00	\$ 181,020
9	Block Sodding and Topsoil	18,700	SY	\$ 5.00	\$ 93,500
Paving Estimate Subtotal:					\$ 1,693,650
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	33,900
10	Traffic Control		5%	\$	84,700
11	Erosion Control		3%	\$	50,900
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	338,800
Other Components Estimate Subtotal:					\$ 508,300
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 2,201,950
Mobilization					5% \$ 110,100
Contingency					10% \$ 231,300
Construction Cost Estimate Total:					\$ 2,543,400

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance		Item Cost	
Construction		-	\$	2,543,400	
Engineering/Survey/Testing		7%	\$	178,038	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 344,800	\$ 344,800	
Impact Fee Project Cost Estimate Total:					\$ 3,066,238

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

CITY LINE ROAD
 Clark Fork Rd. to Maple St.

Roadway Information:	
Roadway Type:	5-Lane Undivided Arterial w/ TWLTL
Length (lf):	1,547
Right-of-Way Width (ft.):	80
Median Type:	TWLTL
Pavement Width (BOC - BOC):	61
Description:	Widening of roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	16	STA	\$ 1,800.00	\$ 28,800
2	Unclassified Street Excavation	5,300	CY	\$ 18.00	\$ 95,400
3	HMAC Type D (2")	9,800	SY	\$ 12.00	\$ 117,600
4	8" Flex Base	11,200	SY	\$ 37.00	\$ 414,400
5	Prime & Tack Coat	1,960	GAL	\$ 4.25	\$ 8,330
6	Lime Subgrade	11,200	SY	\$ 3.00	\$ 33,600
7	Lime for Stabilization (43lbs/SY)	240	TON	\$ 150.00	\$ 36,000
8	6" Monolithic Concrete Curb & Gutter	3,100	LF	\$ 21.00	\$ 65,100
9	Block Sodding and Topsoil	3,300	SY	\$ 5.00	\$ 16,500
Paving Estimate Subtotal:					\$ 815,730
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	16,400
10	Traffic Control		5%	\$	40,800
11	Erosion Control		3%	\$	24,500
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	163,200
Other Components Estimate Subtotal:					\$ 244,900
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 1,060,630
				Mobilization	5% \$ 53,100
				Contingency	10% \$ 111,400
Construction Cost Estimate Total:					\$ 1,225,200

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance		Item Cost	
Construction		-	\$	1,225,200	
Engineering/Survey/Testing		7%	\$	85,764	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 46,410	\$ 46,410	
Impact Fee Project Cost Estimate Total:					\$ 1,357,374

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

CR220/Cunningham
 MLK Jr Industrial Blvd.to W. City Limit

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	3,405
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Construction of new roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	35	STA	\$ 1,800.00	\$ 63,000
2	Unclassified Street Excavation	7,800	CY	\$ 18.00	\$ 140,400
3	HMAC Type D (2")	14,000	SY	\$ 12.00	\$ 168,000
4	8" Flex Base	17,100	SY	\$ 37.00	\$ 632,700
5	Prime & Tack Coat	2,800	GAL	\$ 4.25	\$ 11,900
6	Lime Subgrade	17,000	SY	\$ 3.00	\$ 51,000
7	Lime for Stabilization (43lbs/SY)	370	TON	\$ 150.00	\$ 55,500
8	6" Monolithic Concrete Curb & Gutter	6,810	LF	\$ 21.00	\$ 143,010
9	Block Sodding and Topsoil	7,200	SY	\$ 5.00	\$ 36,000
Paving Estimate Subtotal:					\$ 1,301,510
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	26,100
10	Traffic Control		5%	\$	65,100
11	Erosion Control		3%	\$	39,100
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	260,400
Other Components Estimate Subtotal:					\$ 390,700
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 1,692,210
				Mobilization	5% \$ 84,700
				Contingency	10% \$ 177,700
Construction Cost Estimate Total:					\$ 1,954,700

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance		Item Cost
Construction		-	\$	1,954,700
Engineering/Survey/Testing		7%	\$	136,829
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 204,300	\$ 204,300
Impact Fee Project Cost Estimate Total:				\$ 2,295,829

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Old Kelley Rd

MLK Jr Industrial Blvd.to W. City Limit

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	3,140
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Widening of roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	32	STA	\$ 1,800.00	\$ 57,600
2	Unclassified Street Excavation	7,200	CY	\$ 18.00	\$ 129,600
3	HMAC Type D (2")	13,000	SY	\$ 12.00	\$ 156,000
4	8" Flex Base	15,700	SY	\$ 37.00	\$ 580,900
5	Prime & Tack Coat	2,600	GAL	\$ 4.25	\$ 11,050
6	Lime Subgrade	15,700	SY	\$ 3.00	\$ 47,100
7	Lime for Stabilization (43lbs/SY)	340	TON	\$ 150.00	\$ 51,000
8	6" Monolithic Concrete Curb & Gutter	6,280	LF	\$ 21.00	\$ 131,880
9	Block Sodding and Topsoil	6,700	SY	\$ 5.00	\$ 33,500
Paving Estimate Subtotal:					\$ 1,198,630
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	24,000
10	Traffic Control		5%	\$	60,000
11	Erosion Control		3%	\$	36,000
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	239,800
Other Components Estimate Subtotal:					\$ 359,800
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 1,558,430
				Mobilization	5% \$ 78,000
				Contingency	10% \$ 163,700
Construction Cost Estimate Total:					\$ 1,800,200

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance		Item Cost	
Construction		-	\$	1,800,200	
Engineering/Survey/Testing		7%	\$	126,014	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 31,400	\$ 31,400	
Impact Fee Project Cost Estimate Total:					\$ 1,957,614

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Shady Ln
 Old Kelley to FM20/Blackjack St

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	2,570
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Widening of roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	26	STA	\$ 1,800.00	\$ 46,800
2	Unclassified Street Excavation	5,900	CY	\$ 18.00	\$ 106,200
3	HMAC Type D (2")	10,600	SY	\$ 12.00	\$ 127,200
4	8" Flex Base	12,900	SY	\$ 37.00	\$ 477,300
5	Prime & Tack Coat	2,120	GAL	\$ 4.25	\$ 9,010
6	Lime Subgrade	12,900	SY	\$ 3.00	\$ 38,700
7	Lime for Stabilization (43lbs/SY)	280	TON	\$ 150.00	\$ 42,000
8	6" Monolithic Concrete Curb & Gutter	5,140	LF	\$ 21.00	\$ 107,940
9	Block Sodding and Topsoil	5,500	SY	\$ 5.00	\$ 27,500
Paving Estimate Subtotal:					\$ 982,650
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	19,700
10	Traffic Control		5%	\$	49,200
11	Erosion Control		3%	\$	29,500
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	196,600
Other Components Estimate Subtotal:					\$ 295,000
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 1,277,650
				Mobilization	5% \$ 63,900
				Contingency	10% \$ 134,200
Construction Cost Estimate Total:					\$ 1,475,800

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance		Item Cost	
Construction		-	\$	1,475,800	
Engineering/Survey/Testing		7%	\$	103,306	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 25,700	\$ 25,700	
Impact Fee Project Cost Estimate Total:					\$ 1,604,806

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Lovers Ln
 Old Kelley to Existing Lovers Ln

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	1,230
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	41
Description:	Construction of new roadway to thoroughfare standard

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	13	STA	\$ 1,800.00	\$ 23,400
2	Unclassified Street Excavation	2,900	CY	\$ 18.00	\$ 52,200
3	HMAC Type D (2")	5,100	SY	\$ 12.00	\$ 61,200
4	8" Flex Base	6,200	SY	\$ 37.00	\$ 229,400
5	Prime & Tack Coat	1,020	GAL	\$ 4.25	\$ 4,335
6	Lime Subgrade	6,200	SY	\$ 3.00	\$ 18,600
7	Lime for Stabilization (43lbs/SY)	130	TON	\$ 150.00	\$ 19,500
8	6" Monolithic Concrete Curb & Gutter	2,460	LF	\$ 21.00	\$ 51,660
9	Block Sodding and Topsoil	2,600	SY	\$ 5.00	\$ 13,000
Paving Estimate Subtotal:					\$ 473,295
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	9,500
10	Traffic Control		5%	\$	23,700
11	Erosion Control		3%	\$	14,200
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	94,700
Other Components Estimate Subtotal:					\$ 142,100
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
15	Drainage Structures	None	\$ -	\$	-
16	Bridge Structures	None	\$ -	\$	-
17	Traffic Signals	None	\$ -	\$	-
18	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 615,395
Mobilization					5% \$ 30,800
Contingency					10% \$ 64,700
Construction Cost Estimate Total:					\$ 710,900

Impact Fee Cost Estimate Summary					
Item Description	Notes	Allowance		Item Cost	
Construction		-	\$	710,900	
Engineering/Survey/Testing		7%	\$	49,763	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 73,800	\$ 73,800	
Impact Fee Project Cost Estimate Total:					\$ 834,463

City of Lockhart
Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

McMILLEN STREET

State Park Rd. to MLK Jr. Industrial Blvd.

Roadway Information:	
Roadway Type:	4-Lane Undivided Collector
Length (lf):	3,172
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (BOC - BOC):	47
Description:	Construction of new roadway to thoroughfare standard

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	32	STA	\$ 1,800.00	\$ 57,600
2	Unclassified Street Excavation	8,300	CY	\$ 18.00	\$ 149,400
3	HMAC Type D (2")	15,200	SY	\$ 12.00	\$ 182,400
4	8" Flex Base	18,000	SY	\$ 37.00	\$ 666,000
5	Prime & Tack Coat	3,040	GAL	\$ 4.25	\$ 12,920
6	Lime Subgrade	18,000	SY	\$ 3.00	\$ 54,000
7	Lime for Stabilization (43lbs/SY)	390	TON	\$ 150.00	\$ 58,500
8	6" Monolithic Concrete Curb & Gutter	6,350	LF	\$ 21.00	\$ 133,350
9	Block Sodding and Topsoil	4,600	SY	\$ 5.00	\$ 23,000
Paving Estimate Subtotal:					\$ 1,337,170

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 26,800
10	Traffic Control	5%	\$ 66,900
11	Erosion Control	3%	\$ 40,200
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 267,500
Other Components Estimate Subtotal:			\$ 401,400

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -

I, II, & III Construction Subtotal:				\$ 1,738,570
Mobilization				5% \$ 87,000
Contingency				10% \$ 182,600
Construction Cost Estimate Total:				\$ 2,008,200

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 2,008,200
Engineering/Survey/Testing		7%	\$ 140,574
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 0.75	\$ 142,740
Impact Fee Project Cost Estimate Total:			\$ 2,291,514

APPENDIX F: ROADWAY SERVICE AREA ANALYSIS
SUMMARY

APPENDICES

2022 Lockhart Roadway Impact Fee Update Service Area Analysis Summary

Service Area	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
	Capacity Supplied by CIP (veh-mi)	Existing Utilization (veh-mi)	Existing Deficiencies (veh-mi)	Net Capacity Supplied by CIP (veh-mi)	Percentage Net Capacity Supplied	Total Project Cost of CIP (Full Cost)	Cost of Net Capacity (Full Cost)	Credited Project Cost of CIP (50% Credit)	Credited Cost of Net Capacity (50% Credit)	Cost to Meet Existing Utilization (50% Credit)	Projected New Development (10-Yr Demand) (veh-miles)	Percent of CIP Attributable to New Dev.	Credited Cost Attributable to New Dev. (50% Credit)	Actual Cost per Service Unit (Full Cost)	Credited Cost per Service Unit (Maximum Allowable) (50% Credit)
1	5,516	367	0	5,149	93.35%	16,567,590	15,465,287	8,283,795	\$7,732,643	\$551,152	1,258	24.4	\$1,889,234	\$3,002.00	\$1,501.00
2	7,631	474	0	7,157	93.79%	27,570,301	25,857,770	13,785,151	\$12,928,885	\$866,865	2,894	40.4	\$5,227,916	\$3,612.00	\$1,806.00
Totals	13,147	841	0	12,306	93.60%	\$44,137,891	41,324,486	\$22,068,946	\$20,661,529	\$1,407,417	4,151	33.7	\$7,117,150	\$3,428.00	\$1,744.00

Average

Sample Development Fees at Maximum Allowable

SUE	1.09	1.67	1.47	0.77
Site	1 Dwelling Unit	10,000 Sq Ft	20,000 Sq Ft	50,000 Sq Ft
Service Area	Single Family Residential Dwelling	General Office Building	Shopping Center	General Light Industrial Building
1	\$1,656.09	\$25,066.70	\$44,129.40	\$57,788.50
2	\$1,968.54	\$30,160.20	\$53,096.40	\$69,531.00

APPENDIX G: LAND USE ASSUMPTIONS REPORT

City of Lockhart

Land Use Assumptions for Impact Fees

FINAL REPORT

January 2023



Prepared by Freese and Nichols, Inc.

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Land Use Assumptions for Impact Fees

Purpose

Chapter 395 of the Texas Local Government Code prescribes the process by which cities in Texas must formulate development impact fees. To assist the City of Lockhart in determining the need and timing of capital improvements to serve future development, a reasonable estimation of future growth is required. For the purposes of determining an impact fee structure, growth and development projections were formulated based on assumptions pertaining to the type, location, quantity, and time of various future land uses in the community. It is the purpose of this report to establish and document the methodology used for preparing the growth and land use assumptions for the City of Lockhart. These land use assumptions, which include population and employment projections, will become the basis for updated capital improvement plans for road, water, and wastewater impact fees.

Elements of Land Use Assumptions

This report contains:

- Explanation of the general methodology used to prepare the land use assumptions;
- Impact Fee Service Area Map (Figure 1);
- Base Year Data - Information on population, employment, and land use for Lockhart as of 2022; and
- Population, land use and employment growth assumptions for ten-year horizon (2032).

Methodology

These Land Use Assumptions (LUAs) and future growth projections take into consideration several factors influencing development patterns, including:

1. The type, density, and quantity of existing development
2. Existing zoning patterns
3. The Future Land Use Plan/The Lockhart 2020 Comprehensive Plan
4. Current growth trends in the City
5. Location and configuration of vacant land
6. Employment and population absorption rates
7. Known and anticipated future development

The data used to compile these land use assumptions were from several sources: the American Community Survey (ACS) 5-year estimates, the 2020 Decennial Census, the Capital Area Metropolitan Planning Organization (CAMPO) demographic data, the Lockhart 2020 Comprehensive Plan, Lockhart ISD demographic reports, and the City of Lockhart internal databases. The ten-year growth projections were calculated based upon reasonable growth rates based on using past absorption rates and development proposals known or approved by the City of Lockhart. Based on the growth assumptions and the capital improvements needed to support growth, it is possible to develop an impact fee structure that fairly allocates improvement costs to growth areas in relationship to their impact on the entire infrastructure system. Separate projections were previously prepared for the service areas addressing road, water and wastewater facilities. The following database and projections have been formulated using reasonable and generally accepted planning principles.

Service Area Map

Chapter 395 requires that service areas be defined for capital recovery fees to ensure that facility improvements are in close proximity to areas generating needs. Legislative requirements stipulate that roadway service areas be limited to a 6-mile maximum and must be located within the current city limits. Transportation service areas are different from water and wastewater systems, which can include the City limits, its extra-territorial jurisdiction (ETJ) or Certificate of Necessity and Need (CCN). The result is that new development can only be assessed an impact fee based on the cost of necessary capital improvements within their respective service area. **Figures 1, 2, and 3** depict the service area structure for roads, water, and wastewater, respectively.

Data Format

The existing database and future projections were formulated according to the following format and categories:

1. Service Areas – Correlates to the proposed service areas identified on the attached map (Figure 1) that meets the requirements of Chapter 395.
2. Housing Units (2022) – All living units including single-family, duplex, multi-family, and group quarters.
3. Housing Units (2032) – Projected housing units by service areas for the year 2032 (ten-year growth projection).
4. Population and Households (2022-2032) – Existing and projected ten-year population tabulated for each service area.
5. Employment (2022-2032) – Three employment classifications were used:
 - a. Basic – Land use activities that produce goods and services exported outside the local economy, such as manufacturing, construction, transportation, wholesale trade, warehousing, and other industrial uses
 - b. Service – Land use activities that provide personal and professional services such as financial, insurance, government, and other professional administrative offices.
 - c. Retail – Land use activities that provide for the retail sale of goods that primarily serve households and whose location choice is oriented to the household sector, such as grocery stores, restaurants, etc.

Figure 1: Roadway Impact Fee Service Areas

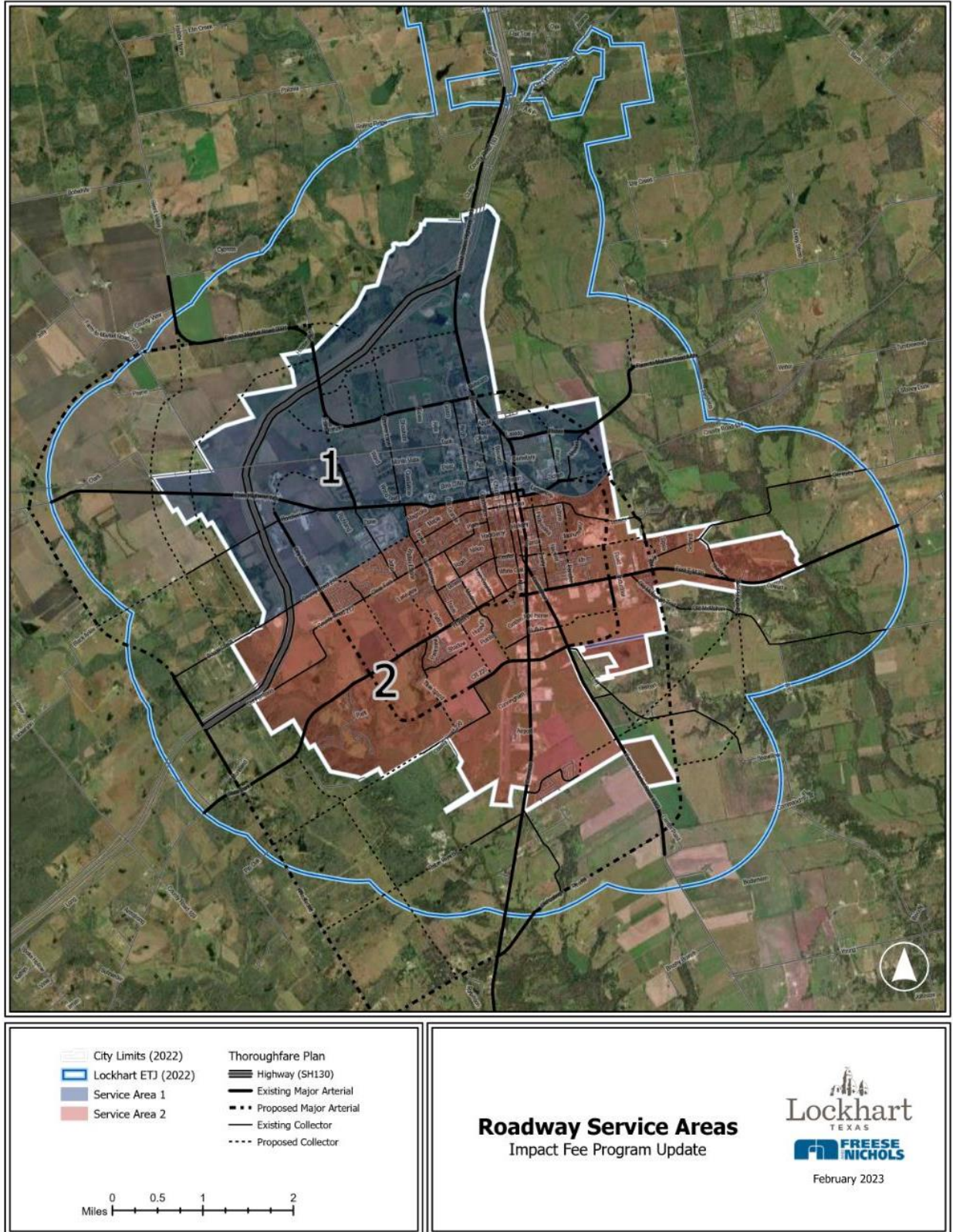


Figure 2: Water Impact Fee Service Area

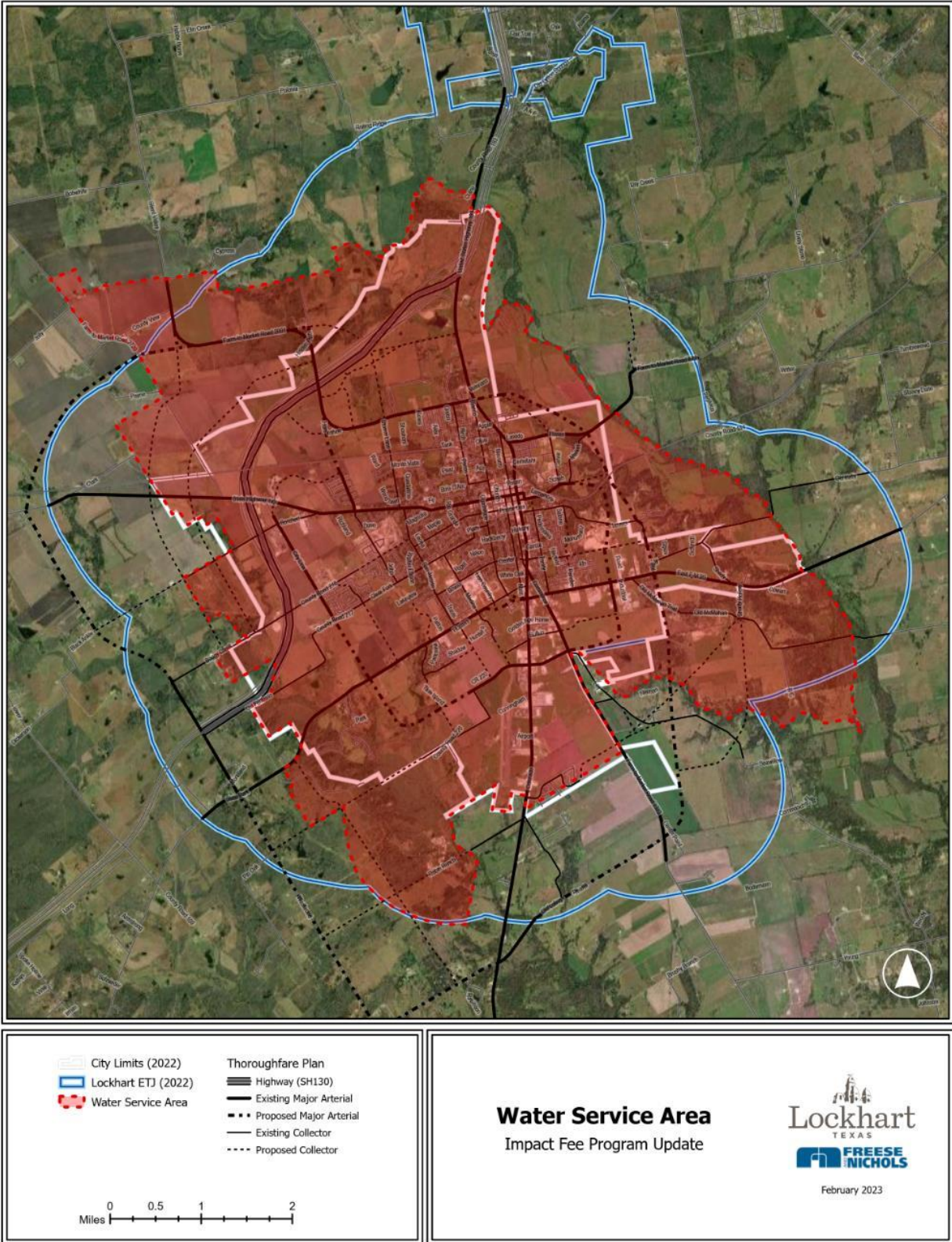
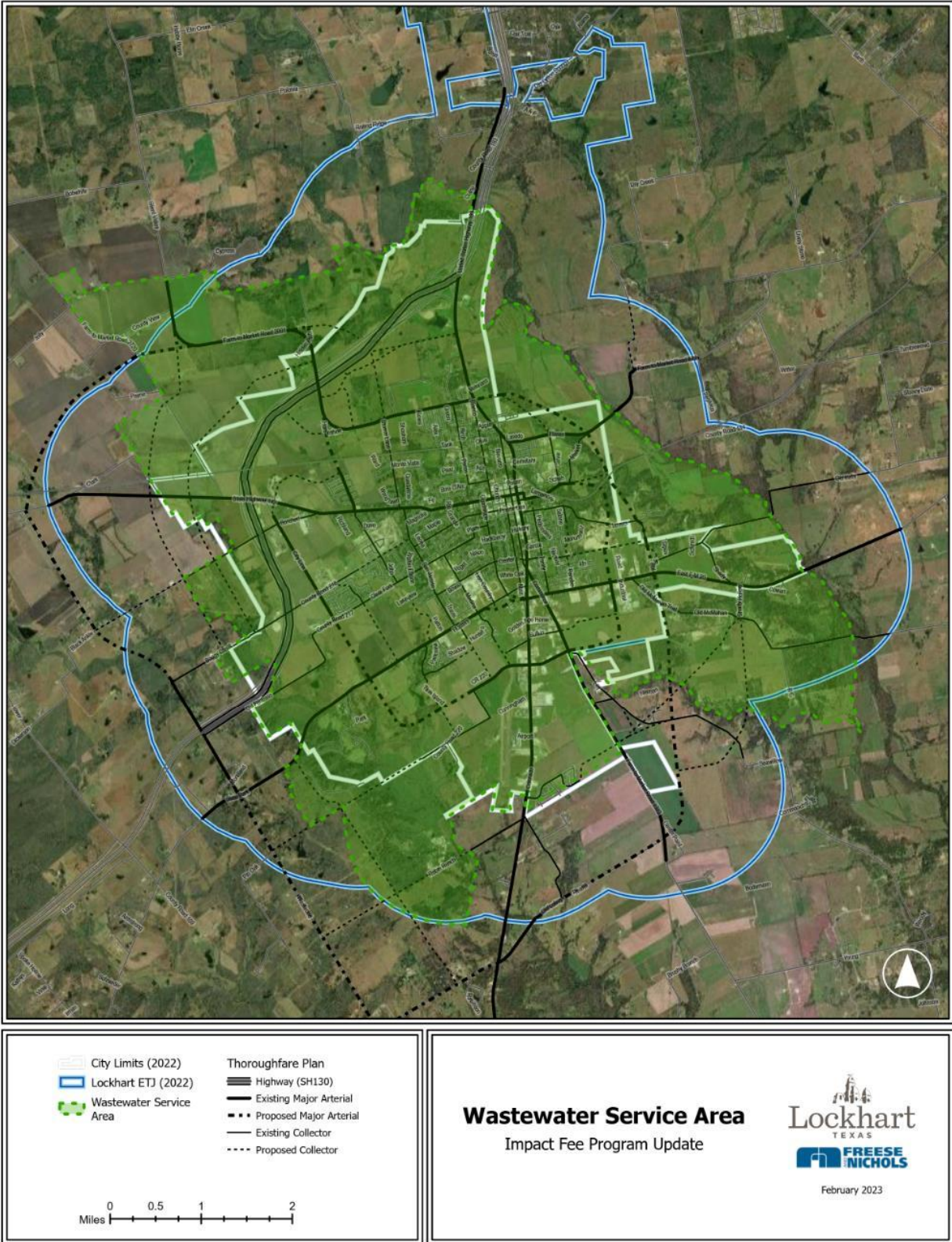


Figure 3: Wastewater Impact Fee Service Area



Base Data: Existing Land Use

A documentation of existing land use patterns and population was made from the City's 2020 Comprehensive Plan and was used as a base line for future growth projections. Table 1 shows a summary of the existing land uses for the area in Lockhart's city limits, updated with information provided by the City of Lockhart's Planning Department.

Table 1: Existing Land Use

Land Use Category		Acres	% of Total Land	Acres/100 Persons ⁽¹⁾
Service Area 1				
AO	Agriculture, Open Space	2,090.78	20.86%	13.40
CCB	Commercial – Central Business	6.83	0.07%	0.04
CHB	Commercial – Heavy Business	159.60	1.59%	1.02
CLB	Commercial – Light Business	14.80	0.15%	0.09
CMB	Commercial – Medium Business	102.60	1.02%	0.66
IH	Industrial Heavy	12.15	0.12%	0.08
IL	Industrial Light	180.52	1.80%	1.16
MH	Manufactured Home	43.41	0.43%	0.28
PDD	Planned Development	12.36	0.12%	0.08
PI	Public and Institutional	166.04	1.66%	1.06
RHD	Residential - High-Density	414.56	4.14%	2.66
RLD	Residential - Low-Density	260.67	2.60%	1.67
RMD	Residential - Medium Density	566.79	5.66%	3.63
Service Area 1 Total		4,031.12	40.22%	25.84
Service Area 2				
AO	Agriculture, Open Space	2,658.38	26.52%	17.04
CCB	Commercial – Central Business	15.76	0.16%	0.10
CHB	Commercial – Heavy Business	337.46	3.37%	2.16
CLB	Commercial – Light Business	45.76	0.46%	0.29
CMB	Commercial – Medium Business	72.88	0.73%	0.47
IH	Industrial Heavy	382.98	3.82%	2.46
IL	Industrial Light	116.02	1.16%	0.74
MH	Manufactured Home	0.89	0.01%	0.01
PDD	Planned Development	241.95	2.41%	1.55
PI	Public and Institutional	248.12	2.48%	1.59
RHD	Residential - High-Density	239.44	2.39%	1.53
RLD	Residential - Low-Density	736.65	7.35%	4.72
RMD	Residential - Medium Density	895.42	8.93%	5.74
Service Area 2 Total		5991.70	59.78%	38.41
Total Acreage Within City Limits		10,022.82		64.25

⁽¹⁾Based on a 2022 population of **15,600** people, City of Lockhart estimate

Base Data: Population and Employment

For the purposes of documenting changes to population, land use, and density, the data format to be used as a basis to formulate the land use assumptions will be principally population and employment. Table 2 represents a summary of existing population and employment for Lockhart.

Table 2: Existing Population and Employment 2022

Housing Units⁽¹⁾	5,877
Population⁽²⁾	15,600
Total Employment⁽³⁾	6,420
<i>Basic</i>	1,638
<i>Service</i>	3,760
<i>Retail</i>	1,021

⁽¹⁾ Estimated derived from 2020 Census, City of Lockhart database

⁽²⁾ Estimate derived from Census, ACS, and City database

⁽³⁾ Estimate derived from ACS, CAMPO data

Base Data: Growth Assumptions

Growth is characterized in two forms: population (residential) and employment (nonresidential). A series of assumptions were made to arrive at reasonable growth rates for population and employment. The following assumptions have been made as a basis from which ten-year projections could be initiated:

1. Future land uses will occur as identified on the Future Land Use Plan in the approved Comprehensive Plan;
2. The City will be able to finance the necessary improvements to accommodate growth;
3. School facilities will accommodate increases in population, and
4. Densities will be in alignment with land uses of the Comprehensive Plan.

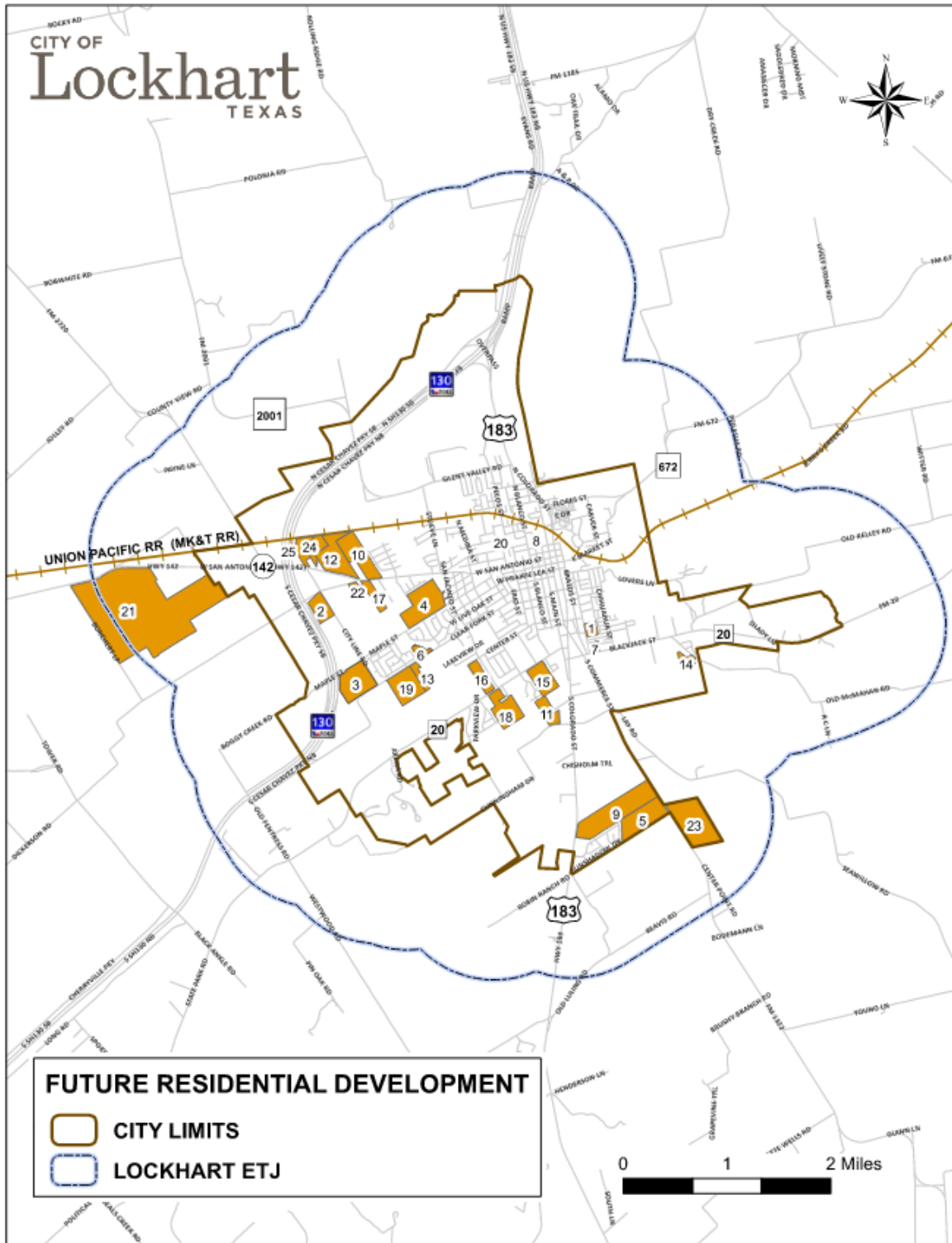
Ten-Year Projections

The ten-year projections or land use assumptions are based upon: 1) approved and/or anticipated development within the city, 2) the policies and growth rate established in the Comprehensive Plan, as well as growth patterns within the city limits as documented in the U.S. Census, ACS, and CAMPO data. Figure 4 illustrates development activity within the city as of August 2022. New development activity within the city includes subdivisions such as:

- **Service Area 1:** Centerpoint Meadows, Vintage Springs, Hansford, Lockhart Farms, Kelly Villas, The Stanton, Lockhart Gateway
- **Service Area 2:** Maple Park, Main Springs, Clear Fork, Heritage Place, Lockhart Place (TH), Cavalry, Ramendu at Lockhart, Spyglass, Golden Eagle, Summerside, and Seawillow.

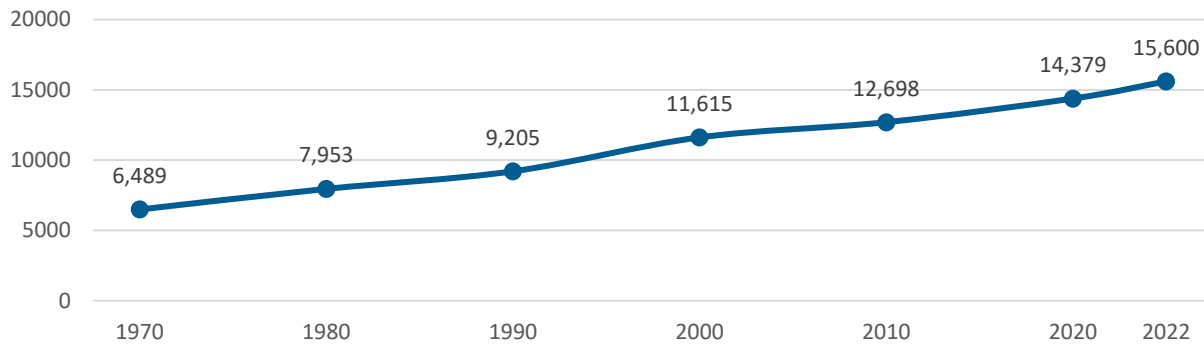
Outside the city (within ETJ), Juniper Springs will bring large-scale residential housing to the west, south of SH 142.

Figure 4: Development Activity within Lockhart, August 2022



Since 1970, the City of Lockhart has experienced relatively steady growth as indicated below:

Figure 5: City of Lockhart Historic Population Growth



The following formula was used to verify the City of Lockhart 2022 population estimate. The City's estimate is close enough to the general calculation to be used as a base population.

$$5,877 \text{ housing units} * 0.93 \text{ occupancy rate} = \text{approx. } 5,480 \text{ occupied dwelling units}$$
$$5,480 \text{ occupied dwelling units} * 2.84 \text{ persons per household} = \text{approx. } 15,600 \text{ residents}$$

Growth Rate

Population (Residential Growth)

An approximate 4.25% average annual growth rate was determined by the Impact Fee Advisory Committee (IFAC) to be a reasonable rate at which Lockhart's population could be expected to grow. Between 1990 and 2000, Lockhart's compound annual growth rate was approximately 1.37 percent. Between 2000 and 2010 the average annual growth rate was approximately 0.83 percent. Based upon anticipated and committed residential construction, development of additional industrial facilities, and anticipated City annexations, a 4.25% percent growth rate should be feasible and reasonable for planning purposes.

If population growth in Lockhart occurs at an average rate of 4.25% per year, a population of approximately 23,695 people could be expected by the year 2032 (ten years). With known development information, it is also reasonable to assume that the City limits will grow by at least 300 acres. Table 3 shows this increase and the resulting projected future land use breakdown within the City limits. This scenario uses similar land use proportions as the existing land use, and accounts for anticipated geographic and population growth of the City.

Table 3: General Future Land Use Projection

Land Use Category	Total Acres in 2022 (15,600 people)	Acre/100 Persons (2022)	Total Acres in 2032 (23,695 people)	Acre/100 Persons (2032)	Net Increase 2022-2032
Agriculture, Open Space	4,749.16	30.44	4,892.54	20.65	143.38
Commercial – Central Business	22.59	0.14	23.56	0.10	0.97
Commercial – Heavy Business	497.06	3.19	512.42	2.16	15.36
Commercial – Light Business	60.56	0.39	62.75	0.26	2.19
Commercial – Medium Business	175.48	1.12	181.09	0.76	5.61
Industrial Heavy	395.13	2.53	406.98	1.72	11.85
Industrial Light	296.54	1.90	305.77	1.29	9.23
Manufactured Home	44.30	0.28	45.76	0.19	1.46
Planned Development	254.31	1.63	261.59	1.10	7.28
Public and Institutional	414.16	2.65	427.15	1.80	12.99
Residential - High-Density	654.00	4.19	673.90	2.84	19.90
Residential - Low-Density	997.32	6.39	1,027.53	4.34	30.21
Residential - Medium Density	1,462.21	9.37	1,506.07	6.36	43.86
Total	10,022.82	64.25	10,327.10	43.58	304.28

Table 4 shows ten-year growth projections of population for the roadway impact fee service areas. While growth is occurring in both service areas, it is anticipated that more growth will occur in the southern portion (Service Area 2) of the city.

Table 4: Ten-Year Population Projections for the Roadway Service Areas

	2022	2032	Net Growth (2022-2032)
Service Area 1	6,004	8,930	2,926
Service Area 2	9,596	14,765	5,169
Total	15,600	23,695	8,095

*Based on a 2022 estimate of **15,600** total population and a 2032 estimate of **23,695** total population

Table 5: Ten-Year Population Projections for the Water/Wastewater Service Areas

	2022	2032	Net Growth (2022-2032)
Water Service Area	15,675	23,810	8,135
Wastewater Service Area	15,600	23,695	8,095

Employment (Nonresidential Growth)

An employment growth rate was determined using interpolated values from the CAMPO demographics and from known ACS employment data. A reasonable compound annual growth rate was determined to be approximately 4.0%. Table 6 shows a summary of the employment projections for the roadway impact fee service areas. Currently, most of the employment is in service area 2 but growth will be assumed to take place at an equal rate in both service areas for the purpose of this analysis. If employment growth in Lockhart occurs at an average of 4.0% per year, a total employment of approximately 9,504 jobs could reasonably be expected by the year 2032 (ten years).

Table 6: Ten-Year Employment Projections for the Roadway Service Areas

	2022				2032				Net Growth (2022-2032)
	Basic	Service	Retail	Total	Basic	Service	Retail	Total	
Service Area 1	573	1,316	357	2,247	849	1,948	529	3,326	1,079
Service Area 2	1,065	2,444	664	4,173	1,577	3,618	983	6,178	2,005
Total	1,638	3,760	1,021	6,420	1,490	1,961	6,053	9,504	3,084

*Based on a 2022 estimate of **6,420** total jobs and a 2032 estimate of **9,504** total jobs

Summary

- Lockhart presently contains approximately 10,022 acres within the City limits
- Existing estimated population of Lockhart in 2022 is 15,600 persons with 6,420 employed persons in the city.
 - The population in the water and wastewater service areas is 15,675 and 15,600, respectively.
- An average annual growth rate of 4.25% was used to calculate the Lockhart ten-year (2022-2032) population growth projection.
 - The ten-year growth projection for Lockhart is an increase from 15,600 to 23,695 persons, representing a net growth of 8,095 persons total.
 - The ten-year growth projection for water service area is forecasted to increase by an additional 115 persons, from 15,675 to 23,810, for a total net growth of 8,135 persons.
 - The ten-year growth projection for wastewater service area is forecasted to have no increase in population outside the city limits and will be 23,695.
- An average annual growth of 4.00% was used to calculate the Lockhart ten-year employment growth projection.
 - The ten-year employment is to grow from 6,420 to 9,504 jobs, representing a net growth of 3,084 jobs total.
- The ultimate holding capacity for population growth within the city (roadway service areas 1 and 2) is expected to accommodate the projected 10-year growth.