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TECHNICAL REPORT

Roadway Impact Fee Update Final Report



2017 Impact Fee Study
City of Lockhart, Texas

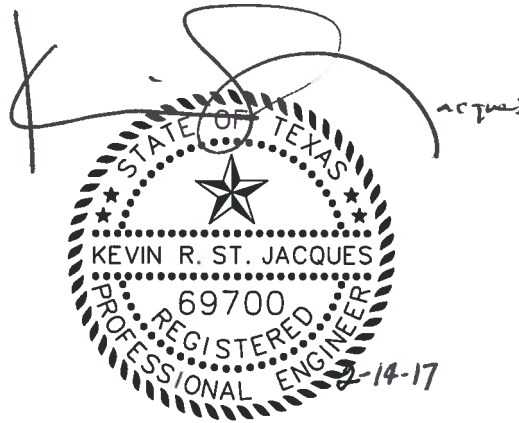
February 2017

Roadway Impact Fee Update

February 2017

Prepared for:

City of Lockhart



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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 second generational update to the initial system adopted in 2001. Since its inception, the roadway impact fee system has been updated once in 2007.

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 contained in the “Land Use Assumption for the Impact Fees” report dated December 2016, which was presented to the Impact Fee Advisory Committee (IFAC) in December 2016.

As a funding mechanism for roadway improvements, impact fees allow cities to recover the costs associated with new or facility expansion in order 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 in November 2016, 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 used the 2016 Land Use Assumptions Report in conjunction with the revised Land Use Equivalency Table. Projected growth between the years 2016 and 2026 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, Ninth 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. Transportation 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 coincide with the current city limits in order to address incorporations that were not part of the previous study. These annexations resulted in the total city limits falling outside the six-mile limit leading to a revised service area structure that splits the city in half. This new service area structure provides flexibility in the program for future annexations. A combination of infrastructure 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 railroad.

The updated service area structure for Lockhart is illustrated in **Figure 2-2**.

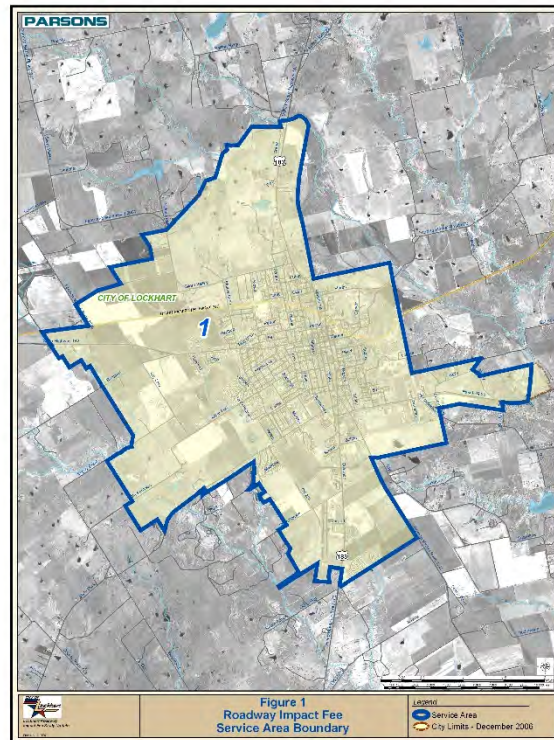


Figure 2-1: 2007 Roadway Service Area

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.

BASE YEAR DATA

Using the City's historical growth trends and data, the 2016 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 the 2016 Land Use Assumption Report located in **Appendix G**.

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 2016

Housing Units ⁽¹⁾	4,922
Population ⁽²⁾	13,459
Total Employment ⁽³⁾	5,832
<i>Basic</i>	1,311
<i>Service</i>	2,696
<i>Retail</i>	1,352
<i>Institutional</i>	473

⁽¹⁾ Estimated from New Construction Permit Log 2007-Sept. 30, 2016, City of Lockhart

⁽²⁾ Population estimate, City of Lockhart

⁽³⁾ Estimate derived from CAMPO Database

LAND USE ASSUMPTIONS SUMMARY

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 as projected in the Comprehensive Plan.

Growth Rate

An approximate 2.25 percent average annual growth rate was determined by the IFAC to be a reasonable rate at which Lockhart 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 residential construction and development of new retail facilities on major transportation corridors (SH 130) and the Texas Water Development Board growth projections of 2.04 percent by 2030, a 2.25 percent growth rate should be feasible and reasonable for planning purposes. The anticipated development spurred by the SH 130 corridor along with the largely agricultural or undeveloped land within Lockhart provides good potential for growth in the coming years.

Employment growth rate was determined using interpolated values from the Capital Area Metropolitan Planning Organization (CAMPO) demographics. This compound annual growth rate was determined to be approximately 3.9 percent.

TEN-YEAR PROJECTION

Table 3-2 shows ten-year compound annual growth projections of population for the roadway impact fee service areas. It is anticipated that most residential growth will happen 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.

LAND USE ASSUMPTIONS SUMMARY

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

	2016		2026		Net Growth (2016-2026)	
	Housing Units	Population	Housing Units	Population	Housing Units	Population
Service Area 1	1,738	4,765	2,171	5,896	433	1,131
Service Area 2	3,184	8,694	3,977	10,917	793	2,223
Total	4,922	13,459	6,148	16,813	1,226	3,354

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

	2016					2026					Difference Between 2016 and 2026
	Employment (Persons)					Employment (Persons)					
	Basic	Service	Retail	Inst.	Total	Basic	Service	Retail	Inst.	Total	
Service Area 1	393	809	406	142	1,750	753	1,600	796	259	3,408	1,658
Service Area 2	918	1,887	946	331	4,082	1,129	2,400	1,194	389	5,112	1,030
Total	1,311	2,696	1,352	473	5,832	1,882	4,000	1,990	648	8,520	2,688

ULTIMATE LAND AREA CAPACITY FOR POPULATION GROWTH

The roadway Service Area 1 has a total of 3,751 vacant acres and roadway Service Area 2 has a total of 3,341 vacant acres. Assuming (1) two-thirds of the vacant acreage within the service areas develops as residential (densities for single-family, two-family, and multi-family reasonably applied), (2) a 98 percent occupancy rate, and (3) approximately 2.79 persons per household, the vacant acreage within the roadway Service Area 1 could support approximately 19,038 people and the vacant acreage in Service Area 2 could support approximately 16,963 people. Including the existing population in each service area, the ultimate holding capacity of the roadway Service Area 1 is approximately 23,803 people and the holding capacity of the roadway Service Area 2 is approximately 20,147 people. This means the ultimate capacity of the current city limits is 43,950. At a 2.25% growth rate, this population would not be reached until 2069.

LAND USE ASSUMPTIONS SUMMARY

SUMMARY

- Lockhart presently contains approximately 10,024 acres within the City limits, of which 69 percent is either agricultural or undeveloped land (see **Appendix G**).
- Existing estimated population of Lockhart in 2016 is 13,459 persons with 5,831 employed persons in the city.
- An average annual growth rate of 2.25 percent was used to calculate the Lockhart ten-year population growth projection.
- The ten-year (2016-2026) growth projection for Lockhart is to grow to 17,191, a net growth of 3,354.
- The ten-year (2016-2026) employment projection is to grow to 8,520, representing an employment growth rate of approximately 3.9% and a net growth of 2,688.
- The ultimate capacity for population growth in roadway service areas 1 and 2 will more than accommodate the projected 10-year growth.

Table 3-4: 10-Year Growth Projections

	2016	2026	Total Increase
Population (Persons)			
Lockhart Total	13,459	16,813	3,354
Service Area 1	4,765	5,896	1,131
Service Area 2	8,694	10,917	2,223
Employment (Employees)			
Lockhart Total	5,832	8,520	2,688
Service Area 1	1,750	3,408	1,658
Basic	393	753	360
Retail	809	1,600	791
Service	406	796	390
Institutional	142	259	117
Service Area 2	4,082	5,112	1,030
Basic	918	1,129	211
Retail	1,887	2,400	513
Service	946	1,194	248
Institutional	331	389	58

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:

ROADWAY IMPACT FEE SERVICE UNITS

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

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 November 2016) 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 Ninth 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 3,200 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.

ROADWAY IMPACT FEE SERVICE UNITS

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 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	Ave. Trip Rate	Pass By Rate	Diverted Trips	Ave. Trip Rate w/ Deductions
Residential						
* Single-Family Detached Housing	210	DU	1.00	0%	0%	1.00
Multi-Family	220	DU	0.62	0%	0%	0.62
Residential Condominium / Townhouse	230	DU	0.52	0%	0%	0.52
Retirement Housing	251	DU	0.27	0%	0%	0.27
Office						
* General Office	710	1000 sq. ft.	1.49	0%	0%	1.49
Medical-Dental Office	720	1000 sq. ft.	3.46	0%	0%	3.46
Research and Development Center	760	1000 sq. ft.	1.07	0%	0%	1.07
Retail / Commercial						
* Retail	820	1000 sq. ft.	3.71	34%	26%	1.48
Restaurant	932	1000 sq. ft.	9.85	43%	26%	3.11
Fast Food Restaurant	934	1000 sq. ft.	32.65	50%	23%	8.72
Drinking Place	925	1000 sq. ft.	11.34	43%	26%	3.58
Convenience Store/Gas Station	853	1000 sq. ft.	50.92	63%	26%	5.60
Super Market	850	1000 sq. ft.	9.48	36%	38%	2.48
Pharmacy/Drugstore with drive thru	881	1000 sq. ft.	9.91	49%	13%	3.77
Bank	912	1000 sq. ft.	24.30	47%	26%	6.64
Hotel	310	Rooms	0.60	0%	0%	0.60
Auto Service	942	1000 sq. ft.	3.11	0%	0%	3.11
Automobile Sales	841	1000 sq. ft.	2.62	40%	0%	1.57
Building Materials and Lumber Store	812	1000 sq. ft.	4.49	25%	0%	3.37
Home Improvement Superstore	862	1000 sq. ft.	2.33	48%	24%	0.65
Furniture Store	890	1000 sq. ft.	0.45	53%	31%	0.07
Golf Course	430	Holes	2.92	0%	0%	2.92
Golf Driving Range	432	Tees	1.25	0%	0%	1.25
Movie Theater with Matinee	444	Seats	0.07	15%	0%	0.06
Indoor Entertainment/Amusement	480	Acres	3.95	0%	0%	3.95
Outdoor Multipurpose Recreation Center	435	1000 sq. ft.	3.58	0%	0%	3.58
Light Industrial						
* General Light Industrial	110	1000 sq. ft.	0.97	0%	0%	0.97
Manufacturing	140	1000 sq. ft.	0.73	0%	0%	0.73
Warehousing	150	1000 sq. ft.	0.32	0%	0%	0.32
Self-Storage Facilities	151	1000 sq. ft.	0.26	0%	0%	0.26
Institutional						
Elementary School	520	Students	0.15	0%	0%	0.15
Junior High	522	Students	0.16	0%	0%	0.16
High School	530	Students	0.13	0%	0%	0.13
Community/Technical College	540	Students	0.12	0%	0%	0.12
Private School (K-8)	534	Students	0.60	0%	0%	0.60
Day Care Center	565	Students	0.81	76%	0%	0.19
Hospital	610	Beds	1.42	0%	0%	1.42
Assisted Living / Nursing Home	254/620	Beds	0.22	0%	0%	0.22
Place of Worship	560	1000 sq. ft.	0.55	0%	0%	0.55
Activity Center	495	1000 sq. ft.	2.74	0%	0%	2.74
U.S. Post Office	732	1000 sq. ft.	11.22	70%	0%	3.37
Detention Facility	571	Beds	0.05	0%	0%	0.05
* Others Not Specified		1000 sq. ft.	0.47	0%	0%	0.47

ROADWAY IMPACT FEE SERVICE UNITS

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 not 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 generated by the Texas Turnpike Authority's (TTA) Austin-San Antonio Super Regional Model, February 2000 and a tri-county travel survey conducted by CAMPO in 1997. Travel characteristics were used to determine average trip lengths for common land use types.

Table 4-2 summarizes the average trip lengths compiled from the forecast model. 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 by the TTA model and the CAMPO survey 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	Ave. Trip Length
Residential			
* Single-Family Detached Housing	210	2.32	1.16
Multi-Family	220	2.32	1.16
Residential Condominium / Townhouse	230	2.32	1.16
Retirement Housing	251	2.00	1.00
Office			
* General Office	710	2.32	1.16
Medical-Dental Office	720	2.00	1.00
Research and Development Center	760	2.00	1.00
Retail / Commercial			
* Retail	820	2.00	1.00
Restaurant	932	2.00	1.00
Fast Food Restaurant	934	2.00	1.00
Drinking Place	925	2.00	1.00
Convenience Store/Gas Station	853	1.60	0.80
Super Market	850	2.00	1.00
Pharmacy/Drugstore with drive thru	881	2.00	1.00
Bank	912	2.00	1.00
Hotel	310	2.00	1.00
Auto Service	942	2.00	1.00
Automobile Sales	841	2.00	1.00
Building Materials and Lumber Store	812	2.00	1.00
Home Improvement Superstore	862	2.00	1.00
Furniture Store	890	2.00	1.00
Golf Course	430	2.00	1.00
Golf Driving Range	432	2.00	1.00
Movie Theater with Matinee	444	2.00	1.00
Indoor Entertainment/Amusement	480	2.00	1.00
Outdoor Multipurpose Recreation Center	435	2.00	1.00
Light Industrial			
* General Light Industrial	110	2.38	1.19
Manufacturing	140	2.38	1.19
Warehousing	150	2.40	1.20
Self-Storage Facilities	151	2.00	1.00
Institutional			
Elementary School	520	1.60	0.80
Junior High	522	2.00	1.00
High School	530	2.00	1.00
Community/Technical College	540	2.00	1.00
Private School (K-8)	534	2.00	1.00
Day Care Center	565	1.60	0.80
Hospital	610	2.00	1.00
Assisted Living / Nursing Home	254/620	2.00	1.00
Place of Worship	560	2.00	1.00
Activity Center	495	2.00	1.00
U.S. Post Office	732	2.00	1.00
Detention Facility	571	2.40	1.20
* Others Not Specified		2.00	1.00

ROADWAY IMPACT FEE SERVICE UNITS

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	Ave. Trip Rate w/ Deductions	Ave. Trip Length	Veh-Mi Per Dev Unit
Residential					
* Single-Family Detached Housing	210	DU	1.00	1.16	1.16
Multi-Family	220	DU	0.62	1.16	0.72
Residential Condominium / Townhouse	230	DU	0.52	1.16	0.60
Retirement Housing	251	DU	0.27	1.00	0.27
Office					
* General Office	710	1000 sq. ft.	1.49	1.16	1.73
Medical-Dental Office	720	1000 sq. ft.	3.46	1.00	3.46
Research and Development Center	760	1000 sq. ft.	1.07	1.00	1.07
Retail / Commercial					
* Retail	820	1000 sq. ft.	1.48	1.00	1.48
Restaurant	932	1000 sq. ft.	3.11	1.00	3.11
Fast Food Restaurant	934	1000 sq. ft.	8.72	1.00	8.72
Drinking Place	925	1000 sq. ft.	3.58	1.00	3.58
Convenience Store/Gas Station	853	1000 sq. ft.	5.60	0.80	4.48
Super Market	850	1000 sq. ft.	2.48	1.00	2.48
Pharmacy/Drugstore with drive thru	881	1000 sq. ft.	3.77	1.00	3.77
Bank	912	1000 sq. ft.	6.64	1.00	6.64
Hotel	310	Rooms	0.60	1.00	0.60
Auto Service	942	1000 sq. ft.	3.11	1.00	3.11
Automobile Sales	841	1000 sq. ft.	1.57	1.00	1.57
Building Materials and Lumber Store	812	1000 sq. ft.	3.37	1.00	3.37
Home Improvement Superstore	862	1000 sq. ft.	0.65	1.00	0.65
Furniture Store	890	1000 sq. ft.	0.07	1.00	0.07
Golf Course	430	Holes	2.92	1.00	2.92
Golf Driving Range	432	Tees	1.25	1.00	1.25
Movie Theater with Matinee	444	Seats	0.06	1.00	0.06
Indoor Entertainment/Amusement	480	Acres	3.95	1.00	3.95
Outdoor Multipurpose Recreation Center	435	1000 sq. ft.	3.58	1.00	3.58
Light Industrial					
* General Light Industrial	110	1000 sq. ft.	0.97	1.19	1.15
Manufacturing	140	1000 sq. ft.	0.73	1.19	0.87
Warehousing	150	1000 sq. ft.	0.32	1.20	0.38
Self-Storage Facilities	151	1000 sq. ft.	0.26	1.00	0.26
Institutional					
Elementary School	520	Students	0.15	0.80	0.12
Junior High	522	Students	0.16	1.00	0.16
High School	530	Students	0.13	1.00	0.13
Community/Technical College	540	Students	0.12	1.00	0.12
Private School (K-8)	534	Students	0.60	1.00	0.60
Day Care Center	565	Students	0.19	0.80	0.16
Hospital	610	Beds	1.42	1.00	1.42
Assisted Living / Nursing Home	254/620	Beds	0.22	1.00	0.22
Place of Worship	560	1000 sq. ft.	0.55	1.00	0.55
Activity Center	495	1000 sq. ft.	2.74	1.00	2.74
U.S. Post Office	732	1000 sq. ft.	3.37	1.00	3.37
Detention Facility	571	Beds	0.05	1.20	0.06
* Others Not Specified		1000 sq. ft.	0.47	1.00	0.47

*This category also represents service unit equivalency for land uses not specified in this category. Actual equivalency may vary and may be demonstrated by property owner to be different pursuant to city guidelines.

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 22 locations in November 2016. 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	22,732	7,665	15,067	0
2	29,125	9,987	19,138	0
Total	51,857	17,652	34,205	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 2016 and 2026.

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, the ten-year VMT was 3,270. This ten-year VMT of 3,868 for 2016 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	2,014
2	1,854
TOTAL	3,868

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 CIP 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 CIP 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 CIP, 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

PROJECTED CONDITIONS ANALYSIS

costs, attorney fees, and expert witness fees; and fees actually 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.”

“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 CIP.

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 in order 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 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 120' right-of-way for an arterial road was needed and 80' of right-of-way currently existed, only 40' would be considered in the acquisition cost.

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 principle and interest on bonds, notes, or other obligations issued by the city to finance capital

PROJECTED CONDITIONS ANALYSIS

improvements identified in the impact fee capital improvements plans. They cannot be used to reimburse bond funds for other facilities.

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, 2016.

Capital Improvements Plan

During the study process, several projects were added or removed in the capital improvement projects listing from the 2007 impact fee program. The projects added were either projects that were completed and have now been fully funded or projects that are no longer seen as likely projects to be implemented. These projects include:

- East MLK Jr. Industrial Blvd. (US 183 to Industrial Blvd.)
- Clear Fork (250' W. of Creek Bridge to Bramhall)
- Trinity (Ruddy to Live Oak)
- Commerce (Pecan to US 183)
- Center (Guadalupe to Main)
- Medina (Center to Clear Fork)

Project additions that were identified by city staff include:

- Borchert (City Line to W. San Antonio)
- Maple (City Line to SH 130)
- Clear Fork (1150' W. of City Line to City Line)

PROJECTED CONDITIONS ANALYSIS

- Main (State Park to Blackjack)
- FM 20 Realignment (W. of Guadalupe to Colorado)
- MLK Jr. Industrial Blvd. (McMillen extension to Colorado)
- MLK Jr. Industrial Blvd. extension (Commerce to E. MLK Jr. Industrial)

The updated CIP consist of 14 project segments. Only those segments of projects lying within or along the city limits were included in the traffic impact capital improvements plan.

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 - \$0.75/s.f.
- Debt service – 2% compounded annually over 20 years

Additionally, impact fee study update costs were included to the project costs at a rate of two five-year updates at \$25,000 each. The cost for the revised IFCIP program totals approximately \$30.7 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

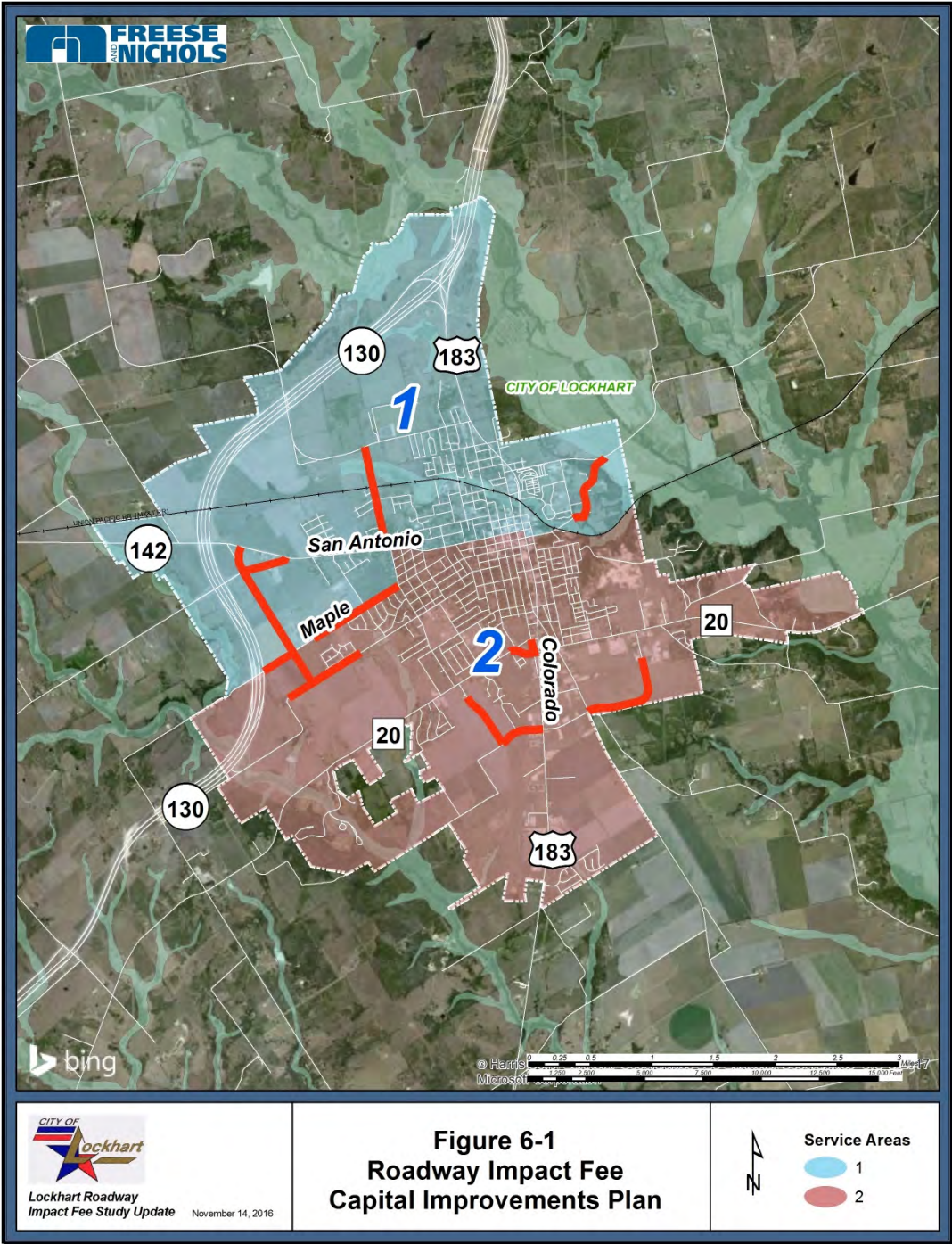


Figure 6-1: Roadway Impact Fee Projects

PROJECTED CONDITIONS ANALYSIS

Table 6-2: Roadway Impact Fee Project Listing

**Lockhart Roadway Impact Fee Study Update
Roadway Capital Improvements Plan**

Serv Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	Pct. in Serv. Area	Total Project Cost
1	Stueve Lane	W. San Antonio	FM 2001 (Silent Valley)	0.85	2	UC	100%	\$3,477,112
1	Market	Carver	FM 672 (Flores)	0.63	2	UC	100%	\$2,321,832
1	Borchert	City Line	W. San Antonio	0.37	2	UC	100%	\$1,358,658
1/2	Maple	San Jacinto	1000' East of City Line	0.81	4	UC	50%	\$1,692,916
1/2	Maple	City Line	SH 130	0.28	3	SC	50%	\$524,780
1	City Line	Maple	W. San Antonio	0.98	5	SA	100%	\$5,133,614
Sub-total SA 1				3.93				\$14,508,912
2	Clear Fork	1150' W. of City Line	City Line	0.22	2	UC	100%	\$811,385
2	Clear Fork	City Line	250' W. of Creek Bridge	0.55	2	UC	100%	\$2,001,309
2/1	Maple	San Jacinto	1000' East of City Line	0.81	4	UC	50%	\$1,692,916
2/1	Maple	City Line	SH 130	0.28	3	SC	50%	\$524,780
2	McMillen	Ex. McMillen End	MLK Jr Industrial	0.60	2	UC	100%	\$2,592,918
2	Main	State Park	Blackjack	0.11	3	SC	100%	\$413,551
2	FM 20 Realignment	W. of Guadalupe	Colorado	0.41	2	UA	100%	\$1,843,565
2	MLK Jr Industrial	McMillen Ext.	Colorado	0.36	4	UA	100%	\$1,432,306
2	MLK Jr Industrial Ext.	Commerce	E MLK Jr Industrial	0.82	2	UA	100%	\$3,387,359
2	City Line	Clear Fork	Maple	0.29	5	SA	100%	\$1,532,636
Sub-total SA 2				4.46				\$16,232,725
				8.39				\$30,741,637

Totals:	Engineering Cost	\$1,585,752
	Right-of-Way Cost	\$958,711
	Construction Cost	\$22,653,600
	Finance Cost	\$5,543,574
<hr/>		
	TOTAL NET COST	\$30,741,637
	Future Impact Fee Update Cost **	\$50,000
<hr/>		
	TOTAL IMPLEMENTATION COST	\$30,791,637

PROJECTED CONDITIONS ANALYSIS

Projected Vehicle-Miles Capacity Available for New Growth

The vehicle-miles of new capacity supply were calculated similar to 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 CIP 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 to properly account for new “net” availability. **Table 6-3** depicts net availability of supply by the CIP. **Appendix D** details capacity calculations provided by the CIP program.

Table 6-3: Vehicle-Miles of New Capacity Supplied

SERVICE AREA	VEH-MILES OF NEW CAPACITY SUPPLIED	VEH-MILES OF EXISTING UTILIZATION	VEH-MILES OF DEFICIENCIES	VEH-MILES OF NET CAPACITY SUPPLIED
1	5,569	349	0	5,220
2	5,624	367	0	5,257
Total	11,193	716	0	10,477

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 CIP 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 CIP 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 PROPOSED IFCIP PROJECTS (INCLUDING IMPACT FEE UPDATE COST)	TOTAL COST OF PROPOSED IFCIP PROJECTS (WITH 50% CIP CREDIT)	COST OF NET CAPACITY SUPPLIED (WITH 50% CIP CREDIT)
1	\$14,533,790	\$7,266,895	\$6,811,627
2	\$16,257,847	\$8,128,923	\$7,598,618
Total	\$30,791,637	\$15,395,818	\$14,411,263

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 particular 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 CIP 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 CIP 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 CIP 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 generally 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	\$2,608	\$1,304
2	\$2,890	\$1,445

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 \$1,304.00

Single-Family Dwelling

$$1 \text{ dwelling unit} \times 1.16 \text{ vehicle-miles/dwelling unit} = 1.16 \text{ vehicle-miles}$$

$$1.16 \text{ vehicle-miles} \times \$1,304.00/\text{vehicle-mile} = \$1,512.64$$

20,000 square foot (s.f.) Office Building

$$20 \text{ (1,000 s.f. units)} \times 1.73 \text{ vehicle-miles/1,000 s.f. units} = 34.60 \text{ vehicle-miles}$$

$$34.60 \text{ vehicle-miles} \times \$1,304.00/\text{vehicle-mile} = \$45,118.40$$

100,000 s.f. Retail Center

$$100 \text{ (1,000 s.f. units)} \times 1.48 \text{ vehicle-miles/1,000 s.f. units} = 148.00 \text{ vehicle-miles}$$

$$148.00 \text{ vehicle-miles} \times \$1,304.00/\text{vehicle-mile} = \$192,992.00$$

Chapter 8 Conclusion

Chapter 395 authorizes the assessment and collection of impact fees in Texas for transportation, 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 were created in Lockhart. Annexation since the last update required a revised service area structure to include the full city limits. This service area structure was configured so that no point is greater than the six-mile maximum set forth by law. The six-mile limit ensures that roadway improvements are in close proximity to 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 through the use of published trip generation data and average trip length. The PM peak hour is used as the time period 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 compiled in the Austin-San Antonio Super Regional Model by the Texas Turnpike Authority.

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 51,857 vehicle-miles of capacity. The existing demand placed on the system was determined to be 17,652 vehicle-miles. Evaluation of the existing roadway system found no deficiencies on the existing roadway network.

CONCLUSION

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 3,868.

Lockhart City Staff identified the roadway impact fee capital improvements program for the 10-year planning period. Projects eligible for this CIP 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 \$30.7 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 \$5.9 million and represents 36.9% of the net capacity made available for development by impact fee roadway projects. The recommended CIP program will provide 10,477 vehicle-miles of new net capacity.

The *actual* cost per service unit was calculated to be \$2,608.00 in Service Area 1 and \$2,890 in Service Area 2 and was based on the total cost of net capacity supplied by the CIP and the demand attributable to new development over the 10-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 \$1,304.00 in Service Area 1 and \$1,445 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 10-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 CIP 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 of time or the total of all trips entering and exiting a site during that designated time. Used in the development of 10-year traffic demand projections

APPENDICES

and the equivalency table. Based primarily on data prepared by the Institute of Transportation Engineers (ITE).

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 a 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 in excess of 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.

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Lockhart Roadway Impact Fee Study Update Existing Capital Improvements Analysis

Serv Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	PM Peak Capacity/Lane	Pct. In Serv. Area	Peak Hour Volume			VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	Exist. VMT Deficiency
									A	B	Total				
1	Colorado (US183)	N. City Limits	Silent Valley	1.87	4	UA	600	100%	535	598	1133	4488	2119	2369	0
1	Colorado (US183)	Silent Valley	UP RR	0.78	4	UA	600	100%	556	621	1177	1872	918	954	0
1	Colorado (US183)	UP RR	Pecan St	0.11	4	UA	600	100%	556	621	1177	264	129	135	0
1	Colorado (US183)	Pecan St	San Antonio (SH142)	0.11	5	SA	700	100%	556	621	1177	385	129	256	0
1/2	Colorado (US183)	San Antonio (SH142)	Market	0.06	5	SA	700	50%	686	0	686	105	41	64	0
1	Silent Valley (FM2001)	N. City Limits	Stueve Lane	0.79	2	UA	600	100%	59	85	144	948	114	834	0
1	Silent Valley (FM2001)	Stueve Lane	Colorado (US183)	0.88	2	UA	600	100%	143	207	350	1056	308	748	0
1	Flores (FM 672)	Colorado (US183)	E. City Limit	0.99	2	UA	600	100%	71	50	121	1188	120	1068	0
1	San Antonio (SH142)	W. City Limits	Borchert	1.53	2	UA	600	100%	458	455	913	1836	1397	439	0
1	San Antonio (SH142)	Borchert	San Jacinto	0.85	2	UA	600	100%	458	455	913	1020	776	244	0
1/2	San Antonio (SH142)	San Jacinto	Colorado (US183)	1.06	2	UA	600	50%	0	364	364	636	386	250	0
1	Commerce	Colorado (US183)	San Antonio (SH142)	0.59	2	UC	500	100%	58	76	134	590	79	511	0
1	Blanco	San Antonio (SH142)	Olive	0.55	2	UC	500	100%	140	191	331	550	182	368	0
1	Blanco	Olive	Colorado (US183)	0.40	2	UC	500	100%	140	191	331	400	132	268	0
1	Pecos	Bois D'Arc	Silent Valley	0.76	2	UC	500	100%	49	62	111	760	84	676	0
1/2	San Jacinto	Maple	San Antonio (SH142)	0.29	2	UC	500	50%	0	196	196	145	57	88	0
1	Stueve Lane	San Antonio (SH142)	Silent Valley	0.85	2	UC	500	100%	73	97	170	850	145	706	0
1	City Line Road	Borchert	San Antonio (SH142)	0.25	2	UA	600	100%	46	54	100	300	25	275	0
1	City Line Road	Maple	Borchert	0.77	2	UA	600	100%	46	54	100	924	77	847	0
1	Mockingbird	Maple	San Antonio (SH142)	0.50	2	UC	500	100%	51	58	109	500	55	446	0
1	FM2720	San Antonio (SH142)	N. City Limit	0.63	2	UC	500	100%	44	54	98	630	62	568	0
1	Pecan	Colorado (US183)	Blanco	0.25	2	UC	500	100%	112	77	189	250	47	203	0
1	Bois D'Arc	Blanco	Medina	0.54	2	UC	500	100%	151	134	285	540	154	386	0
1	Bois D'Arc	Medina	San Antonio (SH142)	0.30	2	UC	500	100%	64	36	100	300	30	270	0
1	Borchert	San Antonio (SH142)	W. City Limit	0.90	2	UC	500	100%	26	34	60	900	54	846	0
1	Carver	Market	End	0.36	2	UC	500	100%	4	43	47	360	17	343	0
1/2	Market	Colorado (US183)	RR	0.27	2	UC	500	50%	0	8	8	135	2	133	0
1	Market	RR	Flores	0.80	2	UC	500	100%	25	8	33	800	26	774	0
Sub-Total				18.04								22,732	7,665	15,067	0
2/1	Colorado (US183)	San Antonio (SH142)	Market	0.06	5	SA	700	50%	0	767	767	105	46	59	0
2	Colorado (US183)	Market	Hickory	0.26	5	SA	700	100%	686	767	1453	910	378	532	0
2	Colorado (US183)	Hickory	Commerce	0.37	5	SA	700	100%	686	767	1453	1295	538	757	0
2	Colorado (US183)	Commerce	FM20 East	0.28	5	SA	700	100%	686	767	1453	980	407	573	0
2	Colorado (US183)	FM20 East	CR 220	0.91	4	UA	600	100%	826	787	1613	2184	1468	716	0
2	Colorado (US183)	CR 220	S. City Limit	1.42	4	UA	600	100%	826	787	1613	3408	2290	1118	0
2/1	San Antonio (SH142)	San Jacinto	Colorado (US183)	1.06	2	UA	600	50%	311	0	311	636	330	306	0
2	FM20 West	W. City Limits	San Jacinto	1.19	2	UA	600	100%	94	107	201	1428	239	1189	0
2	FM20 West	San Jacinto	Colorado (US183)	0.80	2	UA	600	100%	285	325	610	960	488	472	0
2	FM20 East	Colorado (US183)	FM 1322 (Brownsboro)	0.14	2	UA	600	100%	378	174	552	168	77	91	0
2	FM20 East	FM 1322 (Brownsboro)	Old McMahan Trail	0.87	2	UA	600	100%	284	130	414	1044	360	684	0
2	FM20 East	Old McMahan Trail	E. City Limit	1.43	2	UA	600	100%	284	130	414	1715	592	1123	0
2	Commerce	San Antonio (SH142)	Live Oak	0.19	2	UC	500	100%	107	109	216	190	41	149	0
2	Commerce	Live Oak	Colorado (US183)	0.53	2	UC	500	100%	107	109	216	530	114	416	0
2	Commerce	Colorado (US183)	SH 20 East	0.25	2	UA	600	100%	107	109	216	300	54	246	0
2	FM 1322 (Brownsboro)	SH 20 East	S. City Limit	1.72	2	UA	600	100%	122	131	253	2064	435	1629	0
2	Main	State Park	Live Oak	0.66	2	UC	500	100%	115	89	204	660	135	525	0
2	Main	Live Oak	San Antonio (SH142)	0.19	2	UC	500	100%	171	167	338	190	64	126	0
2	Guadalupe	State Park	Center	0.31	2	UC	500	100%	9	33	42	310	13	297	0
2	Guadalupe	Center	San Antonio (SH142)	0.60	2	UC	500	100%	41	51	92	600	55	545	0
2	Medina	State Park	Clear Fork	0.61	2	UC	500	100%	70	56	126	610	77	533	0
2	San Jacinto	State Park	Clear Fork	0.63	2	UC	500	100%	208	222	430	630	271	359	0
2	San Jacinto	Clear Fork	San Antonio (SH142)	0.30	2	UC	500	100%	184	196	380	300	114	186	0
2/1	San Jacinto	Maple	San Antonio (SH142)	0.29	2	UC	500	50%	184	0	184	145	53	92	0
2	Mockingbird	Clear Fork	San Antonio (SH142)	0.29	2	UC	500	100%	51	58	109	290	32	258	0
2	City Line Road	Clear Fork	Maple	0.29	2	UA	600	100%	46	54	100	348	29	319	0
2	Prairie Lea	Colorado (US183)	Guadalupe	0.33	2	UC	500	100%	77	121	198	330	65	265	0
2	Prairie Lea	Guadalupe	San Jacinto	0.77	2	UC	500	100%	77	121	198	770	152	618	0
2	Live Oak	Guadalupe	Colorado (US183)	0.33	2	UC	500	100%	185	243	428	330	141	189	0
2	Live Oak	Brazos	Monument	0.34	2	UC	500	100%	93	122	215	340	73	267	0
2	Clear Fork	Frio	San Jacinto	0.56	2	UC	500	100%	120	171	291	560	163	397	0
2	Clear Fork	San Jacinto	City Line Road	0.99	2	UC	500	100%	120	171	291	990	288	702	0
2	Center	Medina	San Jacinto	0.59	2	UC	500	100%	56	53	109	590	64	526	0
2	Center	Medina	San Jacinto	0.25	2	UC	500	100%	56	53	109	250	27	223	0
2	Trinity	SH 20 East	Pin Oak	0.32	2	UC	500	100%	54	82	136	320	44	276	0
2	Trinity	Pin Oak	Live Oak	0.45	2	UC	500	100%	70	79	149	450	67	383	0
2	Pancho	FM20 East	Fifth	0.13	2	UC	500	100%	17	32	49	130	6	124	0
2	Torres	FM20 East	Fifth	0.14	2	UC	500	100%	7	10	17	140	2	138	0
2/1	Market	Colorado (US183)	RR	0.27	2	UC	500	50%	25	0	25	135	7	128	0
2	Pin Oak	Colorado (US183)	Trinity	0.14	2	UC	500	100%	15	10	25	140	4	137	0
2	Bulkin	Colorado (US183)	FM 1322 (Brownsboro)	0.27	2	UC	500	100%	46	54	100	270	27	243	0
2	MLK Jr Industrial Blvd	Cunningham	FM 1322 (Brownsboro)	1.01	2	UC	500	100%	71	60	131	1010	132	878	0
2	Old McMahan Trail	FM20 East	S. City Limit	0.37	2	UC	500	100%	40	23	63	370	23	347	0
Sub-Total				22.91								29,125	9,987	19,138	0
Total				40.95								51,857	17,652	34,205	0

APPENDIX C: CALCULATION OF VEHICLE-MILES OF NEW
DEMAND

APPENDICES

2016-2026 Vehicle-Mile Trip Generation by Service Area

Based on December 2016 Land Use Assumptions Report, ITE 9th-Trip Gen., Avg Mean Trip Lengths-1997 Austin Area Survey (Tri-County)

Estimated Residential Growth Vehicle-Mile Trip Generation

Service Area	Added Dwelling Units	Vehicle-Miles per DU	Total Vehicle-Miles
1	433	1.16	502
2	794	1.16	921

	Trip Rate	Trip Length	LUE
SF Res	1	1.160	1.16
Basic Employ	0.97	1.190	1.15
Service Employ	1.49	1.160	1.73
Retail Employ	1.48	1.000	1.48

Estimated Basic Employment Growth Vehicle-Mile Generation

Service Area	Added Employees	Square Feet per emp.	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	360	1205	433,800	1.15	501
2	211	1205	254,255	1.15	293

Estimated Service Employment Growth Vehicle-Mile Generation

Service Area	Added Employees	Square Feet per emp.	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	908	350	317,800	1.73	549
2	571	350	199,850	1.73	345

Estimated Retail Employment Growth Vehicle-Mile Generation

Service Area	Added Employees	Square Feet per emp.	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	390	800	312,000	1.48	462
2	248	800	198,400	1.48	294

2016-2026 Vehicle-mile Generation Summary

Service Area	Residential Growth Vehicle-Miles	Basic Growth Vehicle-Miles	Service Growth Vehicle-Miles	Retail Growth Vehicle-Miles	Total Growth Vehicle-Miles
1	502	501	549	462	2,014
2	921	293	345	294	1,854
Total	1,423	794	895	755	3,868

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 Roadway Capital Improvements Plan

Serv Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	Pct. in Serv. Area	Peak Hour Volume			Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	CIF VMT Deficiency
								A	B	Total					
1	Stueve Lane	W. San Antonio	FM2001 (Silent Valley)	0.85	2	UC	100%	73	97	170	849	144	705	0	
1	Market	Carver	FM672 (Flores)	0.63	2	UC	100%	8	25	33	628	21	607	0	
1	Borchert	City Line	W. San Antonio	0.37	2	UC	100%	26	34	60	367	22	345	0	
1/2	Maple	San Jacinto	1000' East of City Line	0.81	4	UC	50%	0	0	0	814	0	814	0	
1/2	Maple	City Line	SH 130	0.28	3	SC	50%	0	50	50	156	14	142	0	
1	City Line						100%							0	
Sub-total SA 1											5569	349	5220	0	
2	Clear Fork	1150' W. of City Line	City Line	0.22	2	UC	100%	171	120	291	218	63	154	0	
2	Clear Fork	City Line	250' W. of Creek Bridge	0.55	2	UC	100%	171	120	291	549	160	389	0	
2/1	Maple	San Jacinto	1000' East of City Line	0.81	4	UC	50%	0	0	0	814	0	814	0	
2/1	Maple	City Line	SH 130	0.28	3	SC	50%	50	0	50	156	14	142	0	
2	McMillen	Ex McMillen End	MLK Jr Industrial	0.60	2	UC	100%	0	0	0	601	0	601	0	
2	Main	Slate Park	Blackjack	0.11	3	SC	100%	171	167	338	123	38	85	0	
2	FM20 Realignment	W. of Guadalupe	Colorado	0.41	2	UA	100%	0	0	0	489	0	489	0	
2	MLK Jr Industrial	McMillen Ext.	Colorado	0.36	4	UA	100%	60	71	131	874	48	826	0	
2	MLK Jr Industrial Ext.	Commerce	E MLK Jr Industrial	0.82	2	UA	100%	0	0	0	980	0	980	0	
2	City Line							75						0	
Sub-total SA 2											5624	367	5257	0	
											11,193	716	10,477	0	
											8.39				

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 Roadway Capital Improvements Plan

Serv Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	Pct. in Serv. Area	Project Status	Roadway Costs			Total Project Cost	
									Engineering	ROW	Construction		Finance
1	Stueve Lane	W. San Antonio	FM2001 (Silent Valley)	0.85	2	UC	100%	N	\$184,254	\$33,638	\$2,632,200	\$627,020	\$3,477,112
1	Market	Carver	FM672 (Flores)	0.63	2	UC	100%	N	\$122,878	\$24,863	\$1,755,400	\$418,691	\$2,321,832
1	Borchert	City Line	W. San Antonio	0.37	2	UC	100%	N	\$71,904	\$14,550	\$1,027,200	\$245,004	\$1,358,658
1/2	Maple	San Jacinto	1000' East of City Line	0.81	4	UC	50%	N	\$87,836	\$45,000	\$1,254,800	\$305,280	\$1,692,916
1/2	Maple	City Line	SH 130	0.28	3	SC	50%	N	\$27,773	\$5,625	\$396,750	\$94,632	\$524,780
1	City Line						100%						\$5,133,614
Sub-total SA 1									\$759,735	\$279,466	\$10,853,350	\$2,616,361	\$14,508,912
2	Clear Fork	1150' W. of City Line	City Line	0.22	2	UC	100%	N	\$42,945	\$8,625	\$613,500	\$146,315	\$811,385
2	Clear Fork	City Line	250' W. of Creek Bridge	0.55	2	UC	100%	N	\$107,317	\$0	\$1,533,100	\$360,892	\$2,001,309
2/1	Maple	San Jacinto	1000' East of City Line	0.81	4	UC	50%	N	\$87,836	\$45,000	\$1,254,800	\$305,280	\$1,692,916
2/1	Maple	City Line	SH 130	0.28	3	SC	50%	N	\$27,773	\$5,625	\$396,750	\$94,632	\$524,780
2	McMillen	Ex McMillen End	MLK Jr Industrial	0.60	2	UC	100%	N	\$129,703	\$142,740	\$1,852,900	\$467,575	\$2,592,918
2	Main	Slate Park	Blackjack	0.11	3	SC	100%	N	\$22,176	\$0	\$316,800	\$74,575	\$413,551
2	FM20 Realignment	W. of Guadalupe	Colorado	0.41	2	UA	100%	N	\$90,419	\$129,000	\$1,291,700	\$332,446	\$1,843,565
2	MLK Jr Industrial	McMillen Ext.	Colorado	0.36	4	UA	100%	N	\$73,976	\$43,245	\$1,056,800	\$258,285	\$1,432,306
2	MLK Jr Industrial Ext	Commerce	E MLK Jr Industrial	0.82	2	UA	100%	N	\$164,724	\$258,600	\$2,353,200	\$610,835	\$3,387,359
2	City Line												\$276,377
Sub-total SA 2									\$826,018	\$679,245	\$11,800,250	\$2,927,213	\$16,232,725
									\$1,585,752	\$958,711	\$22,653,600	\$5,543,574	\$30,741,637

Totals:

Engineering Cost	\$1,585,752
Right-of-Way Cost	\$958,711
Construction Cost	\$22,653,600
Finance Cost	\$5,543,574

TOTAL NET COST	\$30,741,637
Future Impact Fee Update Cost**	\$50,000

TOTAL IMPLEMENTATION COST \$30,791,637

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	\$ 10.00	\$ 103,000
3	HMAC Type D (2")	18,500	SY	\$ 12.00	\$ 222,000
4	8" Flex Base	22,500	SY	\$ 36.00	\$ 810,000
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	\$ 18.00	\$ 161,460
9	Block Sodding and Topsoil	9,500	SY	\$ 5.00	\$ 47,500
Paving Estimate Subtotal:					\$ 1,579,885

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 31,600
10	Traffic Control	5%	\$ 79,000
11	Erosion Control	3%	\$ 47,400
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 316,000
Other Components Estimate Subtotal:			\$ 474,000

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:				\$ 2,278,885
Mobilization				5% \$ 114,000
Contingency				10% \$ 239,300
Construction Cost Estimate Total:				\$ 2,632,200

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 2,632,200
Engineering/Survey/Testing		7%	\$ 184,254
Right-of-Way Acquisition	Cost per sq. ft.: \$ 0.75	\$ 33,638	\$ 33,638
Impact Fee Project Cost Estimate Total:			\$ 2,850,092

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

MARKET STREET
 Carver St. to FM 672 (Flores)

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	3,315
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	34	STA	\$ 1,800.00	\$ 61,200
2	Unclassified Street Excavation	7,600	CY	\$ 10.00	\$ 76,000
3	HMAC Type D (2")	13,700	SY	\$ 12.00	\$ 164,400
4	8" Flex Base	16,600	SY	\$ 36.00	\$ 597,600
5	Prime & Tack Coat	2,740	GAL	\$ 4.25	\$ 11,645
6	Lime Subgrade	16,600	SY	\$ 3.00	\$ 49,800
7	Lime for Stabilization (43lbs/SY)	360	TON	\$ 150.00	\$ 54,000
8	6" Monolithic Concrete Curb & Gutter	6,630	LF	\$ 18.00	\$ 119,340
9	Block Sodding and Topsoil	7,000	SY	\$ 5.00	\$ 35,000
Paving Estimate Subtotal:					\$ 1,168,985

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 23,400
10	Traffic Control	5%	\$ 58,500
11	Erosion Control	3%	\$ 35,100
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 233,800
Other Components Estimate Subtotal:			\$ 350,800

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:				\$ 1,519,785
Mobilization				5% \$ 76,000
Contingency				10% \$ 159,600
Construction Cost Estimate Total:				\$ 1,755,400

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 1,755,400
Engineering/Survey/Testing		7%	\$ 122,878
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 0.75 \$ 24,863	\$ 24,863
Impact Fee Project Cost Estimate Total:			\$ 1,903,141

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	\$ 10.00	\$ 45,000
3	HMAC Type D (2")	8,000	SY	\$ 12.00	\$ 96,000
4	8" Flex Base	9,700	SY	\$ 36.00	\$ 349,200
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	\$ 18.00	\$ 69,840
9	Block Sodding and Topsoil	4,100	SY	\$ 5.00	\$ 20,500
Paving Estimate Subtotal:					\$ 683,940
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	13,700
10	Traffic Control		5%	\$	34,200
11	Erosion Control		3%	\$	20,600
12	Landscaping		0%	\$	-
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)		20%	\$	136,800
Other Components Estimate Subtotal:					\$ 205,300
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:					\$ 889,240
Mobilization					5% \$ 44,500
Contingency					10% \$ 93,400
Construction Cost Estimate Total:					\$ 1,027,200

Impact Fee Cost Estimate Summary					
Item Description	Notes		Allowance	Item Cost	
Construction			-	\$ 1,027,200	
Engineering/Survey/Testing			7%	\$ 71,904	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 0.75	\$ 14,550	\$ 14,550	
Impact Fee Project Cost Estimate Total:					\$ 1,113,654

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

MAPLE STREET

San Jacinto St. to 1000' E. of City Line Rd.

Roadway Information:	
Roadway Type:	4-Lane Undivided Collector
Length (lf):	4,300
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	43	STA	\$ 1,800.00	\$ 77,400
2	Unclassified Street Excavation	11,300	CY	\$ 10.00	\$ 113,000
3	HMAC Type D (2")	20,600	SY	\$ 12.00	\$ 247,200
4	8" Flex Base	24,400	SY	\$ 36.00	\$ 878,400
5	Prime & Tack Coat	4,120	GAL	\$ 4.25	\$ 17,510
6	Lime Subgrade	24,400	SY	\$ 3.00	\$ 73,200
7	Lime for Stabilization (43lbs/SY)	520	TON	\$ 150.00	\$ 78,000
8	6" Monolithic Concrete Curb & Gutter	8,600	LF	\$ 18.00	\$ 154,800
9	Block Sodding and Topsoil	6,300	SY	\$ 5.00	\$ 31,500
Paving Estimate Subtotal:					\$ 1,671,010

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 33,500
10	Traffic Control	5%	\$ 83,600
11	Erosion Control	3%	\$ 50,200
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 334,300
Other Components Estimate Subtotal:			\$ 501,600

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:				\$ -

*Ditch relocation for information only, no additional cost assumed.

I, II, & III Construction Subtotal:			\$ 2,172,610
Mobilization			5% \$ 108,700
Contingency			10% \$ 228,200
Construction Cost Estimate Total: \$ 2,509,600			

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 2,509,600
Engineering/Survey/Testing		7%	\$ 175,672
Right-of-Way Acquisition	Cost per sq. ft.: \$ 0.75	\$ 90,000	\$ 90,000
Impact Fee Project Cost Estimate Total:			\$ 2,775,272

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	\$ 10.00	\$ 35,000
3	HMAC Type D (2")	6,200	SY	\$ 12.00	\$ 74,400
4	8" Flex Base	7,500	SY	\$ 36.00	\$ 270,000
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	\$ 18.00	\$ 54,000
9	Block Sodding and Topsoil	3,200	SY	\$ 5.00	\$ 16,000
Paving Estimate Subtotal:					\$ 528,170

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 10,600
10	Traffic Control	5%	\$ 26,500
11	Erosion Control	3%	\$ 15,900
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 105,700
Other Components Estimate Subtotal:			\$ 158,700

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:				\$ 686,870
Mobilization				5% \$ 34,400
Contingency				10% \$ 72,200
Construction Cost Estimate Total:				\$ 793,500

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 793,500
Engineering/Survey/Testing		7%	\$ 55,545
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 0.75 \$ 11,250	\$ 11,250
Impact Fee Project Cost Estimate Total:			\$ 860,295

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:	5-Lane Undivided Arterial w/ TWLTL
Length (lf):	5,193
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	52	STA	\$ 1,800.00	\$ 93,600
2	Unclassified Street Excavation	17,600	CY	\$ 10.00	\$ 176,000
3	HMAC Type D (2")	32,900	SY	\$ 12.00	\$ 394,800
4	8" Flex Base	37,600	SY	\$ 36.00	\$ 1,353,600
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	\$ 18.00	\$ 187,020
9	Block Sodding and Topsoil	11,000	SY	\$ 5.00	\$ 55,000
Paving Estimate Subtotal:					\$ 2,521,985

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 50,500
10	Traffic Control	5%	\$ 126,100
11	Erosion Control	3%	\$ 75,700
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 504,400
Other Components Estimate Subtotal:			\$ 756,700

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:				\$ 3,278,685
Mobilization				5% \$ 164,000
Contingency				10% \$ 344,300
Construction Cost Estimate Total:				\$ 3,787,000

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 3,787,000
Engineering/Survey/Testing		7%	\$ 265,090
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 0.75	\$ 155,790
Impact Fee Project Cost Estimate Total:			\$ 4,207,880

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

CLEAR FORK ROAD

1150' W. of City Line Rd. to City Line Rd.

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	1,150
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	12	STA	\$ 1,800.00	\$ 21,600
2	Unclassified Street Excavation	2,700	CY	\$ 10.00	\$ 27,000
3	HMAC Type D (2")	4,800	SY	\$ 12.00	\$ 57,600
4	8" Flex Base	5,800	SY	\$ 36.00	\$ 208,800
5	Prime & Tack Coat	960	GAL	\$ 4.25	\$ 4,080
6	Lime Subgrade	5,800	SY	\$ 3.00	\$ 17,400
7	Lime for Stabilization (43lbs/SY)	120	TON	\$ 150.00	\$ 18,000
8	6" Monolithic Concrete Curb & Gutter	2,300	LF	\$ 18.00	\$ 41,400
9	Block Sodding and Topsoil	2,500	SY	\$ 5.00	\$ 12,500
Paving Estimate Subtotal:					\$ 408,380

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 8,200
10	Traffic Control	5%	\$ 20,500
11	Erosion Control	3%	\$ 12,300
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 81,700
Other Components Estimate Subtotal:			\$ 122,700

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:				\$ 531,080
Mobilization				5% \$ 26,600
Contingency				10% \$ 55,800
Construction Cost Estimate Total:				\$ 613,500

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 613,500
Engineering/Survey/Testing		7%	\$ 42,945
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 0.75	\$ 8,625
Impact Fee Project Cost Estimate Total:			\$ 665,070

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):	2,900
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	29	STA	\$ 1,800.00	\$ 52,200
2	Unclassified Street Excavation	6,700	CY	\$ 10.00	\$ 67,000
3	HMAC Type D (2")	12,000	SY	\$ 12.00	\$ 144,000
4	8" Flex Base	14,500	SY	\$ 36.00	\$ 522,000
5	Prime & Tack Coat	2,400	GAL	\$ 4.25	\$ 10,200
6	Lime Subgrade	14,500	SY	\$ 3.00	\$ 43,500
7	Lime for Stabilization (43lbs/SY)	310	TON	\$ 150.00	\$ 46,500
8	6" Monolithic Concrete Curb & Gutter	5,800	LF	\$ 18.00	\$ 104,400
9	Block Sodding and Topsoil	6,200	SY	\$ 5.00	\$ 31,000
Paving Estimate Subtotal:					\$ 1,020,800

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 20,500
10	Traffic Control	5%	\$ 51,100
11	Erosion Control	3%	\$ 30,700
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 204,200
Other Components Estimate Subtotal:			\$ 306,500

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:				\$ 1,327,300
Mobilization				5% \$ 66,400
Contingency				10% \$ 139,400
Construction Cost Estimate Total:				\$ 1,533,100

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 1,533,100
Engineering/Survey/Testing		7%	\$ 107,317
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 0.75	\$ -
Impact Fee Project Cost Estimate Total:			\$ 1,640,417

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	\$ 10.00	\$ 83,000
3	HMAC Type D (2")	15,200	SY	\$ 12.00	\$ 182,400
4	8" Flex Base	18,000	SY	\$ 36.00	\$ 648,000
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	\$ 18.00	\$ 114,300
9	Block Sodding and Topsoil	4,600	SY	\$ 5.00	\$ 23,000
Paving Estimate Subtotal:					\$ 1,233,720

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 24,700
10	Traffic Control	5%	\$ 61,700
11	Erosion Control	3%	\$ 37,100
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 246,800
Other Components Estimate Subtotal:			\$ 370,300

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:				\$ 1,604,020
Mobilization				5% \$ 80,300
Contingency				10% \$ 168,500
Construction Cost Estimate Total:				\$ 1,852,900

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 1,852,900
Engineering/Survey/Testing		7%	\$ 129,703
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 0.75	\$ 142,740
Impact Fee Project Cost Estimate Total:			\$ 2,125,343

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	\$ 10.00	\$ 14,000
3	HMAC Type D (2")	2,500	SY	\$ 12.00	\$ 30,000
4	8" Flex Base	3,000	SY	\$ 36.00	\$ 108,000
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	\$ 18.00	\$ 21,240
9	Block Sodding and Topsoil	1,300	SY	\$ 5.00	\$ 6,500
Paving Estimate Subtotal:					\$ 210,665

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 4,300
10	Traffic Control	5%	\$ 10,600
11	Erosion Control	3%	\$ 6,400
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 42,200
Other Components Estimate Subtotal:			\$ 63,500

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:				\$ 274,165
Mobilization				5% \$ 13,800
Contingency				10% \$ 28,800
Construction Cost Estimate Total:				\$ 316,800

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 316,800
Engineering/Survey/Testing		7%	\$ 22,176
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 0.75	\$ -
Impact Fee Project Cost Estimate Total:			\$ 338,976

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	\$ 10.00	\$ 49,000
3	HMAC Type D (2")	8,900	SY	\$ 12.00	\$ 106,800
4	8" Flex Base	10,800	SY	\$ 36.00	\$ 388,800
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	\$ 18.00	\$ 77,400
9	Block Sodding and Topsoil	9,400	SY	\$ 5.00	\$ 47,000
Paving Estimate Subtotal:					\$ 783,065

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 15,700
10	Traffic Control	5%	\$ 39,200
11	Erosion Control	3%	\$ 23,500
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 156,700
Other Components Estimate Subtotal:			\$ 235,100

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	Utility Relocation	\$ 100,000	\$ 100,000
Special Components Estimate Subtotal:				\$ 100,000

I, II, & III Construction Subtotal:				\$ 1,118,165
Mobilization				5% \$ 56,000
Contingency				10% \$ 117,500
Construction Cost Estimate Total:				\$ 1,291,700

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 1,291,700
Engineering/Survey/Testing		7%	\$ 90,419
Right-of-Way Acquisition	Cost per sq. ft.: \$ 0.75	\$ 129,000	\$ 129,000
Impact Fee Project Cost Estimate Total:			\$ 1,511,119

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

Martin Luther King Jr. Industrial Boulevard
 McMillen St. Extension to Colorado St.

Roadway Information:	
Roadway Type:	2-Lane Undivided Arterial
Length (lf):	1,922
Right-of-Way Width (ft.):	80
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	4,400	CY	\$ 10.00	\$ 44,000
3	HMAC Type D (2")	8,000	SY	\$ 12.00	\$ 96,000
4	8" Flex Base	9,700	SY	\$ 36.00	\$ 349,200
5	Prime & Tack Coat	1,600	GAL	\$ 4.25	\$ 6,800
6	Lime Subgrade	9,600	SY	\$ 3.00	\$ 28,800
7	Lime for Stabilization (43lbs/SY)	210	TON	\$ 150.00	\$ 31,500
8	6" Monolithic Concrete Curb & Gutter	3,850	LF	\$ 18.00	\$ 69,300
9	Block Sodding and Topsoil	8,400	SY	\$ 5.00	\$ 42,000
Paving Estimate Subtotal:					\$ 703,600

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%	\$ 35,200
11	Erosion Control	3%	\$ 21,200
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 140,800
Other Components Estimate Subtotal:			\$ 211,300

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:				\$ 914,900
Mobilization				5% \$ 45,800
Contingency				10% \$ 96,100
Construction Cost Estimate Total:				\$ 1,056,800

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 1,056,800
Engineering/Survey/Testing		7%	\$ 73,976
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 0.75	\$ 43,245
Impact Fee Project Cost Estimate Total:			\$ 1,174,021

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	\$ 10.00	\$ 99,000
3	HMAC Type D (2")	17,800	SY	\$ 12.00	\$ 213,600
4	8" Flex Base	21,600	SY	\$ 36.00	\$ 777,600
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	\$ 18.00	\$ 155,160
9	Block Sodding and Topsoil	18,700	SY	\$ 5.00	\$ 93,500
Paving Estimate Subtotal:					\$ 1,566,990

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 31,400
10	Traffic Control	5%	\$ 78,400
11	Erosion Control	3%	\$ 47,100
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 313,400
Other Components Estimate Subtotal:			\$ 470,300

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:				\$ 2,037,290
Mobilization				5% \$ 101,900
Contingency				10% \$ 214,000
Construction Cost Estimate Total:				\$ 2,353,200

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 2,353,200
Engineering/Survey/Testing		7%	\$ 164,724
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 0.75	\$ 258,600
Impact Fee Project Cost Estimate Total:			\$ 2,776,524

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	\$ 10.00	\$ 53,000
3	HMAC Type D (2")	9,800	SY	\$ 12.00	\$ 117,600
4	8" Flex Base	11,200	SY	\$ 36.00	\$ 403,200
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	\$ 18.00	\$ 55,800
9	Block Sodding and Topsoil	3,300	SY	\$ 5.00	\$ 16,500
Paving Estimate Subtotal:					\$ 752,830

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 15,100
10	Traffic Control	5%	\$ 37,700
11	Erosion Control	3%	\$ 22,600
12	Landscaping	0%	\$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	\$ 150,600
Other Components Estimate Subtotal:			\$ 226,000

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:				\$ 978,830
Mobilization				5% \$ 49,000
Contingency				10% \$ 102,800
Construction Cost Estimate Total:				\$ 1,130,700

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 1,130,700
Engineering/Survey/Testing		7%	\$ 79,149
Right-of-Way Acquisition	Cost per sq. ft.: \$ 0.75	\$ 46,410	\$ 46,410
Impact Fee Project Cost Estimate Total:			\$ 1,256,259

APPENDIX F: ROADWAY SERVICE AREA ANALYSIS
SUMMARY

APPENDICES

Lockhart Roadway Impact Fee Study Update
Service Area Analysis Summary

1	2	3	4	5	6	7	8	9	10	11	12	13	
Service Area	Capacity Supplied by CIP (veh-m)	Existing Utilization	Existing Deficiencies	Net Capacity Supplied by CIP	Total Project Cost of CIP	Project Cost of CIP with 50% Credit	Cost of Net Capacity Supplied	Cost to Meet Existing Utilization	Projected 10yr Demand (veh-miles)	Pcnt. of CIP Attributable to New Dev. (10-yr)	Cost Attributable to New Dev.	Maximum Fee Cost Summary	
											Fee per Service Unit @ 50% Discount	Actual Cost per Service Unit (veh-m)	
1	5,569	349	0	5,220	\$14,533,790	\$7,266,895	\$6,811,627	\$455,288	2,014	38.6	\$2,628,018	\$1,304.00	\$2,608.00
2	5,624	367	0	5,257	\$16,257,847	\$8,128,923	\$7,598,618	\$530,305	1,854	35.3	\$2,679,371	\$1,445.00	\$2,890.00
Totals	11,193	716	0	10,477	\$30,791,637	\$15,395,818	\$14,411,263	\$984,595	3,868	36.9	\$5,319,998	\$1,375.00	\$2,750.00

1. TOTAL VEH-MI OF CAPACITY SUPPLIED BY CIP (TVMCAP)
2. TOTAL VEH-MI OF EXISTING DEMAND (VMEXT)
3. TOTAL VEH-MI OF EXISTING DEFICIENCIES (VMDEF)
4. NET AMOUNT OF ROADWAY CAPACITY SUPPLIED (NVMCAP) =
NVMCAP = TVMCAP - VMEXT - VMDEF
5. TOTAL COST OF CIP WITHIN STUDY AREA (TVMCOST)
6. TOTAL COST OF CIP IN SERVICE AREA w/50% CREDIT (TVMCOST)
7. COST OF NET CAPACITY SUPPLIED (NCVMCAP) =
NCVMCAP = (NVMCAP / TVMCAP) * TVMCOST
8. COST TO MEET EXISTING NEEDS AND USAGE (EXCOST) =
EXCOST = TVMCOST - NCVMCAP
9. TOTAL VEH-MI OF NEW DEMAND OVER TEN YEARS (TNEWDEM)
10. PERCENT OF CIP ATTRIBUTABLE TO NEW DEVELOPMENT (NPCNT) =
IF TNEWDEM > NVMCAP, NPCNT = 100%
IF TNEWDEM < NVMCAP, NPCNT = (TNEWDEM / NVMCAP) * 100
11. COST OF CIP ATTRIBUTABLE TO NEW DEVELOPMENT (NCWIDEM) =
NCWIDEM = (TNEWDEM / NVMCAP) * NCVMCAP
12. MAXIMUM FEE PER SERVICE UNIT (50%) =
MAX FEE = NCWIDEM / TNEWDEM
13. ACTUAL COST PER SERVICE UNIT (100%) =

APPENDIX G: LAND USE ASSUMPTIONS REPORT



Innovative approaches
Practical results
Outstanding service

City of Lockhart

Land Use Assumptions for Impact Fees

FINAL REPORT

December 2016

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 the updated impact fee for capital improvement plans for water, wastewater, and roadway facilities.

Elements of Land Use Assumptions

This report contains:

1. Explanation of the general methodology used to prepare the land use assumptions;
2. Impact Fee Service Zone Maps (**Figure 1** and **Figure 2**) - Dividing the City into zones which form the impact fee service areas;
3. Base Year Data - Information on population, employment, and land use for Lockhart as of September 2016; and
4. Population, land use and employment growth assumptions for ten years (2026).

Methodology

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

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

The data used to compile these land use assumptions were from two sources – the Lockhart 2020 Comprehensive Plan and the City of Lockhart. 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. The following database and projections have been formulated using reasonable and generally accepted planning principles.

Service Area Maps

Figure 2 shows the proposed service areas for water and wastewater facilities. The boundary for these facilities is the existing City Limits and the City's CCN-approved area (that is, the area certified by the Texas Commission on Environmental Quality, TCEQ, to which the City can provide water and wastewater service). Figure 1 depicts the two proposed service areas for roadway facilities (generally consistent with the current City limits and limited to six miles in diameter). The capital improvement plans and impact fees will be prepared as separate documents for water, wastewater, and roadway facilities.

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 maps (**Figure 1** and **Figure 2**) that meet the requirements of Chapter 395.
2. Housing Units (2016) – All living units including single-family, duplex, multi-family, and group quarters.
3. Housing Units (2026) – Projected housing units by service areas for the year 2016 (ten-year growth projection).
4. Population and Households (2016-2026) – Existing and projected ten-year population tabulated for each service area.
5. Employment (2016-2026) – 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 Service Area Map

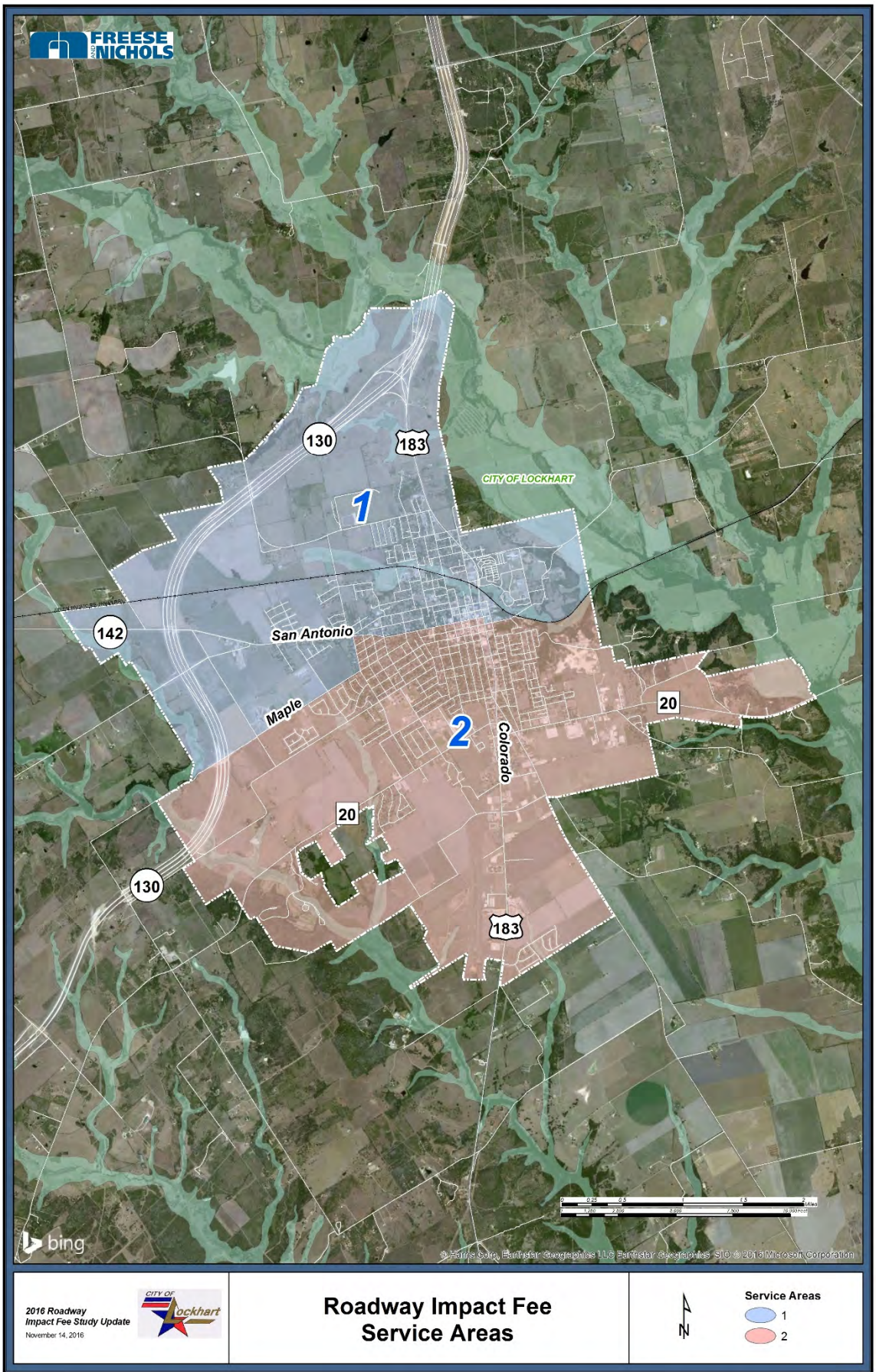
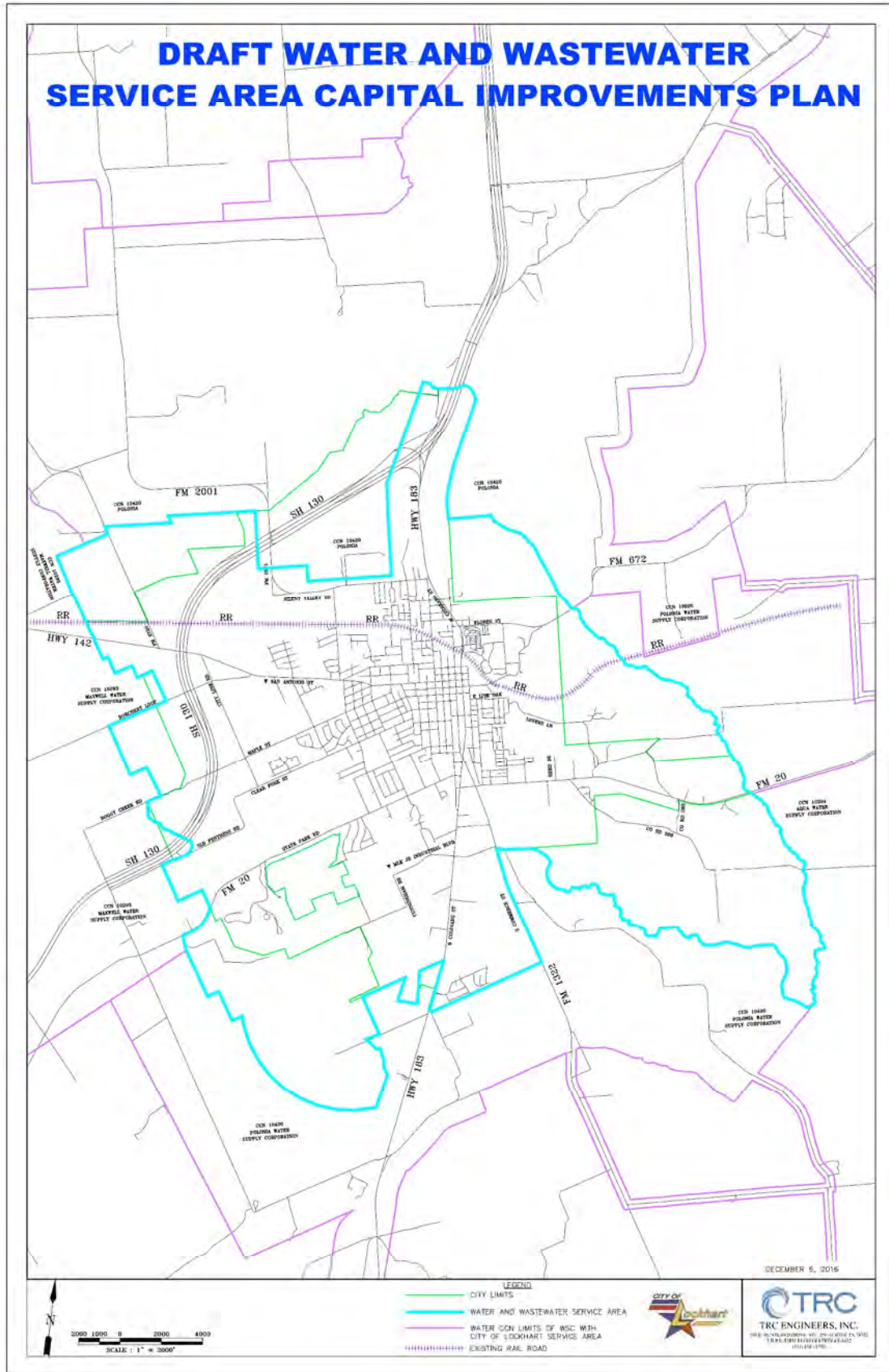


Figure 2. W/WW Service Area Map



Base Data: Existing Land Use

A documentation of existing land use patterns and population was made from the City's Comprehensive Plan and was used as a base line for future growth projections. This also documents the present physical condition of the City regarding any infrastructure deficiencies that may exist. **Table 1** shows a summary of 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			
Residential Single-Family	359	3.58%	2.67
Residential Two-Family	21	0.21%	0.16
Residential Multi-Family	12	0.12%	0.09
Manufactured Housing	43	0.43%	0.32
Light Industrial	12	0.12%	0.09
Retail/Commercial	66	0.66%	0.49
Office	3	0.03%	0.02
Public/Institutional	194	1.94%	1.44
Parks and Recreation	0	0.00%	0.00
Right-of-Way	233	2.32%	1.73
Vacant/Undeveloped	3,751	37.42%	27.87
Service Area 1 Total	4,694	46.83%	34.88
Service Area 2			
Residential Single-Family	796	7.94%	5.91
Residential Two-Family	11	0.11%	0.08
Residential Multi-Family	18	0.18%	0.13
Manufactured Housing	4	0.04%	0.03
Light Industrial	120	1.20%	0.89
Retail/Commercial	202	2.02%	1.50
Office	7	0.07%	0.05
Public/Institutional	219	2.18%	1.63
Parks and Recreation	257	2.56%	1.91
Right-of-Way	355	3.54%	2.64
Vacant/Undeveloped	3,341	33.33%	24.82
Service Area 2 Total	5,330	53.17%	39.60
Total Acreage Within City Limits	10,024	100.00%	74.48

⁽¹⁾ Based on a population of 13,459 people, City of Lockhart estimate

Base Data: Population and Employment

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 2** represents a summary of existing population and employment for Lockhart.

Table 2. Existing Population and Employment 2016

Housing Units ⁽¹⁾	4,922
Population ⁽²⁾	13,459
Total Employment ⁽³⁾	5,832
<i>Basic</i>	1,311
<i>Service</i>	2,696
<i>Retail</i>	1,352
<i>Institutional</i>	473

⁽¹⁾ Estimated from New Construction Permit Log 2007-Sept. 30, 2016, City of Lockhart

⁽²⁾ Population estimate, City of Lockhart

⁽³⁾ Estimate derived from CAMPO Database

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 as projected in the Comprehensive Plan.

Ten-Year Projections

The ten-year projections or land use assumptions are based upon the policies and growth rate established in the Comprehensive Plan. Since 1970, Lockhart has experienced relatively steady growth as indicated below:

1970 – 6,489
1980 – 7,953
1990 – 9,205
2000 – 11,615
2010 – 12,698
2016 – 13,459 (City of Lockhart estimate)

The following formula was used to verify the City of Lockhart 2016 population estimate. The City's estimate is close enough to the general calculation to be used as a base population.

$4,922 \text{ housing units} * 0.98 \text{ occupancy rate} = \text{approx. } 4,823 \text{ occupied dwelling units}$
$4,823 \text{ occupied dwelling units} * 2.79 \text{ persons per household} = \text{approx. } 13,456 \text{ residents}$

Growth Rate

An approximate 2.25 percent average annual growth rate was determined by the IFAC to be a reasonable rate at which Lockhart 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 residential construction and development of new retail facilities on major transportation corridors (SH 130), and the Texas Water Development Board growth projections of 2.04 percent by 2030, a 2.25 percent growth rate should be feasible and reasonable for planning purposes. The anticipated development spurred by the SH 130 corridor along with the largely agricultural or undeveloped land within Lockhart provides good potential for growth in the coming years.

If growth in Lockhart occurs at an average rate of 2.25 percent per year, a population of approximately 16,813 people could be expected by the year 2026 (ten years). **Table 3** shows the projected land use requirements for a population of 16,813.

Table 3. Projected Ten-Year Future Land Use Requirements

Land Use Category	# of Acres in 2016 (13,459 people)	Acres/100 Persons in 2016	# of Acres in 2026 (16,813 people)	Increase Between 2016 and 2026
Service Area 1				
Residential Single-Family	359	2.67	459	100
Residential Two-Family	21	0.16	27	6
Residential Multi-Family	12	0.09	15	3
Manufactured Housing	43	0.32	55	12
Light Industrial	12	0.09	15	3
Retail/Commercial	66	0.49	84	18
Office	3	0.02	4	1
Public/Institutional	194	1.44	248	54
Parks and Recreation	0	0.00	0	0
Right-of-Way	233	1.73	298	65
Vacant/Undeveloped	3,751	27.87	3,516	-254
Service Area 1 Total	4,694	34.88	4,694	0
Service Area 2				
Residential Single-Family	796	5.91	1,017	221
Residential Two-Family	11	0.08	14	3
Residential Multi-Family	18	0.13	23	5
Manufactured Housing	4	0.03	5	1
Light Industrial	120	0.89	153	33
Retail/Commercial	202	1.50	258	56
Office	7	0.05	9	2
Public/Institutional	219	1.63	280	61
Parks and Recreation	257	1.91	328	71
Right-of-Way	355	2.64	453	98
Vacant/Undeveloped	3,341	24.82	2,846	-495
Service Area 2 Total	5,330	39.60	6,808	0
Total Acreage Within City Limits	10,024	74.48	10,024	0

Table 4 shows ten-year growth projections of population for the roadway impact fee service areas. It is anticipated that most residential growth will happen in the service area 2.

Employment growth rate was determined using interpolated values from the Capital Area Metropolitan Planning Organization (CAMPO) demographics. This compound annual growth rate was determined to be approximately 3.9 percent. **Table 5** 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 4. Ten-Year Projections for the Roadway Service Area

	2016		2026		Net Growth (2016-2026)	
	Housing Units	Population	Housing Units	Population	Housing Units	Population
Service Area 1	1,738	4,765	2,171	5,896	433	1,131
Service Area 2	3,184	8,694	3,977	10,917	793	2,223
Total	4,922	13,459	6,148	16,813	1,226	3,354

Table 5. Employment Projections for the Roadway Service Area

	2016					2026					Net Growth (2016-2026)
	Basic	Service	Retail	Inst.	Total	Basic	Service	Retail	Inst.	Total	
Service Area 1	393	809	406	142	1,750	753	1,600	796	259	3,408	1,658
Service Area 2	918	1,887	946	331	4,082	1,129	2,400	1,194	389	5,112	1,030
Total	1,311	2,696	1,352	473	5,832	1,882	4,000	1,990	648	8,520	2,688

Ultimate Land Area Capacity for Population Growth

An ultimate or holding capacity land use and population projection was also established. The water and wastewater service area has a total of 10,730 acres of vacant land. Assuming (1) two-thirds of the vacant acreage within the water and wastewater service areas develops as residential (densities for single-family, two-family, and multi-family reasonably applied), (2) a 98 percent occupancy rate, and (3) approximately 2.79 persons per household, the acreage could support approximately 54,500 people. Including the existing population of approximately 13,459 people, the ultimate holding capacity of the water and wastewater service area is approximately 68,000 people.

The roadway service area 1 has a total of 3,751 vacant acres and roadway service area 2 has a total of 3,341 vacant acres. Using the same assumptions as the water and wastewater calculations, the vacant acreage within the roadway service area 1 could support approximately 19,038 people and the vacant acreage in service area 2 could support approximately 16,963 people. Including the existing population in each service area, the ultimate holding capacity of the roadway service area 1 is approximately 23,803 people and the holding capacity of the roadway service area 2 is approximately 25,657 people. This means the ultimate capacity of the current city limits is 49,460. At a 2.25% growth rate, this population would not be reached until 2069.

Summary

- Lockhart presently contains approximately 10,024 acres within the City limits, of which 69 percent is either agricultural or undeveloped land (refer to **Table 1**).
- Existing estimated population of Lockhart in 2016 is 13,459 persons with 5,831 employed persons in the city.
- An average annual growth rate of 2.25 percent was used to calculate the Lockhart ten-year population growth projection.
- The ten-year (2016-2026) growth projection for Lockhart is to grow to 17,191, a net growth of 3,354.
- The ten-year (2016-2026) employment projection is to grow to 8,520, representing an employment growth rate of approximately 3.9% and a net growth of 2,688.
- The ultimate capacity of the water and wastewater service area is approximately 68,000.
- The ultimate capacity for population growth in roadway service areas 1 and 2 will more than accommodate the projected 10-year growth.