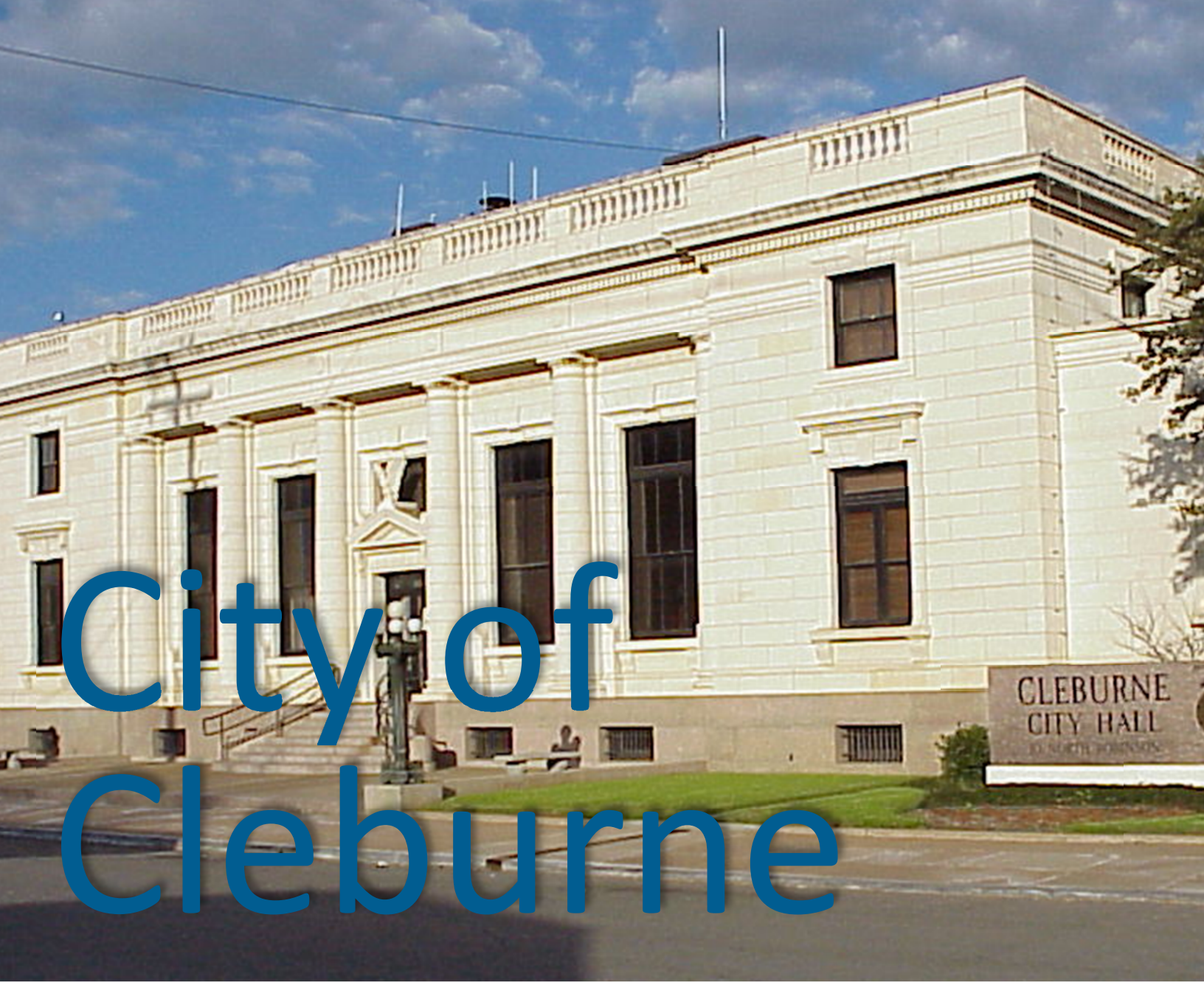

City of Cleburne

FINAL WATER, WASTEWATER, & ROADWAY IMPACT FEE REPORT

cleburne
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PREPARED BY:

Freese and Nichols, Inc.
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FREESE AND NICHOLS

February 9, 2018

Innovative approaches
Practical results
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WATER, WASTEWATER, AND ROADWAY IMPACT FEE REPORT

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City of Cleburne

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EXECUTIVE SUMMARY

BACKGROUND

In June 2014, the City of Cleburne, Texas, authorized Freese and Nichols, Inc. (FNI) to perform an impact fee analysis for the implementation of water, wastewater, and roadway impact fees. The purpose of this report is to summarize the methodology used in the development and calculation of impact fees for the City of Cleburne. The methodology used herein satisfies the requirements of the Texas Local Government Code Section 395 for the establishment and update of water, wastewater, and roadway impact fees.

LAND USE ASSUMPTIONS

Population and land use are important elements in the analysis of water, wastewater, and roadway systems. Individual service areas were defined for water, wastewater, and roadway based on the City Limits and the future service areas. Water demands and wastewater flows depend on the residential population and commercial development served by the systems and determines the sizing and location of system infrastructure. Residential population and commercial development projections are also required to size roadway facilities in terms of number of dwelling units and employment. The population projections for the water and wastewater service area are summarized in **Table ES-1**. The roadway population and employment are presented in **Table ES-2**.

Table ES-1: Population Projections for Water and Wastewater Service Areas

Year	Water Population	Wastewater Population
2017	33,807	33,807
2027	46,548	47,347
2040	70,547	77,542

Table ES-2: Population and Employment Projections for Roadway Service Area

Service Area	Population		Employment							
	2017	2027	2017				2027			
			Basic	Retail	Service	Total	Basic	Retail	Service	Total
Total Population/ Employment	31,323	42,384	5,862	4,281	11,216	21,359	6,315	4,580	12,759	23,654

WATER AND WASTEWATER IMPACT FEE ANALYSIS

A water and wastewater impact fee capital improvements plan (CIP) was developed for the City of Cleburne based on the land use assumptions. The recommended improvements will provide the required capacity to meet projected water demands and wastewater flows through year 2027. **Tables ES-3** and **ES-4** display the water demand and wastewater load projections in terms of million gallons per day (MGD) for the City of Cleburne. These projections were the basis for determining the location and magnitude of the CIP projects.

Table ES-3: Projected Water Demands

Year	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Peak Hour Demand (MGD)
2017	10.4	18.6	30.8
2027	14.0	25.3	42.0
2040	20.2	36.6	62.0

Table ES-4: Projected Wastewater Flows

Year	Average Day Wastewater Flow (MGD)	Peak Wet Weather Flow (MGD)
2017	5.9	15.0
2027	7.6	26.7
2040	10.1	36.6

Chapter 395 of the Texas Local Government Code states that the maximum impact fee may not exceed the amount determined by dividing the cost of capital improvements required by the total number of service units attributed to new development during the impact fee eligibility period, less the credit to account for water and wastewater revenues used to finance capital improvement plans. The total projected costs include the projected capital improvement costs to serve 10-year development, the projected finance cost for the capital improvements, and the consultant cost for preparing and updating the Capital Improvements Plan. A 3.0% interest rate was used to calculate financing costs. **Table ES-5** and **Table ES-6** below display a summary of the maximum allowable impact fee calculations for water and wastewater, respectively.

Table ES-5: Maximum Water Impact Fee Calculation

Total Eligible Capital Improvement Costs	$18,767,641
Total Eligible Financing Costs	$7,564,403
Total Eligible Impact Fee Costs	$26,332,044
Growth in Service Units	4,847
Maximum Water Impact Fee per Service Unit (1)	$5,432
Impact Fee Credit per Service Unit (2)	$2,716
Maximum Allowable Water Impact Fee (3)	**$2,716**

(1) Total Eligible Costs divided by the Growth in Service Units.
(2) Credit is 50% of Maximum Water Impact Fee per Service Unit.
(3) Maximum Allowable Water Impact Fee is Maximum Water Impact Fee minus the Impact Fee Credit per Service Unit.

Table ES-6: Maximum Wastewater Impact Fee Calculation

Total Eligible Capital Improvement Costs	$26,681,511
Total Eligible Financing Costs	$10,754,133
Total Eligible Impact Fee Costs	$37,435,644
Growth in Service Units	5,139
Maximum Water Impact Fee per Service Unit (1)	$7,284
Impact Fee Credit per Service Unit (2)	$3,642
Maximum Allowable Wastewater Impact Fee (3)	**$3,642**

(1) Total Eligible Costs divided by the Growth in Service Units.
(2) Credit is 50% of Maximum Wastewater Impact Fee per Service Unit.
(3) Maximum Allowable Wastewater Impact Fee is Maximum Wastewater Impact Fee minus the Impact Fee Credit per Service Unit.

ROADWAY IMPACT FEE ANALYSIS

Nine (9) roadway service areas were created in Cleburne. Annexation in the extra-territorial jurisdiction (ETJ) was considered in the development of the zonal structure so that as service areas expand in the future, they still conform to legislative mandates in Chapter 395 so that no point is greater than a six-mile maximum. This 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 determined to be the most effective 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.

Projected growth, expressed in terms of vehicle-miles over a 10-year planning period, was based on population and employment data that was prepared in the *Land Use Assumptions and Capital*

Improvement Plan Report for Water, Wastewater, and Roadway Impact Fee Study. Based on this growth, the projected vehicle-miles of demand generated in the 10-year period was calculated to be 25,349 vehicle-miles.

The impact fee CIP is aimed at facilitating anticipated long-term growth in Cleburne. The City has identified the City-funded transportation projects needed to accommodate the anticipated projected growth within the City. Arterial and collector class facilities in the current official Thoroughfare Plan were included in the impact fee CIP to provide flexibility in the development of the community due to the anticipated rates of development.

Eighteen (18) projects totaling $79.8 million with providing 32,454 vehicle-miles of new net capacity, were identified for impact fee consideration of which $50.6 million is 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. Applying the 50% credit to the CIP, the credited CIP projects totaled $39.9 million with $25.3 million attributable to new development in the 10-year period.

The *base* cost per service unit was calculated based on the full cost attributable to new development and the projected 10-year demand. Applying the 50% credit to the CIP cost, the maximum allowable cost per service unit was calculated using the credited cost of the impact fee program.

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. This data is summarized in **Table ES-7**.

Table ES-7: Maximum Roadway Impact Fee Calculation

	A	B	C	D = B / A	E = C / A
Service Area	**Projected 10-Year Growth (Vehicle-Miles)**	**Full Cost Attributable to New Development**	**Credited Cost Attributable to New Development**	**Base Cost per Service Unit**	**Maximum Allowable Cost per Service Unit (After Credit)**
1	15	$0	$0	$0	$0
2	3,321	$1,136,797	$568,398	$342	$171
3	3,570	$8,311,791	$4,155,896	$2,328	$1,164
4	79	$142,481	$71,241	$1,796	$898
5	14,115	$33,263,936	$16,631,968	$2,356	$1,178
6	4,087	$7,832,891	$3,916,446	$1,916	$958
7	0	$0	$0	$0	$0
8	57	$0	$0	$0	$0
9	107	$0	$0	$0	$0
Total	**25,349**	$50,687,897	$25,343,948	--	--

1.0 BACKGROUND

Chapter 395 of the Texas Local Government Code requires an impact fee analysis before impact fees can be created and assessed. Chapter 395 defines an impact fee as "a charge or assessment imposed by a political subdivision against new development in order to generate revenue for funding or recouping the costs of capital improvements or facility expansions necessitated by and attributable to the new development." In September 2001, Senate Bill 243 amended Chapter 395 thus creating the current procedure for implementing impact fees. Chapter 395 identifies the following items as impact fee eligible costs:

- Construction contract price
- Surveying and engineering fees
- Land acquisition costs
- Fees paid to the consultant preparing or updating the capital improvements plan (CIP)
- Projected interest charges and other finance costs for projects identified in the CIP

Chapter 395 also identifies items that impact fees cannot used to pay for, such as:

- Construction, acquisition, or expansion of public facilities or assets other than those identified on the capital improvements plan
- Repair, operation, or maintenance of existing or new capital improvements
- Upgrading, updating, expanding, or replacing existing capital improvements to serve existing development in order to meet stricter safety, efficiency, environmental, or regulatory standards
- Upgrading, updating, expanding, or replacing existing capital improvements to provide better service to existing development
- Administrative and operating costs of the political subdivision
- Principal payments and interest or other finance charges on bonds or other indebtedness, except as allowed above

In June 2014, the City of Cleburne authorized Freese and Nichols, Inc. (FNI) to perform an impact fee analysis on the City's water and wastewater systems as well as a roadway system impact fee analysis. The purpose of this report is to present the methodology used in the development and calculation of water, wastewater, and roadway impact fees for the City of Cleburne. The methodology used herein satisfies the

requirements of the Texas Local Government Code Chapter 395 for the establishment of water, wastewater, and roadway impact fees.

Table 1-1 provides a list of abbreviations used in this report.

Table 1-1: Abbreviations

Abbreviation	Full Nomenclature
AWWA	American Water Works Association
CIP	Capital Improvements Plan
ETJ	Extra-territorial Jurisdiction
FNI	Freese and Nichols, Inc.
gpm	gallons per minute
IFCIP	Impact Fee Capital Improvements Plan
ITE	Institute of Transportation Engineers
LOS	Level of Service
LUA	Land Use Assumptions
MGD	Million Gallons per Day
NCTCOG	North Central Texas Council of Governments
NHTS	National Household Travel Survey
SA	Special Arterial
SC	Special Collector
sf	square foot
TSZ	Traffic Survey Zone
TWLTL	two-way left turn lane
veh-mi	Vehicle-miles
VMT	Vehicle-miles of travel
WWTP	Wastewater Treatment Plant

2.0 LAND USE ASSUMPTIONS

Population and land use are important elements in the analysis of water, wastewater, and roadway systems. Water demands and wastewater flows depend on the residential population and commercial development served by the systems and determines the sizing and location of system infrastructure. Residential population and commercial development projections are also required to size roadway facilities in terms of number of dwelling units and employment. The *Land Use Assumptions and Capital Improvement Plan Report for Water, Wastewater, and Roadway Impact Fee Study* is provided in **Appendix A**.

2.1 SERVICE AREA

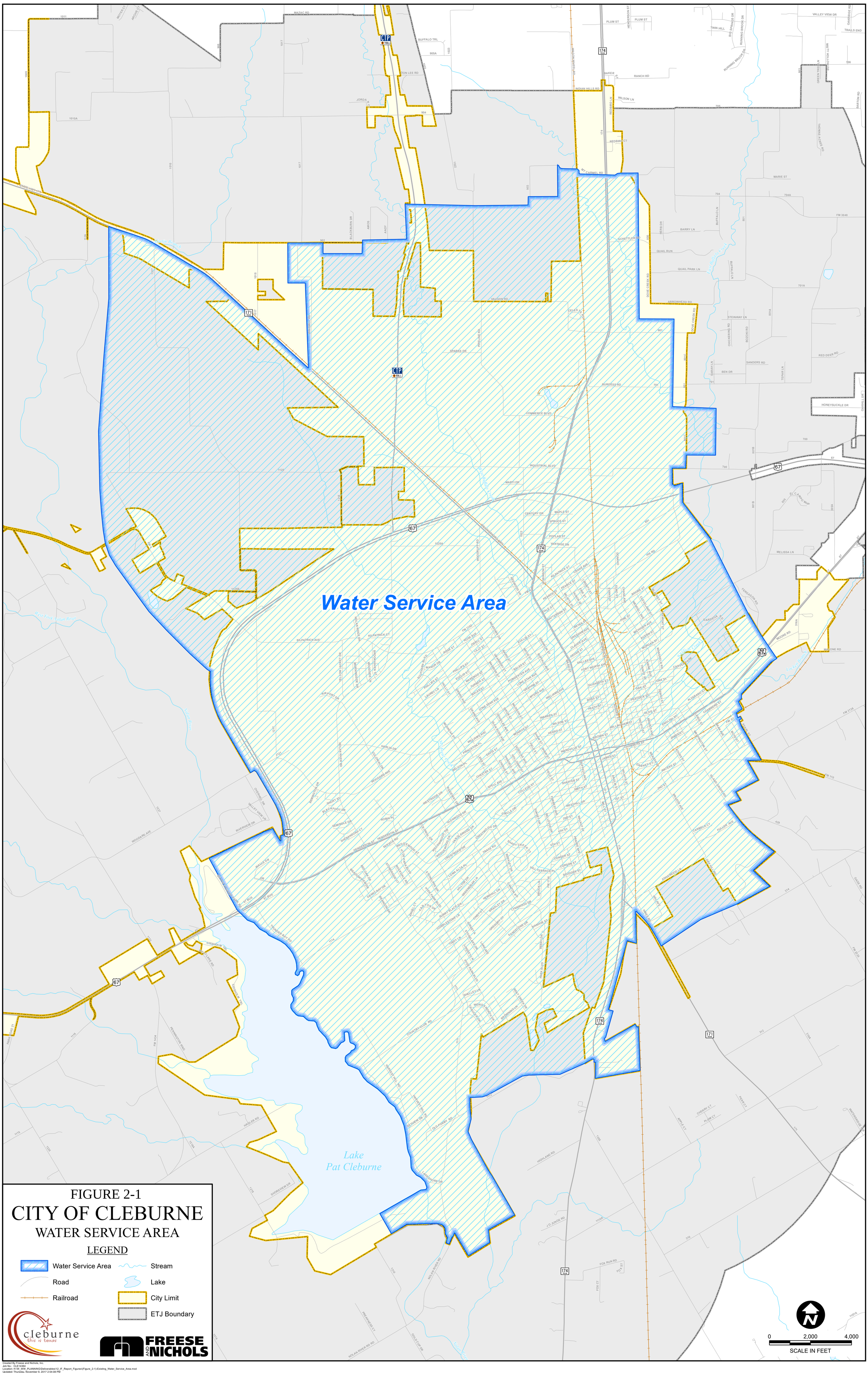
FNI worked with the City of Cleburne to define the water and wastewater service areas. **Figure 2-1** and **Figure 2-2** illustrate the water and wastewater service areas, respectively. For the purpose of calculating roadway impact fees, the City of Cleburne was divided into nine service areas. **Figure 2-3** illustrates the roadway service areas.

2.2 HISTORICAL POPULATION

The City of Cleburne provided yearly population data from 2010 through 2014. **Table 2-1** presents the historical populations for the City of Cleburne.

Table 2-1: Historical City Population

Year	Population	Annual Growth Rate (%)
2009	29,716	-
2010	29,337	-1.28%
2011	29,705	1.25%
2012	30,101	1.33%
2013	29,747	-1.18%
2014	29,160	-1.97%



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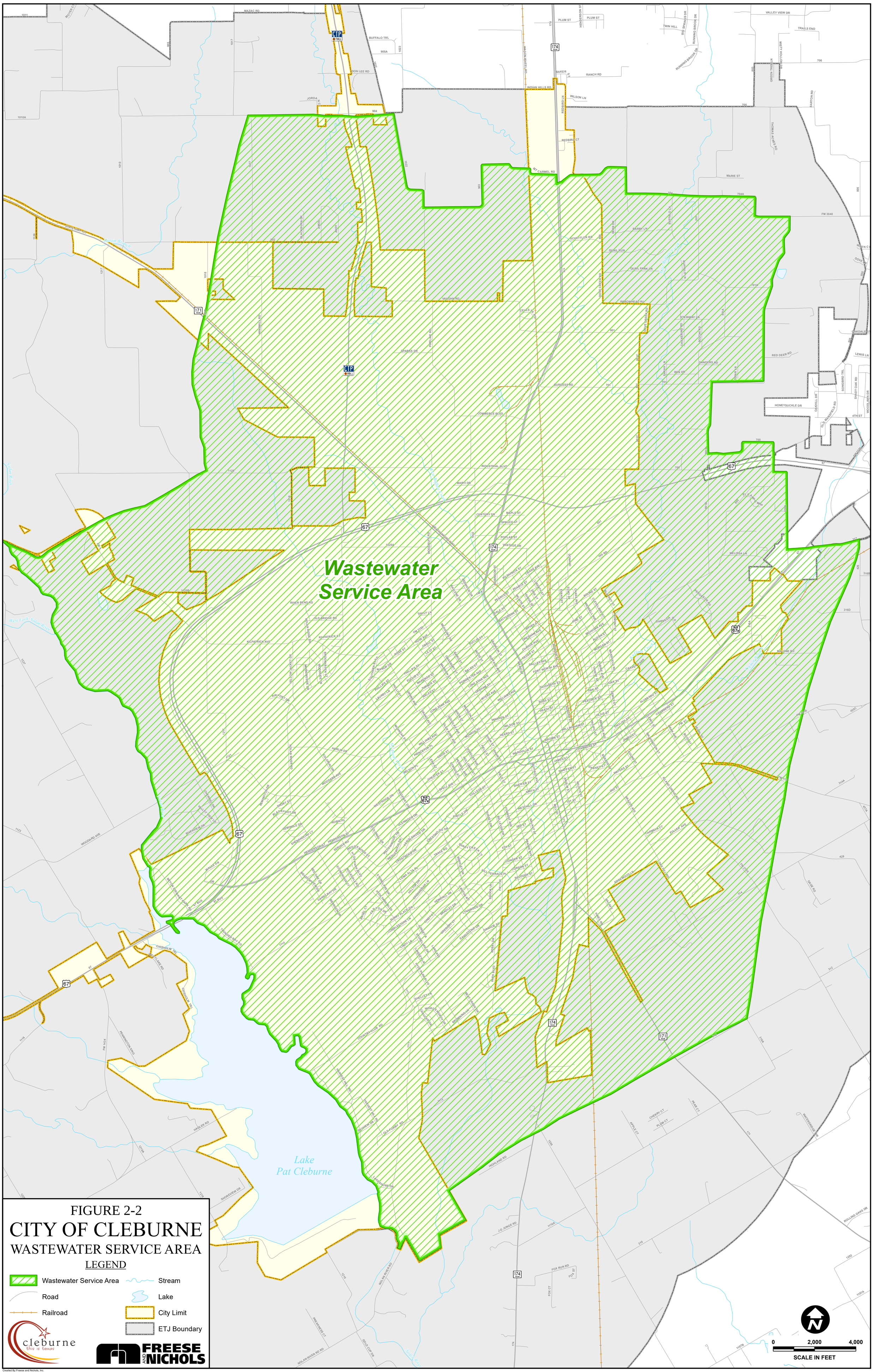

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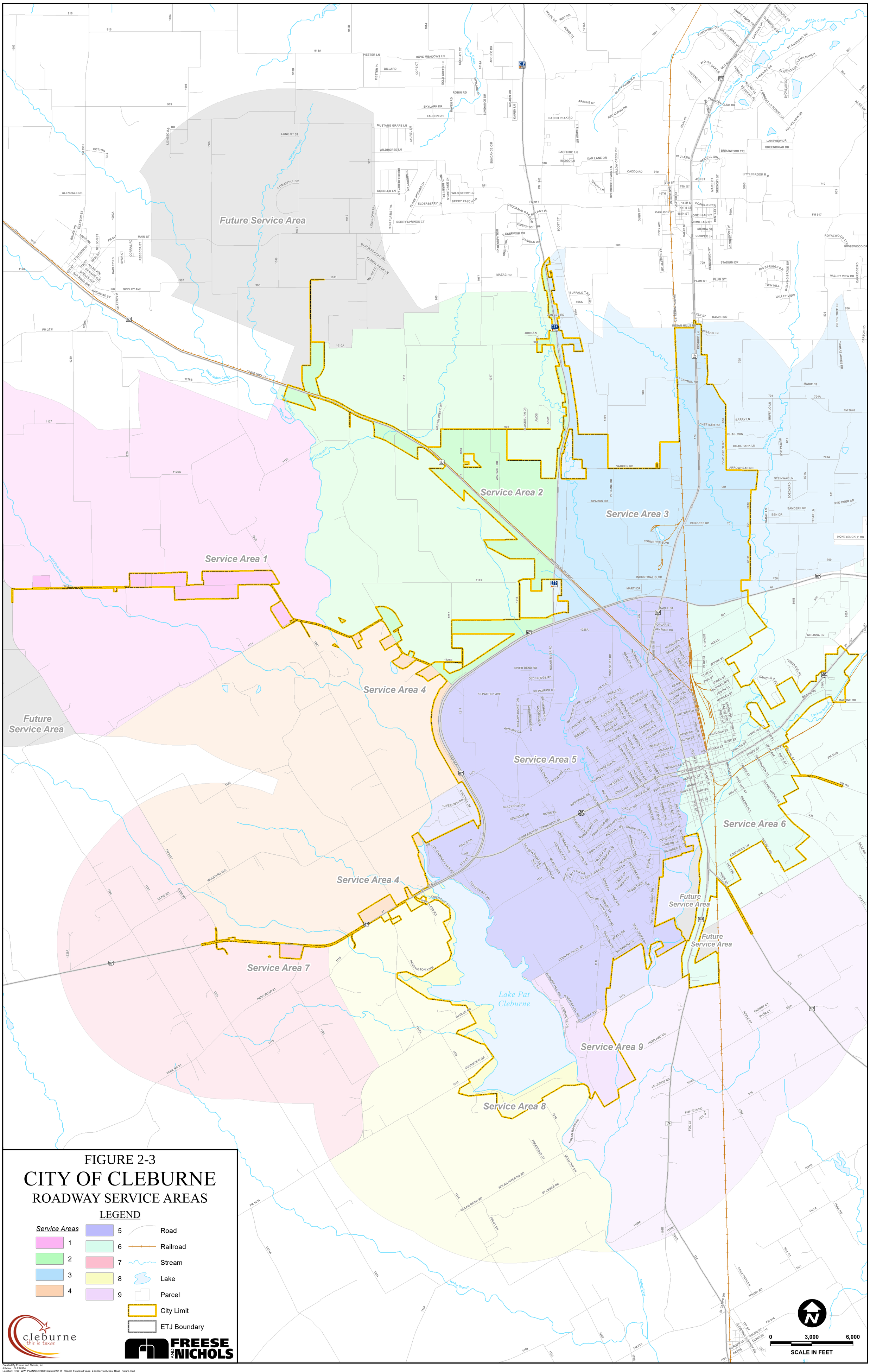

FIGURE 2-3

CITY OF CLEBURNE

ROADWAY SERVICE AREAS

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2.3 PROJECTED POPULATION

Projected growth has been characterized in two forms: population and employment. 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 10-year projections could be initiated. Future land uses will occur based on similar trends of the past and consistent with the Land Use Plan, and the City will be able to finance the necessary improvements to accommodate continued growth.

The 10-year projections are based upon the 3.25% growth from the *2014 Water Supply and Reuse Integration Plan* by FNI. The water service population will grow consistently at 3.25% annually through 2040, and adjustments were made for the wastewater and roadway service population based on the different service area boundaries. A detailed description of the process to adjust the population is provided in **Appendix A**. The population projections for the water and wastewater service area are summarized in **Table 2-2**. The roadway population and employment are presented in **Table 2-3**.

Table 2-2: Population Projections for Water and Wastewater Service Areas

Year	Water Population	Wastewater Population
2017	33,807	33,807
2027	46,548	47,347
2040	70,547	77,542

Table 2-3: Population and Employment Projections for Roadway Service Area

Service Area	Population		Employment							
	2017	2027	2017				2027			
			Basic	Retail	Service	Total	Basic	Retail	Service	Total
Total Population/ Employment	31,323	42,384	5,862	4,281	11,216	21,359	6,315	4,580	12,759	23,654

3.0 WATER AND WASTEWATER IMPACT FEE ANALYSIS

A capital improvements plan (CIP) was developed for the City of Cleburne. The recommended improvements will provide the capacity and reliability to meet projected water demands and wastewater flows through 2040. The water and wastewater projects required to meet growth in the 10-year period were used in the impact fee analysis.

3.1 EXISTING WATER AND WASTEWATER SYSTEMS

The City of Cleburne's water distribution system has two pressure planes, approximately 240 miles of water lines ranging from 1- to 30-inches in diameter, a water treatment plant with a high service pump station, two ground storage tanks, four elevated storage tanks, two booster pump stations, and seven well sites. The existing water system is shown on **Figure 3-1**.

The City of Cleburne's wastewater service area covers approximately 47 square miles. Within the service area, there are approximately 200 miles of sewer lines that are owned and operated by the City. The City's wastewater collection system is primarily a gravity flow system that follows the major drainage features of the service area. The City's collection system consists of four sewer basins. The sewer basins include the Old Foamy, McAnear, West Buffalo, and East Buffalo. The wastewater lines range from 2 to 36 inches in diameter and convey an average daily wastewater flow of approximately 5 million gallons per day (MGD) to a single wastewater treatment plant (WWTP). The City currently operates nine lift stations which pump wastewater into nearby gravity sewers. These lift stations are required due to local topographic constraints. The existing collection system is shown on **Figure 3-2**.

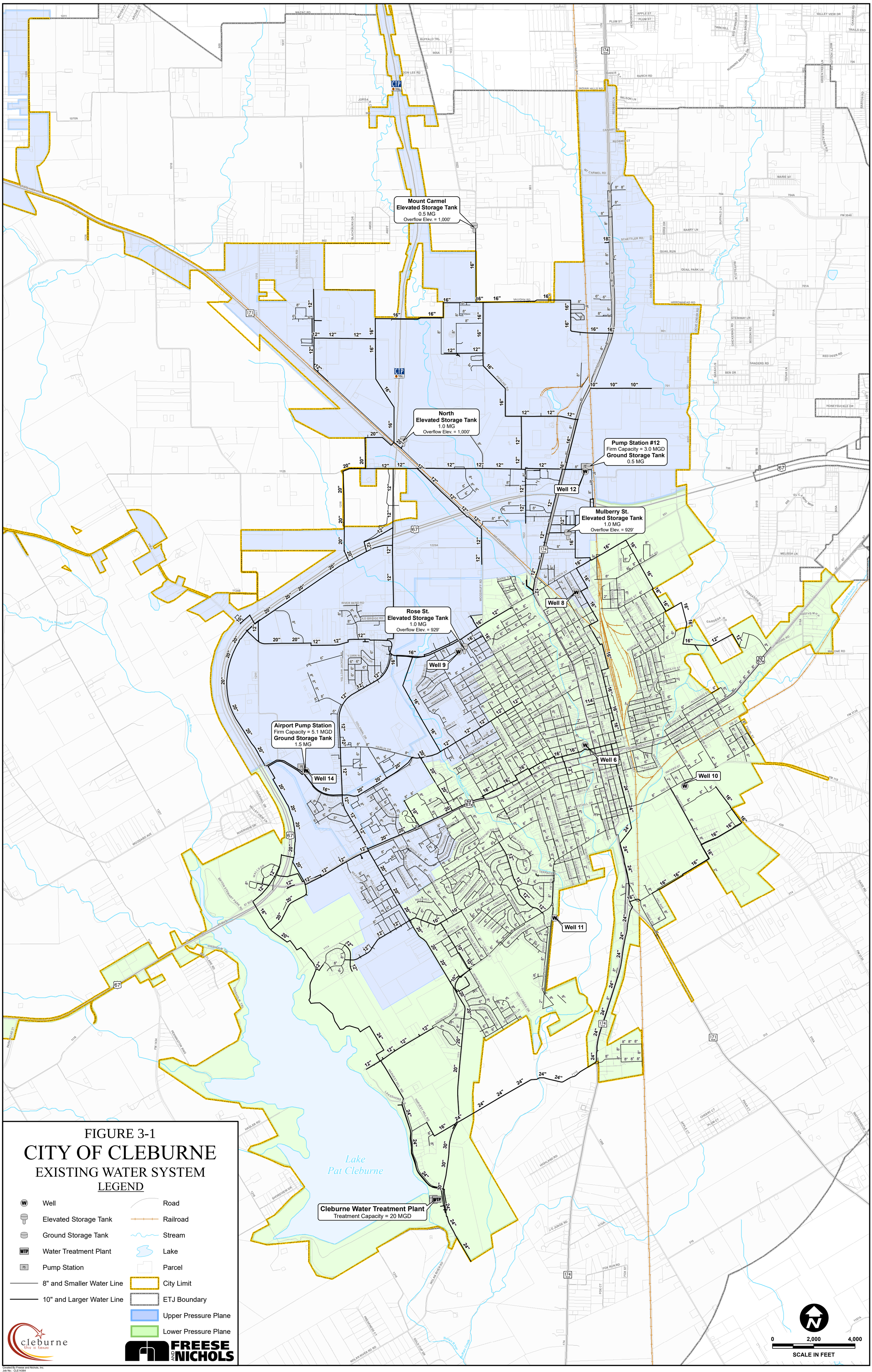

FIGURE 3-1

CITY OF CLEBURNE

EXISTING WATER SYSTEM

LEGEND

- Well
- Elevated Storage Tank
- Ground Storage Tank
- Water Treatment Plant
- Pump Station
- 8" and Smaller Water Line
- 10" and Larger Water Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- City Limit
- ETJ Boundary
- Upper Pressure Plane
- Lower Pressure Plane

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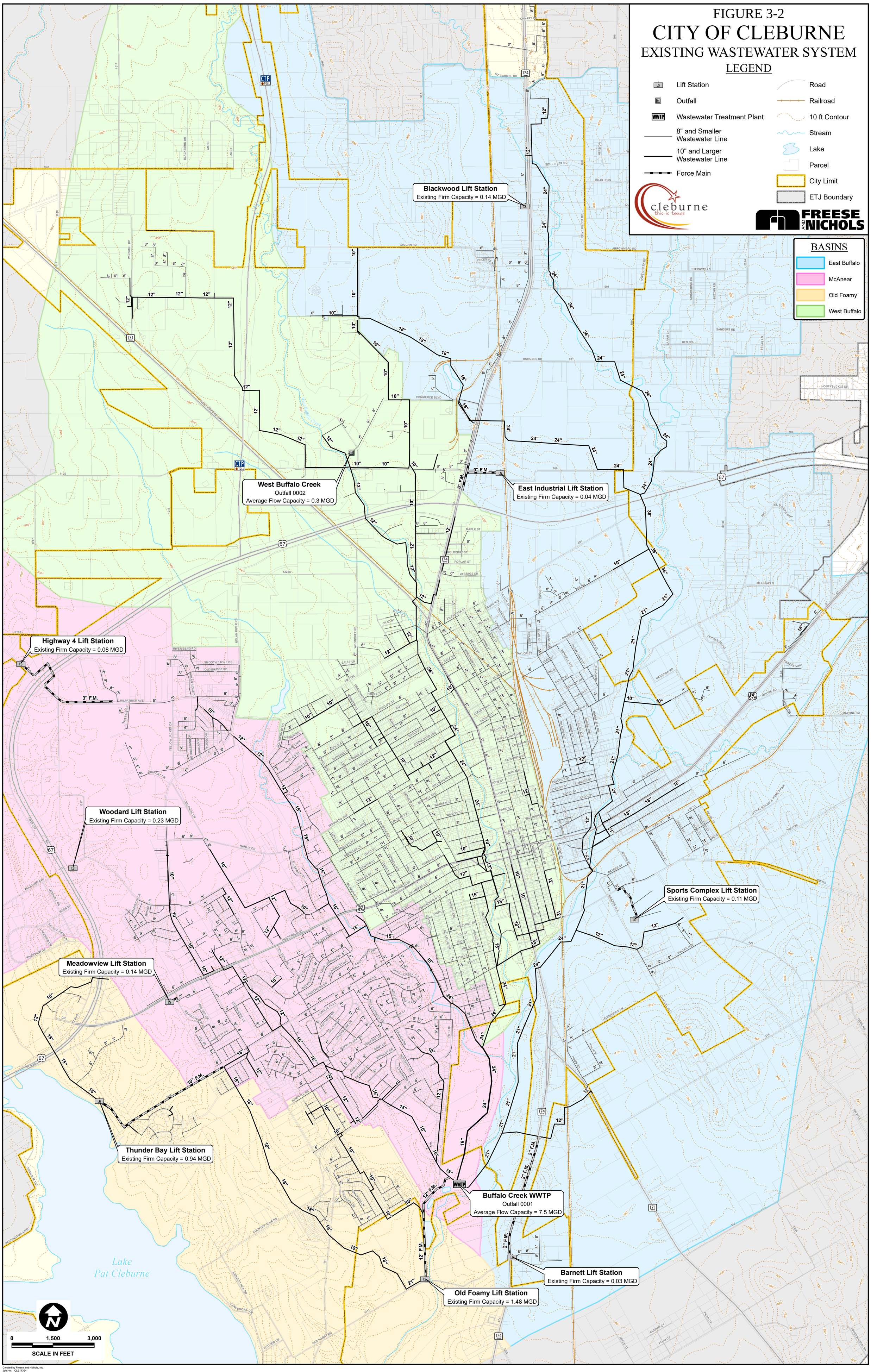

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3.2 WATER AND WASTEWATER LOAD PROJECTIONS

The land use data and historical water demands and wastewater flow characteristics were used to develop future water demands and wastewater flows based on a projected average day per connection use and peaking factors. These projections were the basis for determining the location and magnitude of the CIP projects. Demand and flow projections include separate municipal and industrial projections. **Tables 3-1 and 3-2** show historical water demands and wastewater flows, respectively. **Table 3-3** presents the projected water demands, and **Table 3-4** presents the projected wastewater flows for the City of Cleburne. Detailed water demand projections are provided in the *Task 2: Population and Water Demand Projections Memorandum* developed for the Water Supply and Reuse Integration Plan. Detailed wastewater flow projections are in the 2017 *Wastewater Master Plan*.

Table 3-1: Historical Water Demands

Year	Average Day Production (MGD)	Maximum Day Production (MGD)	Maximum Day to Average Day Peaking Factor
2010	6.2	8.8	1.4
2011	7.1	9.9	1.4
2012	6.4	8.6	1.3
2013	6.1	8.2	1.4
2014	5.9	7.4	1.3

Table 3-2: Historical Wastewater Treatment Plant Influent Flows

Year	Total Rainfall (inches)	Average Annual Daily Flow (MGD)
2010	37.9	5.2
2011	25.7	4.1
2012	27.4	4.9
2013	33.4	4.2
2014	30.7	4.2

Table 3-3: Projected Water Demands

Year	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Peak Hour Demand (MGD)
2017	10.4	18.6	30.8
2027	14.0	25.3	42.0
2040	20.2	36.6	62.0

Table 3-4: Projected Wastewater Flows

Year	Average Day Wastewater Flow (MGD)	Peak Wet Weather Flow (MGD)
2017	5.9	15.0
2027	7.6	26.7
2040	10.1	36.6

3.3 WATER AND WASTEWATER SYSTEM ANALYSES

3.3.1 Water System Analyses

The hydraulic model from the 2014 *High Service Pump Station Evaluation* by FNI was updated to include recently constructed lines. The model was used to analyze the existing water distribution system and the timing of improvements. Using the calibrated hydraulic model, system configurations were evaluated to determine the capital improvements to meet projected water demands. Hydraulic analyses were performed for the existing and proposed distribution system. In general, analyses were performed for three basic demand conditions:

- Average day, which determines the ability of the system to replenish storage facilities during average day demands.
- Maximum day, which determines the ability of the system to maintain full storage facilities during maximum day demands.
- Peak hour, which determines the ability of the system to maintain minimum residual pressure during periods of peak demand.

Improvements were developed by assessing the transmission needs of the system as well as future growth considerations. The analyses indicated the pump stations required additional pumping capacity, and a number of line improvements were recommended in the distribution system. Ground storage and water

lines are also recommended to incorporate new water supply from the north side of the City into the distribution system.

3.3.2 Wastewater System Analyses

The wastewater system analyses were conducted as part of the 2017 *Wastewater Master Plan*. FNI conducted hydraulic analyses to identify deficiencies in the City of Cleburne's wastewater collection system and to establish a capital improvements plan to reinforce the existing system and convey projected wastewater flows through 2040. Various combinations of improvements and modifications were investigated to determine the most appropriate approach for conveying projected flows.

3.4 WATER AND WASTEWATER SYSTEM IMPROVEMENTS

Proposed water and wastewater system improvement projects were developed based on water demand and wastewater flow projections. A summary of the costs for each of the projects required for the 10-year growth period used in the impact fee analysis for both the water and wastewater systems is shown in **Table 3-5** and **Table 3-6**, respectively. Costs listed for the existing projects are based on actual design and construction cost data provided by the City. Detailed cost estimates for the proposed water and wastewater system projects are included in **Appendix B** and **Appendix C**, respectively. The costs are in 2017 dollars and include an allowance for engineering, surveying, and contingencies. Cost estimates do not include allowances for right-of-way acquisition. **Table 3-5** and **Table 3-6** show a 2017 percent utilization as the portion of a project's capacity required to serve existing development. This portion of the project cost is not impact-fee-eligible. The 2027 percent utilization is the portion of the project's capacity that will be required to serve the City in 2027. The 2017-2027 percent utilization is the portion of the project's capacity required to serve development from 2017 to 2027. The portion of a project's total cost that is used to serve development projected to occur from 2017 through 2027 is calculated as the total actual cost multiplied by the 2017-2027 percent utilization. Only this portion of the cost is used in the impact fee analysis. The proposed 10-year water system projects are shown on **Figure 3-3**. Proposed wastewater projects are shown on **Figure 3-4**.

Table 3-5: Water Impact Fee CIP Projects

No.		Description of Project	Percent Utilization			Costs Based on 2017 Dollars		
			2017[1]	2027	2017-2027	Capital Cost	Current Development	10-Year (2017-2027)
Existing	A	24- and 20-inch line from the WTP	90%	100%	10%	$2,964,802	$2,668,322	$296,480
	B	Water Treatment Plant Capacity Expansion	93%	100%	7%	$8,315,863	$7,733,753	$582,110
	C	Impact Fee Study	0%	100%	100%	$40,000	$0	$40,000
					Existing Project Sub-total	**$11,320,665**	**$10,402,074**	**$918,591**
Proposed	W-1	Airport Pump Station Expansion and Ground Storage Tank	33%	88%	55%	$6,900,000	$2,277,000	$3,795,000
	W-2	16-inch Loop from 2nd Street to south of Gardega Road	20%	60%	40%	$2,530,000	$506,000	$1,012,000
	W-3	20-inch Water Line north of the Airport Pump Station	10%	80%	70%	$3,321,700	$332,170	$2,325,190
	W-4	16-inch Water Lines along County Road 1217 and County Road 1125	5%	90%	85%	$3,548,000	$177,400	$3,015,800
	W-5	Water Lines for new supply on north side of the City	0%	40%	40%	$3,554,600	$0	$1,421,840
	W-6	Ground Storage Tank and Pump Station for new water supply	0%	40%	40%	$10,764,000	$0	$4,305,600
	W-7	12-inch Water Line along Highway 67 and along Loop 367	10%	65%	55%	$1,405,800	$140,580	$773,190
	W-8	12-inch Water line along Graham Street	15%	45%	30%	$1,026,100	$153,915	$307,830
	W-9	12-inch Water Line along Woodruff Road	20%	40%	20%	$633,500	$126,700	$126,700
	W-10	1.5 MG Ground Storage Tank at Pump Station #12	33%	70%	37%	$2,070,000	$683,100	$765,900
					Proposed Project Sub-total	**$35,753,700**	**$4,396,865**	**$17,849,050**
					Total Capital Improvements Cost	**$47,074,365**	**$14,798,939**	**$18,767,641**

(1) Utilization in 2017 on proposed projects indicates a portion of the project that will be used to address deficiencies within the existing system, and therefore are not eligible for impact fee cost recovery for future growth.

Table 3-6: Wastewater Impact Fee CIP Projects

No.		Description of Project	Percent Utilization			Costs Based on 2017 Dollars		
			2017[1]	2027	2017-2027	Capital Cost	Current Development	10-Year (2017-2027)
Existing	A	12-inch Sewer Line along Weatherford Highway	5%	51%	46%	$185,000	$9,250	$85,100
	B	24-inch Sewer Line along East Buffalo Creek	7%	23%	16%	$3,349,651	$234,476	$535,944
	C	Impact Fee Study	0%	100%	100%	$40,000	$0	$40,000
					Existing Project Sub-total	**$3,574,651**	**$243,726**	**$661,044**
Proposed	WW-1	WWTP Expansion Permitting and Preliminary Design	0%	100%	100%	$400,000	$0	$400,000
	WW-2	WWTP 3 MGD Expansion and Priority 1 Rehabilitation	0%	81%	81%	$24,682,700	$0	$19,992,987
	WW-3	New North Industrial/Municipal WWTP Siting Study	0%	100%	100%	$150,000	$0	$150,000
	WW-4	27-inch Sewer Line Replacement along West Buffalo Creek	80%	90%	10%	$4,283,600	$3,426,880	$428,360
	WW-5	27-inch Sewer Line Replacement along South East Buffalo Creek	65%	90%	25%	$6,933,200	$4,506,580	$1,733,300
	WW-6	27-inch Sewer Line Replacement along North East Buffalo Creek	65%	90%	25%	$5,961,600	$3,875,040	$1,490,400
	WW-7	12/18-inch Sewer Line Along 174	0%	90%	90%	$483,000	$0	$434,700
	WW-8	8-inch Sewer Line Along Highway 171	0%	80%	80%	$1,738,400	$0	$1,390,720
					Proposed Project Sub-total	**$44,632,500**	**$11,808,500**	**$26,020,467**
					Total Capital Improvements Cost	**$48,207,151**	**$12,052,226**	**$26,681,511**

(1) Utilization in 2017 on proposed projects indicates a portion of the project that will be used to address deficiencies within the existing system, and therefore are not eligible for impact fee cost recovery for future growth.

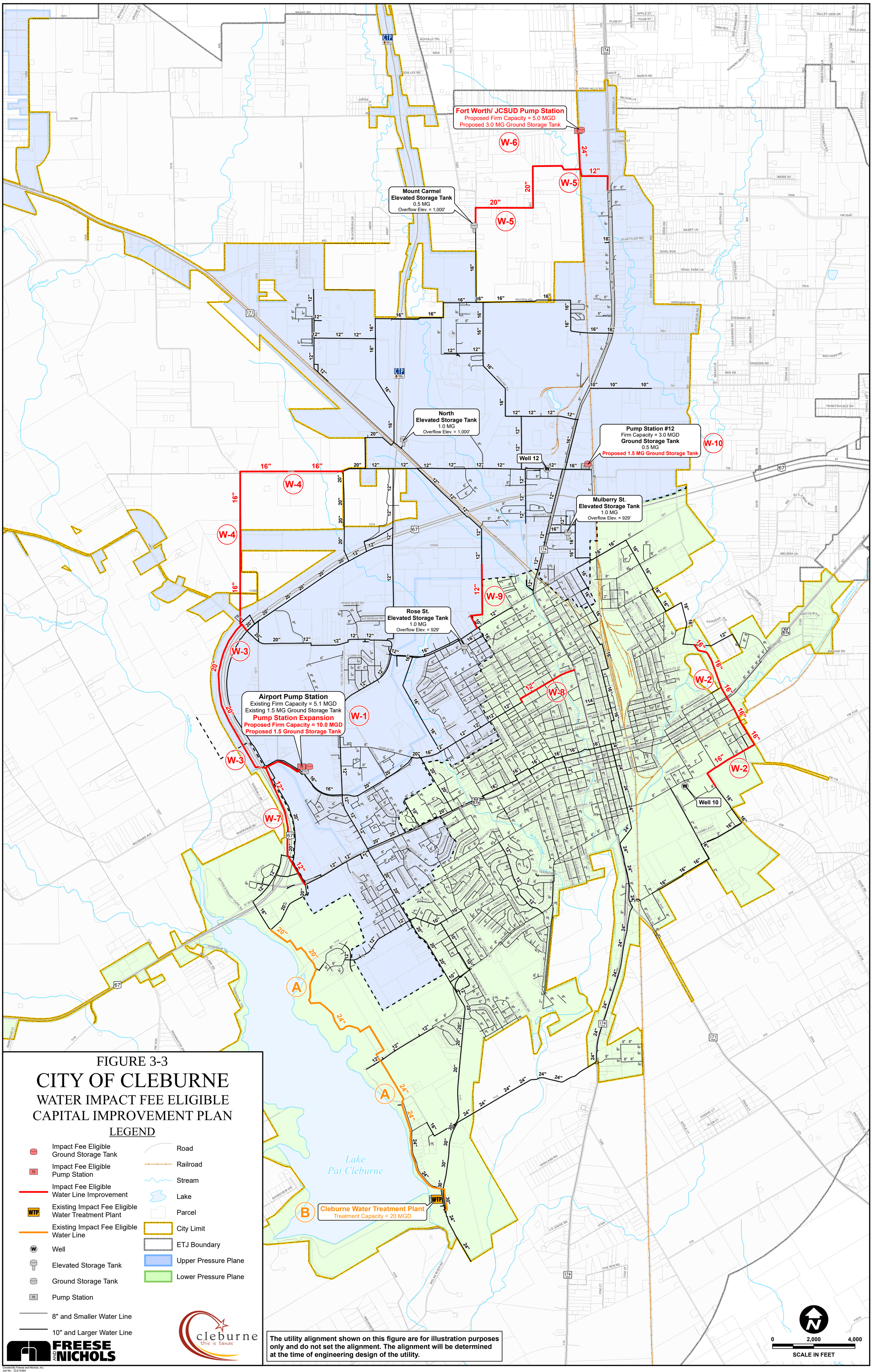

FIGURE 3-3

CITY OF CLEBURNE

WATER IMPACT FEE ELIGIBLE CAPITAL IMPROVEMENT PLAN

LEGEND

- Impact Fee Eligible Ground Storage Tank
- Impact Fee Eligible Pump Station
- Impact Fee Eligible Water Line Improvement
- Existing Impact Fee Eligible Water Treatment Plant
- Existing Impact Fee Eligible Water Line
- Well
- Elevated Storage Tank
- Ground Storage Tank
- Pump Station
- 8" and Smaller Water Line
- 10" and Larger Water Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- City Limit
- ETJ Boundary
- Upper Pressure Plane
- Lower Pressure Plane

FREESE AND NICHOLS

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The utility alignment shown on this figure are for illustration purposes only and do not set the alignment. The alignment will be determined at the time of engineering design of the utility.

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The utility alignment shown on this figure are for illustration purposes only and do not set the alignment. The alignment will be determined at the time of engineering design of the utility.

FIGURE 3-4
CITY OF CLEBURNE
WASTEWATER IMPACT FEE ELIGIBLE CAPITAL IMPROVEMENT PLAN

LEGEND

Impact Fee Eligible

- Wastewater Treatment Plant
- Wastewater Line
- Existing Impact Fee Eligible Wastewater Line

Existing System

- Lift Station
- Outfall
- Large Use Customer
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- Existing Force Main
- Road
- Railroad
- Stream
- Lake
- Parcel
- Proposed North WWTP Service Area
- Proposed South WWTP Service Area
- Joshua City Limit
- Burleson City Limit
- Burleson ETJ Boundary
- Cleburne City Limit
- Cleburne ETJ Boundary

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FREESE AND NICHOLS

WW-1 WWTP Expansion Permitting and Preliminary Design

WW-3 New North Industrial/Municipal WWTP Siting Study

Blackwood Lift Station
Existing Firm Capacity = 0.14 MGD

James Hardie Building Products

Brazos Electric

Sachem Inc.

West Buffalo Creek
Outfall 0002
Average Flow Capacity = 0.30 MGD

East Industrial Lift Station
Existing Firm Capacity = 0.04 MGD

Cleburne Station

Highway 4 Lift Station
Existing Firm Capacity = 0.08 MGD

Woodard Lift Station
Existing Firm Capacity = 0.23 MGD

Replace 24" Sewer Line with 27" Sewer Line

Meadowview Lift Station
Existing Firm Capacity = 0.14 MGD

Sports Complex Lift Station
Existing Firm Capacity = 0.11 MGD

Thunder Bay Lift Station
Existing Firm Capacity = 0.94 MGD

Replace 21" Sewer Line with 27" Sewer Line

Existing WWTP
Outfall 0001
Average Flow Capacity = 7.50 MGD
Expand Avg. Day Flow Capacity to 10.50 MGD
Priority 1 Rehabilitation

Barnett Lift Station
Existing Firm Capacity = 0.03 MGD

Old Foamy Lift Station
Existing Firm Capacity = 1.48 MGD

WW-2 WW-4 WW-5 WW-6 WW-7 WW-8

A B

0 2,500 5,000
SCALE IN FEET

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3.5 WATER AND WASTEWATER IMPACT FEE ANALYSIS

The impact fee analysis involves determining the utilization of existing and proposed projects required as defined by the capital improvement plan to serve new development over the next 10-year time period. For existing or proposed projects, the impact fee is calculated as a percentage of the project cost, based upon the percentage of the project's capacity required to serve development projected to occur between 2017 and 2027. Capacity serving existing development and development projected for more than 10 years in the future cannot be charged to impact fees.

3.5.1 Service Units

According to Chapter 395 of the Texas Local Government Code, the maximum impact fee may not exceed the amount determined by dividing the cost of capital improvements required by the total number of service units attributed to new development during the impact fee eligibility period. A water service unit is defined as the service equivalent to a water only connection or a water/wastewater connection for a single-family residence. A wastewater service unit is defined as the service unit equivalent to a water/wastewater connection for a single-family residence.

The service associated with public, commercial, and industrial connections is converted into service units based upon the capacity of the meter used to provide service. The number of service units required to represent each meter size is based on the safe maximum operating capacity of the appropriate meter type. American Water Works Association (AWWA) standards C700 (Cold Water Meters – Displacement Type, Bronze Main Case) and C702 (Cold Water Meters – Compound Type) were used to determine the safe maximum operating capacity, as these meter types represent those in place and stocked by the City. The service unit equivalent for each meter size used by the City is listed in **Table 3-7**.

Typically, in Cleburne, single-family residences are served with 3/4-inch multijet water meters. Larger meters represent multi-family, public, commercial, and industrial water use. The City provided data that included the meter size of each active water meter. **Table 3-8** shows the actual number water meters for 2017 and the projected number of water meters for 2027. **Table 3-9** shows the wastewater service units for 2017 and the projected service units for 2027.

Table 3-7: Service Unit Equivalencies

Meter Size (1)	Type	Maximum Flow (gpm)	Service Unit Equivalents
3/4"	Multijet	25	1.0
1"	Multijet	35	1.4
1 1/2"	Multijet	70	2.8
2"	Multijet	100	4.0
3"	Compound	320	12.8
4"	Compound	500	20.0
6"	Compound	1,000	40.0
6"	Turbine	1,250	50.0
8"	Compound	1,600	64.0
8"	Turbine	2,400	96.0

(1) Safe maximum operating capacity is based on AWWA standards C700 and C702.

Table 3-8: Water Service Units

Meter Size	2017		2027		Growth in Service Units
	Number of Meters	Service Units	Number of Meters	Service Units	
3/4"	9,985	9,985	13,748	13,748	3,763
1"	1,180	1,652	1,625	2,275	623
1 1/2"	232	650	319	893	244
2"	305	1,220	338	1,352	132
3"	21	269	23	294	26
4"	10	200	11	220	20
6" (Compound)	6	240	7	280	40
6" (Turbine)	2	100	2	100	0
8" (Compound)	1	64	1	64	0
8" (Turbine)	1	96	1	96	0
Total	**11,743**	**14,475**	**16,075**	**19,323**	**4,847**

Table 3-9: Wastewater Service Units

Meter Size	2017		2027		Growth in Service Units
	Number of Meters	Service Units	Number of Meters	Service Units	
3/4"	9,985	9,985	13,984	13,984	3,999
1"	1,180	1,652	1,653	2,314	662
1 1/2"	232	650	325	910	260
2"	305	1,220	338	1,352	132
3"	21	269	23	294	26
4"	10	200	11	220	20
6" (Compound)	6	240	7	280	40
6" (Turbine)	2	100	2	100	0
8" (Compound)	1	64	1	64	0
8" (Turbine)	1	96	1	96	0
Total	**11,743**	**14,475**	**16,345**	**19,615**	**5,139**

3.5.2 Maximum Impact Fee Calculations

Texas Government Code Chapter 395 outlines the procedures and requirements for calculating maximum allowable impact fees to recover costs associated with capital improvement projects needed due to growth over a 10-year period. Chapter 395 also requires a plan that addresses possible duplication of payments for capital improvements. This plan can either provide a credit for the portion of revenues generated by new development that is used for the payment of eligible improvements, including payment of debt, or reduce the total eligible project costs by 50 percent. The City of Cleburne has selected to utilize the reduction of the total eligible project costs by 50 percent to determine the maximum allowable impact fees.

Chapter 395 of the Texas Local Government Code states that the maximum impact fee may not exceed the amount determined by dividing the cost of capital improvements required by the total number of service units attributed to new development during the impact fee eligibility period less the credit to account for water and wastewater revenues used to finance capital improvement plans.

The total projected costs include the projected capital improvement costs to serve 10-year development, the projected finance cost for the capital improvements, and the consultant cost for preparing and

updating the Capital Improvements Plan. A 3.0% interest rate was used to calculate financing costs. **Tables 3-10** and **3-11** display a summary of the maximum allowable impact fee calculations for water and wastewater, respectively.

Table 3-10: Maximum Water Impact Fee Calculation

Total Eligible Capital Improvement Costs	$18,767,641
Total Eligible Financing Costs	$7,564,403
Total Eligible Impact Fee Costs	$26,332,044
Growth in Service Units	4,847
Maximum Water Impact Fee per Service Unit (1)	$5,432
Impact Fee Credit per Service Unit (2)	$2,716
Maximum Allowable Water Impact Fee (3)	**$2,716**

(1) Total Eligible Costs divided by the Growth in Service Units.
(2) Credit is 50% of Maximum Water Impact Fee per Service Unit.
(3) Maximum Allowable Water Impact Fee is Maximum Water Impact Fee minus the Impact Fee Credit per Service Unit.

Table 3-11: Maximum Wastewater Impact Fee Calculation

Total Eligible Capital Improvement Costs	$26,681,511
Total Eligible Financing Costs	$10,754,133
Total Eligible Impact Fee Costs	$37,435,644
Growth in Service Units	5,139
Maximum Water Impact Fee per Service Unit (1)	$7,284
Impact Fee Credit per Service Unit (2)	$3,642
Maximum Allowable Wastewater Impact Fee (3)	**$3,642**

(1) Total Eligible Costs divided by the Growth in Service Units.
(2) Credit is 50% of Maximum Wastewater Impact Fee per Service Unit.
(3) Maximum Allowable Wastewater Impact Fee is Maximum Wastewater Impact Fee minus the Impact Fee Credit per Service Unit.

4.0 ROADWAY IMPACT FEE ANALYSIS

Shrinking funds available for roadway improvements on city thoroughfares have prohibited many cities from upgrading infrastructure to meet increasing travel demands resulting from new growth. To alleviate this issue, many cities collect "impact fees" from new development to help fund roadway improvements necessitated by such development. What is unique and perhaps controversial about impact fees is that they often finance roadway improvements that are outside the development itself. However, when considering traffic implications created from a system standpoint, impact fees provide a means by which infrastructure may keep pace with such development.

Texas initially authorized the use of impact fees with the passage of Senate Bill 336 during the 1987 legislature. Now codified in Chapter 395 of the Texas Local Government Codes, the legislation authorizes cities to collect fees from new developments to finance new construction or expansion of capital improvements such as water treatment and distribution facilities, storm and wastewater facilities, and roadway facilities. The law stipulates that all fees collected from new development must not exceed the maximum amount calculated by the methodology described therein.

The law also mandates that impact fee systems be updated periodically to ensure that the appropriate cost per service unit is established. As new roadway improvements are completed, actual costs are inserted into the cost per service unit calculation to reflect a more accurate reading of service area costs as opposed to estimated costs that were established at the onset of the impact fee system. Additionally, new capital improvement projects can be added to the system.

In September 2001, Chapter 395 was amended, which called for several technical and administrative changes including the following:

- Expansion of the permissible 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 five-year period;
- Changes in compliance requirements as they relate to annual reporting; and
- Consolidation of the land use assumptions and capital improvements plan hearings.

The implementation of a roadway impact fee system complying with Chapter 395 offers several advantages including:

1. A systematic, structured approach to assessment of fees;
2. A clear, equitable distribution of costs associated with the impact of new development;
3. The ability to pool funds for project initiation within a service area;
4. Assurance that fees collected will be spent in the area where new development is occurring;
5. Up-front knowledge of fees to be imposed;
6. Credits for developer participation; and
7. Ability for developers to demonstrate that, pursuant to city guidelines, specific unit equivalencies may be different from those presented in the land use equivalency table.

Recognizing the need to provide safe and adequate facilities and desiring to have equitable funding of roadway improvements, the City of Cleburne retained Freese and Nichols, Inc. to assist in the development of a roadway impact fee system.

4.1 METHODOLOGY

To develop roadway impact fees, a series of work tasks were undertaken. These tasks are described below.

1. Meetings were held with City Staff to discuss impact fee methodology, project criteria and eligibility, and cost eligibility for consideration in the study.
2. Roadway **service areas** were developed to ensure conformity with legislative mandate, as well as amended to allow for city annexations.
3. Vehicle-miles of travel (VMT) in the PM peak hour was identified as the **service unit** of measure for analyses and impact fee calculations.

4. A **roadway inventory** was conducted to document lane geometrics, roadway functional classification, and system capacity. Traffic volume count data were collected in June 2015 to determine roadway utilization, and if any capacity deficiencies exist within each impact fee service area. Traffic volume counts were conducted at 25 locations throughout the city.

5. Projected **10-year growth** was calculated for service areas based on land use assumptions (projections of population and employment growth) and translated into residential, office, commercial and industrial VMT using service unit equivalencies. Trip rate data was obtained from *Trip Generation, Ninth Edition* by the Institute of Transportation Engineers, and trip length statistics for Cleburne were obtained from the North Central Texas Council of Governments (NCTCOG) travel demand model and National Household Travel Survey (NHTS). The Land Use Assumptions for Impact Fees report was publicly heard and approved by the Cleburne City Council on October 24, 2017.

6. A **capital improvements plan (CIP)** to address projected growth was developed and separated by service area.

7. **Roadway costs** associated with construction, engineering, right-of-way, and project financing for capital improvement projects were prepared by Freese and Nichols. Costs for study updates are eligible for recovery and were included in the total project cost. Roadway cost data was compiled and tabulated by service area.

8. As defined in Chapter 395, a **50% credit** was applied to the cost of the CIP in determining a cost per service unit for each service area in lieu of a credit analysis.

9. The cost of capacity supplied, cost attributable to new development and the **maximum cost per service unit** was calculated for each service area.

10. This report was prepared to document the procedures, findings, and conclusions of the study.

4.2 ROADWAY SERVICE AREAS

Legislative requirements stipulate that roadway service areas be limited to a 6-mile maximum and must be located within the current city limits. Transportation service areas are different from water and wastewater systems, which can include the city limits 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 that service area. Nine service areas have been created as a result of zonal restructuring and fall within the 6-mile mandated limits. The service areas for roadways are illustrated on **Figure 4-1**.

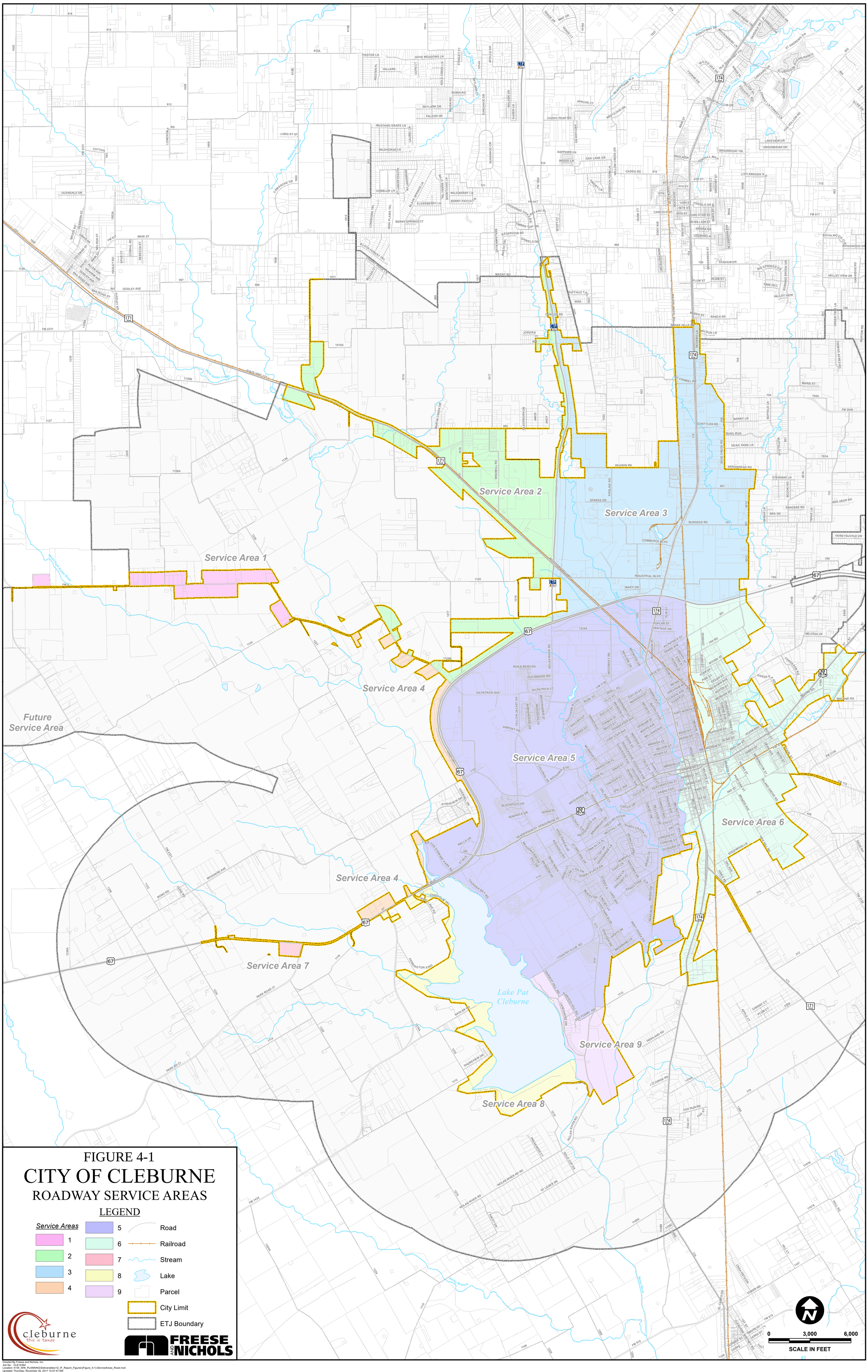

FIGURE 4-1

CITY OF CLEBURNE

ROADWAY SERVICE AREAS

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4.3 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 Cleburne. 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. This service unit has been tested and validated since the inception of impact fee legislation in 1989.

4.3.1 Service Units

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

Service Unit Supply

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

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

600 vehicles per hour per lane x 4 lanes x 2 miles = 4,800 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 vehicle-trips x 2 miles/trip = 200 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 2015) on a street and a given segment length.

4.3.2 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.

4.3.3 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.

Pass-by and Diverted Trips Adjustments

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

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

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

ITE Land Use	ITE Code	Development Unit	Ave. Trip Rate	Pass By Rate	Diverted Trips	Ave. Trip Rate with Deductions
Residential						
Single-family detached housing	210	DU	1.00	0%	0%	1.00
Apartment	220	DU	0.62	0%	0%	0.62
Residential Condominium / Townhouse	230	DU	0.52	0%	0%	0.52
Senior Adult Housing - Detached	251	DU	0.27	0%	0%	0.27
Continuing Care Retirement Community	255	DU	0.16	0%	0%	0.16
Office						
General Office	710	1000 sq. ft.	1.49	0%	0%	1.49
Corporate Headquarters Bldg	714	1000 sq. ft.	1.41	0%	0%	1.41
Medical-Dental Office	720	1000 sq. ft.	3.46	0%	0%	3.46
U.S. Post Office	732	1000 sq. ft.	11.22	0%	0%	11.22
Research and Development Center	760	1000 sq. ft.	1.07	0%	0%	1.07
Business Park	770	1000 sq. ft.	1.26	0%	0%	1.26
Commercial / Retail						
Hotel	310	Rooms	0.60	0%	0%	0.60
All Suites Hotel	311	Rooms	0.40	0%	0%	0.40
Motel	320	Rooms	0.47	0%	0%	0.47
Movie Theater with Matinee	444	Screens	20.22	15%	0%	17.19
Building Materials and Lumber Store	812	1000 sq. ft.	4.49	25%	0%	3.37
Free standing Discount Superstore	813	1000 sq. ft.	4.35	28%	0%	3.13
Variety Store	814	1000 sq. ft.	6.82	0%	0%	6.82
Specialty Retail Center[1]	814 (8th Ed.)	1000 sq. ft.	2.71	45%	23%	0.87
Hardware/Paint Store	816	1000 sq. ft.	4.84	26%	28%	2.23
Garden Center	817	1000 sq. ft.	6.94	0%	0%	6.94
Nursery (Wholesale)	818	1000 sq. ft.	5.17	25%	0%	3.88
Shopping Center[2]	820	1000 sq. ft.	6.35	45%	23%	2.03
Automobile Sales	841	1000 sq. ft.	2.62	40%	0%	1.57
Auto Parts Sales	843	1000 sq. ft.	5.98	43%	13%	2.63
Tire Store	848	1000 sq. ft.	4.15	28%	10%	2.57
Tire Superstore	849	1000 sq. ft.	2.11	28%	10%	1.31
Super market	850	1000 sq. ft.	9.48	36%	38%	2.48
Convenience Market with Gasoline Pumps	853	Fueling Positions	19.07	63%	26%	2.10
Discount Club	857	1000 sq. ft.	4.18	0%	0%	4.18
Home Improvement Superstore	862	1000 sq. ft.	2.33	48%	24%	0.65
Electronic Superstore	863	1000 sq. ft.	4.50	40%	33%	1.22
Toy Superstore	864	1000 sq. ft.	4.99	0%	0%	4.99
Apparel Store	876	1000 sq. ft.	3.83	0%	0%	3.83
Arts and Crafts Store	879	1000 sq. ft.	6.21	0%	0%	6.21
Pharmacy with drive thru	881	1000 sq. ft.	9.91	49%	13%	3.77
Furniture Store	890	1000 sq. ft.	0.45	53%	31%	0.07
Bank with Drive Thru	912	1000 sq. ft.	24.30	47%	26%	6.64
Quality Restaurant	931	1000 sq. ft.	7.49	44%	27%	2.17
Restaurant	932	1000 sq. ft.	9.85	43%	26%	3.11
Fast food with drive thru	934	1000 sq. ft.	32.65	50%	23%	8.72
Quick Lubrication Vehicle Stop	941	Serving Positions	5.19	55%	0%	2.34
Automotive Care Center	942	1000 sq. ft.	3.11	0%	0%	3.11
Gas/Service Station with Convenience Market	945	Fueling Positions	13.51	56%	31%	1.73
Light Industrial						
General Light Industrial	110	1000 sq. ft.	0.97	0%	0%	0.97
Industrial Park	130	1000 sq. ft.	0.85	0%	0%	0.85
Manufacturing	140	1000 sq. ft.	0.73	0%	0%	0.73
Mini Warehouse (Self Storage)	151	1000 sq. ft.	0.26	0%	0%	0.26
Utilities	170	1000 sq. ft.	0.76	0%	0%	0.76
Public / Institutional						
Middle/Jr high school	522	1000 sq. ft.	1.19	0%	0%	1.19
High School	530	1000 sq. ft.	0.97	0%	0%	0.97
Private School (K-8)	534	Students	0.60	0%	0%	0.60
Jr. / Community College	540	Students	0.12	0%	0%	0.12
Church	560	1000 sq. ft.	0.55	0%	0%	0.55
Day Care Center	565	Students	0.81	0%	0%	0.81

Notes: [1] Trip generation rate from ITE Trip Generation Manual 8th Edition
[2] Average trip rate modified for maximum 250,000 sq ft consideration

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 based on information generated by NCTCOG travel demand modeling, National Household Travel Survey information, and engineering judgment. 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 NCTCOG model and National Household Travel Survey represents the best available information on trip lengths for this area.

Localized Trip Adjustment

Due to impact fee legislation mandating the funding tool be limited to locally funded roadways, a localization adjustment was made to the trip lengths to net out the portion on the federal highway system. Modeling output of vehicle-miles traveled by facility classification was used to calculate a local travel percentage of 80% in Cleburne with the remaining portion being discounted to the average trip lengths.

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.

Table 4-2: Trip Lengths and Adjustments

ITE Land Use	ITE Code	NCTCOG Trip Length	Localized Trip Length	Ave. Trip Length
Residential				
Single-family detached housing	210	10.94	8.75	4.38
Apartment	220	10.94	8.75	4.38
Residential Condominium / Townhouse	230	10.94	8.75	4.38
Senior Adult Housing - Detached	251	10.06	8.05	4.02
Continuing Care Retirement Community	255	10.06	8.05	4.02
Office				
General Office	710	9.61	7.69	3.84
Corporate Headquarters Bldg	714	11.88	9.50	4.75
Medical-Dental Office	720	9.64	7.71	3.86
U.S. Post Office	732	8.01	6.41	3.20
Research and Development Center	760	11.88	9.50	4.75
Business Park	770	11.88	9.50	4.75
Commercial / Retail				
Hotel	310	4.15	3.32	1.66
All Suites Hotel	311	4.15	3.32	1.66
Motel	320	4.15	3.32	1.66
Movie Theater with Matinee	444	3.30	2.64	1.32
Building Materials and Lumber Store	812	1.11	0.89	0.44
Free standing Discount Superstore	813	3.98	3.18	1.59
Variety Store	814	3.98	3.18	1.59
Specialty Retail Center[1]	814 (8th Ed.)	2.86	2.29	1.14
Hardware/Paint Store	816	1.11	0.89	0.44
Garden Center	817	2.63	2.10	1.05
Nursery (Wholesale)	818	2.63	2.10	1.05
Shopping Center[2]	820	4.12	3.30	1.65
Automobile Sales	841	4.47	3.58	1.79
Auto Parts Sales	843	2.30	1.84	0.92
Tire Store	848	4.12	3.30	1.65
Tire Superstore	849	4.12	3.30	1.65
Super market	850	1.84	1.47	0.74
Convenience Market with Gasoline Pumps	853	1.77	1.42	0.71
Discount Club	857	2.30	1.84	0.92
Home Improvement Superstore	862	3.90	3.12	1.56
Electronic Superstore	863	3.52	2.82	1.41
Toy Superstore	864	4.63	3.70	1.85
Apparel Store	876	3.39	2.71	1.36
Arts and Crafts Store	879	2.30	1.84	0.92
Pharmacy with drive thru	881	1.05	0.84	0.42
Furniture Store	890	4.68	3.74	1.87
Bank with Drive Thru	912	2.63	2.10	1.05
Quality Restaurant	931	3.75	3.00	1.50
Restaurant	932	3.89	3.11	1.56
Fast food with drive thru	934	3.53	2.82	1.41
Quick Lubrication Vehicle Stop	941	2.86	2.29	1.14
Automotive Care Center	942	4.50	3.60	1.80
Gas/Service Station with Convenience Market	945	1.77	1.42	0.71
Light Industrial				
General Light Industrial	110	9.95	7.96	3.98
Industrial Park	130	9.95	7.96	3.98
Manufacturing	140	10.28	8.22	4.11
Mini Warehouse (Self Storage)	151	6.34	5.07	2.54
Utilities	170	9.95	7.96	3.98
Public / Institutional				
Middle/Jr high school	522	3.00	2.40	1.20
High School	530	4.00	3.20	1.60
Private School (K-8)	534	4.12	3.30	1.65
Jr. / Community College	540	4.20	3.36	1.68
Church	560	2.41	1.93	0.96
Day Care Center	565	1.64	1.31	0.66

Notes: [1] Trip generation rate from ITE Trip Generation Manual 8th Edition
[2] Average trip rate modified for maximum 250,000 sq ft consideration

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 equivalency table is illustrated in **Table 4-3**.

Table 4-3: Land Use Vehicle-Mile Equivalency

ITE Land Use	ITE Code	Development Unit	Ave. Trip Rate with Deductions	Ave. Trip Length	Total Service Units (Veh-Mi/Dev Unit)
Residential					
Single-family detached housing	210	DU	1.00	4.38	**4.38**
Apartment	220	DU	0.62	4.38	**2.71**
Residential Condominium / Townhouse	230	DU	0.52	4.38	**2.28**
Senior Adult Housing - Detached	251	DU	0.27	4.02	**1.09**
Continuing Care Retirement Community	255	DU	0.16	4.02	**0.64**
Office					
General Office	710	1000 sq. ft.	1.49	3.84	**5.73**
Corporate Headquarters Bldg	714	1000 sq. ft.	1.41	4.75	**6.70**
Medical-Dental Office	720	1000 sq. ft.	3.46	3.86	**13.34**
U.S. Post Office	732	1000 sq. ft.	11.22	3.20	**35.95**
Research and Development Center	760	1000 sq. ft.	1.07	4.75	**5.08**
Business Park	770	1000 sq. ft.	1.26	4.75	**5.99**
Commercial / Retail					
Hotel	310	Rooms	0.60	1.66	**1.00**
All Suites Hotel	311	Rooms	0.40	1.66	**0.66**
Motel	320	Rooms	0.47	1.66	**0.78**
Movie Theater with Matinee	444	Screens	17.19	1.32	**22.69**
Building Materials and Lumber Store	812	1000 sq. ft.	3.37	0.44	**1.50**
Free standing Discount Superstore	813	1000 sq. ft.	3.13	1.59	**4.99**
Variety Store	814	1000 sq. ft.	6.82	1.59	**10.86**
Specialty Retail Center[1]	814 (8th Ed.)	1000 sq. ft.	0.87	1.14	**0.99**
Hardware/Paint Store	816	1000 sq. ft.	2.23	0.44	**0.99**
Garden Center	817	1000 sq. ft.	6.94	1.05	**7.30**
Nursery (Wholesale)	818	1000 sq. ft.	3.88	1.05	**4.08**
Shopping Center[2]	820	1000 sq. ft.	2.03	1.65	**3.35**
Automobile Sales	841	1000 sq. ft.	1.57	1.79	**2.81**
Auto Parts Sales	843	1000 sq. ft.	2.63	0.92	**2.42**
Tire Store	848	1000 sq. ft.	2.57	1.65	**4.24**
Tire Superstore	849	1000 sq. ft.	1.31	1.65	**2.16**
Super market	850	1000 sq. ft.	2.48	0.74	**1.82**
Convenience Market with Gasoline Pumps	853	Fueling Positions	2.10	0.71	**1.49**
Discount Club	857	1000 sq. ft.	4.18	0.92	**3.85**
Home Improvement Superstore	862	1000 sq. ft.	0.65	1.56	**1.02**
Electronic Superstore	863	1000 sq. ft.	1.22	1.41	**1.71**
Toy Superstore	864	1000 sq. ft.	4.99	1.85	**9.24**
Apparel Store	876	1000 sq. ft.	3.83	1.36	**5.19**
Arts and Crafts Store	879	1000 sq. ft.	6.21	0.92	**5.71**
Pharmacy with drive thru	881	1000 sq. ft.	3.77	0.42	**1.58**
Furniture Store	890	1000 sq. ft.	0.07	1.87	**0.13**
Bank with Drive Thru	912	1000 sq. ft.	6.64	1.05	**6.99**
Quality Restaurant	931	1000 sq. ft.	2.17	1.50	**3.26**
Restaurant	932	1000 sq. ft.	3.11	1.56	**4.83**
Fast food with drive thru	934	1000 sq. ft.	8.72	1.41	**12.32**
Quick Lubrication Vehicle Stop	941	Serving Positions	2.34	1.14	**2.67**
Automotive Care Center	942	1000 sq. ft.	3.11	1.80	**5.60**
Gas/Service Station with Convenience Market	945	Fueling Positions	1.73	0.71	**1.22**
Light Industrial					
General Light Industrial	110	1000 sq. ft.	0.97	3.98	**3.86**
Industrial Park	130	1000 sq. ft.	0.85	3.98	**3.38**
Manufacturing	140	1000 sq. ft.	0.73	4.11	**3.00**
Mini Warehouse (Self Storage)	151	1000 sq. ft.	0.26	2.54	**0.66**
Utilities	170	1000 sq. ft.	0.76	3.98	**3.02**
Public / Institutional					
Middle/Jr high school	522	1000 sq. ft.	1.19	1.20	**1.43**
High School	530	1000 sq. ft.	0.97	1.60	**1.55**
Private School (K-8)	534	Students	0.60	1.65	**0.99**
Jr. / Community College	540	Students	0.12	1.68	**0.20**
Church	560	1000 sq. ft.	0.55	0.96	**0.53**
Day Care Center	565	Students	0.81	0.66	**0.53**

Notes: [1] Trip generation rate from ITE Trip Generation Manual 8th Edition
[2] Average trip rate modified for maximum 250,000 sq ft consideration

4.4 EXISTING CONDITIONS ANALYSIS

An inventory of major roadways that are designated as arterial and/or collector facilities on the Thoroughfare Plan was conducted to determine: 1) capacity provided by the existing roadway system, 2) the demand currently placed on the system, and 3) the potential existence of deficiencies on the system. Any deficiencies found to occur will be carried over in the impact fee calculations (netting out capacity made available by the CIP). Data for the inventory was obtained from the Thoroughfare Plan, field reconnaissance, and peak hour traffic volume count data.

The roadways were divided into segments based on changes in lane configuration, major intersections, city limits or area development that may influence roadway characteristics. For the assessment of individual segments, lane capacities were assigned to each segment based on roadway functional class and type of cross-section, as listed in **Table 4-4**. Roadway hourly volume capacities are based on general carrying capacity values and reflect level-of-service (LOS) "D" operation, which has been identified as the minimum acceptable traffic operational condition by cities.

Table 4-4: Roadway Facility Vehicle-Mile Lane Capacities

Roadway Facility Functional Classification	Designation	Hourly Vehicle-mile Capacity per Lane Mile of Roadway Facility
Divided Arterial(1)	DA	675
Divided Collector(1)	DC	550
Undivided Arterial	UA	625
Undivided Collector	UC	500

(1) Facilities with a two-way left turn lane (TWLTL) are considered for this assessment as a divided facility for capacity allocation and marked as Special Arterial (SA) or Special Collector (SC) designation.

4.4.1 Existing Volumes

Existing directional PM peak hour volumes were obtained from automated traffic counts conducted in June 2015. Automated traffic counts at 25 separate locations were collected on major roadways throughout the city. In an effort to minimize the total number of counts, data was collected at locations where traffic volumes would typify link volumes on the major segments within the immediate area. 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 **Appendix D** as part of the existing capital improvements database.

4.4.2 Vehicle-Miles of Existing Capacity Supply and Demand

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:

Vehicle-Miles of Capacity = Link capacity per peak hour per lane x No. of Lanes x Length of segment (miles)

A summary of the current capacity available on the roadway system by service area is detailed in **Table 4-5**.

Similarly, 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:

Vehicle-Miles of Demand = PM peak hour volume x Length of segment (miles)

The total vehicle-miles of demand summarized by service area is listed in **Table 4-5**. Vehicle-miles of existing capacity and demand by roadway segment is detailed in **Appendix D**.

4.1 VEHICLE-MILES OF EXISTING EXCESS CAPACITY AND DEFICIENCIES

For each roadway segment, the existing vehicle-miles of excess capacity and/or deficiencies were calculated and are listed in **Table 4-5**. 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 the table. Any deficiencies identified under current operations will be carried over to the impact fee calculation. A detailed listing of existing excess capacity and deficiencies by roadway segment is also located in **Appendix D**.

Table 4-5: Peak Hour Vehicle-Miles of Existing Capacity, Demand, Excess Capacity, and Deficiencies

Service Area	Capacity	Demand	Excess Capacity	Existing Deficiencies
1	1,415	311	1,104	0
2	6,764	3,273	3,491	0
3	25,869	9,399	16,471	0
4	355	92	263	0
5	53,448	20,242	33,206	0
6	23,154	11,531	11,624	0
7	301	35	266	0
8	110	1	109	0
9	1,604	374	1,230	0
Total	**113,020**	**45,258**	**67,763**	**0**

4.2 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.

4.2.1 Projected Growth

The projected growth for the roadway service area is represented by the increase in the number of new vehicle-miles of demand 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 Cleburne Land Use Assumptions (LUA) Report for Impact Fees by Freese and Nichols. Estimates of population and employment were prepared for the years 2017 and 2027.

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, comprising 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 4-6.**

Table 4-6: Projected Population 10-Year Growth Summary

Service Area	2017	2027	Net Growth
1	0	0	0
2	65	948	883
3	632	1,507	875
4	0	28	28
5	26,780	34,099	7,319
6	3,806	5,674	1,868
7	0	0	0
8	16	51	35
9	24	77	53
Total Population	**31,323**	**42,384**	**11,061**

Table 4-7: Projected Employment 10-Year Growth Summary

Service Area	2017				2027				Net Growth			
	Basic	Retail	Service	Total	Basic	Retail	Service	Total	Basic	Retail	Service	Total
1	4	1	7	12	5	2	9	16	1	1	2	4
2	239	168	441	848	276	207	559	1,042	187	39	253	479
3	1,120	787	2,134	4,041	1,225	905	2,552	4,682	105	118	418	641
4	3	2	6	11	6	4	10	20	3	2	4	9
5	3,453	2,557	6,395	12,405	3,664	2,706	7,167	13,537	61	149	637	847
6	1,037	765	2,224	4,026	1,132	754	2,451	4,337	95	-11	227	311
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	6	1	7	14	8	2	10	20	2	1	3	6
Total Jobs	**5,862**	**4,281**	**11,214**	**21,357**	**6,316**	**4,580**	**12,758**	**23,654**	**454**	**299**	**1,544**	**2,297**

4.2.2 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 on the associated 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 each service area. Vehicle-miles of demand for population

growth were based on dwelling units (residential). Vehicle-miles of demand for employment were based on the number of employees and then converted to square footage of building space using estimates of square footage per employee for industrial, office, and retail uses.

The 10-year projected vehicle-miles of demand by service area are summarized in **Table 4-8**. **Appendix E** details the derivation of the projected demand calculations.

Table 4-8: 10-Year Projected Service Units of Demand

Service Area	Projected 10-Year Growth (Vehicle-Miles)
1	15
2	3,321
3	3,570
4	79
5	14,115
6	4,087
7	0
8	57
9	107
Total	**25,349**

4.3 CAPITAL IMPROVEMENTS PLAN

The impact fee CIP is aimed at facilitating anticipated long-term growth in Cleburne. The City has identified the City-funded transportation projects needed to accommodate the anticipated projected growth within the City. Arterial and collector class facilities in the current official Thoroughfare Plan were included in the impact fee CIP to provide flexibility in the development of the community due to the anticipated rates of development.

4.3.1 Eligible Projects

Legislative mandate stipulates that the impact fee CIP contain only those roadways which are included on the City's official Master Thoroughfare Plan that are classified as *arterial* or *collector* status facilities. Impact fee legislation also allows for the recoupment of costs for previously constructed facilities and projects currently under construction; however, after consideration, none of the projects were included

for recoupment. All of these projects conform to the Thoroughfare Plan requirements and will consider only the costs incurred by the City for facility implementation.

4.3.2 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. These estimates are based on the ultimate roadway section identified by functional classification in the 2008 Master Thoroughfare Plan Report. 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 (low) estimates of project cost are considered.

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

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

> <u>Construction:</u> 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, manholes, 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), ancillary adjustments to existing utilities, 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.

The cost for right-of-way may vary based on location of project and will be based on data from the most current County Appraisal District data.

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

Previous Assessments: The cost for any previous assessments collected by the City on projects identified on the impact fee CIP must be removed from program consideration. As this is a new impact fee program, there are no previous assessments to consider in the initial calculation.

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 is considered for impact fee calculations. 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.

4.3.3 Impact Fee CIP

The proposed CIP consists of 18 project segments over five of the nine service areas and advance the implementation of the Thoroughfare Plan network, as seen on **Figure 4-2**.

Project costs were developed based on unit cost estimates compiled by Freese and Nichols. Individual project costs were developed for engineering, right-of-way, and construction as found in the **Appendix F**. Each roadway segment uses the Master Thoroughfare Plan's defined functional classification to determine the ultimate roadway standard for each link. These construction estimates included all appurtenances called for in the City construction standards. Other costs were updated for engineering, right-of-way, construction, and debt service based on the following:

- Engineering/surveying – 7% of construction costs
- Right-of-way acquisition - $1.00/square foot
- Debt service – 3% compounded annually over 20 years

Additionally, impact fee study update costs were attributed to the project costs. For recently completed projects, actual costs must be input to meet legislative mandates. The cost for the impact fee CIP program totals $79.8 million. **Figure 4-2** and **Table 4-9** illustrate and list the capital improvement projects and their associated total cost for the impact fee program.

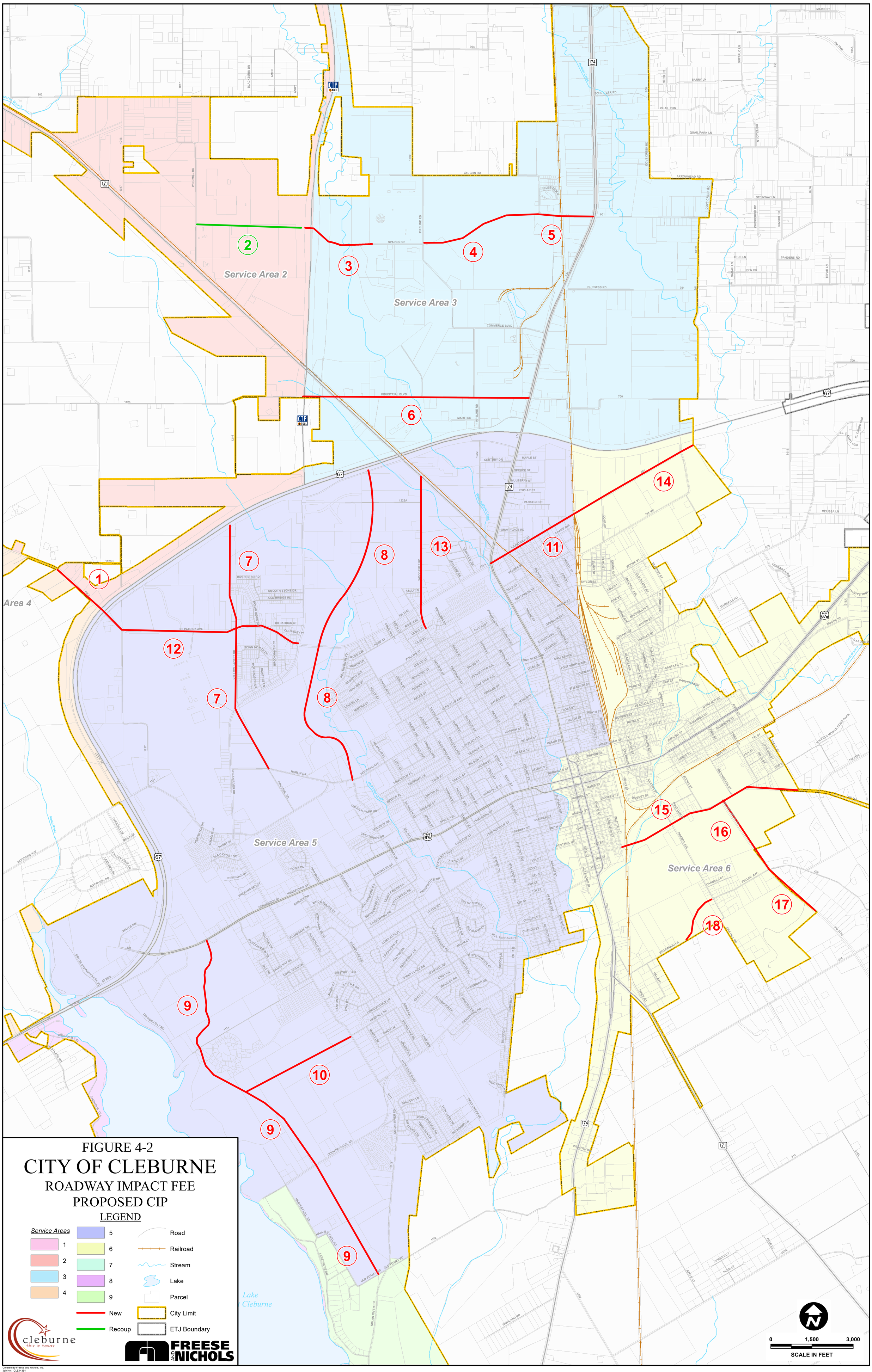

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Table 4-9: Roadway Impact Fee CIP Listing

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Type Rdwy	Pct. in Serv. Area	Total Project Cost
1		No Projects				0.00				$0
Sub-total 1						**0.00**				**$0**
2/4	*1*	Kilpatrick/FM 4	CR 1125B	US 67	New	0.40	4	DA	50%	$970,498
2	*2*	Sparks Dr	Windmill Rd	Chisholm Trail	Recoup	0.72	3	SC	100%	$283,000
Sub-total 2						**1.12**				**$1,253,498**
3	*3*	W Sparks Dr	Chisholm Trail	ex. Sparks Dr	New	0.50	3	SC	100%	$1,855,638
3	*4*	E Sparks Dr	ex. Sparks Dr	Vaughn Rd	New	0.84	3	SC	100%	$3,128,836
3	*5*	E Sparks Dr	Vaughn Rd	SH 174	New	0.37	3	SC	100%	$1,267,379
3	*6*	Industrial Blvd	Chisholm Trail	SH 174	New	1.55	5	SA	100%	$7,893,795
Sub-total 3						**3.26**				**$14,145,648**
4/2	*1*	Kilpatrick/FM 4	CR 1125B	US 67	New	0.40	4	DA	50%	$970,498
Sub-total 4						**0.40**				**$970,498**
5	*7*	Yellowjacket Rd	Harlin Dr	US 67	New	1.74	3	SC	100%	$6,152,038
5	*8*	Ridgeway Dr	Woodard	US 67	New	2.40	3	SA	100%	$9,713,770
5	*9*	University Dr	Bus. 67	CR 1112	New	2.84	5	SA	100%	$15,432,084
5	*10*	Hemphill Dr	University	Nolan River	New	0.81	2	UC	100%	$2,915,219
5	*11*	Kilpatrick	Main	RR	New	0.66	4	DA	100%	$3,382,849
5	*12*	Kilpatrick	US 67	Nolan River	New	1.40	4	DA	100%	$6,772,054
5	*13*	Woodruff Rd	Odell St	SH 171	New	1.05	3	SC	100%	$3,590,032
Sub-total 5						**10.90**				**$47,958,046**
6	*14*	Kilpatrick	RR	Hix Rd	New	0.84	4	DA	100%	$4,162,232
6	*15*	2nd St/FM 4	RR	E City Limits	New	1.31	4	DA	100%	$6,542,122
6	*16*	FM 2135	2nd St	N. Elementary Sch	New	0.35	4	DA	100%	$1,753,137
6	*17*	FM 2135	N. Elementary Sch	S City Limits	New	0.70	4	DA	50%	$1,746,423
6	*18*	CR 315	Edgewood	FM 429	New	0.34	2	UC	100%	$1,242,314
Sub-total 6						**3.55**				**$15,446,228**
7		No Projects				0.00				$0
Sub-total 7						**0.00**				**$0**
8		No Projects				0.00				$0
Sub-total 8						**0.00**				**$0**
9		No Projects				0.00				$0
Sub-total 9						**0.00**				**$0**
Totals:						**19.24**				**$79,773,918**

Totals:	Engineering Cost	$4,339,950
	Right-of-Way Cost	$4,701,360
	Construction Cost	$62,279,150
	Finance Cost	$8,453,458
	TOTAL NET COST	$79,773,918
	Future Impact Fee Update Cost*	$80,000
	TOTAL IMPLEMENTATION COST	$79,853,918

Notes:

DA- Divided arterial
SA- Special arterial (with two way left turn lane)
SC- Special collector (with two way left turn lane)
UC- Undivided collector

Recoup- Recoupment Project
New - New Project
+ Cost for (2) 5 year updates
*/X indcates roadway half in/half out of City Limits
/ indicates roadway split between two service areas

4.3.4 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:

Vehicle-Miles of New Capacity = Link capacity per peak hour per lane x No. of Lanes x Length of segment (miles)

Vehicle-miles of new supply provided by the CIP are listed in **Table 4-10**. 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 4-10** depicts net availability of supply by the CIP. **Appendix G** details capacity calculations provided by the CIP program.

Table 4-10: Capacity and Net Capacity Provided by the Proposed CIP

	A	B	C = A – B	D	E = C – D
Service Area	**Capacity Supplied by CIP (veh-mi)**	**Existing Utilization (veh-mi)**	**Excess Capacity (veh-mi)**	**Existing Deficiencies (veh-mi)**	**Net Capacity Supplied by CIP (veh-mi)**
1	0	0	0	0	0
2	1,328	124	1,204	0	1,204
3	6,075	658	5.417	0	5,417
4	540	52	488	0	488
5	20,350	1,586	18,764	0	18,764
6	8,059	1,477	6,581	0	6,581
7	0	0	0	0	0
8	0	0	0	0	0
9	0	0	0	0	0
Total	**36,351**	**3,897**	**32,454**	**0**	**32,454**

A comparison of net capacity provided by the proposed CIP relative to 10-year needs is listed below in **Table 4-11**. An analysis reveals an adequately matched overall impact fee CIP program to address growth attributable to new development.

Table 4-11: Projected Demand and Net Capacity Provided by the Proposed CIP

	A	B	B / A (Max 100%)
Service Area	**Net Capacity Supplied by CIP (veh-mi)**	**Projected 10-Year Growth (Vehicle-Miles)**	**Pcnt. Of CIP Attributable to New Dev. (10-Yr.)**
1	0	15	100.0
2	1,204	3,321	100.0
3	5,417	3,570	65.9
4	488	79	16.2
5	18,764	14,115	75.2
6	6,581	4,087	62.1
7	0	0	100.0
8	0	57	100.0
9	0	107	100.0
Total	**32,454**	**25,349**	**78.1**

4.3.5 Cost of Roadway Improvements

The total impact fee capital improvement plan (IFCIP) cost, including study update costs, credited (50%) IFCIP cost, and cost of net capacity supplied to implement the roadway improvements plan projects by service area is shown in **Table 4-12**. If traffic exists on proposed CIP project roadways or there are any deficiencies present in each respective service area (existing utilization), 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 H**. **Appendix I** details system costs by service area.

Table 4-12: Summary of Roadway Improvements Plan Cost Analysis

Service Area	Total Cost of Proposed IFCIP Projects	Credited Cost of Proposed IFCIP Projects (with 50% CIP Credit)	Credited Cost of Net Capacity Supplied (with 50% CIP Credit)	Credited Cost to Meet Existing Utilization (with 50% CIP Credit)
1	$0	$0	$0	$0
2	$1,256,420	$626,749	$568,398	$58,351
3	$14,159,018	$7,072,824	$6,306,284	$766,540
4	$971,686	$485,249	$438,521	$46,728
5	$48,002,831	$23,979,023	$22,110,379	$1,868,644
6	$15,463,963	$7,723,114	$6,307,259	$1,415,855
7	$0	$0	$0	$0
8	$0	$0	$0	$0
9	$0	$0	$0	$0
Total	$79,853,918	$39,886,959	$35,730,841	$4,156,118

4.4 CALCULATION OF IMPACT FEES

This section 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.

4.4.1 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.

4.4.2 Cost Attributable to New Development

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. This is shown in **Table 4-13** in Columns A-C calculating the cost attributable to new development through the percent of CIP capacity attributable calculated in **Table 4-11**.

Table 4-13: Roadway Improvements Plan Cost Attributable to New Development

	A	B	C = A x B
Service Area	**Credited Cost of Net Capacity Supplied** (Table 4-12)	**% Of CIP Attributable to New Development** (Table 4-11)	**CIP Cost Attributable to New Development**
1	$0	100.0	$0
2	$568,398	100.0	$568,398
3	$6,306,284	65.9	$4,155,896
4	$438,521	16.2	$71,241
5	$22,110,379	75.2	$16,631,968
6	$6,307,259	62.1	$3,916,446
7	$0	100.0	$0
8	$0	100.0	$0
9	$0	100.0	$0
Total	$35,730,841	**78.1**	$25,343,948

Maximum Cost per Service Unit Calculation

Table 4-14 lists the results of the cost per service unit calculation by service area. The base 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. Opting for the 50% credit, the maximum collection rate after credit reflects the maximum amount per service unit that can be charged to be in compliance with the state statute. **Appendix I** details the maximum fee per service unit calculation for each service area.

Table 4-14: Cost per Service Unit Summary

	A	B	C	D = B / A	E = C / A
Service Area	**Projected 10-Year Growth (Vehicle-Miles)**	**Full Cost Attributable to New Development**	**Credited Cost Attributable to New Development**	**Base Cost per Service Unit**	**Maximum Allowable Cost per Service Unit (After Credit)**
1	15	$0	$0	$0	$0
2	3,321	$1,136,797	$568,398	$342	$171
3	3,570	$8,311,791	$4,155,896	$2,328	$1,164
4	79	$142,481	$71,241	$1,796	$898
5	14,115	$33,263,936	$16,631,968	$2,356	$1,178
6	4,087	$7,832,891	$3,916,446	$1,916	$958
7	0	$0	$0	$0	$0
8	57	$0	$0	$0	$0
9	107	$0	$0	$0	$0
Total	**25,349**	$50,687,897	$25,343,948	--	--

4.5 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.

No. of Development Units x Vehicle-miles per development unit = Development's Vehicle-miles

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

Development's Vehicle-miles x Fee per vehicle-mile = Impact Fee due from Development

Examples: *The following fees would be assessed to new developments in Cleburne in Service Area 5 if the cost per service unit were $1,178.00*

Single-Family Dwelling

1 dwelling unit x 4.38 vehicle-miles/dwelling unit = 4.38 vehicle-miles

4.38 vehicle-miles x $1,178.00/vehicle-mile = $5,159.64

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

20 (1,000 s.f. units) x 5.73 vehicle-miles/1,000 s.f. units = 114.60 vehicle-miles

114.60 vehicle-miles x $1,178.00/vehicle-mile = $134,998.80

100,000 s.f. Retail Center

100 (1,000 s.f. units) x 3.35 vehicle-miles/1,000 s.f. units = 335.00 vehicle-miles

335.00 vehicle-miles x $1,178.00/vehicle-mile = $394,630.00

Appendix A
Land Use Assumptions and Capital Improvement Plan for Water, Wastewater, and Roadway Impact Fee Study

Innovative approaches
Practical results
Outstanding service

TECHNICAL REPORT

Land Use Assumptions and Capital Improvements Plan Report for Water, Wastewater, and Roadway Impact Fee Study

City of Cleburne

November 2017

FREESE AND NICHOLS, INC.
4055 International Plaza, Suite 200
Fort Worth, Texas 76109
(817) 735-7300

Land Use Assumptions and Capital Improvements Plan Report for Water, Wastewater, and Roadway Impact Fee Study

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FNI Project Number: CLE14364

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EXECUTIVE SUMMARY

In June 2014, the City of Cleburne, Texas, authorized Freese and Nichols, Inc. (FNI) to perform an impact fee analysis on the City's water, wastewater, and roadway systems. The purpose of this report is to summarize the methodology used in the development of land use assumptions and impact fee capital improvements plans for the City of Cleburne.

LAND USE ASSUMPTIONS

Population and land use assumptions are important elements in the analysis of water, wastewater, and roadway systems. To assist in the determination of 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, are the basis for the preparation of impact fee capital improvements plans for water, wastewater, and roadway facilities. The land use assumptions were developed using data from North Central Texas Council of Governments (NCTCOG) and with input from City Staff.

CAPITAL IMPROVEMENT PLAN

Water, wastewater, and roadway impact fee capital improvements plans (CIP) were developed for the City of Cleburne based on the land use assumptions. The recommended improvements will provide the required capacity to meet projected water demands, wastewater flows, and roadway demand through year 2027. **Tables ES-1** and **ES-2** present the water demand and wastewater load projections for the City of Cleburne. These projections were the basis for determining the location and magnitude of the CIP projects. The projects identified are consistent with the Chapter 395 definition of impact fee eligible projects. The water and wastewater CIP projects are summarized in **Tables ES-3** and **ES-4**.

Table ES-1: Projected Water Demands

Year	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Peak Hour Demand (MGD)
2017	10.4	18.6	30.8
2027	14.0	25.3	42.0
2040	20.2	36.6	62.0

Table ES-2: Projected Wastewater Flows

Year	Average Day Wastewater Flow (MGD)	Peak Wet Weather Flow (MGD)
2017	5.9	15.0
2027	7.6	26.7
2040	10.1	36.6

Table ES-3: Water Impact Fee CIP Projects

Project Number	Project Name
Existing Impact Fee Eligible Projects	
A	24- and 20-inch line from the WTP
B	Water Treatment Plant Capacity Expansion
Proposed Impact Fee CIP Projects	
1	Airport Pump Station Expansion and Ground Storage Tank
2	16-inch Loop from 2nd Street to south of Gardega Road
3	20-inch Water Line north of the Airport Pump Station
4	16-inch Water Lines along County Road 1217 and County Road 1125
5	Water Lines for new supply on north side of the City
6	Ground Storage Tank and Pump Station for new water supply
7	12-inch Water Line along Highway 67 and along Loop 367
8	12-inch Water line along Graham Street
9	12-inch Water Line along Woodruff Road
10	Pump Station #12 Ground Storage Tank

Table ES-4: Wastewater Impact Fee CIP Projects

Project Number	Project Name
Existing Impact Fee Eligible Projects	
A	12-inch Sewer Line along Weatherford Highway
B	24-inch Sewer Line along East Buffalo Creek
Proposed Impact Fee CIP Projects	
1	WWTP Expansion Permitting and Preliminary Design
2	WWTP 3 MGD Expansion and Priority 1 Rehabilitation
3	New North Industrial/Municipal WWTP Siting Study
4	27-inch Sewer Line Replacement along West Buffalo Creek
5	27-inch Sewer Line Replacement along South East Buffalo Creek
6	27-inch Sewer Line Replacement along North East Buffalo Creek
7	8-inch Sewer Line along SH 174 South
8	12-inch Sewer Line West of SH 174

The roadway impact fee CIP is aimed at facilitating long-term growth in Cleburne. The City has identified the City-funded transportation projects needed to accommodate the projected growth within the City. Arterial and collector class facilities in the current official Thoroughfare Plan were included in the impact fee CIP to provide flexibility in the development of the community. The roadway CIP is summarized in **Table ES-5**.

Table ES-5: Roadway Impact Fee CIP Projects

Service Area	Roadway	From	To	Project Status
1	No Projects Included in CIP			New
2/4	Kilpatrick/FM 4	CR 1125B	US 67	New
2	Sparks Dr	Windmill Rd	Chisholm Trail	Recoup
3	W Sparks Dr	Chisholm Trail	ex. Sparks Dr	New
3	E Sparks Dr	ex. Sparks Dr	Vaughn Rd	New
3	E Sparks Dr	Vaughn Rd	SH 174	New
3	Industrial Blvd	Chisholm Trail	SH 174	New
4/2	Kilpatrick/FM 4	CR 1125B	US 67	New
5	Yellowjacket Rd	Harlin Dr	US 67	New
5	Ridgeway Dr	Woodard	US 67	New
5	University Dr	Bus. 67	CR 1112	New
5	Hemphill Dr	University	Nolan River	New
5	Kilpatrick	Main	RR	New
5	Kilpatrick	US 67	Nolan River	New
5	Woodruff Rd	Odell St	SH 171	New
6	Kilpatrick	RR	Hix Rd	New
6	2nd St/FM 4	RR	E City Limits	New
6	FM 2135	2nd St	N. Elementary Sch	New
6	FM 2135	N. Elementary Sch	S City Limits	New
6	CR 315	Edgewood	FM 429	New
7	No Projects Included in CIP			New
8	No Projects Included in CIP			New
9	No Projects Included in CIP			New

1.0 PURPOSE

Chapter 395 of the Texas Local Government Code prescribes the process by which cities in Texas must formulate impact fees. An initial step in the process is the establishment of land use assumptions and a capital improvements plan to address growth and development for a 10-year planning period (TLGC Section 395.001(5)) for the years 2017-2027. The land use assumptions, which also include population and employment projections, will become the basis for the preparation of impact fee capital improvements plans for water, wastewater, and roadway facilities. Legislative mandate requires that a capital improvements plan (CIP) be prepared that addresses long-term growth and that such plan be approved by the governing body prior to a public hearing for the consideration of imposing an impact fee. This report details the development of the land use assumptions and the impact fee CIPs.

This report contains the following components:

- **Methodology** - Explanation of the general methodology used to prepare the land use assumptions and CIPs.
- **Land Use Assumptions**
    - **Service Area Structure** – Explanation of data collection zones (traffic survey zones), and the division of the City into impact fee service areas for roadway, water, and wastewater facilities.
    - **Base Year Data** – Historical population trends for Cleburne and information on population, employment, and land use for Cleburne as of 2017 for each capital service area.
    - **Existing Conditions Analysis** – Analysis of the existing roadway system including its carrying capacity, current utilization, and deficiencies.
    - **Growth Projections** – Population and employment growth assumptions for 10 years by service areas.
- **Capital Improvements Plans** – Descriptions of water, wastewater, and, roadway CIPs.

2.0 METHODOLOGY

Based upon the growth assumptions and the capital improvements needed to support growth, it is possible to develop an impact fee structure which fairly allocates improvement costs to growth areas in relationship to their impact upon the entire infrastructure system. The data in this report has been formulated using reasonable and generally accepted planning principles for the preparation of impact fee systems in Texas, and meets the requirements of the Texas Local Government Code Section 395 for the establishment of impact fees.

For the formulation of the land use assumptions and the capital improvements plans, a series of work tasks were undertaken and are described below.

- A kick-off meeting was held to describe the general methodological approach in the study. Service areas were defined for roadway, water, and wastewater impact fee systems.
- Current and historic data of population, housing, and employment was collected from the City and other acceptable sources to serve as a basis for future growth.
- Vehicle-miles of travel (VMT) in the PM peak hour was identified as the service unit of measure for analyses and impact fee calculations.
- A roadway inventory was conducted to document lane geometrics, roadway functional classification, and system capacity. Traffic volume count data were collected in June 2015 to determine roadway utilization and if any capacity deficiencies exist within each impact fee service area. Traffic volume counts were conducted at 25 locations throughout the city.
- A base year (2017) estimate was developed using City building permit data, U.S. Census and periodic population, household occupancy and household size data, and employment data from the North Central Texas Council of Governments (NCTCOG).
- A growth rate was determined based upon the Water Supply and Reuse Integration Plan. A compound annual growth rate of 3.25% was recommended and is approved by the Capital Improvements Advisory Committee (CIAC) as part of these land use assumptions.
- A ten-year projection (2027) was prepared using the approved growth rate and traffic survey zone (TSZ) data from NCTCOG. Adjustments were then made to consider known or anticipated development activity within the 10-year planning period.

- Base and 10-year demographics were prepared for the respective service areas for water, wastewater, and roadway.
- Water demands and wastewater flow projections were developed based on the population projections.
- Projected 10-year growth was calculated for service areas based on land use assumptions (projections of population and employment growth) and translated into residential, office, commercial and industrial VMT using service unit equivalencies. Trip rate data was obtained from *Trip Generation, Ninth Edition* by the Institute of Transportation Engineers, and trip length statistics for Cleburne were obtained from the NCTCOG Workplace Survey.
- Water, wastewater, and roadway capital improvements plans to address projected growth were developed.

3.0 LAND USE ASSUMPTIONS

3.1 Data Collection Zones and Service Area Maps

3.1.1 Data Collection Zones

Data collection zones used for the land use assumptions are based upon small geographic areas known as traffic survey zones. These zones, established by the North Central Texas Council of Governments, cover the Metropolitan Planning Organization's (MPO) planning area and serve as the basis for socio-demographic data used in the regional travel forecast model. Traffic survey zones were originally formulated on the basis of homogeneity and traffic generation potential using major arterials, creeks, railroad lines, and other physical boundaries for delineation.

3.1.2 Service Areas

Chapter 395 requires that service areas be defined for impact fees to ensure that facility improvements are located in close proximity to areas generating needs. The water and wastewater service areas were developed using existing certificate of convenience and necessity (CCN) boundaries and through discussions with City staff. **Figure 3-1** illustrates the water service area for the Cleburne Impact Fee study, and **Figure 3-2** shows the wastewater service area.

Legislative requirements stipulate that roadway service areas be limited to a 6-mile maximum and must be located within the current city limits. Transportation service areas are different from water and wastewater systems, which can include the city limits 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 that service area. Nine service areas have been created as a result of zonal restructuring and fall within the 6-mile mandated limits. The service areas for roadways are illustrated on **Figure 3-3**.

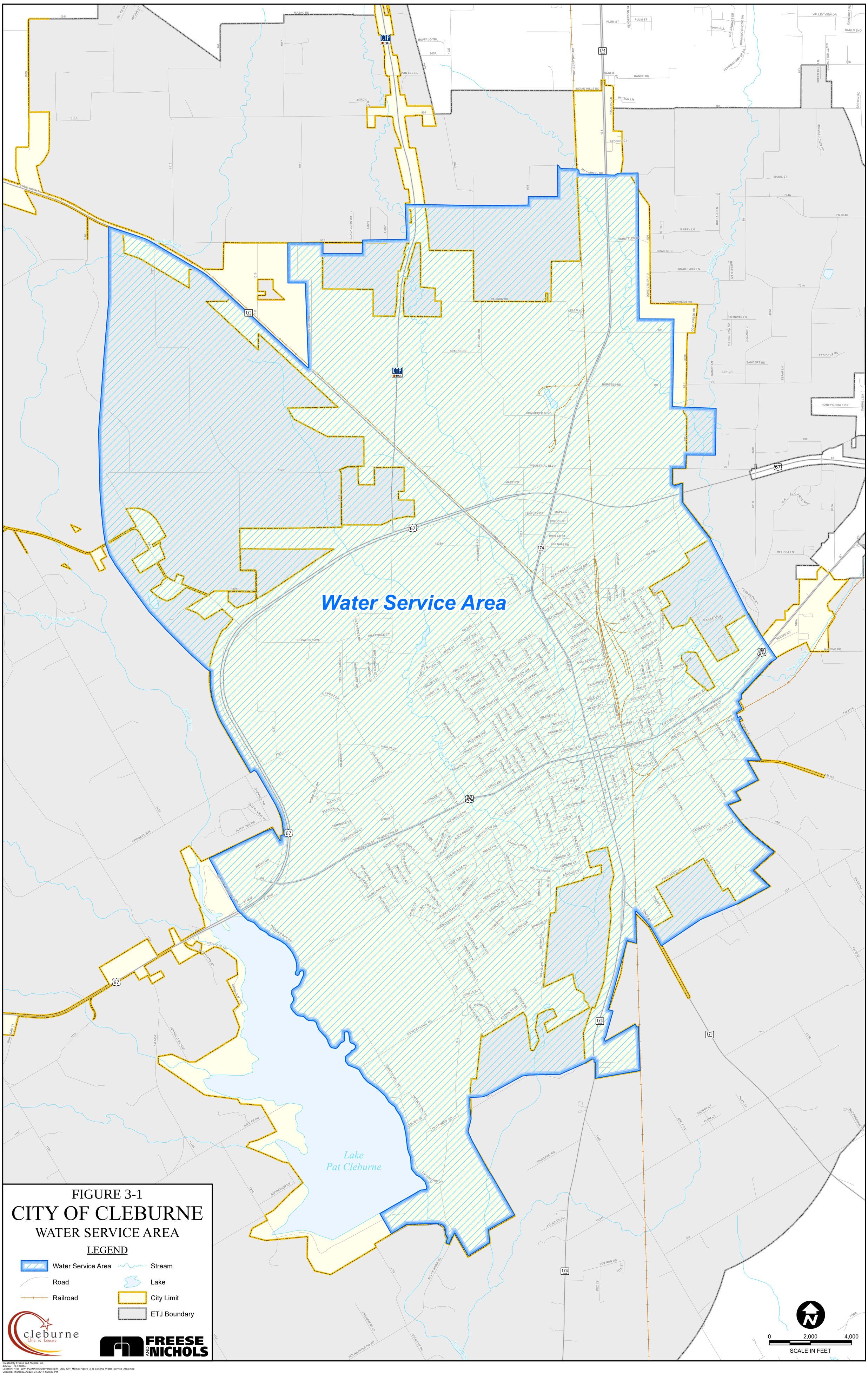

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FIGURE 3-2
CITY OF CLEBURNE
WASTEWATER SERVICE AREA

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Job No.: CLE14364
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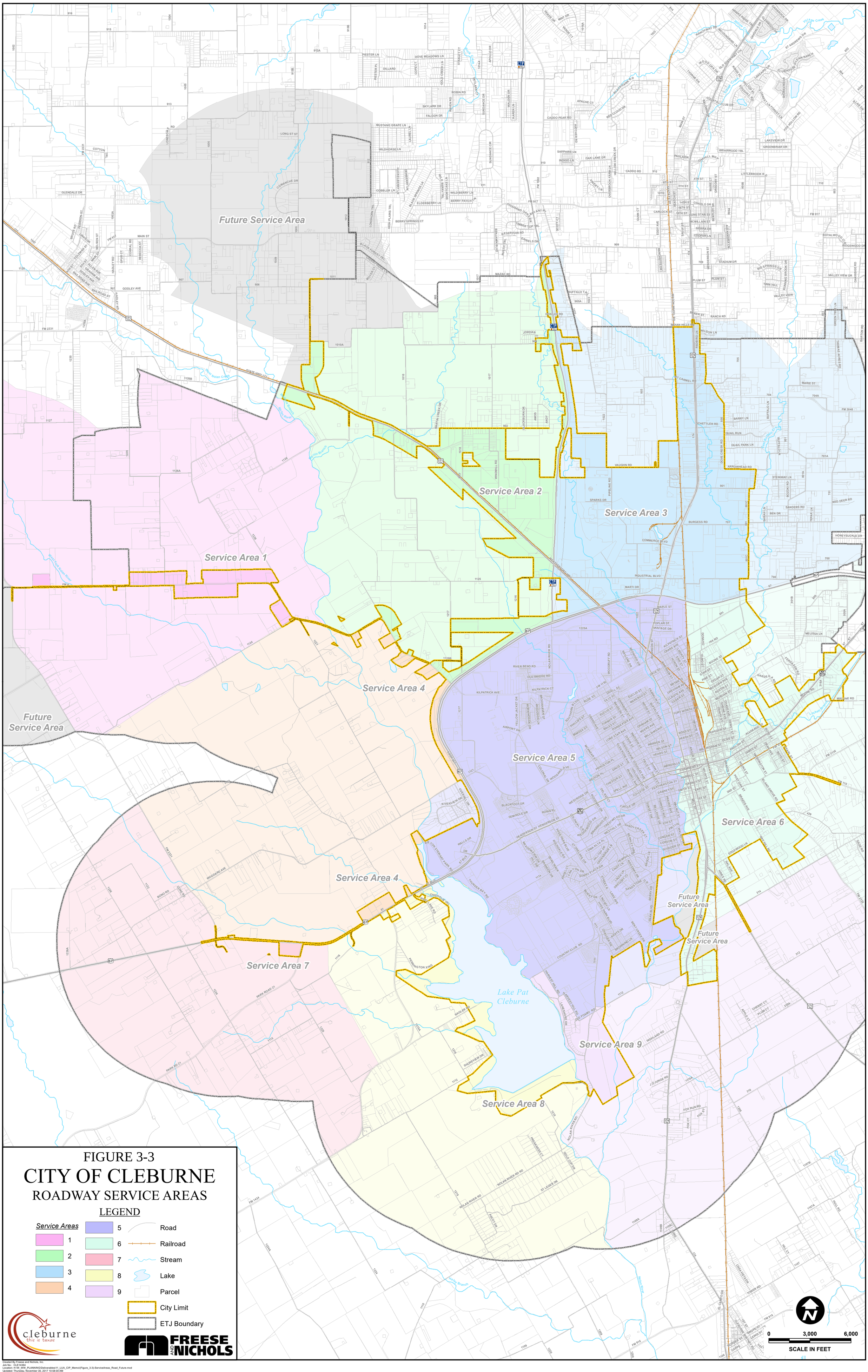

FIGURE 3-3

CITY OF CLEBURNE

ROADWAY SERVICE AREAS

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3.1.3 Data Format

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

Service Area Correlates to the proposed roadway, water, and wastewater service areas identified on the attached maps.

Traffic Survey Zone Geographic areas established by the NCTCOG Traffic Model which are used for data collection purposes and termed TSZs within this report.

Population (2017) Existing population for the base year (2017).

Population (2027) Projected population by service zone for the year 2027 (10-year growth projections).

Employment (2017, 2027) Employment data is aggregated to three employment sectors and includes: Basic, Retail, and Service. The following details which North American Industry Classification System (NAICS) codes fall within each of the three sectors.

- Basic (#210000 to #422999) -- Land use activities that produce goods and services such as those that are exported outside the local economy; manufacturing, construction, transportation, wholesale trade, warehousing and other industrial uses.
- Retail (#440000 to #454390) -- Land use activities which provide for the retail sale of goods that primarily serve households and whose location choice is oriented toward the household sector such as grocery stores, restaurants, etc.
- Service (#520000 to #928199) -- Land use activities which provide personal and professional services such as financial, insurance, government, and other professional and administrative offices.

Minimal adjustments were needed because the NCTCOG prepares employment estimates at the TSZ level.

3.2 Base Year Data

This section documents the City's historical growth trends and data used to derive the 2017 base year population estimate for the City of Cleburne. This "benchmark" information provides a starting basis of data for the 10-year growth assumptions that will be presented within the following section.

3.2.1 Historical Growth

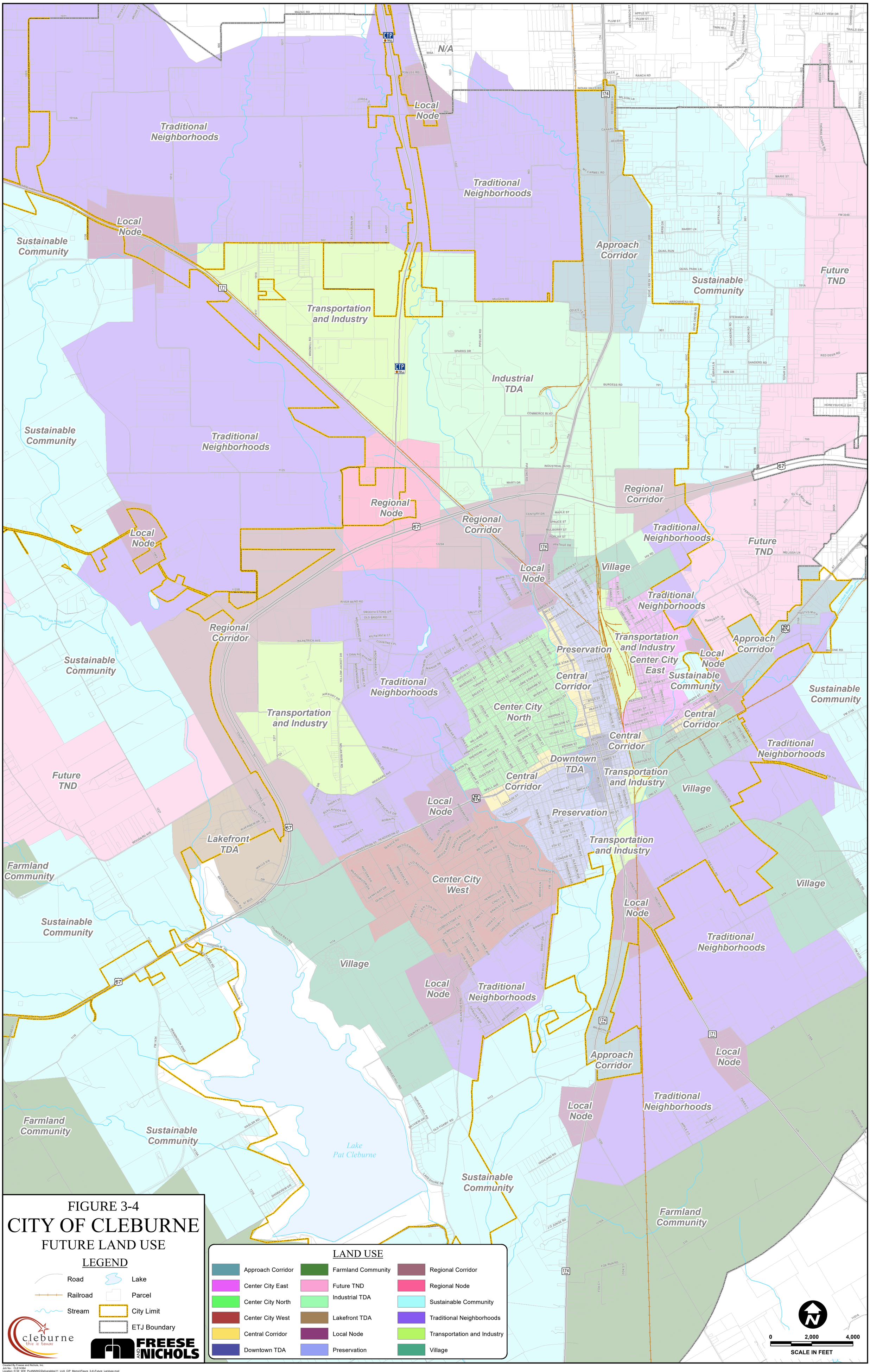
A City's past growth rates are often an indicator of future growth rates. However, with the opening of the Chisholm Trail Parkway (CTP) in 2014, which provides convenient access to the City of Fort Worth, it is anticipated that the City will experience growth that is significantly higher than historic levels. The average annual growth for the historic period is shown in **Table 3-1**.

Table 3-1: Historical City Population

Year	Population	Annual Growth Rate (%)
2009	29,716	-
2010	29,337	-1.28%
2011	29,705	1.25%
2012	30,101	1.33%
2013	29,747	-1.18%
2014	29,160	-1.97%

3.2.2 Existing Land Use

Cleburne's existing land use is primarily residential. A map showing the future land use plan for the City of Cleburne is presented on **Figure 3-4**.



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Location: H:\W_WW_PLANNING\Deliverables\11_LUA_CIP_Memo\(Figure_3-4)-Future_Landuse.mxd
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3.2.3 2017 Population and Employment

For the land use assumptions process, 2017 base population and employment data was calculated using data from the NCTCOG. This information provided a breakout of population and employment by TSZ. For assumption purposes, and to be consistent with the population totals, an interpolation of the population and employment numbers was calculated to derive the 2017 population and employment estimates by TSZ. Adjustments were also made based on discussions with City staff. It is important to note that the TSZs do not follow City limits or water and wastewater service areas in some locations, so adjustments were made based on the locations of existing land uses and upon the percentage of each TSZ located within City limits. **Figure 3-5** presents the TSZ boundaries. Employment for each TSZ was broken down into basic, retail, and service uses as defined by the NAICS code. Since water, wastewater, and roadway have different service areas, three sets of assumptions were used, each tailored to its own service area. **Tables 3-2** and **3-3** summarize the population and employment for 2017.

Table 3-2: Summary of Base Year (2017) Population

Service Area	Population
Water	33,807
Wastewater	33,807
Roadway	31,323

Table 3-3: Summary of Base Year (2017) Employment for Roadway

Service Area	Basic	Retail	Service	Total
1	4	1	7	12
2	239	168	441	848
3	1,120	787	2,134	4,041
4	3	2	6	11
5	3,453	2,557	6,395	12,405
6	1,037	765	2,224	4,026
7	0	0	0	0
8	0	0	0	0
9	6	1	7	14
Total Employment	**5,862**	**4,281**	**11,214**	**21,357**

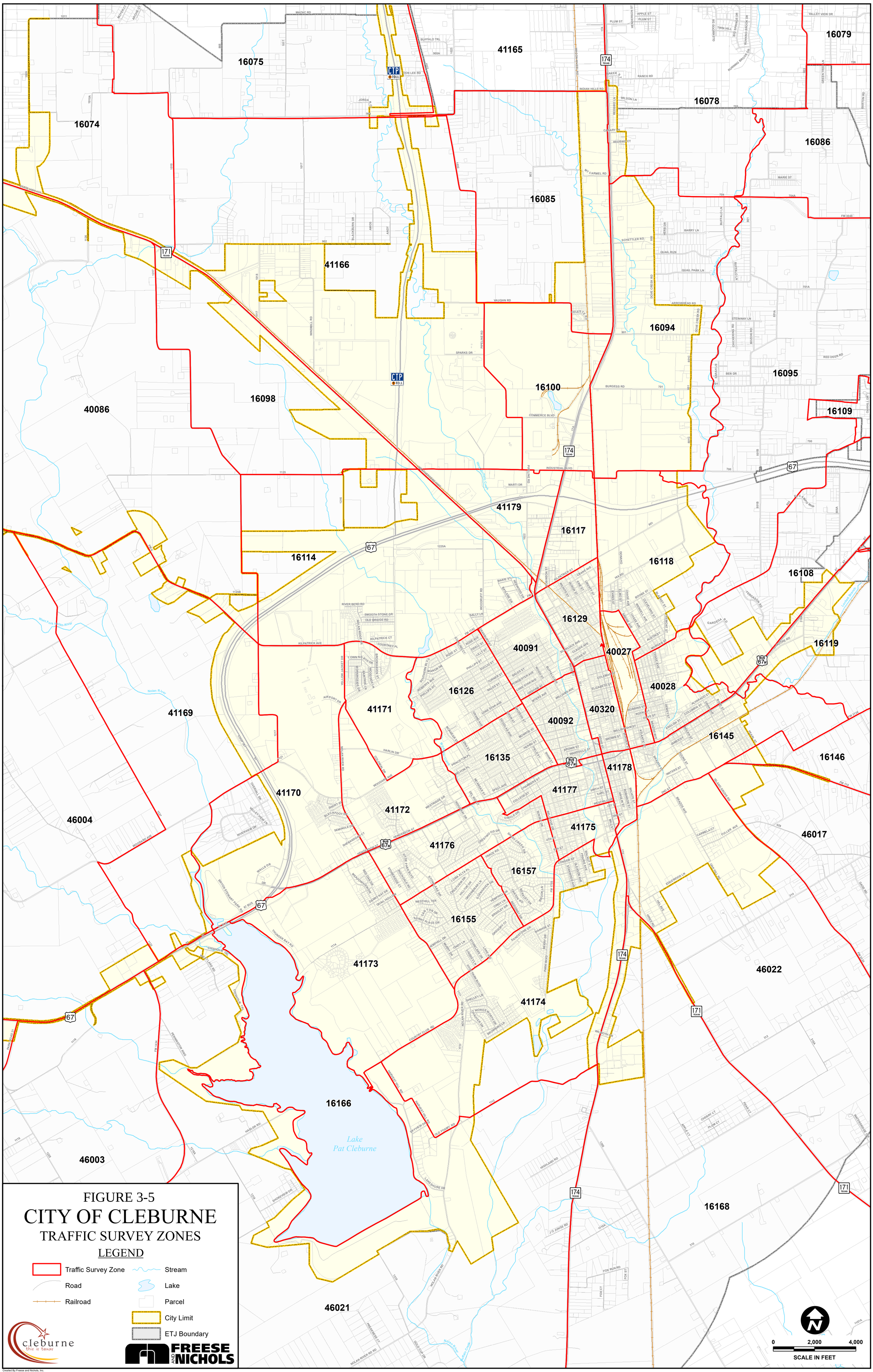

FIGURE 3-5

CITY OF CLEBURNE

TRAFFIC SURVEY ZONES

LEGEND

- Traffic Survey Zone
- Road
- Railroad
- Stream
- Lake
- Parcel
- City Limit
- ETJ Boundary

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3.3 Ten-Year Growth Assumptions

Projected growth has been characterized in two forms: population and employment acreage. 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 10-year projections could be initiated. Future land uses will occur based on similar trends of the past and consistent with the Land Use Plan, and the City will be able to finance the necessary improvements to accommodate continued growth.

The 10-year projections are based upon the 3.25% growth from the Water Supply and Reuse Integration Plan. The water service population will grow consistently at 3.25% annually through 2040, and adjustments were made for the wastewater and roadway service population based on the different service area boundaries. In order to account for these differences, the population was adjusted for each TSZ, as necessary, based on its relationship to the service area boundaries. If a TSZ is fully contained within both service areas, no changes were made to the projections. If a TSZ is not fully contained within both boundaries, the projections were adjusted using the following methodology.

- Determine the area of the TSZ contained within the water service area and calculate the population per acre.
- Calculate the area of the TSZ contained within the wastewater or roadway service area.
- Apply the population per acre to the area of the wastewater or roadway service area to determine the wastewater or roadway service area population projects.

The population projections for the water and wastewater service area are summarized in **Table 3-4**. The roadway population and employment are presented in **Table 3-5.** Summaries of population by TSZ for the water and wastewater service areas are provided in **Appendix A**. A summary of the population and employment by TSZ for the roadway service area are provided in **Appendix B**.

Table 3-4: Population Projections for Water and Wastewater Service Areas

Year	Water Population	Wastewater Population
2017	33,807	33,807
2027	46,548	47,347
2040	70,547	77,542

Table 3-5: Population and Employment Projections for Roadway Service Area

Service Area	Population		Employment							
	2017	2027	2017				2027			
			Basic	Retail	Service	Total	Basic	Retail	Service	Total
Total Population/ Employment	**31,323**	**42,384**	**5,862**	**4,281**	**11,216**	**21,359**	**6,315**	**4,580**	**12,759**	**23,654**

4.0 WATER AND WASTEWATER CAPITAL IMPROVEMENTS PLAN

4.1 Existing Water and Wastewater Systems

The City of Cleburne's water distribution system has two pressure planes, approximately 240 miles of water lines ranging from 1- to 30-inches in diameter, a water treatment plant with a high service pump station, two ground storage tanks, four elevated storage tanks, two booster pump stations, and seven well sites. The existing water system is shown on **Figure 4-1**.

The City of Cleburne's wastewater service area covers approximately 47 square miles. Within the service area, there are approximately 200 miles of sewer lines that are owned and operated by the City. The City's wastewater collection system is primarily a gravity flow system that follows the major drainage features of the service area. The City's collection system consists of four sewer basins. The sewer basins include the Old Foamy, McAnear, West Buffalo, and East Buffalo. The wastewater lines range from 2 to 36 inches in diameter and convey an average daily wastewater flow of approximately 5 million gallons per day (MGD) to a single WWTP. The City currently operates nine lift stations which pump wastewater into nearby gravity sewers. These lift stations are required due to local topographic constraints. The existing collection system is shown on **Figure 4-2**.

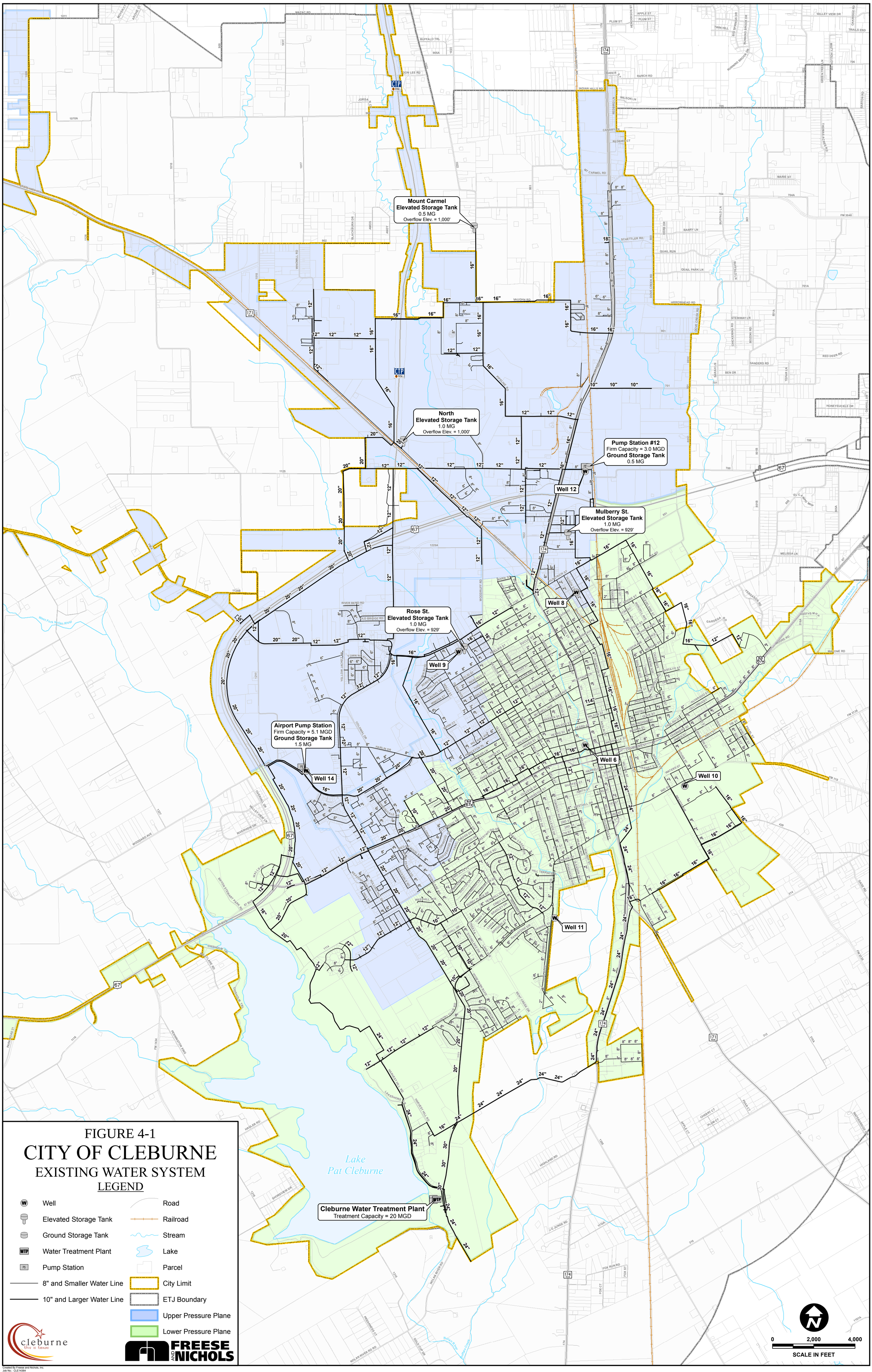

FIGURE 4-1
CITY OF CLEBURNE
EXISTING WATER SYSTEM
LEGEND

- Well
- Elevated Storage Tank
- Ground Storage Tank
- Water Treatment Plant
- Pump Station
- 8" and Smaller Water Line
- 10" and Larger Water Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- City Limit
- ETJ Boundary
- Upper Pressure Plane
- Lower Pressure Plane

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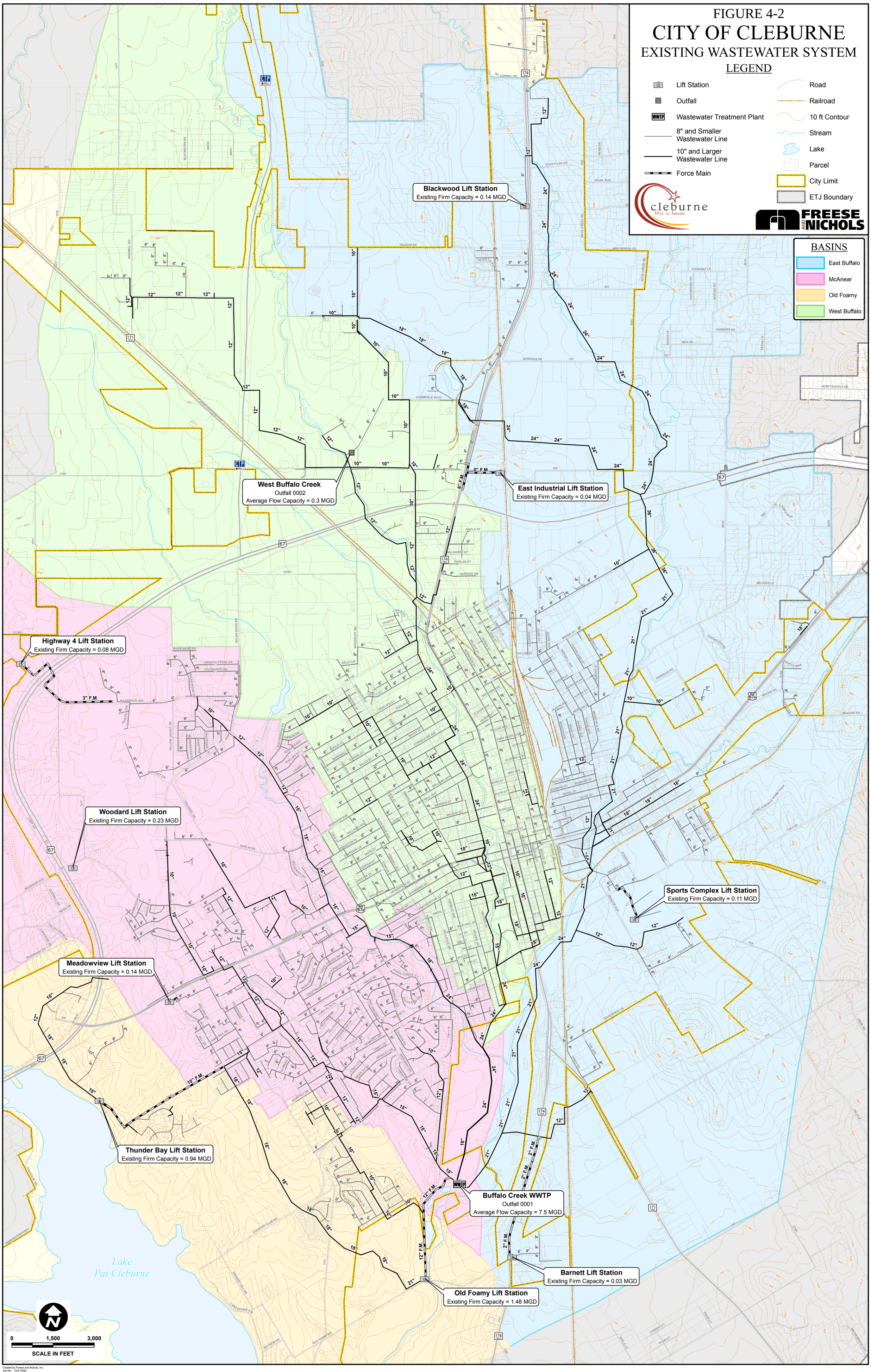
FIGURE 4-2
CITY OF CLEBURNE
EXISTING WASTEWATER SYSTEM



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Job No.: CLE14364
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4.2 Water Demand and Wastewater Load Projections

The land use data and historical water demands and wastewater flow characteristics were used to develop future water demands and wastewater flows based on a projected average day per connection use and peaking factors. These projections were the basis for determining the location and magnitude of the CIP projects. Demand and flow projections include separate municipal and industrial projections. **Tables 4-1 and 4-2** show historical water demands and wastewater flows, respectively. **Table 4-3** presents the projected water demands, and **Table 4-4** presents the projected wastewater flows for the City of Cleburne. Detailed water demand projections are provided in the "Task 2: Population and Water Demand Projections Memorandum" developed for the Water Supply and Reuse Integration Plan. Detailed wastewater flow projections are in the 2017 "Wastewater Master Plan."

Table 4-1: Historical Water Production

Year	Average Day Production (MGD)	Maximum Day Production (MGD)	Maximum Day to Average Day Peaking Factor
2010	6.2	8.8	1.4
2011	7.1	9.9	1.4
2012	6.4	8.6	1.3
2013	6.1	8.2	1.4
2014	5.9	7.4	1.3

Table 4-2: Historical Wastewater Treatment Plant Influent Flows

Year	Total Rainfall (inches)	Average Annual Daily Flow (MGD)
2010	37.9	5.2
2011	25.7	4.1
2012	27.4	4.9
2013	33.4	4.2
2014	30.7	4.2

Table 4-3: Projected Water Demands

Year	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Peak Hour Demand (MGD)
2017	10.4	18.6	30.8
2027	14.0	25.3	42.0
2040	20.2	36.6	62.0

Table 4-4: Projected Wastewater Flows

Year	Average Day Wastewater Flow (MGD)	Peak Wet Weather Flow (MGD)
2017	5.9	15.0
2027	7.6	26.7
2040	10.1	36.6

4.3 Water and Wastewater System Analyses

4.3.1 Water System Analyses

The hydraulic model from the 2014 "High Service Pump Station Evaluation" was updated to include recently constructed lines. The model was used to analyze the existing water distribution system and the timing of improvements. Using the calibrated hydraulic model, system configurations were evaluated to determine the capital improvements to meet projected water demands. Hydraulic analyses were performed for the existing and proposed distribution system. In general, analyses were performed for three basic demand conditions:

- Average day, which determines the ability of the system to replenish storage facilities during average day demands.
- Maximum day, which determines the ability of the system to maintain full storage facilities during maximum day demands.
- Peak hour, which determines the ability of the system to maintain minimum residual pressure during periods of peak demand.

Improvements were developed by assessing the transmission needs of the system as well as future growth considerations. The analyses indicated the pump stations required additional pumping capacity, and a number of line improvements were recommended in the distribution system. Ground storage and water lines are also recommended to incorporate new water supply from the north side of the City into the distribution system.

4.3.2 Wastewater System Analyses

The wastewater system analyses were conducted as part of the 2017 "Wastewater Master Plan." Freese and Nichols conducted hydraulic analyses to identify deficiencies in the City of Cleburne's wastewater collection system and to establish a capital improvements plan to reinforce the existing system and convey projected wastewater flows through 2040. Various combinations of improvements and modifications were investigated to determine the most appropriate approach for conveying projected flows.

4.4 Water and Wastewater System Improvements

Proposed water and wastewater system improvement projects were developed based on water demand and wastewater flow projections. The proposed 10-year impact fee eligible water system projects are shown on **Figure 4-3** and summarized in **Table 4-5**. Proposed impact fee eligible wastewater projects are shown on **Figure 4-4** and summarized in **Table 4-6**.

Table 4-5: Water Impact Fee CIP Projects

Project Number	Project Name
Existing Impact Fee Eligible Projects	
A	24- and 20-inch line from the WTP
B	Water Treatment Plant Capacity Expansion
Proposed Impact Fee CIP Projects	
1	Airport Pump Station Expansion and Ground Storage Tank
2	16-inch Loop from 2nd Street to south of Gardega Road
3	20-inch Water Line north of the Airport Pump Station
4	16-inch Water Lines along County Road 1217 and County Road 1125
5	Water Lines for new supply on north side of the City
6	Ground Storage Tank and Pump Station for new water supply
7	12-inch Water Line along Highway 67 and along Loop 367
8	12-inch Water line along Graham Street
9	12-inch Water Line along Woodruff Road
10	Pump Station #12 Ground Storage Tank

Table 4-6: Wastewater Impact Fee CIP Projects

Project Number	Project Name
Existing Impact Fee Eligible Projects	
A	12-inch Sewer Line along Weatherford Highway
B	24-inch Sewer Line along East Buffalo Creek
Proposed Impact Fee CIP Projects	
1	WWTP Expansion Permitting and Preliminary Design
2	WWTP 3 MGD Expansion and Priority 1 Rehabilitation
3	New North Industrial/Municipal WWTP Siting Study
4	27-inch Sewer Line Replacement along West Buffalo Creek
5	27-inch Sewer Line Replacement along South East Buffalo Creek
6	27-inch Sewer Line Replacement along North East Buffalo Creek
7	8-inch Sewer Line along SH 174 South
8	12-inch Sewer Line West of SH 174

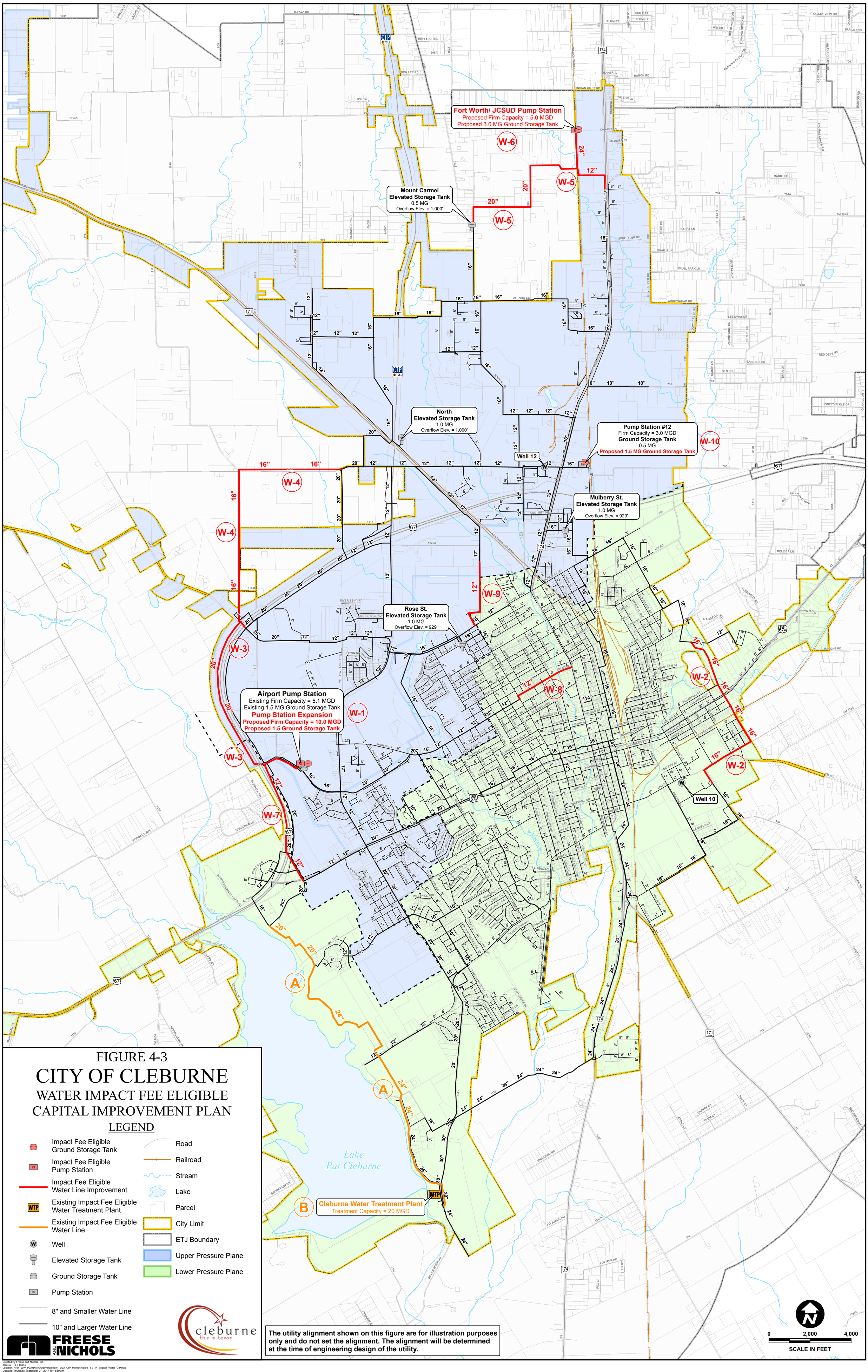

FIGURE 4-3

CITY OF CLEBURNE

WATER IMPACT FEE ELIGIBLE CAPITAL IMPROVEMENT PLAN

LEGEND

- Impact Fee Eligible Ground Storage Tank
- Impact Fee Eligible Pump Station
- Impact Fee Eligible Water Line Improvement
- Existing Impact Fee Eligible Water Treatment Plant
- Existing Impact Fee Eligible Water Line
- Well
- Elevated Storage Tank
- Ground Storage Tank
- Pump Station
- 8" and Smaller Water Line
- 10" and Larger Water Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- City Limit
- ETJ Boundary
- Upper Pressure Plane
- Lower Pressure Plane

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The utility alignment shown on this figure are for illustration purposes only and do not set the alignment. The alignment will be determined at the time of engineering design of the utility.

FIGURE 4-4
CITY OF CLEBURNE
WASTEWATER IMPACT FEE ELIGIBLE CAPITAL IMPROVEMENT PLAN

LEGEND

Impact Fee Eligible

- Wastewater Treatment Plant
- Wastewater Line
- Existing Impact Fee Eligible Wastewater Line

Existing System

- Lift Station
- Outfall
- Large Use Customer
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- Existing Force Main
- Road
- Railroad
- Stream
- Lake
- Parcel
- Proposed North WWTP Service Area
- Proposed South WWTP Service Area
- Joshua City Limit
- Burleson City Limit
- Burleson ETJ Boundary
- Cleburne City Limit
- Cleburne ETJ Boundary

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WW-1 WWTP Expansion Permitting and Preliminary Design

WW-3 New North Industrial/Municipal WWTP Siting Study

Blackwood Lift Station
Existing Firm Capacity = 0.14 MGD

James Hardie Building Products

Brazos Electric

Sachem Inc.

West Buffalo Creek
Outfall 0002
Average Flow Capacity = 0.30 MGD

East Industrial Lift Station
Existing Firm Capacity = 0.04 MGD

Cleburne Station

Highway 4 Lift Station
Existing Firm Capacity = 0.08 MGD

Woodard Lift Station
Existing Firm Capacity = 0.23 MGD

Replace 24" Sewer Line with 27" Sewer Line

Meadowview Lift Station
Existing Firm Capacity = 0.14 MGD

Sports Complex Lift Station
Existing Firm Capacity = 0.11 MGD

Thunder Bay Lift Station
Existing Firm Capacity = 0.94 MGD

Replace 21" Sewer Line with 27" Sewer Line

Existing WWTP
Outfall 0001
Average Flow Capacity = 7.50 MGD
Expand Avg. Day Flow Capacity to 10.50 MGD
Priority 1 Rehabilitation

Barnett Lift Station
Existing Firm Capacity = 0.03 MGD

Old Foamy Lift Station
Existing Firm Capacity = 1.48 MGD

WW-2 WW-4 WW-5 WW-6 WW-7 WW-8

A B

0 2,500 5,000
SCALE IN FEET

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5.0 ROADWAY CAPITAL IMPROVEMENTS PLAN

5.1 Existing Conditions Analysis

An inventory of major roadways that are designated as arterial and/or collector facilities on the Thoroughfare Plan was conducted to determine: 1) capacity provided by the existing roadway system, 2) the demand currently placed on the system, and 3) the potential existence of deficiencies on the system. Any deficiencies found to occur will be carried over in the impact fee calculations (netting out capacity made available by the CIP). Data for the inventory was obtained from the Thoroughfare Plan, field reconnaissance, and peak hour traffic volume count data.

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

Table 5-1: Roadway Facility Vehicle-Mile Lane Capacities

Roadway Facility Functional Classification	Designation	Hourly Vehicle-mile Capacity per Lane Mile of Roadway Facility
Divided Arterial*	DA	675
Divided Collector*	DC	550
Undivided Arterial	UA	625
Undivided Collector	UC	500
*Facilities with a two-way left turn lane (TWLTL) are considered for this assessment as a divided facility for capacity allocation and marked as Special Arterial (SA) or Special Collector (SC) designation.		

5.1.1 Existing Volumes

Existing directional PM peak hour volumes were obtained from automated traffic counts conducted in June 2015. Automated traffic counts at 25 separate locations were collected on major roadways throughout the city. In an effort to minimize the total number of counts, data was collected at locations where traffic volumes would typify link volumes on the major segments within the immediate area. 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 **Appendix C** as part of the existing capital improvements database.

5.1.2 Vehicle-Miles of Existing Capacity Supply and Demand

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:

Vehicle-Miles of Capacity = Link capacity per peak hour per lane x No. of Lanes x Length of segment (miles)

A summary of the current capacity available on the roadway system by service area is detailed below.

Similarly, 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:

Vehicle-Miles of Demand = PM peak hour volume x Length of segment (miles)

The total vehicle-miles of demand summarized by service area is listed in **Table 5-2**. Vehicle-miles of existing capacity and demand by roadway segment is detailed in **Appendix C**.

5.1.3 Vehicle-Miles of Existing Excess Capacity and Deficiencies

For each roadway segment, the existing vehicle-miles of excess capacity and/or deficiencies were calculated and are listed in **Table 5-2**. 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 the table. Any deficiencies identified under current operations will be carried over to the impact fee calculation. A detailed listing of existing excess capacity and deficiencies by roadway segment is also located in **Appendix C**.

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

Service Area	Capacity	Demand	Excess Capacity	Existing Deficiencies
1	1,415	311	1,104	0
2	6,764	3,273	3,491	0
3	25,869	9,399	16,471	0
4	355	92	263	0
5	53,448	20,242	33,206	0
6	23,154	11,531	11,624	0
7	301	35	266	0
8	110	1	109	0
9	1,604	374	1,230	0
Total	**113,020**	**45,258**	**67,763**	**0**

5.2 Growth Projections

The projected growth for the roadway service area is represented by the increase in the number of new vehicle-miles of demand 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 Cleburne Land Use Assumptions (LUA) Report for Impact Fees dated August 24, 2017 by Freese and Nichols. Estimates of population and employment were prepared for the years 2017 and 2027.

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, comprising 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 5-3.**

Table 5-3a: Projected 10-Year Growth Summary

Service Area	Population		
	2017	2027	Net Growth
1	0	0	0
2	65	948	883
3	632	1,507	875
4	0	28	28
5	26,780	34,099	7,319
6	3,806	5,674	1,868
7	0	0	0
8	16	51	35
9	24	77	53
Total Population/ Employment	**31,323**	**42,384**	**11,061**

Table 5-3b: Projected 10-Year Growth Summary

Service Area	Employment											
	2017				2027				Net Growth			
	Basic	Retail	Service	Total	Basic	Retail	Service	Total	Basic	Retail	Service	Total
1	4	1	7	12	5	2	9	16	1	1	2	4
2	239	168	441	848	276	207	559	1,042	187	39	253	479
3	1,120	787	2,134	4,041	1,225	905	2,552	4,682	105	118	418	641
4	3	2	6	11	6	4	10	20	3	2	4	9
5	3,453	2,557	6,395	12,405	3,664	2,706	7,167	13,537	61	149	637	847
6	1,037	765	2,224	4,026	1,132	754	2,451	4,337	95	-11	227	311
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	6	1	7	14	8	2	10	20	2	1	3	6
Total Population/ Employment	**5,862**	**4,281**	**11,214**	**21,357**	**6,316**	**4,580**	**12,758**	**23,654**	**454**	**299**	**1,544**	**2,297**

5.2.1 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 on the associated 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 each service area. Vehicle-miles of demand for population growth were based on dwelling units (residential). Vehicle-miles of demand for employment were based on the number of employees and then converted to square footage of building space using estimates of square footage per employee for industrial, office, and retail uses.

The 10-year projected vehicle-miles of demand by service area are summarized in **Table 5-4**. **Appendix D** details the derivation of the projected demand calculations.

Table 5-4: 10-Year Projected Service Units of Demand

Service Area	Projected 10-Year Growth (Vehicle-Miles)
1	15
2	3,321
3	3,570
4	79
5	14,115
6	4,087
7	0
8	57
9	107
Total	**25,349**

5.3 Capital Improvements Plan

The impact fee CIP is aimed at facilitating anticipated long-term growth in Cleburne. The City has identified the City-funded transportation projects needed to accommodate the anticipated projected growth within the City. Arterial and collector class facilities in the current official Thoroughfare Plan were included in the impact fee CIP to provide flexibility in the development of the community due to the anticipated rates of development.

Subsequent to this report on the development of the impact fee CIP, the final report will detail project cost per service unit, the cost attributable to new development, and service area cost per service unit.

5.3.1 Impact Fee CIP

The proposed CIP consists of 18 project segments over five of the nine service areas and advance the implementation of the Thoroughfare Plan network, as seen on **Figure 5-1**. The added capacity and net capacity that would be provided by the proposed CIP is summarized below in **Table 5-5**. Net capacity to be provided by the proposed CIP takes into consideration current traffic on CIP roads and any deficiencies from the existing conditions analysis described in **Section 5.1** of this report. A detailed listing by project of capacity supplied can be found in **Appendix E**.

Table 5-5: Capacity and Net Capacity to be Provided by the Proposed CIP

Service Area	Capacity Supplied by CIP (veh-mi)	Existing Utilization (veh-mi)	Existing Deficiencies (veh-mi)	Net Capacity Supplied by CIP (veh-mi)
1	0	0	0	0
2	1,328	124	0	1,204
3	6,075	658	0	5,417
4	540	52	0	488
5	20,350	1,586	0	18,764
6	8,059	1,477	0	6,581
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
Total	**36,351**	**3,897**	**0**	**32,454**

A comparison of net capacity to be provided by the proposed CIP compared to 10-year needs (developed in **Table 5-4**) is listed below in **Table 5-6**. An analysis reveals an adequately matched overall impact fee CIP program to address growth attributable to new development.

The percent attributable to new growth is a direct result of the land use assumptions described earlier in the report. Based on the defined capital improvements plan, is some service areas project growth will exceed the projected capacity supplied. The ultimate net effect is that the cost per service unit will be lower as the cost of the specified CIP (by service area) is spread out over the 10-year growth.

Table 5-6: Projected Demand and Net Capacity Provided by the Proposed CIP

Service Area	Projected 10-Year Growth (Vehicle-Miles)	Net Capacity Supplied by CIP (veh-mi)	Pcnt. of CIP Attributable to New Dev. (10-Yr.)
1	15	0	100.0
2	3,321	1,204	100.0
3	3,570	5,417	65.9
4	79	488	16.2
5	14,115	18,764	75.2
6	4,087	6,581	62.1
7	0	0	100.0
8	57	0	100.0
9	107	0	100.0
System Total	**25,349**	**32,454**	**78.1**

Figure 5-1 and **Table 5-7** illustrate and list the capital improvements projects and associated description as part of the impact fee program.

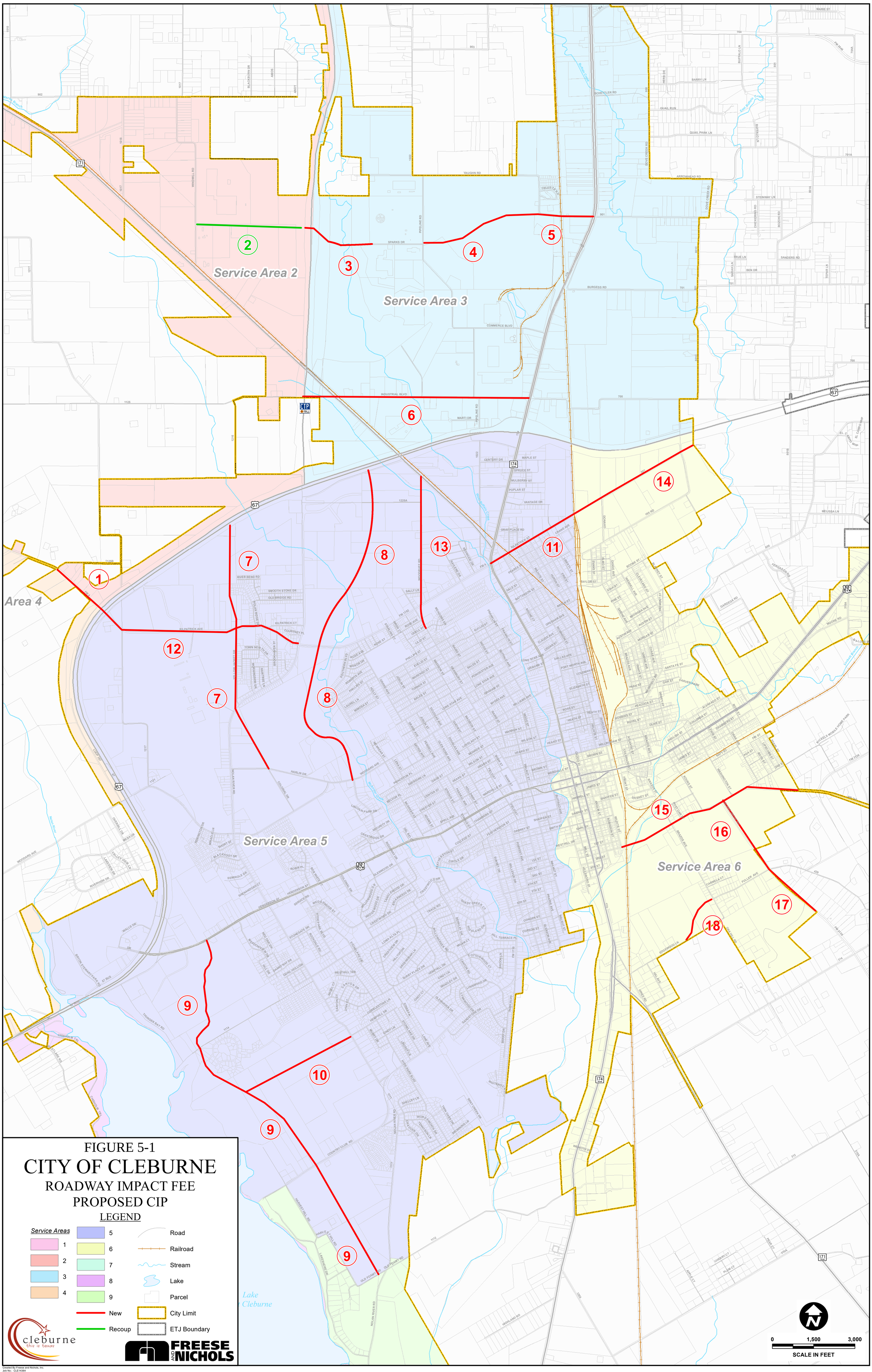

FIGURE 5-1

CITY OF CLEBURNE

ROADWAY IMPACT FEE PROPOSED CIP

LEGEND

Service Areas: 1, 2, 3, 4, 5, 6, 7, 8, 9

New

Recoup

Road

Railroad

Stream

Lake

Parcel

City Limit

ETJ Boundary

cleburne this is texas

FREESE AND NICHOLS

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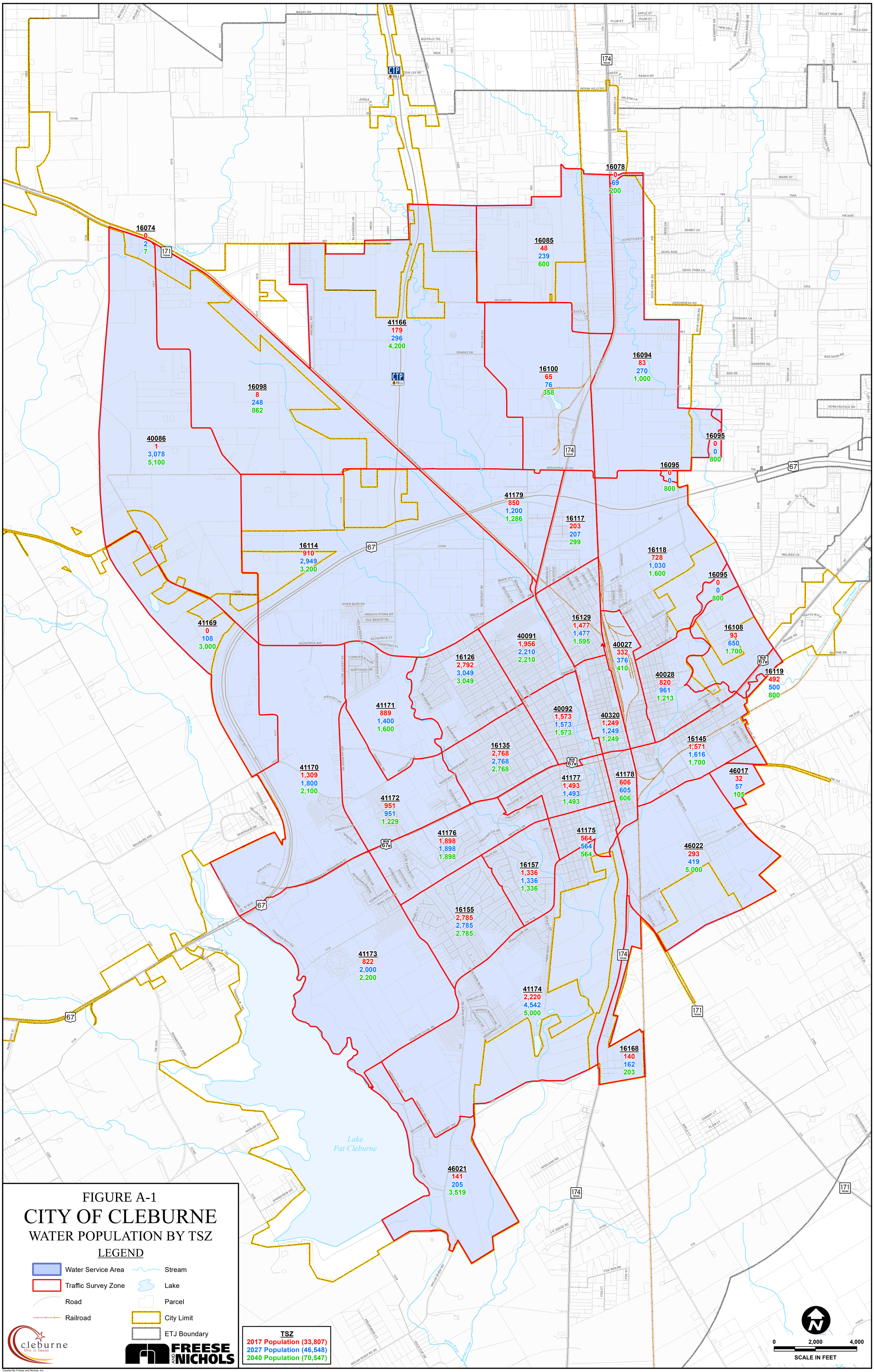
Updated: Thursday, November 30, 2017 10:53:27 AM

Table 5-7: Impact Fee CIP Listing

Serv Area	CIP No.	Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Type Rdwy	% in Serv. Area
1		No Projects			New	0			100%
Sub-total 1						**0**			
2/4	1	Kilpatrick/FM 4	CR 1125B	US 67	New	0.40	4	DA	50%
2	2	Sparks Dr	Windmill Rd	Chisholm Trail	Recoup	0.72	3	SC	100%
Sub-total 2						**1.12**			
3	3	W Sparks Dr	Chisholm Trail	ex. Sparks Dr	New	0.50	3	SC	100%
3	4	E Sparks Dr	ex. Sparks Dr	Vaughn Rd	New	0.84	3	SC	100%
3	5	E Sparks Dr	Vaughn Rd	SH 174	New	0.37	3	SC	100%
3	6	Industrial Blvd	Chisholm Trail	SH 174	New	1.55	5	SA	100%
Sub-total 3						**3.26**			
4/2	1	Kilpatrick/FM 4	CR 1125B	US 67	New	0.4	4	DA	50%
Sub-total 4						**0.40**			
5	7	Yellowjacket Rd	Harlin Dr	US 67	New	1.74	3	SC	100%
5	8	Ridgeway Dr	Woodard	US 67	New	2.40	3	SA	100%
5	9	University Dr	Bus. 67	CR 1112	New	2.84	5	SA	100%
5	10	Hemphill Dr	University	Nolan River	New	0.81	2	UC	100%
5	11	Kilpatrick	Main	RR	New	0.66	4	DA	100%
5	12	Kilpatrick	US 67	Nolan River	New	1.40	4	DA	100%
5	13	Woodruff Rd	Odell St	SH 171	New	1.05	3	SC	100%
Sub-total 5						**10.90**			
6	14	Kilpatrick	RR	Hix Rd	New	0.84	4	DA	100%
6	15	2nd St/FM 4	RR	E City Limits	New	1.31	4	DA	100%
6	16	FM 2135	2nd St	N. Elementary Sch	New	0.35	4	DA	100%
6	17	FM 2135	N. Elementary Sch	S City Limits	New	0.70	4	DA	50%
6	18	CR 315	Edgewood	FM 429	New	0.34	2	UC	100%
Sub-total 6						**3.55**			
7		No Projects			New	0			100%
Sub-total 7						**0**			
8		No Projects			New	0			100%
Sub-total 8						**0**			
9		No Projects			New	0			100%
Sub-total 9						**0**			
Totals:						**19.24**			

Note: DA = Divided Arterial, UA = Undivided Arterial, SA = Special Arterial (with center dual left turn lane), SC = Special Collector (with center dual left turn lane), Recoup = Recoupment Project, New = New Project

Appendix A
Water and Wastewater Population by TSZ



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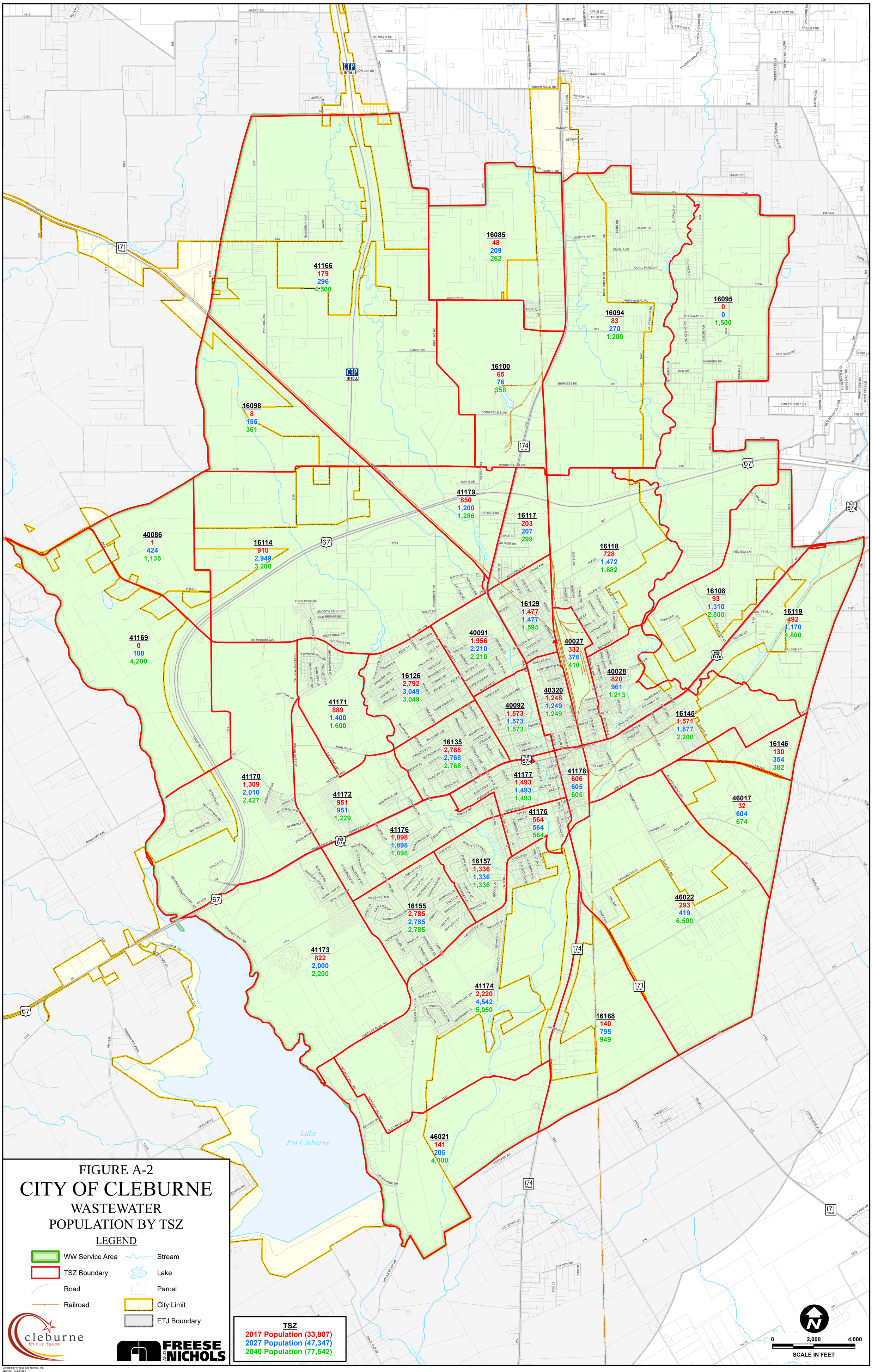

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Table A-1
Water Population by TSZ

TSZ ID	2017 Water Population by TSZ	2027 Water Population by TSZ	2040 Water Population by TSZ
40086	1	3,078	5,100
16074	0	2	7
41169	0	108	3,000
16098	8	248	862
41166	179	296	4,200
16085	48	239	600
16078	0	69	200
46021	141	205	3,519
16168	140	162	203
46017	32	57	105
16146	130	130	130
16119	492	500	800
16108	93	650	1,700
16114	910	2,949	3,200
41170	1,309	1,800	2,100
41173	822	2,000	2,200
41174	2,220	4,542	5,000
46022	293	419	5,000
16100	65	76	358
41179	850	1,200	1,286
40091	1,956	2,210	2,210
16126	2,792	3,049	3,049
16117	203	207	299
16129	1,477	1,477	1,595
16145	1,571	1,616	1,700
41178	606	605	606
41177	1,493	1,493	1,493
41175	564	564	564
41176	1,898	1,898	1,898
40092	1,573	1,573	1,573
16157	1,336	1,336	1,336
16155	2,785	2,785	2,785
40320	1,249	1,249	1,249
41171	889	1,400	1,600
40027	332	376	410
40028	820	961	1,213
16094	83	270	1,000
16095	0	0	800
16118	728	1,030	1,600
41172	951	951	1,229
16135	2,768	2,768	2,768

Table A-2
Wastewater Population by TSZ

TSZ ID	2017 Wastewater Population by TSZ	2027 Wastewater Population by TSZ	2040 Wastewater Population by TSZ
16075	0	0	0
16078	0	0	0
16085	48	209	262
16086	0	0	0
16094	83	270	1,200
16095	0	0	1,500
16098	8	155	361
16100	65	76	358
16108	93	1,310	2,800
16114	910	2,949	3,200
16117	203	207	299
16118	728	1,472	1,682
16119	492	1,170	4,800
16126	2,792	3,049	3,049
16129	1,477	1,477	1,595
16135	2,768	2,768	2,768
16145	1,571	1,877	2,200
16146	130	354	382
16155	2,785	2,785	2,785
16157	1,336	1,336	1,336
16166	0	0	0
16168	140	795	949
40027	332	376	410
40028	820	961	1,213
40086	1	424	1,135
40091	1,956	2,210	2,210
40092	1,573	1,573	1,573
40320	1,248	1,249	1,249
41165	0	0	0
41166	179	296	4,500
41169	0	108	4,200
41170	1,309	2,010	2,318
41171	889	1,400	1,600
41172	951	951	1,229
41173	822	2,000	2,200
41174	2,220	4,542	5,050
41175	564	564	564
41176	1,898	1,898	1,898
41177	1,493	1,493	1,493
41178	606	605	605
41179	850	1,200	1,286
46017	32	604	674
46021	141	205	4,000
46022	293	419	6,500

Appendix B
Roadway Population and Employment by TSZ

Table B-1
Roadway Population and Employment by TSZ

Rdwy Service Area(s)	TSZ	Roadway Population		Roadway Employment					
		2017 Population	2027 Population	2017 Basic	2017 Retail	2017 Service	2027 Basic	2027 Retail	2027 Service
2	16074	0	2	1	0	1	1	0	1
3	16075	0	0	2	1	4	3	1	5
3	16078	5	120	7	6	18	11	7	24
3	16085	30	200	65	46	120	71	53	144
3	16094	30	150	85	56	211	110	71	286
2	16098	12	300	1	1	2	1	1	2
3	16100	65	76	407	288	753	432	325	876
6	16108	10	493	20	13	49	24	16	63
2/3/5	16114	629	2,182	229	161	423	266	201	542
3/5	16117	203	207	291	205	537	297	223	601
3/6	16118	572	1,302	69	45	170	88	56	227
6	16119	21	120	15	10	37	18	12	47
5	16126	2,792	3,049	159	112	294	165	124	333
5	16129	1,477	1,477	163	115	301	160	120	325
5	16135	2,768	2,768	223	158	414	210	158	427
6	16145	900	1,128	64	43	160	73	47	191
6	16146	0	38	1	0	2	2	0	2
5	16155	2,815	2,815	126	105	242	133	94	246
5	16157	1,336	1,336	73	61	140	77	55	142
6/9	16168	140	162	9	2	12	12	3	15
6	40027	332	376	117	78	291	118	77	309
6	40028	820	961	98	65	244	110	71	286
2	40086	1	495	2	1	3	3	2	5
5	40091	1,956	2,210	129	91	238	138	104	280
5/6	40092	1,573	1,573	193	136	357	182	137	367
5/6	40320	1,248	1,249	124	88	230	118	88	238
2/3	41166	75	184	412	292	764	476	358	966
4/5	41169	0	56	4	4	8	8	6	14
5	41170	1,020	1,950	266	188	492	273	206	553
5	41171	889	1,400	80	56	148	89	67	181
5	41172	951	951	608	429	1,123	613	461	1,240
5	41173	947	2,175	180	148	345	241	170	446
5/6	41174	2,225	4,687	69	57	131	96	68	177
5/6	41175	564	564	105	86	200	116	82	214
5	41176	1,898	1,898	493	409	944	558	395	1,033
5/6	41177	1,493	1,493	262	218	503	278	197	514
6	41178	606	605	195	162	374	209	148	385
3/5	41179	850	1,200	476	336	880	486	364	982
1/4	46004	0	0	2	0	4	4	2	6
1	46007	0	0	3	1	5	3	1	6
6	46017	0	94	3	1	3	3	1	4
8/9	46021	40	128	0	0	0	0	0	0
6	46022	30	210	31	7	38	40	8	53
Total		**31,323**	**42,384**	**5,862**	**4,281**	**11,215**	**6,316**	**4,580**	**12,758**

Appendix C
Existing Conditions Analysis

Cleburne Roadway Impact Fee
Existing Capital Improvements Analysis

Serv Area	Shared Svc Area	Roadway	From	To	A Length (mi)	B No. of Lanes	Type	C Lane Capacity	Pct. in Serv. Area	Peak Hour Volume A	B	Total	D	A x B x C VMT Supply Pk Hr Total	A x D VMT Demand Pk Hr Total	Total VMT Excess Capacity	Total VMT Deficiency
1		FM 4	City limit	Proposed CR 1124	0.31	2	UC	500	50%	104	0	104		155	32	123	0
1		FM 4	CL goes to both sides	CR 1228	0.41	2	UC	500	50%	0	114	114		205	47	158	0
1		FM 4	Proposed N/S Collector	CL goes to one side of rd	0.47	2	UC	500	100%	104	114	218		470	102	368	0
1		FM 4	CL goes to both sides	Proposed N/S Collector	0.23	2	UC	500	50%	104	0	104		115	24	91	0
1		FM 4	CL goes to one side on east	CL goes to one side on west	0.16	2	UC	500	100%	104	114	218		160	35	125	0
1		FM 4	West city limits	CL goes to both sides	0.62	2	UC	500	50%	0	114	114		310	71	239	0
Sub-Total					*2.20*									*1,415*	*311*	*1,104*	*0*
2		State Hwy 171	Noth city limits (S of CR 1126)	S of CR 1010	0.76	2	UA	625	50%	0	426	426		475	324	151	0
2		State Hwy 171	S of CR 1010	N of CR 1018	0.35	2	UA	625	50%	384	0	384		219	134	84	0
2		State Hwy 171	N of CR 1018	Chisholm Trail Pwy	2.18	2	UA	625	100%	384	426	810		2725	1766	959	0
2		State Hwy 171	Collector Rd change	Proposed Arterial Rd	0.24	2	UA	625	50%	384	0	384		150	92	58	0
2		State Hwy 171	Northwest City limits	Arterial Rd change	0.22	2	UC	500	50%	0	426	426		110	94	16	0
2		County Rd 1009	North City limits	State Hwy 171	0.79	2	UC	500	50%	50	0	50		395	40	356	0
2		CR 902	City limit	CR 1017	0.72	2	UC	500	50%	50	0	50		360	36	324	0
2		Windmill Rd	SH 171	CR 902	1.23	2	UC	500	100%	246	246	492		1230	605	625	0
2		CR 904	City limit	Chisholm Trail Pwy	0.17	2	UA	625	50%	50	0	50		106	9	98	0
2		CR 1217	City limit	SH 171	0.17	2	UC	500	100%	50	50	100		170	17	153	0
2		CR 1125	W City limit	CL goes to both sides	0.06	2	UA	625	50%	50	0	50		38	3	35	0
2		CR 1125	CL goes to one side on west	CL goes to one side on east	0.09	2	UA	625	100%	50	50	100		113	9	104	0
2		CR 1125	CL goes to both sides	Chisholm Trail Pwy	0.27	2	UA	625	50%	0	50	50		169	14	155	0
2		FM 4	City limit	Local Street	0.42	2	UC	500	50%	130	0	130		210	55	155	0
2	4	FM 4	City limit	US Hwy 67	0.59	2	UC	500	50%	130	0	130		295	77	218	0
Sub-Total					*8.26*									*6,764*	*3,273*	*3,491*	*0*
3		Pipeline Rd/CR 1022	W Vaughn Rd/CR 901	Industrial Blvd	1.63	2	UC	500	100%	63	108	171		1630	279	1351	0
3		County Road 1022	N City Limits	W Vaughn Rd/CR 901	0.47	2	UC	500	50%	0	54	54		235	25	210	0
3		W Vaughn Rd/CR 901	Proposed N/S Collector	CR 1022	0.55	2	UA	625	50%	44	0	44		344	24	320	0
3		W Vaughn Rd/CR 901	CR 1022	W City Limits	0.36	2	UA	625	100%	44	40	84		450	30	420	0
3		W Vaughn Rd/CR 901	Proposed N/S Collector	E City Limits	0.14	2	UC	500	50%	44	0	44		70	6	64	0
3		W Vaughn Rd/CR 901	E City Limits	Railroad Tracks	0.58	2	UC	500	100%	44	40	84		580	49	531	0
3		CR 901	SH 174	CR 801	0.72	2	UC	500	100%	50	50	100		720	72	648	0
3		County Rd 801	N city limits	CR 700	1.58	2	UC	500	50%	0	50	50		790	79	711	0
3		County Road 3048	SH 174	CR 800	0.34	2	UC	500	100%	50	50	100		340	34	306	0
3		Burgess Rd	SH 174	CR 801	0.89	2	UC	500	100%	50	50	100		890	89	801	0
3		CR 700	SH 174	CR 801	1.14	2	UC	500	100%	50	50	100		1140	114	1026	0
3		Hix Rd	CR 700	US Hwy 67	0.20	2	UC	500	50%	0	50	50		100	10	90	0
3		W Industrial Blvd	Chisholm Trail Pwy	SH 174	1.42	2	UA	625	100%	190	214	404		1775	574	1201	0
3		SH 171	Chisholm Trail Pwy	US Hwy 67	0.70	2	UA	625	100%	384	426	810		875	567	308	0
3		SH 174	N City Limits	US Hwy 67	3.81	7	SA	675	100%	1020	924	1944		15431	7407	8024	0
3		CR 904	Chisholm Trail Pwy	CR 1023	0.40	2	UA	625	100%	50	50	100		500	40	460	0
Sub-Total					*14.93*									*25,869*	*9,399*	*16,471*	*0*
4	2	FM 4	City limit	US Hwy 67	0.59	2	UC	500	50%	0	130	130		295	77	218	0
4		FM 4	W City limit	E City limit	0.12	2	UC	500	50%	130	0	130		60	16	44	0
Sub-Total					*0.71*									*355*	*92*	*263*	*0*

Cleburne Roadway Impact Fee
Existing Capital Improvements Analysis

Serv Area	Shared Svc Area	Roadway	From	To	A Length (mi)	B No. of Lanes	Type	C Lane Capacity	Pct. in Serv. Area	Peak Hour Volume A	B	Total	D	A x B x C VMT Supply Pk Hr Total	A x D VMT Demand Pk Hr Total	Total VMT Excess Capacity	Total VMT Deficiency
5		Kilpatrick St/FM 4	US Hwy 67	CR 1216	1.43	2	UC	500	100%	130	130	260		1430	372	1058	0
5		Kilpatrick St/FM 4	CR 1216	SH 174	1.42	5	SA	675	100%	482	580	1062		3834	1508	2326	0
5		Kilpatrick St	SH 174	RR Tracks	0.66	2	UC	500	100%	290	241	531		660	350	310	0
5		Nolan River Rd	US Hwy 67	Kilpatrick St/FM 4	1.06	5	SA	675	100%	394	491	885		2862	938	1924	0
5		SH 171	US Hwy 67	SH 174	0.87	2	UA	625	100%	384	426	810		1088	705	383	0
5		SH 174	US Hwy 67	Kilpatrick St	0.87	7	SA	675	100%	1020	924	1944		3524	1691	1832	0
5		SH 174	Kilpartrick St	W Lone Star Ave	0.74	5	SA	675	100%	640	850	1490		1998	1103	895	0
5		SH 174	W Lone Star Ave	W Willingham St	0.69	4	UA	625	100%	640	850	1490		1725	1028	697	0
5		N Nolan River Rd	FM 4	US Hwy 67 (BUS)	2.00	5	SA	675	100%	394	491	885		5400	1770	3630	0
5		S Nolan Rd	US Hwy 67 (BUS)	CR 1112	2.73	2	UC	500	100%	195	308	503		2730	1373	1357	0
5		Yellow Jacket Dr	FM 4	N Nolan River Rd	0.52	2	UC	500	100%	50	50	100		520	52	468	0
5		Woodard Ave	US Hwy 67	Harlin Dr	1.61	2	UC	500	100%	127	110	237		1610	382	1228	0
5		Woodard Ave	Harlin Dr	McAnear St	0.41	3	SA	675	100%	367	369	736		554	302	252	0
5		Woodard Ave	McAnear St	Grandbury St	0.72	2	UC	500	100%	367	369	736		720	530	190	0
5		Harlin Dr	N Nolan River Rd	Woodard Ave	0.69	3	SA	675	100%	214	243	457		932	315	616	0
5		Colonial Dr	Collector Road end	US Hwy 67 (BUS)	0.25	2	UC	500	100%	20	20	40		250	10	240	0
5		Ridgeway Dr	Woodard Ave	Tanglewood Dr	1.81	5	SA	675	100%	228	291	519		4887	939	3948	0
5		S Ridgeway Dr	Tanglewood Dr	Country Club Rd	1.00	2	UC	500	100%	114	146	260		1000	260	741	0
5		W Westhill Dr	S Nolan River Rd	West Buffalo Creek	1.90	2	UC	500	100%	355	335	690		1900	1311	589	0
5	9	FM 1718	Road end on west side	Proposed N/S Arterial Rd	0.20	2	UC	500	50%	0	50	50		100	10	90	0
5		FM 1718	Proposed N/S Arterial Rd	S Nolan River Rd	1.00	2	UC	500	100%	50	50	100		1000	100	900	0
5		Country Club Rd	S Nolan River Rd	Conger St	1.54	3	SA	675	100%	261	212	473		2079	728	1351	0
5		Country Club Rd	Conger St	West Buffalo Creek	0.82	2	UA	625	100%	261	212	473		1025	388	637	0
5		Grandbury St	FM 4	US Hwy 67 (BUS)	1.41	2	UC	500	100%	440	391	831		1410	1172	238	0
5		Prarie Ave	US Hwy 67 (BUS)	Country Club Rd	0.76	2	UC	500	100%	100	100	200		760	152	608	0
5		Williams Ave	Grandbury St	SH 174	0.52	2	UC	500	100%	100	100	200		520	104	416	0
5		Boone St	SH 174	RR Tracks	0.45	2	UC	500	100%	100	100	200		450	90	360	0
5	6	E Willingham St	SH 174	RR Tracks	0.31	2	UC	500	50%	0	100	100		155	31	124	0
5		US Hwy 67 BUS	US Hwy 67	Walnut St	2.94	5	SA	675	100%	428	345	773		7938	2273	5665	0
5		US Hwy 67 BUS	Walnut St	West Buffalo Creek	0.14	4	DA	675	100%	928	848	1776		389	256	133	0
Sub-Total					*31.47*									*53,448*	*20,242*	*33,206*	*0*
6		Kilpatrick St/CR 801	RR Tracks	E City limits	0.94	2	UC	500	100%	290	241	531		940	499	441	0
6		Boone St	RR Tracks	Blakney St	0.52	2	UC	500	100%	100	100	200		520	104	416	0
6		Boone St	Blakney St	E City limits	0.43	2	UC	500	50%	0	50	50		215	22	194	0
6		Hix Rd	Boone St	Kilpatrick St/CR 801	0.45	2	UC	500	100%	50	50	100		450	45	405	0
6		Sabine Rd	Boone St	Austin Ave	0.39	2	UC	500	100%	50	50	100		390	39	351	0
6		Austin Ave	Brazos Ave	Tremont St	0.33	2	UC	500	100%	50	50	100		330	33	297	0
6		Brazos Ave	Austin Ave	US Hwy 67 BUS	0.68	2	UC	500	100%	47	64	111		680	75	605	0
6	5	E Willingham St	SH 174	RR Tracks	0.31	2	UC	500	50%	100	0	100		155	31	124	0
6		E Willingham St	RR Tracks	Brazos Ave	0.23	2	UC	500	100%	100	100	200		230	46	184	0
6		Olive St	Brazos Ave	Alvarado St	0.29	2	UC	500	100%	50	50	100		290	29	261	0
6		Alvarado st	Olive St	Road end	0.55	2	UC	500	100%	50	50	100		550	55	495	0
6		Island Grove Rd/CR 2135	FM 4	N of CR 429	0.39	2	UC	500	100%	100	100	200		390	78	312	0
6		Island Grove Rd/CR 2135	CR 429	South City limits	0.60	2	UC	500	50%	0	100	100		300	60	240	0

Cleburne Roadway Impact Fee
Existing Capital Improvements Analysis

Serv Area	Shared Svc Area	Roadway	From	To	A Length (mi)	B No. of Lanes	Type	C Lane Capacity	Pct. in Serv. Area	Peak Hour Volume A	B	Total	D	A x B x C VMT Supply Pk Hr Total	A x D VMT Demand Pk Hr Total	Total VMT Excess Capacity	Total VMT Deficiency
6		Edgewood Lane	S Brazos ave	Hal Ave	0.55	2	UC	500	50%	0	50	50		275	28	248	0
6		Hal Ave	Edgewood Ln	Kimberly Dr	0.24	3	SA	675	100%	50	50	100		324	24	300	0
6		Kimberly Ave	Hal Rd	SH 171	0.14	3	SA	675	100%	50	50	100		189	14	175	0
6		Hines Rd	Edgewood Ln	Kimberly Dr	0.40	2	UC	500	100%	50	50	100		400	40	360	0
6		2nd St/FM 4	SH 174	RR Tracks	0.19	2	UC	500	100%	427	304	731		190	139	51	0
6		Grandview Hwy/FM 4	RR Tracks	E City limits	1.29	2	UA	625	100%	427	304	731		1613	943	670	0
6		SH 174	W Willingham St	SH 171	1.82	4	DA	675	100%	640	850	1490		4914	2712	2202	0
6		SH 174	SH 171	Proposed CR 314 Collector Rd	0.89	2	UA	625	100%	321	556	877		1113	781	332	0
6	9	SH 174	Proposed CR 314 Collector Rd	South city limits	0.79	2	UA	625	50%	0	556	556		494	439	55	0
6		Country Club Rd	West Buffalo Creek	SH 174	0.20	2	UA	625	100%	261	212	473		251	95	156	0
6		SH 171	SH 174	RR Tracks	0.12	2	UA	625	100%	222	346	568		150	68	82	0
6		US Hwy 67 BUS	West Buffalo Creek	RR Tracks	0.41	4	DA	675	100%	928	848	1776		1107	728	379	0
6		US Hwy 67 BUS	RR Tracks	E City limits	2.48	5	SA	675	100%	928	848	1776		6696	4404	2292	0
Sub-Total					*15.63*									*23,154*	*11,531*	*11,624*	*0*
7		US Hwy 67	West city limits	Park Rd 21	0.33	2	UA	625	50%	100	0	100		206	33	173	0
7		Park Rd 21	US Hwy 67	South City limits	0.19	2	UC	500	50%	0	10	10		95	2	93	0
Sub-Total					*0.52*									*301*	*35*	*266*	*0*
8		Hagler Rd	W City limits	Road Ends	0.11	2	UC	500	100%	5	5	10		110	1	109	0
Sub-Total					*0.11*									*110*	*1*	*109*	*0*
9	5	SH 174	Proposed CR 314 Collector Rd	CL goes to one side	0.58	2	UA	625	50%	321	0	321		363	186	176	0
9		SH 174	SA 5	S city limits	0.18	3	SA	675	100%	321	0	321		122	58	64	0
9		CR 1111	CR 1112	S city limits	1.02	2	UC	500	100%	55	63	118		1020	120	900	0
9	5	FM 1718	Road end on west side	Proposed N/S Arterial Rd	0.20	2	UC	500	50%	50	0	50		100	10	90	0
Sub-Total					*1.98*									*1,604*	*374*	*1,230*	*0*
Total					**75.81**									**113,020**	**45,258**	**67,763**	**0**

DA- Divided arterial
UA- Undivided arterial
SA- Special arterial with dual-left turn lane
DC- Divided collector
UC- Undivided collector

Appendix D
Projected 10-Year Growth
(Vehicle Miles of New Demand)

Vehicle-Mile Trip Generation by Service Area, Cleburne Roadway Impact Fee
Based on August 21, 2017 Land Use Assumptions by FNI (W/WW Team)

Estimated Residential Growth Vehicle-Mile Trip Generation (2.80 per/DU)

Service Area	Added Population	Added Dwelling Units	Vehicle-Miles per DU	Total Vehicle-Miles
1	0	0	4.38	0
2	883	316	4.38	1383
3	875	313	4.38	1370
4	28	10	4.38	44
5	7,319	2614	4.38	11439
6	1,868	668	4.38	2923
7	0	0	4.38	0
8	35	13	4.38	57
9	53	19	4.38	83

SU Equivalency	
Residential DU	4.38
Basic Employ SF	3.86
Service Employ SF	5.73
Retail Employ SF	3.35

Estimated Basic Employment Growth Vehicle-Mile Generation (1,500 SF/employee)

Service Area	Added Employees	Square Feet per emp.	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	1	1500	1,500	3.86	6
2	187	1500	280,500	3.86	1,083
3	105	1500	157,500	3.86	608
4	3	1500	4,500	3.86	17
5	61	1500	91,500	3.86	353
6	95	1500	142,500	3.86	550
7	0	1500	0	3.86	0
8	0	1500	0	3.86	0
9	2	1500	3,000	3.86	12

Estimated Service Employment Growth Vehicle-Mile Generation (500 SF/employee)

Service Area	Added Employees	Square Feet per emp.	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	2	500	1,000	5.73	6
2	253	500	126,500	5.73	725
3	418	500	209,000	5.73	1,197
4	4	500	2,000	5.73	11
5	637	500	318,500	5.73	1,824
6	227	500	113,500	5.73	650
7	0	500	0	5.73	0
8	0	500	0	5.73	0
9	3	500	1,500	5.73	9

Estimated Retail Employment Growth Vehicle-Mile Generation (1,000 SF/employee)

Service Area	Added Employees	Square Feet per emp.	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	1	1000	1,000	3.35	3
2	39	1000	39,000	3.35	130
3	118	1000	118,000	3.35	395
4	2	1000	2,000	3.35	7
5	149	1000	149,000	3.35	498
6	-11	1000	(11,000)	3.35	(37)
7	0	1000	0	3.35	0
8	0	1000	0	3.35	0
9	1	1000	1,000	3.35	3

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	0	6	6	3	**15**
2	1383	1083	725	130	**3321**
3	1370	608	1197	395	**3570**
4	44	17	11	7	**79**
5	11439	353	1824	498	**14115**
6	2923	550	650	-37	**4087**
7	0	0	0	0	**0**
8	57	0	0	0	**57**
9	83	12	9	3	**107**
Totals	17,298	2,629	4,422	1,000	**25,349**

Appendix E
Roadway Capital Improvements Plan

ROADWAY IMPROVEMENTS PLAN PROJECTS

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 SA = special arterial (arterial with continuous left turn) UC = undivided collector
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.

Cleburne Roadway Impact Fee
2017 Proposed Capital Improvements Plan

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Type Rdwy	Pct. in Serv. Area	Peak Hour Volume A	B	Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	CIP VMT Deficiency
1		No Projects			New	0.00			100%			0	0	0	0	0
Sub-total 1						**0.00**						**0**	**0**	**0**	**0**	**0**
2/4	*1*	Kilpatrick/FM 4	CR 1125B	US 67	New	0.40	4	DA	50%	130	0	130	540	52	488	0
2	*2*	Sparks Dr	Windmill Rd	Chisholm Trail	Recoup	0.72	3	SC	100%	50	50	100	788	72	716	0
Sub-total 2						**1.12**						**230**	**1328**	**124**	**1204**	**0**
3	*3*	W Sparks Dr	Chisholm Trail	ex. Sparks Dr	New	0.50	3	SC	100%	0	0	0	550	0	550	0
3	*4*	E Sparks Dr	ex. Sparks Dr	Vaughn Rd	New	0.84	3	SC	100%	0	0	0	927	0	927	0
3	*5*	E Sparks Dr	Vaughn Rd	SH 174	New	0.37	3	SC	100%	44	40	84	404	31	373	0
3	*6*	Industrial Blvd	Chisholm Trail	SH 174	New	1.55	5	SA	100%	190	214	404	4194	628	3566	0
Sub-total 3						**3.26**						**488**	**6075**	**658**	**5417**	**0**
4/2	*1*	Kilpatrick/FM 4	CR 1125B	US 67	New	0.40	4	DA	50%	0	130	130	540	52	488	0
Sub-total 4						**0.40**						**130**	**540**	**52**	**488**	**0**
5	*7*	Yellowjacket Rd	Harlin Dr	US 67	New	1.74	3	SC	100%	0	0	0	1917	0	1917	0
5	*8*	Ridgeway Dr	Woodard	US 67	New	2.40	3	SA	100%	0	0	0	3246	0	3246	0
5	*9*	University Dr	Bus. 67	CR 1112	New	2.84	5	SA	100%	0	0	0	7667	0	7667	0
5	*10*	Hemphill Dr	University	Nolan River	New	0.81	2	UC	100%	0	0	0	811	0	811	0
5	*11*	Kilpatrick	Main	RR	New	0.66	4	DA	100%	290	241	531	1774	349	1425	0
5	*12*	Kilpatrick	US 67	Nolan River	New	1.40	4	DA	100%	130	130	260	3780	364	3416	0
5	*13*	Woodruff Rd	Odell St	SH 171	New	1.05	3	SC	100%	440	391	831	1155	873	283	0
Sub-total 5						**10.90**						**1622**	**20350**	**1586**	**18764**	**0**
6	*14*	Kilpatrick	RR	Hix Rd	New	0.84	4	DA	100%	290	241	531	2281	449	1832	0
6	*15*	2nd St/FM 4	RR	E City Limits	New	1.31	4	DA	100%	427	304	731	3541	959	2582	0
6	*16*	FM 2135	2nd St	N. Elementary Sch	New	0.35	4	DA	100%	50	50	100	946	35	911	0
6	*17*	FM 2135	N. Elementary Sch	S City Limits	New	0.70	4	DA	50%	0	50	50	946	35	911	0
6	*18*	CR 315	Edgewood	FM 429	New	0.34	2	UC	100%	0	0	0	345	0	345	0
Sub-total 6						**3.55**						**1412**	**8059**	**1477**	**6581**	**0**
7		No Projects			New	0.00			100%			0	0	0	0	0
Sub-total 7						**0.00**						**0**	**0**	**0**	**0**	**0**
8		No Projects			New	0.00			100%			0	0	0	0	0
Sub-total 8						**0.00**						**0**	**0**	**0**	**0**	**0**
9		No Projects			New	0.00			100%			0	0	0	0	0
Sub-total 9						**0.00**						**0**	**0**	**0**	**0**	**0**
Totals:						**19.24**						**3,882**	**36,351**	**3,897**	**32,454**	**0**

Notes:

DA- Divided arterial
SA- Special arterial with dual-left turn lane
DC- Divided collector
SC- Special collector with dual-left turn lane
UC- Undivided collector

Appendix B
Water System Project Cost Estimates

City of Cleburne

Capital Improvement Cost Estimate		**November 2017**	
Construction Project Number:	**1**	**Phase:**	**2027**
Project Name:	**Airport Pump Station Expansion and Ground Storage Tank**		

Project Description:

Expand the Airport Pump Station from 5.1 MGD to 10.0 MGD and add new 1.5 MG ground storage tank.

Project Drivers:

Pump station needs additional capacity to meet increased water demands resulting from population growth.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Pump Station - Expans 5 MGD	1	LS	$ 3,500,000	$ 3,500,000
2	1.5 MG Ground Storage Tank	1	LS	$ 1,500,000	$ 1,500,000
				SUBTOTAL:	**$ 5,000,000**
		CONTINGENCY		20%	$ 1,000,000
				SUBTOTAL:	**$ 6,000,000**
		ENG/SURVEY		15%	$ 900,000
				SUBTOTAL:	**$ 6,900,000**
				Estimated Project Total:	**$ 6,900,000**

Capital Improvement Cost Estimate		**November 2017**	
Construction Project Number:	**2**	**Phase:**	**2027**
Project Name:	**16-inch Loop from 2nd Street to south of Gardega Road**		

Project Description:

The proposed 16-inch water line, starting south of the intersection of 805 and Gardega Road, along Pearl Street and E 2nd Street will serve new development.

Project Drivers:

This line will serve new development and provide system looping.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	10,700	LF	$ 144	$ 1,540,800
2	30" Boring and Casing	500	LF	$ 525	$ 262,500
3	Water Pavement Repair	400	LF	$ 75	$ 30,000
				SUBTOTAL:	**$ 1,833,300**
		CONTINGENCY		20%	$ 366,700
				SUBTOTAL:	**$ 2,200,000**
		ENG/SURVEY		15%	$ 330,000
				SUBTOTAL:	**$ 2,530,000**
				Estimated Project Total:	**$ 2,530,000**

City of Cleburne

Capital Improvement Cost Estimate			**November 2017**
Construction Project Number:	**3**		**Phase: 2027**
Project Name:	**20-inch Water Line north of the Airport Pump Station**		
Project Description:			
The proposed 20-inch water line along Highway 67 from Woodard Avenue to FM 4 will serve new development.			
Project Drivers:			
This line provides additional transmission capacity from the pump station to serve growth.			

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	20" WL & Appurtenances	12,050	LF	$ 180	$ 2,169,000
2	34" Boring and Casing	400	LF	$ 595	$ 238,000
				SUBTOTAL:	**$ 2,407,000**
		CONTINGENCY		20%	$ 481,400
				SUBTOTAL:	**$ 2,888,400**
		ENG/SURVEY		15%	$ 433,300
				SUBTOTAL:	**$ 3,321,700**
				Estimated Project Total:	**$ 3,321,700**

Capital Improvement Cost Estimate			**November 2017**
Construction Project Number:	**4**		**Phase: 2027**
Project Name:	**16-inch Water Lines along County Road 1217 and County Road 1125**		
Project Description:			
The proposed 16-inch water line along 1125 and 1217 will serve new development.			
Project Drivers:			
This line will serve new development and provides additional transmission capacity.			

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	14,260	LF	$ 144	$ 2,053,440
2	30" Boring and Casing	200	LF	$ 525	$ 105,000
3	Water Pavement Repair	5,500	LF	$ 75	$ 412,500
				SUBTOTAL:	**$ 2,571,000**
		CONTINGENCY		20%	$ 514,200
				SUBTOTAL:	**$ 3,085,200**
		ENG/SURVEY		15%	$ 462,800
				SUBTOTAL:	**$ 3,548,000**
				Estimated Project Total:	**$ 3,548,000**

City of Cleburne

Capital Improvement Cost Estimate		**November 2017**	
Construction Project Number:	**5**	**Phase:**	**2027**
Project Name:	**Water Lines for new supply on north side of the City**		

Project Description:

The proposed 12-inch, 20-inch, and 24-inch water lines west of Highway 174. will serve new development.

Project Drivers:

This line provides transmission capacity from the new pump station to incorporate the new water supply into the distribution system.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	2,650	LF	$ 108	$ 286,200
2	20" WL & Appurtenances	9,430	LF	$ 180	$ 1,697,400
3	24" WL & Appurtenances	2,190	LF	$ 216	$ 473,040
4	34" Boring and Casing	200	LF	$ 595	$ 119,000
				SUBTOTAL:	**$ 2,575,700**
		CONTINGENCY		20%	$ 515,200
				SUBTOTAL:	**$ 3,090,900**
		ENG/SURVEY		15%	$ 463,700
				SUBTOTAL:	**$ 3,554,600**
				Estimated Project Total:	**$ 3,554,600**

Capital Improvement Cost Estimate		**November 2017**	
Construction Project Number:	**6**	**Phase:**	**2027**
Project Name:	**Ground Storage Tank and Pump Station for new water supply**		

Project Description:

The proposed Fort Worth/ JCSUD Pump Station will have a 5.0 MGD firm capacity and 3.0 MG ground storage tank.

Project Drivers:

The pump station will meet increased water demands resulting from population growth and provide additional water supply.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Pump Station - New 5.0 MGD	1	LS	$ 4,800,000	$ 4,800,000
2	3.0 MG Ground Storage Tank	1	LS	$ 3,000,000	$ 3,000,000
				SUBTOTAL:	**$ 7,800,000**
		CONTINGENCY		20%	$ 1,560,000
				SUBTOTAL:	**$ 9,360,000**
		ENG/SURVEY		15%	$ 1,404,000
				SUBTOTAL:	**$ 10,764,000**
				Estimated Project Total:	**$ 10,764,000**

City of Cleburne

Capital Improvement Cost Estimate — **November 2017**

Construction Project Number: 7 — **Phase: 2027**

Project Name: **12-inch Water Line along Highway 67 and along Loop 367**

Project Description:

The proposed 12-inch water line along Highway 67 from 67 Bus to Woodard Avenue will serve new development.

Project Drivers:

This line provides additional transmission capacity in the distribution system to serve growth.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	7,070	LF	$ 108	$ 763,560
2	20" Boring and Casing	600	LF	$ 350	$ 210,000
3	Water Pavement Repair	600	LF	$ 75	$ 45,000
				SUBTOTAL:	**$ 1,018,600**
		CONTINGENCY		20%	$ 203,800
				SUBTOTAL:	**$ 1,222,400**
		ENG/SURVEY		15%	$ 183,400
				SUBTOTAL:	**$ 1,405,800**
				Estimated Project Total:	**$ 1,405,800**

Construction Project Number: 8 — **Phase: 2027**

Project Name: **12-inch Water line along Graham Street**

Project Description:

The proposed 12-inch water line along Graham Street will serve new development.

Project Drivers:

This line provides additional transmission capacity in the distribution system to serve growth.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	3,680	LF	$ 108	$ 397,440
2	20" Boring and Casing	200	LF	$ 350	$ 70,000
3	Water Pavement Repair	3,680	LF	$ 75	$ 276,000
				SUBTOTAL:	**$ 743,500**
		CONTINGENCY		20%	$ 148,700
				SUBTOTAL:	**$ 892,200**
		ENG/SURVEY		15%	$ 133,900
				SUBTOTAL:	**$ 1,026,100**
				Estimated Project Total:	**$ 1,026,100**

City of Cleburne

Capital Improvement Cost Estimate			**November 2017**
Construction Project Number:	**9**		**Phase: 2027**
Project Name:	**12-inch Water Line along Woodruff Road**		

Project Description:

The proposed 12-inch water line along Woodruff Road will serve new development.

Project Drivers:

This line will serve new development and connect existing large diameter water lines.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	4,250	LF	$ 108	$ 459,000
				SUBTOTAL:	**$ 459,000**
		CONTINGENCY		20%	$ 91,800
				SUBTOTAL:	**$ 550,800**
		ENG/SURVEY		15%	$ 82,700
				SUBTOTAL:	**$ 633,500**
				Estimated Project Total:	**$ 633,500**

Construction Project Number:	**10**		**Phase: 2027**
Project Name:	**1.5 MG Ground Storage Tank at Pump Station #12**		

Project Description:

Replace existing 0.5 MG GST with 1.5 MG GST.

Project Drivers:

Pump station needs additional storage to meet increased water demands resulting from population growth.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	1.5 MG Ground Storage Tank	1	LS	$ 1,500,000	$ 1,500,000
				SUBTOTAL:	**$ 1,500,000**
		CONTINGENCY		20%	$ 300,000
				SUBTOTAL:	**$ 1,800,000**
		ENG/SURVEY		15%	$ 270,000
				SUBTOTAL:	**$ 2,070,000**
				Estimated Project Total:	**$ 2,070,000**

Appendix C
Wastewater System Project Cost Estimates

City of Cleburne

Capital Improvement Cost Estimate — **November 2017**
Construction Project Number: 1 — **Phase: 2027**

Project Name: **WWTP Expansion Permitting and Preliminary Design**

Project Description:

Preliminary design and permitting phase services for the WWTP expansion. Project will include rehabilitation of the existing plant components, 3.0 MGD expansion of the plant to meet required capacity, and treatment improvements to provide high quality reuse water to Lake Pat Cleburne.

Project Drivers:

The capacity of the plant needs to be increased to meet wastewater flows and plant improvements need to be made to assure proper operations at the plant.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	WWTP Expansion Permitting and Preliminary Design	1	LS	$ 400,000	$ 400,000
				SUBTOTAL:	**$ 400,000**
		CONTINGENCY		0%	$ -
				SUBTOTAL:	**$ 400,000**
		ENG/SURVEY		0%	$ -
				SUBTOTAL:	**$ 400,000**
				Estimated Project Total:	**$ 400,000**

City of Cleburne

Capital Improvement Cost Estimate — **November 2017**
Construction Project Number: 2 — **Phase: 2027**

Project Name: **WWTP 3 MGD Expansion**

Project Description:

This project includes the proposed 3.0 MGD expansion at the existing WWTP. It will increase the average day permitted capacity of the WWTP from 7.5 to 10.5 MGD.

Project Drivers:

The existing WWTP has exceeded 75% of its permitted capacity for 3 consecutive months, triggering the need to evaluate expanding the WWTP. The proposed expansion is sized to treat projected flows through 2045.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	WWTP 3 MGD Expansion	1	LS	$ 16,734,000	$ 16,734,000
				SUBTOTAL:	**$ 16,734,000**
		CONTINGENCY		25%	$ 4,183,500
				SUBTOTAL:	**$ 20,917,500**
		ENG/SURVEY		18%	$ 3,765,200
				SUBTOTAL:	**$ 24,682,700**
				Estimated Project Total:	**$ 24,682,700**

City of Cleburne

Capital Improvement Cost Estimate		**November 2017**
Construction Project Number:	**3**	**Phase: 2027**
Project Name:	**New North Industrial/Municipal WWTP Siting Study**	

Project Description:

Siting study for the proposed North Industrial/Municipal WWTPs.

Project Drivers:

This project will identify potential locations for the new North WWTP. The North WWTP will allow for growth at the existing WWTP.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	New North WWTP Siting Study	1	LS	$ 150,000	$ 150,000
				SUBTOTAL:	**$ 150,000**
		CONTINGENCY		0%	$ -
				SUBTOTAL:	**$ 150,000**
		ENG/SURVEY		0%	$ -
				SUBTOTAL:	**$ 150,000**
				Estimated Project Total:	**$ 150,000**

City of Cleburne

Capital Improvement Cost Estimate		**November 2017**
Construction Project Number:	**4**	**Phase: 2027**
Project Name:	**27" Sewer Line Replacement along West Buffalo Creek**	

Project Description:

The proposed 27-inch wastewater line will replace the existing 24-inch line between the intersection of Wardville Street and Buffalo Avenue and ending near McAnear Creek.

Project Drivers:

The temporary flow monitoring data showed the existing downstream end of the 24-inch line experienced surcharging within three feet of the manhole rim during wet weather events. The proposed 27-inch line will increase the capacity of the line to convey short-term projected flows.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	27" Pipe 8- 16 feet deep	9,700	LF	$ 320	$ 3,104,000
				SUBTOTAL:	**$ 3,104,000**
		CONTINGENCY		20%	$ 620,800
				SUBTOTAL:	**$ 3,724,800**
		ENG/SURVEY		15%	$ 558,800
				SUBTOTAL:	**$ 4,283,600**
				Estimated Project Total:	**$ 4,283,600**

City of Cleburne

Capital Improvement Cost Estimate			**November 2017**
Construction Project Number:	**5**		**Phase: 2027**
Project Name:	**27-inch Wastewater Line Replacement along East Buffalo Creek**		

Project Description:

The proposed 27-inch wastewater line will replace the existing 21-inch line between Henderson Street and the existing WWTP.

Project Drivers:

The temporary flow monitoring data showed this line surcharging within four feet of the manhole rim during wet weather events. The hydraulic model indicates the existing wastewater line may experience surcharging within three feet of the manhole rims or surcharging overflows under the projected short-term wastewater flows. The proposed 27-inch line will increase the capacity of the line to convey short-term projected flows.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	27" Pipe 8- 16 feet deep	15,700	LF	$ 320	$ 5,024,000
				SUBTOTAL:	**$ 5,024,000**
		CONTINGENCY		20%	$ 1,004,800
				SUBTOTAL:	**$ 6,028,800**
		ENG/SURVEY		15%	$ 904,400
				SUBTOTAL:	**$ 6,933,200**
				Estimated Project Total:	**$ 6,933,200**

City of Cleburne

Capital Improvement Cost Estimate			**November 2017**
Construction Project Number:	**6**		**Phase: 2027**
Project Name:	**27-inch Wastewater Line Replacement along East Buffalo Creek**		

Project Description:

The proposed 27-inch wastewater line will replace the existing 21-inch between Boone Street and Henderson Street.

Project Drivers:

The hydraulic model indicates the existing wastewater line may experience surcharging within three feet of the manhole rim during projected short-term wastewater flows. The proposed 27-inch line will increase the capacity of the line to convey projected short-term future flows.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	27" Pipe 8- 16 feet deep	13,500	LF	$ 320	$ 4,320,000
				SUBTOTAL:	**$ 4,320,000**
		CONTINGENCY		20%	$ 864,000
				SUBTOTAL:	**$ 5,184,000**
		ENG/SURVEY		15%	$ 777,600
				SUBTOTAL:	**$ 5,961,600**
				Estimated Project Total:	**$ 5,961,600**

City of Cleburne

Capital Improvement Cost Estimate — **November 2017**

Construction Project Number: 7 — **Phase: 2027**

Project Name: **8-inch Wastewater Line along Highway 171.**

Project Description:

The proposed 8-inch wastewater line will serve new development along Highway 171.

Project Drivers:

This line will serve new development.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	8" Pipe 8- 16 feet deep	2,940	LF	$ 100	$ 294,000
2	16" Boring and Casing	200	LF	$ 280	$ 56,000
				SUBTOTAL:	**$ 350,000**
		CONTINGENCY		20%	$ 70,000
				SUBTOTAL:	**$ 420,000**
		ENG/SURVEY		15%	$ 63,000
				SUBTOTAL:	**$ 483,000**
				Estimated Project Total:	**$ 483,000**

City of Cleburne

Capital Improvement Cost Estimate — **November 2017**

Construction Project Number: 8 — **Phase: 2027**

Project Name: **12-inch and 18-inch Wastewater Lines along East Buffalo Creek.**

Project Description:

The proposed 12-inch and 18-inch wastewater lines will serve new development along East Buffalo Creek.

Project Drivers:

This line will serve new development.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Pipe 8- 16 feet deep	4,520	LF	$ 140	$ 632,800
2	18" Pipe 8- 16 feet deep	2,340	LF	$ 220	$ 514,800
3	32" Boring and Casing	200	LF	$ 560	$ 112,000
				SUBTOTAL:	**$ 1,259,600**
		CONTINGENCY		20%	$ 252,000
				SUBTOTAL:	**$ 1,511,600**
		ENG/SURVEY		15%	$ 226,800
				SUBTOTAL:	**$ 1,738,400**
				Estimated Project Total:	**$ 1,738,400**

Appendix D
Existing Roadway Facilities Inventory

Cleburne Roadway Impact Fee
Existing Capital Improvements Analysis

Serv Area	Shared Svc Area	Roadway	From	To	A Length (mi)	B No. of Lanes	Type	C Lane Capacity	Pct. in Serv. Area	Peak Hour Volume A	B	Total	D	A x B x C VMT Supply Pk Hr Total	A x D VMT Demand Pk Hr Total	Total VMT Excess Capacity	Total VMT Deficiency
1		FM 4	City limit	Proposed CR 1124	0.31	2	UC	500	50%	104	0	104		155	32	123	0
1		FM 4	CL goes to both sides	CR 1228	0.41	2	UC	500	50%	0	114	114		205	47	158	0
1		FM 4	Proposed N/S Collector	CL goes to one side of rd	0.47	2	UC	500	100%	104	114	218		470	102	368	0
1		FM 4	CL goes to both sides	Proposed N/S Collector	0.23	2	UC	500	50%	104	0	104		115	24	91	0
1		FM 4	CL goes to one side on east	CL goes to one side on west	0.16	2	UC	500	100%	104	114	218		160	35	125	0
1		FM 4	West city limits	CL goes to both sides	0.62	2	UC	500	50%	0	114	114		310	71	239	0
Sub-Total					*2.20*									*1,415*	*311*	*1,104*	*0*
2		State Hwy 171	Noth city limits (S of CR 1126)	S of CR 1010	0.76	2	UA	625	50%	0	426	426		475	324	151	0
2		State Hwy 171	S of CR 1010	N of CR 1018	0.35	2	UA	625	50%	384	0	384		219	134	84	0
2		State Hwy 171	N of CR 1018	Chisholm Trail Pwy	2.18	2	UA	625	100%	384	426	810		2725	1766	959	0
2		State Hwy 171	Collector Rd change	Proposed Arterial Rd	0.24	2	UA	625	50%	384	0	384		150	92	58	0
2		State Hwy 171	Northwest City limits	Arterial Rd change	0.22	2	UC	500	50%	0	426	426		110	94	16	0
2		County Rd 1009	North City limits	State Hwy 171	0.79	2	UC	500	50%	50	0	50		395	40	356	0
2		CR 902	City limit	CR 1017	0.72	2	UC	500	50%	50	0	50		360	36	324	0
2		Windmill Rd	SH 171	CR 902	1.23	2	UC	500	100%	246	246	492		1230	605	625	0
2		CR 904	City limit	Chisholm Trail Pwy	0.17	2	UA	625	50%	50	0	50		106	9	98	0
2		CR 1217	City limit	SH 171	0.17	2	UC	500	100%	50	50	100		170	17	153	0
2		CR 1125	W City limit	CL goes to both sides	0.06	2	UA	625	50%	50	0	50		38	3	35	0
2		CR 1125	CL goes to one side on west	CL goes to one side on east	0.09	2	UA	625	100%	50	50	100		113	9	104	0
2		CR 1125	CL goes to both sides	Chisholm Trail Pwy	0.27	2	UA	625	50%	0	50	50		169	14	155	0
2		FM 4	City limit	Local Street	0.42	2	UC	500	50%	130	0	130		210	55	155	0
2	4	FM 4	City limit	US Hwy 67	0.59	2	UC	500	50%	130	0	130		295	77	218	0
Sub-Total					*8.26*									*6,764*	*3,273*	*3,491*	*0*
3		Pipeline Rd/CR 1022	W Vaughn Rd/CR 901	Industrial Blvd	1.63	2	UC	500	100%	63	108	171		1630	279	1351	0
3		County Road 1022	N City Limits	W Vaughn Rd/CR 901	0.47	2	UC	500	50%	0	54	54		235	25	210	0
3		W Vaughn Rd/CR 901	Proposed N/S Collector	CR 1022	0.55	2	UA	625	50%	44	0	44		344	24	320	0
3		W Vaughn Rd/CR 901	CR 1022	W City Limits	0.36	2	UA	625	100%	44	40	84		450	30	420	0
3		W Vaughn Rd/CR 901	Proposed N/S Collector	E City Limits	0.14	2	UC	500	50%	44	0	44		70	6	64	0
3		W Vaughn Rd/CR 901	E City Limits	Railroad Tracks	0.58	2	UC	500	100%	44	40	84		580	49	531	0
3		CR 901	SH 174	CR 801	0.72	2	UC	500	100%	50	50	100		720	72	648	0
3		County Rd 801	N city limits	CR 700	1.58	2	UC	500	50%	0	50	50		790	79	711	0
3		County Road 3048	SH 174	CR 800	0.34	2	UC	500	100%	50	50	100		340	34	306	0
3		Burgess Rd	SH 174	CR 801	0.89	2	UC	500	100%	50	50	100		890	89	801	0
3		CR 700	SH 174	CR 801	1.14	2	UC	500	100%	50	50	100		1140	114	1026	0
3		Hix Rd	CR 700	US Hwy 67	0.20	2	UC	500	50%	0	50	50		100	10	90	0
3		W Industrial Blvd	Chisholm Trail Pwy	SH 174	1.42	2	UA	625	100%	190	214	404		1775	574	1201	0
3		SH 171	Chisholm Trail Pwy	US Hwy 67	0.70	2	UA	625	100%	384	426	810		875	567	308	0
3		SH 174	N City Limits	US Hwy 67	3.81	7	SA	675	100%	1020	924	1944		15431	7407	8024	0
3		CR 904	Chisholm Trail Pwy	CR 1023	0.40	2	UA	625	100%	50	50	100		500	40	460	0
Sub-Total					*14.93*									*25,869*	*9,399*	*16,471*	*0*
4	2	FM 4	City limit	US Hwy 67	0.59	2	UC	500	50%	0	130	130		295	77	218	0
4		FM 4	W City limit	E City limit	0.12	2	UC	500	50%	130	0	130		60	16	44	0
Sub-Total					*0.71*									*355*	*92*	*263*	*0*

Cleburne Roadway Impact Fee
Existing Capital Improvements Analysis

Serv Area	Shared Svc Area	Roadway	From	To	A Length (mi)	B No. of Lanes	Type	C Lane Capacity	Pct. in Serv. Area	Peak Hour Volume A	B	D Total	A x B x C VMT Supply Pk Hr Total	A x D VMT Demand Pk Hr Total	Total VMT Excess Capacity	Total VMT Deficiency
5		Kilpatrick St/FM 4	US Hwy 67	CR 1216	1.43	2	UC	500	100%	130	130	260	1430	372	1058	0
5		Kilpatrick St/FM 4	CR 1216	SH 174	1.42	5	SA	675	100%	482	580	1062	3834	1508	2326	0
5		Kilpatrick St	SH 174	RR Tracks	0.66	2	UC	500	100%	290	241	531	660	350	310	0
5		Nolan River Rd	US Hwy 67	Kilpatrick St/FM 4	1.06	5	SA	675	100%	394	491	885	2862	938	1924	0
5		SH 171	US Hwy 67	SH 174	0.87	2	UA	625	100%	384	426	810	1088	705	383	0
5		SH 174	US Hwy 67	Kilpatrick St	0.87	7	SA	675	100%	1020	924	1944	3524	1691	1832	0
5		SH 174	Kilpartrick St	W Lone Star Ave	0.74	5	SA	675	100%	640	850	1490	1998	1103	895	0
5		SH 174	W Lone Star Ave	W Willingham St	0.69	4	UA	625	100%	640	850	1490	1725	1028	697	0
5		N Nolan River Rd	FM 4	US Hwy 67 (BUS)	2.00	5	SA	675	100%	394	491	885	5400	1770	3630	0
5		S Nolan Rd	US Hwy 67 (BUS)	CR 1112	2.73	2	UC	500	100%	195	308	503	2730	1373	1357	0
5		Yellow Jacket Dr	FM 4	N Nolan River Rd	0.52	2	UC	500	100%	50	50	100	520	52	468	0
5		Woodard Ave	US Hwy 67	Harlin Dr	1.61	2	UC	500	100%	127	110	237	1610	382	1228	0
5		Woodard Ave	Harlin Dr	McAnear St	0.41	3	SA	675	100%	367	369	736	554	302	252	0
5		Woodard Ave	McAnear St	Grandbury St	0.72	2	UC	500	100%	367	369	736	720	530	190	0
5		Harlin Dr	N Nolan River Rd	Woodard Ave	0.69	3	SA	675	100%	214	243	457	932	315	616	0
5		Colonial Dr	Collector Road end	US Hwy 67 (BUS)	0.25	2	UC	500	100%	20	20	40	250	10	240	0
5		Ridgeway Dr	Woodard Ave	Tanglewood Dr	1.81	5	SA	675	100%	228	291	519	4887	939	3948	0
5		S Ridgeway Dr	Tanglewood Dr	Country Club Rd	1.00	2	UC	500	100%	114	146	260	1000	260	741	0
5		W Westhill Dr	S Nolan River Rd	West Buffalo Creek	1.90	2	UC	500	100%	355	335	690	1900	1311	589	0
5	9	FM 1718	Road end on west side	Proposed N/S Arterial Rd	0.20	2	UC	500	50%	0	50	50	100	10	90	0
5		FM 1718	Proposed N/S Arterial Rd	S Nolan River Rd	1.00	2	UC	500	100%	50	50	100	1000	100	900	0
5		Country Club Rd	S Nolan River Rd	Conger St	1.54	3	SA	675	100%	261	212	473	2079	728	1351	0
5		Country Club Rd	Conger St	West Buffalo Creek	0.82	2	UA	625	100%	261	212	473	1025	388	637	0
5		Grandbury St	FM 4	US Hwy 67 (BUS)	1.41	2	UC	500	100%	440	391	831	1410	1172	238	0
5		Prarie Ave	US Hwy 67 (BUS)	Country Club Rd	0.76	2	UC	500	100%	100	100	200	760	152	608	0
5		Williams Ave	Grandbury St	SH 174	0.52	2	UC	500	100%	100	100	200	520	104	416	0
5		Boone St	SH 174	RR Tracks	0.45	2	UC	500	100%	100	100	200	450	90	360	0
5	6	E Willingham St	SH 174	RR Tracks	0.31	2	UC	500	50%	0	100	100	155	31	124	0
5		US Hwy 67 BUS	US Hwy 67	Walnut St	2.94	5	SA	675	100%	428	345	773	7938	2273	5665	0
5		US Hwy 67 BUS	Walnut St	West Buffalo Creek	0.14	4	DA	675	100%	928	848	1776	389	256	133	0
Sub-Total					*31.47*								*53,448*	*20,242*	*33,206*	*0*
6		Kilpatrick St/CR 801	RR Tracks	E City limits	0.94	2	UC	500	100%	290	241	531	940	499	441	0
6		Boone St	RR Tracks	Blakney St	0.52	2	UC	500	100%	100	100	200	520	104	416	0
6		Boone St	Blakney St	E City limits	0.43	2	UC	500	50%	0	50	50	215	22	194	0
6		Hix Rd	Boone St	Kilpatrick St/CR 801	0.45	2	UC	500	100%	50	50	100	450	45	405	0
6		Sabine Rd	Boone St	Austin Ave	0.39	2	UC	500	100%	50	50	100	390	39	351	0
6		Austin Ave	Brazos Ave	Tremont St	0.33	2	UC	500	100%	50	50	100	330	33	297	0
6		Brazos Ave	Austin Ave	US Hwy 67 BUS	0.68	2	UC	500	100%	47	64	111	680	75	605	0
6	5	E Willingham St	SH 174	RR Tracks	0.31	2	UC	500	50%	100	0	100	155	31	124	0
6		E Willingham St	RR Tracks	Brazos Ave	0.23	2	UC	500	100%	100	100	200	230	46	184	0
6		Olive St	Brazos Ave	Alvarado St	0.29	2	UC	500	100%	50	50	100	290	29	261	0
6		Alvarado st	Olive St	Road end	0.55	2	UC	500	100%	50	50	100	550	55	495	0
6		Island Grove Rd/CR 2135	FM 4	N of CR 429	0.39	2	UC	500	100%	100	100	200	390	78	312	0
6		Island Grove Rd/CR 2135	CR 429	South City limits	0.60	2	UC	500	50%	0	100	100	300	60	240	0

Cleburne Roadway Impact Fee
Existing Capital Improvements Analysis

Serv Area	Shared Svc Area	Roadway	From	To	A Length (mi)	B No. of Lanes	Type	C Lane Capacity	Pct. in Serv. Area	Peak Hour Volume A	B	D Total	A x B x C VMT Supply Pk Hr Total	A x D VMT Demand Pk Hr Total	Total VMT Excess Capacity	Total VMT Deficiency
6		Edgewood Lane	S Brazos ave	Hal Ave	0.55	2	UC	500	50%	0	50	50	275	28	248	0
6		Hal Ave	Edgewood Ln	Kimberly Dr	0.24	3	SA	675	100%	50	50	100	324	24	300	0
6		Kimberly Ave	Hal Rd	SH 171	0.14	3	SA	675	100%	50	50	100	189	14	175	0
6		Hines Rd	Edgewood Ln	Kimberly Dr	0.40	2	UC	500	100%	50	50	100	400	40	360	0
6		2nd St/FM 4	SH 174	RR Tracks	0.19	2	UC	500	100%	427	304	731	190	139	51	0
6		Grandview Hwy/FM 4	RR Tracks	E City limits	1.29	2	UA	625	100%	427	304	731	1613	943	670	0
6		SH 174	W Willingham St	SH 171	1.82	4	DA	675	100%	640	850	1490	4914	2712	2202	0
6		SH 174	SH 171	Proposed CR 314 Collector Rd	0.89	2	UA	625	100%	321	556	877	1113	781	332	0
6	9	SH 174	Proposed CR 314 Collector Rd	South city limits	0.79	2	UA	625	50%	0	556	556	494	439	55	0
6		Country Club Rd	West Buffalo Creek	SH 174	0.20	2	UA	625	100%	261	212	473	251	95	156	0
6		SH 171	SH 174	RR Tracks	0.12	2	UA	625	100%	222	346	568	150	68	82	0
6		US Hwy 67 BUS	West Buffalo Creek	RR Tracks	0.41	4	DA	675	100%	928	848	1776	1107	728	379	0
6		US Hwy 67 BUS	RR Tracks	E City limits	2.48	5	SA	675	100%	928	848	1776	6696	4404	2292	0
Sub-Total					*15.63*								*23,154*	*11,531*	*11,624*	*0*
7		US Hwy 67	West city limits	Park Rd 21	0.33	2	UA	625	50%	100	0	100	206	33	173	0
7		Park Rd 21	US Hwy 67	South City limits	0.19	2	UC	500	50%	0	10	10	95	2	93	0
Sub-Total					*0.52*								*301*	*35*	*266*	*0*
8		Hagler Rd	W City limits	Road Ends	0.11	2	UC	500	100%	5	5	10	110	1	109	0
Sub-Total					*0.11*								*110*	*1*	*109*	*0*
9	5	SH 174	Proposed CR 314 Collector Rd	CL goes to one side	0.58	2	UA	625	50%	321	0	321	363	186	176	0
9		SH 174	SA 5	S city limits	0.18	3	SA	675	100%	321	0	321	122	58	64	0
9		CR 1111	CR 1112	S city limits	1.02	2	UC	500	100%	55	63	118	1020	120	900	0
9	5	FM 1718	Road end on west side	Proposed N/S Arterial Rd	0.20	2	UC	500	50%	50	0	50	100	10	90	0
Sub-Total					*1.98*								*1,604*	*374*	*1,230*	*0*
Total					**75.81**								**113,020**	**45,258**	**67,763**	**0**

DA- Divided arterial
UA- Undivided arterial
SA- Special arterial with dual-left turn lane
DC- Divided collector
UC- Undivided collector

Appendix E
Projected 10-Year Growth
(Vehicle-Miles of New Demand)

Vehicle-Mile Trip Generation by Service Area, Cleburne Roadway Impact Fee
Based on August 21, 2017 Land Use Assumptions by FNI (W/WW Team)

SU Equivalency	
Residential DU	4.38
Basic Employ SF	3.86
Service Employ SF	5.73
Retail Employ SF	3.35

Estimated Residential Growth Vehicle-Mile Trip Generation (2.80 per/DU)

Service Area	Added Population	Added Dwelling Units	Vehicle-Miles per DU	Total Vehicle-Miles
1	0	0	4.38	0
2	883	316	4.38	1383
3	875	313	4.38	1370
4	28	10	4.38	44
5	7,319	2614	4.38	11439
6	1,868	668	4.38	2923
7	0	0	4.38	0
8	35	13	4.38	57
9	53	19	4.38	83

Estimated Basic Employment Growth Vehicle-Mile Generation (1,500 SF/employee)

Service Area	Added Employees	Square Feet per emp.	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	1	1500	1,500	3.86	6
2	187	1500	280,500	3.86	1,083
3	105	1500	157,500	3.86	608
4	3	1500	4,500	3.86	17
5	61	1500	91,500	3.86	353
6	95	1500	142,500	3.86	550
7	0	1500	0	3.86	0
8	0	1500	0	3.86	0
9	2	1500	3,000	3.86	12

Estimated Service Employment Growth Vehicle-Mile Generation (500 SF/employee)

Service Area	Added Employees	Square Feet per emp.	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	2	500	1,000	5.73	6
2	253	500	126,500	5.73	725
3	418	500	209,000	5.73	1,197
4	4	500	2,000	5.73	11
5	637	500	318,500	5.73	1,824
6	227	500	113,500	5.73	650
7	0	500	0	5.73	0
8	0	500	0	5.73	0
9	3	500	1,500	5.73	9

Estimated Retail Employment Growth Vehicle-Mile Generation (1,000 SF/employee)

Service Area	Added Employees	Square Feet per emp.	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	1	1000	1,000	3.35	3
2	39	1000	39,000	3.35	130
3	118	1000	118,000	3.35	395
4	2	1000	2,000	3.35	7
5	149	1000	149,000	3.35	498
6	-11	1000	(11,000)	3.35	(37)
7	0	1000	0	3.35	0
8	0	1000	0	3.35	0
9	1	1000	1,000	3.35	3

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	0	6	6	3	**15**
2	1383	1083	725	130	**3321**
3	1370	608	1197	395	**3570**
4	44	17	11	7	**79**
5	11439	353	1824	498	**14115**
6	2923	550	650	-37	**4087**
7	0	0	0	0	**0**
8	57	0	0	0	**57**
9	83	12	9	3	**107**
Totals	17,298	2,629	4,422	1,000	**25,349**

Appendix F
Roadway Project Cost Estimates

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

KILPATRICK ROAD / FM 4

CR 1125B to US 67

Roadway Information:	
Roadway Type:	4-Lane Divided Arterial
Length (lf):	2,112
Right-of-Way Width (ft.):	90
Median Type:	Raised
Pavement Width (Edge to Edge):	48
Description:	Widening of roadway to 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	22	STA	$ 1,800.00	$ 39,600
2	Unclassified Street Excavation	6,900	CY	$ 10.00	$ 69,000
3	HMAC Type D (2")	11,300	SY	$ 12.00	$ 135,600
4	6" Flex Base	14,600	SY	$ 36.00	$ 525,600
5	Prime & Tack Coat	2,260	GAL	$ 4.25	$ 9,605
6	Lime Subgrade	14,600	SY	$ 3.00	$ 43,800
7	Lime for Stabilization (43lbs/SY)	310	TON	$ 150.00	$ 46,500
8	6" Monolithic Concrete Curb & Gutter	8,450	LF	$ 18.00	$ 152,100
9	Block Sodding and Topsoil	7,600	SY	$ 5.00	$ 38,000
				Paving Estimate Subtotal:	**$ 1,059,805**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 21,200
10	Traffic Control	5%	$ 53,000
11	Erosion Control	3%	$ 31,800
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 212,000
		Other Components Estimate Subtotal:	**$ 318,000**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 1,377,805
Mobilization	5%	$ 68,900
Contingency	10%	$ 144,700
Construction Cost Estimate Total:		**$ 1,591,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,591,500
Engineering/Survey/Testing		7%	$ 111,400
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 31,680	$ 31,680
		Impact Fee Project Cost Estimate Total:	**$ 1,734,580**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

SPARKS DRIVE

Chisholm Trail Pkwy to (existing) Sparks Dr

Roadway Information:	
Roadway Type:	3-Lane Collector with TWLTL
Length (lf):	2,640
Right-of-Way Width (ft.):	60
Median Type:	TWLTL
Pavement Width (Edge to Edge):	38
Description:	New roadway construction to 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	27	STA	$ 1,800.00	$ 48,600
2	Unclassified Street Excavation	6,400	CY	$ 10.00	$ 64,000
3	HMAC Type D (2")	11,200	SY	$ 12.00	$ 134,400
4	6" Flex Base	13,200	SY	$ 36.00	$ 475,200
5	Prime & Tack Coat	2,240	GAL	$ 4.25	$ 9,520
6	Lime Subgrade	13,200	SY	$ 3.00	$ 39,600
7	Lime for Stabilization (43lbs/SY)	280	TON	$ 150.00	$ 42,000
8	6" Monolithic Concrete Curb & Gutter	5,280	LF	$ 18.00	$ 95,040
9	Block Sodding and Topsoil	5,000	SY	$ 5.00	$ 25,000
				Paving Estimate Subtotal:	**$ 933,360**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 18,700
10	Traffic Control	5%	$ 46,700
11	Erosion Control	3%	$ 28,100
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 186,700
		Other Components Estimate Subtotal:	**$ 280,200**

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:		$ 1,213,560
Mobilization	5%	$ 60,700
Contingency	10%	$ 127,500
Construction Cost Estimate Total:		**$ 1,401,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,401,800
Engineering/Survey/Testing		7%	$ 98,100
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 158,400	$ 158,400
		Impact Fee Project Cost Estimate Total:	**$ 1,658,300**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

SPARKS DRIVE

(existing) Sparks Dr to Vaughn Rd

Roadway Information:	
Roadway Type:	3-Lane Collector with TWLTL
Length (lf):	4,450
Right-of-Way Width (ft.):	60
Median Type:	TWLTL
Pavement Width (Edge to Edge):	38
Description:	New roadway construction to 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	10,700	CY	$ 10.00	$ 107,000
3	HMAC Type D (2")	18,800	SY	$ 12.00	$ 225,600
4	6" Flex Base	22,300	SY	$ 36.00	$ 802,800
5	Prime & Tack Coat	3,760	GAL	$ 4.25	$ 15,980
6	Lime Subgrade	22,300	SY	$ 3.00	$ 66,900
7	Lime for Stabilization (43lbs/SY)	480	TON	$ 150.00	$ 72,000
8	6" Monolithic Concrete Curb & Gutter	8,900	LF	$ 18.00	$ 160,200
9	Block Sodding and Topsoil	8,500	SY	$ 5.00	$ 42,500
				Paving Estimate Subtotal:	**$ 1,573,980**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 31,500
10	Traffic Control	5%	$ 78,700
11	Erosion Control	3%	$ 47,300
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 314,800
		Other Components Estimate Subtotal:	**$ 472,300**

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:		$ 2,046,280
Mobilization	5%	$ 102,400
Contingency	10%	$ 214,900
Construction Cost Estimate Total:		**$ 2,363,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,363,600
Engineering/Survey/Testing		7%	$ 165,500
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 267,000	$ 267,000
		Impact Fee Project Cost Estimate Total:	**$ 2,796,100**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

SPARKS DRIVE

Vaughn Rd to SH 174

Roadway Information:	
Roadway Type:	3-Lane Collector with TWLTL
Length (lf):	1,940
Right-of-Way Width (ft.):	60
Median Type:	TWLTL
Pavement Width (Edge to Edge):	38
Description:	Widening of roadway to 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	4,700	CY	$ 10.00	$ 47,000
3	HMAC Type D (2")	8,200	SY	$ 12.00	$ 98,400
4	6" Flex Base	9,700	SY	$ 36.00	$ 349,200
5	Prime & Tack Coat	1,640	GAL	$ 4.25	$ 6,970
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	3,700	SY	$ 5.00	$ 18,500
				Paving Estimate Subtotal:	**$ 686,510**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 13,800
10	Traffic Control	5%	$ 34,400
11	Erosion Control	3%	$ 20,600
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 137,400
		Other Components Estimate Subtotal:	**$ 206,200**

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:		$ 892,710
Mobilization	5%	$ 44,700
Contingency	10%	$ 93,800
Construction Cost Estimate Total:		**$ 1,031,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,031,300
Engineering/Survey/Testing		7%	$ 72,200
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 29,100	$ 29,100
		Impact Fee Project Cost Estimate Total:	**$ 1,132,600**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

INDUSTRIAL BOULEVARD

Chisholm Trail Pkwy to SH 174

Roadway Information:	
Roadway Type:	5-Lane Arterial with TWLTL
Length (lf):	8,201
Right-of-Way Width (ft.):	90
Median Type:	TWLTL
Pavement Width (Edge to Edge):	62
Description:	Widening of roadway to 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	83	STA	$ 1,800.00	$ 149,400
2	Unclassified Street Excavation	30,600	CY	$ 10.00	$ 306,000
3	HMAC Type D (2")	56,500	SY	$ 12.00	$ 678,000
4	6" Flex Base	62,900	SY	$ 36.00	$ 2,264,400
5	Prime & Tack Coat	11,300	GAL	$ 4.25	$ 48,025
6	Lime Subgrade	62,900	SY	$ 3.00	$ 188,700
7	Lime for Stabilization (43lbs/SY)	1,350	TON	$ 150.00	$ 202,500
8	6" Monolithic Concrete Curb & Gutter	16,410	LF	$ 18.00	$ 295,380
9	Block Sodding and Topsoil	21,000	SY	$ 5.00	$ 105,000
				Paving Estimate Subtotal:	**$ 4,237,405**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 84,800
10	Traffic Control	5%	$ 211,900
11	Erosion Control	3%	$ 127,200
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 847,500
		Other Components Estimate Subtotal:	**$ 1,271,400**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 5,508,805
Mobilization	5%	$ 275,500
Contingency	10%	$ 578,500
Construction Cost Estimate Total:		**$ 6,362,900**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 6,362,900
Engineering/Survey/Testing		7%	$ 445,400
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 246,030	$ 246,030
		Impact Fee Project Cost Estimate Total:	**$ 7,054,330**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

YELLOWJACKET ROAD

Harlin Dr to US 67

Roadway Information:	
Roadway Type:	3-Lane Collector with TWLTL
Length (lf):	9,200
Right-of-Way Width (ft.):	60
Median Type:	TWLTL
Pavement Width (Edge to Edge):	38
Description:	Widening and extension of roadway to 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	92	STA	$ 1,800.00	$ 165,600
2	Unclassified Street Excavation	22,000	CY	$ 10.00	$ 220,000
3	HMAC Type D (2")	38,900	SY	$ 12.00	$ 466,800
4	6" Flex Base	46,000	SY	$ 36.00	$ 1,656,000
5	Prime & Tack Coat	7,780	GAL	$ 4.25	$ 33,065
6	Lime Subgrade	46,000	SY	$ 3.00	$ 138,000
7	Lime for Stabilization (43lbs/SY)	990	TON	$ 150.00	$ 148,500
8	6" Monolithic Concrete Curb & Gutter	18,400	LF	$ 18.00	$ 331,200
9	Block Sodding and Topsoil	17,400	SY	$ 5.00	$ 87,000
				Paving Estimate Subtotal:	**$ 3,246,165**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 65,000
10	Traffic Control	5%	$ 162,400
11	Erosion Control	3%	$ 97,400
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 649,300
		Other Components Estimate Subtotal:	**$ 974,100**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 4,220,265
Mobilization	5%	$ 211,100
Contingency	10%	$ 443,200
Construction Cost Estimate Total:		**$ 4,874,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 4,874,600
Engineering/Survey/Testing		7%	$ 341,200
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 282,000	$ 282,000
		Impact Fee Project Cost Estimate Total:	**$ 5,497,800**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

RIDGEWAY DRIVE

Woodard Ave to US 67

Roadway Information:	
Roadway Type:	3-Lane Arterial with TWLTL
Length (lf):	12,694
Right-of-Way Width (ft.):	90
Median Type:	TWLTL
Pavement Width (Edge to Edge):	38
Description:	New roadway construction to 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	127	STA	$ 1,800.00	$ 228,600
2	Unclassified Street Excavation	30,400	CY	$ 10.00	$ 304,000
3	HMAC Type D (2")	53,600	SY	$ 12.00	$ 643,200
4	6" Flex Base	63,500	SY	$ 36.00	$ 2,286,000
5	Prime & Tack Coat	10,720	GAL	$ 4.25	$ 45,560
6	Lime Subgrade	63,500	SY	$ 3.00	$ 190,500
7	Lime for Stabilization (43lbs/SY)	1,370	TON	$ 150.00	$ 205,500
8	6" Monolithic Concrete Curb & Gutter	25,390	LF	$ 18.00	$ 457,020
9	Block Sodding and Topsoil	66,300	SY	$ 5.00	$ 331,500
				Paving Estimate Subtotal:	**$ 4,691,880**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 93,900
10	Traffic Control	5%	$ 234,600
11	Erosion Control	3%	$ 140,800
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 938,400
		Other Components Estimate Subtotal:	**$ 1,407,700**

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:		$ 6,099,580
Mobilization	5%	$ 305,000
Contingency	10%	$ 640,500
Construction Cost Estimate Total:		**$ 7,045,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 7,045,100
Engineering/Survey/Testing		7%	$ 493,200
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 1,142,460	$ 1,142,460
		Impact Fee Project Cost Estimate Total:	**$ 8,680,760**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

UNIVERSITY DRIVE

US 67B to CR 1112

Roadway Information:	
Roadway Type:	5-Lane Arterial with TWLTL
Length (lf):	14,994
Right-of-Way Width (ft.):	90
Median Type:	TWLTL
Pavement Width (Edge to Edge):	62
Description:	New roadway construction to 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	150	STA	$ 1,800.00	$ 270,000
2	Unclassified Street Excavation	55,900	CY	$ 10.00	$ 559,000
3	HMAC Type D (2")	103,300	SY	$ 12.00	$ 1,239,600
4	6" Flex Base	115,000	SY	$ 36.00	$ 4,140,000
5	Prime & Tack Coat	20,660	GAL	$ 4.25	$ 87,805
6	Lime Subgrade	115,000	SY	$ 3.00	$ 345,000
7	Lime for Stabilization (43lbs/SY)	2,470	TON	$ 150.00	$ 370,500
8	6" Monolithic Concrete Curb & Gutter	29,990	LF	$ 18.00	$ 539,820
9	Block Sodding and Topsoil	38,400	SY	$ 5.00	$ 192,000
				Paving Estimate Subtotal:	**$ 7,743,725**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 154,900
10	Traffic Control	5%	$ 387,200
11	Erosion Control	3%	$ 232,400
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 1,548,800
		Other Components Estimate Subtotal:	**$ 2,323,300**

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:		$ 10,067,025
Mobilization	5%	$ 503,400
Contingency	10%	$ 1,057,100
Construction Cost Estimate Total:		**$ 11,627,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 11,627,600
Engineering/Survey/Testing		7%	$ 813,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 1,349,460	$ 1,349,460
		Impact Fee Project Cost Estimate Total:	**$ 13,790,960**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

HEMPHILL DRIVE

University Dr to Nolan River Rd

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	4,280
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (Edge to Edge):	36
Description:	New roadway construction to 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	43	STA	$ 1,800.00	$ 77,400
2	Unclassified Street Excavation	9,800	CY	$ 10.00	$ 98,000
3	HMAC Type D (2")	17,200	SY	$ 12.00	$ 206,400
4	6" Flex Base	20,500	SY	$ 36.00	$ 738,000
5	Prime & Tack Coat	3,440	GAL	$ 4.25	$ 14,620
6	Lime Subgrade	20,500	SY	$ 3.00	$ 61,500
7	Lime for Stabilization (43lbs/SY)	440	TON	$ 150.00	$ 66,000
8	6" Monolithic Concrete Curb & Gutter	8,560	LF	$ 18.00	$ 154,080
9	Block Sodding and Topsoil	9,100	SY	$ 5.00	$ 45,500
				Paving Estimate Subtotal:	**$ 1,461,500**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 29,300
10	Traffic Control	5%	$ 73,100
11	Erosion Control	3%	$ 43,900
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 292,300
		Other Components Estimate Subtotal:	**$ 438,600**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 1,900,100
Mobilization	5%	$ 95,100
Contingency	10%	$ 199,600
Construction Cost Estimate Total:		**$ 2,194,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,194,800
Engineering/Survey/Testing		7%	$ 153,600
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 256,800	$ 256,800
		Impact Fee Project Cost Estimate Total:	**$ 2,605,200**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

KILPATRICK ROAD

Main St/SH 174 to Railroad

Roadway Information:	
Roadway Type:	4-Lane Divided Arterial
Length (lf):	3,470
Right-of-Way Width (ft.):	90
Median Type:	Raised
Pavement Width (Edge to Edge):	48
Description:	Widening of roadway to 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	35	STA	$ 1,800.00	$ 63,000
2	Unclassified Street Excavation	11,200	CY	$ 10.00	$ 112,000
3	HMAC Type D (2")	18,600	SY	$ 12.00	$ 223,200
4	6" Flex Base	24,000	SY	$ 36.00	$ 864,000
5	Prime & Tack Coat	3,720	GAL	$ 4.25	$ 15,810
6	Lime Subgrade	24,000	SY	$ 3.00	$ 72,000
7	Lime for Stabilization (43lbs/SY)	520	TON	$ 150.00	$ 78,000
8	6" Monolithic Concrete Curb & Gutter	13,880	LF	$ 18.00	$ 249,840
9	Block Sodding and Topsoil	12,400	SY	$ 5.00	$ 62,000
				Paving Estimate Subtotal:	**$ 1,739,850**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 34,800
10	Traffic Control	5%	$ 87,000
11	Erosion Control	3%	$ 52,200
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 348,000
		Other Components Estimate Subtotal:	**$ 522,000**

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	At-grade RR Crossing	$ 100,000	$ 100,000
			Special Components Estimate Subtotal:	**$ 100,000**

I, II, & III Construction Subtotal:		$ 2,361,850
Mobilization	5%	$ 118,100
Contingency	10%	$ 248,000
Construction Cost Estimate Total:		**$ 2,728,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,728,000
Engineering/Survey/Testing		7%	$ 191,000
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 104,100	$ 104,100
		Impact Fee Project Cost Estimate Total:	**$ 3,023,100**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

KILPATRICK ROAD / FM 4

US 67 to Nolan River Rd

Roadway Information:	
Roadway Type:	4-Lane Divided Arterial
Length (lf):	7,392
Right-of-Way Width (ft.):	90
Median Type:	Raised
Pavement Width (Edge to Edge):	48
Description:	Widening of roadway to 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	74	STA	$ 1,800.00	$ 133,200
2	Unclassified Street Excavation	23,900	CY	$ 10.00	$ 239,000
3	HMAC Type D (2")	39,500	SY	$ 12.00	$ 474,000
4	6" Flex Base	51,000	SY	$ 36.00	$ 1,836,000
5	Prime & Tack Coat	7,900	GAL	$ 4.25	$ 33,575
6	Lime Subgrade	51,000	SY	$ 3.00	$ 153,000
7	Lime for Stabilization (43lbs/SY)	1,100	TON	$ 150.00	$ 165,000
8	6" Monolithic Concrete Curb & Gutter	29,570	LF	$ 18.00	$ 532,260
9	Block Sodding and Topsoil	26,300	SY	$ 5.00	$ 131,500
				Paving Estimate Subtotal:	**$ 3,697,535**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 74,000
10	Traffic Control	5%	$ 184,900
11	Erosion Control	3%	$ 111,000
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 739,600
		Other Components Estimate Subtotal:	**$ 1,109,500**

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:		$ 4,807,035
Mobilization	5%	$ 240,400
Contingency	10%	$ 504,800
Construction Cost Estimate Total:		**$ 5,552,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 5,552,300
Engineering/Survey/Testing		7%	$ 388,700
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 110,880	$ 110,880
		Impact Fee Project Cost Estimate Total:	**$ 6,051,880**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

WOODRUFF ROAD

SH 171 to Odell St

Roadway Information:	
Roadway Type:	3-Lane Collector with TWLTL
Length (lf):	5,545
Right-of-Way Width (ft.):	60
Median Type:	TWLTL
Pavement Width (Edge to Edge):	38
Description:	Widening of roadway to 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	56	STA	$ 1,800.00	$ 100,800
2	Unclassified Street Excavation	13,300	CY	$ 10.00	$ 133,000
3	HMAC Type D (2")	23,500	SY	$ 12.00	$ 282,000
4	6" Flex Base	27,800	SY	$ 36.00	$ 1,000,800
5	Prime & Tack Coat	4,700	GAL	$ 4.25	$ 19,975
6	Lime Subgrade	27,800	SY	$ 3.00	$ 83,400
7	Lime for Stabilization (43lbs/SY)	600	TON	$ 150.00	$ 90,000
8	6" Monolithic Concrete Curb & Gutter	11,090	LF	$ 18.00	$ 199,620
9	Block Sodding and Topsoil	10,500	SY	$ 5.00	$ 52,500
				Paving Estimate Subtotal:	**$ 1,962,095**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 39,300
10	Traffic Control	5%	$ 98,200
11	Erosion Control	3%	$ 58,900
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 392,500
		Other Components Estimate Subtotal:	**$ 588,900**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 2,550,995
Mobilization	5%	$ 127,600
Contingency	10%	$ 267,900
Construction Cost Estimate Total:		**$ 2,946,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,946,500
Engineering/Survey/Testing		7%	$ 206,300
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 55,450	$ 55,450
		Impact Fee Project Cost Estimate Total:	**$ 3,208,250**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

KILPATRICK ROAD

Railroad to Hix Rd

Roadway Information:	
Roadway Type:	4-Lane Divided Arterial
Length (lf):	4,460
Right-of-Way Width (ft.):	90
Median Type:	Raised
Pavement Width (Edge to Edge):	48
Description:	Widening of roadway to 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	14,400	CY	$ 10.00	$ 144,000
3	HMAC Type D (2")	23,800	SY	$ 12.00	$ 285,600
4	6" Flex Base	30,800	SY	$ 36.00	$ 1,108,800
5	Prime & Tack Coat	4,760	GAL	$ 4.25	$ 20,230
6	Lime Subgrade	30,800	SY	$ 3.00	$ 92,400
7	Lime for Stabilization (43lbs/SY)	660	TON	$ 150.00	$ 99,000
8	6" Monolithic Concrete Curb & Gutter	17,840	LF	$ 18.00	$ 321,120
9	Block Sodding and Topsoil	15,900	SY	$ 5.00	$ 79,500
				Paving Estimate Subtotal:	**$ 2,231,650**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 44,700
10	Traffic Control	5%	$ 111,600
11	Erosion Control	3%	$ 67,000
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 446,400
		Other Components Estimate Subtotal:	**$ 669,700**

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:		$ 2,901,350
Mobilization	5%	$ 145,100
Contingency	10%	$ 304,700
Construction Cost Estimate Total:		**$ 3,351,200**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,351,200
Engineering/Survey/Testing		7%	$ 234,600
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 133,800	$ 133,800
		Impact Fee Project Cost Estimate Total:	**$ 3,719,600**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

2nd Street/FM 4

Railroad to E City Limits

Roadway Information:	
Roadway Type:	4-Lane Divided Arterial
Length (lf):	6,925
Right-of-Way Width (ft.):	90
Median Type:	Raised
Pavement Width (Edge to Edge):	48
Description:	Widening of roadway to 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	70	STA	$ 1,800.00	$ 126,000
2	Unclassified Street Excavation	22,400	CY	$ 10.00	$ 224,000
3	HMAC Type D (2")	37,000	SY	$ 12.00	$ 444,000
4	6" Flex Base	47,800	SY	$ 36.00	$ 1,720,800
5	Prime & Tack Coat	7,400	GAL	$ 4.25	$ 31,450
6	Lime Subgrade	47,800	SY	$ 3.00	$ 143,400
7	Lime for Stabilization (43lbs/SY)	1,030	TON	$ 150.00	$ 154,500
8	6" Monolithic Concrete Curb & Gutter	27,700	LF	$ 18.00	$ 498,600
9	Block Sodding and Topsoil	24,700	SY	$ 5.00	$ 123,500
				Paving Estimate Subtotal:	**$ 3,466,250**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 69,400
10	Traffic Control	5%	$ 173,400
11	Erosion Control	3%	$ 104,000
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 693,300
		Other Components Estimate Subtotal:	**$ 1,040,100**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 4,506,350
Mobilization	5%	$ 225,400
Contingency	10%	$ 473,200
Construction Cost Estimate Total:		**$ 5,205,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 5,205,000
Engineering/Survey/Testing		7%	$ 364,400
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 277,000	$ 277,000
		Impact Fee Project Cost Estimate Total:	**$ 5,846,400**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Island Grove Road/FM 2135

2nd St to N Elementary School

Roadway Information:	
Roadway Type:	4-Lane Divided Arterial
Length (lf):	1,850
Right-of-Way Width (ft.):	90
Median Type:	Raised
Pavement Width (Edge to Edge):	48
Description:	Widening of roadway to 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	19	STA	$ 1,800.00	$ 34,200
2	Unclassified Street Excavation	6,000	CY	$ 10.00	$ 60,000
3	HMAC Type D (2")	9,900	SY	$ 12.00	$ 118,800
4	6" Flex Base	12,800	SY	$ 36.00	$ 460,800
5	Prime & Tack Coat	1,980	GAL	$ 4.25	$ 8,415
6	Lime Subgrade	12,800	SY	$ 3.00	$ 38,400
7	Lime for Stabilization (43lbs/SY)	280	TON	$ 150.00	$ 42,000
8	6" Monolithic Concrete Curb & Gutter	7,400	LF	$ 18.00	$ 133,200
9	Block Sodding and Topsoil	6,600	SY	$ 5.00	$ 33,000
				Paving Estimate Subtotal:	**$ 928,815**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 18,600
10	Traffic Control	5%	$ 46,500
11	Erosion Control	3%	$ 27,900
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 185,800
		Other Components Estimate Subtotal:	**$ 278,800**

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:		$ 1,207,615
Mobilization	5%	$ 60,400
Contingency	10%	$ 126,900
Construction Cost Estimate Total:		**$ 1,395,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,395,000
Engineering/Survey/Testing		7%	$ 97,700
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 74,000	$ 74,000
		Impact Fee Project Cost Estimate Total:	**$ 1,566,700**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Island Grove Road/FM 2135

N Elementary School to S City Limits

Roadway Information:	
Roadway Type:	4-Lane Divided Arterial
Length (lf):	3,700
Right-of-Way Width (ft.):	90
Median Type:	Raised
Pavement Width (Edge to Edge):	48
Description:	Widening of roadway to 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	37	STA	$ 1,800.00	$ 66,600
2	Unclassified Street Excavation	12,000	CY	$ 10.00	$ 120,000
3	HMAC Type D (2")	19,800	SY	$ 12.00	$ 237,600
4	6" Flex Base	25,500	SY	$ 36.00	$ 918,000
5	Prime & Tack Coat	3,960	GAL	$ 4.25	$ 16,830
6	Lime Subgrade	25,500	SY	$ 3.00	$ 76,500
7	Lime for Stabilization (43lbs/SY)	550	TON	$ 150.00	$ 82,500
8	6" Monolithic Concrete Curb & Gutter	14,800	LF	$ 18.00	$ 266,400
9	Block Sodding and Topsoil	13,200	SY	$ 5.00	$ 66,000
				Paving Estimate Subtotal:	**$ 1,850,430**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 37,100
10	Traffic Control	5%	$ 92,600
11	Erosion Control	3%	$ 55,600
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 370,100
		Other Components Estimate Subtotal:	**$ 555,400**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 2,405,830
Mobilization	5%	$ 120,300
Contingency	10%	$ 252,700
Construction Cost Estimate Total:		**$ 2,778,900**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,778,900
Engineering/Survey/Testing		7%	$ 194,500
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 148,000	$ 148,000
		Impact Fee Project Cost Estimate Total:	**$ 3,121,400**

City of Cleburne

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Edgewood Lane/CR 315

Edgewood/CR 315 to FM 429 (@ Brazos Ave)

Roadway Information:	
Roadway Type:	2-Lane Undivided Collector
Length (lf):	1,820
Right-of-Way Width (ft.):	60
Median Type:	None
Pavement Width (Edge to Edge):	36
Description:	New roadway construction to thoroughfare standard roadway section for realignment of offset intersection

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	19	STA	$ 1,800.00	$ 34,200
2	Unclassified Street Excavation	4,200	CY	$ 10.00	$ 42,000
3	HMAC Type D (2")	7,300	SY	$ 12.00	$ 87,600
4	6" Flex Base	8,700	SY	$ 36.00	$ 313,200
5	Prime & Tack Coat	1,460	GAL	$ 4.25	$ 6,205
6	Lime Subgrade	8,700	SY	$ 3.00	$ 26,100
7	Lime for Stabilization (43lbs/SY)	190	TON	$ 150.00	$ 28,500
8	6" Monolithic Concrete Curb & Gutter	3,640	LF	$ 18.00	$ 65,520
9	Block Sodding and Topsoil	3,900	SY	$ 5.00	$ 19,500
				Paving Estimate Subtotal:	**$ 622,825**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 12,500
10	Traffic Control	5%	$ 31,200
11	Erosion Control	3%	$ 18,700
12	Landscaping	0%	$ -
13	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 124,600
		Other Components Estimate Subtotal:	**$ 187,000**

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:		$ 809,825
Mobilization	5%	$ 40,500
Contingency	10%	$ 85,100
Construction Cost Estimate Total:		**$ 935,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 935,500
Engineering/Survey/Testing		7%	$ 65,500
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 109,200	$ 109,200
		Impact Fee Project Cost Estimate Total:	**$ 1,110,200**

Appendix G
CIP Service Units of Supply

ROADWAY IMPROVEMENTS PLAN PROJECTS

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 SA = special arterial (arterial with continuous left turn) UC = undivided collector
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.

Cleburne Roadway Impact Fee
2017 Proposed Capital Improvements Plan

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Type Rdwy	Pct. in Serv. Area	Peak Hour Volume A	Peak Hour Volume B	Peak Hour Volume Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	CIP VMT Deficiency
1		No Projects			New	0.00			100%			0	0	0	0	0
Sub-total 1						**0.00**						**0**	**0**	**0**	**0**	**0**
2/4	*1*	Kilpatrick/FM 4	CR 1125B	US 67	New	0.40	4	DA	50%	130	0	130	540	52	488	0
2	*2*	Sparks Dr	Windmill Rd	Chisholm Trail	Recoup	0.72	3	SC	100%	50	50	100	788	72	716	0
Sub-total 2						**1.12**						**230**	**1328**	**124**	**1204**	**0**
3	*3*	W Sparks Dr	Chisholm Trail	ex. Sparks Dr	New	0.50	3	SC	100%	0	0	0	550	0	550	0
3	*4*	E Sparks Dr	ex. Sparks Dr	Vaughn Rd	New	0.84	3	SC	100%	0	0	0	927	0	927	0
3	*5*	E Sparks Dr	Vaughn Rd	SH 174	New	0.37	3	SC	100%	44	40	84	404	31	373	0
3	*6*	Industrial Blvd	Chisholm Trail	SH 174	New	1.55	5	SA	100%	190	214	404	4194	628	3566	0
Sub-total 3						**3.26**						**488**	**6075**	**658**	**5417**	**0**
4/2	*1*	Kilpatrick/FM 4	CR 1125B	US 67	New	0.40	4	DA	50%	0	130	130	540	52	488	0
Sub-total 4						**0.40**						**130**	**540**	**52**	**488**	**0**
5	*7*	Yellowjacket Rd	Harlin Dr	US 67	New	1.74	3	SC	100%	0	0	0	1917	0	1917	0
5	*8*	Ridgeway Dr	Woodard	US 67	New	2.40	3	SA	100%	0	0	0	3246	0	3246	0
5	*9*	University Dr	Bus. 67	CR 1112	New	2.84	5	SA	100%	0	0	0	7667	0	7667	0
5	*10*	Hemphill Dr	University	Nolan River	New	0.81	2	UC	100%	0	0	0	811	0	811	0
5	*11*	Kilpatrick	Main	RR	New	0.66	4	DA	100%	290	241	531	1774	349	1425	0
5	*12*	Kilpatrick	US 67	Nolan River	New	1.40	4	DA	100%	130	130	260	3780	364	3416	0
5	*13*	Woodruff Rd	Odell St	SH 171	New	1.05	3	SC	100%	440	391	831	1155	873	283	0
Sub-total 5						**10.90**						**1622**	**20350**	**1586**	**18764**	**0**
6	*14*	Kilpatrick	RR	Hix Rd	New	0.84	4	DA	100%	290	241	531	2281	449	1832	0
6	*15*	2nd St/FM 4	RR	E City Limits	New	1.31	4	DA	100%	427	304	731	3541	959	2582	0
6	*16*	FM 2135	2nd St	N. Elementary Sch	New	0.35	4	DA	100%	50	50	100	946	35	911	0
6	*17*	FM 2135	N. Elementary Sch	S City Limits	New	0.70	4	DA	50%	0	50	50	946	35	911	0
6	*18*	CR 315	Edgewood	FM 429	New	0.34	2	UC	100%	0	0	0	345	0	345	0
Sub-total 6						**3.55**						**1412**	**8059**	**1477**	**6581**	**0**
7		No Projects			New	0.00			100%			0	0	0	0	0
Sub-total 7						**0.00**						**0**	**0**	**0**	**0**	**0**
8		No Projects			New	0.00			100%			0	0	0	0	0
Sub-total 8						**0.00**						**0**	**0**	**0**	**0**	**0**
9		No Projects			New	0.00			100%			0	0	0	0	0
Sub-total 9						**0.00**						**0**	**0**	**0**	**0**	**0**
Totals:						**19.24**						**3,882**	**36,351**	**3,897**	**32,454**	**0**

Notes:

DA- Divided arterial
SA- Special arterial with dual-left turn lane
DC- Divided collector
SC- Special collector with dual-left turn lane
UC- Undivided collector

Appendix H
Roadway Improvement Plan Cost Analysis

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Type Rdwy	Pct. in Serv. Area	Roadway Project Costs: Engineering	ROW	Construction	Finance*	Total Project Cost
1		No Projects				0.00				$0	$0	$0	$0	$0
Sub-total 1						**0.00**				**$0**	**$0**	**$0**	**$0**	**$0**
2/4	1	Kilpatrick/FM 4	CR 1125B	US 67	New	0.40	4	DA	50%	$55,700	$15,840	$795,750	$103,208	$970,498
2	2	Sparks Dr	Windmill Rd	Chisholm Trail	Recoup	0.72	3	SC	100%	$0	$0	$283,000	$0	$283,000
Sub-total 2						**1.12**				**$55,700**	**$15,840**	**$1,078,750**	**$103,208**	**$1,253,498**
3	3	W Sparks Dr	Chisholm Trail	ex. Sparks Dr	New	0.50	3	SC	100%	$98,100	$158,400	$1,401,800	$197,338	$1,855,638
3	4	E Sparks Dr	ex. Sparks Dr	Vaughn Rd	New	0.84	3	SC	100%	$165,500	$267,000	$2,363,600	$332,736	$3,128,836
3	5	E Sparks Dr	Vaughn Rd	SH 174	New	0.37	3	SC	100%	$72,200	$29,100	$1,031,300	$134,779	$1,267,379
3	6	Industrial Blvd	Chisholm Trail	SH 174	New	1.55	5	SA	100%	$445,400	$246,030	$6,362,900	$839,465	$7,893,795
Sub-total 3						**3.26**				**$781,200**	**$700,530**	**$11,159,600**	**$1,504,318**	**$14,145,648**
4/2	1	Kilpatrick/FM 4	CR 1125B	US 67	New	0.40	4	DA	50%	$55,700	$15,840	$795,750	$103,208	$970,498
Sub-total 4						**0.40**				**$55,700**	**$15,840**	**$795,750**	**$103,208**	**$970,498**
5	7	Yellowjacket Rd	Harlin Dr	US 67	New	1.74	3	SC	100%	$341,200	$282,000	$4,874,600	$654,238	$6,152,038
5	8	Ridgeway Dr	Woodard	US 67	New	2.40	3	SA	100%	$493,200	$1,142,460	$7,045,100	$1,033,010	$9,713,770
5	9	University Dr	Bus. 67	CR 1112	New	2.84	5	SA	100%	$813,900	$1,349,460	$11,627,600	$1,641,124	$15,432,084
5	10	Hemphill Dr	University	Nolan River	New	0.81	2	UC	100%	$153,600	$256,800	$2,194,800	$310,019	$2,915,219
5	11	Kilpatrick	Main	RR	New	0.66	4	DA	100%	$191,000	$104,100	$2,728,000	$359,749	$3,382,849
5	12	Kilpatrick	US 67	Nolan River	New	1.40	4	DA	100%	$388,700	$110,880	$5,552,300	$720,174	$6,772,054
5	13	Woodruff Rd	Odell St	SH 171	New	1.05	3	SC	100%	$206,300	$55,450	$2,946,500	$381,782	$3,590,032
Sub-total 5						**10.90**				**$2,587,900**	**$3,301,150**	**$36,968,900**	**$5,100,096**	**$47,958,046**
6	14	Kilpatrick	RR	Hix Rd	New	0.84	4	DA	100%	$234,600	$133,800	$3,351,200	$442,632	$4,162,232
6	15	2nd St/FM 4	RR	E City Limits	New	1.31	4	DA	100%	$364,400	$277,000	$5,205,000	$695,722	$6,542,122
6	16	FM 2135	2nd St	N. Elementary Sch	New	0.35	4	DA	100%	$97,700	$74,000	$1,395,000	$186,437	$1,753,137
6	17	FM 2135	N. Elementary Sch	S City Limits	New	0.70	4	DA	50%	$97,250	$74,000	$1,389,450	$185,723	$1,746,423
6	18	CR 315	Edgewood	FM 429	New	0.34	2	UC	100%	$65,500	$109,200	$935,500	$132,114	$1,242,314
Sub-total 6						**3.55**				**$859,450**	**$668,000**	**$12,276,150**	**$1,642,628**	**$15,446,228**
7		No Projects				0.00				$0	$0	$0	$0	$0
Sub-total 7						**0.00**				**$0**	**$0**	**$0**	**$0**	**$0**
8		No Projects				0.00				$0	$0	$0	$0	$0
Sub-total 8						**0.00**				**$0**	**$0**	**$0**	**$0**	**$0**
9		No Projects				0.00				$0	$0	$0	$0	$0
Sub-total 9						**0.00**				**$0**	**$0**	**$0**	**$0**	**$0**
Totals:						**19.24**				**$4,339,950**	**$4,701,360**	**$62,279,150**	**$8,453,458**	**$79,773,918**

Totals:	Engineering Cost	$4,339,950
	Right-of-Way Cost	$4,701,360
	Construction Cost	$62,279,150
	Finance Cost	$8,453,458
	TOTAL NET COST	$79,773,918
	Future Impact Fee Update Cost*	$80,000
	TOTAL IMPLEMENTATION COST	$79,853,918

Appendix I
Roadway Service Area Analysis Summary

Cleburne Roadway Impact Fee Study
Service Area Analysis Summary

	1	2	3	4	5	6	7	8	9	10	11	12	13
Service Area	**Capacity Supplied by CIP (veh-mi)**	**Existing Utilization (veh-mi)**	**Existing Deficiencies (veh-mi)**	**Net Capacity Supplied by CIP (veh-mi)**	**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.**	**Cost per Service Unit w/ 50% Credit**	***Actual Cost per Service Unit (veh-mi)***
1	0	0	0	0	$0	$0	$0	$0	15	100.0	$0	$0	*$0*
2	1,328	124	0	1,204	$1,256,420	$626,749	$568,398	$58,351	3,321	100.0	$568,398	$171	*$342*
3	6,075	658	0	5,417	$14,159,018	$7,072,824	$6,306,284	$766,540	3,570	65.9	$4,155,896	$1,164	*$2,328*
4	540	52	0	488	$971,686	$485,249	$438,521	$46,728	79	16.2	$71,241	$898	*$1,796*
5	20,350	1,586	0	18,764	$48,002,831	$23,979,023	$22,110,379	$1,868,644	14,115	75.2	$16,631,968	$1,178	*$2,356*
6	8,059	1,477	0	6,581	$15,463,963	$7,723,114	$6,307,259	$1,415,855	4,087	62.1	$3,916,446	$958	*$1,916*
7	0	0	0	0	$0	$0	$0	$0	0	100.0	$0	$0	*$0*
8	0	0	0	0	$0	$0	$0	$0	57	100.0	$0	$0	*$0*
9	0	0	0	0	$0	$0	$0	$0	107	100.0	$0	$0	*$0*
Totals	36,351	3,897	0	32,454	$79,853,918	$39,886,959	$35,730,841	4,156,118	25,349	78.1	$25,343,948		

1. TOTAL VEH-MI OF CAPACITY SUPPLIED BY CIP (TVMCAP)
2. TOTAL VEH-MI OF EXISTING DEMAND (VMEXT)
3. TOTAL VEH-MI OF EXISTING DEFICENCIES (VMDEF)
4. NET AMOUNT OF ROADWAY CAPACITY SUPPLIED (NVMCAP) =
   NVMCAP =TVMCAP-VMEXT-VMDEF
5. TOTAL COST OF CIP WITHIN STUDY AREA
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 (NCVMDEM) =
    NCVMDEM = (TNEWDEM / NVMCAP) * NCVMCAP
12. COST PER SERVICE UNIT = (MAX FEE)
    MAX FEE = NCVMDEM / TNEWDEM
13. ACTUAL COST PER SERVICE UNIT