Innovative approaches
Practical results
Outstanding service

FINAL WATER, WASTEWATER & ROADWAY CIP AND IMPACT FEE UPDATE

MARCH 2019

Prepared for:

City of Terrell

Prepared by:

FREESE AND NICHOLS, INC.
2711 N. Haskell Avenue, Suite 3300
Dallas, Texas 75204
214-217-2200

FNI Project No. TER18450

FREESE AND NICHOLS

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EXECUTIVE SUMMARY

The purpose of this report is to summarize the methodology used in the development and calculation of water, wastewater, and roadway impact fees for the City of Terrell. The methodology used herein satisfies the requirements of the Texas Local Government Code Section 395 for the establishment of impact fees. Texas Local Government Code Section 395 requires an impact fee analysis before impact fees are set. Section 395 requires that land use assumptions and capital improvement plans be updated at least every five years. The City of Terrell last performed an impact fee analysis update in 2014.

Maximum Allowable Water Impact Fee

The cost of water capital improvements to serve development projected to occur between 2018 and 2028 is $3,998,650. A 3.0% interest rate compounded annually was used to calculate financing costs. The increase in the number of service units due to growth over the next ten years is projected as 2,201 service units. The maximum allowable water impact fee with the credit is $1,221 per service unit. The maximum allowable water impact fee calculation is summarized as follows:

Total Capital Improvement Costs	$3,998,650
Financing Costs	+ $1,375,201
Total Eligible Costs	$5,373,851
Growth in Service Units	2,201

Maximum Water Impact Fee	= Total Eligible Costs/Growth in Service Units
	= $5,373,851 / 2,201
	= $2,442 per Service Unit
Maximum Allowable Water Impact Fee	= Maximum Impact Fee – Credit (50%)
	= $2,442 - $1,221
	= **$1,221 per Service Unit**

Maximum Allowable Wastewater Impact Fee

The cost of wastewater system capital improvements to serve development projected to occur between 2018 and 2028 is $7,098,000. A 3.0% interest rate compounded annually was used to calculate financing costs. The increase in the number of service units due to growth over the next ten years is projected as 2,201 service units. The maximum allowable wastewater impact fee with the credit is $2,167 per service unit. The maximum allowable wastewater impact fee calculation is summarized as follows:

Total Capital Improvement Costs	$7,098,000
Financing Costs	+ $2,441,118
Total Eligible Costs	$9,539,118
Growth in Service Units	2,201

Maximum Wastewater Impact Fee	= Total Eligible Costs/Growth in Service Units
	= $9,539,118 / 2,201
	= $4,334 per Service Unit
Maximum Allowable Wastewater	= Maximum Impact Fee – Credit (50%)
Impact Fee	= $4,334 - $2,167
	= **$2,167 per Service Unit**

Maximum Allowable Roadway Impact Fee

The total cost of roadway capital improvements to serve the development projected to occur between 2018 and 2028 is $51.1 million for the West service area and $19.0 million for the East service area and is inclusive of the cost for study updates. With the state mandate of 50% credit to the CIP, cost of the program is $25.5 million and $9.5 million for the West and East service areas, respectively. No growth, projects, or cost is associated with the new Brushy Creek service area. The costs that are eligible for cost recovery are $19.1 million for the West service area and $6.8 million for the East service area. This cost includes the construction, right-of-way, engineering, and debt service attributable to projected growth. The increase in the number of service units due to growth over the next ten-year period is 12,687 vehicle-miles for the West service area and 6,113 vehicle-miles for the East service area. With the 50% state

mandated credit to the CIP, the maximum allowable West service area roadway impact is $1,503 per service unit. The maximum allowable East service area roadway impact fee is $1,114 per service unit.

West Service Area

Total Capital Improvement Costs	$45,633,400
Financing Costs	+ $5,429,600
CIP Study Updates	+ $41,076
Total Costs	$51,104,076
Total Costs (with 50% credit)	$25,552,038
Cost Attributable to New Growth (credited)	$19,083,676
Growth in Service Units (vehicle-miles)	12,687
Maximum Allowable Roadway Impact Fee	= $19,083,676 / 12,687
(with 50% Credit)	= $1,504 per Service Unit

East Service Area

Total Capital Improvement Costs	$17,408,467
Financing Costs	+ $1,533,500
CIP Study Updates	+ $28,924
Total Costs	$18,970,891
Total Costs (with 50% credit)	$9,485,445
Cost Attributable to New Growth (credited)	$6,818,953
Growth in Service Units (vehicle-miles)	6,113
Maximum Allowable Roadway Impact Fee	= $6,814,494 / 6,113
(with 50% Credit)	= $1,114 per Service Unit

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 be 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 July 2018, the City of Terrell authorized Freese and Nichols, Inc. (FNI) to perform an impact fee analysis on the City's roadway, water, and wastewater systems. This report's purpose is to summarize the methodology used in the development and calculation of water, wastewater, and roadway impact fees for the City of Terrell. The methodology used herein satisfies the requirements of the Texas Local Government Code Section 395 for the establishment of water, wastewater, and roadway impact fees.

As part of the impact fee update, FNI conducted three workshops with the City's appointed Capital Improvements Advisory Committee (CIAC). The CIAC's role includes recommending a growth rate for impact fee calculations, reviewing and recommending land use assumptions and Impact Fee Capital Improvements Plans (CIP), and recommending an impact fee rate to the City Council.

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

Table 1-1. Abbreviations

Abbreviation	Full Nomenclature
AWWA	American Water Works Association
CIAC	Capital Improvements Advisory Committee
CCN	Certificate of Convenience and Necessity (CCN)
CIP	Capital Improvements Plan
DA	Divided Arterial
DC	Divided Collector
DU	Dwelling Unit
ETJ	Extra-Territorial Jurisdiction
GIS	Geographic Information Systems
gpcd	Gallons Per Capita Per Day
gped	Gallons Per Employee Per Day
gpm	Gallons per Minute
FNI	Freese and Nichols, Inc.
LOS	Level-of-Service
MG	Million Gallons
MGD	Million Gallons per Day
NCTCOG	North Central Texas Council of Government
NTMWD	North Texas Municipal Water District
SCADA	Supervisory Control and Data Acquisition
TCEQ	Texas Commission on Environmental Equality
TSZ	Traffic Survey Zone
TxDOT	Texas Department of Transportation
UA	Undivided Arterial
UC	Undivided Collector
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 (DU) and employment. Land use assumptions for the purpose of roadway impact fees can be found in **Section 4** of this report. A thorough analysis of historical and projected populations, along with land use, provides the basis for projecting future water demands and wastewater flows.

2.1 SERVICE AREA

The impact fee service area for the City of Terrell's water and wastewater systems is defined as the City limits plus areas within the extra-territorial jurisdiction (ETJ) that are not within any other entity's water Certificate of Convenience and Necessity (CCN) service area. The roadway impact fee service area is defined as the City limits, and for the purpose of calculating roadway impact fees, the City of Terrell was divided into three service areas. **Figures 2-1** and **2-2** illustrate the water and wastewater impact fee service area. **Figure 4-1**, in Section 4 of this report, illustrates the three roadway service areas.

2.2 HISTORICAL POPULATION

Table 2-1 presents the historical populations for the City of Terrell. The data indicated an average growth rate of 1.4% annual growth over the last 18 years.

Table 2-1. Historical Population[1]

Year	Population	Population Growth	Percentage Growth
2000	13,606	-	-
2001	13,750	144	1.1%
2002	13,950	200	1.5%
2003	14,300	350	2.5%
2004	14,950	650	4.5%
2005	15,500	550	3.7%
2006	15,550	50	0.3%
2007	15,750	200	1.3%
2008	15,500	-250	-1.6%
2009	15,500	0	0.0%
2010	15,816	316	2.0%
2011	16,015	199	1.3%
2012	16,214	199	1.2%
2013	16,413	199	1.2%
2014	16,445	32	0.2%
2015	16,770	325	2.0%
2016	17,030	260	1.6%
2017	17,064	34	0.2%
	Average	**203**	**1.4%**

[1]Historical populations for 2000 through 2010 are based on Census and NCTCOG data. The 2011 and 2012 populations were interpolated based on 2010 population and 2013 population provided by the City of Terrell. Historical populations for 2014 through 2017 were provided by the City of Terrell.

2.3 PROJECTED POPULATION AND EMPLOYMENT

Projected populations were developed by the City of Terrell Planning Department based on recent City growth patterns and known developments. The City of Terrell's total population in 2018 is estimated as 17,719, and the population in 2028 is projected to be 23,119. The 10-year population growth is projected to be 5,400. Growth over the next several years includes a five percent annual increase to account for two new apartment complexes and newly platted lots in the development review process. Annual population growth is projected to slow down to three percent in 2021 and two percent in 2024. The potential for new residential units is very high; however, much of these projects are in the "speculation" or pre-development stage and will likely be easier to analyze within the next few years. Projected populations for the water and wastewater systems are displayed in **Table 2-2**. Population is separated into population inside existing Terrell City limits and population in Terrell's extra-territorial jurisdiction (ETJ). Large developments planned in the Terrell ETJ were not included as part of this study.

In order to capture growth related to commercial, retail, office, institutional, and industrial development, existing and 2028 employment estimates were developed. **Table 2-3** shows the projected number of employees with water and wastewater service. Land use assumptions were developed based on existing NCTCOG population and employment by Traffic Survey Zone (TSZ) with growth occurring in expected areas based on discussions with City staff. To further assist in the analysis of the water and sewer systems, the populations and employment assumptions were distributed into approximately 31 planning areas as shown on **Figure 2-1** and **Figure 2-2**, respectively. Planning areas were developed by FNI since NCTCOG TSZs were too large to provide an accurate level of detail. These population and employment numbers were used to establish water demands and wastewater flows, which in turn determined sizing of proposed water and sewer system improvements.

Table 2-2. Water and Wastewater Service Population Projections

Year	Terrell City Limits Population	Terrell ETJ Population	Total Water and Wastewater Service Population
2018	17,400	319	17,719
2028	22,800	319	23,119

Table 2-3. Employment Projections

Year	Number of Employees	Average Annual Employee Growth
2018	15,028	-
2028	18,028	300

FIGURE 2-1
CITY OF TERRELL
POPULATION BY PLANNING AREA

LEGEND

- Road
- Stream
- Lake/Pond
- Planning Area
- Service Area
- City Limit
- ETJ Boundary

PLANNING AREA
2018 Population (17,719)
2028 Population (23,119)

	2018	2028
1	928	1,606
2	3,130	3,756
3	778	1,033
4	2,172	2,200
5	885	900
6	877	885
7	1,322	1,330
8	986	1,431
9	753	937
10	0	675
11	828	890
12	1,113	1,195
13	50	50
14	1,894	2,394
15	809	1,009
16	0	800
17	0	288
18	291	507
19	0	0
20	303	633
21	0	0
22	57	57
23	69	69
24	149	149
25	6	6
26	0	0
27	39	39
28	253	253
29	0	0
30	15	15
31	12	12

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FIGURE 2-2
CITY OF TERRELL
EMPLOYMENT BY PLANNING AREA

LEGEND

- Road
- Stream
- Lake/Pond
- Planning Area
- Service Area
- City Limit
- ETJ Boundary

PLANNING AREA
2018 Employment (15,028)
2028 Employment (18,028)

	2018	2028
1	345	568
2	874	927
3	1,732	1,974
4	1,002	1,002
5	104	104
6	96	96
7	445	472
8	1,274	1,331
9	775	796
10	1,488	1,520
11	559	609
12	414	459
13	2,865	3,017
14	347	534
15	762	959
16	154	813
17	253	315
18	900	1,100
19	0	0
20	179	762
21	0	0
22	200	200
23	136	346
24	96	96
25	4	4
26	0	0
27	16	16
28	0	0
29	0	0
30	0	0
31	8	8

Terrell AMERICA

FREESE AND NICHOLS

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3.0 WATER AND WASTEWATER ANALYSIS

A capital improvements plan (CIP) was developed for the City of Terrell to promote residential and commercial development through access to quality water and wastewater systems. The recommended improvements will provide the required capacity and reliability to meet projected water demands and wastewater flows through 2028. 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 existing water distribution system currently consists of a network of lines ranging in size from 1-inch to 30-inch, a pump station, ground storage tank, and two elevated storage tanks. The City receives water from the North Texas Municipal Water District (NTMWD) delivery point at the pumping station. The City of Terrell operates the distribution system on one pressure plane.

The existing wastewater system has 6 major basins, 4 lift stations, and a network of lines ranging from 4-inch to 36-inch in diameter. Due to existing topography, the wastewater collection system generally flows from north to south with the terminal point being the King's Creek Wastewater Treatment Plant (WWTP). A 36-inch interceptor flows along Bachelor Creek on the City's west boundary before being pumped to a 36-inch interceptor following King's Creek on the east side of the City.

3.2 WATER AND WASTEWATER MODEL UPDATE

The water system hydraulic model from the 2014 Impact Fee Analysis, performed by FNI, was updated as part of this study to include recently constructed water lines and changes in system operations. In addition, the water system hydraulic model was converted from H2OMap Water to InfoWater software by Innovyze. Existing water demands were reallocated to the model using customer billing records for each individual account for 2017 that were geocoded and matched spatially using the Geographic Information Systems (GIS) parcel and street centerline shapefiles. Of the 6,289 active water accounts, 100% of the billing records were matched. The model's demand allocator module in InfoWater was used to assign each meter location to a model node. **Appendix A** includes a map with the geocoded billing meters color coded by usage.

The wastewater model from the *2012 Wastewater Infrastructure Prioritization Phase I* analysis, performed by FNI, was updated as part of this study to include recently constructed wastewater lines. In

addition, the wastewater system hydraulic model was converted from H2OMap Sewer to InfoSewer software by Innovyze.

3.3 WATER AND WASTEWATER LOAD PROJECTIONS

The population and land use data were used to develop future water demands and wastewater flows based on a projected average day per capita use and peaking factors. The design criteria used to project water demands and wastewater flows were developed based on recent historical data. In the future, it is anticipated that per capita and employment usage will increase based on the large number of irrigation systems being installed with new development and the type of commercial and industrial developments being proposed, but the large increase in residential irrigation systems is expected to offset conservation measures in place for the future. Therefore, for planning purposes, the residential and employment per capita used for projections is assumed to be constant in the future.

Historical water demands from 2008 through 2017 were provided to FNI by the City for the development of projected water usage rates and peaking factors. **Tables 3-1** and **3-2** illustrate the average and maximum day water demands for these years, respectively. The projected residential per capita usage rate is 120 gallons per capita per day (gpcd), and the projected non-residential usage rate is 60 gallons per employee per day (gped). The projected retail maximum day to average day peaking factor is 2.0 and projected retail peak hour to maximum day peaking factor is 1.8 for all planning scenarios. The projected wholesale maximum day to average day peaking factor is 1.8 and projected wholesale peak hour to maximum day peaking factor is 1.25 for all planning scenarios. **Table 3-3** presents the design criteria used to develop the projected water demands. **Table 3-4** displays the projected water demands for the City including the ETJ and wholesale customers.

Table 3-1. Historical Average Day Water Usage

Year	Population	Average Day Demand (MGD)	Wholesale Average Day Demand (MGD)	Overall Average Day Per Capita Consumption (gpcd)	Retail Average Day Per Capita Consumption (gpcd)
2008	15,500	3.30	0.90	213	155
2009	15,500	3.48	0.93	224	164
2010	15,816	3.64	0.90	230	173
2011	16,015	3.85	1.03	240	176
2012	16,214	3.44	1.06	212	147
2013	16,413	3.39	1.02	207	144
2014	16,445	3.18	0.88	193	139
2015	16,770	3.36	0.98	200	142
2016	17,030	3.17	1.01	186	127
2017	17,064	3.30	0.72	193	151
Average		**3.38**	**0.94**	**209**	**150**

Table 3-2. Historical Maximum Day Water Usage

Year	Maximum Day Demand (MGD)	Maximum Day/Average Day Peaking Factor
2011	7.41	1.92
2012	6.39	1.86
2013	7.14	2.10
2014	6.23	1.96
2015	5.62	1.67
2016	5.08	1.60
2017	8.66[(1)]	2.63
Average	**6.65**	**1.96**

[(1)]Maximum day demand occurred the same day as a large water main break.

Table 3-3. Water Demand Projections Design Criteria

Average Day Residential Per Capita Usage (gpcd)	Average Day Employment Per Capita Usage (gped)	Retail Maximum Day to Average Day Peaking Factor	Wholesale Maximum Day to Average Day Peaking Factor	Retail Peak Hour to Maximum Day Peaking Factor	Wholesale Peak Hour to Maximum Day Peaking Factor
120	60	2.00	1.80	1.80	1.25

Table 3-4. Projected Water Demands

Year	Population	Employment	Retail Average Day Demand (MGD)[1]	Wholesale Average Day Demand (MGD)[2]	Total Average Day Demand (MGD)	Maximum Day Demand (MGD)[3]	Peak Hour Demand (MGD)[4]
2018	17,719	15,028	3.03	1.07	4.10	7.98	13.31
2023	20,940	16,528	3.50	1.12	4.63	9.03	15.15
2028	23,119	18,028	3.86	1.18	5.04	9.84	16.54

[1]Average day demands are based on a residential per capita of 120 gpcd and employment per capita of 60 gped.
[2]Wholesale demands are based on approximately 1% growth per year.
[3]Maximum day demands are based on a maximum day to average day peaking factor of 1.8 for wholesale demands and 2.0 for retail demands.
[4]Retail peak hour demands are based on a peak hour to maximum day peaking factor of 1.8. Wholesale peak hour demands are based on a peak hour to maximum day peaking factor of 1.25

The projected wastewater residential per capita production rate is 95 gpcd for all planning periods, and the projected wastewater non-residential production rate is 45 gped for all planning periods. These wastewater production rates represent a percentage of the water demand that is captured by the wastewater collection system for each planning period. Historical wastewater flow data was used in the development of the wastewater residential and non-residential production rates. **Table 3-5** displays the historical average daily wastewater flows for the City of Terrell. The peak wet weather peaking factor for all planning periods is 4.0. The average day flows for all the planning scenarios was multiplied by this factor to calculate the peak wet weather flows. **Table 3-6** presents the projected wastewater flows for the City of Terrell.

Table 3-5. Historical Average Daily Wastewater Flows

Year	Population	Average Daily Flow (MGD)	Average Day Per Capita (gpcd)
2008	15,500	1.62	105
2009	15,500	1.68	108
2010	15,816	1.64	104
2011	16,015	1.16	72
2012	16,214	1.24	76
2013	16,413	-	-
2014	16,445	1.46	89
2015	16,770	2.47	147
2016	17,030	2.10	123
2017	17,064	1.99	117
Average		**1.71**	**105**

Table 3-6. Projected Wastewater Flows

Year	Population	Employment	Average Daily Flow (MGD)[1]	Peak Wet Weather Flow (MGD)[2]
2018	17,719	15,028	2.36	9.44
2023	20,940	16,528	2.73	10.93
2028	23,119	18,028	3.01	12.03

[1]Average daily flows are based on a residential per capita of 95 gpcd and employment per capita of 45 gped.
[2]Peak wet weather flows are based on a wet weather peaking factor of 4.

3.4 TCEQ REQUIREMENTS

The City is required to meet all rules and regulations for public water systems established by the Texas Commission on Environmental Quality (TCEQ) in Title 30 Texas Administrative Code (30 TAC), Chapter 290. These requirements are based on number of connections in each pressure plane. The City operates its water distribution system on one pressure plane presently and will continue to do so in the future. There are currently 8,248 existing connections in the distribution system as of the TCEQ inspection on February 8, 2018.

3.4.1 Elevated Storage

The City is required to meet the TCEQ elevated storage capacity requirement of 100 gallons per connection. The City's distribution system currently has 2.5 MG of elevated storage and can serve a total of 25,000 connections. Based on the number of existing connections in the system, the existing elevated storage can serve approximately 16,750 additional connections.

3.4.2 Total Storage

The City is required to meet the TCEQ total storage capacity requirement of 200 gallons per connection. The City currently has 3.0 MG of ground storage in addition to the aforementioned 2.5 MG of elevated storage and can serve a total of 27,500 connections or approximately 19,250 additional connections.

3.4.3 Pumping

The City is required to meet the TCEQ service pumping capacity requirements established in 30 TAC §290.45(b)(2)(F) and summarized in **Table 3-7**. **Table 3-8** summarizes the existing pumping facilities. Since the city currently has 303 gallons/connection of elevated storage, two pumps with 0.6 gallons per minute (gpm) per connection is required. The city exceeds the required pumping capacity per connection and can

add up to 4,250 connections and maintain 200 gallons of elevated storage per connection. **Table 3-9** presents a summary of the TCEQ minimum requirements for the existing system.

Table 3-7. Service Pumping Capacity Requirements

Elevated Storage Capacity	Service Pumping Capacity Requirement[1]
> 200 gallons per connection	Two service pumps with a minimum combined capacity of 0.6 gpm per connection
< 200 gallons per connection	The lesser of (a) or (b):
	(a) Total pumping capacity of 2.0 gpm per connection
	(b) Total pumping capacity of at least 1,000 gpm and the ability to meet peak hourly demands with the largest pump out of service

[1] According to 30TAC §290.45(b)(2)(F)

Table 3-8. Pumping Facilities Summary

Pump No.	Rated Capacity		Rated Head (feet)
	(gpm)	(MGD)	
1	2,800	4.03	241
2	2,800	4.03	241
3	2,800	4.03	241
4	2,800	4.03	241
Total	**11,200**	**16.12**	-

Table 3-9. TCEQ Checklist

	Requirement	Actual	Meets TCEQ?
Elevated Storage	100 gallons per connection	303 gallons per connection	Yes
Total Storage	200 gallons per connection	666 gallons per connection	Yes
Pump Station	Two Pumps with 0.6 gpm per connection	1.02 gpm per connection	Yes

3.5 DESIGN CRITERIA

Freese and Nichols, Inc. worked with the City of Terrell to establish design criteria for future water and wastewater facilities. Criteria were developed for sizing water transmission lines, elevated storage tanks, ground storage tanks and pump stations for the water system. Design criteria for the wastewater system were established in the *2013 Wastewater Infrastructure Prioritization Phase I Report*.

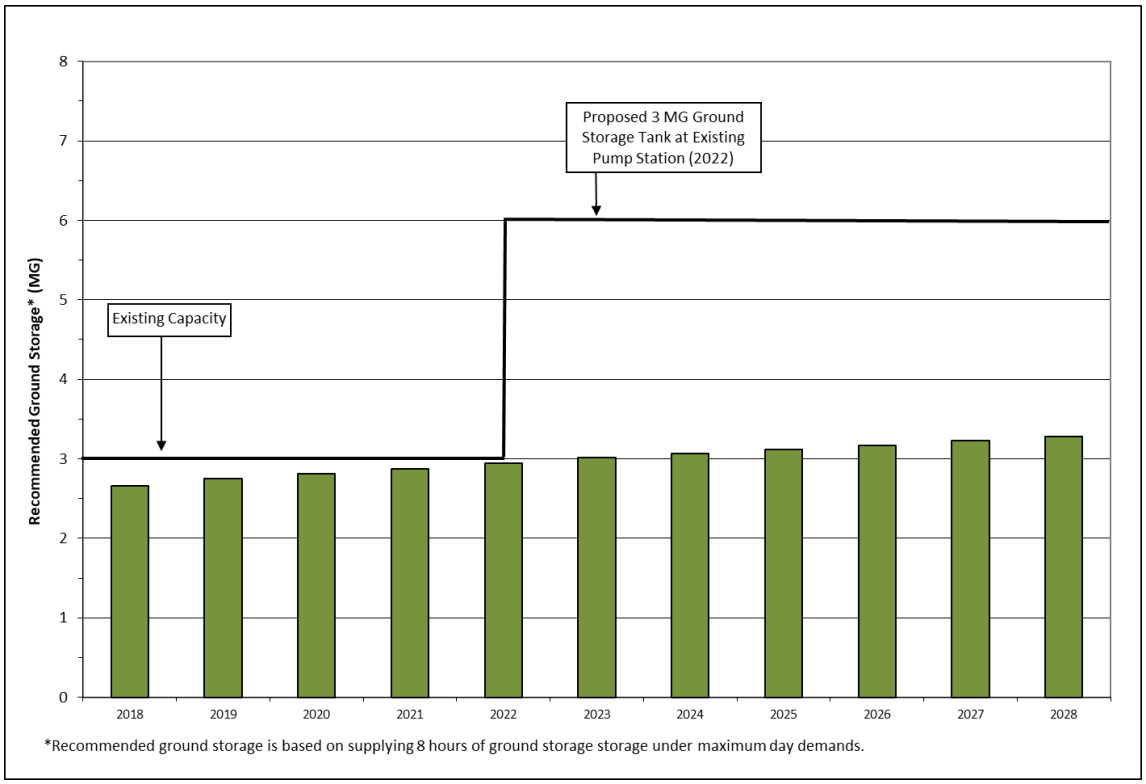
Hydraulic analysis was performed for the existing and future water systems for four operating conditions: average day, maximum day, peak hour, and maximum day with fire flow. The TCEQ required minimum pressure within a distribution system is 35 psi under normal operating conditions. Headloss and velocity in the pipelines are additional criteria used to analyze the water system. Typically, headloss in water lines should not exceed 4 feet/1000 feet, and velocities should not exceed 7 feet/second.

FNI developed criteria for sizing of storage and pumping capacity for the City. These criteria are typically more stringent than TCEQ requirements and take into consideration many additional factors including operational flexibility, fire protection, emergency reserve, and energy efficiency.

3.5.1 Storage

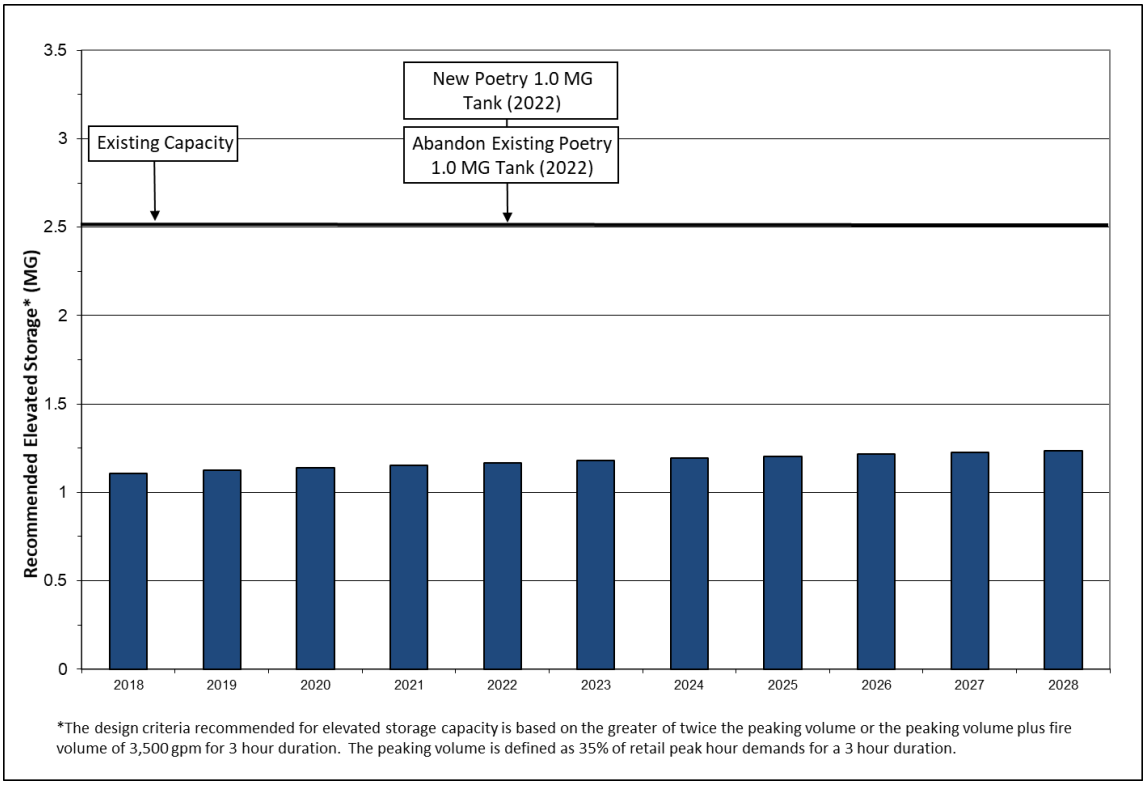
The design criteria recommended to size ground storage tank capacity is to provide adequate storage volume to meet 8 hours of maximum day demand. **Figure 3-1** summarizes the recommended ground storage capacity and associated improvements based on the design criteria. The design criteria recommended for elevated storage capacity is based on the greater of twice the peaking volume or the peaking volume plus fire volume of 3,500 gpm for 3-hour duration. The peaking volume is defined as 35% of peak hour demands for a 3-hour duration. **Figure 3-2** displays the recommended elevated storage capacity and related improvements based on the design criteria.

Figure 3-1. Recommended Ground Storage Capacity



*Recommended ground storage is based on supplying 8 hours of ground storage storage under maximum day demands.

Figure 3-2. Recommended Elevated Storage Capacity



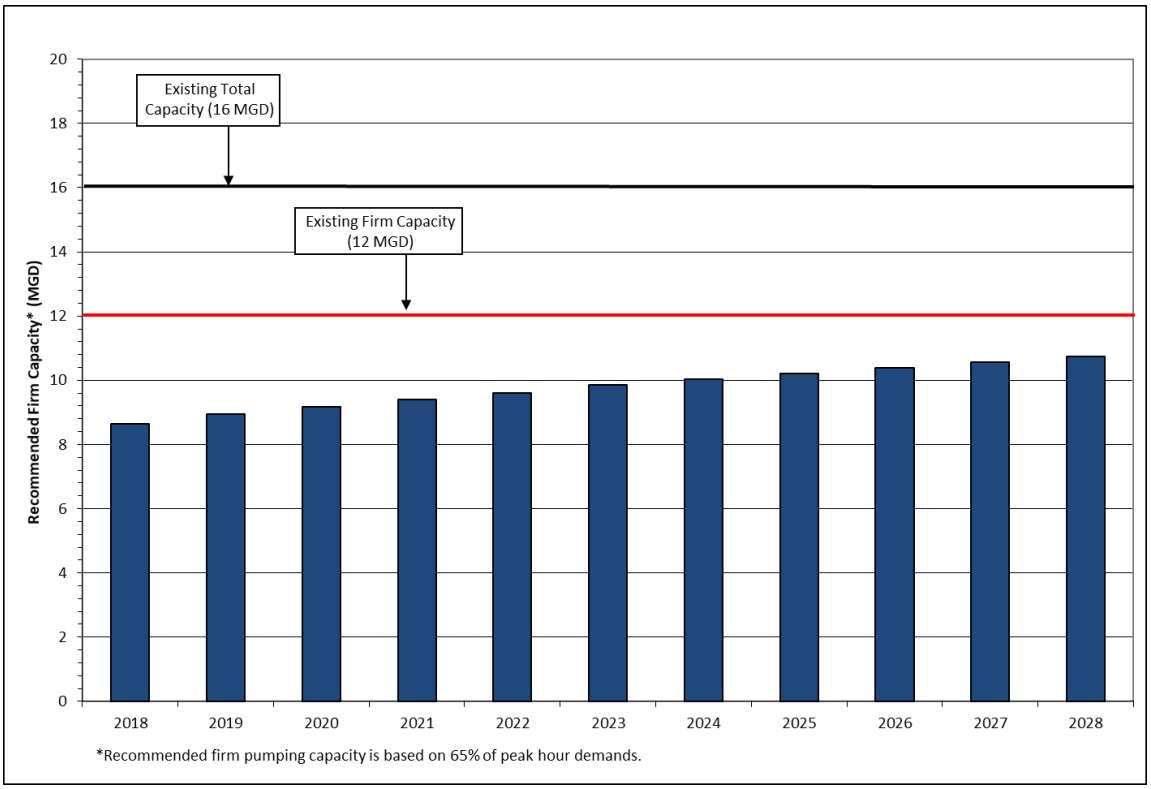
*The design criteria recommended for elevated storage capacity is based on the greater of twice the peaking volume or the peaking volume plus fire volume of 3,500 gpm for 3 hour duration. The peaking volume is defined as 35% of retail peak hour demands for a 3 hour duration.

3.5.2 Pumping

There are four existing pumps at the City of Terrell pump station supplied by North Texas Municipal Water District (NTMWD). Each pump is rated at 4 Million Gallons per Day (MGD) at 241 feet of head, and two existing pumps were installed with variable frequency drives. Therefore, the existing firm capacity of the pump station is 12 MGD, and the total capacity is 16 MGD. Two empty pump slots are available for the next expansion, which will bring the total capacity of the pump station to 24 MGD with a firm pumping capacity of 20 MGD by adding two additional 4 MGD pumps.

The design criteria recommended for pump station capacity is providing a firm pumping capacity to meet 65% of the peak hour demand. The firm pumping capacity is defined as the total available pumping capacity with the largest pump out of service, and **Figure 3-3** displays the recommended firm pumping capacity. Based on the demand projections, a pump station expansion is not recommended in the next 10 years.

Figure 3-3. Recommended Firm Pumping Capacity



3.6 WATER AND WASTEWATER SYSTEM IMPROVEMENTS

Proposed water and wastewater system projects to serve the system through 2028 were developed as part of this project based on load projections and design criteria. The proposed 10-year water system impact fee CIP is shown on **Figure 3-4**. Proposed 10-year wastewater impact fee CIP is shown on **Figure 3-5**. Detailed cost estimates for the proposed water system and wastewater system projects are included in **Appendix B** and **Appendix C**, respectively.

FIGURE 3-4

CITY OF TERRELL

WATER SYSTEM
IMPACT FEE ELIGIBLE
CAPITAL IMPROVEMENTS PLAN

LEGEND

- CIP Ground Storage Tank Improvement
- CIP Water Line Improvement
- Existing Impact Fee Eligible Pump Station
- Existing Impact Fee Eligible Ground Storage Tank
- Existing Impact Fee Eligible Elevated Storage Tank
- Existing Impact Fee Eligible Water Line
- Existing Elevated Storage Tank
- Existing NTMWD Delivery Point
- 8" and Smaller Water Line
- 10" and Larger Water Line
- Road
- Stream
- Lake
- Parcel
- W/WW Impact Fee Service Area
- City Limit
- ETJ Boundary

Terrell AMERICA

FREESE AND NICHOLS

1.0 MG Poetry Elevated Storage Tank
Overflow Elevation = 695'

0.5 MG Elevated Storage Tank
Overflow Elevation = 695'
(Out of Service)

1 Proposed 3 MG Ground Storage Tank

A 3 MG Ground Storage Tank

A' Pump Station
Firm Pumping Capacity = 12 MGD

1.5 MG South Elevated Storage Tank
Overflow Elevation = 695'

0 1,500 3,000
SCALE IN FEET

Created By:Freese and Nichols, Inc.
Job No.: TER19400
Drawing Name: P:\PLANNING\01_DES\NSRABLES\00_FINAL_REPORT\Figure_3_5\c-Water_System_IF_CIP.mxd
Updated: Thursday, January 17, 2019 2:43:25 PM
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FIGURE 3-5

CITY OF TERRELL

WASTEWATER SYSTEM IMPACT FEE ELIGIBLE CAPITAL IMPROVEMENTS PLAN

LEGEND

- Proposed Lift Station
- Proposed Wastewater Line
- Proposed Force Main
- Existing Impact Fee Eligible Wastewater Line
- Existing Impact Fee Eligible Force Main
- Lift Station
- Wastewater Treatment Plant
- Force Main
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- Road
- 10-ft Contour (Index)
- 2-ft Contour
- Stream
- Lake
- Parcel
- W/WW Impact Fee Service Area
- City Limit
- ETJ Boundary

Terrell AMERICA

FREESE NICHOLS

0 700
SCALE IN FEET

Metrocrest Lift Station
Firm Capacity = 1.0 MGD

Market Center Lift Station
Firm Capacity = 0.3 MGD
Decommission

Proposed Lift Station
Firm Capacity = 1.0 MGD

Rose Hill Lift Station
Firm Capacity = 3.0 MGD
Decommission

Industrial Blvd Lift Station

Proposed Bachelor Creek Lift Station
Firm Capacity = 6.0 MGD

King's Creek WWTP
Firm Capacity = 4.5 MGD

0 1,500 3,000
SCALE IN FEET

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3.7 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 2018 and 2028. Capacity serving existing development and development projected for more than 10 years in the future cannot be charged to impact fees.

3.7.1 Eligible CIP Costs

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 3-10** and **Table 3-11**. Costs listed for the existing projects are based on actual design and construction costs provided by the City. **Table 3-10** and **Table 3-11** show 2018 percent utilization as the portion of a project's capacity required to serve existing development. It is not included in the impact fee analysis. The 2028 percent utilization is the portion of the project's capacity that will be required to serve the City of Terrell in 2028. The 2018-2028 percent utilization is the portion of the project's capacity required to serve development from 2018 to 2028. The water and wastewater hydraulic models were used to assist in the calculation of project utilization percentages. The portion of a project's total cost that is used to serve development projected to occur from 2018 through 2028 is calculated as the total actual cost multiplied by the 2018-2028 percent utilization. Only this portion of the cost is used in the impact fee analysis.

Table 3-10. Water System Impact Fee Eligible Project Summary

No.	Description of Project	Percent Utilization			Costs Based on 2018 Dollars	
		2018[1]	2028	2018-2028	Capital Cost	10-Year (2018-2028)
EXISTING						
A	Pump Station and 3.0 MG GST	90%	100%	10%	$4,900,000	$490,000
B	30"/24"/20"/16" Water Lines between Pump Station and Poetry EST	90%	100%	10%	$2,300,000	$230,000
C	20" Water Line Southeast of the Pump Station and North of IH-20	60%	85%	25%	$2,800,000	$700,000
D	20" Water Line in Downtown Area	84%	100%	16%	$575,000	$92,000
E	20" Water Line and 1.5 MG EST	15%	25%	10%	$4,500,000	$450,000
F	16" Water Line North of IH-20 to Supply Crossroads Phase 1B	5%	20%	15%	$332,000	$49,800
G	Impact Fee Study (2018-2019)	0%	100%	100%	$46,000	$46,000
Existing Project Sub-total					**$15,453,000**	**$2,057,800**
PROPOSED						
1	3 MG GST Construction	0%	10%	10%	$3,812,300	$381,230
2	16-inch Water Pipeline Construction	0%	20%	20%	$5,734,900	$1,146,980
3	16-inch Water Pipeline Construction	0%	10%	10%	$932,900	$93,290
4	12-inch Water Pipeline Construction	10%	20%	10%	$932,900	$93,290
5	16-inch Water Pipeline Construction	0%	20%	20%	$1,130,300	$226,060
Proposed Project Sub-total					**$12,543,300**	**$1,940,850**
Total Capital Improvements Cost					**$27,996,300**	**$3,998,650**

[1]Utilization in 2018 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 3-11. Wastewater System Impact Fee Eligible Project Summary

No.	Description of Project	Percent Utilization			Costs Based on 2018 Dollars	
		2018[1]	2028	2018-2028	Capital Cost	10-Year (2018-2028)
EXISTING						
A	36" Gravity Main	17%	21%	4%	$2,200,000	$88,000
B	30" Gravity Main	16%	20%	4%	$525,000	$21,000
C	10"/12"/15" Wastewater Main Replacement	60%	92%	32%	$650,000	$208,000
D	Impact Fee Study (2018-2019)	0%	100%	100%	$42,000	$42,000
Existing Project Sub-total					**$3,417,000**	**$359,000**
PROPOSED						
1	30-inch WW Bachelor Creek (to Colquitt)	16%	20%	4%	$3,628,600	$145,144
2	24-inch WW Upper Bachelor Creek	18%	22%	4%	$1,641,200	$65,648
3a	10-inch and 12-inch WW N. Blanche & Delphine	60%	92%	32%	$662,400	$211,968
3b	10-inch WW in North Alley	62%	92%	30%	$747,300	$224,190
3c	10-inch WW in South Alley	62%	92%	30%	$864,300	$259,290
4a	12-inch WW in Esmt from N. Blanche to N. Adelaide	62%	92%	30%	$604,500	$181,350
4b	10-inch WW Heath & N. Rockwall	62%	92%	30%	$776,900	$233,070
4c	10-inch WW in Griffith	62%	92%	30%	$965,700	$289,710
5a	12-inch WW in State from N. Blanche to N. Virginia	62%	92%	30%	$772,200	$231,660
5b	10-inch and 12-inch WW Langwith to Damon	62%	92%	30%	$697,400	$209,220
5c	10-inch WW KC Tributary to Jerry Drive	62%	92%	30%	$678,600	$203,580
6	New 6 MGD Lift Station, 36-inch Bachelor Creek Interceptor, 20-inch Wastewater Force Main Construction, and Decommissioning of Rose Hill Lift Station	25%	40%	15%	$18,090,200	$2,713,530
7	15-inch Gravity Mains, Proposed 1.0 MGD Lift Station, and 8-inch FM	20%	60%	40%	$4,426,600	$1,770,640
Proposed Project Sub-total					**$34,555,900**	**$6,739,000**
Total Capital Improvements Cost					**$37,972,900**	**$7,098,000**

[1]Utilization in 2018 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.

3.7.2 Service Units

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 connection for a single-family residence. The City of Terrell does not directly meter wastewater flows and bills for wastewater services based on the customer's water consumption. Therefore, a wastewater service unit is defined as the wastewater service provided to a customer with a water 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 C708 (Cold Water Meters – Multi-jet Type), C701 (Cold Water Meters – Class I Turbine Type), and C702 (Cold Water Meters – Compound Type) were used to determine the safe maximum operating capacity. The service unit equivalent for each meter size used by the City is listed in **Table 3-12**.

Typically, in Terrell, single-family residences are served with a 3/4-inch water meter. 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 as of December 2018. **Table 3-13** shows the water and wastewater service units for 2018 and the projected service units for 2028.

Table 3-12. Service Unit Equivalencies

Meter Size	Meter Type	Safe Maximum Operating Capacity (gpm)	Service Unit Equivalent
3/4”	Multi-Jet	25	1.0
1”	Multi-Jet	35	1.4
1-1/2”	Multi-Jet	70	2.8
2”	Compound	160	6.4
3”	Compound	320	12.8
4”	Compound	500	20.0
6”	Compound	1,000	40.0
8”	Compound	1,600	64.0
10”	Compound	2,300	92.0
10”	Turbine	2,900	116.0
12”	Turbine	4,300	172.0

Table 3-13. Water and Wastewater Service Units

Meter Size	2018 Meters	2018 Service Units	2028 Meters	2028 Service Units	Growth in Service Units
3/4”	4,971	4,971	6,486	6,486	1,515
1”	318	445	415	581	136
1-1/2”	161	451	193	540	89
2”	195	1,248	234	1,498	250
3”	22	281	26	333	51
4”	20	400	24	480	80
6”	8	320	10	400	80
8”	2	128	2	128	0
Total	**5,697**	**8,245**	**7,390**	**10,446**	**2,201**

3.7.3 Maximum Impact Fee Calculations

Texas Government Code Section 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. Section 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 Terrell 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. **Table 3-14** displays the maximum allowable impact fee for water and wastewater by meter size.

Water Impact Fee:

Total Capital Improvement Costs	$3,998,650
Financing Costs	+ $1,375,201
Total Eligible Costs	$5,373,851
Growth in Service Units	2,201

Maximum Water Impact Fee	= Total Eligible Costs/Growth in Service Units
	= $5,373,851 / 2,201
	= $2,442 per Service Unit
Maximum Allowable Water Impact Fee	= Maximum Impact Fee – Credit (50%)
	= $2,442 - $1,221
	= **$1,221 per Service Unit**

Wastewater Impact Fee:

Total Capital Improvement Costs	$7,098,000
Financing Costs	+ $2,441,118
Total Eligible Costs	$9,539,118
Growth in Service Units	2,201

Maximum Wastewater Impact Fee	= Total Eligible Costs/Growth in Service Units
	= $9,539,118 / 2,201
	= $4,334 per Service Unit
Maximum Allowable Wastewater	= Maximum Impact Fee – Credit (50%)
Impact Fee	= $4,334 - $2,167
	= **$2,167 per Service Unit**

Table 3-14. Maximum Allowable Impact Fees by Meter Size

Meter Size	Meter Type	Service Unit Equivalent	Water Impact Fee[(1)]	Wastewater Impact Fee[(1)]	Water and Wastewater Total Impact Fee[(1)]
3/4”	Multi-Jet	1.0	$1,221	$2,167	$3,388
1”	Multi-Jet	1.4	$1,709	$3,034	$4,743
1-1/2”	Multi-Jet	2.8	$3,419	$6,068	$9,486
2”	Compound	6.4	$7,814	$13,869	$21,683
3”	Compound	12.8	$15,629	$27,738	$43,366
4”	Compound	20.0	$24,420	$43,340	$67,760
6”	Compound	40.0	$48,840	$86,680	$135,520
8”	Compound	64.0	$78,144	$138,688	$216,832
10”	Compound	92.0	$112,332	$199,364	$311,696
10”	Turbine	116.0	$141,636	$251,372	$393,008
12”	Turbine	172.0	$210,012	$372,724	$582,736

[(1)] Based on maximum allowable water and wastewater impact fees.

4.0 ROADWAY IMPACT FEE ANALYSIS

4.1 METHODOLOGY

Chapter 395 of the Texas Local Government code prescribes the technical requirements for the update of roadway impact fees. To meet this mandate, the following work tasks were undertaken and described below.

- Roadway service areas were updated to address annexations that had occurred by the City since the 2014 update. This included the addition of a new service area in the western region to capture the Brushy Creek area.
- Land use assumptions detailing population and employment growth by service area were used as a basis to derive projected growth over the ten-year planning period 2018-2028. Land use assumptions were prepared by the City Planning Department.
- The vehicle-mile of travel during the PM peak hour was retained as the appropriate service unit for measuring capacity and system utilization for the impact fee calculation. Capacity was based on values developed by the North Central Texas Council of Governments (NCTCOG) for level of service "C" operations.
- A roadway conditions inventory of major roadways within Terrell was conducted to update lane geometrics and segment lengths. New collector and/or arterial streets not previously classified were added to the program database. The existing roadway network was evaluated by service area based on updated traffic volume count information, collected in September 2018, to determine roadway capacity, current utilization, and deficiencies, if present. Traffic count data (PM peak hour directional volume) was collected at ten (10) locations throughout the city as part of this update and supplemented with data from the City from other studies.
- New vehicle-miles of demand (over a 10-year planning period) was calculated for each service area based on net growth of population and employment (service area) supplemented with service unit generation data from the land use equivalency table which was updated for the latest trip rate and trip length data.
- A capital improvements plan was prepared based on projected growth needs, traffic patterns and input from the Capital Improvements Advisory Committee (CIAC) and City Staff. The impact fee capital improvements plan identifies specific projects, associated limits, roadway sizing and functional class (arterial and collector class facilities) per the official City Thoroughfare Plan, and associated cost for facility implementation. Project costs include construction, engineering, right-of-way acquisition and debt service. Updated costs were prepared for all projects based on recent historic unit costs provided by the City and Freese and Nichols. For recoupment projects, data of actual costs were provided by the City. Costs for study updates are eligible for impact fee recovery and were included in the total project cost. The capital improvements plan identifies service units

of capacity provided, capacity utilized (based on current traffic volume counts) and excess capacity by project and service area.

- As a prelude to program update process, the capacity provided by the impact fee CIP was evaluated to ensure excess capacity remained in the system for consideration for impact fees. The evaluation revealed all previously identified projects to currently contain sufficient excess capacity and were therefore retained.
- The cost of capacity supplied, cost attributable to new development, and the maximum cost per service unit were calculated for each service area. Per Chapter 395, a credit of 50% was applied to the overall cost of the capital improvements program for use in the cost per service unit calculation.
- Examples for calculating impact fees were prepared based upon specific uses and the land use vehicle-mile equivalency table.

4.2 ROADWAY IMPACT FEE SERVICE AREAS

Service areas are required by State Law to define the area served by the Roadway Capital Improvements. Chapter 395 requires that service areas be defined for impact fees to ensure that facility improvements are located in proximity to the area that is generating the need. Legislation requires that roadway service areas be limited to a six-mile maximum and must be located within the current city limits. Roadway service areas can be different from other impact fee service areas, which can include a water or sewer CCN's (Certificate of Convenience and Necessity) or the Extra-Territorial Jurisdiction (ETJ). This difference is primarily due to roadway systems being "open" to both local and regional use as opposed to a defined limit of service that is provided with water and wastewater systems. 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.

The service area structure was amended to include recent annexations by the city. This led to the addition of the "Brushy Creek" service area which captures new annexations on the western segment of the City. All portions of the revised service area structure fall within the six-mile requirements. **Figure 4-1** illustrates the roadway service areas for the City of Terrell.

FIGURE 4-1

CITY OF TERRELL

ROADWAY SERVICE AREAS

LEGEND

- East
- West
- Brushy Creek

Terrell AMERICA

FREESE AND NICHOLS

0 4,800

SCALE IN FEET

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4.3 ROADWAY IMPACT FEES LAND USE ASSUMPTIONS

Chapter 395 requires that land use assumptions and capital improvements plan be updated at least every five (5) years. Land use assumptions provide the basis and structure for determining impact fees attributed to future growth and development. For the system update, service unit generation was based on population and employment growth over the planning period. Population data presented earlier (refer to **Section 2**) identified a 10-year growth of 5,400 persons between 2018 and 2028 and represents an average annual growth rate of about 2.7 percent. Based on Census data of 2.76 persons per dwelling unit, this rate represents an increase of 1,956 dwelling units over the planning period. With the city divided into three services areas, population data was allocated to each service area based planning areas from **Section 2**. **Table 4-1** details the breakout of population data by service area.

Employment data was obtained from estimates by NCTCOG and information from the City's Planning Department. Data by work type – basic, service and retail – was used to estimate service unit generation of non-residential growth within the City. The estimated employment for the city in 2018 and 2028 is 15,028 and 18,028 persons, respectively and represents an average annual growth rate of about 1.2% per year. **Table 4-2** details the breakout of employment data by work component and total for service areas.

Table 4-1. Ten Year Population Projections by Service Area

Year	Population	Service Area Population		
		West	East	Brushy Creek
2018	17,400	8,501	8,899	0
2028	22,800	11,403	11,397	0
Total Added	5,400	2,902	2,498	0
Dwelling Units Added	1,956	1,051	905	0

Note: Data depicted as Persons

Table 4-2. Ten Year Employment Projections by Service Area

Year	Employment	Service Area Population		
		West	East	Brushy Creek
2018	15,028	7,323	7,681	0
2028	18,028	9,588	8,416	0
Total Added	3,000	2,265	735	0
Basic	*1,047*	*680 (30%)*	*367 (50%)*	*0*
Service	*1,126*	*905 (40%)*	*221 (30%)*	*0*
Retail	*827*	*680 (30%)*	*147 (20%)*	*0*

Note: Data depicted as Persons

4.4 ROADWAY CAPITAL IMPROVEMENT PLAN

Chapter 395 of the Texas Local Government Code specifies the requirements necessary to prepare an impact fee capital improvements plan. These requirements include:

- A description of the existing capital improvements within the service area and the cost to upgrade, update, improve, expand or replace the improvements to meet existing needs and usage.
- An analysis of the total capacity, the level of current usage, and commitments for usage of capacity of the existing capital improvements.
- A description of all or the parts of the capital improvements and their costs necessitated by and attributable to new development in the service area based on approved land use assumptions.
- A definitive table establishing the specific level or quantity of use, consumption, generation, or discharge of service unit for each category of capital improvements and an equivalency table establishing the ratio of the service unit to various types of land uses, including residential, commercial, and industrial.
- The total number of projected service units necessitated by and attributable to new development within the service area based on the approved land use assumptions
- The projected demand for capital improvements required by the new service units projected over a reasonable period of time.
- A plan for awarding a credit for the portion of the ad valorem tax generated by new service units during the program period used for the payment of improvements or a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan.

The plan must contain two distinct components: analysis of existing conditions and analysis of projected conditions. To analyze these components, two measures of performance have been established and include both level-of-service and service units.

4.5 ROADWAY LEVEL-OF-SERVICE

Level-of-Service (LOS) is a traffic engineering term that describes operational conditions and performance of the roadway system. Roadway level-of-service is the basic design criterion used in thoroughfare planning. The design level-of-service determines the capacity for which the roadway is intended. Level-of-service is rated from "A" to "F". The higher level of service (A-B) provides better driving conditions but requires higher construction cost. Level of Service "E" is generally considered to be the capacity limit of urban roadways. Level of Service "C" is the design level-of-service selected for the Impact Fee Analysis, which corresponds to the design level of the Thoroughfare Plan for the City of Terrell. **Table 4-3** lists the maximum service volumes for level-of-service "C" as a function of facility type.

Table 4-3. Roadway Facility Vehicle-Mile Capacities

Roadway Facility	Roadway Type	Capacity "LOS C" Vehicles per hour per lane-mile of Roadway Facility
Divided Arterials	DA	470
Undivided Arterials	UA	425
Divided Collector	DC	375
Undivided Collectors	UC	340

4.6 ROADWAY IMPACT FEE SERVICE UNITS

An accurate service unit is required to calculate and assess impact fees for new developments. As defined in Chapter 395, "Service unit means a standardized measure of consumption, use, generation, or discharge attributed to an individual unit of development calculated in accordance with generally accepted engineering or planning standards based on historical data and trends applicable to the political subdivision in which the individual unit of development is located during the previous 10 years." The service unit is, essentially, a measure of supply and demand.

The service unit must accurately reflect the supply provided by the roadway system. Transportation facilities are designed to accommodate peak hour traffic volumes because the heaviest demand for the roadway capacity occurs during the peak hour. These peak hours typically occur during the morning (AM peak) and evening (PM peak) rush hours as motorist travel to and from work. The impact fee system for the City of Terrell is based on the PM peak hour. The unit of measurement for supply is the service volume provided by a lane-mile (lane-miles) of roadway facility. This number is also the capacity of the roadway based on an acceptable level-of-service, in this case LOS "C".

The service unit must also reflect the demand that a particular development will place on the transportation system. The impact of the development to the street system is directly related to the trips generated by development, land-use for which the development is intended, and the average length of each trip on the transportation system.

Service units create a link between supply (roadway projects) and demand (new development). Both supply and demand 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. Thus, the service unit for roadway impact fees is the vehicle-mile.

4.7 ROADWAY EXISTING CONDITIONS ANALYSIS

An inventory of major roadway facilities was conducted to determine existing conditions throughout Terrell. This analysis determines the capacity provided by the existing roadway system, the demand currently placed on the system, and the existence of any deficiencies on the system. Data for the inventory was obtained from field reconnaissance, traffic volume counts, the City Thoroughfare Plan and City Staff.

4.7.1 Existing Traffic Volumes

Existing directional PM peak hour volumes were obtained from automated traffic counts conducted by during September 2018 and supplemented with information from the City on recent studies with traffic counts. Automated traffic counts at ten (10) separate locations were collected on major roadways (as identified in the Thoroughfare Plan as arterial or collector status) throughout the city. For segments not counted, estimates were developed based on peaking characteristics of area roadways or data from adjoining roadway counts. 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 E** as part of the existing capital improvements database.

4.7.2 Vehicle-Miles of Existing Capacity (Supply)

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

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

For example: A 4-lane divided roadway that is 3 miles in length and has a capacity of 470 vehicles per hour per lane:

Vehicle-Miles = 470 vehicles per hour x 4 lanes x 3 miles = 5,640 veh-miles per hour. (Capacity)

A summary of existing capacity for the two service areas is illustrated in **Table 4-4**. It is important to note that the roadway capacity depicted in **Table 4-4** is system-wide for most major roadways and not restricted to those roadways proposed in the impact fee capital improvements plan. For a detailed listing of vehicle-miles of capacity by roadway segment, refer to **Appendix F**.

4.7.3 Vehicle-Miles of Demand

The vehicle-miles of existing demand or the current usage of the facilities for each roadway segment was obtained using the equation below:

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

For example: A 3-mile long roadway that carries a PM peak hour volume of 500 vehicles per hour:

Vehicle-Miles = 500 vehicles per hour x 3 miles = 1,500 vehicle-miles per hour. (Demand)

A summary of the existing demand for the service areas is illustrated in **Table 4-4**. A complete detailed listing by roadway segment and service area is provided in **Appendix E**.

Table 4-4. Existing Capacity and Demand

Service Area	Capacity (Supply) (Veh-Miles per Hour)	Demand (Veh-Miles per Hour)
West	27,685	17,101
East	20,636	10,985
Brushy Creek	0	0
Total	48,312	28,086

4.7.4 Vehicle-Miles of Existing Excess Capacity or Deficiencies

For each roadway segment, the existing vehicle-miles of excess capacity and/or deficiencies were calculated. Each direction was evaluated to determine if vehicle demands exceeded the available capacity. If demand exceeded capacity in one or both directions, the deficiency is deducted from the supply associated with the impact fee capital improvement plan. A summary of existing excess capacity and/or deficiencies for each service area is illustrated in **Table 4-5**. A complete detailed listing by roadway segment and service area is provided in **Appendix E**.

Table 4-5. Excess Capacity and Deficiencies

Service Area	Excess Capacity (Veh-Miles per Hour)	Deficiencies (Veh-Miles per Hour)
West	12,093	1,110
East	9,705	54
Brushy Creek	0	0
Total	21,798	1,164

4.8 PROJECTED CONDITIONS ANALYSIS

Chapter 395 of the Texas Local Government Code requires a description of all capital improvements and their cost attributable to new development within the service area. To determine the cost attributable to new development the following information needs to be calculated or supplied: future land use assumptions, vehicle-miles of new demand, a capital improvement plan, vehicle-miles of new capacity supplied by the capital improvements plan and the costs for the roadway improvements.

The recommended service unit for assessing impact fees of new development on roadway facilities is a combination of the trips generated (vehicles) by the new development during the peak hour and the average trip length (miles) of each trip. The following section describes the methodology used in developing service units for new developments.

4.8.1 Trip Generation

Trip generation rates are used to determine the number of vehicles added to the roadway system as a result of new development. The trip generation rates were developed for the PM peak weekday period. The trip generation rates were established using the Institute of Transportation Engineers *Trip Generation Manual, 10th edition*.

Adjustments to the trip generation rates are necessary to reflect the differences between driveway volumes and the total amount of traffic added to the roadway system. The actual "traffic impact" of the new development is based only on the traffic added to the adjacent roadways. The actual traffic added to the adjacent roadways is determined by adjusting the driveway volumes to account for pass-by trips, diverted trips, and internal trips.

- Pass-by trips – trips attracted to a development from traffic that would otherwise pass-by the site on an adjacent roadway. For example, a stop at a convenience store on the way from the office to home is a pass-by trip for the convenience store. The trip does not create an additional burden on the street system and therefore should not be double-counted. The burden of this type should be assigned to the office and/or residence.
- Diverted trips – trips that are already on the roadway system and are diverted to the roadway system serving the new development. For example, a trip from home to work along Rose Hill Road would be a diverted trip if the travel path was changed to State Highway 34 for the purpose of stopping at the cleaners. On a system-wide basis, this trip also does not add a significant additional burden to the street system and, therefore, is not considered in assessing impact fees.

- Internal trips – trips that would typically be made in a mixed-use development between two uses within the development, not utilizing a thoroughfare outside the development for that trip. For example, a trip between an office building and a restaurant contained within the same site would be considered and internal trip and does not create any additional burden on the roadway system.

4.8.2 Trip Length

Trip lengths in miles will be used in conjunction with site trip generation to establish the vehicle-miles of travel (the service unit to be used for assessing impact fees). As with trip generation, trip lengths are used in the development of travel forecasting models for use in assessing roadway needs, as well as for assessing impact fees. As previously stated, Chapter 395 of the Texas Local Government Code limits the average trip length to six miles. Each trip has an origin and destination, half of the trip length will be assigned to the origin and half of the trip length will be assigned to the destination. Therefore, the average trip length for a development is half the total trip length, allowing the maximum total trip length under state law to be six miles. The trip length data used in this report was based on the 2017 National Household Travel Survey (NHTS) and geographic information from the City of Terrell estimating trip lengths for major land use categories based on the land use plan.

4.8.3 Projected Growth and Vehicle-Miles of New Demand

Projected vehicle-miles of demand were calculated based on the growth expected to occur during the 10-year planning period and the service unit generation for each of the population and employment data components (basic, service and retail). Separate calculations were performed for each data component and were then aggregated for the service area. Vehicle-miles of demand for population growth were based on dwelling units and vehicle-miles of demand for employment were based on the number of employees and estimates of square footage per employee.

A summary of the vehicle-miles of new demand for each service area is illustrated in **Table 4-6**. A complete detailed listing by service area is provided in **Appendix F**.

Table 4-6. Projected Vehicle-Miles of New Demand

Service Area	Projected Vehicle-Miles of New Demand
West	12,687
East	6,113
Brushy Creek	0
Total	18,800

4.8.4 Capital Improvements Plan (CIP)

The capital improvements plan includes roadway improvements by service area that are needed to accommodate growth based on the adopted land use assumptions and vehicle-miles of travel for various types of land uses. The impact fee CIP can only contain roadways included on the City's Thoroughfare Plan and classified as arterial or collector status facilities.

At the outset of the update process, capacity provided by the CIP was evaluated to ensure sufficient excess capacity remained in the system for consideration for impact fees. Based on updated traffic volume data collected in September 2018, all existing projects were found to have sufficient remaining capacity and therefore could be retained in the impact fee system.

Projects in the impact fee CIP include both "new" and "recoupment" projects. "Recoupment" projects are those projects recently constructed and still containing excess capacity. Updated cost estimates were prepared for projects in the impact fee program. Updated unit costs were based on historical costs of projects within the City as well data from other recently constructed projects. The following costs were included in the preparation of the 10-year CIP program; construction, surveying and engineering (12.5% of construction), right-of-way acquisition ($.50-$2.50 per square foot), debt service (3% compounded annually over 10-years) and study update costs (two 5-year updates at $35,000 each). Cost data for recoupment projects was provided by the city. Project recoupment considers only costs incurred by the City. Cost contributions from other sources were excluded from consideration, including expected TxDOT contributions for state facilities.

Table 4-7 lists the roadway impact fee capital improvement projects and associated raw costs and **Figure 4-2** illustrates these projects. The cost of the updated impact fee program is $70.0M. When considering the state mandated credit (50%), the cost of the CIP totals $35.0M. A detailed Engineer's Opinion of Probable Construction Cost for each roadway is provided in **Appendix G**.

Table 4-7. 2018 Roadway Impact Fee Capital Improvements Plan

Proj No.	Serv Area	Shared Svc Area	Project Type	Roadway	From	To	Length (mi)	No. of Lanes	Type	Roadway Costs: Engineering	ROW	Construction	Finance	Total Project Cost
1	W		N	Windsor Avenue	Rosehill Road	Rockwall Street	0.41	4	DC	$ 228,600	$ 214,800	$ 1,828,900	$ 270,400	$ 2,542,700
2	W		N	Windsor Avenue	Rockwall Street	FM 2578	0.37	2	DC	$ 111,500	$ 98,600	$ 892,100	$ 131,100	$ 1,233,300
3	W		N	Bradshaw Street	Moore Avenue	Frazier Street	0.52	4	DA	$ 391,300	$ 209,800	$ 3,130,400	$ 444,000	$ 4,175,500
4	W		N	Bradshaw Street	Frazier Street	Rosehill Road	0.68	4	DA	$ 453,800	$ 429,800	$ 3,630,500	$ 537,100	$ 5,051,200
5	W		N	Rosehill Road	500' W. of Lincoln Ln	S. City Limits	1.04	6	DA	$ 1,234,800	$ 658,800	$ 7,448,400	$ 1,111,600	$ 10,453,600
6	W		N	West End Street	FM 148	Bradshaw Street	0.76	2	UA	$ 370,100	$ 282,100	$ 2,960,800	$ 429,900	$ 4,042,900
7	W		N	West End Street	Bradshaw Street	Ann Street	0.40	2	UA	$ 185,500	$ 155,000	$ 1,484,300	$ 217,100	$ 2,041,900
8	W		N	Colquitt Road	SH 205	Lovers Lane	0.34	2	UA	$ 171,100	$ 36,200	$ 1,368,800	$ 187,500	$ 1,763,600
9	W		N	Lovers Lane	Colquitt Road	Griffith Avenue	0.41	3	SC	$ 172,000	$ -	$ 1,375,600	$ 184,100	$ 1,731,700
10	W		N	Griffith Avenue	Carl Lee Circle	Lovers Lane	0.27	2	UC	$ 112,500	$ -	$ 900,300	$ 120,500	$ 1,133,300
11	W		N	New Collector	Griffith Avenue	Town N Extension	0.90	2	DC	$ 373,200	$ 379,600	$ 2,985,700	$ 444,800	$ 4,183,300
12	W		N	Town North Drive	New Collector	FM 986/Poetry Road	0.22	2	DC	$ 89,800	$ 94,000	$ 718,300	$ 107,300	$ 1,009,400
13	W		N	Las Lomas Parkway	N. City Limits	Apache Trail	0.47	4	DA	$ 839,800	$ 296,900	$ 6,718,100	$ 934,700	$ 8,789,500
14	W		N	SH 205	Moore Avenue	Colquitt Road	1.17	4	DA	$ 841,300	$ 61,900	$ -	$ 107,400	$ 1,010,600
15	W		N	Lions Club Lane Ext	Ex. Lions Club Lane	SH 205	0.42	3	SC	$ 173,900	$ 133,100	$ 1,391,400	$ 202,100	$ 1,900,500
Sub-Total Service Area West							**8.38**			**$ 5,749,200**	**$ 3,050,600**	**$ 36,833,600**	**$ 5,429,600**	**$ 51,063,000**
16	E		N	Windsor Avenue	FM 2578	Home Depot	0.28	4	DC	$ 155,300	$ 145,200	$ 1,242,100	$ 183,500	$ 1,726,100
17	E		R	Windsor Avenue	Home Depot	SH 34	0.23	4	DC	$ -	$ -	$ 980,099	$ -	$ 980,099
18	E		N	Town North Drive	Frances Street (SH 34)	Callie St (SH 34)	0.45	2	DC	$ 182,400	$ 192,100	$ 1,459,500	$ 218,200	$ 2,052,200
19	E		R	SH 34	Virginia St. (SH 34)	US 80	0.76	4	DA	$ 500,000	$ 120,000	$ 880,000	$ -	$ 1,500,000
20	E		R	SH 34	US 80	N. City Limits	1.48	4	DA	$ 75,000	$ -	$ 675,000	$ -	$ 750,000
21	E		R	British Flying School Blvd.	SH 34	Airport	0.42	2	DC	$ 85,000	$ -	$ 1,203,568	$ -	$ 1,288,568
22	E		N	Rochester Street	Virginia St. (SH 34)	US 80	0.80	2	UA	$ 450,300	$ 420,100	$ 3,602,700	$ 532,200	$ 5,005,300
23	E		N	FM 429 (realignment)	US 80	Ex. FM 429 (N)	0.60	2	UA	$ 332,900	$ 379,200	$ -	$ 84,700	$ 796,800
24	E		N	CR 309/Wilson Rd	@IH-20 Interchange		0.57	4	DA	$ 732,700	$ 240,800	$ -	$ 115,800	$ 1,089,300
25	E		N	New Collector	British Flying School Blvc	IH-20 Frontage Road	0.83	2	DC	$ 333,600	$ 352,400	$ 2,668,500	$ 399,100	$ 3,753,600
Sub-Total Service Area East							**6.42**			**$ 2,847,200**	**$ 1,849,800**	**$ 12,711,467**	**$ 1,533,500**	**$ 18,941,967**
Sub-Total Service Area Brushy Creek							**0.00**			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Totals:										***$ 8,596,400***	***$ 4,900,400***	***$ 49,545,067***	***$ 6,963,100***	***$ 70,004,967***

Summary:

Engineering Cost	$8,596,400
Right-of-Way Cost	$4,900,400
Construction Cost	$49,545,067
Finance Cost	$6,963,100
TOTAL NET COST	$70,004,967
Future Impact Fee Update Cost	$70,000
TOTAL IMPLEMENTATION COST	$70,074,967
50% Percent Credit	$35,037,484

Notes:

DA - Divided Arterial
UA - Undivided Arterial
SA - Special Arterial with two-way left turn lane (TWLTL)
DC - Divided collector
UC - Undivided Collector
SC - Special Collector with two-way left turn lane (TWLTL)

Project Type

N - New Project
R - Recoupment Project

FIGURE 4-2

CITY OF TERRELL

ROADWAY CIP PROJECTS

LEGEND

Project Type	
New	East
Recoup	West
	Brushy Creek

Terrell AMERICA

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0 4,800

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4.8.5 Projected Vehicle-Miles of New Capacity (Supply)

The vehicle-miles of new capacity supplied for each service area is provided in **Table 4-8**. A complete detailed listing by roadway segment and service area is provided in **Appendix H**.

Table 4-8. Projected Vehicle-Miles of New Capacity (Supply)

Service Area	Vehicle-Miles of New Capacity (Supply)
West	12,084
East	8,509
Brushy Creek	0
Total	20,593

4.8.6 Vehicle-Miles of Existing Demand on CIP Roadways

The vehicle-miles of existing demand on CIP roadways is provided in **Table 4-9**. A complete detailed listing by roadway segment and service area is provided in **Appendix H**.

Table 4-9. Vehicle-Miles of Existing Demand on CIP Roadways

Service Area	Vehicle-Miles of Existing Demand
West	1,949
East	2,053
Brushy Creek	0
Total	4,002

4.8.7 Maximum Cost per Service Unit

The calculation of the cost per service unit involves the calculation of the total cost of the net capacity supplied and the net capacity supplied by the CIP after existing demand and deficiencies are removed.

Where net capacity supplied is greater than the new 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 the 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 cost of the CIP that is

being provided is essentially distributed over the vehicle-miles of demand generated in the 10-year window.

Table 4-10 lists the results of the cost per service unit calculation by service area. The actual cost per service unit was calculated to be $3,008.00 and $2,228.00 for West and East service areas, respectively and was based on the total cost of net capacity supplied by the CIP and the demand attributable to new development over the 10-year planning period. State legislation requires that a credit for the portion of ad valorem tax revenues generated by improvements over the program period, or a credit equal to 50% of the total projected cost of implementing a roadway impact fee capital improvements program be given. Based on a 50% credit, the maximum allowable cost per service is $1,504.00 and $1,114.00 for West and East service areas, respectively.

The Brushy Creek service area does not have any expected projects or growth, so no impact fee cost is calculated for this service area. A summary of the cost per service unit calculation by service area is provided in **Appendix I**.

Table 4-10. Calculation of Maximum Impact Fees (with State Mandate of 50% Credit)

Line #		West Service Area	East Service Area	Brushy Creek Service Area
1	Total Veh-Miles of Capacity Added by the CIP	12,084	8,509	0
	(Projected Veh-Miles of New Capacity - **Table 4-8**)			
2	Total Veh-Miles of Existing Demand on CIP Roads	1,949	2,053	0
	(Veh-Miles of Existing Demand on CIP Roadways - **Table 4-9**)			
3	Total Veh-Mile of Existing Deficiencies on Existing Roads	1,110	54	0
	(Excess Capacity and Deficiencies - Table **4-5**)			
4	Net Amount of Veh-Mile Capacity Added	9,025	6,402	0
	(Line #1 - Line #2 - Line #3)			
5	Total Cost of CIP (with 50% credit)	$25,552,038	$9,485,445	$0
	(From Engineer's Opinion of Probable Construction Costs - **Appendix G**)			
6	Cost of Net Capacity Supplied	$19,083,676	$7,136,658	$0
	(Net of Capacity Added/Total of Capacity Added) x CIP Cost - (Line #4 / Line #1) x (Line #5)			
7	Cost to Meet Existing Needs and Usage	$6,468,362	$2,348,788	$0
	(Total Cost of CIP-Cost of Net Capacity Supplied) – Line #5 - Line #6			
8	Total Veh-Mile of New Demand Over 10 Years	12,687	6,113	0
	(Projected Vehicle-Miles of New Demand - **Table 4-6**)			
9	Percent of Capacity Added Attributed to New Growth	100.0%	95.5%	0.0%
	(Total of New Demand/Net Amount of Capacity Added) – Line #8 / Line #4; Max 100%			
10	Cost of Capacity Added Attributed to New Growth	$19,083,676	$6,814,494	$0
	(Cost of Net Capacity Supplied x Pct. Attributed to New Growth) - Line #6 x Line#9			
11	Maximum Fee per Service Unit	$1,504	$1,114	$0
	(Cost of Net Capacity Attributed to New Growth / Total Veh-Mile of New Demand) - Line #10/Line #8			

4.8.8 Land Use / Vehicle-Mile Equivalency Table

A land use/vehicle-mile equivalency table establishes the service unit rate for various land uses. This table is a result of combining PM peak hour trip generation rates with average trip length information for various land uses. These rates are based on an appropriate development unit for each land use. For example; office, retail, industrial, and institutional are based on development of 1,000 square feet of gross floor area, while single-family and multi-family residential is based on dwelling units. The City of Terrell's Land-Use Vehicle Mile Equivalency Table is made up of seven land uses. These land uses are: Residential-Single Family, Residential-Multi Family, Hotel, Office, Retail/Commercial, Industrial, and Institutional. **Table 4-11** lists the total service units generated for the various land uses.

Table 4-11. Land-Use Vehicle-Mile Equivalency Table

Land Use	Development Unit	Total Service Units (Veh-mi/Dev Unit)
Residential (Single-Family)	Dwelling Unit (D.U.)	3.40
Residential (Multi-Family)	Dwelling Unit (D.U.)	1.92
Hotel	Rooms	1.58
Office	1,000 Sq. Ft. GFA	5.40
Retail/Commercial	1,000 Sq. Ft. GFA	5.28
Industrial	1,000 Sq. Ft. GFA	3.02
Institutional	1,000 Sq. Ft. GFA	1.83

Trip rate data was updated from the 2014 Impact Fee Study using the Institute for Transportations Engineers' *Trip Generation Manual, 10th Edition*. Trip length data was also updated as discussed in **Section 4.8.2**. A new hotel category was added to provide more detailed information with the expectation of possible hotel development in the future.

4.9 ROADWAY IMPACT FEE CALCULATION

The calculation of the actual fee charged to development is a two-part process. These parts are:

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

No. of Development Units x Vehicle-miles (Total Service Units) per development unit = Development's Vehicle-miles

Part 2: Calculate the impact due by new development. This fee based on the cost per service unit for the service area where the development is located.

Development's Vehicle-miles (from Part 1) x Cost per vehicle-mile (from CIP calculation) = Impact Fee due from development

Examples: The following fee would be assessed to new developments located in the East Service, which has a credited fee per service unit of $1,114.

Single-Family Dwelling

1 dwelling unit x (3.40 vehicle-miles/1 dwelling unit) = 3.40 vehicle-miles

3.40 Vehicle-miles x $1, 114/ vehicle-mile = $3,787.60

50,000 square foot (s.f.) Office Building

50,000 s.f x (5.40 vehicles-miles/1000 s.f. units) = 270.00 vehicle-miles

270.00 vehicle-miles x $1, 114/vehicle-mile = $300,780.00

100,000 s.f. Retail Center

100,000 s.f. x (5.28 vehicle-miles/1,000 s.f. units = 528.00 vehicle-miles

528.00 vehicle-miles x $1, 114/vehicle-mile = $588,192.00

300,000 s.f. Industrial Development

300,000 s.f. x (3.02 vehicle-miles/1,000 s.f. units = 906.00 vehicle-miles

906.00 vehicle-miles x $1, 114/ vehicle-mile = $1,009,284.00

APPENDIX A
Water Consumption by Billing Meter

1.0 MG Poetry
Elevated Storage Tank
Overflow Elevation = 695'

0.5 MG Abandoned
Elevated Storage Tank
Overflow Elevation = 695'
(Abandoned)

3 MG
Ground Storage Tank

Pump Station
Firm Pumping Capacity = 12 MGD

1.5 MG South
Elevated Storage Tank
Overflow Elevation = 695'

FIGURE A-1
CITY OF TERRELL
2017 WATER CONSUMPTION BY BILLING METER
LEGEND

2017 Water Consumption (Thousands of Gallons)

- Less than 500
- 500 - 1,000
- 1,000 - 5,000
- 5,000 - 10,000
- Greater than 10,000
- Elevated Storage Tank
- Ground Storage Tank
- PS — Pump Station

- 8" and Smaller Water Line
- 10" and Larger Water Line
- Road
- Stream
- Lake/Pond
- Parcel
- City Limit
- ETJ Boundary

Terrell AMERICA

FREESE AND NICHOLS

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SCALE IN FEET

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APPENDIX B
Water System Project Cost Estimates

City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 1	**Phase: Short**
Project Name:	**3 MG GST Construction**

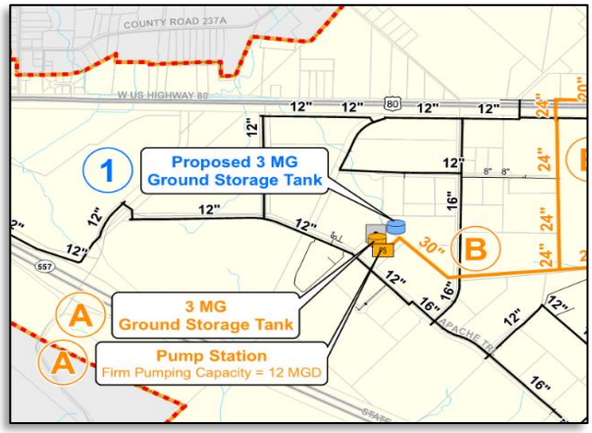
Project Description:

3 MG GST construction on the west side of the City south of Highway 80.

Project Drivers:

3 MG Ground Storage Tank to accommodate growing system demand.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	3.0 MG Ground Storage Tank	1	EA	$ 2,550,000	$ 2,550,000
				SUBTOTAL:	**$ 2,550,000**
				CONTINGENCY 30%	$ 765,000
				SUBTOTAL:	**$ 3,315,000**
				ENG/SURVEY 15%	$ 497,300
				SUBTOTAL:	**$ 3,812,300**
				Estimated Project Total:	**$ 3,812,300**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate — **January 18, 2019**

Construction Project Number: 2 — **Phase:** Short

Project Name: 16-inch Water Pipeline Construction

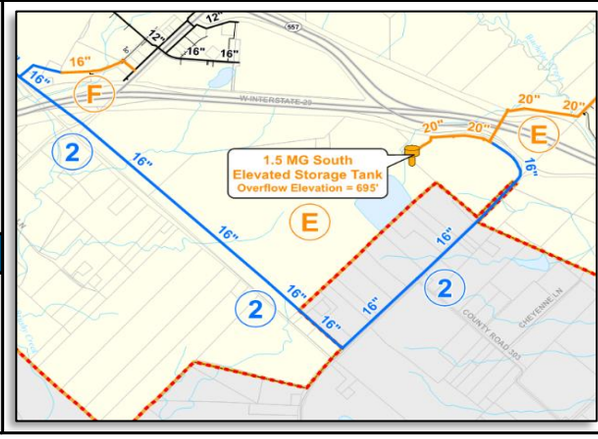
Project Description:

16-inch water pipeline construction in the southwest area of the City. The proposed line begins at the existing 20-inch line east of the South Elevated Storage Tank and just south of Interstate 20. The pipeline then proceeds south along Country Road 304, turns west just north of Country Road 305, and terminates north of Interstate 20.

Project Drivers:

The proposed 16-inch waterline will complete looping from the South Elevated Storage Tank to the northwest side of Interstate Highway 20.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	15,600	LF	$ 160	$ 2,496,000
2	Water Pavement Repair	5,500	LF	$ 80	$ 440,000
3	30" Boring and Casing	1,500	LF	$ 600	$ 900,000
				SUBTOTAL:	**$ 3,836,000**
			CONTINGENCY	30%	$ 1,150,800
				SUBTOTAL:	**$ 4,986,800**
			ENG/SURVEY	15%	$ 748,100
				SUBTOTAL:	**$ 5,734,900**
				Estimated Project Total:	**$ 5,734,900**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate — **January 18, 2019**

Construction Project Number: 3 — **Phase:** Short

Project Name: 16-inch Water Pipeline Construction

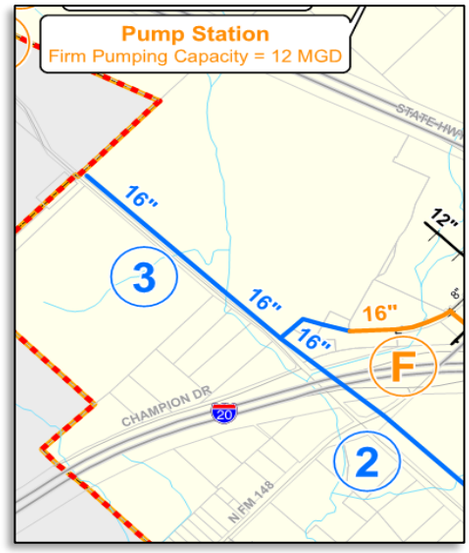
Project Description:

16-inch water pipeline construction in the southwest part of the system. The proposed line starts at the the end of Project No. 2 and follows Country Road 305 north until terminating at the service area boundary.

Project Drivers:

The proposed 16-inch water line will increase capacity in the southwest area of the City.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	3,300	LF	$ 160	$ 528,000
2	Water Pavement Repair	1,200	LF	$ 80	$ 96,000
				SUBTOTAL:	**$ 624,000**
			CONTINGENCY	30%	$ 187,200
				SUBTOTAL:	**$ 811,200**
			ENG/SURVEY	15%	$ 121,700
				SUBTOTAL:	**$ 932,900**
				Estimated Project Total:	**$ 932,900**

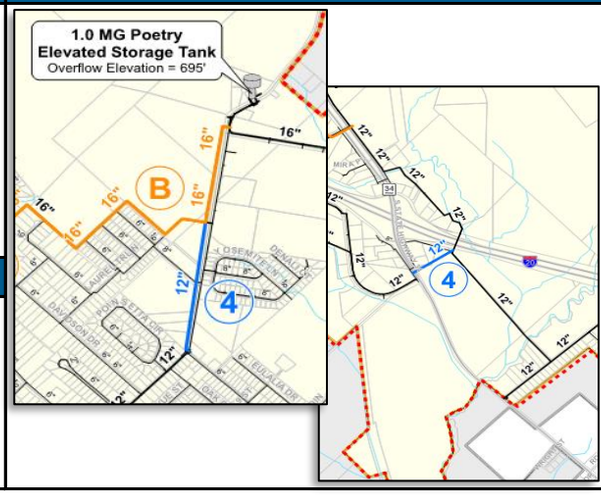
City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 4	**Phase: Short**
Project Name:	**12-inch Water Pipeline Construction**

Project Description:

12-inch water pipeline construction along FM 986 in the north part of the system (parallel to existing 8-inch line) and 12-inch water pipeline construction south of Interstate 20 in the southeast part of the system.

Vicinity Map



Project Drivers:

The proposed 12-inch waterline will complete looping in the southeast area of the system south of Interstate 20. The proposed 12-inch water pipeline along FM 986 in the north area of the system (parallel to existing 8-inch line) will connect existing 12-inch waterline with existing 16-inch waterline.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	3,400	LF	$ 120	$ 408,000
2	Water Pavement Repair	2,700	LF	$ 80	$ 216,000
				SUBTOTAL:	**$ 624,000**
		CONTINGENCY		30%	$ 187,200
				SUBTOTAL:	**$ 811,200**
		ENG/SURVEY		15%	$ 121,700
				SUBTOTAL:	**$ 932,900**
				Estimated Project Total:	**$ 932,900**

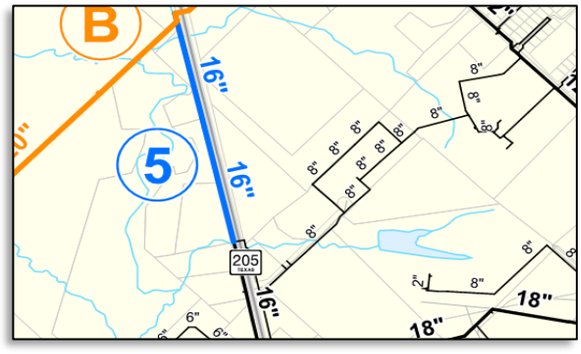
City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 5	**Phase: Short**
Project Name:	**16-inch Water Pipeline Construction**

Project Description:

16-inch waterline along State Highway 205 in the west area of the city.

Vicinity Map



Project Drivers:

16-inch waterline along State Highway 205 to connect existing 16-inch waterline to existing 20-inch waterline.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	2,600	LF	$ 160	$ 416,000
2	Water Pavement Repair	2,000	LF	$ 80	$ 160,000
3	30" Boring and Casing	300	LF	$ 600	$ 180,000
				SUBTOTAL:	**$ 756,000**
		CONTINGENCY		30%	$ 226,800
				SUBTOTAL:	**$ 982,800**
		ENG/SURVEY		15%	$ 147,500
				SUBTOTAL:	**$ 1,130,300**
				Estimated Project Total:	**$ 1,130,300**

APPENDIX C
Wastewater System Project Cost Estimates

City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 1	**Phase: Short**
Project Name:	**30-inch WW Bachelor Creek (to Colquitt)**

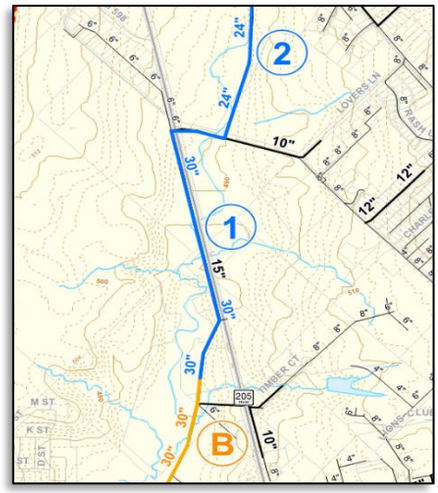
Project Description:

Replace existing 15-inch gravity main with a 30-inch gravity main north of Highway 80 from Colquitt Road to just north of Timber Court to tie into existing 30-inch line funded by CDBG.

Project Drivers:

The existing 15-inch pipeline is subject to infiltration and inflow due to its proximity to a creek and upstream inspections identified significant infiltration.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	30" Pipe 8- 16 feet deep	5,400	LF	$ 330	$ 1,782,000
2	Sewer Pavement Repair	200	LF	$ 80	$ 16,000
3	42" WW Boring and Casing	500	LF	$ 840	$ 420,000
4	72" Diameter Manhole	12	EA	$ 9,000	$ 108,000
				SUBTOTAL:	**$ 2,326,000**
			CONTINGENCY	30%	$ 697,800
				SUBTOTAL:	**$ 3,023,800**
			ENG/SURVEY	20%	$ 604,800
				SUBTOTAL:	**$ 3,628,600**
				Estimated Project Total:	**$ 3,628,600**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate — **January 18, 2019**

Construction Project Number: 2 — **Phase:** Short

Project Name: 24-inch WW Upper Bachelor Creek

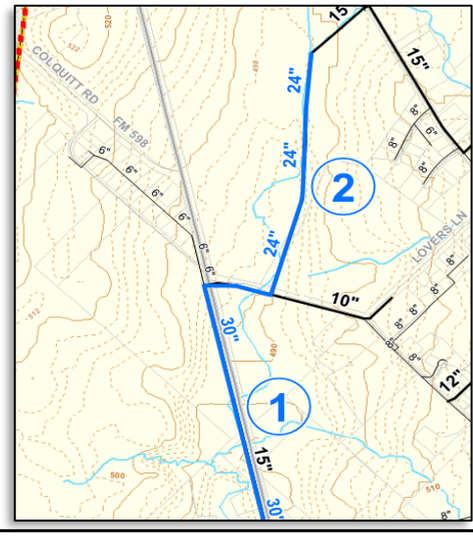
Project Description:

24-inch gravity main north of Colquitt Road along Bachelor Creek to replace existing 15-inch gravity main. The extent of the proposed line begins south of Griffith Avenue and flows south to Colquitt Road where the line connects with the proposed 30-inch wastewater line.

Project Drivers:

The existing 15-inch pipeline is subject to infiltration and inflow due to its proximity to a creek. The proposed 24-inch wastewater line replace the existing 15-inch line and increase capacity in the northwest area of the City to accommodate future population growth.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	24" Pipe 8- 16 feet deep	3,500	LF	$ 264	$ 924,000
2	36" WW Boring and Casing	100	LF	$ 720	$ 72,000
3	60" Diameter Manhole	8	EA	$ 7,000	$ 56,000
				SUBTOTAL:	**$ 1,052,000**
		CONTINGENCY		30%	$ 315,600
				SUBTOTAL:	**$ 1,367,600**
		ENG/SURVEY		20%	$ 273,600
				SUBTOTAL:	**$ 1,641,200**
				Estimated Project Total:	**$ 1,641,200**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate — **January 18, 2019**

Construction Project Number: 3a — **Phase:** Short

Project Name: 10-inch and 12-inch WW N. Blanche & Delphine

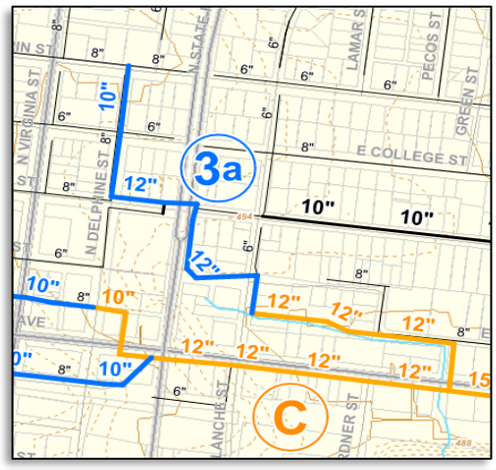
Project Description:

10 and 12-inch gravity mains in the downtown area to replace existing lines. The extent of the proposed lines begins with a 10-inch line along Delphine Street from Brin Street to High Street where the line turns east as a 12-inch, flows south along Highway 34, east on Nash Street, and south on Blanche Street where it connects to an existing 12-inch line.

Project Drivers:

The proposed 10-inch and 12-inch wastewater lines will increase capacity in the downtown area of the City.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Pipe 8- 16 feet deep	900	LF	$ 110	$ 99,000
2	12" Pipe 8- 16 feet deep	1,300	LF	$ 132	$ 171,600
3	Sewer Pavement Repair	1,400	LF	$ 80	$ 112,000
4	60" Diameter Manhole	6	EA	$ 7,000	$ 42,000
				SUBTOTAL:	**$ 424,600**
				CONTINGENCY 30%	$ 127,400
				SUBTOTAL:	**$ 552,000**
				ENG/SURVEY 20%	$ 110,400
				SUBTOTAL:	**$ 662,400**
				Estimated Project Total:	**$ 662,400**

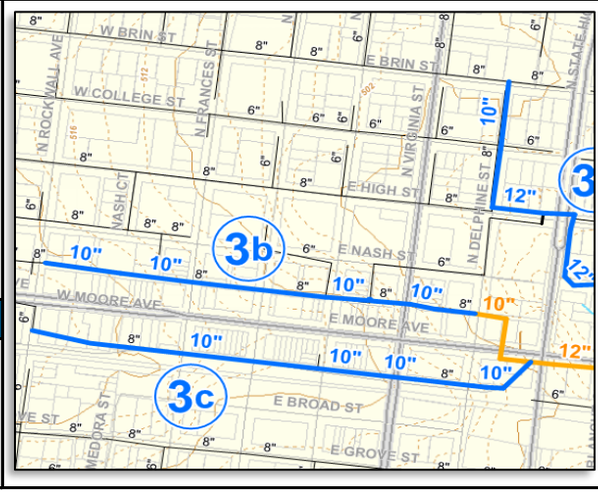
City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 3b	**Phase: Short**
Project Name:	**10-inch WW in North Alley**

Project Description:

10-inch gravity main in the downtown area to replace existing lines. The extent of the proposed line begins at Rockwall Avenue and proceeds east, north of and parallel to Moore Avenue and connects to the existing 10-inch line at Delphine Street.

Vicinity Map



Project Drivers:

The proposed 10-inch wastewater line will increase capacity in the downtown area of the City.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Pipe 8- 16 feet deep	2,300	LF	$ 110	$ 253,000
2	Sewer Pavement Repair	2,300	LF	$ 80	$ 184,000
3	60" Diameter Manhole	6	EA	$ 7,000	$ 42,000
				SUBTOTAL:	**$ 479,000**
				CONTINGENCY 30%	$ 143,700
				SUBTOTAL:	**$ 622,700**
				ENG/SURVEY 20%	$ 124,600
				SUBTOTAL:	**$ 747,300**
				Estimated Project Total:	**$ 747,300**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 3c	**Phase: Short**
Project Name:	**10-inch WW in South Alley**

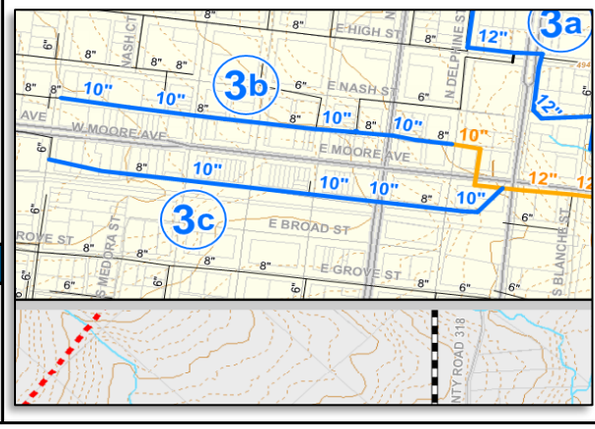
Project Description:

10-inch gravity main in the downtown area to replace existing lines. The extent of the proposed line begins at Rockwall Avenue and proceeds east, along the alley between Moore Avenue and Broad Street before turning north between Delphine Street and Callie Street, connecting to the existing 12-inch main at Moore Avenue.

Project Drivers:

The proposed 10-inch wastewater line will increase capacity in the downtown area of the City.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Pipe 8- 16 feet deep	2,700	LF	$ 110	$ 297,000
2	Sewer Pavement Repair	2,600	LF	$ 80	$ 208,000
3	60" Diameter Manhole	7	EA	$ 7,000	$ 49,000
				SUBTOTAL:	**$ 554,000**
		CONTINGENCY		30%	$ 166,200
				SUBTOTAL:	**$ 720,200**
		ENG/SURVEY		20%	$ 144,100
				SUBTOTAL:	**$ 864,300**
				Estimated Project Total:	**$ 864,300**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 4a	**Phase: Short**
Project Name:	**12-inch WW in Esmt from N. Blanche to N. Adelaide**

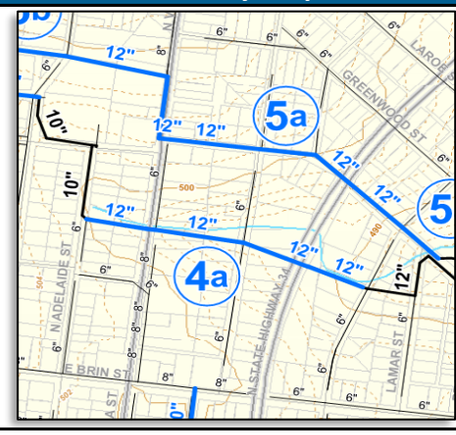
Project Description:

12-inch gravity main in the downtown area to replace existing lines. The extent of the proposed line begins at Adelaide Street between Jackson Street and Alamo Street and proceeds east to Blanche Street where the line connects with the existing 12-inch line.

Project Drivers:

The proposed 12-inch wastewater line will increase capacity in the downtown area of the City.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Pipe 8- 16 feet deep	1,700	LF	$ 132	$ 224,400
2	Sewer Pavement Repair	100	LF	$ 80	$ 8,000
3	24" WW Boring and Casing	250	LF	$ 480	$ 120,000
4	60" Diameter Manhole	5	EA	$ 7,000	$ 35,000
				SUBTOTAL:	**$ 387,400**
		CONTINGENCY		30%	$ 116,300
				SUBTOTAL:	**$ 503,700**
		ENG/SURVEY		20%	$ 100,800
				SUBTOTAL:	**$ 604,500**
				Estimated Project Total:	**$ 604,500**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 4b	**Phase: Short**
Project Name:	**10-inch WW Heath & N. Rockwall**

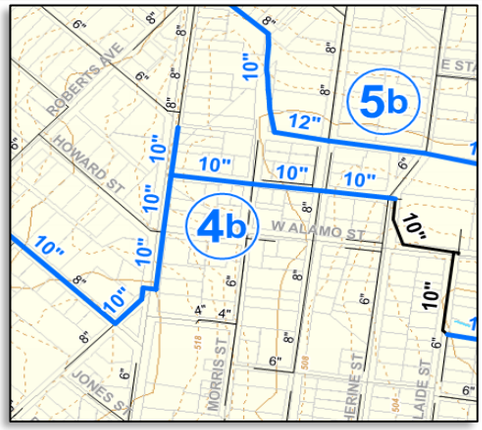
Project Description:

10-inch gravity main in the downtown area to replace existing lines. The extent of the proposed line begins along Pacific Avenue at Griffith Avenue and proceeds northeast to Rockwall Avenue. The line runs along Rockwall Avenue to Elm Drive and proceeds east along Heath Street to Catherine Street where it connects to the existing 10-inch line.

Project Drivers:

The proposed 10-inch wastewater line will increase capacity in the downtown area of the City.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Pipe 8- 16 feet deep	2,400	LF	$ 110	$ 264,000
2	Sewer Pavement Repair	2,400	LF	$ 80	$ 192,000
3	60" Diameter Manhole	6	EA	$ 7,000	$ 42,000
				SUBTOTAL:	**$ 498,000**
				CONTINGENCY 30%	$ 149,400
				SUBTOTAL:	**$ 647,400**
				ENG/SURVEY 20%	$ 129,500
				SUBTOTAL:	**$ 776,900**
				Estimated Project Total:	**$ 776,900**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 4c	**Phase: Short**
Project Name:	**10-inch WW in Griffith**

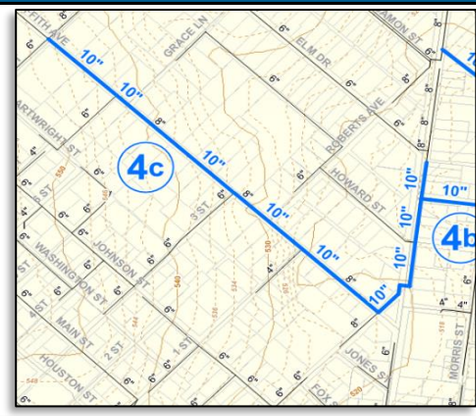
Project Description:

10-inch gravity main in the downtown area to replace existing lines. The extent of the proposed line begins at Griffith Avenue and Ninth Street, proceeds southeast along Griffith Avenue, and terminates at Pacific Avenue .

Project Drivers:

The proposed 10-inch wastewater line will increase capacity in the downtown area of the City.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Pipe 8- 16 feet deep	3,000	LF	$ 110	$ 330,000
2	Sewer Pavement Repair	3,000	LF	$ 80	$ 240,000
3	60" Diameter Manhole	7	EA	$ 7,000	$ 49,000
				SUBTOTAL:	**$ 619,000**
				CONTINGENCY 30%	$ 185,700
				SUBTOTAL:	**$ 804,700**
				ENG/SURVEY 20%	$ 161,000
				SUBTOTAL:	**$ 965,700**
				Estimated Project Total:	**$ 965,700**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate		**January 18, 2019**
Construction Project Number:	**5a**	**Phase: Short**
Project Name:	**12-inch WW in State from N. Blanche to N. Virginia**	

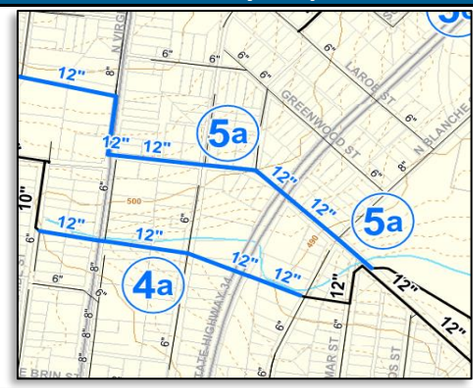
Project Description:

12-inch gravity main in the downtown area to replace existing lines. The extent of the proposed line begins at Virginia Street and Alamo Street, proceeds east and southeast along Alamo Street, and terminates just east of Lamar Street.

Project Drivers:

The proposed 12-inch wastewater line will increase capacity in the downtown area of the City.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Pipe < 8 feet deep	1,900	LF	$ 120	$ 228,000
2	Sewer Pavement Repair	1,700	LF	$ 80	$ 136,000
3	24" WW Boring and Casing	200	LF	$ 480	$ 96,000
4	60" Diameter Manhole	5	EA	$ 7,000	$ 35,000
				SUBTOTAL:	**$ 495,000**
		CONTINGENCY		30%	$ 148,500
				SUBTOTAL:	**$ 643,500**
		ENG/SURVEY		20%	$ 128,700
				SUBTOTAL:	**$ 772,200**
				Estimated Project Total:	**$ 772,200**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 5b	**Phase: Short**
Project Name:	**10-inch and 12-inch WW Langwith to Damon**

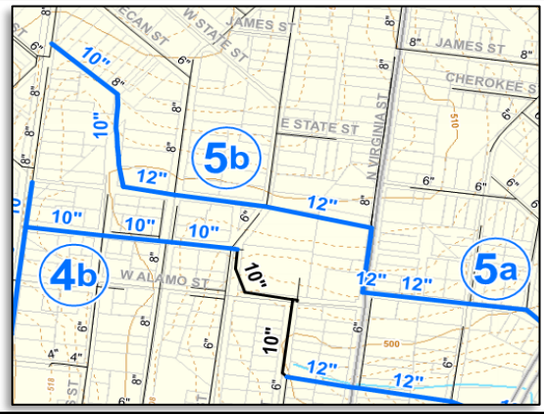
Project Description:

10 and 12-inch gravity mains in the downtown area to replace existing lines. The extent of the proposed 10-inch line begins just north of Roberts Avenue on Rockwall Avenue, then proceeds southeast before increasing in size to a 12-inch north of Heath Street and west of Frances Street. The line then proceeds east to Virginia Street and turns south before terminating at Alamo Street.

Project Drivers:

The proposed 10-inch and 12-inch wastewater lines will increase capacity in the downtown area of the City.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Pipe < 8 feet deep	1,100	LF	$ 100	$ 110,000
2	12" Pipe < 8 feet deep	1,800	LF	$ 120	$ 216,000
3	Sewer Pavement Repair	900	LF	$ 80	$ 72,000
4	60" Diameter Manhole	7	EA	$ 7,000	$ 49,000
				SUBTOTAL:	**$ 447,000**
			CONTINGENCY	30%	$ 134,100
				SUBTOTAL:	**$ 581,100**
			ENG/SURVEY	20%	$ 116,300
				SUBTOTAL:	**$ 697,400**
				Estimated Project Total:	**$ 697,400**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 5c	**Phase: Short**
Project Name:	**10-inch WW KC Tributary to Jerry Drive**

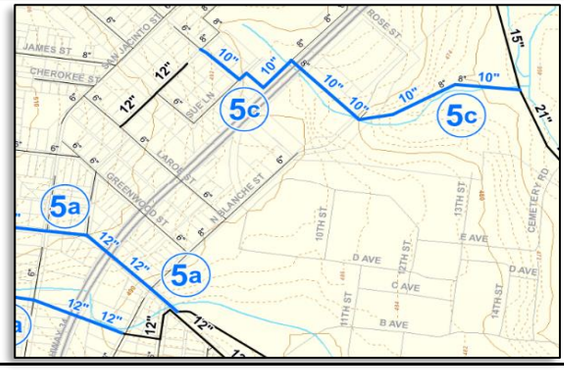
Project Description:

10-inch gravity main in the downtown area to replace existing lines. The extent of the proposed line begins at Jerry Drive and McCoulskey Street, proceeds under State Highway 34, crosses Blanche Street, then connects to the existing 15-inch interceptor.

Project Drivers:

The proposed 10-inch wastewater line will increase capacity in the northeast area of the City.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Pipe 8- 16 feet deep	3,000	LF	$ 110	$ 330,000
2	Sewer Pavement Repair	700	LF	$ 80	$ 56,000
3	60" Diameter Manhole	7	EA	$ 7,000	$ 49,000
				SUBTOTAL:	**$ 435,000**
			CONTINGENCY	30%	$ 130,500
				SUBTOTAL:	**$ 565,500**
			ENG/SURVEY	20%	$ 113,100
				SUBTOTAL:	**$ 678,600**
				Estimated Project Total:	**$ 678,600**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate — **January 18, 2019**

Construction Project Number: 6 — **Phase:** Short

Project Name: New 6 MGD Lift Station, 36-inch Bachelor Creek Interceptor, 20-inch Wastewater Force Main Construction, and Decommissioning of Rose Hill Lift Station

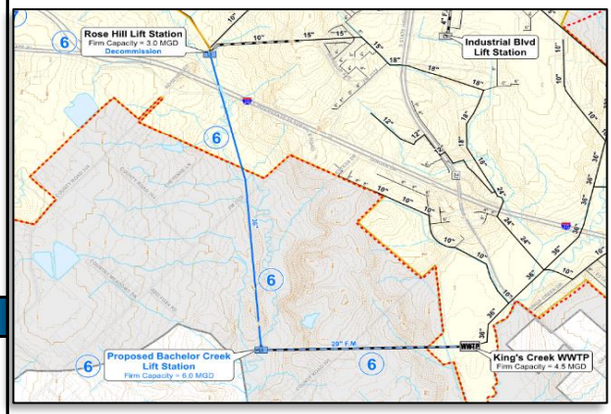
Project Description:

Construction of Bachelor Creek Lift Station with a firm capacity of 6 MGD, a new 36-inch interceptor from the decommissioned Rose Hill Lift Station to the proposed lift station, and a 20-inch force main from the proposed lift station to King's Creek WWTP. Existing Rose Hill Lift Station may only be decommissioned upon installation of the proposed Bachelor Creek Lift Station and corresponding force main and gravity interceptor.

Project Drivers:

Serve future growth and development in the southwest area of the City and provide capacity for additional growth to areas served by the Bachelor Creek 36-inch interceptor.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Lift Station - Decomm	1	LS	$ 200,000	$ 200,000
2	36" Pipe > 16 feet deep	11,600	LF	$ 432	$ 5,011,200
3	6 MGD Lift Station	1	EA	$ 3,900,000	$ 3,900,000
4	20" Force Main < 8 feet deep	6,300	LF	$ 200	$ 1,260,000
5	48" WW Boring and Casing	1,000	LF	$ 960	$ 960,000
6	Sewer Pavement Repair	500	LF	$ 80	$ 40,000
7	72" Diameter Manhole	25	EA	$ 9,000	$ 225,000
				SUBTOTAL:	**$ 11,596,200**
		CONTINGENCY		30%	$ 3,478,900
				SUBTOTAL:	**$ 15,075,100**
		ENG/SURVEY		20%	$ 3,015,100
				SUBTOTAL:	**$ 18,090,200**
				Estimated Project Total:	**$ 18,090,200**

City of Terrell

Capacity Capital Improvement Plan Cost Estimate	**January 18, 2019**
Construction Project Number: 7	**Phase: Short**
Project Name:	**15-inch Gravity Mains, Proposed 1.0 MGD Lift Station, and 8-inch FM**

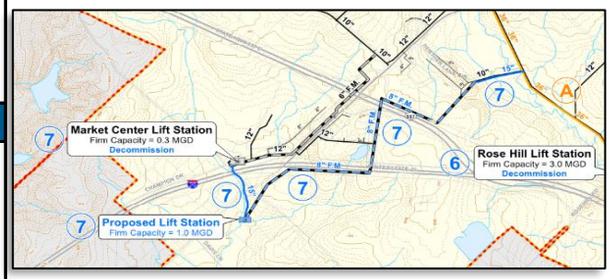
Project Description:

Construction of two 15-inch gravity lines, a 1.0 MGD Lift Station, an 8-inch Force Main, and the decommissioning of Market Center Lift Station.

Project Drivers:

The proposed lift station will serve the proposed 15-inch gravity line between the decommissioned Market Center Lift Station and the proposed lift station. The proposed 8-inch force main will connect the proposed lift station to the proposed 15-inch gravity line (to replace existing 10-inch line) north of Interstate 20.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	1.0 MGD Lift Station	1	EA	$ 650,000	$ 650,000
2	8" Force Main < 8 feet deep	9,900	LF	$ 80	$ 792,000
3	15" Pipe 8- 16 feet deep	3,300	LF	$ 165	$ 544,500
4	21" WW Boring and Casing	1,000	LF	$ 420	$ 420,000
5	30" WW Boring and Casing	200	LF	$ 600	$ 120,000
6	Lift Station - Decomm	1	LS	$ 200,000	$ 200,000
7	Sewer Pavement Repair	600	LF	$ 80	$ 48,000
8	60" Diameter Manhole	9	EA	$ 7,000	$ 63,000
				SUBTOTAL:	**$ 2,837,500**
		CONTINGENCY		30%	$ 851,300
				SUBTOTAL:	**$ 3,688,800**
		ENG/SURVEY		20%	$ 737,800
				SUBTOTAL:	**$ 4,426,600**
				Estimated Project Total:	**$ 4,426,600**

APPENDIX D
Roadway Impact Fee Definitions

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

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

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

Maximum Fee Per Service Unit - the highest impact fee that may be collected by the city per vehicle-mile of supply. Calculated by dividing the costs of the capital improvements by the total number of vehicle-miles of demand expected in the 10-year planning period.

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

PM Peak Hour - the hour when the highest volume of traffic typically occurs. Data collection (September 2001) revealed the peak hour of travel to be between 5:00 and 6:00 pm for Forney.

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

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

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

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

Service Area - the area within the city boundaries to be served by capital improvements. Criteria for developing the service area structure include: 1) restricted to six-mile limit by Chapter 395 of the Texas Local Government Codes to ensure proximity of roadway improvements to development, 2) conforms to census or forecast model boundaries, 3) projects in CIP as boundaries, 4) effort to match roadway supply with projected demand, or 5) city limit boundaries.

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

Trip - a single, one-direction vehicle movement from an origin to a destination.
Trip Generation - the total trip ends for a land use over a given period of time or the total of all trips entering and exiting a site during that designated time. Used in the development of 10-year traffic demand projections and the equivalency table for Terrell. Based primarily on data prepared by the Institute of Transportation Engineers (ITE).

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

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

APPENDIX E
Existing Roadway Capital Improvements Analysis

Appendix E
Existing Capital Improvements Analysis

Definitions

LANES	The total number of lanes available for travel in both directions.
TYPE	The type of roadway (used in determining capacity): DA = divided arterial UA = undivided arterial DC = divided collector UC = undivided collector
% 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%.
PK-HR VOLUME	The existing volume of cars on the roadway segment traveling during the afternoon (P.M.) peak hour of travel. A and B indicate the two directions of travel. Direction A is a northbound or eastbound and direction B is southbound or westbound. If only one half of the roadway is located within the service area (see % in service area), the opposing direction will have no volume in the service area.
VEH-MI SUPPLY TOTAL	The number of total service units (vehicle-miles) supplied within the service area, based on the length and established capacity of the roadway type.
VEH-MI TOTAL DEMAND PK-HR	The total service unit (vehicle-mile) demand created by existing traffic on the roadway segment in the afternoon peak hour.
EXCESS CAPACITY PK-HR VEH-MI	The number of service units supplied but unused by existing traffic in the afternoon peak hour.
EXISTING DEFICIENCIES PK-HR VEH-MI	The number of service units of demand in excess of the service units supplied.

NOTE: Figures presented represent segment totals. Each direction is calculated separately and totaled. It is possible to have excess capacity in one direction and an existing deficiency in the other.

Terrell Roadway Impact Fee Study Update
Existing Capital Improvements Analysis

Serv Area	Shared Svc Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	PM Peak Hr Capacity/Lane	Pct. in Serv. Area	Peak Hour Volume A	B	Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	Exist. VMT Deficiency
W		CR 305	W. City Limits	CR 304	2.07	2	UA	425	100%	2	1	3	1,760	6	1,753	0
W		Apache Trail	FM 148	Las Lomas Pkwy	1.47	4	UC	340	100%	59	32	91	1,999	134	1,865	0
W		Metro Drive	US 80	Apache Trail	0.64	4	UC	340	100%	50	77	127	870	81	789	0
W		Las Lomas Pkwy	EB Spur 557	Apache Trail	0.31	4	UC	340	100%	12	45	57	422	18	404	0
W		Rosehill Road	S. City Limits	Lincoln Lane	0.84	2	UA	425	100%	33	31	64	713	54	659	0
W		FM 148	S. City Limits	IH-20 WB Frontage Rd.	0.63	2	UA	425	100%	224	224	448	536	282	253	0
W		FM 148	IH-20 WB Frontage Rd.	Spur 557	0.56	5	SA	470	100%	635	799	1,434	1,053	803	250	0
W		FM 148	Spur 557	Bachelor Creek	0.97	2	UA	425	100%	520	498	1,018	825	987	0	163
W		FM 148	Bachelor Creek	US 80	0.72	5	SA	470	100%	664	635	1,299	1,354	935	418	0
W		SH 205	US 80	Colquitt Road	1.19	2	UA	425	100%	608	577	1,185	1,012	1,410	0	*
W		SH 205	Colquitt Road	N. City Limits	2.05	2	UA	425	100%	406	391	797	1,743	1,634	109	0
W		Lovers Lane	Griffith Avenue	Colquitt Road	0.39	2	UC	340	100%	108	93	201	267	79	188	0
W		Colquitt Road	SH 205	Lovers Lane	0.35	2	UC	340	100%	116	161	277	235	95	139	0
W		Colquitt Road	Lovers Lane	Charles Road	0.39	2	UC	340	100%	95	97	192	266	75	191	0
W		Colquitt Road	Charles Road	9th Street	0.47	2	UC	340	100%	191	200	391	320	184	136	0
W		Griffith Avenue	SH 205	Lovers Lane	1.82	2	UC	340	100%	138	156	294	1,238	535	703	0
W		Griffith Avenue	Lovers Lane	9th Street	0.86	2	UC	340	100%	195	210	405	585	348	237	0
W		Griffith Avenue	9th Street	N. Rockwall Rd.	0.53	2	UC	340	100%	145	139	284	360	151	210	0
W	E	FM 986/Poetry Road	State Street	Town Drive North	0.69	4	UA	425	50%	0	350	350	587	242	345	0
W	E	State Street	FM 986	N. Rockwall Rd.	0.47	2	UA	425	50%	0	263	263	200	124	76	0
W	E	N. Rockwall Rd (FM 987)	State Street	US 80	0.87	4	UA	425	50%	0	292	292	735	253	483	0
W	E	S. Rockwall Road	US 80	Rosehill Road	0.91	4	UC	340	50%	0	183	183	618	166	452	0
W	E	Windsor Avenue	S. Rockwall Road	FM 2578	0.37	2	UC	340	50%	55	0	55	126	20	105	0
W		US 80/Moore Ave	W. City Limits	SH 205	2.73	4	DA	470	100%	899	669	1,568	5,132	4,281	852	0
W		US 80/Moore Ave	SH 205	Rockwall St	1.34	4	DA	470	100%	1,448	1,139	2,587	2,519	3,467	0	947
W		9th Street	US 80	Colquitt Road	0.41	2	UC	340	100%	319	216	535	279	219	59	0
W		9th Street	Colquitt Road	Griffith Ave	0.39	2	UC	340	100%	319	216	535	268	211	57	0
W		Bradshaw	Mineral Wells	US 80	0.87	2	UA	425	100%	87	63	150	740	131	609	0
W		West End Street	FM 148	Mineral Wells Street	1.03	2	UC	340	100%	81	58	139	700	143	557	0
W		Ann Street	US 80	Emily Street	0.22	2	UC	340	100%	12	21	33	150	7	142	0
W	E	FM 2578	IH-20 WB Frontage Rd.	Windsor Avenue	0.18	2	UA	425	50%	0	146	146	77	26	50	0
Sub-Total Service Area West					**26.74**								**27,685**	**17,101**	**12,093**	**1,110**

Terrell Roadway Impact Fee Study Update
Existing Capital Improvements Analysis

Serv Area	Shared Svc Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	PM Peak Hr Capacity/Lane	Pct. in Serv. Area	Peak Hour Volume A	B	Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	Exist. VMT Deficiency
E	W	FM 2578	IH-20 WB Frontage Rd.	Windsor Avenue	0.18	2	UA	425	50%	112	0	112	77	20	56	0
E		FM 2578	Windsor Avenue	SH 34	0.31	2	UA	425	100%	112	146	258	264	80	184	0
E		British Flying Training Sch	SH 34	Parking Lot	0.42	2	UC	340	100%	2	4	6	286	3	283	0
E		SH 34	IH-20 WB Frontage Rd.	Virginia St. (SH 34)	1.66	4	DA	470	100%	716	885	1,601	3,121	2,658	463	0
E		SH 34	Virginia St. (SH 34)	N. City Limits	2.23	4	DA	470	100%	528	321	849	4,192	1,893	2,299	0
E		Town North Drive	FM 986/Poetry Road	Brookwood Drive	0.81	2	UC	340	100%	126	105	231	551	187	364	0
E		Town North Drive	Brookwood Drive	SH 34	0.33	2	UC	340	100%	66	101	167	222	55	168	0
E		Virginia Street	Callie St (SH 34)	US 80	0.72	4	UA	425	100%	467	404	871	1,227	629	599	0
E		Virginia Street	US 80	High St	0.13	4	DA	470	100%	324	229	553	244	72	173	0
E		Virginia Street	High St	Jackson St	0.24	3	SA	470	100%	259	183	442	226	106	120	0
E		Virginia Street	Jackson St	Frances Street	0.62	2	UA	425	100%	192	138	330	527	205	322	0
E		Frances Street	Virginia Street	N. City Limits	0.68	2	UA	425	100%	239	224	463	578	315	263	0
E	W	FM 986/Poetry Road	State Street	Town North Drive	0.69	4	UA	425	50%	439	0	439	587	303	284	0
E	W	State Street	N, Rockwall Road	FM 986	0.47	2	UA	425	50%	329	0	329	200	155	45	0
E	W	N. Rockwall Rd (FM 987)	US 80	State Street	0.87	4	UA	425	50%	376	0	376	735	325	410	0
E	W	S. Rockwall Road	Rosehill Road	US 80	0.91	4	UC	340	50%	142	0	142	618	129	489	0
E	W	Windsor Avenue	S. Rockwall Road	FM 2578	0.37	2	UC	340	50%	0	56	56	126	21	105	0
E		Windsor Avenue	Home Depot	SH 34	0.23	4	DC	375	100%	83	70	153	347	35	311	0
E		Airport Road	SH 34	Industrial Blvd.	0.34	4	UC	340	100%	240	268	508	462	173	290	0
E		Rochester Street	Virginia Street	Gardner Street	0.30	2	UC	340	100%	26	22	48	204	14	190	0
E		FM 429	US 80	City Limits	0.77	2	UA	425	100%	235	125	360	658	279	379	0
E		US 80/Moore Ave	Rockwall St	Viriginia St	0.33	4	DA	470	100%	1,106	823	1,929	613	629	38	54
E		US 80/Moore Ave	Virginia St	E. City Limits	2.03	4	DA	470	100%	764	507	1,271	3,816	2,580	1,236	0
E		CR 309/Wilson	S. City Limits	Airport Road	0.89	2	UA	425	100%	68	68	136	757	121	635	0
Sub-Total Service Area East					**16.52**								**20,636**	**10,985**	**9,705**	**54**
Sub-Total Service Area Brushy Creek					**0.00**								**0**	**0**	**0**	**0**
Total													***48,321***	***28,086***	***21,798***	***1,164***

Notes:
DA - Divided Arterial
UA - Undivided Arterial
SA - Special Arterial with two-way left turn lane (TWLTL)
DC - Divided collector
UC - Undivided Collector
SC - Special Collector with two-way left turn lane (TWLTL)

APPENDIX F
Projected Vehicle-Miles of New Demand

Vehicle-Mile Trip Generation by Service Area, Terrell Impact Fee

Based on 2018-2028 Land Use Assumptions dated November 2018

Service Unit Equivalency

Residential	3.40	Service Emp	5.40
Basic Emp	3.02	Retail Emp	5.28

Estimated Residential Growth Vehicle-Mile Trip Generation

Conversion Factor: 2.76 *persons/dwelling unit*

Service Area	Added Population	Added Dwelling Units	Vehicle-Miles per DU	Total Vehicle-Miles
West	2,902	1,051	3.40	3,573
East	2,498	905	3.40	3,077
Brushy Creek	0	0	3.40	0
Total	5,400	1,956		6,650

Estimated Basic Employment Growth Vehicle-Mile Trip Generation

Conversion Factor: 1,500 *square feet/employee*

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
West	680	1,020,000	3.02	3,080
East	367	550,500	3.02	1,663
Brushy Creek	0	0	3.02	0
Total	1,047	1,570,500		4,743

Estimated Service Employment Growth Vehicle-Mile Trip Generation

Conversion Factor: 500 *square feet/employee*

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
West	905	452,500	5.40	2,444
East	221	110,500	5.40	597
Brushy Creek	0	0	5.40	0
Total	1,126	563,000		3,041

Estimated Retail Employment Growth Vehicle-Mile Trip Generation

Conversion Factor: 1,000 *square feet/employee*

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
West	680	680,000	5.28	3,590
East	147	147,000	5.28	776
Brushy Creek	0	0	5.28	0
Total	827	827,000		4,366

Total Vehicle-Mile Generation Summary

Service Area	Residential Growth Vehicle-Miles	Basic Emp Growth Vehicle-Miles	Service Emp Growth Vehicle-Miles	Retail Emp Growth Vehicle-Miles	**Total Growth Vehicle-Miles**
West	3,573	3,080	2,444	3,590	**12,687**
East	3,077	1,663	597	776	**6,113**
Brushy Creek	0	0	0	0	**0**
Total	6,650	4,743	3,041	4,366	**18,800**

APPENDIX G
Roadway Impact Fee Project Cost Estimates

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

WINDSOR AVENUE

Rosehill Rd to Rockwall St

Roadway Information:			
Functional Classification:	Collector - Type C	No. of Lanes:	4
Length (lf):	2,148		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Extension of roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	22	STA	$ 2,500.00	$ 55,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	4,100	CY	$ 10.00	$ 41,000
4	8" Concrete Pavement w/ Integral Curb	11,000	SY	$ 55.00	$ 605,000
5	6" Flex Base	12,000	SY	$ 15.00	$ 180,000
6	Concrete Driveway	380	SY	$ 50.00	$ 19,000
7	4" Concrete Sidewalk and Ramps	21,480	SF	$ 6.00	$ 128,880
8	Hydromulching	94,500	SY	$ 2.00	$ 189,000
				Paving Estimate Subtotal:	**$ 1,217,880**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 24,400
10	Traffic Control	5%	$ 60,900
11	Erosion Control	3%	$ 36,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 243,600
		Other Components Estimate Subtotal:	**$ 365,500**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 1,583,380
Mobilization	5%	$ 79,200
Contingency	10%	$ 166,300
Construction Cost Estimate Total:		**$ 1,828,900**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,828,900
Engineering/Survey/Testing		12.5%	$ 228,600
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 214,800	$ 214,800

Impact Fee Project Cost Estimate Total:	**$ 2,272,300**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 270,400**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

WINDSOR AVENUE

Rockwall St to FM 2578

Roadway Information:			
Functional Classification:	Collector - Type C	No. of Lanes:	2
Length (lf):	1,972		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	23		
Description:	Completion of remaining two lanes in ultimate 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	$ 2,500.00	$ 50,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	1,900	CY	$ 10.00	$ 19,000
4	8" Concrete Pavement w/ Integral Curb	5,100	SY	$ 55.00	$ 280,500
5	6" Flex Base	6,000	SY	$ 15.00	$ 90,000
6	Concrete Driveway	170	SY	$ 50.00	$ 8,500
7	4" Concrete Sidewalk and Ramps	9,860	SF	$ 6.00	$ 59,160
8	Hydromulching	43,400	SY	$ 2.00	$ 86,800
				Paving Estimate Subtotal:	**$ 593,960**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 11,900
10	Traffic Control	5%	$ 29,700
11	Erosion Control	3%	$ 17,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 118,800
		Other Components Estimate Subtotal:	**$ 178,300**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 772,260
Mobilization	5%	$ 38,700
Contingency	10%	$ 81,100
Construction Cost Estimate Total:		**$ 892,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 892,100
Engineering/Survey/Testing		12.5%	$ 111,500
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 98,600	$ 98,600

Impact Fee Project Cost Estimate Total:	**$ 1,102,200**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 131,100**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

BRADSHAW STREET

Moore Ave (US 80) to Frazier St

Roadway Information:			
Functional Classification:	Arterial - Type A	No. of Lanes:	4
Length (lf):	2,760		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Widen roadway to ultimate 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	28	STA	$ 2,500.00	$ 70,000
2	Remove Existing Pavement	28	STA	$ 1,000.00	$ 28,000
3	Unclassified Street Excavation	5,400	CY	$ 10.00	$ 54,000
4	10" Concrete Pavement w/ Integral Curb	14,800	SY	$ 60.00	$ 888,000
5	10" Flex Base	16,000	SY	$ 20.00	$ 320,000
6	Concrete Driveway	490	SY	$ 50.00	$ 24,500
7	4" Concrete Sidewalk and Ramps	27,600	SF	$ 6.00	$ 165,600
8	Hydromulching	171,100	SY	$ 2.00	$ 342,200
				Paving Estimate Subtotal:	**$ 1,892,300**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 37,900
10	Traffic Control	5%	$ 94,700
11	Erosion Control	3%	$ 56,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 378,500
		Other Components Estimate Subtotal:	**$ 567,900**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	$ -	$ -
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
17	Other	RR crossing	$ 100,000	$ 250,000
			Special Components Estimate Subtotal:	**$ 250,000**

I, II, & III Construction Subtotal:		$ 2,710,200
Mobilization	5%	$ 135,600
Contingency	10%	$ 284,600
Construction Cost Estimate Total:		**$ 3,130,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,130,400
Engineering/Survey/Testing		12.5%	$ 391,300
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 209,800	$ 209,800

Impact Fee Project Cost Estimate Total:	**$ 3,731,500**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 444,000**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

BRADSHAW STREET

Frazier St to Rosehill Rd

Roadway Information:			
Functional Classification:	Arterial - Type A	No. of Lanes:	4
Length (lf):	3,582		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Extension of roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	36	STA	$ 2,500.00	$ 90,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	7,100	CY	$ 10.00	$ 71,000
4	10" Concrete Pavement w/ Integral Curb	19,200	SY	$ 60.00	$ 1,152,000
5	10" Flex Base	20,700	SY	$ 20.00	$ 414,000
6	Concrete Driveway	630	SY	$ 50.00	$ 31,500
7	4" Concrete Sidewalk and Ramps	35,820	SF	$ 6.00	$ 214,920
8	Hydromulching	222,100	SY	$ 2.00	$ 444,200
				Paving Estimate Subtotal:	**$ 2,417,620**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 48,400
10	Traffic Control	5%	$ 120,900
11	Erosion Control	3%	$ 72,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 483,600
		Other Components Estimate Subtotal:	**$ 725,500**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 3,143,120
Mobilization	5%	$ 157,200
Contingency	10%	$ 330,100
Construction Cost Estimate Total:		**$ 3,630,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,630,500
Engineering/Survey/Testing		12.5%	$ 453,800
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 429,800	$ 429,800

Impact Fee Project Cost Estimate Total:	**$ 4,514,100**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 537,100**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

ROSEHILL ROAD

500' W of Lincoln Ln to S City Limits

Roadway Information:			
Functional Classification:	Arterial - Type A	No. of Lanes:	6
Length (lf):	5,490		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	70		
Description:	Widening of roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	55	STA	$ 2,500.00	$ 137,500
2	Remove Existing Pavement	55	STA	$ 1,000.00	$ 55,000
3	Unclassified Street Excavation	15,700	CY	$ 10.00	$ 157,000
4	10" Concrete Pavement w/ Integral Curb	42,700	SY	$ 60.00	$ 2,562,000
5	10" Flex Base	45,200	SY	$ 20.00	$ 904,000
6	Concrete Driveway	970	SY	$ 50.00	$ 48,500
7	4" Concrete Sidewalk and Ramps	54,900	SF	$ 6.00	$ 329,400
8	Hydromulching	219,600	SY	$ 2.00	$ 439,200
				Paving Estimate Subtotal:	**$ 4,632,600**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 92,700
10	Traffic Control	5%	$ 231,700
11	Erosion Control	3%	$ 139,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 926,600
		Other Components Estimate Subtotal:	**$ 1,390,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	$ -	$ -
14	Drainage Structures	Minor crossing	$ 100,000	$ 100,000
15	Bridge Structures	IH-20 bridge	$ 2,430,000	$ 2,430,000
16	Traffic Signals	None	$ -	$ -
17	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 2,530,000**

I, II, & III Construction Subtotal:		$ 8,552,600
Mobilization	5%	$ 427,700
Contingency	10%	$ 898,100
Construction Cost Estimate Total:		**$ 9,878,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction	Assumes TxDOT funds bridge	$ (2,430,000)	$ 7,448,400
Engineering/Survey/Testing		12.5%	$ 1,234,800
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 658,800	$ 658,800
	Impact Fee Project Cost Estimate Total:		**$ 9,342,000**
	Estimated Finance Cost (11.9%; i.e. 3% over 10 years)		**$ 1,111,600**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

WEST END STREET

FM 148 to Bradshaw St

Roadway Information:			
Functional Classification:	Arterial - Type B	No. of Lanes:	2
Length (lf):	4,030		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	23		
Description:	Construct half of ultimate 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	41	STA	$ 2,500.00	$ 102,500
2	Remove Existing Pavement	41	STA	$ 1,000.00	$ 41,000
3	Unclassified Street Excavation	3,800	CY	$ 10.00	$ 38,000
4	10" Concrete Pavement w/ Integral Curb	10,300	SY	$ 60.00	$ 618,000
5	10" Flex Base	11,200	SY	$ 20.00	$ 224,000
6	Concrete Driveway	1,790	SY	$ 50.00	$ 89,500
7	4" Concrete Sidewalk and Ramps	40,300	SF	$ 6.00	$ 241,800
8	Hydromulching	270,000	SY	$ 2.00	$ 540,000
				Paving Estimate Subtotal:	**$ 1,894,800**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 37,900
10	Traffic Control	5%	$ 94,800
11	Erosion Control	3%	$ 56,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 379,000
		Other Components Estimate Subtotal:	**$ 568,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	$ -	$ -
14	Drainage Structures	Minor crossing	$ 100,000	$ 100,000
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
17	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 100,000**

I, II, & III Construction Subtotal:		$ 2,563,400
Mobilization	5%	$ 128,200
Contingency	10%	$ 269,200
Construction Cost Estimate Total:		**$ 2,960,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,960,800
Engineering/Survey/Testing		12.5%	$ 370,100
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 282,100	$ 282,100

Impact Fee Project Cost Estimate Total:	**$ 3,613,000**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 429,900**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

WEST END STREET

Bradshaw St to Ann St

Roadway Information:			
Functional Classification:	Arterial - Type B	No. of Lanes:	2
Length (lf):	2,094		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	23		
Description:	Construct half of ultimate 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	21	STA	$ 2,500.00	$ 52,500
2	Remove Existing Pavement	21	STA	$ 1,000.00	$ 21,000
3	Unclassified Street Excavation	2,000	CY	$ 10.00	$ 20,000
4	10" Concrete Pavement w/ Integral Curb	5,400	SY	$ 60.00	$ 324,000
5	10" Flex Base	5,900	SY	$ 20.00	$ 118,000
6	Concrete Driveway	930	SY	$ 50.00	$ 46,500
7	4" Concrete Sidewalk and Ramps	20,940	SF	$ 6.00	$ 125,640
8	Hydromulching	140,300	SY	$ 2.00	$ 280,600
				Paving Estimate Subtotal:	**$ 988,240**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 19,800
10	Traffic Control	5%	$ 49,500
11	Erosion Control	3%	$ 29,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 197,700
		Other Components Estimate Subtotal:	**$ 296,700**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 1,284,940
Mobilization	5%	$ 64,300
Contingency	10%	$ 135,000
Construction Cost Estimate Total:		**$ 1,484,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,484,300
Engineering/Survey/Testing		12.5%	$ 185,500
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 155,000	$ 155,000

Impact Fee Project Cost Estimate Total:	**$ 1,824,800**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 217,100**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

COLQUITT ROAD

SH 205 to Lovers Ln

Roadway Information:			
Functional Classification:	Arterial - Type B	No. of Lanes:	2
Length (lf):	1,809		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	23		
Description:	Construct half of ultimate 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	$ 2,500.00	$ 47,500
2	Remove Existing Pavement	19	STA	$ 1,000.00	$ 19,000
3	Unclassified Street Excavation	1,700	CY	$ 10.00	$ 17,000
4	10" Concrete Pavement w/ Integral Curb	4,700	SY	$ 60.00	$ 282,000
5	10" Flex Base	5,100	SY	$ 20.00	$ 102,000
6	Concrete Driveway	320	SY	$ 50.00	$ 16,000
7	4" Concrete Sidewalk and Ramps	18,090	SF	$ 6.00	$ 108,540
8	Hydromulching	121,200	SY	$ 2.00	$ 242,400
				Paving Estimate Subtotal:	**$ 834,440**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 16,700
10	Traffic Control	5%	$ 41,800
11	Erosion Control	3%	$ 25,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 166,900
		Other Components Estimate Subtotal:	**$ 250,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	$ -	$ -
14	Drainage Structures	Minor crossing	$ 100,000	$ 100,000
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
17	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 100,000**

I, II, & III Construction Subtotal:		$ 1,184,940
Mobilization	5%	$ 59,300
Contingency	10%	$ 124,500
Construction Cost Estimate Total:		**$ 1,368,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,368,800
Engineering/Survey/Testing		12.5%	$ 171,100
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 36,200	$ 36,200

Impact Fee Project Cost Estimate Total:	**$ 1,576,100**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 187,500**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

LOVERS LANE

Colquitt Rd to Griffith Ave

Roadway Information:			
Functional Classification:	Collector - Type E	No. of Lanes:	2
Length (lf):	2,149		
Right-of-Way Width (ft.):	60		
Median Type:	TWLTL		
Pavement Width (BOC to BOC):	33		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	22	STA	$ 2,500.00	$ 55,000
2	Remove Existing Pavement	22	STA	$ 1,000.00	$ 22,000
3	Unclassified Street Excavation	2,900	CY	$ 10.00	$ 29,000
4	8" Concrete Pavement w/ Integral Curb	7,900	SY	$ 55.00	$ 434,500
5	6" Flex Base	8,400	SY	$ 15.00	$ 126,000
6	Concrete Driveway	950	SY	$ 50.00	$ 47,500
7	4" Concrete Sidewalk and Ramps	21,490	SF	$ 6.00	$ 128,940
8	Hydromulching	36,500	SY	$ 2.00	$ 73,000
				Paving Estimate Subtotal:	**$ 915,940**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 18,400
10	Traffic Control	5%	$ 45,800
11	Erosion Control	3%	$ 27,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 183,200
	Other Components Estimate Subtotal:		**$ 274,900**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 1,190,840
Mobilization	5%	$ 59,600
Contingency	10%	$ 125,100
Construction Cost Estimate Total:		**$ 1,375,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,375,600
Engineering/Survey/Testing		12.5%	$ 172,000
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -

Impact Fee Project Cost Estimate Total:	**$ 1,547,600**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 184,100**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

GRIFFITH AVENUE

Lovers Ln to Carl Lee Cir

Roadway Information:			
Functional Classification:	Collector - Type F	No. of Lanes:	2
Length (lf):	1,403		
Right-of-Way Width (ft.):	60		
Median Type:	None		
Pavement Width (BOC to BOC):	33		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	14	STA	$ 2,500.00	$ 35,000
2	Remove Existing Pavement	14	STA	$ 1,000.00	$ 14,000
3	Unclassified Street Excavation	1,900	CY	$ 10.00	$ 19,000
4	8" Concrete Pavement w/ Integral Curb	5,200	SY	$ 55.00	$ 286,000
5	6" Flex Base	5,500	SY	$ 15.00	$ 82,500
6	Concrete Driveway	620	SY	$ 50.00	$ 31,000
7	4" Concrete Sidewalk and Ramps	14,030	SF	$ 6.00	$ 84,180
8	Hydromulching	23,900	SY	$ 2.00	$ 47,800
				Paving Estimate Subtotal:	**$ 599,480**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 12,000
10	Traffic Control	5%	$ 30,000
11	Erosion Control	3%	$ 18,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 119,900
		Other Components Estimate Subtotal:	**$ 179,900**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 779,380
Mobilization	5%	$ 39,000
Contingency	10%	$ 81,900
Construction Cost Estimate Total:		**$ 900,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 900,300
Engineering/Survey/Testing		12.5%	$ 112,500
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -

Impact Fee Project Cost Estimate Total:	**$ 1,012,800**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 120,500**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW COLLECTOR

Griffith Ave to Town North Extension

Roadway Information:			
Functional Classification:	Collector - Type D	No. of Lanes:	2
Length (lf):	4,745		
Right-of-Way Width (ft.):	80		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	47	STA	$ 2,500.00	$ 117,500
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	4,700	CY	$ 10.00	$ 47,000
4	8" Concrete Pavement w/ Integral Curb	12,700	SY	$ 55.00	$ 698,500
5	6" Flex Base	14,800	SY	$ 15.00	$ 222,000
6	Concrete Driveway	2,100	SY	$ 50.00	$ 105,000
7	4" Concrete Sidewalk and Ramps	47,450	SF	$ 6.00	$ 284,700
8	Hydromulching	218,300	SY	$ 2.00	$ 436,600
				Paving Estimate Subtotal:	**$ 1,911,300**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 38,300
10	Traffic Control	5%	$ 95,600
11	Erosion Control	3%	$ 57,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 382,300
	Other Components Estimate Subtotal:		**$ 573,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	$ -	$ -
14	Drainage Structures	Minor crossing	$ 100,000	$ 100,000
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
17	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 100,000**

I, II, & III Construction Subtotal:		$ 2,584,900
Mobilization	5%	$ 129,300
Contingency	10%	$ 271,500
Construction Cost Estimate Total:		**$ 2,985,700**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,985,700
Engineering/Survey/Testing		12.5%	$ 373,200
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 94,900	$ 379,600

Impact Fee Project Cost Estimate Total:	**$ 3,738,500**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 444,800**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

TOWN NORTH DRIVE

New Collector to FM 986/Poetry Rd

Roadway Information:			
Functional Classification:	Collector - Type D	No. of Lanes:	2
Length (lf):	1,175		
Right-of-Way Width (ft.):	80		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	12	STA	$ 2,500.00	$ 30,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	1,200	CY	$ 10.00	$ 12,000
4	8" Concrete Pavement w/ Integral Curb	3,200	SY	$ 55.00	$ 176,000
5	6" Flex Base	3,700	SY	$ 15.00	$ 55,500
6	Concrete Driveway	520	SY	$ 50.00	$ 26,000
7	4" Concrete Sidewalk and Ramps	11,750	SF	$ 6.00	$ 70,500
8	Hydromulching	54,100	SY	$ 2.00	$ 108,200
				Paving Estimate Subtotal:	**$ 478,200**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 9,600
10	Traffic Control	5%	$ 24,000
11	Erosion Control	3%	$ 14,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 95,700
		Other Components Estimate Subtotal:	**$ 143,700**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	$ -	$ -
14	Drainage Structures	Minor crossing	$ 100,000	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
17	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 621,900
Mobilization	5%	$ 31,100
Contingency	10%	$ 65,300
Construction Cost Estimate Total:		**$ 718,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 718,300
Engineering/Survey/Testing		12.5%	$ 89,800
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 94,000	$ 94,000
	Impact Fee Project Cost Estimate Total:		**$ 902,100**
	Estimated Finance Cost (11.9%; i.e. 3% over 10 years)		**$ 107,300**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

LAS LOMAS PARKWAY

N. City Limits to Apache Trail

Roadway Information:			
Functional Classification:	Arterial - Type A	No. of Lanes:	4
Length (lf):	2,474		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	25	STA	$ 2,500.00	$ 62,500
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	4,900	CY	$ 10.00	$ 49,000
4	10" Concrete Pavement w/ Integral Curb	13,200	SY	$ 60.00	$ 792,000
5	10" Flex Base	14,300	SY	$ 20.00	$ 286,000
6	Concrete Driveway	430	SY	$ 50.00	$ 21,500
7	4" Concrete Sidewalk and Ramps	24,740	SF	$ 6.00	$ 148,440
8	Hydromulching	153,400	SY	$ 2.00	$ 306,800
				Paving Estimate Subtotal:	**$ 1,666,240**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 33,400
10	Traffic Control	5%	$ 83,400
11	Erosion Control	3%	$ 50,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 333,300
		Other Components Estimate Subtotal:	**$ 500,100**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	$ -	$ -
14	Drainage Structures	minor crossing	$ 100,000	$ 100,000
15	Bridge Structures	bridge over RR/US 80	$ 3,150,000	$ 3,150,000
16	Traffic Signals	1 - signal	$ 150,000	$ 150,000
17	Other	RR crossing	$ 250,000	$ 250,000
		Special Components Estimate Subtotal:		**$ 3,650,000**

I, II, & III Construction Subtotal:		$ 5,816,340
Mobilization	5%	$ 290,900
Contingency	10%	$ 610,800
Construction Cost Estimate Total:		**$ 6,718,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 6,718,100
Engineering/Survey/Testing		12.5%	$ 839,800
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 296,900	$ 296,900

Impact Fee Project Cost Estimate Total:	**$ 7,854,800**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 934,700**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

SH 205

Moore Ave to Colquitt Rd

Roadway Information:			
Functional Classification:	Arterial - Type AA	No. of Lanes:	4
Length (lf):	6,189		
Right-of-Way Width (ft.):	140		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Widen existing roadway		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	62	STA	$ 2,500.00	$ 155,000
2	Remove Existing Pavement	62	STA	$ 1,000.00	$ 62,000
3	Unclassified Street Excavation	12,200	CY	$ 10.00	$ 122,000
4	10" Concrete Pavement w/ Integral Curb	33,100	SY	$ 60.00	$ 1,986,000
5	10" Flex Base	35,800	SY	$ 20.00	$ 716,000
6	Concrete Driveway	1,100	SY	$ 50.00	$ 55,000
7	4" Concrete Sidewalk and Ramps	61,890	SF	$ 6.00	$ 371,340
8	Hydromulching	507,500	SY	$ 2.00	$ 1,015,000
				Paving Estimate Subtotal:	**$ 4,482,340**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 89,700
10	Traffic Control	5%	$ 224,200
11	Erosion Control	3%	$ 134,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 896,500
		Other Components Estimate Subtotal:	**$ 1,344,900**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	$ -	$ -
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	1 - signal	$ 150,000	$ -
17	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 5,827,240
Mobilization	5%	$ 291,400
Contingency	10%	$ 611,900
Construction Cost Estimate Total:		**$ 6,730,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction	Assume TxDOT funds construction	$ (6,730,600)	$ -
Engineering/Survey/Testing		12.5%	$ 841,300
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 61,900	$ 61,900
	Impact Fee Project Cost Estimate Total:		**$ 903,200**
	Estimated Finance Cost (11.9%; i.e. 3% over 10 years)		**$ 107,400**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

LIONS CLUB LANE

Ex. Lions Club Ln to SH 205

Roadway Information:			
Functional Classification:	Collector - Type E	No. of Lanes:	2
Length (lf):	2,218		
Right-of-Way Width (ft.):	60		
Median Type:	TWLTL		
Pavement Width (BOC to BOC):	33		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	23	STA	$ 2,500.00	$ 57,500
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	3,000	CY	$ 10.00	$ 30,000
4	8" Concrete Pavement w/ Integral Curb	8,200	SY	$ 55.00	$ 451,000
5	6" Flex Base	8,700	SY	$ 15.00	$ 130,500
6	Concrete Driveway	980	SY	$ 50.00	$ 49,000
7	4" Concrete Sidewalk and Ramps	22,180	SF	$ 6.00	$ 133,080
8	Hydromulching	37,700	SY	$ 2.00	$ 75,400
				Paving Estimate Subtotal:	**$ 926,480**

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%	$ 46,400
11	Erosion Control	3%	$ 27,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 185,300
		Other Components Estimate Subtotal:	**$ 278,100**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 1,204,580
Mobilization	5%	$ 60,300
Contingency	10%	$ 126,500
Construction Cost Estimate Total:		**$ 1,391,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,391,400
Engineering/Survey/Testing		12.5%	$ 173,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 133,100	$ 133,100

Impact Fee Project Cost Estimate Total:	**$ 1,698,400**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 202,100**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

WINDSOR AVENUE

FM 2578 to Existing Windsor Ave (@ Home Depot)

Roadway Information:			
Functional Classification:	Collector - Type C	No. of Lanes:	4
Length (lf):	1,452		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Extension of roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	15	STA	$ 2,500.00	$ 37,500
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	2,800	CY	$ 10.00	$ 28,000
4	8" Concrete Pavement w/ Integral Curb	7,500	SY	$ 55.00	$ 412,500
5	6" Flex Base	8,100	SY	$ 15.00	$ 121,500
6	Concrete Driveway	250	SY	$ 50.00	$ 12,500
7	4" Concrete Sidewalk and Ramps	14,520	SF	$ 6.00	$ 87,120
8	Hydromulching	63,900	SY	$ 2.00	$ 127,800
				Paving Estimate Subtotal:	**$ 826,920**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 16,600
10	Traffic Control	5%	$ 41,400
11	Erosion Control	3%	$ 24,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 165,400
		Other Components Estimate Subtotal:	**$ 248,300**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 1,075,220
Mobilization	5%	$ 53,800
Contingency	10%	$ 113,000
Construction Cost Estimate Total:		**$ 1,242,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,242,100
Engineering/Survey/Testing		12.5%	$ 155,300
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 145,200	$ 145,200

Impact Fee Project Cost Estimate Total:	**$ 1,542,600**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 183,500**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

WINDSOR AVENUE

Existing Windsor Ave (@ Home Depot) to SH 34

Roadway Information:			
Functional Classification:	Collector - Type C	No. of Lanes:	4
Length (lf):	1,214		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Recoupment of constructed roadway to thoroughfare standard		

Impact Fee Cost Estimate Summary				
Item Description	**Notes**	**Allowance**		**Item Cost**
Construction	Actual cost on project from City	-	$	980,099
Engineering/Survey/Testing			$	-
Right-of-Way Acquisition			$	-
		Impact Fee Project Cost Total:	**$**	**980,099**
		Finance Cost:	**$**	**-**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

TOWN NORTH DRIVE

Frances St (SH 34) to Callie St (SH 34)

Roadway Information:			
Functional Classification:	Collector - Type D	No. of Lanes:	2
Length (lf):	2,401		
Right-of-Way Width (ft.):	80		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	24	STA	$ 2,500.00	$ 60,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	2,400	CY	$ 10.00	$ 24,000
4	8" Concrete Pavement w/ Integral Curb	6,500	SY	$ 55.00	$ 357,500
5	6" Flex Base	7,500	SY	$ 15.00	$ 112,500
6	Concrete Driveway	1,060	SY	$ 50.00	$ 53,000
7	4" Concrete Sidewalk and Ramps	24,010	SF	$ 6.00	$ 144,060
8	Hydromulching	110,400	SY	$ 2.00	$ 220,800
				Paving Estimate Subtotal:	**$ 971,860**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 19,500
10	Traffic Control	5%	$ 48,600
11	Erosion Control	3%	$ 29,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 194,400
		Other Components Estimate Subtotal:	**$ 291,700**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 1,263,560
Mobilization	5%	$ 63,200
Contingency	10%	$ 132,700
Construction Cost Estimate Total:		**$ 1,459,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,459,500
Engineering/Survey/Testing		12.5%	$ 182,400
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 192,100	$ 192,100

Impact Fee Project Cost Estimate Total:	**$ 1,834,000**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 218,200**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

SH 34

Virginia St (SH 34) to US 80

Roadway Information:			
Functional Classification:	Arterial - Type AA	No. of Lanes:	4
Length (lf):	4,013		
Right-of-Way Width (ft.):	140		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Recoupment of constructed roadway to thoroughfare standard;		
	TxDOT project, only City portion considered		

Impact Fee Cost Estimate Summary				
Item Description	**Notes**	**Allowance**		**Item Cost**
Construction	Actual cost on project from City	-	$	880,000
Engineering/Survey/Testing			$	500,000
Right-of-Way Acquisition			$	120,000
		Impact Fee Project Cost Total:	**$**	**1,500,000**
		Finance Cost:	**$**	**-**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

SH 34

US 80 to N City Limits

Roadway Information:			
Functional Classification:	Arterial - Type AA	No. of Lanes:	4
Length (lf):	7,814		
Right-of-Way Width (ft.):	140		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Recoupment of constructed roadway to thoroughfare standard;		
	TxDOT project, only City portion considered		

Impact Fee Cost Estimate Summary				
Item Description	**Notes**	**Allowance**		**Item Cost**
Construction	Actual cost on project from City	-	$	675,000
Engineering/Survey/Testing			$	75,000
Right-of-Way Acquisition			$	-
		Impact Fee Project Cost Total:	**$**	**750,000**
		Finance Cost:	**$**	**-**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

BRITISH FLYING SCHOOL BOULEVARD

SH 34 to Airport

Roadway Information:			
Functional Classification:	Arterial - Type AA	No. of Lanes:	4
Length (lf):	7,814		
Right-of-Way Width (ft.):	140		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Recoupment of constructed roadway to thoroughfare standard;		
	TxDOT project, only City portion considered		

Impact Fee Cost Estimate Summary				
Item Description	**Notes**	**Allowance**		**Item Cost**
Construction	Actual cost on project from City	-	$	1,203,568
Engineering/Survey/Testing			$	85,000
Right-of-Way Acquisition			$	-
		Impact Fee Project Cost Total:	**$**	**1,288,568**
		Finance Cost:	**$**	**-**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

ROCHESTER STREET

Virginia St (SH 34) to Moore Ave (US 80)

Roadway Information:			
Functional Classification:	Arterial - Type B	No. of Lanes:	2
Length (lf):	4,201		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	23		
Description:	Construct half of ultimate 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	$ 2,500.00	$ 107,500
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	4,000	CY	$ 10.00	$ 40,000
4	10" Concrete Pavement w/ Integral Curb	10,800	SY	$ 60.00	$ 648,000
5	10" Flex Base	11,700	SY	$ 20.00	$ 234,000
6	Concrete Driveway	1,860	SY	$ 50.00	$ 93,000
7	4" Concrete Sidewalk and Ramps	42,010	SF	$ 6.00	$ 252,060
8	Hydromulching	281,500	SY	$ 2.00	$ 563,000
				Paving Estimate Subtotal:	**$ 1,937,560**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 38,800
10	Traffic Control	5%	$ 96,900
11	Erosion Control	3%	$ 58,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 387,600
	Other Components Estimate Subtotal:		**$ 581,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	$ -	$ -
14	Drainage Structures	Minor crossing	$ 100,000	$ 100,000
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
17	Other	2 - RR crossings	$ 500,000	$ 500,000
		Special Components Estimate Subtotal:		**$ 600,000**

I, II, & III Construction Subtotal:		$ 3,119,060
Mobilization	5%	$ 156,000
Contingency	10%	$ 327,600
Construction Cost Estimate Total:		**$ 3,602,700**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,602,700
Engineering/Survey/Testing		12.5%	$ 450,300
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 420,100	$ 420,100

Impact Fee Project Cost Estimate Total:	**$ 4,473,100**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 532,200**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

FM 429 (realignment)

Moore Ave (US 80) to Existing FM 429

Roadway Information:			
Functional Classification:	Arterial - Type A	No. of Lanes:	2
Length (lf):	3,160		
Right-of-Way Width (ft.):	120		
Median Type:	None		
Pavement Width (BOC to BOC):	23		
Description:	Construct half of ultimate 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	32	STA	$ 2,500.00	$ 80,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	3,000	CY	$ 10.00	$ 30,000
4	10" Concrete Pavement w/ Integral Curb	8,100	SY	$ 60.00	$ 486,000
5	10" Flex Base	8,800	SY	$ 20.00	$ 176,000
6	Concrete Driveway	1,400	SY	$ 50.00	$ 70,000
7	4" Concrete Sidewalk and Ramps	31,600	SF	$ 6.00	$ 189,600
8	Hydromulching	274,900	SY	$ 2.00	$ 549,800
				Paving Estimate Subtotal:	**$ 1,581,400**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 31,700
10	Traffic Control	5%	$ 79,100
11	Erosion Control	3%	$ 47,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 316,300
		Other Components Estimate Subtotal:	**$ 474,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	$ -	$ -
14	Drainage Structures	Major crossing	$ 250,000	$ 250,000
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
17	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 250,000**

I, II, & III Construction Subtotal:		$ 2,306,000
Mobilization	5%	$ 115,300
Contingency	10%	$ 242,200
Construction Cost Estimate Total:		**$ 2,663,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction	Assume TxDOT funds construction	$ (2,663,500)	$ -
Engineering/Survey/Testing		12.5%	$ 332,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 379,200	$ 379,200

Impact Fee Project Cost Estimate Total:	**$ 712,100**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 84,700**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

WILSON ROAD (CR 309)

S City Limits to N City Limits (Airport Rd)

Roadway Information:			
Functional Classification:	Arterial - Type AA	No. of Lanes:	4
Length (lf):	3,010		
Right-of-Way Width (ft.):	140		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Construct new roadway with four lanes of ultimate 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	30	STA	$ 2,500.00	$ 75,000
2	Remove Existing Pavement	30	STA	$ 1,000.00	$ 30,000
3	Unclassified Street Excavation	5,900	CY	$ 10.00	$ 59,000
4	10" Concrete Pavement w/ Integral Curb	16,100	SY	$ 60.00	$ 966,000
5	10" Flex Base	17,400	SY	$ 20.00	$ 348,000
6	Concrete Driveway	1,330	SY	$ 50.00	$ 66,500
7	4" Concrete Sidewalk and Ramps	30,100	SF	$ 6.00	$ 180,600
8	Hydromulching	246,800	SY	$ 2.00	$ 493,600
				Paving Estimate Subtotal:	**$ 2,218,700**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 44,400
10	Traffic Control	5%	$ 111,000
11	Erosion Control	3%	$ 66,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 443,800
		Other Components Estimate Subtotal:	**$ 665,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	$ -	$ -
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	IH-20 bridge	$ 1,890,000	$ 1,890,000
16	Traffic Signals	2 - signals (frontage roads)	$ 300,000	$ 300,000
17	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 2,190,000**

I, II, & III Construction Subtotal:		$ 5,074,500
Mobilization	5%	$ 253,800
Contingency	10%	$ 532,900
Construction Cost Estimate Total:		**$ 5,861,200**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction	Assume TxDOT funds construction	$ (5,861,200)	$ -
Engineering/Survey/Testing		12.5%	$ 732,700
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 240,800	$ 240,800
	Impact Fee Project Cost Estimate Total:		**$ 973,500**
	Estimated Finance Cost (11.9%; i.e. 3% over 10 years)		**$ 115,800**

City of Terrell

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW COLLECTOR

British Flying School Blvd to IH-20 Frontage Rd

Roadway Information:			
Functional Classification:	Collector - Type D	No. of Lanes:	2
Length (lf):	4,405		
Right-of-Way Width (ft.):	80		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	44	STA	$ 2,500.00	$ 110,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	4,400	CY	$ 10.00	$ 44,000
4	8" Concrete Pavement w/ Integral Curb	11,800	SY	$ 55.00	$ 649,000
5	6" Flex Base	13,800	SY	$ 15.00	$ 207,000
6	Concrete Driveway	1,950	SY	$ 50.00	$ 97,500
7	4" Concrete Sidewalk and Ramps	44,050	SF	$ 6.00	$ 264,300
8	Hydromulching	202,600	SY	$ 2.00	$ 405,200
				Paving Estimate Subtotal:	**$ 1,777,000**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 35,600
10	Traffic Control	5%	$ 88,900
11	Erosion Control	3%	$ 53,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 355,400
	Other Components Estimate Subtotal:		**$ 533,300**

III. Special Construction Components

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

I, II, & III Construction Subtotal:		$ 2,310,300
Mobilization	5%	$ 115,600
Contingency	10%	$ 242,600
Construction Cost Estimate Total:		**$ 2,668,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,668,500
Engineering/Survey/Testing		12.5%	$ 333,600
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ 352,400	$ 352,400

Impact Fee Project Cost Estimate Total:	**$ 3,354,500**
Estimated Finance Cost (11.9%; i.e. 3% over 10 years)	**$ 399,100**

APPENDIX H
Roadway Improvement Plan Projects

Appendix H
Roadway Improvement 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 DC = divided collector UC = undivided collector
% 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%.
PK-HR VOLUME	The existing volumes of cars on the roadway segment traveling during the afternoon (P.M.) peak hour of travel.
VEH-MI SUPPLY TOTAL	The number of total service units (vehicle-miles) supplied within the segment/service area, based on the length and established capacity of the roadway type.
VEH-MI DEMAND TOTAL	The total service unit (vehicle-mile) demand created by existing traffic on the roadway segment in the afternoon peak hour.
VEH-MI EXCESS CAPACITY TOTAL	The number of service units supplied but unused by existing traffic in the afternoon peak hour.
VEH-MI DEFICIENCY	The deficiency in service units during the afternoon peak hour when demand exceeds capacity supplied by the CIP.
PROJECT STATUS	Identification of project as “new” or “recoupment”.

Terrell Roadway Impact Fee Study Update
Roadway Capital Improvements Plan

Proj No.	Serv Area	Shared Svc Area	Project Type	Roadway	From	To	Length (mi)	No. of Lanes	Type	Lane Capacity	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	W		N	Windsor Avenue	Rosehill Road	Rockwall Street	0.41	4	DC	375	100%	0	0	0	610	0	610	0
2	W		N	Windsor Avenue	Rockwall Street	FM 2578	0.37	2	DC	375	100%	0	0	0	280	0	280	0
3	W		N	Bradshaw Street	Moore Avenue	Frazier Street	0.52	4	DA	470	100%	87	63	150	983	78	905	0
4	W		N	Bradshaw Street	Frazier Street	Rosehill Road	0.68	4	DA	470	100%	0	0	0	1,275	0	1,275	0
5	W		N	Rosehill Road	500' W. of Lincoln Ln	S. City Limits	1.04	6	DA	470	100%	33	31	64	2,932	66	2,866	0
6	W		N	West End Street	FM 148	Bradshaw Street	0.76	2	UA	425	100%	81	58	139	649	106	543	0
7	W		N	West End Street	Bradshaw Street	Ann Street	0.40	2	UA	425	100%	81	58	139	337	55	282	0
8	W		N	Colquitt Road	SH 205	Lovers Lane	0.34	2	UA	425	100%	116	161	277	291	95	196	0
9	W		N	Lovers Lane	Colquitt Road	Griffith Avenue	0.41	3	SC	375	100%	108	93	201	305	82	223	0
10	W		N	Griffith Avenue	Carl Lee Circle	Lovers Lane	0.27	2	UC	340	100%	138	156	294	181	78	103	0
11	W		N	New Collector	Griffith Avenue	Town N Extension	0.90	2	DC	375	100%	0	0	0	674	0	674	0
12	W		N	Town North Drive	New Collector	FM 986/Poetry Road	0.22	2	DC	375	100%	0	0	0	167	0	167	0
13	W		N	Las Lomas Parkway	N. City Limits	Apache Trail	0.47	4	DA	470	100%	0	0	0	881	0	881	0
14	W		N	SH 205	Moore Avenue	Colquitt Road	1.17	4	DA	470	100%	608	577	1185	2,204	1,389	815	0
15	W		N	Lions Club Lane Ext	Ex. Lions Club Lane	SH 205	0.42	3	SC	375	100%	0	0	0	315	0	315	0
Sub-Total Service Area West							**8.38**								**12,084**	**1,949**	**10,135**	**0**
16	E		N	Windsor Avenue	FM 2578	Home Depot	0.28	4	DC	375	100%	0	**0**	0	413	0	413	0
17	E		R	Windsor Avenue	Home Depot	SH 34	0.23	4	DC	375	100%	83	70	153	345	35	310	0
18	E		N	Town North Drive	Frances Street (SH 34)	Callie St (SH 34)	0.45	2	DC	375	100%	0	0	0	341	0	341	0
19	E		R	SH 34	Virginia St. (SH 34)	US 80	0.76	4	DA	470	100%	528	321	849	1,429	645	784	0
20	E		R	SH 34	US 80	N. City Limits	1.48	4	DA	470	100%	528	321	849	2,782	1,256	1,526	0
21	E		R	British Flying School Blvd	SH 34	Airport	0.42	2	DC	375	100%	5	5	10	316	4	312	0
22	E		N	Rochester Street	Virginia St. (SH 34)	US 80	0.80	2	UA	425	100%	24	20	44	676	35	641	0
23	E		N	FM 429 (realignment)	US 80	Ex. FM 429 (N)	0.60	2	UA	425	100%	0	0	0	509	0	509	0
24	E		N	CR 309/Wilson Rd	@IH-20 Interchange		0.57	4	DA	470	100%	68	68	136	1,072	78	994	0
25	E		N	New Collector	British Flying School Blvc	IH-20 Frontage Road	0.83	2	DC	375	100%	0	0	0	626	0	626	0
Sub-Total Service Area East							**6.42**								**8,509**	**2,053**	**6,455**	**0**
Sub-Total Service Area Brushy Creek							**0.00**								**0**	**0**	**0**	**0**
Totals:															***20,593***	***4,002***	***16,590***	***0***

APPENDIX I
Roadway Improvement Plan Cost Analysis

Appendix I
Roadway Improvement Plan Cost Analysis

Definitions

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): DA = divided arterial UA = undivided arterial DC = divided collector UC = undivided collector
% IN SERVICE AREA	If the roadway is located on the boundary of the service area (with the city limits running along the centerline of the roadway), then half of the roadway is inventoried in the service area and the other half is not. This value is either 50% or 100%.
TOTAL PROJECT COST	The estimated cost (in dollars) of the entire segment of the proposed improvement.
STUDY UPDATE COST	The portion of the study update cost allocated to the proposed improvement. The allocated cost is based on capacity supplied by a proposed improvement relative to the entire CIP program.
SERVICE AREA TOTAL COST	The estimated cost (in dollars) of the portion of the proposed roadway improvement within the service area.
PROJECT STATUS	Identification of project as “new” or “recoupment”.

Terrell Roadway Impact Fee Study Update
Roadway Capital Improvements Plan

Proj No.	Serv Area	Shared Svc Area	Project Type	Roadway	From	To	Length (mi)	No. of Lanes	Type	Pct. in Serv. Area	Roadway Costs Engineering	ROW	Construction	Finance	Total Project Cost
1	W		N	Windsor Avenue	Rosehill Road	Rockwall Street	0.41	4	DC	100%	$ 228,600	$ 214,800	$ 1,828,900	$ 270,400	$ 2,542,700
2	W		N	Windsor Avenue	Rockwall Street	FM 2578	0.37	2	DC	100%	$ 111,500	$ 98,600	$ 892,100	$ 131,100	$ 1,233,300
3	W		N	Bradshaw Street	Moore Avenue	Frazier Street	0.52	4	DA	100%	$ 391,300	$ 209,800	$ 3,130,400	$ 444,000	$ 4,175,500
4	W		N	Bradshaw Street	Frazier Street	Rosehill Road	0.68	4	DA	100%	$ 453,800	$ 429,800	$ 3,630,500	$ 537,100	$ 5,051,200
5	W		N	Rosehill Road	500' W. of Lincoln Ln	S. City Limits	1.04	6	DA	100%	$ 1,234,800	$ 658,800	$ 7,448,400	$ 1,111,600	$ 10,453,600
6	W		N	West End Street	FM 148	Bradshaw Street	0.76	2	UA	100%	$ 370,100	$ 282,100	$ 2,960,800	$ 429,900	$ 4,042,900
7	W		N	West End Street	Bradshaw Street	Ann Street	0.40	2	UA	100%	$ 185,500	$ 155,000	$ 1,484,300	$ 217,100	$ 2,041,900
8	W		N	Colquitt Road	SH 205	Lovers Lane	0.34	2	UA	100%	$ 171,100	$ 36,200	$ 1,368,800	$ 187,500	$ 1,763,600
9	W		N	Lovers Lane	Colquitt Road	Griffith Avenue	0.41	3	SC	100%	$ 172,000	$ -	$ 1,375,600	$ 184,100	$ 1,731,700
10	W		N	Griffith Avenue	Carl Lee Circle	Lovers Lane	0.27	2	UC	100%	$ 112,500	$ -	$ 900,300	$ 120,500	$ 1,133,300
11	W		N	New Collector	Griffith Avenue	Town N Extension	0.90	2	DC	100%	$ 373,200	$ 379,600	$ 2,985,700	$ 444,800	$ 4,183,300
12	W		N	Town North Drive	New Collector	FM 986/Poetry Road	0.22	2	DC	100%	$ 89,800	$ 94,000	$ 718,300	$ 107,300	$ 1,009,400
13	W		N	Las Lomas Parkway	N. City Limits	Apache Trail	0.47	4	DA	100%	$ 839,800	$ 296,900	$ 6,718,100	$ 934,700	$ 8,789,500
14	W		N	SH 205	Moore Avenue	Colquitt Road	1.17	4	DA	100%	$ 841,300	$ 61,900	$ -	$ 107,400	$ 1,010,600
15	W		N	Lions Club Lane Ext	Ex. Lions Club Lane	SH 205	0.42	3	SC	100%	$ 173,900	$ 133,100	$ 1,391,400	$ 202,100	$ 1,900,500
Sub-Total Service Area West							**8.38**				**$ 5,749,200**	**$ 3,050,600**	**$ 36,833,600**	**$ 5,429,600**	**$ 51,063,000**
16	E		N	Windsor Avenue	FM 2578	Home Depot	0.28	4	DC	100%	$ 155,300	$ 145,200	$ 1,242,100	$ 183,500	$ 1,726,100
17	E		R	Windsor Avenue	Home Depot	SH 34	0.23	4	DC	100%	$ -	$ -	$ 980,099	$ -	$ 980,099
18	E		N	Town North Drive	Frances Street (SH 34)	Callie St (SH 34)	0.45	2	DC	100%	$ 182,400	$ 192,100	$ 1,459,500	$ 218,200	$ 2,052,200
19	E		R	SH 34	Virginia St. (SH 34)	US 80	0.76	4	DA	100%	$ 500,000	$ 120,000	$ 880,000	$ -	$ 1,500,000
20	E		R	SH 34	US 80	N. City Limits	1.48	4	DA	100%	$ 75,000	$ -	$ 675,000	$ -	$ 750,000
21	E		R	British Flying School Blvd	SH 34	Airport	0.42	2	DC	100%	$ 85,000	$ -	$ 1,203,568	$ -	$ 1,288,568
22	E		N	Rochester Street	Virginia St. (SH 34)	US 80	0.80	2	UA	100%	$ 450,300	$ 420,100	$ 3,602,700	$ 532,200	$ 5,005,300
23	E		N	FM 429 (realignment)	US 80	Ex. FM 429 (N)	0.60	2	UA	100%	$ 332,900	$ 379,200	$ -	$ 84,700	$ 796,800
24	E		N	CR 309/Wilson Rd	@IH-20 Interchange		0.57	4	DA	100%	$ 732,700	$ 240,800	$ -	$ 115,800	$ 1,089,300
25	E		N	New Collector	British Flying School Blvd	IH-20 Frontage Road	0.83	2	DC	100%	$ 333,600	$ 352,400	$ 2,668,500	$ 399,100	$ 3,753,600
Sub-Total Service Area East							**6.42**				**$ 2,847,200**	**$ 1,849,800**	**$ 12,711,467**	**$ 1,533,500**	**$ 18,941,967**
Sub-Total Service Area Brushy Creek							**0.00**				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Totals:											***$ 8,596,400***	***$ 4,900,400***	***$ 49,545,067***	***$ 6,963,100***	***$ 70,004,967***

Summary:

Engineering Cost	$8,596,400
Right-of-Way Cost	$4,900,400
Construction Cost	$49,545,067
Finance Cost	$6,963,100
TOTAL NET COST	$70,004,967
Future Impact Fee Update Cost	$70,000
TOTAL IMPLEMENTATION COST	$70,074,967
50% Percent Credit	$35,037,484

Notes:

DA - Divided Arterial
UA - Undivided Arterial
SA - Special Arterial with two-way left turn lane (TWLTL)
DC - Divided collector
UC - Undivided Collector
SC - Special Collector with two-way left turn lane (TWLTL)

Project Type

N - New Project
R - Recoupment Project

APPENDIX J
Roadway Impact Fee Service Area Summary

Terrell Roadway Impact Fee Study Update
Roadway Service Area Analysis Summary

	A	B	C	D	E	F	G	H	I	J	K	L	M
				A - B - C		E x (50%)	F x (D / A)	F - G		I / D	G x J	K / I	L / (50%)
Service Area	Capacity Supplied by CIP	Existing Utilization	Existing Deficiencies	Net Capacity Supplied by CIP	Total Project Cost of CIP	Credited Project Cost of CIP	Cost of Net Capacity	Cost to Meet Existing Utilization	Projected New Development (10-Yr Demand)	Percent of CIP Attributable to New Dev.	Credited Cost Attributable to New Dev.	Credited Cost per Service Unit (Maximum Allowable)	Actual Cost per Service Unit
	(veh-mi)	(veh-mi)	(veh-mi)	(veh-mi)	(Full Cost)	(50% Credit)	(50% Credit)	(50% Credit)	(veh-miles)		(50% Credit)	(50% Credit)	(Full Cost)
West	12,084	1,949	1,110	9,025	$51,104,076	$25,552,038	$19,083,676	$6,468,362	12,687	100.0	$19,083,676	$1,504.00	$3,008.00
East	8,509	2,053	54	6,402	$18,970,891	$9,485,445	$7,136,658	$2,348,788	6,113	95.5	$6,814,494	$1,114.00	$2,228.00
Brushy Creek	0	0	0	0	$0	$0	$0	$0	0	100.0	$0	$0.00	$0.00
Totals	20,593	4,002	1,164	15,427	$70,074,967	$35,037,484	$26,220,334	$8,817,149	18,800	100.0	$25,898,170	$1,343.00	$2,686.00
												Weighted Average	

APPENDIX K
Impact Fee Ordinance

ORDINANCE NO. 2767

AN ORDINANCE, AMENDING THE CODE OF ORDINANCES OF THE CITY OF TERRELL, TEXAS, CHAPTER 14 - IMPACT FEES; REPEALING AND REPLACING IN THEIR ENTIRETY ORDINANCES 2217, 2263, 2400, AND 2597; IMPOSING AN IMPACT FEE ON NEW DEVELOPMENT FOR PROVIDING WATER AND WASTEWATER FACILITIES NECESSITATED BY SUCH DEVELOPMENT; PROVIDING ROADWAY IMPROVEMENTS TO SUPPORT NEW DEVELOPMENT; ADOPTING UPDATED LAND USE ASSUMPTIONS, SERVICE AREA BOUNDARIES, AND CAPITAL IMPROVEMENTS PLANS; AND APPROVING REVISED ASSESSMENT AND COLLECTION SCHEDULES FOR WATER, WASTEWATER AND ROADWAY IMPACT FEES; PROVIDING DEFINITIONS; PROVIDING FOR USE OF PROCEEDS FROM SUCH ACCOUNTS; PROVIDING FOR APPEALS, RELIEF PROCEDURES AND EXEMPTIONS; PROVIDING FOR CREDITS; PROVIDING FOR UPDATES TO PLANS AND REVISION OF FEES; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Terrell, Texas previously has approved Land Use Assumptions and Capital Improvements Plans and adopted water, wastewater and roadway impact fees by Ordinances 2217, 2263, 2400, and 2597 adopted on April 6, 2004, April 19, 2005, April 7, 2009, and April 1, 2014 respectively; and

WHEREAS, the City Council has appointed a Capital Improvements Advisory Committee to advise the City Council concerning amendments to current land use assumptions, capital improvements plans and impact fees for water, wastewater and roadway facilities; and

WHEREAS, the City Council finds that in all things the City has complied with Chapter 395 of the Texas Local Government Code in the notice, adoption, promulgation and methodology necessary to adopt impact fees; and

WHEREAS, the City has retained consultants to prepare and/or update land use assumptions, capital improvements plans, and impact fees water, wastewater and roadway facilities; and

WHEREAS, the Capital Improvements Advisory Committee has made its recommendations to the City Council regarding Land Use Assumptions, Capital Improvements Plan and the imposition of Impact Fees for Roadways, Water and Wastewater facilities to update and replace Schedule 1 (Capital Improvement Costs) and Schedule 2 rates for collecting impact fees previously adopted by Ordinances 2217, 2263, 2400, and 2597; adopted on April 6, 2004, April 19, 2005, April 7, 2009, and April 1, 2014 respectively; and

WHEREAS, the adoption of impact fees and the periodic updates and amendments to the adopted Ordinance are intended to ensure the availability of adequate water, wastewater and roadway facilities in order to serve new development consistent with the policies in the City's Comprehensive Plan and development regulations; and

WHEREAS, to the extent that such new development places demands upon the public infrastructure, finding that those demands should be satisfied by partially shifting responsibility for financing the provision of such facilities from the public at large to the development actually creating the demands for them; and

WHEREAS, the City Council, after careful consideration of the matter, hereby finds and declares that impact fees imposed upon residential and nonresidential development to finance specified major public facilities in designated service areas, the demand for which is created by such development, are in the best interest of the general welfare of the City and its residents, are equitable, and do not impose an unfair burden on such development;

WHEREAS, this Ordinance is intended to and satisfies the statutory requirements for adoption of land use assumptions, capital improvements plans and impact fees; and

NOW THEREFORE BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF TERRELL, TEXAS:

ARTICLE I.
General Provisions

SECTION 1.

Short Title.
This Chapter shall be known and cited as the Terrell Impact Fee Regulations.

SECTION 2.

Purpose.
This Chapter is intended to ensure the provision of adequate public facilities to serve new development in the City by requiring each new development to pay its share of the cost of such improvements necessitated by and attributed to such new development.

SECTION 3.

Authority.
This Chapter is adopted pursuant to Texas Local Government Code Chapter 395 and the City Charter. The provisions of this Chapter shall not be construed to limit the power of the City to utilize other methods authorized under State law, or pursuant to other City powers to accomplish the purposes set forth herein, either in substitution, resolution, or otherwise to implement and administer this Chapter.

SECTION 4.

Definitions.
For the purposes of this Chapter the following words and phrases shall have the meanings respectively ascribed to them by this section:

Assessment –The determination of the amount of the maximum impact fee per service unit which can be imposed on new development pursuant to this Ordinance.

Building Permit –Written permission issued by the City for the construction, repair, alteration or addition to a structure.

Capital Improvements Advisory Committee (Advisory Committee) –Advisory committee, appointed by the City Council, to regularly review and update the Capital Improvement plan in accordance with the requirements of Chapter 395.

Capital Improvement Plan (CIP) –The plan or plans which identify water, wastewater, and roadway capital improvements or facility expansions pursuant to which impact fees may be assessed. The Capital Improvement Plan may be composed of a separate Water and Wastewater Capital Improvement Plan and a Roadway Capital Improvement Plan.

City –City of Terrell.

City Council (Council) – Governing body of the City of Terrell.

Credit –The amount of the reduction of an impact assessment for fees, payments or charges for the same type of capital improvements for which the fee has been assessed.

Commercial Development – For the purposes of this Ordinance, all development which is not single-family residential.

Existing Development – All development within the service area which has a water or wastewater tap on the City's water or wastewater system, or which has access to the City's roadway system as of the date of adoption of this Ordinance.

Facility Expansion – The expansion of the capacity of an existing facility, which serves the same function as an otherwise necessary new capital improvement in order that the existing facility may serve new development. Facility expansion does not include repair, maintenance, modernization, or expansion of an existing facility to better serve existing development.

Final Plat – The map, drawing or chart meeting the requirements of the City's Subdivision Ordinance on which is provided a subdivider's plan of a subdivision, and which has received approval by the City, and which is recorded with the office of the County Clerk.

Growth Related Cost – Capital construction cost of service related to providing additional service units to new development, either from excess capacity in existing facilities, from facility expansions or from new capital facilities.

Impact Fees – Fee for water, wastewater and roadway facilities to be imposed upon new development, in order to generate revenue to fund or recoup all the costs of capital improvements or facility expansion necessitated by and attributable to such new development. Impact fees do not include dedication of land for public parks or payment in lieu of the dedication to serve park needs; dedication of right-of-way or easements, or construction or dedication of site-related water distribution or wastewater collection facilities or internal roadways required by other ordinances of the City Code.

Land Use Assumptions – Description of the service area and projections of changes in land uses, densities, intensities, and population therein over at least a 10-year period, adopted by the City, as may be amended from time to time, upon which capital improvement plans are based.

Land Use Equivalency Table – A table converting the demands for capital improvements generated by various land uses to numbers of service units, as may be amended from time to time, which table is attached hereto and incorporated by reference herein as Exhibit 1.

New Development – The subdivision of land; or the construction, reconstruction, redevelopment, conversion, structural alteration, relocation, or enlargement of any structure; or any use or extension of the use of land; any of which increases the number of service units for water; wastewater or roadway services, or requires the purchase of a new water or wastewater tap. New development includes the purchase of a water tap resulting from the conversion of an individual well to the City's water utility and includes the purchase of a wastewater tap resulting from the conversion of an individual septic or other individual waste disposal system to the City's wastewater utility. A new single family home in an area platted prior to April 6, 2000 with a roadway, water line, and sewer line in an adjacent easement or right of way should not be considered new development.

Offset – The amount of the reduction of an impact fee designed to fairly reflect the value of system-related facilities, pursuant to rules herein established or administrative guidelines, provided and funded by a developer pursuant to the City's subdivision regulations or requirements.

Plat – The meaning given in the City's subdivision regulations. Plat includes replat.

Property Owner – Any person, corporation, legal entity or agent thereof having a legal or equitable interest in the land for which an impact fee becomes due. Property owner also includes the developer of the new development.

Recoupment – The imposition of an impact fee to reimburse the City for capital improvements which the City has constructed.

Residential Development – A lot developed for use and occupancy as a residence or residences, according to the City's Zoning Ordinance and Subdivision Ordinance as adopted or amended.

Roadway – Any freeway, expressway, principal or minor arterial or collector roadways designated in the City's adopted Thoroughfare Plan, as may be amended from time to time. Roadway also includes any roadway designated as a numbered highway on the official federal or Texas highway system, to the extent that the City incurs capital improvement costs for such facility.

Roadway Facility – Improvement for providing roadway service including, but not limited to, pavement, right-of-way, intersection improvements, drainage and traffic control devices. Roadway facility excludes roadways which are constructed by developers, the costs of which are reimbursed from charges paid by subsequent users of the facilities. Roadway facilities also exclude dedication of right-of-way or easements or construction or dedication of off-site roadways required by valid ordinances of the City of Terrell, Texas and necessitated and attributable to the new development.

Roadway Facility Expansion – Expansion of the capacity of any existing roadway improvement for the purpose of serving new development, not including repair, maintenance, modernization, or expansion of the existing roadway facility to serve existing development.

Roadway Improvement Plan – Portion of the CIP, as may be amended from time to time, which identifies the roadway facilities or roadway expansions and their associated cost which are necessitated by and which are attributable to new development, and which are to be financed in whole or in part through the imposition of roadway impact fees pursuant to this Ordinance.

Service Area – An area defined in this Ordinance within the corporate boundaries of the City for roadway facilities or with the corporate boundaries or extraterritorial jurisdiction of the City or other areas served in the City for water and wastewater facilities to be served by the capital improvements or facility expansions specified in the Capital Improvement Plan applicable to the service area.

Service Unit – Standardized measure of consumption, use, generation, or discharge attributable to an individual unit of development calculated in accordance with generally accepted engineering or planning standards for a particular category of capital improvements or facility expansions. Service units for water and wastewater impact fees are expressed in Service Unit Equivalents (SUE's). Service units for roadway impact fees are expressed in vehicle miles.

Service Unit Equivalent (SUE) – Basis for establishing equivalency among and within various customer classes and land uses. The table of equivalencies for water, wastewater, and roadway are included in Exhibit 1.

Site-related Facility - Improvement or facility which is for the primary use or benefit of a new development and/or which is for the primary purpose of safe and adequate provision of water, wastewater or roadway facilities to serve the new development, and which is not included in the impact fees capital improvements plan and for which the developer or property owner is solely responsible under subdivision or other applicable regulations.

Tap Purchase – The filing with the City of a written application of water or wastewater service and the acceptance of applicable fees by the City. The term "tap purchase" shall not be applicable to a meter purchased for and exclusively dedicated to fire protection.

Wastewater Facility – A wastewater interceptor or main, lift station, treatment facility or other facility included within and comprising an integral component of the City's collection and transmission system for wastewater. Wastewater facility includes land, easements or structures associated with such facilities. Wastewater facility excludes a site-related facility.

Wastewater Facility Expansion – Expansion of the capacity of any existing wastewater facility for the purpose of serving new development, not including the repair, maintenance, modernization or expansion of an existing wastewater facility to serve existing development.

Wastewater Improvement Plan – Portion of the Capital Improvement Plan, as may be amended from time to time, which identifies the wastewater facilities or wastewater expansions and their associated cost which are necessitated by and which are attributed to new development, and for a period not to exceed ten (10) years, and which are to be financed in whole or in part through the imposition of wastewater impact fees pursuant to this Ordinance.

Water Facility – A water main, pump station, storage tank or other facility included within and comprising an integral component of the City's water storage or distribution system. Water facility includes land, easements or structures associated with such facilities. Water facility excludes on site-related facilities or that portion of a water line or main which is constructed by a developer, the costs of which are reimbursed from charges paid by subsequent users of the facilities.

Water Facility Expansion – Expansion of the capacity of any existing water facility for the purpose of serving new development and not including the repair, maintenance, modernization or expansion of an existing water facility to serve existing development.

Water Improvement Plan – Portion of the Capital Improvement Plan, as may be amended from time to time, which identifies the water facilities or water expansions and their associated cost which are necessitated by and which are attributable to new development, and for a period not to exceed ten (10) years, and which are to be financed in whole or in part through the imposition of water impact fees pursuant to this Ordinance.

Water Meter – A device for measuring the flow of water to a development, whether for domestic or for irrigation purposes.

Vehicle Mile – A unit used to express both supply and demand provided by and placed on the roadway system. A combination of a number of vehicles traveling during a given time period and the distance in which these vehicles travel in miles; for supply, it is the capacity provided by facility type over a given segment distance.

SECTION 5.

Applicability of Impact Fees.

The provisions of this Ordinance apply to all new development within the corporate boundaries of the City and its extraterritorial jurisdiction which lie within the service area for each category of capital improvement, except that it shall not apply to tracts of land that were platted prior to the adoption of this Ordinance for a period of one year subsequent to the date of its adoption. The provisions of this article apply to all new development uniformly within each service area, which will include roadways in the City limits only.

SECTION 6.

Impact Fees as Conditions of Development Approval.

No application for new development shall be approved within the City without assessment of impact fees pursuant to this Ordinance, and no water and wastewater tap shall be installed and no building permit shall be issued unless the applicant has paid the applicable impact fees imposed by and calculated hereunder.

SECTION 7.

Establishment of Water and Wastewater Service Areas and Roadway Service Areas.

A) There are hereby established Service Areas for Water and Wastewater Impact Fees as depicted on Exhibits 2 attached to this Ordinance.

B) There are hereby established Service Areas for Roadway Impact Fees as depicted on Exhibit 3 attached to this Ordinance.

C) The service areas shall be established consistent with any facility service area defined in the CIP for each utility or facility. Additions or revisions to the service areas may be approved by the City Council consistent with the procedure set forth in Chapter 395.

SECTION 8.

Impact fees per service unit.

A) The maximum impact fee per service unit for each service area shall be established by category of capital improvement as set forth in Schedule 1.

B) The amount of the impact fees to be assessed by water meter size or by vehicle mile shall be as set forth in Schedule 1, attached hereto and made a part of this Ordinance by reference. Impact fees may be amended from time to time utilizing the amendment procedure set forth in Section 18.

C) The City may vary the rates of collection or amount of impact fees per service unit among or within service districts in order to reasonably further goals and policies affecting the adequacy of system facilities serving new development, or other regulatory purposes affecting the type, quality, intensity, economic development potential or development timing of land uses within such service districts.

D) The maximum impact fee per service unit for system facilities, as may be amended from time to time, hereby is declared to be an approximate and appropriate measure of the impacts generated by a new unit of development on the City's system facilities. To the extent that the impact fee charged against a new development, as may be amended from time to time, is less than the maximum impact fee per service unit, such difference hereby is declared to be founded on policies unrelated to measurement of the impacts of the new development on the City's system facilities. The maximum impact fee rate may be used in evaluating any claim by a property owner that the dedication or construction of a capital improvement imposed as a condition of development approval pursuant to the City's subdivision or development regulations is disproportionate to the impacts created by the development on the City's system facilities.

SECTION 9.

Service unit determination.

A) The number of service units for a new development shall be determined by using the land use equivalency table, attached hereto and incorporated herein by reference as Exhibit 1.

B) In determining the number of water and wastewater service units, the following rules shall apply:

1) Each new freestanding building requires a new water meter, except as provided in subsection (2).

2) Where a site is redeveloped (clearance and reconstruction), no new service units will be attributed to such redevelopment, provided that the water meter is of the same size as the development previously occupying the site. If the meter size is increased, the number of new service units will be based upon the increase in capacity of the meter.

3) Existing buildings or land uses may be expanded using existing meter service. No service units will be attributed to such development if the water

meter size remains the same. If the meter size is increased, the number of service units will be based upon the increase in capacity of the meter.

4) In determining the number of service units for wastewater impact fees, no service units will be attributed to irrigation meters.

5) If a new development does not require water or wastewater service, no service units will be attributable to the development.

6) For purposes of determining water impact fees, no service units will be attributable to an increase in the size of a water meter installed solely to provide capacity for sprinkler systems for fire safety.

7) Required meter size shall be determined by the City, based upon the proposed land use and AWWA Guidelines regarding meter sizing.

C) In determining the number of roadway service units, the following rules shall apply:

1) For residential structures, the number of units on the site shall be multiplied by the number of vehicle-miles per dwelling unit in Exhibit 1 to compute the total service units attributed to the site.

2) For business uses, the gross floor area (GFA) of a proposed structure divided by 1,000 shall be multiplied by the number of vehicle-miles per development unit for the proposed land use in Exhibit 1 to compute the total service units attributed to the site.

3) Where a site is redeveloped, no new service units will be attributed to the site provided that there is no increase in GFA and the proposed land use falls within the same category as the prior use. If the GFA is increased or if the proposed land use is in a different category, then the number of service units attributed to the site will be as computed for the change in impact.

SECTION 10.

Assessment of Impact Fees.

A) Assessment of the impact fee for any new development shall be at the time of final plat approval or upon approval of a building permit for property already platted for either new development, redevelopment resulting in an increase in service units, when possible (see G below) and shall be based upon the maximum impact fees per service unit then in effect, as set forth in Schedule 1. Assessment of the maximum impact fee for any new development shall be made as follows:

1) For land which is platted at the time of application for a building permit or utility connection, or for a new development which received final plat approval prior to the effective date of this Ordinance, and for which no

replatting is necessary pursuant to the City's subdivision regulations prior to development, assessment of impact fees shall occur at the time application is made for the building permit or utility connection, whichever first occurs, and shall be at the rates set forth in Schedule 2.

2) For a new development which is submitted for approval pursuant to the City's subdivision regulations on or after the effective date of this Ordinance, or for which replatting results in an increase in the number of service units after such date, assessment of impact fees shall be at the time of final plat approval, and shall be at the rates set forth in Schedule 1.

B) Following assessment of the impact fee pursuant to subsection A, the amount of the impact fee assessment per service unit for that development cannot be increased, unless the owner proposes to change the approved development by the submission of a new application for final plat approval or other development application that results in approval of additional service units, in which case a new assessment shall occur at the Schedule 1 rate then in effect for such additional service units.

C) Following the vacating of any plat or submittal of any replat, a new assessment must be made in accordance with the provisions set forth herein.

D) Approval of an amended plat pursuant to Texas Local Government Code, Section 212.016 and the City's subdivision regulations is not subject to reassessment for any impact fee.

E) For a development which received final plat approval prior to adoption of impact fees by the City, or for which no plat approval is required, assessment of impact fees shall be at the time of application for permit of service in the amount set forth herein.

F) After a development has been assessed impact fees under this Ordinance, no new impact fee shall be assessed against that development unless:

1) The final plat lapses or expires or a new application for final plat approval is submitted on the property; or

2) The number of service units to be developed on the property increases.

G) For business developments where building gross floor area is not known at the time of final plat approval, assessment of impact fees shall occur upon application for building permit.

SECTION 11.

Computation and Collection of Impact Fees.

A) Impact fees shall be collected at the time the City issues a building permit for land within the corporate limits, or at the time an application for an individual water meter connection to the City's water system is filed for land in Extra-Territorial Jurisdiction.

B) The impact fees to be paid and collected by water meter size or by vehicle-mile shall be at the rates listed in Schedule 2.

C) The City shall compute the impact fees for the new development in the following manner:

1) The amount of each impact fee shall be determined by multiplying the number of service units generated by the new development by the impact fee per service unit for the service area using Schedule 2. The number of service units shall be determined by using the land equivalency table (Exhibit 1).

2) The amount of each impact fee shall be reduced by any allowable offsets or credits for that category of capital improvements.

3) The total amount of the impact fees for the new development shall be calculated and attached to the development application or request for connection as a condition of approval.

D) The amount of each impact fee for a new development shall not exceed an amount computed by multiplying the fee assessed per service unit pursuant to Section 8 by the number of service units generated by the development.

E) If the building permit for which an impact fee has been paid has expired, and a new application is thereafter filed, the impact fees shall be computed using Schedule 2 then in effect, with credits for previous payment of fees being applied against the new fees due.

F) Whenever the property owner proposes to increase the number of service units for a development, the additional impact fees collected for such new service units shall be determined by using Exhibit 1 then in effect, and such additional fee shall be collected at the time prescribed by this section.

SECTION 12.

Credits Against Impact Fees.

A) A property owner who constructs an area-related facility pursuant to an improvements agreement approved by the City following adoption of this Ordinance may be charged reduced impact fees due for the property for that category of capital improvement by the value of such improvement, as determined in Subsection (C). The credit shall be associated with the plat of the property that is to be served by the capital improvement constructed.

B) The improvements agreement required by subsection (A) may provide for participation by the City in the costs of the capital improvement to be constructed by the property owner, as provided in the City's subdivision regulations. The amount of any credit shall be reduced by the amount of the City's participation.

C) The amount of a credit shall be determined pursuant to rules established in this Section or pursuant to administrative guidelines promulgated by the City. A credit against impact fees is limited to that portion of the cost of an area-related facility attributable to new development within the service area and does not include that portion of the cost of the equivalent to the cost of a standard or minimum size facility.

   The unit costs used to calculate offsets and credits shall not exceed those assumed for the capital improvements included in the impact fees capital improvements plan for the category of facility for which the impact fee is imposed, nor shall the amount of the offset or credit exceed the actual costs of constructing a capital improvement. For roadway facilities, the costs of any roadway improvement not included within the roadway improvements plan or the Master Thoroughfare Plan are not eligible for offsets or credits.

D) A credit associated with a plat shall be applied to reduce an impact fee at the time of final plat approval for developments. For all other developments, the credit shall be applied to reduce an impact fee at the time of application for the first building permit or at the time of application for the first utility connection for the property and, thereafter, to all subsequently issued building permits or utility connections, until the credit or offset is exhausted.

E) Unused credits or oversize costs which are not attributable to a new development shall be reimbursed.

F) Offsets or credits created after the effective date of an Ordinance establishing an impact fee for a particular category of capital improvement shall expire within 10 years from the date the offset or credit was created. Offsets or credits arising prior to such effective date shall expire ten years from such effective date. Credits for construction of improvements shall be deemed created when the improvements are completed and the City has accepted the facility, or in the case of improvements constructed and

accepted prior to the effective date of the Ordinance establishing the impact fee for a particular category of capital improvements, on such effective date.

SECTION 13.

Establishment of Accounts.

A) The City's Finance Department shall establish an account to which interest is allocated for each service area for each category of capital facility for which an Impact Fee is imposed pursuant to this Ordinance. Each impact fee collected within the service area shall be deposited in such account.

B) Interest earned on the account into which the impact fees are deposited shall be considered funds of the account, and shall be used solely for the purposes authorized in Section 14.

C) The City's Finance Department shall establish adequate financial and accounting controls to ensure that impact fees disbursed from the account are utilized solely for the purposes authorized in Section 14. Disbursement of funds shall be authorized by the City at such times as are reasonably necessary to carry out the purposes and intent of this Ordinance; provided, however, that any fee paid shall be expended within a reasonable period of time, but not to exceed ten (10) years from the date the fee is deposited into the account.

D) The City's Finance Department shall maintain and keep financial records for impact fees, which shall show the source and disbursement of all fees collected in or expended from each service area. The records of the account into which impact fees are deposited shall be open for public inspection and copying during ordinary business hours. The City may establish a fee for copying services.

E) The Finance Department shall maintain and keep adequate financial records for said account which shall show the source and disbursement of all funds placed in or expended from such account.

SECTION 14.

Use of Proceeds of Impact Fee Accounts.

A) The impact fees collected for each service area pursuant to this article may be used to finance or to recoup the costs of any capital improvements or facility expansion identified in the applicable capital improvements plan for the service area, including but not limited to the construction contract price, surveying and engineering fees, land acquisition costs (including land purchases, court awards and costs, attorney's fees and expert witness fees). Impact fees may also be used to pay the principal sum and interest and other finance costs on bonds, notes or other obligations issued by or on behalf of the City to finance such capital improvements or facility expansion.

B) Impact fees collected pursuant to this Ordinance shall not be used to pay for any of the following expenses:

1) Construction, acquisition or expansion of capital improvements or assets other than those identified in the applicable capital improvements plan;

2) Repair, operation, or maintenance of existing or new capital improvements or facility expansion;

3) Upgrade, expansion or replacement of existing capital improvements to serve existing development in order to meet stricter safety, efficiency, environmental or regulatory standards;

4) Upgrade, expansion or replacement of existing capital improvements to provide better service to existing development; provided, however, that impact fees may be used to pay the cost of upgrading, expanding, or replacing existing capital improvements in order to meet the need for new capital improvements generated by new development; or

5) Administrative and operating cost of the City.

SECTION 15.

Appeals.

A) The property owner or applicant for new development may appeal the following administrative decisions to the City Council.

1) The applicability of an impact fee to the development;

2) The amount of the impact fee due;

3) The denial of or the amount of a credit:

4) The amount of the impact fee assessment versus the benefit received by the new development; or

5) The amount of refund due, if any.

B) The burden of proof shall be on the appellant to demonstrate that the amount of the fee or the amount of the offset or credit was not calculated according to the applicable schedule of impact fees or the guidelines established for determining offsets or credit.

C) The appellant must file a written notice of appeal with the City within thirty (30) days following the decision. If the notice of appeal is accompanied by a payment

or other security satisfactory to the City Manager in an amount equal to the original determination of the impact fee due, the development application may be processed while appeal is pending.

SECTION 16.

Refunds.

A) Upon written application, any impact fee or portion thereof collected pursuant to these regulations, which has not been expended within the service area within ten (10) years from the date of payment, shall be refunded to the record owner of the property for which the impact fee was paid or, if the impact fee was paid by another governmental entity, to such governmental entity, together with the interest calculated from the date of the collection to the date of refund at the statutory rate as set forth in Chapter 1.03, Title 79, Revised Statutes (Chapter 5069-1.03, Vernon's Texas Civil Statutes) or its successor statute. The application for refund pursuant to this section shall be submitted within sixty (60) days after the expiration of the ten-year period for expenditure of the fee. An impact fee shall be considered expended on a first-in, first-out basis,

B) An impact fee collected pursuant to these regulations shall also be considered expended if the total expenditures for capital improvements or facility expansion authorized in Section 14 within the service area within ten (10) years following the date of payment exceeds the total fees collected within the service area for such improvements or expansions during such period.

C) Upon written application, any impact fee or portion thereof collected pursuant to these regulations shall be refunded if:

1) Existing service is available and service is denied; or

2) Service was not available when the fee was collected and the City has failed to commence construction of facilities to provide service within two (2) years of fee payment; or

3) Service was not available when the fee was collected and has not subsequently been made available within a reasonable period of time considering the type of capital improvement or facility expansion to be constructed, but in any event later than five (5) years from the date of fee payment.

SECTION 17.

Rebates.

A) If a tract of land for which an impact fee has been paid is replatted, resulting in a reduction in the number of service units for water and wastewater facilities, and the new impact fee to be collected is less than that paid, the City shall rebate the difference, provided that water meters to serve the development have not been installed.

B) If the building permit for a new development for which an impact fee has been paid has expired, no tap purchases for that category of capital improvements have been made to the development (for water and wastewater facilities), and a modified or new application has not been filed within six (6) months of such expiration, the City shall, upon written application, rebate the amount of the impact fee to the record owner of the property for which the impact fee was paid. If no application for rebate pursuant to this subsection has been filed within this period, no rebate shall become due.

SECTION 18.

Updates to Plans and Revision of Fees.

The City shall update its land use assumptions and capital improvements plans at least every five (5) years commencing from the date of adoption of such plans, and shall recalculate the impact fees based thereon in accordance with the procedures set forth in Texas Local Government Code, Chapter 395, or in any successor statute. At the discretion of the Council, the fee structure in Schedule 2 may be updated or amended without revising land use assumptions and capital improvements plans as deemed necessary, not to exceed the maximum amounts as set forth in Schedule 1. Public notice and hearing is required to amend Schedule 2 in accordance with the procedure for amending impact fees set forth in Texas Local Gov't Code, Ch. 395, or in any successor statute.

SECTION 19.

Relief Procedures.

A) Any person who has paid an impact fee or an owner of land upon which an impact fee has been paid may petition the City Council to determine whether any duty required by this Ordinance has not been performed within the time so prescribed. The petition shall be in writing and shall state the nature of the unperformed duty and request that the duty be performed within sixty (60) days of the request. If the City Council determines that the duty is required pursuant to the Ordinance and is late in being performed, it shall cause the duty to commence within sixty (60) days of the date of the request and to continue until completion. This subsection is not applicable to matters which may be appealed pursuant to Section 15.

B) The City Council may grant a variance from any requirement of this Ordinance, upon written request by a developer or owner of property subject to the Ordinance, following a public hearing, and only upon finding that a strict application of such requirement would, when regarded as a whole, result in confiscation of the property.

C) If the City Council grants a variance to the amount of the impact fee due for a new development under this section, it may cause to be appropriated from other City funds the amount of the reduction in the impact fee to the account for the service area in which the property is located.

SECTION 20.

Exemptions.

A) Pursuant to Tex. Loc. Gov't Code section 395.022, as amended, a school district is not required to pay impact fees imposed under this Ordinance unless the board of trustees of the district consents to the payment of the fees by entering a contract with the City imposing the fees.

B) Any building permit application which was duly accepted for filing prior to the adoption of this Ordinance and which was subsequently granted after its adoption shall pay impact fees according to the schedule in Ordinance 2400 or in accordance with any prior executed Developer's Agreement..

ARTICLE II.
Water Facilities Impact Fees

SECTION 21.

Water Service Area.

A) There is hereby established a water service area, constituting land within the City limits and within the City's extraterritorial jurisdiction, as depicted on Exhibit 2 attached hereto and incorporated herein by reference.

B) The boundaries of the water service area may be amended from time to time, or new water benefit areas may be delineated, pursuant to the procedures in Section 18.

SECTION 22.

Water Improvements Plan.

A) The Water Improvements Plan for the City Of Terrell, Texas, is hereby adopted as depicted on Exhibit 4, attached hereto and incorporated herein by reference.

B) The Water Improvements Plan may be amended from time to time, pursuant to the procedures in Section 18.

SECTION 23.

Water Facilities Impact Fee.

A) The maximum impact fees per service unit for water facilities are hereby adopted and incorporated in Schedule 1 attached hereto and made a part hereof by reference.

B) The impact fees per service unit for water facilities, which are to be paid by each new development, are hereby adopted and incorporated in Schedule 2 attached hereto and made a part hereto by reference.

C) The impact fees per service unit for water facilities may be amended from time to time, pursuant to the procedures in Section 18.

ARTICLE III.
Wastewater Facilities Impact Fees

SECTION 24.

Wastewater Service Area.

A) There is hereby established a wastewater service area, constituting land within the City limits and within the City's extraterritorial jurisdiction, as depicted on Exhibit 2 attached hereto and incorporated herein by reference.

B) The boundaries of the wastewater service area may be amended from time to time, or new wastewater benefit areas may be delineated, pursuant to the procedures in Section 18.

SECTION 25.

Wastewater Improvements Plan.

A) The Wastewater Improvements Plan for the City Of Terrell, Texas, is hereby adopted as depicted on Exhibit 5, attached hereto and incorporated herein by reference.

B) The Wastewater Improvements Plan may be amended from time to time, pursuant to the procedures in Section 18.

SECTION 26.

Wastewater Facilities Impact Fee.

A) The maximum impact fees per service unit for wastewater facilities are hereby adopted and incorporated in Schedule 1 attached hereto and made a part hereof by reference.

B) The impact fees per service unit for wastewater facilities, which are to be paid by each new development, are hereby adopted and incorporated in Schedule 2 attached hereto and made a part hereto by reference.

C) The impact fees per service unit for wastewater facilities may be amended from time to time, pursuant to the procedures in Section 18.

ARTICLE IV.
Roadway Impact Fees

SECTION 27.

Roadway Service Areas.

A) There are hereby established three (3) roadway service areas, constituting land within the City limits as depicted on Exhibit 3 attached hereto and incorporated herein by reference.

B) The boundaries of the roadway service area may be amended from time to time, or new roadway benefit areas may be delineated, pursuant to the procedures in Section 18.

SECTION 28.

Roadway Improvements Plan.

A) The Roadway Improvements Plan for the City Of Terrell, Texas, is hereby adopted as depicted by Exhibit 6, attached hereto and incorporated herein by reference.

B) The Roadway Improvements Plan may be amended from time to time, pursuant to the procedures in Section 18.

SECTION 29.

Roadway Facilities Impact Fee.

A) The maximum impact fees per service unit for roadway facilities are hereby adopted and incorporated in Schedule 1 attached hereto and made a part hereof by reference.

B) The impact fees per service unit for roadway facilities, which are to be paid by each new development, are hereby adopted and incorporated in Schedule 2 attached hereto and made a part hereto by reference.

C) The impact fees per service unit for roadway facilities may be amended from time to time, pursuant to the procedures in Section 18.

ARTICLE V.

It is hereby declared to be the intention of the City Council that the sections, paragraphs, sentences, clauses, and phrases of this Ordinance are severable and, if any phrase, clause, sentence, paragraph, or section of this Ordinance shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionally shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and sections of this Ordinance, since the same would have been enacted by the City Council without the incorporation in this Ordinance of any such unconstitutional phrase, clause, sentence, paragraph, or section.

ARTICLE VI.

This Ordinance will take effect immediately from and after its passage and the publication of the caption, as the law in such cases provides.

PASSED AND APPROVED ON THIS THE 19th DAY OF March, 2019.

PASSED AND ADOPTED ON THIS THE 2nd DAY OF April, 2019.

D.J. ORY, MAYOR

ATTEST:

JOHN ROUNSAVALL, CITY SECRETARY

APPROVED AS TO FORM:

MARY GAYLE RAMSEY, CITY ATTORNEY

Impact Fees

EXHIBIT 1

LAND USE OR SERVICE UNIT EQUIVALENCY

WATER AND WASTEWATER

Meter Size	Service Unit Equivalents
3/4"	1
1"	1.4
1 1/2"	2.8
2"	6.4
3"	12.8
4"	20
6"	40
8"	64
10" (Compound)	92
10" (Turbine)	116
12"	172

ROADWAYS

Land Use	Development Unit	Total Service Units (Veh-mi/Dev Unit)
Residential-Single Family	Dwelling Unit (D.U.)	3.40
Multi- Family	Dwelling Unit (D.U.)	1.92
Hotel	Rooms	1.58
Office	1,000 GFA* (up to 10,000)	5.40
Retail/Commercial	1,000 GFA* (up to 100,000 sq ft)	5.28
Industrial	1,000 GFA* (up to 250,000 sq ft)	3.02
Institutional	1,000 GFA* (up to 20,000 sq ft)	1.83

*GFA = Gross Floor Area – Cap

EXHIBIT 2

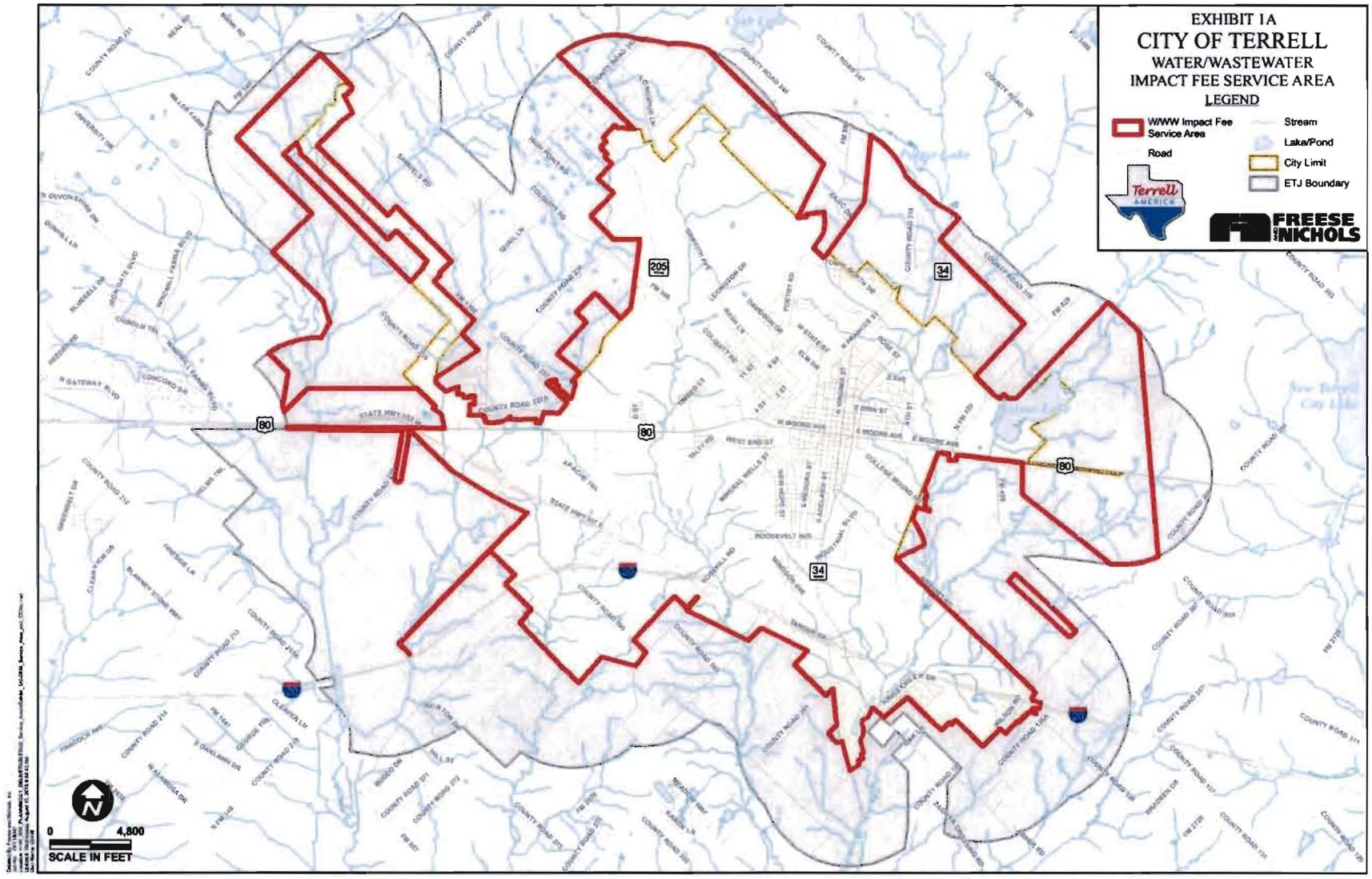


EXHIBIT 1A
CITY OF TERRELL
WATER/WASTEWATER
IMPACT FEE SERVICE AREA
LEGEND
W/WW Impact Fee Service Area
Road
Stream
Lake/Pond
City Limit
ETJ Boundary
Terrell AMERICA
FREESE NICHOLS
0
4,800
SCALE IN FEET

EXHIBIT 3

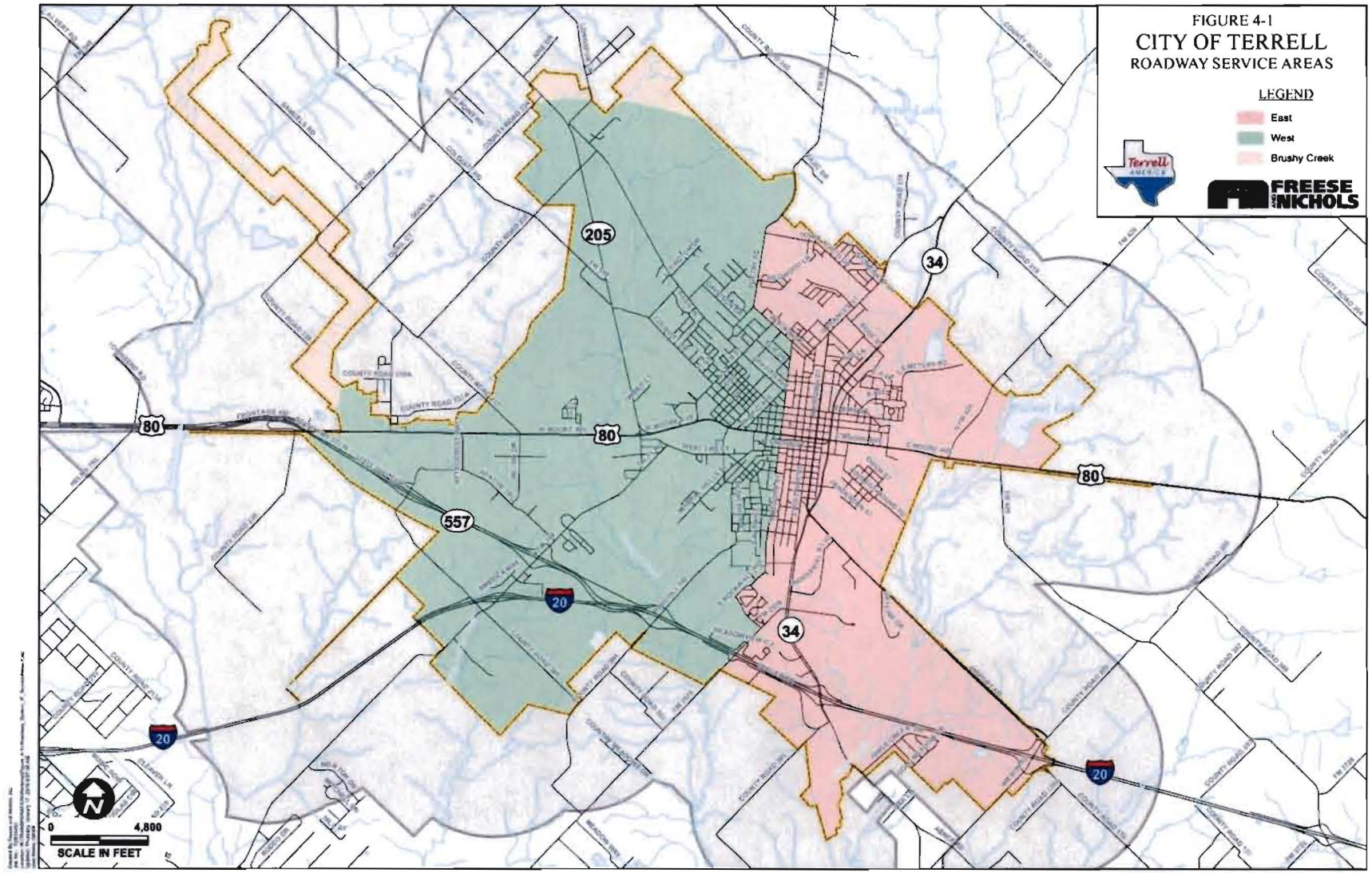


FIGURE 4-1
CITY OF TERRELL
ROADWAY SERVICE AREAS
LEGEND
East
West
Brushy Creek
FREESE NICHOLS
205
34
80
557
20
0
4,800
SCALE IN FEET

EXHIBIT 4

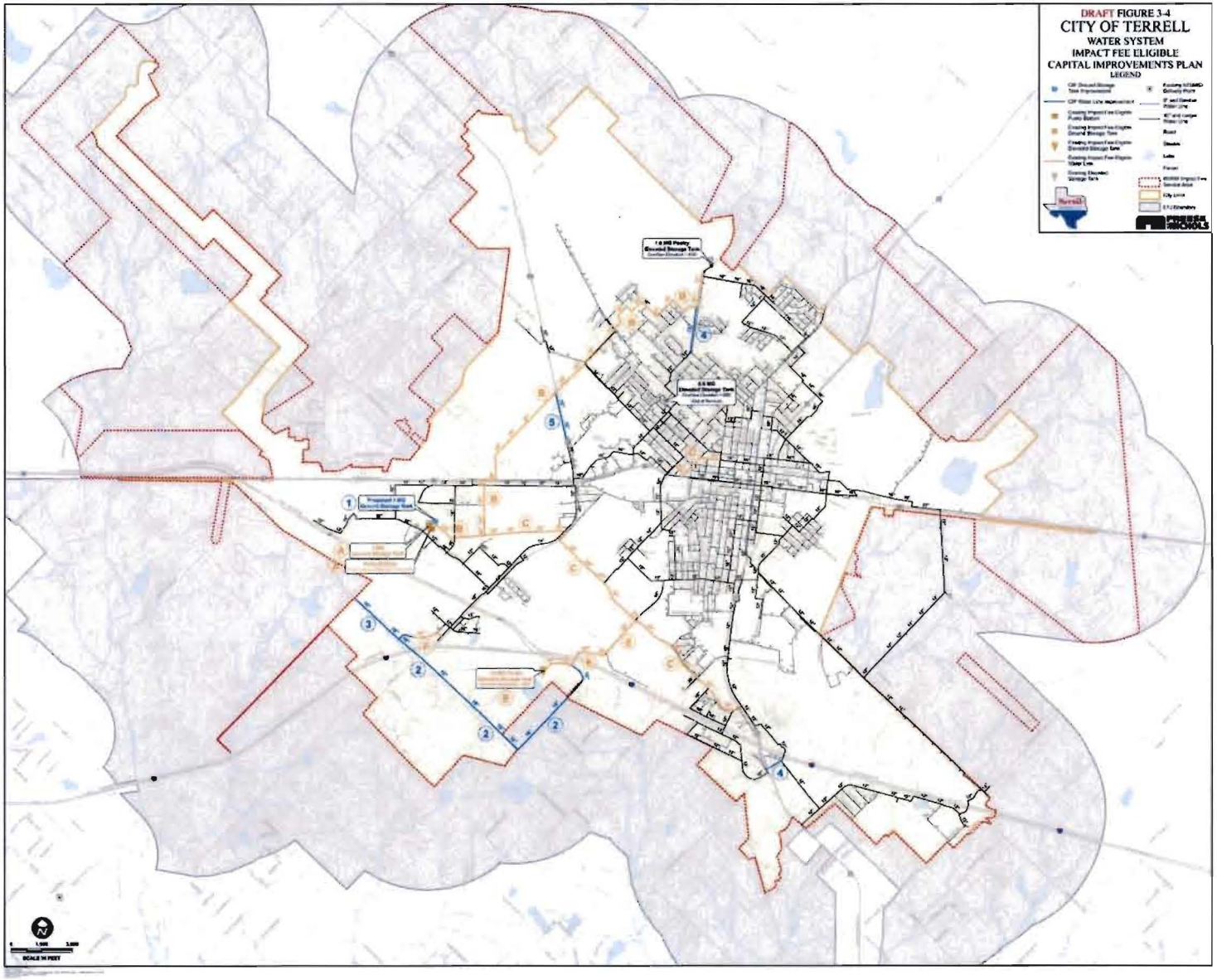

DRAFT FIGURE 3-4
CITY OF TERRELL
WATER SYSTEM
IMPACT FEE ELIGIBLE
CAPITAL IMPROVEMENTS PLAN
LEGEND

EXHIBIT 5

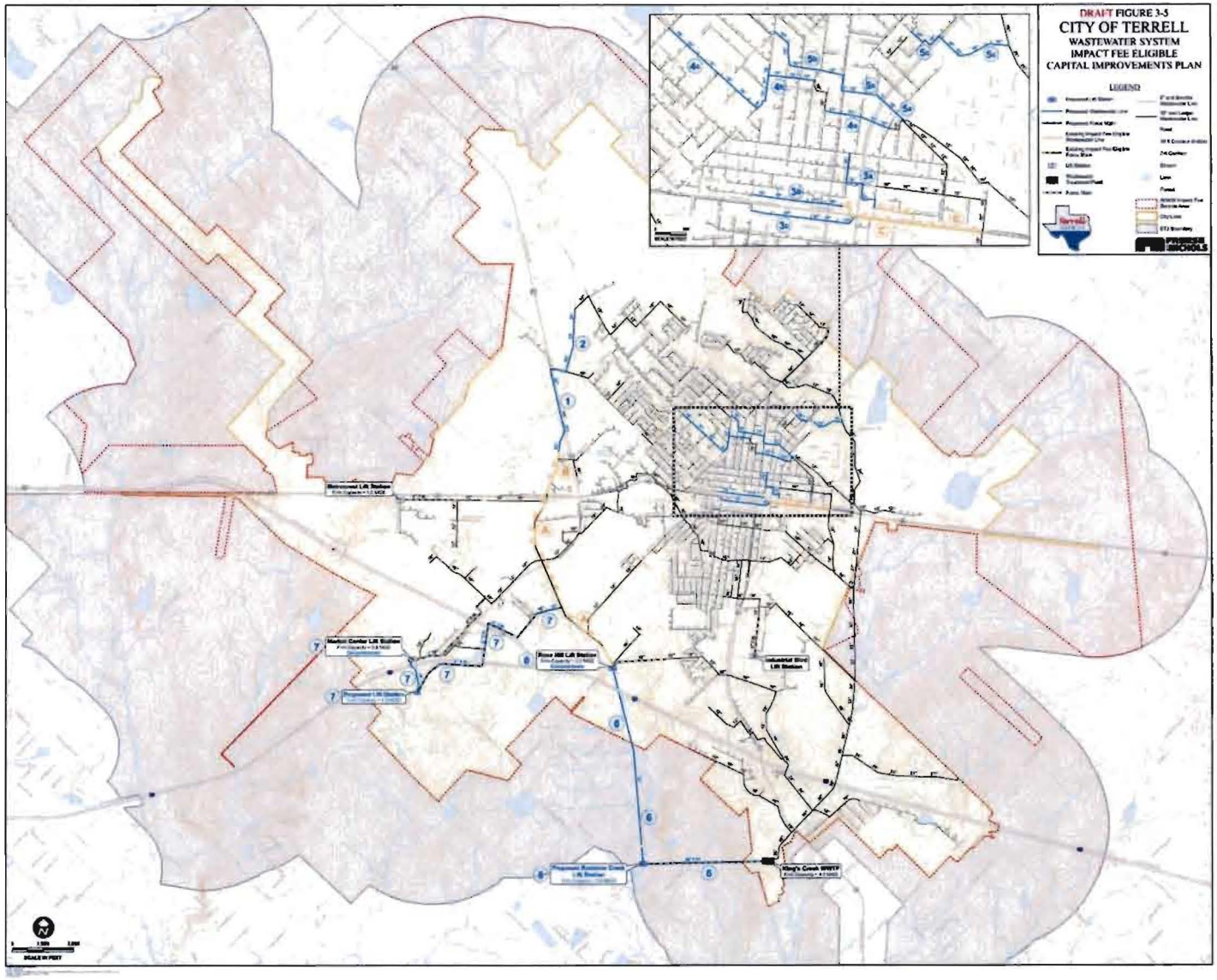

DRAFT FIGURE 3-5
CITY OF TERRELL
WASTEWATER SYSTEM
IMPACT FEE ELIGIBLE
CAPITAL IMPROVEMENTS PLAN
LEGEND

EXHIBIT 6

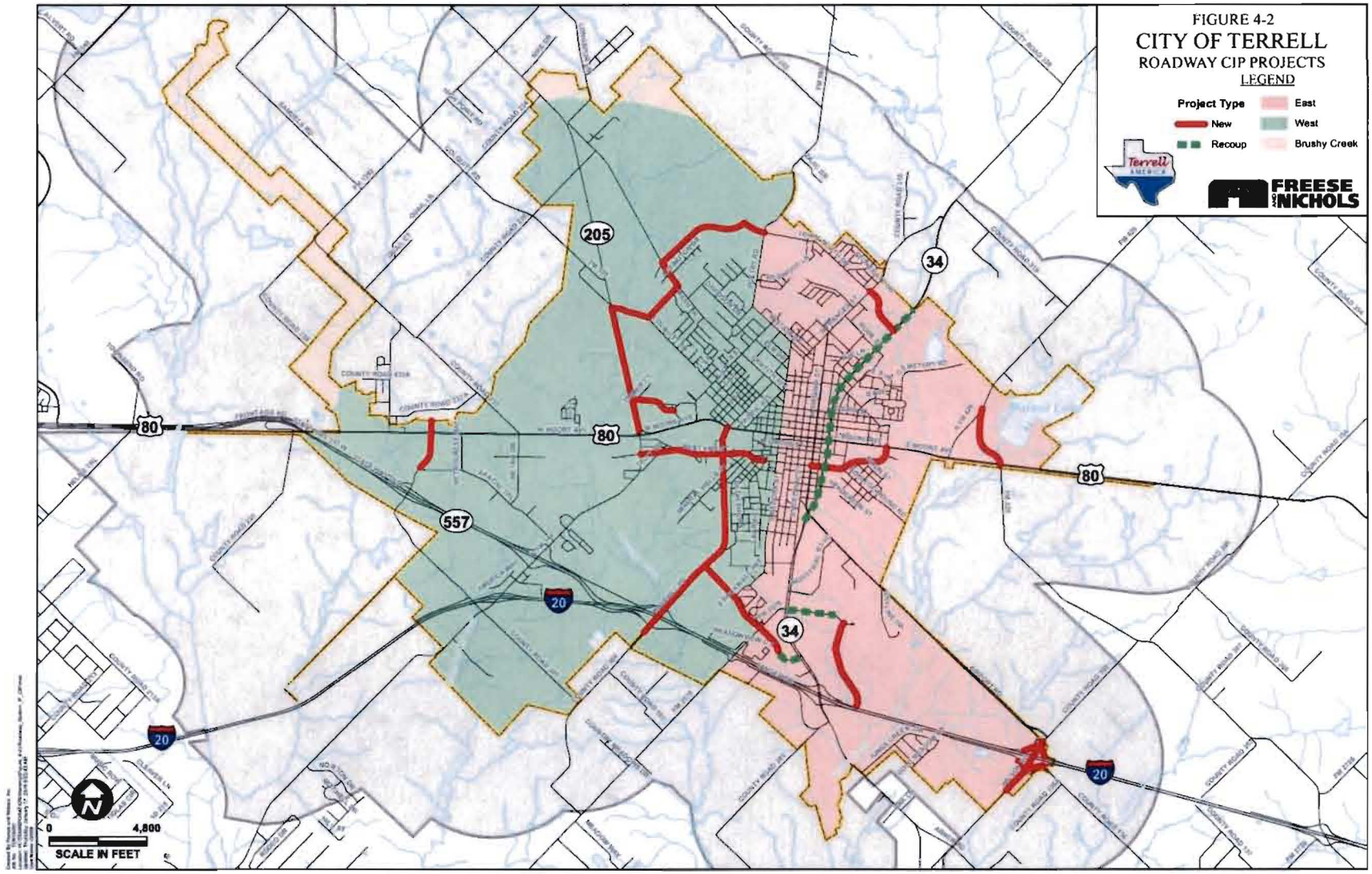


FIGURE 4-2
CITY OF TERRELL
ROADWAY CIP PROJECTS
LEGEND
Project Type
New
Recoup
East
West
Brushy Creek
FREESE NICHOLS
205
34
80
557
20
0
4,800
SCALE IN FEET

SCHEDULE 1
Page 1 of 3

Water Impact Fee Summary

Existing Capital Improvement Costs	$2,057,800
Proposed Capital Improvement Costs	$1,940,850
Total Capital Improvement Costs	**$3,998,650**
Financing Costs	$1,375,201
Total Eligible Costs	**$5,373,851**
50% Credit	**$2,686,925**
Ten Year Growth in SUEs	**2,201**
Base Maximum Calculated Water Impact Fee Per Service Unit With 50% Credit	**$1,221**

Sewer Impact Fee Summary

Existing Capital Improvement Costs	$359,000
Proposed Capital Improvement Costs	$6,739,000
Total Capital Improvement Costs	**$7,098,000**
Financing Costs	$2,441,118
Total Eligible Costs	**$9,539,118**
50% Credit	**$4,769,559**
Ten Year Growth in SUEs	**2,201**
Base Maximum Calculated Sanitary Sewer Impact Fee Per Service Unit With 50% Credit	**$2,167**

SCHEDULE 1
Page 2 of 3

Roadway Impact Fee Summary

West Service Area

Proposed Capital Improvement Costs	$45,633,400
Financing Costs	$5,429,600
CIP Study and Updates	$41,076
Total Costs	$51,104,076
Total Costs (with 50% credit)	**$25,552,038**
Cost Attributable to New Development	**$19,083,676**
Total 10-year Projected Growth in Service Units (veh-mi)	**12,687**
Base Maximum Calculated Roadway Impact Fee Per Service Unit with 50% Credit	**$1,504**

East Service Area

Proposed Capital Improvement Costs	$17,408,467
Financing Costs	$1,533,500
CIP Study and Updates	$28,924
Total Costs	$18,970,891
Total Eligible Costs (with 50% credit)	**$9,485,445**
Cost Attributable to New Development	**$6,818,953**
Total 10-year Projected Growth in Service Units (veh-mi)	**6,113**
Base Maximum Calculated Roadway Impact Fee Per Service Unit with 50% Credit	**$1,114**

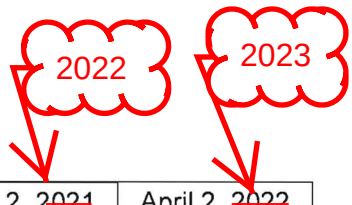
SCHEDULE 1

Page 3 of 3

Brushy Creek Service Area

Proposed Capital Improvement Costs	$0
Financing Costs	$0
CIP Study and Updates	$0
Total Costs	$0
Total Eligible Costs (with 50% credit)	**$0**
Cost Attributable to New Development	**$0**
Total 10-year Projected Growth in Service Units (veh-mi)	**0**
Base Maximum Calculated Roadway Impact Fee Per Service Unit with 50% Credit	**$0**

Schedule 2
Impact Fees
City of Terrell
April 2, 2019



Per Service Unit

Effective Date	April 2, 2019	April 2, 2020	April 2, 2021	April 2, ~~2021~~	April 2, ~~2022~~
Water Service Unit	$1,221	$1,221	$1,221	$1,221	$1,221
Wastewater Service Unit	$2,167	$2,167	$2,167	$2,167	$2,167
Roadway Service Unit*	$574	$653	$735	$822	$913

*For development within West and East Service Areas; $0 for development within Brushy Creek Service Area

Example Fee per Single-Family Dwelling Unit

Effective Date	April 2, 2019	April 2, 2020	April 2, 2021	April 2, 2022	April 2, 2023
Total Per Single-Family Dwelling Unit[1]	$5,340	$5,608	$5,888	$6,183	$6,492

1. Example for April 2019: $574 x 3.40 (service unit equivalent) = $1,952 (roadway) + $1,221 (water) + $2,167 (wastewater) = $5,340 per single-family dwelling unit