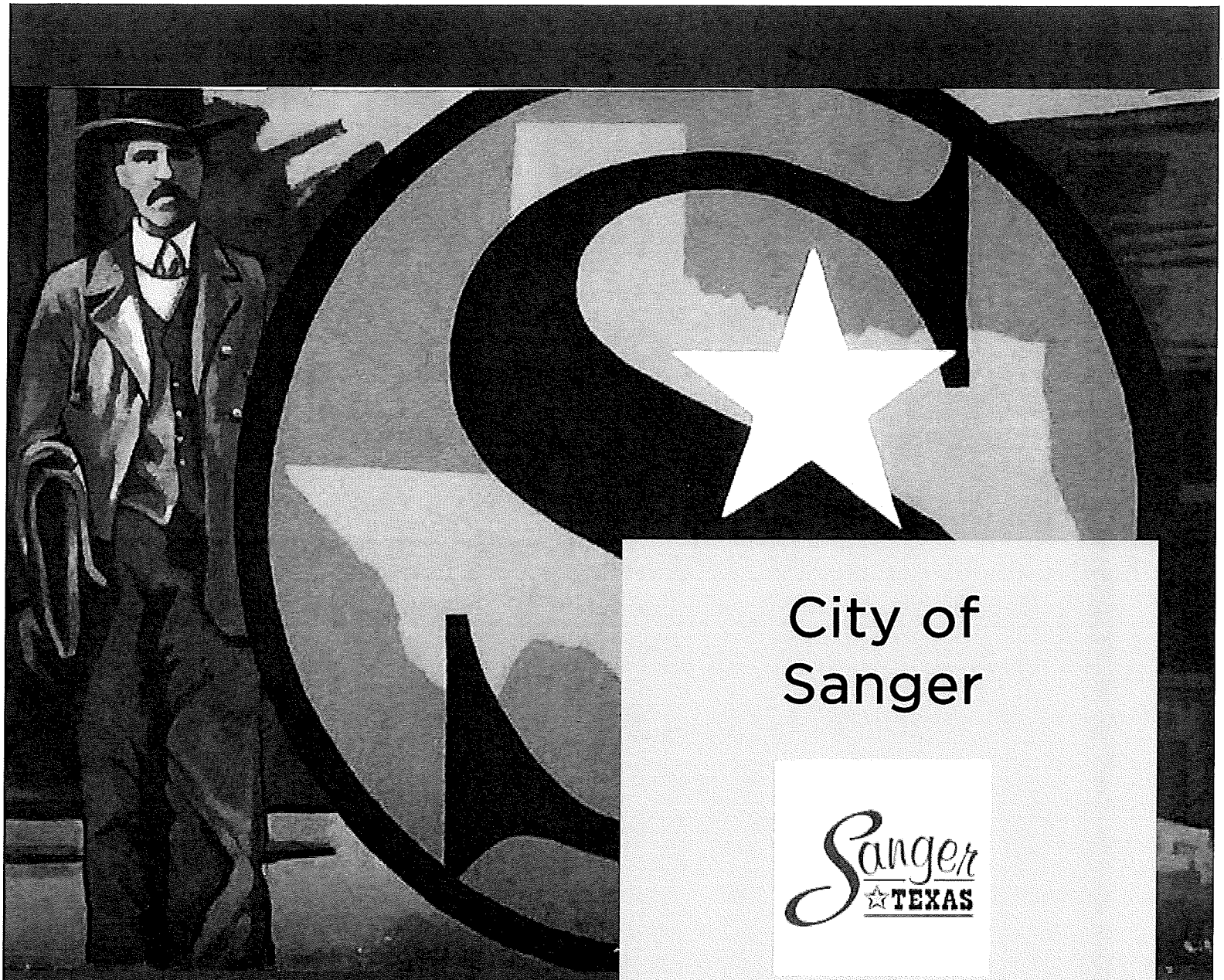

City of Sanger

2015 Roadway Impact Fee Study

Prepared by

EIKON

July 2016

2015 Roadway Impact Fee Study

City of Sanger, Texas

Prepared by:

EIKON
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I. EXECUTIVE SUMMARY

This study was performed to initiate the City of Sanger Roadway Impact Fees. Roadway improvements necessary to serve the 10-year (2025) system needs were evaluated based on information available from the City of Sanger 2015 Thoroughfare Plan, the 2007 Comprehensive Land Use Plan and the North Central Texas Council of Governments (NCTCOG).

Texas' impact fee law (Chapter 395) allows the recovery of costs for a 10-year planning period. We reviewed the service area (Service Area) created based on the Thoroughfare Plan by site observations along the widening of existing roadways and aerial images of future alignments. The projected cost to construct the infrastructure needed through 2025 is **$45,918,339** for the Service Area.

Based on the City's 10-year growth projections and the associated demand (consumption) values, **3,295** additional vehicle-miles of capacity will be needed by year 2025 for the Service Area.

Based on the additional service units and the recoverable capital improvements plans, the City may assess a maximum of **$1,304.22** per service unit in the Service Area.

II. INTRODUCTION

Chapter 395 of the Texas Local Government Code describes the procedure Texas cities must follow in order to create and implement impact fees. Senate Bill 243 (SB 243) amended Chapter 395 in September 2001 to define 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 roadway improvements or facility expansions necessitated by and attributable to the new development."

The City of Sanger has determined based on their 2015 Thoroughfare Plan that assessing impact fees for the continued expansion of the City is valuable and necessary. The City has retained EIKON Consultant Group to provide professional transportation engineering services for the initiation of their Roadway Impact Fees. This report includes the impact fee calculation in accordance with Chapter 395 and the adopted Land Use Assumptions and the Roadway Improvements Plan.

This report consists of the methodology for the computation of impact fees. The components of the computation, as outlined by Chapter 395 "must contain specific enumeration" of the following items:

1. 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
2. An analysis of the total capacity, the level of current usage, and commitments for usage of capacity of the existing capital improvements
3. 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
4. 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 or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, and industrial
5. 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 and calculated in accordance with generally accepted engineering or planning criteria
6. The projected demand for capital improvements or facility expansions required by new service units projected over a reasonable period of time, not to exceed 10 years
7. A plan for awarding a credit for the portion of the ad valorem tax generated by new service units during the program period that is used for the payment of improvements or a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan

III. ROADWAY IMPACT FEE CALCULATION INPUTS

A. LAND USE ASSUMPTIONS

Per Chapter 395 of the Texas Local Government Code, Land Use Assumptions include changes in land uses, densities, and population in the service area. The Land Use Assumptions used in this report were developed by using employment data, population data, and trends developed by the North Central Texas Council of Governments (NCTCOG). This information has been approved by the City of Sanger staff to be a reasonable representation of the building growth seen in the recent years and what may be expected in the following ten years.

The following population and employment estimates and projections are defined by North American Industry Classification System (NAICS) and utilized by NCTCOG:

Housing Units: Number of houses including single and multi-family homes

Population: Number of people reported in the City.

Employment: Square feet of building area based on retail, service, and basic land uses. Each classification has unique trip making characteristics.

Basic/Goods: Land use activities that produce goods and services such as those that are exported outside of the local economy, such as manufacturing, construction, transportation, wholesale, trade, warehousing, and other industrial uses. (NAICS #210000 to #422999)

Service: Land use activities which provide personal and professional services such as government and other professional administrative offices. (NAICS #520000 to #928199)

Retail: Land use activities which provide for the retail sale of goods that primarily serve households and whose location choice is oriented toward the household sector, such as grocery stores and restaurants. (NAICS #440000 to #454390)

To establish the population and employment characteristics for this report, demographic data provided by North Central Texas Council of Governments (NCTCOG) and the 2010 US Census was used:

Table 1A. 2010 Demographics
US Census

Population	6,916
Housing Units	2,427

Table 1B. 2011 Estimated Employment in Persons
2011 Data from NCTCOG

Employment Type	Number of Persons
Good Producing Industries (Basic)	645
Service Producing Industries (Service)	2,178
Retail Industries (Retail)	394
Total	**3,217**

NCTCOG published population estimates in 2015, which shows on average 1.9% growth in Sanger from 2010 to their estimates for 2014. The percent change for the population estimates for 2014 to 2015 is 1.3%. The population growth anticipated from the City's adopted Comprehensive Land Use Plan (October 2007) predicted an annual growth rate of 3.75% based on historical growth since 1960. In reviewing the recent trend for building permit applications, City Staff anticipates a slower growth than identified in the Comprehensive Plan, which is more congruent with the growth estimated by NCTCOG. For the purposes of this report, a population growth rate of 1.3% was used to project the growth in Sanger up to 2025. In addition, we have assumed that the housing units and employment characteristics will grow at the same rate as the population. The following table summarizes the anticipated population and employment characteristics based on these assumptions:

Table 2A. Projected Population, Housing Units, and Employment in Persons
2011 Data from NCTCOG

Year	Population	Housing Units	Basic Employees	Service Employees	Retail Employees
2010	6,916	2,427	-	-	-
2011	-	-	645	2,178	394
2015	7,366	2,585	679	2,291	415
2025	8,265	2,900	762	2,574	466

For the purposes of this report, employment population data is converted to square feet of building area required to create the non-residential square footage within the City. The following conversions rates were used to create **Table 2B**:

Basic/Goods: 1,000 square feet
Service: 350 square feet
Retail: 500 square feet

Table 2B. Projected Population, Housing Units, and Employment in Square Feet
2011 Data from NCTCOG

Year	Population	Housing Units	Basic (Square Footage)	Service (Square Footage)	Retail (Square Footage)
2010	6,916	2,427	-	-	-
2011	-	-	645,000	762,300	197,000
2015	7,366	2,585	679,000	801,940	207,244
2025	8,265	2,900	762,000	901,039	232,854

B. IMPACT FEE SERVICE AREA

Chapter 395 of the Texas Local Government Code defines the service area for roadway facility analysis as an area within the corporate boundaries of the political subdivision that shall not exceed 6 miles. City Staff has determined that one (1) roadway facility service area based upon a six (6) mile limit is adequate and coincides with the capital improvement plans for roadway expansion over the next 10 years. The geographic boundary of the impact fee service area for roadway facilities is shown in **Exhibit 1**.

C. FUTURE ROADWAY IMPROVEMENTS

The City has identified the City-funded roadway projects needed for the projected growth within the City. These facilities are part of the currently adopted Thoroughfare Plan. The table below shows the length of each project as well as the Thoroughfare Plan classification. The future roadway improvements were developed by the City of Sanger staff and represent those projects that will be needed to accommodate the growth projected in this report.

Table 3. Roadway Improvement Plan for the Service Area

Street Name	Class	Limits	Length (mi)
Willow St./ McReynolds Rd.	Minor 4 Lanes	5th Street to City Limits	2.11
Indian Ln.	Minor 4 Lanes	Willow St./McReynolds Rd. to FM 455	0.88
Marion Rd.	Minor 4 Lanes	FM 455 to Huling Rd.	0.76
Lois Rd.	Minor 4 Lanes	E. of Melton Rd. to I-35	0.83
Belz Rd.	Minor 4 Lanes	I-35 SBFR to Metz Rd.	0.97
Metz Rd.	Minor 4 Lanes	Belz Rd. to FM 455	0.67
Utility Rd.	Collector 2 Lanes	RR Tracks to Marion Rd.	0.77
Keaton Rd.	Collector 2 Lanes	Belz Rd. to FM 455	0.67
Future Belz Rd – Indian Connector	Minor 4 Lanes	I-35 NBFR to FM 455	1.02
Future East-West Thoroughfare	Minor 4 Lanes	Cowling Rd. to BNSF RR Tracks	0.53

Exhibit 1 maps the roadway alignments described above.

IV. ROADWAY IMPACT FEE METHODOLOGY

A. SERVICE AREAS

Chapter 395 of the Texas Local Government Code specifies that "the service area is limited to an area within the corporate boundaries of the political subdivision and shall not exceed six (6) miles." One (1) service area was used in this report and is shown in **Exhibit 1** and incorporates the anticipated roadway improvement projects within the corporate boundary of the City of Sanger.

B. SERVICE UNITS

The "service unit" is a measure of consumption or use of the roadway facilities by new development and is defined as a vehicle-mile for transportation purposes. In regards to supply and demand, it is a lane-mile and a vehicle-trip of one-mile in length, respectively. The afternoon peak hour of traffic is the time period used for transportation planning and the estimation of trips from new development.

The service volume that is supplied by a lane-mile of roadway facility is another component of the service unit. This volume is a function of the facility type, configuration, number of lanes, and level of service.

The hourly service volumes used in this report are based on the hourly capacity for level of service D obtained from the DFW Regional Travel Model Criteria published by the North Central Texas Council of Governments (NCTCOG) and the Highway Capacity Manual. Level of service D roadways represents the minimal acceptable capacity limit for urban roadways. In the absence of providing a traffic study to generate the number of cars currently using the roads within the service area, we have assumed that the hourly capacity of the roads is equal to the number of cars currently using the roads in the peak am hour. **Table 4** shows the service volumes as a function of the facility type for the types of roads within the service area.

Table 4. Vehicle-Mile Capacities

Class	Median Configuration	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
Minor 4 Lanes	Undivided	525
Collector 2 Lanes	Undivided	450
Principal 4 Lanes	Undivided	650

C. COST PER SERVICE UNIT

The cost for each service unit is the cost for each vehicle-mile traveled or the cost to build a lane-mile for a vehicle-mile of travel at a level of service provided by the City's standards. The cost per service unit is calculated for each project within the service area. The number of service units in the service are is the measure of the presumed growth in the transportation demand projected over a ten-year period. Chapter 395 requires that Impact Fees be assessed only to pay for growth projected to occur within the next ten-years.

D. COST OF THE IMPROVEMENTS

Per Chapter 395, costs that may be included in the cost per service unit are "...including and limited to the:

1. Construction contract price;
2. Surveying and engineering fees;
3. Land acquisition costs, including land purchases, court awards and costs, attorney's fees, and expert witness fees; and
4. Fees actually paid or contracted to be paid to an independent qualified engineer or financial consultant preparing or updating the Roadway improvements plan who is not an employee of the political subdivision."

The engineer's opinion of the probable costs of the projects in the service area are based on the typical costs of construction. The roadway alignments identified as part of the roadway improvement projects were visual surveyed. Components required to accommodate the expansions or extensions were noted, such as the number of required lanes and the length of the project. In addition we made note of any other incidental construction items that would be necessary such as bridges or culvert crossings, traffic signals, highway ramps, and drainage structures. These costs were combined into an overall cost.

Costs associated with State, Denton County, and developer driven projects in which the City has contributed a portion of the total project cost may be included in the calculations. At the time of this report, the City does not intend to contribute funds to any of these types of roadway projects.

To simplify the calculations, we have separated the probable costs into two (2) categories; construction costs and construction allowances, and made several assumptions about the types of roads to be constructed. The roadway construction costs consist of the following items: (1) unclassified street excavation, (2) lime stabilization, (3) concrete pavement, (4) topsoil, (5) curb and gutter, and (6) allotment for turn lanes and median openings. The unit prices for these items are based on recently completed construction projects located in neighboring municipalities.

Using the construction cost subtotal, a percentage of this total is calculated to account for major construction component allowances. These allowances include preparation of right-of-way, traffic control, pavement markings/markers, roadway drainage, special drainage structures, water and sewer relocations, turf reestablishment and erosion control, and street lighting. The allowance percentages are also based on values from RS Means and the amount of these types of construction estimated for each individual project. The paving and allowance subtotal is given a six percent (6%) allotment for mobilization and a twenty percent (20%) contingency to determine the construction cost total. To determine the total Impact Fee Project Cost, a percentage of the construction cost total is added to account for engineering, surveying, testing, and contractor mobilization. For alignments that will require right-of way acquisitions, we have assumed the allotment for the acquisitions should be $3 per square foot.

Table 4 is a summary of the road improvement project list for the service area with the probable project cost projections. Detailed cost projections for each alignment are provided in **Appendix A, Opinion of Probable Costs**. Actual costs of construction will vary with time and are dependent on market conditions. Therefore, the cost projections reported in this study should not be utilized for the City's building program or construction CIP.

Table 4. Ten Year Roadway Improvements Plan Opinion of Probable Costs

Street Name	Class	Limits	Length (mi)	Total Project Cost
Willow St./ McReynolds Rd.	Minor 4 Lanes	5th Street to City Limits	2.11	$ 11,320,127
Indian Ln.	Minor 4 Lanes	Willow St./McReynolds Rd. to FM 455	0.88	$1,130,328
Marion Rd.	Minor 4 Lanes	FM 455 to Huling Rd.	0.76	$3,880,244
Lois Rd.	Minor 4 Lanes	E. of Melton Rd. to I-35	0.83	$4,434,456
Belz Rd.	Minor 4 Lanes	I-35 SBFR to Metz Rd.	0.97	$5,130,524
Metz Rd.	Minor 4 Lanes	Belz Rd. to FM 455	0.67	$3,681,822
Utility Rd.	Collector 2 Lanes	RR Tracks to Marion Rd.	0.77	$3,180,747
Keaton Rd.	Collector 2 Lanes	Belz Rd. to FM 455	0.67	$2,831,252
Future Belz Rd – Indian Connector	Minor 4 Lanes	I-35 NBFR to FM 455	1.02	$6,877,083
Future East-West Thoroughfare	Minor 4 Lanes	Cowling Rd. to BNSF RR Tracks	0.53	$3,451,757

E. SERVICE UNIT CALCULATION

The service unit for the computation of roadway impact fees is the vehicle-mile of travel during the afternoon peak-hour. The roadway demand service units (vehicle-miles) for each service area are the sum of the vehicle-miles "generated" by each category of land use in the service area.

All developed and developable land is categorized as either residential or non-residential. For residential land uses, the number of housing units in each service area is multiplied by a transportation demand factor to compute the vehicle-miles of travel that occur during the afternoon peak hour or the average amount of demand caused by the residential land uses in the service area. The square footages calculated using the employment data and conversion units described in Section III.A were used to calculate the vehicle-miles for non-residential land uses.

To determine the cost per service unit, the growth in vehicle-miles of travel for the service area is required. The growth in vehicle-miles from 2015 to 2025 is based upon the changes in residential and non-residential growth for the period. This growth has been estimated in Table 2B of this report.

The existing and projected Land Use Assumptions for the dwelling units and the square footage of basic, service, and retail land uses provide the basis for the projected increase

in vehicle-miles of travel. A *transportation demand factor* is applied to these values and then summed to calculate the total peak hour vehicle-miles of demand for each service area.

The *transportation demand factors* are derived from the *ITE Trip Generation Manual, 9th Edition* and the Regional Origin-Destination Travel Survey performed by NCTCOG. The *ITE Trip Generation Manual, 9th Edition* provides variables for the number of trips that are produced or attracted to the land use.

The *transportation demand factor* also includes the length of each trip (L). The average trip length for each category is based on the travel characteristics survey conducted by NCTCOG and the National Household Travel Survey (NHTS).

The maximum trip length (L_{max}), for land uses which are characterized by longer average trip lengths (primarily residential uses), has been limited to a length based on the nature of the roadway network within the service area, along with consideration of the existing City boundaries. For the purposes of this report, the maximum trip length available is the boundary of the service area, which is six (6) miles.

The adjustment made to the average trip length statistic in the computation of the maximum trip length is the origin-destination reduction. This adjustment is made because the roadway impact fee is charged to both the origin and destination end of the trip. For the retail category of land uses, the rate is adjusted because a percentage of retail trips are made by people visiting these locations as part of an existing trip between work and home and are therefore called pass-by trips. The retail trips are then reduced to avoid counting these trips twice. Per the ITE, retail shopping centers have an average pass-by trip percentage of 34%. For the purposes of this report, we have used this value for P_b to calculate the demand factor for retail areas.

The computation of the *transportation demand factor* is detailed in the following equation:

$$TDF = T * (1 - P_b) * L_{max}$$

where $L_{max} = \min(L * OD \text{ or } SA_L)$

Variables:

TDF = Transportation Demand Factor

T = Trip Rate (peak hour trips / unit)

P_b = Pass-By Discount (% of trips)

L_{max} = Maximum Trip Length (miles)

L = Average Trip Length (miles)

SA_L = Max Service Area Trip Length (see **Table 5**)

OD = Origin-Destination Reduction (50%)

Table 5 shows the derivation of the *Transportation Demand Factor* for the residential land uses and the three (3) non-residential land use categories. The values utilized for all variables shown in the *transportation demand factor* equation are also shown in the table.

Table 5. Transportation Demand Factor Calculations (TDF)

Variable	Residential	Basic	Service	Retail
T	1.00	0.97	1.49	3.71
Pb	0%	0%	0%	34%
L	17.21	10.02	10.92	6.43
Lmax *	6.00	5.01	5.46	3.22
TDF	**6.00**	**4.86**	**8.14**	**7.89**

* 50% of L is less than L_{max} for non-residential land uses; therefore this lower trip length is used for calculating the TDF for non-residential land uses

Table 6 shows the vehicle-mile calculations for 2015 and 2025 using the above TDF values.

Table 6. Ten Year Growth Projections

2015

Residential Vehicle-Miles

Housing Units	TDF	Vehicle-Miles
2,585	6	15,510

Non-Residential Vehicle-Miles

Square-Feet			TDF			Vehicle-Miles (in 1,000 SQFT)		
Basic	Service	Retail	Basic	Service	Retail	Basic	Service	Retail
679,000	801,940	207,244	4.8	8.14	7.8	3,259	6,528	1,617

2015 Total Vehicle Miles = 26,913

2025

Residential Vehicle-Miles

Housing Units	TDF	Vehicle-Miles
2,900	6	17,400

Non-Residential Vehicle-Miles

Square-Feet			TDF			Vehicle-Miles (in 1,000 SQFT)		
Basic	Service	Retail	Basic	Service	Retail	Basic	Service	Retail
762,000	901,039	232,854	4.8	8.14	7.8	3,658	7,334	1,816

2015 Total Vehicle Miles = 30,208

Projected Increase in Vehicle-Miles = 30,208 - 26,913 = **3,295 vehicle-miles**

V. IMPACT FEE CALCULATIONS

A. MAXIMUM ASSESSABLE IMPACT FEE PER SERVICE UNIT

The maximum assessable impact fee is the sum of the eligible Impact Fee Roadway Improvement Project costs for the service area divided by the growth in travel attributable to new development projected to occur within the 10-year period. The documentation for this calculation has been provided in **Appendix C**.

B. PLAN FOR AWARDING THE ROADWAY IMPACT FEE CREDIT

Per Chapter 395 of the Texas Local Government Code, the Roadway Impact Fees Program must contain specific enumeration of a plan for awarding the impact fee credit. This is provided in Section 395.014 of the Code and states:

> "(7) A plan for awarding:
> (A) a credit for the portion of ad valorem tax and utility service revenues generated by new service units during the program period that is used for the payment of improvements, including the payment of debt, that are included in the capital improvements plan; or
> (B) In the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan..."

The max assessable fee has been based on the option of the 50% credit.

Table 7 illustrates the computation of the maximum assessable impact fee computed for the service area. The description of how each line has been calculated is provided in **Appendix C**.

Table 7. Maximum Assessable Fee Per Service Unit/Vehicle-Mile

Line	Description	Value
1	Total Vehicle-Miles of Capacity Added by the Roadway Improvement Projects	17,604
2	Total Vehicle-Miles of Existing Demand From the Roadway Improvement Projects	4,274
3	Total Vehicle-Miles of Existing Deficiencies From the Existing Roadway Facilities	141
4	Net Amount of Vehicle-Miles of Capacity Added	13,021
5	Total Cost of the Roadway Improvement Projects	$45,918,339
6	Cost of the Net Capacity Supplied	$33,963,766
7	Cost to Meet the Existing Needs and Usage	$11,954,573
8	Total Vehicle-Miles of New Demand over 10-Years	3,295
9	Percent of Capacity Added Attributable to Growth (Must be Less than or Equal to 100%)	25%
10	Cost of Capacity Added Attributable to Growth	$8,594,812
11	50% Credit	$4,297,409
12	**Max Assessable Fee Per Service Unit/Vehicle Mile**	**$1,304.22**

C. SERVICE UNIT DEMAND PER UNIT OF DEVELOPMENT

The maximum allowable roadway impact fee for development is calculated by multiplying the impact fee rate by the number of service units projected for the proposed development. The Land Use/Vehicle-Mile Equivalency Table (LUVMET) provided in **Appendix D** provides the service unit multipliers for typical land uses that should be used to calculate the maximum impact assessment. This table lists the most common land uses that may occur within the City. All possible categories of development may not be represented. However, in these situations, we suggest using a similar use which will generate similar trip characteristics.

The trip rate is the average number of trips generated during the afternoon peak hour by each land use per development unit. The next column is the pass-by rate the *ITE Trip Generation Manual, 9th Edition*. To convert vehicle trips to vehicle-miles, it is necessary to multiply trips by trip length. The NCTCOG trip length values are based on the *Regional Origin-Destination Travel Survey* performed by the North Central Texas Council of Governments (NCTCOG). The other adjustment to trip length is the 50% origin-destination reduction to avoid double counting of trips. Based on the State Law, there is a limit on transportation service unit demand. If the adjusted trip length is above the maximum trip length within the service area (for this study, 6 miles is the maximum trip length), the maximum trip length used for calculation is reduced to the corresponding value.

The last column in the LUVMET shows the vehicle-miles per development unit calculated by multiplying the trip rate by the maximum trip length. This is the *Transportation Demand Factor* and should be used to calculate the maximum assessable impact fee. The number of service units is multiplied by the impact fee rate (established by City ordinance) in order to determine the impact fee for a development.

VI. SAMPLE CALCULATIONS

The following section details two (2) examples of maximum assessable roadway impact fee calculations.

Example 1:
Development Type - One (1) Unit of Single-Family Housing

Roadway Impact Fee Calculation Steps – Example 1	
Step 1	**Determine Development Unit and Vehicle-Miles Per Development Unit**
	From APX D [Land Use – Vehicle-mile Equivalency Table] *Development Type: 1 Dwelling Unit of Single-Family Detached Housing* *Number of Development Units: 1 Dwelling Unit* *Veh-Mi Per Development Unit: 6.06*
Step 2	**Determine Maximum Assessable Impact Fee Per Service Unit**
	$1,304.22
Step 3	**Determine Maximum Assessable Impact Fee**
	Impact Fee = # of Development Units x Veh-Mi Per Dev Unit x Max. Fee Per Service Unit
	Maximum Assessable Impact Fee = 1 x 6.06 x $1,304.22
	$7,903.57

Example 2:
Development Type – 25,000 square foot Home Improvement Superstore

Roadway Impact Fee Calculation Steps – Example 2	
Step 1	**Determine Development Unit and Vehicle-Miles Per Development Unit**
	From APX D [Land Use – Vehicle-mile Equivalency Table] *Development Type: 25,000 square feet of Home Improvement Superstore* *Development Unit: 1,000 square feet of Gross Floor Area* *Veh-Mi Per Development Unit: 3.96*
Step 2	**Determine Maximum Assessable Impact Fee Per Service Unit**
	$1,304.22
Step 3	**Determine Maximum Assessable Impact Fee**
	Impact Fee = # of Development Units x Veh-Mi Per Dev Unit x Max. Fee Per Service Unit
	Maximum Assessable Impact Fee = (25,000/1,000) x 3.96 x $1,304.22
	$129,117.78

VII. CONCLUSION

The City of Sanger has established a process to implement the assessment and collection of roadway impact fees through the adoption of an impact fee ordinance that is consistent with Chapter 395 of the Texas Local Government Code.

This report establishes the maximum allowable roadway impact fee that could be assessed by the City of Sanger within the service area boundary. The maximum assessable roadway impact fees calculated is $1,304.22.

This is a guide to the assessment of roadway impact fees pertaining to future development and the City's need for roadway improvements to accommodate that growth. Following the public hearing process, the City Council may establish an amount to be assessed (if any) up to the maximum established within this report and update the Roadway Impact Fee Ordinance accordingly.

It is our opinion that the data and methodology used in this report are appropriate and consistent with Chapter 395 of the Texas Local Government Code, and the Land Use Assumptions and the proposed Roadway Improvements Plan are appropriately incorporated into the process.

Roadway Impact Fee Opinion of Probable Costs

CITY OF SANGER
IMPACT FEE STUDY
CONCEPTUAL LEVEL COST PROJECTIONS
JULY 2016

Street Name: Willow St/McReynolds Rd
Limits: 5th St to City Limits
Impact Fee Class:
Ultimate Class:
Length (LF): 11,141

Existing two lane concrete roadway from 5th St to Jones; two lane asphalt from Jones to City Limits.

Item Description	Quantity	Unit	Unit Price	Item Cost
Unclassified Street Excavation	14,854.40	CY	$ 15.00	$ 222,816.00
6" Lime or Cement Subgrade Treatment (27 lbs/sf)	63,131.20	SY	$ 4.00	$ 252,524.80
8" Reinf. Concrete Pvmt with 6" Integral Curb	58,179.73	SY	$ 46.00	$ 2,676,267.73
4" Topsoil	12,378.67	SY	$ 5.00	$ 61,893.33
4' Wide Concrete Sidewalk	89,126	SF	$ 4.00	$ 356,505.60
Turn Lanes and Median Openings		SY	$ 50.00	$ -
Signalized Intersection (at Indian Rd)	1	EA	$ 200,000.00	$ 200,000.00
				$ -
			Paving Construction Cost Subtotal	**$ 3,770,007.47**

Item Description	Notes	Allowance	Item Cost
R.O.W. Preparation		6%	$ 226,200.45
Traffic Control During Construction		5%	$ 188,500.37
Pavment Markings		3%	$ 113,100.22
Roadway Drainage		30%	$ 1,131,002.24
Roadway Lighting		6%	$ 226,200.45
Special Drainage Structures (bridges and culverts)	8 crossings	6%	$ 226,200.45
Minor Water Line Adjustments		6%	$ 226,200.45
Minor Wastewater Line Adjustments		4%	$ 150,800.30
Erosion Control/Establish Turf		3%	$ 113,100.22
Basic Landscaping/Irrigation		3%	$ 113,100.22
Franchised Utility Facilities	OH-Electric, UG Fiber Optic, Telephone	3%	$ 113,100.22
Railroad Crossing	Single track between 1st and Railroad	3%	$ 113,100.22
Tree Mitigation		3%	$ 113,100.22
Other	Bridge west of Ranger Creek Rd	0%	$ -
		Allowance Subtotal	**$ 3,053,706.05**

Paving and Allowance Subtotal	$ 6,823,713.51
Construction Contingency @ 20%	$ 1,364,742.70
Total Construction Cost	**$ 8,188,456.22**

Item Description	Notes	Allowance	Item Cost
Construction			$ 8,188,456.22
Engineering/Survey/Testing		20%	$ 1,637,691.24
Mobilization		6%	$ 491,307.37
Previous City Contribution			$ -
Other			$ -
R.O.W. and Easement Acquisition	For Area from 5th to the RR	$3/SF	$ 1,002,672.00
		Total Impact Fee Project Cost	**$ 11,320,126.83**

CITY OF SANGER
IMPACT FEE STUDY
CONCEPTUAL LEVEL COST PROJECTIONS
JULY 2016

Street Name: Indian Ln
Limits: Willow St/McReynolds Rd to FM 455
Impact Fee Class:
Ultimate Class:
Length (LF): 4,641

Existing concrete roadway to remain. Roadway is approx. 37 ft wide for approx. 3472 LF and approx. 25 ft wide for approx. 1169 LF.

Item Description	Quantity	Unit	Unit Price	Item Cost
Unclassified Street Excavation	1,054.93	CY	$ 15.00	$ 15,823.89
6" Lime or Cement Subgrade Treatment (27 lbs/sf)	7,360.89	SY	$ 4.00	$ 29,443.56
8" Reinf. Concrete Pvmt with 6" Integral Curb	6,329.56	SY	$ 46.00	$ 291,159.56
4" Topsoil	4,641.00	SY	$ 5.00	$ 23,205.00
4' Wide Concrete Sidewalk	7,432	SF	$ 4.00	$ 29,728.00
Turn Lanes and Median Openings		SY	$ 50.00	$ -
Signalized Intersection		EA	$ 200,000.00	$ -
				$ -
			Paving Construction Cost Subtotal	$ 389,360.00

Item Description	Notes	Allowance	Item Cost
R.O.W. Preparation		6%	$ 23,361.60
Traffic Control During Construction		5%	$ 19,468.00
Pavment Markings		3%	$ 11,680.80
Roadway Drainage		30%	$ 116,808.00
Roadway Lighting		6%	$ 23,361.60
Special Drainage Structures (bridges and culverts)	2 culverts	6%	$ 23,361.60
Minor Water Line Adjustments		6%	$ 23,361.60
Minor Wastewater Line Adjustments		4%	$ 15,574.40
Erosion Control/Establish Turf		3%	$ 11,680.80
Basic Landscaping/Irrigation		3%	$ 11,680.80
Franchised Utility Facilities	OH utils on east; switchgear in r.o.w. east side	10%	$ 38,936.00
Railroad Crossing		5%	$ 19,468.00
Tree Mitigation		3%	$ 11,680.80
Other	move fence around water tower	2%	$ 7,787.20
		Allowance Subtotal	$ 358,211.20

Paving and Allowance Subtotal	$ 747,571.20
Construction Contingency @ 20%	$ 149,514.24
Total Construction Cost	$ 897,085.44

Item Description	Notes	Allowance	Item Cost
Construction			$ 897,085.44
Engineering/Survey/Testing		20%	$ 179,417.09
Mobilization		6%	$ 53,825.13
Previous City Contribution			$ -
Other			$ -
R.O.W. and Easement Acquisition	None	$3/SF	$ -
		Total Impact Fee Project Cost	$ 1,130,327.65

CITY OF SANGER
IMPACT FEE STUDY
CONCEPTUAL LEVEL COST PROJECTIONS
JULY 2016

Street Name: Marion Rd
Limits: FM 455 to Huling Rd.
Impact Fee Class:
Ultimate Class:
Length (LF): 4,013

Existing two lane asphalt roadway.

Item Description	Quantity	Unit	Unit Price	Item Cost
Unclassified Street Excavation	5,350.40	CY	$ 15.00	$ 80,256.00
6" Lime or Cement Subgrade Treatment (27 lbs/sf)	22,739.20	SY	$ 4.00	$ 90,956.80
8" Reinf. Concrete Pvmt with 6" Integral Curb	20,955.73	SY	$ 46.00	$ 963,963.73
4" Topsoil	4,458.67	SY	$ 5.00	$ 22,293.33
4' Wide Concrete Sidewalk	32,102	SF	$ 4.00	$ 128,409.60
Turn Lanes and Median Openings		SY	$ 50.00	$ -
Signalized Intersection		EA	$ 200,000.00	$ -
				$ -
			Paving Construction Cost Subtotal	$ 1,285,879.47

Item Description	Notes	Allowance	Item Cost
R.O.W. Preparation		6%	$ 77,152.77
Traffic Control During Construction		5%	$ 64,293.97
Pavment Markings		3%	$ 38,576.38
Roadway Drainage		30%	$ 385,763.84
Roadway Lighting		6%	$ 77,152.77
Special Drainage Structures (bridges and culverts)	2 culverts	6%	$ 77,152.77
Minor Water Line Adjustments		6%	$ 77,152.77
Minor Wastewater Line Adjustments		4%	$ 51,435.18
Erosion Control/Establish Turf		3%	$ 38,576.38
Basic Landscaping/Irrigation		3%	$ 38,576.38
Franchised Utility Facilities	OH-E on e. side; UG-Fiber/Tel both sides	3%	$ 38,576.38
Railroad Crossing		3%	$ 38,576.38
Tree Mitigation		3%	$ 38,576.38
Other		0%	$ -
		Allowance Subtotal	$ 1,041,562.37

Paving and Allowance Subtotal	$ 2,327,441.83
Construction Contingency @ 20%	$ 465,488.37
Total Construction Cost	$ 2,792,930.20

Item Description	Notes	Allowance	Item Cost
Construction			$ 2,792,930.20
Engineering/Survey/Testing		20%	$ 558,586.04
Mobilization		6%	$ 167,575.81
Previous City Contribution			$ -
Other			$ -
R.O.W. and Easement Acquisition	Entire Length at 72 Feet Wide	$3/SF	$ 361,152.00
		Total Impact Fee Project Cost	$ 3,880,244.05

CITY OF SANGER
IMPACT FEE STUDY
CONCEPTUAL LEVEL COST PROJECTIONS
JULY 2016

Street Name: Lois Rd
Limits: E. of Melton Rd. to I-35
Impact Fee Class:
Ultimate Class:
Length (LF): 4,382

Existing two lane asphalt roadway.

Item Description	Quantity	Unit	Unit Price	Item Cost
Unclassified Street Excavation	5,843.20	CY	$ 15.00	$ 87,648.00
6" Lime or Cement Subgrade Treatment (27 lbs/sf)	24,833.60	SY	$ 4.00	$ 99,334.40
8" Reinf. Concrete Pvmt with 6" Integral Curb	22,885.87	SY	$ 46.00	$ 1,052,749.87
4" Topsoil	4,869.33	SY	$ 5.00	$ 24,346.67
4' Wide Concrete Sidewalk	35,059	SF	$ 4.00	$ 140,236.80
Turn Lanes and Median Openings	800	SY	$ 50.00	$ 40,000.00
Signalized Intersection		EA	$ 200,000.00	$ -
				$ -
			Paving Construction Cost Subtotal	$ 1,444,315.73

Item Description	Notes	Allowance	Item Cost
R.O.W. Preparation		6%	$ 86,658.94
Traffic Control During Construction		5%	$ 72,215.79
Pavment Markings		3%	$ 43,329.47
Roadway Drainage		30%	$ 433,294.72
Roadway Lighting		6%	$ 86,658.94
Special Drainage Structures (bridges and culverts)	1 culvert (major) at Walmart	6%	$ 86,658.94
Minor Water Line Adjustments		6%	$ 86,658.94
Minor Wastewater Line Adjustments		4%	$ 57,772.63
Erosion Control/Establish Turf		3%	$ 43,329.47
Basic Landscaping/Irrigation		3%	$ 43,329.47
Franchised Utility Facilities	OH-E s. side; UG-Fiber both sides	5%	$ 72,215.79
Railroad Crossing	single track east of Walmart	5%	$ 72,215.79
Tree Mitigation		3%	$ 43,329.47
Other		0%	$ -
		Allowance Subtotal	$ 1,227,668.37

Paving and Allowance Subtotal	$ 2,671,984.11
Construction Contingency @ 20%	$ 534,396.82
Total Construction Cost	$ 3,206,380.93

Item Description	Notes	Allowance	Item Cost
Construction			$ 3,206,380.93
Engineering/Survey/Testing		20%	$ 641,276.19
Mobilization		6%	$ 192,382.86
Previous City Contribution			$ -
Other			$ -
R.O.W. and Easement Acquisition	Entire Length at 72 Feet Wide	$3/SF	$ 394,416.00
		Total Impact Fee Project Cost	$ 4,434,455.97

CITY OF SANGER
IMPACT FEE STUDY
CONCEPTUAL LEVEL COST PROJECTIONS
JULY 2016

Street Name: Belz Rd
Limits: I-35 SBFR to Metz Rd
Impact Fee Class:
Ultimate Class:
Length (LF): 5,126

Existing two lane asphalt roadway.

Item Description	Quantity	Unit	Unit Price	Item Cost
Unclassified Street Excavation	6,834.67	CY	$ 15.00	$ 102,520.00
6" Lime or Cement Subgrade Treatment (27 lbs/sf)	29,047.33	SY	$ 4.00	$ 116,189.33
8" Reinf. Concrete Pvmt with 6" Integral Curb	26,769.11	SY	$ 46.00	$ 1,231,379.11
4" Topsoil	5,695.56	SY	$ 5.00	$ 28,477.78
4' Wide Concrete Sidewalk	41,008	SF	$ 4.00	$ 164,032.00
Turn Lanes and Median Openings		SY	$ 50.00	$ -
Signalized Intersection		EA	$ 200,000.00	$ -
				$ -
			Paving Construction Cost Subtotal	$ 1,642,598.22

Item Description	Notes	Allowance	Item Cost
R.O.W. Preparation		6%	$ 98,555.89
Traffic Control During Construction		5%	$ 82,129.91
Pavment Markings		3%	$ 49,277.95
Roadway Drainage		30%	$ 492,779.47
Roadway Lighting		6%	$ 98,555.89
Special Drainage Structures (bridges and culverts)	2 culverts (one major)	10%	$ 164,259.82
Minor Water Line Adjustments		6%	$ 98,555.89
Minor Wastewater Line Adjustments		4%	$ 65,703.93
Erosion Control/Establish Turf		3%	$ 49,277.95
Basic Landscaping/Irrigation		3%	$ 49,277.95
Franchised Utility Facilities	OH-E on metal poles n. side; OH-E concr	6%	$ 98,555.89
Railroad Crossing		3%	$ 49,277.95
Tree Mitigation		3%	$ 49,277.95
Other		0%	$ -
		Allowance Subtotal	$ 1,445,486.44

Paving and Allowance Subtotal	$ 3,088,084.66
Construction Contingency @ 20%	$ 617,616.93
Total Construction Cost	$ 3,705,701.59

Item Description	Notes	Allowance	Item Cost
Construction			$ 3,705,701.59
Engineering/Survey/Testing		20%	$ 741,140.32
Mobilization		6%	$ 222,342.10
Previous City Contribution			$ -
Other			$ -
R.O.W. and Easement Acquisition	Entire Length at 72 Feet Wide	$3/SF	$ 461,340.00
		Total Impact Fee Project Cost	$ 5,130,524.00

CITY OF SANGER
IMPACT FEE STUDY
CONCEPTUAL LEVEL COST PROJECTIONS
JULY 2016

Street Name: Metz Rd
Limits: Belz Rd to FM 455
Impact Fee Class:
Ultimate Class:
Length (LF): 3,525

Existing two lane asphalt roadway.

Item Description	Quantity	Unit	Unit Price	Item Cost
Unclassified Street Excavation	4,700.00	CY	$ 15.00	$ 70,500.00
6" Lime or Cement Subgrade Treatment (27 lbs/sf)	19,975.00	SY	$ 4.00	$ 79,900.00
8" Reinf. Concrete Pvmt with 6" Integral Curb	18,408.33	SY	$ 46.00	$ 846,783.33
4" Topsoil	3,916.67	SY	$ 5.00	$ 19,583.33
4' Wide Concrete Sidewalk	28,200	SF	$ 4.00	$ 112,800.00
Turn Lanes and Median Openings		SY	$ 50.00	$ -
Signalized Intersection		EA	$ 200,000.00	$ -
				$ -
			Paving Construction Cost Subtotal	$ 1,129,566.67

Item Description	Notes	Allowance	Item Cost
R.O.W. Preparation		6%	$ 67,774.00
Traffic Control During Construction		5%	$ 56,478.33
Pavment Markings		3%	$ 33,887.00
Roadway Drainage		30%	$ 338,870.00
Roadway Lighting		6%	$ 67,774.00
Special Drainage Structures (bridges and culverts)	3 culverts	10%	$ 112,956.67
Minor Water Line Adjustments		6%	$ 67,774.00
Minor Wastewater Line Adjustments		4%	$ 45,182.67
Erosion Control/Establish Turf		3%	$ 33,887.00
Basic Landscaping/Irrigation		3%	$ 33,887.00
Franchised Utility Facilities	OH-E both sides	10%	$ 112,956.67
Railroad Crossing		8%	$ 90,365.33
Tree Mitigation		3%	$ 33,887.00
Other	Site distance issue at FM 455	0%	$ -
		Allowance Subtotal	$ 1,095,679.67

Paving and Allowance Subtotal	$ 2,225,246.33
Construction Contingency @ 20%	$ 445,049.27
Total Construction Cost	$ 2,670,295.60

Item Description	Notes	Allowance	Item Cost
Construction			$ 2,670,295.60
Engineering/Survey/Testing		20%	$ 534,059.12
Mobilization		6%	$ 160,217.74
Previous City Contribution			$ -
Other			$ -
R.O.W. and Easement Acquisition	Entire Length at 72 Feet Wide	$3/SF	$ 317,250.00
		Total Impact Fee Project Cost	$ 3,681,822.46

CITY OF SANGER
IMPACT FEE STUDY
CONCEPTUAL LEVEL COST PROJECTIONS
JULY 2016

Street Name:	Extension of Utility Rd	New roadway adjacent to farm and open fields.
Limits:	RR tracks to Marion Rd (at Huling Rd)	Roadway to go between two houses at Marion.
Impact Fee Class:		
Ultimate Class:		
Length (LF):	4,055	

Item Description	Quantity	Unit	Unit Price	Item Cost
Unclassified Street Excavation	3,754.63	CY	$ 15.00	$ 56,319.44
6" Lime or Cement Subgrade Treatment (27 lbs/sf)	13,967.22	SY	$ 4.00	$ 55,868.89
8" Reinf. Concrete Pvmt with 6" Integral Curb	12,165.00	SY	$ 46.00	$ 559,590.00
4" Topsoil	3,604.44	SY	$ 5.00	$ 18,022.22
4' Wide Concrete Sidewalk	32,440	SF	$ 4.00	$ 129,760.00
Turn Lanes and Median Openings		SY	$ 50.00	$ -
Signalized Intersection		EA	$ 200,000.00	$ -
				$ -
			Paving Construction Cost Subtotal	**$ 819,560.56**

Item Description	Notes	Allowance	Item Cost
R.O.W. Preparation		6%	$ 49,173.63
Traffic Control During Construction		5%	$ 40,978.03
Pavment Markings		3%	$ 24,586.82
Roadway Drainage		30%	$ 245,868.17
Roadway Lighting		6%	$ 49,173.63
Special Drainage Structures (bridges and culverts)		6%	$ 49,173.63
Minor Water Line Adjustments		6%	$ 49,173.63
Minor Wastewater Line Adjustments		4%	$ 32,782.42
Erosion Control/Establish Turf		3%	$ 24,586.82
Basic Landscaping/Irrigation		3%	$ 24,586.82
Franchised Utility Facilities		3%	$ 24,586.82
Railroad Crossing	single track	8%	$ 65,564.84
Tree Mitigation		3%	$ 24,586.82
Other		0%	$ -
		Allowance Subtotal	**$ 704,822.08**

Paving and Allowance Subtotal	$ 1,524,382.63
Construction Contingency @ 20%	$ 304,876.53
Total Construction Cost	**$ 1,829,259.16**

Item Description	Notes	Allowance	Item Cost
Construction			$ 1,829,259.16
Engineering/Survey/Testing		20%	$ 365,851.83
Mobilization		6%	$ 109,755.55
Previous City Contribution			$ -
Other			$ -
R.O.W. and Easement Acquisition	Entire Length at 72 Feet Wide	$3/SF	$ 875,880.00
		Total Impact Fee Project Cost	**$ 3,180,746.54**

CITY OF SANGER
IMPACT FEE STUDY
CONCEPTUAL LEVEL COST PROJECTIONS
JULY 2016

Street Name: Extension of Keaton Rd
Limits: Belz Rd to FM 455
Impact Fee Class:
Ultimate Class:
Length (LF): 3,527

New roadway adjacent to farm field and signal tower site.

Item Description	Quantity	Unit	Unit Price	Item Cost
Unclassified Street Excavation	3,265.74	CY	$ 15.00	$ 48,986.11
6" Lime or Cement Subgrade Treatment (27 lbs/sf)	12,148.56	SY	$ 4.00	$ 48,594.22
8" Reinf. Concrete Pvmt with 6" Integral Curb	10,581.00	SY	$ 46.00	$ 486,726.00
4" Topsoil	3,135.11	SY	$ 5.00	$ 15,675.56
4' Wide Concrete Sidewalk	28,216	SF	$ 4.00	$ 112,864.00
Turn Lanes and Median Openings		SY	$ 50.00	$ -
Signalized Intersection		EA	$ 200,000.00	$ -
				$ -
			Paving Construction Cost Subtotal	**$ 712,845.89**

Item Description	Notes	Allowance	Item Cost
R.O.W. Preparation		6%	$ 42,770.75
Traffic Control During Construction		5%	$ 35,642.29
Pavment Markings		3%	$ 21,385.38
Roadway Drainage		30%	$ 213,853.77
Roadway Lighting		6%	$ 42,770.75
Special Drainage Structures (bridges and culverts)		10%	$ 71,284.59
Minor Water Line Adjustments		6%	$ 42,770.75
Minor Wastewater Line Adjustments		4%	$ 28,513.84
Erosion Control/Establish Turf		3%	$ 21,385.38
Basic Landscaping/Irrigation		3%	$ 21,385.38
Franchised Utility Facilities	OH-E on concrete poles e. side; OH-E on west sid	10%	$ 71,284.59
Railroad Crossing		3%	$ 21,385.38
Tree Mitigation		3%	$ 21,385.38
Other		0%	$ -
		Allowance Subtotal	**$ 655,818.22**

Paving and Allowance Subtotal	$ 1,368,664.11
Construction Contingency @ 20%	$ 273,732.82
Total Construction Cost	**$ 1,642,396.93**

Item Description	Notes	Allowance	Item Cost
Construction			$ 1,642,396.93
Engineering/Survey/Testing		20%	$ 328,479.39
Mobilization		6%	$ 98,543.82
Previous City Contribution			$ -
Other			$ -
R.O.W. and Easement Acquisition	Entire Length at 72 Feet Wide	$3/SF	$ 761,832.00
		Total Impact Fee Project Cost	**$ 2,831,252.13**

CITY OF SANGER
IMPACT FEE STUDY
CONCEPTUAL LEVEL COST PROJECTIONS
JULY 2016

Street Name: Future Belz Rd - Indian Rd Connector
Limits: I-35 NBFR to FM 455
Impact Fee Class:
Ultimate Class:
Length (LF): 5,385

Future roadway through open fields.

Item Description	Quantity	Unit	Unit Price	Item Cost
Unclassified Street Excavation	7,180.00	CY	$ 15.00	$ 107,700.00
6" Lime or Cement Subgrade Treatment (27 lbs/sf)	30,515.00	SY	$ 4.00	$ 122,060.00
8" Reinf. Concrete Pvmt with 6" Integral Curb	28,121.67	SY	$ 46.00	$ 1,293,596.67
4" Topsoil	5,983.33	SY	$ 5.00	$ 29,916.67
4' Wide Concrete Sidewalk	43,080	SF	$ 4.00	$ 172,320.00
Turn Lanes and Median Openings		SY	$ 50.00	$ -
Signalized Intersection		EA	$ 200,000.00	$ -
				$ -
			Paving Construction Cost Subtotal	$ 1,725,593.33

Item Description	Notes	Allowance	Item Cost
R.O.W. Preparation		6%	$ 103,535.60
Traffic Control During Construction		5%	$ 86,279.67
Pavment Markings		3%	$ 51,767.80
Roadway Drainage		30%	$ 517,678.00
Roadway Lighting		6%	$ 103,535.60
Special Drainage Structures (bridges and culverts)	6 stream crossings	30%	$ 517,678.00
Minor Water Line Adjustments		6%	$ 103,535.60
Minor Wastewater Line Adjustments		4%	$ 69,023.73
Erosion Control/Establish Turf		3%	$ 51,767.80
Basic Landscaping/Irrigation		3%	$ 51,767.80
Franchised Utility Facilities	OH-E along n. side of FM 455	10%	$ 172,559.33
Railroad Crossing	single track	10%	$ 172,559.33
Tree Mitigation		3%	$ 51,767.80
Other		0%	$ -
		Allowance Subtotal	$ 2,053,456.07

Paving and Allowance Subtotal	$ 3,779,049.40
Construction Contingency @ 20%	$ 755,809.88
Total Construction Cost	$ 4,534,859.28

Item Description	Notes	Allowance	Item Cost
Construction			$ 4,534,859.28
Engineering/Survey/Testing		20%	$ 906,971.86
Mobilization		6%	$ 272,091.56
Previous City Contribution			$ -
Other			$ -
R.O.W. and Easement Acquisition	Entire Length at 72 Feet Wide	$3/SF	$ 1,163,160.00
		Total Impact Fee Project Cost	$ 6,877,082.69

CITY OF SANGER
IMPACT FEE STUDY
CONCEPTUAL LEVEL COST PROJECTIONS
JULY 2016

Street Name: Future East-West Thoroughfare — Future roadway through open fields.
Limits: Cowling Rd to BNSF RR Tracks
Impact Fee Class:
Ultimate Class:
Length (LF): 2,798

Item Description	Quantity	Unit	Unit Price	Item Cost
Unclassified Street Excavation	3,731.20	CY	$ 15.00	$ 55,968.00
6" Lime or Cement Subgrade Treatment (27 lbs/sf)	15,857.60	SY	$ 4.00	$ 63,430.40
8" Reinf. Concrete Pvmt with 6" Integral Curb	14,613.87	SY	$ 46.00	$ 672,237.87
4" Topsoil	3,109.33	SY	$ 5.00	$ 15,546.67
4' Wide Concrete Sidewalk	22,387	SF	$ 4.00	$ 89,548.80
Turn Lanes and Median Openings		SY	$ 50.00	$ -
Signalized Intersection		EA	$ 200,000.00	$ -
				$ -
			Paving Construction Cost Subtotal	**$ 896,731.73**

Item Description	Notes	Allowance	Item Cost
R.O.W. Preparation		6%	$ 53,803.90
Traffic Control During Construction		5%	$ 44,836.59
Pavment Markings		3%	$ 26,901.95
Roadway Drainage		30%	$ 269,019.52
Roadway Lighting		6%	$ 53,803.90
Special Drainage Structures (bridges and culverts)	1 stream crossing	35%	$ 313,856.11
Minor Water Line Adjustments		6%	$ 53,803.90
Minor Wastewater Line Adjustments		4%	$ 35,869.27
Erosion Control/Establish Turf		3%	$ 26,901.95
Basic Landscaping/Irrigation		3%	$ 26,901.95
Franchised Utility Facilities	OH-E n. side from Cowling to railroad	3%	$ 26,901.95
Railroad Crossing	single track	3%	$ 26,901.95
Tree Mitigation		3%	$ 26,901.95
Other	Improvements to intersection with Railr	0%	$ -
		Allowance Subtotal	**$ 986,404.91**

Paving and Allowance Subtotal	$ 1,883,136.64
Construction Contingency @ 20%	$ 376,627.33
Total Construction Cost	**$ 2,259,763.97**

Item Description	Notes	Allowance	Item Cost
Construction			$ 2,259,763.97
Engineering/Survey/Testing		20%	$ 451,952.79
Mobilization		6%	$ 135,585.84
Previous City Contribution			$ -
Other			$ -
R.O.W. and Easement Acquisition	Entire Length at 72 Feet Wide	$3/SF	$ 604,454.40
		Total Impact Fee Project Cost	**$ 3,451,757.00**

Roadway Impact Fee Service Units of Supply

City of Sanger - 2015 Roadway Impact Fee Service Units of Supply

Street Name	Class	Length (MI)	Lanes	NCTCOG PK-HR Volume	% in Service Area	Vehicle-Miles Capacity PK-HR Per LN	Vehicle-Miles Supply PK-HR Total	Vehicle-Miles Demand PK-HR Total	Excess Capacity PK-HR Vehicle-Miles	Total Project Cost
Willow St./McRynolds	Minor 4 Lane	2.11	4	525	100%	525	4,431	1,108	3,323	$ 11,320,127
Indian Ln.	Minor 4 Lane	0.88	4	525	100%	525	1,846	461	1,384	$ 1,130,328
Marion Rd.	Minor 4 Lane	0.76	4	525	100%	525	1,596	399	1,197	$ 3,880,244
Lois Rd.	Minor 4 Lane	0.83	4	525	100%	525	1,743	436	1,307	$ 4,434,456
Belz Rd.	Minor 4 Lane	0.97	4	525	100%	525	2,039	510	1,529	$ 5,130,524
Metz Rd.	Minor 4 Lane	0.67	4	525	100%	525	1,402	350	1,051	$ 3,681,822
Utility Rd.	Collector 2 Lane	0.77	2	450	100%	450	691	346	346	$ 3,180,747
Keaton Rd.	Collector 2 Lane	0.67	2	450	100%	450	601	301	301	$ 2,831,252
Future Belz Rd – Indian Connector	Minor 4 Lane	1.02	4	525	100%	525	2,142	535	1,606	$ 6,877,083
Future East-West Thoroughfare	Minor 4 Lane	0.53	4	525	100%	525	1,113	278	835	$ 3,451,757
						Total	**17,604**	**4,724**	**12,880**	**$ 45,918,339**

City of Sanger - 2015 Roadway Impact Fee Existing Roadway Facilities Inventory

Street Name	Class	Length (MI)	Lanes	NCTCOG PK-HR Volume	% in Service Area	Vehicle-Miles Capacity PK-HR Per LN	Vehicle-Miles Supply PK-HR Total	Vehicle-Miles Demand PK-HR Total	Excess Capacity PK-HR Vehicle-Miles	Existing Deficiencies PK-HR Vehicle-Miles
Willow St./McReynolds	Minor 4 Lane	3.86	2	525	100%	525	4,057	2,029	2,029	-
Indian Ln.	Minor 4 Lane	0.88	2	525	100%	525	923	461	461	-
Marion Rd.	Minor 4 Lane	1.37	2	525	100%	525	1,439	719	719	-
Lois Rd.	Minor 4 Lane	2.61	2	525	100%	525	2,741	1,370	1,370	-
Lois Rd.	Collector 2 Lane	0.94	2	450	100%	525	987	423	564	(141)
Belz Rd.	Minor 4 Lane	0.97	2	525	100%	525	1,019	510	510	-
Metz Rd.	Minor 4 Lane	3.40	2	525	100%	525	3,568	1,784	1,784	-
Utility Rd.	Collector 2 Lane	1.13	2	450	100%	450	1,015	508	508	-
Keaton Rd.	Collector 2 Lane	2.03	2	450	100%	450	1,824	912	912	-
5th st	Collector 2 Lane	1.98	2	450	100%	450	1,778	889	889	-
Chisam rd	Collector 2 Lane	0.82	2	450	100%	450	736	368	368	-
Cowling	Collector 2 Lane	1.54	2	450	100%	450	1,382	691	691	-
Duck Creek	Collector 2 Lane	2.04	2	450	100%	450	1,835	918	918	-
FM 2164	Minor 4 Lane	2.95	2	525	100%	525	3,092	1,546	1,546	-
FM 455	Principal 4 Lane	6.77	2	650	100%	650	8,798	4,399	4,399	-
Future Indian Lane	Minor 4 Lane	1.56	2	525	100%	525	1,638	819	819	-
Huling Rd	Collector 2 Lane	1.69	2	450	100%	450	1,525	762	762	-
Tejas Dr	Collector 2 Lane	0.77	2	450	100%	450	689	345	345	-
Union Hill Rd	Collector 2 Lane	2.36	2	450	100%	450	2,124	1,062	1,062	-
View Rd	Minor 4 Lane	0.93	2	525	100%	525	975	487	487	-
						Total	**42,146**	**21,003**	**21,144**	**(141.00)**

Maximum Allowable Roadway Impact Fee Per Service Unit Calculations

Line	Title	Description
1	Total Vehicle-Miles of Capacity Added by the Roadway Improvement Projects	Based on the capacity, length, and number of lanes for each project - Vehicle-Mile Supply Peak-Hour Total from Appendix B Service Units of Supply
2	Total Vehicle-Miles of Existing Demand From the Roadway Improvement Projects	The amount of traffic currently on the roads that are planned for expansion - Vehicle-Mile Total Demand Peak-Hour Total from Appendix B Service Units of Supply
3	Total Vehicle-Miles of Existing Deficiencies From the Existing Roadway Facilities	Vehicle-Miles of travel that are not accommodated by the existing roads - Existing Deficiencies Peak-Hour Vehicle-Mile from Appendix B Existing Roadway Facilities Inventory
4	Net Amount of Vehicle-Miles of Capacity Added	Amount of Vehicle-Miles added by the thoroughfare plan that will not be utilized by the existing demand = Line 1 - Line 2 - Line 3
5	Total Cost of the Roadway Improvement Projects	Total of the Opinion of Probable Construction Costs for the 10-Year Roadway Impact Study
6	Cost of the Net Capacity Supplied	Total of the Opinion of Probable Construction Costs for the 10-Year Roadway Impact Study prorated by the ratio capacity added to the total capacity added = (Line 4/Line 1) x Line 5
7	Cost to Meet the Existing Needs and Usage	The Total Cost of the Roadway Improvements minus the Cost of the Capacity Supplied = Line 5 - Line 6
8	Total Vehicle-Miles of New Demand over 10-Years	The Estimate of the Number of Vehicle-Miles growth within the Service Area - based on the TDF
9	Percent of Capacity Added Attributable to Growth (Must be Less than or Equal to 100%)	The Total Vehicle-Miles of New Demand over 10-Years divided by the Net Amount of Vehicle-Miles of Capacity Added up to 100%. Required by Chapter 395 to verify the capacity added is from new growth. = Line 8 / Line 4 <= 100%
10	Cost of Capacity Added Attributable to Growth	The Cost of the Net Capacity Supplied multiplied by the Percent of Capacity Added Attributable to Growth = Line 6 x Line 9
11	50% Credit	Per Chapter 395 and the option selected in the report, multiply the Cost of Capacity Added Attributable to Growth by 50%, which is the recoverable cost of the projected improvements based on the projected growth = Line 10 x 50%
12	Max Assessable Fee Per Service Unit/Vehicle Mile	The 50% Credit divided by Total Vehicle-Miles of New Demand over 10-Years = Line 11 / Line 8

Land Use/Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-By Rate	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi)	Veh-Mi Per Dev-Unit
PORT AND TERMINAL										
Truck Terminal	30	Acres	6.55		6.55	10.02	50%	5.01	5.01	32.82
INDUSTRIAL										
General Light Industrial	110	1,000 SF GFA	0.97		0.97	10.02	50%	5.01	5.01	4.86
General Heavy Industrial	120	1,000 SF GFA	0.68		0.68	10.02	50%	5.01	5.01	3.41
Industrial Park	130	1,000 SF GFA	0.85		0.86	10.02	50%	5.01	5.01	4.31
Warehousing	150	1,000 SF GFA	0.32		0.32	10.83	50%	5.42	5.42	1.73
Mini-Warehouse	151	1,000 SF GFA	0.26		0.26	10.83	50%	5.42	5.42	1.41
RESIDENTIAL										
Single-Family Detached Housing	210	Dwelling Unit	1.01		1.01	17.21	50%	8.61	6	6.06
Apartment/Multi-family	220	Dwelling Unit	0.62		0.62	17.21	50%	8.61	6	3.72
Residential Condominium/ Townhome	230	Dwelling Unit	0.52		0.52	17.21	50%	8.61	6	3.12
Mobile Home Park / Manufactured Housing	240	Dwelling Unit	0.59		0.59	17.21	50%	8.61	6	3.54
Senior Adult Housing	252	Dwelling Unit	0.27		0.27	17.21	50%	8.61	6	1.62
Congregate Care Facility	253	Dwelling Unit	0.16		0.16	17.21	50%	8.61	6	0.96
Assisted Living	254	Beds	0.22		0.22	17.21	50%	8.61	6	1.32
LODGING										
Hotel	310	Rooms	0.59		0.59	6.43	50%	3.22	3.22	1.90
Motel / Other Lodging Facilities	320	Rooms	0.47		0.47	6.43	50%	3.22	3.22	1.51
RECREATIONAL										
Driving Range	432	Tees	1.25		1.25	6.43	50%	3.22	3.22	4.02
Golf Course	430	Acres	0.3		0.3	6.43	50%	3.22	3.22	0.96
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	2.74		2.74	6.43	50%	3.22	3.22	8.81
Ice Rink	465	1,000 SF GFA	2.36		2.36	6.43	50%	3.22	3.22	7.59
Miniature Golf	431	Holes	0.33		0.33	6.43	50%	3.22	3.22	1.06
Multiplex Movie Theater	445	Screens	13.64		13.64	6.43	50%	3.22	3.22	43.85
Racquet / Tennis Club	491	Courts	3.35		3.35	6.43	50%	3.22	3.22	10.77

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-By Rate	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi)	Veh-Mi Per Dev-Unit
INSTITUTIONAL										
Church	560	1,000 SF GFA	0.55		0.55	4.2	50%	2.10	2.10	1.16
Day Care Center	565	1,000 SF GFA	12.34	44%	6.91	4.2	50%	2.10	2.10	14.51
Primary/Middle School (1-8)	522	Students	0.16		0.16	4.2	50%	2.10	2.10	0.34
High School (9-12)	530	Students	0.13		0.13	4.2	50%	2.10	2.10	0.27
Jr / Community College	540	Students	0.12		0.12	4.2	50%	2.10	2.10	0.25
University / College	550	Students	0.17		0.21	4.2	50%	2.10	2.10	0.44
MEDICAL										
Clinic	630	1,000 SF GFA	5.18		5.18	7.55	50%	3.78	3.78	19.55
Hospital	610	Beds	1.42		1.31	7.55	50%	3.78	3.78	4.95
Nursing Home	620	Beds	0.22		0.22	7.55	50%	3.78	3.78	0.83
Animal Hospital/ Veterinary Clinic	640	1,000 SF GFA	4.72	30%	3.30	7.55	50%	3.78	3.78	12.47
OFFICE										
Corporate Headquarters Building	714	1,000 SF GFA	1.41		1.41	10.02	50%	5.01	5.01	7.06
General Office Building	710	1,000 SF GFA	1.49		1.49	10.02	50%	5.01	5.01	7.46
Medical/Dental Office	720	1,000 SF GFA	3.57		3.57	10.02	50%	5.01	5.01	17.89
Single Tenant Office Building	715	1,000 SF GFA	1.74		1.74	10.02	50%	5.01	5.01	8.72
Office Park	750	1,000 SF GFA	1.48		1.48	10.02	50%	5.01	5.01	7.41

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-By Rate	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi)	Veh-Mi Per Dev-Unit
COMMERCIAL										
Automobile Related										
Automobile Care Center	942	1,000 SF GLA	3.11	40%	1.87	6.43	50%	3.22	3.22	6.00
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	3.41	6.43	50%	3.22	3.22	10.96
Gasoline/Service Station w/ Conv. Market	945	Vehicle Fueling Positions	13.51	20%	10.81	1.2	50%	0.60	0.60	6.48
New and Used Car Sales	841	1,000 SF GFA	2.62	40%	1.57	6.43	50%	3.22	3.22	5.05
Quick Lubrication Vehicle Shop	941	Servicing Positions	5.19	40%	3.11	6.43	50%	3.22	3.22	10.01
Self-Service Car Wash	947	Stalls	5.54	40%	3.32	1.2	50%	0.60	0.60	1.99
Tire Store	848	1,000 SF GFA	4.15	28%	2.99	6.43	50%	3.22	3.22	9.61
Dining										
Fast Food Restaurant with Drive-Thru	934	1,000 SF GFA	33.84	50%	16.92	4.79	50%	2.40	2.40	40.52
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	11.15	43%	6.36	4.79	50%	2.40	2.40	15.22
Quality Restaurant	931	1,000 SF GFA	7.49	44%	4.19	4.79	50%	2.40	2.40	10.05
Other Retail										0.00
Free-Standing Retail Store	815	1,000 SF GFA	5	44%	2.80	6.43	50%	3.22	3.22	9.00
Garden Center (Nursery)	817	1,000 SF GFA	3.8	30%	2.66	6.43	50%	3.22	3.22	8.55
Home Improvement Superstore	862	1,000 SF GFA	2.37	48%	1.23	6.43	50%	3.22	3.22	3.96
Pharmacy/Drugstore With Drive-Thru Window	881	1,000 SF GFA	10.35	53%	4.86	6.43	50%	3.22	3.22	15.64
Shopping Center	820	1,000 SF GLA	3.73	34%	2.46	6.43	50%	3.22	3.22	7.91
Supermarket	850	1,000 SF GFA	10.5	36%	6.72	6.43	50%	3.22	3.22	21.60
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	3.49	6.43	50%	3.22	3.22	11.23
SERVICES										
Bank (Walk-In)	911	1,000 SF GFA	12.13	40%	7.28	3.39	50%	1.70	1.70	12.34
Bank (Drive In)	912	Drive-in Lanes	27.41	47%	14.53	3.39	50%	1.70	1.70	24.62
Hair Salon	918	1,000 SF GLA	1.45	30%	1.02	3.39	50%	1.70	1.70	1.72

Service Area Map

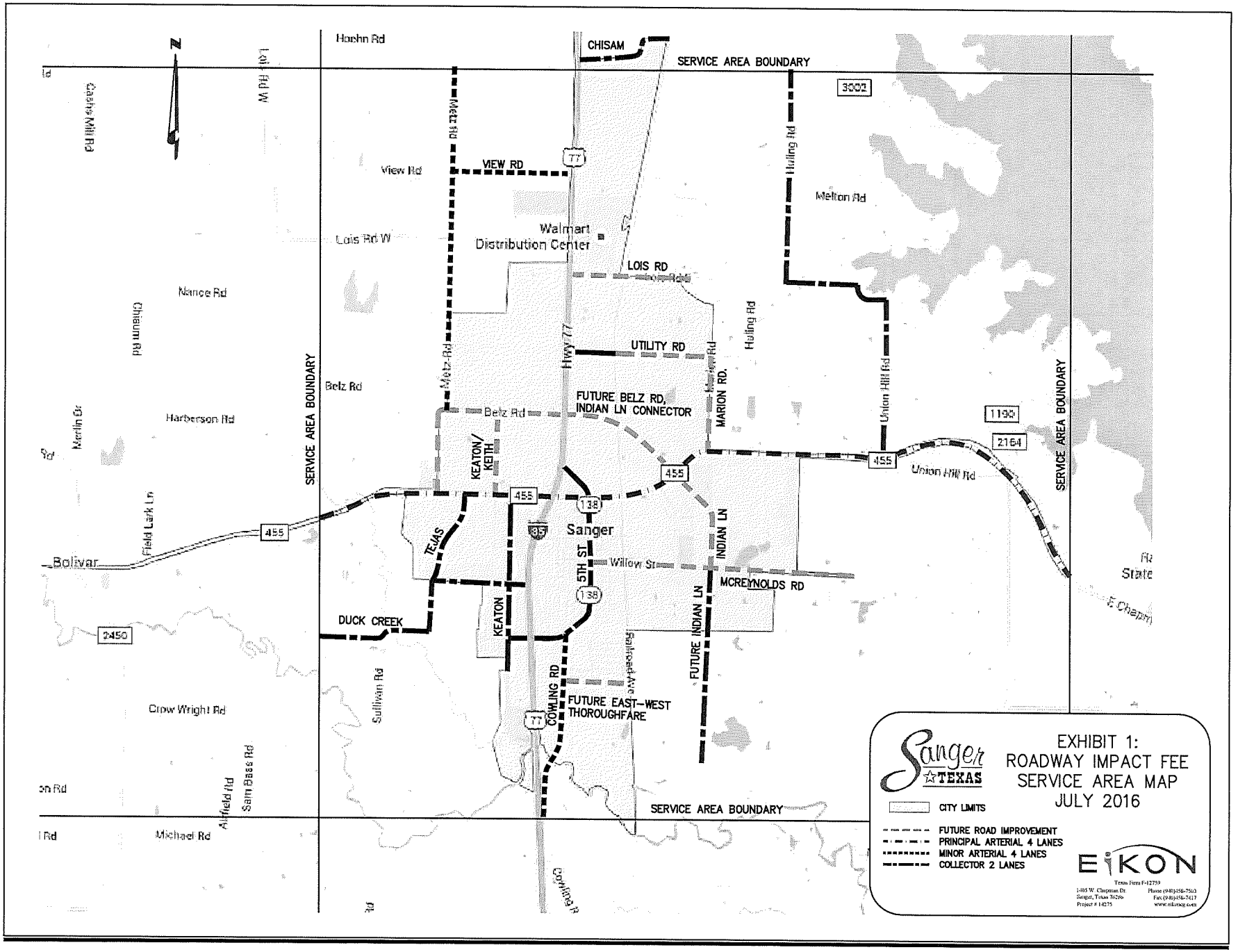
Horsh Rd
CHISAM
SERVICE AREA BOUNDARY
3002
Hailing Rd
Melton Rd
VIEW RD
77
View Rd
Metz Rd
Walmart
Distribution Center
Lois Rd W
LOIS RD
Nance Rd
Chisum Rd
Hailing Rd
UTILITY RD
Hwy 77
Metz Rd
Belz Rd
FUTURE BELZ RD,
INDIAN LN CONNECTOR
Belz Rd
MARION RD.
Harberson Rd
Merlin Dr
SERVICE AREA BOUNDARY
KEATON/
KEITH
455
1190
2164
Union Hill Rd
455
455
138
Sanger
TEXAS
35
INDIAN LN
Bolivar
Field Lark Ln
Willow St
5TH ST
MCREYNOLDS RD
138
DUCK CREEK
KEATON
2450
INDIAN LN
Railroad Ave
COWLING RD
FUTURE EAST–WEST
THOROUGHFARE
77
Crow Wright Rd
Sullivan Rd
Airfield Rd
Sam Bass Rd
Michael Rd
SERVICE AREA BOUNDARY
Sanger
TEXAS
CITY LIMITS
FUTURE ROAD IMPROVEMENT
PRINCIPAL ARTERIAL 4 LANES
MINOR ARTERIAL 4 LANES
COLLECTOR 2 LANES
EXHIBIT 1:
ROADWAY IMPACT FEE
SERVICE AREA MAP
JULY 2016
EIKON

EXHIBIT B

Roadway Impact Fee Collection Rate

Residential Fee Per Service Unit	$ 247.53
Nonresidential Fee Per Service Unit	$ 185.65

Proposed City of Sanger Roadway Impact Fees

Residential Fee Per Service Unit	$	247.53
Nonresidential Fee Per Service Unit	$	185.65

Selected Residential Land Uses	Unit	VM/DU	Fee per Dwelling Unit	
SFD Dwelling	Dwelling	6.06	$	1,500
Apartment	Dwelling	3.72	$	921
Townhome	Dwelling	3.12	$	772

Selected Non-Residential Land Uses	Unit	VM/DU	Fee per Development Unit	
General Office	1,000 sqft	7.46	$	1,385
Medical Office	1,000 sqft	17.89	$	3,321
Fast Food	1,000 sqft	40.52	$	7,522
Sit Down Restaurant	1,000 sqft	15.22	$	2,826
Quality Restaurant	1,000 sqft	10.05	$	1,866
Light Industrial	1,000 sqft	4.86	$	902
Heavy Industrial	1,000 sqft	3.41	$	633
Warehouse	1,000 sqft	1.73	$	321
Church	1,000 sqft	1.16	$	215
Day Care Center	1,000 sqft	14.51	$	2,694
Medical Clinic	1,000 sqft	19.55	$	3,629
Corporate Headquarters	1,000 sqft	8.46	$	1,571
New Car Sales	1,000 sqft	5.05	$	938
Supermarket	1,000 sqft	21.60	$	4,010
Discount Store	1,000 sqft	9.00	$	1,671
Walk-In Bank	1,000 sqft	12.34	$	2,291
Hotel	Room	1.90	$	353
Motel	Room	1.51	$	280

Note: These are selected examples of land uses from the Roadway Impact Fee Study. For a comprehensive list, consult the study.