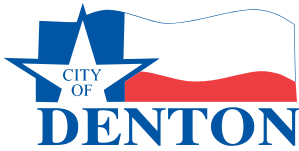


CITY OF DENTON, TEXAS

ROADWAY IMPACT FEE STUDY

December 2023

Prepared for



Prepared by:
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TBPE Firm Registration
Number: F-928
Project Number: 067390001

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EXECUTIVE SUMMARY

Introduction

Impact Fees are a mechanism for funding the public infrastructure necessitated by new development. Across the country, they are used to fund police and fire facilities, parks, schools, roads and utilities. In Texas, the legislature has allowed their use for water, wastewater, roadway and drainage facilities. They have been used to fund public water and wastewater improvements since 1998 and transportation improvements since 2016 in the City of Denton.

In the most basic terms, impact fees are meant to recover the incremental cost of the impact of each new unit of development creating new infrastructure needs. In the case of roadway impact fees, the infrastructure need is the increased capacity on arterial and collector roadways that serve the overall transportation system. The purpose of the 2022 Roadway Impact Fee Study is to identify the fee per unit of new development necessary to fund these improvements in accordance with the enabling legislation, Chapter 395 of the Texas Local Government Code.

Impact Fee Basics

Transportation Impact Fees are determined by several key variables, each described below in greater detail.

Impact Fee Study

The primary purpose of the 2022 Roadway Impact Fee Study is to determine the maximum impact fee per unit of new development chargeable as allowed by the state law. This determination is not a recommendation; the actual fee amount ultimately collected is at the discretion of the Denton City Council, so long as it does not exceed the maximum assessable allowed by law. The study looks at a period of 10 years to project new growth and corresponding capacity needs, as required by state law. The study and corresponding maximum fees must be restudied at least every five years. However, the study can be updated at any time to accommodate significant changes in any of the key variables of the impact fee equation.

Service Areas

A Service Area is a geographic area within which a unique maximum impact fee is determined. All fees collected within the Service Area must be spent on eligible improvements within the same Service Area. For Roadway Impact Fees, the Service Area may not exceed six miles. In Denton, this restriction necessitated the creation of five separate Service Areas. A map of the Service Areas can be found on Page 6.

In defining the Service Area boundaries, the project team considered the corporate boundary, required size limit, adjacent land uses, and topography. Since each Service Area has a unique maximum impact fee, the per-unit maximum fee for an identical land use will vary from one Service Area to the next. For this reason, the team contained areas of uniform land use within the same Service Area boundary where possible.

Land Use Assumptions

The maximum Roadway Impact Fee determination is required to be based on the projected growth and corresponding capacity needs in a 10-year window. This study considers the years 2022-2032.

In order to arrive at a reasonable projection of growth, all vacant parcels were inventoried. It was assumed that vacant parcels would develop according to the Future Land Use Plan specified in the Comprehensive Plan (Pg. 8). To project future development in the ten-year window, the known developing areas within the city were assumed to be fully developed by the year 2032. Research of historical building permits was performed to compare the projected growth of these known development areas against historical data.

Roadway Impact Fee Capital Improvement Plan (CIP)

The Roadway Impact Fee CIP is distinct and separate from the City's traditional Capital Improvements Plan. The Roadway Impact Fee CIP is simply the list of projects eligible for funding through impact fees. Only those capacity improvements included in the City's adopted Mobility Plan are included in the Roadway Impact Fee CIP. Capacity improvements may include the addition of lanes, intersection improvements, or the extension of a new road. Resurfacing or other maintenance activities do not qualify as capacity improvements under impact fee law in Texas.

Only the projects listed in the Roadway Impact Fee CIP are eligible to utilize impact fee funds. In order to optimize future flexibility, all capacity improvement projects included in the Mobility Plan are included in the Roadway Impact Fee CIP and will be eligible to utilize impact fee funds. Only the costs associated with providing the additional capacity necessitated by 10-years of growth can be used to calculate the maximum impact fee.

In order to calculate the maximum impact fee, the total cost of the Roadway Impact Fee CIP at build-out was reduced to account for:

- The portion of new capacity that will address existing needs, and
- The portion of new capacity that will not be necessitated until beyond the 10-year growth window.

A ratio that compares 10 years' demand for capacity to the net supply of capacity (total new capacity in the Roadway Impact Fee CIP minus existing needs) can be calculated. This ratio, which may not exceed 100%, is then applied to the cost of the net capacity supplied. The result is a determination of the costs attributable to the next 10 years' growth, which is then used to calculate the maximum impact fee in accordance with state law. The result is known as the cost of the Roadway Impact Fee CIP Attributable to Growth (i.e. recoverable portion of the Roadway Impact Fee CIP):

SERVICE AREA:	A	B	C	D	E
Recoverable Cost of Roadway Impact Fee CIP and Financing	\$191,401,529	\$66,577,513	\$147,114,364	\$61,257,141	\$89,881,134

Service Units

The impact fee law defines a service unit as follows: "Service Unit means a standardized measure of consumption attributable to an individual unit of development calculated in accordance with generally accepted engineering or planning standards and 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 2022 Roadway Impact Fee Study defines a *service unit* as the number of vehicle-miles. Based on the City's 10-year growth projections the associated demand (consumption) values for each service area are as follows in terms of vehicle-miles:

SERVICE AREA:	A	B	C	D	E
Total Veh-Mi Demand Over Ten Years	39,968	16,374	31,332	11,634	24,148

Impact Fee Calculation

The maximum impact fee allowable in each of the five service areas is then calculated by dividing the Roadway Impact Fee CIP Attributable to Growth by the number of vehicle-miles in the corresponding Service Area in the above table. This calculation is performed for each service area individually; each service area has a stand-alone Roadway Impact Fee CIP and 10-year growth projection.

Below is the listing of the 2022 Roadway Impact Fee Study's Maximum Assessable Impact Fee Per Service Unit (Vehicle-Mile):

SERVICE AREA:	A	B	C	D	E
2022 Roadway Impact Fee Study Maximum Assessable Fee Per Vehicle-Mile	\$4,789	\$4,066	\$4,695	\$5,265	\$3,722

Chapter 395 Required Adoption Process

Chapter 395 of the Texas Local Government Code stipulates a specific process for the adoption of Roadway Impact Fees. A Capital Improvement Advisory Committee (CIAC) is required to review the Land Use Assumptions and Roadway Impact Fees CIP used in calculating the maximum fee, and to provide the Committee's findings for consideration by the City Council. This CIAC also reviews the Roadway Impact Fee ordinance and provides its findings to the City Council. The composition of the CIAC is required to adequately represent the building and development communities. The City Council then conducts a first public hearing on the Land Use Assumptions and Roadway Impact Fee CIP and a second public hearing on the Roadway Impact Fee Ordinance.

Following policy adoption, the CIAC is tasked with advising the City Council of the need to update the Land Use Assumptions or the Roadway Impact Fees CIP at any time within five years of adoption. Finally, the CIAC oversees the proper administration of the Impact Fee, once in place, and advises the Council as necessary.

Collection and Use of Transportation Impact Fees

Roadway Impact fees are assessed when a final plat is recorded. The assessment defines the impact of each unit at the time of platting, according to land use, and may not exceed the maximum impact fee allowed by law. Roadway Impact Fees are collected when a building permit is issued. Therefore, funds are not collected until development-impacts are introduced to the transportation system. Funds collected within a service area can be used only within the same service area. Finally, fees must be utilized within 10 years of collection, or must be refunded with interest.

I. INTRODUCTION

Chapter 395 of the Texas Local Government Code describes the procedure political subdivisions must follow in order to create and implement impact fees. Senate Bill 243 (SB 243) amended Chapter 395 in 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 capital improvements or facility expansions necessitated by and attributable to the new development.”

The City retained Kimley-Horn and Associates, Inc. to provide professional transportation engineering services for the 2022 Roadway Impact Fee Study. This report includes details of the Roadway Impact Fee calculation methodology in accordance with Chapter 395, the applicable Land Use Assumptions, development of the Roadway Impact Fee Capital Improvements Plan, and the Land Use Equivalency Table.

This report references two of the basic inputs to the Roadway Impact Fee:

- 1) **Land Use Assumptions** (Pg. 3)
- 2) **Roadway Impact Fee Capital Improvements Plan (CIP)** (Pg. 9)

Information from these Land Use Assumptions and Roadway Impact Fee CIP is used extensively throughout the remainder of the report.

There is a detailed discussion of the methodology for the computation of impact fees. This discussion is broken into three components:

- 1) **Methodology for Roadway Impact Fees** (Pg. 20)
- 2) **Roadway Impact Fee Calculation** (Pg. 36)
- 3) **Plan for Financing and the Ad Valorem Tax Credit** (Pg. 38)

The components of the **Computation Method for Roadway Impact Fee** include development of:

- Service Areas (Pg. 20)
- Service Units (Pg. 20)
- Cost Per Service Unit (Pg. 22)
- Roadway Impact Fee CIP Costing Methodology (Pg. 22)
- Summary of Roadway Impact Fee CIP Costs (Pg. 25)
- Service Unit Calculation (Pg. 31)

The Roadway Impact Fee is then calculated as:

- Maximum Assessable Impact Fee Per Service Unit (Pg. 36)
- Service Unit Demand Per Unit of Development (Pg. 43)

The report also includes a section concerning the **Plan for Financing and the Ad Valorem Tax Credit**. This involves the calculation of the applicable credit required by law to offset the City's use of ad valorem taxes to help fund the Roadway Impact Fee CIP. This plan, prepared by NewGen Strategies, and upon which we relied, details the maximum assessable impact fee per service unit the City of Denton may apply under Chapter 395 of the Texas Local Government Code.

II. LAND USE ASSUMPTIONS

A. Purpose and Overview

In order to assess an impact fee, Land Use Assumptions must be developed to provide the basis for residential and employment growth projections within a political subdivision. As defined by Chapter 395 of the Texas Local Government Code, these assumptions include a description of changes in land uses, densities, and development in the service area. The land use assumptions are then used in determining the need and timing of transportation improvements to serve future development.

Information from the following sources was compiled to complete the land use assumptions:

- Denton Plan 2040 (City of Denton Comprehensive Plan)
- Denton County Appraisal District (DCAD)
- North Central Texas Council of Governments (NCTCOG)
- City of Denton staff
- Denton 2022 Mobility Plan

The Land Use Assumptions include the following components:

- **Land Use Assumptions Methodology** – An overview of the general methodology used to generate the land use assumptions.
- **Roadway Impact Fee Service Areas** – Explanation of the division of Denton into service areas for transportation facilities.
- **Residential and Employment**– Data on residential and employment growth within the service area over the next ten years (2022 – 2032).
- **Land Use Assumptions Summary** – A synopsis of the land use assumptions.

The residential and employment estimates and projections were compiled in accordance with the following categories:

Residential: Number of residential dwelling units, both single and multi-family.

Employment: Square feet of building area based on three (3) different classifications. Each classification has unique trip making characteristics.

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

Service: Land use activities which provide personal and professional services, such as government and other professional offices.

Basic: Land use activities that produce goods and services such as those which are exported outside of the local economy, such as manufacturing, construction, transportation, wholesale, trade, warehousing, and other industrial uses.

The above categories in the Land Use Assumptions match those used to develop the travel demand model for the City of Denton. These broader categories are used in the development of the assumptions for impact fees; however, expanded classifications used in the assessment of impact fees are found in the Land Use / Vehicle-Mile Equivalency Table (Pg. 45).

B. Land Use Assumptions Methodology

The residential and employment growth projections formulated in this report were performed using reasonable and generally accepted planning principles. The following factors were considered in developing these projections:

- Character, type, density, and quantity of existing development;
- Current zoning plans;
- Future Land Use Plan (based on Denton 2040 Comprehensive Plan);
- Growth trends;
- Location of vacant land;

- Physical restrictions (i.e. flood plains, railroads); and
- Physical development capacity of Denton.

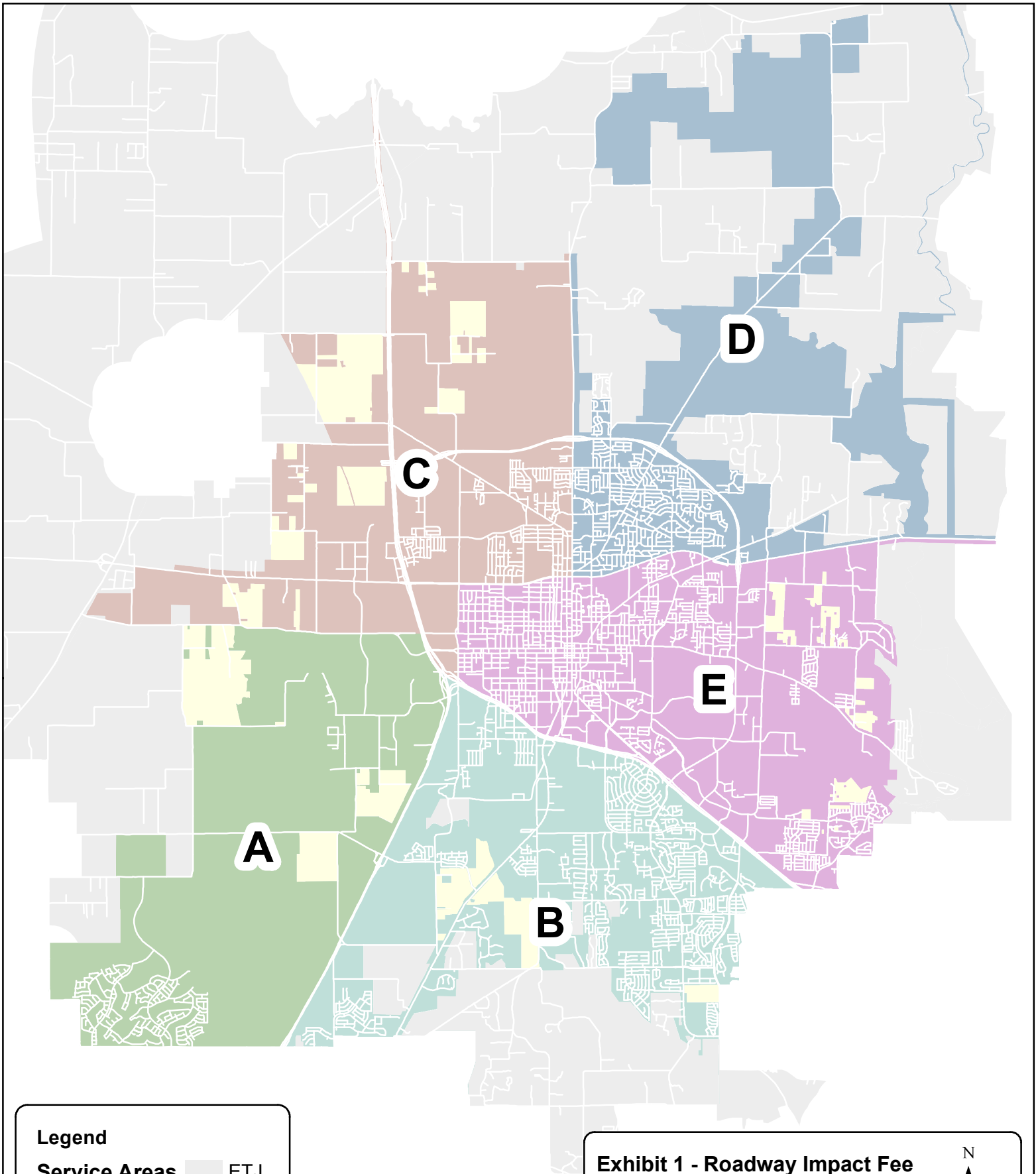
Existing residential and employment estimates were obtained using Denton Central Appraisal District (DCAD) parcel data and an aerial survey of existing development.

For the remaining undeveloped areas, assumptions based upon the City's Future Land Use Plan were used to estimate the ultimate buildout of residential and employment development. To project future development in the ten-year window, the known developing areas within the city were assumed to be fully developed by the year 2032.

C. Roadway Impact Fee Service Areas

The geographic boundary of the proposed impact fee service areas for transportation facilities is shown in **Exhibit 1**. The City of Denton is currently divided into five (5) service areas, each based upon the six (6) mile limit, as required in Chapter 395 (explained on Pg. 20). For roadway facilities, the service areas as required by state law are limited to areas within the current corporate limits. Therefore, areas within the extraterritorial jurisdiction (ETJ) and non-annexation areas (NAAs) are excluded from this study.

It should be noted that at locations where service area boundaries follow a City thoroughfare facility, the proposed boundary is intended to follow the centerline of the roadway, unless otherwise noted. In cases where a service area boundary follows the City Limits, only those portions of the transportation facility within the City Limits are included in the service area.



Legend

Service Areas

- | | | | |
|--|---|---|-----|
|  | A |  | ETJ |
|  | B |  | NAA |
|  | C | | |
|  | D | | |
|  | E | | |

Exhibit 1 - Roadway Impact Fee Service Areas

2022 Roadway Impact Fee Study

0 0.5 1
Miles

Kimley»Horn



D. Residential and Employment

Residential and Employment estimates for the base year (2022) were performed based upon a survey of the existing land uses on DCAD parcel data, and aerial verification. Build-out projections were prepared by combining the existing land uses within the service area with reasonable density assumptions for undeveloped land based upon the Denton 2040 Comprehensive Plan - Future Land Use Plan. Ten-year growth projections were prepared based upon historic growth trends, location of recent and known development within the City, and consultation with City staff. **Exhibit 2** presents the existing City limits and the proposed service areas, combined with the Future Land Use Plan.

E. Land Use Assumptions Summary

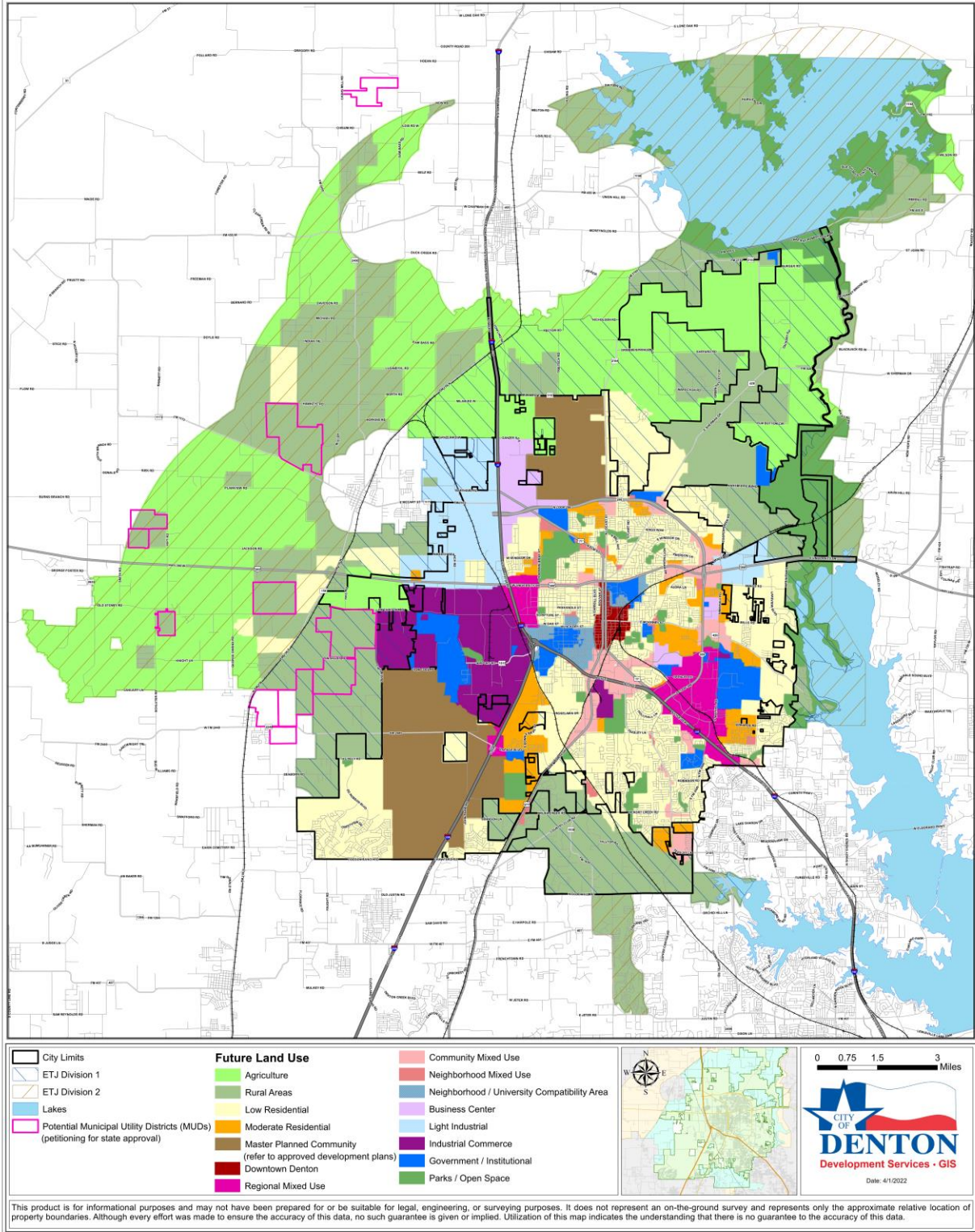
Table 1 summarizes the residential and employment 10-year growth projections. The projected growth over the next ten years is reasonable compared to the historical growth over the previous ten years, as described in the Land Use Assumptions Methodology (page 4).

Table 1. Residential and Employment 10-Year Projections

Service Area	Residential		Employment		
	Single Family	Multi-Family	Basic	Service	Retail
	Dwelling Units		Sq. Ft.	Sq. Ft.	Sq. Ft.
A	3,212	970	2,843,000	591,000	871,000
B	2,009	387	415,000	238,000	285,000
C	1,538	1,015	3,518,000	689,000	446,000
D	847	215	815,000	206,000	287,000
E	1,219	1,291	1,831,000	519,000	505,000
Sub-Total	8,825	3,878	9,422,000	2,243,000	2,394,000
Total	12,703		14,059,000		

Exhibit 2– Citywide Future Land Use Map

**Denton 2040 Comprehensive Plan
Future Land Use Map**



III. ROADWAY IMPACT FEE CAPITAL IMPROVEMENTS PLAN

Development of a 10-year Roadway Impact Fee Capital Improvement Plan is required per Chapter 395 of the Texas local Government Code. To accomplish this, the current Denton Mobility Plan has been updated using a Denton-specific Travel Demand Model. The Travel Demand Model was developed using the existing roadway network and residential and employment data to develop a baseline scenario. This scenario was calibrated using existing vehicle counts. Several build-out scenarios were run using the build-out residential and employment data to assist in completing the updated mobility plan map. This updated mobility plan map serves as the basis for this Roadway Impact Fee CIP. The Roadway Impact Fee CIP includes arterial and collector class roadway facilities that serve the overall transportation system, as well as major intersection improvements. All the facilities identified are included in the proposed mobility plan map.

The proposed Roadway Impact Fee CIP is listed in **Tables 2.A – 2.E** and mapped in **Exhibits 3.A – 3.E**. The tables show the length of each project as well as the facility's Mobility Plan classification. The Roadway Impact Fee CIP was developed in conjunction with input from City of Denton staff and represents those projects that will be needed to accommodate the growth projected in the Land Use Assumptions section of this report.

Table 2.A. 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area A

Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area
A-1	SA	CORBIN	IH-35W TO CORBIN	0.58	100%
A-2	SA	CORBIN	500' S OF SPRINGSIDE TO CORBIN	0.27	100%
A-3	PA	FM 1515	IH 35W TO CORBIN	1.13	100%
A-4	PA	FM 1515	CORBIN TO WESTERN	0.22	100%
A-5	PA	FM 1515	WESTERN TO WESTCOURT	0.29	100%
A-6	PA	FM 1515	WESTCOURT TO MASCH BRANCH	0.12	100%
A-7	PA	FM 1515	TOM COLE TO 3435' W OF TOM COLE	0.65	100%
A-8	PA	FM 1515	3435' W OF TOM COLE TO 530' E OF C WOLFE	0.71	100%
A-9	PA	H LIVELY	C WOLFE TO 2145' W OF H LIVELY	0.41	50%
A-10	PA	H LIVELY	2145' W OF H LIVELY TO 2150' W OF ED ROBSON	0.74	100%
A-11	C	IH-35-CORBIN	IH-35 TO CORBIN	0.84	100%
A-12	SA	JIM CHRISTAL	IH 35 TO OLD SH 24	0.59	100%
A-13,C-10	SA	JIM CHRISTAL	OLD SH 24 TO WESTERN	0.55	50%
A-14,C-11	SA	JIM CHRISTAL	WESTERN TO MASCH BRANCH	0.66	50%
A-15,C-12	SA	JIM CHRISTAL	MASCH BRANCH TO THOMAS J EGAN	1.13	50%
A-16,C-13	SA	JIM CHRISTAL	THOMAS J EGAN TO 515' E OF C WOLFE	0.75	50%
A-17	C	PRECISION-WESTERN	PRECISION TO WESTERN	0.65	100%
A-18	PA	ROBSON RANCH	IH 35W TO ED ROBSON	1.65	50%
A-19	PA	ROBSON RANCH	ED ROBSON TO YARBROUGH	1.35	50%
A-20	SA	SPRINGSIDE	CORBIN TO UNDERWOOD	0.35	100%
A-21	SA	SPRINGSIDE	UNDERWOOD TO WESTCOURT	0.16	100%
A-22	C	TJ EGAN-LOOP 288	LOOP 288 TO 2440' W OF LOOP 288	0.46	100%
A-23	PA	C WOLFE	1140' S OF TOM COLE TO FM 2449	1.38	100%
A-24	PA	C WOLFE	FM 2449 TO H LIVELY	0.63	50%
A-25	C	CORBIN	IH-35-CORBIN TO SPRINGSIDE	0.39	100%
A-26	C	J CHRISTAL-H LIVELY	FM 2449 TO H LIVELY	0.63	100%
A-27	C	PRECISION	JIM CHRISTAL TO 1635' N OF FM 1515	0.45	100%
A-28	SA	THOMAS J EGAN	JIM CHRISTAL TO 2915' S OF JIM CRISTAL	0.55	100%
A-29	SA	THOMAS J EGAN	1830' N OF FM 1515 TO FM 1515	0.35	50%
A-30	PA	UNDERWOOD	SPRINGSIDE TO UNDERWOOD CONNECTOR	0.76	100%
A-31	SA (1/2)	WESTCOURT	FM 1515 TO SPRINGSIDE	0.79	100%
A-32	PA (1/3)	WESTERN	JIM CHRISTAL TO AIRPORT	1.23	100%
A-33	PA	WESTERN	FM 1515 TO SPRINGSIDE	0.79	100%

Note: The 10-Year Roadway Impact Fee CIP is not in a prioritized order.

Table 2.B. 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area B

Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area
B-1	C	ALLRED	BONNIE BRAE TO BRUSH CREEK	0.81	50%
B-2	PA	ALLRED	BRUSH CREEK TO JOHN PAINE	0.30	50%
B-3	PA	BRUSH CREEK	815' E OF COUNTRY CLUB TO COUNTRY CLUB	0.15	100%
B-4	PA	BRUSH CREEK	COUNTRY CLUB TO 1935' W OF COUNTRY CLUB	0.37	100%
B-5	PA	BRUSH CREEK	2180' E OF FORT WORTH TO FORT WORTH	0.41	100%
B-6	PA	BRUSH CREEK	FORT WORTH TO 590' E OF ALLRED	0.68	100%
B-7	SA	CORBIN	BONNIE BRAE TO IH-35W	0.66	100%
B-8	C	CREEKDALE	PIMLICO TO RIVERCHASE	0.61	100%
B-9	C	CREEKDALE	THISTLE WAY TO OAKBLUFF	0.39	100%
B-10	C	EL PASEO	BELMONT TO COUNTRY CLUB	0.36	100%
B-11	PA	FM 1515	BONNIE BRAE TO IH 35W	0.15	100%
B-12	PA (1/3)	HICKORY CREEK	FM 2499 TO NAUTICA	0.22	100%
B-13	PA (1/3)	HICKORY CREEK	NAUTICA TO TEASLEY	0.25	100%
B-14	PA (1/3)	HICKORY CREEK	TEASLEY TO MONTECITO	0.85	100%
B-15	PA (1/3)	HICKORY CREEK	MONTECITO TO 1435' W OF BIDDY BYE	0.42	50%
B-16	PA	HICKORY CREEK	1435' W OF BIDDY BYE TO 815' E OF COUNTRY CLUB	0.38	100%
B-17	SA	HOBSON LANE	TEASLEY TO MONTECITO	0.13	100%
B-18	SA	HOBSON LANE	MONTECITO TO FORRESTRIDGE	0.28	100%
B-19	SA	HOBSON LANE	FORRESTRIDGE TO COUNTRY CLUB	0.72	100%
B-20	C	PARVIN	MCCORMICK TO HIGHLAND PARK	0.50	100%
B-21	SA	ROBINSON	230' E OF WHEELER RIDGE TO TEASLEY	0.52	100%
B-22	SA	RYAN	TEASLEY TO MONTECITO	0.76	100%
B-23	SA	RYAN	MONTECITO TO FORRESTRIDGE	0.63	100%
B-24	SA	RYAN	FORRESTRIDGE TO COUNTRY CLUB	0.66	100%
B-25	PA (1/3)	VINTAGE	FORT WORTH TO BONNIE BRAE	0.87	100%
B-26	PA (1/3)	VINTAGE	BONNIE BRAE TO NAPA VALLEY	0.14	100%
B-27	PA (1/3)	VINTAGE	NAPA VALLEY TO IH 35W	0.65	100%
B-28	C	WILLOWWOOD	1250' W OF HIGHLAND PARK TO BONNIE BRAE	0.24	100%
B-29	SA	BONNIE BRAE	IH 35E TO FM 1515	0.14	100%
B-30	SA	BONNIE BRAE	FM 1515 TO WILLOWWOOD	1.09	100%
B-31	SA	BONNIE BRAE	HIGHLAND PARK TO ROSELAWN	0.48	50%
B-32	SA	COUNTRY CLUB	FORT WORTH TO HOBSON	0.08	100%
B-33	SA	COUNTRY CLUB	HOBSON TO RYAN	1.00	100%
B-34	SA	COUNTRY CLUB	RYAN TO HICKORY CREEK	0.66	50%
B-35	PA	FORT WORTH	COUNTRY CLUB TO VINTAGE	1.32	100%
B-36	PA	FORT WORTH	VINTAGE TO BONNIE BRAE	1.07	100%
B-37	PA	FORT WORTH	BONNIE BRAE TO BRUSH CREEK	0.24	100%
B-38	PA	FORT WORTH	BRUSH CREEK TO CRAWFORD	1.11	100%
B-39	Completed	JOHN PAINE	JOHNSON TO ATHENS	0.42	100%
B-40	SA	JOHN PAINE	VINTAGE TO 1045' S OF VINTAGE	0.20	100%
B-41	C	PARVIN-ROSELAWN	PARVIN TO ROSELAWN	0.52	100%
B-42	PA (1/3)	TEASLEY	IH 35E TO LONDONDERRY	0.25	100%
B-43	PA (1/3)	TEASLEY	LONDONDERRY TO HOBSON	0.97	100%
B-44	PA (1/3)	TEASLEY	LILLIAN B MILLER TO PENNSYLVANIA	0.36	100%
B-45	PA (1/3)	TEASLEY	PENNSYLVANIA TO HOBSON	0.21	100%

Note: The 10-Year Roadway Impact Fee CIP is not in a prioritized order.

Table 2.C. 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area C

Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area
C-1	PA	BARTHOLD	MASCH BRANCH TO 5200' W OF IH 35	0.98	50%
C-2	SA	BOBCAT	FM 2164 TO IH-35	2.75	100%
C-3	SA	FM 1173	IH 35 TO 4605' W OF IH 35	0.87	100%
C-4	SA	FM 1173	4605' W OF IH 35 TO LOVERS	0.41	50%
C-5	SA	FM 2164-IH 35	FM 2164 TO IH 35	2.73	100%
C-6	PA	GANZER	FM 2164 TO GANZER	2.40	100%
C-7	PA	GANZER	2900' E OF IH 35 TO IH 35	0.55	100%
C-8	PA	GANZER	1620' E OF BARTHOLD TO BARTHOLD	0.31	50%
C-9	PA	GANZER	BARTHOLD TO RECTOR	0.49	50%
A-13,C-10	SA	JIM CHRISTAL	OLD SH 24 TO WESTERN	0.55	50%
A-14,C-11	SA	JIM CHRISTAL	WESTERN TO MASCH BRANCH	0.66	50%
A-15,C-12	SA	JIM CHRISTAL	MASCH BRANCH TO THOMAS J EGAN	1.13	50%
A-16,C-13	SA	JIM CHRISTAL	THOMAS J EGAN TO 515' E OF C WOLFE	0.75	50%
C-14	SA	JIM CHRISTAL	945' W OF C WOLFE TO NAIL	0.59	50%
C-15	SA	JIM CHRISTAL	NAIL TO 2045' W of Nail	0.39	50%
C-16	C	MARSHALL	2845' N OF HAMPTON TO HAMPTON	0.54	100%
C-17	C	MARSHALL	HAMPTON TO US 380	0.59	100%
C-18	SA	MASCH BRANCH	MASCH BRANCH TO DARBY SMITH	0.65	100%
C-19	C	WESTWARD	NORTHWAY TO BONNIE BRAE	0.22	100%
C-20	SA (1/2)	RINEY	US 77 TO 2460' W OF US 77	0.47	100%
C-21	SA (1/2)	RINEY	2460' W OF US 77 TO BONNIE BRAE	0.19	100%
C-22	PA (1/3)	US 77	WINDSOR TO FM 2164	0.22	100%
C-23	PA (1/3)	US 77	RINEY TO WINDSOR	0.46	100%
C-24	PA (1/3)	US 77	RINEY TO RINEY	0.40	100%
C-25	PA (1/3)	US 77	BONNIE BRAE TO RINEY	0.75	100%
C-26	PA (1/3)	US 77	LOOP 288 TO BONNIE BRAE	0.33	100%
C-27	PA (1/3)	US 77	IH 35 TO LOOP 288	0.87	100%
C-28	C	MASCH BRANCH-NAIL	MASCH BRANCH TO 1295' W OF MASCH BRANCH	0.25	100%
C-29	C	MASCH BRANCH-NAIL	1050' E OF LOOP 288 TO 1550' W OF LOOP 288	0.49	100%
C-30	C	MASCH BRANCH-NAIL	1335' W OF THOMAS J EGAN TO 775' E OF C WOLFE	0.48	100%
C-31	C	MASCH BRANCH-NAIL	775' E OF C WOLFE TO 690' W OF C WOLFE	0.28	50%
C-32	C	MASCH BRANCH-NAIL	690' W OF C WOLFE TO NAIL	0.58	100%
C-33	SA	WESTGATE	WESTGATE TO 1460' E OF IH-35	0.18	100%
C-34	SA	WINDSOR	US 77 TO HINKLE	0.46	100%
C-35	SA (1/2)	WINDSOR	HINKLE TO BONNIE BRAE	0.99	100%
C-36	SA (1/2)	WINDSOR	WESTGATE TO 145' W OF CLARENDON	0.10	100%
C-37	SA (1/2)	WINDSOR	220' W OF WINDSOR FARMS TO IH 35	0.17	100%
C-38	SA	WINDSOR	IH 35 TO MASCH BRANCH	1.24	100%
C-39	SA	BARTHOLD	GANZER TO 2600' S OF GANZER	0.49	100%
C-40	PA	BONNIE BRAE	MILAM TO LOOP 288	3.13	100%
C-41	SA	BONNIE BRAE	LOOP 288 TO US 77	0.24	100%
C-42	SA	BONNIE BRAE	US 77 TO RINEY	0.38	100%
C-43	SA	BONNIE BRAE	RINEY TO WINDSOR	0.66	100%
C-44	SA	BONNIE BRAE	WINDSOR TO US 380	0.68	100%
C-45,E-29	SA	BONNIE BRAE	US 380 TO PANHANDLE	0.55	50%
C-46,E-30	SA	BONNIE BRAE	PANHANDLE TO SCRIPTURE	0.20	50%
C-47,E-31	SA	BONNIE BRAE	SCRIPTURE TO OAK	0.22	50%
C-48,E-32	SA	BONNIE BRAE	OAK TO HICKORY	0.07	50%
C-49,E-33	SA	BONNIE BRAE	HICKORY TO PRAIRIE	0.27	50%
C-50,E-34	SA	BONNIE BRAE	PRAIRIE TO IH 35E	0.16	50%
C-51	PA	C WOLFE	US 380 TO WESTERN-NAIL	0.51	100%
C-52	C	FALLMEADOW	MEADOWLEDGE TO GARDENVIEW	0.17	100%
C-53,D-22	PA	FM 2164	MILAM TO LOOP 288	2.62	50%
C-54,D-28	SA	LOCUST	LOOP 288 TO HERCULES	0.43	50%
C-55,D-29	SA	LOCUST	HERCULES TO BELL	0.45	50%
C-56,D-30	SA	LOCUST	BELL TO WINDSOR	0.24	50%
C-57,D-31	SA	LOCUST	WINDSOR TO FM 2164	0.25	50%
C-58	SA	LOVERS	FM 1173 TO MASCH BRANCH	0.78	100%
C-59	SA	LOVERS	1085' N OF MASCH BRANCH TO MASCH BRANCH	0.21	100%
C-60	SA	LOVERS LN CONNECTOR	LOVERS TO LOOP 288	0.06	100%
C-61	SA	LOVERS LN CONNECTOR	LOOP 288 TO 1085' N OF MASCH BRANCH	0.08	100%
C-62	SA	MASCH BRANCH	1295' S OF FM 1173 TO JACKSON	0.79	50%
C-63	SA	MASCH BRANCH	LOVERS TO US 380	0.72	100%
C-64	SA	MASCH BRANCH	US 380 TO JIM CHRISTAL	0.78	100%
C-65	SA	MILAM-LOOP 288	MILAM TO LOOP 288	2.71	100%
C-66	SA	MILAM-US 77	MILAM TO GANZER	1.51	100%
C-67	SA	MILAM-US 77	GANZER TO LONG	0.73	100%
C-68	SA	MILAM-US 77	LONG TO US 77	0.53	100%
C-69	C	NICOSIA	LOOP 288 TO BEALL	0.12	100%
C-70	SA	THOMAS J EGAN	US 380 TO JIM CHRISTAL	0.76	100%
C-71	PA	WESTERN	US 380 TO JIM CHRISTAL	0.80	100%

Note: The 10-Year Roadway Impact Fee CIP is not in a prioritized order.

Table 2.D. 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area D

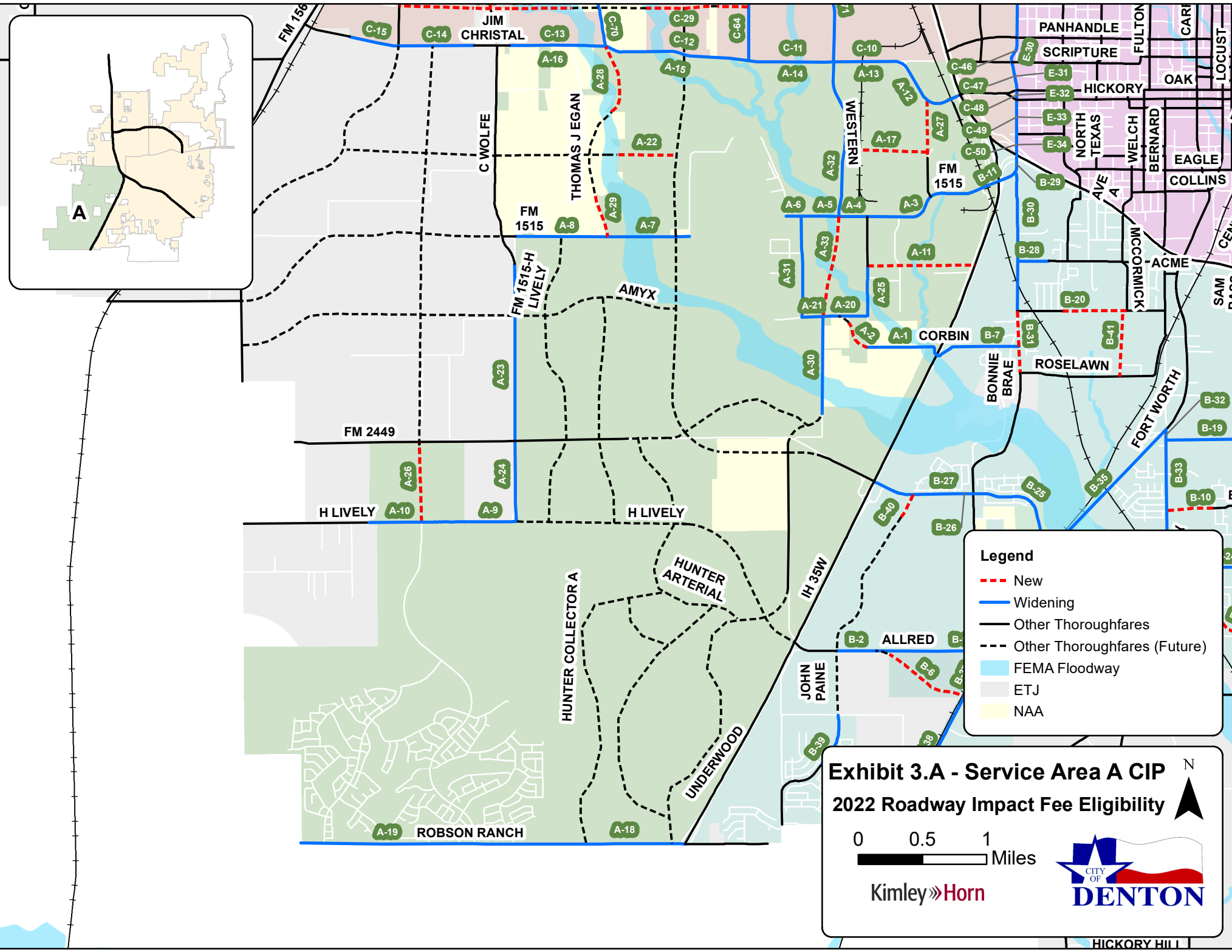
Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area
D-1	SA	BOBCAT	560' W OF FM 2164 TO FM 2164	0.11	50%
D-2	C	FISHTRAP	MINGO TO GEESLING	0.36	50%
D-3	PA	GANZER	15,500' E OF SHERMAN TO 4600' W OF SHERMAN	3.41	100%
D-4	SA	GRIBBLE SPRINGS	INDIAN WELLS TO 3015' W OF INDIAN WELLS	0.57	50%
D-5	SA	HARTLEE FIELD	4220' E OF COOPER CREEK TO COOPER CREEK	0.80	50%
D-6	SA	HARTLEE FIELD	COOPER CREEK TO 5170' W OF COOPER CREEK	0.98	50%
D-7	C	HARTLEE FIELD	600' E OF SHERMAN TO SHERMAN	0.11	50%
D-8	SA	HARTLEE FLD-FM 2164	HARTLEE FIELD TO SHERMAN	0.43	100%
D-9	SA	HARTLEE FLD-FM 2164	SHERMAN TO 3500' W OF SHERMAN	0.66	100%
D-10	SA	HARTLEE FLD-FM 2164	STUART TO 1485' W OF STUART	0.28	50%
D-11	SA	HARTLEE FLD-FM 2164	475' W OF FM 2164 TO FM 2164	0.09	100%
D-12	C	LONG	510' W OF FM 2164 TO FM 2164	0.10	100%
D-13	SA	MINGO	E CITY LIMITS TO COOPER CREEK	0.09	100%
D-14	SA	MINGO	COOPER CREEK TO LOOP 288	0.44	100%
D-15	SA	MINGO	LOOP 288 TO US 380	0.43	100%
D-16	C	KINGS ROW	SILVER DOME TO LOOP 288	0.50	100%
D-17	C	SILVER DOME	COOPER CREEK TO FARRIS RD	0.41	50%
D-18	C	COLLINS	HARTLEE FIELD TO 2730' S OF HARTLEE FIELD	0.84	50%
D-19	SA	COOPER CREEK	SHERMAN TO HARTLEE FIELD	1.91	100%
D-20	SA	COOPER CREEK	SILVER DOME TO MINGO	0.83	50%
D-21	PA	COOPER CREEK	MINGO TO US 380	0.32	100%
C-53,D-22	PA	FM 2164	MILAM TO LOOP 288	2.62	50%
D-23	PA	GREEN VALLEY	2395' S OF FM 2153 TO 2935' N OF SHEPARD	1.47	100%
D-24	SA	GREEN VALLEY	WARSCHUN TO SHERMAN	0.40	100%
D-25	SA	INDIAN WELLS	1615' S OF FM 2153 TO 4930' N OF GRIBBLE SPRINGS	0.73	100%
D-26	SA	INDIAN WELLS	4930' N OF GRIBBLE SPRINGS TO 2905' N OF GRIBBLE	0.38	50%
D-27	SA	INDIAN WELLS	2905' N OF GRIBBLE SPRINGS TO GRIBBLE SPRINGS	0.55	50%
C-54,D-28	SA	LOCUST	LOOP 288 TO HERCULES	0.43	50%
C-55,D-29	SA	LOCUST	HERCULES TO BELL	0.45	50%
C-56,D-30	SA	LOCUST	BELL TO WINDSOR	0.24	50%
C-57,D-31	SA	LOCUST	WINDSOR TO FM 2164	0.25	50%
D-32	SA	SHERMAN	LOOP 288 TO HERCULES	0.31	100%
D-33	SA	SHERMAN	HERCULES TO KINGS	0.36	100%
D-34	SA	SHERMAN	KINGS TO WINDSOR	0.38	100%
D-35	SA	SHERMAN	WINDSOR TO WILSONWOOD	0.19	100%
D-36	SA	SHERMAN	WILSONWOOD TO CORONADO	0.22	100%
D-37	SA	SHERMAN	CORONADO TO GREENWOOD	0.31	100%
D-38	SA	SHERMAN	GREENWOOD TO BELL	0.16	100%
D-39	SA	SHERMAN	BELL TO LOCUST	0.32	100%
D-40	C	WINDSOR	LOOP 288 TO DOMINION	0.16	100%

Note: The 10-Year Roadway Impact Fee CIP is not in a prioritized order.

Table 2.E. 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area E

Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area
E-1	C	AUDRA	LOOP 288 TO 1185' W OF LOOP 288	0.22	100%
E-2	SA	BLAGG	LAKEVIEW TO GEESLING	0.71	100%
E-3	SA	BLAGG	GEESLING TO 2175' W OF GEESLING	0.41	100%
E-4	SA	BLAGG	235' E OF MAYHILL TO MAYHILL	0.04	50%
E-5	PA (1/3)	DALLAS	TEASLEY TO IH 35E	0.87	100%
E-6	C	DUCHESS	TRAILHEAD TO WOODROW	0.76	100%
E-7	SA	FM 426	LANEY TO GRISSOM	0.57	100%
E-8	Completed	MCKINNEY	GRISSOM TO LOOP 288	1.65	100%
E-9	SA	MCKINNEY	LOOP 288 TO CARDINAL	0.13	100%
E-10	SA	MCKINNEY	CARDINAL TO MOCKINGBIRD	0.22	100%
E-11	SA	MCKINNEY	MOCKINGBIRD TO MACK	0.61	100%
E-12	SA	MCKINNEY	MACK TO AUDRA	0.29	100%
E-13	SA	MILLS	TRINITY TO MAYHILL	1.40	100%
E-14	SA	MILLS	LAKEVIEW TO MAYHILL	0.41	100%
E-15	SA	MINGO	US 380 TO OLD NORTH	0.14	100%
E-16	SA	MINGO	OLD NORTH TO NOTTINGHAM	0.48	100%
E-17	SA	MINGO	NOTTINGHAM TO PERTAIN	0.56	100%
E-18	SA	MINGO	PERTAIN TO RUDELL	0.18	100%
E-19	SA	MINGO	RUDELL TO WILLIS	0.11	100%
E-20	SA	MINGO	WILLIS TO WITHERS	0.44	100%
E-21	SA	MINGO	WITHERS TO PAISLEY	0.04	100%
E-22	SA	MINGO	PAISLEY TO BELL	0.19	100%
E-23	SA (1/2)	MORSE	MAYHILL TO KIMBERLY	0.22	100%
E-24	SA	SHADY OAKS	WOODROW TO TEASLEY	0.58	100%
E-25	SA	SPENCER	MAYHILL TO LOOP 288	0.44	100%
E-26	C	TREATMENT PLANT	MCKINNEY TO POST OAK	0.63	100%
E-27	SA	TREATMENT PLANT	POST OAK TO 1325' W OF POST OAK	0.25	100%
E-28	SA	TREATMENT PLANT	1325' W OF POST OAK TO MAYHILL	0.75	100%
C-45,E-29	SA	BONNIE BRAE	US 380 TO PANHANDLE	0.55	50%
C-46,E-30	SA	BONNIE BRAE	PANHANDLE TO SCRIPTURE	0.20	50%
C-47,E-31	SA	BONNIE BRAE	SCRIPTURE TO OAK	0.22	50%
C-48,E-32	SA	BONNIE BRAE	OAK TO HICKORY	0.07	50%
C-49,E-33	SA	BONNIE BRAE	HICKORY TO PRAIRIE	0.27	50%
C-50,E-34	SA	BONNIE BRAE	PRAIRIE TO IH 35E	0.16	50%
E-35	C	CARDINAL	ORIOLE TO MCKINNEY	0.42	100%
E-36	PA	GEESLING	US 380 TO BLAGG	0.46	100%
E-37	PA	GEESLING	US 380 TO BLAGG	1.02	100%
E-38	PA (1/3)	LAKEVIEW	POST OAK TO SHADY SHORES	0.26	100%
E-39	PA (1/3)	MAYHILL	US 380 TO PROMINENCE	0.44	100%
E-40	PA (1/3)	MAYHILL	PROMINENCE TO 770' N OF RUSSELL NEWMAN	0.39	100%
E-41	PA (1/3)	MAYHILL	770' N OF RUSSELL NEWMAN TO RUSSELL NEWMAN	0.15	50%
E-42	PA (1/3)	MAYHILL	RUSSELL NEWMAN TO 460' S OF RUSSELL NEWMAN	0.09	50%
E-43	PA (1/3)	MAYHILL	460' S OF RUSSELL NEWMAN TO MILLS	0.20	100%
E-44	PA (1/3)	MAYHILL	MILLS TO MCKINNEY	0.37	100%
E-45	PA (1/3)	MAYHILL	MCKINNEY TO MORSE	0.39	100%
E-46	PA (1/3)	MAYHILL	MORSE TO SPENCER	0.67	100%
E-47	PA (1/3)	MAYHILL	SPENCER TO EDWARDS	0.60	100%
E-48	PA (1/3)	MAYHILL	2725' N OF COLORADO TO COLORADO	0.52	100%
E-49	PA (1/3)	MAYHILL	COLORADO TO IH 35E	0.44	100%
E-50	PA	MAYHILL CONNECTOR	MAYHILL TO QUAILCREEK	0.13	100%
E-51	C	MOCKINGBIRD	MCKINNEY TO 625' N OF DUCHESS	0.16	100%
E-52	SA	MOCKINGBIRD	DUCHESS TO SHADY OAKS	0.41	100%
E-53	SA	MOCKINGBIRD	SHADY OAKS TO SPENCER	0.53	100%
E-54	PA	POST OAK	MILLS TO SPENCER	1.30	100%
E-55	PA	POST OAK	TREATMENT PLANT TO EDWARDS	1.27	100%
E-56	PA	POST OAK	EDWARDS TO POCKRUS PAGE	0.51	100%
E-57	C	SWISHER	EDWARDS TO POCKRUS PAGE	0.50	100%
E-58	PA (1/3)	TEASLEY	DALLAS TO IH 35E	0.35	100%
E-59	C	N STAR	SPENCER TO ROY	0.32	100%
E-60	C	ROY	MAYHILL TO N STAR	0.21	100%

Note: The 10-Year Roadway Impact Fee CIP is not in a prioritized order.



Legend

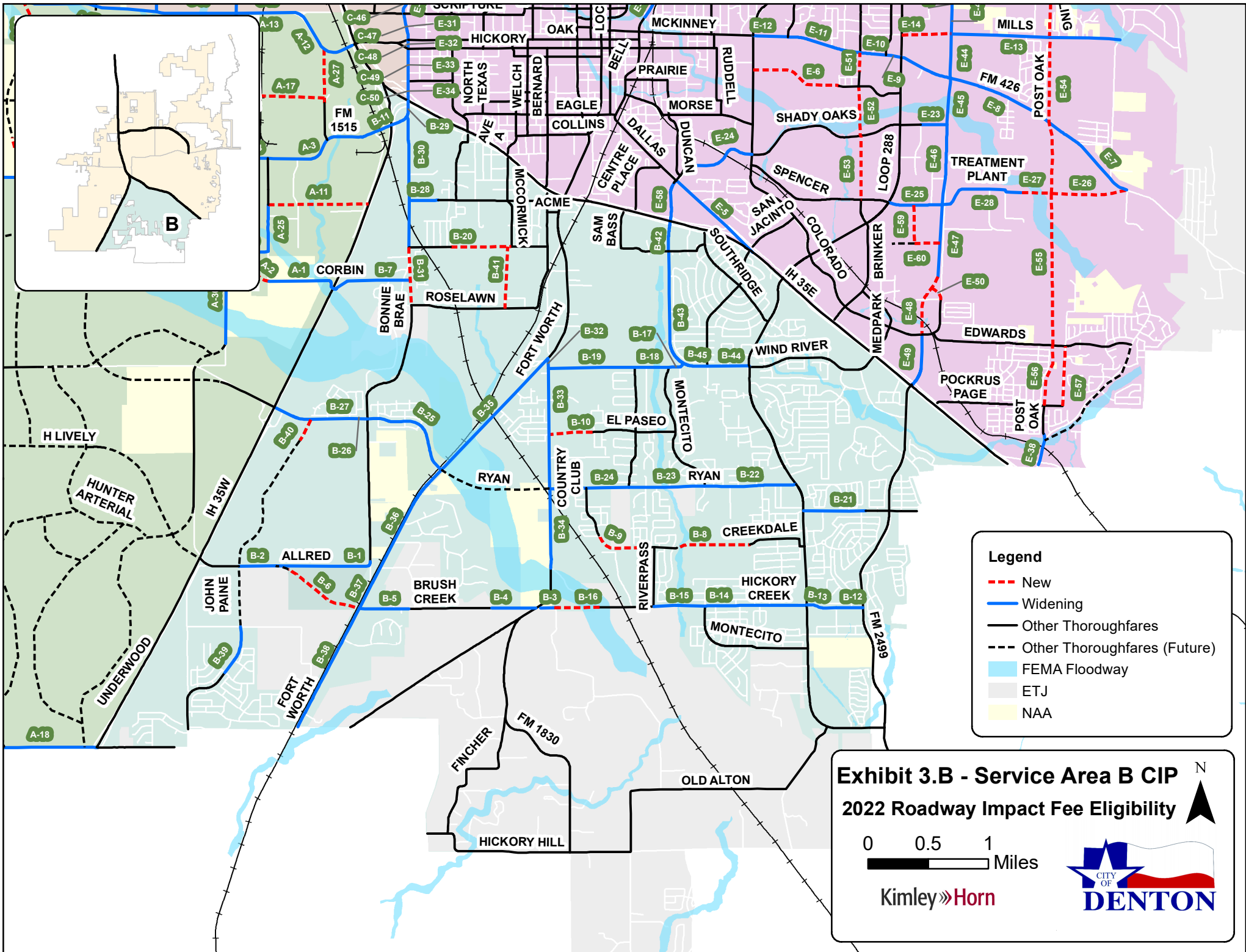
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- Widening
- Other Thoroughfares
- - - Other Thoroughfares (Future)
- FEMA Floodway
- ETJ
- NAA

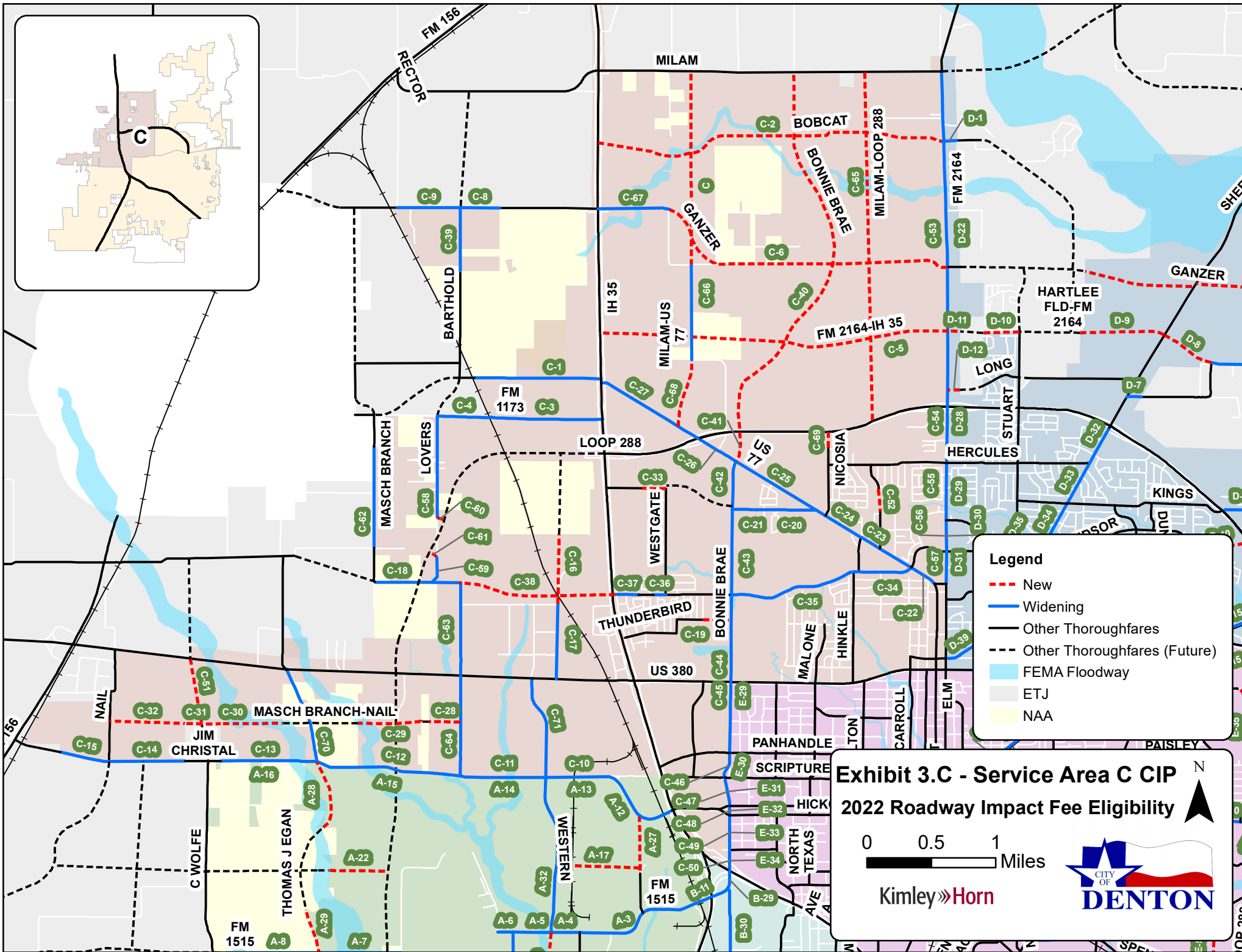
Exhibit 3.A - Service Area A CIP
2022 Roadway Impact Fee Eligibility

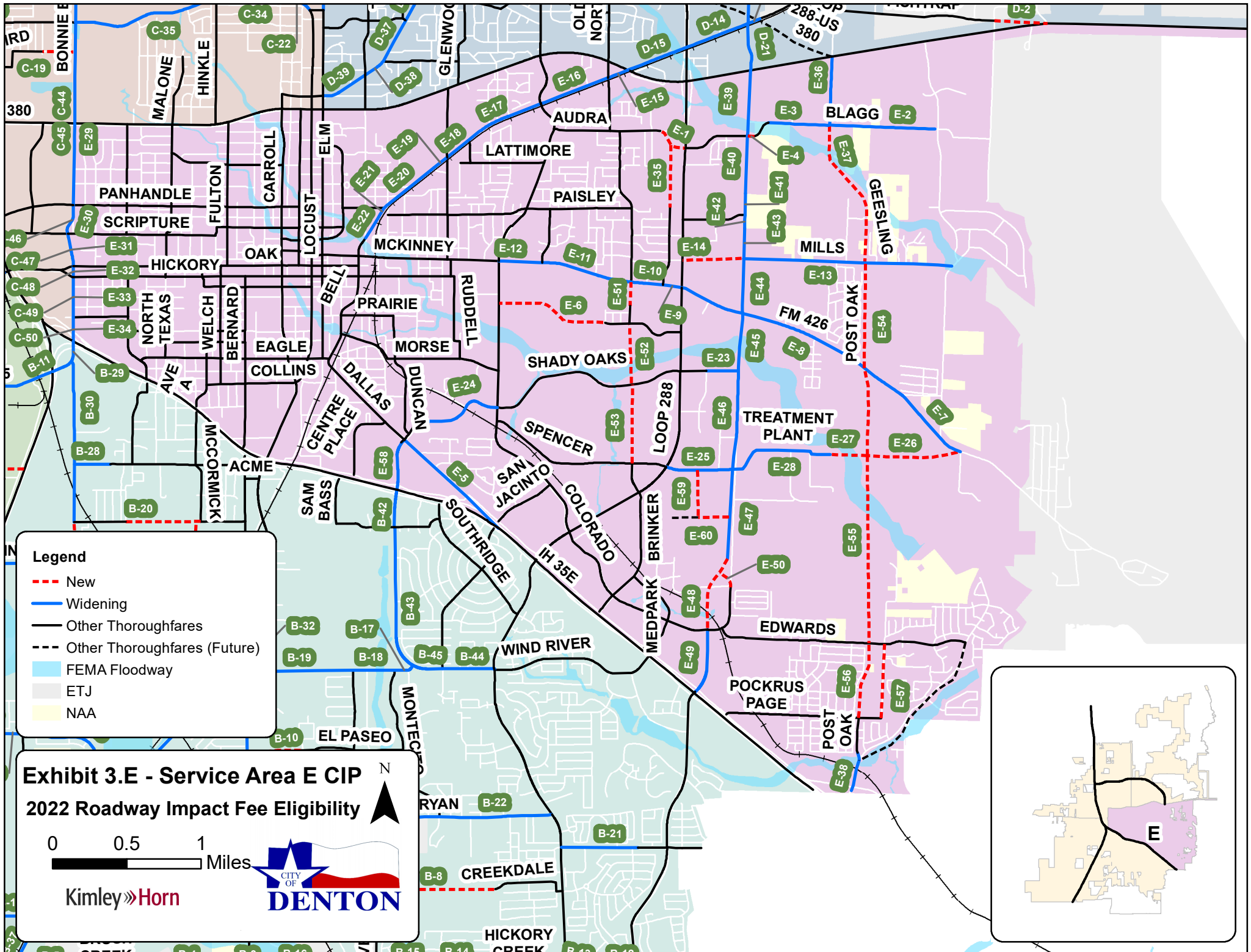
0 0.5 1 Miles

Kimley»Horn

CITY OF DENTON







Legend

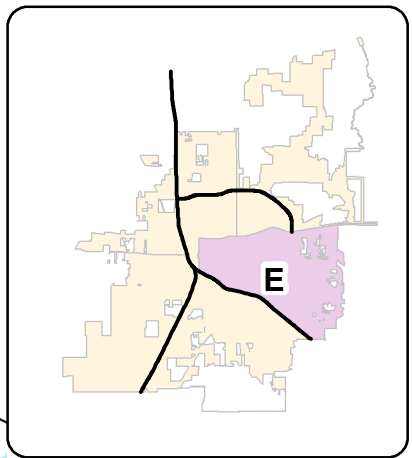
- New
- Widening
- Other Thoroughfares
- Other Thoroughfares (Future)
- Light Blue FEMA Floodway
- Light Grey ETJ
- Yellow NAA

Exhibit 3.E - Service Area E CIP
2022 Roadway Impact Fee Eligibility

0 0.5 1 Miles

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CITY OF DENTON



IV.COMPUTATION METHOD FOR ROADWAY IMPACT FEES

A. Service Areas

The five (5) service areas used in the 2022 Roadway Impact Fee Study are shown in **Exhibit 1**. These service areas cover the entire corporate area of the City of Denton. 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.”

B. Service Units

The “service unit” is a measure of consumption or use of the capital facilities by new development. In other words, it is the unit of measure used in the 2022 Roadway Impact Fee Study to quantify the supply and demand for roads in the City. For transportation purposes, the service unit is defined as a vehicle-mile. Below is the definition for vehicle-mile.

Vehicle-Mile: The capacity consumed in a single lane in the PM peak hour by a vehicle making a trip one mile in length. The PM Peak is used as the basis for transportation planning and the estimation of trips caused by new development.

Total Vehicle-Miles of Supply: Based on the total length (miles), number of lanes, and capacity (vehicles per hour) provided by the Denton Mobility Plan (see **Appendix B**).

Total Vehicle-Miles of Demand: Based on the 10-year growth projections (Pg. 35). The demand is equal to PM Trip Rate (trips) * Trip Length (miles).

The capacity values used in the 2022 Roadway Impact Fee Study are based upon Thoroughfare Capacity Criteria published by the North Central Texas Council of Governments (NCTCOG) and applied to City of Denton thoroughfare standards. **Tables 3A** and **3B** show the service volumes as a function of the facility classification and type.

Table 3A. Service Volumes for Proposed Facilities
(used in Appendix B – Roadway Impact Fee CIP Service Units of Supply)

Facility Classification	Median Configuration	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
Primary Arterial (PA)	Divided	850
Secondary Arterial (SA)	Divided	750
Collector (C)	Undivided	550

Table 3B. Service Volumes for Existing Facilities
(used in Appendix C – Existing Roadway Facilities Inventory)

Roadway Type	Description	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
2U-R	Rural Cross-Section (i.e., gravel, dirt, etc.)	150
2U-H	Two lane undivided – Arterial Type	725
2-1W	Two lane – one way couplet	650
2U	Two lane undivided	425
3-1W	Three lane - one way couplet	700
3U	Three lane undivided (two-way, left-turn lane)	550
4U	Four lane undivided	550
4D	Four lane divided	750
6D	Six lane divided	850

C. Cost Per Service Unit

A fundamental step in the impact fee process is to establish the cost for each service unit. In the case of the Roadway Impact Fee, this is the cost for each vehicle-mile of travel. Thus, it is the cost to construct a roadway (lane-mile) needed to accommodate a vehicle-mile of travel. The cost per service unit is calculated for each service area based on the roadway projects within that service area.

The second component of the cost per service unit is the determination of the number of service units in each service area. This number is the measure of the growth in transportation demand that is projected to occur in the ten-year period.

D. Roadway Impact Fee CIP Costing Methodology

All of the project costs for an arterial or collector facility which serves the overall transportation system are eligible to be included in the Roadway Impact Fee Capital Improvements Plan. Chapter 395 of the Texas Local Government Code specifies that the allowable costs 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 capital improvements plan who is not an employee of the political subdivision."

The engineer's opinion of the probable costs of the projects in the Roadway Impact Fee CIP is based, in part, on the calculation of a unit cost of construction. This means that a cost per linear foot of roadway is calculated based on an average price for the various components of roadway construction. This allows the probable cost to be determined by the type of facility being constructed, the number of lanes, and the length of the project. The cost for location specific items such as bridges, highway ramps, drainage structures, and any other

special components are added to each project, as appropriate. The detailed costing components are provided in the costing sheets in **Appendix A**. The following is a detailed description of the costing methodology for the Roadway Impact Fee CIP.

1. Project Information

In order to correctly estimate the cost of a roadway project, several attributes are first identified:

- Project Number – Identifies which Service Area the project is in with a corresponding number. The corresponding number does not represent any prioritizations and is used only to identify projects. For example, Project A-10 is in Service Area A and is the 10th project on the list.
- Roadway Name – A unique identifier for each project. In some cases abbreviations are used for the project name. In cases where roadway names are unknown the connecting limits may be used such as FM 1515 – H Lively represents a roadway link that connects FM 1515 to H Lively.
- Limits – Represents the beginning and ending location for each project.
- Length (ft) – The distance measured in feet that is used to cost out the project.
- Roadway Classification – The costing class to be used in the analysis. The impact fee class provides the width for the various elements in the roadway. The construction costs are variable, based on the proposed Mobility Plan classification of the roadway. For example, PA stands for Primary Arterial. A PA Impact Fee Class means the entire roadway is to be constructed. Additional classifications are utilized in cases where a portion of the facility currently exists and the road is only to be widened. The following notations are used for these projects:
 - “(1/2)” for facilities where half the facility still needs to be constructed;
 - “(1/3)” for future six-lane principal arterials facilities where two additional median lanes are needed
 - “(2/3)” for future six-lane principal arterials facilities where four additional lanes are needed

2. Construction Cost

A typical roadway project consists of a number of costs, including the following: planning, survey, design engineering, permitting, right-of way acquisition, and construction and inspection. While the construction cost component of a project may actually consist of approximately 100 various pay items, a simplified approach was used for developing the conceptual level project costs. The pay items used to estimate construction costs are shown in **Table 4.**

Table 4. Construction Cost Pay Items

Pay Items
• Unclassified Street Earthwork • Lime Stabilization • Concrete pavement and curb • Sidewalk (and Trail when applicable) • Topsoil • Block Sodding • Turn lanes

3. Allowances

A percentage of the paving construction cost is allotted for various major construction component allowances, as appropriate. These allowances include mobilization, traffic control, pavement markings and signage, roadway drainage, illumination, minor water and sewer adjustments, landscaping, irrigation and SWPPP. These allowance percentages are also based on historical data and are shown in the example project costing sheets in the **Appendix.**

In addition, allowances are provided for streams and channel crossings, railroad crossings, and intersection improvements where needs are anticipated. The construction cost subtotal is given a fifteen percent (15%) allowance for contingency and ROW costs, sixteen percent (16%) for engineering, surveying, and SUE, and three and a half percent (3.5%) of the construction cost total is added for inspection and materials testing. In addition, if City funds

were previously spent or are currently allocated to a project, those amounts are also included in the total cost.

The Impact Fee Project Cost Total is then the Construction Cost Total plus engineering, surveying, testing, and inspection; plus ROW/contingency.

E. Summary of Roadway Impact Fee CIP Costs

Tables 5.A – 5.E are the 10-Year Roadway Impact Fee CIP project lists for each service area with planning level project costs. Overall project costs can be seen in the summary tables in **Appendix A**, Conceptual Level Project Cost Projections. These costs are based on the example project costing sheets, also provided in **Appendix A**. It should be noted that these tables reflect only conceptual-level opinions or assumptions regarding the portions of future project costs that are recoverable through impact fees. Actual project costs are likely to change with time and are dependent on market and economic conditions that cannot be predicted.

The Roadway Impact Fee CIP establishes the list of projects for which Impact Fees may be utilized. Projects not included in the Roadway Impact Fee CIP are not eligible to receive impact fee funding. The cost projections utilized in this study should not be utilized for the City's construction CIP.

**Table 5.A – 10-Year Roadway Impact Fee CIP
with Conceptual Level Cost Projections – Service Area A**

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA A	A-1	SA	CORBIN	IH-35W TO CORBIN	0.58	100%	\$ 10,164,000	\$ 10,164,000
	A-2	SA	CORBIN	500' S OF SPRINGSIDE TO CORBIN	0.27	100%	\$ 3,378,000	\$ 3,378,000
	A-3	PA	FM 1515	IH 35W TO CORBIN	1.13	100%	\$ 23,533,000	\$ 23,533,000
	A-4	PA	FM 1515	CORBIN TO WESTERN	0.22	100%	\$ 3,959,000	\$ 3,959,000
	A-5	PA	FM 1515	WESTERN TO WESTCOURT	0.29	100%	\$ 7,495,000	\$ 7,495,000
	A-6	PA	FM 1515	WESTCOURT TO MASCH BRANCH	0.12	100%	\$ 2,089,000	\$ 2,089,000
	A-7	PA	FM 1515	TOM COLE TO 3435' W OF TOM COLE	0.65	100%	\$ 13,827,000	\$ 13,827,000
	A-8	PA	FM 1515	3435' W OF TOM COLE TO 530' E OF C WOLFE	0.71	100%	\$ 13,132,000	\$ 13,132,000
	A-9	PA	H LIVELY	C WOLFE TO 2145' W OF H LIVELY	0.41	50%	\$ 7,226,000	\$ 3,613,000
	A-10	PA	H LIVELY	2145' W OF H LIVELY TO 2150' W OF ED ROBSON	0.74	100%	\$ 13,188,000	\$ 13,188,000
	A-11	C	IH-35-CORBIN	IH-35 TO CORBIN	0.84	100%	\$ 7,040,000	\$ 7,040,000
	A-12	SA	JIM CHRISTAL	IH 35 TO OLD SH 24	0.59	100%	\$ 10,332,000	\$ 10,332,000
	A-13,C-10	SA	JIM CHRISTAL	OLD SH 24 TO WESTERN	0.55	50%	\$ 9,746,000	\$ 4,873,000
	A-14,C-11	SA	JIM CHRISTAL	WESTERN TO MASCH BRANCH	0.66	50%	\$ 11,964,000	\$ 5,982,000
	A-15,C-12	SA	JIM CHRISTAL	MASCH BRANCH TO THOMAS J EGAN	1.13	50%	\$ 18,502,000	\$ 9,251,000
	A-16,C-13	SA	JIM CHRISTAL	THOMAS J EGAN TO 515' E OF C WOLFE	0.75	50%	\$ 12,707,000	\$ 6,353,500
	A-17	C	PRECISION-WESTERN	PRECISION TO WESTERN	0.65	100%	\$ 6,566,000	\$ 6,566,000
	A-18	PA	ROBSON RANCH	IH 35W TO ED ROBSON	1.65	50%	\$ 30,974,000	\$ 15,487,000
	A-19	PA	ROBSON RANCH	ED ROBSON TO YARBROUGH	1.35	50%	\$ 25,335,000	\$ 12,667,500
	A-20	SA	SPRINGSIDE	CORBIN TO UNDERWOOD	0.35	100%	\$ 6,141,000	\$ 6,141,000
	A-21	SA	SPRINGSIDE	UNDERWOOD TO WESTCOURT	0.16	100%	\$ 2,971,000	\$ 2,971,000
	A-22	C	TJ EGAN-LOOP 288	LOOP 288 TO 2440' W OF LOOP 288	0.46	100%	\$ 3,722,000	\$ 3,722,000
	A-23	PA	C WOLFE	1140' S OF TOM COLE TO FM 2449	1.38	100%	\$ 26,240,000	\$ 26,240,000
	A-24	PA	C WOLFE	FM 2449 TO H LIVELY	0.63	50%	\$ 12,018,000	\$ 6,009,000
	A-25	C	CORBIN	IH-35-CORBIN TO SPRINGSIDE	0.39	100%	\$ 3,667,000	\$ 3,667,000
	A-26	C	J CHRISTAL-H LIVELY	FM 2449 TO H LIVELY	0.63	100%	\$ 5,353,000	\$ 5,353,000
	A-27	C	PRECISION	JIM CHRISTAL TO 1635' N OF FM 1515	0.45	100%	\$ 3,694,000	\$ 3,694,000
	A-28	SA	THOMAS J EGAN	JIM CHRISTAL TO 2915' S OF JIM CRISTAL	0.55	100%	\$ 6,984,000	\$ 6,984,000
	A-29	SA	THOMAS J EGAN	1830' N OF FM 1515 TO FM 1515	0.35	50%	\$ 4,635,000	\$ 2,317,500
	A-30	PA	UNDERWOOD	SPRINGSIDE TO UNDERWOOD CONNECTOR	0.76	100%	\$ 15,229,000	\$ 15,229,000
	A-31	SA (1/2)	WESTCOURT	FM 1515 TO SPRINGSIDE	0.79	100%	\$ 5,343,000	\$ 5,343,000
	A-32	PA (1/3)	WESTERN	JIM CHRISTAL TO AIRPORT	1.23	100%	\$ 6,619,000	\$ 6,619,000
	A-33	PA	WESTERN	FM 1515 TO SPRINGSIDE	0.79	100%	\$ 14,102,000	\$ 14,102,000
							Service Area Project Cost Subtotal	\$ 281,321,500
							2022 Roadway Impact Fee Study Cost Per Service Area	\$ 37,660
							Total Cost in SERVICE AREA A	\$ 281,359,160

- These planning level cost projections have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Projects within the City of Denton.
- These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

**Table 5.B – 10-Year Roadway Impact Fee CIP
with Conceptual Level Cost Projections – Service Area B**

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA B	B-1	C	ALLRED	BONNIE BRAE TO BRUSH CREEK	0.81	50%	\$ 6,097,000	\$ 3,048,500
	B-2	PA	ALLRED	BRUSH CREEK TO JOHN PAINE	0.30	50%	\$ 5,424,000	\$ 2,712,000
	B-3	PA	BRUSH CREEK	815' E OF COUNTRY CLUB TO COUNTRY CLUB	0.15	100%	\$ 2,747,000	\$ 2,747,000
	B-4	PA	BRUSH CREEK	COUNTRY CLUB TO 1935' W OF COUNTRY CLUB	0.37	100%	\$ 6,769,000	\$ 6,769,000
	B-5	PA	BRUSH CREEK	2180' E OF FORT WORTH TO FORT WORTH	0.41	100%	\$ 7,344,000	\$ 7,344,000
	B-6	PA	BRUSH CREEK	FORT WORTH TO 590' E OF ALLRED	0.68	100%	\$ 10,698,000	\$ 10,698,000
	B-7	SA	CORBIN	BONNIE BRAE TO IH-35W	0.66	100%	\$ 10,760,000	\$ 10,760,000
	B-8	C	CREEKDALE	PIMLICO TO RIVERCHASE	0.61	100%	\$ 5,346,000	\$ 5,346,000
	B-9	C	CREEKDALE	THISTLE WAY TO OAKBLUFF	0.39	100%	\$ 3,461,000	\$ 3,461,000
	B-10	C	EL PASEO	BELMONT TO COUNTRY CLUB	0.36	100%	\$ 3,369,000	\$ 3,369,000
	B-11	PA	FM 1515	BONNIE BRAE TO IH 35W	0.15	100%	\$ 2,595,000	\$ 2,595,000
	B-12	PA (1/3)	HICKORY CREEK	FM 2499 TO NAUTICA	0.22	100%	\$ 1,605,000	\$ 1,605,000
	B-13	PA (1/3)	HICKORY CREEK	NAUTICA TO TEASLEY	0.25	100%	\$ 1,789,000	\$ 1,789,000
	B-14	PA (1/3)	HICKORY CREEK	TEASLEY TO MONTECITO	0.85	100%	\$ 8,638,000	\$ 8,638,000
	B-15	PA (1/3)	HICKORY CREEK	MONTECITO TO 1435' W OF BIDDY BYE	0.42	50%	\$ 4,006,000	\$ 2,003,000
	B-16	PA	HICKORY CREEK	1435' W OF BIDDY BYE TO 815' E OF COUNTRY CLUB	0.38	100%	\$ 7,612,000	\$ 7,612,000
	B-17	SA	HOBSON LANE	TEASLEY TO MONTECITO	0.13	100%	\$ 1,914,000	\$ 1,914,000
	B-18	SA	HOBSON LANE	MONTECITO TO FORRESTRIDGE	0.28	100%	\$ 5,710,000	\$ 5,710,000
	B-19	SA	HOBSON LANE	FORRESTRIDGE TO COUNTRY CLUB	0.72	100%	\$ 11,559,000	\$ 11,559,000
	B-20	C	PARVIN	MCCORMICK TO HIGHLAND PARK	0.50	100%	\$ 2,150,000	\$ 2,150,000
	B-21	SA	ROBINSON	230' E OF WHEELER RIDGE TO TEASLEY	0.52	100%	\$ 8,061,000	\$ 8,061,000
	B-22	SA	RYAN	TEASLEY TO MONTECITO	0.76	100%	\$ 11,980,000	\$ 11,980,000
	B-23	SA	RYAN	MONTECITO TO FORRESTRIDGE	0.63	100%	\$ 10,878,000	\$ 10,878,000
	B-24	SA	RYAN	FORRESTRIDGE TO COUNTRY CLUB	0.66	100%	\$ 10,824,000	\$ 10,824,000
	B-25	PA (1/3)	VINTAGE	FORT WORTH TO BONNIE BRAE	0.87	100%	\$ 11,721,000	\$ 11,721,000
	B-26	PA (1/3)	VINTAGE	BONNIE BRAE TO NAPA VALLEY	0.14	100%	\$ 1,665,000	\$ 1,665,000
	B-27	PA (1/3)	VINTAGE	NAPA VALLEY TO IH 35W	0.65	100%	\$ 7,975,000	\$ 7,975,000
	B-28	C	WILLOWWOOD	1250' W OF HIGHLAND PARK TO BONNIE BRAE	0.24	100%	\$ 2,079,000	\$ 2,079,000
	B-29	SA	BONNIE BRAE	IH 35E TO FM 1515	0.14	100%	\$ 1,285,000	\$ 1,285,000
	B-30	SA	BONNIE BRAE	FM 1515 TO WILLOWWOOD	1.09	100%	\$ 11,351,000	\$ 11,351,000
	B-31	SA	BONNIE BRAE	HIGHLAND PARK TO ROSELAWN	0.48	50%	\$ 4,521,000	\$ 2,260,500
	B-32	SA	COUNTRY CLUB	FORT WORTH TO HOBSON	0.08	100%	\$ 1,229,000	\$ 1,229,000
	B-33	SA	COUNTRY CLUB	HOBSON TO RYAN	1.00	100%	\$ 15,093,000	\$ 15,093,000
	B-34	SA	COUNTRY CLUB	RYAN TO HICKORY CREEK	0.66	50%	\$ 11,902,000	\$ 5,951,000
	B-35	PA	FORT WORTH	COUNTRY CLUB TO VINTAGE	1.32	100%	\$ 26,417,000	\$ 26,417,000
	B-36	PA	FORT WORTH	VINTAGE TO BONNIE BRAE	1.07	100%	\$ 19,299,000	\$ 19,299,000
	B-37	PA	FORT WORTH	BONNIE BRAE TO BRUSH CREEK	0.24	100%	\$ 4,811,000	\$ 4,811,000
	B-38	PA	FORT WORTH	BRUSH CREEK TO CRAWFORD	1.11	100%	\$ 20,190,000	\$ 20,190,000
	B-39	Completed	JOHN PAINE	JOHNSON TO ATHENS	0.42	100%	\$ 238,000	\$ 238,000
	B-40	SA	JOHN PAINE	VINTAGE TO 1045' S OF VINTAGE	0.20	100%	\$ 3,254,000	\$ 3,254,000
	B-41	C	PARVIN-ROSELAWN	PARVIN TO ROSELAWN	0.52	100%	\$ 3,878,000	\$ 3,878,000
	B-42	PA (1/3)	TEASLEY	IH 35E TO LONDONDERRY	0.25	100%	\$ 1,039,000	\$ 1,039,000
	B-43	PA (1/3)	TEASLEY	LONDONDERRY TO HOBSON	0.97	100%	\$ 4,558,000	\$ 4,558,000
	B-44	PA (1/3)	TEASLEY	LILLIAN B MILLER TO PENNSYLVANIA	0.36	100%	\$ 1,493,000	\$ 1,493,000
	B-45	PA (1/3)	TEASLEY	PENNSYLVANIA TO HOBSON	0.21	100%	\$ 857,000	\$ 857,000
Service Area Project Cost Subtotal							\$ 290,216,000	
2022 Roadway Impact Fee Study Cost Per Service Area							\$ 37,660	
Total Cost in SERVICE AREA B							\$ 290,253,660	

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- These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

**Table 5.C – 10-Year Roadway Impact Fee CIP
with Conceptual Level Cost Projections – Service Area C**

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA C	C-1	PA	BARTHOLD	MASCH BRANCH TO 5200' W OF IH 35	0.98	50%	\$ 17,750,000	\$ 8,875,000
	C-2	SA	BOBCAT	FM 2164 TO IH-35	2.75	100%	\$ 37,762,000	\$ 37,762,000
	C-3	SA	FM 1173	IH 35 TO 4605' W OF IH 35	0.87	100%	\$ 13,401,000	\$ 13,401,000
	C-4	SA	FM 1173	4605' W OF IH 35 TO LOVERS	0.41	50%	\$ 7,704,000	\$ 3,852,000
	C-5	SA	FM 2164-IH 35	FM 2164 TO IH 35	2.73	100%	\$ 37,057,000	\$ 37,057,000
	C-6	PA	GANZER	FM 2164 TO GANZER	2.40	100%	\$ 39,748,000	\$ 39,748,000
	C-7	PA	GANZER	2900' E OF IH 35 TO IH 35	0.55	100%	\$ 11,525,000	\$ 11,525,000
	C-8	PA	GANZER	1620' E OF BARTHOLD TO BARTHOLD	0.31	50%	\$ 5,708,000	\$ 2,854,000
	C-9	PA	GANZER	BARTHOLD TO RECTOR	0.49	50%	\$ 9,208,000	\$ 4,604,000
	A-13,C-10	SA	JIM CHRISTAL	OLD SH 24 TO WESTERN	0.55	50%	\$ 9,746,000	\$ 4,873,000
	A-14,C-11	SA	JIM CHRISTAL	WESTERN TO MASCH BRANCH	0.66	50%	\$ 11,964,000	\$ 5,982,000
	A-15,C-12	SA	JIM CHRISTAL	MASCH BRANCH TO THOMAS J EGAN	1.13	50%	\$ 18,502,000	\$ 9,251,000
	A-16,C-13	SA	JIM CHRISTAL	THOMAS J EGAN TO 515' E OF C WOLFE	0.75	50%	\$ 12,707,000	\$ 6,353,500
	C-14	SA	JIM CHRISTAL	945' W OF C WOLFE TO NAIL	0.59	50%	\$ 9,547,000	\$ 4,773,500
	C-15	SA	JIM CHRISTAL	NAIL TO 2045' W of Nail	0.39	50%	\$ 5,841,000	\$ 2,920,500
	C-16	C	MARSHALL	2845' N OF HAMPTON TO HAMPTON	0.54	100%	\$ 5,249,000	\$ 5,249,000
	C-17	C	MARSHALL	HAMPTON TO US 380	0.59	100%	\$ 4,397,000	\$ 4,397,000
	C-18	SA	MASCH BRANCH	MASCH BRANCH TO DARBY SMITH	0.65	100%	\$ 10,602,000	\$ 10,602,000
	C-19	C	WESTWARD	NORTHWAY TO BONNIE BRAE	0.22	100%	\$ 1,672,000	\$ 1,672,000
	C-20	SA (1/2)	RINEY	US 77 TO 2460' W OF US 77	0.47	100%	\$ 3,156,000	\$ 3,156,000
	C-21	SA (1/2)	RINEY	2460' W OF US 77 TO BONNIE BRAE	0.19	100%	\$ 1,258,000	\$ 1,258,000
	C-22	PA (1/3)	US 77	WINDSOR TO FM 2164	0.22	100%	\$ 1,432,000	\$ 1,432,000
	C-23	PA (1/3)	US 77	RINEY TO WINDSOR	0.46	100%	\$ 2,819,000	\$ 2,819,000
	C-24	PA (1/3)	US 77	RINEY TO RINEY	0.40	100%	\$ 2,075,000	\$ 2,075,000
	C-25	PA (1/3)	US 77	BONNIE BRAE TO RINEY	0.75	100%	\$ 3,126,000	\$ 3,126,000
	C-26	PA (1/3)	US 77	LOOP 288 TO BONNIE BRAE	0.33	100%	\$ 1,859,000	\$ 1,859,000
	C-27	PA (1/3)	US 77	IH 35 TO LOOP 288	0.87	100%	\$ 4,738,000	\$ 4,738,000
	C-28	C	MASCH BRANCH-NAIL	MASCH BRANCH TO 1295' W OF MASCH BRANCH	0.25	100%	\$ 2,094,000	\$ 2,094,000
	C-29	C	MASCH BRANCH-NAIL	1050' E OF LOOP 288 TO 1550' W OF LOOP 288	0.49	100%	\$ 4,450,000	\$ 4,450,000
	C-30	C	MASCH BRANCH-NAIL	1335' W OF THOMAS J EGAN TO 775' E OF C WOLFE	0.48	100%	\$ 4,379,000	\$ 4,379,000
	C-31	C	MASCH BRANCH-NAIL	775' E OF C WOLFE TO 690' W OF C WOLFE	0.28	50%	\$ 2,092,000	\$ 1,046,000
	C-32	C	MASCH BRANCH-NAIL	690' W OF C WOLFE TO NAIL	0.58	100%	\$ 4,376,000	\$ 4,376,000
	C-33	SA	WESTGATE	WESTGATE TO 1460' E OF IH-35	0.18	100%	\$ 2,336,000	\$ 2,336,000
	C-34	SA	WINDSOR	US 77 TO HINKLE	0.46	100%	\$ 6,912,000	\$ 6,912,000
	C-35	SA (1/2)	WINDSOR	HINKLE TO BONNIE BRAE	0.99	100%	\$ 6,972,000	\$ 6,972,000
	C-36	SA (1/2)	WINDSOR	WESTGATE TO 145' W OF CLARENDON	0.10	100%	\$ 649,000	\$ 649,000
	C-37	SA (1/2)	WINDSOR	220' W OF WINDSOR FARMS TO IH 35	0.17	100%	\$ 1,162,000	\$ 1,162,000
	C-38	SA	WINDSOR	IH 35 TO MASCH BRANCH	1.24	100%	\$ 17,606,000	\$ 17,606,000
	C-39	SA	BARTHOLD	GANZER TO 2600' S OF GANZER	0.49	100%	\$ 7,425,000	\$ 7,425,000
	C-40	PA	BONNIE BRAE	MILAM TO LOOP 288	3.13	100%	\$ 52,065,000	\$ 52,065,000
	C-41	SA	BONNIE BRAE	LOOP 288 TO US 77	0.24	100%	\$ 3,008,000	\$ 3,008,000
	C-42	SA	BONNIE BRAE	US 77 TO RINEY	0.38	100%	\$ 6,587,000	\$ 6,587,000
	C-43	SA	BONNIE BRAE	RINEY TO WINDSOR	0.66	100%	\$ 10,320,000	\$ 10,320,000
	C-44	SA	BONNIE BRAE	WINDSOR TO US 380	0.68	100%	\$ 11,981,000	\$ 11,981,000
	C-45,E-29	SA	BONNIE BRAE	US 380 TO PANHANDLE	0.55	50%	\$ 8,310,000	\$ 4,155,000
	C-46,E-30	SA	BONNIE BRAE	PANHANDLE TO SCRIPTURE	0.20	50%	\$ 3,056,000	\$ 1,528,000
	C-47,E-31	SA	BONNIE BRAE	SCRIPTURE TO OAK	0.22	50%	\$ 3,370,000	\$ 1,685,000
	C-48,E-32	SA	BONNIE BRAE	OAK TO HICKORY	0.07	50%	\$ 1,087,000	\$ 543,500
	C-49,E-33	SA	BONNIE BRAE	HICKORY TO PRAIRIE	0.27	50%	\$ 4,070,000	\$ 2,035,000
	C-50,E-34	SA	BONNIE BRAE	PRAIRIE TO IH 35E	0.16	50%	\$ 2,457,000	\$ 1,228,500
	C-51	PA	C WOLFE	US 380 TO WESTERN-NAIL	0.51	100%	\$ 8,901,000	\$ 8,901,000
	C-52	C	FALLMEADOW	MEADOWLEDGE TO GARDENVIEW	0.17	100%	\$ 1,303,000	\$ 1,303,000
	C-53,D-22	PA	FM 2164	MILAM TO LOOP 288	2.62	50%	\$ 49,925,000	\$ 24,962,500
	C-54,D-28	SA	LOCUST	LOOP 288 TO HERCULES	0.43	50%	\$ 6,954,000	\$ 3,477,000
	C-55,D-29	SA	LOCUST	HERCULES TO BELL	0.45	50%	\$ 7,433,000	\$ 3,716,500
	C-56,D-30	SA	LOCUST	BELL TO WINDSOR	0.24	50%	\$ 3,628,000	\$ 1,814,000
	C-57,D-31	SA	LOCUST	WINDSOR TO FM 2164	0.25	50%	\$ 3,841,000	\$ 1,920,500
	C-58	SA	LOVERS	FM 1173 TO MASCH BRANCH	0.78	100%	\$ 12,266,000	\$ 12,266,000
	C-59	SA	LOVERS	1085' N OF MASCH BRANCH TO MASCH BRANCH	0.21	100%	\$ 3,349,000	\$ 3,349,000
	C-60	SA	LOVERS LN CONNECTOR	LOVERS TO LOOP 288	0.06	100%	\$ 756,000	\$ 756,000
	C-61	SA	LOVERS LN CONNECTOR	LOOP 288 TO 1085' N OF MASCH BRANCH	0.08	100%	\$ 972,000	\$ 972,000
	C-62	SA	MASCH BRANCH	1295' S OF FM 1173 TO JACKSON	0.79	50%	\$ 11,908,000	\$ 5,954,000
	C-63	SA	MASCH BRANCH	LOVERS TO US 380	0.72	100%	\$ 11,352,000	\$ 11,352,000
	C-64	SA	MASCH BRANCH	US 380 TO JIM CHRISTAL	0.78	100%	\$ 12,137,000	\$ 12,137,000
	C-65	SA	MILAM-LOOP 288	MILAM TO LOOP 288	2.71	100%	\$ 36,182,000	\$ 36,182,000
	C-66	SA	MILAM-US 77	MILAM TO GANZER	1.51	100%	\$ 20,546,000	\$ 20,546,000
	C-67	SA	MILAM-US 77	GANZER TO LONG	0.73	100%	\$ 11,567,000	\$ 11,567,000
	C-68	SA	MILAM-US 77	LONG TO US 77	0.53	100%	\$ 7,359,000	\$ 7,359,000
	C-69	C	NICOSIA	LOOP 288 TO BEALL	0.12	100%	\$ 1,169,000	\$ 1,169,000
	C-70	SA	THOMAS J EGAN	US 380 TO JIM CHRISTAL	0.76	100%	\$ 12,353,000	\$ 12,353,000
	C-71	PA	WESTERN	US 380 TO JIM CHRISTAL	0.80	100%	\$ 14,699,000	\$ 14,699,000
							Service Area Project Cost Subtotal	\$ 587,514,000
							2022 Roadway Impact Fee Study Cost Per Service Area	\$ 37,660
							Total Cost in SERVICE AREA C	\$ 587,551,660

- These planning level cost projections have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Projects within the City of Denton.
- These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

**Table 5.D – 10-Year Roadway Impact Fee CIP
with Conceptual Level Cost Projections – Service Area D**

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SAD	D-1	SA	BOBCAT	560' W OF FM 2164 TO FM 2164	0.11	50%	\$ 1,601,000	\$ 800,500
	D-2	C	FISHTRAP	MINGO TO GEESLING	0.36	50%	\$ 2,939,000	\$ 1,469,500
	D-3	PA	GANZER	15,500' E OF SHERMAN TO 4600' W OF SHERMAN	3.41	100%	\$ 53,936,000	\$ 53,936,000
	D-4	SA	GRIBBLE SPRINGS	INDIAN WELLS TO 3015' W OF INDIAN WELLS	0.57	50%	\$ 8,861,000	\$ 4,430,500
	D-5	SA	HARTLEE FIELD	4220' E OF COOPER CREEK TO COOPER CREEK	0.80	50%	\$ 12,051,000	\$ 6,025,500
	D-6	SA	HARTLEE FIELD	COOPER CREEK TO 5170' W OF COOPER CREEK	0.98	50%	\$ 14,764,000	\$ 7,382,000
	D-7	C	HARTLEE FIELD	600' E OF SHERMAN TO SHERMAN	0.11	50%	\$ 855,000	\$ 427,500
	D-8	SA	HARTLEE FLD-FM 2164	HARTLEE FIELD TO SHERMAN	0.43	100%	\$ 5,392,000	\$ 5,392,000
	D-9	SA	HARTLEE FLD-FM 2164	SHERMAN TO 3500' W OF SHERMAN	0.66	100%	\$ 8,386,000	\$ 8,386,000
	D-10	SA	HARTLEE FLD-FM 2164	STUART TO 1485' W OF STUART	0.28	50%	\$ 3,809,000	\$ 1,904,500
	D-11	SA	HARTLEE FLD-FM 2164	475' W OF FM 2164 TO FM 2164	0.09	100%	\$ 1,139,000	\$ 1,139,000
	D-12	C	LONG	510' W OF FM 2164 TO FM 2164	0.10	100%	\$ 726,000	\$ 726,000
	D-13	SA	MINGO	E CITY LIMITS TO COOPER CREEK	0.09	100%	\$ 1,315,000	\$ 1,315,000
	D-14	SA	MINGO	COOPER CREEK TO LOOP 288	0.44	100%	\$ 6,583,000	\$ 6,583,000
	D-15	SA	MINGO	LOOP 288 TO US 380	0.43	100%	\$ 7,937,000	\$ 7,937,000
	D-16	C	KINGS ROW	SILVER DOME TO LOOP 288	0.50	100%	\$ 3,779,000	\$ 3,779,000
	D-17	C	SILVER DOME	COOPER CREEK TO FARRIS RD	0.41	50%	\$ 3,117,000	\$ 1,558,500
	D-18	C	COLLINS	HARTLEE FIELD TO 2730' S OF HARTLEE FIELD	0.84	50%	\$ 6,818,000	\$ 3,409,000
	D-19	SA	COOPER CREEK	SHERMAN TO HARTLEE FIELD	1.91	100%	\$ 25,554,000	\$ 25,554,000
	D-20	SA	COOPER CREEK	SILVER DOME TO MINGO	0.83	50%	\$ 12,452,000	\$ 6,226,000
	D-21	PA	COOPER CREEK	MINGO TO US 380	0.32	100%	\$ 7,361,000	\$ 7,361,000
	C-53,D-22	PA	FM 2164	MILAM TO LOOP 288	2.62	50%	\$ 49,925,000	\$ 24,962,500
	D-23	PA	GREEN VALLEY	2395' S OF FM 2153 TO 2935' N OF SHEPARD	1.47	100%	\$ 24,463,000	\$ 24,463,000
	D-24	SA	GREEN VALLEY	WARSCHUN TO SHERMAN	0.40	100%	\$ 6,234,000	\$ 6,234,000
	D-25	SA	INDIAN WELLS	1615' S OF FM 2153 TO 4930' N OF GRIBBLE SPRINGS	0.73	100%	\$ 10,021,000	\$ 10,021,000
	D-26	SA	INDIAN WELLS	4930' N OF GRIBBLE SPRINGS TO 2905' N OF GRIBBLE SPRINGS	0.38	50%	\$ 4,853,000	\$ 2,426,500
	D-27	SA	INDIAN WELLS	2905' N OF GRIBBLE SPRINGS TO GRIBBLE SPRINGS	0.55	50%	\$ 8,296,000	\$ 4,148,000
	C-54,D-28	SA	LOCUST	LOOP 288 TO HERCULES	0.43	50%	\$ 6,954,000	\$ 3,477,000
	C-55,D-29	SA	LOCUST	HERCULES TO BELL	0.45	50%	\$ 7,433,000	\$ 3,716,500
	C-56,D-30	SA	LOCUST	BELL TO WINDSOR	0.24	50%	\$ 3,628,000	\$ 1,814,000
	C-57,D-31	SA	LOCUST	WINDSOR TO FM 2164	0.25	50%	\$ 3,841,000	\$ 1,920,500
	D-32	SA	SHERMAN	LOOP 288 TO HERCULES	0.31	100%	\$ 4,713,000	\$ 4,713,000
	D-33	SA	SHERMAN	HERCULES TO KINGS	0.36	100%	\$ 5,455,000	\$ 5,455,000
	D-34	SA	SHERMAN	KINGS TO WINDSOR	0.38	100%	\$ 7,223,000	\$ 7,223,000
	D-35	SA	SHERMAN	WINDSOR TO WILSONWOOD	0.19	100%	\$ 2,856,000	\$ 2,856,000
	D-36	SA	SHERMAN	WILSONWOOD TO CORONADO	0.22	100%	\$ 3,328,000	\$ 3,328,000
	D-37	SA	SHERMAN	CORONADO TO GREENWOOD	0.31	100%	\$ 4,685,000	\$ 4,685,000
	D-38	SA	SHERMAN	GREENWOOD TO BELL	0.16	100%	\$ 2,357,000	\$ 2,357,000
	D-39	SA	SHERMAN	BELL TO LOCUST	0.32	100%	\$ 4,899,000	\$ 4,899,000
	D-40	C	WINDSOR	LOOP 288 TO DOMINION	0.16	100%	\$ 1,225,000	\$ 1,225,000
	Service Area Project Cost Subtotal							\$ 275,665,500
	2022 Roadway Impact Fee Study Cost Per Service Area							\$ 37,660
	Total Cost in SERVICE AREA D							\$ 275,703,160

- These planning level cost projections have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Projects within the City of Denton.
- These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

**Table 5.E – 10-Year Roadway Impact Fee CIP
with Conceptual Level Cost Projections – Service Area E**

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA E	E-1	C	AUDRA	LOOP 288 TO 1185' W OF LOOP 288	0.22	100%	\$ 1,687,000	\$ 1,687,000
	E-2	SA	BLAGG	LAKEVIEW TO GEESLING	0.71	100%	\$ 11,181,000	\$ 11,181,000
	E-3	SA	BLAGG	GEESLING TO 2175' W OF GEESLING	0.41	100%	\$ 7,651,000	\$ 7,651,000
	E-4	SA	BLAGG	235' E OF MAYHILL TO MAYHILL	0.04	50%	\$ 563,000	\$ 281,500
	E-5	PA (1/3)	DALLAS	TEASLEY TO IH 35E	0.87	100%	\$ 3,624,000	\$ 3,624,000
	E-6	C	DUCHESS	TRAILHEAD TO WOODROW	0.76	100%	\$ 5,949,000	\$ 5,949,000
	E-7	SA	FM 426	LANEY TO GRISSOM	0.57	100%	\$ 9,953,000	\$ 9,953,000
	E-8	Completed	MCKINNEY	GRISSOM TO LOOP 288	1.65	100%	\$ 1,551,000	\$ 1,551,000
	E-9	SA	MCKINNEY	LOOP 288 TO CARDINAL	0.13	100%	\$ 1,914,000	\$ 1,914,000
	E-10	SA	MCKINNEY	CARDINAL TO MOCKINGBIRD	0.22	100%	\$ 3,270,000	\$ 3,270,000
	E-11	SA	MCKINNEY	MOCKINGBIRD TO MACK	0.61	100%	\$ 9,268,000	\$ 9,268,000
	E-12	SA	MCKINNEY	MACK TO AUDRA	0.29	100%	\$ 4,399,000	\$ 4,399,000
	E-13	SA	MILLS	TRINITY TO MAYHILL	1.40	100%	\$ 23,115,000	\$ 23,115,000
	E-14	SA	MILLS	LAKEVIEW TO MAYHILL	0.41	100%	\$ 5,235,000	\$ 5,235,000
	E-15	SA	MINGO	US 380 TO OLD NORTH	0.14	100%	\$ 2,172,000	\$ 2,172,000
	E-16	SA	MINGO	OLD NORTH TO NOTTINGHAM	0.48	100%	\$ 7,268,000	\$ 7,268,000
	E-17	SA	MINGO	NOTTINGHAM TO PERTAIN	0.56	100%	\$ 8,381,000	\$ 8,381,000
	E-18	SA	MINGO	PERTAIN TO RUDDLELL	0.18	100%	\$ 2,700,000	\$ 2,700,000
	E-19	SA	MINGO	RUDDLELL TO WILLIS	0.11	100%	\$ 1,714,000	\$ 1,714,000
	E-20	SA	MINGO	WILLIS TO WITHERS	0.44	100%	\$ 6,583,000	\$ 6,583,000
	E-21	SA	MINGO	WITHERS TO PAISLEY	0.04	100%	\$ 671,000	\$ 671,000
	E-22	SA	MINGO	PAISLEY TO BELL	0.19	100%	\$ 2,813,000	\$ 2,813,000
	E-23	SA (1/2)	MORSE	MAYHILL TO KIMBERLY	0.22	100%	\$ 1,969,000	\$ 1,969,000
	E-24	SA	SHADY OAKS	WOODROW TO TEASLEY	0.58	100%	\$ 9,967,000	\$ 9,967,000
	E-25	SA	SPENCER	MAYHILL TO LOOP 288	0.44	100%	\$ 6,862,000	\$ 6,862,000
	E-26	C	TREATMENT PLANT	MCKINNEY TO POST OAK	0.63	100%	\$ 4,731,000	\$ 4,731,000
	E-27	SA	TREATMENT PLANT	POST OAK TO 1325' W OF POST OAK	0.25	100%	\$ 5,015,000	\$ 5,015,000
	E-28	SA	TREATMENT PLANT	1325' W OF POST OAK TO MAYHILL	0.75	100%	\$ 11,310,000	\$ 11,310,000
	C-45,E-29	SA	BONNIE BRAE	US 380 TO PANHANDLE	0.55	50%	\$ 8,310,000	\$ 4,155,000
	C-46,E-30	SA	BONNIE BRAE	PANHANDLE TO SCRIPTURE	0.20	50%	\$ 3,056,000	\$ 1,528,000
	C-47,E-31	SA	BONNIE BRAE	SCRIPTURE TO OAK	0.22	50%	\$ 3,370,000	\$ 1,685,000
	C-48,E-32	SA	BONNIE BRAE	OAK TO HICKORY	0.07	50%	\$ 1,087,000	\$ 543,500
	C-49,E-33	SA	BONNIE BRAE	HICKORY TO PRAIRIE	0.27	50%	\$ 4,070,000	\$ 2,035,000
	C-50,E-34	SA	BONNIE BRAE	PRAIRIE TO IH 35E	0.16	50%	\$ 2,457,000	\$ 1,228,500
	E-35	C	CARDINAL	ORIOLE TO MCKINNEY	0.42	100%	\$ 3,167,000	\$ 3,167,000
	E-36	PA	GEESLING	US 380 TO BLAGG	0.46	100%	\$ 8,237,000	\$ 8,237,000
	E-37	PA	GEESLING	US 380 TO BLAGG	1.02	100%	\$ 18,210,000	\$ 18,210,000
	E-38	PA (1/3)	LAKEVIEW	POST OAK TO SHADY SHORES	0.26	100%	\$ 2,294,000	\$ 2,294,000
	E-39	PA (1/3)	MAYHILL	US 380 TO PROMINENCE	0.44	100%	\$ 2,467,000	\$ 2,467,000
	E-40	PA (1/3)	MAYHILL	PROMINENCE TO 770' N OF RUSSELL NEWMAN	0.39	100%	\$ 2,155,000	\$ 2,155,000
	E-41	PA (1/3)	MAYHILL	770' N OF RUSSELL NEWMAN TO RUSSELL NEWMAN	0.15	50%	\$ 819,000	\$ 409,500
	E-42	PA (1/3)	MAYHILL	RUSSELL NEWMAN TO 460' S OF RUSSELL NEWMAN	0.09	50%	\$ 487,000	\$ 243,500
	E-43	PA (1/3)	MAYHILL	460' S OF RUSSELL NEWMAN TO MILLS	0.20	100%	\$ 1,142,000	\$ 1,142,000
	E-44	PA (1/3)	MAYHILL	MILLS TO MCKINNEY	0.37	100%	\$ 2,066,000	\$ 2,066,000
	E-45	PA (1/3)	MAYHILL	MCKINNEY TO MORSE	0.39	100%	\$ 2,161,000	\$ 2,161,000
	E-46	PA (1/3)	MAYHILL	MORSE TO SPENCER	0.67	100%	\$ 3,717,000	\$ 3,717,000
	E-47	PA (1/3)	MAYHILL	SPENCER TO EDWARDS	0.60	100%	\$ 3,864,000	\$ 3,864,000
	E-48	PA (1/3)	MAYHILL	2725' N OF COLORADO TO COLORADO	0.52	100%	\$ 4,477,000	\$ 4,477,000
	E-49	PA (1/3)	MAYHILL	COLORADO TO IH 35E	0.44	100%	\$ 1,840,000	\$ 1,840,000
	E-50	PA	MAYHILL CONNECTOR	MAYHILL TO QUAILCREEK	0.13	100%	\$ 2,071,000	\$ 2,071,000
	E-51	C	MOCKINGBIRD	MCKINNEY TO 625' N OF DUCHESS	0.16	100%	\$ 1,217,000	\$ 1,217,000
	E-52	SA	MOCKINGBIRD	DUCHESS TO SHADY OAKS	0.41	100%	\$ 7,039,000	\$ 7,039,000
	E-53	SA	MOCKINGBIRD	SHADY OAKS TO SPENCER	0.53	100%	\$ 6,721,000	\$ 6,721,000
	E-54	PA	POST OAK	MILLS TO SPENCER	1.30	100%	\$ 20,228,000	\$ 20,228,000
	E-55	PA	POST OAK	TREATMENT PLANT TO EDWARDS	1.27	100%	\$ 21,525,000	\$ 21,525,000
	E-56	PA	POST OAK	EDWARDS TO POCKRUS PAGE	0.51	100%	\$ 8,015,000	\$ 8,015,000
	E-57	C	SWISHER	EDWARDS TO POCKRUS PAGE	0.50	100%	\$ 3,750,000	\$ 3,750,000
	E-58	PA (1/3)	TEASLEY	DALLAS TO IH 35E	0.35	100%	\$ 2,077,000	\$ 2,077,000
	E-59	C	N STAR	SPENCER TO ROY	0.32	100%	\$ 2,427,000	\$ 2,427,000
	E-60	C	ROY	MAYHILL TO N STAR	0.21	100%	\$ 1,594,000	\$ 1,594,000
Service Area Project Cost Subtotal							\$ 305,523,500	
2022 Roadway Impact Fee Study Cost Per Service Area							\$ 37,660	
Total Cost in SERVICE AREA E							\$ 305,561,160	

- These planning level cost projections have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Projects within the City of Denton.
- These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

F. Service Unit Calculation

The basic service unit for the computation of Denton's Roadway Impact Fees is the vehicle-mile of travel during the afternoon peak-hour (as explained on Pg. 20). To determine the cost per service unit, it is necessary to project the growth in vehicle-miles of travel for the service area for the ten-year period.

The growth in vehicle-miles from 2022 to 2032 is based upon projected changes in residential units and employment for the period. In order to determine this growth, estimates of residential units, basic employment, service employment, and retail employment for 2022 were made, along with growth projections for each of these demographic statistics through 2032. The Land Use Assumptions section of this report details the growth estimates used for impact fee determination.

For the purposes of impact fees, all developed and developable land is categorized as either residential or employment. For residential land uses, the existing and projected number of dwelling units are estimated. The number of dwelling units in each service area is multiplied by a *transportation demand factor* (discussed in more detail below) to compute the vehicle-miles of travel that occur during the afternoon peak hour. This factor indicates the average amount of demand created by the residential land uses in the service area.

For employment land uses, the process is similar. The Land Use Assumptions section of this report provides existing and projected number of building square footages for three (3) categories of employment – basic, service, and retail. These categories correspond to an aggregation of other specific land use categories based on the North American Industrial Classification System (NAICS).

Building square footage is the most common independent variable for the estimation of non-residential trips in the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition*. This characteristic is more appropriate than the number of employees, because building square footage is tied more closely to trip generation and is known at the time of application for any development that would require the assessment of an impact fee.

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. As noted earlier, 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 aggregate rates derived from two sources – the *ITE Trip Generation Manual, 11th Edition* and the National Household Travel Survey performed by the FHWA. The *ITE Trip Generation Manual, 11th Edition* provides the number of trips that are produced or attracted to the land use for each dwelling unit, square foot of building, or other corresponding unit. For the retail category of land uses, the rate is adjusted to account for the fact that a percentage of retail trips are made by people who would otherwise be traveling past that particular establishment anyway, such as a trip between work and home. For example, a stop at a nearby supermarket on the way home from work does not create a new trip onto the roadway network. These trips are called pass-by trips, and since the travel demand is accounted for in the land use calculations relative to the primary trip, it is necessary to discount the retail trip generation rates to avoid double counting trips.

The next component of the *transportation demand factor* accounts for the length of each trip. The average trip length for each category is based on the National Household Travel Survey conducted by the Federal Highway Administration (FHWA).

The computation of the *transportation demand factor* is based on the following equation:

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

where... $L_{\max} = \min(L * OD \text{ or } 6)$

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), and
- OD = Origin-Destination Reduction (50%)

The maximum trip length was limited to six (6) miles based on the maximum trip length within each service area. Chapter 395 of the Texas Local Government Code allows for a service area of six (6) miles, and the service areas within Denton are closely approximated with a six (6) mile distance.

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 example, impact fee methodology will account for a trip from home to work within Denton to both residential and non-residential land uses. To avoid counting these trips twice as both residential and non-residential trips, a 50% origin-destination (OD) reduction factor is applied. Therefore, only half of the trip length is assessed to each land use, and the total trip is only counted once. This methodology is consistent with that used in the National Household Travel Survey.

Table 6 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 6. Transportation Demand Factor Calculations

Variable	Single Family	Multi-Family	Basic	Service	Retail
T	0.94	0.51	0.65	1.44	5.19
P_b	0%	0%	0%	0%	34%
L	9.79	9.79	10.02	14.65	5.60
L_{max} *	4.90	4.90	5.01	6.00	2.80
TDF	4.61	2.50	3.26	8.64	9.60
* L _{max} is less than 6 miles for residential and retail land uses; therefore this lower trip length is used for calculating the TDF for these land uses.					

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), and
- OD = Origin-Destination Reduction (50%)

The application of the demographic projections and the *transportation demand factors* are presented in the 10-Year Growth Projections in **Table 7**. This table shows the total vehicle-miles by service area for the years 2022 and 2032. These estimates and projections lead to the Vehicle-Miles of Travel for both 2022 and 2032.

Table 7. 10-Year Growth Projections

2022 - 2032 Growth Projections¹

SERVICE AREA	RESIDENTIAL VEHICLE-MILES			EMPLOYMENT SQUARE FEET ⁴			TRANS. DEMAND FACTOR ⁵			EMPLOYMENT VEHICLE-MILES ⁹			TOTAL VEHICLE MILES ¹⁰
	Single Family Units	Trip Rate TDF ²	VEHICLE MILES ³	Multi-Family Units	Trip Rate TDF ²	VEHICLE MILES ³	BASIC	SERVICE	RETAIL	BASIC	SERVICE	RETAIL	
A	3,212	0.94	14,807	970		2,425		591,000	871,000	0.65	1.44	5.19	39,968
B	2,009		9,261	387		968		415,000	238,000				16,374
C	1,538	4.61	7,090	1,015	2.50	2,538	3.26	689,000	446,000		8.64	9.60	31,332
D	847		3,905	215		538		206,000	287,000				11,634
E	1,219		5,620	1,291		3,228		519,000	505,000				24,148
Totals	8,825		40,683	3,878		9,695	9,422,000	2,243,000	2,394,000	30,716	19,379	22,983	123,456

VEHICLE-MILES OF INCREASE (2022 - 2032)

SERVICE AREA	VEH-MILES
A	39,968
B	16,374
C	31,332
D	11,634
E	24,148

Notes:

- 1 From City of Denton 2022 Land Use Assumptions for Roadway Impact Fees
- 2 Transportation Demand Factor for each Service Area (from LUMMET) using Single Family Detached Housing land use and trip generation rate
- 3 Calculated by multiplying TDF by the number of dwelling units
- 4 From City of Denton 2022 Land Use Assumptions for Roadway Impact Fees
- 5 Trip generation rate and Transportation Demand Factors from LUMMET for each land use
- 6 'Basic' corresponds to General Light Industrial land use and trip generation rate
- 7 'Service' corresponds to General Office land use and trip generation rate
- 8 'Retail' corresponds to Shopping Plaza (40-150k) land use and trip generation rate
- 9 Calculated by multiplying Transportation Demand Factor by the number of thousand square feet for each land use
- 10 Residential plus Employment vehicle-mile totals for each Service Area

V. ROADWAY IMPACT FEE CALCULATION

A. Maximum Assessable Impact Fee Per Service Unit

This section presents the maximum assessable impact fee rate calculated for each service area. The maximum assessable impact fee is the sum of the eligible Roadway Impact Fee CIP costs for the service area divided by the growth in travel attributable to new development projected to occur within the 10-year period. A majority of the components of this calculation have been described and presented in previous sections of this report. The purpose of this section is to document the computation for each service area and to demonstrate that the guidelines provided by Chapter 395 of the Texas Local Government Code have been addressed. **Table 8** illustrates the computation of the maximum assessable impact fee computed for each service area. Each row in the table is numbered to simplify explanation of the calculation. The calculation of the maximum assessable impact fee is shown in **Table 9**. Each row in the table is numbered to simplify explanation of the calculation.

Table 8. Maximum Assessable Roadway Impact Fee Computation

Line	Title	Description
1	<i>Total Vehicle-Miles of Capacity Added by the Roadway Impact Fee CIP</i>	The total number of vehicle-miles added to the service area based on the capacity, length, and number of lanes in each project (from Appendix B – CIP Units of Supply)

Each project identified in the CIP will add a certain amount of capacity to the City's roadway network based on its length and classification. This line displays the total amount added within each service area.

2	<i>Total Vehicle-Miles of Existing Demand</i>	A measure of the amount of traffic currently using the roadway facilities upon which capacity is being added. (from Appendix B – CIP Units of Supply)
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A number of facilities identified in the CIP have traffic currently utilizing a portion of their existing capacity. This line displays the total amount of capacity along these facilities currently being used by existing traffic.

3	<i>Total Vehicle-Miles of Existing Deficiencies</i>	Number of vehicle-miles of travel that are not accommodated by the existing roadway system (from Appendix C – Existing Roadway Facilities Inventory)
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In order to ensure that existing deficiencies on the City's roadway network are not recoverable through impact fees, this line is based on the entire roadway network within the service area. Any roadway within the service area that is deficient – even those not identified on the Roadway Impact Fee CIP – will have these additional trips removed from the calculation.

4	<i>Net Amount of Vehicle-Miles of Capacity Added</i>	A measurement of the amount of vehicle-miles added by the Roadway Impact Fee CIP that will not be utilized by existing demand (Line 1 – Line 2 – Line 3)
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This calculation identifies the portion of the Roadway Impact Fee CIP (in vehicle-miles) that may be recoverable through the collection of impact fees.

5	<i>Total Cost of the Roadway Impact Fee CIP within the Service Area</i>	The total cost of the projects within each service area (from Table 5: 10-Year Roadway Impact Fee Capital Improvements Plan with Conceptual Level Cost Opinions)
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This line simply identifies the total cost of all of the projects identified in each service area.

6	<i>Cost of Net Capacity Supplied</i>	The total Roadway Impact Fee CIP cost (Line 5) prorated by the ratio of Net Capacity Added (Line 4) to Total Capacity Added (Line 1). $[(\text{Line 4} / \text{Line 1}) * (\text{Line 5})]$
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Using the ratio of vehicle-miles added by the Roadway Impact Fee CIP available to serve future growth to the total vehicle-miles added, the total cost of the CIP is reduced to the amount available for future growth (i.e. excluding existing usage and deficiencies).

7	<i>Cost to Meet Existing Needs and Usage</i>	The difference between the Total Cost of the Roadway Impact Fee CIP (Line 5) and the Cost of the Net Capacity supplied (Line 6). (Line 5 – Line 6)
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This line is provided for information purposes only – it is to present the portion of the total cost of the Roadway Impact Fee CIP that is required to meet existing demand.

8	<i>Total Vehicle-Miles of New Demand over Ten Years</i>	Based upon the growth projection provided in the Land Use Assumptions , an estimate of the number of new vehicle-miles within the service area over the next ten years. (from Table 7)
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This line presents the amount of growth (in vehicle-miles) projected to occur within each service area over the next ten years.

9	<i>Percent of Capacity Added Attributable to New Growth</i>	The result of dividing Total Vehicle-Miles of New Demand (Line 8) by the Net Amount of Capacity Added (Line 4), limited to 100% (Line 10). This calculation is required by Chapter 395 to ensure capacity added is attributable to new growth.
10	<i>Chapter 395 Check</i>	

In order to ensure that the vehicle-miles added by the Roadway Impact Fee CIP do not exceed the amount needed to accommodate growth beyond the ten-year window, a comparison of the two values is performed. If the amount of vehicle-miles added by the Roadway Impact Fee CIP exceeds the growth projected to occur in the next ten years, the Roadway Impact Fee CIP cost is reduced accordingly.

11	<i>Cost of Roadway Impact Fee CIP Attributable to New Growth</i>	The result of multiplying the Cost of Net Capacity Added (Line 6) by the Percent of Capacity Added Attributable to New Growth, limited to 100% (Line 9).
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This value is the total Roadway Impact Fee CIP project costs (excluding financial costs) that may be recovered through impact fees. This line is determined considering the limitations to impact fees required by the Texas legislature.

B. Plan for Financing and the Ad Valorem Tax Credit

Chapter 395 of the Texas Local Government Code requires the Roadway Impact Fee Capital Improvements Plan for Roadway Impact Fees to contain specific enumeration of a plan for awarding the impact fee credit. Section 395.014 of the Code requires:

- (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 plan is summarized, as prepared by NewGen Strategies in **Appendix D** and **Appendix E**, Plan for Awarding the Transportation Impact Fee Credit. The following table summarizes the portions of **Table 8** that utilize this credit calculation.

Line	Title	Description
12	<i>Financing Costs</i>	(from Appendix D – Plan for Awarding the Transportation Impact Fee Credit)
13	<i>Interest Earnings</i>	(from Appendix D – Plan for Awarding the Transportation Impact Fee Credit)
14	<i>Existing Impact Fee Fund Balance</i>	(from Appendix D – Plan for Awarding the Transportation Impact Fee Credit)
15	<i>Cost of the Roadway Impact Fee CIP and Financing Attributable to New Growth</i>	The sum of the Cost of Capacity Added Attributable to New Growth, Financing Costs, and Interest Earnings. (Line 11 + Line 12 + Line 13 – Line 14)
16	<i>Pre-Credit Maximum Fee Per Service Unit</i>	Found by dividing the Cost of the TIP and Financing Attributable to New Growth (Line 15) by the Total Vehicle-Miles of New Demand Over Ten Years (Line 8). (Line 15 / Line 8)
17	<i>Credit for Ad Valorem Taxes</i>	A credit for the portion of ad valorem taxes projected to be generated by the new service units, as per Section 395.014 of the Local Government Code. (from Appendix D – Plan for Awarding the Transportation Impact Fee Credit)
18	<i>Recoverable Cost of the Roadway Impact Fee CIP and Financing</i>	The difference between the Cost of the TIP and Financing Attributable to New Growth (Line 15) and the Credit for Ad Valorem Taxes (Line 17). (Line 15 + Line 17)
19	<i>Maximum Assessable Fee Per Service Unit</i>	Found by dividing the Recoverable Cost of the TIP and Financing (Line 18) by the Total Vehicle-Miles of New Demand Over Ten Years (Line 8). (Line 18 / Line 8)

C. Maximum Assessable Impact Fee Determination

The impact fee determination method employed by NewGen Strategies and Solutions, LLC is developed through a financial based model, which fully recognizes the requirements of Chapter 395, including the recognition of cash and/or debt financing, interest earnings, fund balances, and applicable credits associated with the use of ad valorem taxes. In developing the components of the financial model several assumptions must be made, including the following:

- Financing
 - Method of financing (i.e. cash or debt financing)
 - The level of financing (e.g. 80% debt / 20% cash)
 - Cost of financing
 - Debt repayment structure
- Timing and Level of Expenditures and Revenues
- Interest Earnings
- Annual Service Unit Growth
- Portion of Ad Valorem Tax Revenue Used to Fund Impact Fee Transportation Improvements

The assumptions employed in the maximum assessable impact fee determination provide a reasonable basis for forecasting, however, it must be emphasized that these assumptions may not necessarily reflect actual future conditions. To address this, Chapter 395 requires the monitoring of impact fees through the Capital Improvements Advisory Committee (CIAC) and allows for the option to update or revise impact fees to reflect the actual implementation of the impact fee program.

Once the cost of capacity added that is attributable to growth (**Table 8** - line 11) is determined, it must then be decided how the cost will be financed: cash and/or debt. For any previously funded projects, whether partially funded or in full, actual costs of capital have been included. Based on discussions with City staff, it is assumed that the City will debt finance 80% of the future project costs and cash finance 20%. For debt financing, the cost of financing is based on the City staff's estimates of future debt costs for bonds issued with 20-

year terms, as shown in **Appendix D**. Debt service payments for each future debt issue are assumed to remain constant over the issue's term.

Currently, the exact timing and annual level of capital expenditures over the 10-year forecast is indeterminate; therefore, it is assumed that capital expenditures will occur in equal amounts over the 10-year program period. It is also assumed that for debt financed capital projects, the City will expend debt proceeds over a 3-year timeframe. For the calculation of the maximum assessable impact fee, debt is assumed to be issued in equal amounts for each year. Because of the 10-year forecast limitation, and in order to recognize the full amount of debt to be issued for the cost of capacity added that is attributable to growth during the 10-year period, a portion of years 8, 9, and 10 are assumed to be spent in the final 3 years.

Because debt is issued over 20-year terms and impact fees developed herein are to be charged over a 10-year period, sufficient fund balance must be generated to meet the future debt service obligations. Because of the generation of the fund balance, excess monies will be available for interest earnings. Chapter 395 states that interest earnings are funds of the impact fee account and are to be held to the same restrictions as impact fee revenues. Therefore, in order to recognize that interest earnings are used to fund transportation improvements, interest earnings are credited against the costs recoverable through impact fees. It should be noted that Chapter 395 does not require the upfront recognition of interest earnings in the impact fee determination; however, in an effort to acknowledge the time value of the impact fee payers' monies, interest earnings have been credited. Interest is assumed to be earned at an annual rate of 2.00% based on discussions with City staff.

As with the timing and level of the capital expenditures over the 10-year forecast, the timing and annual level of service unit growth over the 10-year program period is indeterminate at the present time. As such, it is assumed that service unit growth will be consistent over the 10-year forecast.

Chapter 395 requires a plan for awarding either a credit for the portion of ad valorem tax and/or utility service revenues generated by new service units during the program period that are used for payment of improvements that are included in the Roadway Impact Fee CIP. As an alternative, a credit equal to 50% of the total cost of implementing the Roadway Impact Fee CIP may be used. The City has elected to pursue the determination of a credit for the portion of ad valorem tax revenues generated by new service units during the program

period that are used for payment of improvements that are included in the Roadway Impact Fee CIP. It should be noted that the credit is not a determination to recognize the total ad valorem tax revenue generated by new service units, but is only a credit for the portion of ad valorem tax revenue that is used for payment of improvements that are included in the Roadway Impact Fee CIP. Theoretically, the credit determination could be zero (0) if the City does not utilize any of the new service unit ad valorem tax revenue to fund improvements that are included in the Roadway Impact Fee CIP. However, to be conservative and recognize potential cash flow issues that can occur with the funding of major capital improvement projects, it is assumed that the cash funded projects (50% of the improvement costs included in the Roadway Impact Fee CIP) could potentially be funded by ad valorem tax revenue.

Since payments made through ad valorem tax revenue will consist of not only the revenue generated by new service units in the defined service area, but also existing property owners throughout the City, the portion attributable to the new service units in the defined service area must be isolated, as illustrated in the credit calculation in **Appendix D**.

The following summarizes the financial model's determination of the maximum assessable impact fee:

- Recoverable Impact Fee Transportation Improvements Costs (**Table 8**, line 11)
- Plus: Financing Costs (**Table 8**, line 12)
- Less: Interest Earnings (**Table 8**, line 13)
- Pre-Credit Recoverable Costs for Impact Fee (**Table 8**, line 15)
- Less: Credit for Ad Valorem Revenues (**Table 8**, line 17)
- Maximum Recoverable Costs for Impact Fee (**Table 8**, line 18)

Table 9. Maximum Assessable Roadway Impact Fee

SERVICE AREA:		A	B	C	D	E
1	TOTAL VEH-MI OF CAPACITY ADDED BY THE ROADWAY IMPACT FEE CIP (FROM ROADWAY IMPACT FEE CIP SERVICE UNITS OF SUPPLY, APPENDIX B)	67,482	83,059	145,092	61,918	92,971
2	TOTAL VEH-MI OF EXISTING DEMAND (FROM ROADWAY IMPACT FEE CIP SERVICE UNITS OF SUPPLY, APPENDIX B)	7,427	29,090	11,526	11,586	23,997
3	TOTAL VEH-MI OF EXISTING DEFICIENCIES (FROM EXISTING ROADWAY FACILITIES INVENTORY, APPENDIX C)	1,348	22,182	2,406	8,418	7,367
4	NET AMOUNT OF VEH-MI OF CAPACITY ADDED (LINE 1 - LINE 2 - LINE 3)	58,707	31,787	131,160	41,914	61,607
5	TOTAL COST OF THE ROADWAY IMPACT FEE CIP AND STUDY WITHIN SERVICE AREA (FROM TABLES 5A TO 5E)	\$ 281,359,160	\$ 290,253,660	\$ 587,551,660	\$ 275,703,160	\$ 305,561,160
6	COST OF NET CAPACITY SUPPLIED (LINE 4 / LINE 1) * (LINE 5)	\$ 244,772,713	\$ 111,081,196	\$ 531,133,872	\$ 186,631,064	\$ 202,479,336
7	COST TO MEET EXISTING NEEDS AND USAGE (LINE 5 - LINE 6)	\$ 36,586,447	\$ 179,172,464	\$ 56,417,788	\$ 89,072,096	\$ 103,081,824
8	TOTAL VEH-MI OF NEW DEMAND OVER TEN YEARS (FROM TABLE 7 AND LAND USE ASSUMPTIONS)	39,968	16,374	31,332	11,634	24,148
9	PERCENT OF CAPACITY ADDED ATTRIBUTABLE TO GROWTH (LINE 8 / LINE 4)	68.0%	51.5%	23.8%	27.7%	39.1%
10	IF LINE 8 > LINE 4, REDUCE LINE 9 TO 100%, OTHERWISE NO CHANGE	68.0%	51.5%	23.8%	27.7%	39.1%
11	COST OF ROADWAY IMPACT FEE CIP ATTRIBUTABLE TO GROWTH (LINE 6 * LINE 10)	\$ 166,445,445	\$ 57,206,816	\$ 126,409,862	\$ 51,696,805	\$ 79,169,420
12	FINANCING COSTS (FROM APPENDIX D)	\$ 80,871,139	\$ 26,749,649	\$ 61,414,578	\$ 25,105,399	\$ 38,714,769
13	INTEREST EARNINGS (FROM APPENDIX D)	\$ (39,254,897)	\$ (13,661,722)	\$ (30,142,851)	\$ (12,702,369)	\$ (19,534,195)
14	EXISTING IMPACT FEE FUND BALANCE	\$ 4,394,807	\$ 2,004,188	\$ 3,170,473	\$ 1,685,562	\$ 4,840,794
15	COST OF THE ROADWAY IMPACT FEE CIP AND FINANCING ATTRIBUTABLE TO NEW GROWTH (LINE 11 + LINE 12 + LINE 13 - LINE 14)	\$ 203,666,880	\$ 68,290,555	\$ 154,511,115	\$ 62,414,273	\$ 93,509,199
16	PRE-CREDIT MAXIMUM FEE PER SERVICE UNIT (LINE 15 / LINE 8)	\$ 5,096	\$ 4,171	\$ 4,931	\$ 5,365	\$ 3,872
17	CREDIT FOR AD VALOREM TAXES (FROM APPENDIX D)	\$ (12,265,351)	\$ (1,713,041)	\$ (7,396,751)	\$ (1,157,132)	\$ (3,628,065)
18	RECOVERABLE COST OF ROADWAY IMPACT FEE CIP AND FINANCING (LINE 15 + LINE 17)	\$ 191,401,529	\$ 66,577,513	\$ 147,114,364	\$ 61,257,141	\$ 89,881,134
19	MAXIMUM ASSESSABLE FEE PER SERVICE UNIT (LINE 18 / LINE 8)	\$ 4,789	\$ 4,066	\$ 4,695	\$ 5,265	\$ 3,722

D. Service Unit Demand Per Unit of Development

The Roadway Impact Fee is determined by multiplying the impact fee rate by the number of service units projected for the proposed development. For this purpose, the City will utilize the Land Use/Vehicle-Mile Equivalency Table (LUVMET), presented in **Table 10**. This table lists the predominant land uses that may occur within the City of Denton. For each land use, the development unit that defines the development's magnitude with respect to transportation demand is shown. Although every possible use cannot be anticipated, the majority of local uses are found in this table. The descriptions for each land use are presented in **Table 11**. If the exact use is not listed, one similar in trip-making characteristics can serve as a reasonable proxy. The individual land uses are grouped into categories, such as residential, office, commercial, industrial, and institutional.

The trip rates presented for each land use is a fundamental component of the LUVMET. 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 in **Table 10**, if applicable to the land use, presents the number of trips to and from certain land uses reduced by pass-by trips, as previously discussed.

The definitive source of the trip generation and pass-by statistics is the *ITE Trip Generation Manual, 11th Edition*, the latest edition. This manual utilizes trip generation studies for a variety of land uses throughout the United States, and is the standard used by traffic engineers and transportation planners for traffic impact analysis, site design, and transportation planning. However, for land uses not contained within the 11th Edition of the *ITE Trip Generation Manual*, an alternative service unit demand could be calculated by completing a trip generation study based on the procedure identified in the *ITE Trip Generation Handbook*.

To convert vehicle trips to vehicle-miles, it is necessary to multiply trips by trip length. The trip length values are based on the *National Household Travel Survey* performed by the FHWA. The other adjustment to trip length is the 50% origin-destination reduction to avoid double counting of trips. At this stage, another important aspect of the state law is applied – the limit on transportation service unit demand. If the adjusted trip length is above six (6) miles, the maximum trip length used for calculation is reduced to six (6) miles. This reduction, as

discussed previously, limits the maximum trip length to the approximate size of the service areas.

The remaining column in the LUVMET shows the vehicle-miles per development unit. This number is the product of the trip rate and the maximum trip length. This number, previously referred to as the *Transportation Demand Factor*, is used in the impact fee to compute the number of service units attributed to each land use category. 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.

Table 10 - Land Use / Vehicle-Mile Equivalency Table (LUVMET)

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi)	Veh-Mi Per Dev-Unit
PORT AND TERMINAL											
Intermodal Truck Terminal	030	1,000 SF GFA	1.87			1.87	10.02	50%	5.01	5.01	9.37
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.65			0.65	10.02	50%	5.01	5.01	3.26
Industrial Park	130	1,000 SF GFA	0.34			0.34	10.02	50%	5.01	5.01	1.70
Warehousing	150	1,000 SF GFA	0.18			0.18	10.02	50%	5.01	5.01	0.90
Mini-Warehouse	151	1,000 SF GFA	0.15			0.15	10.02	50%	5.01	5.01	0.75
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	0.94			0.94	9.79	50%	4.90	4.90	4.61
Multifamily Housing (Low-Rise)	220	Dwelling Unit	0.51			0.51	9.79	50%	4.90	4.90	2.50
Multifamily Housing (Mid-Rise)	221	Dwelling Unit	0.39			0.39	9.79	50%	4.90	4.90	1.91
Multifamily Housing (High-Rise)	222	Dwelling Unit	0.32			0.32	9.79	50%	4.90	4.90	1.57
Residential Condominium/Townhome	230	Dwelling Unit	0.36			0.36	9.79	50%	4.90	4.90	1.76
Senior Adult Housing-Single-Family	251	Dwelling Unit	0.30			0.30	9.79	50%	4.90	4.90	1.47
Senior Adult Housing-Multifamily	252	Dwelling Unit	0.25			0.25	9.79	50%	4.90	4.90	1.23
Assisted Living	254	Beds	0.24			0.24	9.79	50%	4.90	4.90	1.18
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.21	3.21	1.89
Motel	320	Room	0.36			0.36	6.43	50%	3.21	3.21	1.16
RECREATIONAL											
Golf Driving Range	432	Tees/Driving Positions	1.25			1.25	7.86	50%	3.93	3.93	4.91
Golf Course	430	Acre	0.28			0.28	7.86	50%	3.93	3.93	1.10
Recreational Community Center	495	1,000 SF GFA	2.50			2.50	7.86	50%	3.93	3.93	9.83
Ice Skating Rink	465	1,000 SF GFA	1.33			1.33	7.86	50%	3.93	3.93	5.23
Miniature Golf Course	431	Holes	0.33			0.33	7.86	50%	3.93	3.93	1.30
Multiplex Movie Theater	445	Movie Screens	13.96			13.96	15.77	50%	7.88	6.00	83.76
Racquet / Tennis Club	491	Tennis Court	3.82			3.82	7.86	50%	3.93	3.93	15.01
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.49			0.49	8.31	50%	4.15	4.15	2.03
Day Care Center	565	1,000 SF GFA	11.12	44%	B	6.23	3.49	50%	1.74	1.74	10.84
Elementary School	520	Students	0.16			0.16	3.49	50%	1.74	1.74	0.28
Middle School/Junior High School	522	Students	0.15			0.15	3.49	50%	1.74	1.74	0.26
High School	530	Students	0.14			0.14	3.49	50%	1.74	1.74	0.24
Junior / Community College	540	Students	0.11			0.11	10.44	50%	5.22	5.22	0.57
University / College	550	Students	0.15			0.15	10.44	50%	5.22	5.22	0.78
MEDICAL											
Clinic	630	1,000 SF GFA	3.69			3.69	9.85	50%	4.92	4.92	18.15
Hospital	610	1,000 SF GFA	0.86			0.86	9.85	50%	4.92	4.92	4.23
Nursing Home	620	Beds	0.14			0.14	9.85	50%	4.92	4.92	0.69
Animal Hospital/Veterinary Clinic	640	1,000 SF GFA	3.53	30%	B	2.47	9.85	50%	4.92	4.92	12.15
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.30			1.30	14.65	50%	7.32	6.00	7.80
General Office Building	710	1,000 SF GFA	1.44			1.44	14.65	50%	7.32	6.00	8.64
Medical-Dental Office Building	720	1,000 SF GFA	3.93			3.93	9.85	50%	4.92	4.92	19.34
Single Tenant Office Building	715	1,000 SF GFA	1.76			1.76	14.65	50%	7.32	6.00	10.56
Office Park	750	1,000 SF GFA	1.30			1.30	14.65	50%	7.32	6.00	7.80

Key to Sources of Pass-by Rates:

A: ITE Trip Generation Handbook 3rd Edition (September 2017)

B: Estimated by Kimley-Horn based on ITE rates for similar categories

C: ITE rate adjusted upward by KHA based on logical relationship to other categories

Table 10 (Cont'd). Land Use / Vehicle-Mile Equivalency Table (LUVMET)

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	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 GFA	3.11	40%	B	1.87	4.45	50%	2.22	2.22	4.15
Automobile Parts Sales	843	1,000 SF GFA	4.90	43%	A	2.79	4.45	50%	2.22	2.22	6.19
Gasoline/Service Station	944	Vehicle Fueling Position	13.91	42%	A	8.07	1.20	50%	0.60	0.60	4.84
Gasoline/Service Station w/ Conv Market	945	Vehicle Fueling Position	18.42	56%	B	8.10	1.20	50%	0.60	0.60	4.86
New Car Sales	841	1,000 SF GFA	2.42	20%	B	1.94	5.60	50%	2.80	2.80	5.43
Quick Lubrication Vehicle Shop	941	Servicing Positions	4.85	40%	B	2.91	4.45	50%	2.22	2.22	6.46
Self-Service Car Wash	947	Wash Stalls	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Tire Store	848	1,000 SF GFA	3.75	28%	A	2.70	4.45	50%	2.22	2.22	5.99
Dining											
Fast Food Restaurant with Drive-Thru Window	934	1,000 SF GFA	33.03	50%	A	16.52	5.64	50%	2.82	2.82	46.59
Fast Food Restaurant without Drive-Thru Window	933	1,000 SF GFA	33.21	50%	B	16.61	5.64	50%	2.82	2.82	46.84
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	9.05	43%	A	5.16	5.64	50%	2.82	2.82	14.55
Quality Restaurant	931	1,000 SF GFA	7.80	44%	A	4.37	5.64	50%	2.82	2.82	12.32
Coffee/Donut Shop with Drive-Thru Window	937	1,000 SF GFA	38.99	70%	A	11.70	5.64	50%	2.82	2.82	32.99
Other Retail											
Free-Standing Discount Store	815	1,000 SF GFA	4.83	30%	C	3.38	5.60	50%	2.80	2.80	9.46
Nursery (Garden Center)	817	1,000 SF GFA	6.94	30%	B	4.86	5.60	50%	2.80	2.80	13.61
Home Improvement Superstore	862	1,000 SF GFA	2.33	48%	A	1.21	5.60	50%	2.80	2.80	3.39
Pharmacy/Drugstore w/o Drive-Thru Window	880	1,000 SF GFA	8.51	53%	A	4.00	5.60	50%	2.80	2.80	11.20
Pharmacy/Drugstore w/ Drive-Thru Window	881	1,000 SF GFA	10.29	49%	A	5.25	5.60	50%	2.80	2.80	14.70
Shopping Center (>150k)	820	1,000 SF GLA	3.40	34%	A	2.24	5.60	50%	2.80	2.80	6.27
Shopping Plaza (40-150k)	821	1,000 SF GLA	5.19	34%	A	3.43	5.60	50%	2.80	2.80	9.60
Strip Retail Plaza (<40k)	822	1,000 SF GLA	6.59	34%	A	4.35	5.60	50%	2.80	2.80	12.18
Supermarket	850	1,000 SF GFA	9.24	36%	A	5.91	5.60	50%	2.80	2.80	16.55
Toy/Children's Superstore	864	1,000 SF GFA	5.00	30%	B	3.50	5.60	50%	2.80	2.80	9.80
Department Store	875	1,000 SF GFA	1.95	30%	B	1.37	5.60	50%	2.80	2.80	3.84
SERVICES											
Walk-In Bank	911	1,000 SF GFA	12.13	40%	B	7.28	4.45	50%	2.22	2.22	16.16
Drive-In Bank	912	Drive-in Lanes	27.07	47%	A	14.35	4.45	50%	2.22	2.22	31.86
Hair Salon	918	1,000 SF GLA	1.45	30%	B	1.02	6.41	50%	3.20	3.20	3.26

Key to Sources of Pass-by Rates:

A: ITE Trip Generation Handbook 3rd Edition (September 2017)

B: Estimated by Kimley-Horn based on ITE rates for similar categories

C: ITE rate adjusted upward by KHA based on logical relationship to other categories

Table 11 - Land Use Descriptions

Land Use Category	ITE Land Use Code	Land Use Description
PORT AND TERMINAL		
Intermodal Truck Terminal	030	Point of good transfer between trucks or between trucks and rail
INDUSTRIAL		
General Light Industrial	110	Emphasis on activities other than manufacturing; typically employing fewer than 500 workers
Industrial Park	130	Area containing a number of industries or related facilities
Warehousing	150	Devoted to storage of materials but may have included office and maintenance areas
Mini-Warehouse	151	Facilities with a number of units rented to others for the storage of goods
RESIDENTIAL		
Single-Family Detached Housing	210	Single-family detached homes on individual lots
Multifamily Housing (Low-Rise)	220	At least 3 rental dwelling units and one or two levels (floors) per building
Multifamily Housing (Mid-Rise)	221	At least 3 rental dwelling units and between three and ten levels (floors) per building
Multifamily Housing (High-Rise)	222	At least 3 rental dwelling units and more than ten levels (floors) per building
Residential Condominium/Townhome	230	Single-family ownership units that have at least one other single-family owned unit within the same building
Senior Adult Housing-Single-Family	251	Consists of detached independent living developments that include amenities such as golf courses and swimming pools
Senior Adult Housing-Multifamily	252	Consists of attached independent living developments that include limited social or recreation services
Assisted Living	254	Residential settings that provide either routine general protective oversight or assistance with activities.
LODGING		
Hotel	310	Lodging facilities that typically have on-site restaurants, lounges, meeting and/or banquet rooms, or other retail shops and services
Motel	320	Lodging facilities that may have small on-site restaurant or buffet area but little or no meeting space
RECREATIONAL		
Golf Driving Range	432	Facilities with driving tees for practice; may provide individual or group lessons; may have prop shop and/or refreshment facilities
Golf Course	430	May include municipal courses and private country clubs; may have driving ranges, pro shops, and restaurant/banquet facilities
Recreational Community Center	495	Category includes racquet clubs, health/fitness clubs, can include facilities such as YMCA's
Ice Skating Rink	465	Rinks for ice skating and related sports; may contain spectator areas and refreshment facilities
Miniature Golf Course	431	One or more individual putting courses; category should not be used when part of a larger entertainment center(with batting cages, video game centers, etc)
Multiplex Movie Theater	445	Movie theater with audience seating, minimum of ten screens, lobby, and refreshment area.
Racquet / Tennis Club	491	Indoor or outdoor facilities specifically designed for playing tennis
INSTITUTIONAL		
Church	560	Churches and houses of worship
Day Care Center	565	Generally includes facilities for care of pre-school aged children, generally includes classrooms, offices, eating areas, and playgrounds
Elementary School	520	Serves students who have not yet entered middle or junior high school
Middle School/Junior High School	522	Serves students who have completed elementary school but have not yet entered high school
High School	530	Serves students who have completed middle or junior high school
Junior / Community College	540	Higher education campus providing undergraduate degrees, often focused on local students
University / College	550	Higher education campus providing undergraduate and graduate degrees
MEDICAL		
Clinic	630	Facilities with limited diagnostic and outpatient care
Hospital	610	Medical and surgical facilities with overnight accommodations
Nursing Home	620	Rest and convalescent homes with residents who do little or no driving
Animal Hospital/Veterinary Clinic	640	Rest and convalescent homes with residents who do little or no driving
OFFICE		
Corporate Headquarters Building	714	Office building housing corporate headquarters of a single company or organization
General Office Building	710	Office buildings which house multiple tenants
Medical-Dental Office Building	720	Multi-tenant building with offices for physicians and/or dentists
Single Tenant Office Building	715	Single tenant office buildings other than corporate headquarters
Office Park	750	Office buildings (typically low-rise) in a campus setting and served by a common roadway system

Table 1 (Cont'd). Land Use Descriptions

Land Use Category	ITE Land Use Code	Land Use Description
COMMERCIAL		
Automobile Related		
Automobile Care Center	942	Automobile repair and servicing including stereo installations and upholstery
Automobile Parts Sales	843	Retail sale of auto parts but no on-site vehicle repair
Gasoline/Service Station	944	Gasoline sales without convenience store or car wash; may include repair
Gasoline/Service Station w/ Conv Market	945	Gasoline sales with convenience store where the primary business is gasoline sales
New Car Sales	841	New car dealerships, typically with automobile servicing, part sales, and used car sales
Quick Lubrication Vehicle Shop	941	Primary business is to perform oil changes and fluid/filter changes with other repair services not provided
Self-Service Car Wash	947	Has stalls for driver to park and wash the vehicle
Tire Store	848	Primary business is sales and installation of tires; usually do not have large storage or warehouse area
Dining		
Fast Food Restaurant with Drive-Thru Window	934	High-turnover fast food restaurant for carry-out and eat-in customers with a drive-thru window
Fast Food Restaurant without Drive-Thru Window	933	High-turnover fast food restaurant for carry-out and eat-in customers without a drive-thru window
High Turnover (Sit-Down) Restaurant	932	High-turnover fast food restaurant for carry-out and eat-in customers, but without a drive-thru window
Quality Restaurant	931	Restaurants with turnover rates less than one hour; typically includes moderately-priced chain restaurants
Coffee/Donut Shop with Drive-Thru Window	937	Restaurants that specialize in Coffee and/or Donuts with a drive-thru window
Other Retail		
Free-Standing Discount Store	815	Category includes free-standing stores with off-street parking; typically offer a variety of products and services with long store hours
Nursery (Garden Center)	817	Building with a yard of planting or landscape stock; may have office, storage, shipping or greenhouse facilities
Home Improvement Superstore	862	Warehouse-type facilities offering a large variety of products and services including lumber, tool, paint, lighting, and fixtures, among other items.
Pharmacy/Drugstore w/o Drive-Thru Window	880	Facilities that primarily sell prescription and non-prescription drugs without a drive-through window
Pharmacy/Drugstore w/ Drive-Thru Window	881	Facilities that primarily sell prescription and non-prescription drugs with a drive-through window
Shopping Center (>150k)	820	Integrated group of commercial establishments; planning, owned, and managed as a unit. >150k sq. ft.
Shopping Plaza (40-150k)	821	Integrated group of commercial establishments; planning, owned, and managed as a unit. 40-150k sq. ft.
Strip Retail Plaza (<40k)	822	Integrated group of commercial establishments; planning, owned, and managed as a unit. <40k sq. ft.
Supermarket	850	Primary business is sale of groceries, food, and household cleaning items; may include photo, pharmacy, video rental, and/or ATM
Toy/Children's Superstore	864	Businesses specializing in child-oriented merchandise
Department Store	875	Free-standing stores that specialize in the sale of apparel, footwear, bedding, home products, jewelry, etc.
SERVICES		
Walk-In Bank	911	Banks with their own parking lots, no drive-in lanes but contain non-drive-through ATMs
Drive-In Bank	912	Banking facilities to conduct financial transactions from the vehicle; also usually a part of a walk-in bank
Hair Salon	918	Facilities that specialize in cosmetic and beauty services including hair cutting and styling

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 in Service Area A

Roadway Impact Fee Calculation Steps – Example 1	
Step 1	Determine Development Unit and Vehicle-Miles Per Development Unit
	<i>From Table 10 [Land Use – Vehicle-Mile Equivalency Table]</i> Development Type: 1 Dwelling Unit of Single-Family Detached Housing Number of Development Units: 1 Dwelling Unit Veh-Mi Per Development Unit: 4.61
Step 2	Determine Maximum Assessable Impact Fee Per Service Unit (Vehicle-Mile)
	<i>From Table 9, Line 14 [Maximum Assessable Fee Per Service Unit]</i> Service Area A: \$4,733
Step 3	Determine Maximum Assessable Impact Fee
	Impact Fee = # of Development Units * Veh-Mi Per Dev Unit * Max. Fee Per Service Unit Impact Fee = 1 * 4.61 * \$4,789 Maximum Assessable Impact Fee = \$22,077

Example 2:

Development Type – 125,000 square foot Home Improvement Superstore in Service Area D

Roadway Impact Fee Calculation Steps – Example 2	
Step 1	Determine Development Unit and Vehicle-Miles Per Development Unit
	<i>From Table 10 [Land Use – Vehicle-Mile Equivalency Table]</i> Development Type: 125,000 square feet of Home Improvement Superstore Development Unit: 1,000 square feet of Gross Floor Area Veh-Mi Per Development Unit: 3.39
Step 2	Determine Maximum Assessable Impact Fee Per Service Unit (Vehicle-Mile)
	<i>From Table 9, Line 14 [Maximum Assessable Fee Per Service Unit]</i> Service Area D: \$5,265
Step 3	Determine Maximum Assessable Impact Fee
	Impact Fee = # of Development Units * Veh-Mi Per Dev Unit * Max. Fee Per Service Unit Impact Fee = 125 * 3.39 * \$5,265 Maximum Assessable Impact Fee = \$2,231,044

VII. ADOPTION AND ADMINISTRATION OF ROADWAY IMPACT FEES

A. Adoption Process

Chapter 395 of the Texas Local Government Code stipulates a specific process for the adoption of Roadway Impact Fees. A Capital Improvement Advisory Committee (CIAC) is required to review the Land Use Assumptions and Roadway Impact Fees CIP used in calculating the maximum fee, and to provide the Committee's findings for consideration by the City Council. This CIAC also reviews the Roadway Impact Fee ordinance and provides its findings to the City Council. The composition of the CIAC is required to adequately represent the building and development communities. The City Council then conducts a first public hearing on the Land Use Assumptions and Roadway Impact Fee CIP and a second public hearing on the Roadway Impact Fee Ordinance.

Following policy adoption, the CIAC is tasked with advising the City Council of the need to update the Land Use Assumptions or the Roadway Impact Fees CIP at any time within five years of adoption. Finally, the CIAC oversees the proper administration of the Impact Fee, once in place, and advises the Council as necessary.

B. Collection and Use of Transportation Impact Fees

Roadway Impact fees are assessed when a final plat is recorded. The assessment defines the impact of each unit at the time of platting, according to land use, and may not exceed the maximum impact fee allowed by law. Roadway Impact Fees are collected when a building permit is issued. Therefore, funds are not collected until development-impacts are introduced to the transportation system. Funds collected within a service area can be used only within the same service area. Finally, fees must be utilized within 10 years of collection, or must be refunded with interest.

VIII. CONCLUSIONS

The City of Denton 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 Denton, as shown in the previously referenced **Table 9**.

This document serves as a guide to the assessment of Roadway Impact Fees pertaining to future development, and the City's need for transportation improvements to accommodate that growth. Following the public hearing process, the City Council may establish an impact fee amount to be collected, up to the calculated maximum and establish the Roadway Impact Fee Ordinance accordingly.

In conclusion, it is our opinion that the data and methodology used in this analysis are appropriate and consistent with Chapter 395 of the Texas Local Government Code. Furthermore, the Land Use Assumptions and the proposed Roadway Impact Fee Capital Improvements Plan are appropriately incorporated into the development of the maximum assessable Roadway Impact Fee.

Below is the listing of the 2022 Roadway Impact Fee Study's Maximum Assessable Impact Fee Per Service Unit (Vehicle-Mile):

SERVICE AREA:	A	B	C	D	E
2022 Roadway Impact Fee Study Maximum Assessable Fee Per Vehicle-Mile	\$4,789	\$4,066	\$4,695	\$5,265	\$3,722

APPENDICES

A. Conceptual Level Project Cost Projections

SERVICE AREA A
SERVICE AREA B
SERVICE AREA C
SERVICE AREA D
SERVICE AREA E
FUNCTIONAL CLASSIFICATION EXAMPLE COSTING SHEETS

B. Roadway Impact Fee CIP Service Units of Supply

C. Existing Roadway Facilities Inventory

D. Plan for Awarding the Transportation Impact Fee Credit Summary

E. Plan for Awarding the Transportation Impact Fee Credit Supporting Exhibits

F. Consideration for the Hunter Ranch and Cole Ranch Operating Agreements

Appendix A – Conceptual Level Project Cost Projections

City of Denton - 2022 Roadway Impact Fee Study
Service Area A Impact Fee CIP

#	Roadway Name	Limits		Length (FT)	Costing Classification	Roadway Classification	Roadway Status	Construction Cost	Contingency/ ROW	Engineering/ Survey/SUE	Railroad Crossings	Intersections	Streams/Channel Crossings	Inspection/ Materials Testing	Percent in Service Area	Total Cost	Cost in Service Area	
		From	To					Pavement and Allowances	15%	16%	Cost	Cost	Total Drainage Cost	3.5%				
A-1	CORBIN	IH-35W	CORBIN	3,055	SA Recon	SA	Widening	\$ 6,485,996	\$ 973,000	\$ 1,038,000	\$ -	\$ -	\$ 1,440,000	\$ 227,010	100%	\$ 10,164,000	\$ 10,164,000	
A-2	CORBIN	500' S OF SPRINGSIDE	CORBIN	1,410	SA New	SA	New	\$ 2,511,393	\$ 377,000	\$ 402,000	\$ -	\$ -	\$ -	\$ 87,899	100%	\$ 3,378,000	\$ 3,378,000	
A-3	FM 1515	IH 35W	CORBIN	5,990	PA Recon	PA	Widening	\$ 15,001,383	\$ 2,251,000	\$ 2,401,000	\$ 1,200,000	\$ 400,000	\$ 1,755,000	\$ 525,048	100%	\$ 23,533,000	\$ 23,533,000	
A-4	FM 1515	CORBIN	WESTERN	1,175	PA Recon	PA	Widening	\$ 2,942,675	\$ 442,000	\$ 471,000	\$ -	\$ -	\$ -	\$ 102,994	100%	\$ 3,959,000	\$ 3,959,000	
A-5	FM 1515	WESTERN	WESTCOURT	1,555	PA Recon	PA	Widening	\$ 3,894,349	\$ 585,000	\$ 624,000	\$ -	\$ 500,000	\$ 1,755,000	\$ 136,302	100%	\$ 7,495,000	\$ 7,495,000	
A-6	FM 1515	WESTCOURT	MASCH BRANCH	620	PA Recon	PA	Widening	\$ 1,552,731	\$ 233,000	\$ 249,000	\$ -	\$ -	\$ -	\$ 54,346	100%	\$ 2,089,000	\$ 2,089,000	
A-7	FM 1515	TOM COLE	3435' W OF TOM COLE	3,435	PA Recon	PA	Widening	\$ 8,602,629	\$ 1,291,000	\$ 1,377,000	\$ -	\$ 500,000	\$ 1,755,000	\$ 301,092	100%	\$ 13,827,000	\$ 13,827,000	
A-8	FM 1515	3435' W OF TOM COLE	530' E OF C WOLFE	3,750	PA Recon	PA	Widening	\$ 9,391,517	\$ 1,409,000	\$ 1,503,000	\$ -	\$ 500,000	\$ -	\$ 328,703	100%	\$ 13,132,000	\$ 13,132,000	
A-9	H LIVELY	C WOLFE	2145' W OF H LIVELY	2,145	PA Recon	PA	Widening	\$ 5,371,948	\$ 806,000	\$ 860,000	\$ -	\$ -	\$ -	\$ 188,018	50%	\$ 7,226,000	\$ 3,613,000	
A-10	H LIVELY	2145' W OF H LIVELY	2150' W OF ED ROBSON	3,915	PA Recon	PA	Widening	\$ 9,804,743	\$ 1,471,000	\$ 1,569,000	\$ -	\$ -	\$ -	\$ 343,166	100%	\$ 13,188,000	\$ 13,188,000	
A-11	IH-35-CORBIN	IH-35	CORBIN	4,420	C New	C	New	\$ 4,675,377	\$ 702,000	\$ 749,000	\$ -	\$ -	\$ 750,000	\$ 163,638	100%	\$ 7,040,000	\$ 7,040,000	
A-12	JIM CHRISTAL	IH 35	OLD SH 24	3,110	SA Recon	SA	Widening	\$ 6,602,765	\$ 991,000	\$ 1,057,000	\$ 1,200,000	\$ -	\$ 250,000	\$ 231,097	100%	\$ 10,332,000	\$ 10,332,000	
A-13,C-10	JIM CHRISTAL	OLD SH 24	WESTERN	2,905	SA Recon	SA	Widening	\$ 6,167,534	\$ 926,000	\$ 987,000	\$ 1,200,000	\$ -	\$ 250,000	\$ 215,864	50%	\$ 9,746,000	\$ 4,873,000	
A-14,C-11	JIM CHRISTAL	WESTERN	MASCH BRANCH	3,510	SA Recon	SA	Widening	\$ 7,451,995	\$ 1,118,000	\$ 1,193,000	\$ -	\$ 500,000	\$ 1,440,000	\$ 260,820	50%	\$ 11,964,000	\$ 5,982,000	
A-15,C-12	JIM CHRISTAL	MASCH BRANCH	THOMAS J EGAN	5,975	SA Recon	SA	Widening	\$ 12,685,376	\$ 1,903,000	\$ 2,030,000	\$ -	\$ -	\$ 1,440,000	\$ 443,988	50%	\$ 18,502,000	\$ 9,251,000	
A-16,C-13	JIM CHRISTAL	THOMAS J EGAN	515' E OF C WOLFE	3,945	SA Recon	SA	Widening	\$ 8,375,533	\$ 1,257,000	\$ 1,341,000	\$ -	\$ -	\$ 1,440,000	\$ 293,144	50%	\$ 12,707,000	\$ 6,353,500	
A-17	PRECISION-WESTERN	PRECISION	WESTERN	3,420	C New	C	New	\$ 3,617,599	\$ 543,000	\$ 579,000	\$ 1,200,000	\$ -	\$ 500,000	\$ 126,616	100%	\$ 6,566,000	\$ 6,566,000	
A-18	ROBSON RANCH	IH 35W	ED ROBSON	8,720	PA Recon	PA	Widening	\$ 21,838,407	\$ 3,276,000	\$ 3,495,000	\$ -	\$ 1,600,000	\$ -	\$ 764,344	50%	\$ 30,974,000	\$ 15,487,000	
A-19	ROBSON RANCH	ED ROBSON	YARBROUGH	7,150	PA Recon	PA	Widening	\$ 17,906,492	\$ 2,686,000	\$ 2,866,000	\$ -	\$ -	\$ 1,250,000	\$ 626,727	50%	\$ 25,335,000	\$ 12,667,500	
A-20	SPRINGSIDE	CORBIN	UNDERWOOD	1,835	SA Recon	SA	Widening	\$ 3,895,844	\$ 585,000	\$ 624,000	\$ -	\$ 900,000	\$ -	\$ 136,355	100%	\$ 6,141,000	\$ 6,141,000	
A-21	SPRINGSIDE	UNDERWOOD	WESTCOURT	865	SA Recon	SA	Widening	\$ 1,836,460	\$ 276,000	\$ 294,000	\$ -	\$ 500,000	\$ -	\$ 64,276	100%	\$ 2,971,000	\$ 2,971,000	
A-22	TJ EGAN-LOOP 288	LOOP 288	2440' W OF LOOP 288	2,440	C New	C	New	\$ 2,580,977	\$ 388,000	\$ 413,000	\$ -	\$ -	\$ 250,000	\$ 90,334	100%	\$ 3,722,000	\$ 3,722,000	
A-23	C WOLFE	1140' S OF TOM COLE	FM 2449	7,270	PA Recon	PA	Widening	\$ 18,207,020	\$ 2,732,000	\$ 2,914,000	\$ -	\$ 1,000,000	\$ 750,000	\$ 637,246	100%	\$ 26,240,000	\$ 26,240,000	
A-24	C WOLFE	FM 2449	H LIVELY	3,315	PA Recon	PA	Widening	\$ 8,302,101	\$ 1,246,000	\$ 1,329,000	\$ -	\$ 600,000	\$ 250,000	\$ 290,574	50%	\$ 12,018,000	\$ 6,009,000	
A-25	CORBIN	IH-35-CORBIN	SPRINGSIDE	2,050	C New	C	Widening	\$ 2,168,444	\$ 326,000	\$ 347,000	\$ -	\$ -	\$ 750,000	\$ 75,896	100%	\$ 3,667,000	\$ 3,667,000	
A-26	J CHRISTAL-H LIVELY	FM 2449	H LIVELY	3,305	C New	C	New	\$ 3,495,955	\$ 525,000	\$ 560,000	\$ -	\$ 400,000	\$ 250,000	\$ 122,358	100%	\$ 5,353,000	\$ 5,353,000	
A-27	PRECISION	JIM CHRISTAL	1635' N OF FM 1515	2,385	C New	C	New	\$ 2,522,799	\$ 379,000	\$ 404,000	\$ -	\$ 300,000	\$ -	\$ 88,298	100%	\$ 3,694,000	\$ 3,694,000	
A-28	THOMAS J EGAN	JIM CHRISTAL	2915' S OF JIM CRISTAL	2,915	SA New	SA	New	\$ 5,191,993	\$ 779,000	\$ 831,000	\$ -	\$ -	\$ -	\$ 181,720	100%	\$ 6,984,000	\$ 6,984,000	
A-29	THOMAS J EGAN	1830' N OF FM 1515	FM 1515	1,830	SA New	SA	New	\$ 3,259,467	\$ 489,000	\$ 522,000	\$ -	\$ -	\$ 250,000	\$ 114,081	50%	\$ 4,635,000	\$ 2,317,500	
A-30	UNDERWOOD	SPRINGSIDE	UNDERWOOD CONNECTOR	4,000	PA Recon	PA	Widening	\$ 10,017,618	\$ 1,503,000	\$ 1,603,000	\$ -	\$ -	\$ 1,755,000	\$ 350,617	100%	\$ 15,229,000	\$ 15,229,000	
A-31	WESTCOURT	FM 1515	SPRINGSIDE	4,165	SA (1/2)	SA (1/2)	Widening	\$ 3,971,565	\$ 596,000	\$ 636,000	\$ -	\$ -	\$ -	\$ 139,005	100%	\$ 5,343,000	\$ 5,343,000	
A-32	WESTERN	JIM CHRISTAL	AIRPORT	6,485	PA (1/3)	PA (1/3)	Widening	\$ 3,805,620	\$ 571,000	\$ 609,000	\$ -	\$ 1,500,000	\$ -	\$ 133,197	100%	\$ 6,619,000	\$ 6,619,000	
A-33	WESTERN	FM 1515	SPRINGSIDE	4,175	PA New	PA	New	\$ 9,179,489	\$ 1,377,000	\$ 1,469,000	\$ -	\$ -	\$ 1,755,000	\$ 321,282	100%	\$ 14,102,000	\$ 14,102,000	
TOTAL																	\$ 347,875,000	\$ 281,321,500

City of Denton - 2022 Roadway Impact Fee Study
Service Area B Impact Fee CIP

#	Roadway Name	Limits		Length (FT)	Roadway Classification	Roadway Status	Construction Cost	Contingency/ ROW	Engineering/ Survey/SUE	Railroad Crossings	Intersections	Streams/Channe l Crossings	Inspection/ Materials Testing	Previous City Contribution	Percent in Service Area	Total Cost	Cost in Service Area	
		From	To				Pavement and Allowances	15%	16%	Cost	Cost	Total Drainage Cost	3.5%					
B-1	ALLRED	BONNIE BRAE	BRUSH CREEK	4,285	C	Widening	\$ 4,532,577	\$ 680,000	\$ 726,000	\$ -	\$ -	\$ -	\$ 158,640	\$ -	50%	\$ 6,097,000	\$ 3,048,500	
B-2	ALLRED	BRUSH CREEK	JOHN PAINE	1,610	PA	Widening	\$ 4,032,091	\$ 605,000	\$ 646,000	\$ -	\$ -	\$ -	\$ 141,123	\$ -	50%	\$ 5,424,000	\$ 2,712,000	
B-3	BRUSH CREEK	815' E OF COUNTRY CLUB	COUNTRY CLUB	815	PA	Widening	\$ 2,041,090	\$ 307,000	\$ 327,000	\$ -	\$ -	\$ -	\$ 71,438	\$ -	100%	\$ 2,747,000	\$ 2,747,000	
B-4	BRUSH CREEK	COUNTRY CLUB	1935' W OF COUNTRY CLUB	1,935	PA	Widening	\$ 4,846,023	\$ 727,000	\$ 776,000	\$ -	\$ -	\$ 250,000	\$ 169,611	\$ -	100%	\$ 6,769,000	\$ 6,769,000	
B-5	BRUSH CREEK	2180' E OF FORT WORTH	FORT WORTH	2,180	PA	Widening	\$ 5,459,602	\$ 819,000	\$ 874,000	\$ -	\$ -	\$ -	\$ 191,086	\$ -	100%	\$ 7,344,000	\$ 7,344,000	
B-6	BRUSH CREEK	FORT WORTH	590' E OF ALLRED	3,615	PA	New	\$ 7,948,228	\$ -	\$ 1,272,000	\$ 1,200,000	\$ -	\$ -	\$ 278,188	\$ -	100%	\$ 10,698,000	\$ 10,698,000	
B-7	CORBIN	BONNIE BRAE	IH-35W	3,505	SA	Widening	\$ 7,441,380	\$ 1,117,000	\$ 1,191,000	\$ -	\$ 500,000.00	\$ 250,000	\$ 260,448	\$ -	100%	\$ 10,760,000	\$ 10,760,000	
B-8	CREEKDALE	PIMLICO	RIVERCHASE	3,230	C	New	\$ 3,416,621	\$ 513,000	\$ 547,000	\$ -	\$ -	\$ 750,000	\$ 119,582	\$ -	100%	\$ 5,346,000	\$ 5,346,000	
B-9	CREEKDALE	THISTLE WAY	OAKBLUFF	2,080	C	New	\$ 2,200,177	\$ 331,000	\$ 353,000	\$ -	\$ -	\$ 500,000	\$ 77,006	\$ -	100%	\$ 3,461,000	\$ 3,461,000	
B-10	EL PASEO	BELMONT	COUNTRY CLUB	1,910	C	New	\$ 2,020,355	\$ 304,000	\$ 324,000	\$ -	\$ 400,000.00	\$ 250,000	\$ 70,712	\$ -	100%	\$ 3,369,000	\$ 3,369,000	
B-11	FM 1515	BONNIE BRAE	IH 35W	770	PA	Widening	\$ 1,928,391	\$ 290,000	\$ 309,000	\$ -	\$ -	\$ -	\$ 67,494	\$ -	100%	\$ 2,595,000	\$ 2,595,000	
B-12	HICKORY CREEK	FM 2499	NAUTICA	1,175	PA (1/3)	Widening	\$ 689,530	\$ 104,000	\$ 111,000	\$ -	\$ -	\$ -	\$ 24,134	\$ 676,116.28	100%	\$ 1,605,000	\$ 1,605,000	
B-13	HICKORY CREEK	NAUTICA	TEASLEY	1,310	PA (1/3)	Widening	\$ 768,753	\$ 116,000	\$ 124,000	\$ -	\$ -	\$ -	\$ 26,906	\$ 753,797.72	100%	\$ 1,789,000	\$ 1,789,000	
B-14	HICKORY CREEK	TEASLEY	MONTECITO	4,475	PA (1/3)	Widening	\$ 2,626,083	\$ 394,000	\$ 421,000	\$ -	\$ 600,000.00	\$ -	\$ 91,913	\$ 4,505,033.56	100%	\$ 8,638,000	\$ 8,638,000	
B-15	HICKORY CREEK	MONTECITO	1435' W OF BIDDY BYE	2,230	PA (1/3)	Widening	\$ 1,308,640	\$ 197,000	\$ 210,000	\$ -	\$ -	\$ -	\$ 45,802	\$ 2,244,966.44	50%	\$ 4,006,000	\$ 2,003,000	
B-16	HICKORY CREEK	1435' W OF BIDDY BYE	815' E OF COUNTRY CLUB	1,980	PA	New	\$ 4,353,386	\$ 654,000	\$ 697,000	\$ -	\$ -	\$ 1,755,000	\$ 152,369	\$ -	100%	\$ 7,612,000	\$ 7,612,000	
B-17	HOBSON LANE	TEASLEY	MONTECITO	670	SA	Widening	\$ 1,422,461	\$ 214,000	\$ 228,000	\$ -	\$ -	\$ -	\$ 49,786	\$ -	100%	\$ 1,914,000	\$ 1,914,000	
B-18	HOBSON LANE	MONTECITO	FORRESTRIDGE	1,495	SA	Widening	\$ 3,173,998	\$ 477,000	\$ 508,000	\$ -	\$ -	\$ 1,440,000	\$ 111,090	\$ -	100%	\$ 5,710,000	\$ 5,710,000	
B-19	HOBSON LANE	FORRESTRIDGE	COUNTRY CLUB	3,785	SA	Widening	\$ 8,035,841	\$ 1,206,000	\$ 1,286,000	\$ -	\$ 500,000.00	\$ 250,000	\$ 281,254	\$ -	100%	\$ 11,559,000	\$ 11,559,000	
B-20	PARVIN	MCCORMICK	HIGHLAND PARK	2,665	C	New	\$ 1,374,924	\$ 207,000	\$ 220,000	\$ -	\$ 300,000.00	\$ -	\$ 48,122	\$ -	100%	\$ 2,150,000	\$ 2,150,000	
B-21	ROBINSON	230' E OF WHEELER RIDGE	TEASLEY	2,735	SA	Widening	\$ 5,806,612	\$ 871,000	\$ 930,000	\$ -	\$ -	\$ 250,000	\$ 203,231	\$ -	100%	\$ 8,061,000	\$ 8,061,000	
B-22	RYAN	TEASLEY	MONTECITO	4,020	SA	Widening	\$ 8,534,764	\$ 1,281,000	\$ 1,366,000	\$ -	\$ -	\$ 500,000	\$ 298,717	\$ -	100%	\$ 11,980,000	\$ 11,980,000	
B-23	RYAN	MONTECITO	FORRESTRIDGE	3,305	SA	Widening	\$ 7,016,765	\$ 1,053,000	\$ 1,123,000	\$ -	\$ -	\$ 1,440,000	\$ 245,587	\$ -	100%	\$ 10,878,000	\$ 10,878,000	
B-24	RYAN	FORRESTRIDGE	COUNTRY CLUB	3,475	SA	Widening	\$ 7,377,688	\$ 1,107,000	\$ 1,181,000	\$ -	\$ 400,000.00	\$ 500,000	\$ 258,219	\$ -	100%	\$ 10,824,000	\$ 10,824,000	
B-25	VINTAGE	FORT WORTH	BONNIE BRAE	4,605	PA (1/3)	Widening	\$ 2,702,371	\$ 406,000	\$ 433,000	\$ 1,200,000	\$ 500,000.00	\$ -	\$ 94,583	\$ 6,385,003.13	100%	\$ 11,721,000	\$ 11,721,000	
B-26	VINTAGE	BONNIE BRAE	NAPA VALLEY	765	PA (1/3)	Widening	\$ 448,928	\$ 68,000	\$ 72,000	\$ -	\$ -	\$ -	\$ 15,712	\$ 1,060,700.85	100%	\$ 1,665,000	\$ 1,665,000	
B-27	VINTAGE	NAPA VALLEY	IH 35W	3,435	PA (1/3)	Widening	\$ 2,015,775	\$ 303,000	\$ 323,000	\$ -	\$ 500,000.00	\$ -	\$ 70,552	\$ 4,762,754.78	100%	\$ 7,975,000	\$ 7,975,000	
B-28	WILLOWWOOD	1250' W OF HIGHLAND PARK	BONNIE BRAE	1,285	C	Widening	\$ 1,359,244	\$ 204,000	\$ 218,000	\$ -	\$ -	\$ 250,000	\$ 47,574	\$ -	100%	\$ 2,079,000	\$ 2,079,000	
B-29	BONNIE BRAE	IH 35E	FM 1515	725	SA	Widening	\$ 1,285,335	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	100%	\$ 1,285,000	\$ 1,285,000	
B-30	BONNIE BRAE	FM 1515	WILLOWWOOD	5,740	SA	Widening	\$ 10,176,311	\$ -	\$ -	\$ 1,175,000	\$ -	\$ -	\$ -	\$ -	100%	\$ 11,351,000	\$ 11,351,000	
B-31	BONNIE BRAE	HIGHLAND PARK	ROSELAWN	2,550	SA	New	\$ 4,520,835	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	50%	\$ 4,521,000	\$ 2,260,500	
B-32	COUNTRY CLUB	FORT WORTH	HOBSON	430	SA	Widening	\$ 912,922	\$ 137,000	\$ 147,000	\$ -	\$ -	\$ -	\$ 31,952	\$ -	100%	\$ 1,229,000	\$ 1,229,000	
B-33	COUNTRY CLUB	HOBSON	RYAN	5,285	SA	Widening	\$ 11,220,454	\$ 1,684,000	\$ 1,796,000	\$ -	\$ -	\$ -	\$ 392,716	\$ -	100%	\$ 15,093,000	\$ 15,093,000	
B-34	COUNTRY CLUB	RYAN	HICKORY CREEK	3,485	SA	Widening	\$ 7,398,918	\$ 1,110,000	\$ 1,184,000	\$ 1,200,000	\$ 500,000.00	\$ 250,000	\$ 258,962	\$ -	50%	\$ 11,902,000	\$ 5,951,000	
B-35	FORT WORTH	COUNTRY CLUB	VINTAGE	6,965	PA	Widening	\$ 17,443,177	\$ 2,617,000	\$ 2,791,000	\$ 1,200,000	\$ -	\$ 1,755,000	\$ 610,511	\$ -	100%	\$ 26,417,000	\$ 26,417,000	
B-36	FORT WORTH	VINTAGE	BONNIE BRAE	5,655	PA	Widening	\$ 14,162,407	\$ 2,125,000	\$ 2,266,000	\$ -	\$ -	\$ 250,000	\$ 495,684	\$ -	100%	\$ 19,299,000	\$ 19,299,000	
B-37	FORT WORTH	BONNIE BRAE	BRUSH CREEK	1,250	PA	Widening	\$ 3,130,506	\$ 470,000	\$ 501,000	\$ -	\$ 600,000.00	\$ -	\$ 109,568	\$ -	100%	\$ 4,811,000	\$ 4,811,000	
B-38	FORT WORTH	BRUSH CREEK	CRAWFORD	5,845	PA	Widening	\$ 14,638,244	\$ 2,196,000	\$ 2,343,000	\$ -	\$ -	\$ 500,000	\$ 512,339	\$ -	100%	\$ 20,190,000	\$ 20,190,000	
B-39	JOHN PAINE	JOHNSON	ATHENS	2,210	Completed	Widening	\$ 176,276	\$ 27,000	\$ 29,000	\$ -	\$ -	\$ -	\$ 6,170	\$ -	100%	\$ 238,000	\$ 238,000	
B-40	JOHN PAINE	VINTAGE	1045' S OF VINTAGE	1,045	SA	New	\$ 1,861,281	\$ 280,000	\$ 298,000	\$ -	\$ 500,000.00	\$ 250,000	\$ 65,145	\$ -	100%	\$ 3,254,000	\$ 3,254,000	
B-41	PARVIN-ROSELAWN	PARVIN	ROSELAWN	2,725	C	New	\$ 2,882,444	\$ 433,000	\$ 462,000	\$ -	\$ -	\$ -	\$ 100,886	\$ -	100%	\$ 3,878,000	\$ 3,878,000	
B-42	TEASLEY	IH 35E	LONDONDERRY	1,315	PA (1/3)	Widening	\$ 771,687	\$ 116,000	\$ 124,000	\$ -	\$ -	\$ -	\$ 27,009	\$ -	100%	\$ 1,039,000	\$ 1,039,000	
B-43	TEASLEY	LONDONDERRY	HOBSON	5,140	PA (1/3)	Widening	\$ 3,016,328	\$ 453,000	\$ 483,000	\$ -	\$ 500,000.00	\$ -	\$ 105,571	\$ -	100%	\$ 4,558,000	\$ 4,558,000	
B-44	TEASLEY	LILLIAN B MILLER	PENNSYLVANIA	1,890	PA (1/3)	Widening	\$ 1,109,117	\$ 167,000	\$ 178,000	\$ -	\$ -	\$ -	\$ 38,819	\$ -	100%	\$ 1,493,000	\$ 1,493,000	
B-45	TEASLEY	PENNSYLVANIA	HOBSON	1,085	PA (1/3)	Widening	\$ 636,715	\$ 96,000	\$ 102,000	\$ -	\$ -	\$ -	\$ 22,285	\$ -	100%	\$ 857,000	\$ 857,000	
TOTAL																	\$ 306,191,000	\$ 290,216,000

City of Denton - 2022 Roadway Impact Fee Study
Service Area C Impact Fee CIP

#	Roadway Name	Limits		Length (FT)	Roadway Classification	Roadway Status	Construction Cost	Contingency/ ROW	Engineering/ Survey/SUE	Railroad Crossings	Intersections	Streams/Chann el Crossings	Inspection/ Materials Testing	Percent in Service Area	Total Cost	Cost in Service Area
		From	To				Pavement and Allowances	15%	16%	Cost	Cost	Total Drainage Cost	3.5%			
C-66	MILAM-US 77	MILAM	GANZER	7,975	SA	New	\$ 14,204,509	\$ 2,131,000	\$ 2,273,000	\$ -	\$ -	\$ 1,440,000.00	\$ 497,158	100%	\$ 20,546,000	\$ 20,546,000
C-67	MILAM-US 77	GANZER	LONG	3,875	SA	Widening	\$ 8,226,918	\$ 1,235,000	\$ 1,317,000	\$ -	\$ 500,000.00	\$ -	\$ 287,942	100%	\$ 11,567,000	\$ 11,567,000
C-68	MILAM-US 77	LONG	US 77	2,800	SA	New	\$ 4,987,163	\$ 749,000	\$ 798,000	\$ -	\$ 400,000.00	\$ 250,000.00	\$ 174,551	100%	\$ 7,359,000	\$ 7,359,000
C-69	NICOSIA	LOOP 288	BEALL	645	C	New	\$ 682,266	\$ 103,000	\$ 110,000	\$ -	\$ -	\$ 250,000.00	\$ 23,879	100%	\$ 1,169,000	\$ 1,169,000
C-70	THOMAS J EGAN	US 380	JIM CHRISTAL	4,010	SA	Widening	\$ 8,513,533	\$ 1,278,000	\$ 1,363,000	\$ -	\$ 900,000.00	\$ -	\$ 297,974	100%	\$ 12,353,000	\$ 12,353,000
C-71	WESTERN	US 380	JIM CHRISTAL	4,245	PA	Widening	\$ 10,631,197	\$ 1,595,000	\$ 1,701,000	\$ -	\$ 400,000.00	\$ -	\$ 372,092	100%	\$ 14,699,000	\$ 14,699,000
TOTAL															\$ 695,918,000	\$ 587,514,000

City of Denton - 2022 Roadway Impact Fee Study
Service Area D Impact Fee CIP

#	Roadway Name	Limits		Length (FT)	Roadway Classification	Roadway Status	Construction Cost	Contingency/ ROW	Engineering/ Survey/SUE	Railroad Crossings	Intersections	Streams/Chann el Crossings	Inspection/ Materials Testing	Percent in Service Area	Total Cost	Cost in Service Area
		From	To				Pavement and Allowances	15%	16%	Cost	Cost	Total Drainage Cost	3.5%			
D-1	BOBCAT	560' W OF FM 2164	FM 2164	560	SA	Widening	\$ 1,188,922	\$ 179,000	\$ 191,000	\$ -	\$ -	\$ -	\$ 41,612	50%	\$ 1,601,000	\$ 800,500
D-2	FISHTRAP	MINGO	GEESLING	1,890	C	New	\$ 1,999,199	\$ 300,000	\$ 320,000	\$ -	\$ -	\$ 250,000.00	\$ 69,972	50%	\$ 2,939,000	\$ 1,469,500
D-3	GANZER	15,500' E OF SHERMAN	4600' W OF SHERMAN	17,985	PA	New	\$ 39,543,260	\$ 5,932,000	\$ 6,327,000	\$ -	\$ -	\$ 750,000.00	\$ 1,384,014	100%	\$ 53,936,000	\$ 53,936,000
D-4	GRIBBLE SPRINGS	INDIAN WELLS	3015' W OF INDIAN WELLS	3,015	SA	Widening	\$ 6,401,073	\$ 961,000	\$ 1,025,000	\$ -	\$ -	\$ 250,000.00	\$ 224,038	50%	\$ 8,861,000	\$ 4,430,500
D-5	HARTLEE FIELD	4220' E OF COOPER CREEK	COOPER CREEK	4,220	SA	Widening	\$ 8,959,379	\$ 1,344,000	\$ 1,434,000	\$ -	\$ -	\$ -	\$ 313,578	50%	\$ 12,051,000	\$ 6,025,500
D-6	HARTLEE FIELD	COOPER CREEK	5170' W OF COOPER CREEK	5,170	SA	Widening	\$ 10,976,301	\$ 1,647,000	\$ 1,757,000	\$ -	\$ -	\$ -	\$ 384,171	50%	\$ 14,764,000	\$ 7,382,000
D-7	HARTLEE FIELD	600' E OF SHERMAN	SHERMAN	600	C	Widening	\$ 634,667	\$ 96,000	\$ 102,000	\$ -	\$ -	\$ -	\$ 22,213	50%	\$ 855,000	\$ 427,500
D-8	HARTLEE FLD-FM 2164	HARTLEE FIELD	SHERMAN	2,250	SA	New	\$ 4,007,542	\$ 602,000	\$ 642,000	\$ -	\$ -	\$ -	\$ 140,264	100%	\$ 5,392,000	\$ 5,392,000
D-9	HARTLEE FLD-FM 2164	SHERMAN	3500' W OF SHERMAN	3,500	SA	New	\$ 6,233,954	\$ 936,000	\$ 998,000	\$ -	\$ -	\$ -	\$ 218,188	100%	\$ 8,386,000	\$ 8,386,000
D-10	HARTLEE FLD-FM 2164	STUART	1485' W OF STUART	1,485	SA	New	\$ 2,644,978	\$ 397,000	\$ 424,000	\$ -	\$ -	\$ 250,000.00	\$ 92,574	50%	\$ 3,809,000	\$ 1,904,500
D-11	HARTLEE FLD-FM 2164	475' W OF FM 2164	FM 2164	475	SA	New	\$ 846,037	\$ 127,000	\$ 136,000	\$ -	\$ -	\$ -	\$ 29,611	100%	\$ 1,139,000	\$ 1,139,000
D-12	LONG	510' W OF FM 2164	FM 2164	510	C	New	\$ 539,467	\$ 81,000	\$ 87,000	\$ -	\$ -	\$ -	\$ 8,881	100%	\$ 726,000	\$ 726,000
D-13	MINGO	E CITY LIMITS	COOPER CREEK	460	SA	Widening	\$ 976,615	\$ 147,000	\$ 157,000	\$ -	\$ -	\$ -	\$ 34,182	100%	\$ 1,315,000	\$ 1,315,000
D-14	MINGO	COOPER CREEK	LOOP 288	2,305	SA	Widening	\$ 4,893,689	\$ 735,000	\$ 783,000	\$ -	\$ -	\$ -	\$ 171,279	100%	\$ 6,583,000	\$ 6,583,000
D-15	MINGO	LOOP 288	US 380	2,275	SA	Widening	\$ 4,829,997	\$ 725,000	\$ 773,000	\$ -	\$ -	\$ 1,440,000.00	\$ 169,050	100%	\$ 7,937,000	\$ 7,937,000
D-16	KINGS ROW	SILVER DOME	LOOP 288	2,655	C	Widening	\$ 2,808,399	\$ 422,000	\$ 450,000	\$ -	\$ -	\$ -	\$ 98,294	100%	\$ 3,779,000	\$ 3,779,000
D-17	SILVER DOME	COOPER CREEK	FARRIS RD	2,190	C	Widening	\$ 2,316,533	\$ 348,000	\$ 371,000	\$ -	\$ -	\$ -	\$ 81,079	50%	\$ 3,117,000	\$ 1,558,500
D-18	COLLINS	HARTLEE FIELD	2730' S OF HARTLEE FIELD	4,440	C	Widening	\$ 4,696,532	\$ 705,000	\$ 752,000	\$ -	\$ -	\$ 500,000.00	\$ 164,379	50%	\$ 6,818,000	\$ 3,409,000
D-19	COOPER CREEK	SHERMAN	HARTLEE FIELD	10,065	SA	New	\$ 17,927,070	\$ 2,690,000	\$ 2,869,000	\$ -	\$ -	\$ 1,440,000.00	\$ 627,447	100%	\$ 25,554,000	\$ 25,554,000
D-20	COOPER CREEK	SILVER DOME	MINGO	4,360	SA	Widening	\$ 9,256,609	\$ 1,389,000	\$ 1,482,000	\$ -	\$ -	\$ -	\$ 323,981	50%	\$ 12,452,000	\$ 6,226,000
D-21	COOPER CREEK	MINGO	US 380	1,680	PA	Widening	\$ 4,207,399	\$ 632,000	\$ 674,000	\$ 1,200,000	\$ 500,000.00	\$ -	\$ 147,259	100%	\$ 7,361,000	\$ 7,361,000
C-53,D-22	FM 2164	MILAM	LOOP 288	13,855	PA	Widening	\$ 34,698,524	\$ 5,205,000	\$ 5,552,000	\$ -	\$1,500,000.00	\$ 1,755,000.00	\$ 1,214,448	50%	\$ 49,925,000	\$ 24,962,500
D-23	GREEN VALLEY	2395' S OF FM 2153	2935' N OF SHEPARD	7,765	PA	New	\$ 17,072,750	\$ 2,561,000	\$ 2,732,000	\$ -	\$ 500,000.00	\$ 1,000,000.00	\$ 597,546	100%	\$ 24,463,000	\$ 24,463,000
D-24	GREEN VALLEY	WARSCHUN	SHERMAN	2,095	SA	Widening	\$ 4,447,843	\$ 668,000	\$ 712,000	\$ -	\$ -	\$ 250,000.00	\$ 155,675	100%	\$ 6,234,000	\$ 6,234,000
D-25	INDIAN WELLS	1615' S OF FM 2153	4930' N OF GRIBBLE SPRINGS	3,870	SA	New	\$ 6,892,972	\$ 1,034,000	\$ 1,103,000	\$ -	\$ 500,000.00	\$ 250,000.00	\$ 241,254	100%	\$ 10,021,000	\$ 10,021,000
D-26	INDIAN WELLS	4930' N OF GRIBBLE SPRINGS	2905' N OF GRIBBLE SPRINGS	2,025	SA	New	\$ 3,606,788	\$ 542,000	\$ 578,000	\$ -	\$ -	\$ -	\$ 126,238	50%	\$ 4,853,000	\$ 2,426,500
D-27	INDIAN WELLS	2905' N OF GRIBBLE SPRINGS	GRIBBLE SPRINGS	2,905	SA	Widening	\$ 6,167,534	\$ 926,000	\$ 987,000	\$ -	\$ -	\$ -	\$ 215,864	50%	\$ 8,296,000	\$ 4,148,000
C-54,D-28	LOCUST	LOOP 288	HERCULES	2,260	SA	Widening	\$ 4,798,151	\$ 720,000	\$ 768,000	\$ -	\$ -	\$ 500,000.00	\$ 167,935	50%	\$ 6,954,000	\$ 3,477,000
C-55,D-29	LOCUST	HERCULES	BELL	2,375	SA	Widening	\$ 5,042,304	\$ 757,000	\$ 807,000	\$ -	\$ 400,000.00	\$ 250,000.00	\$ 176,481	50%	\$ 7,433,000	\$ 3,716,500
C-56,D-30	LOCUST	BELL	WINDSOR	1,270	SA	Widening	\$ 2,696,306	\$ 405,000	\$ 432,000	\$ -	\$ -	\$ -	\$ 94,371	50%	\$ 3,628,000	\$ 1,814,000
C-57,D-31	LOCUST	WINDSOR	FM 2164	1,345	SA	Widening	\$ 2,855,537	\$ 429,000	\$ 457,000	\$ -	\$ -	\$ -	\$ 99,944	50%	\$ 3,841,000	\$ 1,920,500
D-32	SHERMAN	LOOP 288	HERCULES	1,650	SA	Widening	\$ 3,503,075	\$ 526,000	\$ 561,000	\$ -	\$ -	\$ -	\$ 122,608	100%	\$ 4,713,000	\$ 4,713,000
D-33	SHERMAN	HERCULES	KINGS	1,910	SA	Widening	\$ 4,055,074	\$ 609,000	\$ 649,000	\$ -	\$ -	\$ -	\$ 141,928	100%	\$ 5,455,000	\$ 5,455,000
D-34	SHERMAN	KINGS	WINDSOR	2,025	SA	Widening	\$ 4,299,228	\$ 645,000	\$ 688,000	\$ -	\$ -	\$ 1,440,000.00	\$ 150,473	100%	\$ 7,223,000	\$ 7,223,000
D-35	SHERMAN	WINDSOR	WILSONWOOD	1,000	SA	Widening	\$ 2,123,076	\$ 319,000	\$ 340,000	\$ -	\$ -	\$ -	\$ 74,308	100%	\$ 2,856,000	\$ 2,856,000
D-36	SHERMAN	WILSONWOOD	CORONADO	1,165	SA	Widening	\$ 2,473,383	\$ 372,000	\$ 396,000	\$ -	\$ -	\$ -	\$ 86,568	100%	\$ 3,328,000	\$ 3,328,000
D-37	SHERMAN	CORONADO	GREENWOOD	1,640	SA	Widening	\$ 3,481,844	\$ 523,000	\$ 558,000	\$ -	\$ -	\$ -	\$ 121,865	100%	\$ 4,685,000	\$ 4,685,000
D-38	SHERMAN	GREENWOOD	BELL	825	SA	Widening	\$ 1,751,537	\$ 263,000	\$ 281,000	\$ -	\$ -	\$ -	\$ 61,304	100%	\$ 2,357,000	\$ 2,357,000
D-39	SHERMAN	BELL	LOCUST	1,715	SA	Widening	\$ 3,641,075	\$ 547,000	\$ 583,000	\$ -	\$ -	\$ -	\$ 127,438	100%	\$ 4,899,000	\$ 4,899,000
D-40	WINDSOR	LOOP 288	DOMINION	860	C	New	\$ 909,689	\$ 137,000	\$ 146,000	\$ -	\$ -	\$ -	\$ 31,839	100%	\$ 1,225,000	\$ 1,225,000
TOTAL															\$ 351,764,000	\$ 275,665,500

City of Denton

Kimley-Horn

2022 Denton Mobility Plan - Roadway Costing

Planning Level Opinion of Probable Construction Cost

Project Information

Street Name: Primary Arterial (New) Limits: Classification: PA ROW Width (feet): 135 Length (feet): 5,280	Notes:
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Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Unclassified Street Earthwork	24,700	CY	\$ 18.00	\$ 444,600
2	12" Lime Stabilization (with Lime @ 46#/sy)	47,000	SY	\$ 20.75	\$ 975,250
3	11" Concrete Pavement and Curb	44,600	SY	\$ 80.00	\$ 3,568,000
4	8' Concrete Sidewalk and 10' Concrete Trail (6" Depth)	95,100	SF	\$ 7.50	\$ 713,250
5	4" Topsoil	2,700	CY	\$ 45.00	\$ 121,500
6	Block Sodding	24,100	SY	\$ 12.00	\$ 289,200
7	12' Wide Turn Lane (300 LF Long)	8,600	SY	\$ 80.00	\$ 688,000
Paving Subtotal:					\$ 6,799,800

Major Construction Component Allowances:

Item Description	Notes:	Allowance	Item Cost
✓ Mobilization		5%	\$ 339,500.00
✓ Removals/Prepare Right-of-Way	Only for Reconstruction	2%	\$ 135,800.00
✓ Traffic Control	Maintain Existing Traffic	2%	\$ 135,800.00
✓ Pavement Markings/Signs		2%	\$ 135,800.00
✓ Roadway Drainage	Standard Internal System	30%	\$ 2,036,700.00
Concrete Driveways	Driveways (Every 100')	\$ -	\$ -
✓ Irrigation	Basic	3%	\$ 203,700.00
✓ Illumination	Street Light Foundations and Conduit	7%	\$ 475,300.00
✓ Water	Minor Adjustments	10%	\$ 678,900.00
✓ Sewer	Minor Adjustments	10%	\$ 678,900.00
✓ SWPPP		2%	\$ 135,800.00
Other:			\$ -
Allowance Subtotal:			\$ 4,956,200
Paving and Allowance SUBTOTAL:			\$ 11,756,000
Subtotal Price per Lane Mile			\$ 1,960,000

Denton Mobility Plan - Roadway Costing

Item Description	Notes	Allowance	Item Cost
Construction			\$ 11,756,000
Construction Contingency/Right-of-Way		15%	\$ 1,764,000
Railroad Crossings	Priced Per Roadway Segment		
Intersections	Priced Per Roadway Segment		
Streams/Channel Crossings	Priced Per Roadway Segment		
Engineering/Survey/SUE		16%	\$ 1,881,000
Inspections/Material Testing		3.5%	\$ 412,000
Roadway Cost TOTAL:			\$ 15,813,000
Price per Linear Foot (PA):			\$ 3,000
Price per Lane Mile			\$ 2,636,000

NOTE: The planning level cost projections provided have been developed for the Denton Mobility Plan, and should not be used for any future Capital Improvement Planning within the City of Denton. No Engineering evaluation was used in the development of the costs. Generic costs and percentages were developed for paving unit prices, allowances, intersections, drainage crossings, and railroad crossings. Percentages have also been provided for contingencies/ROW, Engineering/Survey/SUE, Inspections/Material Testing, and Staff Time. The costs and percentages are based on the information known to the Engineer at this time and represent only the Engineer's judgement as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

City of Denton

Kimley-Horn

2022 Denton Mobility Plan - Roadway Costing

Planning Level Opinion of Probable Construction Cost

Project Information

Street Name: Primary Arterial (Widening) Limits: Classification: PA ROW Width (feet): 135 Length (feet): 5,280	Notes:
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Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Unclassified Street Earthwork	24,700	CY	\$ 18.00	\$ 444,600
2	12" Lime Stabilization (with Lime @ 46#/sy)	47,000	SY	\$ 20.75	\$ 975,250
3	11" Concrete Pavement and Curb	44,600	SY	\$ 80.00	\$ 3,568,000
4	8' Concrete Sidewalk and 10' Concrete Trail (6" Depth)	95,100	SF	\$ 7.50	\$ 713,250
5	4" Topsoil	2,700	CY	\$ 45.00	\$ 121,500
6	Block Sodding	24,100	SY	\$ 12.00	\$ 289,200
7	12' Wide Turn Lane (300 LF Long)	8,600	SY	\$ 80.00	\$ 688,000
Paving Subtotal:					\$ 6,799,800

Major Construction Component Allowances:

Item Description	Notes:	Allowance	Item Cost
✓ Mobilization		5%	\$ 339,500.00
✓ Removals/Prepare Right-of-Way	Only for Reconstruction	10%	\$ 678,900.00
✓ Traffic Control	Maintain Existing Traffic	10%	\$ 678,900.00
✓ Pavement Markings/Signs		2%	\$ 135,800.00
✓ Roadway Drainage	Standard Internal System	30%	\$ 2,036,700.00
✓ Concrete Driveways	Driveways (Every 100')	\$ 5,000.00	\$ 528,000.00
✓ Irrigation	Basic	3%	\$ 203,700.00
✓ Illumination	Street Light Foundations and Conduit	7%	\$ 475,300.00
✓ Water	Minor Adjustments	10%	\$ 678,900.00
✓ Sewer	Minor Adjustments	10%	\$ 678,900.00
✓ SWPPP		4%	\$ 271,600.00
Other:			\$ -
Allowance Subtotal:			\$ 6,706,200
Paving and Allowance SUBTOTAL:			\$ 13,506,000
Subtotal Price per Lane Mile			\$ 2,251,000

Denton Mobility Plan - Roadway Costing

Item Description	Notes	Allowance	Item Cost
Construction			\$ 13,506,000
Construction Contingency/Right-of-Way		15%	\$ 2,026,000
Railroad Crossings	Priced Per Roadway Segment		
Intersections	Priced Per Roadway Segment		
Streams/Channel Crossings	Priced Per Roadway Segment		
Engineering/Survey/SUE		16%	\$ 2,161,000
Inspections/Material Testing		3.5%	\$ 473,000
Roadway Cost TOTAL:			\$ 18,166,000
Price per Linear Foot (PA):			\$ 3,500
Price per Lane Mile			\$ 3,028,000

NOTE: The planning level cost projections provided have been developed for the Denton Mobility Plan, and should not be used for any future Capital Improvement Planning within the City of Denton. No Engineering evaluation was used in the development of the costs. Generic costs and percentages were developed for paving unit prices, allowances, intersections, drainage crossings, and railroad crossings. Percentages have also been provided for contingencies/ROW, Engineering/Survey/SUE, Inspections/Material Testing, and Staff Time. The costs and percentages are based on the information known to the Engineer at this time and represent only the Engineer's judgement as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

City of Denton

Kimley-Horn

2020 Denton Mobility Plan - Roadway Costing

Planning Level Opinion of Probable Construction Cost

Project Information

Street Name: Primary Arterial (Half Roadway) Limits: Classification: PA (4/6) ROW Width (feet): 135 Length (feet): 5,280	Notes:
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Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Unclassified Street Earthwork	16,600	CY	\$ 18.00	\$ 298,800
2	12" Lime Stabilization (with Lime @ 46#/sy)	31,400	SY	\$ 20.75	\$ 651,550
3	11" Concrete Pavement and Curb	29,700	SY	\$ 80.00	\$ 2,376,000
4	10' Concrete Trail (6" Depth)	52,800	SF	\$ 7.50	\$ 396,000
5	4" Topsoil	2,200	CY	\$ 45.00	\$ 99,000
6	Block Sodding	19,400	SY	\$ 12.00	\$ 232,800
7	12' Wide Turn Lane (300 LF Long)	8,600	SY	\$ 80.00	\$ 688,000
Paving Subtotal:					\$ 4,742,150

Major Construction Component Allowances:

Item Description	Notes:	Allowance	Item Cost
✓ Mobilization		5%	\$ 236,400.00
✓ Removals/Prepare Right-of-Way	Only for Reconstruction	5%	\$ 236,400.00
✓ Traffic Control	Maintain Existing Traffic	5%	\$ 236,400.00
✓ Pavement Markings/Signs		2%	\$ 94,600.00
✓ Roadway Drainage	Standard Internal System	20%	\$ 945,600.00
✓ Concrete Driveways	Driveways (Every 100')	\$ 5,000.00	\$ 264,000.00
✓ Irrigation	Basic	3%	\$ 141,900.00
✓ Illumination	Street Light Foundations and Conduit	3%	\$ 141,900.00
✓ Water	Minor Adjustments	3%	\$ 141,900.00
✓ Sewer	Minor Adjustments	3%	\$ 141,900.00
✓ SWPPP		4%	\$ 189,200.00
Other:			\$ -
Allowance Subtotal:			\$ 2,770,200
Paving and Allowance SUBTOTAL:			\$ 7,513,000
Subtotal Price per Lane Mile			\$ 1,879,000

Denton Mobility Plan - Roadway Costing

Item Description	Notes	Allowance	Item Cost
Construction			\$ 7,513,000
Construction Contingency/Right-of-Way		15%	\$ 1,127,000
Railroad Crossings	Priced Per Roadway Segment		
Intersections	Priced Per Roadway Segment		
Streams/Channel Crossings	Priced Per Roadway Segment		
Engineering/Survey/SUE		16%	\$ 1,203,000
Inspections/Material Testing		3.5%	\$ 263,000
Roadway Cost TOTAL:			\$ 10,106,000
Price per Linear Foot (PA):			\$ 2,000
Price per Lane Mile			\$ 2,527,000

NOTE: The planning level cost projections provided have been developed for the Denton Mobility Plan, and should not be used for any future Capital Improvement Planning within the City of Denton. No Engineering evaluation was used in the development of the costs. Generic costs and percentages were developed for paving unit prices, allowances, intersections, drainage crossings, and railroad crossings. Percentages have also been provided for contingencies/ROW, Engineering/Survey/SUE, Inspections/Material Testing, and Staff Time. The costs and percentages are based on the information known to the Engineer at this time and represent only the Engineer's judgement as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

City of Denton

Kimley-Horn

2020 Denton Mobility Plan - Roadway Costing

Planning Level Opinion of Probable Construction Cost

Project Information

Street Name: Primary Arterial (Median Lanes) Limits: Classification: PA (1/3) ROW Width (feet): 135 Length (feet): 5,280	Notes:
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Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Unclassified Street Earthwork	7,400	CY	\$ 18.00	\$ 133,200
2	12" Lime Stabilization (with Lime @ 46#/sy)	5,300	SY	\$ 20.75	\$ 109,975
3	11" Concrete Pavement and Curb	14,700	SY	\$ 80.00	\$ 1,176,000
4	No Sidewalk - Median Widening	0	SF	\$ 7.50	\$ -
5	4" Topsoil	700	CY	\$ 45.00	\$ 31,500
6	Block Sodding	5,900	SY	\$ 12.00	\$ 70,800
7	12' Wide Turn Lane (300 LF Long)	8,600	SY	\$ 80.00	\$ 688,000
Paving Subtotal:					\$ 2,209,475

Major Construction Component Allowances:

Item Description	Notes:	Allowance	Item Cost
✓ Mobilization		5%	\$ 109,900.00
✓ Removals/Prepare Right-of-Way	Only for Reconstruction	2%	\$ 44,000.00
✓ Traffic Control	Maintain Existing Traffic	10%	\$ 219,800.00
✓ Pavement Markings/Signs		2%	\$ 44,000.00
✓ Roadway Drainage	Standard Internal System	10%	\$ 219,800.00
Concrete Driveways	Driveways (Every 100')	\$ -	\$ -
✓ Irrigation	Basic	3%	\$ 66,000.00
✓ Illumination	Street Light Foundations and Conduit	3%	\$ 66,000.00
✓ Water	Minor Adjustments	3%	\$ 66,000.00
✓ Sewer	Minor Adjustments	3%	\$ 66,000.00
✓ SWPPP		4%	\$ 88,000.00
Other:			\$ -
Allowance Subtotal:			\$ 989,500
Paving and Allowance SUBTOTAL:			\$ 3,199,000
Subtotal Price per Lane Mile			\$ 1,600,000

Denton Mobility Plan - Roadway Costing

Item Description	Notes	Allowance	Item Cost
Construction			\$ 3,199,000
Construction Contingency/Right-of-Way		15%	\$ 480,000
Railroad Crossings	Priced Per Roadway Segment		
Intersections	Priced Per Roadway Segment		
Streams/Channel Crossings	Priced Per Roadway Segment		
Engineering/Survey/SUE		16%	\$ 512,000
Inspections/Material Testing		3.5%	\$ 112,000
Roadway Cost TOTAL:			\$ 4,303,000
Price per Linear Foot (PA):			\$ 900
Price per Lane Mile			\$ 2,152,000

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City of Denton

Kimley-Horn

2022 Denton Mobility Plan - Roadway Costing

Planning Level Opinion of Probable Construction Cost

Project Information

Street Name: Secondary Arterial (New) Limits: Classification: SA ROW Width (feet): 110 Length (feet): 5,280	Notes:
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Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Unclassified Street Earthwork	22,300	CY	\$ 18.00	\$ 401,400
2	12" Lime Stabilization (with Lime @ 46#/sy)	42,300	SY	\$ 20.75	\$ 877,725
3	11" Concrete Pavement and Curb	39,900	SY	\$ 80.00	\$ 3,192,000
4	6' Concrete Sidewalk (4" Depth)	63,400	SF	\$ 6.50	\$ 412,100
5	4" Topsoil	2,100	CY	\$ 45.00	\$ 94,500
6	Block Sodding	18,800	SY	\$ 12.00	\$ 225,600
7	12' Wide Turn Lane (200 LF Long)	6,400	SY	\$ 80.00	\$ 512,000
Paving Subtotal:					\$ 5,715,325

Major Construction Component Allowances:

Item Description	Notes:	Allowance	Item Cost
✓ Mobilization		5%	\$ 260,100.00
✓ Removals/Prepare Right-of-Way	Only for Reconstruction	2%	\$ 104,100.00
✓ Traffic Control	Maintain Existing Traffic	2%	\$ 104,100.00
✓ Pavement Markings/Signs		2%	\$ 104,100.00
✓ Roadway Drainage	Standard Internal System	30%	\$ 1,560,100.00
Concrete Driveways	Driveways (Every 100')	\$ -	\$ -
✓ Irrigation	Basic	3%	\$ 156,100.00
✓ Illumination	Street Light Foundations and Conduit	7%	\$ 364,100.00
✓ Water	Minor Adjustments	10%	\$ 520,100.00
✓ Sewer	Minor Adjustments	10%	\$ 520,100.00
✓ SWPPP		2%	\$ 104,100.00
Other:			\$ -
Allowance Subtotal:			\$ 3,797,000
Paving and Allowance SUBTOTAL:			\$ 9,513,000
Subtotal Price per Lane Mile			\$ 2,379,000

Denton Mobility Plan - Roadway Costing

Item Description	Notes	Allowance	Item Cost
Construction			\$ 9,513,000
Construction Contingency/Right-of-Way		15%	\$ 1,427,000
Railroad Crossings	Priced Per Roadway Segment		
Intersections	Priced Per Roadway Segment		
Streams/Channel Crossings	Priced Per Roadway Segment		
Engineering/Survey/SUE		16%	\$ 1,523,000
Inspections/Material Testing		3.5%	\$ 333,000
Roadway Cost TOTAL:			\$ 12,796,000
Price per Linear Foot (PA):			\$ 2,500
Price per Lane Mile			\$ 3,199,000

NOTE: The planning level cost projections provided have been developed for the Denton Mobility Plan, and should not be used for any future Capital Improvement Planning within the City of Denton. No Engineering evaluation was used in the development of the costs. Generic costs and percentages were developed for paving unit prices, allowances, intersections, drainage crossings, and railroad crossings. Percentages have also been provided for contingencies/ROW, Engineering/Survey/SUE, Inspections/Material Testing, and Staff Time. The costs and percentages are based on the information known to the Engineer at this time and represent only the Engineer's judgement as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

City of Denton

Kimley-Horn

2022 Denton Mobility Plan - Roadway Costing

Planning Level Opinion of Probable Construction Cost

Project Information

Street Name: Secondary Arterial (Widening) Limits: Classification: SA ROW Width (feet): 110 Length (feet): 5,280	Notes:
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Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Unclassified Street Earthwork	22,300	CY	\$ 18.00	\$ 401,400
2	12" Lime Stabilization (with Lime @ 46#/sy)	42,300	SY	\$ 20.75	\$ 877,725
3	11" Concrete Pavement and Curb	39,900	SY	\$ 80.00	\$ 3,192,000
4	6' Concrete Sidewalk (4" Depth)	63,400	SF	\$ 6.50	\$ 412,100
5	4" Topsoil	2,100	CY	\$ 45.00	\$ 94,500
6	Block Sodding	18,800	SY	\$ 12.00	\$ 225,600
7	12' Wide Turn Lane (200 LF Long)	6,400	SY	\$ 80.00	\$ 512,000
Paving Subtotal:					\$ 5,715,325

Major Construction Component Allowances:

Item Description	Notes:	Allowance	Item Cost
✓ Mobilization		5%	\$ 285,700.00
✓ Removals/Prepare Right-of-Way	Only for Reconstruction	10%	\$ 571,300.00
✓ Traffic Control	Maintain Existing Traffic	10%	\$ 571,300.00
✓ Pavement Markings/Signs		2%	\$ 114,300.00
✓ Roadway Drainage	Standard Internal System	30%	\$ 1,713,700.00
✓ Concrete Driveways	Driveways (Every 100')	\$ 5,000.00	\$ 528,000.00
✓ Irrigation	Basic	3%	\$ 171,400.00
✓ Illumination	Street Light Foundations and Conduit	7%	\$ 399,900.00
✓ Water	Minor Adjustments	10%	\$ 571,300.00
✓ Sewer	Minor Adjustments	10%	\$ 571,300.00
✓ SWPPP		4%	\$ 228,500.00
Other:			\$ -
Allowance Subtotal:			\$ 5,726,700
Paving and Allowance SUBTOTAL:			\$ 11,443,000
Subtotal Price per Lane Mile			\$ 2,861,000

Denton Mobility Plan - Roadway Costing

Item Description	Notes	Allowance	Item Cost
Construction			\$ 11,443,000
Construction Contingency/Right-of-Way		15%	\$ 1,717,000
Railroad Crossings	Priced Per Roadway Segment		
Intersections	Priced Per Roadway Segment		
Streams/Channel Crossings	Priced Per Roadway Segment		
Engineering/Survey/SUE		16%	\$ 1,831,000
Inspections/Material Testing		3.5%	\$ 401,000
Roadway Cost TOTAL:			\$ 15,392,000
Price per Linear Foot (PA):			\$ 3,000
Price per Lane Mile			\$ 3,848,000

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City of Denton

Kimley-Horn

2020 Denton Mobility Plan - Roadway Costing

Planning Level Opinion of Probable Construction Cost

Project Information

Street Name: Secondary Arterial (Half Roadway) Limits: Classification: SA (1/2) ROW Width (feet): 110 Length (feet): 5,280	Notes:
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Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Unclassified Street Earthwork	11,200	CY	\$ 18.00	\$ 201,600
2	12" Lime Stabilization (with Lime @ 46#/sy)	21,200	SY	\$ 20.75	\$ 439,900
3	11" Concrete Pavement and Curb	20,000	SY	\$ 80.00	\$ 1,600,000
4	6' Concrete Sidewalk (4" Depth)	31,700	SF	\$ 6.50	\$ 206,050
5	4" Topsoil	1,700	CY	\$ 45.00	\$ 76,500
6	Block Sodding	14,700	SY	\$ 12.00	\$ 176,400
7	12' Wide Turn Lane (200 LF Long)	6,400	SY	\$ 80.00	\$ 512,000
Paving Subtotal:					\$ 3,212,450

Major Construction Component Allowances:

Item Description	Notes:	Allowance	Item Cost
✓ Mobilization		5%	\$ 160,100.00
✓ Removals/Prepare Right-of-Way	Only for Reconstruction	5%	\$ 160,100.00
✓ Traffic Control	Maintain Existing Traffic	5%	\$ 160,100.00
✓ Pavement Markings/Signs		2%	\$ 64,100.00
✓ Roadway Drainage	Standard Internal System	20%	\$ 640,400.00
✓ Concrete Driveways	Driveways (Every 100')	\$ 5,000.00	\$ 264,000.00
✓ Irrigation	Basic	3%	\$ 96,100.00
✓ Illumination	Street Light Foundations and Conduit	3%	\$ 96,100.00
✓ Water	Minor Adjustments	3%	\$ 96,100.00
✓ Sewer	Minor Adjustments	3%	\$ 96,100.00
✓ SWPPP		4%	\$ 128,100.00
Other:			\$ -
Allowance Subtotal:			\$ 1,961,300

Paving and Allowance SUBTOTAL: \$ 5,174,000

Subtotal Price per Lane Mile \$ 2,587,000

Denton Mobility Plan - Roadway Costing

Item Description	Notes	Allowance	Item Cost
Construction			\$ 5,174,000
Construction Contingency/Right-of-Way		15%	\$ 777,000
Railroad Crossings	Priced Per Roadway Segment		
Intersections	Priced Per Roadway Segment		
Streams/Channel Crossings	Priced Per Roadway Segment		
Engineering/Survey/SUE		16%	\$ 828,000
Inspections/Material Testing		3.5%	\$ 182,000
Roadway Cost TOTAL:			\$ 6,961,000
Price per Linear Foot (PA):			\$ 1,400
Price per Lane Mile			\$ 3,481,000

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City of Denton

Kimley-Horn

2022 Denton Mobility Plan - Roadway Costing

Planning Level Opinion of Probable Construction Cost

Project Information

Street Name: Collector (New) Limits: Classification: C ROW Width (feet): 65 Length (feet): 5,280	Notes:
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Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Unclassified Street Earthwork	13,200	CY	\$ 18.00	\$ 237,600
2	8" Lime Stabilization (with Lime @ 46#/sy)	25,300	SY	\$ 20.75	\$ 524,975
3	8" Concrete Pavement and Curb	24,100	SY	\$ 70.00	\$ 1,687,000
4	5' Concrete Sidewalk (4" Depth)	52,800	SF	\$ 6.50	\$ 343,200
5	4" Topsoil	1,000	CY	\$ 45.00	\$ 45,000
6	Block Sodding	8,800	SY	\$ 12.00	\$ 105,600
7	Parking Lane	4,700	SY	\$ 70.00	\$ 329,000
Paving Subtotal:					\$ 3,272,375

Major Construction Component Allowances:

Item Description	Notes:	Allowance	Item Cost
✓ Mobilization		5%	\$ 163,400.00
✓ Removals/Prepare Right-of-Way	Only for Reconstruction	2%	\$ 65,400.00
✓ Traffic Control	Maintain Existing Traffic	2%	\$ 65,400.00
✓ Pavement Markings/Signs		2%	\$ 65,400.00
✓ Roadway Drainage	Standard Internal System	30%	\$ 979,900.00
Concrete Driveways	Driveways (Every 100')	\$ -	\$ -
✓ Irrigation	Basic	3%	\$ 98,000.00
✓ Illumination	Street Light Foundations and Conduit	7%	\$ 228,700.00
✓ Water	Minor Adjustments	10%	\$ 326,700.00
✓ Sewer	Minor Adjustments	10%	\$ 326,700.00
✓ SWPPP		2%	\$ 65,400.00
Other:			\$ -
Allowance Subtotal:			\$ 2,385,000
Paving and Allowance SUBTOTAL:			\$ 5,658,000
Subtotal Price per Lane Mile			\$ 2,829,000

Denton Mobility Plan - Roadway Costing

Item Description	Notes	Allowance	Item Cost
Construction			\$ 5,658,000
Construction Contingency/Right-of-Way		15%	\$ 849,000
Railroad Crossings	Priced Per Roadway Segment		
Intersections	Priced Per Roadway Segment		
Streams/Channel Crossings	Priced Per Roadway Segment		
Engineering/Survey/SUE		16%	\$ 906,000
Inspections/Material Testing		3.5%	\$ 199,000
Roadway Cost TOTAL:			\$ 7,612,000
Price per Linear Foot (PA):			\$ 1,500
Price per Lane Mile			\$ 3,806,000

NOTE: The planning level cost projections provided have been developed for the Denton Mobility Plan, and should not be used for any future Capital Improvement Planning within the City of Denton. No Engineering evaluation was used in the development of the costs. Generic costs and percentages were developed for paving unit prices, allowances, intersections, drainage crossings, and railroad crossings. Percentages have also been provided for contingencies/ROW, Engineering/Survey/SUE, Inspections/Material Testing, and Staff Time. The costs and percentages are based on the information known to the Engineer at this time and represent only the Engineer's judgement as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

Appendix B – Roadway Impact Fee CIP Service Units of Supply

City of Denton - 2022 Roadway Impact Fee Study

CIP Service Units of Supply

Service Area A

12/7/2023

Project ID #	ROADWAY	LIMITS		LENGTH (FT)	LENGTH (MI)	LANES	MTP CLASSIFICATION	IMPACT FEE CLASSIFICATIO N	ROADWAY STATUS	PEAK HOUR VOLUME	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN	VEH-MI SUPPLY PK-HR TOTAL ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY PK-HR VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
		FROM	TO														
A-1	CORBIN	IH-35W	CORBIN	3,055	0.58	4	SECONDARY ARTERIAL	SA	Widening	9	100%	750	1740	5	1735	\$ 10,164,000	\$ 10,164,000.00
A-2	CORBIN	500' S OF SPRINGSIDE	CORBIN	1,410	0.27	4	SECONDARY ARTERIAL	SA	New	New	100%	750	810	0	810	\$ 3,378,000	\$ 3,378,000.00
A-3	FM 1515	IH 35W	CORBIN	5,990	1.13	6	PRIMARY ARTERIAL	PA	Widening	761	100%	850	5763	860	4,903	\$ 23,533,000	\$ 23,533,000
A-4	FM 1515	CORBIN	WESTERN	1,175	0.22	6	PRIMARY ARTERIAL	PA	Widening	460	100%	850	1122	101	1,021	\$ 3,959,000	\$ 3,959,000
A-5	FM 1515	WESTERN	WESTCOURT	1,555	0.29	6	PRIMARY ARTERIAL	PA	Widening	1,120	100%	850	1479	325	1,154	\$ 7,495,000	\$ 7,495,000
A-6	FM 1515	WESTCOURT	MASCH BRANCH	620	0.12	6	PRIMARY ARTERIAL	PA	Widening	552	100%	850	612	66	546	\$ 2,089,000	\$ 2,089,000
A-7	FM 1515	TOM COLE	3435' W OF TOM COLE	3,435	0.65	6	PRIMARY ARTERIAL	PA	Widening	663	100%	850	3315	431	2,884	\$ 13,827,000	\$ 13,827,000
A-8	FM 1515	3435' W OF TOM COLE	530' E OF C WOLFE	3,750	0.71	6	PRIMARY ARTERIAL	PA	Widening	619	100%	850	3621	439	3,182	\$ 13,132,000	\$ 13,132,000
A-9	H LIVELY	C WOLFE	2145' W OF H LIVELY	2,145	0.41	6	PRIMARY ARTERIAL	PA	Widening	48	50%	850	1046	10	1,036	\$ 7,226,000	\$ 3,613,000
A-10	H LIVELY	2145' W OF H LIVELY	2150' W OF ED ROBSON	3,915	0.74	2	PRIMARY ARTERIAL	PA	Widening	234	100%	850	1258	173	1,085	\$ 13,188,000	\$ 13,188,000
A-11	IH-35-CORBIN	IH-35	CORBIN	4,420	0.84	2	COLLECTOR	C	New	New	100%	550	924	0	924	\$ 7,040,000	\$ 7,040,000
A-12	JIM CHRISTAL	IH 35	OLD SH 24	3,110	0.59	4	SECONDARY ARTERIAL	SA	Widening	1,290	100%	750	1770	761	1,009	\$ 10,332,000	\$ 10,332,000
A-13,C-10	JIM CHRISTAL	OLD SH 24	WESTERN	2,905	0.55	4	SECONDARY ARTERIAL	SA	Widening	1,056	50%	750	825	290	535	\$ 9,746,000	\$ 4,873,000
A-14,C-11	JIM CHRISTAL	WESTERN	MASCH BRANCH	3,510	0.66	4	SECONDARY ARTERIAL	SA	Widening	910	50%	750	990	300	690	\$ 11,964,000	\$ 5,982,000
A-15,C-12	JIM CHRISTAL	MASCH BRANCH	THOMAS J EGAN	5,975	1.13	4	SECONDARY ARTERIAL	SA	Widening	239	50%	750	1695	135	1,560	\$ 18,502,000	\$ 9,251,000
A-16,C-13	JIM CHRISTAL	THOMAS J EGAN	515' E OF C WOLFE	3,945	0.75	4	SECONDARY ARTERIAL	SA	Widening	239	50%	750	1125	90	1,035	\$ 12,707,000	\$ 6,353,500
A-17	PRECISION-WESTERN	PRECISION	WESTERN	3,420	0.65	2	COLLECTOR	C	New	New	100%	550	715	0	715	\$ 6,566,000	\$ 6,566,000
A-18	ROBSON RANCH	IH 35W	ED ROBSON	8,720	1.65	6	PRIMARY ARTERIAL	PA	Widening	808	50%	850	4208	667	3,541	\$ 30,974,000	\$ 15,487,000
A-19	ROBSON RANCH	ED ROBSON	YARBROUGH	7,150	1.35	6	PRIMARY ARTERIAL	PA	Widening	627	50%	850	3443	423	3,020	\$ 25,335,000	\$ 12,667,500
A-20	SPRINGSIDE	CORBIN	UNDERWOOD	1,835	0.35	4	SECONDARY ARTERIAL	SA	Widening	620	100%	750	1050	217	833	\$ 6,141,000	\$ 6,141,000
A-21	SPRINGSIDE	UNDERWOOD	WESTCOURT	865	0.16	4	SECONDARY ARTERIAL	SA	Widening	31	100%	750	480	5	475	\$ 2,971,000	\$ 2,971,000
A-22	TJ EGAN-LOOP 288	LOOP 288	2440' W OF LOOP 288	2,440	0.46	2	COLLECTOR	C	New	New	100%	550	506	0	506	\$ 3,722,000	\$ 3,722,000
A-23	C WOLFE	1140' S OF TOM COLE	FM 2449	7,270	1.38	6	PRIMARY ARTERIAL	PA	Widening	225	100%	850	7038	310	6,728	\$ 26,240,000	\$ 26,240,000
A-24	C WOLFE	FM 2449	H LIVELY	3,315	0.63	6	PRIMARY ARTERIAL	PA	Widening	964	50%	850	1607	304	1,303	\$ 12,018,000	\$ 6,009,000
A-25	CORBIN	IH-35-CORBIN	SPRINGSIDE	2,050	0.39	2	COLLECTOR	C	Widening	620	100%	550	429	242	187	\$ 3,667,000	\$ 3,667,000
A-26	J CHRISTAL-H LIVELY	FM 2449	H LIVELY	3,305	0.63	2	COLLECTOR	C	New	New	100%	550	693	0	693	\$ 5,353,000	\$ 5,353,000
A-27	PRECISION	JIM CHRISTAL	1635' N OF FM 1515	2,385	0.45	2	COLLECTOR	C	New	New	100%	550	495	0	495	\$ 3,694,000	\$ 3,694,000
A-28	THOMAS J EGAN	JIM CHRISTAL	2915' S OF JIM CRISTAL	2,915	0.55	4	SECONDARY ARTERIAL	SA	New	New	100%	750	1650	0	1,650	\$ 6,984,000	\$ 6,984,000
A-29	THOMAS J EGAN	1830' N OF FM 1515	FM 1515	1,830	0.35	4	SECONDARY ARTERIAL	SA	New	New	50%	750	525	0	525	\$ 4,635,000	\$ 2,317,500
A-30	UNDERWOOD	SPRINGSIDE	UNDERWOOD CONNECTOR	4,000	0.76	6	PRIMARY ARTERIAL	PA	Widening	692	100%	850	3876	526	3,350	\$ 15,229,000	\$ 15,229,000
A-31	WESTCOURT	FM 1515	SPRINGSIDE	4,165	0.79	4	SECONDARY ARTERIAL	SA (1/2)	Widening	552	100%	750	2370	436	1,934	\$ 5,343,000	\$ 5,343,000
A-32	WESTERN	JIM CHRISTAL	AIRPORT	6,485	1.23	6	PRIMARY ARTERIAL	PA (1/3)	Widening	253	100%	850	6273	311	5,962	\$ 6,619,000	\$ 6,619,000
A-33	WESTERN	FM 1515	SPRINGSIDE	4,175	0.79	6	PRIMARY ARTERIAL	PA	New	New	100%	850	4029	0	4,029	\$ 14,102,000	\$ 14,102,000
SUBTOTAL													67,482	7,427	60,055	\$ 347,875,000	\$ 281,321,500

2022 Roadway Impact Impact Fee Cost per Service Area \$ 37,660
TOTAL COST IN SERVICE AREA A \$ 281,359,160

1. Veh-Mi Supply Pk-Hr Total = [Length (mi)] * [Exist Lanes] * [Veh-Mi Capacity Pk-Hr Per Ln] * [% in Service Area]

2. Veh-Mi Demand Pk-Hr Total = [Length (mi)] * [PM Peak Hour Vol] * [% In Service Area]

3. Excess Capacity Pk-Hr Veh-Mi = [Veh-Mi Supply Pk-Hr Total] - [Veh-Mi Demand Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280].

City of Denton - 2022 Roadway Impact Fee Study

CIP Service Units of Supply

Service Area C

12/7/2023

Project ID #	ROADWAY	LIMITS		LENGTH (FT)	LENGTH (MI)	LANES	MTP CLASSIFICATION	IMPACT FEE CLASSIFICATION	ROADWAY STATUS	PEAK HOUR VOLUME	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN	VEH-MI SUPPLY PK-HR TOTAL ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY PK-HR ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
		FROM	TO														
C-66	MILAM-US 77	MILAM	GANZER	7,975	1.51	4	SECONDARY ARTERIAL	SA	New	New	100%	750	4530	0	4,530	\$ 20,546,000	\$ 20,546,000
C-67	MILAM-US 77	GANZER	LONG	3,875	0.73	4	SECONDARY ARTERIAL	SA	Widening	95	100%	750	2190	69	2,121	\$ 11,567,000	\$ 11,567,000
C-68	MILAM-US 77	LONG	US 77	2,800	0.53	4	SECONDARY ARTERIAL	SA	New	New	100%	750	1590	0	1,590	\$ 7,359,000	\$ 7,359,000
C-69	NICOSIA	LOOP 288	BEALL	645	0.12	2	COLLECTOR	C	New	New	100%	550	132	0	132	\$ 1,169,000	\$ 1,169,000
C-70	THOMAS J EGAN	US 380	JIM CRISTAL	4,010	0.76	4	SECONDARY ARTERIAL	SA	Widening	552	100%	750	2280	420	1,860	\$ 12,353,000	\$ 12,353,000
C-71	WESTERN	US 380	JIM CRISTAL	4,245	0.80	6	PRIMARY ARTERIAL	PA	Widening	164	100%	850	4080	132	3,948	\$ 14,699,000	\$ 14,699,000
SUBTOTAL													145,092	11,526	133,566	\$ 695,918,000	\$ 587,514,000

2022 Roadway Impact Impact Fee Cost per Service Area \$ 37,660
TOTAL COST IN SERVICE AREA C \$ 587,551,660

1. Veh-Mi Supply Pk-Hr Total = [Length (mi)] * [Exist Lanes] * [Veh-Mi Capacity Pk-Hr Per Ln] * [% in Service Area]
2. Veh-Mi Demand Pk-Hr Total = [Length (mi)] * [PM Peak Hour Vol] * [% In Service Area]
3. Excess Capacity Pk-Hr Veh-Mi = [Veh-Mi Supply Pk-Hr Total] - [Veh-Mi Demand Pk-Hr Total]
Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280].

City of Denton - 2022 Roadway Impact Fee Study

CIP Service Units of Supply

Service Area D

12/7/2023

Project ID #	ROADWAY	LIMITS		LENGTH (FT)	LENGTH (MI)	LANES	MTP CLASSIFICATION	IMPACT FEE CLASSIFICATION	ROADWAY STATUS	PEAK HOUR VOLUME	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN	VEH-MI SUPPLY PK-HR TOTAL ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY PK-HR VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
		FROM	TO														
D-1	BOBCAT	560' W OF FM 2164	FM 2164	560	0.11	4	SECONDARY ARTERIAL	SA	Widening	38	50%	750	165	2	163	\$ 1,601,000	\$ 800,500
D-2	FISHTRAP	MINGO	GEESLING	1,890	0.36	2	COLLECTOR	C	New	New	50%	550	198	0	198	\$ 2,939,000	\$ 1,469,500.00
D-3	GANZER	15,500' E OF SHERMAN	4600' W OF SHERMAN	17,985	3.41	6	PRIMARY ARTERIAL	PA	New	New	100%	850	17391	0	17391	\$ 53,936,000	\$ 53,936,000.00
D-4	GRIBBLE SPRINGS	INDIAN WELLS	3015' W OF INDIAN WELLS	3,015	0.57	2	SECONDARY ARTERIAL	SA	Widening	624	50%	750	428	178	250	\$ 8,861,000	\$ 4,430,500
D-5	HARTLEE FIELD	4220' E OF COOPER CREEK	COOPER CREEK	4,220	0.80	4	SECONDARY ARTERIAL	SA	Widening	624	50%	750	1200	250	950	\$ 12,051,000	\$ 6,025,500
D-6	HARTLEE FIELD	COOPER CREEK	5170' W OF COOPER CREEK	5,170	0.98	4	SECONDARY ARTERIAL	SA	Widening	37	50%	750	1470	18	1,452	\$ 14,764,000	\$ 7,382,000
D-7	HARTLEE FIELD	600' E OF SHERMAN	SHERMAN	600	0.11	2	COLLECTOR	C	Widening	4	50%	550	61	0	61	\$ 855,000	\$ 427,500
D-8	HARTLEE FLD-FM 2164	HARTLEE FIELD	SHERMAN	2,250	0.43	4	SECONDARY ARTERIAL	SA	New	New	100%	750	1290	0	1,290	\$ 5,392,000	\$ 5,392,000
D-9	HARTLEE FLD-FM 2164	SHERMAN	3500' W OF SHERMAN	3,500	0.66	4	SECONDARY ARTERIAL	SA	New	New	100%	750	1980	0	1,980	\$ 8,386,000	\$ 8,386,000
D-10	HARTLEE FLD-FM 2164	STUART	1485' W OF STUART	1,485	0.28	4	SECONDARY ARTERIAL	SA	New	New	50%	750	420	0	420	\$ 3,809,000	\$ 1,904,500
D-11	HARTLEE FLD-FM 2164	475' W OF FM 2164	FM 2164	475	0.09	4	SECONDARY ARTERIAL	SA	New	New	100%	750	270	0	270	\$ 1,139,000	\$ 1,139,000
D-12	LONG	510' W OF FM 2164	FM 2164	510	0.10	2	COLLECTOR	C	New	New	100%	550	110	0	110	\$ 726,000	\$ 726,000
D-13	MINGO	E CITY LIMITS	COOPER CREEK	460	0.09	4	SECONDARY ARTERIAL	SA	Widening	260	100%	750	270	23	247	\$ 1,315,000	\$ 1,315,000
D-14	MINGO	COOPER CREEK	LOOP 288	2,305	0.44	4	SECONDARY ARTERIAL	SA	Widening	552	100%	750	1320	243	1,077	\$ 6,583,000	\$ 6,583,000
D-15	MINGO	LOOP 288	US 380	2,275	0.43	4	SECONDARY ARTERIAL	SA	Widening	552	100%	750	1290	237	1,053	\$ 7,937,000	\$ 7,937,000
D-16	KINGS ROW	SILVER DOME	LOOP 288	2,655	0.50	2	COLLECTOR	C	Widening	552	100%	550	550	276	274	\$ 3,779,000	\$ 3,779,000
D-17	SILVER DOME	COOPER CREEK	FARRIS RD	2,190	0.41	2	COLLECTOR	C	Widening	552	50%	550	226	113	113	\$ 3,117,000	\$ 1,558,500
D-18	COLLINS	HARTLEE FIELD	2730' S OF HARTLEE FIELD	4,440	0.84	4	COLLECTOR	C	Widening	218	50%	550	924	92	832	\$ 6,818,000	\$ 3,409,000
D-19	COOPER CREEK	SHERMAN	HARTLEE FIELD	10,065	1.91	6	SECONDARY ARTERIAL	SA	New	New	100%	750	8595	0	8,595	\$ 25,554,000	\$ 25,554,000
D-20	COOPER CREEK	SILVER DOME	MINGO	4,360	0.83	6	SECONDARY ARTERIAL	SA	Widening	1,822	50%	750	1868	756	1,112	\$ 12,452,000	\$ 6,226,000
D-21	COOPER CREEK	MINGO	US 380	1,680	0.32	6	PRIMARY ARTERIAL	PA	Widening	2,250	100%	850	1632	720	912	\$ 7,361,000	\$ 7,361,000
C-53,D-22	FM 2164	MILAM	LOOP 288	13,855	2.62	6	PRIMARY ARTERIAL	PA	Widening	2,098	50%	850	6681	2749	3,932	\$ 49,925,000	\$ 24,962,500
D-23	GREEN VALLEY	2395' S OF FM 2153	2935' N OF SHEPARD	7,765	1.47	2	SECONDARY ARTERIAL	PA	New	New	100%	750	2205	0	2,205	\$ 24,463,000	\$ 24,463,000
D-24	GREEN VALLEY	WARSCHUN	SHERMAN	2,095	0.40	2	SECONDARY ARTERIAL	SA	Widening	1,856	100%	750	600	742	-142	\$ 6,234,000	\$ 6,234,000
D-25	INDIAN WELLS	1615' S OF FM 2153	4930' N OF GRIBBLE SPRINGS	3,870	0.73	2	SECONDARY ARTERIAL	SA	New	New	100%	750	1095	0	1,095	\$ 10,021,000	\$ 10,021,000
D-26	INDIAN WELLS	4930' N OF GRIBBLE SPRINGS	2905' N OF GRIBBLE SPRINGS	2,025	0.38	2	SECONDARY ARTERIAL	SA	New	New	50%	750	285	0	285	\$ 4,853,000	\$ 2,426,500
D-27	INDIAN WELLS	2905' N OF GRIBBLE SPRINGS	GRIBBLE SPRINGS	2,905	0.55	2	SECONDARY ARTERIAL	SA	Widening	67	50%	750	413	18	395	\$ 8,296,000	\$ 4,148,000
C-54,D-28	LOCUST	LOOP 288	HERCULES	2,260	0.43	4	SECONDARY ARTERIAL	SA	Widening	1,923	50%	750	645	413	232	\$ 6,954,000	\$ 3,477,000
C-55,D-29	LOCUST	HERCULES	BELL	2,375	0.45	4	SECONDARY ARTERIAL	SA	Widening	1,429	50%	750	675	322	353	\$ 7,433,000	\$ 3,716,500
C-56,D-30	LOCUST	BELL	WINDSOR	1,270	0.24	4	SECONDARY ARTERIAL	SA	Widening	999	50%	750	360	120	240	\$ 3,628,000	\$ 1,814,000
C-57,D-31	LOCUST	WINDSOR	FM 2164	1,345	0.25	4	SECONDARY ARTERIAL	SA	Widening	941	50%	750	375	118	257	\$ 3,841,000	\$ 1,920,500
D-32	SHERMAN	LOOP 288	HERCULES	1,650	0.31	4	SECONDARY ARTERIAL	SA	Widening	2,214	100%	750	930	686	244	\$ 4,713,000	\$ 4,713,000
D-33	SHERMAN	HERCULES	KINGS	1,910	0.36	4	SECONDARY ARTERIAL	SA	Widening	1,923	100%	750	1080	692	388	\$ 5,455,000	\$ 5,455,000
D-34	SHERMAN	KINGS	WINDSOR	2,025	0.38	4	SECONDARY ARTERIAL	SA	Widening	1,781	100%	750	1140	677	463	\$ 7,223,000	\$ 7,223,000
D-35	SHERMAN	WINDSOR	WILSONWOOD	1,000	0.19	4	SECONDARY ARTERIAL	SA	Widening	1,651	100%	750	570	314	256	\$ 2,856,000	\$ 2,856,000
D-36	SHERMAN	WILSONWOOD	CORONADO	1,165	0.22	4	SECONDARY ARTERIAL	SA	Widening	1,646	100%	750	660	362	298	\$ 3,328,000	\$ 3,328,000
D-37	SHERMAN	CORONADO	GREENWOOD	1,640	0.31	4	SECONDARY ARTERIAL	SA	Widening	1,659	100%	750	930	514	416	\$ 4,685,000	\$ 4,685,000
D-38	SHERMAN	GREENWOOD	BELL	825	0.16	4	SECONDARY ARTERIAL	SA	Widening	2,075	100%	750	480	332	148	\$ 2,357,000	\$ 2,357,000
D-39	SHERMAN	BELL	LOCUST	1,715	0.32	4	SECONDARY ARTERIAL	SA	Widening	1,934	100%	750	960	619	341	\$ 4,899,000	\$ 4,899,000
D-40	WINDSOR	LOOP 288	DOMINION	860	0.16	2	COLLECTOR	C	New	New	100%	550	176	0	176	\$ 1,225,000	\$ 1,225,000
SUBTOTAL													61,918	11,586	50,332	\$ 351,764,000	\$ 275,665,500

1. Veh-Mi Supply Pk-Hr Total = [Length (mi)] * [Exist Lanes] * [Veh-Mi Capacity Pk-Hr Per Ln] * [% in Service Area]

2. Veh-Mi Demand Pk-Hr Total = [Length (mi)] * [PM Peak Hour Vol] * [% In Service Area]

3. Excess Capacity Pk-Hr Veh-Mi = [Veh-Mi Supply Pk-Hr Total] - [Veh-Mi Demand Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280].

Appendix C – Existing Roadway Facilities Inventory

City of Denton - 2022 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area A

12/7/2023

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXIST LANES	CLASS	PM PEAK HOUR VOL		% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL		VEH-MI DEMAND PK-HR TOTAL		EXCESS CAPACITY PK-HR VEH-MI		EXISTING DEFICIENCIES PK-HR VEH-MI			
					NB/EB	SB/WB			NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
CORBIN	IH-35W	CORBIN	3,055	0.58	1	1	2U-R	SA	5	5	100%	150	150	87	87	3	3	84	84				
FM 1515	IH 35W	CORBIN	5,990	1.13	1	1	2U-H	PA	381	381	100%	725	725	819	819	431	431	389	389				
FM 1515	CORBIN	WESTERN	1,175	0.22	1	1	2U-H	PA	230	230	100%	725	725	160	160	51	51	109	109				
FM 1515	WESTERN	WESTCOURT	1,555	0.29	1	1	2U-H	PA	560	560	100%	725	725	210	210	162	162	48	48				
FM 1515	WESTCOURT	MASCH BRANCH	620	0.12	1	1	2U	PA	276	276	100%	450	450	54	54	33	33	21	21				
FM 1515	TOM COLE	3435' W OF TOM COLE	3,435	0.65	1	1	2U-R	PA	332	332	100%	150	150	98	98	216	216	-118	-118	118	118		
FM 1515	3435' W OF TOM COLE	530' E OF C WOLFE	3,750	0.71	1	1	2U-R	PA	309	309	100%	150	150	107	107	219	219	-113	-113	113	113		
FM 2449	4380' E OF C WOLFE	C WOLFE	4,380	0.83	1	1	2U-H	PA	682	682	100%	725	725	602	602	566	566	36	36				
FM 2449	AMYX HILL RD	3830' W OF AMYX HILL RD	3,830	0.73	1	1	2U-H	PA	189	189	50%	725	725	265	265	69	69	196	196				
H LIVELY	C WOLFE	2145' W OF H LIVELY	2,145	0.41	1	1	2U-R	PA	24	24	50%	150	150	31	31	5	5	26	26				
H LIVELY	2145' W OF H LIVELY	2150' W OF ED ROBSON	3,915	0.74	1	1	2U-R	PA	117	117	100%	150	150	111	111	87	87	24	24				
JIM CHRISTAL	IH 35	OLD SH 24	3,110	0.59	1	1	2U-H	SA	645	645	100%	725	725	428	428	381	381	47	47				
JIM CHRISTAL	OLD SH 24	WESTERN	2,905	0.55	1	1	2U-H	SA	528	528	50%	725	725	199	199	145	145	54	54				
JIM CHRISTAL	WESTERN	MASCH BRANCH	3,510	0.66	1	1	2U-H	SA	455	455	50%	725	725	239	239	150	150	89	89				
JIM CHRISTAL	MASCH BRANCH	THOMAS J EGAN	5,975	1.13	1	1	2U-H	SA	119	119	50%	725	725	410	410	67	67	342	342				
JIM CHRISTAL	THOMAS J EGAN	515' E OF C WOLFE	3,945	0.75	1	1	2U-H	SA	119	119	50%	725	725	272	272	45	45	227	227				
ROBSON RANCH	IH 35W	ED ROBSON	8,720	1.65	2	2	4U	PA	404	404	50%	550	550	908	908	333	333	574	574				
ROBSON RANCH	ED ROBSON	YARBROUGH	7,150	1.35	2	2	4U	PA	314	314	50%	550	550	743	743	212	212	531	531				
SPRINGSIDE	CORBIN	UNDERWOOD	1,835	0.35	1	1	2U	SA	310	310	100%	450	450	158	158	109	109	49	49				
SPRINGSIDE	UNDERWOOD	WESTCOURT	865	0.16	1	1	2U	SA	15	15	100%	450	450	72	72	2	2	70	70				
C WOLFE	1140' S OF TOM COLE	FM 2449	7,270	1.38	1	1	2U-R	PA	112	112	100%	150	150	207	207	155	155	52	52				
CORBIN	AIRPORT	1335' S OF FM 1515	1,355	0.26	2	2	4U	C	310	310	100%	550	550	286	286	81	81	205	205				
CORBIN	1335' S OF FM 1515	IH-35-CORBIN	675	0.13	1	1	3U	C	310	310	100%	550	550	72	72	40	40	31	31				
CORBIN	IH-35-CORBIN	SPRINGSIDE	2,050	0.39	1	1	2U-R	C	310	310	100%	150	150	59	59	121	121	-62	-62	62	62		
H LIVELY	FM 2449	H LIVELY	3,315	0.63	1	1	2U	PA	482	482	50%	450	450	142	142	152	152	-10	-10	10	10		
LOOP 288	IH-35W	UNDERWOOD CONNECTOR	2,565	0.49	1	1	2U-H	FWY	1,483	1,483	100%	725	725	355	355	727	727	-371	-371	371	371		
PRECISION	1635' N OF FM 1515	FM 1515	1,635	0.31	1	1	2U	C	222	222	100%	450	450	140	140	69	69	71	71				
UNDERWOOD	SPRINGSIDE	UNDERWOOD CONNECTOR	4,000	0.76	1	1	2U	PA	346	346	100%	450	450	342	342	263	263	79	79				
UNDERWOOD	LOOP 288	1610' N OF H LIVELY	5,910	1.12	1	1	2U-R	PA	30	30	100%	150	150	168	168	34	34	134	134				
UNDERWOOD CONNECTOR	UNDERWOOD	915' S OF UNDERWOOD	915	0.17	1	1	2U	SA	321	321	100%	450	450	77	77	55	55	22	22				
WESTCOURT	FM 1515	SPRINGSIDE	4,165	0.79	1	1	2U	SA	276	276	100%	450	450	356	356	218	218	137	137				
WESTERN	JIM CHRISTAL	AIRPORT	6,485	1.23	2	2	4D	PA	127	127	100%	750	750	1,845	1,845	156	156	1,689	1,689				
SUBTOTAL			112,205	21.26										10,016	10,016	5,354	5,354	4,662	4,662	674	674		
														20,032		10,709		9,323		1,348			

City of Denton - 2022 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area B

12/7/2023

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXIST LANES	CLASS	PM CAPACITY HOUR VOL		% IN SERVICE AREA	VEH-MI SUPPLY PK-HR PER LN		VEH-MI CAPACITY PK-HR TOTAL		VEH-MI DEMAND PK-HR TOTAL		EXCESS CAPACITY PK-HR VEH-MI		EXISTING DEFICIENCIES PK-HR VEH-MI	
					NB/EB	SB/WB			NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
LILLIAN MILLER	SOUTHRIDGE	WIND RIVER	2,170	0.41	2	2	4D	PA	1,335	1,335	100%	750	750	615	615	547	547	68	68		
MCCORMICK	WILLOWWOOD	PARVIN	2,085	0.39	1	1	2U	C	4	4	100%	450	450	176	176	2	2	174	174		
MONTECITO	HOBSON	EL PASEO	2,960	0.56	1	1	2U	C	153	153	100%	450	450	252	252	86	86	166	166		
MONTECITO	EL PASEO	RYAN	3,060	0.58	1	1	2U	C	310	310	100%	450	450	261	261	180	180	81	81		
PENNSYLVANIA	IH 35E	SOUTHRIDGE	1,560	0.30	1	1	2U	C	32	32	100%	450	450	135	135	10	10	125	125		
PENNSYLVANIA	SOUTHRIDGE	TEASLEY	4,075	0.77	1	1	2U	C	1	1	100%	450	450	347	347	1	1	346	346		
RIVERPASS	CREEKDALE	HICKORY CREEK	2,595	0.49	1	1	2U	C	636	636	100%	450	450	221	221	312	312	-91	-91	91	91
SAM BASS	IH 35E	LONDONDERRY	1,600	0.30	1	1	2U	C	2	2	100%	450	450	135	135	1	1	134	134		
SOUTHRIDGE	IH 35E	LONDONDERRY	505	0.10	1	1	2U	C	4	4	100%	450	450	45	45	0	0	45	45		
SOUTHRIDGE	LONDONDERRY	PENNSYLVANIA	2,410	0.46	1	1	2U	C	3	3	100%	450	450	207	207	1	1	206	206		
SOUTHRIDGE	PENNSYLVANIA	LILLIAN B MILLER	2,045	0.39	1	1	2U	C	119	119	100%	450	450	176	176	46	46	129	129		
TEASLEY	IH 35E	LONDONDERRY	1,315	0.25	2	2	4D	PA	1,704	1,704	100%	750	750	375	375	426	426	-51	-51	51	51
TEASLEY	LONDONDERRY	HOBSON	5,140	0.97	2	2	4D	PA	1,568	1,568	100%	750	750	1,455	1,455	1,521	1,521	-66	-66	66	66
TEASLEY	LILLIAN B MILLER	PENNSYLVANIA	1,890	0.36	2	2	4D	PA	1,608	1,608	100%	750	750	540	540	579	579	-39	-39	39	39
TEASLEY	PENNSYLVANIA	HOBSON	1,085	0.21	2	2	4D	PA	1,567	1,567	100%	750	750	315	315	329	329	-14	-14	14	14
TEASLEY	WIND RIVER	BENT OAKS	1,230	0.23	2	2	4D	PA	2,542	2,542	100%	750	750	345	345	585	585	-240	-240	240	240
TEASLEY	BENT OAKS	RYAN	4,455	0.84	2	2	6D	PA	2,542	2,542	100%	850	850	1,428	1,428	2,135	2,135	-707	-707	707	707
TEASLEY	RYAN	ROBINSON	1,245	0.24	2	2	6D	PA	2,665	2,665	100%	850	850	408	408	640	640	-232	-232	232	232
TEASLEY	ROBINSON	HICKORY CREEK	4,145	0.79	2	2	6D	PA	2,888	2,888	100%	850	850	1,343	1,343	2,282	2,282	-939	-939	939	939
TEASLEY	HICKORY CREEK	MONTECITO	1,890	0.36	2	2	6D	PA	2,096	2,096	100%	850	850	612	612	755	755	-143	-143	143	143
TEASLEY	MONTECITO	OLD ALTON	3,760	0.71	2	2	6D	PA	2,638	2,638	100%	850	850	1,207	1,207	1,873	1,873	-666	-666	666	666
TEASLEY	OLD ALTON	635' W OF FM 2499	1,890	0.36	2	2	6D	PA	2,260	2,260	100%	850	850	612	612	814	814	-202	-202	202	202
SUBTOTAL			238,125	45.13										33,907	33,907	38,149	38,149	-4,242	-4,242	11,091	11,091
																67,813		76,298		-8,485	22,182

City of Denton - 2022 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area C

12/7/2023

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXIST LANES	CLASS	PM PEAK HOUR VOL		% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL		VEH-MI DEMAND PK-HR TOTAL		EXCESS CAPACITY PK-HR VEH-MI		EXISTING DEFICIENCIES PK-HR VEH-MI	
					NB/EB	SB/WB			NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
ELM	FM 2164	SHERMAN	3,090	0.59	0	2	6D	SA	0	1,106	100%	850	850	0	752	0	653	0	100		
ELM	SHERMAN	US 380	455	0.09	0	2	6D	SA	0	1,072	100%	850	850	0	115	0	96	0	18		
FALLMEADOW	HERCULES	MEADOWEDGE LN	1,095	0.21	1	1	2U	C	276	276	100%	450	450	95	95	58	58	37	37		
FALLMEADOW	GARDENVIEW	US 77	1,530	0.29	1	1	2U	C	276	276	100%	450	450	131	131	80	80	50	50		
FM 2164	KLEIN	MILAM	635	0.12	1	1	2U	PA	169	169	50%	450	450	27	27	10	10	17	17		
FM 2164	MILAM	LOOP 288	13,855	2.62	1	1	2U	PA	1,049	1,049	50%	450	450	590	590	1,374	1,374	-785	-785	785	785
HERITAGE TRAIL	US 380	SCRIPTURE	4,050	0.77	2	2	4D	SA	132	132	100%	750	750	1,155	1,155	102	102	1,053	1,053		
HINKLE	WINDSOR	US 380	4,555	0.86	1	1	2U	C	276	276	100%	450	450	387	387	237	237	150	150		
LOCUST	LOOP 288	HERCULES	2,260	0.43	1	1	2U	SA	962	962	50%	450	450	97	97	207	207	-110	-110	110	110
LOCUST	HERCULES	BELL	2,375	0.45	1	1	2U	SA	715	715	50%	450	450	101	101	161	161	-60	-60	60	60
LOCUST	BELL	WINDSOR	1,270	0.24	1	1	2U	SA	499	499	50%	450	450	54	54	60	60	-6	-6	6	6
LOCUST	WINDSOR	FM 2164	1,345	0.25	1	1	2U	SA	471	471	50%	450	450	56	56	59	59	-3	-3	3	3
LOCUST	FM 2164	CORONADO	630	0.12	2	0	4D	SA	870	0	100%	750	750	180	0	104	0	76	0		
LOCUST	CORONADO	SHERMAN	2,420	0.46	2	0	4D	SA	870	0	100%	750	750	690	0	400	0	290	0		
LOCUST	SHERMAN	US 380	475	0.09	2	0	4D	SA	1,025	513	100%	750	750	135	0	92	46	-46		46	
LOVERS	FM 1173	MASCH BRANCH	4,120	0.78	1	1	2U	SA	65	65	100%	450	450	351	351	51	51	300	300		
LOVERS	1085' N OF MASCH BRANCH	MASCH BRANCH	1,085	0.21	1	1	2U	SA	80	80	100%	450	450	95	95	17	17	78	78		
MALONE	AUBURN	US 380	2,545	0.48	1	1	2U	C	276	276	100%	450	450	216	216	132	132	84	84		
MASCH BRANCH	1295' S OF FM 1173	JACKSON	4,170	0.79	1	1	2U	SA	222	222	50%	450	450	178	178	88	88	90	90		
MASCH BRANCH	LOVERS	US 380	3,800	0.72	1	1	2U	SA	50	50	100%	450	450	324	324	36	36	288	288		
MASCH BRANCH	US 380	JIM CHRISTAL	4,110	0.78	1	1	2U	SA	74	74	100%	450	450	351	351	58	58	293	293		
MILAM-US 77	GANZER	LONG	3,875	0.73	1	1	2U-R	SA	48	48	100%	150	150	110	110	35	35	74	74		
NAIL	US 380	2255' S OF JIM CHRISTAL	2,255	0.43	1	1	2U	SA	30	30	50%	450	450	97	97	6	6	90	90		
NAIL	2255' S OF JIM CHRISTAL	JIM CHRISTAL	2,470	0.47	1	1	2U	SA	30	30	100%	450	450	212	212	14	14	197	197		
NICOSIA	BEALL	US 77	2,820	0.53	1	1	2U	C	62	62	100%	450	450	239	239	33	33	206	206		
NORTHWAY	WINDSOR	THUNDERBIRD	1,045	0.20	1	1	2U	C	5	5	100%	450	450	90	90	1	1	89	89		
RINEY	US 77	WINDSOR	1,420	0.27	1	1	2U	C	276	276	100%	450	450	122	122	75	75	47	47		
THOMAS J EGAN	550' N OF US 380	US 380	550	0.10	1	1	2U	SA	276	276	50%	450	450	23	23	14	14	9	9		
THOMAS J EGAN	US 380	JIM CHRISTAL	4,010	0.76	1	1	2U	SA	276	276	100%	450	450	342	342	210	210	132	132		
WESTERN	US 380	JIM CHRISTAL	4,245	0.80	1	1	2U	PA	82	82	100%	450	450	360	360	66	66	294	294		
WESTGATE	WESTGATE	WINDSOR	4,310	0.82	1	1	2U	C	1	1	100%	450	450	369	369	1	1	368	368		
SUBTOTAL			254,970	48.27										36,501	36,363	12,203	12,401	24,298	23,961	1,180	1,226
														72,863		24,604		48,259		2,406	

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Service Area D

12/7/2023

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXIST LANES	CLASS	PM PEAK HOUR VOL		% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL		VEH-MI DEMAND PK-HR TOTAL		EXCESS CAPACITY PK-HR VEH-MI		EXISTING DEFICIENCIES PK-HR VEH-MI	
					NB/EB	SB/WB			NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
LOCUST	LOOP 288	HERCULES	2,260	0.43	1	1	2U	SA	962	962	50%	450	450	97	97	207	207	-110	-110	110	110
LOCUST	HERCULES	BELL	2,375	0.45	1	1	2U	SA	715	715	50%	450	450	101	101	161	161	-60	-60	60	60
LOCUST	BELL	WINDSOR	1,270	0.24	1	1	2U	SA	499	499	50%	450	450	54	54	60	60	-6	-6	6	6
LOCUST	WINDSOR	FM 2164	1,345	0.25	1	1	2U	SA	471	471	50%	450	450	56	56	59	59	-3	-3	3	3
LOCUST	FM 2164	CORONADO	630	0.12	2	0	4D	SA	870	0	100%	750	750	180	0	104	0	76	0		
LOCUST	CORONADO	SHERMAN	2,420	0.46	2	0	4D	SA	870	0	100%	750	750	690	0	400	0	290	0		
LOCUST	SHERMAN	US 380	475	0.09	2	0	4D	SA	1,025	0	100%	750	750	135	0	92	0	43	0		
NOTTINGHAM	KINGS	WINDSOR	1,490	0.28	1	1	2U	C	2	2	100%	450	450	126	126	1	1	125	125		
NOTTINGHAM	WINDSOR	EMERSON	1,395	0.26	1	1	2U	C	276	276	100%	450	450	117	117	72	72	45	45		
NOTTINGHAM	EMERSON	US 380	2,445	0.46	1	1	2U	C	276	276	100%	450	450	207	207	127	127	80	80		
OLD NORTH	WINDSOR	EMERSON	1,585	0.30	1	1	2U	C	22	22	100%	450	450	135	135	7	7	128	128		
OLD NORTH	EMERSON	US 380	1,725	0.33	1	1	2U	C	8	8	100%	450	450	149	149	3	3	146	146		
SHERMAN	GREEN VALLEY	HARTLEE FIELD	12,485	2.36	1	1	2U-H	FWY	1,305	1,305	100%	725	725	1,711	1,711	3,080	3,080	-1,369	-1,369	1,369	1,369
SHERMAN	HARTLEE FIELD	LOOP 288	1,460	0.28	1	1	2U-H	FWY	1,377	1,377	100%	725	725	203	203	386	386	-183	-183	183	183
SHERMAN	LOOP 288	HERCULES	1,650	0.31	2	2	4U	SA	1,107	1,107	100%	550	550	341	341	343	343	-2	-2	2	2
SHERMAN	HERCULES	KINGS	1,910	0.36	2	2	4U	SA	962	962	100%	550	550	396	396	346	346	50	50		
SHERMAN	KINGS	WINDSOR	2,025	0.38	2	2	4U	SA	890	890	100%	550	550	418	418	338	338	80	80		
SHERMAN	WINDSOR	WILSONWOOD	1,000	0.19	2	2	4U	SA	826	826	100%	550	550	209	209	157	157	52	52		
SHERMAN	WILSONWOOD	CORONADO	1,165	0.22	2	2	4U	SA	823	823	100%	550	550	242	242	181	181	61	61		
SHERMAN	CORONADO	GREENWOOD	1,640	0.31	2	2	4U	SA	830	830	100%	550	550	341	341	257	257	84	84		
SHERMAN	GREENWOOD	BELL	825	0.16	2	2	4U	SA	1,038	1,038	100%	550	550	176	176	166	166	10	10		
SHERMAN	BELL	LOCUST	1,715	0.32	2	2	4U	SA	967	967	100%	550	550	352	352	309	309	43	43		
STUART	LAKEVIEW	LOOP 288	3,105	0.59	1	1	2U	C	276	276	50%	450	450	133	133	81	81	51	51		
STUART	LOOP 288	HERCULES	2,250	0.43	1	1	2U	C	276	276	100%	450	450	194	194	119	119	75	75		
STUART	HERCULES	KINGS	1,555	0.29	1	1	2U	C	276	276	100%	450	450	131	131	80	80	50	50		
STUART	KINGS	WINDSOR	1,875	0.36	1	1	2U	C	276	276	100%	450	450	162	162	99	99	63	63		
STUART	WINDSOR	CORONADO	1,840	0.35	1	1	2U	C	45	45	100%	450	450	158	158	16	16	142	142		
SUBTOTAL			226,580	42.91										27,118	26,113	20,275	19,678	6,843	6,435	4,209	4,209
														53,231	39,954			13,278		8,418	

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Existing Roadway Facilities Inventory

Service Area E

12/7/2023

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXIST LANES	CLASS	PM PEAK HOUR VOL		% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL		VEH-MI DEMAND PK-HR TOTAL		EXCESS CAPACITY PK-HR VEH-MI		EXISTING DEFICIENCIES PK-HR VEH-MI	
					NB/EB	SB/WB			NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
OAKLAND	WITHERS	CONGRESS	680	0.13	1	1	2U	C	15	15	100%	450	450	59	59	2	2	57	57		
OLD NORTH	US 380	MINGO	600	0.11	1	1	2U	C	263	263	100%	450	450	50	50	29	29	21	21		
PERTAIN	MINGO	LATTIMORE	805	0.15	1	1	2U	C	2	2	100%	450	450	68	68	0	0	67	67		
POST OAK	POCKRUS PAGE	LAKEVIEW	1,240	0.23	1	1	2U	PA	276	276	100%	450	450	104	104	63	63	40	40		
RUDELL	US 380	MINGO	2,460	0.47	1	1	2U	C	62	62	100%	450	450	212	212	29	29	182	182		
RUDELL	WILLIS	PAISLEY	1,455	0.28	1	1	2U	C	17	17	100%	450	450	126	126	5	5	121	121		
RUDELL	PAISLEY	MCKINNEY	1,580	0.30	1	1	2U	C	48	48	100%	450	450	135	135	14	14	121	121		
RUDELL	MCKINNEY	HICKORY	590	0.11	1	1	2U	C	0	0	100%	450	450	50	50	0	0	50	50		
RUDELL	HICKORY	MORSE	3,255	0.62	1	1	2U	C	8	8	100%	450	450	279	279	5	5	274	274		
TEASLEY	SHADY OAKS	DALLAS	860	0.16	2	2	4D	SA	760	760	100%	750	750	240	240	122	122	118	118		
TEASLEY	DALLAS	IH 35E	1,870	0.35	2	2	4D	PA	1,045	1,045	100%	750	750	525	525	366	366	159	159		
WELCH	OAK	HICKORY	380	0.07	2	2	4U	SA	640	640	100%	550	550	77	77	45	45	32	32		
WELCH	HICKORY	MULBERRY	350	0.07	2	2	4U	SA	277	277	100%	550	550	77	77	19	19	58	58		
WELCH	MULBERRY	HIGHLAND	1,570	0.30	2	2	4U	SA	187	187	100%	550	550	330	330	56	56	274	274		
WELCH	HIGHLAND	MAPLE	400	0.08	2	2	4U	SA	182	182	100%	550	550	88	88	15	15	73	73		
WELCH	MAPLE	EAGLE	575	0.11	2	2	4U	SA	640	640	100%	550	550	121	121	70	70	51	51		
WELCH	EAGLE	COLLINS	925	0.18	2	2	4U	C	640	640	100%	550	550	198	198	115	115	83	83		
WOODROW	MCKINNEY	MORSE	3,910	0.74	2	2	5U	SA	1,960	1,960	100%	725	725	1,073	1,073	1,450	1,450	-377	-377	377	377
WOODROW	MORSE	SHADY OAKS	1,305	0.25	2	2	4U	SA	640	640	100%	550	550	275	275	160	160	115	115		
WOODROW	SHADY OAKS	SPENCER	475	0.09	2	2	5U	SA	1,960	1,960	100%	725	725	131	131	176	176	-46	-46	46	46
SUBTOTAL			158,685	30.09										20,658	19,830	11,737	11,004	8,921	8,948	3,695	3,672
														40,488		22,741		17,870		7,367	

Appendix D – Plan for Awarding the Transportation Impact Fee Credit Summary

(as prepared by NewGen Strategies.)

SUMMARY OF ROADWAY IMPACT FEE DETERMINATION

Service Area A

Recoverable Impact Fee CIP Costs	\$ 166,445,445	Kimley-Horn Impact Fee Study
Financing Cost	80,871,139	See Detail Below
Existing Fund Balance	(4,394,807)	Roadway Appendices - page 1
Interest Earnings	(39,254,897)	Roadway Appendices - page 4
Pre Credit Recoverable Cost for Impact Fee	\$ 203,666,880	Sum of Above
Credit for Ad Valorem Revenues	(12,265,351)	Roadway Appendices - page 7
Maximum Recoverable Cost for Impact Fee	\$ 191,401,529	

Recoverable Impact Fee CIP Costs:

Represents the portion of capital improvement costs that are eligible for funding through Impact fees. Reference is the Kimley-Horn Impact Fee Study.

Financing Costs:

Represents the interest costs associated with debt financing the new Impact fee project costs. Interest costs are derived from existing debt issues and forecasted debt issues.

New Annual Debt Service	\$ 213,997,367	Roadway Appendices - page 2
Existing Annual Debt Service	-	Roadway Appendices - page 3
Principal Component (New and Existing Debt)	(133,126,228)	Roadway Appendices - page 1
Financing Costs	<u>\$ 80,871,139</u>	

Existing Fund Balance:

Represents impact fee revenue collected but not yet expended. To avoid charging twice for the same project, the impact fee revenues collected but yet to be expended (i.e. fund balance) are credited against the recoverable costs.

Reference is page 1 of Roadway Appendices.

Interest Earnings:

Represents the interest earned on cash flows and assumes a 2.00% annual interest rate.

The Impact Fee Statute states that interest earnings are funds of the Impact fee account and are held to the same restrictions as Impact fee revenues. Therefore in order to recognize that interest earnings are used to fund capital improvements, interest earnings are credited against the recoverable costs.

Reference is the sum of Accumulated Interest on page 4 of Roadway Appendices.

Pre Credit Recoverable Cost for Impact Fee:

Represents Recoverable Impact Fee CIP Costs plus Financing Costs less Existing Fund Balance and Interest Earnings.

Credit for Ad Valorem Revenues:

In 2001, the LGC Chapter 395 was amended to include a credit for ad valorem and utility revenues generated by new service units during the ten-year timeframe that are used to fund Impact fee eligible projects for which the new service units were charged an Impact fee. The intent of this amendment is to avoid double-charging the new service units for Impact fee capital improvements. The credit recognizes ad valorem revenues used to fund the debt service of debt financed Impact fee eligible projects and assumes that all non-debt funded impact fee eligible project costs will be funded solely through impact fee revenues or non-ad valorem revenue sources. Reference is page 7 of Roadway Appendices.

Maximum Recoverable Cost for Impact Fee:

Represents Pre Credit Recoverable Cost for Impact Fee less Credit for Ad Valorem Revenues.

This is the maximum cost that can be recovered through Impact fees.

SUMMARY OF ROADWAY IMPACT FEE DETERMINATION

Service Area B

Recoverable Impact Fee CIP Costs	\$ 57,206,816	Kimley-Horn Impact Fee Study
Financing Cost	26,749,649	See Detail Below
Existing Fund Balance	(2,004,188)	Roadway Appendices - page 1
Interest Earnings	(13,661,722)	Roadway Appendices - page 4
Pre Credit Recoverable Cost for Impact Fee	\$ 68,290,555	Sum of Above
Credit for Ad Valorem Revenues	(1,713,041)	Roadway Appendices - page 7
Maximum Recoverable Cost for Impact Fee	\$ 66,577,514	

Recoverable Impact Fee CIP Costs:

Represents the portion of capital improvement costs that are eligible for funding through Impact fees. Reference is the Kimley-Horn Impact Fee Study.

Financing Costs:

Represents the interest costs associated with debt financing the new Impact fee project costs. Interest costs are derived from existing debt issues and forecasted debt issues.

New Annual Debt Service	\$ 70,081,910	Roadway Appendices - page 2
Existing Annual Debt Service	1,268,749	Roadway Appendices - page 3
Principal Component (New and Existing Debt)	(44,601,010)	Roadway Appendices - page 1
Financing Costs	<u>\$ 26,749,649</u>	

Existing Fund Balance:

Represents impact fee revenue collected but not yet expended. To avoid charging twice for the same project, the impact fee revenues collected but yet to be expended (i.e. fund balance) are credited against the recoverable costs. Reference is page 1 of Roadway Appendices.

Interest Earnings:

Represents the interest earned on cash flows and assumes a 2.00% annual interest rate.

The Impact Fee Statute states that interest earnings are funds of the Impact fee account and are held to the same restrictions as Impact fee revenues. Therefore in order to recognize that interest earnings are used to fund capital improvements, interest earnings are credited against the recoverable costs.

Reference is the sum of Accumulated Interest on page 4 of Roadway Appendices.

Pre Credit Recoverable Cost for Impact Fee:

Represents Recoverable Impact Fee CIP Costs plus Financing Costs less Existing Fund Balance and Interest Earnings.

Credit for Ad Valorem Revenues:

In 2001, the LGC Chapter 395 was amended to include a credit for ad valorem and utility revenues generated by new service units during the ten-year timeframe that are used to fund Impact fee eligible projects for which the new service units were charged an Impact fee. The intent of this amendment is to avoid double-charging the new service units for Impact fee capital improvements. The credit recognizes ad valorem revenues used to fund the debt service of debt financed Impact fee eligible projects and assumes that all non-debt funded impact fee eligible project costs will be funded solely through impact fee revenues or non-ad valorem revenue sources. Reference is page 7 of Roadway Appendices.

Maximum Recoverable Cost for Impact Fee:

Represents Pre Credit Recoverable Cost for Impact Fee less Credit for Ad Valorem Revenues.

This is the maximum cost that can be recovered through Impact fees.

SUMMARY OF ROADWAY IMPACT FEE DETERMINATION

Service Area C

Recoverable Impact Fee CIP Costs	\$ 126,409,861	Kimley-Horn Impact Fee Study
Financing Cost	61,414,578	See Detail Below
Existing Fund Balance	(3,170,473)	Roadway Appendices - page 1
Interest Earnings	(30,142,851)	Roadway Appendices - page 4
Pre Credit Recoverable Cost for Impact Fee	\$ 154,511,114	Sum of Above
Credit for Ad Valorem Revenues	(7,396,751)	Roadway Appendices - page 7
Maximum Recoverable Cost for Impact Fee	\$ 147,114,363	

Recoverable Impact Fee CIP Costs:

Represents the portion of capital improvement costs that are eligible for funding through Impact fees. Reference is the Kimley-Horn Impact Fee Study.

Financing Costs:

Represents the interest costs associated with debt financing the new Impact fee project costs. Interest costs are derived from existing debt issues and forecasted debt issues.

New Annual Debt Service	\$ 162,512,338	Roadway Appendices - page 2
Existing Annual Debt Service	-	Roadway Appendices - page 3
Principal Component (New and Existing Debt)	(101,097,761)	Roadway Appendices - page 1
Financing Costs	<u>\$ 61,414,578</u>	

Existing Fund Balance:

Represents impact fee revenue collected but not yet expended. To avoid charging twice for the same project, the impact fee revenues collected but yet to be expended (i.e. fund balance) are credited against the recoverable costs. Reference is page 1 of Roadway Appendices.

Interest Earnings:

Represents the interest earned on cash flows and assumes a 2.00% annual interest rate.

The Impact Fee Statute states that interest earnings are funds of the Impact fee account and are held to the same restrictions as Impact fee revenues. Therefore in order to recognize that interest earnings are used to fund capital improvements, interest earnings are credited against the recoverable costs.

Reference is the sum of Accumulated Interest on page 4 of Roadway Appendices.

Pre Credit Recoverable Cost for Impact Fee:

Represents Recoverable Impact Fee CIP Costs plus Financing Costs less Existing Fund Balance and Interest Earnings.

Credit for Ad Valorem Revenues:

In 2001, the LGC Chapter 395 was amended to include a credit for ad valorem and utility revenues generated by new service units during the ten-year timeframe that are used to fund Impact fee eligible projects for which the new service units were charged an Impact fee. The intent of this amendment is to avoid double-charging the new service units for Impact fee capital improvements. The credit recognizes ad valorem revenues used to fund the debt service of debt financed Impact fee eligible projects and assumes that all non-debt funded impact fee eligible project costs will be funded solely through impact fee revenues or non-ad valorem revenue sources. Reference is page 7 of Roadway Appendices.

Maximum Recoverable Cost for Impact Fee:

Represents Pre Credit Recoverable Cost for Impact Fee less Credit for Ad Valorem Revenues.

This is the maximum cost that can be recovered through Impact fees.

**Appendix E – Plan for Awarding the
Transportation Impact Fee Credit Supporting Exhibits**

(as prepared by NewGen Strategies.)

City of Denton - 2022 Roadway Impact Fee Study
Impact Fee Calculation Assumptions
Appendix E - Impact Fee Calculation Assumptions
Service Area B

I. General Assumptions

Annual Interest Rate on Deposits ⁽¹⁾	2.00%
Annual Vehicle Mile Growth ⁽²⁾	1,637
Existing Fund Balance ⁽³⁾	2,004,188
Portion of Projects Funded by Existing Debt ⁽³⁾	\$ 1,003,556
Non-debt Funded Project Cost ⁽⁴⁾	12,605,806
New Project Cost Funded Through New Debt ⁽⁵⁾	43,597,454
Total Recoverable Project Cost ⁽⁶⁾	\$ 57,206,816

II. New Debt Issues Assumptions

<u>Year</u>	<u>Principal ⁽⁷⁾</u>	<u>Interest ⁽⁸⁾</u>	<u>Term</u>
1	\$ 4,359,745	4.05%	20
2	4,359,745	4.30%	20
3	4,359,745	5.00%	20
4	4,359,745	5.00%	20
5	4,359,745	5.15%	20
6	4,359,745	5.15%	20
7	4,359,745	5.25%	20
8	4,359,745	5.25%	20
9	4,359,745	5.50%	20
10	4,359,745	5.50%	20
Total	\$ 43,597,454		

III. Capital Expenditure Assumptions

<u>Year</u>	<u>Annual Capital Expenditures ⁽⁹⁾</u>
1	\$ 1,260,581
2	2,713,829
3	4,167,078
4	5,620,326
5	5,620,326
6	5,620,326
7	5,620,326
8	5,620,326
9	5,620,326
10	5,620,326
11	4,359,745
12	2,906,497
13	1,453,248
Total	56,203,260

- (1) Per discussions with City Staff and City files
(2) Per Kimley-Horn Impact Fee Study
(3) Per discussions with City Staff and City files
(4) Per discussions with City Staff and City files
(5) This assumes 20% of new project costs funded through sources other than debt, unless specified otherwise
(6) This assumes 80% of new project costs funded through new debt issues, unless specified otherwise
(7) Per Kimley-Horn Impact Fee Study
(8) Assumes new debt issued in equal amounts every year
(9) Estimated interest on future debt from City's Financial Advisor October 2022
(10) Assumes new debt proceeds expended over a 3-year timeframe
Non-debt funded capital expenditures allocated per discussions with City Staff

City of Denton - 2022 Roadway Impact Fee Study

Credit Determination

Appendix E - Impact Fee Calculation Assumptions

Service Area B

<u>Year</u>	<u>Eligible Debt Service⁽¹⁾</u>	<u>Annual Vehicle Miles</u>	<u>Eligible Debt Service per Vehicle Mile</u>	<u>Annual Growth in Vehicle Miles (Cumulative)</u>	<u>Credit for Annual Ad Valorem Rate Revenues</u>
1	\$ 358,603	605,138	\$ 0.59	1,637	\$ 970
2	684,544	606,776	1.13	3,275	3,695
3	1,034,305	608,413	1.70	4,912	8,351
4	1,384,047	610,051	2.27	6,550	14,859
5	1,738,838	611,688	2.84	8,187	23,273
6	2,092,988	613,325	3.41	9,824	33,526
7	2,450,715	614,963	3.99	11,462	45,677
8	2,807,783	616,600	4.55	13,099	59,649
9	3,172,931	618,238	5.13	14,737	75,631
10	3,538,002	619,875	5.71	16,374	93,456
11	3,537,591	619,875	5.71	16,374	93,445
12	3,538,345	619,875	5.71	16,374	93,465
13	3,538,412	619,875	5.71	16,374	93,467
14	3,504,096	619,875	5.65	16,374	92,561
15	3,504,096	619,875	5.65	16,374	92,561
16	3,504,096	619,875	5.65	16,374	92,561
17	3,504,096	619,875	5.65	16,374	92,561
18	3,504,096	619,875	5.65	16,374	92,561
19	3,504,096	619,875	5.65	16,374	92,561
20	3,504,096	619,875	5.65	16,374	92,561
21	3,181,876	619,875	5.13	16,374	84,049
22	2,852,499	619,875	4.60	16,374	75,349
23	2,502,661	619,875	4.04	16,374	66,108
24	2,152,824	619,875	3.47	16,374	56,867
25	1,798,524	619,875	2.90	16,374	47,508
26	1,444,223	619,875	2.33	16,374	38,149
27	1,086,932	619,875	1.75	16,374	28,711
28	729,641	619,875	1.18	16,374	19,273
29	364,821	619,875	0.59	16,374	9,637
Total	\$ 70,519,775				\$ 1,713,041

2022 Vehicle Miles (All Service Areas) ⁽²⁾ 603,501

Ten Year Growth in Vehicle Miles (Service Area B) ⁽²⁾ 16,374

Annual Growth in Vehicle Miles 10 years
1,637

Credit Amount \$ 1,713,041

(1) Appendix D - Service Area B, Page 3

(2) Per Kimley-Horn Impact Fee Study

City of Denton - 2022 Roadway Impact Fee Study
Impact Fee Calculation Assumptions
Appendix E - Impact Fee Calculation Assumptions
Service Area C

I. General Assumptions

Annual Interest Rate on Deposits ⁽¹⁾	2.00%
Annual Vehicle Mile Growth ⁽²⁾	3,133
Existing Fund Balance ⁽³⁾	3,170,473
Portion of Projects Funded by Existing Debt ⁽³⁾	\$ -
Non-debt Funded Project Cost ⁽⁴⁾	25,312,100
New Project Cost Funded Through New Debt ⁽⁵⁾	101,097,761
Total Recoverable Project Cost ⁽⁶⁾	\$ 126,409,861

II. New Debt Issues Assumptions

<u>Year</u>	<u>Principal ⁽⁷⁾</u>	<u>Interest ⁽⁸⁾</u>	<u>Term</u>
1	\$ 10,109,776	4.05%	20
2	10,109,776	4.30%	20
3	10,109,776	5.00%	20
4	10,109,776	5.00%	20
5	10,109,776	5.15%	20
6	10,109,776	5.15%	20
7	10,109,776	5.25%	20
8	10,109,776	5.25%	20
9	10,109,776	5.50%	20
10	10,109,776	5.50%	20
Total	\$ 101,097,761		

III. Capital Expenditure Assumptions

<u>Year</u>	<u>Annual Capital Expenditures ⁽⁹⁾</u>
1	\$ 2,531,210
2	5,901,135
3	9,271,061
4	12,640,986
5	12,640,986
6	12,640,986
7	12,640,986
8	12,640,986
9	12,640,986
10	12,640,986
11	10,109,776
12	6,739,851
13	3,369,925
Total	126,409,861

- (1) Per discussions with City Staff and City files
(2) Per Kimley-Horn Impact Fee Study
(3) Per discussions with City Staff and City files
(4) Per discussions with City Staff and City files
(5) This assumes 20% of new project costs funded through sources other than debt, unless specified otherwise
(6) This assumes 80% of new project costs funded through new debt issues, unless specified otherwise
(7) Per Kimley-Horn Impact Fee Study
(8) Assumes new debt issued in equal amounts every year
(9) Estimated interest on future debt from City's Financial Advisor October 2022
(10) Assumes new debt proceeds expended over a 3-year timeframe
Non-debt funded capital expenditures allocated per discussions with City Staff

City of Denton - 2022 Roadway Impact Fee Study
Appendix E - Impact Fee Calculation Assumptions
Debt Service and Expense Summary
Service Area C

I. New Debt Service Detail

<u>Year</u>	<u>Series 1</u>	<u>Series 2</u>	<u>Series 3</u>	<u>Series 4</u>	<u>Series 5</u>	<u>Series 6</u>	<u>Series 7</u>	<u>Series 8</u>	<u>Series 9</u>	<u>Series 10</u>	<u>Total Annual New Debt Service</u>
1	\$ 747,192	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 747,192
2	747,192	763,790	-	-	-	-	-	-	-	-	1,510,982
3	747,192	763,790	811,235	-	-	-	-	-	-	-	2,322,217
4	747,192	763,790	811,235	811,235	-	-	-	-	-	-	3,133,451
5	747,192	763,790	811,235	811,235	821,584	-	-	-	-	-	3,955,036
6	747,192	763,790	811,235	811,235	821,584	821,584	-	-	-	-	4,776,620
7	747,192	763,790	811,235	811,235	821,584	821,584	828,519	-	-	-	5,605,139
8	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	-	-	6,433,658
9	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	-	7,279,638
10	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	8,125,617
11	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	8,125,617
12	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	8,125,617
13	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	8,125,617
14	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	8,125,617
15	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	8,125,617
16	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	8,125,617
17	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	8,125,617
18	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	8,125,617
19	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	8,125,617
20	747,192	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	8,125,617
21	-	763,790	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	7,378,425
22	-	-	811,235	811,235	821,584	821,584	828,519	828,519	845,979	845,979	6,614,635
23	-	-	-	811,235	821,584	821,584	828,519	828,519	845,979	845,979	5,803,400
24	-	-	-	-	821,584	821,584	828,519	828,519	845,979	845,979	4,992,165
25	-	-	-	-	-	821,584	828,519	828,519	845,979	845,979	4,170,581
26	-	-	-	-	-	-	828,519	828,519	845,979	845,979	3,348,997
27	-	-	-	-	-	-	-	828,519	845,979	845,979	2,520,478
28	-	-	-	-	-	-	-	-	845,979	845,979	1,691,959
29	-	-	-	-	-	-	-	-	-	845,979	845,979
	\$ 14,943,846	\$ 15,275,800	\$ 16,224,692	\$ 16,224,692	\$ 16,431,684	\$ 16,431,684	\$ 16,570,385	\$ 16,570,385	\$ 16,919,586	\$ 16,919,586	\$ 162,512,338

City of Denton - 2022 Roadway Impact Fee Study

Appendix E - Impact Fee Calculation Assumptions

Debt Service and Expense Summary

Service Area C

II. Summary of Annual Expenses

<u>Year</u>	<u>New Annual Debt Service⁽¹⁾</u>	<u>Annual Capital Expenditures⁽²⁾</u>	<u>Annual Bond Proceeds⁽²⁾</u>	<u>Existing Annual Debt Service⁽³⁾</u>	<u>Annual Credit⁽⁴⁾</u>	<u>Total Expense</u>
1	\$ 747,192	\$ 2,531,210	\$ (10,109,776)	\$ -	\$ (3,859)	\$ (6,835,233)
2	1,510,982	5,901,135	(10,109,776)	-	(15,528)	(2,713,186)
3	2,322,217	9,271,061	(10,109,776)	-	(35,614)	1,447,888
4	3,133,451	12,640,986	(10,109,776)	-	(63,747)	5,600,914
5	3,955,036	12,640,986	(10,109,776)	-	(100,068)	6,386,177
6	4,776,620	12,640,986	(10,109,776)	-	(144,297)	7,163,533
7	5,605,139	12,640,986	(10,109,776)	-	(196,556)	7,939,793
8	6,433,658	12,640,986	(10,109,776)	-	(256,555)	8,708,313
9	7,279,638	12,640,986	(10,109,776)	-	(324,957)	9,485,891
10	8,125,617	12,640,986	(10,109,776)	-	(401,034)	10,255,793
11	8,125,617	10,109,776	-	-	(401,034)	17,834,359
12	8,125,617	6,739,851	-	-	(401,034)	14,464,434
13	8,125,617	3,369,925	-	-	(401,034)	11,094,509
14	8,125,617	-	-	-	(401,034)	7,724,583
15	8,125,617	-	-	-	(401,034)	7,724,583
16	8,125,617	-	-	-	(401,034)	7,724,583
17	8,125,617	-	-	-	(401,034)	7,724,583
18	8,125,617	-	-	-	(401,034)	7,724,583
19	8,125,617	-	-	-	(401,034)	7,724,583
20	8,125,617	-	-	-	(401,034)	7,724,583
21	7,378,425	-	-	-	(364,156)	7,014,268
22	6,614,635	-	-	-	(326,460)	6,288,174
23	5,803,400	-	-	-	(286,422)	5,516,978
24	4,992,165	-	-	-	(246,384)	4,745,781
25	4,170,581	-	-	-	(205,836)	3,964,745
26	3,348,997	-	-	-	(165,287)	3,183,710
27	2,520,478	-	-	-	(124,396)	2,396,082
28	1,691,959	-	-	-	(83,505)	1,608,453
29	845,979	-	-	-	(41,753)	804,227
PTD	-	-	-	-	-	-
	\$ 162,512,338	\$ 126,409,861	#####	\$ -	\$ (7,396,751)	\$ 180,427,687

(1) Appendix D - Service Area C, Page 2

(2) Appendix D - Service Area C, Page 1

(3) Eligible outstanding debt funded projects as a percent of total principal times original annual debt service, including Paid-To-Date (PTD) amounts

(4) Appendix D - Service Area C, Page 7

City of Denton - 2022 Roadway Impact Fee Study

Revenue Test

Appendix E - Impact Fee Calculation Assumptions

Service Area C

<u>Year</u>	<u>Impact Fee</u>	<u>Vehicle Miles</u>	<u>Impact Fee Revenue</u>	<u>Annual Expenses</u>	<u>Sub-Total</u>	<u>Accumulated Interest</u>	<u>Estimated Fund Balance</u>
Initial							\$ 3,170,473
1	\$ 4,695	3,133	\$ 14,711,436	\$ (6,835,233)	\$ 21,546,669	\$ 278,876	24,996,019
2	4,695	3,133	14,711,436	(2,713,186)	17,424,622	674,167	43,094,808
3	4,695	3,133	14,711,436	1,447,888	13,263,548	994,532	57,352,888
4	4,695	3,133	14,711,436	5,600,914	9,110,522	1,238,163	67,701,573
5	4,695	3,133	14,711,436	6,386,177	8,325,259	1,437,284	77,464,116
6	4,695	3,133	14,711,436	7,163,533	7,547,903	1,624,761	86,636,780
7	4,695	3,133	14,711,436	7,939,793	6,771,644	1,800,452	95,208,876
8	4,695	3,133	14,711,436	8,708,313	6,003,123	1,964,209	103,176,208
9	4,695	3,133	14,711,436	9,485,891	5,225,545	2,115,780	110,517,533
10	4,695	3,133	14,711,436	10,255,793	4,455,643	2,254,907	117,228,083
11	-	-	-	17,834,359	(17,834,359)	2,166,218	101,559,941
12	-	-	-	14,464,434	(14,464,434)	1,886,554	88,982,062
13	-	-	-	11,094,509	(11,094,509)	1,668,696	79,556,249
14	-	-	-	7,724,583	(7,724,583)	1,513,879	73,345,545
15	-	-	-	7,724,583	(7,724,583)	1,389,665	67,010,627
16	-	-	-	7,724,583	(7,724,583)	1,262,967	60,549,010
17	-	-	-	7,724,583	(7,724,583)	1,133,734	53,958,161
18	-	-	-	7,724,583	(7,724,583)	1,001,917	47,235,495
19	-	-	-	7,724,583	(7,724,583)	867,464	40,378,376
20	-	-	-	7,724,583	(7,724,583)	730,322	33,384,114
21	-	-	-	7,014,268	(7,014,268)	597,540	26,967,386
22	-	-	-	6,288,174	(6,288,174)	476,466	21,155,677
23	-	-	-	5,516,978	(5,516,978)	367,944	16,006,643
24	-	-	-	4,745,781	(4,745,781)	272,675	11,533,537
25	-	-	-	3,964,745	(3,964,745)	191,023	7,759,815
26	-	-	-	3,183,710	(3,183,710)	123,359	4,699,465
27	-	-	-	2,396,082	(2,396,082)	70,028	2,373,412
28	-	-	-	1,608,453	(1,608,453)	31,384	796,342
29	-	-	-	804,227	(804,227)	7,885	-
PTD	-	-	-	-	-	-	-
			\$ 147,114,363	\$ 180,427,687		\$ 30,142,851	

City of Denton - 2022 Roadway Impact Fee Study

Impact Fee Calculation

Appendix E - Impact Fee Calculation Assumptions

Service Area C

<u>Year</u>	<u>Number of Years to End of Period</u>	<u>Future Value Escalation</u>		<u>Annual Vehicle Miles</u>		<u>Annual Expense</u>	
		<u>Interest Rate Factor</u>	<u>Recovery Fee Factor</u>	<u>Actual</u>	<u>Escalated</u>	<u>Actual</u>	<u>Escalated</u>
1	29	1.7584	1.0000	3,133	5,509	\$ (6,835,233)	\$ (12,019,309)
2	28	1.7240	1.0000	3,133	5,401	(2,713,186)	(4,677,412)
3	27	1.6902	1.0000	3,133	5,296	1,447,888	2,447,151
4	26	1.6570	1.0000	3,133	5,192	5,600,914	9,280,782
5	25	1.6245	1.0000	3,133	5,090	6,386,177	10,374,483
6	24	1.5927	1.0000	3,133	4,990	7,163,533	11,409,132
7	23	1.5614	1.0000	3,133	4,892	7,939,793	12,397,506
8	22	1.5308	1.0000	3,133	4,796	8,708,313	13,330,886
9	21	1.5008	1.0000	3,133	4,702	9,485,891	14,236,490
10	20	1.4714	1.0000	3,133	4,610	10,255,793	15,090,162
11	19	1.4425	1.0000	-	-	17,834,359	25,726,575
12	18	1.4142	1.0000	-	-	14,464,434	20,456,237
13	17	1.3865	1.0000	-	-	11,094,509	15,382,687
14	16	1.3593	1.0000	-	-	7,724,583	10,500,235
15	15	1.3327	1.0000	-	-	7,724,583	10,294,348
16	14	1.3065	1.0000	-	-	7,724,583	10,092,498
17	13	1.2809	1.0000	-	-	7,724,583	9,894,606
18	12	1.2558	1.0000	-	-	7,724,583	9,700,594
19	11	1.2312	1.0000	-	-	7,724,583	9,510,386
20	10	1.2070	1.0000	-	-	7,724,583	9,323,908
21	9	1.1834	1.0000	-	-	7,014,268	8,300,516
22	8	1.1602	1.0000	-	-	6,288,174	7,295,367
23	7	1.1374	1.0000	-	-	5,516,978	6,275,143
24	6	1.1151	1.0000	-	-	4,745,781	5,292,123
25	5	1.0933	1.0000	-	-	3,964,745	4,334,484
26	4	1.0718	1.0000	-	-	3,183,710	3,412,364
27	3	1.0508	1.0000	-	-	2,396,082	2,517,812
28	2	1.0302	1.0000	-	-	1,608,453	1,657,029
29	1	1.0100	1.0000	-	-	804,227	812,269
PTD		1.0000	1.0000	-	-	-	-
				<u>50,479</u>		<u>\$ 242,649,053</u>	

Annual Interest Rate: 2.00%

Total Escalated Expense for Entire Period	\$ 242,649,053
Less Future Value of Initial Impact Fee Fund Balance	<u>5,630,268</u>
Sub-Total	\$ 237,018,784

Total Escalated Vehicle Miles	<u>50,479</u>
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Maximum Assessable Impact Fee for Roadway Service Area C \$ 4,695

City of Denton - 2022 Roadway Impact Fee Study

Credit Determination

Appendix E - Impact Fee Calculation Assumptions

Service Area C

<u>Year</u>	<u>Eligible Debt Service⁽¹⁾</u>	<u>Annual Vehicle Miles</u>	<u>Eligible Debt Service per Vehicle Mile</u>	<u>Annual Growth in Vehicle Miles (Cumulative)</u>	<u>Credit for Annual Ad Valorem Rate Revenues</u>
1	\$ 747,192	606,634	\$ 1.23	3,133	\$ 3,859
2	1,510,982	609,767	2.48	6,266	15,528
3	2,322,217	612,901	3.79	9,400	35,614
4	3,133,451	616,034	5.09	12,533	63,747
5	3,955,036	619,167	6.39	15,666	100,068
6	4,776,620	622,300	7.68	18,799	144,297
7	5,605,139	625,433	8.96	21,932	196,556
8	6,433,658	628,566	10.24	25,065	256,555
9	7,279,638	631,700	11.52	28,199	324,957
10	8,125,617	634,833	12.80	31,332	401,034
11	8,125,617	634,833	12.80	31,332	401,034
12	8,125,617	634,833	12.80	31,332	401,034
13	8,125,617	634,833	12.80	31,332	401,034
14	8,125,617	634,833	12.80	31,332	401,034
15	8,125,617	634,833	12.80	31,332	401,034
16	8,125,617	634,833	12.80	31,332	401,034
17	8,125,617	634,833	12.80	31,332	401,034
18	8,125,617	634,833	12.80	31,332	401,034
19	8,125,617	634,833	12.80	31,332	401,034
20	8,125,617	634,833	12.80	31,332	401,034
21	7,378,425	634,833	11.62	31,332	364,156
22	6,614,635	634,833	10.42	31,332	326,460
23	5,803,400	634,833	9.14	31,332	286,422
24	4,992,165	634,833	7.86	31,332	246,384
25	4,170,581	634,833	6.57	31,332	205,836
26	3,348,997	634,833	5.28	31,332	165,287
27	2,520,478	634,833	3.97	31,332	124,396
28	1,691,959	634,833	2.67	31,332	83,505
29	845,979	634,833	1.33	31,332	41,753
Total	\$ 162,512,338				\$ 7,396,751

2022 Vehicle Miles (All Service Areas) ⁽²⁾ 603,501

Ten Year Growth in Vehicle Miles (Service Area C) ⁽²⁾ 31,332

Annual Growth in Vehicle Miles 10 years
3,133

Credit Amount \$ **7,396,751**

(1) Appendix D - Service Area C, Page 3

(2) Per Kimley-Horn Impact Fee Study

City of Denton - 2022 Roadway Impact Fee Study
Impact Fee Calculation Assumptions
Appendix E - Impact Fee Calculation Assumptions
Service Area D

I. General Assumptions

Annual Interest Rate on Deposits ⁽¹⁾	2.00%
Annual Vehicle Mile Growth ⁽²⁾	1,163
Existing Fund Balance ⁽³⁾	1,685,562
Portion of Projects Funded by Existing Debt ⁽³⁾	\$ -
Non-debt Funded Project Cost ⁽⁴⁾	10,369,489
New Project Cost Funded Through New Debt ⁽⁵⁾	41,327,316
Total Recoverable Project Cost ⁽⁶⁾	\$ 51,696,805

II. New Debt Issues Assumptions

<u>Year</u>	<u>Principal ⁽⁷⁾</u>	<u>Interest ⁽⁸⁾</u>	<u>Term</u>
1	\$ 4,132,732	4.05%	20
2	4,132,732	4.30%	20
3	4,132,732	5.00%	20
4	4,132,732	5.00%	20
5	4,132,732	5.15%	20
6	4,132,732	5.15%	20
7	4,132,732	5.25%	20
8	4,132,732	5.25%	20
9	4,132,732	5.50%	20
10	4,132,732	5.50%	20
Total	\$ 41,327,316		

III. Capital Expenditure Assumptions

<u>Year</u>	<u>Annual Capital Expenditures ⁽⁹⁾</u>
1	\$ 1,036,949
2	2,414,526
3	3,792,103
4	5,169,681
5	5,169,681
6	5,169,681
7	5,169,681
8	5,169,681
9	5,169,681
10	5,169,681
11	4,132,732
12	2,755,154
13	1,377,577
Total	51,696,805

- (1) Per discussions with City Staff and City files
(2) Per Kimley-Horn Impact Fee Study
(3) Per discussions with City Staff and City files
(4) Per discussions with City Staff and City files
(5) This assumes 20% of new project costs funded through sources other than debt, unless specified otherwise
(6) This assumes 80% of new project costs funded through new debt issues, unless specified otherwise
(7) Per Kimley-Horn Impact Fee Study
(8) Assumes new debt issued in equal amounts every year
(9) Estimated interest on future debt from City's Financial Advisor October 2022
(10) Assumes new debt proceeds expended over a 3-year timeframe
Non-debt funded capital expenditures allocated per discussions with City Staff

City of Denton - 2022 Roadway Impact Fee Study
Appendix E - Impact Fee Calculation Assumptions
Debt Service and Expense Summary
Service Area D

I. New Debt Service Detail

<u>Year</u>	<u>Series 1</u>	<u>Series 2</u>	<u>Series 3</u>	<u>Series 4</u>	<u>Series 5</u>	<u>Series 6</u>	<u>Series 7</u>	<u>Series 8</u>	<u>Series 9</u>	<u>Series 10</u>	<u>Total Annual New Debt Service</u>
1	\$ 305,442	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 305,442
2	305,442	312,226	-	-	-	-	-	-	-	-	617,668
3	305,442	312,226	331,621	-	-	-	-	-	-	-	949,289
4	305,442	312,226	331,621	331,621	-	-	-	-	-	-	1,280,910
5	305,442	312,226	331,621	331,621	335,852	-	-	-	-	-	1,616,762
6	305,442	312,226	331,621	331,621	335,852	335,852	-	-	-	-	1,952,614
7	305,442	312,226	331,621	331,621	335,852	335,852	338,687	-	-	-	2,291,301
8	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	-	-	2,629,987
9	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	-	2,975,812
10	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,321,636
11	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,321,636
12	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,321,636
13	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,321,636
14	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,321,636
15	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,321,636
16	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,321,636
17	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,321,636
18	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,321,636
19	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,321,636
20	305,442	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,321,636
21	-	312,226	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	3,016,194
22	-	-	331,621	331,621	335,852	335,852	338,687	338,687	345,824	345,824	2,703,968
23	-	-	-	331,621	335,852	335,852	338,687	338,687	345,824	345,824	2,372,347
24	-	-	-	-	335,852	335,852	338,687	338,687	345,824	345,824	2,040,726
25	-	-	-	-	-	335,852	338,687	338,687	345,824	345,824	1,704,874
26	-	-	-	-	-	-	338,687	338,687	345,824	345,824	1,369,022
27	-	-	-	-	-	-	-	338,687	345,824	345,824	1,030,335
28	-	-	-	-	-	-	-	-	345,824	345,824	691,648
29	-	-	-	-	-	-	-	-	-	345,824	345,824
	\$ 6,108,830	\$ 6,244,528	\$ 6,632,422	\$ 6,632,422	\$ 6,717,037	\$ 6,717,037	\$ 6,773,736	\$ 6,773,736	\$ 6,916,484	\$ 6,916,484	\$ 66,432,715

City of Denton - 2022 Roadway Impact Fee Study

Appendix E - Impact Fee Calculation Assumptions

Debt Service and Expense Summary

Service Area D

II. Summary of Annual Expenses

<u>Year</u>	<u>New Annual Debt Service⁽¹⁾</u>	<u>Annual Capital Expenditures⁽²⁾</u>	<u>Annual Bond Proceeds⁽²⁾</u>	<u>Existing Annual Debt Service⁽³⁾</u>	<u>Annual Credit⁽⁴⁾</u>	<u>Total Expense</u>
1	\$ 305,442	\$ 1,036,949	\$ (4,132,732)	\$ -	\$ (588)	\$ (2,790,929)
2	617,668	2,414,526	(4,132,732)	-	(2,372)	(1,102,910)
3	949,289	3,792,103	(4,132,732)	-	(5,458)	603,202
4	1,280,910	5,169,681	(4,132,732)	-	(9,802)	2,308,057
5	1,616,762	5,169,681	(4,132,732)	-	(15,435)	2,638,276
6	1,952,614	5,169,681	(4,132,732)	-	(22,327)	2,967,236
7	2,291,301	5,169,681	(4,132,732)	-	(30,508)	3,297,741
8	2,629,987	5,169,681	(4,132,732)	-	(39,944)	3,626,992
9	2,975,812	5,169,681	(4,132,732)	-	(50,750)	3,962,011
10	3,321,636	5,169,681	(4,132,732)	-	(62,823)	4,295,762
11	3,321,636	4,132,732	-	-	(62,823)	7,391,545
12	3,321,636	2,755,154	-	-	(62,823)	6,013,967
13	3,321,636	1,377,577	-	-	(62,823)	4,636,390
14	3,321,636	-	-	-	(62,823)	3,258,813
15	3,321,636	-	-	-	(62,823)	3,258,813
16	3,321,636	-	-	-	(62,823)	3,258,813
17	3,321,636	-	-	-	(62,823)	3,258,813
18	3,321,636	-	-	-	(62,823)	3,258,813
19	3,321,636	-	-	-	(62,823)	3,258,813
20	3,321,636	-	-	-	(62,823)	3,258,813
21	3,016,194	-	-	-	(57,046)	2,959,148
22	2,703,968	-	-	-	(51,141)	2,652,827
23	2,372,347	-	-	-	(44,869)	2,327,478
24	2,040,726	-	-	-	(38,597)	2,002,129
25	1,704,874	-	-	-	(32,245)	1,672,629
26	1,369,022	-	-	-	(25,893)	1,343,129
27	1,030,335	-	-	-	(19,487)	1,010,848
28	691,648	-	-	-	(13,081)	678,567
29	345,824	-	-	-	(6,541)	339,284
PTD	-	-	-	-	-	-
	\$ 66,432,715	\$ 51,696,805	\$ (41,327,316)	\$ -	\$ (1,157,132)	\$ 75,645,072

(1) Appendix D - Service Area D, Page 2

(2) Appendix D - Service Area D, Page 1

(3) Eligible outstanding debt funded projects as a percent of total principal times original annual debt service, including Paid-To-Date (PTD) amounts

(4) Appendix D - Service Area D, Page 7

City of Denton - 2022 Roadway Impact Fee Study

Credit Determination

Appendix E - Impact Fee Calculation Assumptions

Service Area D

<u>Year</u>	<u>Eligible Debt Service⁽¹⁾</u>	<u>Annual Vehicle Miles</u>	<u>Eligible Debt Service per Vehicle Mile</u>	<u>Annual Growth in Vehicle Miles (Cumulative)</u>	<u>Credit for Annual Ad Valorem Rate Revenues</u>
1	\$ 305,442	604,664	\$ 0.51	1,163	\$ 588
2	617,668	605,828	1.02	2,327	2,372
3	949,289	606,991	1.56	3,490	5,458
4	1,280,910	608,155	2.11	4,654	9,802
5	1,616,762	609,318	2.65	5,817	15,435
6	1,952,614	610,482	3.20	6,981	22,327
7	2,291,301	611,645	3.75	8,144	30,508
8	2,629,987	612,808	4.29	9,307	39,944
9	2,975,812	613,972	4.85	10,471	50,750
10	3,321,636	615,135	5.40	11,634	62,823
11	3,321,636	615,135	5.40	11,634	62,823
12	3,321,636	615,135	5.40	11,634	62,823
13	3,321,636	615,135	5.40	11,634	62,823
14	3,321,636	615,135	5.40	11,634	62,823
15	3,321,636	615,135	5.40	11,634	62,823
16	3,321,636	615,135	5.40	11,634	62,823
17	3,321,636	615,135	5.40	11,634	62,823
18	3,321,636	615,135	5.40	11,634	62,823
19	3,321,636	615,135	5.40	11,634	62,823
20	3,321,636	615,135	5.40	11,634	62,823
21	3,016,194	615,135	4.90	11,634	57,046
22	2,703,968	615,135	4.40	11,634	51,141
23	2,372,347	615,135	3.86	11,634	44,869
24	2,040,726	615,135	3.32	11,634	38,597
25	1,704,874	615,135	2.77	11,634	32,245
26	1,369,022	615,135	2.23	11,634	25,893
27	1,030,335	615,135	1.67	11,634	19,487
28	691,648	615,135	1.12	11,634	13,081
29	345,824	615,135	0.56	11,634	6,541
Total	\$ 66,432,715				\$ 1,157,132

2022 Vehicle Miles (All Service Areas) ⁽²⁾ 603,501

Ten Year Growth in Vehicle Miles (Service Area D) ⁽²⁾ 11,634

Annual Growth in Vehicle Miles 10 years
1,163

Credit Amount \$ 1,157,132

(1) Appendix D - Service Area D, Page 3

(2) Per Kimley-Horn Impact Fee Study

City of Denton - 2022 Roadway Impact Fee Study
Impact Fee Calculation Assumptions
Appendix E - Impact Fee Calculation Assumptions
Service Area E

I. General Assumptions

Annual Interest Rate on Deposits ⁽¹⁾	2.00%
Annual Vehicle Mile Growth ⁽²⁾	2,415
Existing Fund Balance ⁽³⁾	4,840,794
Portion of Projects Funded by Existing Debt ⁽³⁾	\$ 299,581
Non-debt Funded Project Cost ⁽⁴⁾	15,285,563
New Project Cost Funded Through New Debt ⁽⁵⁾	63,584,277
Total Recoverable Project Cost ⁽⁶⁾	\$ 79,169,421

II. New Debt Issues Assumptions

<u>Year</u>	<u>Principal ⁽⁷⁾</u>	<u>Interest ⁽⁸⁾</u>	<u>Term</u>
1	\$ 6,358,428	4.05%	20
2	6,358,428	4.30%	20
3	6,358,428	5.00%	20
4	6,358,428	5.00%	20
5	6,358,428	5.15%	20
6	6,358,428	5.15%	20
7	6,358,428	5.25%	20
8	6,358,428	5.25%	20
9	6,358,428	5.50%	20
10	6,358,428	5.50%	20
Total	\$ 63,584,277		

III. Capital Expenditure Assumptions

<u>Year</u>	<u>Annual Capital Expenditures ⁽⁹⁾</u>
1	\$ 1,528,556
2	3,648,032
3	5,767,508
4	7,886,984
5	7,886,984
6	7,886,984
7	7,886,984
8	7,886,984
9	7,886,984
10	7,886,984
11	6,358,428
12	4,238,952
13	2,119,476
Total	78,869,840

- (1) Per discussions with City Staff and City files
(2) Per Kimley-Horn Impact Fee Study
(3) Per discussions with City Staff and City files
(4) Per discussions with City Staff and City files
(5) This assumes 20% of new project costs funded through sources other than debt, unless specified otherwise
(6) This assumes 80% of new project costs funded through new debt issues, unless specified otherwise
(7) Per Kimley-Horn Impact Fee Study
(8) Assumes new debt issued in equal amounts every year
(9) Estimated interest on future debt from City's Financial Advisor October 2022
(10) Assumes new debt proceeds expended over a 3-year timeframe
Non-debt funded capital expenditures allocated per discussions with City Staff

City of Denton - 2022 Roadway Impact Fee Study

Appendix E - Impact Fee Calculation Assumptions

Debt Service and Expense Summary

Service Area E

II. Summary of Annual Expenses

<u>Year</u>	<u>New Annual Debt Service⁽¹⁾</u>	<u>Annual Capital Expenditures⁽²⁾</u>	<u>Annual Bond Proceeds⁽²⁾</u>	<u>Existing Annual Debt Service⁽³⁾</u>	<u>Annual Credit⁽⁴⁾</u>	<u>Total Expense</u>
1	\$ 469,938	\$ 1,528,556	\$ (6,358,428)	\$ 12,533	\$ (1,923)	\$ (4,349,323)
2	950,315	3,648,032	(6,358,428)	12,532	(7,644)	(1,755,193)
3	1,460,532	5,767,508	(6,358,428)	12,212	(17,469)	864,355
4	1,970,748	7,886,984	(6,358,428)	12,165	(31,237)	3,480,232
5	2,487,474	7,886,984	(6,358,428)	9,845	(48,983)	3,976,893
6	3,004,200	7,886,984	(6,358,428)	9,792	(70,663)	4,471,885
7	3,525,288	7,886,984	(6,358,428)	9,859	(96,319)	4,967,384
8	4,046,376	7,886,984	(6,358,428)	9,806	(125,814)	5,458,924
9	4,578,445	7,886,984	(6,358,428)	9,896	(159,492)	5,957,406
10	5,110,514	7,886,984	(6,358,428)	9,965	(197,005)	6,452,030
11	5,110,514	6,358,428	-	9,839	(197,000)	11,281,780
12	5,110,514	4,238,952	-	10,053	(197,008)	9,162,510
13	5,110,514	2,119,476	-	9,093	(196,971)	7,042,111
14	5,110,514	-	-	52	(196,623)	4,913,942
15	5,110,514	-	-	-	(196,621)	4,913,892
16	5,110,514	-	-	-	(196,621)	4,913,892
17	5,110,514	-	-	-	(196,621)	4,913,892
18	5,110,514	-	-	-	(196,621)	4,913,892
19	5,110,514	-	-	-	(196,621)	4,913,892
20	5,110,514	-	-	-	(196,621)	4,913,892
21	4,640,576	-	-	-	(178,541)	4,462,035
22	4,160,199	-	-	-	(160,059)	4,000,140
23	3,649,982	-	-	-	(140,429)	3,509,553
24	3,139,765	-	-	-	(120,799)	3,018,966
25	2,623,039	-	-	-	(100,918)	2,522,121
26	2,106,313	-	-	-	(81,038)	2,025,275
27	1,585,226	-	-	-	(60,990)	1,524,236
28	1,064,138	-	-	-	(40,942)	1,023,196
29	532,069	-	-	-	(20,471)	511,598
PTD	-	-	-	250,714	-	250,714
	\$ 102,210,271	\$ 78,869,840	\$ (63,584,277)	\$ 388,356	\$ (3,628,065)	\$ 114,256,125

(1) Appendix D - Service Area E, Page 2

(2) Appendix D - Service Area E, Page 1

(3) Eligible outstanding debt funded projects as a percent of total principal times original annual debt service, including Paid-To-Date (PTD) amounts

(4) Appendix D - Service Area E, Page 7

City of Denton - 2022 Roadway Impact Fee Study

Revenue Test

Appendix E - Impact Fee Calculation Assumptions

Service Area E

<u>Year</u>	<u>Impact Fee</u>	<u>Vehicle Miles</u>	<u>Impact Fee Revenue</u>	<u>Annual Expenses</u>	<u>Sub-Total</u>	<u>Accumulated Interest</u>	<u>Estimated Fund Balance</u>
Initial							\$ 4,840,794
1	\$ 3,722	2,415	\$ 8,988,114	\$ (4,349,323)	\$ 13,337,437	\$ 230,190	18,408,421
2	3,722	2,415	8,988,114	(1,755,193)	10,743,306	475,601	29,627,329
3	3,722	2,415	8,988,114	864,355	8,123,758	673,784	38,424,871
4	3,722	2,415	8,988,114	3,480,232	5,507,881	823,576	44,756,329
5	3,722	2,415	8,988,114	3,976,893	5,011,220	945,239	50,712,788
6	3,722	2,415	8,988,114	4,471,885	4,516,228	1,059,418	56,288,434
7	3,722	2,415	8,988,114	4,967,384	4,020,730	1,165,976	61,475,140
8	3,722	2,415	8,988,114	5,458,924	3,529,189	1,264,795	66,269,124
9	3,722	2,415	8,988,114	5,957,406	3,030,708	1,355,690	70,655,522
10	3,722	2,415	8,988,114	6,452,030	2,536,084	1,438,471	74,630,076
11	-	-	-	11,281,780	(11,281,780)	1,379,784	64,728,080
12	-	-	-	9,162,510	(9,162,510)	1,202,936	56,768,506
13	-	-	-	7,042,111	(7,042,111)	1,064,949	50,791,344
14	-	-	-	4,913,942	(4,913,942)	966,687	46,844,090
15	-	-	-	4,913,892	(4,913,892)	887,743	42,817,941
16	-	-	-	4,913,892	(4,913,892)	807,220	38,711,268
17	-	-	-	4,913,892	(4,913,892)	725,086	34,522,462
18	-	-	-	4,913,892	(4,913,892)	641,310	30,249,880
19	-	-	-	4,913,892	(4,913,892)	555,859	25,891,847
20	-	-	-	4,913,892	(4,913,892)	468,698	21,446,652
21	-	-	-	4,462,035	(4,462,035)	384,313	17,368,931
22	-	-	-	4,000,140	(4,000,140)	307,377	13,676,168
23	-	-	-	3,509,553	(3,509,553)	238,428	10,405,043
24	-	-	-	3,018,966	(3,018,966)	177,911	7,563,988
25	-	-	-	2,522,121	(2,522,121)	126,059	5,167,926
26	-	-	-	2,025,275	(2,025,275)	83,106	3,225,756
27	-	-	-	1,524,236	(1,524,236)	49,273	1,750,793
28	-	-	-	1,023,196	(1,023,196)	24,784	752,381
29	-	-	-	511,598	(511,598)	9,932	250,714
PTD	-	-	-	250,714	(250,714)	-	-
			\$ 89,881,135	\$ 114,256,125		\$ 19,534,195	

City of Denton - 2022 Roadway Impact Fee Study

Impact Fee Calculation

Appendix E - Impact Fee Calculation Assumptions

Service Area E

<u>Year</u>	<u>Number of Years to End of Period</u>	<u>Future Value Escalation</u>		<u>Annual Vehicle Miles</u>		<u>Annual Expense</u>	
		<u>Interest Rate Factor</u>	<u>Recovery Fee Factor</u>				
1	29	1.7584	1.0000	2,415	4,246	\$ (4,349,323)	\$ (7,648,000)
2	28	1.7240	1.0000	2,415	4,163	(1,755,193)	(3,025,874)
3	27	1.6902	1.0000	2,415	4,081	864,355	1,460,892
4	26	1.6570	1.0000	2,415	4,001	3,480,232	5,766,787
5	25	1.6245	1.0000	2,415	3,923	3,976,893	6,460,549
6	24	1.5927	1.0000	2,415	3,846	4,471,885	7,122,230
7	23	1.5614	1.0000	2,415	3,771	4,967,384	7,756,269
8	22	1.5308	1.0000	2,415	3,697	5,458,924	8,356,647
9	21	1.5008	1.0000	2,415	3,624	5,957,406	8,940,915
10	20	1.4714	1.0000	2,415	3,553	6,452,030	9,493,383
11	19	1.4425	1.0000	-	-	11,281,780	16,274,292
12	18	1.4142	1.0000	-	-	9,162,510	12,958,023
13	17	1.3865	1.0000	-	-	7,042,111	9,763,982
14	16	1.3593	1.0000	-	-	4,913,942	6,679,654
15	15	1.3327	1.0000	-	-	4,913,892	6,548,614
16	14	1.3065	1.0000	-	-	4,913,892	6,420,210
17	13	1.2809	1.0000	-	-	4,913,892	6,294,324
18	12	1.2558	1.0000	-	-	4,913,892	6,170,906
19	11	1.2312	1.0000	-	-	4,913,892	6,049,907
20	10	1.2070	1.0000	-	-	4,913,892	5,931,282
21	9	1.1834	1.0000	-	-	4,462,035	5,280,265
22	8	1.1602	1.0000	-	-	4,000,140	4,640,852
23	7	1.1374	1.0000	-	-	3,509,553	3,991,850
24	6	1.1151	1.0000	-	-	3,018,966	3,366,515
25	5	1.0933	1.0000	-	-	2,522,121	2,757,325
26	4	1.0718	1.0000	-	-	2,025,275	2,170,731
27	3	1.0508	1.0000	-	-	1,524,236	1,601,673
28	2	1.0302	1.0000	-	-	1,023,196	1,054,097
29	1	1.0100	1.0000	-	-	511,598	516,714
PTD		1.0000	1.0000	-	-	250,714	250,714
				<u>38,905</u>			<u>\$ 153,405,728</u>

Annual Interest Rate: 2.00%

Total Escalated Expense for Entire Period	\$ 153,405,728
Less Future Value of Initial Impact Fee Fund Balance	8,596,499
Sub-Total	<u>\$ 144,809,229</u>

Total Escalated Vehicle Miles	<u>38,905</u>
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Maximum Assessable Impact Fee for Roadway Service Area E \$ 3,722

City of Denton - 2022 Roadway Impact Fee Study

Credit Determination

Appendix E - Impact Fee Calculation Assumptions

Service Area E

<u>Year</u>	<u>Eligible Debt Service⁽¹⁾</u>	<u>Annual Vehicle Miles</u>	<u>Eligible Debt Service per Vehicle Mile</u>	<u>Annual Growth in Vehicle Miles (Cumulative)</u>	<u>Credit for Annual Ad Valorem Rate Revenues</u>
1	\$ 482,471	605,916	\$ 0.80	2,415	\$ 1,923
2	962,847	608,331	1.58	4,830	7,644
3	1,472,744	610,745	2.41	7,244	17,469
4	1,982,913	613,160	3.23	9,659	31,237
5	2,497,320	615,575	4.06	12,074	48,983
6	3,013,992	617,990	4.88	14,489	70,663
7	3,535,147	620,405	5.70	16,904	96,319
8	4,056,182	622,819	6.51	19,318	125,814
9	4,588,341	625,234	7.34	21,733	159,492
10	5,120,478	627,649	8.16	24,148	197,005
11	5,120,353	627,649	8.16	24,148	197,000
12	5,120,566	627,649	8.16	24,148	197,008
13	5,119,606	627,649	8.16	24,148	196,971
14	5,110,565	627,649	8.14	24,148	196,623
15	5,110,514	627,649	8.14	24,148	196,621
16	5,110,514	627,649	8.14	24,148	196,621
17	5,110,514	627,649	8.14	24,148	196,621
18	5,110,514	627,649	8.14	24,148	196,621
19	5,110,514	627,649	8.14	24,148	196,621
20	5,110,514	627,649	8.14	24,148	196,621
21	4,640,576	627,649	7.39	24,148	178,541
22	4,160,199	627,649	6.63	24,148	160,059
23	3,649,982	627,649	5.82	24,148	140,429
24	3,139,765	627,649	5.00	24,148	120,799
25	2,623,039	627,649	4.18	24,148	100,918
26	2,106,313	627,649	3.36	24,148	81,038
27	1,585,226	627,649	2.53	24,148	60,990
28	1,064,138	627,649	1.70	24,148	40,942
29	532,069	627,649	0.85	24,148	20,471
Total	\$ 102,347,912				\$ 3,628,065

2022 Vehicle Miles (All Service Areas) ⁽²⁾ 603,501

Ten Year Growth in Vehicle Miles (Service Area E) ⁽²⁾ 24,148

Annual Growth in Vehicle Miles 10 years
2,415

Credit Amount \$ **3,628,065**

(1) Appendix D - Service Area E, Page 3

(2) Per Kimley-Horn Impact Fee Study

Appendix F – Consideration for the Hunter Ranch and Cole Ranch Operating Agreements

Consideration for Hunter Ranch and Cole Ranch Operating Agreement

The City of Denton has operating agreements with the Hunter Ranch District and the Cole Ranch District which stipulate certain calculations to be included in the Roadway Impact Fee Study. The purpose of this appendix is to explain what calculations are included as part of the operating agreements, how the calculations were performed, and how they will be used in the administration of both the Impact Fee Program and the operating agreements.

“City Offsites” Facilities

The operating agreements define City Offsites as specific roadways that are to be constructed by the City. City Offsites facilities are impact fee eligible roadways that are anticipated to be constructed with District financial participation in the form of impact fees and a District Tax assessed and paid from properties in the districts. As part of the operating agreements, the Roadway Impact Fee study is to include a capacity analysis which shows the portion of City Offsites facilities that the Hunter Ranch District and Cole Ranch District are responsible for. This analysis is provided in the tables included in this appendix. A map identifying the City Offsite facilities and development Improvement Projects as identified within the context of the 2022 Roadway Impact Fee CIP is provided in **Exhibit F.1**. The original map of the City Off-sites from the operating agreement is included in **Exhibit F.2**.

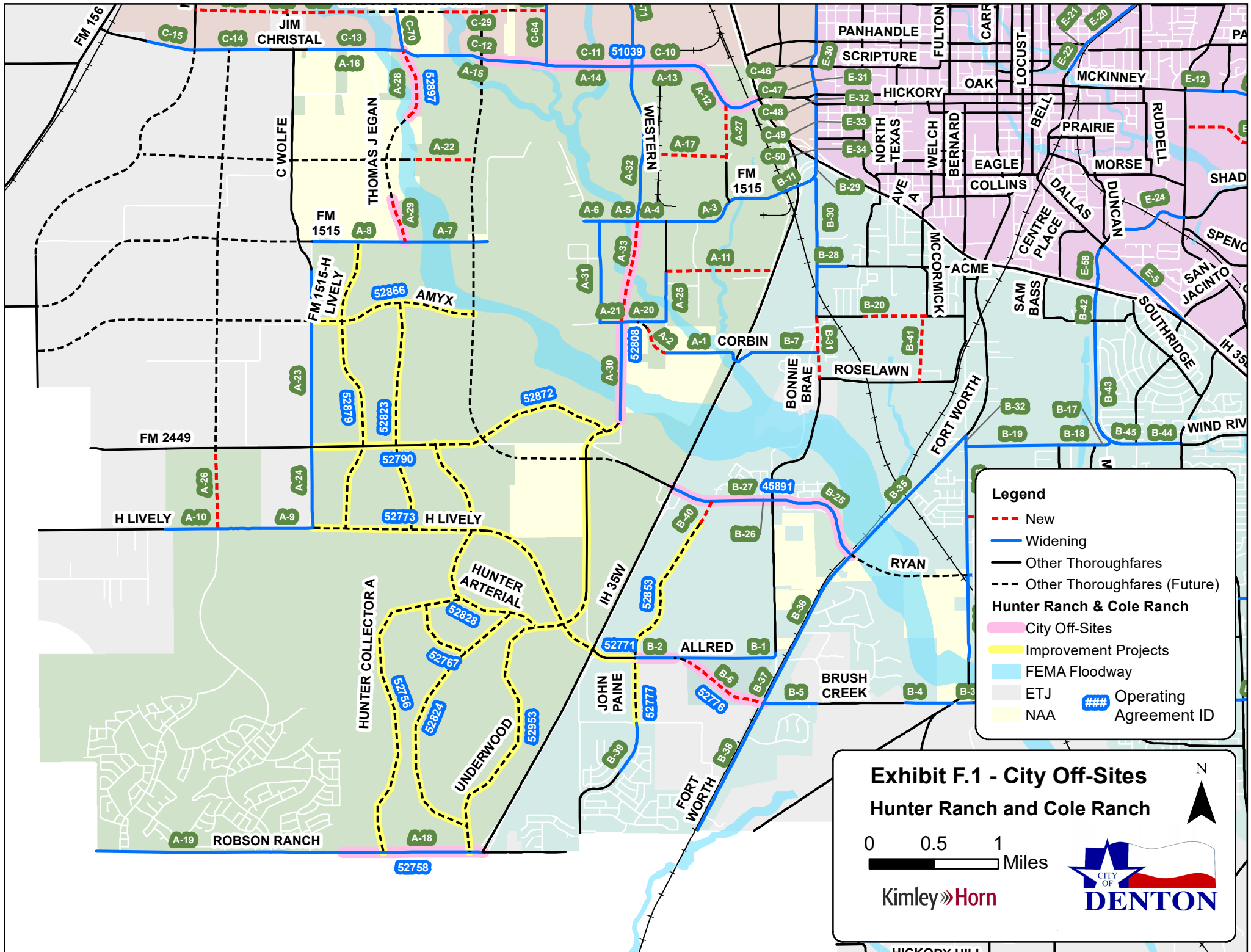
Administration of the Impact Fee Program

Included in the operating agreements is a stipulation that the revenue collected from the Districts for the construction of City Offsites facilities does not exceed the District Cost for the City Offsites as determined by the capacity analysis. The terms City Offsites, District Cost, District Area Revenue, and District Tax Revenue, are defined in Section 4.11 of the operating agreements.

As impact fee District Area Revenue and District Tax Revenue are collected, the City will keep an accounting of the total amount of revenue collected in addition to keeping an accounting of the District Area Revenue that is spent on the construction of the City Offsites. This is to ensure that the District Area Revenue collected and spent on the construction of City Offsites does not exceed the District Cost as determined by the capacity analysis. Impact fee revenue collected from the Districts and allocated to roadway projects within the same service area but not defined as City Offsites will not be designated as District Cost.

Updates to the Capacity Analysis

The capacity analysis considers only the District Cost attributable to the 10-year demand and not the total district cost beyond the 10-year window. Each time the study is updated, the capacity analysis will be updated to reflect the District Area Revenue and District Tax Revenue collected and spent on City Offsites, in addition to the new 10-year demand and the updated District Cost.



Planning Level Infrastructure Development Phasing Map – Off-site Roadways with Phase Boundaries

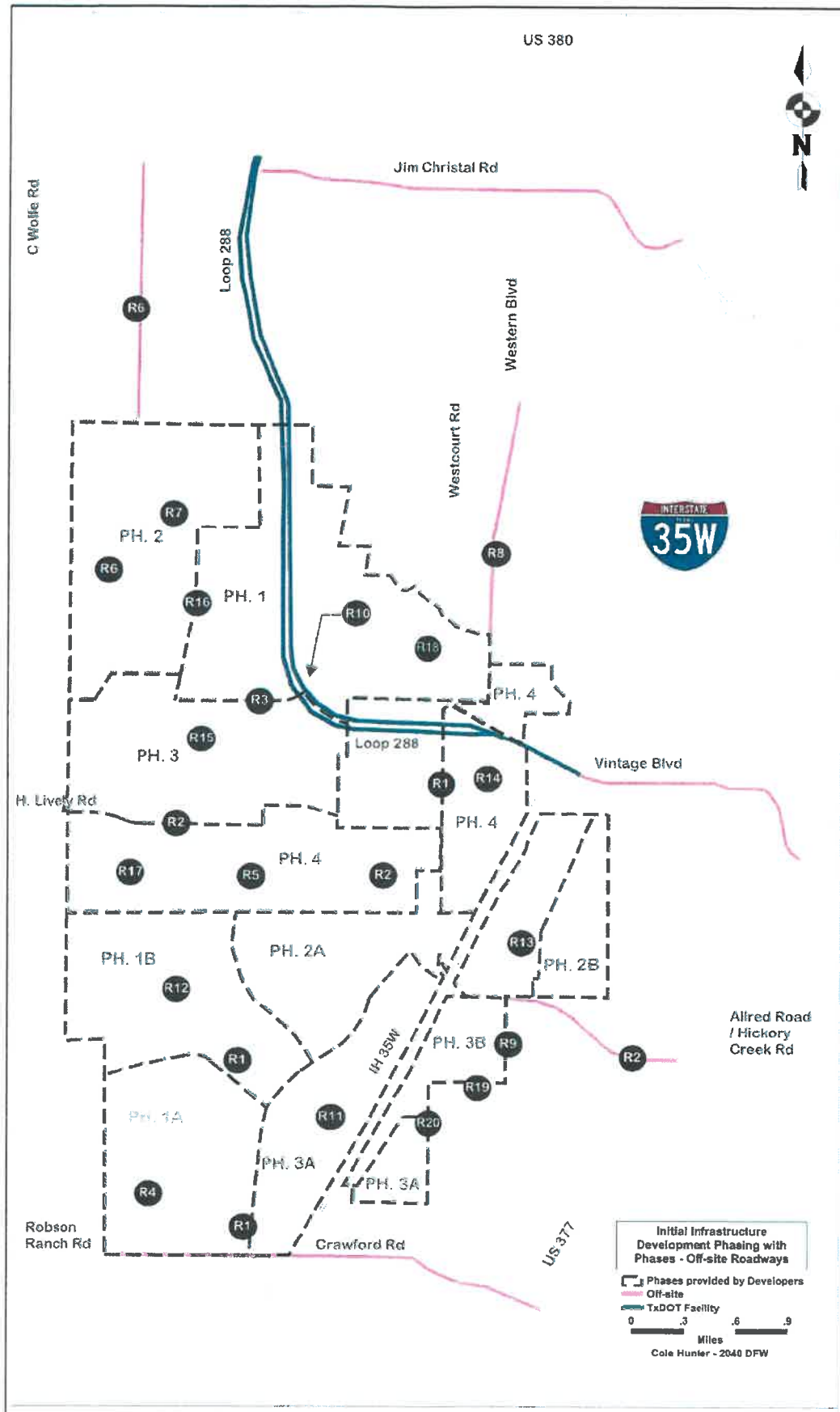


Exhibit F.2 - City Off-sites
Hunter Ranch and Cole Ranch Operating Agreement