AGENDA
TOWN OF FLOWER MOUND
CAPITAL IMPROVEMENTS ADVISORY COMMITTEE MEETING

NOVEMBER 9, 2020

FLOWER MOUND TOWN HALL
2121 CROSS TIMBERS ROAD
FLOWER MOUND, TEXAS

AN AGENDA INFORMATION PACKET IS AVAILABLE ONLINE AT www.flower-mound.com/AgendaCenter

There will be limited seating in Jody Smith Hall to allow for social distancing.

Meeting participants may be asked to wait in the lobby until their name is called.

A. CALL MEETING TO ORDER 6:00 P.M.

B. INVOCATION AND PLEDGE OF ALLEGIANCE

C. PUBLIC COMMENT

The purpose of this item is to allow the public an opportunity to address the Commission on issues that are not indicated as a "Public Hearing" on this agenda. Issues regarding daily operational or administrative matters should first be dealt with by calling Town Hall at 972-874-6000 during business hours.

D. REGULAR ITEMS

1. *Minutes of September 28, 2020*

   Consider approval of the minutes of the September 28, 2020, Capital Improvements Advisory Committee Regular Session.

2. *Impact Fee Update*

   Consider a recommendation to amend the Town of Flower Mound land use assumptions and capital improvements plan and the imposition of an impact fee.

E. ADJOURNMENT – REGULAR SESSION

I do hereby certify that the Notice of Meeting was posted on the bulletin board in Town Hall of the Town of Flower Mound, Texas, a place convenient and readily accessible to the general public at all times, on the following date and time: November 5, 2020, at 4:00 p.m., at least 72 hours prior to the scheduled time of said meeting.

_____

LauriAnn Cash, Executive Assistant

Pursuant to Section 551.071 of the Texas Government Code, the Capital Improvements Advisory Committee reserves the right to consult in closed session with its attorney and to receive legal advice regarding any item listed on this agenda.

The Flower Mound Town Hall and Jody Smith Hall are wheelchair accessible. Requests for accommodations or interpretive services must be made at least 48 hours prior to this meeting by contacting Planning Services at (972) 874-6350.

CAPITAL IMPROVEMENTS ADVISORY COMMITTEE

AGENDA ITEM NO: 1

REGULAR ITEM

DATE: November 9, 2020

FROM: LauriAnn Cash, Development Services Executive Assistant

ITEM: **Consider approval of the minutes of the September 28, 2020, Capital Improvements Advisory Committee Regular Session.**

I. BACKGROUND INFORMATION

The Capital Improvements Advisory Committee held a regular meeting on September 28, 2020.

II. ATTACHMENTS

1. Draft Minutes

THE FLOWER MOUND CAPITAL IMPROVEMENTS ADVISORY COMMITTEE MEETING HELD ON THE 28TH DAY OF SEPTEMBER 2020, IN THE FLOWER MOUND TOWN HALL, LOCATED AT 2121 CROSS TIMBERS ROAD IN THE TOWN OF FLOWER MOUND, COUNTY OF DENTON, TEXAS, AT 6:00 PM

The Capital Improvements Advisory Committee met in a regular session with the following members present:

David Johnson	Chair
Brad Ruthrauff	Vice-Chair
Adam Schiestel	Commissioner, Place 2
Robert Rawson	Commissioner, Place 3
Philip Del Vecchio	Commissioner, Place 5
Laura Dillon	Commissioner, Place 6
Robert Cox	Commissioner, Place 8
Timothy Fink	Commissioner, Place 9
Reginald Rembert	Representative of the Development Industry
Mark Glover	Representative of the Real Estate Industry

Constituting a quorum with the following members absent:

None

And the following members of Town staff present:

Alicia Kreh	Town Attorney
Lexin Murphy	Director of Planning Services
Tiffany Bruce	Executive Director of Public Works
Brian Waltenburg	Assistant Director of Engineering
Robert Pegg	Assistant Director of Engineering
LauriAnn Cash	Executive Assistant

A. CALL REGULAR SESSION TO ORDER (Council Chambers): 6:00 P.M.

B. INVOCATION AND PLEDGE OF ALLEGIANCE

C. GENERAL PUBLIC COMMENTS

None

D. REGULAR ITEMS

1. **Consider approval of the minutes of the February 24, 2020, Capital Improvements Advisory Committee, Regular Session.**

Commission Deliberation

Vice-Chair Ruthrauff moved to approve the minutes of February 24, 2020. Commissioner Cox seconded the motion.

VOTE ON THE MOTION

DRAFT

AYES: **Fink, Cox, Ruthrauff, Dillon, Del Vecchio, Rawson, Schiestel, Glover, Rembert**

NAYS: **None**

The motion to approve passed with a vote of 9 to 0.

2. Consider approval of the Semi-Annual Impact Fee Report of March 31, 2020 as required by Chapter 395 of the Texas Local Government Code.

Staff Presentation

Brian Waltenburg, Assistant Director of Engineering

Commission Deliberation

Vice-Chair Ruthrauff moved to recommend approval of the Semi-Annual Impact Fee Report of March 31, 2020, as presented. Commissioner Dillon seconded the motion.

VOTE ON THE MOTION

AYES: **Rembert, Glover, Schiestel, Rawson, Del Vecchio, Dillon, Ruthrauff, Cox, Fink**

NAYS: **None**

The motion to approve passed with a vote of 9 to 0.

3. Presentation of land use assumptions as they relate to the ongoing Master Plan and Impact Fee update projects, and opportunity for the Commission to ask questions and provide input.

Staff Presentation

Brian Waltenburg, Assistant Director of Engineering
Pete Kelly, Kimley-Horn
Anthony Samarripas, Kimley-Horn

F. ADJOURNMENT – REGULAR SESSION 6:41 P.M.

TOWN OF FLOWER MOUND, TEXAS

_____
Brian Waltenburg, Assistant Director of Engineering

ATTEST:

_____
LauriAnn Cash, Executive Assistant

DRAFT

CAPITAL IMPROVEMENTS ADVISORY COMMITTEE

AGENDA ITEM NO: 2

REGULAR ITEM

DATE: November 9, 2020

FROM: Brian Waltenburg, P.E., Assistant Director of Engineering

ITEM: **Consider a recommendation to amend the Town of Flower Mound land use assumptions and capital improvements plan and the imposition of an impact fee.**

I. ITEM SUMMARY

Impact Fees allow the Town to recoup costs associated with infrastructure needed to serve new development. The Town is required by Chapter 395 of the Texas Local Government Code to update impact fees every five years. The Town's last impact fee update was done in 2015. The 2020 Impact Fee Updates, performed by Kimley-Horn and Associates, Inc., as attached here, determines the maximum fee allowed by state law. Town Council sets the actual fee to be collected from new development. The Town Council will consider this Committee's recommendation at the December 7, 2020 Town Council meeting.

II. ATTACHMENTS

A. Proposed

1. 2020 Land Use Assumptions for Impact Fee Update
2. 2020 Roadway Impact Fee Update
3. 2020 Water Impact Fee Update
4. 2020 Wastewater Impact Fee Update

Town of Flower Mound, Texas

2020 Land Use Assumptions for Impact Fee Update

November 2020

Prepared for:
Town of Flower Mound

Prepared by:
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Fort Worth, TX 76102
Phone: 817 335 6511

TBPE Firm Registration Number: F-928

Project Number: 061000201

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Purpose

Chapter 395 of the Texas Local Government Code describes the procedure Texas political subdivisions must follow in order to assess impact fees for new development. The first step required in updating impact fees is the development of Land Use Assumptions. These Land Use Assumptions, including both population and employment estimates, form the basis for the development of impact fee Capital Improvement Plans for roadway, wastewater, and water, facilities.

Reasonable future growth estimates are necessary in order to aid the Town of Flower Mound in establishing the need for capital improvements required to serve future development. In accordance with Chapter 395, Kimley-Horn and Associates, Inc. (KHA) has compiled the information required to complete the update of the Land Use Assumptions using the following sources: the Town of Flower Mound Future Land Use Plan, previous land use assumptions used for recent thoroughfare plan modeling, consultation with Town staff, and building permit history. Included in this report are the growth projections based on assumptions pertaining to the type, location, quantity, and timing of various future land uses within the Town. In addition, this report also documents the methodology used in generating the growth and land use assumptions.

Components of the Land Use Assumptions Report

Methodology: An explanation of the general methodology used to create the land use assumptions.

Impact Fee Service Areas: An explanation and the division of Flower Mound into impact fee Service Areas for roadway, wastewater, and water facilities.

Base Year Data: Data on population, employment, and land use for the Town in the year 2020 for each Service Area.

Build Out Population Projection: Population and employment projections by Service Area, for a completely developed scenario.

Ten Year Growth Assumptions: Population and employment growth assumptions over the next ten years (2020-2030) for each Service Area.

Summary: A synopsis of the land use assumptions report.

Methodology

Chapter 395 of the Texas Local Government Code defines Land Use Assumptions as "a description of the service area and projections of changes in land uses, densities, intensities, and population in the service area over at least a 10-year period." The population and employment growth projections formulated in this report were done so using reasonable and generally accepted planning principles.

The future growth projections and land use assumptions were based upon several development patterns, which are listed below.

- Character, type, density, and quantity of existing development
- Zoning patterns in place
- Land use anticipated (as shown in the Master Land Use Plan)
- Growth trends currently in place
- Location and configuration of vacant land
- Physical holding capacity of Flower Mound
- Development projects, known or anticipated

The general methodology used in developing the land use assumptions include:

1. Establishing impact fee service areas for roadway, wastewater, and water facilities. (Exhibit 1, 2, & 3)
2. Collection/determination of population and employment data for the base year 2020.
3. Projection of the population and employment growth by Service Area at build out.
4. Projection of the ten-year (2020-2030) population and employment by Service Area.

Demographics from Denton and Tarrant County Appraisal Districts (DCAD/TAD) parcel data and recent building permit data served as the basis for establishing the year 2020 and ten year (2020-2030) demographic estimates and projections. After analyzing the build-out condition with consultation from Town staff, the determination was made that the build out projections would be based on a future Town population of 111,842.

Impact Fee Service Areas

Roadway Impact Fee Service Areas

The geographic boundaries of the three (3) impact fee service areas for roadway facilities are shown in Exhibit 1. The roadway service areas cover the entire corporate boundary of the Town of Flower Mound. 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." The service areas used in the 2020 Roadway Impact Fee Update are the same as in the previous impact fee update (adopted in 2015).

Wastewater Impact Fee Service Areas

The geographic boundaries of the four (4) impact fee service areas for wastewater facilities are shown in Exhibit 2. These service areas consist of the Long Prairie, Lakeside, Denton Creek, and Prairie Vista areas.

Water Impact Fee Service Areas

The geographic boundary of the impact fee service area for water facilities is shown in Exhibit 3. Note that the water impact fee service area includes the Town limits plus some areas outside the corporate limits where the Town is providing or will be providing service.

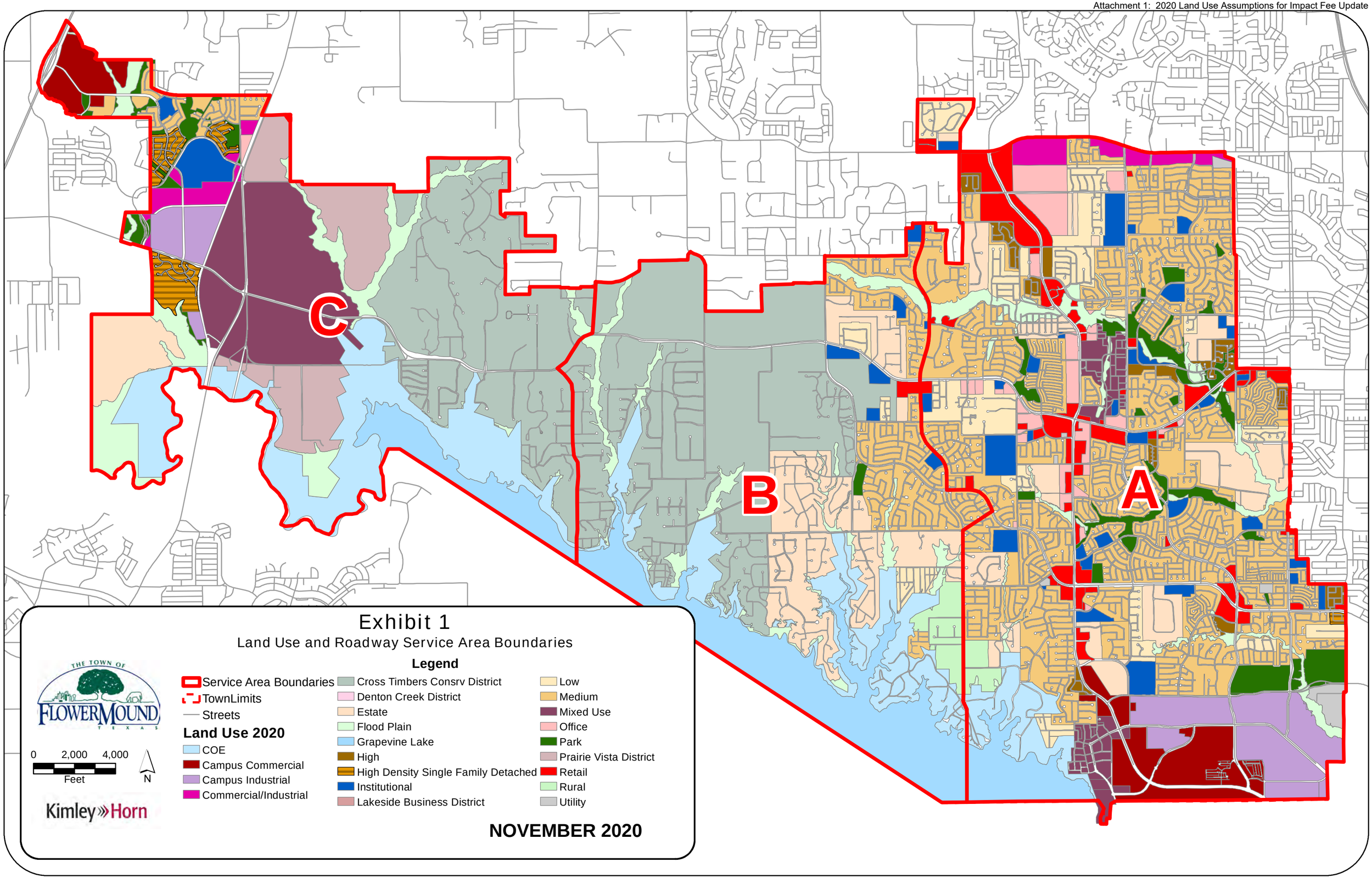

Exhibit 1

Land Use and Roadway Service Area Boundaries

THE TOWN OF FLOWER MOUND TEXAS

0 2,000 4,000
Feet

N

Kimley»Horn

Legend

- Service Area Boundaries
- TownLimits
- Streets

Land Use 2020

- COE
- Campus Commercial
- Campus Industrial
- Commercial/Industrial
- Cross Timbers Consrv District
- Denton Creek District
- Estate
- Flood Plain
- Grapevine Lake
- High
- High Density Single Family Detached
- Institutional
- Lakeside Business District
- Low
- Medium
- Mixed Use
- Office
- Park
- Prairie Vista District
- Retail
- Rural
- Utility

NOVEMBER 2020

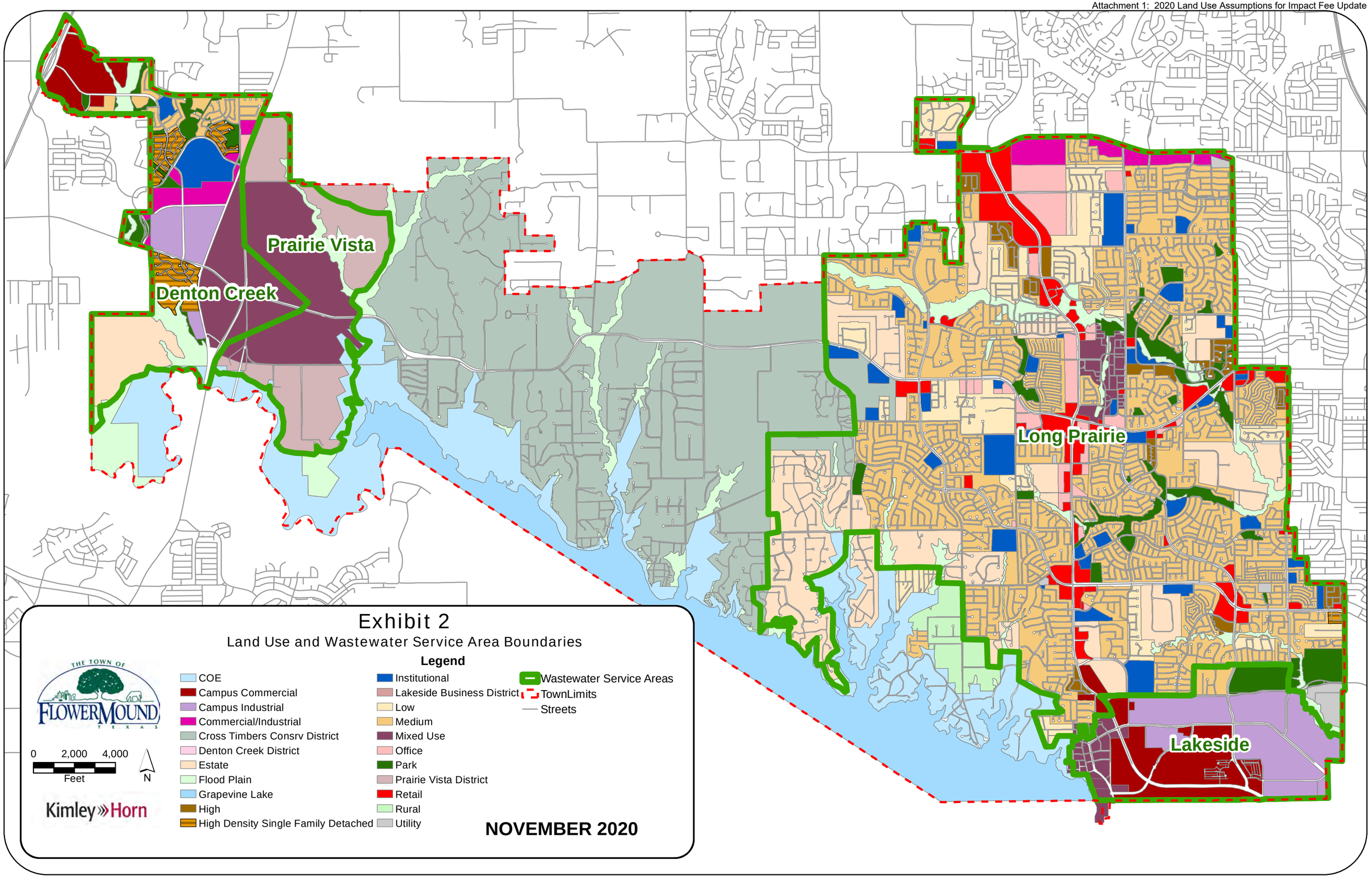

Exhibit 2

Land Use and Wastewater Service Area Boundaries

Legend

- COE
- Campus Commercial
- Campus Industrial
- Commercial/Industrial
- Cross Timbers Consrv District
- Denton Creek District
- Estate
- Flood Plain
- Grapevine Lake
- High
- High Density Single Family Detached
- Institutional
- Lakeside Business District
- Low
- Medium
- Mixed Use
- Office
- Park
- Prairie Vista District
- Retail
- Rural
- Utility
- Wastewater Service Areas
- TownLimits
- Streets

THE TOWN OF FLOWER MOUND TEXAS

0 2,000 4,000
Feet

N

Kimley»Horn

NOVEMBER 2020

Exhibit 3

Land Use and Water Service Area Boundaries

THE TOWN OF FLOWER MOUND TEXAS

0 2,000 4,000
Feet

N

Kimley»Horn

Legend

- COE
- Campus Commercial
- Campus Industrial
- Commercial/Industrial
- Cross Timbers Consrv District
- Denton Creek District
- Estate
- Flood Plain
- Grapevine Lake
- High
- High Density Single Family Detached
- Institutional
- Lakeside Business District
- Low
- Medium
- Mixed Use
- Office
- Park
- Prairie Vista District
- Retail
- Rural
- Utility
- Water Service Area
- TownLimits
- Streets

NOVEMBER 2020

Data Format

The base year, ten year, and build out population and employment estimates were all compiled in accordance with the following categories and format:

Impact Fee Service Areas: Larger zones, which correspond to the proposed roadway, wastewater, and water facilities service areas (as described in the previous section).

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

Population: Number of people, based on person per dwelling unit factors.

Employment: Square feet of building area based on three (3) different classifications.

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

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

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

Town Limits – Base Year Data (2020)

The baseline projections were made for the entire town corporate limits. The roadway, water, and wastewater land use assumptions were derived from these Town wide assumptions.

2020 Population

Population data for Flower Mound from 1970 to 2020 can be seen in the table below.

Year	Flower Mound
1970[1]	1,685
1980[1]	4,402
1990[1]	15,527
1995[2]	29,600
2000[1]	50,702
2010[1]	64,669
2019[3]	76,030
2020[4]	78,085

[1] Source: United States Census
[2] Source: NCTCOG Estimate
[3] Source: Town of Flower Mound Estimate
[4] Source: Kimley-Horn and Associates, Inc.

2020 Employment

The year 2020 employment was estimated using the DCAD parcel data and an aerial survey of existing development. Listed below is a summary of the employment figures for the year 2020.

2020 Employment in Square Feet[1]	
Type	
Basic	8,877,000
Retail	4,430,000
Service	5,743,000
Total	19,050,000

[1] Source: Kimley-Horn and Associates, Inc.

Town Limits – Build Out Year Data

Build Out Population

The build out dwelling unit figures were found by multiplying the Town's build out residential land area by the corresponding housing densities found in the Future Land Use Plan. It is estimated that there will be a total of approximately 40,842 housing units, both single and multi-family, resulting in a build out population of 111,842.

Build Out Employment

Build out employment, expressed as square feet of development, was calculated by multiplying the build out non-residential land area by the corresponding floor-to-area ratio (FAR). A summary of the projected total square feet of employment by basic, retail, and service can be seen below.

Build Out Employment in Square Feet [1]	
Basic	14,131,000
Retail	10,763,000
Service	12,439,000
Total	37,333,000

[1] Source: Kimley-Horn and Associates, Inc.

Roadway Land Use Assumptions Summary

The previously referenced town limit's base line and build out projections were further broken down into the three (3) Roadway Service Areas illustrated in Exhibit 1.

Residential

Based on the historical population data provided by the town, the 10-year rolling growth rate in the Town of Flower Mound as of 2019 was 1.94%. It was reasonable to assume that residential growth rate will be relatively similar during the next ten-year window. Based on knowledge of known growth areas and coordination with Town staff, it was assumed that the residential growth rate will be approximately 1.7% over the next ten years. This growth will add an additional 5,044 residential dwelling units to the Town of Flower Mound, resulting in an approximate 2030 total of 32,690 dwelling units.

Non-Residential

For the roadway land use assumptions, non-residential land uses were displayed in terms of square footage. Non-residential land use was projected based on known growth areas and on input from town staff. This growth will bring approximately an additional 8,022,000 square feet of non-residential development to the Town of Flower Mound by the year 2030.

Table 1 illustrates the baseline (2020), ten-year window (2030) by Roadway Service Area.

Table 1. Population and Employment Data by Roadway Service Area

Service Area	Year	Population	Units	Employment			
				Basic	Service	Retail	Total
A	2020	62,370	22,082	8,781,000	5,127,000	4,315,000	18,223,000
	2030	66,980	23,884	9,930,000	7,491,000	5,891,000	23,312,000
	Buildout	70,070	25,092	10,769,000	8,440,000	6,619,000	25,828,000
B	2020	11,775	4,169	41,000	477,000	115,000	633,000
	2030	12,108	4,299	41,000	537,000	115,000	693,000
	Buildout	13,154	4,708	41,000	547,000	140,000	728,000
C	2020	3,940	1,395	55,000	139,000	0	194,000
	2030	11,901	4,507	690,000	1,148,000	1,229,000	3,067,000
	Buildout	28,619	11,042	3,321,000	3,452,000	4,004,000	10,777,000
Total	2020	78,085	27,646	8,877,000	5,743,000	4,430,000	19,050,000
	2030	90,988	32,690	10,661,000	9,176,000	7,235,000	27,072,000
	Buildout	111,842	40,842	14,131,000	12,439,000	10,763,000	37,333,000

Wastewater Land Use Assumptions Summary

The previously referenced town limit's base line and build out projections were further broken down into the four (4) Wastewater Service Areas illustrated in Exhibit 2.

Table 2 illustrates the baseline (2020), ten-year window (2030), and build out by Wastewater Service Areas. For wastewater the non-residential land uses are converted to acreage. Note the land uses for the wastewater services area do not include the Cross Timbers Protection Area.

Table 2. Population and Employment by Wastewater Service Area

SA	Year	Population	Units	Employment			
				Basic	Service	Retail	Total
Denton Creek	2020	2,028	718	32,000	133,000	0	165,000
	2030	6,249	2,368	667,000	823,000	750,000	2,240,000
	Buildout	13,251	5,105	3,933,000	3,178,000	3,318,000	10,429,000
Prairie Vista	2020	42	15	23,000	0	0	23,000
	2030	3,153	1,231	23,000	276,000	414,000	713,000
	Buildout	11,150	4,357	23,000	1,147,000	1,720,000	2,890,000
Lakeside	2020	6,578	2,329	8,534,000	100,000	213,000	8,847,000
	2030	9,594	3,508	9,512,000	1,700,000	1,541,000	12,753,000
	Buildout	10,912	4,023	11,328,000	3,804,000	3,259,000	18,391,000
Long Prairie	2020	64,084	22,689	248,000	5,504,000	4,203,000	9,955,000
	2030	65,680	23,313	419,000	6,273,000	4,431,000	11,123,000
	Buildout	67,581	24,056	590,000	7,458,000	5,002,000	13,050,000
Total 2020		72,732	25,751	8,837,000	5,737,000	4,416,000	18,990,000
Total 2030		84,676	30,420	10,621,000	9,072,000	7,136,000	26,829,000
Buildout		102,893	37,541	15,874,000	15,587,000	13,299,000	44,760,000

Water Land Use Assumptions Summary

As previously mentioned, the Water Service Area is roughly a combination of the three roadway Service Areas.

Table 3 illustrates the baseline (2020) and ten-year window (2030) by the Water Service Area.

Table 3. Employment and Population Data by Service Area

Service Area	Year	Population	Units	Employment			
				Basic	Service	Retail	Total
Town Limits	2020	77,286	27,363	8,861,000	5,560,000	4,360,000	18,781,000
	2030	89,499	32,137	10,386,000	8,266,000	6,568,000	25,220,000
	Buildout	108,171	39,436	13,619,000	10,291,000	8,971,000	32,881,000

Summary

The following is a summary for the Town limits. This is equivalent to the roadway land use assumptions which was the adjusted for the wastewater and water land use assumptions.

- The existing (2020) population is approximately 78,085.
- The existing (2020) employment area is approximately 19,050,000 square feet.
- The ten-year (2030) population projection is approximately 90,998.
- The ten-year (2030) employment area projection is approximately 27,072,000 square feet.
- The build out population projection is approximately 111,842.
- The build out employment area projection is approximately 37,333,000 square feet.





THE TOWN OF FLOWER MOUND TEXAS

2020 Roadway Impact Fee Update

Town of Flower Mound, Texas

Kimley»Horn



Town of Flower Mound, Texas

2020 Roadway Impact Fee Update

November 2020

Prepared for:
Town of Flower Mound

Prepared by:
Kimley»Horn
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Fort Worth, TX 76102
Phone: 817 335 6511

TBPE Firm Registration Number: F-928

Project Number: 061000201

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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 roadway and drainage, water, and wastewater facilities. In 2020, the Town of Flower Mound began its update of the previously adopted (2015) Roadway, Water, and Wastewater Impact Fees as a funding tool for infrastructure needs as a result of growth in the Town.

In the most basic terms, impact fees are meant to recover the incremental cost of the impact of each new unit of development towards new infrastructure needs. Impact Fees are a mathematical calculation that determine a maximum fee that would be equivalent to growth paying for growth. This study's purpose is to calculate the maximum impact fee per service unit of new growth.

The Maximum Impact Fee is considered an appropriate measure of the impacts generated by a new unit of development on a city's infrastructure system. An impact fee program is anticipated to be designed so that it is predictable for both the development community and city. An impact fee program is transparent. This report describes in detail how the fee is calculated and how the Capital Improvements Advisory Committee (CIAC) monitors the Impact Fee program. An impact fee program is flexible in that funds can be used on priority projects and not just on projects adjacent to a specific development. An impact fee program is both equitable and proportional in that every new development pays an equal fee that is directly related to its systemwide impact.

Impact Fee Basics

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 a 6-mile diameter trip length. In Flower Mound, this results in the creation of three (3) separate Roadway Service Areas. For Water and Wastewater Impact Fees, this study utilizes a singular Service Area for the Water and Wastewater components respectively. The Water and Wastewater Impact Fees are addressed in a separate report.

Land Use Assumptions

The 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 2020-2030. The 10-year increase in residential units is projected to be 5,044 units within the Town Limits. The 2030 projections show an increase of 8,022,000 square feet of non-residential land uses over the 10-year window. These projections set the basis for determining loadings and demands to serve new growth. The distribution of residential and non-residential growth utilized information from historical population data and input from Town staff.

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 to quantify the supply and demand for roads and utilities in the Town. Service units are attributable to an individual unit of development and utilized to calculate the maximum impact fee of a development.

For roadway purposes, the service unit is defined as a vehicle-mile. A "vehicle-mile" refers to the capacity consumed in a single lane by a vehicle making a trip one mile in length during the PM peak hour. The PM peak hour is the one-hour period during the afternoon/evening when the highest vehicular volumes are observed. In accordance with the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*, the PM Peak is used as the basis for transportation planning and the estimation of trips caused by new development.

Capital Improvement Plans

The Town and project staff have identified the roadway, water, and wastewater projects needed to accommodate the projected growth over the next ten (10) years within the Town of Flower Mound. These projects include existing, proposed, and recently completed projects that were determined based on their current or anticipated impact on each defined Service Area and the Town as a whole.

Roadway Impact Fee Capital Improvement Plan

The Town of Flower Mound Thoroughfare Plan is the ultimate plan for the roadway infrastructure within the Town Limits. The projects on the Roadway Impact Fee Capital Improvement Plan were selected from the Thoroughfare Plan and cover existing, proposed, and completed roadway improvements, as well as intersection improvements with 10-year growth potential. The project team and Town staff identified roadway and intersection projects with a projected total project cost (*not* impact fee eligible cost) of $170,120,119 over three (3) Roadway Service Areas.

Recoverable Project Costs

Impact Fees are a one-time fee meant to recover the incremental cost of the impact of each new unit of development creating new infrastructure needs within a ten-year window. With this consideration, the maximum assessable impact fee does not specifically cover the entire cost of a roadway, water, or wastewater project. The calculations that determine the percentage of a project's cost that is impact fee eligible are defined as the project's *recoverable cost*.

Roadway Recoverable Project Costs

The recoverable costs for roadway projects are calculated by first determining the net capacity of vehicle-miles supplied to support future growth within a 10-year window. This net capacity is then multiplied by the percentage of roadway capacity added attributable to this 10-year growth. This growth percentage is obtained through the derivation of a *transportation demand factor* (TDF), which computes the total vehicle-miles associated to a single land use development unit. The TDF is applied to both the net vehicle-miles supplied and the vehicle-mile growth projections to calculate the growth percentage needed to determine the total recoverable project costs, which total $116,345,778 (pre-finance) over three (3) Roadway Service Areas. Per state law this recoverable cost is reduced to account for future ad valorem tax revenues from the new development.

Maximum Assessable Impact Fee Calculation

In simplest terms, the maximum impact fee allowable by law is calculated by dividing the recoverable cost of the Capital Improvement Plans by the number of new service units of development. In accordance with state law, both the cost of the Capital Improvement Plan and the number of new service units of development used in the equation

are based on the growth and corresponding capacity needs projected to occur within a 10-year window. This calculation is performed for each service area individually; each service area has a stand-alone Capital Improvement Plan and 10-year growth projection.

In practice, there are many factors that complicate this calculation. The maximum impact fee allowable by law for each service area is shown on the following page:

Roadway Service Area	Roadway Maximum Fee Per Single Family Dwelling[1]
A	$2,954
B	$17,974
C	$15,976

Adoption Process

Chapter 395 of the Texas Local Government Code stipulates a specific process for the adoption of impact fees. A Capital Improvements Advisory Committee (CIAC) is required to review the Land Use Assumptions and Capacity Plan used in calculating the maximum fee, and to provide the Committee's findings for consideration by the Town Council. This CIAC also reviews the calculation and resulting maximum fees and provides its findings to the Town Council. The composition of the CIAC is required to have adequate representation of the building and development communities. In Flower Mound this is the Planning & Zoning Commission plus representatives from the Real Estate and Development communities. The Town Council then conducts a public hearing on the Land Use Assumptions, Capital Improvements Plan, and Impact Fee Ordinance.

Following policy adoption, the CIAC is tasked with advising the Town Council of the need to update the Land Use Assumptions or the Capital Improvements Plan 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.

Chapter 395 of the Texas Local Government Code requires a total of two (2) public hearings before Council to approve an impact fee program. The first public hearing to discuss the land use assumptions and capacity plans was held on October 5, 2020. The second public hearing is scheduled to be held on December 7, 2020 with the intent of presenting a proposal for impact fee calculations and the adoption of an impact fee report (this study) and ordinance.

I. Introduction

Chapter 395 of the Texas Local Government Code describes the procedure Texas cities must follow in order to create and implement Impact Fees. Senate Bill 243 (SB 243) amended Chapter 395 in September 2001 to define an Impact Fee as "a charge or assessment imposed by a political subdivision against new development in order to generate revenue for funding or recouping the costs of capital improvements or facility expansions necessitated by and attributable to the new development."

Chapter 395 mandates that impact fees be reviewed and updated at least every five (5) years. Accordingly, the Town of Flower Mound has initiated a review of its Land Use Assumptions, Capital Improvement Plan (CIP), and Roadway Impact Fees. The Town has retained Kimley-Horn and Associates, Inc. to provide professional transportation engineering services for the 2020 update of their Roadway Impact Fees. This report includes the details of the Roadway Impact Fee calculation methodology in accordance with Chapter 395 and the adopted revisions to the Land Use Assumptions, Capital Improvement Plan, and refinement of the Land Use Equivalency Table.

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

1. Land Use Assumptions (Pg. 2)
2. Capital Improvement Plan (Pg. 4)

Information from the Land Use Assumptions and this Capital Improvement Plan is used extensively throughout the remainder of the report.

This report consists of a detailed discussion of the methodology for the computation of impact fees and is broken down into two components:

1. Methodology for Roadway Impact Fees (Pg. 8)
2. Roadway Impact Fee Calculation (Pg. 19)

The components of the Methodology for Roadway Impact Fee include development of:

- Service Areas
- Service Units
- Cost Per Service Unit
- Cost of the CIP
- Service Unit Calculation

The components of the Roadway Impact Fee Calculation include:

- Maximum Assessable Impact Fee Per Service Unit
- Service Unit Demand Per Unit of Development

This report also includes a section concerning the Plan for Awarding the Roadway Impact Fee Credit. This plan, prepared by NewGen Strategies, details the maximum assessable impact fee per service unit the Town of Flower Mound may apply under Chapter 395 of the Texas Local Government Code.

The final section of the report is the Conclusion, which presents the findings of the update analysis and summarizes the report.

II. Roadway Impact Fee Calculation Inputs

A. Land Use Assumptions

In order to assess an impact fee, land use assumptions must be developed to provide the basis for population 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 population in the service area. The land use assumptions used in this report were developed and presented in a separate report titled 2020 Land Use Assumptions for Impact Fee Update (September 2020, Kimley-Horn and Associates, Inc.).

The future land use map and the geographic boundaries of the impact fee service areas for roadway facilities are shown in Exhibit 1. The Town of Flower Mound is divided into three (3) service areas, each based on a six (6) mile limit as required in Chapter 395.

Table 1 summarizes the residential and non-residential projections by service area within the Town of Flower Mound for 2020 and 2030. The Build Out projections are provided for reference purposes only. The information provided in Table 1 was taken from the previously referenced 2020 Land Use Assumptions for Impact Fee Update.

Table 1. Residential and Non-Residential Projections for the Town of Flower Mound

Service Area	Year	Population	Units	Employment			
				Basic	Service	Retail	Total
A	2020	62,370	22,082	8,781,000	5,127,000	4,315,000	18,223,000
	2030	66,980	23,884	9,930,000	7,491,000	5,891,000	23,312,000
	Buildout	70,070	25,092	10,769,000	8,440,000	6,619,000	25,828,000
B	2020	11,775	4,169	41,000	477,000	115,000	633,000
	2030	12,108	4,299	41,000	537,000	115,000	693,000
	Buildout	13,154	4,708	41,000	547,000	140,000	728,000
C	2020	3,940	1,395	55,000	139,000	0	194,000
	2030	11,901	4,507	690,000	1,148,000	1,229,000	3,067,000
	Buildout	28,619	11,042	3,321,000	3,452,000	4,004,000	10,777,000
Total	2020	78,085	27,646	8,877,000	5,743,000	4,430,000	19,050,000
	2030	90,988	32,690	10,661,000	9,176,000	7,235,000	27,072,000
	Buildout	111,842	40,842	14,131,000	12,439,000	10,763,000	37,333,000

C

B

A

Exhibit 1

Land Use and Roadway Service Area Boundaries

THE TOWN OF FLOWER MOUND TEXAS

0 2,000 4,000

Feet

N

Kimley»Horn

Legend

- Service Area Boundaries
- TownLimits
- Streets

Land Use 2020

- COE
- Campus Commercial
- Campus Industrial
- Commercial/Industrial
- Cross Timbers Consrv District
- Denton Creek District
- Estate
- Flood Plain
- Grapevine Lake
- High
- High Density Single Family Detached
- Institutional
- Lakeside Business District
- Low
- Medium
- Mixed Use
- Office
- Park
- Prairie Vista District
- Retail
- Rural
- Utility

NOVEMBER 2020

B. Capital Improvement Plan

The Town has identified the Town-funded transportation projects needed to accommodate the projected growth within the Town. The Capital Improvement Plan (CIP) for Roadway Impact Fees is made up of the following:

- Recently completed projects with excess capacity available to serve new growth;
- Projects currently under construction; and
- All remaining projects needed to complete the Town's Master Thoroughfare Plan.

The CIP includes arterial and collector class roadway facilities as well as intersection improvements. All of the facilities are part of the currently adopted Master Thoroughfare Plan.

The CIP for Roadway Impact Fees for the 2020 Impact Fee Update is listed in Table 2 and mapped in Exhibit 2. The table shows the length of each project as well as the facility's Master Thoroughfare Plan classification. The CIP was developed in conjunction with input from Town of Flower Mound staff and represents those projects that will be needed to accommodate the growth projected in the 2020 Land Use Assumptions for Impact Fee Update.

Table 2.A. Roadway Improvement Plan for Roadway Impact Fees – Service Area A

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
Service Area A	A-1	UMAD	Aberdeen Dr	FM 2499 (Long Prairie Rd) to 1340' N of Spinks Rd	0.48	100%
	A-2	UMAD	Aberdeen Dr	1340' N of Spinks Rd to 700' N of Spinks Rd	0.12	100%
	A-3	UMAU	Chinn Chapel Rd	FM 407 (Justin Rd) to Waketon Rd	0.66	50%
	A-4	UMAD	Dixon Ln	Chinn Chapel Rd to Crestside Dr	1.24	100%
	A-5	UMAU	Duncan Ln	Honeysuckle Way to Spinks Rd	0.38	50%
	A-6	UMAU	Firewheel Dr	515' S of FM 1171 to 140' S of Hearthstone Dr	0.24	100%
	A-7	P6D	FM 2499 (Long Prairie Rd)	FM 1171 (Cross Timbers) to Spinks Rd	2.73	100%
	A-8	GUA	Garden Ridge Blvd	Bellaire Blvd to Forest Vista Dr	0.81	50%
	A-9	GUA	Garden Ridge Blvd	FM 3040 to Spinks Rd	0.75	100%
	A-10	GUA	Garden Ridge Blvd	Spinks Rd to Lakeside Pkwy	0.42	100%
	A-11	UC	Kirkpatrick Ln	Morriss Rd to Kirkpatrick Ln	0.99	100%
	A-12	UMAD	Kirkpatrick Ln	Spanish Oak Dr to 1310' W of Garden Ridge Blvd	0.41	100%
	A-13	UC	Lake Forest Blvd	75' S of Lincoln Ct to Foxborough Trail	0.15	100%
	A-14	P6D	Lakeside Pkwy	FM 2499 (Long Prairie Rd) to Gerault Rd	1.08	100%
	A-15	P6D	Lakeside Pkwy	Gerault Rd to Garden Ridge Blvd	0.50	100%
	A-16	P6D	Lakeside Pkwy	Garden Ridge Blvd to South Town Limit	0.53	100%
	A-17	UMAD	Morriss Rd	Mandarin Way to Flower Mound Rd	0.16	100%
	A-18	UC	Sagebrush Dr	Old Settlers Rd to FM 2499 (Long Prairie Rd)	0.51	100%
	A-19,B-6	UMAU	Simmons Rd	Wichita Trail to McKamy Creek Rd	0.51	50%
	A-20	UMAD	Spinks Rd	Aberdeen Dr to Gerault Rd	0.93	100%
	A-21	UMAD	Spinks Rd	Gerault Rd to Garden Ridge Blvd	0.56	100%
	A-22	UMAU	Timber Creek Rd	445' S of Glenn Hollow Ln to Kirkpatrick Ln	0.20	100%
	A-23	UC	Waketon/College Connector	Waketon Rd to College Pkwy	0.27	100%
	A-24	UC	Windsor Dr	Amy Ln to FM 2499 (Long Prairie Rd)	0.60	100%
	A-25	UC	Yucca Dr	440' E of FM 2499 to 460' S of FM 1171	0.08	100%
	S-1		Intersection	College Pkwy. at Timber Creek Rd.		100%
	S-2		Intersection	Bruton Orand Blvd. at Quail Run Rd.		50%
	S-3		Intersection	Churchill Dr. at Peters Colony Rd.		100%
	S-4		Intersection	Cross Timbers Rd. at Forums Dr.		100%
	S-5		Intersection	Garden Ridge Blvd. at Kirkpatrick Ln.		100%
	S-6		Intersection	FM 2499 (Long Prairie Rd.) at Chaparral Ln.		100%
	S-7		Intersection	Garden Ridge Blvd. at Forest Vista Rd.		100%
	S-8		Intersection	FM 2499 (Long Prairie Rd.) at Northshore Blvd.		100%
	S-9		Intersection	FM 2499 (Long Prairie Rd.) at Aberdeen Dr.		100%
	S-10		Intersection	Lakeside Pkwy. at Silveron Blvd.		100%
	S-11		Intersection	FM 2499 (Long Prairie Rd.) at Silveron Blvd.		100%
	S-12		Intersection	Gerault Rd. at Old Gerault Rd.		100%
	S-13		Intersection	Lakeside Pkwy. at Enterprise Dr.		100%
	I - 1		Intersection Improvement	Dixon Ln. at Morriss Rd.		100%
	I - 2		Right-turn lane - all directions	FM 2499 (Long Prairie Rd.) at Waketon Rd.		100%
	I - 3		Intersection Improvement	FM 2499 (Long Prairie Rd.) at College Pkwy.		100%
	I - 4		Northbound right-turn lane	Bruton Orand Blvd. at Cross Timbers Rd.		50%
	I - 5		Intersection Improvement	Cross Timbers Rd. at Auburn Dr.		100%
	I - 6		Westbound right-turn lane	Cross Timbers Rd. at FM 2499 (Long Prairie Rd.)		100%
	I - 7		Intersection Improvement	Flower Mound Rd. at McKamy Creek Rd.		100%
	I - 8		Second left-turn lane, EB and SB	Flower Mound Rd. at FM 2499 (Long Prairie Rd.)		100%
	I - 9		Intersection Improvement	Flower Mound Rd. at Garden Ridge Blvd.		100%
	I - 10		Intersection Improvement	FM 2499 (Long Prairie Rd.) at Lakeside Pkwy.		100%
	I-11		Intersection Improvement	Lakeside Pkwy. At Gerault Rd.		100%

Table 2.B. Roadway Improvement Plan for Roadway Impact Fees – Service Area B

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
Service Area B	B-1	UMAD	Flower Mound Rd	FM 1171 (Cross Timbers) to Skillern Rd	1.21	100%
	B-2	RC	Red Rock/Shiloh Connector	Red Rock Ln to Shiloh Rd	1.01	100%
	B-3	RC	Scenic /Flower Mound Connector	Scenic Dr to Alcott Ave	0.45	100%
	B-4	RC	Shiloh Rd/Lusk Ln Connector	2820' E of Shiloh Rd to Lusk Ln	0.58	100%
	B-5	RC	Shiloh Rd/Lusk Ln Connector	Shiloh Rd to 2820' E of Shiloh Rd	0.53	50%
	A-19,B-6	UMAU	Simmons Rd	Wichita Trail to McKamy Creek Rd	0.51	50%
	S-2		Intersection	Bruton Orand Blvd. at Quail Run Rd.		50%
	I - 4		Northbound right-turn lane	Bruton Orand Blvd. at Cross Timbers Rd.		50%
	I-12		Intersection Improvement	Cross Timbers Rd. at Flower Mound Rd.		100%

Table 2.C. Roadway Improvement Plan for Roadway Impact Fees – Service Area C

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
Service Area C	C-1	RC	CrossTimbers/Dunham Connector	Cross Timbers Rd to Dunham Rd	0.51	100%
	C-2	GRA	CrossTimbers/US 377 Connector1	US 377 to Cross Timbers Rd	2.14	100%
	C-3	RC	CrossTimbers/US 377 Connector2	CrossTimbers/US 377 Connector1 to Cross Timbers Rd	0.90	100%
	C-4	UMABL	Denton Creek Blvd	IH-35 Diamond Interchange to 120' NW of Prairie Ridge Rd	1.17	100%
	C-5	UMABL	Denton Creek Blvd	Canyon Falls Dr to 1155' S of Canyon Falls Dr	0.23	100%
	C-6	UMABL	Denton Creek Blvd	1155' S of Canyon Falls Dr to Cross Timbers Rd	0.68	100%
	C-7	UC	Stonecrest Rd	850' S of Canyon Falls Dr to UMAB 1	0.24	100%
	C-8	UC	Stonecrest Rd	UMAB 1 to Cross Timbers Rd	0.70	100%
	C-9	UMABL	UMAB 1	Denton Creek Blvd to US 377	0.57	100%
	C-10	UMABL	UMAB2	Denton Creek Blvd to West Town Limit	0.27	100%
	C-11	UC	Urban Collector 1	Cross Timbers Road to Cross Timbers Rd	0.83	100%
	C-12	UC	Urban Collector 1	Stonecrest Rd to Cross Timbers Rd	0.59	100%
	S-14		Intersection	US 377 at Canyon Falls Dr.		100%
	S-15		Intersection	Cross Timbers Rd. at Canyon Falls Dr.		50%
	S-16		Intersection	Cross Timbers Rd. at Denton Creek Blvd.		100%
	S-17		Intersection	Cross Timbers Rd. at Cross Timbers/US 377 Connector 1		100%

Exhibit 2

Roadway Impact Fee CIP

THE TOWN OF FLOWER MOUND TEXAS

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Feet

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Legend

- Bridge, Proposed
- Intersection Improvements, Completed
- Intersection Improvements, In Design
- Intersection Improvements, Proposed
- Signal, Completed
- Signal, In Design
- Signal, Partially Completed
- Signal, Proposed

Impact Fee CIP

- Impact Fee Eligible Projects
- Impact Fee Eligible Widening Projects
- Impact Fee Eligible Median Lane Projects
- Impact Fee Eligible Completed Projects
- Other Thoroughfare Facilities

Service Areas

- A
- B
- C

III. Methodology for Roadway Impact Fees

A. Service Areas

The three (3) service areas used in the 2020 Roadway Impact Fee Update are shown in the previously referenced Exhibit 1. These service areas cover the entire corporate boundary of the Town of Flower Mound. 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." The roadway service areas used in the 2020 Roadway Impact Fee Update are the same as in the previous impact fee update (adopted in 2015).

B. Service Units

The "service unit" is a measure of consumption or use of the roadway facilities by new development. In other words, it is the measure of supply and demand for roads in the Town. For transportation purposes, the service unit is defined as a vehicle-mile.

Another aspect of the service unit is the service volume that is provided (supplied) by a lane-mile of roadway facility. This number, also referred to as capacity, is a function of the facility type, facility configuration, number of lanes, and level of service. 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 commonly 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 Flower Mound Thoroughfare Plan (see Appendix B).

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

The hourly service volumes used in the Roadway Impact Fee Update are based upon Thoroughfare Capacity Criteria published by the North Central Texas Council of Governments (NCTCOG) and applied to the Town of Flower Mound. Tables 3A and 3B shows the service volumes as a function of the facility type.

Table 3A. Level of Use for Proposed Facilities
(used in Appendix B – CIP Units of Supply)

Roadway Type (MTP Classifications)	Median Configuration	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
P6D – Major Arterial	Divided	750
GUA – Greenway Urban Arterial	Divided	650
GRA – Greenway Rural Arterial	Divided	650
UMAD – Urban Minor Arterial	Divided	650
UMABL* – Urban Minor Arterial	Divided	650
UMAU – Urban Minor Arterial	Undivided	525
UC – Urban Collector	Undivided	425
RC – Rural Collector	Undivided	425

*(BL) – Facilities with bike lanes

Table 3B. Level of Use for Existing Facilities
(used in Appendix C – Existing Facilities Inventory)

Roadway Type	Description	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
7U	Seven lane undivided (TWLTL)	750
6D	Six lane divided	750
5U	Five lane undivided (TWLTL)	625
4D	Four lane divided	650
4U	Four lane undivided	525
3U	Three lane undivided (TWLTL)	525
2U-H	High Speed, Limited Access Two lane	750
2U	Two lane undivided	475
2U-R	Rural Cross-Section (i.e. gravel, dirt, etc.)	150

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. This cost per service unit is the cost to construct a roadway (lane-mile) needed to accommodate a vehicle-mile of travel at a level of service corresponding to the Town's standards. The cost per service unit is calculated for each service area based on a specific list of projects within that service area.

The second component of the cost per service unit is 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. Chapter 395 requires that impact fees be assessed only to pay for growth projected to occur in the Town limits within the next ten-years, a concept that will be covered in a later section of this report (see Section III.E). As noted earlier, the units of demand are vehicle-miles of travel.

D. Cost of the CIP

The costs that may be included in the cost per service unit are all of the implementation costs for the Roadway Impact Fee Update, as well as project costs for arterial system elements within the Capital Improvement 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 Improvement Plan who is not an employee of the political subdivision."

The engineer's opinion of the probable costs of the projects in the 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 costs for location-specific items such as bridges, highway ramps, drainage structures, and any other special components are added to each project as appropriate. In addition, based upon discussions with Town of Flower Mound staff, projects in which the Town has contributed a portion of the total project cost have been included in the CIP as lump sum costs. The following is a detailed description of the costing worksheet/methodology for the Roadway Impact Fee CIP.

1. Overview of Roadway Impact Fee CIP Costing Worksheets

For each project a specific costing worksheet was developed (see Appendix A). Each worksheet contained the following four (4) main components:

- Project Information,
- Construction Pay Items,
- Construction Component Allowances and
- Summary of Costs and Allowances

Project Information

Construction Pay Items

Construction Component Allowances

Summary of Costs and Allowances

Town of Flower Mound

2020 Roadway Impact Fee Update
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.
updated: 10/16/2020

Project Information:		**Description:**	**Project No.**	**A-2**
Name:	Aberdeen Dr	**This project consists of the widening of the existing two-lane concrete facility into a four-lane divided Urban Minor Arterial.**		
Limits:	1340' N of Spinks Rd to 700' N of Spinks Rd			
Impact Fee Class:	UMAD (1/2)			
Ultimate Class:	UMAD			
Length (lf):	655			
Service Area(s):	A			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
112	Unclassified Street Excavation	946	CY	$ 27.00	$ 25,545
212	10" Lime Stabilization	2,038	SY	$ 15.00	$ 30,567
312	8" Reinforced Concrete	1,892	SY	$ 73.00	$ 138,132
412	Block Sod with 4" Topsoil (with sidewalk)	509	SY	$ 10.00	$ 5,094
512	4' Sidewalk	2,620	SF	$ 8.00	$ 20,960
				Paving Construction Cost Subtotal:	**$ 220,298**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 11,015
√	Traffic Control	Construction Phase Traffic Control	15%	$ 33,045
√	Pavement Markings/Markers		5%	$ 11,015
√	Roadway Drainage	Standard Internal System	35%	$ 77,104
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 11,015
√	Sewer	Minor Adjustments	5%	$ 11,015
√	Establish Turf / Erosion Control		2%	$ 4,406
√	Illumination	Standard Ilumination System	6%	$ 13,218
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 171,833**
			Paving and Allowance Subtotal:	**$ 392,131**
			Construction Contingency: 15%	$ 58,820
			Construction Cost TOTAL:	**$ 451,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 451,000**
Engineering/Survey/Testing:		20%	$ 90,200
Mobilization		6%	$ 27,060
ROW/Easement Acquisition:	Existing Alignment	15%	$ 67,650
		Impact Fee Project Cost TOTAL:	**$ 636,000**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.
The planning level cost projections shall not supersede the Town's Design Criteria and Construction Standards in the Code of Ordinances or the determination of the Town Engineer for a specific project.

2. 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.
- Name – A unique identifier for each project. In some cases where roadway names are unknown the connecting limits may be used such as US 377 – FM 1171.
- Limits – Represents the beginning and ending location for each project.
- Impact Fee Class – 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 Thoroughfare Plan classification of the roadway. For example, UMAU stands for Urban Minor Arterial Undivided. A UMAU 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;
  - "(1/6)" for future six-lane principal arterial facilities where one additional lane is needed
  - "(1/3)" for future six-lane principal arterial facilities where two additional median lanes are needed
  - "(2/3)" for future six-lane principal arterial facilities where four additional lanes are needed
- Ultimate Class – The functional classification on Flower Mound's Thoroughfare Plan.
- Length (ft) – The distance measured in feet that is used to cost out the project.
- Service Area(s) – Represents the service areas where the project is located.
- Description – Used to describe the project type assumed in the costing such as a widening or reconstruction.

3. Construction Pay Items

A typical roadway project consists of a number of costs, including the following: planning, survey, design engineering, permitting, right-of way acquisition, 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. Each new project's construction cost was divided into three cost components: roadway construction cost, major construction component allowances, and summary of cost and allowances.

4. Construction Component Allowances

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

In addition, lump sum dollar allowances are provided for special drainage structures, railroad crossings, and intersection improvements where needs are anticipated. The paving and allowance subtotal is given a fifteen percent (15%) contingency.

5. Summary of Cost and Allowances

To determine the total Impact Fee Project Cost, twenty percent (20%) of the construction cost total is added for engineering, surveying, and testing. An additional six percent (6%) of the construction cost total is added for mobilization.

Percentages are also allotted for ROW/easement acquisition. ROW/easement acquisition was based on whether the project was an existing alignment or future alignment. For an existing alignment, the ROW/easement acquisition cost was provided an allotment equal to 15% of the construction cost total. For a new alignment, the ROW/easement acquisition cost was equal to 30% of the construction cost total. The value for ROW/easement acquisition is an estimated contribution allocation and does not represent actual ROW/easement acquisition needs.

The Impact Fee Project Cost Total is the Construction Cost Total plus engineering, surveying, testing, and inspection; plus ROW/easement acquisition; and minus roadway escrow agreements.

Table 4.A – 10-Year Capital Improvement Plan for Roadway Impact Fees with Conceptual Level Project Cost Projections – Service Area A

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
Service Area A	A-1	UMAD	Aberdeen Dr	FM 2499 (Long Prairie Rd) to 1340' N of Spinks Rd	0.48	100%	$ 1,454,821	$ 1,454,821
	A-2	UMAD	Aberdeen Dr	1340' N of Spinks Rd to 700' N of Spinks Rd	0.12	100%	$ 636,000	$ 636,000
	A-3	UMAU	Chinn Chapel Rd	FM 407 (Justin Rd) to Waketon Rd	0.66	50%	$ 2,728,803	$ 1,364,402
	A-4	UMAD	Dixon Ln	Chinn Chapel Rd to Crestside Dr	1.24	100%	$ 5,297,438	$ 5,297,438
	A-5	UMAU	Duncan Ln	Honeysuckle Way to Spinks Rd	0.38	50%	$ 562,532	$ 281,266
	A-6	UMAU	Firewheel Dr	515' S of FM 1171 to 140' S of Hearthstone Dr	0.24	100%	$ 603,525	$ 603,525
	A-7	P6D	FM 2499 (Long Prairie Rd)	FM 1171 (Cross Timbers) to Spinks Rd	2.73	100%	$ 1,515,721	$ 1,515,721
	A-8	GUA	Garden Ridge Blvd	Bellaire Blvd to Forest Vista Dr	0.81	50%	$ 1,146,031	$ 573,016
	A-9	GUA	Garden Ridge Blvd	FM 3040 to Spinks Rd	0.75	100%	$ 1,891,126	$ 1,891,126
	A-10	GUA	Garden Ridge Blvd	Spinks Rd to Lakeside Pkwy	0.42	100%	$ 2,504,704	$ 2,504,704
	A-11	UC	Kirkpatrick Ln	Morriss Rd to Kirkpatrick Ln	0.99	100%	$ 3,794,884	$ 3,794,884
	A-12	UMAD	Kirkpatrick Ln	Spanish Oak Dr to 1310' W of Garden Ridge Blvd	0.41	100%	$ 5,243,000	$ 5,243,000
	A-13	UC	Lake Forest Blvd	75' S of Lincoln Ct to Foxborough Trail	0.15	100%	$ 1,400,601	$ 1,400,601
	A-14	P6D	Lakeside Pkwy	FM 2499 (Long Prairie Rd) to Gerault Rd	1.08	100%	$ 4,375,554	$ 4,375,554
	A-15	P6D	Lakeside Pkwy	Gerault Rd to Garden Ridge Blvd	0.50	100%	$ 2,018,856	$ 2,018,856
	A-16	P6D	Lakeside Pkwy	Garden Ridge Blvd to South Town Limit	0.53	100%	$ 2,145,590	$ 2,145,590
	A-17	UMAD	Morriss Rd	Mandarin Way to Flower Mound Rd	0.16	100%	$ 1,009,492	$ 1,009,492
	A-18	UC	Sagebrush Dr	Old Settlers Rd to FM 2499 (Long Prairie Rd)	0.51	100%	$ 3,209,771	$ 3,209,771
	A-19,B-6	UMAU	Simmons Rd	Wichita Trail to McKamy Creek Rd	0.51	50%	$ 1,128,789	$ 564,395
	A-20	UMAD	Spinks Rd	Aberdeen Dr to Gerault Rd	0.93	100%	$ 448,253	$ 448,253
	A-21	UMAD	Spinks Rd	Gerault Rd to Garden Ridge Blvd	0.56	100%	$ 968,297	$ 968,297
	A-22	UMAU	Timber Creek Rd	445' S of Glenn Hollow Ln to Kirkpatrick Ln	0.20	100%	$ 690,850	$ 690,850
	A-23	UC	Waketon/College Connector	Waketon Rd to College Pkwy	0.27	100%	$ 1,353,000	$ 1,353,000
	A-24	UC	Windsor Dr	Amy Ln to FM 2499 (Long Prairie Rd)	0.60	100%	$ 1,058,867	$ 1,058,867
	A-25	UC	Yucca Dr	440' E of FM 2499 to 460' S of FM 1171	0.08	100%	$ 214,416	$ 214,416
	S-1		Intersection	College Pkwy. at Timber Creek Rd.		100%	$ 275,000	$ 275,000
	S-2		Intersection	Bruton Orand Blvd. at Quail Run Rd.		50%	$ 275,000	$ 137,500
	S-3		Intersection	Churchill Dr. at Peters Colony Rd.		100%	$ 990,000	$ 990,000
	S-4		Intersection	Cross Timbers Rd. at Forums Dr.		100%	$ 179,000	$ 179,000
	S-5		Intersection	Garden Ridge Blvd. at Kirkpatrick Ln.		100%	$ 275,000	$ 275,000
	S-6		Intersection	FM 2499 (Long Prairie Rd.) at Chaparral Ln.		100%	$ 375,000	$ 375,000
	S-7		Intersection	Garden Ridge Blvd. at Forest Vista Rd.		100%	$ 275,000	$ 275,000
	S-8		Intersection	FM 2499 (Long Prairie Rd.) at Northshore Blvd.		100%	$ 275,000	$ 275,000
	S-9		Intersection	FM 2499 (Long Prairie Rd.) at Aberdeen Dr.		100%	$ 380,000	$ 380,000
	S-10		Intersection	Lakeside Pkwy. at Silveron Blvd.		100%	$ 275,000	$ 275,000
	S-11		Intersection	FM 2499 (Long Prairie Rd.) at Silveron Blvd.		100%	$ 390,000	$ 390,000
	S-12		Intersection	Gerault Rd. at Old Gerault Rd.		100%	$ 275,000	$ 275,000
	S-13		Intersection	Lakeside Pkwy. at Enterprise Dr.		100%	$ 275,000	$ 275,000
	I - 1		Intersection Improvement	Dixon Ln. at Morriss Rd.		100%	$ 375,000	$ 375,000
	I - 2		Right-turn lane - all directions	FM 2499 (Long Prairie Rd.) at Waketon Rd.		100%	$ 1,473,000	$ 1,473,000
	I - 3		Intersection Improvement	FM 2499 (Long Prairie Rd.) at College Pkwy.		100%	$ 333,000	$ 333,000
	I - 4		Northbound right-turn lane	Bruton Orand Blvd. at Cross Timbers Rd.		50%	$ 375,000	$ 187,500
	I - 5		Intersection Improvement	Cross Timbers Rd. at Auburn Dr.		100%	$ 375,000	$ 375,000
	I - 6		Westbound right-turn lane	Cross Timbers Rd. at FM 2499 (Long Prairie Rd.)		100%	$ 492,000	$ 492,000
	I - 7		Intersection Improvement	Flower Mound Rd. at McKamy Creek Rd.		100%	$ 336,000	$ 336,000
	I - 8		Second left-turn lane, EB and SB	Flower Mound Rd. at FM 2499 (Long Prairie Rd.)		100%	$ 460,000	$ 460,000
	I - 9		Intersection Improvement	Flower Mound Rd. at Garden Ridge Blvd.		100%	$ 375,000	$ 375,000
	I - 10		Intersection Improvement	FM 2499 (Long Prairie Rd.) at Lakeside Pkwy.		100%	$ 375,000	$ 375,000
	I-11		Intersection Improvement	Lakeside Pkwy. At Gerault Rd.		100%	$ 375,000	$ 375,000
							Service Area Project Cost Subtotal	**$ 54,150,844**
							2020 Roadway Impact Fee Update Cost Per Service Area	**$ 30,000**
							Total Cost in SERVICE AREA A	**$ 54,180,844**

Table 4.B – 10-Year Capital Improvement Plan for Roadway Impact Fees with Conceptual Level Project Cost Projections – Service Area B

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
Service Area B	B-1	UMAD	Flower Mound Rd	FM 1171 (Cross Timbers) to Skillern Rd	1.21	100%	$ 680,380	$ 680,380
	B-2	RC	Red Rock/Shiloh Connector	Red Rock Ln to Shiloh Rd	1.01	100%	$ 6,845,000	$ 6,845,000
	B-3	RC	Scenic /Flower Mound Connector	Scenic Dr to Alcott Ave	0.45	100%	$ 3,067,000	$ 3,067,000
	B-4	RC	Shiloh Rd/Lusk Ln Connector	2820' E of Shiloh Rd to Lusk Ln	0.58	100%	$ 3,945,000	$ 3,945,000
	B-5	RC	Shiloh Rd/Lusk Ln Connector	Shiloh Rd to 2820' E of Shiloh Rd	0.53	50%	$ 3,611,000	$ 1,805,500
	A-19,B-6	UMAU	Simmons Rd	Wichita Trail to McKamy Creek Rd	0.51	50%	$ 1,128,789	$ 564,395
	S-2		Intersection	Bruton Orand Blvd. at Quail Run Rd.		50%	$ 275,000	$ 137,500
	I - 4		Northbound right-turn lane	Bruton Orand Blvd. at Cross Timbers Rd.		50%	$ 230,000	$ 115,000
	I-12		Intersection Improvement	Cross Timbers Rd. at Flower Mound Rd.		100%	$ 375,000	$ 375,000
							Service Area Project Cost Subtotal	**$ 17,534,775**
							2020 Roadway Impact Fee Update Cost Per Service Area	**$ 30,000**
							Total Cost in SERVICE AREA B	**$ 17,564,775**

Table 4.C – 10-Year Capital Improvement Plan for Roadway Impact Fees with Conceptual Level Project Cost Projections – Service Area C

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
Service Area C	C-1	RC	CrossTimbers/Dunham Connector	Cross Timbers Rd to Dunham Rd	0.51	100%	$ 3,483,000	$ 3,483,000
	C-2	GRA	CrossTimbers/US 377 Connector1	US 377 to Cross Timbers Rd	2.14	100%	$ 22,005,000	$ 22,005,000
	C-3	RC	CrossTimbers/US 377 Connector2	CrossTimbers/US 377 Connector1 to Cross Timbers Rd	0.90	100%	$ 6,090,000	$ 6,090,000
	C-4	UMABL	Denton Creek Blvd	IH-35 Diamond Interchange to 120' NW of Prairie Ridge Rd	1.17	100%	$ 28,014,000	$ 28,014,000
	C-5	UMABL	Denton Creek Blvd	Canyon Falls Dr to 1155' S of Canyon Falls Dr	0.23	100%	$ 1,435,000	$ 1,435,000
	C-6	UMABL	Denton Creek Blvd	1155' S of Canyon Falls Dr to Cross Timbers Rd	0.68	100%	$ 4,323,000	$ 4,323,000
	C-7	UC	Stonecrest Rd	850' S of Canyon Falls Dr to UMAB 1	0.24	100%	$ 3,137,000	$ 3,137,000
	C-8	UC	Stonecrest Rd	UMAB 1 to Cross Timbers Rd	0.70	100%	$ 5,437,000	$ 5,437,000
	C-9	UMABL	UMAB 1	Denton Creek Blvd to US 377	0.57	100%	$ 4,444,000	$ 4,444,000
	C-10	UMABL	UMAB2	Denton Creek Blvd to West Town Limit	0.27	100%	$ 3,512,000	$ 3,512,000
	C-11	UC	Urban Collector 1	Cross Timbers Road to Cross Timbers Rd	0.83	100%	$ 10,995,000	$ 10,995,000
	C-12	UC	Urban Collector 1	Stonecrest Rd to Cross Timbers Rd	0.59	100%	$ 4,577,000	$ 4,577,000
	S-14		Intersection	US 377 at Canyon Falls Dr.		100%	$ 205,000	$ 205,000
	S-15		Intersection	Cross Timbers Rd. at Canyon Falls Dr.		50%	$ 275,000	$ 137,500
	S-16		Intersection	Cross Timbers Rd. at Denton Creek Blvd.		100%	$ 275,000	$ 275,000
	S-17		Intersection	Cross Timbers Rd. at Cross Timbers/US 377 Connector 1		100%	$ 275,000	$ 275,000
							Service Area Project Cost Subtotal	**$ 98,344,500**
							2020 Roadway Impact Fee Update Cost Per Service Area	**$ 30,000**
							Total Cost in SERVICE AREA C	**$ 98,374,500**
							Total CIP COST	**$ 170,120,119**

Notes:

a. The planning level cost projections have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.
b. The planning level cost projections shall not supersede the Town's design standards contained within the Subdivision Ordinance or the determination of the Town Engineer for a specific project.
c. The project cost total within each Service Area may differ from the total shown in the Summary sheets contained within Appendix A due to some projects that are split between multiple service areas.

E. Service Unit Calculation

The basic service unit for the computation of Flower Mound's roadway impact fees is the vehicle-mile of travel during the evening peak-hour. 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 2020 to 2030 is based upon projected changes in residential and non-residential growth for the period. In order to determine this growth, baseline estimates of population, basic square feet, service square feet, and retail square feet for 2020 were made by the Town, along with projections for each of these demographic statistics through 2030. The Land Use Assumptions for 2020 Impact Fee Update details the growth estimates used for the impact fee determination.

The residential and non-residential statistics in the Land Use Assumptions provide the "independent variables" that are used to calculate the existing (2020) and projected (2030) transportation service units used to establish the roadway impact fee maximum rates within each service area. The roadway demand service units (vehicle-miles) for each service area are the sum of the vehicle-miles "generated" by each category of land use in the service area.

For the purpose of impact fees, all developed and developable land is categorized as either residential or non-residential. For residential land uses, the existing and projected population is converted to dwelling units. The number of dwelling units in each service area is multiplied by a transportation demand factor to compute the vehicle-miles of travel that occur during the evening peak hour. This factor computes the average amount of demand caused by the residential land uses in the service area. The transportation demand factor is discussed in more detail below.

For non-residential land uses, the process is similar. The Land Use Assumptions provide existing and projected number of building square footages for three (3) categories of non-residential land uses – 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, 10th 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 or development modification 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, 10th Edition and the latest Regional Origin-Destination Travel Survey performed by NCTCOG. ITE's Trip Generation Manual, 10th 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. 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 rate 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 region-wide travel characteristics survey conducted by NCTCOG.

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

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

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

Variables:

- TDF = Transportation Demand Factor,
- T = Trip Rate (peak hour trips / unit),
- P_b = Pass-By Discount (% of trips),
- L_{max} = Maximum Trip Length (miles),
- L = Average Trip Length (miles), and
- OD = Origin-Destination Reduction (50%)
- SA_L = Max Service Area Trip Length (see Table 5)

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 Flower Mound are approximately six (6) miles in 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 Flower Mound to both residential and non-residential land uses. To avoid counting these trips 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. This methodology is consistent with that used in the National Household Travel Survey.

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

Table 5. Transportation Demand Factor Calculations

Variable	Residential (ITE 210)	Basic (ITE 110)	Service (ITE 710)	Retail (ITE 820)
T	.99	0.63	1.15	3.81
P_b	0%	0%	0%	34%
L	9.79	10.02	14.65	5.60
L_{max} *	4.90	5.01	6.00	2.80
TDF	4.85	3.16	6.90	7.04

The application of the demographic projections and the transportation demand factors are presented in the 10-Year Growth Projections in Table 6. This table shows the total vehicle-miles by service area for the years 2020 and 2030. These estimates and projections lead to the Vehicle-Miles of Travel for both 2020 and 2030.

Table 6. 10-Year Growth Projections

Year 2020

SERVICE AREA	RESIDENTIAL VEHICLE-MILES			SQUARE FEET[4]			TRANS. DEMAND FACTOR[5]			NON-RESIDENTIAL VEHICLE-MILES[9]				TOTAL VEHICLE MILES[10]
	DWELLING UNITS[1]	TDF[2]	VEHICLE MILES[3]	BASIC	SERVICE	RETAIL	BASIC[6]	SERVICE[7]	RETAIL[8]	BASIC	SERVICE	RETAIL	TOTAL	
		0.99					*0.63*	*1.15*	*2.51*					
A	22,082	4.85	107,098	8,781,000	5,127,000	4,315,000	3.16	6.90	7.04	27,748	35,376	30,381	93,505	200,603
B	4,169	4.85	20,220	41,000	477,000	115,000	3.16	6.90	7.04	130	3,291	810	4,231	24,451
C	1,395	4.85	6,766	55,000	139,000	0	3.16	6.90	7.04	174	959	0	1,133	7,899
Totals	**27,646**		**134,083**	**8,877,000**	**5,743,000**	**4,430,000**				**28,052**	**39,626**	**31,191**	**98,869**	**232,952**

Year 2030

SERVICE AREA	RESIDENTIAL VEHICLE-MILES			SQUARE FEET[4]			TRANS. DEMAND FACTOR[5]			NON-RESIDENTIAL VEHICLE-MILES[9]				TOTAL VEHICLE MILES[10]
	DWELLING UNITS[1]	TDF[2]	VEHICLE MILES[3]	BASIC	SERVICE	RETAIL	BASIC[6]	SERVICE[7]	RETAIL[8]	BASIC	SERVICE	RETAIL	TOTAL	
		0.99					*0.63*	*1.15*	*3.81*					
A	23,884	4.85	115,837	9,930,000	7,491,000	5,891,000	3.16	6.90	7.04	31,379	51,688	41,478	124,545	240,382
B	4,299	4.85	20,850	41,000	537,000	115,000	3.16	6.90	7.04	130	3,705	810	4,645	25,495
C	4,507	4.85	21,859	690,000	1,148,000	1,229,000	3.16	6.90	7.04	2,180	7,921	8,653	18,754	40,613
Totals	**32,690**		**158,547**	**10,661,000**	**9,176,000**	**7,235,000**				**33,689**	**63,314**	**50,941**	**147,944**	**306,491**

VEHICLE-MILES OF INCREASE[11] (2020 - 2030)

SERVICE AREA	VEH-MILES
A	39,780
B	1,045
C	32,714
Total	73,538

Notes:

[1] From *Land Use Assumptions for 2020 Impact Fees Update Report*

[2] Transportation Demand Factor for each Service Area (from LUVMET) using Single Family Detached Housing land use and *trip generation rate*

[3] Calculated by multiplying TDF by the number of dwelling units

[5] *Trip generation rate* and Transportation Demand Factors from LUVMET 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 Center 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 non-residential vehicle-mile totals for each Service Area

[11] Total Vehicle-Miles (2020) subtracted from Total Vehicle-Miles (2030)

IV. 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 7 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.

Table 7. Maximum Assessable Roadway Impact Fee Computation

Line	Title	Description
1	*Total Vehicle-Miles of Capacity Added by the CIP*	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 Service Units of Supply)

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

2	*Total Vehicle-Miles of Existing Demand*	A measure of the amount of traffic currently using the roadway facilities upon which capacity is being added (from Appendix B – CIP Service Units of Supply)

A number of facilities identified in the Impact Fee 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	*Total Vehicle-Miles of Existing Deficiencies*	Number of vehicle-miles of travel that are not accommodated by the existing roadway system (from Appendix C – Existing Roadway Facilities Inventory)

In order to ensure that existing deficiencies on the Town'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 Impact Fee CIP – will have these additional vehicle-miles removed from the calculation.

4	*Net Amount of Vehicle-Miles of Capacity Added*	A measurement of the number of vehicle-miles added by the CIP that will not be utilized by existing demand (Line 1 – Line 2 – Line 3)

This calculation identifies the portion of the Impact Fee CIP (in vehicle-miles) that may be recoverable through the collection of impact fees.

5	*Total Cost of the CIP within the Service Area*	The total cost of the projects within each service area (from Table 4: 10-Year Capital Improvement Plan with Conceptual Level Cost Opinions)

This line simply identifies the total cost of all projects identified in each service area.

6	*Cost of Net Capacity Supplied*	The total CIP cost (Line 5) prorated by the ratio of Net Capacity Added (Line 4) to Total Capacity Added (Line 1). [(Line 4 / Line 1) * (Line 5)]

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	*Cost to Meet Existing Needs and Usage*	The difference between the Total Cost of the CIP (Line 5) and the Cost of the Net Capacity supplied (Line 6). (Line 5 **–** Line 6)

This line is provided for informational 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	*Total Vehicle-Miles of New Demand over Ten Years*	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 6)

This line presents the amount of growth (in vehicle-miles) projected to occur within each service area over the next ten years.

9	*Percent of Capacity Added Attributable to New Growth*	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	*Chapter 395 Check*	

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 number 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	*Cost of Capacity Added Attributable to New Growth*	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).

This value is the total 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.

A. Plan For Awarding the Roadway Impact Fee Credit

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

"(7) A plan for awarding:

(A) a credit for the portion of ad valorem tax and utility service revenues generated by new service units during the program period that is used for the payment of improvements, including the payment of debt, that are included in the capital improvements plan; or

(B) In the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan…"

The plan following 395.014(7)(A) is summarized, as prepared by NewGen Strategies, in Appendix D and E, Plan for Awarding the Roadway Impact Fee Credit. The following table summarizes the portions of Table 7 that utilize this credit calculation.

Line	Title	Description
12	*Financing Costs*	(from Appendix D – Plan for Awarding the Roadway Impact Fee Credit)
13	*Interest Earnings*	(from Appendix D – Plan for Awarding the Roadway Impact Fee Credit)
14	*Cost of the CIP and Financing Attributable to New Growth*	The sum of the Cost of Capacity Added Attributable to New Growth, Financing Costs, and Interest Earnings. (Line 11 + Line 12 + Line 13)
15	*Pre-Credit Maximum Fee Per Service Unit*	Found by dividing the Cost of the CIP and Financing Attributable to New Growth (Line 14) by the Total Vehicle-Miles of New Demand Over Ten Years (Line 8). (Line 14 / Line 8)
16	*Credit for Ad Valorem Taxes*	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 Roadway Impact Fee Credit)
17	*Recoverable Cost of CIP and Financing*	The difference between the Cost of the CIP and Financing Attributable to New Growth (Line 14) and the Credit for Ad Valorem Taxes (Line 16). (Line 14 + Line 16)
18	*Maximum Assessable Fee Per Service Unit*	Found by dividing the Recoverable Cost of the CIP and Financing (Line 17) by the Total Vehicle-Miles of New Demand Over Ten Years (Line 8). (Line 17 / Line 8)

Table 8. Maximum Assessable Roadway Impact Fee

	SERVICE AREA:	A	B	C
1	TOTAL VEH-MI OF CAPACITY ADDED BY THE CIP (FROM CIP UNITS OF SUPPLY, **APPENDIX B)**	40,792	5,645	16,352
2	TOTAL VEH-MI OF EXISTING DEMAND (FROM CIP UNITS OF SUPPLY, **APPENDIX B**)	20,744	1,133	0
3	TOTAL VEH-MI OF EXISTING DEFICIENCIES (FROM EXISTING FACILITIES INVENTORY, **APPENDIX C**)	3,329	31	1,244
4	NET AMOUNT OF VEH-MI OF CAPACITY ADDED (LINE 1 - LINE 2 - LINE 3)	16,719	4,481	15,108
5	TOTAL COST OF THE CIP WITHIN SERVICE AREA (FROM **TABLE 4)**	$ 54,180,844	$ 17,564,775	$ 98,374,500
6	COST OF NET CAPACITY SUPPLIED (LINE 4 / LINE 1) * (LINE 5)	$ 22,206,549	$ 13,942,915	$ 90,890,530
7	COST TO MEET EXISTING NEEDS AND USAGE (LINE 5 - LINE 6)	$ 31,974,295	$ 3,621,860	$ 7,483,970
8	TOTAL VEH-MI OF NEW DEMAND OVER TEN YEARS (FROM **TABLE 6** and **Land Use Assumptions**)	39,780	1,045	32,714
9	PERCENT OF CAPACITY ADDED ATTRIBUTABLE TO GROWTH (LINE 8 / LINE 4)	237.9%	23.3%	216.5%
10	IF LINE 8 > LINE 4, REDUCE LINE 9 TO 100%, OTHERWISE NO CHANGE	100.0%	23.3%	100.0%
11	COST OF CAPACITY ADDED ATTRIBUTABLE TO GROWTH (LINE 6 * LINE 10)	$ 22,206,549	$ 3,248,699	$ 90,890,530
12	FINANCING COSTS (FROM **APPENDIX D**)	$ 2,660,377	$ 717,918	$ 21,232,053
13	INTEREST EARNINGS (FROM **APPENDIX D**)	$ (115,159)	$ (91,866)	$ (2,746,439)
14	COST OF CIP AND FINANCING ATTRIBUTABLE TO GROWTH (LINE 11 + LINE 12 + LINE 13)	$ 24,751,766	$ 3,874,751	$ 109,376,144
15	PRE-CREDIT MAX FEE PER SERVICE UNIT ($ PER VEH-MI) (LINE 14 / LINE 8)	$ 622	$ 3,708	$ 3,343
16	CREDIT FOR AD VALOREM TAXES (FROM **APPENDIX D**)	$ (540,978)	$ (1,984)	$ (1,614,052)
17	RECOVERABLE COST OF CIP AND FINANCING (LINE 14 + LINE 16)	$ 24,210,788	$ 3,872,766	$ 107,762,092
18	MAX ASSESSABLE FEE PER SERVICE UNIT ($ PER VEH-MI) (LINE 17 / LINE 8)	$ 609	$ 3,706	$ 3,294

B. 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 Town utilizes the Land Use/Vehicle-Mile Equivalency Table (LUVMET), presented in Table 9. This table lists the predominant land uses that may occur within the Town of Flower Mound. 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 uses are found in this table. 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 evening peak hour by each land use per development unit. The next column, 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 source of the trip generation and pass-by statistics is ITE's Trip Generation Manual, 10th Edition, the latest edition of the definitive source for trip generation data. 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.

To convert vehicle trips to vehicle-miles, it is necessary to multiply trips by trip length. The adjusted trip length values are based on the Regional Origin-Destination Travel Survey performed by the North Central Texas Council of Governments (NCTCOG). The other adjustment to trip length is the 50% origin-destination reduction to avoid double counting of trips. 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 estimate 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 Town ordinance) in order to determine the impact fee for a development.

Table 9. 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
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.63			0.63	10.02	50%	5.01	5.01	3.16
Industrial Park	130	1,000 SF GFA	0.40			0.40	10.02	50%	5.01	5.01	2.00
Warehousing	150	1,000 SF GFA	0.19			0.19	10.02	50%	5.01	5.01	0.95
Mini-Warehouse	151	1,000 SF GFA	0.17			0.17	10.02	50%	5.01	5.01	0.85
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	0.99			0.99	9.79	50%	4.90	4.90	4.85
Townhomes	220	Dwelling Unit	0.56			0.56	9.79	50%	4.90	4.90	2.74
Multi-family Housing (Apartment/Condominium)	220	Dwelling Unit	0.56			0.56	9.79	50%	4.90	4.90	2.74
Senior Adult Housing-Detached	251	Dwelling Unit	0.30			0.30	9.79	50%	4.90	4.90	1.47
Senior Adult Housing-Attached	252	Dwelling Unit	0.26			0.26	9.79	50%	4.90	4.90	1.27
Assisted Living	254	Beds	0.26			0.26	9.79	50%	4.90	4.90	1.27
LODGING											
Hotel	310	Room	0.60			0.60	6.43	50%	3.22	3.22	1.93
Motel / Other Lodging Facilities	320	Room	0.38			0.38	6.43	50%	3.22	3.22	1.22
RECREATIONAL											
Golf Course	430	Acre	0.28			0.28	7.86	50%	3.93	3.93	1.10
Miniature Golf Course	431	Hole	0.33			0.33	7.86	50%	3.93	3.93	1.30
Golf Driving Range	432	Tee	1.25			1.25	7.86	50%	3.93	3.93	4.91
Multiplex Movie Theater	445	Screens	13.73			13.73	15.77	50%	7.89	6.00	82.38
Ice Skating Rink	465	1,000 SF GFA	1.33			1.33	7.86	50%	3.93	3.93	5.23
Racquet / Tennis Club	491	Court	3.82			3.82	7.86	50%	3.93	3.93	15.01
Recreational Community Center	495	1,000 SF GFA	2.31			2.31	7.86	50%	3.93	3.93	9.08
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.49			0.49	8.31	50%	4.16	4.16	2.04
Day Care Center	565	1,000 SF GFA	11.12	44%	B	6.23	3.49	50%	1.75	1.75	10.87
Primary/Middle School (1-8)	522	Students	0.17			0.17	3.49	50%	1.75	1.75	0.30
High School	530	Students	0.14			0.14	3.49	50%	1.75	1.75	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	3.28			3.28	9.85	50%	4.93	4.93	16.15
Hospital	610	1,000 SF GFA	0.97			0.97	9.85	50%	4.93	4.93	4.78
Nursing Home	620	Beds	0.22			0.22	9.85	50%	4.93	4.93	1.08
Animal Hospital/Veterinary Clinic	640	1,000 SF GFA	3.53	30%	B	2.47	9.85	50%	4.93	4.93	12.16
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	0.60			0.60	14.65	50%	7.33	6.00	3.60
General Office Building	710	1,000 SF GFA	1.15			1.15	14.65	50%	7.33	6.00	6.90
Medical-Dental Office Building	720	1,000 SF GFA	3.46			3.46	9.85	50%	4.93	4.93	17.04
Single Tenant Office Building	715	1,000 SF GFA	1.71			1.71	14.65	50%	7.33	6.00	10.26
Office Park	750	1,000 SF GFA	1.07			1.07	14.65	50%	7.33	6.00	6.42

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 **9 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%	2.23	2.23	4.15
Automobile Parts Sales	843	1,000 SF GFA	4.91	43%	A	2.80	4.45	50%	2.23	2.23	6.23
Gasoline/Service Station	944	Vehicle Fueling Position	14.03	42%	A	8.14	1.20	50%	0.60	0.60	4.88
Gasoline/Service Station w/ Conv Market	945	Vehicle Fueling Position	13.99	56%	B	6.16	1.20	50%	0.60	0.60	3.69
New Car Sales	840	1,000 SF GFA	2.43	20%	B	1.94	5.60	50%	2.80	2.80	5.44
Quick Lubrication Vehicle Shop	941	Servicing Positions	4.85	40%	B	2.91	4.45	50%	2.23	2.23	6.47
Automated Car Wash	948	1,000 SF GFA	5.08	40%	B	3.05	1.20	50%	0.60	0.60	1.83
Tire Store	848	1,000 SF GFA	3.98	28%	A	2.87	4.45	50%	2.23	2.23	6.38
Dining											
Fast Food Restaurant with Drive-Thru Window	934	1,000 SF GFA	32.67	50%	A	16.34	5.64	50%	2.82	2.82	46.06
Fast Food Restaurant without Drive-Thru Window	933	1,000 SF GFA	28.34	50%	B	14.17	5.64	50%	2.82	2.82	39.96
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	9.77	43%	A	5.57	5.64	50%	2.82	2.82	15.70
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	43.38	70%	A	13.01	5.64	50%	2.82	2.82	36.70
Other Retail											
Free-Standing Discount Store	815	1,000 SF GFA	4.83	30%	C	3.38	5.60	50%	2.80	2.80	9.47
Nursery (Garden Center)	817	1,000 SF GFA	6.94	30%	B	4.86	5.60	50%	2.80	2.80	13.60
Home Improvement Superstore	862	1,000 SF GFA	2.33	42%	A	1.35	5.60	50%	2.80	2.80	3.78
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	14.69
Shopping Center	820	1,000 SF GFA	3.81	34%	A	2.51	5.60	50%	2.80	2.80	7.04
Supermarket	850	1,000 SF GFA	9.24	36%	A	5.91	5.60	50%	2.80	2.80	16.56
SERVICES											
Walk-In Bank	911	1,000 SF GFA	12.13	40%	B	7.28	4.45	50%	2.23	2.23	16.19
Drive-In Bank	912	Drive-in Lanes	27.15	35%	A	17.65	4.45	50%	2.23	2.23	39.27

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. Land Use Descriptions

Land Use Category	ITE Land Use Code	Land Use Description	Development Unit
INDUSTRIAL			
General Light Industrial	110	Emphasis on activities other than manufacturing; typically employing fewer than 500 workers	1,000 SF GFA
Industrial Park	130	Area containing a number of industries or related facilities	1,000 SF GFA
Warehousing	150	Devoted to storage of materials but may have included office and maintenance areas	1,000 SF GFA
Mini-Warehouse	151	Facilities with a number of units rented to others for the storage of goods	1,000 SF GFA
RESIDENTIAL			
Single-Family Detached Housing	210	Single-family detached homes on individual lots	Dwelling Unit
Townhomes	220	Single-family attached homes on individual lots	
Multi-family Housing (Apartment/Condominium)	220	At least 3 rental dwelling units and one or two levels (floors) per building	Dwelling Unit
Senior Adult Housing-Detached	251	Consists of detached independent living developments that include amenities such as golf courses and swimming pools	Dwelling Unit
Senior Adult Housing-Attached	252	Consists of attached independent living developments that include limited social or recreation services	Dwelling Unit
Assisted Living	254	Residential settings that provide either routine general protective oversight or assistance with activities	Beds
LODGING			
Hotel	310	Lodging facilities that typically have on-site restaurants, lounges, meeting and/or banquet rooms, or other retail shops and services	Room
Motel / Other Lodging Facilities	320	Lodging facilities that may have small on-site restaurant or buffet area but little or no meeting space	Room
RECREATIONAL			
Golf Course	430	May include municipal courses and private country clubs; may have driving ranges, pro shops, and restaurant/banquet facilities	Acre
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)	Hole
Golf Driving Range	432	Facilities with driving tees for practice; may provide individual or group lessons; may have prop shop and/or refreshment facilities	Tee
Multiplex Movie Theater	445	Movie theater with audience seating, minimum of ten screens, lobby, and refreshment area.	Screens
Ice Skating Rink	465	Rinks for ice skating and related sports; may contain spectator areas and refreshment facilities	1,000 SF GFA
Racquet / Tennis Club	491	Indoor or outdoor facilities specifically designed for playing tennis	Court
Recreational Community Center	495	Category includes racquet clubs, health/fitness clubs, can include facilities such as YMCA's	1,000 SF GFA
INSTITUTIONAL			
Church	560	Churches and houses of worship	1,000 SF GFA
Day Care Center	565	Generally includes facilities for care of pre-school aged children, generally includes classrooms, offices, eating areas, and playgrounds	1,000 SF GFA
Primary/Middle School (1-8)	522	Serves students who have not yet entered high school	Students
High School	530	Serves students who have completed middle or junior high school	Students
Junior / Community College	540	Two-year junior, community or technical colleges	Students
University / College	550	Four-year universities or colleges that may or may not offer graduate programs	Students
MEDICAL			
Clinic	630	Facilities with limited diagnostic and outpatient care	1,000 SF GFA
Hospital	610	Medical and surgical facilities with overnight accommodations	1,000 SF GFA
Nursing Home	620	Rest and convalescent homes with residents who do little or no driving	Beds
Animal Hospital/Veterinary Clinic	640	Rest and convalescent homes with residents who do little or no driving	1,000 SF GFA
OFFICE			
Corporate Headquarters Building	714	Office building housing corporate headquarters of a single company or organization	1,000 SF GFA
General Office Building	710	Office buildings which house multiple tenants	1,000 SF GFA
Medical-Dental Office Building	720	Multi-tenant building with offices for physicians and/or dentists	1,000 SF GFA
Single Tenant Office Building	715	Single tenant office buildings other than corporate headquarters	1,000 SF GFA
Office Park	750	Office buildings (typically low-rise) in a campus setting and served by a common roadway system	1,000 SF GFA

Table 10 **Cont'd**. Land Use Descriptions

Land Use Category	ITE Land Use Code	Land Use Description	Development Unit
COMMERCIAL			
Automobile Related			
Automobile Care Center	942	Automobile repair and servicing including stereo installations and upholstering	1,000 SF GFA
Automobile Parts Sales	843	Retail sale of auto parts but no on-site vehicle repair	1,000 SF GFA
Gasoline/Service Station	944	Gasoline sales without convenience store or car wash; may include repair	Vehicle Fueling Position
Gasoline/Service Station w/ Conv Market	945	Gasoline sales with convenience store where the primary business is gasoline sales	Vehicle Fueling Position
New Car Sales	840	New car dealerships, typically with automobile servicing, part sales, and used car sales	1,000 SF GFA
Quick Lubrication Vehicle Shop	941	Primary business is to perform oil changes and fluid/filter changes with other repair services not provided	Servicing Positions
Automated Car Wash	948	Allows for mechanical cleaning of the exterior of vehicles; manual cleaning and detailing may also take place	1,000 SF GFA
Tire Store	848	Primary business is sales and installation of tires; usually do not have large storage or warehouse area	1,000 SF GFA
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	1,000 SF GFA
Fast Food Restaurant without Drive-Thru Window	933	High-turnover fast food restaurant for carry-out and eat-in customers, but without a drive-thru window	1,000 SF GFA
High Turnover (Sit-Down) Restaurant	932	Restaurants with turnover rates less than one hour; typically includes moderately-priced chain restaurants	1,000 SF GFA
Quality Restaurant	931	Restaurants with turnover rates of one hour or longer; typically require reservations	1,000 SF GFA
Coffee/Donut Shop with Drive-Thru Window	937	Coffee and Donut restaurants with drive-through windows, hold long store hours and have limited indoor seating	1,000 SF GFA
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	1,000 SF GFA
Nursery (Garden Center)	817	Building with a yard of planting or landscape stock; may have office, storage, shipping or greenhouse facilities	1,000 SF GFA
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.	1,000 SF GFA
Pharmacy/Drugstore w/o Drive-Thru Window	880	Facilities that primarily sell prescription and non-prescription drugs without a drive-through window	1,000 SF GFA
Pharmacy/Drugstore w/ Drive-Thru Window	881	Facilities that primarily sell prescription and non-prescription drugs with a drive-through window	1,000 SF GFA
Shopping Center	820	Integrated group of commercial establishments; planning, owned, and managed as a unit	1,000 SF GFA
Supermarket	850	Primary business is sale of groceries, food, and household cleaning items; may include photo, pharmacy, video rental, and/or ATM	1,000 SF GFA
SERVICES			
Walk-In Bank	911	Banks with their own parking lots, no drive-in lanes but contain non-drive-through ATMs	1,000 SF GFA
Drive-In Bank	912	Banking facilities to conduct financial transactions from the vehicle; also usually a part of a walk-in bank	Drive-in Lanes

V. 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
	From Table 10 [Land Use – Vehicle-mile Equivalency Table] Development Type: 1 Dwelling Unit of Single-Family Detached Housing Number of Development Units: 1 Dwelling Unit Veh-Mi Per Development Unit: 4.85
Step 2	Determine Maximum Assessable Impact Fee Per Service Unit
	From Table 8, Line 20 [Maximum Assessable Fee Per Service Unit] Service Area A: $609
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 * 4.85 * $609 Maximum Assessable Impact Fee = $2,954

Example 2:
Development Type – 125,000 square foot Home Improvement Superstore in Service Area C

Roadway Impact Fee Calculation Steps – Example 2	
Step 1	Determine Development Unit and Vehicle-Miles Per Development Unit
	From Table 10 [Land Use – Vehicle-mile Equivalency Table] 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: 3.78
Step 2	Determine Maximum Assessable Impact Fee Per Service Unit
	From Table 8, Line 20 [Maximum Assessable Fee Per Service Unit] Service Area C: $3,294
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 * 3.78 * $3,294 Maximum Assessable Impact Fee = $1,556,415

VI. Conclusion

The Town of Flower Mound 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 Town of Flower Mound within each of the three (3) service areas. The maximum assessable roadway impact fees calculated in this report are presented in the table below:

Service Areas	A	B	C
2020 Roadway Impact Fee Study Maximum Assessible Fee Per Vehicle-Mile	$609	$3,706	$3,294

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

In conclusion, it is our opinion that the data and methodology used in this update are appropriate and consistent with Chapter 395 of the Texas Local Government Code. Furthermore, the Land Use Assumptions and the proposed Capital Improvement Plan are appropriately incorporated into the process.

VII. APPENDICES

A. Conceptual Level Project Cost Projections

SERVICE AREA A
SERVICE AREA B
SERVICE AREA C

B. CIP Service Units of Supply

C. Existing Roadway Facilities Inventory

D. Plan For Awarding the Roadway Impact Fee Credit Summary

E. Plan For Awarding the Roadway Impact Fee Credit Supporting Exhibits

A. Conceptual Level Project Cost Projections

Town of Flower Mound - 2020 Roadway Impact Fee Update

Capital Improvement Plan for Roadway Impact Fees

Appendix A - Summary of Conceptual Level Project Cost Projections

Roadway Improvements - Service Area A

#	Class	Project	Limits	Status	Project Cost
A-1	UMAD	Aberdeen Dr	FM 2499 (Long Prairie Rd) to 1340' N of Spinks Rd	Widening	$ 1,454,821
A-2	UMAD	Aberdeen Dr	1340' N of Spinks Rd to 700' N of Spinks Rd	Widening	$ 636,000
A-3	UMAU	Chinn Chapel Rd	FM 407 (Justin Rd) to Waketon Rd	Completed	$ 2,728,803
A-4	UMAD	Dixon Ln	Chinn Chapel Rd to Crestside Dr	Completed	$ 5,297,438
A-5	UMAU	Duncan Ln	Honeysuckle Way to Spinks Rd	Widening	$ 562,532
A-6	UMAU	Firewheel Dr	515' S of FM 1171 to 140' S of Hearthstone Dr	Completed	$ 603,525
A-7	P6D	FM 2499 (Long Prairie Rd)	FM 1171 (Cross Timbers) to Spinks Rd	Completed	$ 1,515,721
A-8	GUA	Garden Ridge Blvd	Bellaire Blvd to Forest Vista Dr	Completed	$ 1,146,031
A-9	GUA	Garden Ridge Blvd	FM 3040 to Spinks Rd	Completed	$ 1,891,126
A-10	GUA	Garden Ridge Blvd	Spinks Rd to Lakeside Pkwy	Completed	$ 2,504,704
A-11	UC	Kirkpatrick Ln	Morriss Rd to Kirkpatrick Ln	Completed	$ 3,794,884
A-12	UMAD	Kirkpatrick Ln	Spanish Oak Dr to 1310' W of Garden Ridge Blvd	New	$ 5,243,000
A-13	UC	Lake Forest Blvd	75' S of Lincoln Ct to Foxborough Trail	Completed	$ 1,400,601
A-14	P6D	Lakeside Pkwy	FM 2499 (Long Prairie Rd) to Gerault Rd	Widening	$ 4,375,554
A-15	P6D	Lakeside Pkwy	Gerault Rd to Garden Ridge Blvd	Widening	$ 2,018,856
A-16	P6D	Lakeside Pkwy	Garden Ridge Blvd to South Town Limit	Widening	$ 2,145,590
A-17	UMAD	Morriss Rd	Mandarin Way to Flower Mound Rd	Widening	$ 1,009,492
A-18	UC	Sagebrush Dr	Old Settlers Rd to FM 2499 (Long Prairie Rd)	Completed	$ 3,209,771
A-19,B-6	UMAU	Simmons Rd	Wichita Trail to McKamy Creek Rd	Completed	$ 1,128,789
A-20	UMAD	Spinks Rd	Aberdeen Dr to Gerault Rd	Completed	$ 448,253
A-21	UMAD	Spinks Rd	Gerault Rd to Garden Ridge Blvd	Completed	$ 968,297
A-22	UMAU	Timber Creek Rd	445' S of Glenn Hollow Ln to Kirkpatrick Ln	Completed	$ 690,850
A-23	UC	Waketon/College Connector	Waketon Rd to College Pkwy	New	$ 1,353,000
A-24	UC	Windsor Dr	Amy Ln to FM 2499 (Long Prairie Rd)	Completed	$ 1,058,867
A-25	UC	Yucca Dr	440' E of FM 2499 to 460' S of FM 1171	Completed	$ 214,416

Signal Installation And Intersection Improvements

S-1		Intersection	College Pkwy. at Timber Creek Rd.	Proposed	$ 275,000
S-2		Intersection	Bruton Orand Blvd. at Quail Run Rd.	Proposed	$ 275,000
S-3		Intersection	Churchill Dr. at Peters Colony Rd.	Proposed	$ 990,000
S-4		Intersection	Cross Timbers Rd. at Forums Dr.	Completed	$ 179,000
S-5		Intersection	Garden Ridge Blvd. at Kirkpatrick Ln.	Proposed	$ 275,000
S-6		Intersection	FM 2499 (Long Prairie Rd.) at Chaparral Ln.	In Design	$ 375,000
S-7		Intersection	Garden Ridge Blvd. at Forest Vista Rd.	Proposed	$ 275,000
S-8		Intersection	FM 2499 (Long Prairie Rd.) at Northshore Blvd.	Proposed	$ 275,000
S-9		Intersection	FM 2499 (Long Prairie Rd.) at Aberdeen Dr.	Completed	$ 380,000
S-10		Intersection	Lakeside Pkwy. at Silveron Blvd.	Proposed	$ 275,000
S-11		Intersection	FM 2499 (Long Prairie Rd.) at Silveron Blvd.	Completed	$ 390,000
S-12		Intersection	Gerault Rd. at Old Gerault Rd.	Proposed	$ 275,000
S-13		Intersection	Lakeside Pkwy. at Enterprise Dr.	Proposed	$ 275,000
I - 1		Intersection Improvement	Dixon Ln. at Morriss Rd.	Proposed	$ 375,000
I - 2		Right-turn lane - all directions	FM 2499 (Long Prairie Rd.) at Waketon Rd.	In Design	$ 1,473,000
I - 3		Intersection Improvement	FM 2499 (Long Prairie Rd.) at College Pkwy.	Completed	$ 333,000
I - 4		Northbound right-turn lane	Bruton Orand Blvd. at Cross Timbers Rd.	In Design	$ 375,000
I - 5		Intersection Improvement	Cross Timbers Rd. at Auburn Dr.	Proposed	$ 375,000
I - 6		Westbound right-turn lane	Cross Timbers Rd. at FM 2499 (Long Prairie Rd.)	In Design	$ 492,000
I - 7		Intersection Improvement	Flower Mound Rd. at McKamy Creek Rd.	Completed	$ 336,000
I - 8		Second left-turn lane, EB and SB	Flower Mound Rd. at FM 2499 (Long Prairie Rd.)	Proposed	$ 460,000
I - 9		Intersection Improvement	Flower Mound Rd. at Garden Ridge Blvd.	Proposed	$ 375,000
I - 10		Intersection Improvement	FM 2499 (Long Prairie Rd.) at Lakeside Pkwy.	Proposed	$ 375,000
I-11		Intersection Improvement	Lakeside Pkwy. At Gerault Rd.	Proposed	$ 375,000

TOTAL $ 57,258,921

Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-1**
Name:	Aberdeen Dr	**This project consists of the widening of the existing two-lane concrete facility into a four-lane divided Urban Minor Arterial. The Town's anticipated contribution is $1,455,000.**		
Limits:	FM 2499 (Long Prairie Rd) to 1340' N of Spinks Rd			
Impact Fee Class:	UMAD (1/2)			
Ultimate Class:	UMAD			
Length (lf):	2,545			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 1,459,821**
Non-Recoverable Funds:	$5,000 Escrow		$ (5,000)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 1,454,821**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-2**
Name:	Aberdeen Dr	**This project consists of the widening of the existing two-lane concrete facility into a four-lane divided Urban Minor Arterial.**		
Limits:	1340' N of Spinks Rd to 700' N of Spinks Rd			
Impact Fee Class:	UMAD (1/2)			
Ultimate Class:	UMAD			
Length (lf):	655			
Service Area(s):	A			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
112	Unclassified Street Excavation	946	CY	$ 27.00	$ 25,545
212	10" Lime Stabilization	2,038	SY	$ 15.00	$ 30,567
312	8" Reinforced Concrete	1,892	SY	$ 73.00	$ 138,132
412	Block Sod with 4" Topsoil (with sidewalk)	509	SY	$ 10.00	$ 5,094
512	4' Sidewalk	2,620	SF	$ 8.00	$ 20,960
				Paving Construction Cost Subtotal:	**$ 220,298**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 11,015
√	Traffic Control	Construction Phase Traffic Control	15%	$ 33,045
√	Pavement Markings/Markers		5%	$ 11,015
√	Roadway Drainage	Standard Internal System	35%	$ 77,104
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 11,015
√	Sewer	Minor Adjustments	5%	$ 11,015
√	Establish Turf / Erosion Control		2%	$ 4,406
√	Illumination	Standard Ilumination System	6%	$ 13,218
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 171,833**
			Paving and Allowance Subtotal:	**$ 392,131**
			Construction Contingency: 15%	$ 58,820
			Construction Cost TOTAL:	**$ 451,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 451,000**
Engineering/Survey/Testing:		20%	$ 90,200
Mobilization		6%	$ 27,060
ROW/Easement Acquisition:	Existing Alignment	15%	$ 67,650
		Impact Fee Project Cost TOTAL:	**$ 636,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-3**
Name:	Chinn Chapel Rd	**This project consisted of the construction a new four-lane undivided Urban Minor Arterial. The Town of Flower Mound contributed $2,729,000 to this project.**		
Limits:	FM 407 (Justin Rd) to Waketon Rd			
Impact Fee Class:	UMAU			
Ultimate Class:	UMAU			
Length (lf):	3,460			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 2,728,803**
Non-Recoverable Funds:			
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 2,728,803**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-4**
Name:	Dixon Ln	**This project consisted of the construction a new four-lane divided Urban Minor Arterial. The Town contributed $5,297,000 to this project.**		
Limits:	Chinn Chapel Rd to Crestside Dr			
Impact Fee Class:	UC			
Ultimate Class:	UMAD			
Length (lf):	6,520			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 5,689,141**
Non-Recoverable Funds:	$391,703 Escrow		$ (391,703)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 5,297,438**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-5**
Name:	Duncan Ln	**This project consists of the widening of the existing two-lane concrete facility into a four-lane undivided Urban Minor Arterial. The Town's contribution was 563,000.**		
Limits:	Honeysuckle Way to Spinks Rd			
Impact Fee Class:	UMAD			
Ultimate Class:	UMAU			
Length (lf):	1,990			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 751,744**
Non-Recoverable Funds:	$189,212 RTR		$ (189,212)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 562,532**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-6**
Name:	Firewheel Dr	**This project consisted of the construction of the easternmost two lanes to complete the ultimate four-lane concrete undivided Urban Minor Arterial. The Town's contribution was $604,000.**		
Limits:	515' S of FM 1171 to 140' S of Hearthstone Dr			
Impact Fee Class:	UMAU (1/2)			
Ultimate Class:	UMAU			
Length (lf):	1,290			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 603,525**
Non-Recoverable Funds:			
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 603,525**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-7**
Name:	FM 2499 (Long Prairie Rd)	**This TxDOT project consisted of the construction of the two additional through lanes within the existing median. The Town's contribution was $1,516,000.**		
Limits:	FM 1171 (Cross Timbers) to Spinks Rd			
Impact Fee Class:	UMAU (1/2)			
Ultimate Class:	P6D			
Length (lf):	14,410			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 1,515,721**
Non-Recoverable Funds:			
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 1,515,721**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-8**
Name:	Garden Ridge Blvd	**This project consisted of the construction of half of a new Greenway Urban Arterial. The easternmost half is within the City of Lewisville. The Town's contribution was $1,146,000. The remaining funds come from other sources.**		
Limits:	Bellaire Blvd to Forest Vista Dr			
Impact Fee Class:	P6D (1/3)			
Ultimate Class:	GUA			
Length (lf):	4,290			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 6,650,404**
Non-Recoverable Funds:	$5,504,373 Interlocal Funds		$ (5,504,373)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 1,146,031**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-9**
Name:	Garden Ridge Blvd	**This project consisted of the construction of half of a new Greenway Urban Arterial. Note, two lanes from FM 3040 to Somerset exist and are not included in the CIP cost. The Town's contribution was $1,891,000.**		
Limits:	FM 3040 to Spinks Rd			
Impact Fee Class:	GUA (1/2)			
Ultimate Class:	GUA			
Length (lf):	3,945			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 5,534,149**
Non-Recoverable Funds:	$649,377 Interlocal Funds / $2,993,646 RTR Funds		$ (3,643,023)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 1,891,126**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-10**
Name:	Garden Ridge Blvd	**This project consisted of the construction of a new Greenway Urban Arterial. The Town's contribution was $2,505,000.**		
Limits:	Spinks Rd to Lakeside Pkwy			
Impact Fee Class:	GUA			
Ultimate Class:	GUA			
Length (lf):	2,240			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 2,504,704**
Non-Recoverable Funds:			
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 2,504,704**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-11**
Name:	Kirkpatrick Ln	**This project consisted of the reconstruction of an existing two-lane asphalt facility to a concrete Urban Collector with left-turn lanes at major cross streets. The Town's contribution was $3,795,000.**		
Limits:	Morriss Rd to Kirkpatrick Ln			
Impact Fee Class:	GUA			
Ultimate Class:	UC			
Length (lf):	5,240			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 3,815,000**
Non-Recoverable Funds:	$20,116 Road Escrow		$ (20,116)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 3,794,884**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-12**
Name:	Kirkpatrick Ln	**This project consists of the construction of a four-lane divided arterial. The project was part of the Denton County '08 Bond Program. The Town's anticipated contribution is $5,243,000.**		
Limits:	Spanish Oak Dr to 1310' W of Garden Ridge Blvd			
Impact Fee Class:	UC			
Ultimate Class:	UMAD			
Length (lf):	2,165			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 8,718,000**
Non-Recoverable Funds:	$3,475,000 RTR		$ (3,475,000)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 5,243,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-13**
Name:	Lake Forest Blvd 75' S of Lincoln Ct to Foxborough	**This project consisted of the extension of the Urban Collector. It also includes the drainage structure to accommodate the existing creek. The City's contribution was $1,401,000.**		
Limits:	Trail			
Impact Fee Class:	UMAD			
Ultimate Class:	UC			
Length (lf):	810			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 1,400,601**
Non-Recoverable Funds:			
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 1,400,601**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-14**
Name:	Lakeside Pkwy	**This project consists of the widening of the existing four-lane concrete facility into a six-lane divided Major Arterial. The Town's anticipated costs are $4,376,000.**		
Limits:	FM 2499 (Long Prairie Rd) to Gerault Rd			
Impact Fee Class:	UC			
Ultimate Class:	P6D			
Length (lf):	5,700			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 4,375,554**
Non-Recoverable Funds:			
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 4,375,554**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-15**
Name:	Lakeside Pkwy	**This project consists of the widening of the existing four-lane concrete facility into a six-lane divided Major Arterial. The Town's anticipated costs are $2,019,000.**		
Limits:	Gerault Rd to Garden Ridge Blvd			
Impact Fee Class:	P6D (1/3)			
Ultimate Class:	P6D			
Length (lf):	2,630			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 2,018,856**
Non-Recoverable Funds:			
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 2,018,856**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-16**
Name:	Lakeside Pkwy	**This project consists of the widening of the existing four-lane concrete facility into a six-lane divided Major Arterial. The Town's anticipated costs are $2,146,000.**		
Limits:	Garden Ridge Blvd to South Town			
Impact Fee Class:	P6D (1/3)			
Ultimate Class:	P6D			
Length (lf):	2,795			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 2,145,590**
Non-Recoverable Funds:			
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 2,145,590**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-17**
Name:	Morriss Rd	**This project consisted of the widening of the existing five-lane concrete facility into a six-lane divided Major Arterial. The Town's contribution was $1,009,000.**		
Limits:	Mandarin Way to Flower Mound Rd			
Impact Fee Class:	P6D (1/3)			
Ultimate Class:	UMAD			
Length (lf):	835			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 1,409,336**
Non-Recoverable Funds:	$399,844 RTR		$ (399,844)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 1,009,492**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-18**
Name:	Sagebrush Dr	**This project consisted of the reconstruction of a two-lane asphalt facility to a concrete Urban Collector. The Town's contribution was $3,210,000.**		
Limits:	Old Settlers Rd to FM 2499 (Long Prairie Rd)			
Impact Fee Class:	P6D (1/6)			
Ultimate Class:	UC			
Length (lf):	2,720			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 3,209,771**
Non-Recoverable Funds:			
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 3,209,771**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-19,B-6**
Name:	Simmons Rd	**This project consisted of the reconstruction of an existing two-lane facility as a four-lane undivided Urban Minor Arterial. The Town contributed $1,129,000 to the construction of this facility.**		
Limits:	Wichita Trail to McKamy Creek Rd			
Impact Fee Class:	UMAU			
Ultimate Class:	UMAU			
Length (lf):	2,715			
Service Area(s):	A/B			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 1,198,860**
Non-Recoverable Funds:	$70,071 Escrow Funds		$ (70,071)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 1,128,789**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-20**
Name:	Spinks Rd	**This project consisted of the construction of a new four-lane divided Urban Minor Arterial. The Town contributed $448,000 to the construction of this facility.**		
Limits:	Aberdeen Dr to Gerault Rd			
Impact Fee Class:	UMAU			
Ultimate Class:	UMAD			
Length (lf):	4,910			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 2,023,037**
Non-Recoverable Funds:	$1,574,784 Interlocal Funds		$ (1,574,784)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 448,253**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-21**
Name:	Spinks Rd	**This project consisted of the construction of a new four-lane divided Urban Minor Arterial. The Town contributed $968,000 to the construction of this facility.**		
Limits:	Gerault Rd to Garden Ridge Blvd			
Impact Fee Class:	UMAD			
Ultimate Class:	UMAD			
Length (lf):	2,970			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 1,857,999**
Non-Recoverable Funds:	$889,702 Interlocal Funds		$ (889,702)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 968,297**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-22**
Name:	Timber Creek Rd	**This project consisted of the widening of the existing two-lane concrete facility to a four-lane undivided Urban Minor Arterial. The Town contributed $691,000 to the construction of this facility.**		
Limits:	445' S of Glenn Hollow Ln to Kirkpatrick Ln			
Impact Fee Class:	UMAD			
Ultimate Class:	UMAU			
Length (lf):	1,075			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 690,850**
Non-Recoverable Funds:			
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 690,850**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-23**
Name:	Waketon/College Connector	**This project consists of the construction of a concrete two-lane Urban Collector.**		
Limits:	Waketon Rd to College Pkwy			
Impact Fee Class:	UMAU (1/2)			
Ultimate Class:	UC			
Length (lf):	1,415			
Service Area(s):	A			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
113	Unclassified Street Excavation	1,965	CY	$ 27.00	$ 53,063
213	10" Lime Stabilization	4,088	SY	$ 15.00	$ 61,317
313	8" Reinforced Concrete	3,931	SY	$ 73.00	$ 286,931
413	Block Sod with 4" Topsoil (with sidewalk)	1,572	SY	$ 10.00	$ 15,722
513	4' Sidewalk	5,660	SF	$ 8.00	$ 45,280
				Paving Construction Cost Subtotal:	**$ 462,312**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 23,116
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 23,116
√	Roadway Drainage	Standard Internal System	35%	$ 161,809
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 23,116
√	Sewer	Minor Adjustments	5%	$ 23,116
√	Establish Turf / Erosion Control		2%	$ 9,246
√	Illumination	Standard Ilumination System	6%	$ 27,739
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 291,257**
			Paving and Allowance Subtotal:	**$ 753,568**
			Construction Contingency: 15%	$ 113,035
			Construction Cost TOTAL:	**$ 867,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 867,000**
Engineering/Survey/Testing:		20%	$ 173,400
Mobilization		6%	$ 52,020
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 260,100
		Impact Fee Project Cost TOTAL:	**$ 1,353,000**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-24**
Name:	Windsor Dr	**This project consisted of the construction of an Urban Collector. The Town's contribution was $1,059,000 to the construction of this facility.**		
Limits:	Amy Ln to FM 2499 (Long Prairie Rd)			
Impact Fee Class:	UC			
Ultimate Class:	UC			
Length (lf):	3,180			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 4,160,508**
Non-Recoverable Funds:	$520,000 Interlocal / $2,581,641 RTR		$ (3,101,641)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
	Impact Fee Project Cost TOTAL:		**$ 1,058,867**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-25**
Name:	Yucca Dr 440' E of FM 2499 to 460' S of FM	**This project consisted of the construction of a new Urban Collector. The Town's contribution was $214,000.**		
Limits:	1171			
Impact Fee Class:	UC			
Ultimate Class:	UC			
Length (lf):	410			
Service Area(s):	A			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 214,416**
Non-Recoverable Funds:			
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
	Impact Fee Project Cost TOTAL:		**$ 214,416**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound - 2020 Roadway Impact Fee Update

Capital Improvement Plan for Roadway Impact Fees

Appendix A - Summary of Conceptual Level Project Cost Projections

Roadway Improvements - Service Area B

#	Class	Project	Limits	Status	Project Cost
B-1	UMAD	Flower Mound Rd	FM 1171 (Cross Timbers) to Skillern Rd	Completed	$ 680,380
B-2	RC	Red Rock/Shiloh Connector	Red Rock Ln to Shiloh Rd	New	$ 6,845,000
B-3	RC	Scenic /Flower Mound Connector	Scenic Dr to Alcott Ave	New	$ 3,067,000
B-4	RC	Shiloh Rd/Lusk Ln Connector	2820' E of Shiloh Rd to Lusk Ln	New	$ 3,945,000
B-5	RC	Shiloh Rd/Lusk Ln Connector	Shiloh Rd to 2820' E of Shiloh Rd	New	$ 3,611,000
A-19,B-6	UMAU	Simmons Rd	Wichita Trail to McKamy Creek Rd	Completed	$ 1,128,789

Signal Installation And Intersection Improvements

S-2		Intersection	Bruton Orand Blvd. at Quail Run Rd.	Proposed	$ 275,000
I - 4		Northbound right-turn lane	Bruton Orand Blvd. at Cross Timbers Rd.	In Design	$ 230,000
I-12		Intersection Improvement	Cross Timbers Rd. at Flower Mound Rd.	Proposed	$ 375,000

TOTAL $ 20,157,169

Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**B-1**
Name:	Flower Mound Rd FM 1171 (Cross Timbers) to Skillern	**This project consisted of the reconstruction of an existing two-lane facility to a four-lane divided Urban Minor Arterial. The Town's contribution is $680,000 to the construction of this facility.**		
Limits:	Rd			
Impact Fee Class:	UMAD			
Ultimate Class:	UMAD			
Length (lf):	6,370			
Service Area(s):	B			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 4,451,353**
Non-Recoverable Funds:	$3,770,973 Interlocal Funds		$ (3,770,973)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 680,380**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**B-2**
Name:	Red Rock/Shiloh Connector	**This project consists of the construction of a concrete two-lane Rural Collector.**		
Limits:	Red Rock Ln to Shiloh Rd			
Impact Fee Class:	RC			
Ultimate Class:	RC			
Length (lf):	5,345			
Service Area(s):	B			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
107	Unclassified Street Excavation	10,096	CY	$ 27.00	$ 272,595
207	8" Lime Stabilization	21,380	SY	$ 15.00	$ 320,700
307	8" Reinforced Concrete	20,192	SY	$ 73.00	$ 1,474,032
407	Block Sod with 4" Topsoil (no sidewalk)	27,319	SY	$ 10.00	$ 273,189
507	No Sidewalk	0	SF	$ 8.00	$ -
				Paving Construction Cost Subtotal:	**$ 2,340,516**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 117,026
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 117,026
√	Roadway Drainage	Standard Internal System	35%	$ 819,181
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 117,026
√	Sewer	Minor Adjustments	5%	$ 117,026
√	Establish Turf / Erosion Control		2%	$ 46,810
√	Illumination	Standard Ilumination System	6%	$ 140,431
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 1,474,525**
			Paving and Allowance Subtotal:	**$ 3,815,041**
			Construction Contingency: 15%	$ 572,256
			Construction Cost TOTAL:	**$ 4,388,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 4,388,000**
Engineering/Survey/Testing:		20%	$ 877,600
Mobilization		6%	$ 263,280
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 1,316,400
		Impact Fee Project Cost TOTAL:	**$ 6,845,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**B-3**
Name:	Scenic /Flower Mound Connector	**This project consists of the construction of a concrete two-lane Rural Collector.**		
Limits:	Scenic Dr to Alcott Ave			
Impact Fee Class:	RC			
Ultimate Class:	RC			
Length (lf):	2,395			
Service Area(s):	B			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
107	Unclassified Street Excavation	4,524	CY	$ 27.00	$ 122,145
207	8" Lime Stabilization	9,580	SY	$ 15.00	$ 143,700
307	8" Reinforced Concrete	9,048	SY	$ 73.00	$ 660,488
407	Block Sod with 4" Topsoil (no sidewalk)	12,241	SY	$ 10.00	$ 122,411
507	No Sidewalk	0	SF	$ 8.00	$ -
				Paving Construction Cost Subtotal:	**$ 1,048,744**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 52,437
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 52,437
√	Roadway Drainage	Standard Internal System	35%	$ 367,060
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 52,437
√	Sewer	Minor Adjustments	5%	$ 52,437
√	Establish Turf / Erosion Control		2%	$ 20,975
√	Illumination	Standard Ilumination System	6%	$ 62,925
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 660,709**
			Paving and Allowance Subtotal:	**$ 1,709,453**
			Construction Contingency: 15%	$ 256,418
			Construction Cost TOTAL:	**$ 1,966,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 1,966,000**
Engineering/Survey/Testing:		20%	$ 393,200
Mobilization		6%	$ 117,960
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 589,800
		Impact Fee Project Cost TOTAL:	**$ 3,067,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**B-4**
Name:	Shiloh Rd/Lusk Ln Connector	**This project consists of the construction of a concrete two-lane Rural Collector.**		
Limits:	2820' E of Shiloh Rd to Lusk Ln			
Impact Fee Class:	RC			
Ultimate Class:	RC			
Length (lf):	3,080			
Service Area(s):	B			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
107	Unclassified Street Excavation	5,818	CY	$ 27.00	$ 157,080
207	8" Lime Stabilization	12,320	SY	$ 15.00	$ 184,800
307	8" Reinforced Concrete	11,636	SY	$ 73.00	$ 849,396
407	Block Sod with 4" Topsoil (no sidewalk)	15,742	SY	$ 10.00	$ 157,422
507	No Sidewalk	0	SF	$ 8.00	$ -
				Paving Construction Cost Subtotal:	**$ 1,348,698**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 67,435
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 67,435
√	Roadway Drainage	Standard Internal System	35%	$ 472,044
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 67,435
√	Sewer	Minor Adjustments	5%	$ 67,435
√	Establish Turf / Erosion Control		2%	$ 26,974
√	Illumination	Standard Ilumination System	6%	$ 80,922
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 849,680**
			Paving and Allowance Subtotal:	**$ 2,198,377**
			Construction Contingency: 15%	$ 329,757
			Construction Cost TOTAL:	**$ 2,529,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 2,529,000**
Engineering/Survey/Testing:		20%	$ 505,800
Mobilization		6%	$ 151,740
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 758,700
		Impact Fee Project Cost TOTAL:	**$ 3,945,000**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**B-5**
Name:	Shiloh Rd/Lusk Ln Connector	**This project consists of the construction of a concrete two-lane Rural Collector.**		
Limits:	Shiloh Rd to 2820' E of Shiloh Rd			
Impact Fee Class:	RC			
Ultimate Class:	RC			
Length (lf):	2,820			
Service Area(s):	B			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
107	Unclassified Street Excavation	5,327	CY	$ 27.00	$ 143,820
207	8" Lime Stabilization	11,280	SY	$ 15.00	$ 169,200
307	8" Reinforced Concrete	10,653	SY	$ 73.00	$ 777,693
407	Block Sod with 4" Topsoil (no sidewalk)	14,413	SY	$ 10.00	$ 144,133
507	No Sidewalk	0	SF	$ 8.00	$ -
				Paving Construction Cost Subtotal:	**$ 1,234,847**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 61,742
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 61,742
√	Roadway Drainage	Standard Internal System	35%	$ 432,196
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 61,742
√	Sewer	Minor Adjustments	5%	$ 61,742
√	Establish Turf / Erosion Control		2%	$ 24,697
√	Illumination	Standard Ilumination System	6%	$ 74,091
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 777,953**
			Paving and Allowance Subtotal:	**$ 2,012,800**
			Construction Contingency: 15%	$ 301,920
			Construction Cost TOTAL:	**$ 2,315,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 2,315,000**
Engineering/Survey/Testing:		20%	$ 463,000
Mobilization		6%	$ 138,900
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 694,500
		Impact Fee Project Cost TOTAL:	**$ 3,611,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**A-19,B-6**
Name:	Simmons Rd	**This project consisted of the reconstruction of an existing two-lane facility to construct a four-lane undivided Urban Minor Arterial. The Town contributed $1,129,000 to the construction of this facility.**		
Limits:	Wichita Trail to McKamy Creek Rd			
Impact Fee Class:	UMAU			
Ultimate Class:	UMAU			
Length (lf):	2,715			
Service Area(s):	A/B			

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Contribution to Construction Cost:		-	**$ 1,198,860**
Non-Recoverable Funds:	$70,071 Escrow Funds		$ (70,071)
Engineering/Survey/Testing:			
ROW/Easement Acquisition:			
		Impact Fee Project Cost TOTAL:	**$ 1,128,789**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound - 2020 Roadway Impact Fee Update

Capital Improvement Plan for Roadway Impact Fees

Appendix A - Summary of Conceptual Level Project Cost Projections

Roadway Improvements - Service Area C

#	Class	Project	Limits	Status	Project Cost
C-1	RC	CrossTimbers/Dunham Connector	Cross Timbers Rd to Dunham Rd	New	$ 3,483,000
C-2	GRA	CrossTimbers/US 377 Connector1	US 377 to Cross Timbers Rd	New	$ 22,005,000
C-3	RC	CrossTimbers/US 377 Connector2	CrossTimbers/US 377 Connector1 to Cross Timbers R	New	$ 6,090,000
C-4	UMABL	Denton Creek Blvd	IH-35 Diamond Interchange to 120' NW of Prairie Ridge	New	$ 28,014,000
C-5	UMABL	Denton Creek Blvd	Canyon Falls Dr to 1155' S of Canyon Falls Dr	Widening	$ 1,435,000
C-6	UMABL	Denton Creek Blvd	1155' S of Canyon Falls Dr to Cross Timbers Rd	New	$ 4,323,000
C-7	UC	Stonecrest Rd	850' S of Canyon Falls Dr to UMAB 1	New	$ 3,137,000
C-8	UC	Stonecrest Rd	UMAB 1 to Cross Timbers Rd	New	$ 5,437,000
C-9	UMABL	UMAB 1	Denton Creek Blvd to US 377	New	$ 4,444,000
C-10	UMABL	UMAB2	Denton Creek Blvd to West Town Limit	New	$ 3,512,000
C-11	UC	Urban Collector 1	Cross Timbers Road to Cross Timbers Rd	New	$ 10,995,000
C-12	UC	Urban Collector 1	Stonecrest Rd to Cross Timbers Rd	New	$ 4,577,000

Signal Installation And Intersection Improvements

S-14		Intersection	US 377 at Canyon Falls Dr.	Proposed	$ 205,000
S-15		Intersection	Cross Timbers Rd. at Canyon Falls Dr.	Proposed	$ 275,000
S-16		Intersection	Cross Timbers Rd. at Denton Creek Blvd.	Proposed	$ 275,000
S-17		Intersection	Cross Timbers Rd. at Cross Timbers/US 377 Connecto	Proposed	$ 275,000

TOTAL $ 98,482,000

Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**C-1**
Name:	CrossTimbers/Dunham Connector	**This project consists of the construction of a concrete two-lane Rural Collector.**		
Limits:	Cross Timbers Rd to Dunham Rd			
Impact Fee Class:	RC			
Ultimate Class:	RC			
Length (lf):	2,720			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
107	Unclassified Street Excavation	5,138	CY	$ 27.00	$ 138,720
207	8" Lime Stabilization	10,880	SY	$ 15.00	$ 163,200
307	8" Reinforced Concrete	10,276	SY	$ 73.00	$ 750,116
407	Block Sod with 4" Topsoil (no sidewalk)	13,902	SY	$ 10.00	$ 139,022
507	No Sidewalk	0	SF	$ 8.00	$ -
				Paving Construction Cost Subtotal:	**$ 1,191,058**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 59,553
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 59,553
√	Roadway Drainage	Standard Internal System	35%	$ 416,870
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 59,553
√	Sewer	Minor Adjustments	5%	$ 59,553
√	Establish Turf / Erosion Control		2%	$ 23,821
√	Illumination	Standard Ilumination System	6%	$ 71,463
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 750,366**
			Paving and Allowance Subtotal:	**$ 1,941,424**
			Construction Contingency: 15%	$ 291,214
			Construction Cost TOTAL:	**$ 2,233,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 2,233,000**
Engineering/Survey/Testing:		20%	$ 446,600
Mobilization		6%	$ 133,980
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 669,900
		Impact Fee Project Cost TOTAL:	**$ 3,483,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**C-2**
Name:	CrossTimbers/US 377 Connector1	**This project consists of the construction of a concrete four-lane Greenway Rural Arterial.**		
Limits:	US 377 to Cross Timbers Rd			
Impact Fee Class:	GRA			
Ultimate Class:	GRA			
Length (lf):	11,275			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	36,331	CY	$ 27.00	$ 980,925
203	10" Lime Stabilization	77,672	SY	$ 15.00	$ 1,165,083
303	8" Reinforced Concrete	55,122	SY	$ 73.00	$ 4,023,922
403	Block Sod with 4" Topsoil (no sidewalk)	77,672	SY	$ 10.00	$ 776,722
503	No Sidewalk	0	SF	$ 8.00	$ -
601	Turn Lanes and Median Openings	8,264	SY	$ 70.00	$ 578,484
				Paving Construction Cost Subtotal:	**$ 7,525,137**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 376,257
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 376,257
√	Roadway Drainage	Standard Internal System	35%	$ 2,633,798
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 376,257
√	Sewer	Minor Adjustments	5%	$ 376,257
√	Establish Turf / Erosion Control		2%	$ 150,503
√	Illumination	Standard Ilumination System	6%	$ 451,508
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 4,740,836**
			Paving and Allowance Subtotal:	**$ 12,265,974**
			Construction Contingency: 15%	$ 1,839,896
			Construction Cost TOTAL:	**$ 14,106,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 14,106,000**
Engineering/Survey/Testing:		20%	$ 2,821,200
Mobilization		6%	$ 846,360
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 4,231,800
		Impact Fee Project Cost TOTAL:	**$ 22,005,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**C-3**
Name:	CrossTimbers/US 377 Connector2 CrossTimbers/US 377 Connector1 to	**This project consists of the construction of a concrete two-lane Rural Collector.**		
Limits:	Cross Timbers Rd			
Impact Fee Class:	RC			
Ultimate Class:	RC			
Length (lf):	4,755			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
107	Unclassified Street Excavation	8,982	CY	$ 27.00	$ 242,505
207	8" Lime Stabilization	19,020	SY	$ 15.00	$ 285,300
307	8" Reinforced Concrete	17,963	SY	$ 73.00	$ 1,311,323
407	Block Sod with 4" Topsoil (no sidewalk)	24,303	SY	$ 10.00	$ 243,033
507	No Sidewalk	0	SF	$ 8.00	$ -
				Paving Construction Cost Subtotal:	**$ 2,082,162**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 104,108
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 104,108
√	Roadway Drainage	Standard Internal System	35%	$ 728,757
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 104,108
√	Sewer	Minor Adjustments	5%	$ 104,108
√	Establish Turf / Erosion Control		2%	$ 41,643
√	Illumination	Standard Ilumination System	6%	$ 124,930
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 1,311,762**
			Paving and Allowance Subtotal:	**$ 3,393,924**
			Construction Contingency: 15%	$ 509,089
			Construction Cost TOTAL:	**$ 3,904,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 3,904,000**
Engineering/Survey/Testing:		20%	$ 780,800
Mobilization		6%	$ 234,240
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 1,171,200
		Impact Fee Project Cost TOTAL:	**$ 6,090,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**C-4**
Name:	Denton Creek Blvd IH-35 Diamond Interchange to 120'	**This project consists of the construction of a new four-lane Urban Minor Arterial with bike lanes and a bridge costing $7,000,000.**		
Limits:	NW of Prairie Ridge Rd			
Impact Fee Class:	UMABL			
Ultimate Class:	UMABL			
Length (lf):	6,185			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
114	Unclassified Street Excavation	21,304	CY	$ 27.00	$ 575,205
214	10" Lime Stabilization	45,357	SY	$ 15.00	$ 680,350
314	8" Reinforced Concrete	42,608	SY	$ 73.00	$ 3,110,368
414	Block Sod with 4" Topsoil (with sidewalk)	20,617	SY	$ 10.00	$ 206,167
514	4' Sidewalk	49,480	SF	$ 8.00	$ 395,840
601	Turn Lanes and Median Openings	4,533	SY	$ 70.00	$ 317,333
				Paving Construction Cost Subtotal:	**$ 5,285,262**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 264,263
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 264,263
√	Roadway Drainage	Standard Internal System	35%	$ 1,849,842
√	Special Drainage Structures	Bridge	$7,000,000	$ 7,000,000
√	Water	Minor Adjustments	5%	$ 264,263
√	Sewer	Minor Adjustments	5%	$ 264,263
√	Establish Turf / Erosion Control		2%	$ 105,705
√	Illumination	Standard Ilumination System	6%	$ 317,116
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 10,329,715**
			Paving and Allowance Subtotal:	**$ 15,614,977**
			Construction Contingency: 15%	$ 2,342,247
			Construction Cost TOTAL:	**$ 17,958,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 17,958,000**
Engineering/Survey/Testing:		20%	$ 3,591,600
Mobilization		6%	$ 1,077,480
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 5,387,400
		Impact Fee Project Cost TOTAL:	**$ 28,014,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 11/4/2020

Project Information:		**Description:**	**Project No.**	**C-5**
Name:	Denton Creek Blvd	**This project consists of the construction of half of an Urban Minor Arterial with bike lanes.**		
Limits:	Canyon Falls Dr to 1155' S of Canyon Falls Dr			
Impact Fee Class:	UMABL (1/2)			
Ultimate Class:	UMABL			
Length (lf):	1,195			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
115	Unclassified Street Excavation	2,058	CY	$ 27.00	$ 55,568
215	10" Lime Stabilization	4,382	SY	$ 15.00	$ 65,725
315	8" Reinforced Concrete	4,116	SY	$ 73.00	$ 300,476
415	Block Sod with 4" Topsoil (with sidewalk)	3,054	SY	$ 10.00	$ 30,539
515	4' Sidewalk	4,780	SF	$ 8.00	$ 38,240
				Paving Construction Cost Subtotal:	**$ 490,548**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 24,527
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 24,527
√	Roadway Drainage	Standard Internal System	35%	$ 171,692
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 24,527
√	Sewer	Minor Adjustments	5%	$ 24,527
√	Establish Turf / Erosion Control		2%	$ 9,811
√	Illumination	Standard Ilumination System	6%	$ 29,433
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 309,045**
			Paving and Allowance Subtotal:	**$ 799,592**
			Construction Contingency: 15%	$ 119,939
			Construction Cost TOTAL:	**$ 920,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 920,000**
Engineering/Survey/Testing:		20%	$ 184,000
Previous Contribution			
Mobilization		6%	$ 55,200
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 276,000
		Impact Fee Project Cost TOTAL:	**$ 1,435,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**C-6**
Name:	Denton Creek Blvd	**This project consists of the construction of an Urban Minor Arterial with bike lanes.**		
Limits:	1155' S of Canyon Falls Dr to Cross Timbers Rd			
Impact Fee Class:	UMABL (1/2)			
Ultimate Class:	UMABL			
Length (lf):	3,600			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
115	Unclassified Street Excavation	6,200	CY	$ 27.00	$ 167,400
215	10" Lime Stabilization	13,200	SY	$ 15.00	$ 198,000
315	8" Reinforced Concrete	12,400	SY	$ 73.00	$ 905,200
415	Block Sod with 4" Topsoil (with sidewalk)	9,200	SY	$ 10.00	$ 92,000
515	4' Sidewalk	14,400	SF	$ 8.00	$ 115,200
601	Turn Lanes and Median Openings	0	SY	$ 70.00	$ -
				Paving Construction Cost Subtotal:	**$ 1,477,800**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 73,890
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 73,890
√	Roadway Drainage	Standard Internal System	35%	$ 517,230
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 73,890
√	Sewer	Minor Adjustments	5%	$ 73,890
√	Establish Turf / Erosion Control		2%	$ 29,556
√	Illumination	Standard Ilumination System	6%	$ 88,668
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 931,014**
			Paving and Allowance Subtotal:	**$ 2,408,814**
			Construction Contingency: 15%	$ 361,322
			Construction Cost TOTAL:	**$ 2,771,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 2,771,000**
Engineering/Survey/Testing:		20%	$ 554,200
Mobilization		6%	$ 166,260
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 831,300
		Impact Fee Project Cost TOTAL:	**$ 4,323,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**C-7**
Name:	Stonecrest Rd	**This project consists of the construction of an**		
Limits:	850' S of Canyon Falls Dr to UMAB 1	**Urban Collector.**		
Impact Fee Class:	UMABL			
Ultimate Class:	UC			
Length (lf):	1,255			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
114	Unclassified Street Excavation	4,323	CY	$ 27.00	$ 116,715
214	10" Lime Stabilization	9,203	SY	$ 15.00	$ 138,050
314	8" Reinforced Concrete	8,646	SY	$ 73.00	$ 631,126
414	Block Sod with 4" Topsoil (with sidewalk)	4,183	SY	$ 10.00	$ 41,833
514	4' Sidewalk	10,040	SF	$ 8.00	$ 80,320
				Paving Construction Cost Subtotal:	**$ 1,072,434**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 53,622
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 53,622
√	Roadway Drainage	Standard Internal System	35%	$ 375,352
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 53,622
√	Sewer	Minor Adjustments	5%	$ 53,622
√	Establish Turf / Erosion Control		2%	$ 21,449
√	Illumination	Standard Ilumination System	6%	$ 64,346
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 675,633**
			Paving and Allowance Subtotal:	**$ 1,748,067**
			Construction Contingency: 15%	$ 262,210
			Construction Cost TOTAL:	**$ 2,011,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 2,011,000**
Engineering/Survey/Testing:		20%	$ 402,200
Mobilization		6%	$ 120,660
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 603,300
		Impact Fee Project Cost TOTAL:	**$ 3,137,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**C-8**
Name:	Stonecrest Rd	**This project consists of the construction of an Urban Collector.**		
Limits:	UMAB 1 to Cross Timbers Rd			
Impact Fee Class:	UC			
Ultimate Class:	UC			
Length (lf):	3,700			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
106	Unclassified Street Excavation	7,606	CY	$ 27.00	$ 205,350
206	8" Lime Stabilization	16,033	SY	$ 15.00	$ 240,500
306	8" Reinforced Concrete	15,211	SY	$ 73.00	$ 1,110,411
406	Block Sod with 4" Topsoil (with sidewalk)	6,578	SY	$ 10.00	$ 65,778
506	4' Sidewalk	29,600	SF	$ 8.00	$ 236,800
				Paving Construction Cost Subtotal:	**$ 1,858,839**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 92,942
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 92,942
√	Roadway Drainage	Standard Internal System	35%	$ 650,594
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 92,942
√	Sewer	Minor Adjustments	5%	$ 92,942
√	Establish Turf / Erosion Control		2%	$ 37,177
√	Illumination	Standard Ilumination System	6%	$ 111,530
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 1,171,069**
			Paving and Allowance Subtotal:	**$ 3,029,907**
			Construction Contingency: 15%	$ 454,486
			Construction Cost TOTAL:	**$ 3,485,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 3,485,000**
Engineering/Survey/Testing:		20%	$ 697,000
Mobilization		6%	$ 209,100
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 1,045,500
		Impact Fee Project Cost TOTAL:	**$ 5,437,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**C-9**
Name:	UMAB 1	**This project consists of the construction of an Urban Minor Arterial with bike lanes.**		
Limits:	Denton Creek Blvd to US 377			
Impact Fee Class:	UC			
Ultimate Class:	UMABL			
Length (lf):	3,025			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
106	Unclassified Street Excavation	6,218	CY	$ 27.00	$ 167,888
206	8" Lime Stabilization	13,108	SY	$ 15.00	$ 196,625
306	8" Reinforced Concrete	12,436	SY	$ 73.00	$ 907,836
406	Block Sod with 4" Topsoil (with sidewalk)	5,378	SY	$ 10.00	$ 53,778
506	4' Sidewalk	24,200	SF	$ 8.00	$ 193,600
601	Turn Lanes and Median Openings	0	SY	$ 70.00	$ -
				Paving Construction Cost Subtotal:	**$ 1,519,726**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 75,986
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 75,986
√	Roadway Drainage	Standard Internal System	35%	$ 531,904
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 75,986
√	Sewer	Minor Adjustments	5%	$ 75,986
√	Establish Turf / Erosion Control		2%	$ 30,395
√	Illumination	Standard Ilumination System	6%	$ 91,184
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 957,428**
			Paving and Allowance Subtotal:	**$ 2,477,154**
			Construction Contingency: 15%	$ 371,573
			Construction Cost TOTAL:	**$ 2,849,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 2,849,000**
Engineering/Survey/Testing:		20%	$ 569,800
Mobilization		6%	$ 170,940
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 854,700
		Impact Fee Project Cost TOTAL:	**$ 4,444,000**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the Town of Flower Mound.

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**C-10**
Name:	UMAB2 Denton Creek Blvd to West Town	**This project consists of the construction of an Urban Minor Arterial with bike lanes.**		
Limits:	Limit			
Impact Fee Class:	UMABL			
Ultimate Class:	UMABL			
Length (lf):	1,405			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
114	Unclassified Street Excavation	4,839	CY	$ 27.00	$ 130,665
214	10" Lime Stabilization	10,303	SY	$ 15.00	$ 154,550
314	8" Reinforced Concrete	9,679	SY	$ 73.00	$ 706,559
414	Block Sod with 4" Topsoil (with sidewalk)	4,683	SY	$ 10.00	$ 46,833
514	4' Sidewalk	11,240	SF	$ 8.00	$ 89,920
601	Turn Lanes and Median Openings	1,030	SY	$ 70.00	$ 72,086
				Paving Construction Cost Subtotal:	**$ 1,200,613**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 60,031
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 60,031
√	Roadway Drainage	Standard Internal System	35%	$ 420,215
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 60,031
√	Sewer	Minor Adjustments	5%	$ 60,031
√	Establish Turf / Erosion Control		2%	$ 24,012
√	Illumination	Standard Ilumination System	6%	$ 72,037
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 756,386**
			Paving and Allowance Subtotal:	**$ 1,957,000**
			Construction Contingency: 15%	$ 293,550
			Construction Cost TOTAL:	**$ 2,251,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 2,251,000**
Engineering/Survey/Testing:		20%	$ 450,200
Mobilization		6%	$ 135,060
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 675,300
		Impact Fee Project Cost TOTAL:	**$ 3,512,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**C-11**
Name:	Urban Collector 1 Cross Timbers Road to Cross Timbers Rd	**This project consists of the construction of an Urban Collector.**		
Limits:				
Impact Fee Class:	UMABL			
Ultimate Class:	UC			
Length (lf):	4,400			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
114	Unclassified Street Excavation	15,156	CY	$ 27.00	$ 409,200
214	10" Lime Stabilization	32,267	SY	$ 15.00	$ 484,000
314	8" Reinforced Concrete	30,311	SY	$ 73.00	$ 2,212,711
414	Block Sod with 4" Topsoil (with sidewalk)	14,667	SY	$ 10.00	$ 146,667
514	4' Sidewalk	35,200	SF	$ 8.00	$ 281,600
				Paving Construction Cost Subtotal:	**$ 3,759,928**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 187,996
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 187,996
√	Roadway Drainage	Standard Internal System	35%	$ 1,315,975
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 187,996
√	Sewer	Minor Adjustments	5%	$ 187,996
√	Establish Turf / Erosion Control		2%	$ 75,199
√	Illumination	Standard Ilumination System	6%	$ 225,596
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 2,368,755**
			Paving and Allowance Subtotal:	**$ 6,128,682**
			Construction Contingency: 15%	$ 919,302
			Construction Cost TOTAL:	**$ 7,048,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 7,048,000**
Engineering/Survey/Testing:		20%	$ 1,409,600
Mobilization		6%	$ 422,880
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 2,114,400
		Impact Fee Project Cost TOTAL:	**$ 10,995,000**

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Town of Flower Mound

2020 Roadway Impact Fee Update

Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 10/30/2020

Project Information:		**Description:**	**Project No.**	**C-12**
Name:	Urban Collector 1	**This project consists of the construction of an Urban Collector.**		
Limits:	Stonecrest Rd to Cross Timbers Rd			
Impact Fee Class:	UC			
Ultimate Class:	UC			
Length (lf):	3,115			
Service Area(s):	C			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
106	Unclassified Street Excavation	6,403	CY	$ 27.00	$ 172,883
206	8" Lime Stabilization	13,498	SY	$ 15.00	$ 202,475
306	8" Reinforced Concrete	12,806	SY	$ 73.00	$ 934,846
406	Block Sod with 4" Topsoil (with sidewalk)	5,538	SY	$ 10.00	$ 55,378
506	4' Sidewalk	24,920	SF	$ 8.00	$ 199,360
				Paving Construction Cost Subtotal:	**$ 1,564,941**

Major Construction Component Allowances:**

	Item Description	Notes	Allowance	Item Cost
√	Prep ROW		5%	$ 78,247
	Traffic Control	None Anticipated	0%	$ -
√	Pavement Markings/Markers		5%	$ 78,247
√	Roadway Drainage	Standard Internal System	35%	$ 547,729
	Special Drainage Structures	None Anticipated	$0	$ -
√	Water	Minor Adjustments	5%	$ 78,247
√	Sewer	Minor Adjustments	5%	$ 78,247
√	Establish Turf / Erosion Control		2%	$ 31,299
√	Illumination	Standard Ilumination System	6%	$ 93,896
	Other:		$0	$ -
**Allowances based on % of Paving Construction Cost Subtotal			**Allowance Subtotal:**	**$ 985,913**

Paving and Allowance Subtotal:		**$ 2,550,854**
Construction Contingency:	15%	$ 382,628
Construction Cost TOTAL:		**$ 2,934,000**

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	**$ 2,934,000**
Engineering/Survey/Testing:		20%	$ 586,800
Mobilization		6%	$ 176,040
ROW/Easement Acquisition:	New Roadway Alignment	30%	$ 880,200
		Impact Fee Project Cost TOTAL:	**$ 4,577,000**

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B. CIP Service Units of Supply

Town of Flower Mound - 2020 Roadway Impact Fee Update

CIP Service Units of Supply

Service Area A

10/30/2020

Project ID #	ROADWAY	LIMITS	LENGTH (MI)	LANES	IMPACT FEE CLASSIFICATION	PEAK HOUR VOLUME	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN	VEH-MI SUPPLY PK-HR TOTAL	VEH-MI TOTAL DEMAND PK-HR	EXCESS CAPACITY PK-HR VEH-MI	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
A-1	Aberdeen Dr	FM 2499 (Long Prairie Rd) to 1340' N of Spinks Rd	0.48	4	UMAD	0	100%	650	1,252	0	1,252	$ 1,454,821	$ 1,454,821
A-2	Aberdeen Dr	1340' N of Spinks Rd to 700' N of Spinks Rd	0.12	4	UMAD	8	100%	650	323	1	322	$ 636,000	$ 636,000
A-3	Chinn Chapel Rd	FM 407 (Justin Rd) to Waketon Rd	0.66	4	UMAU	1,163	50%	525	688	381	307	$ 2,728,803	$ 1,364,402
A-4	Dixon Ln	Chinn Chapel Rd to Crestside Dr	1.24	4	UMAD	1,192	100%	650	3,211	1,472	1,739	$ 5,297,438	$ 5,297,438
A-5	Duncan Ln	Honeysuckle Way to Spinks Rd	0.38	4	UMAU	408	50%	525	396	77	319	$ 562,532	$ 281,266
A-6	Firewheel Dr	515' S of FM 1171 to 140' S of Hearthstone Dr	0.24	4	UMAU	36	100%	525	513	9	504	$ 603,525	$ 603,525
A-7	FM 2499 (Long Prairie Rd)	FM 1171 (Cross Timbers) to Spinks Rd	2.73	6	P6D	4,530	100%	750	12,282	12,364	-82	$ 1,515,721	$ 1,515,721
A-8	Garden Ridge Blvd	Bellaire Blvd to Forest Vista Dr	0.81	4	GUA	1,247	50%	650	1,057	507	550	$ 1,146,031	$ 573,016
A-9	Garden Ridge Blvd	FM 3040 to Spinks Rd	0.75	4	GUA	912	100%	650	1,942	681	1,261	$ 1,891,126	$ 1,891,126
A-10	Garden Ridge Blvd	Spinks Rd to Lakeside Pkwy	0.42	4	GUA	911	100%	650	1,103	386	716	$ 2,504,704	$ 2,504,704
A-11	Kirkpatrick Ln	Morriss Rd to Kirkpatrick Ln	0.99	2	UC	473	100%	425	844	469	374	$ 3,794,884	$ 3,794,884
A-12	Kirkpatrick Ln	Spanish Oak Dr to 1310' W of Garden Ridge Blvd	0.41	4	UMAD	0	100%	650	1,067	0	1,067	$ 5,243,000	$ 5,243,000
A-13	Lake Forest Blvd	75' S of Lincoln Ct to Foxborough Trail	0.15	2	UC	200	100%	425	131	31	100	$ 1,400,601	$ 1,400,601
A-14	Lakeside Pkwy	FM 2499 (Long Prairie Rd) to Gerault Rd	1.08	6	P6D	937	100%	750	4,859	1,012	3,847	$ 4,375,554	$ 4,375,554
A-15	Lakeside Pkwy	Gerault Rd to Garden Ridge Blvd	0.50	6	P6D	1,270	100%	750	2,242	633	1,609	$ 2,018,856	$ 2,018,856
A-16	Lakeside Pkwy	Garden Ridge Blvd to South Town Limit	0.53	6	P6D	999	100%	750	2,381	529	1,852	$ 2,145,590	$ 2,145,590
A-17	Morriss Rd	Mandarin Way to Flower Mound Rd	0.16	4	UMAD	1,981	100%	650	412	314	98	$ 1,009,492	$ 1,009,492
A-18	Sagebrush Dr	Old Settlers Rd to FM 2499 (Long Prairie Rd)	0.51	2	UC	476	100%	425	438	245	193	$ 3,209,771	$ 3,209,771
A-19,B-6	Simmons Rd	Wichita Trail to McKamy Creek Rd	0.51	4	UMAU	428	50%	525	540	110	430	$ 1,128,789	$ 564,395
A-20	Spinks Rd	Aberdeen Dr to Gerault Rd	0.93	4	UMAD	1,259	100%	650	2,417	1,170	1,247	$ 448,253	$ 448,253
A-21	Spinks Rd	Gerault Rd to Garden Ridge Blvd	0.56	4	UMAD	324	100%	650	1,464	182	1,281	$ 968,297	$ 968,297
A-22	Timber Creek Rd	445' S of Glenn Hollow Ln to Kirkpatrick Ln	0.20	4	UMAU	116	100%	525	428	24	404	$ 690,850	$ 690,850
A-23	Waketon/College Connector	Waketon Rd to College Pkwy	0.27	2	UC	0	100%	425	228	0	228	$ 1,353,000	$ 1,353,000
A-24	Windsor Dr	Amy Ln to FM 2499 (Long Prairie Rd)	0.60	2	UC	246	100%	425	512	148	364	$ 1,058,867	$ 1,058,867
A-25	Yucca Dr	440' E of FM 2499 to 460' S of FM 1171	0.08	2	UC	0	100%	425	66	0	66	$ 214,416	$ 214,416
S-1	Intersection	College Pkwy. at Timber Creek Rd.	0.00				100%					$ 275,000	$ 275,000
S-2	Intersection	Bruton Orand Blvd. at Quail Run Rd.	0.00				50%					$ 275,000	$ 137,500
S-3	Intersection	Churchill Dr. at Peters Colony Rd.	0.00				100%					$ 990,000	$ 990,000
S-4	Intersection	Cross Timbers Rd. at Forums Dr.	0.00				100%					$ 179,000	$ 179,000
S-5	Intersection	Garden Ridge Blvd. at Kirkpatrick Ln.	0.00				100%					$ 275,000	$ 275,000
S-6	Intersection	FM 2499 (Long Prairie Rd.) at Chaparral Ln.	0.00				100%					$ 375,000	$ 375,000
S-7	Intersection	Garden Ridge Blvd. at Forest Vista Rd.	0.00				100%					$ 275,000	$ 275,000
S-8	Intersection	FM 2499 (Long Prairie Rd.) at Northshore Blvd.	0.00				100%					$ 275,000	$ 275,000
S-9	Intersection	FM 2499 (Long Prairie Rd.) at Aberdeen Dr.	0.00				100%					$ 380,000	$ 380,000
S-10	Intersection	Lakeside Pkwy. at Silveron Blvd.	0.00				100%					$ 275,000	$ 275,000
S-11	Intersection	FM 2499 (Long Prairie Rd.) at Silveron Blvd.	0.00				100%					$ 390,000	$ 390,000
S-12	Intersection	Gerault Rd. at Old Gerault Rd.	0.00				100%					$ 275,000	$ 275,000
S-13	Intersection	Lakeside Pkwy. at Enterprise Dr.	0.00				100%					$ 275,000	$ 275,000
I - 1	Intersection Improvement	Dixon Ln. at Morriss Rd.	0.00				100%					$ 375,000	$ 375,000
I - 2	Right-turn lane - all directions	FM 2499 (Long Prairie Rd.) at Waketon Rd.	0.00				100%					$ 1,473,000	$ 1,473,000
I - 3	Intersection Improvement	FM 2499 (Long Prairie Rd.) at College Pkwy.	0.00				100%					$ 333,000	$ 333,000
I - 4	Northbound right-turn lane	Bruton Orand Blvd. at Cross Timbers Rd.	0.00				50%					$ 375,000	$ 187,500
I - 5	Intersection Improvement	Cross Timbers Rd. at Auburn Dr.	0.00				100%					$ 375,000	$ 375,000
I - 6	Westbound right-turn lane	Cross Timbers Rd. at FM 2499 (Long Prairie Rd.)	0.00				100%					$ 492,000	$ 492,000
I - 7	Intersection Improvement	Flower Mound Rd. at McKamy Creek Rd.	0.00				100%					$ 336,000	$ 336,000
I - 8	Second left-turn lane, EB and SB	Flower Mound Rd. at FM 2499 (Long Prairie Rd.)	0.00				100%					$ 460,000	$ 460,000
I - 9	Intersection Improvement	Flower Mound Rd. at Garden Ridge Blvd.	0.00				100%					$ 375,000	$ 375,000
I - 10	Intersection Improvement	FM 2499 (Long Prairie Rd.) at Lakeside Pkwy.	0.00				100%					$ 375,000	$ 375,000
I-11	Intersection Improvement	Lakeside Pkwy. At Gerault Rd.	0.00				100%					$ 375,000	$ 375,000
SUBTOTAL									**40,792**	**20,744**	**20,048**	**$ 57,258,921**	**$ 54,150,844**

2020 Roadway Impact Fee Update Cost Per Service Area $ 30,000

TOTAL COST IN SERVICE AREA A $ 54,180,844

Town of Flower Mound - 2020 Roadway Impact Fee Update

CIP Service Units of Supply

Service Area B

10/30/2020

Project ID #	ROADWAY	LIMITS	LENGTH (MI)	LANES	IMPACT FEE CLASSIFICATION	PEAK HOUR VOLUME	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN	VEH-MI SUPPLY PK-HR TOTAL	VEH-MI TOTAL DEMAND PK-HR	EXCESS CAPACITY PK-HR VEH-MI	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
B-1	Flower Mound Rd	FM 1171 (Cross Timbers) to Skillern Rd	1.21	4	UMAD	848	100%	650	3,136	1,023	2,113	$ 680,380	$ 680,380
B-2	Red Rock/Shiloh Connector	Red Rock Ln to Shiloh Rd	1.01	2	RC	0	100%	425	861	0	861	$ 6,845,000	$ 6,845,000
B-3	Scenic /Flower Mound Connector	Scenic Dr to Alcott Ave	0.45	2	RC	0	100%	425	385	0	385	$ 3,067,000	$ 3,067,000
B-4	Shiloh Rd/Lusk Ln Connector	2820' E of Shiloh Rd to Lusk Ln	0.58	2	RC	0	100%	425	496	0	496	$ 3,945,000	$ 3,945,000
B-5	Shiloh Rd/Lusk Ln Connector	Shiloh Rd to 2820' E of Shiloh Rd	0.53	2	RC	0	50%	425	227	0	227	$ 3,611,000	$ 1,805,500
A-19,B-6	Simmons Rd	Wichita Trail to McKamy Creek Rd	0.51	4	UMAU	428	50%	525	540	110	430	$ 1,128,789	$ 564,395
S-2	Intersection	Bruton Orand Blvd. at Quail Run Rd.	0.00				50%					$ 275,000	$ 137,500
I - 4	Northbound right-turn lane	Bruton Orand Blvd. at Cross Timbers Rd.	0.00				50%					$ 230,000	$ 115,000
I-12	Intersection Improvement	Cross Timbers Rd. at Flower Mound Rd.	0.00				100%					$ 375,000	$ 375,000
SUBTOTAL									**5,645**	**1,133**	**4,512**	**$ 20,157,169**	**$ 17,534,775**

2020 Roadway Impact Fee Update Cost Per Service Area $ 30,000

TOTAL COST IN SERVICE AREA B $ 17,564,775

Town of Flower Mound - 2020 Roadway Impact Fee Update

CIP Service Units of Supply

Service Area C

10/30/2020

Project ID #	ROADWAY	LIMITS	LENGTH (MI)	LANES	IMPACT FEE CLASSIFICATION	PEAK HOUR VOLUME	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN	VEH-MI SUPPLY PK-HR TOTAL	VEH-MI TOTAL DEMAND PK-HR	EXCESS CAPACITY PK-HR VEH-MI	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
C-1	CrossTimbers/Dunham Connector	Cross Timbers Rd to Dunham Rd	0.51	2	RC	0	100%	425	437	0	437	$ 3,483,000	$ 3,483,000
C-2	CrossTimbers/US 377 Connector1	US 377 to Cross Timbers Rd	2.14	4	GRA	0	100%	650	5,551	0	5,551	$ 22,005,000	$ 22,005,000
C-3	CrossTimbers/US 377 Connector2	CrossTimbers/US 377 Connector1 to Cross Timbers Rd	0.90	2	RC	0	100%	425	766	0	766	$ 6,090,000	$ 6,090,000
C-4	Denton Creek Blvd	IH-35 Diamond Interchange to 120' NW of Prairie Ridge Rd	1.17	4	UMABL	0	100%	650	3,047	0	3,047	$ 28,014,000	$ 28,014,000
C-5	Denton Creek Blvd	Canyon Falls Dr to 1155' S of Canyon Falls Dr	0.23	4	UMABL	2	100%	650	589	0	589	$ 1,435,000	$ 1,435,000
C-6	Denton Creek Blvd	1155' S of Canyon Falls Dr to Cross Timbers Rd	0.68	4	UMABL	0	100%	650	1,772	0	1,772	$ 4,323,000	$ 4,323,000
C-7	Stonecrest Rd	850' S of Canyon Falls Dr to UMAB 1	0.24	2	UC	0	100%	425	202	0	202	$ 3,137,000	$ 3,137,000
C-8	Stonecrest Rd	UMAB 1 to Cross Timbers Rd	0.70	2	UC	0	100%	425	596	0	596	$ 5,437,000	$ 5,437,000
C-9	UMAB 1	Denton Creek Blvd to US 377	0.57	4	UMABL	0	100%	650	1,491	0	1,491	$ 4,444,000	$ 4,444,000
C-10	UMAB2	Denton Creek Blvd to West Town Limit	0.27	4	UMABL	0	100%	650	692	0	692	$ 3,512,000	$ 3,512,000
C-11	Urban Collector 1	Cross Timbers Road to Cross Timbers Rd	0.83	2	UC	0	100%	425	708	0	708	$ 10,995,000	$ 10,995,000
C-12	Urban Collector 1	Stonecrest Rd to Cross Timbers Rd	0.59	2	UC	0	100%	425	501	0	501	$ 4,577,000	$ 4,577,000
S-14	Intersection	US 377 at Canyon Falls Dr.					100%					$ 205,000	$ 205,000
S-15	Intersection	Cross Timbers Rd. at Canyon Falls Dr.					50%					$ 275,000	$ 137,500
S-16	Intersection	Cross Timbers Rd. at Denton Creek Blvd.					100%					$ 275,000	$ 275,000
S-17	Intersection	Cross Timbers Rd. at Cross Timbers/US 377 Connector 1					100%					$ 275,000	$ 275,000
SUBTOTAL									**16,352**	**0**	**16,352**	**$ 98,482,000**	**$ 98,344,500**

2020 Roadway Impact Fee Update Cost Per Service Area $ 30,000

TOTAL COST IN SERVICE AREA C $ 98,374,500

C. Existing Roadway Facilities Inventory

Town of Flower Mound - 2020 Roadway Impact Fee Update
Existing Roadway Facilities Inventory

Service Area A

10/30/2020

OBJECTID	ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	SERVICE AREA	STATUS	STATUS 2020	EXIST LANE		EXIST TYPE	TP TYPE	PM PEAK HOUR VOLUME		% 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	
									EB/NB	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
27	Aberdeen Dr	700' N of Spinks Rd	Spinks Rd	698	0.13	A	Completed	Established	2	2	4D	UMAD	8	8	100%	650	650	172	172	1	1	171	171		
28	Aberdeen Dr	FM 2499 (Long Prairie Rd)	1340' N of Spinks Rd	2,543	0.48	A	Widening	Widening	0	2	2U	UMAD	0	0	100%	475	475	0	458	0	0	0	458		
205	Aberdeen Dr	1340' N of Spinks Rd	700' N of Spinks Rd	655	0.12	A	Widening	Widening	2	0	2U	UMAD	8	0	100%	475	475	118	0	1	0	117	0		
68	Auburn Dr	Cross Timbers Rd	Peters Colony Rd	2,164	0.41	A	Completed	Established	1	1	2U	UC	155	155	100%	475	475	195	195	64	64	131	131		
103	Bridlewood Blvd	Waketon Rd	Windsor Dr	5,148	0.97	A/B	Completed	Established	2	2	4D	UMAD	419	432	50%	650	650	634	634	204	211	429	423		
132	Bridlewood Blvd	Windsor Dr	Cross Timbers Rd	2,813	0.53	A/B	Completed	Established	2	2	4D	UMAD	455	368	50%	650	650	346	346	121	98	225	248		
36	Browning Dr	Grand Park Pl Ln	Valley Ridge Blvd	1,131	0.21	A	Completed	Established	1	1	2U	UC	413	413	100%	475	475	102	102	88	88	13	13		
126	Browning Dr	FM 407 (Justin Rd)	Grand Park Pl Ln	759	0.14	A	Completed	Established	2	2	4D	UC	413	413	100%	650	650	187	187	59	59	127	127		
69	Bruton Orand Blvd	Quail Run	Flower Mound Rd	3,727	0.71	A/B	Completed	Established	2	2	4D	UMAD	491	331	50%	650	650	459	459	173	117	286	342		
160	Bruton Orand Blvd	Cross Timbers Rd	Quail Run	2,032	0.38	A/B	Completed	Established	2	2	4D	UMAD	543	474	50%	650	650	250	250	105	91	146	159		
34	Chinn Chapel Rd	North Town Limit	FM 407 (Justin Rd)	2,535	0.48	A	Completed	Established	1	1	2U	RC	221	221	50%	475	475	114	114	53	53	61	61		
39	Chinn Chapel Rd	FM 407 (Justin Rd)	Waketon Rd	3,459	0.66	A	Completed	Completed_2015	2	2	4U	UMAU	612	551	50%	525	525	344	344	200	180	143	163		
56	Churchill Dr	Windsor Dr	Cross Timbers Rd	2,774	0.53	A	Completed	Established	1	1	2U	UC	200	200	100%	475	475	250	250	105	105	145	145		
67	Churchill Dr	Peters Colony Rd	FM 2499 (Long Prairie Rd)	1,751	0.33	A	Completed	Established	2	2	4U	UMAU	160	160	100%	525	525	348	348	53	53	295	295		
133	Churchill Dr	Cross Timbers Rd	Peters Colony Rd	675	0.13	A	Completed	Established	2	2	4U	UMAU	350	350	100%	525	525	134	134	45	45	90	90		
50	College Pkwy	Morriss Rd	Kirkpatrick Ln	5,535	1.05	A	Completed	Established	2	2	4D	UMAD	270	284	100%	650	650	1,363	1,363	283	298	1,080	1,065		
52	College Pkwy	FM 2499 (Long Prairie Rd)	Morriss Rd	4,620	0.88	A	Completed	Established	2	2	4D	UMAD	177	200	100%	650	650	1,138	1,138	155	175	983	963		
120	College Pkwy	Waketon/College Connector	FM 2499 (Long Prairie Rd)	676	0.13	A	Completed	Completed_2020	1	1	2U	UC	13	13	100%	475	475	61	61	2	2	59	59		
1	Cross Timbers Rd	Morriss Rd	Kirkpatrick Ln	6,286	1.19	A	Completed	Established	3	3	6D	P6D	1,619	1,623	100%	750	750	2,679	2,679	1,928	1,932	751	747		
55	Cross Timbers Rd	Bruton Orand Blvd	Old Settlers Rd	5,080	0.96	A	Completed	Established	3	3	6D	P6D	1,119	1,331	100%	750	750	2,165	2,165	1,077	1,281	1,088	884		
59	Cross Timbers Rd	Kirkpatrick Ln	East Town Limit	2,659	0.50	A	Completed	Established	3	3	6D	P6D	1,659	1,808	50%	750	750	567	567	418	455	149	111		
65	Cross Timbers Rd	FM 2499 (Long Prairie Rd)	Morriss Rd	2,606	0.49	A	Completed	Established	3	3	6D	P6D	1,486	1,696	100%	750	750	1,111	1,111	734	837	377	273		
66	Cross Timbers Rd	Old Settlers Rd	FM 2499 (Long Prairie Rd)	3,270	0.62	A	Completed	Established	3	3	6D	P6D	1,434	1,428	100%	750	750	1,394	1,394	888	884	505	509		
2	Dixon Ln	Chinn Chapel Rd	Crestside Dr	6,521	1.24	A	Completed	Completed_2015	2	2	4D	UMAD	561	631	100%	650	650	1,606	1,606	693	779	913	826		
201	Dixon Ln	Crestside Dr	Morriss Rd	1,548	0.29	A	Completed	Established	2	2	4D	UMAD	472	612	100%	650	650	381	381	138	179	243	202		
13	Duncan Ln	Honeysuckle Way	Spinks Rd	1,989	0.38	A	Widening	Widening	1	1	2U	UMAU	204	204	50%	475	475	89	89	38	38	51	51		
202	Duncan Ln	Flower Mound Rd	Honeysuckle Way	1,491	0.28	A	Completed	Established	2	2	4U	UMAU	212	212	50%	525	525	148	148	30	30	118	118		
57	Eaton St	Morriss Rd	Timber Creek Rd	501	0.09	A	Completed	Established	2	2	4D	UMAD	112	112	100%	650	650	123	123	11	11	113	113		
75	Firewheel Dr	Morriss Rd	FM 2499 (Long Prairie Rd)	3,049	0.58	A	Completed	Established	2	2	4D	UMAD	127	127	100%	650	650	751	751	73	73	677	677		
138	Firewheel Dr	140' S of Hearthstone Dr	Morriss Rd	1,841	0.35	A	Completed	Established	2	2	4D	UMAD	64	64	100%	650	650	453	453	22	22	431	431		
189	Firewheel Dr	515' S of FM 1171	140' S of Hearthstone Dr	1,290	0.24	A	Completed	Completed_2020	2	2	4U	UMAU	18	18	100%	525	525	257	257	4	4	252	252		
192	Firewheel Dr	Cross Timbers	420' S of Cross Timbers	425	0.08	A	Completed	Established	2	2	4U	UMAU	18	18	100%	525	525	85	85	1	1	83	83		
14	Flower Mound Rd	Garden Ridge Blvd	Duncan Ln	2,796	0.53	A	Completed	Established	3	3	6D	P6D	1,122	1,174	100%	750	750	1,191	1,191	594	622	597	570		
15	Flower Mound Rd	Lake Forest Blvd	Gerault Rd	5,538	1.05	A	Completed	Established	3	3	6D	P6D	810	1,290	100%	750	750	2,360	2,360	850	1,353	1,510	1,007		
16	Flower Mound Rd	McKamy Creek Rd	FM 2499 (Long Prairie Rd)	1,339	0.25	A	Completed	Established	3	3	6D	P6D	1,019	1,789	100%	750	750	571	571	258	454	312	117		
72	Flower Mound Rd	Simmons Rd	1660' W of Old Settlers Rd	2,731	0.52	A/B	Completed	Established	2	2	4D	UMAD	607	1,104	50%	650	650	336	336	157	285	179	51		
73	Flower Mound Rd	Old Settlers Rd	McKamy Creek Rd	2,972	0.56	A	Completed	Established	2	2	4D	UMAD	1,399	705	100%	650	650	732	732	787	397	-56	335	56	
76	Flower Mound Rd	Gerault Rd	Garden Ridge Blvd	2,553	0.48	A	Completed	Established	3	3	6D	P6D	1,243	1,323	100%	750	750	1,088	1,088	601	640	487	448		
139	Flower Mound Rd	FM 2499 (Long Prairie Rd)	Lake Forest Blvd	2,847	0.54	A	Completed	Established	3	3	6D	P6D	831	1,164	100%	750	750	1,213	1,213	448	628	765	586		
195	Flower Mound Rd	1660' W of Old Settlers Rd	Old Settlers Rd	1,639	0.31	A	Completed	Established	2	2	4D	UMAD	607	1,104	100%	650	650	404	404	188	343	215	61		
7	FM 2499 (Long Prairie Rd)	Gerault Rd	South Town Limit	921	0.17	A	Completed	Established	3	3	6D	P6D	1,019	1,789	100%	750	750	392	392	178	312	215	80		
11	FM 2499 (Long Prairie Rd)	Lakeside Village Blvd	Gerault Rd	4,812	0.91	A	Completed	Established	3	3	6D	P6D	1,191	2,490	100%	750	750	2,051	2,051	1,085	2,269	965	-219		219
30	FM 2499 (Long Prairie Rd)	FM 407 (Justin Rd)	Dixon Ln	2,179	0.41	A	Completed	Established	3	3	6D	P6D	2,161	1,150	100%	750	750	928	928	892	475	37	454		
40	FM 2499 (Long Prairie Rd)	Dixon Ln	Waketon Rd	3,251	0.62	A	Completed	Established	3	3	6D	P6D	2,285	1,320	100%	750	750	1,385	1,385	1,407	813	-22	573	22	
64	FM 2499 (Long Prairie Rd)	125' S of W Windsor Dr	Cross Timbers Rd	4,077	0.77	A	Completed	Established	3	3	6D	P6D	2,339	1,456	100%	750	750	1,737	1,737	1,806	1,124	-69	613	69	
82	FM 2499 (Long Prairie Rd)	FM 1171 (Cross Timbers)	Spinks Rd	14,410	2.73	A	Completed	Completed_2015	3	3	6D	P6D	2,950	1,580	100%	750	750	6,141	6,141	8,051	4,312	-1,910	1,829	1,910	
130	FM 2499 (Long Prairie Rd)	College Pkwy	125' S of Windsor Dr	3,427	0.65	A	Completed	Established	3	3	6D	P6D	2,339	1,456	100%	750	750	1,460	1,460	1,518	945	-58	515	58	
131	FM 2499 (Long Prairie Rd)	Waketon Rd	College Pkwy	1,533	0.29	A	Completed	Established	3	3	6D	P6D	2,353	1,411	100%	750	750	653	653	683	410	-30	244	30	
151	FM 2499 (Long Prairie Rd)	Spinks Rd	Lakeside Village Blvd	4,454	0.84	A	Completed	Established	3	3	6D	P6D	2,828	1,263	100%	750	750	1,898	1,898	2,385	1,065	-488	833	488	
33	FM 407 (Justin Road)	West Town Limit	FM 2499 (Long Prairie Rd)	3,453	0.65	A	Completed	Established	2	2	4D	UMAD	990	1,566	50%	650	650	425	425	324	512	101	-87		87
35	FM 407 (Justin Road)	FM 2499 (Long Prairie Rd)	Browning Dr	8,170	1.55	A	Completed	Established	2	2	4D	UMAD	1,307	1,539	50%	650	650	1,006	1,006	1,011	1,191	-5	-185	5	185
122	FM 407 (Justin Road)	Browning Dr	East Town Limit	3,581	0.68	A	Completed	Established	2	2	4D	UMAD	1,120	1,284	50%	650	650	441	441	380	435	61	5		
20	Forest Vista Dr	FM 2499 (Long Prairie Rd)	Morriss Rd	5,290	1.00	A	Completed	Established	2	2	4D	UMAD	229	164	100%	650	650	1,303	1,303	229	164	1,073	1,138		
21	Forest Vista Dr	Morriss Rd	Garden Ridge Blvd	6,035	1.14	A	Completed	Established	2	2	4D	UMAD	277	350	100%	650	650	1,486	1,486	317	400	1,169	1,086		
17	Garden Ridge Blvd	Cross Timbers Rd	Kirkpatrick Ln	3,550	0.67	A	Completed	Established	2	2	4D	UMAD	1,126	1,126	50%	650	650	437	437	379	379	58	58		
18	Garden Ridge Blvd	Forest Vista Dr	Flower Mound Rd	3,933	0.74	A	Completed	Established	2	2	4D	GUA	958	453	100%	650	650	968	968	714	337	255	631		
19	Garden Ridge Blvd	Bellaire Blvd	Forest Vista Dr	4,292	0.81	A	Completed	Completed_2015	2	2	4D	GUA	792	455	50%	650	650	528	528	322	185	206	343		
83	Garden Ridge Blvd	FM 3040	Spinks Rd	3,944	0.75	A	Completed	Completed_2015	2	2	4D	GUA	736	176	100%	650	650	971	971	550	131	421	839		
145	Garden Ridge Blvd	Spinks Rd	Lakeside Pkwy	2,240	0.42	A	Completed	Completed_2015	2	2	4D	GUA	743	168	100%	650	650	551	551	315	71	236	480		
8	Gerault Rd	Lakeside Pkwy	FM 2499 (Long Prairie Rd)	3,355	0.64	A	Completed	Established	3	3	6D	P6D	1,451	833	100%	750	750	1,430	1,430	922	529	508	900		
147	Gerault Rd	Flower Mound Rd	Spinks Rd	4,410	0.84	A	Completed	Established	3	3	6D	P6D	1,886	731	100%	750	750	1,879	1,879	1,575	610	304	1,269		
153	Gerault Rd	Spinks Rd	Lakeside Pkwy	1,426	0.27	A	Completed	Established	3	3	6D	P6D	1,422	1,422	100%	750	750	608	608	384	384	224	224		

Town of Flower Mound - 2020 Roadway Impact Fee Update
Existing Roadway Facilities Inventory

Service Area A

10/30/2020

OBJECTID	ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	SERVICE AREA	STATUS	STATUS 2020	EXIST LANE		EXIST TYPE	TP TYPE	PM PEAK HOUR VOLUME		% 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	
									EB/NB	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
31	Kirkpatrick Ln	Spanish Oak Dr	1310' W of Garden Ridge Blvd	2,167	0.41	A	New	Future	0	0	0	UMAD	0	0	100%	0	0	0	0	0	0	0	0		
32	Kirkpatrick Ln	College Pkwy	Cross Timbers Rd	2,711	0.51	A	Completed	Established	1	1	2U	UC	326	326	50%	475	475	122	122	84	84	38	38		
44	Kirkpatrick Ln	Morriss Rd	Kirkpatrick Ln	5,240	0.99	A	Completed	Completed_2015	1	1	2U	UC	224	249	100%	475	475	471	471	222	247	249	224		
49	Kirkpatrick Ln	Lonebuck Dr	College Pkwy	3,973	0.75	A	Completed	Established	1	1	2U	UC	203	203	50%	475	475	179	179	76	76	102	102		
140	Kirkpatrick Ln	1340' W of Garden Ridge Blvd	Garden Ridge Blvd	1,342	0.25	A	Completed	Established	2	2	4D	UMAD	201	201	100%	650	650	330	330	51	51	279	279		
141	Kirkpatrick Ln	Cross Timbers Rd	Spanish Oak Dr	2,361	0.45	A	Completed	Established	2	2	4D	UMAD	201	201	100%	650	650	581	581	90	90	491	491		
22	Lake Forest Blvd	Flower Mound Rd	75' S of Lincoln Ct	2,718	0.51	A	Completed	Established	1	1	2U	UC	100	100	100%	475	475	244	244	51	51	193	193		
108	Lake Forest Blvd	Forest Vista Dr	Flower Mound Rd	2,453	0.46	A	Completed	Established	2	2	4D	UMAD	31	31	100%	650	650	604	604	14	14	590	590		
190	Lake Forest Blvd	Foxborough Trail	Aberdeen Dr	590	0.11	A	Completed	Established	1	1	2U	UC	100	100	100%	475	475	53	53	11	11	42	42		
191	Lake Forest Blvd	75' S of Lincoln Ct	Foxborough Trail	812	0.15	A	Completed	Completed_2020	1	1	2U	UC	100	100	100%	475	475	73	73	15	15	58	58		
9	Lakeside Pkwy	Lakeside Village Blvd	FM 2499 (Long Prairie Rd)	4,349	0.82	A	Completed	Established	2	2	4D	UMAP	349	349	100%	650	650	1,071	1,071	287	287	783	783		
10	Lakeside Pkwy	Garden Ridge Blvd	South Town Limit	2,794	0.53	A	Widening	Widening	2	2	4D	P6D	375	624	100%	650	650	688	688	198	330	489	358		
152	Lakeside Pkwy	Gerault Rd	Garden Ridge Blvd	2,630	0.50	A	Widening	Widening	2	2	4D	P6D	464	806	100%	650	650	648	648	231	401	416	246		
154	Lakeside Pkwy	FM 2499 (Long Prairie Rd)	Gerault Rd	5,701	1.08	A	Widening	Widening	2	2	4D	P6D	611	326	100%	650	650	1,404	1,404	660	352	744	1,052		
118	Lakeside Village Blvd	Lakeside Pkwy	FM 2499 (Long Prairie Rd)	2,036	0.39	A	Completed	Established	3	3	6D	P6D	772	772	100%	750	750	868	868	298	298	570	570		
24	Lexington Ave	Strait Ln	Gerault Rd	1,471	0.28	A	Completed	Established	2	2	4D	UMAD	64	64	100%	650	650	362	362	18	18	344	344		
25	Lexington Ave	Spinks Rd	Strait Ln	4,388	0.83	A	Completed	Established	2	2	4D	UMAD	70	70	100%	650	650	1,080	1,080	58	58	1,022	1,022		
48	Lonebuck Dr	Valley Ridge Blvd	Kirkpatrick Ln	1,767	0.33	A	Completed	Established	1	1	2U	UC	250	250	50%	475	475	79	79	42	42	38	38		
81	McKamy Creek Rd	Old Settlers Rd	Flower Mound Rd	1,772	0.34	A	Completed	Established	2	2	4U	UMAU	100	100	100%	525	525	352	352	34	34	319	319		
105	McKamy Creek Rd	Simmons Rd	Old Settlers Rd	2,739	0.52	A	Completed	Established	2	2	4U	UMAU	121	121	100%	525	525	545	545	63	63	482	482		
42	Morriss Rd	FM 407 (Justin Rd)	Dixon Ln	2,268	0.43	A	Completed	Established	2	2	4D	UMAD	1,000	677	100%	650	650	559	559	430	291	129	268		
43	Morriss Rd	Kirkpatrick Ln	Waketon Rd	598	0.11	A	Completed	Established	2	2	4D	UMAD	993	720	100%	650	650	147	147	112	82	35	66		
51	Morriss Rd	Waketon Rd	College Pkwy	2,518	0.48	A	Completed	Established	2	2	4D	UMAD	993	720	100%	650	650	620	620	474	343	146	277		
60	Morriss Rd	College Pkwy	Cross Timbers Rd	6,475	1.23	A	Completed	Established	2	2	4D	UMAD	1,170	742	100%	650	650	1,594	1,594	1,435	910	159	684		
77	Morriss Rd	Forest Vista Dr	Mandarin Way	4,051	0.77	A	Completed	Established	2	2	4D	UMAD	1,361	620	100%	650	650	997	997	1,044	476	-47	522	47	
78	Morriss Rd	Firewheel Dr	Forest Vista Dr	4,126	0.78	A	Completed	Established	2	2	4D	UMAD	1,265	789	100%	650	650	1,016	1,016	988	617	27	399		
124	Morriss Rd	Dixon Ln	Kirkpatrick Ln	2,042	0.39	A	Completed	Established	2	2	4D	UMAD	1,120	803	100%	650	650	503	503	433	311	70	192		
137	Morriss Rd	Cross Timbers Rd	Firewheel Dr	2,759	0.52	A	Completed	Established	2	2	4D	UMAD	1,129	678	100%	650	650	679	679	590	354	89	325		
194	Morriss Rd	Mandarin Way	Flower Mound Rd	837	0.16	A	Widening	Widening	2	3	4D	UMAD	1,361	620	100%	650	650	206	309	216	98	-10	211	10	
3	Old Settlers Rd	Flower Mound Rd	McKamy Creek Rd	2,784	0.53	A	Completed	Established	2	2	4U	UMAU	97	225	100%	525	525	554	554	51	119	503	435		
74	Old Settlers Rd	Cross Timbers Rd	Sagebrush Dr	3,402	0.64	A	Completed	Established	2	2	4U	UMAU	261	103	100%	525	525	677	677	168	66	508	610		
157	Old Settlers Rd	Sagebrush Dr	Flower Mound Rd	3,148	0.60	A	Completed	Established	2	2	4U	UMAU	345	539	100%	525	525	626	626	206	321	420	305		
63	Peters Colony Rd	Old Settlers Rd	Churchill Dr	1,349	0.26	A	Completed	Established	1	1	2U	UC	100	100	100%	475	475	121	121	26	26	96	96		
158	Peters Colony Rd	Auburn Dr	Old Settlers Rd	3,314	0.63	A	Completed	Established	1	1	2U	UC	100	100	100%	475	475	298	298	63	63	235	235		
159	Quail Run	Bruton Orand Blvd	Auburn Dr	1,921	0.36	A	Completed	Established	1	1	2U	UC	94	94	100%	475	475	173	173	34	34	139	139		
29	Rippy Rd	Waketon Rd	FM 2499 (Long Prairie Rd)	4,404	0.83	A	Completed	Established	1	1	2U	UC	98	98	100%	475	475	396	396	82	82	314	314		
61	Sagebrush Dr	Yucca Dr	Morriss Rd	1,620	0.31	A	Completed	Established	2	2	4D	UMAD	369	369	100%	650	650	399	399	113	113	286	286		
119	Sagebrush Dr	Old Settlers Rd	FM 2499 (Long Prairie Rd)	2,718	0.51	A	Completed	Completed_2020	1	1	2U	UC	238	238	100%	475	475	244	244	123	123	122	122		
136	Sagebrush Dr	FM 2499 (Long Prairie Rd)	Yucca Dr	841	0.16	A	Completed	Established	2	2	4U	UMAU	362	362	100%	525	525	167	167	58	58	110	110		
6	Silveron Blvd	FM 2499 (Long Prairie Rd)	Lakeside Pkwy	3,741	0.71	A	Completed	Established	2	2	4D	UMAD	611	326	100%	650	650	921	921	433	231	488	690		
106	Simmons Rd	McKamy Creek Rd	White Chalk Rd	5,508	1.04	A/B	Completed	Established	1	1	2U	RC	100	100	50%	475	475	248	248	52	52	196	196		
107	Simmons Rd	Wichita Trail	McKamy Creek Rd	2,715	0.51	A/B	Completed	Completed_2015	2	2	4U	UMAU	202	226	50%	525	525	270	270	52	58	218	212		
12	Spinks Rd	Gerault Rd	Garden Ridge Blvd	2,972	0.56	A	Completed	Completed_2015	2	2	4D	UMAD	179	145	100%	650	650	732	732	101	82	631	650		
26	Spinks Rd	Aberdeen Dr	Gerault Rd	4,908	0.93	A	Completed	Completed_2015	2	2	4D	UMAD	657	602	100%	650	650	1,208	1,208	611	560	598	649		
146	Spinks Rd	Garden Ridge Blvd	Duncan Ln	2,859	0.54	A	Completed	Established	2	2	4D	UMAD	226	175	100%	650	650	704	704	122	95	582	609		
150	Spinks Rd	FM 2499 (Long Prairie Rd)	Aberdeen Dr	1,127	0.21	A	Completed	Established	2	2	4D	UMAD	657	602	100%	650	650	277	277	140	128	137	149		
45	Stone Hill Farms Pkwy	205' S of Stone Bend Ln	Valley Ridge Blvd	1,275	0.24	A	Completed	Established	1	1	2U	UMAD	158	158	100%	475	475	115	115	38	38	77	77		
127	Stone Hill Farms Pkwy	FM 407 (Justin Rd)	205' S of Stone Bend Ln	766	0.15	A	Completed	Established	2	2	4D	UMAD	146	146	100%	650	650	189	189	21	21	167	167		
23	Strait Ln	Flower Mound Rd	Lexington Ave	1,753	0.33	A	Completed	Established	1	1	2U	UC	28	28	100%	475	475	158	158	9	9	148	148		
46	Timber Creek Rd	Kirkpatrick Ln	College Pkwy	4,887	0.93	A	Completed	Established	1	1	2U	UC	47	47	100%	475	475	440	440	44	44	396	396		
47	Timber Creek Rd	445' S of Glenn Hollow Ln	Kirkpatrick Ln	1,076	0.20	A	Completed	Completed_2020	2	2	4U	UMAU	58	58	100%	525	525	214	214	12	12	202	202		
58	Timber Creek Rd	Eaton St	Cross Timbers Rd	5,257	1.00	A	Completed	Established	1	1	2U	UC	189	189	100%	475	475	473	473	188	188	285	285		
129	Timber Creek Rd	College Pkwy	Eaton St	2,490	0.47	A	Completed	Established	1	1	2U	UC	50	50	100%	475	475	224	224	24	24	200	200		
203	Timber Creek Rd	Valley Ridge Blvd	445' S of Glenn Hollow Ln	882	0.17	A	Completed	Established	2	2	4U	UMAU	58	58	100%	525	525	175	175	10	10	166	166		
125	Valley Ridge Blvd	Morriss Rd	Lonebuck Dr	5,309	1.01	A	Completed	Established	2	2	4U	UMAD	412	802	100%	525	525	1,056	1,056	414	806	642	249		
38	Waketon Rd	Chinn Chapel Rd	Rippy Rd	3,623	0.69	A	Completed	Established	1	1	2U	UC	165	225	100%	475	475	326	326	113	154	213	172		
41	Waketon Rd	FM 2499 (Long Prairie Rd)	Morriss Rd	4,148	0.79	A	Completed	Established	1	1	2U	UC	570	564	100%	475	475	373	373	448	443	-75	-70	75	70
128	Waketon Rd	Rippy Rd	FM 2499 (Long Prairie Rd)	971	0.18	A	Completed	Established	1	1	2U	UC	187	187	100%	475	475	87	87	34	34	53	53		
199	Waketon Rd	Bridlewood Blvd	515' E of Bridlewood Blvd	514	0.10	A	Completed	Established	1	1	2U	RC	136	136	50%	475	475	23	23	7	7	17	17		
121	Waketon/College Connector	Waketon Rd	College Pkwy	1,417	0.27	A	New	Future	0	0	0	UC	0	0	100%	0	0	0	0	0	0	0	0		
110	Windsor Dr	Bridlewood Blvd	Amy Ln	4,184	0.79	A	Completed	Established	1	1	2U	UC	120	126	100%	475	475	376	376	95	100	281	277		
200	Windsor Dr	Amy Ln	FM 2499 (Long Prairie Rd)	3,178	0.60	A	Completed	Completed_2015	1	1	2U	UC	120	126	100%	475	475	286	286	72	76	214	210		
62	Yucca Dr	Cross Timbers Rd	Yucca Dr	727	0.14	A	Completed	Established	1	1	2U	UC	162	162	100%	475	475	65	65	22	22	43	43		
142	Yucca Dr	440' E of FM 2499	460' S of FM 1171	411	0.08	A	Completed	Completed_2020	1	1	2U	UC	0	0	100%	475	475	37	37	0	0	37	37		
143	Yucca Dr	420' E of Long Prairie Rd	FM 2499 (Long Prairie Rd)	419	0.08	A	Completed	Established	1	1	2U	UC	160	160	100%	475	475	38	38	13	13	25	25		
	SUBTOTAL			**369,715**	**70.02**													**167,124**		**89,462**		**77,662**		**3,329**	

Town of Flower Mound - 2020 Roadway Impact Fee Update
Existing Roadway Facilities Inventory

Service Area B

10/30/2020

OBJECTID	ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	SERVICE AREA	STATUS	STATUS 2020	EXIST LANE		EXIST TYPE	TP TYPE	PM PEAK HOUR VOLUME		% 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	
									EB/NB	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
103	Bridlewood Blvd	Waketon Rd	Windsor Dr	5,148	0.97	A/B	Completed	Established	2	2	4D	UMAD	419	432	50%	650	650	634	634	204	211	429	423		
132	Bridlewood Blvd	Windsor Dr	Cross Timbers Rd	2,813	0.53	A/B	Completed	Established	2	2	4D	UMAD	455	368	50%	650	650	346	346	121	98	225	248		
69	Bruton Orand Blvd	Quail Run	Flower Mound Rd	3,727	0.71	A/B	Completed	Established	2	2	4D	UMAD	491	331	50%	650	650	459	459	173	117	286	342		
160	Bruton Orand Blvd	Cross Timbers Rd	Quail Run	2,032	0.38	A/B	Completed	Established	2	2	4D	UMAD	543	474	50%	650	650	250	250	105	91	146	159		
163	Cardinal Dr	Rocky Point Rd	Wichita Trail	1,641	0.31	B	Completed	Established	1	1	2U	RC	15	15	100%	475	475	148	148	5	5	143	143		
54	Cross Timbers Rd	Flower Mound Rd	Bruton Orand Blvd	5,133	0.97	B	Completed	Established	3	3	6D	P6D	945	1,053	100%	750	750	2,187	2,187	919	1,024	1,269	1,164		
90	Cross Timbers Rd	Red Rock Ln	Shiloh Rd	5,493	1.04	B	Completed	Established	3	3	6D	P6D	1,005	1,032	100%	750	750	2,341	2,341	1,045	1,074	1,295	1,267		
96	Cross Timbers Rd	Shiloh Rd	Flower Mound Rd	5,966	1.13	B	Completed	Established	3	3	6D	P6D	1,058	1,318	100%	750	750	2,542	2,542	1,195	1,489	1,347	1,053		
166	Cross Timbers Rd	High Rd	Red Rock Ln	2,403	0.46	B/C	Completed	Established	3	3	6D	P6D	1,005	1,032	50%	750	750	512	512	229	235	283	277		
72	Flower Mound Rd	Simmons Rd	1660' W of Old Settlers Rd	2,731	0.52	A/B	Completed	Established	2	2	4D	UMAD	607	1,104	50%	650	650	336	336	157	285	179	51		
155	Flower Mound Rd	Skillern Blvd	Simmons Rd	4,769	0.90	B	Completed	Established	2	2	4D	UMAD	291	501	100%	650	650	1,174	1,174	263	452	911	722		
162	Flower Mound Rd	FM 1171 (Cross Timbers)	Skillern Rd	6,369	1.21	B	Completed	Completed_2015	2	2	4D	UMAD	347	501	100%	650	650	1,568	1,568	419	604	1,150	964		
85	High Rd	Cross Timbers Rd	South Town Limit	9,117	1.73	B/C	Completed	Established	1	1	2U	RC	20	20	50%	475	475	410	410	17	17	393	393		
101	Kings Rd	Lusk Ln	3090' E of Lusk Ln	3,092	0.59	B	Completed	Established	1	1	2U	RC	100	100	50%	475	475	139	139	29	29	110	110		
102	Kings Rd	3090' E of Lusk Ln	North Town Limit	2,119	0.40	B	Completed	Established	1	1	2U	RC	199	199	50%	475	475	95	95	40	40	55	55		
100	Lusk Ln	Kings Rd	1315' S of Kings Rd	1,339	0.25	B	Completed	Established	1	1	2U	RC	316	316	50%	475	475	60	60	40	40	20	20		
135	Lusk Ln	Shiloh Rd/Lusk Ln Connector	Cross Timbers Rd	1,599	0.30	B	Completed	Established	1	1	2U	RC	300	300	100%	475	475	144	144	91	91	53	53		
196	Lusk Ln	1315' S of Kings Rd	Shiloh Rd/Lusk Ln Connector	1,310	0.25	B	Completed	Established	1	1	2U	RC	316	316	100%	475	475	118	118	78	78	39	39		
104	Quail Run Rd	Flower Mound Rd	Bruton Orand Blvd	3,183	0.60	B	Completed	Established	1	1	2U	UC	9	9	100%	475	475	286	286	5	5	281	281		
89	Red Rock Ln	Red Rock/Shiloh Connector	Cross Timbers Rd	1,798	0.34	B/C	Completed	Established	1	1	2U	RC	343	343	50%	475	475	81	81	58	58	22	22		
167	Red Rock Ln	North Town Limit	Red Rock/Shiloh Connector	756	0.14	B/C	Completed	Established	1	1	2U	RC	337	337	50%	475	475	34	34	24	24	10	10		
84	Red Rock/Shiloh Connector	Red Rock Ln	Shiloh Rd	5,346	1.01	B	New	Future	0	0	0	RC	0	0	100%	0	0	0	0	0	0	0	0		
93	Ridgecrest Dr	Raintree Pl	Sunset Trail	4,268	0.81	B	Completed	Established	1	1	2U	RC	3	3	100%	475	475	384	384	2	2	382	382		
94	Rocky Point Rd	Sunset Trail	Orchard Dr	3,149	0.60	B	Completed	Established	1	1	2U	RC	15	15	100%	475	475	283	283	9	9	274	274		
4	Scenic /Flower Mound Connec	Scenic Dr	Alcott Ave	2,393	0.45	B	New	Future	0	0	0	RC	0	0	100%	0	0	0	0	0	0	0	0		
95	Scenic Dr	Cross Timbers Rd	Wichita Trail	10,083	1.91	B	Completed	Established	1	1	2U	RC	15	15	100%	475	475	907	907	29	29	878	878		
193	Scenic/Flower Mound Connect	Alcott Ave	Flower Mound Rd	285	0.05	B	Completed	Completed_2020	1	1	2U	RC	0	0	100%	475	475	26	26	0	0	26	26		
91	Shiloh Rd	North Town Limits	Shiloh Rd/Lusk Ln Connector	3,108	0.59	B	Completed	Established	1	1	2U	RC	500	500	50%	475	475	140	140	147	147	-7	-7	7	7
92	Shiloh Rd	Cross Timbers Rd	Sunset Trail	6,466	1.22	B	Completed	Established	1	1	2U	RC	55	55	100%	475	475	582	582	67	67	514	514		
168	Shiloh Rd	Shiloh Rd/Lusk Ln Connector	Cross Timbers Rd	1,685	0.32	B	Completed	Established	1	1	2U	RC	500	500	100%	475	475	152	152	160	160	-8	-8	8	8
99	Shiloh Rd/Lusk Ln Connector	2820' E of Shiloh Rd	Lusk Ln	3,082	0.58	B	New	Future	0	0	0	RC	0	0	100%	0	0	0	0	0	0	0	0		
197	Shiloh Rd/Lusk Ln Connector	Shiloh Rd	2820' E of Shiloh Rd	2,822	0.53	B	New	Future	0	0	0	RC	0	0	50%	0	0	0	0	0	0	0	0		
71	Simmons Rd	Flower Mound Rd	Wichita Trail	2,213	0.42	B	Completed	Established	2	2	4U	UMAU	202	226	100%	525	525	440	440	85	95	355	345		
106	Simmons Rd	McKamy Creek Rd	White Chalk Rd	5,508	1.04	A/B	Completed	Established	1	1	2U	RC	100	100	50%	475	475	248	248	52	52	196	196		
107	Simmons Rd	Wichita Trail	McKamy Creek Rd	2,715	0.51	A/B	Completed	Completed_2015	2	2	4U	UMAU	202	226	50%	525	525	270	270	52	58	218	212		
98	Skillern Blvd	River Hill Dr	Wichita Trail	2,670	0.51	B	Completed	Established	1	1	2U	RC	18	18	100%	475	475	240	240	9	9	231	231		
156	Skillern Blvd	Flower Mound Rd	River Hill Dr	936	0.18	B	Completed	Established	1	1	2U	RC	70	70	100%	475	475	84	84	12	12	72	72		
164	Sunset Trail	Rocky Point Rd	Shiloh Rd	978	0.19	B	Completed	Established	1	1	2U	RC	12	12	100%	475	475	88	88	2	2	86	86		
165	Sunset Trail	Ridgecrest Dr	Rocky Point Rd	1,169	0.22	B	Completed	Established	1	1	2U	RC	3	3	100%	475	475	105	105	1	1	104	104		
53	Waketon Rd	525' W of Bridlewood Blvd	Bridlewood Blvd	532	0.10	B	Completed	Established	1	1	2U	RC	136	136	50%	475	475	24	24	7	7	17	17		
70	Wichita Trail	Skillern Blvd	Simmons Rd	5,373	1.02	B	Completed	Established	1	1	2U	RC	31	31	100%	475	475	483	483	32	32	452	452		
97	Wichita Trail	Scenic Dr	Skillern Blvd	7,472	1.42	B	Completed	Established	1	1	2U	RC	27	27	100%	475	475	672	672	38	38	634	634		
	SUBTOTAL			**144,788**	**27.42**													**37,985**		**12,711**		**25,275**		**31**	

Town of Flower Mound - 2020 Roadway Impact Fee Update
Existing Roadway Facilities Inventory

Service Area C

10/30/2020

OBJECTID	ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	SERVICE AREA	STATUS	STATUS 2020	EXIST LANE		EXIST TYPE	TP TYPE	PM PEAK HOUR VOLUME		% 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	
									EB/NB	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
113	Canyon Falls Dr	Cross Timbers Rd	West Town Limit	1,766	0.33	C	Completed	Established	2	2	4D	UMABL	177	175	100%	650	650	435	435	59	59	376	376		
114	Canyon Falls Dr	Prairie Ridge Rd	US 377	2,558	0.48	C	Completed	Established	2	2	4D	UMABL	250	250	100%	650	650	630	630	121	121	509	509		
182	Canyon Falls Dr	West Town Limit	Denton Creek Blvd	1,613	0.31	C	Completed	Established	2	2	4D	UMABL	151	152	100%	650	650	397	397	46	46	351	351		
183	Canyon Falls Dr	Denton Creek Blvd	Prairie Ridge Rd	2,287	0.43	C	Completed	Established	2	2	4D	UMABL	250	250	100%	650	650	563	563	108	108	455	455		
88	Cross Timbers Rd	CrossTimbers/US 377 Connector1	High Rd	9,310	1.76	C	Completed	Established	3	3	6D	P6D	990	988	100%	750	750	3,968	3,968	1,746	1,742	2,222	2,225		
166	Cross Timbers Rd	High Rd	Red Rock Ln	2,403	0.46	B/C	Completed	Established	3	3	6D	P6D	1,005	1,032	50%	750	750	512	512	229	235	283	277		
170	Cross Timbers Rd	CrossTimbers/US 377 Connector2	CrossTimbers/US 377 Connector1	4,336	0.82	C	Completed	Established	3	3	6D	P6D	990	988	100%	750	750	1,848	1,848	813	811	1,035	1,036		
172	Cross Timbers Rd	US 377	CrossTimbers/US 377 Connector2	2,923	0.55	C	Completed	Established	3	3	6D	P6D	858	826	100%	750	750	1,246	1,246	475	457	771	788		
178	Cross Timbers Rd	West Town Limit	Canyon Falls Dr	1,031	0.20	C	Completed	Established	3	3	6D	P6D	858	826	50%	750	750	220	220	84	81	136	139		
179	Cross Timbers Rd	470' E of Canyon Falls Dr	US 377	5,134	0.97	C	Completed	Established	3	3	6D	P6D	858	826	100%	750	750	2,188	2,188	834	803	1,353	1,385		
198	Cross Timbers Rd	Canyon Falls Dr	470' E of Canyon Falls Dr	468	0.09	C	Completed	Established	3	3	6D	P6D	858	826	50%	750	750	100	100	38	37	62	63		
171	CrossTimbers/Dunham Conne	Cross Timbers Rd	Dunham Rd	2,718	0.51	C	New	Future	0	0	0	RC	0	0	100%	0	0	0	0	0	0	0	0		
169	CrossTimbers/US 377 Conned	US 377	Cross Timbers Rd	11,273	2.14	C	New	Future	0	0	0	GRA	0	0	100%	0	0	0	0	0	0	0	0		
87	CrossTimbers/US 377 Conned	CrossTimbers/US 377 Connector1	Cross Timbers Rd	4,756	0.90	C	New	Future	0	0	0	RC	0	0	100%	0	0	0	0	0	0	0	0		
115	Denton Creek Blvd	120' NW of Prairie Ridge Rd	Canyon Falls Dr	3,436	0.65	C	Completed	Completed_2020	2	2	4D	UMABL	81	82	100%	650	650	846	846	53	53	793	793		
180	Denton Creek Blvd	IH-35 Diamond Interchange	120' NW of Prairie Ridge Rd	6,187	1.17	C	New	Future	0	0	0	UMABL	0	0	100%	0	0	0	0	0	0	0	0		
181	Denton Creek Blvd	Canyon Falls Dr	1155' S of Canyon Falls Dr	1,196	0.23	C	Widening	Widening	2	0	2U	UMABL	2	0	100%	475	475	215	0	0	0	215	0		
187	Denton Creek Blvd	1155' S of Canyon Falls Dr	Cross Timbers Rd	3,599	0.68	C	New	Future	0	0	0	UMABL	0	0	100%	0	0	0	0	0	0	0	0		
86	Dunham Rd	Dunham/US 377 Connector	CrossTimbers/Dunham Connector	5,368	1.02	C	Completed	Established	1	1	2U	RC	1,087	1,087	100%	475	475	483	483	1,105	1,105	-622	-622	622	622
85	High Rd	Cross Timbers Rd	South Town Limit	9,117	1.73	B/C	Completed	Established	1	1	2U	RC	20	20	50%	475	475	410	410	17	17	393	393		
112	Oak Knoll Rd	Prairie Ridge Rd	Stonecrest Rd	800	0.15	C	Completed	Established	1	1	2U	UC	100	100	100%	475	475	72	72	15	15	57	57		
111	Prairie Ridge Rd	North Town Limits	Denton Creek Blvd	604	0.11	C	Completed	Established	1	1	2U	UC	0	0	100%	475	475	54	54	0	0	54	54		
186	Prairie Ridge Rd	North Town Limit	Canyon Falls Dr	2,584	0.49	C	Completed	Established	1	1	2U	UC	100	100	100%	475	475	232	232	49	49	184	184		
89	Red Rock Ln	Red Rock/Shiloh Connector	Cross Timbers Rd	1,798	0.34	B/C	Completed	Established	1	1	2U	RC	343	343	50%	475	475	81	81	58	58	22	22		
167	Red Rock Ln	North Town Limit	Red Rock/Shiloh Connector	756	0.14	B/C	Completed	Established	1	1	2U	RC	337	337	50%	475	475	34	34	24	24	10	10		
116	Stonecrest Rd	Oak Knoll Rd	Canyon Falls Dr	1,933	0.37	C	Completed	Established	1	1	2U	UC	68	68	100%	475	475	174	174	25	25	149	149		
177	Stonecrest Rd	UMAB 1	Cross Timbers Rd	3,700	0.70	C	New	Future	0	0	0	UC	0	0	100%	0	0	0	0	0	0	0	0		
184	Stonecrest Rd	850' S of Canyon Falls Dr	UMAB 1	1,256	0.24	C	New	Future	0	0	0	UC	0	0	100%	0	0	0	0	0	0	0	0		
185	Stonecrest Rd	Canyon Falls Dr	850' S of Canyon Falls Dr	880	0.17	C	Completed	Established	1	1	2U	UC	32	32	100%	475	475	79	79	5	5	74	74		
188	Stonecrest Rd	North Town Limit	Oak Knoll Rd	1,454	0.28	C	Completed	Established	1	1	2U	UC	55	55	100%	475	475	131	131	15	15	116	116		
5	UMAB 1	Denton Creek Blvd	US 377	3,027	0.57	C	New	Future	0	0	0	UMABL	0	0	100%	0	0	0	0	0	0	0	0		
117	UMAB2	Denton Creek Blvd	West Town Limit	1,405	0.27	C	New	Future	0	0	0	UMABL	0	0	100%	0	0	0	0	0	0	0	0		
175	Urban Collector 1	Cross Timbers Road	Cross Timbers Rd	4,399	0.83	C	New	Future	0	0	0	UC	0	0	100%	0	0	0	0	0	0	0	0		
176	Urban Collector 1	Stonecrest Rd	Cross Timbers Rd	3,115	0.59	C	New	Future	0	0	0	UC	0	0	100%	0	0	0	0	0	0	0	0		
109	US 377	North Town Limit	CrossTimbers/US 377 Connector1	4,661	0.88	C	Completed	Established	2	2	4D	P6D	642	647	100%	650	650	1,148	1,148	567	571	581	576		
173	US 377	Cross Timbers Rd	West Town Limit	5,019	0.95	C	Completed	Established	2	2	4D	P6D	1,215	868	100%	650	650	1,236	1,236	1,155	825	81	411		
174	US 377	CrossTimbers/US 377 Connector1	Cross Timbers Rd	4,174	0.79	C	Completed	Established	2	2	4D	P6D	657	602	100%	650	650	1,028	1,028	519	476	508	552		
	SUBTOTAL			**123,041**	**23.30**													**36,439**		**15,902**		**20,537**		**1,244**	

D. Plan For Awarding the Roadway Impact Fee Credit Summary

SUMMARY OF ROADWAY IMPACT FEE DETERMINATION

Service Area A

Recoverable Impact Fee CIP Costs	$	22,206,549	Line 11, Max Fee Calculation Table
Financing Costs		2,660,377	See Detail Below
Existing Fund Balance		-	Page 1 of Appendix E - Service Area A
Interest Earnings		(115,159)	Page 5 of Appendix E - Service Area A
Pre Credit Recoverable Cost for Impact Fee	$	24,751,766	Sum of Above
Credit for Ad Valorem Revenues		(540,978)	Page 7 of Appendix E - Service Area A
Maximum Recoverable Cost for Impact Fee	**$**	**24,210,788**	

Recoverable Impact Fee CIP Costs:

Represents the portion of capital improvement costs that are eligible for funding through impact fees.
Reference is Service Area A column, line 11 on the Max Fee Calculation Table.

Financing Costs:

New Annual Debt Service	$	1,037,766	(Page 3 of Appendix E - Service Area A)
Existing Annual Debt Service		9,910,133	(Page 3 of Appendix E - Service Area A)
Principal Component		(8,287,522)	(Page 4 of Appendix E - Service Area A)
Financing Costs	$	2,660,377	

Existing Fund Balance:

Represents impact fee revenue collected but not yet expended. Some projects that are included in the 2020 Impact Fee Update were also included in the previous Impact Fee Updates.
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.

Interest Earnings:

Represents the interest earned on cash flows. Assumes a 0.438% annual interest rate based on the Town's current annual return as of 06/30/2020. 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.

Pre Credit Recoverable Cost for Impact Fee:

Represents Recoverable Impact Fee CIP Costs plus Financing Costs less Interest Earnings.

Credit for Ad Valorem Revenues:

In 2001, the Impact Fee Statute 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.

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	$	3,248,699	Line 11, Max Fee Calculation Table
Financing Costs		717,918	See Detail Below
Existing Fund Balance		-	Page 1 of Appendix E - Service Area B
Interest Earnings		(91,866)	Page 5 of Appendix E - Service Area B
Pre Credit Recoverable Cost for Impact Fee	$	3,874,751	Sum of Above
Credit for Ad Valorem Revenues		(1,984)	Page 7 of Appendix E - Service Area B
Maximum Recoverable Cost for Impact Fee	**$**	**3,872,766**	

Recoverable Impact Fee CIP Costs:

Represents the portion of capital improvement costs that are eligible for funding through impact fees.
Reference is Service Area B column, line 11 on the Max Fee Calculation Table.

Financing Costs:

New Annual Debt Service	$	2,191,723	(Page 3 of Appendix E - Service Area B)
Existing Annual Debt Service		66,017	(Page 3 of Appendix E - Service Area B)
Principal Component		(1,539,822)	(Page 4 of Appendix E - Service Area B)
Financing Costs	$	717,918	

Existing Fund Balance:

Represents impact fee revenue collected but not yet expended. Some projects that are included in the 2020 Impact Fee Update were also included in the previous Impact Fee Updates.
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.

Interest Earnings:

Represents the interest earned on cash flows. Assumes a 0.438% annual interest rate based on the Town's current annual return as of 06/30/2020. 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.

Pre Credit Recoverable Cost for Impact Fee:

Represents Recoverable Impact Fee CIP Costs plus Financing Costs less Interest Earnings.

Credit for Ad Valorem Revenues:

In 2001, the Impact Fee Statute 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.

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	$	90,890,530	Line 11, Max Fee Calculation Table
Financing Costs		21,232,053	See Detail Below
Existing Fund Balance		-	Page 1 of Appendix E - Service Area C
Interest Earnings		(2,746,439)	Page 5 of Appendix E - Service Area C
Pre Credit Recoverable Cost for Impact Fee	$	109,376,144	Sum of Above
Credit for Ad Valorem Revenues		(1,614,052)	Page 7 of Appendix E - Service Area C
Maximum Recoverable Cost for Impact Fee	**$**	**107,762,092**	

Recoverable Impact Fee CIP Costs:

Represents the portion of capital improvement costs that are eligible for funding through impact fees.
Reference is Service Area C column, line 11 on the Max Fee Calculation Table.

Financing Costs:

New Annual Debt Service	$	66,250,027	(Page 3 of Appendix E - Service Area C)
Existing Annual Debt Service		-	(Page 3 of Appendix E - Service Area C)
Principal Component		(45,017,974)	(Page 4 of Appendix E - Service Area C)
Financing Costs	$	21,232,053	

Existing Fund Balance:

Represents impact fee revenue collected but not yet expended. Some projects that are included in the 2020 Impact Fee Update were also included in the previous Impact Fee Updates.
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.

Interest Earnings:

Represents the interest earned on cash flows. Assumes a 0.438% annual interest rate based on the Town's current annual return as of 06/30/2020. 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.

Pre Credit Recoverable Cost for Impact Fee:

Represents Recoverable Impact Fee CIP Costs plus Financing Costs less Interest Earnings.

Credit for Ad Valorem Revenues:

In 2001, the Impact Fee Statute 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.

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.

E. Plan For Awarding the Roadway Impact Fee Credit Supporting Exhibits

Town of Flower Mound 2020 Roadway Impact Fee Update

Impact Fee Calculation Assumptions

Appendix E - Impact Fee Calculation Assumptions

Service Area A

I. General Assumptions

Annual Interest Rate on Deposits [1]	0.438%
Annual Service Unit Growth [2]	3,978
Available Existing Fund Balance [3]	-

Portion of Projects Funded by Existing Debt [4]	$ 7,582,343
Non-debt Funded Project Cost [5]	13,919,026
Project Cost Funded Through New Debt [6]	705,179
Total Recoverable Project Cost [7]	$ 22,206,549

II. New Debt Issues Assumptions

Year	Principal [8]	Interest [9]	Term
1	$ 70,518	4.00%	20
2	70,518	4.00%	20
3	70,518	4.00%	20
4	70,518	4.00%	20
5	70,518	4.00%	20
6	70,518	4.00%	20
7	70,518	4.00%	20
8	70,518	4.00%	20
9	70,518	4.00%	20
10	70,518	4.00%	20
Total	$ 705,179		

III. Capital Expenditure Assumptions

Year	Annual Capital Expenditures [10]
1	$ 1,427,162
2	1,462,421
3	1,462,421
4	1,462,421
5	1,462,421
6	1,462,421
7	1,462,421
8	1,462,421
9	1,462,421
10	1,497,679
Total	$ 14,624,205

(1) Town's current earnings rate as of June 30, 2020
(2) Per Kimley-Horn Impact Fee Update
(3) Assumes all existing fund balances are already encumbered
(4) Per discussion with Town staff and files
(5) Unless specified in Town CIP, Assumes 50% of new project cost funded through sources other than debt
(6) Unless specified in Town CIP, Assumes 50% of new project costs funded through new debt issues
(7) Line 11 of the Max Fee Table Report
(8) Assumes new debt issued based on Town Input
(9) Estimated interest cost provided by Town's Financial Advisor
(10) Non-debt funded capital expenditures made in equal annual amounts. Assumes new debt proceeds expended over a 2-year timeframe with Year 10 bond proceeds spent in one year.

Town of Flower Mound 2020 Roadway Impact Fee Update

Debt Service and Expenses Summary
Appendix E - Impact Fee Calculation Assumptions
Service Area A

I. New Debt Service Detail

Year	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6	Series 7	Series 8	Series 9	Series 10	Total Annual New Debt Service
1	$ 5,189	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,189
2	5,189	5,189	-	-	-	-	-	-	-	-	10,378
3	5,189	5,189	5,189	-	-	-	-	-	-	-	15,566
4	5,189	5,189	5,189	5,189	-	-	-	-	-	-	20,755
5	5,189	5,189	5,189	5,189	5,189	-	-	-	-	-	25,944
6	5,189	5,189	5,189	5,189	5,189	5,189	-	-	-	-	31,133
7	5,189	5,189	5,189	5,189	5,189	5,189	5,189	-	-	-	36,322
8	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	-	-	41,511
9	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	-	46,699
10	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	51,888
11	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	51,888
12	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	51,888
13	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	51,888
14	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	51,888
15	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	51,888
16	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	51,888
17	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	51,888
18	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	51,888
19	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	51,888
20	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	51,888
21	-	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	46,699
22	-	-	5,189	5,189	5,189	5,189	5,189	5,189	5,189	5,189	41,511
23	-	-	-	5,189	5,189	5,189	5,189	5,189	5,189	5,189	36,322
24	-	-	-	-	5,189	5,189	5,189	5,189	5,189	5,189	31,133
25	-	-	-	-	-	5,189	5,189	5,189	5,189	5,189	25,944
26	-	-	-	-	-	-	5,189	5,189	5,189	5,189	20,755
27	-	-	-	-	-	-	-	5,189	5,189	5,189	15,566
28	-	-	-	-	-	-	-	-	5,189	5,189	10,378
29	-	-	-	-	-	-	-	-	-	5,189	$ 5,189
	$ 103,777	$ 103,777	$ 103,777	$ 103,777	$ 103,777	$ 103,777	$ 103,777	$ 103,777	$ 103,777	$ 103,777	$ 1,037,766

Town of Flower Mound 2020 Roadway Impact Fee Update

Debt Service and Expenses Summary

Appendix E - Impact Fee Calculation Assumptions

II. Summary of Annual Expenses

Year	New Annual Debt Service[1]	Annual Capital Expenditures[2]	Annual Bond Proceeds[2]	Existing Annual Debt Service[3]	Annual Credit[4]	Total Expense
1	$ 5,189	$ 1,427,162	$ (70,518)	$ 1,113,646	$ (18,785)	2,456,694
2	10,378	1,462,421	(70,518)	1,035,356	(34,535)	2,403,101
3	15,566	1,462,421	(70,518)	919,064	(45,547)	2,280,986
4	20,755	1,462,421	(70,518)	797,867	(52,342)	2,158,183
5	25,944	1,462,421	(70,518)	758,607	(61,717)	2,114,736
6	31,133	1,462,421	(70,518)	707,537	(68,650)	2,061,923
7	36,322	1,462,421	(70,518)	626,112	(70,730)	1,983,607
8	41,511	1,462,421	(70,518)	512,918	(66,638)	1,879,694
9	46,699	1,462,421	(70,518)	396,308	(59,015)	1,775,895
10	51,888	1,497,679	(70,518)	380,173	(63,019)	1,796,203
11	51,888	-	-	357,591	-	409,479
12	51,888	-	-	337,691	-	389,579
13	51,888	-	-	337,623	-	389,511
14	51,888	-	-	338,700	-	390,588
15	51,888	-	-	310,816	-	362,704
16	51,888	-	-	307,416	-	359,305
17	51,888	-	-	270,221	-	322,109
18	51,888	-	-	235,712	-	287,601
19	51,888	-	-	111,611	-	163,499
20	51,888	-	-	55,165	-	107,053
21	46,699	-	-	-	-	46,699
22	41,511	-	-	-	-	41,511
23	36,322	-	-	-	-	36,322
24	31,133	-	-	-	-	31,133
25	25,944	-	-	-	-	25,944
26	20,755	-	-	-	-	20,755
27	15,566	-	-	-	-	15,566
28	10,378	-	-	-	-	10,378
29	5,189	-	-	-	-	5,189
	$ 1,037,766	$ 14,624,205	$ (705,179)	$ 9,910,133	$ (540,978)	$ 24,325,947

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

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

(3) Eligible Outstanding Debt Funded Projects Percent of General Projects Debt Issuance times total outstanding tax-supported annual debt service

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

Town of Flower Mound 2020 Roadway Impact Fee Update

Revenue Test

Appendix E - Impact Fee Calculation Assumptions

Service Area A

Year	Impact Fee	Service Units	Impact Fee Revenue	Annual Expenses	Sub-Total	Accumulated Interest	Estimated Fund Balance
Initial							$ -
1	$ 609	3,978	$ 2,421,079	$ 2,456,694	$ (35,615)	(78)	(35,693)
2	609	3,978	2,421,079	2,403,101	17,978	(117)	(17,832)
3	609	3,978	2,421,079	2,280,986	140,093	229	122,489
4	609	3,978	2,421,079	2,158,183	262,895	1,112	386,497
5	609	3,978	2,421,079	2,114,736	306,342	2,364	695,203
6	609	3,978	2,421,079	2,061,923	359,156	3,832	1,058,191
7	609	3,978	2,421,079	1,983,607	437,472	5,593	1,501,255
8	609	3,978	2,421,079	1,879,694	541,385	7,761	2,050,402
9	609	3,978	2,421,079	1,775,895	645,184	10,394	2,705,979
10	609	3,978	2,421,079	1,796,203	624,875	13,221	3,344,075
11	-	-	-	409,479	(409,479)	13,750	2,948,347
12	-	-	-	389,579	(389,579)	12,061	2,570,828
13	-	-	-	389,511	(389,511)	10,407	2,191,725
14	-	-	-	390,588	(390,588)	8,744	1,809,881
15	-	-	-	362,704	(362,704)	7,133	1,454,309
16	-	-	-	359,305	(359,305)	5,583	1,100,588
17	-	-	-	322,109	(322,109)	4,115	782,594
18	-	-	-	287,601	(287,601)	2,798	497,791
19	-	-	-	163,499	(163,499)	1,822	336,114
20	-	-	-	107,053	(107,053)	1,238	230,299
21	-	-	-	46,699	(46,699)	906	184,506
22	-	-	-	41,511	(41,511)	717	143,713
23	-	-	-	36,322	(36,322)	550	107,941
24	-	-	-	31,133	(31,133)	405	77,213
25	-	-	-	25,944	(25,944)	281	51,550
26	-	-	-	20,755	(20,755)	180	30,975
27	-	-	-	15,566	(15,566)	102	15,510
28	-	-	-	10,378	(10,378)	45	5,178
29	-	-	-	5,189	(5,189)	11	-
			24,210,788	24,325,947		115,159	

Town of Flower Mound 2020 Roadway Impact Fee Update

Impact Fee Calculation

Appendix E - Impact Fee Calculation Assumptions

Service Area A

Year	Number of Years to End of Period	Future Value Escalation Interest Rate Factor	Recovery Fee Factor	Annual Service Units Actual	Annual Service Units Escalated	Annual Expense Actual	Annual Expense Escalated
Prev							
1	29	1.1326	1.0000	3,978	4,506	2,456,694	2,782,573
2	28	1.1277	1.0000	3,978	4,486	2,403,101	2,710,002
3	27	1.1228	1.0000	3,978	4,466	2,280,986	2,561,074
4	26	1.1179	1.0000	3,978	4,447	2,158,183	2,412,625
5	25	1.1130	1.0000	3,978	4,428	2,114,736	2,353,746
6	24	1.1082	1.0000	3,978	4,408	2,061,923	2,284,956
7	23	1.1033	1.0000	3,978	4,389	1,983,607	2,188,583
8	22	1.0985	1.0000	3,978	4,370	1,879,694	2,064,887
9	21	1.0937	1.0000	3,978	4,351	1,775,895	1,942,355
10	20	1.0890	1.0000	3,978	4,332	1,796,203	1,955,999
11	19	1.0842	1.0000	-	-	409,479	443,963
12	18	1.0795	1.0000	-	-	389,579	420,545
13	17	1.0748	1.0000	-	-	389,511	418,638
14	16	1.0701	1.0000	-	-	390,588	417,965
15	15	1.0654	1.0000	-	-	362,704	386,434
16	14	1.0608	1.0000	-	-	359,305	381,143
17	13	1.0562	1.0000	-	-	322,109	340,197
18	12	1.0515	1.0000	-	-	287,601	302,425
19	11	1.0470	1.0000	-	-	163,499	171,177
20	10	1.0424	1.0000	-	-	107,053	111,591
21	9	1.0378	1.0000	-	-	46,699	48,467
22	8	1.0333	1.0000	-	-	41,511	42,894
23	7	1.0288	1.0000	-	-	36,322	37,369
24	6	1.0243	1.0000	-	-	31,133	31,890
25	5	1.0199	1.0000	-	-	25,944	26,460
26	4	1.0154	1.0000	-	-	20,755	21,075
27	3	1.0110	1.0000	-	-	15,566	15,738
28	2	1.0066	1.0000	-	-	10,378	10,446
29	1	1.0022	1.0000	-	-	5,189	5,200
					44,183	24,325,947	26,890,416

Total Escalated Expense for Entire Period	$	26,890,416
Total Escalated Service Units		44,183
Impact Fee for Service Area A	**$**	**609**

Town of Flower Mound 2020 Roadway Impact Fee Update

Impact Fee Project Funding

Appendix E - Impact Fee Calculation Assumptions

Service Area A

Impact Fee Project Name[1]	Impact Fee Project No. [1]	Cost in Service Area [1]	Impact Fee Recoverable Cost [2]	Debt Funded [3] Existing	Debt Funded [3] Proposed	Non-Debt Funded [3]	Impact Fee Recoverable Cost
Roadway Improvements - Service Area A							
Aberdeen Dr	A-1	$ 1,454,821	$ 595,797	$ -	$ 297,899	$ 297,899	$ 595,797
Aberdeen Dr	A-2	636,000	260,463	-	130,231	130,231	260,463
Chinn Chapel Rd	A-3	1,364,402	558,767	2,457	-	556,310	558,767
Dixon Ln	A-5	5,297,438	2,169,475	-	-	2,169,475	2,169,475
Duncan Ln	A-6	281,266	115,188	115,188	-	-	115,188
Firewheel Dr	A-7	603,525	247,163	19,873	-	227,291	247,163
FM 2499 (Long Prairie Rd)	A-8	1,515,721	620,738	409,533	-	211,205	620,738
Garden Ridge Blvd	A-9	573,016	234,669	169,143	-	65,525	234,669
Garden Ridge Blvd	A-10	1,891,126	774,478	631,517	-	142,961	774,478
Garden Ridge Blvd	A-11	2,504,704	1,025,759	1,025,759	-	-	1,025,759
Kirkpatrick Ln	A-12	3,794,884	1,554,130	1,462,709	-	91,421	1,554,130
Kirkpatrick Ln	A-13	5,243,000	2,147,181	1,548,444	-	598,737	2,147,181
Lake Forest Blvd	A-14	1,400,601	573,592	328,842	-	244,750	573,592
Lakeside Pkwy	A-15	4,375,554	1,791,933	-	-	1,791,933	1,791,933
Lakeside Pkwy	A-16	2,018,856	826,788	-	-	826,788	826,788
Lakeside Pkwy	A-17	2,145,590	878,690	-	-	878,690	878,690
Morriss Rd	A-18	1,009,492	413,420	167,700	-	245,720	413,420
Sagebrush Dr	A-19	3,209,771	1,314,507	1,305,630	-	8,876	1,314,507
Simmons Rd	A-20,B-7	564,395	231,138	-	-	231,138	231,138
Spinks Rd	A-21	448,253	183,574	183,574	-	-	183,574
Spinks Rd	A-22	968,297	396,549	184,775	-	211,775	396,549
Timber Creek Rd	A-23	690,850	282,926	-	-	282,926	282,926
Waketon/College Connector	A-24	1,353,000	554,098	-	277,049	277,049	554,098
Windsor Dr	A-25	1,058,867	433,641	27,200	-	406,440	433,641
Yucca Dr	A-26	214,416	87,810	-	-	87,810	87,810
Signal Installation And Intersection Improvements							
College Pkwy. at Timber Creek Rd.	S-1	$ 275,000	$ 112,622	$ -	$ -	$ 112,622	$ 112,622
Bruton Orand Blvd. at Quail Run Rd.	S-2	137,500	56,311	-	-	56,311	56,311
Churchill Dr. at Peters Colony Rd.	S-3	990,000	405,438	-	-	405,438	405,438
Cross Timbers Rd. at Forums Dr.	S-4	179,000	73,306	-	-	73,306	73,306
Garden Ridge Blvd. at Kirkpatrick Ln.	S-5	275,000	112,622	-	-	112,622	112,622
FM 2499 (Long Prairie Rd.) at Chaparral Ln.	S-6	375,000	153,575	-	-	153,575	153,575
Garden Ridge Blvd. at Forest Vista Rd.	S-7	275,000	112,622	-	-	112,622	112,622
FM 2499 (Long Prairie Rd.) at Northshore Blvd.	S-8	275,000	112,622	-	-	112,622	112,622
FM 2499 (Long Prairie Rd.) at Aberdeen Dr.	S-9	380,000	155,622	-	-	155,622	155,622
Lakeside Pkwy. at Silveron Blvd.	S-10	275,000	112,622	-	-	112,622	112,622
FM 2499 (Long Prairie Rd.) at Silveron Blvd.	S-11	390,000	159,718	-	-	159,718	159,718
Gerault Rd. at Old Gerault Rd.	S-12	275,000	112,622	-	-	112,622	112,622
Lakeside Pkwy. at Enterprise Dr.	S-13	275,000	112,622	-	-	112,622	112,622
Dixon Ln. at Morriss Rd.	I - 1	375,000	153,575	-	-	153,575	153,575
FM 2499 (Long Prairie Rd.) at Waketon Rd.	I - 2	1,473,000	603,242	-	-	603,242	603,242
FM 2499 (Long Prairie Rd.) at College Pkwy.	I - 3	333,000	136,374	-	-	136,374	136,374
Bruton Orand Blvd. at Cross Timbers Rd.	I - 4	187,500	76,787	-	-	76,787	76,787
Cross Timbers Rd. at Auburn Dr.	I - 5	375,000	153,575	-	-	153,575	153,575
Cross Timbers Rd. at FM 2499 (Long Prairie Rd.)	I - 6	492,000	201,490	-	-	201,490	201,490
Flower Mound Rd. at McKamy Creek Rd.	I - 7	336,000	137,603	-	-	137,603	137,603
Flower Mound Rd. at FM 2499 (Long Prairie Rd.)	I - 8	460,000	188,385	-	-	188,385	188,385
Flower Mound Rd. at Garden Ridge Blvd.	I - 9	375,000	153,575	-	-	153,575	153,575
FM 2499 (Long Prairie Rd.) at Lakeside Pkwy.	I - 10	375,000	153,575	-	-	153,575	153,575
Lakeside Pkwy. At Gerault Rd.	I-11	375,000	153,575	-	-	153,575	153,575
Roadway Impact Fee Project		$ 30,000	$ 30,000	$ -	$ -	$ 30,000	$ 30,000
Total		**$ 54,180,844**	**$ 22,206,549**	**$ 7,582,343**	**$ 705,179**	**$ 13,919,026**	**$ 22,206,549**

(1) 2020 Roadway Impact Fee Study, Appendix A

(2) Line 11 of the Max Fee Table Report

(3) Based on Contributions by Project and Planned Future Debt Financing

Town of Flower Mound 2020 Roadway Impact Fee Update

Credit Determination

Appendix E - Impact Fee Calculation Assumptions

Service Area A

2020 Vehicle Miles (All Service Areas) [1]	232,952	
Ten Year Growth in Vehicle Miles (Service Area A) [1]	39,780	
	10	years
Annual Growth in Vehicle Miles	3,978	

	1	2	3	4	5	6	7	8	9	10	Total
Total Debt Service Eligible for Impact Fees	$ 1,118,835	$ 1,045,734	$ 934,631	$ 818,622	$ 784,551	$ 738,670	$ 662,434	$ 554,429	$ 443,008	$ 432,061	$ 7,532,974
2020 Vehicle Miles plus Service Area A Growth	236,930	240,908	244,886	248,864	252,842	256,820	260,798	264,776	268,754	272,732	
Total Debt Service Eligible for Impact Fees per Vehicle Mile	$ 4.72	$ 4.34	$ 3.82	$ 3.29	$ 3.10	$ 2.88	$ 2.54	$ 2.09	$ 1.65	$ 1.58	
Annual Growth in Service Area A Vehicle Miles (Cumulative)	3,978	7,956	11,934	15,912	19,890	23,868	27,846	31,824	35,802	39,780	
Annual Ad Valorem Revenue Generated by Vehicle Miles for Debt Service Eligible for Impact Fees	$ 18,785	$ 34,535	$ 45,547	$ 52,342	$ 61,717	$ 68,650	$ 70,730	$ 66,638	$ 59,015	$ 63,019	$ 540,978

Credit Amount **$ 540,978**

(1) Per Kimley-Horn Impact Fee Update

Town of Flower Mound 2020 Roadway Impact Fee Update

Impact Fee Calculation Assumptions

Appendix E - Impact Fee Calculation Assumptions

Service Area B

I. General Assumptions

Annual Interest Rate on Deposits [1]	0.438%
Annual Service Unit Growth [2]	105
Available Existing Fund Balance [3]	-

Portion of Projects Funded by Existing Debt [4]	$ 50,510
Non-debt Funded Project Cost [5]	1,708,877
Project Cost Funded Through New Debt [6]	1,489,312
Total Recoverable Project Cost [7]	$ 3,248,699

II. New Debt Issues Assumptions

Year	Principal [8]	Interest [9]	Term
1	$ 148,931	4.00%	20
2	148,931	4.00%	20
3	148,931	4.00%	20
4	148,931	4.00%	20
5	148,931	4.00%	20
6	148,931	4.00%	20
7	148,931	4.00%	20
8	148,931	4.00%	20
9	148,931	4.00%	20
10	148,931	4.00%	20
Total	$ 1,489,312		

III. Capital Expenditure Assumptions

Year	Annual Capital Expenditures [10]
1	$ 245,353
2	319,819
3	319,819
4	319,819
5	319,819
6	319,819
7	319,819
8	319,819
9	319,819
10	394,284
Total	$ 3,198,189

(1) Town's current earnings rate as of June 30, 2020
(2) Per Kimley-Horn Impact Fee Update
(3) Assumes all existing fund balances are already encumbered
(4) Per discussion with Town staff and files
(5) Unless specified in Town CIP, Assumes 50% of new project cost funded through sources other than debt
(6) Unless specified in Town CIP, Assumes 50% of new project costs funded through new debt issues
(7) Line 11 of the Max Fee Table Report
(8) Assumes new debt issued based on Town Input
(9) Estimated interest cost provided by Town's Financial Advisor
(10) Non-debt funded capital expenditures made in equal annual amounts. Assumes new debt proceeds expended over a 2-year timeframe with Year 10 bond proceeds spent in one year.

Town of Flower Mound 2020 Roadway Impact Fee Update

Debt Service and Expenses Summary
Appendix E - Impact Fee Calculation Assumptions
Service Area B

I. New Debt Service Detail

Year	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6	Series 7	Series 8	Series 9	Series 10	Total Annual New Debt Service
1	$ 10,959	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,959
2	10,959	10,959	-	-	-	-	-	-	-	-	21,917
3	10,959	10,959	10,959	-	-	-	-	-	-	-	32,876
4	10,959	10,959	10,959	10,959	-	-	-	-	-	-	43,834
5	10,959	10,959	10,959	10,959	10,959	-	-	-	-	-	54,793
6	10,959	10,959	10,959	10,959	10,959	10,959	-	-	-	-	65,752
7	10,959	10,959	10,959	10,959	10,959	10,959	10,959	-	-	-	76,710
8	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	-	-	87,669
9	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	-	98,628
10	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	109,586
11	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	109,586
12	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	109,586
13	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	109,586
14	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	109,586
15	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	109,586
16	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	109,586
17	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	109,586
18	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	109,586
19	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	109,586
20	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	109,586
21	-	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	98,628
22	-	-	10,959	10,959	10,959	10,959	10,959	10,959	10,959	10,959	87,669
23	-	-	-	10,959	10,959	10,959	10,959	10,959	10,959	10,959	76,710
24	-	-	-	-	10,959	10,959	10,959	10,959	10,959	10,959	65,752
25	-	-	-	-	-	10,959	10,959	10,959	10,959	10,959	54,793
26	-	-	-	-	-	-	10,959	10,959	10,959	10,959	43,834
27	-	-	-	-	-	-	-	10,959	10,959	10,959	32,876
28	-	-	-	-	-	-	-	-	10,959	10,959	21,917
29	-	-	-	-	-	-	-	-	-	10,959	$ 10,959
	$ 219,172	$ 219,172	$ 219,172	$ 219,172	$ 219,172	$ 219,172	$ 219,172	$ 219,172	$ 219,172	$ 219,172	$ 2,191,723

Town of Flower Mound 2020 Roadway Impact Fee Update

Debt Service and Expenses Summary

Appendix E - Impact Fee Calculation Assumptions

II. Summary of Annual Expenses

Year	New Annual Debt Service[1]	Annual Capital Expenditures[2]	Annual Bond Proceeds[2]	Existing Annual Debt Service[3]	Annual Credit[4]	Total Expense
Prev						
1	$ 10,959	$ 245,353	$ (148,931)	$ 7,419	$ (8)	$ 114,791
2	21,917	319,819	(148,931)	6,897	(26)	199,676
3	32,876	319,819	(148,931)	6,122	(52)	209,834
4	43,834	319,819	(148,931)	5,315	(88)	219,949
5	54,793	319,819	(148,931)	5,054	(134)	230,600
6	65,752	319,819	(148,931)	4,713	(189)	241,164
7	76,710	319,819	(148,931)	4,171	(253)	251,516
8	87,669	319,819	(148,931)	3,417	(326)	261,648
9	98,628	319,819	(148,931)	2,640	(407)	271,748
10	109,586	394,284	(148,931)	2,533	(501)	356,971
11	109,586	-	-	2,382	-	111,968
12	109,586	-	-	2,250	-	111,836
13	109,586	-	-	2,249	-	111,835
14	109,586	-	-	2,256	-	111,842
15	109,586	-	-	2,071	-	111,657
16	109,586	-	-	2,048	-	111,634
17	109,586	-	-	1,800	-	111,386
18	109,586	-	-	1,570	-	111,156
19	109,586	-	-	744	-	110,330
20	109,586	-	-	367	-	109,954
21	98,628	-	-	-	-	98,628
22	87,669	-	-	-	-	87,669
23	76,710	-	-	-	-	76,710
24	65,752	-	-	-	-	65,752
25	54,793	-	-	-	-	54,793
26	43,834	-	-	-	-	43,834
27	32,876	-	-	-	-	32,876
28	21,917	-	-	-	-	21,917
29	10,959	-	-	-	-	10,959
	$ 2,191,723	$ 3,198,189	$ (1,489,312)	$ 66,017	$ (1,984)	$ 3,964,633

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

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

(3) Eligible Outstanding Debt Funded Projects Percent of General Projects Debt Issuance times total outstanding tax-supported annual debt service

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

Town of Flower Mound 2020 Roadway Impact Fee Update

Revenue Test

Appendix E - Impact Fee Calculation Assumptions

Service Area B

Year	Impact Fee	Service Units	Impact Fee Revenue	Annual Expenses	Sub-Total	Accumulated Interest	Estimated Fund Balance
Initial							$ -
1	$ 3,706	105	$ 387,277	114,791	$ 272,486	$ 597	273,082
2	3,706	105	387,277	199,676	187,600	1,607	462,290
3	3,706	105	387,277	209,834	177,443	2,413	642,146
4	3,706	105	387,277	219,949	167,327	3,179	812,653
5	3,706	105	387,277	230,600	156,676	3,903	973,231
6	3,706	105	387,277	241,164	146,113	4,583	1,123,927
7	3,706	105	387,277	251,516	135,761	5,220	1,264,908
8	3,706	105	387,277	261,648	125,629	5,815	1,396,353
9	3,706	105	387,277	271,748	115,529	6,369	1,518,250
10	3,706	105	387,277	356,971	30,305	6,716	1,555,272
11	-	-	-	111,968	(111,968)	6,567	1,449,870
12	-	-	-	111,836	(111,836)	6,106	1,344,140
13	-	-	-	111,835	(111,835)	5,642	1,237,947
14	-	-	-	111,842	(111,842)	5,177	1,131,282
15	-	-	-	111,657	(111,657)	4,710	1,024,336
16	-	-	-	111,634	(111,634)	4,242	916,944
17	-	-	-	111,386	(111,386)	3,772	809,330
18	-	-	-	111,156	(111,156)	3,301	701,475
19	-	-	-	110,330	(110,330)	2,831	593,976
20	-	-	-	109,954	(109,954)	2,361	486,384
21	-	-	-	98,628	(98,628)	1,914	389,670
22	-	-	-	87,669	(87,669)	1,515	303,516
23	-	-	-	76,710	(76,710)	1,161	227,967
24	-	-	-	65,752	(65,752)	855	163,070
25	-	-	-	54,793	(54,793)	594	108,871
26	-	-	-	43,834	(43,834)	381	65,418
27	-	-	-	32,876	(32,876)	215	32,756
28	-	-	-	21,917	(21,917)	95	10,935
29	-	-	-	10,959	(10,959)	24	-
			3,872,766	3,964,633		91,866	

Town of Flower Mound 2020 Roadway Impact Fee Update

Impact Fee Calculation

Appendix E - Impact Fee Calculation Assumptions

Service Area B

Year	Number of Years to End of Period	Future Value Escalation Interest Rate Factor	Recovery Fee Factor	Annual Service Units Actual	Annual Service Units Escalated	Annual Expense Actual	Annual Expense Escalated
1	29	1.1326	1.0000	105	118	$ 114,791	$ 130,018
2	28	1.1277	1.0000	105	118	199,676	225,177
3	27	1.1228	1.0000	105	117	209,834	235,600
4	26	1.1179	1.0000	105	117	219,949	245,880
5	25	1.1130	1.0000	105	116	230,600	256,663
6	24	1.1082	1.0000	105	116	241,164	267,250
7	23	1.1033	1.0000	105	115	251,516	277,506
8	22	1.0985	1.0000	105	115	261,648	287,426
9	21	1.0937	1.0000	105	114	271,748	297,220
10	20	1.0890	1.0000	105	114	356,971	388,729
11	19	1.0842	1.0000	-	-	111,968	121,398
12	18	1.0795	1.0000	-	-	111,836	120,725
13	17	1.0748	1.0000	-	-	111,835	120,198
14	16	1.0701	1.0000	-	-	111,842	119,682
15	15	1.0654	1.0000	-	-	111,657	118,962
16	14	1.0608	1.0000	-	-	111,634	118,419
17	13	1.0562	1.0000	-	-	111,386	117,641
18	12	1.0515	1.0000	-	-	111,156	116,886
19	11	1.0470	1.0000	-	-	110,330	115,511
20	10	1.0424	1.0000	-	-	109,954	114,615
21	9	1.0378	1.0000	-	-	98,628	102,361
22	8	1.0333	1.0000	-	-	87,669	90,590
23	7	1.0288	1.0000	-	-	76,710	78,921
24	6	1.0243	1.0000	-	-	65,752	67,352
25	5	1.0199	1.0000	-	-	54,793	55,881
26	4	1.0154	1.0000	-	-	43,834	44,510
27	3	1.0110	1.0000	-	-	32,876	33,237
28	2	1.0066	1.0000	-	-	21,917	22,061
29	1	1.0022	1.0000	-	-	10,959	10,983
					1,161	3,964,633	4,301,401

Total Escalated Expense for Entire Period	$	4,301,401
Total Escalated Service Units		1,161
Impact Fee for Service Area B	**$**	**3,706**

Town of Flower Mound 2020 Roadway Impact Fee Update

Impact Fee Project Funding

Appendix E - Impact Fee Calculation Assumptions

Service Area B

Impact Fee Project Name[1]	Impact Fee Project No. [1]	Cost in Service Area [1]	Impact Fee Recoverable Cost [2]	Debt Funded [3] Existing	Debt Funded [3] Proposed	Non-Debt Funded [3]	Impact Fee Recoverable Cost
Roadway Improvements - Service Area B							
Flower Mound Rd	B-1	$ 680,380	$ 124,891	$ 50,510	$ -	$ 74,381	$ 124,891
Red Rock/Shiloh Connector	B-2	6,845,000	1,256,474	-	628,237	628,237	1,256,474
Scenic /Flower Mound Connector	B-3	3,067,000	562,981	-	281,491	281,491	562,981
Shiloh Rd/Lusk Ln Connector	B-4	3,945,000	724,148	-	362,074	362,074	724,148
Shiloh Rd/Lusk Ln Connector	B-5	1,805,500	331,419	-	165,710	165,710	331,419
Simmons Rd	A-19,B-6	564,395	103,601	-	51,800	51,800	103,601
Signal Installation And Intersection Improvements							
Bruton Orand Blvd. at Quail Run Rd.	S-2	137,500	25,240	-	-	25,240	25,240
Bruton Orand Blvd. at Cross Timbers Rd.	I - 4	115,000	21,110	-	-	21,110	21,110
Cross Timbers Rd. at Flower Mound Rd.	I-12	375,000	68,835	-	-	68,835	68,835
Roadway Impact Fee Project		$ 30,000	$ 30,000	$ -	$ -	$ 30,000	$ 30,000
Total		**$ 17,564,775**	**$ 3,248,699**	**$ 50,510**	**$ 1,489,312**	**$ 1,708,877**	**$ 3,248,699**

(1) 2020 Roadway Impact Fee Study, Appendix A

(2) Line 11 of the Max Fee Table Report

(3) Based on Contributions by Project and Planned Future Debt Financing

Town of Flower Mound 2020 Roadway Impact Fee Update

Credit Determination

Appendix E - Impact Fee Calculation Assumptions

Service Area B

2020 Vehicle Miles (All Service Areas) [1]	232,952	
Ten Year Growth in Vehicle Miles (Service Area B) [1]	1,045	
	10	years
Annual Growth in Vehicle Miles	105	

		1	2	3	4	5	6	7	8	9	10	Total
Total Debt Service Eligible for Impact Fees		$ 18,377	$ 28,814	$ 38,998	$ 49,150	$ 59,847	$ 70,465	$ 80,881	$ 91,086	$ 101,268	$ 112,119	$ 651,004
2020 Vehicle Miles plus Service Area B Growth		233,057	233,161	233,266	233,370	233,475	233,579	233,684	233,788	233,893	233,997	
Total Debt Service Eligible for Impact Fees per Vehicle Mile		$ 0.08	$ 0.12	$ 0.17	$ 0.21	$ 0.26	$ 0.30	$ 0.35	$ 0.39	$ 0.43	$ 0.48	
Annual Growth in Service Area B Vehicle Miles (Cumulative)		105	209	314	418	523	627	732	836	941	1,045	
Annual Ad Valorem Revenue Generated by Vehicle Miles for Debt Service Eligible for Impact Fees		$ 8	$ 26	$ 52	$ 88	$ 134	$ 189	$ 253	$ 326	$ 407	$ 501	$ 1,984
Credit Amount	**$ 1,984**											

(1) Per Kimley-Horn Impact Fee Update

Town of Flower Mound 2020 Roadway Impact Fee Update

Impact Fee Calculation Assumptions

Appendix E - Impact Fee Calculation Assumptions

Service Area C

I. General Assumptions

Annual Interest Rate on Deposits [1]	0.438%
Annual Service Unit Growth [2]	3,271
Available Existing Fund Balance [3]	-

Portion of Projects Funded by Existing Debt [4]	$ -
Non-debt Funded Project Cost [5]	45,872,556
Project Cost Funded Through New Debt [6]	45,017,974
Total Recoverable Project Cost [7]	$ 90,890,530

II. New Debt Issues Assumptions

Year	Principal [8]	Interest [9]	Term
1	$ 4,501,797	4.00%	20
2	4,501,797	4.00%	20
3	4,501,797	4.00%	20
4	4,501,797	4.00%	20
5	4,501,797	4.00%	20
6	4,501,797	4.00%	20
7	4,501,797	4.00%	20
8	4,501,797	4.00%	20
9	4,501,797	4.00%	20
10	4,501,797	4.00%	20
Total	$ 45,017,974		

III. Capital Expenditure Assumptions

Year	Annual Capital Expenditures [10]
1	$ 6,838,154
2	9,089,053
3	9,089,053
4	9,089,053
5	9,089,053
6	9,089,053
7	9,089,053
8	9,089,053
9	9,089,053
10	11,339,952
Total	$ 90,890,530

(1) Town's current earnings rate as of June 30, 2020
(2) Per Kimley-Horn Impact Fee Update
(3) Assumes all existing fund balances are already encumbered
(4) Per discussion with Town staff and files
(5) Unless specified in Town CIP, Assumes 50% of new project cost funded through sources other than debt
(6) Unless specified in Town CIP, Assumes 50% of new project costs funded through new debt issues
(7) Line 11 of the Max Fee Table Report
(8) Assumes new debt issued based on Town Input
(9) Estimated interest cost provided by Town's Financial Advisor
(10) Non-debt funded capital expenditures made in equal annual amounts. Assumes new debt proceeds expended over a 2-year timeframe with Year 10 bond proceeds spent in one year.

Town of Flower Mound 2020 Roadway Impact Fee Update

Debt Service and Expenses Summary
Appendix E - Impact Fee Calculation Assumptions
Service Area C

I. New Debt Service Detail

Year	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6	Series 7	Series 8	Series 9	Series 10	Total Annual New Debt Service
1	$ 331,250	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 331,250
2	331,250	331,250	-	-	-	-	-	-	-	-	662,500
3	331,250	331,250	331,250	-	-	-	-	-	-	-	993,750
4	331,250	331,250	331,250	331,250	-	-	-	-	-	-	1,325,001
5	331,250	331,250	331,250	331,250	331,250	-	-	-	-	-	1,656,251
6	331,250	331,250	331,250	331,250	331,250	331,250	-	-	-	-	1,987,501
7	331,250	331,250	331,250	331,250	331,250	331,250	331,250	-	-	-	2,318,751
8	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	-	-	2,650,001
9	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	-	2,981,251
10	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	3,312,501
11	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	3,312,501
12	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	3,312,501
13	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	3,312,501
14	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	3,312,501
15	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	3,312,501
16	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	3,312,501
17	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	3,312,501
18	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	3,312,501
19	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	3,312,501
20	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	3,312,501
21	-	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	2,981,251
22	-	-	331,250	331,250	331,250	331,250	331,250	331,250	331,250	331,250	2,650,001
23	-	-	-	331,250	331,250	331,250	331,250	331,250	331,250	331,250	2,318,751
24	-	-	-	-	331,250	331,250	331,250	331,250	331,250	331,250	1,987,501
25	-	-	-	-	-	331,250	331,250	331,250	331,250	331,250	1,656,251
26	-	-	-	-	-	-	331,250	331,250	331,250	331,250	1,325,001
27	-	-	-	-	-	-	-	331,250	331,250	331,250	993,750
28	-	-	-	-	-	-	-	-	331,250	331,250	662,500
29	-	-	-	-	-	-	-	-	-	331,250	$ 331,250
	$ 6,625,003	$ 6,625,003	$ 6,625,003	$ 6,625,003	$ 6,625,003	$ 6,625,003	$ 6,625,003	$ 6,625,003	$ 6,625,003	$ 6,625,003	$ 66,250,027

Town of Flower Mound 2020 Roadway Impact Fee Update

Debt Service and Expenses Summary

Appendix E - Impact Fee Calculation Assumptions

II. Summary of Annual Expenses

Year	New Annual Debt Service[1]	Annual Capital Expenditures[2]	Annual Bond Proceeds[2]	Existing Annual Debt Service[3]	Annual Credit[4]	Total Expense
Prev						
1	$ 331,250	$ 6,838,154	$ (4,501,797)	$ -	$ (4,587)	$ 2,663,020
2	662,500	9,089,053	(4,501,797)	-	(18,099)	5,231,657
3	993,750	9,089,053	(4,501,797)	-	(40,174)	5,540,832
4	1,325,001	9,089,053	(4,501,797)	-	(70,471)	5,841,785
5	1,656,251	9,089,053	(4,501,797)	-	(108,666)	6,134,841
6	1,987,501	9,089,053	(4,501,797)	-	(154,452)	6,420,305
7	2,318,751	9,089,053	(4,501,797)	-	(207,538)	6,698,469
8	2,650,001	9,089,053	(4,501,797)	-	(267,648)	6,969,609
9	2,981,251	9,089,053	(4,501,797)	-	(334,518)	7,233,989
10	3,312,501	11,339,952	(4,501,797)	-	(407,900)	9,742,756
11	3,312,501	-	-	-	-	3,312,501
12	3,312,501	-	-	-	-	3,312,501
13	3,312,501	-	-	-	-	3,312,501
14	3,312,501	-	-	-	-	3,312,501
15	3,312,501	-	-	-	-	3,312,501
16	3,312,501	-	-	-	-	3,312,501
17	3,312,501	-	-	-	-	3,312,501
18	3,312,501	-	-	-	-	3,312,501
19	3,312,501	-	-	-	-	3,312,501
20	3,312,501	-	-	-	-	3,312,501
21	2,981,251	-	-	-	-	2,981,251
22	2,650,001	-	-	-	-	2,650,001
23	2,318,751	-	-	-	-	2,318,751
24	1,987,501	-	-	-	-	1,987,501
25	1,656,251	-	-	-	-	1,656,251
26	1,325,001	-	-	-	-	1,325,001
27	993,750	-	-	-	-	993,750
28	662,500	-	-	-	-	662,500
29	331,250	-	-	-	-	331,250
	$ 66,250,027	$ 90,890,530	$ (45,017,974)	$ -	$ (1,614,052)	$ 110,508,531

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

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

(3) Eligible Outstanding Debt Funded Projects Percent of General Projects Debt Issuance times total outstanding tax-supported annual debt service

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

Town of Flower Mound 2020 Roadway Impact Fee Update

Revenue Test

Appendix E - Impact Fee Calculation Assumptions

Service Area C

Year	Impact Fee	Service Units	Impact Fee Revenue	Annual Expenses	Sub-Total	Accumulated Interest	Estimated Fund Balance
Initial							$ -
1	$ 3,294	3,271	$ 10,776,209	$ 2,663,020	$ 8,113,190	$ 17,768	8,130,958
2	3,294	3,271	10,776,209	5,231,657	5,544,552	47,756	13,723,266
3	3,294	3,271	10,776,209	5,540,832	5,235,377	71,573	19,030,217
4	3,294	3,271	10,776,209	5,841,785	4,934,424	94,159	24,058,799
5	3,294	3,271	10,776,209	6,134,841	4,641,368	115,542	28,815,710
6	3,294	3,271	10,776,209	6,420,305	4,355,904	135,752	33,307,366
7	3,294	3,271	10,776,209	6,698,469	4,077,741	154,817	37,539,923
8	3,294	3,271	10,776,209	6,969,609	3,806,600	172,761	41,519,285
9	3,294	3,271	10,776,209	7,233,989	3,542,221	189,612	45,251,118
10	3,294	3,271	10,776,209	9,742,756	1,033,454	200,463	46,485,034
11	-	-	-	3,312,501	(3,312,501)	196,350	43,368,883
12	-	-	-	3,312,501	(3,312,501)	182,701	40,239,083
13	-	-	-	3,312,501	(3,312,501)	168,993	37,095,574
14	-	-	-	3,312,501	(3,312,501)	155,224	33,938,297
15	-	-	-	3,312,501	(3,312,501)	141,395	30,767,191
16	-	-	-	3,312,501	(3,312,501)	127,506	27,582,196
17	-	-	-	3,312,501	(3,312,501)	113,556	24,383,250
18	-	-	-	3,312,501	(3,312,501)	99,544	21,170,293
19	-	-	-	3,312,501	(3,312,501)	85,472	17,943,263
20	-	-	-	3,312,501	(3,312,501)	71,337	14,702,099
21	-	-	-	2,981,251	(2,981,251)	57,866	11,778,714
22	-	-	-	2,650,001	(2,650,001)	45,787	9,174,500
23	-	-	-	2,318,751	(2,318,751)	35,106	6,890,856
24	-	-	-	1,987,501	(1,987,501)	25,829	4,929,184
25	-	-	-	1,656,251	(1,656,251)	17,963	3,290,896
26	-	-	-	1,325,001	(1,325,001)	11,512	1,977,408
27	-	-	-	993,750	(993,750)	6,485	990,142
28	-	-	-	662,500	(662,500)	2,886	330,528
29	-	-	-	331,250	(331,250)	722	(0)
			107,762,092	110,508,531		2,746,439	

Town of Flower Mound 2020 Roadway Impact Fee Update

Impact Fee Calculation

Appendix E - Impact Fee Calculation Assumptions

Service Area C

Year	Number of Years to End of Period	Future Value Escalation Interest Rate Factor	Future Value Escalation Recovery Fee Factor	Annual Service Units Actual	Annual Service Units Escalated	Annual Expense Actual	Annual Expense Escalated
1	29	1.1326	1.0000	3,271	3,705	$ 2,663,020	$ 3,016,268
2	28	1.1277	1.0000	3,271	3,689	5,231,657	5,899,794
3	27	1.1228	1.0000	3,271	3,673	5,540,832	6,221,205
4	26	1.1179	1.0000	3,271	3,657	5,841,785	6,530,510
5	25	1.1130	1.0000	3,271	3,641	6,134,841	6,828,207
6	24	1.1082	1.0000	3,271	3,625	6,420,305	7,114,772
7	23	1.1033	1.0000	3,271	3,609	6,698,469	7,390,653
8	22	1.0985	1.0000	3,271	3,594	6,969,609	7,656,277
9	21	1.0937	1.0000	3,271	3,578	7,233,989	7,912,050
10	20	1.0890	1.0000	3,271	3,562	9,742,756	10,609,501
11	19	1.0842	1.0000	-	-	3,312,501	3,591,461
12	18	1.0795	1.0000	-	-	3,312,501	3,575,799
13	17	1.0748	1.0000	-	-	3,312,501	3,560,205
14	16	1.0701	1.0000	-	-	3,312,501	3,544,679
15	15	1.0654	1.0000	-	-	3,312,501	3,529,221
16	14	1.0608	1.0000	-	-	3,312,501	3,513,831
17	13	1.0562	1.0000	-	-	3,312,501	3,498,507
18	12	1.0515	1.0000	-	-	3,312,501	3,483,251
19	11	1.0470	1.0000	-	-	3,312,501	3,468,061
20	10	1.0424	1.0000	-	-	3,312,501	3,452,937
21	9	1.0378	1.0000	-	-	2,981,251	3,094,091
22	8	1.0333	1.0000	-	-	2,650,001	2,738,309
23	7	1.0288	1.0000	-	-	2,318,751	2,385,572
24	6	1.0243	1.0000	-	-	1,987,501	2,035,859
25	5	1.0199	1.0000	-	-	1,656,251	1,689,151
26	4	1.0154	1.0000	-	-	1,325,001	1,345,427
27	3	1.0110	1.0000	-	-	993,750	1,004,670
28	2	1.0066	1.0000	-	-	662,500	666,859
29	1	1.0022	1.0000	-	-	331,250	331,976
					36,335	110,508,531	119,689,104

Total Escalated Expense for Entire Period	$	119,689,104
Total Escalated Service Units		36,335
Impact Fee for Service Area C	**$**	**3,294**

Town of Flower Mound 2020 Roadway Impact Fee Update

Impact Fee Project Funding

Appendix E - Impact Fee Calculation Assumptions

Service Area C

Impact Fee Project Name[1]	Impact Fee Project No. [1]	Cost in Service Area [1]	Impact Fee Recoverable Cost [2]	Debt Funded [3] Existing	Debt Funded [3] Proposed	Non-Debt Funded [3]	Impact Fee Recoverable Cost
Roadway Improvements - Service Area C							
CrossTimbers/Dunham Connector	C-1	$ 3,483,000	$ 3,217,945	$ -	$ 1,608,973	$ 1,608,973	$ 3,217,945
CrossTimbers/US 377 Connector1	C-2	22,005,000	20,330,430	-	10,165,215	10,165,215	20,330,430
CrossTimbers/US 377 Connector2	C-3	6,090,000	5,626,554	-	2,813,277	2,813,277	5,626,554
Denton Creek Blvd	C-4	28,014,000	25,882,148	-	12,941,074	12,941,074	25,882,148
Denton Creek Blvd	C-5	1,435,000	1,325,797	-	662,899	662,899	1,325,797
Denton Creek Blvd	C-6	4,323,000	3,994,022	-	1,997,011	1,997,011	3,994,022
Stonecrest Rd	C-7	3,137,000	2,898,276	-	1,449,138	1,449,138	2,898,276
Stonecrest Rd	C-8	5,437,000	5,023,247	-	2,511,623	2,511,623	5,023,247
UMAB 1	C-9	4,444,000	4,105,814	-	2,052,907	2,052,907	4,105,814
UMAB2	C-10	3,512,000	3,244,738	-	1,622,369	1,622,369	3,244,738
Urban Collector 1	C-11	10,995,000	10,158,286	-	5,079,143	5,079,143	10,158,286
Urban Collector 1	C-12	4,577,000	4,228,692	-	2,114,346	2,114,346	4,228,692
Signal Installation And Intersection Improvements							
US 377 at Canyon Falls Dr.	S-14	205,000	189,400	-	-	189,400	189,400
Cross Timbers Rd. at Canyon Falls Dr.	S-15	137,500	127,036	-	-	127,036	127,036
Cross Timbers Rd. at Denton Creek Blvd.	S-16	275,000	254,073	-	-	254,073	254,073
Cross Timbers Rd. at Cross Timbers/US 377 Conne	S-17	275,000	254,073	-	-	254,073	254,073
Roadway Impact Fee Project		$ 30,000	$ 30,000	$ -	$ -	$ 30,000	$ 30,000
Total		**$ 98,374,500**	**$ 90,890,530**	**$ -**	**$ 45,017,974**	**$ 45,872,556**	**$ 90,890,530**

(1) 2020 Roadway Impact Fee Study, Appendix A

(2) Line 11 of the Max Fee Table Report

(3) Based on Contributions by Project and Planned Future Debt Financing from Town CIP where available

Town of Flower Mound 2020 Roadway Impact Fee Update

Credit Determination

Appendix E - Impact Fee Calculation Assumptions

Service Area C

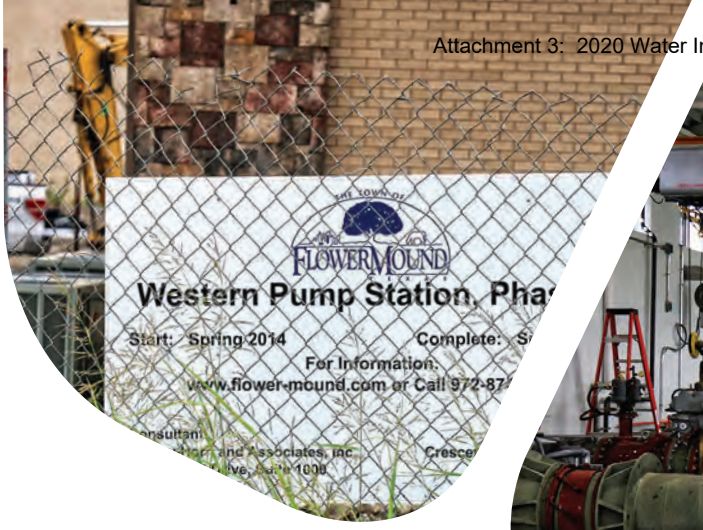
2020 Vehicle Miles (All Service Areas) [1]	232,952	
Ten Year Growth in Vehicle Miles (Service Area C) [1]	32,714	
	10	years
Annual Growth in Vehicle Miles	3,271	

	1	2	3	4	5	6	7	8	9	10	Total
Total Debt Service Eligible for Impact Fees	$ 331,250	$ 662,500	$ 993,750	$ 1,325,001	$ 1,656,251	$ 1,987,501	$ 2,318,751	$ 2,650,001	$ 2,981,251	$ 3,312,501	$ 18,218,757
2020 Vehicle Miles plus Service Area C Growth	236,223	239,495	242,766	246,038	249,309	252,580	255,852	259,123	262,395	265,666	
Total Debt Service Eligible for Impact Fees per Vehicle Mile	$ 1.40	$ 2.77	$ 4.09	$ 5.39	$ 6.64	$ 7.87	$ 9.06	$ 10.23	$ 11.36	$ 12.47	
Annual Growth in Service Area C Vehicle Miles (Cumulative)	3,271	6,543	9,814	13,086	16,357	19,628	22,900	26,171	29,443	32,714	
Annual Ad Valorem Revenue Generated by Vehicle Miles for Debt Service Eligible for Impact Fees	$ 4,587	$ 18,099	$ 40,174	$ 70,471	$ 108,666	$ 154,452	$ 207,538	$ 267,648	$ 334,518	$ 407,900	$ 1,614,052

Credit Amount **$ 1,614,052**

(1) Per Kimley-Horn Impact Fee Update







THE TOWN OF FLOWERMOUND TEXAS

2020 Water

Impact Fee Update

Town of Flower Mound, Texas



Kimley»Horn





Town of Flower Mound, Texas

Water Impact Fee Update Report for 2020

November 2020

Prepared for:
Town of Flower Mound

Prepared by:
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11-5-20

Project Number: 061000201

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1.0 Introduction

The Town of Flower Mound retained the services of Kimley-Horn and Associates, Inc. (Kimley-Horn) for the purpose of updating the impact fees for water system improvements required to serve new development. The existing fees were adopted by the Town in 2015 in accordance with Chapter 395 of the *Local Government Code* (impact fees), which requires a city imposing impact fees to update the land-use assumptions and capital improvements plan upon which the fees are calculated.

The purpose of this report is to satisfy the requirements of the law and provide the Town with an updated impact fee capital improvements plan and associated impact fees.

For convenience and reference, the following is excerpted from Chapter 395 of the code:

(a) The political subdivision shall use qualified professionals to prepare the capital improvements plan and to calculate the impact fee. The capital improvements plan must contain specific enumeration of the following items:

(1) a description of the existing capital improvements within the service area and the costs to upgrade, update, improve, expand, or replace the improvements to meet existing needs and usage and stricter safety, efficiency, environmental, or regulatory standards, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;

(2) an analysis of the total capacity, the level of current usage, and commitments for usage of capacity of the existing capital improvements, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;

(3) a description of all or the parts of the capital improvements or facility expansions and their costs necessitated by and attributable to new development in the service area based on the approved land use assumptions, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;

(4) a definitive table establishing the specific level or quantity of use, consumption, generation, or discharge of a service unit for each category of capital improvements or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including but not limited to residential, commercial, and industrial;

(5) the total number of projected service units necessitated by and attributable to new development within the service area based on the approved land use assumptions and calculated in accordance with generally accepted engineering or planning criteria;

(6) the projected demand for capital improvements or facility expansions required by new service units projected over a reasonable period of time, not to exceed 10 years; and

(7) a plan for awarding:

i. a credit for the portion of ad valorem tax and utility service revenues generated by new service unit 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

ii. in the alternative, a credit equal to 50 percent of the total project cost of implementing the capital improvements plan.

The impact fee study includes information from the *2015 Water Master Plan Update* completed by Kimley-Horn in May 2015 and from the 2015 Water Model Update completed by Kimley-Horn in 2020. The impact fees are based on recommended capital improvements and population growth projections outlined in the *2020 Water Master Plan Update.*

The study process was comprised of three tasks:

A. Land Use Assumptions

This task involved evaluating the existing and future land use plan and projecting future growth for the Town. Kimley-Horn worked with Town staff to determine future projections. The growth projections were then used to project wastewater flow throughout the Town.

B. Impact Fee Capital Improvements Plan

This task involved the evaluation of the water capital improvements plan outlined in the 2020 Water System Master Plan Amendments and discussion with Town staff to identify projects that will be constructed in the 10-year planning window and that meet the design criteria to be impact fee eligible.

C. Impact Fee Analysis and Report

This task included calculating the additional service units, service unit equivalents, and credit reduction. These values were then used to determine the impact fee per service unit and the maximum assessable impact fee by meter size.

1.2 Executive Summary

This study was performed to update the Town of Flower Mound's Water System Impact Fees. Water system analysis and the Water System Master Plan are important tools for facilitating orderly growth of the water system and for providing adequate facilities that promote economic development in the Town of Flower Mound. The implementation of an impact fee is a way to shift a portion of the burden of paying for new facilities onto new development.

Elements of the water system, including storage facilities, pumping facilities, and the distribution network itself, were evaluated against industry standards as outlined in the Design Criteria section of this report. Information related to the growth of the Town was obtained from the 2020 Land Use Assumptions Update. Also included in the water system are the proposed improvements for the reuse water system detailed in the Denton Creek Reuse Water Master Plan and Lakeside Reuse Master Plan.

Water system improvements necessary to serve 10-year (2030) and ultimate system needs were evaluated. Typically, infrastructure improvements are sized beyond the 10-year requirements; however, Texas' impact fee law (Chapter 395) only allows recovery of costs to serve the 10-year planning period. For example, the projected cost to serve the ultimate system needs is $146,975,635. Of this, $39,158,083 is projected to be eligible for recovery through impact fees within the next 10 years. A portion of the remainder can be assessed as the planning window extends beyond 2030 and as the impact fees are updated in the future.

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."* Therefore, the Town of Flower Mound defines a service unit as a unit of development that consumes the amount of water requiring a standard 5/8"x3/4" meter. For a development that requires a different size meter, a service unit equivalent is established at a multiplier based on its capacity with respect to the 5/8"x3/4" meter. The equivalency factor and associated impact fee by meter size is shown in Table 1.1.

Based on the Town's 10-year growth projections and the associated demand (consumption) values, 9,000 additional service units will need water by the year 2030. Based on the additional service units and the recoverable capital improvements plans, the Town may assess a maximum of $4,676 per service unit.

Table 1.1 Maximum Assessable Water Impact Fee for Commonly Used Meters

Meter Size	Maximum Continuous Operating Capacity (gpm)**	Service Unit Equivalent	Maximum Assessable Fee ($)
5/8"x 3/4" PD	10	1	4,676
3/4" PD	15	1.5	7,013
1" PD	25	2.5	11,689
1 1/2" PD	50	5	23,378
2" PD	80	8	37,405
2" Compound	80	8	37,405
2" Turbine	160	16	74,809
3" Compound	175	17.5	81,823
3" Turbine	350	35	163,646
4" Compound	300	30	140,268
4" Turbine	650	65	303,913
6" Compound	675	67.5	315,602
6" Turbine	1,400	140	654,582
8" Compound	900	90	420,803
8" Turbine	2,400	240	1,122,141
10" Turbine	3,500	350	1,636,455

*PD = Positive Displacement Meter (typical residential meter)
**Operating capacities obtained from American Water Works Associate (AWWA) C700-15, C701-15, and C702-19. Turbine and Compound meter flows are based on Class II (in-line) meters.

1.3 Design Criteria

A. Water Transmission Lines

Water transmission lines shall be sized to maintain the following pressure requirements:

- Peak hour demand with a minimum pressure of 35 psi;
- Peak day demand plus fire flow with a minimum pressure of 20 psi.

B. Storage Tanks

The Texas Commission on Environmental Quality (TCEQ) has established criteria for ground and elevated water storage. These criteria address volume and height requirements only. The layout of the distribution system, location of the storage facilities, and the interaction with the high service pumps and booster pumps affect the amount of storage necessary for the most efficient and reliable operation of the system.

1. Ground Storage

Ground storage serves two functions:

- Equalization for differing feed rates between water supply and pumping output to the system; and
- Emergency capacity in the event of temporary loss of water supply.

Generally, ground storage facilities are located at water supply points or at each pump station within the water distribution system. Suggested storage capacities are established based on several criteria. There are specific requirements of the TCEQ. These criteria are detailed later in this section. Although ground and elevated storage facilities perform separate functions within the system, both are aimed at decreasing the impact of demand fluctuations. Their capacities are established based on knowledge of how demand varies seasonally and daily.

2. Elevated Storage

Elevated storage serves three purposes:

- Functionally, elevated storage equalizes the pumping rate to compensate for daily variations in demand and to maintain a fairly constant pumping rate (usually referred to as operational storage), or a pumping rate that conforms to the requirements of the electrical rate structure.
- Provides pressure maintenance and protection against surges created by instantaneous demand, such as fire flow and main breaks, and instantaneous change in supply, such as pumps turning on and off.
- Maintains a reserve capacity for fire protection and pressure maintenance in case of power failure to one or more pump stations. Sufficient storage should be maintained to provide four hours of fire flow demand during a loss of power to the pump station.

Suggested storage capacities are established by the TCEQ. Adequate operational storage is established by determining the required volume to equalize the daily fluctuations in flow during the maximum day demand, plus the reserve volume required for fire protection.

The minimum requirements for storage, according to Chapter 290 of the Texas Administrative Code, are as follows:

- Total Storage: equal to 200 gallons per connection.
- Elevated Storage: equal to 100 gallons per connection; or

- Elevated Storage: equal to 200 gallons per connection for a firm pumping capacity reduction from 2.0 gallons per minute (gpm) per connection to 0.6 gpm.

C. Pump Stations

Pumping capacities must provide the maximum day demand or the peak hour demand required by the water system of the suggested capacities established by the TCEQ. Pumping capacity should supply the maximum demand with sufficient redundancy to allow for the largest pump at the pump station to be out of service. This is known as firm pumping capacity.

Each pump station or pressure plane must have two or more pumps that have a total capacity of 2.0 gpm per connection or have a total capacity of at least 1,000 gpm and the ability to meet peak hour demand with the largest pump out of service, whichever is less. If the system provides elevated storage capacity of 200 gallons per connection, two service pumps with a minimum combined capacity of 0.6 gpm per connection are required.

D. Water Demand

The criteria used for projecting the water demands for the water system were derived from the 2020 Water System Master Plan Amendments.

Table 1.2 Demand by Land Use Type

Land Use Type	Demand (gpd/acre)	Demand (gpd/dwelling unit)
Single Family Residential Unit	-	500
Conservation District Residential	350	-
Multifamily	3,000	-
Mixed Use	4,000	-
Lakeside area with residential	3,050	-
Office	2,625	-
Retail	1,000	-
Commercial	2,025	-
Industrial	1,300	-
Park	250	-
Utility	200	-
Hospital	3,000	-
School	2,000	-
Nature's Best	1,500	-
Bridlewood	2,250	-
Wellington	2,000	-
MI Windows	1,800	-
Lifetime Fitness	2,500	-
Inventrust	3,500	-

1.4 Impact Fee Capital Improvements Plan

Kimley-Horn assisted the Town with an update to the water model. The update included an evaluation of existing and future demands along with the required infrastructure needed to serve future needs. The model updated recommended system improvements to accommodate growth through the Town's build-out. Also included in the recommended project list are the improvements associated with the Denton Creek and Lakeside reuse water system.. In 2015 the Town adopted the Denton Creek Reuse Water System Master Plan for proposed reuse improvements. Only the first three phases of the Lakeside Reuse projects are included due to their estimated construction dates per Alan Plummer's 2018 Report. The reuse water systems will offset some of the future potable water demand needs and thus is a benefit to the overall water system of the Town.

Sixty-eight (68) projects have been determined to be eligible for recoverable cost through impact fees over the next 10 years. The total of these projects is $146,975,635. The projected total recoverable amount through impact fees is $39,158,083. After financing costs are added and the credit calculation is completed, $42,080,278 is recoverable through impact fees serving the 10-year system needs. These impact fee improvements are shown in Table 1.3 and illustrated in Figure 1.1 and Figure 1.2.

Table 1.3 Water Impact Fee Capital Improvements Project Cost and 10-Year Recoverable Cost

Proj #	Description	2020 Required Capacity (Percent Utilized)	2030 Required Capacity (Percent Utilized)	2020-2030 Required Capacity (Percent Utilized)	Total Project Cost	2030 Projected Recoverable Cost
1	Canyon Falls 20-inch Water Line	0%	24%	24%	$1,746,339	$419,121
2	Highway 377/UPRR Water Lines Phase I	16%	24%	8%	$2,296,815	$183,745
3	Stonecrest Pump Station Auxiliary Power	7%	22%	15%	$2,550,000	$382,500
4	Stonecrest (Western) Pump Station Phase I	13%	51%	38%	$11,944,788	$4,539,019
5	Trailwood Terrace 12-inch Water Line	32%	100%	68%	$325,099	$221,067
6	FM 1171 to Hwy 377 Phase I	32%	92%	60%	$2,810,382	$1,686,229
7	Freeman (Western) 2.5 MG EST	16%	46%	30%	$5,613,340	$1,684,002
8	Raintree 12-inch Water Line (Ridgecrest to Shiloh)	50%	100%	50%	$308,757	$154,379
9	Lusk Lane Water Line	80%	100%	20%	$1,060,864	$212,173
10	16" Kirkpatrick Water Line	69%	91%	22%	$570,341	$125,475
11	Branchwood Water Line (Russwood Dr. to FM 407)	50%	100%	50%	$55,222	$27,611
12	FM 2499 12-inch Water Line Phase I (Dixon to south of FM 1171)	0%	100%	100%	$1,157,783	$1,157,783
13	Morriss Road Water Line Phase II (FM 1171 to Eaton)	0%	91%	91%	$2,722,500	$2,477,475
14	Rippy Road Water Line Improvements (FM 2499 to Waketon)	5%	100%	95%	$750,000	$712,500
15	Stonehill Pump Station	85%	97%	12%	$9,487,799	$1,138,536
16	Timber Creek 20" Water Line	67%	91%	24%	$542,164	$130,119
17	Valley Ridge 20" Water Line	67%	91%	24%	$208,441	$50,026
18	Kirkpatrick Lane 12-inch Water Line Phase II (Valley Ridge to FM 1171)	0%	100%	100%	$1,079,971	$1,079,971
19	Garden Ridge Boulevard Water Line Phase II (South of Kirkpatrick)	0%	100%	100%	$743,844	$743,844
20	FM 2499 12-inch Water Line Phase III	5%	82%	77%	$762,253	$586,935
21	Lake Forest 12-inch Water Line (Bridge Gap)	50%	100%	50%	$127,571	$63,786
22	Lake Forest 12-inch Water Line (Spinks to Lakeside)	38%	82%	44%	$109,252	$48,071
23	Long Prairie 12-inch Water Line	5%	82%	77%	$828,903	$638,255
24	Pintail Pump Station Auxiliary Power	85%	100%	15%	$1,269,857	$190,479
25	Pintail Pump Station Capacity Improvements	31%	82%	51%	$300,000	$153,000
26	Denton Creek Spine Road 12-inch Water Line	0%	18%	18%	$3,210,000	$577,800
27	Denton Creek Boulevard 12-inch Water Line	0%	24%	24%	$1,300,000	$312,000
28	FM 1171 to Hwy 377 Water Line Phase II	0%	24%	24%	$6,400,000	$1,536,000
29	Hwy 377/UPRR Water Line Phase II	0%	24%	24%	$3,410,000	$818,400
30	Stonecrest Pump Station Phase II	0%	5%	5%	$5,460,000	$273,000
31	Stonecrest Pump Station Phase III	0%	5%	5%	$790,000	$39,500
32	West Side Water Line (West)	0%	24%	24%	$1,560,000	$374,400
33	West Side Water Line (East)	0%	5%	5%	$4,850,000	$242,500
34	West Side Water Line (South)	0%	36%	36%	$4,550,000	$1,638,000
35	Cowboy Lane Water Line	0%	36%	36%	$930,000	$334,800
36	Lusk/Red RockEast-West Connector	0%	5%	5%	$4,250,000	$212,500
37	Scenic Drive Water Line (S of FM 1171 to River Hill Drive)	0%	5%	5%	$1,430,000	$71,500
38	Aberdeen 12-inch Water Line (FM 2499 to Lake Forest)	40%	82%	42%	$207,187	$87,019
39	Kirkpatrick 12-inch Water Line Phase III (South to FM 1171)	0%	100%	100%	$450,000	$450,000
40	Timber Creek 20-inch Water Line Extension	0%	91%	91%	$490,000	$445,900
41	Morriss Road Water Line Phase III (Eaton to Waketon Road)	0%	91%	91%	$3,140,000	$2,857,400

Proj #	Description	2020 Required Capacity (Percent Utilized)	2030 Required Capacity (Percent Utilized)	2020-2030 Required Capacity (Percent Utilized)	Total Project Cost	2030 Projected Recoverable Cost
42	Morriss Road Water Line Phase IV (Waketon Road to FM 407)	0%	91%	91%	$4,190,000	$3,812,900
43	Morriss Road 20-Inch Water Line (Mallard Way to FM 3040)	0%	91%	91%	$720,000	$655,200
44	Lake Forest 12-inch Water Line (FM 3040 to Spinks Road)	0%	5%	5%	$1,760,000	$88,000
45	2020 Water Master Plan and Impact Fee Updates	0%	100%	100%	$179,500	$179,500
46	Reuse Pump Station and Ground Storage Tanks	0%	15%	15%	$7,900,000	$1,185,000
47	Reuse Transmission Lines	0%	15%	15%	$1,770,000	$265,500
48	FM 1171/Hwy 377 Central Reuse Loop	0%	15%	15%	$1,570,000	$235,500
49	FM 1171 West Reuse Line	0%	15%	15%	$1,570,000	$235,500
50	FM 1171 East Reuse Line	0%	15%	15%	$1,360,000	$204,000
51	Highway 377 Central Reuse Line	0%	15%	15%	$1,290,000	$193,500
52	Canyon Falls Drive Reuse Line	0%	15%	15%	$1,320,000	$198,000
53	Denton Creek Boulevard South Reuse Line	0%	15%	15%	$1,060,000	$159,000
54	UPRR Central Reuse Line	0%	15%	15%	$960,000	$144,000
55	Stonecrest Road Reuse Line	0%	15%	15%	$770,000	$115,500
56	Canyon Falls North Reuse Line	0%	15%	15%	$680,000	$102,000
57	East Reuse Lines	0%	15%	15%	$2,320,000	$348,000
58	Reuse Central Connector	0%	15%	15%	$630,000	$94,500
59	Denton Creek North Distribution Line	0%	15%	15%	$870,000	$130,500
60	Denton Creek Spine Road Reuse Lines	0%	15%	15%	$1,110,000	$166,500
61	Hwy 377 North Reuse Line	0%	15%	15%	$440,000	$66,000
62	Dunham/Hayes Reuse Loop	0%	15%	15%	$900,000	$135,000
63	Cowboy Lane Reuse Line	0%	15%	15%	$770,000	$115,500
64	Southwest Reuse Line	0%	15%	15%	$800,000	$120,000
65	Lakeside Business District - Water Reuse Master Plan	0%	100%	100%	$126,663	$126,663
66	Lakeside Reuse Phase I	0%	5%	5%	$9,030,000	$451,500
67	Lakeside Reuse Phase II	0%	5%	5%	$5,450,000	$272,500
68	Lakeside Reuse Phase III	0%	5%	5%	$5,630,000	$281,500
	Total				$146,975,635	$39,158,083

TOWN OF FLOWER MOUND
Water Impact Fee CIP

THE TOWN OF FLOWER MOUND TEXAS

N
W E
S

0 4,100 8,200 Feet

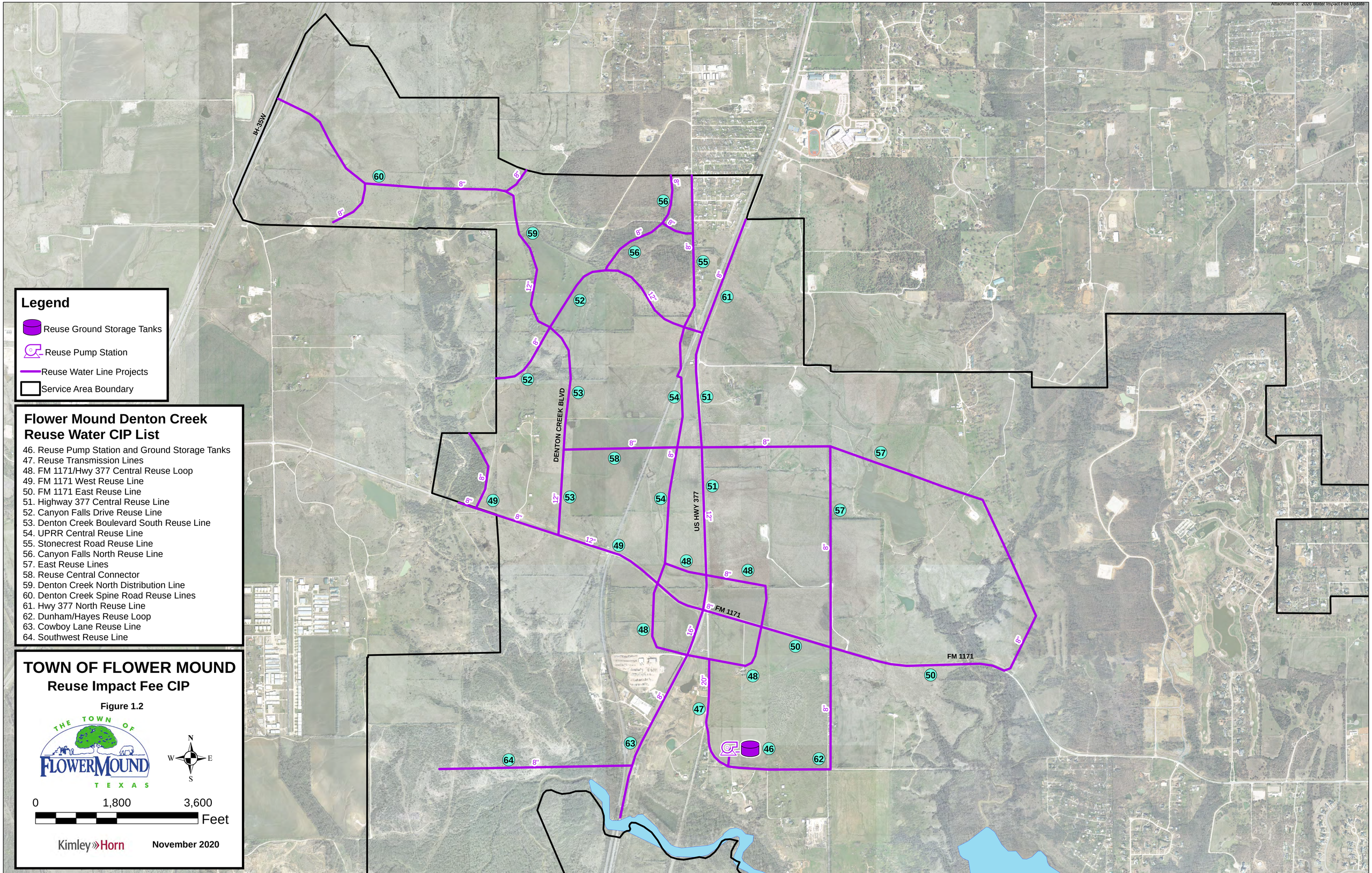
Kimley»Horn November 2020

Legend

- Elevated Storage Tank
- PS Pump Station
- Water Line Improvements
- Service Area Boundary

Flower Mound Water
CIP Project List

1. Canyon Falls 20 Inch Water Line
2. FM 1171 to Hwy 377 Phase I
3. Stonecrest Western Pump Station Auxiliary Power
4. Stonecrest Western Pump Station Phase I
5. Trailwood Terrace 12-inch Water Line
6. Highway 377/UPRR Water Lines Phase I
7. Freeman (Western) 2.5 MG EST
8. Raintree 12-inch Water Line (Ridgecrest to Shiloh)
9. Lusk Lane Water Line
10. 16" Kirkpatrick Water Line
11. Branchwood Water Line (Russwood Dr. to FM 407)
12. FM 2499 12-inch Water Line Phase I (Dixon to south of FM 1171)
13. Morriss Road Water Line (Milford to Eaton)
14. Rippy Road Water Line Improvements (FM 2499 to Waketon)
15. Stonehill Pump Station
16. Timbercreek 20" Water Line
17. Valley Ridge 20" Water Line
18. Kirkpatrick Lane 12-inch Water Line Phase II (Valley Ridge to FM 1171)
19. Garden Ridge Boulevard Water Line Phase II (South of Kirkpatrick)
20. FM 2499 12-inch Water Line Phase III
21. Lake Forest 12-inch Water Line (Bridge Gap)
22. Lake Forest 12-inch Water Line (Spinks to Lakeside)
23. Long Prairie 12-inch Water Line
24. Pintail Pump Station Auxiliary Power
25. Pintail Pump Station Improvements
26. Denton Creek Spine Road 12-inch Water Line
27. Denton Creek Boulevard 12-inch Water Line
28. FM 1171 to Hwy 377 Water Line Phase II
29. Hwy 377/UPRR Water Line Phase II
30. Stonecrest Pump Station Phase II
31. Stonecrest Pump Station Phase III
32. West Side Water Line (West)
33. West Side Water Line (East)
34. West Side Water Line (South)
35. Cowboy Lane Water Line
36. Lusk/RedRock East-West Connector
37. Scenic Drive Water Line (S of FM 1171 to River Hill Drive)
38. Aberdeen 12-inch Water Line (FM 2499 to Lake Forest)
39. Kirkpatrick 12-inch Water Line Phase III (South to FM 1171)
40. Timber Creek 20-inch Water Line Extension
41. Morriss Road Water Line (Eaton to Waketon Road)
42. Morriss Road Water Line (Waketon Road to FM 407)
43. Morriss Road 20-Inch Water Line (Mallard Way to FM 3040)
44. Lake Forest 12-inch Water Line (FM 3040 to Spinks Road)



Legend

- Reuse Ground Storage Tanks
- Reuse Pump Station
- Reuse Water Line Projects
- Service Area Boundary

Flower Mound Denton Creek Reuse Water CIP List

46. Reuse Pump Station and Ground Storage Tanks
47. Reuse Transmission Lines
48. FM 1171/Hwy 377 Central Reuse Loop
49. FM 1171 West Reuse Line
50. FM 1171 East Reuse Line
51. Highway 377 Central Reuse Line
52. Canyon Falls Drive Reuse Line
53. Denton Creek Boulevard South Reuse Line
54. UPRR Central Reuse Line
55. Stonecrest Road Reuse Line
56. Canyon Falls North Reuse Line
57. East Reuse Lines
58. Reuse Central Connector
59. Denton Creek North Distribution Line
60. Denton Creek Spine Road Reuse Lines
61. Hwy 377 North Reuse Line
62. Dunham/Hayes Reuse Loop
63. Cowboy Lane Reuse Line
64. Southwest Reuse Line

TOWN OF FLOWER MOUND

Reuse Impact Fee CIP

Figure 1.2

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 1,800 3,600 Feet

Kimley»Horn

November 2020

SPINKS RD

FM 2499

GERAULT RD

LAKESIDE PKWY

INTERNATIONAL PKWY

LAKESIDE
SERVICE AREA

TOWN OF FLOWER MOUND

Lakeside Reuse Map

Figure 1

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 500 1,000
Feet

Kimley»Horn

NOVEMBER 2020

Legend

- Phase 1
- Phase 2
- Phase 3
- Town_Boundary

Flower Mound Lakeside Reuse Water CIP List

66. Lakeside Reuse Phase I
67. Lakeside Reuse Phase II
68. Lakeside Reuse Phase III

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

A. Project Descriptions

1. Canyon Falls 20-inch Water Line
   Approximately 7,600 LF of 20-inch water line along Stonecrest Road through the Canyon Falls development from Stonecrest Road to Prairie Ridge Road. This water line is being constructed in phases as part of a Development Agreement in which the Town reimburses the developer for the waterline progress as it is completed.

Project Cost	$1,746,339
Recoverable Cost	$419,121

2. Highway 377/UPRR Water Lines Phase I
   Approximately 6,500 LF of 30-inch water line was constructed along Highway 377 from FM 1171 to Stonecrest Road, in addition to 2,700 LF of 36-inch water line along Highway 377, from Stonecrest Road to the proposed Western (Stonecrest) Pump Station. This line will provide the primary transmission from the Stonecrest Pump Station to the western portion of the Town.

Project Cost	$2,296,815
Recoverable Cost	$183,745

3. Stonecrest Pump Station Auxiliary Power
   This project includes installing a 1,500 kW generator and associated items to provide auxiliary power to the Stonecrest Pump Station.

Project Cost	$2,550,000
Recoverable Cost	$382,500

4. Stonecrest (Western) Pump Station Phase I
   The Stonecrest Pump Station was constructed in 2015. The first phase of the pump station included 5 MG of ground storage capacity and a firm pumping capacity of approximately 12,000 gpm. The station is currently oversized to meet future demands; therefore, a portion of the tank cost is recoverable through impact fees.

Project Cost	$11,944,788
Recoverable Cost	$4,539,019

5. Trailwood Terrace 12-inch Water Line
   This project included approximately 8,000 LF of 12-inch water line from Highway 377 west to Canyon Falls Drive. This project also included approximately 150 LF of 20-inch water line installed by bore under FM 1171 on the west side of Highway 377. This water line provides service to Trailwood Terrace and other developments in the west part of Town. The cost shown is the Town's reimbursement to the developer based on the required upsize of the waterline from 8" to 12" as established in the corresponding Developer Agreement.

Project Cost	$325,099
Recoverable Cost	$221,067

6. FM 1171 to Hwy 377 Phase I
   Approximately 13,100 LF of 20-inch water line was constructed along the north side of FM 1171, from Tour 18 Drive to Highway 377 and connects to the 30-inch water line constructed as part of the Highway 377/UPRR Water Line Phase I project. This water line will serve as primary transmission from the Stonecrest Pump Station to the western portion of the Town.

Project Cost	$2,810,382
Recoverable Cost	$1,686,229

7. Freeman (Western) 2.5 MG EST
   Construction of this 2.5 MG EST near the intersection of FM 1171 and High Road in western Flower Mound was completed in 2013. The tank is currently oversized to meet projected demands; therefore, a portion of the tank cost is recoverable through impact fees.

Project Cost	$5,613,340
Recoverable Cost	$1,684,002

8. Raintree 12-inch Water Line (Ridgecrest to Shiloh)
   Approximately 1,800 LF of 12-inch water line was constructed along Raintree Place, from Ridgecrest Drive to Shiloh Road.

Project Cost	$308,757
Recoverable Cost	$154,379

9. Lusk Lane Water Line
   Lusk Lane water line was completed and placed into service in the fall of 2009. The project consisted of 4,000 LF of 20-inch/24-inch water line which was constructed along Lusk Lane, from Kings Roads to FM 1171. The line completes an additional transmission loop from the 24-inch water line on Kings Road to the existing 20-inch water line on FM 1171.

Project Cost	$1,060,864
Recoverable Cost	$212,173

10. 16-inch Kirkpatrick Water Line
    Kirkpatrick water line was completed and placed into service in the spring of 2009. The project consisted of 4,700 LF of 16-inch water line along Kirkpatrick Lane, from Morriss Road to Timber Creek Road.

Project Cost	$570,341
Recoverable Cost	$125,475

11. Branchwood Water Line (Russwood Dr. to FM 407)
    Approximately 1,350 LF of 12-inch water line was constructed to connect the system along FM 407 to the existing 12-inch water line along Dixon Lane, approximately half way between FM 2499 and Morriss Road. The cost shown is the Town's reimbursement to the developer based on the required line upsize from 8" to 12" as established in the corresponding Developer Agreement.

Project Cost	$55,222
Recoverable Cost	$27,611

12. FM 2499 12-inch Water Line Phase I (Dixon to south of FM 1171)
    Approximately 7,560 LF of 12-inch water line is proposed along FM 2499 from south of the Robertson's Creek commercial development south to the Texas Presbyterian Hospital filling in gaps between existing water lines. An additional 140 LF of water line is proposed along FM 2499, south of FM 1171, closing a gap in the 12-inch loop south of FM 1171.

Project Cost	$1,157,783
Recoverable Cost	$1,157,783

13. Morriss Road Water Line Phase II (FM 1171 to Eaton)
    Approximately 100 LF of 20-inch, 3,900 LF of 24-inch, 800 LF of 30-inch, 150 LF of 8-inch, and 200 LF of 12-inch water line is proposed from FM 1171 to north of Eaton Street.

Project Cost	$2,722,500
Recoverable Cost	$2,477,475

14. Rippy Road Water Line Improvements (FM 2499 to Waketon)
    Approximately 1,400 LF of 12-inch water line has been constructed along Rippy Road from Waketon to Pecan Meadows. The remaining approximately 2,500 LF of 12-inch water line is proposed to be constructed along Rippy Road to connect this line to existing water mains in FM 2499.

Project Cost	$750,000
Recoverable Cost	$712,500

15. Stonehill Pump Station
    The Stonehill Pump Station was completed and placed into service in the fall of 2002. The pump station consists of 10 MG of ground storage and a firm pumping capacity of approximately 28,000 gpm. The station is currently oversized to meet future system needs; therefore, a portion of the station cost is recoverable through impact fees.

Project Cost	$9,487,799
Recoverable Cost	$1,138,536

16. Timber Creek 20-inch Water Line
    Approximately 1,930 LF of 20-inch water line was constructed along Timber Creek Road, beginning at Valley Ridge Boulevard and ending at Kirkpatrick Lane. The water line provides secondary transmission from the Stonehill Pump Station.

Project Cost	$542,164
Recoverable Cost	$130,119

17. Valley Ridge 20-inch Water Line
    Approximately 760 LF of 20-inch water line was constructed along Valley Ridge Boulevard, beginning at Stone Hill Farms Parkway and ending at Timber Creek Road. The water line provides secondary transmission from the Stonehill Pump Station.

Project Cost	$208,441
Recoverable Cost	$50,026

18. Kirkpatrick Lane 12-inch Water Line Phase II (Valley Ridge to FM 1171)
    Approximately 5,980 LF of 12-inch water line is proposed along the north-south leg of Kirkpatrick Lane, from the bend in Kirkpatrick Lane to the dead end of the existing 12-inch line in Kirkpatrick Lane.

Project Cost	$1,079,971
Recoverable Cost	$1,079,971

19. Garden Ridge Boulevard Water Line Phase II (South of Kirkpatrick)
    Approximately 3,200 LF of 12-inch water line is proposed along Garden Ridge Boulevard from Bellaire Boulevard to Ridgecreek Drive.

Project Cost	$743,844
Recoverable Cost	$743,844

20. FM 2499 12-inch Water Line Phase III
    Approximately 3,950 LF of 12-inch water line was constructed along FM 2499, between Sherri Lane and Spinks Road.

Project Cost	$762,253
Recoverable Cost	$586,935

21. Lake Forest 12-inch Water Line (Bridge Gap)
    Approximately 750 LF of 12-inch water line was constructed to close the gap located along Lake Forest Boulevard, south of Lincoln Court and north of Spinks Road.

Project Cost	$127,571
Recoverable Cost	$63,786

22. Lake Forest 12-inch Water Line (Spinks to Lakeside)
    Approximately 1,450 LF of 12-inch water line was constructed from Spinks Road to Lakeside Parkway. This water line was installed in an easement adjacent to an industrial development. This line is the first section of the parallel Lake Forest Water Line which provides secondary transmission to the Lakeside Business District to accommodate residential uses in the district.

Project Cost	$109,252
Recoverable Cost	$48,071

23. Long Prairie 12-inch Water Line
    Approximately 5,500 LF of 12-inch water line was constructed along Long Prairie Road, from Silveron Boulevard to Enterprise Drive. This line provides a second line along Long Prairie Road, preventing service lines from running under the roadway.

Project Cost	$828,903
Recoverable Cost	$638,255

24. Pintail Pump Station Auxiliary Power
This project included installing a 1,500 kW generator and associated items to provide auxiliary power to the Pintail Pump Station.

Project Cost	$1,269,857
Recoverable Cost	$190,479

25. Pintail Pump Station Capacity Improvements
This project included the replacement of one existing small pump with a larger pump along with necessary piping and valve improvements for larger pump and increased overall capacity. The total project cost for this project was $1,245,395; of that the Southgate Development contributed $945,395 per the development agreement. This $945,395 is not included in the project cost below because it is not a recoverable cost.

Project Cost	$300,000
Recoverable Cost	$153,000

26. Denton Creek Spine Road 12-inch Water Line
Approximately 14,300 LF of 12-inch water line is proposed for the far northwest portion of town, extending to Interstate Highway 35-W.

Project Cost	$3,210,000
Recoverable Cost	$577,800

27. Denton Creek Boulevard 12-inch Water Line
Approximately 5,000 LF of 12-inch water line is proposed along Denton Creek Boulevard. This line will extend from FM 1171 north through the Canyon Falls development where it will connect to an existing water line.

Project Cost	$1,300,000
Recoverable Cost	$312,000

28. FM 1171 to Hwy 377 Water Line Phase II
Approximately 12,600 LF of 24-inch water line is proposed along the south side of FM 1171 parallel to the existing 20-inch transmission line. The project would begin east of the Freeman Elevated Tank at High Road and extend west to Highway 377, where it will connect to the 20-inch water line proposed in the Highway 377/UPRR Water Line Phase II project. The line will serve as secondary transmission from the Stonecrest Pump Station to the western portion of the Town.

Project Cost	$6,400,000
Recoverable Cost	$1,536,000

29. Highway 377/UPRR Water Lines Phase II
Approximately 7,600 LF of 24-inch to 30-inch water line is proposed along Stonecrest Lane, adjacent to the Union Pacific Railroad, beginning south of Stonecrest Road and extending south to the intersection of the railroad and FM 1171, then continuing east to Highway 377. This line will provide secondary transmission from the Stonecrest Pump Station of the western portion of the Town.

Project Cost	$3,410,000

Recoverable Cost	$818,400

30. Stonecrest Pump Station Phase II
    Phase II of the Stonecrest Pump Station will consist of an additional 5 MG of ground storage capacity and an additional fourth pump bringing the firm pumping capacity of the pump station to 18,000 gpm.

Project Cost	$5,460,000
Recoverable Cost	$273,000

31. Stonecrest Pump Station Phase III
    Phase III of the Stonecrest Pump Station will consist of installing a fifth pump, bringing the station to its ultimate firm pumping capacity of approximately 24,000 gpm.

Project Cost	$790,000
Recoverable Cost	$39,500

32. West Side Water Line (West)
    Approximately 3,000 LF of 12-inch water line connecting the system from the 30-inch water line along Highway 377 to Denton Creek Boulevard. This project also includes approximately 2,600 LF of 12-inch water line on the north side of FM 1171 from the future 20-inch water line at UPRR west to the Trailwood Terrace 12-inch Water Line near Canyon Falls Drive. These lines will comprise a portion of the distribution system in the west side of the Town.

Project Cost	$1,560,000
Recoverable Cost	$374,400

33. West Side Water Line (East)
    Approximately 12,300 LF of 16-inch water line and 2,700 LF of 20-Inch water line is proposed north of FM 1171, east of Highway 377, and west of Tour 18 Drive.

Project Cost	$4,850,000
Recoverable Cost	$242,500

34. West Side Water Line (South)
    Approximately 19,100 LF of looped, 12-inch water line is proposed south of FM 1171, eventually providing service to the southwest portion of the Town.

Project Cost	$4,550,000
Recoverable Cost	$1,638,000

35. Cowboy Lane Water Line
    Approximately 3,800 LF of 12-inch water line is proposed to extend from the intersection of Highway 377 and FM 1171, southeast, to Cowboy Lane.

Project Cost	$930,000
Recoverable Cost	$334,800

36. Lusk/Red Rock East-West Connector
    Approximately 12,000 LF of 16-inch water line is proposed along the future Lusk/Red Rock East-West Connector as shown on the Master Thoroughfare Plan. It also includes roughly 3,500 LF of 16-inch water line along FM 1171, from Red Rock to the Freeman Elevated Tank. This line will provide secondary transmission to the western portion of the Town.

Project Cost	$4,250,000
Recoverable Cost	$212,500

37. Scenic Drive Water Line (S of FM 1171 to River Hill Drive)
    Approximately 5,700 LF of 12-inch water line is proposed along Scenic Drive, connecting to the existing 12-inch water line along Scenic Drive south of FM 1171 to River Hill Drive.

Project Cost	$1,430,000
Recoverable Cost	$71,500

38. Aberdeen 12-inch Water Line (FM 2499 to Lake Forest)
    Approximately 1,150 LF of 12-inch water line was constructed along Aberdeen Road, from Long Prairie Road (FM 2499) to Lake Forest Boulevard, north of Spinks Road. This line provides additional capacity from the system in Long Prairie Road, east, into the Lakeside Business District.

Project Cost	$207,187
Recoverable Cost	$87,019

39. Kirkpatrick Lane 12-inch Water Line Phase III (South of FM 1171)
    Approximately 1,000 LF of 12-inch water line is proposed to connect the 12-inch water line along Kirkpatrick Lane, south of Spanish Oak Drive, to the 12-inch water line along Bellaire Boulevard, east of Wager Drive.

Project Cost	$450,000
Recoverable Cost	$450,000

40. Timber Creek 20-inch Water Line Extension
    Approximately 550 LF of 20-Inch water line is proposed in Timber Creek Road from Kirkpatrick Lane to Colony Street. This line, which will parallel an existing 12-inch line, will connect the existing 16-inch lines in Kirkpatrick Lane and Colony Street and alleviate high velocities and headloss in the existing 12-inch line.

Project Cost	$490,000
Recoverable Cost	$445,900

41. Morriss Road Water Line Phase III (Eaton to Waketon Road)
    Approximately 4,400 LF of 30-inch water line in Morriss Road from Eaton to Waketon Road. This water line will replace the existing 20-inch water line in Morriss Road and provide transmission from Stonehill Pump Station.

Project Cost	$3,140,000
Recoverable Cost	$2,857,000

42. Morriss Road Water Line Phase IV (Waketon Road to FM 407)
Approximately 5,200 LF of 30-inch water line in Morriss Road from Waketon Road to FM 407. This water line will replace the existing 20-inch water line in Morriss Road and provide transmission from Stonehill Pump Station.

Project Cost	$4,190,000
Recoverable Cost	$3,812,900

43. Morriss Road Parallel 20-inch Water Line (Mallard Way to FM 3040)
Approximately 1,100 LF of 20-inch water line is proposed from Mallard Way to FM 3040. This line will parallel and existing 16-inch line and provide secondary transmission from Pintail Pump Station to the Lakeside Business District.

Project Cost	$720,000
Recoverable Cost	$655,200

44. Lake Forest 12-inch Water Line (FM 3040 to Spinks Road)
Approximately 5,600 LF of 12-inch water line is proposed extending from FM 3040 south to Spinks Road parallel to the existing 12-inch water line in Lake Forest Boulevard. This water line is the second section of the parallel Lake Forest 12-inch line and will provide secondary transmission to the Lakeside Business District to accommodate residential uses in the district.

Project Cost	$1,760,000
Recoverable Cost	$88,000

45. 2020 Water Master Plan and Impact Fee Updates
The major update to the Water Master Plan was performed in 2020. Based on projected future infrastructure needs, a Water Impact Fee Update was also completed to determine how much of the infrastructure costs may be recovered by the Town.

Project Cost	$179,500
Recoverable Cost	$179,500

46. Reuse Pump Station and Ground Storage Tanks
This project includes a pump station with a capacity of 4,500 gpm as well as two 2 MG ground storage tanks. Reuse water from the Trinity River Authority will be delivered to this site; the pump station will pressurize and distribute the reuse water throughout the reuse pipe network.

Project Cost	$7,900,000
Recoverable Cost	$1,185,000

47. Reuse Transmission Lines
Approximately 3,470 LF of 20-inch reuse water line and 1,090 LF of 16-inch reuse water line is proposed to provide primary distribution of reuse water from the Reuse Pump Station to the Town. The Reuse Transmission Lines connect directly to the FM 1171/Hwy 377 Central Reuse Loop, FM 1171 East and West Reuse Lines and the Hwy 377 Central Reuse Line.

Project Cost	$1,770,000
Recoverable Cost	$265,500

48. FM 1171/Hwy 377 Central Reuse Loop
    Approximately 7,630 LF of 8-inch reuse water line is proposed to provide reuse water to the area surrounding the intersection of Hwy 377 and FM 1171. This reuse line will also provide secondary transmission from the Reuse Pump Station to the FM 1171/Hwy 377 Central Reuse Loop, FM 1171 East and West Reuse Lines, Hwy 377 Central Reuse Line and the UPRR Central Reuse Line.

Project Cost	$1,570,000
Recoverable Cost	$235,500

49. FM 1171 West Reuse Line
    Approximately 3,700 LF of 12-inch reuse water line and 4,150 LF of 8-inch reuse water line is proposed to connect to the Reuse Transmission Line at Hwy 377 and FM 1171. The FM 1171 West Reuse Line will provide reuse water to FM 1171 west of Hwy 377 as well as Canyon Falls Drive north of FM 1171.

Project Cost	$1,570,000
Recoverable Cost	$235,500

50. FM 1171 East Reuse Line
    Approximately 6,900 LF of 8-inch reuse water line is proposed to provide reuse water along FM 1171 east of where it connects to the Reuse Transmission Line at Hwy 377. This reuse line will connect to the proposed East Reuse Lines north of FM 1171.

Project Cost	$1,360,000
Recoverable Cost	$204,000

51. Hwy 377 Central Reuse Line
    Approximately 6,170 LF of 12" reuse water line is proposed to connect to the Reuse Transmission Line and will provide reuse water north along Hwy 377 between FM 1171 and Canyon Falls Drive. The Hwy 377 Central Refuse Line provides reuse water to the East Reuse Lines and the Canyon Falls Drive Reuse Line.

Project Cost	$1,290,000
Recoverable Cost	$193,500

52. Canyon Falls Drive Reuse Line
    Approximately 4,560 LF of 12-inch reuse water line and 1,780 LF of 8-inch reuse water line is proposed to provide reuse water along Canyon Falls Drive west of Hwy 377 to the Town's service area boundary. The Canyon Falls Drive Reuse Line also provides reuse water to the Canyon Falls North Reuse Line.

Project Cost	$1,320,000
Recoverable Cost	$198,000

53. Denton Creek Boulevard South Reuse Line
    Approximately 4,770 LF of 12-inch reuse water line is proposed to connect to the FM 1171 West Reuse Line at Denton Creek Blvd. This reuse water line will provide reuse water along Denton Creek Blvd. north to Canyon Falls Drive.

Project Cost	$1,060,000
Recoverable Cost	$159,000

54. UPRR Central Reuse Line
Approximately 5,370 LF of 8-inch reuse water line is proposed to connect to the FM 1171/Hwy 377 Central Reuse Loop and will extend north to the connection with the Stonecrest Road Reuse Line at Canyon Falls Drive.

Project Cost	$960,000
Recoverable Cost	$144,000

55. Stonecrest Road Reuse Line
Approximately 3,400 LF of 8-inch reuse water line is proposed to provide reuse water along Stonecrest Road from Canyon Falls Drive to Oakridge Drive at the Town's north service area boundary.

Project Cost	$770,000
Recoverable Cost	$115,500

56. Canyon Falls North Reuse Line
Approximately 3,520 LF of 8-inch reuse water line is proposed to provide water to the area north of Canyon Falls Drive and west of Stonecrest Road.

Project Cost	$680,000
Recoverable Cost	$102,000

57. East Reuse Lines
Approximately 15,150 LF of 8-inch reuse water line is proposed to connect to the FM 1171 East Reuse Line east of Hwy 377 and also to the Hwy 377 Central Reuse Line north of FM 1171. This reuse water line will provide reuse water to the area of the Town north of FM 1171 and east of Hwy 377.

Project Cost	$2,320,000
Recoverable Cost	$348,000

58. Reuse Central Connector
Approximately 3,000 LF of 8-inch reuse water line is proposed to connect to the Hwy 377 Central Reuse Line north of FM 1171, where it will extend west and connect to the Denton Creek Blvd. South Reuse Line.

Project Cost	$630,000
Recoverable Cost	$94,500

59. Denton Creek North Distribution Line
Approximately 3,430 LF of 12-inch reuse water line and 660 LF of 8-inch reuse water line is proposed to connect to the Denton Creek Blvd. South Reuse Line and extend north along Denton Creek Blvd. until it connects to the Denton Creek Spine Road Reuse Line at the point where future Denton Creek Blvd. extends west.

Project Cost	$870,000
Recoverable Cost	$130,500

60. Denton Creek Spine Road Reuse Lines
    Approximately 7,130 LF of 8-inch reuse line is proposed to extend west from where it connects to the Denton Creek North Distribution Line until it reaches the Town's west service area boundary at Interstate Highway 35-W.

Project Cost	$1,110,000
Recoverable Cost	$166,500

61. Hwy 377 North Reuse Line
    Approximately 2,680 LF of 8-inch reuse water line is proposed to connect to the Hwy 377 Central Reuse Line and provide reuse water north along Hwy 377 to the north service area boundary at Oakridge Drive.

Project Cost	$440,000
Recoverable Cost	$66,000

62. Dunham/Hayes Reuse Loop
    Approximately 4,970 LF of 8-inch reuse water line is proposed to connect to the Reuse Transmission Line at Dunham Road. The reuse line will extend east to Hayes Road, where it will turn north and provide reuse water along Hayes Road south of FM 1171.

Project Cost	$900,000
Recoverable Cost	$135,000

63. Cowboy Lane Reuse Line
    Approximately 3,920 LF of 8-inch water line is proposed to provide water along Hwy 377 where it connects to the Reuse Transmission Line, south to the southern service area boundary. The Cowboy Lane Reuse Line also supplies reuse water to the Southwest Reuse Line.

Project Cost	$770,000
Recoverable Cost	$115,500

64. Southwest Reuse Line
    Approximately 4,270 LF of 8-inch reuse water line is proposed to connect to the Cowboy Lane Reuse Line south of Cowboy Lane. The Southwest Reuse Line will provide reuse water west of Hwy 377 near the southern service area boundary.

Project Cost	$800,000
Recoverable Cost	$120,000

65. Lakeside Business District – Water Reuse Master Plan
    The Lakeside Reuse Water Master Plan was performed in 2020. This Master Plan was created to determine recommendations for providing reclaimed water to irrigation customers in the Lakeside Business District area of the Town.

Project Cost	$126,663
Recoverable Cost	$126,663

66. Lakeside Reuse Phase I
    Approximately 15,0000 linear feet of proposed reclaimed water piping to connect to 26 existing irrigation meters and upgrades to the WWTP are proposed to provide reuse water to the Lakeside area near the Town's Wastewater Treatment facility. The proposed WWTP improvements constructed in Phase 1 include the transfer pump station, sodium hypochlorite feed system, temporary polyethylene storage tanks, and the reuse pump station.

Project Cost	$9,030,000
Recoverable Cost	$451,500

67. Lakeside Reuse Phase II
    Approximately 20,800 linear feet of proposed reclaimed water piping to connect to an additional 29 existing irrigation meters on commercial properties generally located along Lakeside Parkway, east of Gerault Road. Temporary storage tanks installed at the WWTP during Phase I are anticipated to be replaced with the first 1 MG covered storage tank and additional pumps are proposed to be installed at the Transfer and Reuse Pump Stations.

Project Cost	$5,450,000
Recoverable Cost	$272,500

68. Lakeside Reuse Phase III
    Approximately 18,900 linear feet of proposed reclaimed water piping to connect an additional 24 irrigation meters along Lakeside Parkway and Spinks Road between Gerault Road and Long Prairie Road. A second 1 MG covered storage tank is also proposed to be installed at the WWTP.

Project Cost	$5,630,000
Recoverable Cost	$281,500

1.5 Water Impact Fee Calculation

Chapter 395 of the Local Government Code 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."* Therefore, the Town of Flower Mound defines a service unit based on historical water usage over the past 10 years as compared to the estimated residential units. The residential unit is the development type that predominately uses a 5/8"x3/4" meter. The measure of consumption per service unit is based on a 5/8"x3/4" meter and the data is shown in Table 1.4.

Table 1.4 Service Unit Consumption Calculation

Year	Population	Residential Units (3.16 persons/unit)	Water Usage Average Day Demand (MGD)	Consumption per Service Unit (gpd)
2010	64,669	22,932	13.05	569
2011	65,071	23,075	15.37	666
2012	65,394	23,189	14.06	606
2013	65,701	23,298	13.16	565
2014	66,833	23,700	13.49	569
2015	67,893	24,076	13.02	541
2016	69,070	24,493	12.43	507
2017	71,850	25,479	11.84	465
2018	73,130	25,933	11.25	434
2019	76,030	26,961	10.53	391
Average Consumption per Service Unit				531

The consumption calculated above, 531 gallons, was considered a high estimate given the Town's downward trend over the past 10 years. During this update a revised consumption per service unit was used which more closely follows the recent trends. The assumed service unit consumption value to be used is 400 gallons per service unit.

Additional Service Units and Water Impact Fee Calculation

Based on the Town's 10-year growth projections and the resulting water demand projections, water service will be required for an additional 9,000 service units. The calculation is as follows:

- A service unit, which is a unit of development that consumes approximately 400 gallons per day (gpd), is a typical residential connection that uses a 5/8"x3/4" meter. Table 1.5 outlines the future water demand projections and their relationships to the additional service units projected for the next ten years.

Table 1.5 10-year Additional Service Units Calculation

Year	Average Day Demand (MGD)	Service Unit Demand (gpd)	Service Units
2020	16.27	400	40,675
2030	19.87	400	49,675
10-year Additional Service Units			9,000

Impact fee law allows for a credit calculation to credit back the development community based on the utility revenues or ad valorem taxes that are allocated to pay for a portion of future capital improvements. The intent of this credit is to prevent the Town from double charging development for future capital improvements via impact fees and utility rates. If the Town chooses not to do a financial analysis to determine the credit value, they are required by law to reduce the recoverable cost by 50 percent. The Town has chosen to perform a financial analysis. The maximum recoverable cost for impact fee is shown below.

A breakdown of the 10-year recoverable costs and the associated impact fee per service unit is as follows:

Table 1.6 10-year Recoverable Cost Breakdown

Recoverable Impact Fee CIP Costs	$39,158,082
Financing Costs	$8,119,930
Existing Fund Balance	($2,872,750)
Interest Earnings	($877,307)
Pre Credit Recoverable Cost for Impact Fee	$43,527,955
Credit for Utility Revenues	($1,447,677)
Maximum Recoverable Cost for Impact Fee	$42,080,278

$$\text{Impact fee per service unit} = \frac{\text{10-year recoverable costs}}{\text{10-year additional service units}}$$

$$\text{Impact fee per service unit} = \frac{\$42{,}080{,}278}{9000}$$

$$\text{Impact fee per service unit} = \$4{,}676$$

Therefore, the maximum assessable water impact fee for the Town per service unit is $4,676.

For a development that requires a different size meter, a service unit equivalent is established at a multiplier based on its capacity with respect to the 5/8"x3/4" meter. The maximum impact fee that could be assessed for other meter sizes is based on the value shown in Table 1.7 below.

Table 1.7 Service Unit Equivalency Table for Commonly Used Meters

Meter Size	Maximum Continuous Operating Capacity (gpm)**	Service Unit Equivalent	Maximum Assessable Fee ($)
5/8"x 3/4" PD	10	1	4,676
3/4" PD	15	1.5	7,013
1" PD	25	2.5	11,689
1 1/2" PD	50	5	23,378
2" PD	80	8	37,405
2" Compound	80	8	37,405
2" Turbine	160	16	74,809
3" Compound	175	17.5	81,823
3" Turbine	350	35	163,646
4" Compound	300	30	140,268
4" Turbine	650	65	303,913
6" Compound	675	67.5	315,602
6" Turbine	1,400	140	654,582
8" Compound	900	90	420,803
8" Turbine	2,400	240	1,122,141
10" Turbine	3,500	350	1,636,455

* PD = Positive Displacement Meter (typical residential meter)
** Operating capacities obtained from American Water Works Associate (AWWA) C700-15, C701-15, and C702-19. Turbine and Compound meter flows are based on Class II (in-line) meters.

Appendix A: Plan for Awarding Water Impact Fee Credit

SUMMARY OF WATER IMPACT FEE DETERMINATION

Water

Recoverable Impact Fee CIP Costs	$	39,158,082	Per Kimley-Horn Impact Fee Update
Financing Costs		8,119,930	See Detail Below
Existing Fund Balance		(2,872,750)	Page 1 of Appendix B - Water.
Interest Earnings		(877,307)	Page 4 of Appendix B - Water
Pre Credit Recoverable Cost for Impact Fee	$	43,527,955	Sum of Above
Credit for Utility Revenues		(1,447,677)	Page 8 of Appendix B - Water
Maximum Recoverable Cost for Impact Fee	**$**	**42,080,278**	

Recoverable Impact Fee CIP Costs:

Represents the portion of capital improvement costs that are eligible for funding through impact fees.

Financing Costs:

New Annual Debt Service	$	16,487,069	(Page 3 of Appendix B - Water)
Existing Annual Debt Service		12,830,238	(Page 3 of Appendix B - Water)
Principal Component		(21,197,378)	(Page 7 of Appendix B - Water)
Financing Costs	$	8,119,930	

Existing Fund Balance:

Represents impact fee revenue collected but not yet expended. Some projects that are included in the 2020 Impact Fee Update were also included in the previous Impact Fee Updates. 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.

Interest Earnings:

Represents the interest earned on cash flows. Assumes a 0.438% annual interest rate based on the Town's current annual return as of 06/30/2020. 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.

Pre Credit Recoverable Cost for Impact Fee

Represents Recoverable Impact Fee CIP Costs plus Financing Costs less Interest Earnings.

Credit for Utility Revenues:

In 2001, the Impact Fee Statute 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 utility 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 other revenue sources.

Maximum Recoverable Cost for Impact Fee:

Represents Pre Credit Recoverable Cost for Impact Fee less Credit for Utility Service Revenues. This is the maximum cost that can be recovered through impact fees.

Appendix B: Impact Fee Calculation Assumptions

Town of Flower Mound 2020 Water Impact Fee Update

Impact Fee Calculation Assumptions

Appendix B - Impact Fee Calculation Assumptions

Water

I. General Assumptions

Annual Interest Rate on Deposits [1]	0.438%
Annual Service Unit Growth [2]	900
Available Existing Fund Balance [3]	2,872,750
Portion of Projects Funded by Existing Debt [4]	$ 9,994,145
Non-debt Funded Project Cost [5]	17,960,705
Project Cost Funded Through New Debt [6]	11,203,233
Total Recoverable Project Cost [7]	$ 39,158,082

II. New Debt Issues Assumptions

Year	Principal [8]	Interest [9]	Term
1	$ 1,120,323	4.00%	20
2	1,120,323	4.00%	20
3	1,120,323	4.00%	20
4	1,120,323	4.00%	20
5	1,120,323	4.00%	20
6	1,120,323	4.00%	20
7	1,120,323	4.00%	20
8	1,120,323	4.00%	20
9	1,120,323	4.00%	20
10	1,120,323	4.00%	20
Total	$ 11,203,233		

III. Capital Expenditure Assumptions

Year	Annual Capital Expenditures [10]
1	$ 2,356,232
2	2,916,394
3	2,916,394
4	2,916,394
5	2,916,394
6	2,916,394
7	2,916,394
8	2,916,394
9	2,916,394
10	3,476,555
Total	$ 29,163,937

(1) Town's current earning rate as of June 30, 2020
(2) Per Kimley-Horn Impact Fee Update
(3) Balances for this service area available as of July 31, 2020
(4) Per discussions with Town staff and files
(5) Unless specified in Town CIP, Assumes 50% of new project cost funded through sources other than debt
(6) Unless specified in Town CIP, Assumes 50% of new project costs funded through new debt issues
(7) Per Kimley-Horn Impact Fee Update
(8) Assumes new debt issued based on Town input
(9) Estimated interest cost provided by Town's Financial Advisor
(10) Non-debt funded capital expenditures made in equal annual amounts. Assumes new debt proceeds expended over a 2-year timeframe with Year 10 bond proceeds spent in one year.

Town of Flower Mound 2020 Water Impact Fee Update

Debt Service and Expenses Summary

Appendix B - Impact Fee Calculation Assumptions

Water

I. New Debt Service Detail

Year	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6	Series 7	Series 8	Series 9	Series 10	Total Annual New Debt Service
1	$ 82,435	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 82,435
2	82,435	82,435	-	-	-	-	-	-	-	-	164,871
3	82,435	82,435	82,435	-	-	-	-	-	-	-	247,306
4	82,435	82,435	82,435	82,435	-	-	-	-	-	-	329,741
5	82,435	82,435	82,435	82,435	82,435	-	-	-	-	-	412,177
6	82,435	82,435	82,435	82,435	82,435	82,435	-	-	-	-	494,612
7	82,435	82,435	82,435	82,435	82,435	82,435	82,435	-	-	-	577,047
8	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	-	-	659,483
9	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	-	741,918
10	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	824,353
11	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	824,353
12	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	824,353
13	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	824,353
14	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	824,353
15	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	824,353
16	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	824,353
17	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	824,353
18	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	824,353
19	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	824,353
20	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	824,353
21	-	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	741,918
22	-	-	82,435	82,435	82,435	82,435	82,435	82,435	82,435	82,435	659,483
23	-	-	-	82,435	82,435	82,435	82,435	82,435	82,435	82,435	577,047
24	-	-	-	-	82,435	82,435	82,435	82,435	82,435	82,435	494,612
25	-	-	-	-	-	82,435	82,435	82,435	82,435	82,435	412,177
26	-	-	-	-	-	-	82,435	82,435	82,435	82,435	329,741
27	-	-	-	-	-	-	-	82,435	82,435	82,435	247,306
28	-	-	-	-	-	-	-	-	82,435	82,435	164,871
29	-	-	-	-	-	-	-	-	-	82,435	$ 82,435
	$ 1,648,707	$ 1,648,707	$ 1,648,707	$ 1,648,707	$ 1,648,707	$ 1,648,707	$ 1,648,707	$ 1,648,707	$ 1,648,707	$ 1,648,707	$ 16,487,069

Town of Flower Mound 2020 Water Impact Fee Update

Debt Service and Expenses Summary

Appendix B - Impact Fee Calculation Assumptions

II. Summary of Annual Expenses

Year	New Annual Debt Service[1]	Annual Capital Expenditures[2]	Annual Bond Proceeds[2]	Existing Annual Debt Service[3]	Annual Credit[4]	Total Expense
1	$ 82,435	$ 2,356,232	$ (1,120,323)	$ 1,092,197	$ (25,428)	2,385,113
2	164,871	2,916,394	(1,120,323)	1,123,154	(54,584)	3,029,511
3	247,306	2,916,394	(1,120,323)	859,404	(68,890)	2,833,890
4	329,741	2,916,394	(1,120,323)	859,939	(96,733)	2,889,018
5	412,177	2,916,394	(1,120,323)	860,112	(126,736)	2,941,623
6	494,612	2,916,394	(1,120,323)	815,406	(153,534)	2,952,554
7	577,047	2,916,394	(1,120,323)	805,484	(185,417)	2,993,185
8	659,483	2,916,394	(1,120,323)	792,647	(218,388)	3,029,812
9	741,918	2,916,394	(1,120,323)	727,011	(243,943)	3,021,057
10	824,353	3,476,555	(1,120,323)	688,106	(274,024)	3,594,668
11	824,353	-	-	687,795	-	1,512,149
12	824,353	-	-	671,487	-	1,495,840
13	824,353	-	-	645,482	-	1,469,835
14	824,353	-	-	598,214	-	1,422,567
15	824,353	-	-	532,939	-	1,357,292
16	824,353	-	-	429,826	-	1,254,180
17	824,353	-	-	371,186	-	1,195,540
18	824,353	-	-	212,760	-	1,037,113
19	824,353	-	-	57,089	-	881,443
20	824,353	-	-	-	-	824,353
21	741,918	-	-	-	-	741,918
22	659,483	-	-	-	-	659,483
23	577,047	-	-	-	-	577,047
24	494,612	-	-	-	-	494,612
25	412,177	-	-	-	-	412,177
26	329,741	-	-	-	-	329,741
27	247,306	-	-	-	-	247,306
28	164,871	-	-	-	-	164,871
29	82,435	-	-	-	-	82,435
	$ 16,487,069	$ 29,163,937	$ (11,203,233)	$ 12,830,238	$ (1,447,677)	$ 45,830,335

(1) Appendix B - Water, Page 2

(2) Appendix B - Water, Page 1

(3) Eligible Outstanding Debt Funded Projects Percent of Utility Self-Supported Debt Issuance times total outstanding utility self-supported annual debt service

(4) Appendix B - Water, Page 8

Town of Flower Mound 2020 Water Impact Fee Update

Revenue Test

Appendix B - Impact Fee Calculation Assumptions

Water

Year	Impact Fee	Service Units	Impact Fee Revenue	Annual Expenses	Sub-Total	Accumulated Interest	Estimated Fund Balance
Initial							$ 2,872,750
1	$ 4,676	900	$ 4,208,028	$ 2,385,113	$ 1,822,915	16,575	4,712,240
2	4,676	900	4,208,028	3,029,511	1,178,516	23,221	5,913,977
3	4,676	900	4,208,028	2,833,890	1,374,138	28,913	7,317,027
4	4,676	900	4,208,028	2,889,018	1,319,010	34,937	8,670,974
5	4,676	900	4,208,028	2,941,623	1,266,404	40,752	9,978,131
6	4,676	900	4,208,028	2,952,554	1,255,474	46,454	11,280,058
7	4,676	900	4,208,028	2,993,185	1,214,842	52,067	12,546,967
8	4,676	900	4,208,028	3,029,812	1,178,215	57,536	13,782,719
9	4,676	900	4,208,028	3,021,057	1,186,971	62,968	15,032,658
10	4,676	900	4,208,028	3,594,668	613,360	67,186	15,713,204
11	-	-	-	1,512,149	(1,512,149)	65,512	14,266,568
12	-	-	-	1,495,840	(1,495,840)	59,212	12,829,939
13	-	-	-	1,469,835	(1,469,835)	52,976	11,413,080
14	-	-	-	1,422,567	(1,422,567)	46,874	10,037,387
15	-	-	-	1,357,292	(1,357,292)	40,991	8,721,086
16	-	-	-	1,254,180	(1,254,180)	35,452	7,502,358
17	-	-	-	1,195,540	(1,195,540)	30,242	6,337,060
18	-	-	-	1,037,113	(1,037,113)	25,485	5,325,432
19	-	-	-	881,443	(881,443)	21,395	4,465,384
20	-	-	-	824,353	(824,353)	17,753	3,658,784
21	-	-	-	741,918	(741,918)	14,401	2,931,266
22	-	-	-	659,483	(659,483)	11,395	2,283,178
23	-	-	-	577,047	(577,047)	8,737	1,714,867
24	-	-	-	494,612	(494,612)	6,428	1,226,683
25	-	-	-	412,177	(412,177)	4,470	818,977
26	-	-	-	329,741	(329,741)	2,865	492,100
27	-	-	-	247,306	(247,306)	1,614	246,408
28	-	-	-	164,871	(164,871)	718	82,256
29	-	-	-	82,435	(82,435)	180	-
			42,080,278	45,830,335		877,307	

Town of Flower Mound 2020 Water Impact Fee Update

Impact Fee Calculation

Appendix B - Impact Fee Calculation Assumptions

Water

Year Prev	Number of Years to End of Period	Future Value Escalation Interest Rate Factor	Future Value Escalation Recovery Fee Factor	Annual Service Units Actual	Annual Service Units Escalated	Annual Expense Actual	Annual Expense Escalated
1	29	1.1326	1.0000	900	1,019	2,385,113	2,701,498
2	28	1.1277	1.0000	900	1,015	3,029,511	3,416,411
3	27	1.1228	1.0000	900	1,011	2,833,890	3,181,870
4	26	1.1179	1.0000	900	1,006	2,889,018	3,229,622
5	25	1.1130	1.0000	900	1,002	2,941,623	3,274,089
6	24	1.1082	1.0000	900	997	2,952,554	3,271,924
7	23	1.1033	1.0000	900	993	2,993,185	3,302,485
8	22	1.0985	1.0000	900	989	3,029,812	3,328,319
9	21	1.0937	1.0000	900	984	3,021,057	3,304,228
10	20	1.0890	1.0000	900	980	3,594,668	3,914,460
11	19	1.0842	1.0000	-	-	1,512,149	1,639,493
12	18	1.0795	1.0000	-	-	1,495,840	1,614,739
13	17	1.0748	1.0000	-	-	1,469,835	1,579,747
14	16	1.0701	1.0000	-	-	1,422,567	1,522,277
15	15	1.0654	1.0000	-	-	1,357,292	1,446,093
16	14	1.0608	1.0000	-	-	1,254,180	1,330,407
17	13	1.0562	1.0000	-	-	1,195,540	1,262,673
18	12	1.0515	1.0000	-	-	1,037,113	1,090,574
19	11	1.0470	1.0000	-	-	881,443	922,836
20	10	1.0424	1.0000	-	-	824,353	859,302
21	9	1.0378	1.0000	-	-	741,918	770,000
22	8	1.0333	1.0000	-	-	659,483	681,459
23	7	1.0288	1.0000	-	-	577,047	593,677
24	6	1.0243	1.0000	-	-	494,612	506,647
25	5	1.0199	1.0000	-	-	412,177	420,364
26	4	1.0154	1.0000	-	-	329,741	334,825
27	3	1.0110	1.0000	-	-	247,306	250,024
28	2	1.0066	1.0000	-	-	164,871	165,955
29	1	1.0022	1.0000	-	-	82,435	82,616
					9,996	45,830,335	49,998,615

Total Escalated Expense for Entire Period	$	49,998,615
Total Escalated Service Units		9,996
Impact Fee for Water	**$**	**4,676**

Town of Flower Mound 2020 Water Impact Fee Update

Impact Fee Project Funding

Appendix B - Impact Fee Calculation Assumptions

Water

Impact Fee Project Name[1]	Impact Fee Project No.[1]	Total Project Cost [1]	Percent Recoverable[1]	Impact Fee Recoverable Cost[2]	Debt Funded[3] Existing	Debt Funded[3] Proposed	Non-Debt Funded[3]	Impact Fee Recoverable Cost
Water Capital Improvements								
Canyon Falls 20-inch Water Line	1	$ 1,746,339	24%	$ 419,121	$ 267,860	$ -	$ 151,262	$ 419,121
Highway 377/UPRR Water Lines Phase I	2	2,296,815	8%	183,745	40,651	-	143,094	183,745
Stonecrest Pump Station Auxiliary Power	3	2,550,000	15%	382,500	-	300,000	82,500	382,500
Stonecrest (Western) Pump Station Phase I	4	11,944,788	38%	4,539,019	4,389,492	-	149,528	4,539,019
Trailwood Terrace 12-inch Water Line	5	325,099	68%	221,067	-	-	221,067	221,067
FM 1171 to Hwy 377 Phase I	6	2,810,382	60%	1,686,229	-	-	1,686,229	1,686,229
Freeman (Western) 2.5 MG EST	7	5,613,340	30%	1,684,002	1,528,002	-	156,000	1,684,002
Raintree 12-inch Water Line (Ridgecrest to Shiloh)	8	308,757	50%	154,378	116,878	-	37,500	154,378
Lusk Lane Water Line	9	1,060,864	20%	212,173	212,173	-	-	212,173
16" Kirkpatrick Water Line	10	570,341	22%	125,475	125,475	-	-	125,475
Branchwood Water Line (Russwood Dr. to FM 407)	11	55,222	50%	27,611		13,806	13,806	27,611
FM 2499 12-inch Water Line Phase I (Dixon to south of FM 1171)	12	1,157,783	100%	1,157,783	325,626	-	832,157	1,157,783
Morriss Road Water Line Phase II (FM 1171 to Eaton)	13	2,722,500	91%	2,477,475	855,855	-	1,621,620	2,477,475
Rippy Road Water Line Improvements (FM 2499 to Waketon)	14	750,000	95%	712,500	380,000	-	332,500	712,500
Stonehill Pump Station	15	9,487,799	12%	1,138,536		569,268	569,268	1,138,536
Timber Creek 20" Water Line	16	542,164	24%	130,119	129,984	-	136	130,119
Valley Ridge 20" Water Line	17	208,441	24%	50,026	50,026	-	-	50,026
Kirkpatrick Lane 12-inch Water Line Phase II (Valley Ridge to FM 1171)	18	1,079,971	100%	1,079,971	408,374	-	671,596	1,079,971
Garden Ridge Boulevard Water Line Phase II (South of Kirkpatrick)	19	743,844	100%	743,844	190,714	-	553,130	743,844
FM 2499 12-inch Water Line Phase III	20	762,253	77%	586,935	339,928	-	247,007	586,935
Lake Forest 12-inch Water Line (Bridge Gap)	21	127,571	50%	63,786	-	-	63,786	63,786
Lake Forest 12-inch Water Line (Spinks to Lakeside)	22	109,252	44%	48,071	48,071	-	-	48,071
Long Prairie 12-inch Water Line	23	828,903	77%	638,256	293,808	-	344,448	638,256
Pintail Pump Station Auxiliary Power	24	1,269,857	15%	190,479	130,479	-	60,000	190,479
Pintail Pump Station Capacity Improvements	25	300,000	51%	153,000	153,000	-	-	153,000
Denton Creek Spine Road 12-inch Water Line	26	3,210,000	18%	577,800		288,900	288,900	577,800
Denton Creek Boulevard 12-inch Water Line	27	1,300,000	24%	312,000		156,000	156,000	312,000
FM 1171 to Hwy 377 Water Line Phase II	28	6,400,000	24%	1,536,000		768,000	768,000	1,536,000
Hwy 377/UPRR Water Line Phase II	29	3,410,000	24%	818,400		409,200	409,200	818,400
Stonecrest Pump Station Phase II	30	5,460,000	5%	273,000		136,500	136,500	273,000
Stonecrest Pump Station Phase III	31	790,000	5%	39,500		19,750	19,750	39,500
West Side Water Line (West)	32	1,560,000	24%	374,400		187,200	187,200	374,400
West Side Water Line (East)	33	4,850,000	5%	242,500		121,250	121,250	242,500
West Side Water Line (South)	34	4,550,000	36%	1,638,000		819,000	819,000	1,638,000
Cowboy Lane Water Line	35	930,000	36%	334,800		167,400	167,400	334,800
Lusk/Red RockEast-West Connector	36	4,250,000	5%	212,500		106,250	106,250	212,500
Scenic Drive Water Line (S of FM 1171 to River Hill Drive)	37	1,430,000	5%	71,500		35,750	35,750	71,500

Town of Flower Mound 2020 Water Impact Fee Update

Impact Fee Project Funding

Appendix B - Impact Fee Calculation Assumptions

Water

Impact Fee Project Name[1]	Impact Fee Project No.[1]	Total Project Cost [1]	Percent Recoverable[1]	Impact Fee Recoverable Cost[2]	Debt Funded[3] Existing	Debt Funded[3] Proposed	Non-Debt Funded[3]	Impact Fee Recoverable Cost
Aberdeen 12-inch Water Line (FM 2499 to Lake Forest)	38	207,187	42%	87,019		43,509	43,509	87,019
Kirkpatrick 12-inch Water Line Phase III (South to FM 1171)	39	450,000	100%	450,000		225,000	225,000	450,000
Timber Creek 20-inch Water Line Extension	40	490,000	91%	445,900		222,950	222,950	445,900
Morriss Road Water Line Phase III (Eaton to Waketon Road)	41	3,140,000	91%	2,857,400		1,428,700	1,428,700	2,857,400
Morriss Road Water Line Phase IV (Waketon Road to FM 407)	42	4,190,000	91%	3,812,900		1,906,450	1,906,450	3,812,900
Morriss Road 20-Inch Water Line (Mallard Way to FM 3040)	43	720,000	91%	655,200		327,600	327,600	655,200
Lake Forest 12-inch Water Line (FM 3040 to Spinks Road)	44	1,760,000	5%	88,000		44,000	44,000	88,000
2020 Water Master Plan and Impact Fee Updates	45	179,500	100%	179,500		-	179,500	179,500
Reuse Pump Station and Ground Storage Tanks	46	7,900,000	15%	1,185,000		592,500	592,500	1,185,000
Reuse Transmission Lines	47	1,770,000	15%	265,500		132,750	132,750	265,500
FM 1171/Hwy 377 Central Reuse Loop	48	1,570,000	15%	235,500		117,750	117,750	235,500
FM 1171 West Reuse Line	49	1,570,000	15%	235,500		117,750	117,750	235,500
FM 1171 East Reuse Line	50	1,360,000	15%	204,000		102,000	102,000	204,000
Highway 377 Central Reuse Line	51	1,290,000	15%	193,500		96,750	96,750	193,500
Canyon Falls Drive Reuse Line	52	1,320,000	15%	198,000		99,000	99,000	198,000
Denton Creek Boulevard South Reuse Line	53	1,060,000	15%	159,000		79,500	79,500	159,000
UPRR Central Reuse Line	54	960,000	15%	144,000		72,000	72,000	144,000
Stonecrest Road Reuse Line	55	770,000	15%	115,500		57,750	57,750	115,500
Canyon Falls North Reuse Line	56	680,000	15%	102,000		51,000	51,000	102,000
East Reuse Lines	57	2,320,000	15%	348,000		174,000	174,000	348,000
Reuse Central Connector	58	630,000	15%	94,500		47,250	47,250	94,500
Denton Creek North Distribution Line	59	870,000	15%	130,500		65,250	65,250	130,500
Denton Creek Spine Road Reuse Lines	60	1,110,000	15%	166,500		83,250	83,250	166,500
Hwy 377 North Reuse Line	61	440,000	15%	66,000		33,000	33,000	66,000
Dunham/Hayes Reuse Loop	62	900,000	15%	135,000		67,500	67,500	135,000
Cowboy Lane Reuse Line	63	770,000	15%	115,500		57,750	57,750	115,500
Southwest Reuse Line	64	800,000	15%	120,000		60,000	60,000	120,000
Lakeside Business District - Water Reuse Master Plan	65	126,663	100%	126,663	7,750	-	118,913	126,663
Lakeside Reuse Phase I	66	9,030,000	5%	451,500	-	400,000	51,500	451,500
Lakeside Reuse Phase II	67	5,450,000	5%	272,500	-	200,000	72,500	272,500
Lakeside Reuse Phase III	68	5,630,000	5%	281,500	-	200,000	81,500	281,500
Total		**$ 146,975,635**		**$ 39,158,082**	**$ 9,994,145**	**$ 11,203,233**	**$ 17,960,705**	**$ 39,158,082**

(1) 2020 Water Impact Fee Study, Appendix C

(2) Per Kimley-Horn Impact Fee Update

(3) Based on Contributions by Project and Planned Future Debt Financing

Town of Flower Mound 2020 Water Impact Fee Update

Credit Determination

Appendix B - Impact Fee Calculation Assumptions

Water

2020 Service Units [1]	40,675	
Ten Year Growth in Service Units [1]	9,000	
	10	years
Annual Growth in Service Units	900	

		1	2	3	4	5	6	7	8	9	10	Total
Total Debt Service Eligible for Impact Fees		$ 1,174,632	$ 1,288,025	$ 1,106,710	$ 1,189,680	$ 1,272,289	$ 1,310,018	$ 1,382,532	$ 1,452,130	$ 1,468,929	$ 1,512,459	$ 13,157,404
2020 Service Units Plus Water Growth		41,575	42,475	43,375	44,275	45,175	46,075	46,975	47,875	48,775	49,675	
Total Debt Service Eligible for Impact Fees per Service Unit		$ 28.25	$ 30.32	$ 25.51	$ 26.87	$ 28.16	$ 28.43	$ 29.43	$ 30.33	$ 30.12	$ 30.45	
Annual Service Unit Growth in Water (Cumulative)		900	1,800	2,700	3,600	4,500	5,400	6,300	7,200	8,100	9,000	
Annual Water Utility Revenue Generated by Additional Service Units for Debt Service Eligible for Impact Fees		$ 25,428	$ 54,584	$ 68,890	$ 96,733	$ 126,736	$ 153,534	$ 185,417	$ 218,388	$ 243,943	$ 274,024	$ 1,447,677
Credit Amount	**$ 1,447,677**											

(1) Per Kimley-Horn Impact Fee Update

Appendix C: Construction Cost Projections

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Canyon Falls 20-inch Water Line**	**Project:**	**1**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 1,746,339.00	$ 1,746,339
	Basis for Cost Projection:	**Total:**			$ 1,746,339
	Existing Development Agreement				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Highway 377/UPRR Water Lines Phase I**	**Project:**	**2**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 2,296,815.28	$ 2,296,815
	Basis for Cost Projection:	**Total:**			$ 2,296,815
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Stonecrest Pump Station Auxiliary Power**	**Project:**	**3**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost	1	LS	$ 2,550,000.00	$ 2,550,000
	Basis for Cost Projection:	**Total:**			$ 2,550,000
	Design Contract & Current OPCC				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Stonecrest (Western) Pump Station Phase I**	**Project:**	**4**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 11,944,788.00	$ 11,944,788
	Basis for Cost Projection:	**Total:**			$ 11,944,788
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Trailwood Terrace 12-inch Water Line**	**Project:**	**5**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 325,098.74	$ 325,099
	Basis for Cost Projection:	**Total:**			$ 325,099
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**FM 1171 to Hwy 377 Phase I**	**Project:**	**6**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 2,810,382.31	$ 2,810,382
	Basis for Cost Projection:	**Total:**			$ 2,810,382
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Freeman (Western) 2.5 MG EST**	**Project:**	**7**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 5,613,339.75	$ 5,613,340
	Basis for Cost Projection:	**Total:**			$ 5,613,340
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Raintree 12-inch Water Line (Ridgecrest to Shiloh)**	**Project:**	**8**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 308,756.85	$ 308,757
	Basis for Cost Projection:	**Total:**			$ 308,757
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Lusk Lane Water Line**	**Project:**	**9**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 1,060,864.16	$ 1,060,864
	Basis for Cost Projection:	**Total:**			$ 1,060,864
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**16" Kirkpatrick Water Line**	**Project:**	**10**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 570,340.80	$ 570,341
	Basis for Cost Projection:	**Total:**			$ 570,341
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Branchwood Water Line (Russwood Dr. to FM 407)**	**Project:**	**11**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 55,222.00	$ 55,222
	Basis for Cost Projection:	**Total:**			$ 55,222
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**FM 2499 12-inch Water Line Phase I (Dixon to south of FM 1171)**	**Project:**	**12**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 1,157,783.44	$ 1,157,783
	Basis for Cost Projection:	**Total:**			$ 1,157,783
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Morriss Road Water Line Phase II (FM 1171 to Eaton)**	**Project:**	**13**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost	1	LS	$ 2,722,500.00	$ 2,722,500
	Basis for Cost Projection:	**Total:**			$ 2,722,500
	Design Contract & Current OPCC				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Rippy Road Water Line Improvements (FM 2499 to Waketon)**	**Project:**	**14**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 750,000.00	$ 750,000
	Basis for Cost Projection:	**Total:**			$ 750,000
	Phase I Constructed + Phase II OPCC				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Stonehill Pump Station**	**Project:**	**15**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 9,487,799.00	$ 9,487,799
	Basis for Cost Projection:	**Total:**			$ 9,487,799
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Timber Creek 20" Water Line**	**Project:**	**16**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 542,163.58	$ 542,164
	Basis for Cost Projection:	**Total:**			$ 542,164
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Valley Ridge 20" Water Line**	**Project:**	**17**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 208,441.26	$ 208,441
	Basis for Cost Projection:	**Total:**			$ 208,441
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Kirkpatrick Lane 12-inch Water Line Phase II (Valley Ridge to FM 1171)**	**Project:**	**18**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 1,079,970.54	$ 1,079,971
	Basis for Cost Projection:	**Total:**			$ 1,079,971
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Garden Ridge Boulevard Water Line Phase II (South of Kirkpatrick)**	**Project:**	**19**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 743,844.00	$ 743,844
	Basis for Cost Projection:	**Total:**			$ 743,844
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**FM 2499 12-inch Water Line Phase III**	**Project:**	**20**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 762,253.11	$ 762,253
	Basis for Cost Projection:	**Total:**			$ 762,253
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Lake Forest 12-inch Water Line (Bridge Gap)**	**Project:**	**21**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 127,571.00	$ 127,571
	Basis for Cost Projection:	**Total:**			$ 127,571
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Lake Forest 12-inch Water Line (Spinks to Lakeside)**	**Project:**	**22**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 109,251.74	$ 109,252
	Basis for Cost Projection:	**Total:**			$ 109,252
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Long Prairie 12-inch Water Line**	**Project:**	**23**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 828,903.25	$ 828,903
	Basis for Cost Projection:	**Total:**			$ 828,903
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Pintail Pump Station Auxiliary Power**	**Project:**	**24**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project per KH Design Contract + Contractor's Bid	1	LS	$ 1,269,857.00	$ 1,269,857
	Basis for Cost Projection:	**Total:**			$ 1,269,857
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Pintail Pump Station Capacity Improvements**	**Project:**	**25**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 300,000.00	$ 300,000
	Basis for Cost Projection:	**Total:**			$ 300,000
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Denton Creek Spine Road 12-inch Water Line** **Project:** **26**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 90,000.00	$ 90,000
2	12" Water Line	14,300	LF	$ 120.00	$ 1,716,000
3	Trench Safety	14,300	LF	$ 2.00	$ 28,600
4	Seed, Fertilizer and Erosion Control	14,270	LF	$ 10.00	$ 142,700
5	Concrete Pavement Repair	50	SY	$ 110.00	$ 5,500
6	12" Gate Valve (1 per 500 lf of pipe)	29	EA	$ 5,000.00	$ 145,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	29	EA	$ 7,500.00	$ 217,500
8	Connect to Small Diameter Water Line	2	LF	$ 5,000.00	$ 10,000
9	Hydrostatic Testing and Disinfection (Long)	1	LF	$ 20,000.00	$ 20,000

Basis for Cost Projection:

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:			$ 2,285,300
Eng/Survey Fees (+/- %):	15		$ 343,000
Contingency (+/- %):	25		$ 581,700
Prop Acquisition:			$ -
Total:			$ 3,210,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Denton Creek Boulevard 12-inch Water Line** **Project:** **27**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 40,000.00	$ 40,000
2	12" Water Line	5,000	LF	$ 120.00	$ 600,000
3	Trench Safety	4,900	LF	$ 2.00	$ 9,800
4	Seed, Fertilizer and Erosion Control	4,900	LF	$ 10.00	$ 49,000
5	Concrete Pavement Repair	20	SY	$ 110.00	$ 2,200
6	12" Gate Valve (1 per 500 lf of pipe)	10	EA	$ 5,000.00	$ 50,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	10	EA	$ 7,500.00	$ 75,000
8	Bore with 24" Steel Casing	100	LF	$ 600.00	$ 60,000
9	Connect to Small Diameter Water Line	3	EA	$ 5,000.00	$ 15,000
10	Connect to Large Diameter Water Line	1	EA	$ 15,000.00	$ 15,000
11	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:		$ 926,000
Eng/Survey Fees (+/- %):	15	$ 139,000
Contingency (+/- %):	25	$ 235,000
Prop Acquisition:		$ -
Total:		$ 1,300,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**FM 1171 to Hwy 377 Water Line Phase II**	**Project:**	**28**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 170,000.00	$ 170,000
2	24" Water Line	12,600	LF	$ 250.00	$ 3,150,000
3	Trench Safety	12,050	LF	$ 2.00	$ 24,100
4	Seed, Fertilizer and Erosion Control	12,000	LF	$ 10.00	$ 120,000
5	Concrete Pavement Repair	56	SY	$ 110.00	$ 6,111
6	24" Gate Valve with Vault (1 per 3,000 lf of pipe)	5	EA	$ 50,000.00	$ 250,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	6	EA	$ 7,500.00	$ 45,000
8	Bore with 42" Steel Casing	550	LF	$ 1,000.00	$ 550,000
9	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
10	Connect to Large Diameter Water Line	4	EA	$ 15,000.00	$ 60,000
11	Hydrostatic Testing and Disinfection (Long)	1	EA	$ 20,000.00	$ 20,000
12	Combination 6" Blow Off Valve & Vault	4	EA	$ 15,000.00	$ 60,000
13	Combination 4" Air Release/Vacuum Valve & Vault	4	EA	$ 20,000.00	$ 80,000
14	Cathodic Protection	1	LS	$ 20,000.00	$ 20,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 4,560,211
Eng/Survey Fees (+/- %):	15		$ 685,000
Contingency (+/- %):	25		$ 1,154,789
Prop Acquisition:			$ -
Total:			$ 6,400,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Highway 377/UPRR Water Lines Phase II**	**Project:**	**29**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 90,000.00	$ 90,000
2	24" Water Line	7,600	LF	$ 250.00	$ 1,900,000
3	Trench Safety	7,600	LF	$ 2.00	$ 15,200
4	Seed, Fertilizer and Erosion Control	7,580	LF	$ 10.00	$ 75,800
5	Concrete Pavement Repair	20	SY	$ 110.00	$ 2,200
6	24" Gate Valve with Vault (1 per 3,000 lf of pipe)	3	EA	$ 50,000.00	$ 150,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	4	EA	$ 7,500.00	$ 30,000
8	Connect to Small Diameter Water Line	4	EA	$ 5,000.00	$ 20,000
9	Connect to Large Diameter Water Line	1	LS	$ 15,000.00	$ 15,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000
11	Combination 6" Blow Off Valve & Vault	2	EA	$ 15,000.00	$ 30,000
12	Combination 4" Air Release/Vacuum Valve & Vault	2	EA	$ 20,000.00	$ 40,000
13	Cathodic Protection	1	LS	$ 50,000.00	$ 50,000

Basis for Cost Projection:

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:		$ 2,428,200
Eng/Survey Fees (+/- %):	15	$ 365,000
Contingency (+/- %):	25	$ 616,800
Prop Acquisition:		$ -
Total:		$ 3,410,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Stonecrest Pump Station Phase II** **Project:** **30**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000.00	$ 150,000
2	Tank Supply Line	175	LF	$ 400.00	$ 70,000
3	Tank Discharge Line	170	LF	$ 450.00	$ 76,500
4	5 MG Ground Storage Tank	1	EA	$ 2,300,000.00	$ 2,300,000
5	Excavation	4,750	CY	$ 30.00	$ 142,500
6	Select Backfill	4,750	CY	$ 30.00	$ 142,500
7	Connect to Existing Water Line	2	EA	$ 10,000.00	$ 20,000
8	Grading	1	LS	$ 50,000.00	$ 50,000
9	Landscaping	1	LS	$ 25,000.00	$ 25,000
10	Irrigation	1	LS	$ 10,000.00	$ 10,000
11	Horizontal Split Case Pump	1	EA	$ 300,000.00	$ 300,000
12	Mechanical Piping	1	LS	$ 50,000.00	$ 50,000
13	Control Valve	1	LS	$ 30,000.00	$ 30,000
14	Feeder and soft starter to pump	1	LS	$ 50,000.00	$ 50,000
15	Yard Valves	1	LS	$ 275,000.00	$ 275,000
16	Electrical	1	LS	$ 150,000.00	$ 150,000
17	SCADA/Instumentation	1	LS	$ 50,000.00	$ 50,000

Basis for Cost Projection:

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:			$ 3,891,500
Eng/Survey Fees (+/- %):	15		$ 584,000
Contingency (+/- %):	25		$ 984,500
Prop Acquisition:			$ -
Total:			$ 5,460,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Stonecrest Pump Station Phase III** **Project:** **31**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 30,000.00	$ 30,000
2	Horizontal Split Case Pump	1	EA	$ 300,000.00	$ 300,000
3	Mechanical Piping	1	LS	$ 45,000.00	$ 45,000
4	Control Valve	1	LS	$ 30,000.00	$ 30,000
5	Feeder and soft starter to pump	1	LS	$ 50,000.00	$ 50,000
6	Electrical	1	LS	$ 50,000.00	$ 50,000
7	SCADA/Instumentation	1	LS	$ 50,000.00	$ 50,000

Basis for Cost Projection:

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:		$ 555,000
Eng/Survey Fees (+/- %):	15	$ 84,000
Contingency (+/- %):	25	$ 151,000
Prop Acquisition:		$ -
Total:		$ 790,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **West Side Water Line (West)** **Project:** **32**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 50,000.00	$ 50,000
2	12" Water Line	5,600	LF	$ 120.00	$ 672,000
3	Trench Safety	5,300	LF	$ 2.00	$ 10,600
4	Seed, Fertilizer and Erosion Control	5,300	LF	$ 10.00	$ 53,000
5	12" Gate Valve (1 per 500 lf of pipe)	12	EA	$ 5,000.00	$ 60,000
6	Fire Hydrant Assembly (1 per 500 lf of pipe)	12	EA	$ 7,500.00	$ 90,000
7	Bore with 24" Steel Casing	300	LF	$ 600.00	$ 180,000
8	Connect to Small Diameter Water Line	7	EA	$ 5,000.00	$ 35,000
9	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 1,110,600
Eng/Survey Fees (+/- %):	15		$ 167,000
Contingency (+/- %):	25		$ 279,400
Prop Acquisition:			$ -
Total:			$ 1,560,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **West Side Water Line (East)** **Project:** **33**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 130,000.00	$ 130,000
2	16" Water Line	12,300	LF	$ 150.00	$ 1,845,000
3	20" Water Line	2,700	LF	$ 210.00	$ 567,000
4	Trench Safety	15,000	LF	$ 2.00	$ 30,000
5	Seed, Fertilizer and Erosion Control	15,000	LF	$ 10.00	$ 150,000
6	16" Gate Valve (1 per 3,000 lf of pipe)	7	EA	$ 12,000.00	$ 84,000
7	20" Gate Valve with Vault (1 per 3,000 lf of pipe)	2	EA	$ 35,000.00	$ 70,000
8	Fire Hydrant Assembly (1 per 500 lf of pipe)	8	EA	$ 7,500.00	$ 60,000
9	Connect to Large Diameter Water Line	3	EA	$ 15,000.00	$ 45,000
10	Hydrostatic Testing and Disinfection (Long)	1	LS	$ 20,000.00	$ 20,000
11	Combination 2" Blow Off Valve & Vault	5	EA	$ 7,500.00	$ 37,500
12	Combination 2" Air Release/Vacuum Valve & Vault	5	EA	$ 10,000.00	$ 50,000
13	Cathodic Protection	5	EA	$ 75,000.00	$ 375,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 3,463,500
Eng/Survey Fees (+/- %):	15	$ 520,000
Contingency (+/- %):	25	$ 866,500
Prop Acquisition:		$ -
Total:		$ 4,850,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**West Side Water Line (South)**	**Project:**	**34**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 120,000.00	$ 120,000
2	12" Water Line	19,100	LF	$ 120.00	$ 2,292,000
3	Trench Safety	18,800	LF	$ 2.00	$ 37,600
4	Seed, Fertilizer and Erosion Control	18,750	LF	$ 10.00	$ 187,500
5	Concrete Pavement Repair	28	SY	$ 110.00	$ 3,056
6	12" Gate Valve (1 per 500 lf of pipe)	39	EA	$ 5,000.00	$ 195,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	39	EA	$ 7,500.00	$ 292,500
8	Bore with 24" Steel Casing	300	LF	$ 600.00	$ 180,000
9	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
10	Connect to Large Diameter Water Line	2	EA	$ 15,000.00	$ 30,000
11	Hydrostatic Testing and Disinfection (Long)	1	LS	$ 20,000.00	$ 20,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 3,242,656
Eng/Survey Fees (+/- %):	15		$ 487,000
Contingency (+/- %):	25		$ 817,344
Prop Acquisition:			$ -
Total:			$ 4,550,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Cowboy Lane Water Line** **Project:** **35**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 30,000.00	$ 30,000
2	12" Water Line	3,800	LF	$ 120.00	$ 456,000
3	Trench Safety	3,800	LF	$ 2.00	$ 7,600
4	Seed, Fertilizer and Erosion Control	3,750	LF	$ 10.00	$ 37,500
5	Concrete Pavement Repair	25	SY	$ 110.00	$ 2,750
6	12" Gate Valve (1 per 500 lf of pipe)	8	EA	$ 5,000.00	$ 40,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	8	EA	$ 7,500.00	$ 60,000
8	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
9	Connect to Large Diameter Water Line	1	EA	$ 15,000.00	$ 15,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:			$ 663,850
Eng/Survey Fees (+/- %):	15		$ 100,000
Contingency (+/- %):	25		$ 166,150
Prop Acquisition:			$ -
Total:			$ 930,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Lusk/Red Rock East-West Connector**	**Project:**	**36**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 120,000.00	$ 120,000
2	16" Water Line	15,500	LF	$ 150.00	$ 2,325,000
3	Trench Safety	15,450	LF	$ 2.00	$ 30,900
4	Seed, Fertilizer and Erosion Control	15,350	LF	$ 10.00	$ 153,500
5	Concrete Pavement Repair	70	SY	$ 110.00	$ 7,700
6	16" Gate Valve (1 per 3,000 lf of pipe)	6	EA	$ 12,000.00	$ 72,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	7	EA	$ 7,500.00	$ 52,500
8	Bore with 30" Steel Casing	50	LF	$ 750.00	$ 37,500
9	Connect to Small Diameter Water Line	3	EA	$ 5,000.00	$ 15,000
10	Hydrostatic Testing and Disinfection (Long)	1	LS	$ 20,000.00	$ 20,000
11	Combination 4" Blow Off Valve & Vault	6	EA	$ 20,000.00	$ 60,000
12	Combination 2" Air Release/Vacuum Valve & Vault	6	EA	$ 10,000.00	$ 60,000
13	Cathodic Protection	1	LS	$ 75,000.00	$ 75,000

Basis for Cost Projection:

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:		$ 3,029,100
Eng/Survey Fees (+/- %):	15	$ 455,000
Contingency (+/- %):	25	$ 765,900
Prop Acquisition:		$ -
Total:		$ 4,250,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Scenic Drive Water Line (S of FM 1171 to River Hill Drive)** **Project:** **37**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 40,000.00	$ 40,000
2	12" Water Line	6,200	LF	$ 120.00	$ 744,000
3	Trench Safety	6,200	LF	$ 2.00	$ 12,400
4	Seed, Fertilizer and Erosion Control	6,050	LF	$ 10.00	$ 60,500
5	Concrete Pavement Repair	83	SY	$ 110.00	$ 9,167
6	12" Gate Valve (1 per 500 lf of pipe)	13	EA	$ 5,000.00	$ 65,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	13	EA	$ 7,500.00	$ 97,500
8	Connect to Small Diameter Water Line	4	EA	$ 5,000.00	$ 20,000
9	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 1,018,567
Eng/Survey Fees (+/- %):	15		$ 153,000
Contingency (+/- %):	25		$ 261,433
Prop Acquisition:			$ -
Total:			$ 1,430,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Aberdeen 12-inch Water Line (FM 2499 to Lake Forest)**	**Project:**	**38**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 207,187.00	$ 207,187
	Basis for Cost Projection:	**Total:**			$ 207,187
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Kirkpatrick Lane 12-inch Water Line Phase III (South of FM 1171)** **Project:** **39**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 20,000.00	$ 20,000
2	12" Water Line	1,000	LF	$ 120.00	$ 120,000
3	Trench Safety	800	LF	$ 2.00	$ 1,600
4	Seed, Fertilizer and Erosion Control	770	LF	$ 10.00	$ 7,700
5	Concrete Pavement Repair	35	SY	$ 110.00	$ 3,850
6	12" Gate Valve (1 per 500 lf of pipe)	2	EA	$ 5,000.00	$ 10,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	2	EA	$ 7,500.00	$ 15,000
8	Bore with 24" Steel Casing	200	LF	$ 600.00	$ 120,000
9	Connect to Small Diameter Water Line	2	EA	$ 5,000.00	$ 10,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:			$ 318,150
Eng/Survey Fees (+/- %):	15		$ 48,000
Contingency (+/- %):	25		$ 83,850
Prop Acquisition:			$ -
Total:			$ 450,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title: **Timber Creek 20-inch Water Line Extension** **Project:** **40**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 20,000.00	$ 20,000
2	20" Water Line	550	LF	$ 210.00	$ 115,500
3	Trench Safety	470	LF	$ 2.00	$ 940
4	Seed, Fertilizer and Erosion Control	390	LF	$ 10.00	$ 3,900
5	Concrete Pavement Repair	45	SY	$ 110.00	$ 4,950
6	20" Gate Valve with Vault (1 per 3,000 lf of pipe)	1	EA	$ 35,000.00	$ 35,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	1	EA	$ 7,500.00	$ 7,500
8	Bore with 36" Steel Casing	80	LF	$ 850.00	$ 68,000
9	Connect to Large Diameter Water Line	2	EA	$ 15,000.00	$ 30,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000
11	Combination 6" Blow Off Valve & Vault	1	EA	$ 15,000.00	$ 15,000
12	Combination 4" Air Release/Vacuum Valve & Vault	2	EA	$ 20,000.00	$ 40,000
13	Cathodic Protection	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 340,790
Eng/Survey Fees (+/- %):	15	$ 52,000
Contingency (+/- %):	25	$ 97,210
Prop Acquisition:		$ -
Total:		$ 490,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Morriss Road Water Line Phase III (Eaton to Waketon Road)** **Project:** **41**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 170,000.00	$ 170,000
2	30" Water Line	4,400	LF	$ 275.00	$ 1,210,000
3	Trench Safety	4,100	LF	$ 2.00	$ 8,200
4	Seed, Fertilizer and Erosion Control	3,560	LF	$ 10.00	$ 35,600
5	Concrete Pavement Repair	600	SY	$ 110.00	$ 66,000
6	30" Gate Valve with Vault	2	EA	$ 90,000.00	$ 180,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	3	EA	$ 7,500.00	$ 22,500
8	Bore with 48" Steel Casing	300	LF	$ 1,250.00	$ 375,000
9	Connect to Large Diameter Water Line	2	EA	$ 15,000.00	$ 30,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000
11	Combination 8" Blow Off Valve & Vault	1	EA	$ 22,500.00	$ 22,500
12	Combination 6" Air Release/Vacuum Valve & Vault	1	EA	$ 30,000.00	$ 30,000
13	Cathodic Protection	1	LS	$ 75,000.00	$ 75,000

Basis for Cost Projection:

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:		$ 2,234,800
Eng/Survey Fees (+/- %):	15	$ 336,000
Contingency (+/- %):	25	$ 569,200
Prop Acquisition:		$ -
Total:		$ 3,140,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Morriss Road Water Line Phase IV (Waketon Road to FM 407)** **Project:** **42**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 170,000.00	$ 170,000
2	30" Water Line	5,200	LF	$ 275.00	$ 1,430,000
3	Trench Safety	4,500	LF	$ 2.00	$ 9,000
4	Seed, Fertilizer and Erosion Control	3,960	LF	$ 10.00	$ 39,600
5	Concrete Pavement Repair	600	SY	$ 110.00	$ 66,000
6	30" Gate Valve with Vault	2	EA	$ 90,000.00	$ 180,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	3	EA	$ 7,500.00	$ 22,500
8	Bore with 48" Steel Casing	700	LF	$ 1,250.00	$ 875,000
9	Connect to Large Diameter Water Line	2	EA	$ 15,000.00	$ 30,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000
11	Combination 8" Blow Off Valve & Vault	1	EA	$ 22,500.00	$ 22,500
12	Combination 6" Air Release/Vacuum Valve & Vault	2	EA	$ 30,000.00	$ 60,000
13	Cathodic Protection	1	LS	$ 75,000.00	$ 75,000

Basis for Cost Projection:

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:		$ 2,989,600
Eng/Survey Fees (+/- %):	15	$ 449,000
Contingency (+/- %):	25	$ 751,400
Prop Acquisition:		$ -
Total:		$ 4,190,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Morriss Road 20-inch Water Line (Mallard Way to FM 3040)** **Project:** **43**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 20,000.00	$ 20,000
2	20" Water Line	1,100	LF	$ 210.00	$ 231,000
3	Trench Safety	1,000	LF	$ 2.00	$ 2,000
4	Concrete Pavement Repair	100	SY	$ 110.00	$ 11,000
5	Seed, Fertilizer and Erosion Control	1,000	LF	$ 10.00	$ 10,000
6	20" Gate Valve with Vault (1 per 3,000 lf of pipe)	2	EA	$ 35,000.00	$ 70,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	1	EA	$ 7,500.00	$ 7,500
8	Bore with 36" Steel Casing	100	LF	$ 850.00	$ 85,000
9	Connect to Large Diameter Water Line	2	EA	$ 15,000.00	$ 30,000
10	Combination 4" Air Release/Vacuum Valve & Vault	1	EA	$ 20,000.00	$ 20,000
11	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000
12	Cathodic Protection	1	LS	$ 15,000.00	$ 15,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 511,500
Eng/Survey Fees (+/- %):	15	$ 77,000
Contingency (+/- %):	25	$ 131,500
Prop Acquisition:		$ -
Total:		$ 720,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Lake Forest 12-inch Water Line (FM 3040 to Spinks Road)** **Project:** **44**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 50,000.00	$ 50,000
2	12" Water Line	5,600	LF	$ 120.00	$ 672,000
3	Trench Safety	5,200	LF	$ 2.00	$ 10,400
4	Seed, Fertilizer and Erosion Control	4,850	LF	$ 10.00	$ 48,500
5	Concrete Pavement Repair	390	SY	$ 110.00	$ 42,900
6	12" Gate Valve (1 per 500 lf of pipe)	12	EA	$ 5,000.00	$ 60,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	12	EA	$ 7,500.00	$ 90,000
8	Bore with 24" Steel Casing	400	LF	$ 600.00	$ 240,000
9	Connect to Small Diameter Water Line	2	EA	$ 5,000.00	$ 10,000
10	Connect to Large Diameter Water Line	1	EA	$ 15,000.00	$ 15,000
11	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:		$ 1,248,800
Eng/Survey Fees (+/- %):	15	$ 188,000
Contingency (+/- %):	25	$ 323,200
Prop Acquisition:		$ -
Total:		$ 1,760,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**2020 Water Master Plan and Impact Fee Updates**	**Project:**	**45**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost	1	LS	$ 179,500.00	$ 179,500
	Basis for Cost Projection:	**Total:**			$ 179,500
	Design Contract				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Reuse Pump Station and Ground Storage Tanks**	**Project:**	**46**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization, Bonds, and Insurance	1	LS	$100,000.00	$100,000
2	20" Water Line	400	LF	$210.00	$84,000
3	30" TRA Supply Line	1,500	LF	$230.00	$345,000
4	20" Gate Valve	1	EA	$35,000.00	$35,000
5	Seed, Fertilizer and Erosion Control	500	LF	$10.00	$5,000
6	Concrete Pavement Repair	10	SY	$110.00	$1,100
7	Trench Safety	1,900	LF	$2.00	$3,800
8	Project Sign	1	EA	$500.00	$500
9	Connect to Large Diameter Water Line	1	EA	$15,000.00	$15,000
10	Pump Station (4500 GPM Capacity)	1	LS	$2,000,000.00	$2,000,000
11	Ground Storage Tank (2 - 2 MG)	1	LS	$3,000,000.00	$3,000,000
12	Chemical Feed Station	1	LS	$50,000.00	$50,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$5,639,400
Engineering, Surveying (%,+/-)	15		$840,000
Conting. (%,+/-)	25		$1,420,600
Total:			**$7,900,000**

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**Reuse Transmission Lines**	**Project:**	**47**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 40,000.00	$ 40,000
2	16" Water Line	1,090	LF	$ 150.00	$ 163,500
3	20" Water Line	3,470	LF	$ 210.00	$ 728,700
4	Trench Safety	4,360	LF	$ 2.00	$ 8,720
5	Seed, Fertilizer and Erosion Control	4,360	LF	$ 10.00	$ 43,600
6	16" Gate Valve	1	EA	$ 12,000.00	$ 12,000
7	20" Gate Valve	2	EA	$ 35,000.00	$ 70,000
8	Bore with 36" Steel Casing	200	LF	$ 850.00	$ 170,000
9	Connect to Large Diameter Water Line	1	EA	$ 15,000.00	$ 15,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 1,261,520
Eng/Survey Fees (+/- %):	15		$ 190,000
Contingency (+/- %):	25		$ 318,480
Prop Acquisition:			$ -
Total:			$ 1,770,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**FM 1171/Hwy 377 Central Reuse Loop**	**Project:**	**48**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 40,000.00	$ 40,000
2	8" Water Line	7,630	LF	$ 90.00	$ 686,700
3	Trench Safety	7,180	LF	$ 2.00	$ 14,360
4	Seed, Fertilizer and Erosion Control	7,180	LF	$ 10.00	$ 71,800
5	8" Gate Valve	4	EA	$ 3,500.00	$ 14,000
6	Bore with 24" Steel Casing	450	LF	$ 600.00	$ 270,000
7	Connect to Small Diameter Water Line	2	EA	$ 5,000.00	$ 10,000
8	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 1,116,860
Eng/Survey Fees (+/- %):	15		$ 168,000
Contingency (+/- %):	25		$ 283,140
Prop Acquisition:			$ -
Total:			$ 1,570,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**FM 1171 West Reuse Line**	**Project:**	**49**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 30,000.00	$ 30,000
2	8" Water Line	4,150	LF	$ 90.00	$ 373,500
3	12" Water Line	3,700	LF	$ 120.00	$ 444,000
4	Trench Safety	7,600	LF	$ 2.00	$ 15,200
5	Seed, Fertilizer and Erosion Control	7,600	LF	$ 10.00	$ 76,000
6	8" Gate Valve	3	EA	$ 3,500.00	$ 10,500
7	12" Gate Valve	2	EA	$ 5,000.00	$ 10,000
8	Bore with 20" Steel Casing	100	LF	$ 550.00	$ 55,000
9	Bore with 24" Steel Casing	150	LF	$ 600.00	$ 90,000
10	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
11	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 1,119,200
Eng/Survey Fees (+/- %):	15	$ 168,000
Contingency (+/- %):	25	$ 280,800
Prop Acquisition:		$ -
Total:		$ 1,570,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**FM 1171 East Reuse Line**	**Project:**	**50**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 30,000.00	$ 30,000
2	8" Water Line	6,900	LF	$ 90.00	$ 621,000
3	Trench Safety	6,550	LF	$ 2.00	$ 13,100
4	Seed, Fertilizer and Erosion Control	6,550	LF	$ 10.00	$ 65,500
5	8" Gate Valve	4	EA	$ 3,500.00	$ 14,000
6	Bore with 20" Steel Casing	350	LF	$ 550.00	$ 192,500
7	Connect to Small Diameter Water Line	3	EA	$ 5,000.00	$ 15,000
8	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 961,100
Eng/Survey Fees (+/- %):	15	$ 145,000
Contingency (+/- %):	25	$ 248,900
Prop Acquisition:		$ -
Total:		$ 1,360,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**Highway 377 Central Reuse Line**	**Project:**	**51**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 30,000.00	$ 30,000
2	12" Water Line	6,170	LF	$ 120.00	$ 740,400
3	Trench Safety	6,120	LF	$ 2.00	$ 12,240
4	Seed, Fertilizer and Erosion Control	6,120	LF	$ 10.00	$ 61,200
5	12" Gate Valve	4	EA	$ 5,000.00	$ 20,000
6	Bore with 24" Steel Casing	50	LF	$ 600.00	$ 30,000
7	Connect to Small Diameter Water Line	3	EA	$ 5,000.00	$ 15,000
8	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 918,840
Eng/Survey Fees (+/- %):	15	$ 138,000
Contingency (+/- %):	25	$ 231,160
Prop Acquisition:		$ -
Total:		$ 1,290,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title: **Canyon Falls Drive Reuse Line** **Project:** **52**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 30,000.00	$ 30,000
2	8" Water Line	1,780	LF	$ 90.00	$ 160,200
3	12" Water Line	4,560	LF	$ 120.00	$ 547,200
4	Trench Safety	6,190	LF	$ 2.00	$ 12,380
5	Seed, Fertilizer and Erosion Control	6,190	LF	$ 10.00	$ 61,900
6	8" Gate Valve	1	EA	$ 3,500.00	$ 3,500
7	12" Gate Valve	3	EA	$ 5,000.00	$ 15,000
8	Bore with 24" Steel Casing	150	LF	$ 600.00	$ 90,000
9	Concrete Pavement Repair	67	SY	$ 110.00	$ 7,333
10	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
11	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 942,513
Eng/Survey Fees (+/- %):	15		$ 142,000
Contingency (+/- %):	25		$ 237,487
Prop Acquisition:			$ -
Total:			$ 1,320,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**Denton Creek Boulevard South Reuse Line**	**Project:**	**53**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 30,000.00	$ 30,000
2	12" Water Line	4,770	LF	$ 120.00	$ 572,400
3	Trench Safety	4,670	LF	$ 2.00	$ 9,340
4	Seed, Fertilizer and Erosion Control	4,670	LF	$ 10.00	$ 46,700
5	12" Gate Valve	3	EA	$ 5,000.00	$ 15,000
6	Bore with 24" Steel Casing	100	LF	$ 600.00	$ 60,000
7	Connect to Small Diameter Water Line	2	EA	$ 5,000.00	$ 10,000
8	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 753,440
Eng/Survey Fees (+/- %):	15		$ 114,000
Contingency (+/- %):	25		$ 196,560
Prop Acquisition:			$ -
Total:			$ 1,060,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**UPRR Central Reuse Line**	**Project:**	**54**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 20,000.00	$ 20,000
2	8" Water Line	5,370	LF	$ 90.00	$ 483,300
3	Trench Safety	5,220	LF	$ 2.00	$ 10,440
4	Seed, Fertilizer and Erosion Control	5,220	LF	$ 10.00	$ 52,200
5	8" Gate Valve	3	EA	$ 3,500.00	$ 10,500
6	Bore with 20" Steel Casing	150	LF	$ 550.00	$ 82,500
7	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
8	Hydrostatic Testing and Disinfection (Short)	2	LS	$ 10,000.00	$ 20,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 683,940
Eng/Survey Fees (+/- %):	15	$ 103,000
Contingency (+/- %):	25	$ 176,060
Prop Acquisition:		$ -
Total:		$ 960,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**Stonecrest Road Reuse Line**	**Project:**	**55**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 20,000.00	$ 20,000
2	8" Water Line	3,400	LF	$ 90.00	$ 306,000
3	Trench Safety	3,110	LF	$ 2.00	$ 6,220
4	Seed, Fertilizer and Erosion Control	3,110	LF	$ 10.00	$ 31,100
5	8" Gate Valve	2	EA	$ 3,500.00	$ 7,000
6	Bore with 20" Steel Casing	290	LF	$ 550.00	$ 159,500
7	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
8	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 544,820
Eng/Survey Fees (+/- %):	15		$ 82,000
Contingency (+/- %):	25		$ 145,180
Prop Acquisition:			$ -
Total:			$ 770,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**Canyon Falls North Reuse Line**	**Project:**	**56**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 20,000.00	$ 20,000
2	8" Water Line	3,520	LF	$ 90.00	$ 316,800
3	Trench Safety	3,420	LF	$ 2.00	$ 6,840
4	Seed, Fertilizer and Erosion Control	3,420	LF	$ 10.00	$ 34,200
5	8" Gate Valve	2	EA	$ 3,500.00	$ 7,000
6	Bore with 20" Steel Casing	100	LF	$ 550.00	$ 55,000
7	Concrete Pavement Repair	71	SY	$ 110.00	$ 7,822
8	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
9	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000
10	Combination 2" Air Release/Vacuum Valve & Assembly	2	EA	$ 10,000.00	$ 20,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 482,662
Eng/Survey Fees (+/- %):	15	$ 73,000
Contingency (+/- %):	25	$ 127,338
Prop Acquisition:		$ -
Total:		$ 680,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title: **East Reuse Lines** **Project:** **57**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 50,000.00	$ 50,000
2	8" Water Line	15,150	LF	$ 90.00	$ 1,363,500
3	Trench Safety	15,150	LF	$ 2.00	$ 30,300
4	Seed, Fertilizer and Erosion Control	15,150	LF	$ 10.00	$ 151,500
5	8" Gate Valve	8	EA	$ 3,500.00	$ 28,000
6	Connect to Small Diameter Water Line	3	EA	$ 5,000.00	$ 15,000
7	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 15,000.00	$ 15,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 1,653,300
Eng/Survey Fees (+/- %):	15		$ 248,000
Contingency (+/- %):	25		$ 416,700
Prop Acquisition:			$ -
Total:			$ 2,320,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title: **Reuse Central Connector** **Project:** **58**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 20,000.00	$ 20,000
2	8" Water Line	3,000	LF	$ 90.00	$ 270,000
3	Trench Safety	2,850	LF	$ 2.00	$ 5,700
4	Seed, Fertilizer and Erosion Control	2,900	LF	$ 10.00	$ 29,000
5	8" Gate Valve	2	EA	$ 3,500.00	$ 7,000
6	Bore with 20" Steel Casing	150	LF	$ 550.00	$ 82,500
7	Connect to Small Diameter Water Line	4	EA	$ 5,000.00	$ 20,000
8	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 444,200
Eng/Survey Fees (+/- %):	15	$ 67,000
Contingency (+/- %):	25	$ 115,800
Prop Acquisition:		$ -
Total:		$ 630,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title: **Denton Creek North Distribution Line** **Project:** **59**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 20,000.00	$ 20,000
2	8" Water Line	660	LF	$ 90.00	$ 59,400
3	12" Water Line	3,430	LF	$ 120.00	$ 411,600
4	Trench Safety	3,990	LF	$ 2.00	$ 7,980
5	Seed, Fertilizer and Erosion Control	3,990	LF	$ 10.00	$ 39,900
6	8" Gate Valve	1	EA	$ 3,500.00	$ 3,500
7	12" Gate Valve	2	EA	$ 5,000.00	$ 10,000
8	Bore with 20" Steel Casing	100	LF	$ 550.00	$ 55,000
9	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 622,380
Eng/Survey Fees (+/- %):	15	$ 94,000
Contingency (+/- %):	25	$ 157,620
Prop Acquisition:		$ -
Total:		$ 870,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title: **Denton Creek Spine Road Reuse Lines** **Project:** **60**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 30,000.00	$ 30,000
2	8" Water Line	7,130	LF	$ 90.00	$ 641,700
3	Trench Safety	7,130	LF	$ 2.00	$ 14,260
4	Seed, Fertilizer and Erosion Control	7,130	LF	$ 10.00	$ 71,300
5	8" Gate Valve	4	EA	$ 3,500.00	$ 14,000
6	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
7	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 786,260
Eng/Survey Fees (+/- %):	15		$ 118,000
Contingency (+/- %):	25		$ 203,740
Prop Acquisition:			$ -
Total:			$ 1,110,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**Hwy 377 North Reuse Line**	**Project:**	**61**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 10,000.00	$ 10,000
2	8" Water Line	2,680	LF	$ 90.00	$ 241,200
3	Trench Safety	2,680	LF	$ 2.00	$ 5,360
4	Seed, Fertilizer and Erosion Control	2,680	LF	$ 10.00	$ 26,800
5	8" Gate Valve	2	EA	$ 3,500.00	$ 7,000
6	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
7	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 305,360
Eng/Survey Fees (+/- %):	15		$ 46,000
Contingency (+/- %):	25		$ 84,640
Prop Acquisition:			$ -
Total:			$ 440,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**Dunham/Hayes Reuse Loop**	**Project:**	**62**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 20,000.00	$ 20,000
2	8" Water Line	4,970	LF	$ 90.00	$ 447,300
3	Trench Safety	4,970	LF	$ 2.00	$ 9,940
4	Seed, Fertilizer and Erosion Control	4,970	LF	$ 10.00	$ 49,700
5	8" Gate Valve	3	EA	$ 3,500.00	$ 10,500
6	Bore with 20" Steel Casing	150	EA	$ 550.00	$ 82,500
7	Connect to Small Diameter Water Line	2	EA	$ 5,000.00	$ 10,000
8	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 639,940
Eng/Survey Fees (+/- %):	15		$ 96,000
Contingency (+/- %):	25		$ 160,060
Prop Acquisition:			$ -
Total:			$ 900,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**Cowboy Lane Reuse Line**	**Project:**	**63**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 20,000.00	$ 20,000
2	8" Water Line	3,920	LF	$ 90.00	$ 352,800
3	Trench Safety	3,730	LF	$ 2.00	$ 7,460
4	Seed, Fertilizer and Erosion Control	3,730	LF	$ 10.00	$ 37,300
5	8" Gate Valve	2	EA	$ 3,500.00	$ 7,000
6	Bore with 20" Steel Casing	190	LF	$ 550.00	$ 104,500
7	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
8	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 544,060
Eng/Survey Fees (+/- %):	15		$ 82,000
Contingency (+/- %):	25		$ 145,940
Prop Acquisition:			$ -
Total:			$ 770,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000152**	**Checked By:**	**MAS**

Title:	**Southwest Reuse Line**	**Project:**	**64**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 20,000.00	$ 20,000
2	8" Water Line	4,270	LF	$ 90.00	$ 384,300
3	Trench Safety	4,270	LF	$ 2.00	$ 8,540
4	Seed, Fertilizer and Erosion Control	4,270	LF	$ 10.00	$ 42,700
5	8" Gate Valve	3	EA	$ 3,500.00	$ 10,500
6	Bore with 20" Steel Casing	150	LF	$ 550.00	$ 82,500
7	Connect to Small Diameter Water Line	1	EA	$ 5,000.00	$ 5,000
8	Hydrostatic Testing and Disinfection (Short)	1	LS	$ 10,000.00	$ 10,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 563,540
Eng/Survey Fees (+/- %):	15	$ 85,000
Contingency (+/- %):	25	$ 146,460
Prop Acquisition:		$ -
Total:		$ 800,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Lakeside Business District - Water Reuse Master Plan**	**Project:**	**65**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$ 126,663.00	$ 126,663
	Basis for Cost Projection:	**Total:**			$ 126,663
	Project Completed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Lakeside Reuse Phase I**	**Project:**	**66**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost	1	LS	$ 9,030,000.00	$ 9,030,000
	Basis for Cost Projection:	**Total:**			$ 9,030,000
	Alan Plummer 2018 Reuse Master Plan Report				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Lakeside Reuse Phase II**	**Project:**	**67**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost	1	LS	$ 5,450,000.00	$ 5,450,000
	Basis for Cost Projection:	**Total:**			$ 5,450,000
	Alan Plummer 2018 Reuse Master Plan Report				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/26/2020**
Project:	**Water Impact Fee Updates**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Lakeside Reuse Phase III**	**Project:**	**68**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost	1	LS	$ 5,630,000.00	$ 5,630,000
	Basis for Cost Projection:	**Total:**			$ 5,630,000
	Alan Plummer 2018 Reuse Master Plan Report				







THE TOWN OF FLOWER MOUND TEXAS

2020 Wastewater Impact Fee Update

Town of Flower Mound, Texas





Kimley»Horn

Town of Flower Mound, Texas

Wastewater Impact Fee Update Report for 2020

November 2020

Prepared for:
Town of Flower Mound

Prepared by:
Kimley»Horn
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Project Number: 061000201

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Introduction

Chapter 395 of the Texas Local Government Code describes the procedure Texas political subdivisions must follow in order to assess impact fees for new development. The first step required in updating impact fees is the development of Land Use Assumptions. These Land Use Assumptions, including both population and employment estimates, form the basis for the development of impact fee Capital Improvement Plans for roadway, wastewater, and water, facilities.

Reasonable future growth estimates are necessary in order to aid the Town of Flower Mound in establishing the need for capital improvements required to serve future development. In accordance with Chapter 395, Kimley-Horn and Associates, Inc. (Kimley-Horn) has compiled the information required to complete the update of the Land Use Assumptions using the following sources: the Town of Flower Mound Future Land Use Plan, previous land use assumptions used for recent thoroughfare plan modeling, consultation with Town staff, and building permit history. Included in this report are the growth projections based on assumptions pertaining to the type, location, quantity, and timing of various future land uses within the Town. In addition, this report also documents the methodology used in generating the growth and land use assumptions.

The Town of Flower Mound retained the services of Kimley-Horn for the purpose of updating the impact fees for wastewater system improvements required to serve new development. The existing fees were adopted by the Town in 2015 in accordance with Chapter 395 of the *Local Government Code* (impact fees), which requires a city imposing impact fees to update the land-use assumptions and capital improvements plan upon which the fees are calculated.

The purpose of this report is to satisfy the requirements of the law and provide the Town with an updated impact fee capital improvements plan and associated impact fees.

For convenience and reference, the following is excerpted from Chapter 395 of the code:

(a) The political subdivision shall use qualified professionals to prepare the capital improvements plan and to calculate the impact fee. The capital improvements plan must contain specific enumeration of the following items:

(1) a description of the existing capital improvements within the service area and the costs to upgrade, update, improve, expand, or replace the improvements to meet existing needs and usage and stricter safety, efficiency, environmental, or regulatory standards, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;

(2) an analysis of the total capacity, the level of current usage, and commitments for usage of capacity of the existing capital improvements, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;

(3) a description of all or the parts of the capital improvements or facility expansions and their costs necessitated by and attributable to new development in the service area based on the approved land use assumptions, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;

(4) a definitive table establishing the specific level or quantity of use, consumption, generation, or discharge of a service unit for each category of capital improvements or facility expansions and an

equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including but not limited to residential, commercial, and industrial;

(5) the total number of projected service units necessitated by and attributable to new development within the service area based on the approved land use assumptions and calculated in accordance with generally accepted engineering or planning criteria;

(6) the projected demand for capital improvements or facility expansions required by new service units projected over a reasonable period of time, not to exceed 10 years; and

(7) a plan for awarding:

(A) a credit for the portion of ad valorem tax and utility service revenues generated by new service unit 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 project cost of implementing the capital improvements plan.

The impact fee study includes information from the *2015 Wastewater Master Plan Update* completed by Kimley-Horn in May 2015 and from the *2020 Wastewater Model Update* completed by Kimley-Horn in 2020. The impact fees are based on recommended capital improvements and population growth projections outlined in the *2020 Wastewater Model Update.*

The study process was comprised of three tasks:

A. Land Use Assumptions

This task involved evaluating the existing and future land use plan and projecting future growth for the Town. Kimley-Horn worked with Town staff to determine future projections. The growth projections were then used to project wastewater flow throughout the Town.

B. Impact Fee Capital Improvements Plan

This task involved evaluation of the wastewater capital improvements plan outlined in the master plan and discussion with Town staff to identify projects that will be built in the 10-year planning window and meet the design criteria.

C. Impact Fee Analysis and Report

This task included calculating the additional service units, service unit equivalents, and credit reduction. These values were then used to determine the impact fee per service unit and the maximum assessable impact fee by meter size.

Executive Summary

This study was performed to update the Town of Flower Mound's Wastewater System Impact Fees. Wastewater system analysis and the Wastewater System Master Plan are important tools for facilitating orderly growth of the wastewater system and for providing adequate facilities that promote economic development in the Town of Flower Mound. The implementation of an impact fee is a way to shift a portion of the burden of paying for new facilities onto new development.

Elements of the wastewater system, including gravity pipes, force mains and lift station facilities, were evaluated against industry standards as outlined in the Design Criteria section of this report. Information related to the growth of the Town was developed based on the future land use plan and direction from Town staff.

Texas impact fee law (Chapter 395) requires that if a system has multiple service areas those areas must be evaluated individually to determine the appropriate fee for each service area. The Town has five wastewater service areas, Long Prairie, Lakeside, Denton Creek, Prairie Vista and Cross Timbers Conservation service area. The Cross Timbers Conservation area currently has no sewer service and there are no future plans to provide sewer to this area, thus there are no future system needs and no impact fees associated with this area.

The other four service areas were evaluated to determine the necessary wastewater system improvements required to serve the 10-year (2030) and ultimate system needs. Typically, infrastructure improvements are sized beyond the 10-year requirements; however, Texas' impact fee law (Chapter 395) only allows recovery of costs to serve the 10-year planning period. For example, the projected total cost to serve the ultimate system needs for all four impact fee eligible service areas will be $52,505,795. Of this, $17,767,572 is projected to be eligible for recovery through impact fees within the next 10 years. A portion of the remainder can be assessed as the planning window extends beyond 2030 and as the impact fees are updated in the future.

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." Therefore, the Town of Flower Mound defines a *service unit* as a unit of development that consumes the amount of water requiring a standard 5/8"x 3/4" meter. For a development that requires a different size meter, a service unit equivalent is established at a multiplier based on its capacity with respect to the 5/8"x 3/4" meter. The equivalency factor and associated impact fee by meter size is shown in Table 2.1.

Based on the Town's 10-year growth projections and the associated flow values, a total of 8,301 additional service units will need wastewater service by the year 2030. Table 2.2 shows the additional service unit breakdown by service area. Based on the additional service units and the recoverable capital improvements plans, the maximum impact fee per service unit was calculated for each service area. Table 2.1 shows the maximum allowable impact fees for the four service areas.

Table 2.1 Maximum Assessable Wastewater Impact Fee for Commonly Used Meters

Meter Size*	Maximum Continuous Operating Capacity (GPM)**	Service Unit Equivalent	Maximum Assessable Fee per Service Area ($)			
			Long Prairie	Lakeside	Denton Creek	Prairie Vista
5/8"x 3/4" PD	10	1	2,862	2,428	586	456
3/4" PD	15	1.5	4,293	3,642	879	684
1" PD	25	2.5	7,155	6,070	1,465	1,140
1 1/2" PD	50	5	14,310	12,140	2,930	2,280
2" PD	80	8	22,896	19,424	4,688	3,648
2" Compound	80	8	22,896	19,424	4,688	3,648
2" Turbine	160	16	45,792	38,848	9,376	7,296
3" Compound	175	17.5	50,085	42,490	10,255	7,980
3" Turbine	350	35	100,170	84,980	20,510	15,960
4" Compound	300	30	85,860	72,840	17,580	13,680
4" Turbine	650	65	186,030	157,820	38,090	29,640
6" Compound	675	67.5	193,185	163,890	39,555	30,780
6" Turbine	1400	140	400,680	339,920	82,040	63,840
8" Compound	900	90	257,580	218,520	52,740	41,040
8" Turbine	2,400	240	686,880	582,720	140,640	109,440
10" Turbine	3,500	350	1,001,700	849,800	205,100	159,600

*PD = Positive Displacement Meter (typical residential meter)
**Operating capacities obtained from American Water Works Associate (AWWA) C700-15, C701-15, and C702-19. Turbine and Compound meter flows are based on Class II (in-line) meters.

Table 2.2 Additional Service Units - 2030

Service Area	2030 Additional Service Units
Long Prairie	1,371
Lakeside	3,113
Denton Creek	2,372
Prairie Vista	1,445
TOTAL	8,301

Design Criteria

A. Sewer Trunk Lines (Interceptors)

The design criteria for sewer trunk lines or interceptors is based on the TCEQ requirements that meet peak wet weather design flows with no overflows while maintaining a minimum of 2 ft/sec cleaning velocity and a maximum of 8 ft/sec velocity.

B. Lift Stations Pumping Capacity

The design criteria for lift station pumping shall be to provide firm pumping capacity to meet the peak wet weather design flows. The firm pumping capacity is defined as the available total pumping capacity with the largest pump out of service.

C. Lift Station Wet Well Capacity

The design criteria for lift station wet wells are to provide adequate volumes to limit pump cycling to once every 10 minutes. Based on this criterion, the required operating volume for each pump can be calculated as

V = tQ/4 where,

t = Maximum pump cycling time = 10 minutes

Q = Lead pump discharge rate in gallons per minute (gpm)

V = Required wet well volume between pump start and stop elevation

D. Force Mains

The design criteria recommended for force mains is to meet the required pumping capacity of the lift station at a velocity less than 8 feet per second and a maximum discharge pressure of 100 psi and to allow a minimum of 2 feet per second scouring velocity during a single pump operation.

E. Wastewater Demand

The criteria used for projecting the wastewater demands for the four service areas were derived from the 2020 Wastewater Model Update.

For the Long Prairie and Lakeside service areas, residential and commercial flows were obtained for existing developments. As part of the Model Update, a large amount of data was collected throughout the Long Prairie and Lakeside service areas. This data was used to calibrate the existing and buildout demands in the updated model. For the Denton Creek and Prairie Vista service areas, projected build out flows were also calculated in the Model Update based on the future land use plan.

Impact Fee Capital Improvements Plan

Kimley-Horn assisted the Town with an update to the wastewater model. The update included an evaluation of existing and future demands along with the required infrastructure needed to serve future needs. The model update recommended system improvements to accommodate growth through the Town's build-out.

The Town's Wastewater system is divided into five service areas, Long Prairie, Lakeside, Denton Creek, Prairie Vista, and Cross Timbers Conservation District. Each of these areas must be evaluated individually to determine the maximum impact fee allowable for each service area.

The Long Prairie service area has twelve (12) projects which are determined eligible for recoverable cost through impact fee over the next 10 years. The total cost of these projects is $36,823,649. The projected total recoverable through impact fees is $6,601,303. After financing costs are added and the credit calculation is completed, $3,925,349 is recoverable through impact fees serving the 10-year system needs. These impact fee capital improvements are shown in Table 2.3.1 and illustrated in Figure 2.1.

The Lakeside service area has Seven (7) projects which are determined eligible for recoverable cost through impact fee over the next 10 years. The total cost of these projects is $25,921,362. The projected total recoverable through impact fees is $8,682,056. After financing costs are added and the credit calculation is completed, $7,558,414 is recoverable through impact fees serving the 10-year system needs. These impact fee capital improvements are shown in Table 2.3.2 and illustrated in Figure 2.1.

Both the Denton Creek and Prairie Vista service areas are to be served by the Trinity River Authority (TRA) through an agreement the Town has entered into with TRA. The Town will participate in cost sharing for infrastructure related to service for this part of town. A total average daily flow of 3.83 MGD is projected for these two service areas, 2.38 MGD for Denton Creek and 1.45 MGD for Prairie Vista. Denton Creek makes up approximately 62% of the total projected 3.83 MGD flow and Prairie Vista makes up the remaining 38%. The total cost associated with the TRA agreement is $8,860,048. The projected total recoverable through impact fees is $1,529,172 for Denton Creek and $955,041 for Prairie Vista. After financing costs are added and the credit calculation is completed, the recoverable amount through impact fees serving the 10-year system needs is $1,391,931 for Denton Creek and $659,634 for Prairie Vista. A detailed cost breakdown of the TRA agreement can be found in Table 2.3.4. The impact fee capital improvements are shown in Table 2.3.5 and illustrated in Figure 2.2.

The Cross Timbers Conservation District does not currently have sewer service, and there are no plans to provide service in the future. Therefore, this area has no wastewater capital improvement projects associated with it and thus no wastewater impact fee.

Table 2.3.1 Long Prairie
Wastewater Impact Fee Capital Improvements
Project Cost and 10-Year Recoverable Cost

Proj #	Description	2020 Required Capacity (Percent Utilized)	2030 Required Capacity (Percent Utilized)	2020-2030 Required Capacity (Percent Utilized)	Total Project Cost	2030 Project Recoverable Cost
1	Bakers Branch Collector Phase I (Gerault to Lower Timber Interceptor)	41%	60%	19%	$607,181	$115,364
2	Bakers Branch Wastewater Collector Phase II (Lexington Ave to Gerault Rd)	22%	45%	23%	$1,351,217	$310,780
3	Oak Street Lift Station Phase III and Force Main	49%	78%	29%	$5,833,654	$1,691,760
4	Oak Street Lift Station and Force Main Phase IV	74%	84%	10%	$3,400,000	$340,000
5	Upper Timber Creek Interceptor Phase I (FM 2499 to Morriss Rd and Buckthorn Ct to FM 1171)	42%	68%	26%	$1,525,872	$396,727
6	Upper Timber Creek Interceptor Phase III (FM 1171 to Hidden Forest Drive)	20%	57%	37%	$2,448,208	$905,837
7	Upper Timber Interceptor (College Parkway to Pecan Drive)	0%	31%	31%	$480,000	$148,800
8	Wellington Interceptor Improvements (Sections I and II)	27%	77%	50%	$1,345,254	$672,627
9	Riverwalk Collector (Morris Road to Windsor Drive)	0%	57%	57%	$530,000	$302,100
10	2001 Wastewater Treatment Plant Improvements[2]	-	-	-	$19,191,263	$1,606,309
11	2020 Wastewater Master Plan and Impact Fee Updates[1]	0%	100%	100%	$46,000	$46,000
12	Wastewater Treatment Plant Master Plan[3]	0%	100%	100%	$65,000	$65,000
	Total				$36,823,649	$6,601,303

[1]Master Plan and Impact Fee Update Costs were divided equally among the four (4) impact fee eligible service areas

[2]Refer to Table 2.3.3 for Service Area proportional cost breakdown

[3]WWTP Master Plan was divided proportionally between Long Prairie and Lakeside Service Areas

Table 2.3.2 Lakeside
Wastewater Impact Fee Capital Improvements
Project Cost and 10-Year Recoverable Cost

Proj #	Description	2020 Required Capacity (Percent Utilized)	2030 Required Capacity (Percent Utilized)	2020-2030 Required Capacity (Percent Utilized)	Total Project Cost	2030 Project Recoverable Cost
1	Lakeside Lift Station and Force Main	25%	100%	75%	$2,499,099	$1,874,324
2	Southside Force Main Extension	0%	75%	75%	$2,020,000	$1,515,000
3	Southside Pump Upgrade	0%	75%	75%	$530,000	$397,500
4	Southside Gravity Main Improvements	0%	77%	77%	$1,570,000	$1,208,900
5	2001 Wastewater Treatment Plant Improvements[2]	-	-	-	$19,191,263	$3,575,332
6	2020 Wastewater Master Plan and Impact Fee Updates[1]	0%	100%	100%	$46,000	$46,000
7	Wastewater Treatment Plant Master Plan[3]	0%	100%	100%	$65,000	$65,000
	Total				$25,921,362	$8,682,056

[1]Master Plan and Impact Fee Update Costs were divided equally among the four (4) impact fee eligible service areas

[2]Refer to Table 2.3.3 for Service Area proportional cost breakdown

[3]WWTP Master Plan was divided proportionally between Long Prairie and Lakeside Service Areas

In 2001 the Town's wastewater treatment plant was upgraded. The upgrade increased the plant capacity from 5 MGD to 10 MGD. The plant treats flow from both the Long Prairie and Lakeside service areas. Since both service areas flow to the plant, each service area may be proportioned a percentage of the improvement costs associated with the plant upgrade. Table 2.3.3 shows the total recoverable cost for the 2001 improvements and also shows what percentages of the recoverable cost may be applied to each service area. The percent for each service area is based on the service area's projected flow.

Table 2.3.3
Wastewater Treatment Plant
Project Cost and 10-Year Recoverable Cost

Description	2020 Required Capacity (Percent Utilization)	2030 Required Capacity (Percent Utilization)	2020-2030 Required Capacity (Percent Utilization)	Total Project Cost	2030 Projected Recoverable Cost
2001 Wastewater Treatment Plant Improvements	73%	100%	27%	$19,191,263	$5,181,641

Proportional Recoverable Costs for Long Prairie and Lakeside Service Areas		
Description	Percentage of Projected 2030 Growth	2030 WWTP Recoverable Cost
Long Prairie[1]	31%	$1,606,309
Lakeside[1]	69%	$3,575,332
Total		$5,181,641

[1]Percentage of proportional cost for Long Prairie and Lakeside Service areas is based on ratio of projected growth for each service area

Table 2.3.4
Trinity River Authority Contract Breakdown

Trinity River Authority - Denton Creek Wastewater Transportation System Contract		
Phase 1	$	4,275,352
Additional Town Reimbursable Cost	$	691,837
CDBG Funds Utilized for TRA Agreement	$	(135,595)
CDBG Fund Utilized for Engineering Services	$	(197,785)
Phase 2	$	4,226,239
Total	$	8,860,048

Proportional Total Cost per Service Area	
Denton Creek (62%)	$ 5,493,230
Prairie Vista (38%)	$ 3,366,818

Table 2.3.5
Denton Creek and Prairie Vista
Wastewater Impact Fee Capital Improvements
Project Cost and 10-Year Recoverable Cost

Denton Creek Service Area

Proj #	Description	2020 Required Capacity (Percent Utilized)	2030 Required Capacity (Percent Utilized)	2020-2030 Required Capacity (Percent Utilized)	Total Project Cost	2030 Project Recoverable Cost
1	TRA System Contract	8%	35%	27%	$5,493,230	$1,483,172
2	2020 Wastewater Master Plan and Impact Fee Updates[1]	0%	100%	100%	$46,000	$46,000
	Total				$5,539,230	$1,529,172

[1]Master Plan and Impact Fee Update Costs were divided equally among the four (4) impact fee eligible service areas

Prairie Vista Service Area

Proj #	Description	2020 Required Capacity (Percent Utilized)	2030 Required Capacity (Percent Utilized)	2020-2030 Required Capacity (Percent Utilized)	Total Project Cost	2030 Project Recoverable Cost
1	TRA System Contract	0%	27%	27%	$3,366,818	$909,041
2	2020 Wastewater Master Plan and Impact Fee Updates[1]	0%	100%	100%	$46,000	$46,000
	Total				$3,412,818	$955,041

[1]Master Plan and Impact Fee Update Costs were divided equally among the four (4) impact fee eligible service areas

LONG PRAIRIE SERVICE AREA

LAKESIDE SERVICE AREA

Grapevine Lake

FM 407
LONG PRAIRIE RD
VALLEY RIDGE BLVD
DIXON LN
KIRKPATRICK LN
WAKETON RD
MORRISS RD
BRIDLEWOOD BLVD
FM 1171
COLLEGE PKWY
KIRKPATRICK LN
GARDEN RIDGE RD
CROSS TIMBERS RD
BRUTON ORAND BLVD
QUAIL RUN
FM 2499
FIREWHEEL DR
OAK DR
FOREST VISTA DR
WICHITA TRL
SIMMONS RD
OLD SETTLERS RD
MCKAMY CREEK RD
FM 3040
SPINKS RD
INTERNATIONAL PKWY
GERAULT RD
LAKESIDE PKWY

12" 7
15" 7
15" 7
27" 5
15" 9
30" / 33" 5
27" 6
27" 3
27" 4
21" 8
18" 2
21" 1
12" 4
18" FM 2
18" FM 3
15" 4
5 10

TOWN OF FLOWER MOUND
Wastewater Impact Fee CIP
Long Prairie and Lakeside

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 2,800 5,600 Feet

Kimley»Horn

November 2020

Legend

- Wastewaster Treatment Plant
- Lakeside Basin Lift Station
- Long Prairie Basin Lift Station
- Wastewater Force Main
- Lakeside
- Long Prairie
- Service Area Boundary

Flower Mound Wastewater CIP Project List (Long Prairie)

1. Bakers Branch Collector Phase I (Gerault to Lower Timber Interceptor)
2. Bakers Branch Wastewater Collector Phase II (Lexington Ave to Gerault Rd)
3. Oak Street Lift Station Ph III and Force Main
4. Oak Street Lift Station and Force Main Phase IV
5. Upper Timber Creek Interceptor Phase I (FM 2499 to Morriss Rd and Buckthorn Ct to FM 1171)
6. Upper Timber Creek Interceptor Phase III (FM 1171 to Hidden Forest Drive)
7. Upper Timber Creek Interceptor (College Parkway to Pecan Drive)
8. Wellington Interceptor Improvements (Sections I and II)
9. Riverwalk Collector (Morriss Road to Windsor Drive)
10. 2001 Wastewater Treatment Plan Improvements

Flower Mound Wastewater CIP Project List (Lakeside)

1. Lakeside Lift Station and Force Main
2. Southside Force Main Extension
3. Southside Pump Upgrade
4. Southside Gravity Main Improvements
5. 2001 Wastewater Treatment Plan Improvements

DENTON CREEK BLVD

CANYON FALLS

SMOOT LN

DENTON CREEK
SERVICE AREA

HWY 377

PRAIRIE VISTA
SERVICE AREA

CROSS TIMBERS RD

DUNHAM RD

HAYNES RD

TOWN OF FLOWER MOUND
Wastewater Impact Fee CIP
Prairie Vista and Denton Creek
Figure 2.2

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 1,800 3,600 Feet

Kimley»Horn

November 2020

Legend

- TRA Wastewater Line
- TRA Service Area

Flower Mound Wastewater CIP Project List (Prairie Vista and Denton Creek)

1. TRA System Contract

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

A. Project Descriptions (By Service Area)

I. Long Prairie Service Area

1. Bakers Branch Wastewater Collector Phase I (Gerault Rd to Lower Timber Interceptor)
   In 2014 the Town installed approximately 1,750 LF of 21-inch wastewater main from Gerault Rd to the Lower Timber interceptor. This project replaced the existing 15-inch wastewater main to provide additional capacity for future demands.

Project Cost	$607,181
Recoverable Cost	$115,364

2. Bakers Branch Collector Phase II (Lexington Avenue to Gerault Road)
   Approximately 2,300 LF of 18-inch wastewater main was built to replace an existing 12-inch/15-inch wastewater main. The alignment begins at the intersection of Gerault Road and the east-west creek south of Lexington Avenue. The main parallels the southern fork of the creek, then parallels Strait Lane to Twilight Drive, then west approximately 1,050 LF before intersecting Lexington Avenue.

Project Cost	$1,351,217
Recoverable Cost	$310,780

3. Oak Street Phase III Lift Station and Force Main
   This project included the installation of approximately 12,700 LF of 30-inch Force Main from the Oak Street Lift Station to the WWTP. This force main parallels the existing 24-inch force main and provides additional capacity to the station.

Project Cost	$5,833,654
Recoverable Cost	$1,691,760

4. Oak Street Lift Station and Force Main Phase IV
   This project will include replacing one of the existing small 3400 gpm, 77 hp submersible pumps with a large 7000 gpm, 215 hp pump with variable frequency drive, upgrading the lift station's mechanical piping, and installing control valves for three large pumps.

Project Cost	$3,400,000
Recoverable Cost	$340,000

5. Upper Timber Creek Interceptor Phase I (FM 2499 to Morriss Rd and Buckthorn Ct to FM 1171)
   In 2013 the Town installed approximately 3,800 LF of 27-inch wastewater main from FM 2499 to Morriss Road. This project replaced the existing 15" wastewater main to provide additional capacity for future demands. As part of this project approximately 400 LF of 33-inch and 30-inch wastewater main was installed near Parker Square.

Project Cost	$1,525,872
Recoverable Cost	$396,727

6. Upper Timber Creek Interceptor Phase III (FM 1171 to Hidden Forest Drive)
   Approximately 1,900 LF of 27-inch wastewater main was installed to replace an existing 24-inch main from FM 1171 to Hidden Forest Drive. The main connects to the 33-inch main constructed as part of the Upper Timber Interceptor Phase I project just north of FM 1171.

Project Cost	$2,448,208
Recoverable Cost	$905,837

7. Upper Timber Interceptor (College Parkway to Pecan Drive)
   Approximately 1,240 LF of 15-inch wastewater main is proposed to replace the existing 12-inch wastewater line along Long Prairie Road south of College Parkway.

Project Cost	$480,000
Recoverable Cost	$148,800

8. Wellington Interceptor Improvements (Sections I and II)
   In 2012 and 2013 the Town upgraded two sections of the Wellington interceptor. Approximately 2,500 LF of 27-inch wastewater main was installed as part of Section I and 900 LF of 21-inch wastewater main was installed as part of Section II.

Project Cost	$1,345,254
Recoverable Cost	$672,627

9. Riverwalk Collector (Morris Road to Windsor Drive)
   Approximately 1,430 LF of 15-inch wastewater main is proposed running north and east from between FM 2499 and Morriss Road to Morriss Road north of the intersection with Eaton. Inflow and infiltration monitoring of the existing line is recommended prior to construction.

Project Cost	$530,000
Recoverable Cost	$302,100

10. 2001 Wastewater Treatment Plant Improvements
    In 2001, the Town upgraded the existing wastewater treatment plant (WWTP). The improvements increased the WWTP capacity from 5 MGD to 10 MGD. The WWTP is oversized to meet future system needs; therefore, a portion of the station cost is recoverable through impact fees. Since the WWTP serves both the Long Prairie and Lakeside Service Areas, a proportional amount of the recoverable cost is assigned to each service area based on project flow. (See Table 2.3.3)

Project Cost	$19,191,263
Recoverable Cost	$1,368,337

11. 2020 Wastewater Master Plan and Impact Fee Updates
    The major update to the Wastewater Master Plan was performed in 2020. Based on projected future infrastructure needs, a Wastewater Impact Fee Update was also completed to determine how much of the infrastructure costs may be recovered by the Town. The recoverable cost associated with the Wastewater Master Plan and Impact Fee Updates has been divided among the four service areas with impact fees.

Project Cost	$46,000
Recoverable Cost	$46,000

12. Wastewater Treatment Plant Master Plan

This project included an analysis of influent and treatment capacity of the Town's wastewater treatment plant and recommendations for future improvements at the existing treatment plant. This project cost was split evenly between the Long Prairie and Lakeside Service Areas.

Project Cost	$65,000
Recoverable Cost	$65,000

II. Lakeside Service area

1. Lakeside Lift Station and Force Main

In order to serve the projected flows for the Lakeside service area, the existing Lakeside lift station underwent improvements to add capacity to the station. This project involved the installation of two additional pumps to the existing lift station along with required electrical improvements. It also involved the installation of approximately 4,500 LF of a parallel 18-inch force main.

Project Cost	$2,499,099
Recoverable Cost	$1,874,324

2. Southside Force Main Extension

Approximately 4,600 LF of 18-inch force main is proposed to alleviate capacity constraints at the raw water lift station at the wastewater treatment plant. This force main will connect to the force main constructed as part of the Lakeside Lift Station and Force Main project and end at the Town's wastewater treatment plant.

Project Cost	$2,020,000
Recoverable Cost	$1,515,000

3. Southside Pump Upgrade

This project includes upsizing the two smaller pumps at the Southside Lift Station to add capacity to the lift station. Total projected cost for this project is $680,000, of that the Lakeside DFW development has committed to contribute $150,000 per the development agreement. This $150,000 is not included in the project cost below because it is not a recoverable cost.

Project Cost	$530,000
Recoverable Cost	$397,500

4. Southside Gravity Improvements

Approximately 2,970 LF 15-inch wastewater main and 620 LF 12-inch wastewater main is proposed to provide adequate capacity for density increases in the Lakeside area.

Project Cost	$1,570,000
Recoverable Cost	$1,208,900

5. 2001 Wastewater Treatment Plant Improvements

In 2001, the Town upgraded the existing wastewater treatment plant (WWTP). The improvements increased the WWTP capacity from 5 MGD to 10 MGD. The WWTP is oversized to meet future system needs; therefore, a portion of the station cost is recoverable through impact fees. Since the WWTP serves both the Long Prairie and Lakeside Service Areas, a proportional amount of the recoverable cost is assigned to each service area based on project flow. (See Table 2.3.3)

Project Cost	$19,191,263
Recoverable Cost	$3,045,653

6. 2020 Wastewater Master Plan and Impact Fee Updates

The major update to the Wastewater Master Plan was performed in 2020. Based on projected future infrastructure needs, a Wastewater Impact Fee Update was also completed to determine how much of the infrastructure costs may be recovered by the Town. The recoverable cost associated with the Wastewater Master Plan and Impact Fee Updates has been divided among the four service areas with impact fees.

Project Cost	$46,000
Recoverable Cost	$46,000

7. Wastewater Treatment Plant Master Plan

This project included an analysis of influent and treatment capacity of the Town's wastewater treatment plant and recommendations for future improvements at the existing treatment plant. This project cost was split evenly between the Long Prairie and Lakeside Service Areas.

Project Cost	$65,000
Recoverable Cost	$65,000

III. Denton Creek Service Area

1. TRA System Contract

The Town has entered into an agreement with the Trinity River Authority (TRA) for wastewater service for the western part of Flower Mound. As part of this agreement TRA will provide wastewater service for the area and in return Flower Mound has agreed to pay a portion of the cost associated with the infrastructure improvements necessary to serve this area. (See Table 2.3.4)

Project Cost	$5,493,230
Recoverable Cost	$1,483,172

2. 2020 Wastewater Master Plan and Impact Fee Updates

The major update to the Wastewater Master Plan was performed in 2020. Based on projected future infrastructure needs, a Wastewater Impact Fee Update was also completed to determine how much of the infrastructure costs may be recovered by the Town. The recoverable cost associated with the Wastewater Master Plan and Impact Fee Updates has been divided among the four service areas with impact fees.

Project Cost	$46,000
Recoverable Cost	$46,000

IV. Prairie Vista Service Area

1. TRA System Contract

The Town has entered into an agreement with the Trinity River Authority (TRA) for wastewater service for the western part of Flower Mound. As part of this agreement TRA will provide wastewater service for the area and in return Flower Mound has agreed to pay a portion of the cost associated with the infrastructure improvements necessary to serve this area. (See Table 2.3.4)

Project Cost	$3,366,818
Recoverable Cost	$909,041

2. 2020 Wastewater Master Plan and Impact Fee Updates

The major update to the Wastewater Master Plan was performed in 2020. Based on projected future infrastructure needs, a Wastewater Impact Fee Update was also completed to determine how much of the infrastructure costs may be recovered by the Town. The recoverable cost associated with the Wastewater Master Plan and Impact Fee Updates has been divided among the four service areas with impact fees.

Project Cost	$46,000
Recoverable Cost	$46,000

Wastewater Impact Fee Calculation

Chapter 395 of the Local Government Code 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.*" Therefore, the Town of Flower Mound defines a *service unit* based on historical wastewater usage over the past 10 years as compared to the estimated residential units. The residential unit is the development type that predominately uses a 5/8"x 3/4" meter. The measure of consumption per service unit is based on a 5/8"x 3/4" meter and the data shown in Table 2.4.

Table 2.4 Service Unit Consumption Calculation

Year	Population[1]	Residential Units (3.16 persons/unit) [1]	Wastewater Flow Average Day Flow (MGD)	Flow per Service Unit (GPD)
2010	58,521	20,752	5.49	265
20011	58,885	20,881	4.77	228
2012	59,177	20,985	4.60	219
2013	59,455	21,083	4.37	207
2014	60,480	21,447	4.18	195
2015	61,439	21,787	6.31	290
2016	62,504	22,165	6.31	285
2017	65,020	23,057	6.33	275
2018	66,178	23,467	5.78	246
2019	68,802	24,398	6.2	254
10-yr Average Flow per Service Unit				246
5-Yr Average Flow per Service Unit				270

Wastewater Usage Source: Town of Flower Mound
(1) Source: Land Use Assumptions, 2020
Populations and Flows are for Lakeside and Long Prairie Service Areas

The flows calculated above, 246 gpd per service unit, was considered a low estimate per the Town's recent upward trend in historical wastewater flows. In order to obtain a more accurate flow projection, the 5-year average flow of 270 gpm was used instead of the 10-year average flow.

Based on the Town's growth projections and the resulting wastewater flow projections, wastewater service will be required for 8,301 additional service units. Chapter 395 of the Local Government Code requires that service areas be evaluated individually. The Town of Flower Mound has four wastewater service areas subject to impact fees: Long Prairie, Lakeside, Denton Creek, and Prairie Vista. The growth projections must be evaluated individually for each service area, as well as the impact calculated for each service area. The calculation is as follows:

- A service unit, which is a unit of development that discharges approximately 270 gallons per day (GPD), is a typical residential connection that uses a 5/8"x 3/4" meter. Tables 2.5.1 through 2.5.4 outlines the future wastewater discharge projections and its relationship to the additional service units projected for the next 10-years.

Table 2.5.1 Long Prairie Service Area 10-year Additional Service Unit Calculation

Year	Average Day Flow (MGD)	Service Unit Demand (GPD)	Service Units
2020	6.99	270	25,903
2030	7.36	270	27,274
10-year Additional Service Units			1,371

Table 2.5.2 Lakeside Service Area 10-year Additional Service Unit Calculation

Year	Average Day Flow (MGD)	Service Unit Demand (GPD)	Service Units
2020	0.70	270	2,594
2030	1.54	270	5,707
10-year Additional Service Units			3,113

Table 2.5.3 Denton Creek Service Area 10-year Additional Service Unit Calculation

Year	Average Day Flow (MGD)	Service Unit Demand (GPD)	Service Units
2020	0.2	270	741
2030	0.84	270	3,113
10-year Additional Service Units			2,372

Table 2.5.4 Prairie Vista Service Area 10-year Additional Service Unit Calculation

Year	Average Day Flow (MGD)	Service Unit Demand (GPD)	Service Units
2020	0.00	270	0
2030	0.39	270	1,445
10-year Additional Service Units			1,445

Impact fee law allows for a credit calculation to credit back the development community based on the utility revenues or ad valorem taxes that are allocated for paying a portion of future capital improvements. The intent of this credit is to prevent the Town from double charging development for future capital improvements via impact fees and utility rates. If the city chooses not to do a financial analysis to determine the credit value, they are required by law to reduce the recoverable cost by 50 percent. The Town has chosen to perform a financial analysis. The maximum recoverable cost for impact fee or each service area is shown in Tables 2.6.1 through 2.6.4.

A breakdown of the 10-year recoverable costs and the associated impact fee for each service area per service unit is as follows:

Table 2.6.1 Long Prairie Service Area 10-year Recoverable Cost Breakdown

Recoverable Impact Fee CIP Costs	$6,601,303
Financing Costs	$1,443,740
Existing Fund Balance	($3,828,736)
Interest Earnings	($175,366)
Pre Credit Recoverable Cost for Impact Fee	$4,040,940
Credit for Utility Revenues	($115,591)
Maximum Recoverable Cost for Impact Fee	$3,925,349

Impact fee per service unit = 10-year recoverable costs / 10-year additional service units

Impact fee per service unit = $3,925,349 / 1,371

Impact fee per service unit = $2,862

Therefore, the maximum assessable impact fee for the Long Prairie Service area per service unit is $2,862.

Table 2.6.2 Lakeside Service Area 10-year Recoverable Cost Breakdown

Recoverable Impact Fee CIP Costs	$8,682,056
Financing Costs	$2,274,182
Existing Fund Balance	($1,619,658)
Interest Earnings	($218,048)
Pre Credit Recoverable Cost for Impact Fee	$9,118,532
Credit for Utility Revenues	($1,560,118)
Maximum Recoverable Cost for Impact Fee	$7,558,414

Impact fee per service unit = 10-year recoverable costs / 10-year additional service units

Impact fee per service unit = $7,558,414 / 3,113

Impact fee per service unit = $2,428

Therefore, the maximum assessable impact fee for the Lakeside Service area per service unit is $2,428.

Table 2.6.3 Denton Creek Service Area 10-year Recoverable Cost Breakdown

Recoverable Impact Fee CIP Costs	$1,529,172
Financing Costs	$283,822
Existing Fund Balance	$0
Interest Earnings	($13,437)
Pre Credit Recoverable Cost for Impact Fee	$1,799,557
Credit for Utility Revenues	($407,626)
Maximum Recoverable Cost for Impact Fee	$1,391,931

$$\text{Impact fee per service unit} = \frac{\text{10-year recoverable costs}}{\text{10-year additional service units}}$$

$$\text{Impact fee per service unit} = \frac{\$1,391,931}{2,372}$$

$$\text{Impact fee per service unit} = \$586$$

Therefore, the maximum assessable impact fee for the Denton Creek Service area per service unit is $586.

Table 2.6.4 Prairie Vista Service Area 10-year Recoverable Cost Breakdown

Recoverable Impact Fee CIP Costs	$955,041
Financing Costs	$173,955
Existing Fund Balance	($16,560)
Interest Earnings	($9,834)
Pre Credit Recoverable Cost for Impact Fee	$1,102,602
Credit for Utility Revenues	($442,969)
Maximum Recoverable Cost for Impact Fee	$659,634

$$\text{Impact fee per service unit} = \frac{\text{10-year recoverable costs}}{\text{10-year additional service units}}$$

$$\text{Impact fee per service unit} = \frac{\$659,634}{1,445}$$

$$\text{Impact fee per service unit} = \$456$$

Therefore, the maximum assessable impact fee for the Prairie Vista Service area per service unit is $456.

For a development that requires a different size meter, a service unit equivalent is established at a multiplier based on its capacity with respect to the 5/8"x 3/4" meter. The maximum impact fee that could be assessed for other meter sizes is based on the value shown on Table 2.7, Service Unit Equivalency Table for Commonly Used Meters.

Table 2.7 Service Unit Equivalency Table for Commonly Used Meters

Meter Size*	Maximum Continuous Operating Capacity (GPM)**	Service Unit Equivalent	Maximum Assessable Fee per Service Area ($)			
			Long Prairie	Lakeside	Denton Creek	Prairie Vista
5/8"x 3/4" PD	10	1	2,862	2,428	586	456
3/4" PD	15	1.5	4,293	3,642	879	684
1" PD	25	2.5	7,155	6,070	1,465	1,140
1 1/2" PD	50	5	14,310	12,140	2,930	2,280
2" PD	80	8	22,896	19,424	4,688	3,648
2" Compound	80	8	22,896	19,424	4,688	3,648
2" Turbine	160	16	45,792	38,848	9,376	7,296
3" Compound	175	17.5	50,085	42,490	10,255	7,980
3" Turbine	350	35	100,170	84,980	20,510	15,960
4" Compound	300	30	85,860	72,840	17,580	13,680
4" Turbine	650	65	186,030	157,820	38,090	29,640
6" Compound	675	67.5	193,185	163,890	39,555	30,780
6" Turbine	1400	140	400,680	339,920	82,040	63,840
8" Compound	900	90	257,580	218,520	52,740	41,040
8" Turbine	2,400	240	686,880	582,720	140,640	109,440
10" Turbine	3,500	350	1,001,700	849,800	205,100	159,600

* PD = Positive Displacement Meter (typical residential meter)

** Operating capacities obtained from American Water Works Associate (AWWA) C700-15, C701-15, and C702-15. Turbine and Compound meter flows are based on Class II (in-line) meters.

Appendix A: Plan for Awarding Wastewater Impact Fee Credit

SUMMARY OF WASTEWATER IMPACT FEE DETERMINATION

Denton Creek

Recoverable Impact Fee CIP Costs	$	1,529,172	Per Kimley-Horn Impact Fee Update
Financing Costs		283,822	See Detail Below
Existing Fund Balance		-	Page 1 of Appendix B - Denton Creek
Interest Earnings		(13,437)	Page 4 of Appendix B - Denton Creek
Pre Credit Recoverable Cost for Impact Fee	$	1,799,557	Sum of Above
Credit for Utility Revenues		(407,626)	Page 7 of Appendix B - Denton Creek
Maximum Recoverable Cost for Impact Fee	**$**	**1,391,931**	

Recoverable Impact Fee CIP Costs:

Represents the portion of capital improvement costs that are eligible for funding through impact fees.

Financing Costs:

New Annual Debt Service	$	-	(Page 3 of Appendix B - Denton Creek)
Existing Annual Debt Service		1,121,438	(Page 3 of Appendix B - Denton Creek)
Principal Component		(837,616)	(Page 1 of Appendix B - Denton Creek)
Financing Costs	$	283,822	

Existing Fund Balance:

Represents impact fee revenue collected but not yet expended. Some projects that are included in the 2020 Impact Fee Update were also included in the previous Impact Fee Updates. 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.

Interest Earnings:

Represents the interest earned on cash flows. Assumes a 0.438% annual interest rate based on the Town's current annual return as of 06/30/2020. 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.

Pre Credit Recoverable Cost for Impact Fee:

Represents Recoverable Impact Fee CIP Costs plus Financing Costs less Interest Earnings.

Credit for Utility Revenues:

In 2001, the Impact Fee Statute 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 utility 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 other revenue sources.

Maximum Recoverable Cost for Impact Fee:

Represents Pre Credit Recoverable Cost for Impact Fee less Credit for Utility Service Revenues. This is the maximum cost that can be recovered through impact fees.

SUMMARY OF WASTEWATER IMPACT FEE DETERMINATION

Lakeside

Recoverable Impact Fee CIP Costs	$	8,682,056	Per Kimley-Horn Impact Fee Update
Financing Costs		2,274,182	See Detail Below
Existing Fund Balance		(1,619,658)	Page 1 of Appendix B - Lakeside
Interest Earnings		(218,048)	Page 4 of Appendix B - Lakeside
Pre Credit Recoverable Cost for Impact Fee	$	9,118,532	Sum of Above
Credit for Utility Revenues		(1,560,118)	Page 7 of Appendix B - Lakeside
Maximum Recoverable Cost for Impact Fee	**$**	**7,558,414**	

Recoverable Impact Fee CIP Costs:

Represents the portion of capital improvement costs that are eligible for funding through impact fees.

Financing Costs:

New Annual Debt Service	$	2,774,714	(Page 3 of Appendix B - Lakeside)
Existing Annual Debt Service		5,472,147	(Page 3 of Appendix B - Lakeside)
Principal Component		(5,972,678)	(Page 1 of Appendix B - Lakeside)
Financing Costs	$	2,274,182	

Existing Fund Balance:

Represents impact fee revenue collected but not yet expended. Some projects that are included in the 2020 Impact Fee Update were also included in the previous Impact Fee Updates. 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.

Interest Earnings:

Represents the interest earned on cash flows. Assumes a 0.438% annual interest rate based on the Town's current annual return as of 06/30/2020. 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.

Pre Credit Recoverable Cost for Impact Fee:

Represents Recoverable Impact Fee CIP Costs plus Financing Costs less Interest Earnings.

Credit for Utility Revenues:

In 2001, the Impact Fee Statute 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 utility 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 other revenue sources.

Maximum Recoverable Cost for Impact Fee:

Represents Pre Credit Recoverable Cost for Impact Fee less Credit for Utility Service Revenues. This is the maximum cost that can be recovered through impact fees.

SUMMARY OF WASTEWATER IMPACT FEE DETERMINATION

Long Prairie

Recoverable Impact Fee CIP Costs	$	6,601,303	Per Kimley-Horn Impact Fee Update
Financing Costs		1,443,740	See Detail Below
Existing Fund Balance		(3,828,736)	Page 1 of Appendix B - Long Prairie
Interest Earnings		(175,366)	Page 4 of Appendix B - Long Prairie
Pre Credit Recoverable Cost for Impact Fee	$	4,040,940	Sum of Above
Credit for Utility Revenues		(115,591)	Page 7 of Appendix B - Long Prairie
Maximum Recoverable Cost for Impact Fee	**$**	**3,925,349**	

Recoverable Impact Fee CIP Costs:

Represents the portion of capital improvement costs that are eligible for funding through impact fees.

Financing Costs:

New Annual Debt Service	$	218,979	(Page 3 of Appendix B - Long Prairie)
Existing Annual Debt Service		6,711,356	(Page 3 of Appendix B - Long Prairie)
Principal Component		(5,486,595)	(Page 1 of Appendix B - Long Prairie)
Financing Costs	$	1,443,740	

Existing Fund Balance:

Represents impact fee revenue collected but not yet expended. Some projects that are included in the 2020 Impact Fee Update were also included in the previous Impact Fee Updates. 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.

Interest Earnings:

Represents the interest earned on cash flows. Assumes a 0.438% annual interest rate based on the Town's current annual return as of 06/30/2020. 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.

Pre Credit Recoverable Cost for Impact Fee:

Represents Recoverable Impact Fee CIP Costs plus Financing Costs less Interest Earnings.

Credit for Utility Revenues:

In 2001, the Impact Fee Statute 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 utility 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 other revenue sources.

Maximum Recoverable Cost for Impact Fee:

Represents Pre Credit Recoverable Cost for Impact Fee less Credit for Utility Service Revenues. This is the maximum cost that can be recovered through impact fees.

SUMMARY OF WASTEWATER IMPACT FEE DETERMINATION

Prairie Vista

Recoverable Impact Fee CIP Costs	$	955,041	Per Kimley-Horn Impact Fee Update
Financing Costs		173,955	See Detail Below
Existing Fund Balance		(16,560)	Page 1 of Appendix B - Prairie Vista
Interest Earnings		(9,834)	Page 4 of Appendix B - Prairie Vista
Pre Credit Recoverable Cost for Impact Fee	$	1,102,602	Sum of Above
Credit for Utility Revenues		(442,969)	Page 7 of Appendix B - Prairie Vista
Maximum Recoverable Cost for Impact Fee	**$**	**659,634**	

Recoverable Impact Fee CIP Costs:

Represents the portion of capital improvement costs that are eligible for funding through impact fees.

Financing Costs:

New Annual Debt Service	$	-	(Page 3 of Appendix B - Prairie Vista)
Existing Annual Debt Service		687,333	(Page 3 of Appendix B - Prairie Vista)
Principal Component		(513,378)	(Page 1 of Appendix B - Prairie Vista)
Financing Costs	$	173,955	

Existing Fund Balance:

Represents impact fee revenue collected but not yet expended. Some projects that are included in the 2020 Impact Fee Update were also included in the previous Impact Fee Updates. 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.

Interest Earnings:

Represents the interest earned on cash flows. Assumes a 0.438% annual interest rate based on the Town's current annual return as of 06/30/2020. 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.

Pre Credit Recoverable Cost for Impact Fee:

Represents Recoverable Impact Fee CIP Costs plus Financing Costs less Interest Earnings.

Credit for Utility Revenues:

In 2001, the Impact Fee Statute 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 utility 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 other revenue sources.

Maximum Recoverable Cost for Impact Fee:

Represents Pre Credit Recoverable Cost for Impact Fee less Credit for Utility Service Revenues. This is the maximum cost that can be recovered through impact fees.

Appendix B: Impact Fee Calculation Assumptions

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Calculation Assumptions

Appendix B - Impact Fee Calculation Assumptions

Prairie Vista

I. General Assumptions

Annual Interest Rate on Deposits [1]	0.438%
Annual Service Unit Growth [2]	145
Available Existing Fund Balance [3]	16,560

Portion of Projects Funded by Existing Debt [4]	$ 513,378
Non-debt Funded Project Cost [5]	441,663
Project Cost Funded Through New Debt [6]	-
Total Recoverable Project Cost [7]	$ 955,041

II. New Debt Issues Assumptions

Year	Principal [8]	Interest [9]	Term
1	$ -	4.00%	20
2	-	4.00%	20
3	-	4.00%	20
4	-	4.00%	20
5	-	4.00%	20
6	-	4.00%	20
7	-	4.00%	20
8	-	4.00%	20
9	-	4.00%	20
10	-	4.00%	20
Total	$ -		

III. Capital Expenditure Assumptions

Year	Annual Capital Expenditures [10]
1	$ 44,166
2	44,166
3	44,166
4	44,166
5	44,166
6	44,166
7	44,166
8	44,166
9	44,166
10	44,166
Total	$ 441,663

(1) Town's current earnings rate as of June 30, 2020
(2) Per Kimley-Horn Impact Fee Update, includes 1,036 of prepaid service units over the 10-year period
(3) Balances for this service area available as of July 31, 2020
(4) Per discussions with Town staff and Town files
(5) Per discussions with Town staff and Town files
(6) Per discussions with Town staff and Town files
(7) Per Kimley-Horn Impact Fee Update
(8) Assumes no new debt issued for projects
(9) Estimated interest cost provided by Town's Financial Advisor
(10) Assumes new debt proceeds expended over a 2-year timeframe with Year 10 bond proceeds spent in one year; Non-debt funded capital expenditures made in equal annual amounts

Town of Flower Mound 2020 Wastewater Impact Fee Update

Debt Service and Expenses Summary
Appendix B - Impact Fee Calculation Assumptions
Prairie Vista

I. New Debt Service Detail

Year	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6	Series 7	Series 8	Series 9	Series 10	Total Annual New Debt Service [1]
1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	$ -
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Town of Flower Mound 2020 Wastewater Impact Fee Update

Debt Service and Expenses Summary
Appendix B - Impact Fee Calculation Assumptions
Prairie Vista

II. Summary of Annual Expenses

Year	New Annual Debt Service[1]	Annual Capital Expenditures[2]	Annual Bond Proceeds[2]	Existing Annual Debt Service[3]	Annual Credit[4]	Total Expense
1	$ -	$ 44,166	$ -	$ 56,104	$ (56,104)	44,166
2	-	44,166	-	57,694	(57,694)	44,166
3	-	44,166	-	44,146	(44,146)	44,166
4	-	44,166	-	44,173	(44,173)	44,166
5	-	44,166	-	44,182	(44,182)	44,166
6	-	44,166	-	41,886	(41,886)	44,166
7	-	44,166	-	41,376	(41,376)	44,166
8	-	44,166	-	40,717	(40,717)	44,166
9	-	44,166	-	37,345	(37,345)	44,166
10	-	44,166	-	35,347	(35,347)	44,166
11	-	-	-	35,331	-	35,331
12	-	-	-	34,493	-	34,493
13	-	-	-	33,157	-	33,157
14	-	-	-	30,729	-	30,729
15	-	-	-	27,376	-	27,376
16	-	-	-	22,079	-	22,079
17	-	-	-	19,067	-	19,067
18	-	-	-	15,804	-	15,804
19	-	-	-	12,468	-	12,468
20	-	-	-	10,929	-	10,929
21	-	-	-	2,933	-	2,933
22	-	-	-	-	-	-
23	-	-	-	-	-	-
24	-	-	-	-	-	-
25	-	-	-	-	-	-
26	-	-	-	-	-	-
27	-	-	-	-	-	-
28	-	-	-	-	-	-
29	-	-	-	-	-	-
	$ -	$ 441,663	$ -	$ 687,333	$ (442,969)	$ 686,028

(1) Appendix B - Denton Creek, Page 2; assumes no new debt issued for projects
(2) Appendix B - Denton Creek, Page 1
(3) Eligible Outstanding Debt Funded Projects Percent of Utility Self-Supported Debt Issuance times total outstanding utility self-supported annual debt service
(4) Appendix B - Denton Creek, Page 7

Town of Flower Mound 2020 Wastewater Impact Fee Update

Revenue Test

Appendix B - Impact Fee Calculation Assumptions

Prairie Vista

Year	Impact Fee [1]	Service Units	Impact Fee Revenue [1]	Annual Expenses	Sub-Total	Accumulated Interest	Estimated Fund Balance
Initial							$ 16,560
1	$ 456	145	$ 65,963	$ 44,166	$ 21,797	120	38,477
2	456	145	65,963	44,166	21,797	216	60,491
3	456	145	65,963	44,166	21,797	313	82,600
4	456	145	65,963	44,166	21,797	410	104,807
5	456	145	65,963	44,166	21,797	507	127,111
6	456	145	65,963	44,166	21,797	604	149,512
7	456	145	65,963	44,166	21,797	703	172,012
8	456	145	65,963	44,166	21,797	801	194,610
9	456	145	65,963	44,166	21,797	900	217,307
10	456	145	65,963	44,166	21,797	1,000	240,104
11	-	-	-	35,331	(35,331)	974	205,748
12	-	-	-	34,493	(34,493)	826	172,080
13	-	-	-	33,157	(33,157)	681	139,605
14	-	-	-	30,729	(30,729)	544	109,420
15	-	-	-	27,376	(27,376)	419	82,463
16	-	-	-	22,079	(22,079)	313	60,697
17	-	-	-	19,067	(19,067)	224	41,854
18	-	-	-	15,804	(15,804)	149	26,199
19	-	-	-	12,468	(12,468)	87	13,819
20	-	-	-	10,929	(10,929)	37	2,926
21	-	-	-	2,933	(2,933)	6	(0)
22	-	-	-	-	-	(0)	(0)
23	-	-	-	-	-	(0)	(0)
24	-	-	-	-	-	(0)	(0)
25	-	-	-	-	-	(0)	(0)
26	-	-	-	-	-	(0)	(0)
27	-	-	-	-	-	(0)	(0)
28	-	-	-	-	-	(0)	(0)
29	-	-	-	-	-	(0)	-
			659,634	686,028		9,834	

(1) Actual revenues could be closer to $190,000 due to prepaid service units.

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Calculation

Appendix B - Impact Fee Calculation Assumptions

Prairie Vista

Year	Number of Years to End of Period	Future Value Escalation Interest Rate Factor	Future Value Escalation Recovery Fee Factor	Annual Service Units Actual	Annual Service Units Escalated	Annual Expense Actual	Annual Expense Escalated
Prev							
1	29	1.1326	1.0000	145	164	44,166	50,025
2	28	1.1277	1.0000	145	163	44,166	49,807
3	27	1.1228	1.0000	145	162	44,166	49,590
4	26	1.1179	1.0000	145	162	44,166	49,373
5	25	1.1130	1.0000	145	161	44,166	49,158
6	24	1.1082	1.0000	145	160	44,166	48,944
7	23	1.1033	1.0000	145	159	44,166	48,730
8	22	1.0985	1.0000	145	159	44,166	48,518
9	21	1.0937	1.0000	145	158	44,166	48,306
10	20	1.0890	1.0000	145	157	44,166	48,095
11	19	1.0842	1.0000	-	-	35,331	38,306
12	18	1.0795	1.0000	-	-	34,493	37,235
13	17	1.0748	1.0000	-	-	33,157	35,636
14	16	1.0701	1.0000	-	-	30,729	32,883
15	15	1.0654	1.0000	-	-	27,376	29,167
16	14	1.0608	1.0000	-	-	22,079	23,421
17	13	1.0562	1.0000	-	-	19,067	20,138
18	12	1.0515	1.0000	-	-	15,804	16,618
19	11	1.0470	1.0000	-	-	12,468	13,053
20	10	1.0424	1.0000	-	-	10,929	11,392
21	9	1.0378	1.0000	-	-	2,933	3,044
22	8	1.0333	1.0000	-	-	-	-
23	7	1.0288	1.0000	-	-	-	-
24	6	1.0243	1.0000	-	-	-	-
25	5	1.0199	1.0000	-	-	-	-
26	4	1.0154	1.0000	-	-	-	-
27	3	1.0110	1.0000	-	-	-	-
28	2	1.0066	1.0000	-	-	-	-
29	1	1.0022	1.0000	-	-	-	-
					1,605	686,028	751,439

Total Escalated Expense for Entire Period	$	751,439
Total Escalated Service Units		1,605
Impact Fee for Denton Creek	**$**	**456**

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Project Funding

Appendix B - Impact Fee Calculation Assumptions

Prairie Vista

Impact Fee Project Name[1]	Impact Fee Project No.[1]	Total Project Cost [1]	Percent Recoverable [1]	Impact Fee Recoverable Cost [1]	Debt Funded [2] Existing	Debt Funded [2] Proposed	Non-Debt Funded[2]	Impact Fee Recoverable Cost
Wastewater Capital Improvements								
TRA System Contract	1	$ 3,366,818	27.0%	$ 909,041	$ 513,378	$ -	$ 395,663	$ 909,041
2020 Wastewater Master Plan and Impact Fee Updates	2	46,000	100.0%	46,000	-	-	46,000	46,000
Total		**$ 3,412,818**		**$ 955,041**	**$ 513,378**	**$ -**	**$ 441,663**	**$ 955,041**

(1) Per Kimley-Horn Impact Fee Update

(2) Based on Contributions by Project and Planned Future Debt Financing

Town of Flower Mound 2020 Wastewater Impact Fee Update

Credit Determination

Appendix B - Impact Fee Calculation Assumptions

Prairie Vista

2020 Service Units [1]	-	
Ten Year Growth in Service Units [1]	1,445	
	10	years
Annual Growth in Service Units	145	

	1	2	3	4	5	6	7	8	9	10	Total
Total Debt Service Eligible for Impact Fees	$ 56,104	$ 57,694	$ 44,146	$ 44,173	$ 44,182	$ 41,886	$ 41,376	$ 40,717	$ 37,345	$ 35,347	$ 442,969
2020 Service Units Plus Prairie Vista Growth	145	289	434	578	723	867	1,012	1,156	1,301	1,445	
Total Debt Service Eligible for Impact Fees per Service Unit	$ 388.26	$ 199.63	$ 101.84	$ 76.42	$ 61.15	$ 48.31	$ 40.91	$ 35.22	$ 28.72	$ 24.46	
Annual Service Unit Growth in Prairie Vista (Cumulative)	145	289	434	578	723	867	1,012	1,156	1,301	1,445	
Annual Wastewater Utility Revenue Generated by Additional Service Units for Debt Service Eligible for Impact Fees	$ 56,104	$ 57,694	$ 44,146	$ 44,173	$ 44,182	$ 41,886	$ 41,376	$ 40,717	$ 37,345	$ 35,347	$ 442,969

Credit Amount **$ 442,969**

(1) Per Kimley-Horn Impact Fee Update, which includes 1,036 of prepaid service units per Town staff

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Calculation Assumptions

Appendix B - Impact Fee Calculation Assumptions

Lakeside

I. General Assumptions

Annual Interest Rate on Deposits [1]	0.438%
Annual Service Unit Growth [2]	311
Available Existing Fund Balance [3]	1,619,658
Portion of Projects Funded by Existing Debt [4]	$ 4,087,215
Non-debt Funded Project Cost [5]	2,709,378
Project Cost Funded Through New Debt [6]	1,885,463
Total Recoverable Project Cost [7]	$ 8,682,056

II. New Debt Issues Assumptions

Year	Principal [8]	Interest [9]	Term
1	$ -	4.00%	20
2	-	4.00%	20
3	-	4.00%	20
4	986,538	4.00%	20
5	-	4.00%	20
6	179,785	4.00%	20
7	179,785	4.00%	20
8	179,785	4.00%	20
9	179,785	4.00%	20
10	179,785	4.00%	20
Total	$ 1,885,463		

III. Capital Expenditure Assumptions

Year	Annual Capital Expenditures [10]
1	$ 270,938
2	270,938
3	270,938
4	764,207
5	764,207
6	360,830
7	450,723
8	450,723
9	450,723
10	540,615
Total	$ 4,594,841

(1) Town's current earnings rate as of June 30, 2020
(2) Per Kimley-Horn Impact Fee Update
(3) Balances for this service area available as of July 31, 2020
(4) Per discussions with Town staff and Town files
(5) Per discussions with Town staff and Town files
(6) Per discussions with Town staff and Town files
(7) Per Kimley-Horn Impact Fee Update
(8) Assumes new debt issued in equal annual amounts, unless specified in Town CIP
(9) Estimated interest cost provided by Town's Financial Advisor
(10) Assumes new debt proceeds expended over a 2-year timeframe with Year 10 bond proceeds spent in one year; Non-debt funded capital expenditures made in equal annual amounts

Town of Flower Mound 2020 Wastewater Impact Fee Update

Debt Service and Expense Summary
Appendix B - Impact Fee Calculation Assumptions
Lakeside

I. New Debt Service Detail

Year	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6	Series 7	Series 8	Series 9	Series 10	Total Annual New Debt Service
1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	72,591	-	-	-	-	-	-	72,591
5	-	-	-	72,591	-	-	-	-	-	-	72,591
6	-	-	-	72,591	-	13,229	-	-	-	-	85,820
7	-	-	-	72,591	-	13,229	13,229	-	-	-	99,049
8	-	-	-	72,591	-	13,229	13,229	13,229	-	-	112,278
9	-	-	-	72,591	-	13,229	13,229	13,229	13,229	-	125,507
10	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
11	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
12	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
13	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
14	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
15	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
16	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
17	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
18	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
19	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
20	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
21	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
22	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
23	-	-	-	72,591	-	13,229	13,229	13,229	13,229	13,229	138,736
24	-	-	-	-	-	13,229	13,229	13,229	13,229	13,229	66,145
25	-	-	-	-	-	13,229	13,229	13,229	13,229	13,229	66,145
26	-	-	-	-	-	-	13,229	13,229	13,229	13,229	52,916
27	-	-	-	-	-	-	-	13,229	13,229	13,229	39,687
28	-	-	-	-	-	-	-	-	13,229	13,229	26,458
29	-	-	-	-	-	-	-	-	-	13,229	$ 13,229
	$ -	$ -	$ -	$ 1,451,823	$ -	$ 264,578	$ 264,578	$ 264,578	$ 264,578	$ 264,578	$ 2,774,714

Town of Flower Mound 2020 Wastewater Impact Fee Update

Debt Service and Expense Summary
Appendix B - Impact Fee Calculation Assumptions
Lakeside

II. Summary of Annual Expenses

Year	New Annual Debt Service[1]	Annual Capital Expenditures[2]	Annual Bond Proceeds[2]	Existing Annual Debt Service[3]	Annual Credit[4]	Total Expense
1	$ -	$ 270,938	$ -	$ 446,666	$ (47,857)	669,747
2	-	270,938	-	459,326	(88,902)	641,362
3	-	270,938	-	351,463	(93,034)	529,366
4	72,591	764,207	(986,538)	351,681	(137,602)	64,340
5	72,591	764,207	-	351,752	(159,128)	1,029,422
6	85,820	360,830	(179,785)	333,469	(175,516)	424,819
7	99,049	450,723	(179,785)	329,412	(195,601)	503,797
8	112,278	450,723	(179,785)	324,162	(213,766)	493,612
9	125,507	450,723	(179,785)	297,319	(219,544)	474,220
10	138,736	540,615	(179,785)	281,408	(229,169)	551,805
11	138,736	-	-	281,281	-	420,017
12	138,736	-	-	274,612	-	413,348
13	138,736	-	-	263,977	-	402,712
14	138,736	-	-	244,646	-	383,382
15	138,736	-	-	217,951	-	356,687
16	138,736	-	-	175,782	-	314,518
17	138,736	-	-	151,801	-	290,536
18	138,736	-	-	125,821	-	264,557
19	138,736	-	-	99,260	-	237,995
20	138,736	-	-	87,011	-	225,746
21	138,736	-	-	23,347	-	162,083
22	138,736	-	-	-	-	138,736
23	138,736	-	-	-	-	138,736
24	66,145	-	-	-	-	66,145
25	66,145	-	-	-	-	66,145
26	52,916	-	-	-	-	52,916
27	39,687	-	-	-	-	39,687
28	26,458	-	-	-	-	26,458
29	13,229	-	-	-	-	13,229
	$ 2,774,714	$ 4,594,841	$ (1,885,463)	$ 5,472,147	$ (1,560,118)	$ 9,396,120

(1) Appendix B - Denton Creek, Page 2
(2) Appendix B - Denton Creek, Page 1
(3) Eligible Outstanding Debt Funded Projects Percent of Utility Self-Supported Debt Issuance times total outstanding utility self-supported annual debt service
(4) Appendix B - Denton Creek, Page 7

Town of Flower Mound 2020 Wastewater Impact Fee Update

Revenue Test

Appendix B - Impact Fee Calculation Assumptions

Lakeside

Year	Impact Fee	Service Units	Impact Fee Revenue	Annual Expenses	Sub-Total	Accumulated Interest	Estimated Fund Balance
Initial							$ 1,619,658
1	$ 2,428	311	$ 755,841	$ 669,747	$ 86,095	7,283	1,713,035
2	2,428	311	755,841	641,362	114,479	7,754	1,835,268
3	2,428	311	755,841	529,366	226,475	8,534	2,070,278
4	2,428	311	755,841	64,340	691,501	10,582	2,772,361
5	2,428	311	755,841	1,029,422	(273,580)	11,544	2,510,325
6	2,428	311	755,841	424,819	331,023	11,720	2,853,068
7	2,428	311	755,841	503,797	252,044	13,048	3,118,160
8	2,428	311	755,841	493,612	262,230	14,232	3,394,622
9	2,428	311	755,841	474,220	281,621	15,485	3,691,729
10	2,428	311	755,841	551,805	204,036	16,617	3,912,381
11	-	-	-	420,017	(420,017)	16,216	3,508,580
12	-	-	-	413,348	(413,348)	14,462	3,109,695
13	-	-	-	402,712	(402,712)	12,739	2,719,721
14	-	-	-	383,382	(383,382)	11,073	2,347,412
15	-	-	-	356,687	(356,687)	9,501	2,000,226
16	-	-	-	314,518	(314,518)	8,072	1,693,780
17	-	-	-	290,536	(290,536)	6,782	1,410,027
18	-	-	-	264,557	(264,557)	5,597	1,151,066
19	-	-	-	237,995	(237,995)	4,520	917,591
20	-	-	-	225,746	(225,746)	3,525	695,370
21	-	-	-	162,083	(162,083)	2,691	535,978
22	-	-	-	138,736	(138,736)	2,044	399,286
23	-	-	-	138,736	(138,736)	1,445	261,995
24	-	-	-	66,145	(66,145)	1,003	196,853
25	-	-	-	66,145	(66,145)	717	131,426
26	-	-	-	52,916	(52,916)	460	78,970
27	-	-	-	39,687	(39,687)	259	39,543
28	-	-	-	26,458	(26,458)	115	13,200
29	-	-	-	13,229	(13,229)	29	-
			7,558,414	9,396,120		218,048	

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Calculation

Appendix B - Impact Fee Calculation Assumptions

Lakeside

Year	Number of Years to End of Period	Future Value Escalation Interest Rate Factor	Future Value Escalation Recovery Fee Factor	Annual Service Units Actual	Annual Service Units Escalated	Annual Expense Actual	Annual Expense Escalated
Prev							
1	29	1.1326	1.0000	311	353	669,747	758,589
2	28	1.1277	1.0000	311	351	641,362	723,271
3	27	1.1228	1.0000	311	350	529,366	594,369
4	26	1.1179	1.0000	311	348	64,340	71,926
5	25	1.1130	1.0000	311	346	1,029,422	1,145,768
6	24	1.1082	1.0000	311	345	424,819	470,770
7	23	1.1033	1.0000	311	343	503,797	555,857
8	22	1.0985	1.0000	311	342	493,612	542,244
9	21	1.0937	1.0000	311	340	474,220	518,670
10	20	1.0890	1.0000	311	339	551,805	600,896
11	19	1.0842	1.0000	-	-	420,017	455,389
12	18	1.0795	1.0000	-	-	413,348	446,203
13	17	1.0748	1.0000	-	-	402,712	432,827
14	16	1.0701	1.0000	-	-	383,382	410,254
15	15	1.0654	1.0000	-	-	356,687	380,023
16	14	1.0608	1.0000	-	-	314,518	333,634
17	13	1.0562	1.0000	-	-	290,536	306,851
18	12	1.0515	1.0000	-	-	264,557	278,194
19	11	1.0470	1.0000	-	-	237,995	249,172
20	10	1.0424	1.0000	-	-	225,746	235,317
21	9	1.0378	1.0000	-	-	162,083	168,218
22	8	1.0333	1.0000	-	-	138,736	143,359
23	7	1.0288	1.0000	-	-	138,736	142,734
24	6	1.0243	1.0000	-	-	66,145	67,754
25	5	1.0199	1.0000	-	-	66,145	67,458
26	4	1.0154	1.0000	-	-	52,916	53,731
27	3	1.0110	1.0000	-	-	39,687	40,123
28	2	1.0066	1.0000	-	-	26,458	26,632
29	1	1.0022	1.0000	-	-	13,229	13,258
					3,457	9,396,120	10,233,487

Total Escalated Expense for Entire Period	$	10,233,487
Total Escalated Service Units		3,457
Impact Fee for Denton Creek	**$**	**2,428**

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Project Funding

Appendix B - Impact Fee Calculation Assumptions

Lakeside

Impact Fee Project Name[1]	Impact Fee Project No.[1]	Total Project Cost [1]	Percent Recoverable [1]	Impact Fee Recoverable Cost [1]	Debt Funded [2] Existing	Debt Funded [2] Proposed	Non-Debt Funded [2]	Impact Fee Recoverable Cost
Wastewater Capital Improvements								
Lakeside Lift Station and Force Main	1	$ 2,499,099	75%	$ 1,874,324	$ 750,000	$ -	$ 1,124,324	$ 1,874,324
Southside Force Main Extension	2	2,020,000	75%	1,515,000	-	750,000	765,000	1,515,000
Southside Pump Upgrade	3	530,000	75%	397,500	-	236,538	160,962	397,500
Southside Gravity Main Improvements	4	1,570,000	77%	1,208,900	-	898,926	309,974	1,208,900
2020 Wastewater Master Plan and Impact Fee Updates	5	46,000	100%	46,000	-	-	46,000	46,000
2001 Wastewater Treatment Plant Improvements	6	19,191,263	19%	3,575,332	3,337,215	-	238,117	3,575,332
2020 Wastewater Master Plan Update	7	65,000	100%	65,000	-	-	65,000	65,000
Total		**$ 25,921,362**		**$ 8,682,056**	**$ 4,087,215**	**$ 1,885,463**	**$ 2,709,378**	**$ 8,682,056**

(1) Per Kimley-Horn Impact Fee Update

(2) Based on Contributions by Project and Planned Future Debt Financing

Town of Flower Mound 2020 Wastewater Impact Fee Update

Credit Determination

Appendix B - Impact Fee Calculation Assumptions

Lakeside

2020 Service Units [1]	2,594	
Ten Year Growth in Service Units [1]	3,113	
	10	years
Annual Growth in Service Units	311	

	1	2	3	4	5	6	7	8	9	10	Total
Total Debt Service Eligible for Impact Fees	$ 446,666	$ 459,326	$ 351,463	$ 424,273	$ 424,343	$ 419,289	$ 428,461	$ 436,440	$ 422,826	$ 420,144	$ 4,233,230
2020 Service Units Plus Lakeside Growth	2,905	3,217	3,528	3,839	4,150	4,462	4,773	5,084	5,396	5,707	
Total Debt Service Eligible for Impact Fees per Service Unit	$ 153.74	$ 142.80	$ 99.63	$ 110.51	$ 102.24	$ 93.98	$ 89.77	$ 85.84	$ 78.37	$ 73.62	
Annual Service Unit Growth in Lakeside (Cumulative)	311	623	934	1,245	1,556	1,868	2,179	2,490	2,802	3,113	
Annual Wastewater Utility Revenue Generated by Additional Service Units for Debt Service Eligible for Impact Fees	$ 47,857	$ 88,902	$ 93,034	$ 137,602	$ 159,128	$ 175,516	$ 195,601	$ 213,766	$ 219,544	$ 229,169	$ 1,560,118

Credit Amount **$ 1,560,118**

(1) Per Kimley-Horn Impact Fee Update

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Calculation Assumptions

Appendix B - Impact Fee Calculation Assumptions

Long Prairie

I. General Assumptions

Annual Interest Rate on Deposits [1]	0.438%
Annual Service Unit Growth [2]	137
Available Existing Fund Balance [3]	3,828,736
Portion of Projects Funded by Existing Debt [4]	$ 5,012,795
Non-debt Funded Project Cost [5]	1,114,708
Project Cost Funded Through New Debt [6]	473,800
Total Recoverable Project Cost [7]	$ 6,601,303

II. New Debt Issues Assumptions

Year	Principal [8]	Interest [9]	Term
1	$ -	4.00%	20
2	-	4.00%	20
3	148,800	4.00%	20
4	-	4.00%	20
5	-	4.00%	20
6	-	4.00%	20
7	-	4.00%	20
8	-	4.00%	20
9	-	4.00%	20
10	-	4.00%	20
Total	$ 148,800		

III. Capital Expenditure Assumptions

Year	Annual Capital Expenditures [10]
1	$ 111,471
2	111,471
3	185,871
4	185,871
5	111,471
6	111,471
7	111,471
8	111,471
9	111,471
10	111,471
Total	$ 1,263,508

(1) Town's current earnings rate as of June 30, 2020
(2) Per Kimley-Horn Impact Fee Update
(3) Balances for this service area available as of July 31, 2020
(4) Per discussions with Town staff and Town files
(5) Per discussions with Town staff and Town files
(6) Per discussions with Town staff and Town files
(7) Per Kimley-Horn Impact Fee Update
(8) Assumes new debt issued in equal annual amounts unless specified in Town CIP
(9) Estimated interest cost provided by Town's Financial Advisor
(10) Assumes new debt proceeds expended over a 2-year timeframe with Year 10 bond proceeds spent in one year; Non-debt funded capital expenditures made in equal annual amounts

Town of Flower Mound 2020 Wastewater Impact Fee Update

Debt Service and Expense Summary
Appendix B - Impact Fee Calculation Assumptions
Long Prairie

I. New Debt Service Detail

Year	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6	Series 7	Series 8	Series 9	Series 10	Total Annual New Debt Service
1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	-	-	-	-	-	-	-	-	-	-	-
3	-	-	10,949	-	-	-	-	-	-	-	10,949
4	-	-	10,949	-	-	-	-	-	-	-	10,949
5	-	-	10,949	-	-	-	-	-	-	-	10,949
6	-	-	10,949	-	-	-	-	-	-	-	10,949
7	-	-	10,949	-	-	-	-	-	-	-	10,949
8	-	-	10,949	-	-	-	-	-	-	-	10,949
9	-	-	10,949	-	-	-	-	-	-	-	10,949
10	-	-	10,949	-	-	-	-	-	-	-	10,949
11	-	-	10,949	-	-	-	-	-	-	-	10,949
12	-	-	10,949	-	-	-	-	-	-	-	10,949
13	-	-	10,949	-	-	-	-	-	-	-	10,949
14	-	-	10,949	-	-	-	-	-	-	-	10,949
15	-	-	10,949	-	-	-	-	-	-	-	10,949
16	-	-	10,949	-	-	-	-	-	-	-	10,949
17	-	-	10,949	-	-	-	-	-	-	-	10,949
18	-	-	10,949	-	-	-	-	-	-	-	10,949
19	-	-	10,949	-	-	-	-	-	-	-	10,949
20	-	-	10,949	-	-	-	-	-	-	-	10,949
21	-	-	10,949	-	-	-	-	-	-	-	10,949
22	-	-	10,949	-	-	-	-	-	-	-	10,949
23	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	$ -
	$ -	$ -	$ 218,979	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 218,979

Town of Flower Mound 2020 Wastewater Impact Fee Update

Debt Service and Expense Summary
Appendix B - Impact Fee Calculation Assumptions
Long Prairie

II. Summary of Annual Expenses

Year	New Annual Debt Service[1]	Annual Capital Expenditures[2]	Annual Bond Proceeds[2]	Existing Annual Debt Service[3]	Annual Credit[4]	Total Expense
1	$ -	$ 111,471	$ -	$ 547,817	$ (2,884)	656,403
2	-	111,471	-	563,344	(5,901)	668,914
3	10,949	185,871	(148,800)	431,054	(6,909)	472,165
4	10,949	185,871	-	431,322	(9,169)	618,973
5	10,949	111,471	-	431,409	(11,405)	542,424
6	10,949	111,471	-	408,986	(12,925)	518,480
7	10,949	111,471	-	404,009	(14,825)	511,604
8	10,949	111,471	-	397,571	(16,595)	503,395
9	10,949	111,471	-	364,649	(17,078)	469,991
10	10,949	111,471	-	345,136	(17,900)	449,656
11	10,949	-	-	344,980	-	355,929
12	10,949	-	-	336,800	-	347,749
13	10,949	-	-	323,756	-	334,705
14	10,949	-	-	300,048	-	310,997
15	10,949	-	-	267,308	-	278,257
16	10,949	-	-	215,589	-	226,538
17	10,949	-	-	186,177	-	197,126
18	10,949	-	-	154,314	-	165,263
19	10,949	-	-	121,738	-	132,687
20	10,949	-	-	106,715	-	117,664
21	10,949	-	-	28,634	-	39,583
22	10,949	-	-	-	-	10,949
23	-	-	-	-	-	-
24	-	-	-	-	-	-
25	-	-	-	-	-	-
26	-	-	-	-	-	-
27	-	-	-	-	-	-
28	-	-	-	-	-	-
29	-	-	-	-	-	-
	$ 218,979	$ 1,263,508	$ (148,800)	$ 6,711,356	$ (115,591)	$ 7,929,452

(1) Appendix B - Denton Creek, Page 2
(2) Appendix B - Denton Creek, Page 1
(3) Eligible Outstanding Debt Funded Projects Percent of Utility Self-Supported Debt Issuance times total outstanding utility self-supported annual debt service
(4) Appendix B - Denton Creek, Page 7

Town of Flower Mound 2020 Wastewater Impact Fee Update

Revenue Test

Appendix B - Impact Fee Calculation Assumptions

Long Prairie

Year	Impact Fee	Service Units	Impact Fee Revenue	Annual Expenses	Sub-Total	Accumulated Interest	Estimated Fund Balance
Initial							$ 3,828,736
1	$ 2,863	137	$ 392,535	$ 656,403	$ (263,868)	16,192	3,581,060
2	2,863	137	392,535	668,914	(276,379)	15,080	3,319,761
3	2,863	137	392,535	472,165	(79,630)	14,366	3,254,497
4	2,863	137	392,535	618,973	(226,438)	13,759	3,041,818
5	2,863	137	392,535	542,424	(149,889)	12,995	2,904,924
6	2,863	137	392,535	518,480	(125,945)	12,448	2,791,426
7	2,863	137	392,535	511,604	(119,069)	11,966	2,684,323
8	2,863	137	392,535	503,395	(110,860)	11,515	2,584,977
9	2,863	137	392,535	469,991	(77,456)	11,153	2,518,673
10	2,863	137	392,535	449,656	(57,121)	10,907	2,472,459
11	-	-	-	355,929	(355,929)	10,050	2,126,580
12	-	-	-	347,749	(347,749)	8,553	1,787,385
13	-	-	-	334,705	(334,705)	7,096	1,459,775
14	-	-	-	310,997	(310,997)	5,713	1,154,491
15	-	-	-	278,257	(278,257)	4,447	880,681
16	-	-	-	226,538	(226,538)	3,361	657,504
17	-	-	-	197,126	(197,126)	2,448	462,826
18	-	-	-	165,263	(165,263)	1,665	299,229
19	-	-	-	132,687	(132,687)	1,020	167,562
20	-	-	-	117,664	(117,664)	476	50,374
21	-	-	-	39,583	(39,583)	134	10,925
22	-	-	-	10,949	(10,949)	24	0
23	-	-	-	-	-	0	0
24	-	-	-	-	-	0	0
25	-	-	-	-	-	0	0
26	-	-	-	-	-	0	0
27	-	-	-	-	-	0	0
28	-	-	-	-	-	0	0
29	-	-	-	-	-	0	-
			3,925,349	7,929,452		175,366	

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Calculation

Appendix B - Impact Fee Calculation Assumptions

Long Prairie

Year	Number of Years to End of Period	Future Value Escalation Interest Rate Factor	Future Value Escalation Recovery Fee Factor	Annual Service Units Actual	Annual Service Units Escalated	Annual Expense Actual	Annual Expense Escalated
Prev							
1	29	1.1326	1.0000	137	155	656,403	743,475
2	28	1.1277	1.0000	137	155	668,914	754,341
3	27	1.1228	1.0000	137	154	472,165	530,143
4	26	1.1179	1.0000	137	153	618,973	691,947
5	25	1.1130	1.0000	137	153	542,424	603,730
6	24	1.1082	1.0000	137	152	518,480	574,563
7	23	1.1033	1.0000	137	151	511,604	564,471
8	22	1.0985	1.0000	137	151	503,395	552,991
9	21	1.0937	1.0000	137	150	469,991	514,044
10	20	1.0890	1.0000	137	149	449,656	489,658
11	19	1.0842	1.0000	-	-	355,929	385,903
12	18	1.0795	1.0000	-	-	347,749	375,390
13	17	1.0748	1.0000	-	-	334,705	359,734
14	16	1.0701	1.0000	-	-	310,997	332,795
15	15	1.0654	1.0000	-	-	278,257	296,462
16	14	1.0608	1.0000	-	-	226,538	240,307
17	13	1.0562	1.0000	-	-	197,126	208,195
18	12	1.0515	1.0000	-	-	165,263	173,782
19	11	1.0470	1.0000	-	-	132,687	138,918
20	10	1.0424	1.0000	-	-	117,664	122,652
21	9	1.0378	1.0000	-	-	39,583	41,082
22	8	1.0333	1.0000	-	-	10,949	11,314
23	7	1.0288	1.0000	-	-	-	-
24	6	1.0243	1.0000	-	-	-	-
25	5	1.0199	1.0000	-	-	-	-
26	4	1.0154	1.0000	-	-	-	-
27	3	1.0110	1.0000	-	-	-	-
28	2	1.0066	1.0000	-	-	-	-
29	1	1.0022	1.0000	-	-	-	-
					1,523	7,929,452	8,705,897

Total Escalated Expense for Entire Period	$	8,705,897
Less Future Value of Initial Fund Balance		4,346,094
Net Escalated Expense for Entire Period	$	4,359,803
Total Escalated Service Units		1,523
Impact Fee for Denton Creek	**$**	**2,863**

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Project Funding

Appendix B - Impact Fee Calculation Assumptions

Long Prairie

Impact Fee Project Name[1]	Impact Fee Project No.[1]	Total Project Cost [1]	Percent Recoverable [1]	Impact Fee Recoverable Cost [1]	Debt Funded [2] Existing	Debt Funded [2] Proposed	Non-Debt Funded [2]	Impact Fee Recoverable Cost
Wastewater Capital Improvements								
Bakers Branch Collector Phase I (Gerault to Lower Timber Interceptor)	1	$ 607,181	19%	$ 115,364	$ 115,364	$ -	$ -	$ 115,364
Bakers Branch Wastewater Collector Phase II (Lexington Ave to Gerault Rd)	2	1,351,217	23%	310,780	251,984	-	58,796	310,780
Oak Street Lift Station Ph 3 and Force Main	3	5,833,654	29%	1,691,760	1,671,460	-	20,300	1,691,760
Oak Street Lift Station and Force Main Phase IV	4	3,400,000	10%	340,000	-	325,000	15,000	340,000
Upper Timber Creek Interceptor Phase I (FM 2499 to Morriss Rd and Buckthorn Ct to FM 1171)	5	1,525,872	26%	396,727	215,767	-	180,960	396,727
Upper Timber Creek Interceptor Phase III (FM 1171 to Hidden Forest Drive)	6	2,448,208	37%	905,837	766,216	-	139,622	905,837
Upper Timber Interceptor (College Parkway to Pecan Drive)	7	480,000	31%	148,800	-	148,800	-	148,800
Wellington Interceptor Improvements (Sections I and II)	8	1,345,254	50%	672,627	492,677	-	179,950	672,627
Riverwalk Collector (Morris Road to Windsor Drive)	9	530,000	57%	302,100	-	-	302,100	302,100
2020 Wastewater Master Plan and Impact Fee Updates	10	46,000	100%	46,000	-	-	46,000	46,000
2001 Wastewater Treatment Plant Improvements	11	19,191,263	8%	1,606,309	1,499,329	-	106,980	1,606,309
2020 Wastewater Master Plan Update	12	65,000	100%	65,000	-	-	65,000	65,000
Total		**$ 36,823,649**		**$ 6,601,303**	**$ 5,012,795**	**$ 473,800**	**$ 1,114,708**	**$ 6,601,303**

(1) Per Kimley-Horn Impact Fee Update

(2) Based on Contributions by Project and Planned Future Debt Financing

Town of Flower Mound 2020 Wastewater Impact Fee Update

Credit Determination

Appendix B - Impact Fee Calculation Assumptions

Long Prairie

2020 Service Units [1]	25,903	
Ten Year Growth in Service Units [1]	1,371	
	10	years
Annual Growth in Service Units	137	

	1	2	3	4	5	6	7	8	9	10	Total
Total Debt Service Eligible for Impact Fees	$ 547,817	$ 563,344	$ 442,003	$ 442,271	$ 442,358	$ 419,935	$ 414,958	$ 408,520	$ 375,598	$ 356,084	$ 4,412,888
2020 Service Units Plus Long Prairie Growth	26,040	26,177	26,314	26,451	26,589	26,726	26,863	27,000	27,137	27,274	
Total Debt Service Eligible for Impact Fees per Service Unit	$ 21.04	$ 21.52	$ 16.80	$ 16.72	$ 16.64	$ 15.71	$ 15.45	$ 15.13	$ 13.84	$ 13.06	
Annual Service Unit Growth in Long Prairie (Cumulative)	137	274	411	548	686	823	960	1,097	1,234	1,371	
Annual Wastewater Utility Revenue Generated by Additional Service Units for Debt Service Eligible for Impact Fees	$ 2,884	$ 5,901	$ 6,909	$ 9,169	$ 11,405	$ 12,925	$ 14,825	$ 16,595	$ 17,078	$ 17,900	$ 115,591

Credit Amount **$ 115,591**

(1) Per Kimley-Horn Impact Fee Update

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Calculation Assumptions

Appendix B - Impact Fee Calculation Assumptions

Prairie Vista

I. General Assumptions

Annual Interest Rate on Deposits [1]	0.438%
Annual Service Unit Growth [2]	145
Available Existing Fund Balance [3]	16,560

Portion of Projects Funded by Existing Debt [4]	$ 513,378
Non-debt Funded Project Cost [5]	441,663
Project Cost Funded Through New Debt [6]	-
Total Recoverable Project Cost [7]	$ 955,041

II. New Debt Issues Assumptions

Year	Principal [8]	Interest [9]	Term
1	$ -	4.00%	20
2	-	4.00%	20
3	-	4.00%	20
4	-	4.00%	20
5	-	4.00%	20
6	-	4.00%	20
7	-	4.00%	20
8	-	4.00%	20
9	-	4.00%	20
10	-	4.00%	20
Total	$ -		

III. Capital Expenditure Assumptions

Year	Annual Capital Expenditures [10]
1	$ 44,166
2	44,166
3	44,166
4	44,166
5	44,166
6	44,166
7	44,166
8	44,166
9	44,166
10	44,166
Total	$ 441,663

(1) Town's current earnings rate as of June 30, 2020
(2) Per Kimley-Horn Impact Fee Update, includes 1,036 of prepaid service units over the 10-year period
(3) Balances for this service area available as of July 31, 2020
(4) Per discussions with Town staff and Town files
(5) Per discussions with Town staff and Town files
(6) Per discussions with Town staff and Town files
(7) Per Kimley-Horn Impact Fee Update
(8) Assumes no new debt issued for projects
(9) Estimated interest cost provided by Town's Financial Advisor
(10) Assumes new debt proceeds expended over a 2-year timeframe with Year 10 bond proceeds spent in one year; Non-debt funded capital expenditures made in equal annual amounts

Town of Flower Mound 2020 Wastewater Impact Fee Update

Debt Service and Expenses Summary
Appendix B - Impact Fee Calculation Assumptions
Prairie Vista

I. New Debt Service Detail

Year	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6	Series 7	Series 8	Series 9	Series 10	Total Annual New Debt Service [1]
1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	$ -
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Town of Flower Mound 2020 Wastewater Impact Fee Update

Debt Service and Expenses Summary
Appendix B - Impact Fee Calculation Assumptions
Prairie Vista

II. Summary of Annual Expenses

Year	New Annual Debt Service[1]	Annual Capital Expenditures[2]	Annual Bond Proceeds[2]	Existing Annual Debt Service[3]	Annual Credit[4]	Total Expense
1	$ -	$ 44,166	$ -	$ 56,104	$ (56,104)	44,166
2	-	44,166	-	57,694	(57,694)	44,166
3	-	44,166	-	44,146	(44,146)	44,166
4	-	44,166	-	44,173	(44,173)	44,166
5	-	44,166	-	44,182	(44,182)	44,166
6	-	44,166	-	41,886	(41,886)	44,166
7	-	44,166	-	41,376	(41,376)	44,166
8	-	44,166	-	40,717	(40,717)	44,166
9	-	44,166	-	37,345	(37,345)	44,166
10	-	44,166	-	35,347	(35,347)	44,166
11	-	-	-	35,331	-	35,331
12	-	-	-	34,493	-	34,493
13	-	-	-	33,157	-	33,157
14	-	-	-	30,729	-	30,729
15	-	-	-	27,376	-	27,376
16	-	-	-	22,079	-	22,079
17	-	-	-	19,067	-	19,067
18	-	-	-	15,804	-	15,804
19	-	-	-	12,468	-	12,468
20	-	-	-	10,929	-	10,929
21	-	-	-	2,933	-	2,933
22	-	-	-	-	-	-
23	-	-	-	-	-	-
24	-	-	-	-	-	-
25	-	-	-	-	-	-
26	-	-	-	-	-	-
27	-	-	-	-	-	-
28	-	-	-	-	-	-
29	-	-	-	-	-	-
	$ -	$ 441,663	$ -	$ 687,333	$ (442,969)	$ 686,028

(1) Appendix B - Denton Creek, Page 2; assumes no new debt issued for projects
(2) Appendix B - Denton Creek, Page 1
(3) Eligible Outstanding Debt Funded Projects Percent of Utility Self-Supported Debt Issuance times total outstanding utility self-supported annual debt service
(4) Appendix B - Denton Creek, Page 7

Town of Flower Mound 2020 Wastewater Impact Fee Update

Revenue Test

Appendix B - Impact Fee Calculation Assumptions

Prairie Vista

Year	Impact Fee [1]	Service Units	Impact Fee Revenue [1]	Annual Expenses	Sub-Total	Accumulated Interest	Estimated Fund Balance
Initial							$ 16,560
1	$ 456	145	$ 65,963	$ 44,166	$ 21,797	120	38,477
2	456	145	65,963	44,166	21,797	216	60,491
3	456	145	65,963	44,166	21,797	313	82,600
4	456	145	65,963	44,166	21,797	410	104,807
5	456	145	65,963	44,166	21,797	507	127,111
6	456	145	65,963	44,166	21,797	604	149,512
7	456	145	65,963	44,166	21,797	703	172,012
8	456	145	65,963	44,166	21,797	801	194,610
9	456	145	65,963	44,166	21,797	900	217,307
10	456	145	65,963	44,166	21,797	1,000	240,104
11	-	-	-	35,331	(35,331)	974	205,748
12	-	-	-	34,493	(34,493)	826	172,080
13	-	-	-	33,157	(33,157)	681	139,605
14	-	-	-	30,729	(30,729)	544	109,420
15	-	-	-	27,376	(27,376)	419	82,463
16	-	-	-	22,079	(22,079)	313	60,697
17	-	-	-	19,067	(19,067)	224	41,854
18	-	-	-	15,804	(15,804)	149	26,199
19	-	-	-	12,468	(12,468)	87	13,819
20	-	-	-	10,929	(10,929)	37	2,926
21	-	-	-	2,933	(2,933)	6	(0)
22	-	-	-	-	-	(0)	(0)
23	-	-	-	-	-	(0)	(0)
24	-	-	-	-	-	(0)	(0)
25	-	-	-	-	-	(0)	(0)
26	-	-	-	-	-	(0)	(0)
27	-	-	-	-	-	(0)	(0)
28	-	-	-	-	-	(0)	(0)
29	-	-	-	-	-	(0)	-
			659,634	686,028		9,834	

(1) Actual revenues could be closer to $190,000 due to prepaid service units.

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Calculation

Appendix B - Impact Fee Calculation Assumptions

Prairie Vista

Year	Number of Years to End of Period	Future Value Escalation Interest Rate Factor	Future Value Escalation Recovery Fee Factor	Annual Service Units Actual	Annual Service Units Escalated	Annual Expense Actual	Annual Expense Escalated
Prev							
1	29	1.1326	1.0000	145	164	44,166	50,025
2	28	1.1277	1.0000	145	163	44,166	49,807
3	27	1.1228	1.0000	145	162	44,166	49,590
4	26	1.1179	1.0000	145	162	44,166	49,373
5	25	1.1130	1.0000	145	161	44,166	49,158
6	24	1.1082	1.0000	145	160	44,166	48,944
7	23	1.1033	1.0000	145	159	44,166	48,730
8	22	1.0985	1.0000	145	159	44,166	48,518
9	21	1.0937	1.0000	145	158	44,166	48,306
10	20	1.0890	1.0000	145	157	44,166	48,095
11	19	1.0842	1.0000	-	-	35,331	38,306
12	18	1.0795	1.0000	-	-	34,493	37,235
13	17	1.0748	1.0000	-	-	33,157	35,636
14	16	1.0701	1.0000	-	-	30,729	32,883
15	15	1.0654	1.0000	-	-	27,376	29,167
16	14	1.0608	1.0000	-	-	22,079	23,421
17	13	1.0562	1.0000	-	-	19,067	20,138
18	12	1.0515	1.0000	-	-	15,804	16,618
19	11	1.0470	1.0000	-	-	12,468	13,053
20	10	1.0424	1.0000	-	-	10,929	11,392
21	9	1.0378	1.0000	-	-	2,933	3,044
22	8	1.0333	1.0000	-	-	-	-
23	7	1.0288	1.0000	-	-	-	-
24	6	1.0243	1.0000	-	-	-	-
25	5	1.0199	1.0000	-	-	-	-
26	4	1.0154	1.0000	-	-	-	-
27	3	1.0110	1.0000	-	-	-	-
28	2	1.0066	1.0000	-	-	-	-
29	1	1.0022	1.0000	-	-	-	-
					1,605	686,028	751,439

Total Escalated Expense for Entire Period	$	751,439
Total Escalated Service Units		1,605
Impact Fee for Denton Creek	**$**	**456**

Town of Flower Mound 2020 Wastewater Impact Fee Update

Impact Fee Project Funding

Appendix B - Impact Fee Calculation Assumptions

Prairie Vista

Impact Fee Project Name[1]	Impact Fee Project No.[1]	Total Project Cost [1]	Percent Recoverable [1]	Impact Fee Recoverable Cost [1]	Debt Funded [2] Existing	Debt Funded [2] Proposed	Non-Debt Funded[2]	Impact Fee Recoverable Cost
Wastewater Capital Improvements								
TRA System Contract	1	$ 3,366,818	27.0%	$ 909,041	$ 513,378	$ -	$ 395,663	$ 909,041
2020 Wastewater Master Plan and Impact Fee Updates	2	46,000	100.0%	46,000	-	-	46,000	46,000
Total		**$ 3,412,818**		**$ 955,041**	**$ 513,378**	**$ -**	**$ 441,663**	**$ 955,041**

(1) Per Kimley-Horn Impact Fee Update

(2) Based on Contributions by Project and Planned Future Debt Financing

Town of Flower Mound 2020 Wastewater Impact Fee Update

Credit Determination

Appendix B - Impact Fee Calculation Assumptions

Prairie Vista

2020 Service Units [1]	-	
Ten Year Growth in Service Units [1]	1,445	
	10	years
Annual Growth in Service Units	145	

	1	2	3	4	5	6	7	8	9	10	Total
Total Debt Service Eligible for Impact Fees	$ 56,104	$ 57,694	$ 44,146	$ 44,173	$ 44,182	$ 41,886	$ 41,376	$ 40,717	$ 37,345	$ 35,347	$ 442,969
2020 Service Units Plus Prairie Vista Growth	145	289	434	578	723	867	1,012	1,156	1,301	1,445	
Total Debt Service Eligible for Impact Fees per Service Unit	$ 388.26	$ 199.63	$ 101.84	$ 76.42	$ 61.15	$ 48.31	$ 40.91	$ 35.22	$ 28.72	$ 24.46	
Annual Service Unit Growth in Prairie Vista (Cumulative)	145	289	434	578	723	867	1,012	1,156	1,301	1,445	
Annual Wastewater Utility Revenue Generated by Additional Service Units for Debt Service Eligible for Impact Fees	$ 56,104	$ 57,694	$ 44,146	$ 44,173	$ 44,182	$ 41,886	$ 41,376	$ 40,717	$ 37,345	$ 35,347	$ 442,969

Credit Amount **$ 442,969**

(1) Per Kimley-Horn Impact Fee Update, which includes 1,036 of prepaid service units per Town staff

Appendix C: Construction Cost Projections

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Lakeside**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Southside Force Main Extension**	**Project:**	**1**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1	LS	$2,499,099.00	$ 2,499,099
	Basis for Cost Projection:	**Total:**			$ 2,499,099
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Lakeside**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Lakeside Lift Station and Force Main**	**Project:**	**2**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization Bonds and Insurance	1	LS	$50,000.00	$50,000
2	18" Ductile Iron Force Main	4,600	LF	$200.00	$920,000
3	Bore with 36" Steel Casing	400	LF	$800.00	$320,000
4	Connect to Headwork	1	EA	$5,000.00	$5,000
5	Trench Safety	4,600	LF	$2.00	$9,200
6	Seeding, Fertilizer and Erosion Control	4,600	EA	$5.00	$23,000
7	Air Release/Vacuum Valve	2	EA	$20,000.00	$40,000
8	Connect to Existing 18" Force Main	1	EA	$15,000.00	$15,000
9	Cathodic Protection	1	EA	$55,000.00	$55,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$	1,437,200
Eng/Survey Fees (+/- %):	15	$	216,000
Contingency (+/- %):	25	$	366,800
Prop Acquisition:		$	-
Total:		$	2,020,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Lakeside**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Southside Pump Upgrade**	**Project:**	**3**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization Bonds and Insurance	1	LS	$20,000.00	$20,000
2	1,500 GPM Submersible Pump and 85 HP Motor	2	EA	$120,000.00	$240,000
3	Electrical / SCADA	1	LS	$12,500.00	$12,500
4	Mechanical Piping	1	LS	$50,000.00	$50,000
5	Variable Frequency Drives	2	EA	$65,000.00	$130,000
6	Remove Existing Pumps	2	EA	$10,000.00	$20,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$	472,500
Eng/Survey Fees (+/- %):	15	$	71,000
Contingency (+/- %):	25	$	136,500
Prop Acquisition:		$	-
Total:		$	680,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Lakeside**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Southside Gravity Main Improvements** **Project:** **4**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization Bonds and Insurance	1	LS	$40,000.00	$40,000
	Eastern Improvements				
2	15" Wastewater Main	2,970	LF	$ 155.00	$460,350
3	4' Manhole (8" - 18" Main)	9	EA	$ 10,000.00	$90,000
4	Concrete Pavement Repair	267	SY	$ 110.00	$29,333
5	Bore with 36" Steel Casing	380	LF	$ 850.00	$323,000
6	Seeding, Fertilizer & Erosion Control	2,390	LF	$ 10.00	$23,900
7	Trench Safety	2,590	LF	$ 2.00	$5,180
8	TV Inspection	2,970	LF	$ 2.00	$5,940
9	Vacuum Testing of Sanitary Sewer Manholes	11	EA	$ 500.00	$5,500
10	Connect to Existing Manhole	2	EA	$ 9,000.00	$18,000
	Subtotal				*$961,203*
	Western Improvements				
9	12" Wastewater Main	620	LF	$ 130.00	$80,600
10	4' Manhole (8" - 18" Main)	2	EA	$ 10,000.00	$20,000
11	Seeding, Fertilizer & Erosion Control	620	LF	$ 10.00	$6,200
12	Trench Safety	620	LF	$ 2.00	$1,240
13	TV Inspection	620	LF	$ 2.00	$1,240
14	Vacuum Testing of Sanitary Sewer Manholes	4	EA	$ 500.00	$2,000
15	Connect to Existing Manhole	2	EA	$ 9,000.00	$18,000
	Subtotal				*$111,280*

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:			$ 1,112,483
Eng/Survey Fees (+/- %):	15		$ 167,000
Contingency (+/- %):	25		$ 290,517
Prop Acquisition:			$ -
Total:			$ 1,570,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Lakeside**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**2001 Wastewater Treatment Plant Improvements**	**Project:**	**5**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1.00	LS	$ 19,191,263.00	$ 19,191,263
	Basis for Cost Projection:	**Total:**			$ 19,191,263
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Lakeside**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**2020 Wastewater Mater Plan and Impact Fee Updates**	**Project:**	**6**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Per KH Engineering Contract	0.25	LS	$ 184,000.00	$ 46,000
	Basis for Cost Projection:	**Total:**			$ 46,000
	KH Engineering Contract with Town				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Lakeside**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Wastewater Treatment Plant Master Plan**	**Project:**	**7**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	0.5	LS	$ 130,000.00	$ 65,000
	Basis for Cost Projection:	**Total:**			$ 65,000
	Project Completed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Bakers Branch Collector Phase I (Gerault to Lower Timber Interceptor)**	**Project:**	**1**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1.0	LS	$ 607,181.00	$ 607,181
	Basis for Cost Projection:	**Total:**			$ 607,181
	Project Completed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Bakers Branch Collector Phase II (Lexington Ave to Gerault Rd)**	**Project:**	**2**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1.0	LS	$ 1,351,217.00	$ 1,351,217
	Basis for Cost Projection:	**Total:**			$ 1,351,217
	Project Completed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Oak Street Lift Station and Force Main Phase III**	**Project:**	**3**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1.0	LS	$ 5,833,653.62	$ 5,833,654
	Basis for Cost Projection:	**Total:**			$ 5,833,654
	Project Completed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Oak Street Lift Station and Force Main Phase IV** **Project:** **4**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization Bonds and Insurance	1	LS	$ 90,000.00	$ 90,000
	MECHANICAL				
2	7,000 gpm Submersible Pump and 215 HP Motor	1	EA	$ 230,000.00	$ 230,000
3	20"x12" Stainless Steel Reducing Elbow	3	EA	$ 15,000.00	$ 45,000
4	20" Stainless Steel Mechanical Piping	45	LF	$ 1,000.00	$ 45,000
5	20" Check Valve with Oil Cushion	3	EA	$ 25,000.00	$ 75,000
6	20" Harnessed Coupling	6	EA	$ 5,000.00	$ 30,000
7	20" Isolation Valve	3	EA	$ 20,000.00	$ 60,000
8	2" Air Release/Vacuum Valve	3	EA	$ 5,000.00	$ 15,000
9	Stainless Steel Pump Guide Rails	3	EA	$ 10,000.00	$ 30,000
10	Relocation of Existing 215 HP Pumps	2	EA	$ 40,000.00	$ 80,000
11	Remove and Dispose Existing Piping/Valves/Pump	1	LS	$ 30,000.00	$ 30,000
	YARD PIPING				
12	Bypass Pumping	1	LS	$ 350,000.00	$ 350,000
13	30" Discharge Header	60	LF	$ 1,000.00	$ 60,000
14	24" Gravity Line	30	LF	$ 700.00	$ 21,000
15	30" Gravity Line	30	LF	$ 900.00	$ 27,000
16	Connect to Existing Force Main	1	EA	$ 10,000.00	$ 10,000
17	Connect to Existing Gravity Main	2	EA	$ 10,000.00	$ 20,000
	SITE				
18	Splitter Box	1	EA	$ 150,000.00	$ 150,000
19	Grading, Erosion Control, Site Restoration	1	LS	$ 50,000.00	$ 50,000
20	Demolish Existing Electrical Building	1	LS	$ 25,000.00	$ 25,000
21	Move Equipment to New Electrical Building	1	LS	$ 50,000.00	$ 50,000
22	Remove Existing Hoist	1	LS	$ 5,000.00	$ 5,000
23	Install 5 Ton Bridge Crane	1	LS	$ 75,000.00	$ 75,000
24	Driveway Improvements	1	LS	$ 15,000.00	$ 15,000
	ELECTRICAL/SCADA				
20	Misc Electrical/SCADA/HVAC	1	LS	$ 100,000.00	$ 100,000
21	Motor Control Center	1	LS	$ 100,000.00	$ 100,000
22	Variable Frequency Drive	1	EA	$ 75,000.00	$ 75,000
23	400 KW Genset	1	EA	$ 175,000.00	$ 175,000
24	Automatic Transfer Switch and Switchgear Mods	1	LS	$ 100,000.00	$ 100,000
25	Temporary Power/Controls	1	LS	$ 100,000.00	$ 100,000
	STRUCTURAL				
26	New Electrical Building and Foundation	600	SF	$ 300.00	$ 180,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 2,418,000
Eng/Survey Fees (+/- %):	15	$ 363,000
Contingency (+/- %):	25	$ 619,000
Prop Acquisition:		$ -
Total		$ 3,400,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Upper Timber Creek Interceptor Phase I (FM 2499 to Morriss Rd and Buckthorn Ct to FM 1171)**	**Project:**	**5**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1.0	LS	$ 1,525,872.30	$ 1,525,872
	Basis for Cost Projection:	**Total:**			$ 1,525,872
	Project Completed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Upper Timber Creek Interceptor Phase III (FM 1171 to Hidden Forest Drive)**	**Project:**	**6**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1.0	LS	$ 2,448,208.40	$ 2,448,208
	Basis for Cost Projection:	**Total:**			$ 2,448,208
	Project Completed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Upper Timber Interceptor (College Parkway to Pecan Drive)** **Project:** **7**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 10,000.00	$ 10,000.00
2	15" Wastewater Main	1,240	LF	$ 155.00	$ 192,200
3	4' Manhole (8" - 18" Main)	5	EA	$ 10,000.00	$ 50,000
4	Seeding, Fertilizer & Erosion Control	1,180	LF	$ 10.00	$ 11,800
5	Concrete Pavement Repair	5	SY	$ 110.00	$ 550
6	Bore with 30" Steel Casing	60	LF	$ 750.00	$ 45,000
7	Trench Safety	1,180	LF	$ 2.00	$ 2,360
8	Vacuum Testing of Sanitary Sewer Manholes	7	EA	$ 500.00	$ 3,500
9	TV Inspection	1,240	LF	$ 2.00	$ 2,480
10	Connect to Existing Manhole	2	EA	$ 9,000.00	$ 18,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 335,890
Eng/Survey Fees (+/- %):	15	$ 51,000
Contingency (+/- %):	25	$ 93,110
Prop Acquisition:		$ -
Total:		$ 480,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Wellington Interceptor Improvements (Sections I and II)**	**Project:**	**8**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1.0	LS	$ 1,345,253.80	$ 1,345,254
	Basis for Cost Projection:	**Total:**			$ 1,345,254
	Project Completed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title: **Riverwalk Collector (Morris Road to Windsor Drive)** **Project:** **9**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 10,000.00	$ 10,000.00
2	15" Wastewater Main	1,430	LF	$ 155.00	$ 221,650
3	4' Manhole (8" - 18" Main)	6	EA	$ 10,000.00	$ 60,000
4	Seeding, Fertilizer & Erosion Control	800	LF	$ 10.00	$ 8,000
5	Concrete Pavement Repair	420	SY	$ 110.00	$ 46,200
6	Trench Safety	1,430	LF	$ 2.00	$ 2,860
7	TV Inspection	1,430	LF	$ 2.00	$ 2,860
8	Vacuum Testing of Sanitary Sewer Manholes	8	EA	$ 500.00	$ 4,000
9	Connect to Existing Manhole	2	EA	$ 9,000.00	$ 18,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 373,570
Eng/Survey Fees (+/- %):	15	$ 57,000
Contingency (+/- %):	25	$ 99,430
Prop Acquisition:		$ -
Total:		$ 530,000

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**2001 Wastewater Treatment Plant Improvements**	**Project:**	**10**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	1.00	LS	$ 19,191,263.00	$ 19,191,263
	Basis for Cost Projection:	**Total:**			$ 19,191,263
	Constructed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**2020 Wastewater Mater Plan and Impact Fee Updates**	**Project:**	**11**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Per KH Engineering Contract	0.25	LS	$ 184,000.00	$ 46,000
	Basis for Cost Projection:	**Total:**			$ 46,000
	KH Engineering Contract with Town				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Long Prairie**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**Wastewater Treatment Plant Master Plan**	**Project:**	**12**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Provided by Town	0.5	LS	$ 130,000.00	$ 65,000
	Basis for Cost Projection:	**Total:**			$ 65,000
	Project Completed				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Denton Creek**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**TRA System Contract**	**Project:**	**1**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	TRA System Contract	0.62	LS	$8,860,048.00	$ 5,493,230
	Basis for Cost Projection:	**Total:**			$ 5,493,230
	Existing Contract between TRA and Town				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Denton Creek**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**2020 Wastewater Mater Plan and Impact Fee Updates**	**Project:**	**2**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Per KH Engineering Contract	0.25	LS	$ 184,000.00	$ 46,000
	Basis for Cost Projection:	**Total:**			$ 46,000
	KH Engineering Contract with Town				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Prairie Vista**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**TRA System Contract**	**Project:**	**1**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	TRA System Contract	0.38	LS	$8,860,048.00	$ 3,366,818
	Basis for Cost Projection:	**Total:**			$ 3,366,818
	Existing Contract between TRA and Town				

Kimley-Horn & Associates, Inc. **Opinion of Probable Construction Cost**

Client:	**Flower Mound**	**Date:**	**10/20/2020**
Project:	**Wastewater Impact Fee Updates - Prairie Vista**	**Prepared By:**	**LMB**
KHA No.:	**061000201**	**Checked By:**	**MAS**

Title:	**2020 Wastewater Mater Plan and Impact Fee Updates**	**Project:**	**2**

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Project Cost Per KH Engineering Contract	0.25	LS	$ 184,000.00	$ 46,000
	Basis for Cost Projection:	**Total:**			$ 46,000
	KH Engineering Contract with Town				