CITY OF HEATH
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ROADWAY THOROUGHFARE IMPACT FEE ASSESSMENT

2019 TO 2029

Prepared for:
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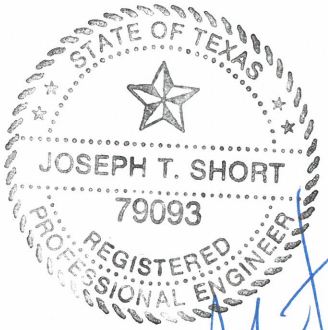

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EXECUTIVE SUMMARY

This study was performed by Lee Engineering to update the City of Heath's roadway impact fees charged to new developments in the City. As part of this process, updated capital improvement and thoroughfare plans and land use data were provided by and discussed with the City of Heath and Freeman-Millican staff.

The roadway capital improvement plan includes projects that have been built by the City of Heath with excess capacity intended to serve future development (recoupment projects), and projects proposed to be built and completed within the next ten years to serve future development. The City of Heath identified the following projects that have already been completed as eligible for reimbursement through impact fees:

Recoupment Projects from the previous study:

1. Wyndemere Boulevard from Smirl Drive (FM 1140) to Laurence Drive (FM 740)
2. Chris Cuny Parkway from Smirl Drive (FM 1140) to High School Road
3. Ridge Road (FM 740) from North City Limits to Heathland Crossing
4. Laurence Drive (FM 740) from Heathland Crossing to FM 550/Buffalo Way Road (FM 549)/Laurence Drive (FM 740)
5. Laurence Drive (FM 740) from Smirl Drive (FM 1140)/Bois D Arc to FM 550
6. Heathland Crossing from Keystone Bend to Buffalo Way Drive (FM 549)
7. White Road from Tubbs Road to Country Club Road

New Recoupment Projects:

8. Rabbit Ridge from Horizon Road to Ridge Lakes Subdivision
9. Horizon Road from Buffalo Way Road (FM 549) Rabbit Ridge Extension

The City of Heath identified the following projects to be completed within the next ten years:

1. White Road from Country Club Road to Heathland Crossing
2. Rabbit Ridge Phase 2 from Ridge Lakes subdivision to FM-550
3. New alignment from Buffalo Way Road (FM 549) to FM 550
4. FM 550 from Rabbit Ridge to FM 740 new alignment
5. Proposed new alignment of FM 740 from Laurence Drive to Kings Road
6. Proposed new alignment of Rabbit Ridge Road from the proposed new alignment of FM 740 to FM 550
7. McDonald Road from the proposed new alignment of Rabbit Ridge Road to Stevens Road
8. Hubbard Drive from FM 740 to south Scenic Drive

The City of Heath and Freeman-Millican provided the total cost for construction of these recoupment and proposed projects and financing of these projects.

The maximum **calculated** roadway impact fee is $1,629 per service unit. In the absence of financial analysis supporting an impact fee greater than 50 percent of this maximum calculated impact fee, state law indicates that the maximum **allowed** impact fee is 50 percent of this value, which results in an allowable impact fee in the City of Heath of $814.50/vehicle-mile. A summary of the impact fee calculation is provided below:

1)	Cost of CIP Projects		$97,549,210
2)	Vehicle-Miles under the Ultimate Conditions		59,730 veh-miles
3)	New Vehicle-Miles (2019-2029)		11,918 veh-miles
4)	Portion of Vehicle-Miles Attributed to 10-Year Growth (Ratio of 10-year growth to the service units at the ultimate conditions)	(3 / 2 = 4)	0.199
5)	Cost of New Capacity Attributed to 10-Year Growth	(1 x 4 = 5)	$19,412,292.79
6)	Cost per Service Unit (Maximum Calculated Impact Fee)	(5 / 3 = 6)	$1,629
7)	Maximum Allowed Impact Fee (50% Calculation)	(6 x 0.50 = 7)	$814.5

Assuming the application of the maximum allowed impact fee of $814.50/vehicle-mile, the roadway impact fee for a single-family dwelling unit would be $2,419.07.

ROADWAY IMPACT FEES INTRODUCTION AND METHODOLOGY

According to Chapter 395 of the Local Government Code, impact fees can be assessed for new development to help fund the costs of necessary capital improvements to accommodate resulting growth. For roadway impact fees, these improvements include the capacity expansion of existing roadway facilities or new facilities, providing additional capacity to serve future development. The impact fees are developed using land use assumptions and changes for at least a 10-year period within the defined service areas of the municipality charging impact fees. The service areas for roadway impact fees are limited to the boundaries of the city (city limits).

The steps used for calculating the roadway impact fees for the City of Heath, and described in the following sections, include:

1. Determination of 10-year Capital Improvement Plan and associated costs;
2. Determination of a standard service unit;
3. Identification of service areas for the City;
4. Analysis of the total capacity, level of current usage, and commitment for the usage of capacity of existing improvements;
5. Identification of that portion of the total capital improvements necessary to serve the projected growth over the next 10-year period;
6. Determination of the “standard service unit” and equivalency tables establishing the ratio of a service unit to the types of land use forecast for growth.

CAPITAL IMPROVEMENT PLAN

The first step in the development impact fee study process is the development of a 10-year Capital Improvement Plan (CIP). This capital improvement plan includes projects intended for construction by the City of Heath in the next ten years (from 2019 to 2029) to serve existing and future development. The CIP was developed in conjunction with the City of Heath and Freeman-Millican, Inc.

Existing Facilities

The City of Heath arterial and major collector street system is partially developed at this time. Some roadways in developed areas are partially built to current thoroughfare plan standards. Some existing streets are two-lane (20' - 40' width) asphalt roadways with open surface drainage.

The existing major arterial roadways within the City include Laurence Drive (FM 740), Ridge Road (FM 740), Buffalo Way Road (FM 549), Smirl Road (FM 1140), Horizon Road (FM 3097), FM 550, and White Road. Some of these arterial roadways (FM 740, FM 549, FM 1140, FM 3097, FM 550) are under the operation and maintenance jurisdiction of the Texas Department of Transportation (TxDOT).

Proposed Facilities

The City of Heath adopted a revised Comprehensive Plan in April 2018 and updated the thoroughfare plan in July 2019, which is the basis for the development of the future street system. The thoroughfare system was developed to support the forecast traffic demands of future land use and is a conventional network conforming to a hierarchical, functional classification system.

The highest classification is the Arterial type facility. These roadways are generally multi-lane (4 lanes) with median dividers that serve the function of controlling access, separating opposing traffic movements, and providing an area for the storage of left turning vehicles. The lower classifications are the collector facilities that are developed to serve the adjoining development. The size and alignment of these collector roadways should be determined by the character of the development they are serving.

Capital Improvement Plan for Roadway Impact Fees

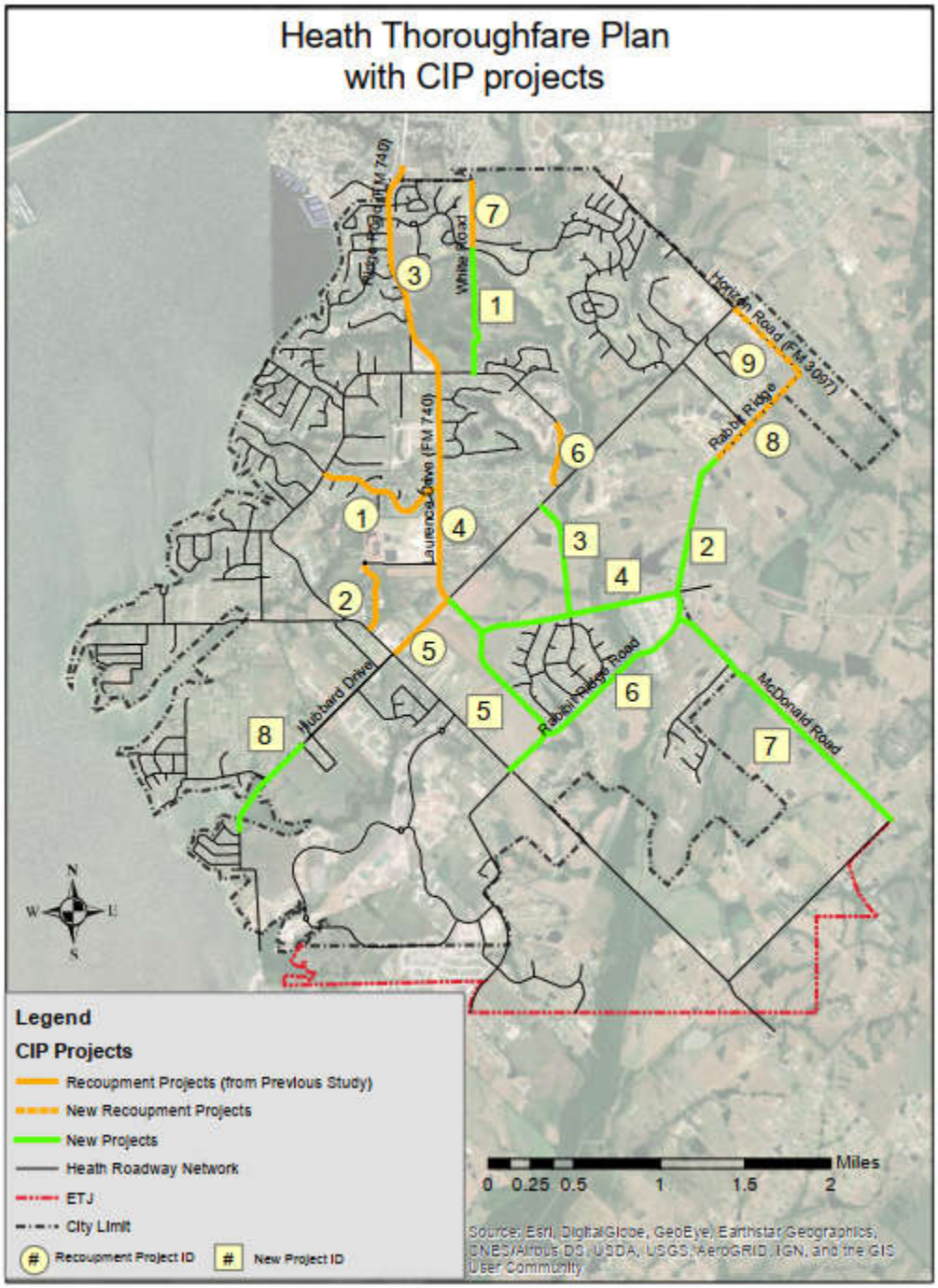
The thoroughfare facilities determined for inclusion in the Capital Improvement Plan of this study are tabulated in **Table 1** and graphically illustrated in **Figure 1**. Each listed project includes a description of the improvements and costs to the City. In addition, under existing State Statute, a municipalities' cost associated with TxDOT facilities can be financed with impact fees. All roadways included in the CIP are identified in the City of Heath Thoroughfare Plan.

The construction cost for the recoupment projects was obtained from the City of Heath staff. Construction costs, without the benefit of a detailed preliminary engineering study for each of the proposed projects, have been determined based on data provided by Freeman-Millican, Inc. Financing costs for the projects in the thoroughfare CIP were also included in the total estimated project cost.

Table 1: Thoroughfare Capital Improvement Plan

Project	Probable Cost	Interest	Total Cost
Recoupment Projects			
Recoupment Projects from the Previous Study:			
1. Wyndemere Boulevard from Smirl Drive (FM 1140) to Laurence Drive (FM 740)	$149,541	$0	$149,541
2. Chris Cuny Parkway from Smirl Drive (FM 1140) to High School Road	$803,692	$395,015	$1,198,707
3. Ridge Road (FM 740) from North City Limits to Heathland Crossing	$319,181	$156,877	$476,058
4. Laurence Drive (FM 740) from Heathland Crossing to FM 550/Buffalo Way Road (FM 549)/Laurence Drive (FM 740)	$1,200,000	$301,500	$1,501,500
5. Laurence Drive (FM 740) from Smirl Drive (FM 1140)/Bois D Arc to FM 550	$800,000	$301,500	$1,101,500
6. Heathland Crossing from Keystone Bend to Buffalo Way Drive (FM 549)	$2,058,741	$561,178	$2,619,919
7. White Road from Tubbs Road to Country Club Road	$1,117,813	$337,524	$1,455,337
Sub-Total of Recoupment Projects from the Previous Study:			**$8,502,562**
New Recoupment Projects:			
8. Rabbit Ridge from Horizon Road to Ridge Lakes Subdivision	$2,756,696	$1,568,310	$4,325,006
9. Horizon Road from Buffalo Way Road (FM 549) Rabbit Ridge Extension	$3,141,057	$838,527	$3,979,584
Sub-Total of New Recoupment Projects:			**$8,304,590**
Sub-Total of Recoupment Projects:			**$16,807,152**
New CIP Projects			
1. White Road from Country Club Road to Heathland Crossing	$825,000	$0	$825,000
2. Rabbit Ridge Phase 2 from Ridge Lakes subdivision to FM-550	$1,621,580	$922,582	$2,544,162
3. New alignment from Buffalo Way Road (FM 549) to FM 550	$4,861,000	$1,979,504	$6,840,504
4. FM 550 from Rabbit Ridge to FM 740 new alignment	$2,721,000	$1,108,050	$3,829,050
5. Proposed new alignment of FM 740 from Laurence Drive to Kings Road	$7,738,000	$3,151,080	$10,889,080
6. Proposed new alignment of Rabbit Ridge Road from proposed new alignment of FM 740 to FM 550	$25,200,000	$10,180,538	$35,380,538
7. McDonald Road from the proposed new alignment of Rabbit Ridge Road to Stevens Road	$12,167,000	$4,954,664	$17,121,664
8. Hubbard Drive from FM 740 to south Scenic Drive	$2,550,000	$762,060	$3,312,060
Sub-Total of New CIP Projects:			**$80,742,058**
Total Cost of CIP Projects			**$97,549,210**

Figure 1: Heath Capital Improvement Projects (CIP)



STANDARD SERVICE UNIT

To determine the impact fee rate applied to thoroughfare facilities, the standard service unit selected was **"PM Peak Hour Vehicle-Miles."** This service unit can be obtained by multiplying the number of trips generated by a specific land use type during the PM peak hour (vehicles) by the average trip length (miles) for that land use.

The PM peak hour was chosen because it is usually considered the critical time for roadway analyses. The trip generation data were directly obtained or derived for each defined land use type from the Institute of Transportation Engineers *Trip Generation, 10th Edition,* which is the standard data reference to determine vehicle trip generation characteristics of particular land use types and densities.

The trip length was included as part of the standard service unit to more accurately reflect the amount of impact a specific land use would have on the roadways within the City of Heath. Trip length information for each land use specified was based on data developed by the Federal Highway Administration as part of the 2009 and 2017 National Household Travel Survey. The trip length was set at a maximum of three (3) miles for any land use, as this trip length was assumed to be the maximum average distance a trip would travel on roadways within the City of Heath. **Table 2** shows the typical service units for each land use type.

Table 2 - Service Unit Calculation by Land Use Type

	Variable	PM Peak Trips[1] (vehicles)	Trip Length[2] (miles)	Vehicle-Miles
Residential				
Rural Estate	Dwelling Unit	0.99	3.0	2.97
Low Density Residential	Dwelling Unit	0.99	3.0	2.97
Medium Density Residential	Dwelling Unit	0.99	3.0	2.97
Multi-Family	Dwelling Unit	0.56	3.0	1.68
Public/Semi-Public				
Public/Semi-Public	acres	21.04	3.0	63.12
Parks & Open Space	acres	1.68	3.0	5.04
Private Recreation	acres	0.28	3.0	0.84
Non-Residential				
Office	1,000 ft^2	1.15	3.0	3.45
Retail	1,000 ft^2	3.81	3.0	11.43
Commercial	1,000 ft^2	3.81	3.0	11.43

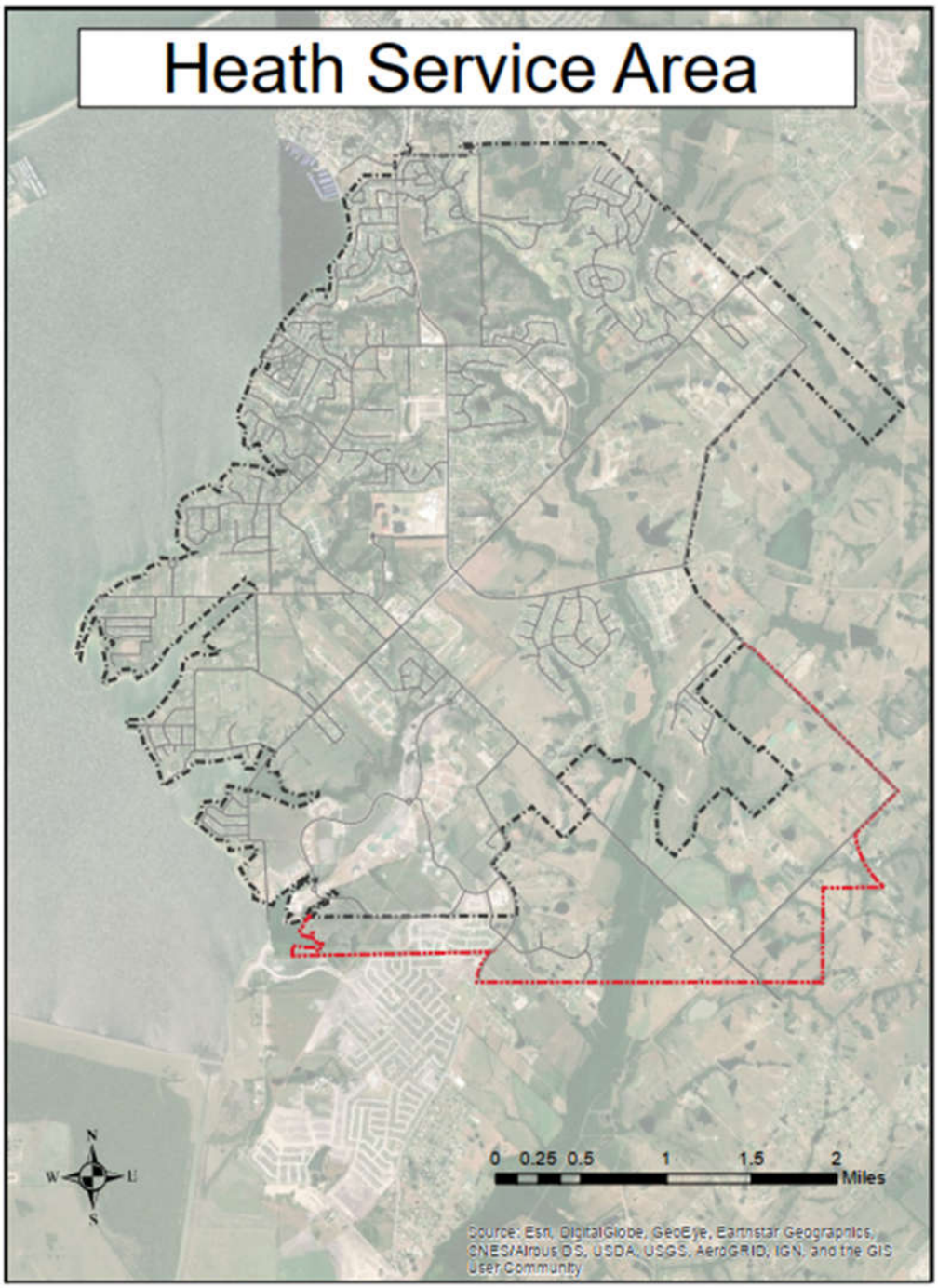
[1] Based on the *ITE Trip Generation Manual, 10th Edition*

[2] Based on the 2007 and 2017 National Household Travel Survey (FHWA) or Maximum of 3 miles

SERVICE AREA

The State Statute governing the imposition of development impact fees require that collection and expenditure of fees imposed for street facilities "...*is limited to an area within the corporate boundaries of the political subdivision and shall not exceed six miles.*" Based on the City of Heath's geographic size and to comply with this State Law, one service area was established for the City of Heath. The service area includes all of the developable lands within the city limits of Heath and is shown in **Figure 2**. Within Heath, the growth and intensities of growth for the ultimate development of the City and the service area expected to occur during the 10-year period from 2019 to 2029 is forecast.

Figure 2: Service Area for Roadway Impact Fee



ANALYSIS OF EXISTING AND FUTURE USE OF IMPROVEMENTS

The portion of service units that will be attributable to growth within the next ten years is shown in **Table 3**. This value is calculated as the ratio of the 10-year growth to the ultimate number of service units at the end of the 10-year period. This information is used to pro-rate the identified costs of CIP in the service area. Data from the City of Heath 2018 Comprehensive Plan was used to develop the information in Table 3 and is provided in the Appendix.

Table 3 - Summary of Vehicle-Mileage Distribution by Development Period

	Existing (2019)		2019 - 2029		2030 - Ultimate		
Service Area	**Vehicle-Miles**	**Portion of Ultimate Vehicle-Miles**	**Vehicle-Miles Added**	**Portion of Ultimate Vehicle-Miles**	**Vehicle-Miles Added**	**Portion of Ultimate Vehicle-Miles**	**Ultimate Vehicle-Miles**
1	29,618	0.496	11,918	0.199	18,194	0.305	59,730
Total	**29,618**	**0.496**	**11,918**	**0.199**	**18,194**	**0.305**	**59,730**

PORTION OF CAPITAL IMPROVEMENTS TO SERVE 10-YR GROWTH

Determination of the eligible costs of capital improvements to serve the forecast growth over the 10-year period, 2019-2029, was based on data provided by the City of Heath. The basic criteria and assumptions made include the following:

1. Costs of existing facilities constructed to serve new development have been included, and projects of this type were identified by the City of Heath staff.
2. Bond interest costs are included.
3. Street facility improvements, although necessary for additional capacity by new growth, will logically serve all existing and future growth by improved safety and drainage characteristics. Therefore, the 10-year eligible costs have been proportioned as the ratio of the 10-year growth to the ultimate number of service units.

Table 4 presents a summary of the roadway capital improvement costs for the service area. Cost information for the roadway CIP was previously provided in Table 1. The 10-year portion of the total costs was calculated using the data from Table 3.

Table 4 - Summary of Capital Improvement Cost by Service Area

Service Area	Zone Cost of Thoroughfare	Portion of Capacity of New Thoroughfare Attributed to Growth (2019 - 2029)	Cost of New Thoroughfare Attributed to Growth (2019 - 2029)
1	$97,549,210	0.199	$19,412,292.79
Totals	**$97,549,210**		**$19,412,292.79**

To maintain the equity of impact fee assessment, the cost for streets included in the 10-year Capital Improvement Plan will include the total cost of the street facilities, not reduced by any expected participation. Rather, construction by a developer of an arterial facility within or off-site should be treated as a credit to the impact fee assessment.

CALCULATED IMPACT FEE

Table 5 presents a summary of the calculations and the resulting eligible cost per service unit. Under current state law, municipalities are required to administer a detailed financial analysis to support the use of an impact fee higher than 50 percent of the eligible costs. As an alternative to performing the financial analysis, the impact fee can be set at or below 50 percent of the total eligible costs. Table 5 also presents the maximum allowable impact fee assuming 50 percent of the total eligible cost.

Table 5 - Impact Fee Calculation for Thoroughfare by Service Area

Service Area	Cost of New Thoroughfare Attributed to Growth (2019 - 2029)	Number of New Service Units[1] (2019 - 2029)	Cost Per Service Unit	Maximum Allowable Impact Fee[2]
1	$19,412,292.79	11,918	$1,629.00	**$814.50**
Totals	$19,412,292.79	11,918	$1,629.00	**$814.50**

[1] Service Units = Vehicle-Miles
[2] Assuming 50% of the total eligible cost per service unit

SUMMARY OF IMPACT FEE METHODOLOGY CALCULATIONS

The methodology for calculating the maximum *allowable* impact fee for roadway facilities described in the previous sections can be summarized in the following three steps:

The first step is to determine the cost of the roadway facilities (existing roadways eligible for recoupment and proposed roadways) that can be attributed to new growth over the ten year period evaluated. This calculation for Service Area 1 is:

Cost of Roadway Facilities (Table 1) = $97,549,210
Proportion of Capacity Attributable to New Growth (Table 3) = 0.199

Cost of Roadway Facilities Attributable to Growth (2019-2029):
$97,549,210 x 0.199 = $19,412,292.79

The second step is to determine the maximum *calculated* impact fee. The maximum *calculated* impact fee is the ratio of the total cost for roadway facilities attributable to growth in the next ten years (2019-2029) divided by the total growth in equivalent service units (ESU). The maximum calculated impact fee for Service Area 1 is:

Maximum Roadway Impact Fee = Eligible Cost of Thoroughfare Attributed to New Growth (Table 4) / Total Growth in Equivalent Service Units (Table 3)

= $19,412,292.79 / 11,918 Vehicle-Miles

= $1,629 / Vehicle-Mile

This amount represents the maximum *calculated* impact fee for roadway facilities.

For the final step, the current impact fee legislation requires the City to produce a financial analysis to support a fee greater than 50 percent of the eligible costs or to reduce the maximum calculated impact fee by 50 percent. Assuming an impact fee of 50 percent of the maximum calculated above results in a maximum allowable impact fee of **$814.50 / vehicle-mile**.

STANDARD SERVICE UNIT EQUIVALENCY

Table 6 presents the derivation of service unit equivalents for each of the eleven defined land use types. The service unit equivalents are referenced to and based on the low density residential land use.

Table 6 - Thoroughfare Land Use Equivalency

Land Use	Unit	Vehicle-Miles / Development Unit[1]	SU Equivalency[2]
Residential			
Rural Estate	Dwelling Unit	2.97	1.00
Low Density Residential	Dwelling Unit	2.97	1.00
Medium Density Residential	Dwelling Unit	2.97	1.00
Multi-Family	Dwelling Unit	1.68	0.57
Public/Semi-Public			
Public/Semi-Public	acres	63.12	21.25
Parks & Open Space	acres	5.04	1.70
Private Recreation	acres	0.84	0.28
Non-Residential			
Office	1,000 ft^2	3.45	1.16
Retail	1,000 ft^2	11.43	3.85
Commercial	1,000 ft^2	11.43	3.85

[1] Based on the 2007 and 2017 National Household Travel Survey (FHWA) or Maximum of 3 miles

[2] The ratio of each land use to service unit of Low Density Residential

IMPACT FEE CALCULATION EXAMPLE

To obtain the impact fee to be charged for a particular land use, the impact fee per service unit adopted by the City and the service unit rate per development unit generated for a particular land use are used. **Table 7** provides the service unit rate by specific uses within each land use category.

Pass-by trips are new trips generated by a development. However, these trips are attracted out of the existing traffic streams adjacent to the site. When a motorist makes an intermediate stop at an adjacent land use during their journey to their primary trip destination, they are said to have made a pass-by trip. For example, an individual going home from work may decide to stop along the way for a meal. The trip to the restaurant becomes a "pass-by" trip. The ITE *Trip Generation Handbook* publishes average pass-by rates for various land uses. The total service units shown in Table 7 are reduced according to the pass-by trip percentages.

Examples for calculating the impact fee for both a single family dwelling unit and a 50,000 ft^2 shopping center (commercial/retail facility) assuming an impact fee of $1,629 per service unit (50 percent of the maximum allowable impact fee) are shown below.

SINGLE-FAMILY DWELLING (Service Area 1)

- Assume 50 percent of the Maximum Calculated Roadway Impact Fee = $814.50 / Service Unit
- Service Unit for Single Family Residential = 2.97 miles per Dwelling Unit
- Cost per Dwelling Unit = 2.97 x 814.50 = $2,419.07
- Cost per Development Unit for Single-Family Dwelling Unit = $2,419.07 / Dwelling Unit
- Impact Fee for one (1) Single-Family Dwelling Unit:
  (1 Dwelling Unit) x ($2,671.52 / Dwelling Unit) = $2,419.07

50,000 ft^2 SHOPPING CENTER (Service Area 1)

- Assume 50 percent of the Maximum Calculated Roadway Impact Fee = $814.50 / Service Unit
- Service Unit for Shopping Center = 7.54 miles per 1,000 ft^2 GFA
- Cost per 1,000 ft^2 GFA = 7.54 x 814.50 = $6,141.33
- Cost per Development Unit for Shopping Center = $6,141.33 / 1,000 ft^2
- Impact Fee for 50,000 ft^2 Shopping Center:
  (50,000 ft^2) x ($6,141.33 / 1,000 ft^2) = $307,066.50

Table 7 – Service Unit by Land Use

LAND USE	DEVELOPMENT UNITS[1]	ITE TRIP RATE[2]	TRIP LENGTH[3]	PASS-BY TRAFFIC[4]	SERVICE UNITS[5]	COST PER DEVELOPMENT UNIT[6]
RESIDENTIAL						
Single-Family Detached	Dwelling Unit	0.99	3.0	0	2.97	**$2,419.07**
Multi-Family Residential	Dwelling Unit	0.56	3.0	0	1.68	**$1,368.36**
Retirement Community	Dwelling Unit	0.3	3.0	0	0.90	**$733.05**
Independent Senior Living Facility	Dwelling Unit	0.18	3.0	0	0.54	**$439.83**
OFFICE						
General Office Building	1,000 ft² GFA	1.15	3.0	0	3.45	**$2,810.03**
Corporate Headquarters Building	1,000 ft² GFA	0.60	3.0	0	1.80	**$1,466.10**
Medical-Dental Office Building	1,000 ft² GFA	3.46	3.0	0	10.38	**$8,454.51**
US Post office	1,000 ft² GFA	11.21	2.4	0.34	17.76	**$14,465.52**
Business Park	1,000 ft² GFA	0.42	3.0	0	1.26	**$1,026.27**
Research and Development Center	1,000 ft² GFA	0.49	3.0	0	1.47	**$1,197.32**
COMMERCIAL						
Shopping Center	1,000 ft² GFA	3.81	3.0	0.34	7.54	**$6,141.33**
Specialtly Retail Center[7]	1,000 ft² GFA	2.71	3.0	0.34	5.37	**$4,373.87**
Hair Salon	1,000 ft² GFA	1.45	3.0	0	4.35	**$3,543.08**
Quality Restaurant	1,000 ft² GFA	7.8	3.0	0	23.40	**$19,059.30**
Fast Food Restaurant w/ Drive Thru	1,000 ft² GFA	32.67	2.4	0.50	39.20	**$31,928.40**
Fast Casual Restaurant	1,000 ft² GFA	14.13	3.0	0.43	24.16	**$19,678.32**
High Turnover Restaurant	1,000 ft² GFA	9.77	3.0	0.43	16.71	**$13,610.30**
Super Convenience Market/Gas Station	Fueling Positions	22.96	2.4	0.76	13.22	**$10,767.69**
Supermarket	1,000 ft² GFA	9.24	2.8	0.36	16.56	**$13,488.12**
Discount Club	1,000 ft² GFA	4.18	3.0	0.37	7.90	**$6,434.55**
Automobile Sales	1,000 ft² GFA	3.75	3.0	0	11.25	**$9,163.13**
Drive-In Bank	1,000 ft² GFA	20.45	2.4	0.35	31.90	**$25,982.55**
Pharmacy/Drugstore with Drive-Through	1,000 ft² GFA	10.29	3.0	0.49	15.74	**$12,820.23**
Apparel Store	1,000 ft² GFA	4.12	2.8	0.34	7.61	**$6,198.35**
Health/Fitness Club	1,000 ft2 GFA	3.45	3.0	0.34	6.83	**$5,563.04**
Movie Theater	Screens	13.73	3.0	0	41.19	**$33,549.26**
Furniture Store	1,000 ft² GFA	0.52	3.0	0.53	0.73	**$594.59**
Home Improvement Superstore	1,000 ft² GFA	2.33	3.0	0.42	4.05	**$3,298.73**
Hardware/Paint Store	1,000 ft² GFA	2.68	2.8	0.34	4.95	**$4,031.78**
Building Materials/Lumber	1,000 ft² GFA	2.06	3.0	0.34	4.08	**$3,323.16**
Nursery (Garden Center)	1,000 ft² GFA	6.94	3.0	0.34	13.74	**$11,191.23**
Nursery (Wholesale)	1,000 ft² GFA	5.18	3.0	0.34	10.26	**$8,356.77**
Hotel	Rooms	0.6	3.0	0	1.80	**$1,466.10**
Motel	Rooms	0.38	3.0	0	1.14	**$928.53**
All Suites Hotel	Rooms	0.36	3.0	0	1.08	**$879.66**
Automobile Care Center	1,000 ft² GFA	3.11	3.0	0.28	6.72	**$5,473.44**
Quick Lube Shop	Servicing Positions	4.85	2.4	0.28	8.38	**$6,825.51**
Auto Parts Sales	1,000 ft² GFA	4.91	3.0	0.34	9.72	**$7,916.94**
Tire Superstore	1,000 ft² GFA	2.11	3.0	0.28	4.56	**$3,714.12**
Mini-Warehouse/Self Storage	1,000 ft² GFA	0.17	3.0	0	0.51	**$415.40**
INDUSTRIAL						
General Light Industrial	1,000 ft² GFA	0.63	3.0	0	1.89	**$1,539.41**
Manunfacturing	1,000 ft² GFA	0.67	3.0	0	2.01	**$1,637.15**
Industrial Park	1,000 ft² GFA	0.4	3.0	0	1.20	**$977.40**
Warehouse	1,000 ft² GFA	0.19	3.0	0	0.57	**$464.27**
INSTITUTIONAL						
Private School (K-12)	Students	0.17	3.0	0	0.51	**$415.40**
Elementary School	Students	0.17	3.0	0	0.51	**$415.40**
High School	Students	0.14	3.0	0	0.42	**$342.09**
Junior/Community College	Students	0.11	3.0	0	0.33	**$268.79**
Universiy/College	Students	0.15	3.0	0	0.45	**$366.53**
Day Care Center	Students	0.79	3.0	0	2.37	**$1,930.37**
Hospital	Beds	1.89	3.0	0	5.67	**$4,618.22**
Nursing Home	Beds	0.22	3.0	0	0.66	**$537.57**
Assisted Living Center	Beds	0.26	3.0	0	0.78	**$635.31**
Place of Worship	1,000 ft² GFA	0.49	3.0	0	1.47	**$1,197.32**
PUBLIC/SEMI-PUBLIC						
Park	Acres	0.11	3.0	0	0.33	**$268.79**
Golf Course	Holes	2.91	3.0	0	8.73	**$7,110.59**
Multipurpose Recreational Facility	1,000 ft² GFA	3.58	3.0	0	10.74	**$8,747.73**
Athletic Club	1,000 ft² GFA	6.29	3.0	0	18.87	**$15,369.62**

[1] GFA = Gross Floor Area
[2] (Vehicles); Based on *ITE Trip Generation, 10th Edition*
[3] (Miles); Based on FHWA National Household Travel Survey (2017 and 2009); or a maximum of 3 miles
[4] Percentage of traffic already passing by site based on ITE *Trip Generation Handbook, the 3rd Edition*
[5] Service Units (vehicle-miles) = Trip Rate (vehicles) * Trip Length (miles) * (1 - Pass-By Traffic)
[6] Assumes 50% of maximum calculated impact fee ($1,629) = $814.50/service unit
[7] Based on *ITE Trip Generation Manual, 9th Edition*

APPENDIX

									1	years	(2019-2018)			10	years	(2029-2019)			10	years	(2039-2029)		
	2018	2018	%	% of	Avg DU	PM Trip Rate/	Max Trip	Veh-Mi/	2019					2029					2039				
Land Use Category	Acres[1]	Acres[2]	distribution[2]	Developed Land[1]	Per Acre[3]	dev-unit[4]	Length (mi)	dev unit	Acres	acres	Dev Unit	Unit	Veh-Mi	Acres	acres	Dev Unit	Unit	Veh-Mi	Acres[5]	acres	Dev Unit	Unit	Veh-Mi
Residential																							
Rural Estate	2,936.3	2429.9	82.8%	70.3%	1	0.99	3.00	2.97	2,550.0		2550	each	7573	3,367		3367		10,000	4,952		4952		14,707
Medium Density Residential		312.6	10.6%		2	0.99	3.00	2.97	328.0		656	each	1948	381		761		2,260	637		1274		3,784
High Density Residential		193.8	6.6%		4	0.99	3.00	2.97	203.4		814	each	2416	220		879		2,610	395		1580		4,693
Multi-Family	5.8	5.8		0.1%	8	0.56	3.00	1.68	9.3		74	each	125	11		87		147	79		632		1,062
Public/Semi-Public																							
Parks & Open Space	77.1	77.1		1.8%		1.68	3.00	5.04	80.0				403	108				547	137				690
Private Recreation	285.3	285.3		6.8%		0.28	3.00	0.84	300.4				252	451				379	602				506
Public/Semi-Public	218.8	218.8		5.2%		21.04	3.00	63.12	219.1				13829	222				14015	225				14202
Non-Residential																							
Office	14.9	14.9		0.4%	20%	1.15	3.00	3.45	17.1	3.43	149.3	ft^2	515	40	7.9	344.7	ft^2	1189	62	12.4	540.1	ft^2	1863
Retail	6.7	6.7		0.2%	20%	3.81	3.00	11.43	8.0	1.61	70.1	ft^2	801	22	4.3	187.5	ft^2	2143	35	7.0	304.9	ft^2	3485
Commercial	11.1	11.1		0.3%	20%	3.81	3.00	11.43	17.6	3.52	153.5	ft^2	1754	83	16.6	721.4	ft^2	8246	148	29.6	1,289.4	ft^2	14738
Rights-of-Way	618.2	618.2		14.8%					618.2					618					618				
Total Developed Land	4,174	4,174		100%					4,351.1					5,521.8					7,890.0				
Vacant	3,845.0	3,845.0							3,668.1					2,497.4					129.2				
Total		**8,019**							**8,019**				**29,618**	**8,019**				**41,536**	**8,019**				**59,730**

52.1%	developed	54.3%	developed	68.9%	developed	98.4%	developed
47.9%	vacant	45.7%	vacant	31.1%	vacant	1.6%	vacant

[1] From Heath 2018 Comprehensive Plan (Table 1)

[2] Based on Heath 2018 Comprehensive Plan (Table 2)

[3] Based on Heath 2018 Comprehensive Plan (Table 3) or 20% FAR

[4] Based on ITE *Trip Generation Manual* 10th Edition

[5] Based on Heath 2018 Comprehensive Plan (Table 3)