

CITY OF NEW BRAUNFELS

ROADWAY IMPACT FEE STUDY

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September
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Prepared for the City of New Braunfels

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Table of Contents

EXECUTIVE SUMMARY.....	1
I. INTRODUCTION.....	8
II. LAND USE ASSUMPTIONS.....	10
A. Purpose and Overview.....	10
B. Land Use Assumptions Methodology.....	11
C. Roadway Impact Fee Service Areas.....	17
D. Land Use Assumptions Summary	19
III. ROADWAY IMPACT FEE CAPITAL IMPROVEMENTS PLAN	20
IV. METHODOLOGY FOR ROADWAY IMPACT FEES	34
A. Service Areas.....	34
B. Service Units.....	34
C. Cost Per Service Unit.....	36
D. Cost of the RIF CIP	36
1. Overview of RIF CIP Costing Worksheets.....	37
2. Project Information.....	38
3. Construction Pay Items.....	39
4. Construction Component Allowances.....	39
5. Summary of Cost and Allowances.....	40
6. Minor Collector Adjustment	40
E. Summary of Roadway Impact Fee CIP Costs.....	41
F. Service Unit Calculation	48
1. Intersection ITS Calculations.....	53
V. ROADWAY IMPACT FEE CALCULATION	54
A. Maximum Assessable Impact Fee Per Service Unit.....	54
B. Plan for Financing and the Ad Valorem Tax Credit.....	56
C. Service Unit Demand Per Unit of Development.....	59
VI. SAMPLE CALCULATIONS	65
VII. ADOPTION AND ADMINISTRATION OF ROADWAY IMPACT FEES	66
A. Adoption Process.....	66
B. Collection and Use of Roadway Impact Fees.....	66
VIII. CONCLUSIONS.....	67
APPENDICES	68

List of Exhibits

1	Developed vs. Undeveloped Parcels.....	12
2	Future Land Use Plan (FLUP).....	14
3	Service Areas.....	18
4	10-Year Roadway Impact Fee Capital Improvements Plan	
	Service Area 1	23
	Service Area 2	25
	Service Area 3	27
	Service Area 4	29
	Service Area 5	31
	Service Area 6	33

List of Tables

1	Maximum Assessable Roadway Impact Fee Per Service Unit.....	7
2	Residential and Employment 10-Year Growth Projections.....	19
3	10-Year Roadway Impact Fee Capital Improvements Plan	
	Service Area 1	22
	Service Area 2	24
	Service Area 3	26
	Service Area 4	28
	Service Area 5	30
	Service Area 6	32
4.A	Service Volumes for Proposed Facilities.....	35
4.B	Service Volumes for Existing Facilities.....	35
5	10-Year Roadway Impact Fee CIP with Conceptual Level Cost Projections	
	Service Area 1	42
	Service Area 2	43
	Service Area 3	44
	Service Area 4	45
	Service Area 5	46
	Service Area 6	47
6	Transportation Demand Factor Calculations.....	51
7	Ten Year Growth Projections.....	52
8	Maximum Assessable Roadway Impact Fee Computation.....	54
9	Maximum Assessable Roadway Impact Fee.....	58
10	Land Use/Vehicle-Mile Equivalency Table (LUVMET).....	61
11	Land Use Descriptions.....	63

EXECUTIVE SUMMARY

Introduction

Impact Fees are a mechanism for funding the public infrastructure necessitated by new development. Across the country, they are used to fund police and fire facilities, parks, schools, roads and utilities. In Texas, the legislature has allowed their use for water, wastewater, roadway and drainage facilities. Since 2007, they have been used to fund public roadway improvements in the City of New Braunfels.

In the most basic terms, impact fees are meant to recover the incremental cost of the impact of each new unit of development creating new infrastructure needs. In the case of Roadway Impact Fees, the infrastructure need is the increased capacity on arterial and collector roadways that serve the overall transportation system. The purpose of the 2019 Roadway Impact Fee Study is to identify the fee per unit of new development necessary to fund these improvements in accordance with the enabling legislation, Chapter 395 of the Texas Local Government Code.

Impact Fees are a mathematical calculation that determines a maximum impact fee that would be equivalent for growth paying for growth. The Maximum Roadway Impact Fee per Service Unit for Roadway Facilities is considered an appropriate measure of the impacts generated by a new unit of development on the City's Roadway 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 **equitable** since similar developments pay a similar fee regardless if they are the first or last to develop. An impact fee program is **transparent**. This report describes in detail how the fee is calculated and how a Roadway Impact Fee Advisory Committee (Advisory Committee) monitors the Impact Fee program. An impact fee program is **flexible** in that funds can be used on priority projects and not just on project adjacent to a specific development. An impact fee program is **consistent** with other City goals and objectives for growth. For example, the actual collection rate set by Council may be determined to be less than the Maximum Roadway Impact Fee to achieve and be in alignment with other City goals and objectives for growth.

Impact Fee Basics

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

Impact Fee Study

The 2019 Roadway Impact Fee Study is to determine the maximum impact fee per unit of new development chargeable as allowed by the state law. This determination is not a recommendation; the actual fee amount ultimately assessed is at the discretion of the New Braunfels City Council, so long as it does not exceed the maximum assessable fee allowed by law. The study looks at a period of 10 years to project new growth and corresponding capacity needs, as required by state law. The study and corresponding maximum fees must be restudied at least every five years. However, the study can be updated at any time to accommodate significant changes in any of the key variables of the impact fee equation.

Service Areas

A Service Area is a geographic area within which a unique maximum impact fee is determined. All fees collected within the Service Area must be spent on eligible improvements within the same Service Area. For Roadway Impact Fees, the Service Area may not exceed 6 miles. In New Braunfels, this restriction necessitated the creation of 6 separate Service Areas. A map of the Service Areas can be found on Page 18.

In defining the Service Area boundaries, the project team considered the corporate boundary (including full and limited purpose jurisdiction), required size limit, adjacent land uses, highway facilities, and topography. Since each Service Area has a unique maximum impact fee, the per-unit maximum fee for an identical land use will vary from one Service Area to the next. For this reason, the team avoided drawing a Service Area boundary through uniform land uses where possible. There were no changes made to the Service Area boundaries in the 2019 study other than City annexations.

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 2019-2029. Acknowledging that the parameters of the study (the corporate boundaries, Transportation Plan, Comprehensive Plan, zoning maps, platting history, etc.) are changing constantly, this study is based on conditions as they were on July 26, 2018.

Roadway Impact Fee Capital Improvements Plan

The Roadway Impact Fee Capital Improvements Plan (RIF CIP) is distinct and separate from the City's traditional Capital Improvements Plan (CIP). The RIF CIP is a list of projects eligible for funding through impact fees. The City's Major Thoroughfare Plan (MTP) is the plan for the infrastructure that is estimated to be necessary to accommodate the expected growth. Only those capacity improvements included in the City's MTP are included in the RIF CIP. Capacity improvements may include the addition of lanes, intersection improvements, or the extension of a new road. Resurfacing or other maintenance activities do not qualify as capacity improvements under impact fee law in Texas and cannot be funded with Roadway Impact Fees.

The cost of the RIF CIP is one of the fundamental factors in the calculation of the per-unit maximum impact fee. The RIF CIP's cost was calculated through systematic evaluation of each eligible project. The project team visited each project site to determine the project scope, the presence of any special conditions (such as the need for significant drainage improvements or railroad crossings) and whether various additional construction costs were applicable (such as costing for significant grades). In determining project limits, the team identified roadway segments with uniform need. For example, County Line Road has a portion with half of a 4-lane divided built from FM 725 to Chinaberry Lane, while the remainder east to SH 46 is a new alignment. These were split as two separate projects based on uniform need. Developing unit costs from recently City bid projects and TxDOT moving average bid prices, uniform costs were determined for the major items of work, additional construction items, and project delivery costs. Section III provides a listing of the 10-Year RIF CIP by service area in **Tables 3.A – 3.F** and maps of the RIF CIP by service area in **Exhibits 4.A – 4.F**. Finally, detailed cost projections by project can be found in Appendix A. It should be noted that



these cost projections are based on conceptual level planning and are subject to refinement upon final design.

Only those projects listed in the RIF CIP are eligible to utilize impact fee funds. In order to optimize future flexibility, all capacity improvements included in the MTP are included in the RIF CIP and will be eligible to utilize impact fee funds.

Only the costs associated with providing the additional capacity necessitated by 10 years of growth can be used to calculate the maximum impact fee. To calculate the maximum impact fee, the total cost of the RIF CIP at build-out was reduced to account for (1) the portion of new capacity that will address existing needs, (2) the portion of new capacity that will not be necessitated until beyond the 10-year growth window, and (3) contributions already made by current developments. A ratio that compares 10 years' demand for capacity to the net supply of capacity (total new capacity in the RIF CIP minus existing needs) can be calculated. That ratio, which may not exceed 100%, is then applied to the cost of the net capacity supplied. The result is a determination of the costs attributable to the next 10 years' growth, which is then used to calculate the maximum impact fee in accordance with state law. The result is known as the recoverable cost of the RIF CIP.

Service Unit

The "service unit" is a measure of consumption or use of the capital facilities by new development. In other words, it is the unit of measure used in the 2019 Roadway Impact Fee Study to quantify the supply and demand for roads in the City. For transportation purposes, the service unit is defined as a vehicle-mile. A vehicle-mile is the capacity consumed in a single lane in the PM peak hour by a vehicle making a trip one mile in length. The PM Peak is used as the basis for transportation planning and the estimation of trips caused by new development. The PM peak is utilized because this is the time where most roadway sizing and intersection improvements are determined.

Impact Fee Calculation

In simplest terms, the maximum impact fee allowable by law is calculated by dividing the recoverable cost of the RIF CIP by the number of new service units of development. In accordance with state law, both the cost of the RIF CIP 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 RIF CIP 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 calculated in **Table 9**. A detailed discussion of the calculation precedes **Table 9**, found on Page 54.

Collection and Use of Roadway Impact Fees

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

Adoption Process

Chapter 395 of the Texas Local Government Code stipulates a specific process for the adoption of Roadway Impact Fees. A Roadway Impact Fee Advisory Committee (Advisory Committee) is required to review the Land Use Assumptions and RIF CIP used in calculating the maximum fee, and to provide the Committee's findings for consideration by the City Council. The Advisory Committee also reviews the Roadway Impact Fee ordinance and provides its findings to the City Council. The composition of the Advisory Committee is required to adequately represent the building and development communities. The City Council then conducts a public hearing on the Land Use Assumptions, RIF CIP and Impact Fee Ordinance. One public hearing is required for the 2019 Roadway Impact Fee study.

Following policy adoption, the Advisory Committee is tasked with advising the City Council of the need to update the Land Use Assumptions or the RIF CIP at any time within five years of adoption.



Finally, the Advisory Committee oversees the proper administration of the Impact Fee, once in place, and advises the Council as necessary.



2019 Roadway Impact Fee Study Results

Below is the listing of the 2019 Roadway Impact Fee Study's Maximum Assessable Impact Fee Per Service Unit (Vehicle-Mile):

Table 1. Maximum Assessable Roadway Impact Fee Per Service Unit

Service Area	Maximum Fee Per Service Unit (per Vehicle-Mile)
1	\$1,066
2	\$319
3	\$505
4	\$2,349
5	\$1,371
6	\$1,777

I. INTRODUCTION

Chapter 395 of the Texas Local Government Code describes the procedure political subdivisions must follow to create and implement impact fees. Chapter 395 defines an Impact Fee as “a charge or assessment imposed by a political subdivision against new development to generate revenue for funding or recouping the costs of capital improvements or facility expansions necessitated by and attributable to the new development.”

The City has retained Kimley-Horn and Associates, Inc. to provide professional transportation engineering services for the 2019 Rodway Impact Fee Study. This report includes details of the Roadway Impact Fee calculation methodology in accordance with Chapter 395, the applicable Land Use Assumptions, development of the Roadway Impact Fee Capital Improvements Plan (RIF CIP), and the Land Use/Vehicle-Mile Equivalency Table.

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

- 1) **Land Use Assumptions** (Pg. 10)
- 2) **Roadway Impact Fee Capital Improvements Plan (RIF CIP)** (Pg. 20)

Information from these Land Use Assumptions and RIF CIP is used extensively throughout the report.

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

- 1) **Methodology for Roadway Impact Fees** (Pg. 34)
- 2) **Roadway Impact Fee Calculation** (Pg. 54)
- 3) **Plan for Financing and the Ad Valorem Tax Credit** (Pg. 56)

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

- Service Areas (Exhibit 3, Pg. 18)
- Service Units (Pg. 34)
- Cost Per Service Unit (Pg. 36)
- RIF CIP Costing Methodology (Pg. 36)
- Summary of RIF CIP Costs (Pg. 41)
- Service Unit Calculation (Pg. 48)

The Roadway Impact Fee is then calculated as:

- Maximum Assessable Impact Fee Per Service Unit (Pg. 54)
- Service Unit Demand Per Unit of Development (Pg. 59)

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

II. LAND USE ASSUMPTIONS

A. Purpose and Overview

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

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

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

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

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

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

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

The above categories are used in the development of the assumptions for impact fees; however, expanded classifications used in the assessment of impact fees are found in the Land Use / Vehicle-Mile Equivalency Table.

B. Land Use Assumptions Methodology

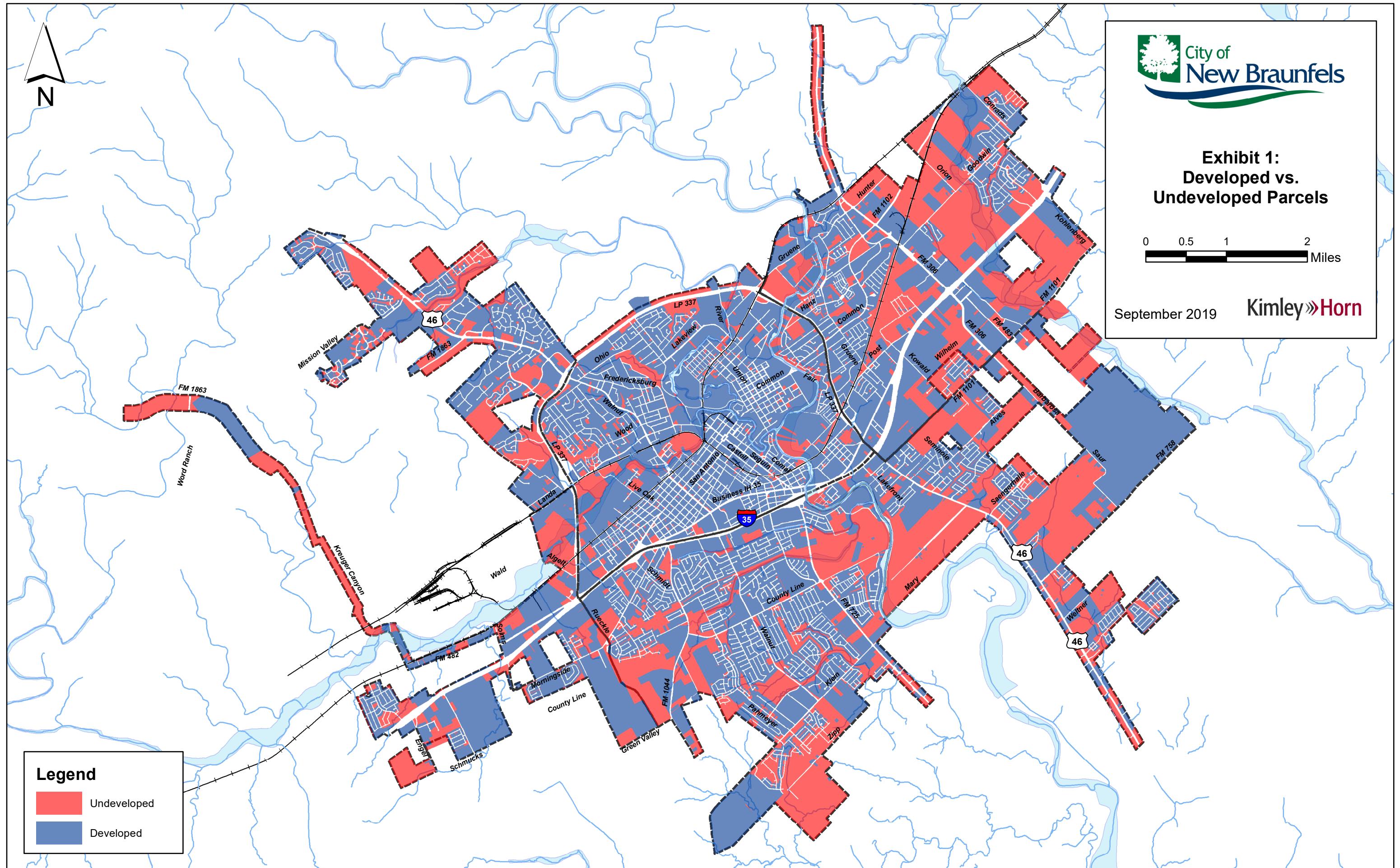
The residential and non-residential growth projections formulated in this report were performed using reasonable and generally accepted planning principles. The following factors were considered in developing these projections:

- Character, type, density, and quantity of existing development;
- Current zoning plans;
- Future Land Use Plan;
- Growth trends;
- Location of undeveloped parcels;
- Physical restrictions (i.e. flood plains, railroads, gas wells); and
- Physical development carrying capacity of the City of New Braunfels.

The following process was used to develop the land use assumptions:

Step 1: Determine Developed and Undeveloped Parcels

The first step was determining which parcels were developed versus undeveloped. Based on information provided by the City of New Braunfels and aerial survey, parcel level development was able to be estimated. **Exhibit 1** summarizes parcel development status within the City Limits.



Step 2: Determine Base Year (2018)

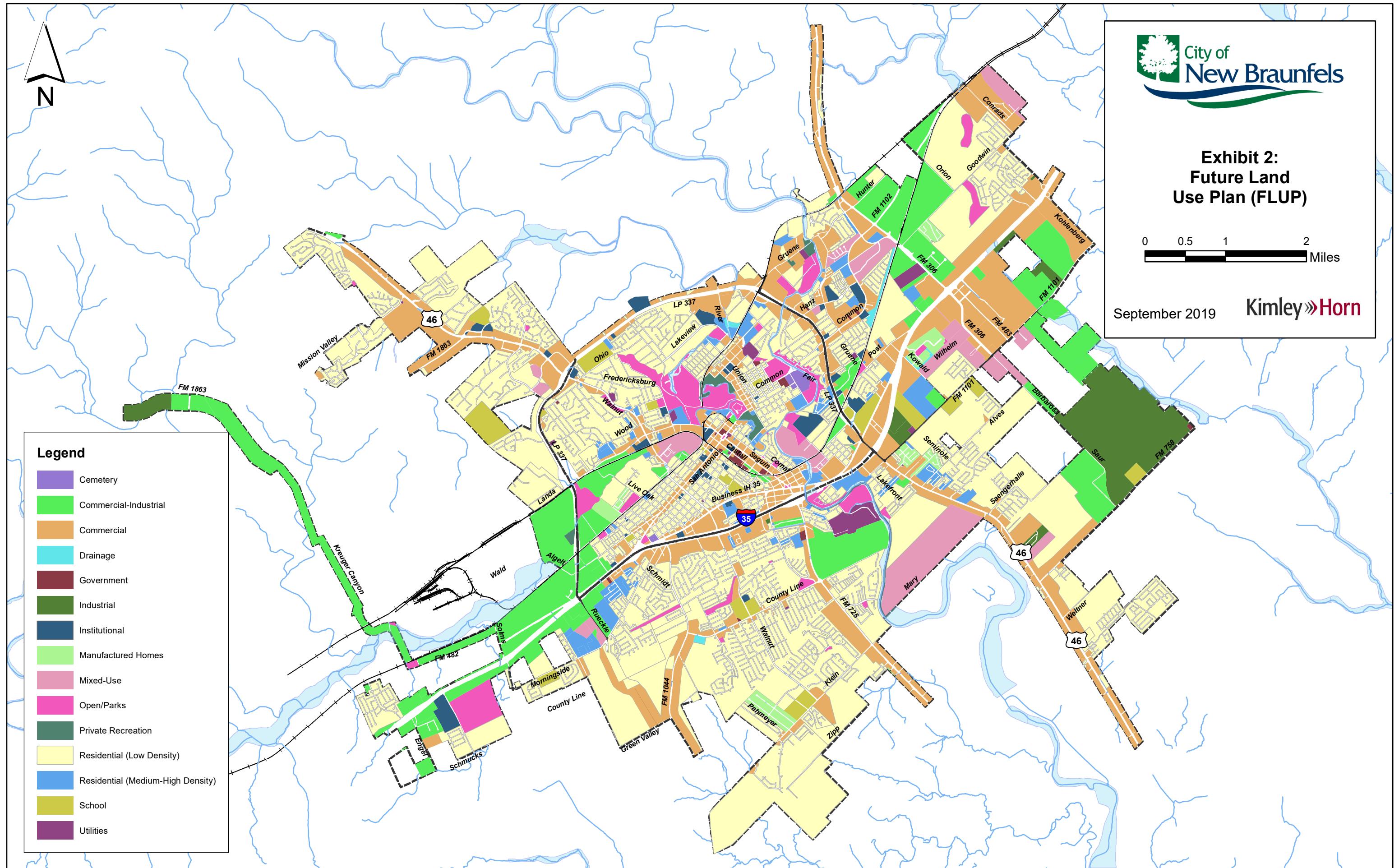
For the developed parcels identified in Step 1, existing residential and employment estimates were obtained using existing building information provided by the City and an aerial survey of existing development. For multifamily units, a density calculation was performed based on the building's footprint and average densities throughout the city. A conversion of square footage per unit was utilized to determine the number of units.

To estimate employment square footage, building footprint data and aerials were utilized.

Step 3: Determine Development Carrying Capacity (Growth Potential)

For the remaining undeveloped areas, assumptions based upon the City's Future Land Use (**Exhibit 2**) from the *Envision New Braunfels Comprehensive Plan* were used to estimate the carrying capacity, or growth potential, of land within the Roadway Impact Fee study area for both residential and employment land uses. The carrying capacity was calculated in two basic steps:

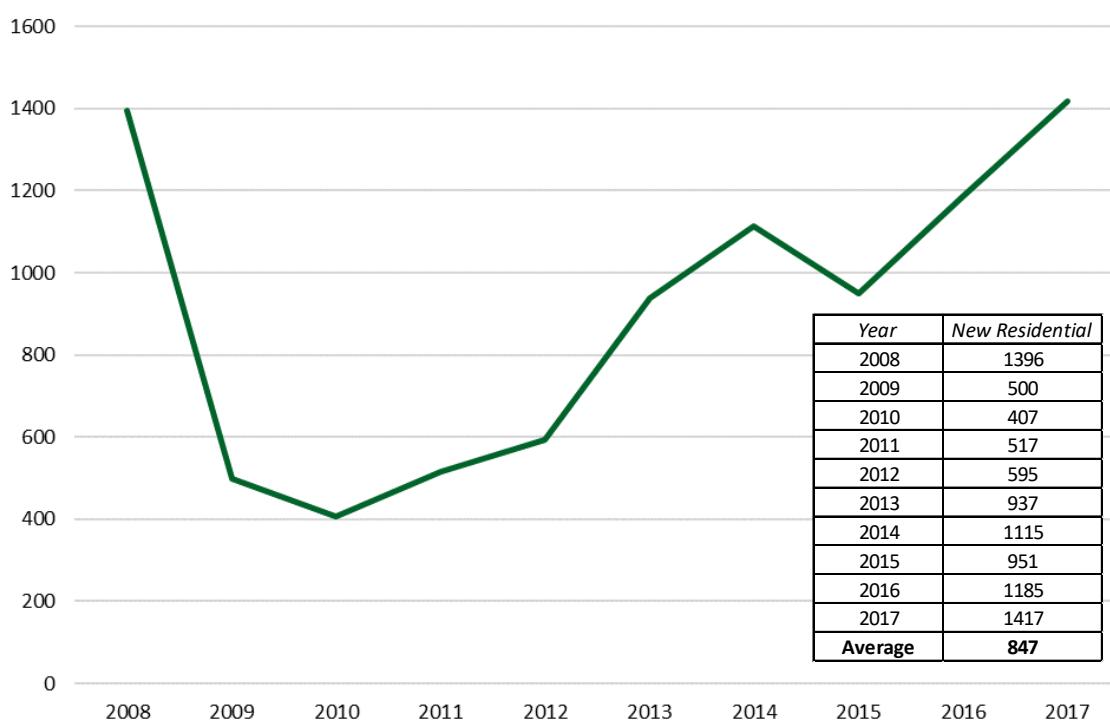
- 1) Determine the future land use for study area parcels based on previous planning efforts completed by the City.
- 2) Determine the number of dwelling units and employment building space that could occupy every parcel – i.e. the parcel's “Development Carrying Capacity” – based on the future land use development types.



Step 4: Determine 10-Year Growth Projections

As a basis for determining the 10-year growth projections, historical permit data provided by City staff was used. Using new residential permit data collected from 2008 to 2017, an average new permit per year value was found. Using the average number of new permits per year, an estimate of the number of single-family dwelling units to develop within the 10-year window was obtained. Based on the historical permit data, it was found that an average of 847 permits per year have been pulled from 2008 to 2017. With the 10-year growth assumptions, it is estimated that 8,470 single-family dwelling units will be constructed over the next 10 years. **Figure 1** summarizes the permit data from 2008 to 2017.

Figure 1. New Residential Permit Totals (2008 – 2017)

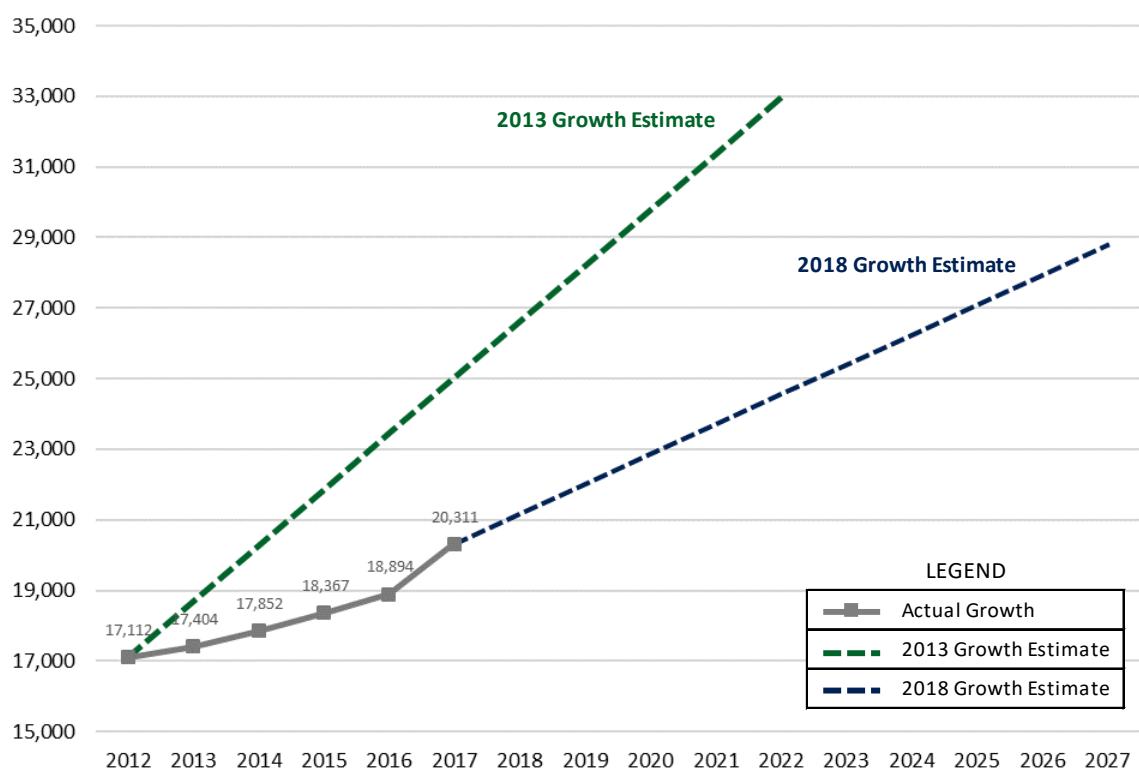


This anticipated number of single-family units to develop within the 10-year window was distributed among the service areas using a ratio of the anticipated development carrying capacity within the individual service area and the development carrying capacity of the City.

The remaining growth to occur within the 10-year window for non-residential units was derived from reasonable assumptions for undeveloped areas based on growth trends and the Future Land Use Plan.

Figure 2 shows how the 2013 impact fee study's single-family growth estimate compares with the actual growth (shown in grey), along with the current growth estimate.

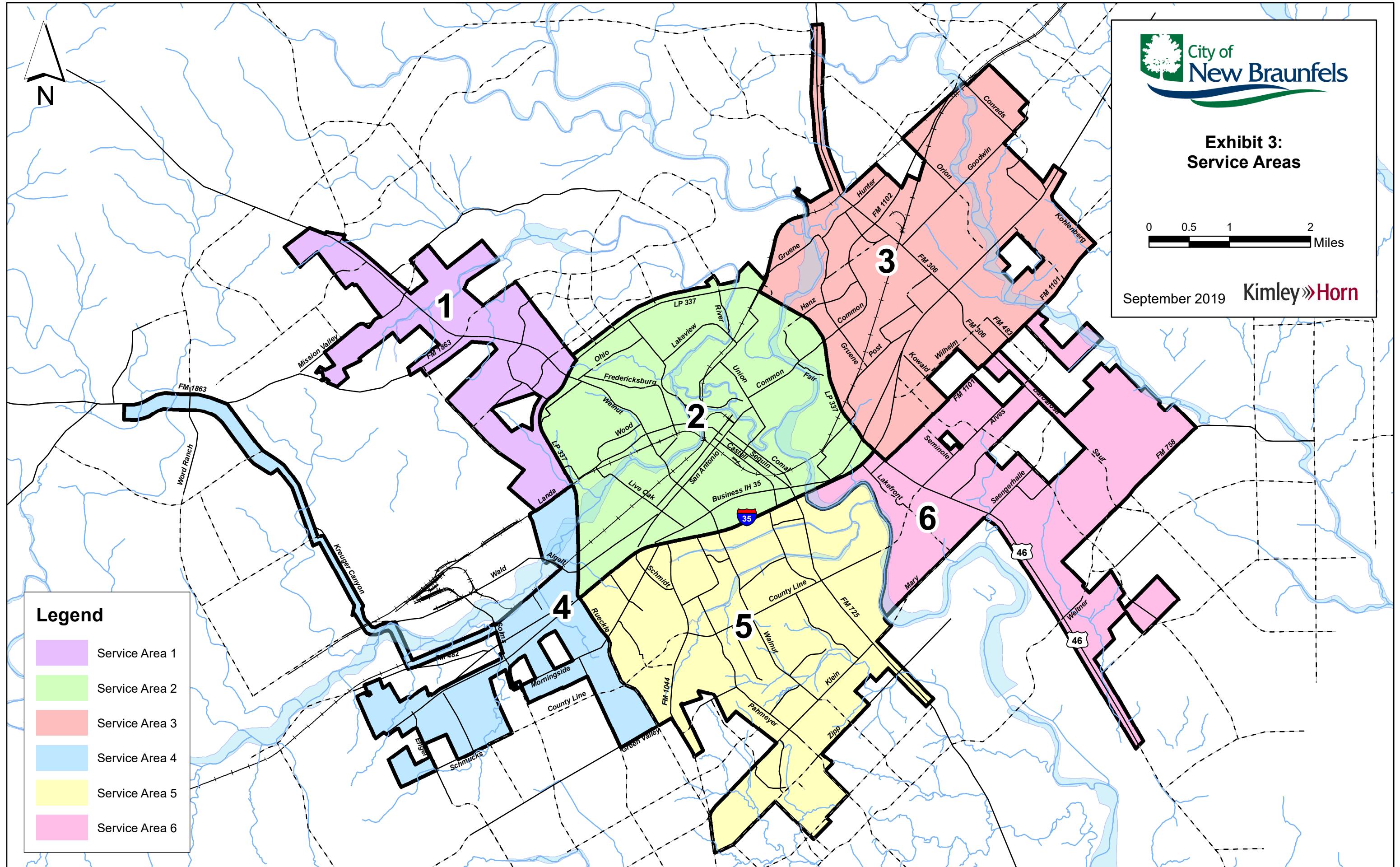
Figure 2. Estimated Single-Family Growth: 2013 and 2018



C. Roadway Impact Fee Service Areas

The geographic boundary of the proposed impact fee service areas for transportation facilities is shown in **Exhibit 3**. The City of New Braunfels is currently divided into six (6) service areas. The service areas were determined by City of New Braunfels staff and Advisory Committee. For roadway facilities, the service areas are limited to those areas within the current city limits. Therefore, areas within the extraterritorial jurisdiction (ETJ) are excluded from this study.

It should be noted that at locations where service area boundaries follow a thoroughfare facility, the proposed boundary is intended to follow the centerline of the roadway. In cases where a service area boundary follows the City Limits, only those portions of the facility within the City Limits are included in the service area. There were no changes made to the Service Area boundaries in the 2019 study other than City annexations.



D. Land Use Assumptions Summary

Table 2 summarizes the residential and non-residential 10-year growth projections. These values were derived based on the identification of undeveloped parcels, the City's Future Land Use Plan, historical building permit data, and input from City of New Braunfels Utilities staff.

Table 2. Residential and Non-Residential 10-Year (2019-2029) Growth Projections

Service Area	Residential		Non-Residential		
	Single - Family	Multi-Family	Basic	Service	Retail
	Dwelling Units		Sq. Ft.	Sq. Ft.	Sq. Ft.
1	927	216	-	48,000	740,000
2	198	-	145,000	-	3,996,000
3	2,190	3,061	1,999,000	396,000	5,247,000
4	194	437	774,000	29,000	44,000
5	413	194	-	-	101,000
6	1,134	301	86,000	49,000	535,000
Sub-Total	5,056	4,209	3,004,000	522,000	10,663,000

III. ROADWAY IMPACT FEE CAPITAL IMPROVEMENTS PLAN

The City has identified the transportation projects needed to accommodate the projected growth within the City. The City's Major Thoroughfare Plan (MTP) is the plan for the infrastructure that is estimated to be necessary to accommodate the expected growth. The Roadway Impact Fee Capital Improvements Plan (RIF CIP) consists of four (4) categories of projects. They are as follows:

- **Previously Constructed** – Identified corridors that were previously constructed and have access capacity for future development to utilized.
- **Widening** – Existing roadways not currently built to the ultimate class in the MTP and must be completely reconstructed
- **Access Management** – Existing undivided roadways identified for median construction in the existing center turn lane for access management purposes. Many of these are TxDOT corridors, but the full value of access management was utilized in the study.
- **New** - All future roadways needed to complete the MTP

The RIF CIP includes arterial/parkway class roadway facilities and collector facilities, as well as major intersection improvements. All of the roadway facilities identified are included in the MTP, except for some roadway alignment modifications due to city direction. Through evaluation of the MTP with City staff, some facilities were identified that were upgraded or downgraded from their functional classification to reflect capacity need in a 10-year window.

Major intersection improvements were identified to improve capacity for new development.

Improvements were categorized as follows:

- **Intersection Improvement** – construction of an intersection improvement to be determined after complete analysis
- **Turn Lanes** – addition or extension of a turn lane.
- **Update Intelligent Transportation System (ITS) and Traffic Management Infrastructure** – This item was identified in the MTP and was split between the six (6) service areas for developing the roadway impact fee. The calculated percentage for each service area represents the amount of infrastructure improvements attributable to anticipated future growth in each service area.

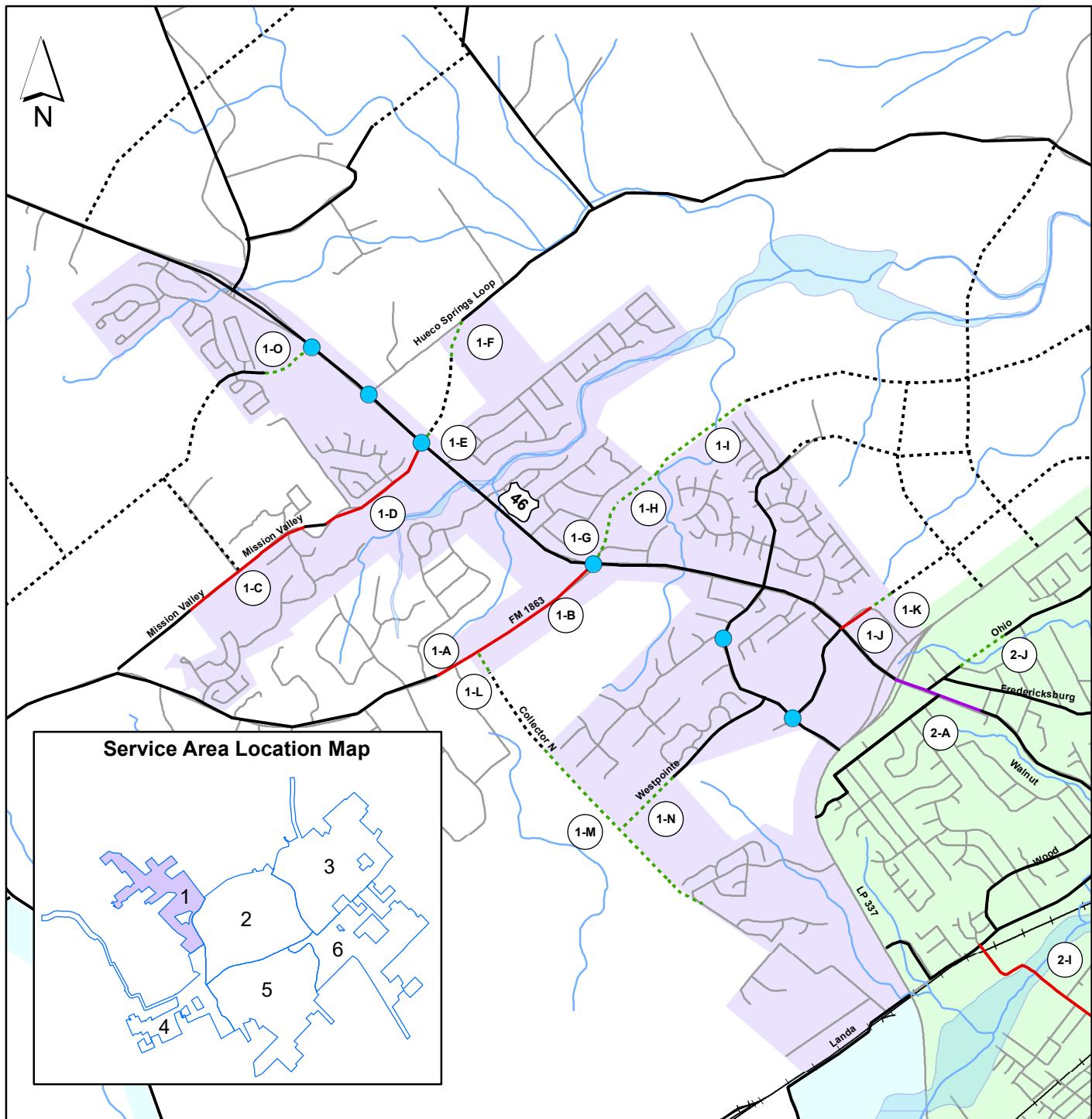
All intersection improvement recommendations are recommended to undergo a design level evaluation before implementation to ensure the most appropriate improvements are made. In the case where a design level evaluation determines improvements contrary to the RIF CIP, such as turn lane improvements in place of a signal, the RIF CIP cost allocated to the intersection may still be applied to the alternate improvements.

The proposed RIF CIP is listed in **Tables 3.A – 3.F** and mapped in **Exhibits 4.A – 4.F**. The tables show the length of each project as well as the facility's typology. The RIF CIP was developed in conjunction with input from City of New Braunfels staff and represents projects that will be needed to accommodate the growth projected in the Land Use Assumptions section of this report.



Table 3.A. 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area 1

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 1	1-A	Principal Arterial	FM 1863 (1)	City Limits to 810' E of City Limits	0.15	50%	\$ 277,800	\$ 138,900
	1-B	Principal Arterial	FM 1863 (2)	810' E of City Limits to SH 46	0.66	100%	\$ 1,200,200	\$ 1,200,200
	1-C	Minor Arterial	Mission Valley (1)	City Limits to City Limits	0.61	50%	\$ 3,846,000	\$ 1,923,000
	1-D	Minor Arterial	Mission Valley (2)	City Limits to SH 46	0.56	100%	\$ 3,497,000	\$ 3,497,000
	1-E	Minor Arterial	Mission Valley (3)	SH 46 to City Limits	0.06	100%	\$ 402,000	\$ 402,000
	1-F	Minor Arterial	Mission Valley (4)	City Limits to 895' E of City Limits	0.17	100%	\$ 1,105,000	\$ 1,105,000
	1-G	Minor Arterial	Roadway A (1)	SH 46 to 1495' E of SH 46	0.28	100%	\$ 1,847,000	\$ 1,847,000
	1-H	Minor Arterial	Roadway A (2)	1495' E of SH 46 to 2575' E of SH 46	0.20	100%	\$ 1,341,000	\$ 1,341,000
	1-I	Minor Arterial	Roadway A (3)	2575' E of SH 46 to City Limits	0.50	50%	\$ 3,645,000	\$ 1,822,500
	1-J	Major Collector	Roadway C (1)	SH 46 to 795' E of SH 46	0.15	100%	\$ 799,000	\$ 799,000
	1-K	Major Collector	Roadway C (2)	795' E of SH 46 to 1370' E of SH 46	0.11	100%	\$ 606,000	\$ 606,000
	1-L	Minor Collector	Collector N (1)	FM 1863 to City Limits	0.09	100%	\$ 106,720	\$ 106,720
	1-M	Minor Collector	Collector N (2)	City Limits to Stone Crossing	0.96	50%	\$ 1,093,010	\$ 546,505
	1-N	Minor Collector	Westpointe Drive	Collector N to 2750' W of Oak Run	0.31	100%	\$ 357,280	\$ 357,280
	1-O	Minor Collector	Old Mission Lane	1225' W of SH 46 to SH 46	0.23	100%	\$ 263,610	\$ 263,610
		Intersection Improvements	Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
	1-1		SH 46 and FM 1863	Intersection Improvements and Turn Lanes		100%	\$ 215,000	\$ 215,000
	1-2		Independence Drive and Oak Run Parkway	Intersection Improvements		100%	\$ 350,000	\$ 350,000
	1-3		Oak Run Parkway and Hunter's Creek Drive	Intersection Improvements		100%	\$ 350,000	\$ 350,000
	1-4		SH 46 and Hueco Springs Loop	Intersection Improvements		100%	\$ 350,000	\$ 350,000
	1-5		SH 46 and Old Mission Lane (Future)	Intersection Improvements		100%	\$ 350,000	\$ 350,000
	1-6		SH 46 and Mission Valley	Intersection Improvements		100%	\$ 350,000	\$ 350,000
	-		Update ITS and Traffic Management Infrastructure	-		3%	\$ 1,000,000	\$ 33,000



Legend

- New Projects
- Widening Projects
- Access Management Projects
- Completed or Funded Projects
- Non Impact Fee Eligible Existing Thoroughfares
- Non Impact Fee Eligible Proposed Thoroughfares
- Intersection Improvements

Service Area 1
Service Area 2
Service Area 3
Service Area 4
Service Area 5
Service Area 6



**Exhibit 4.A:
Service Area 1
Capital Improvement Plan**

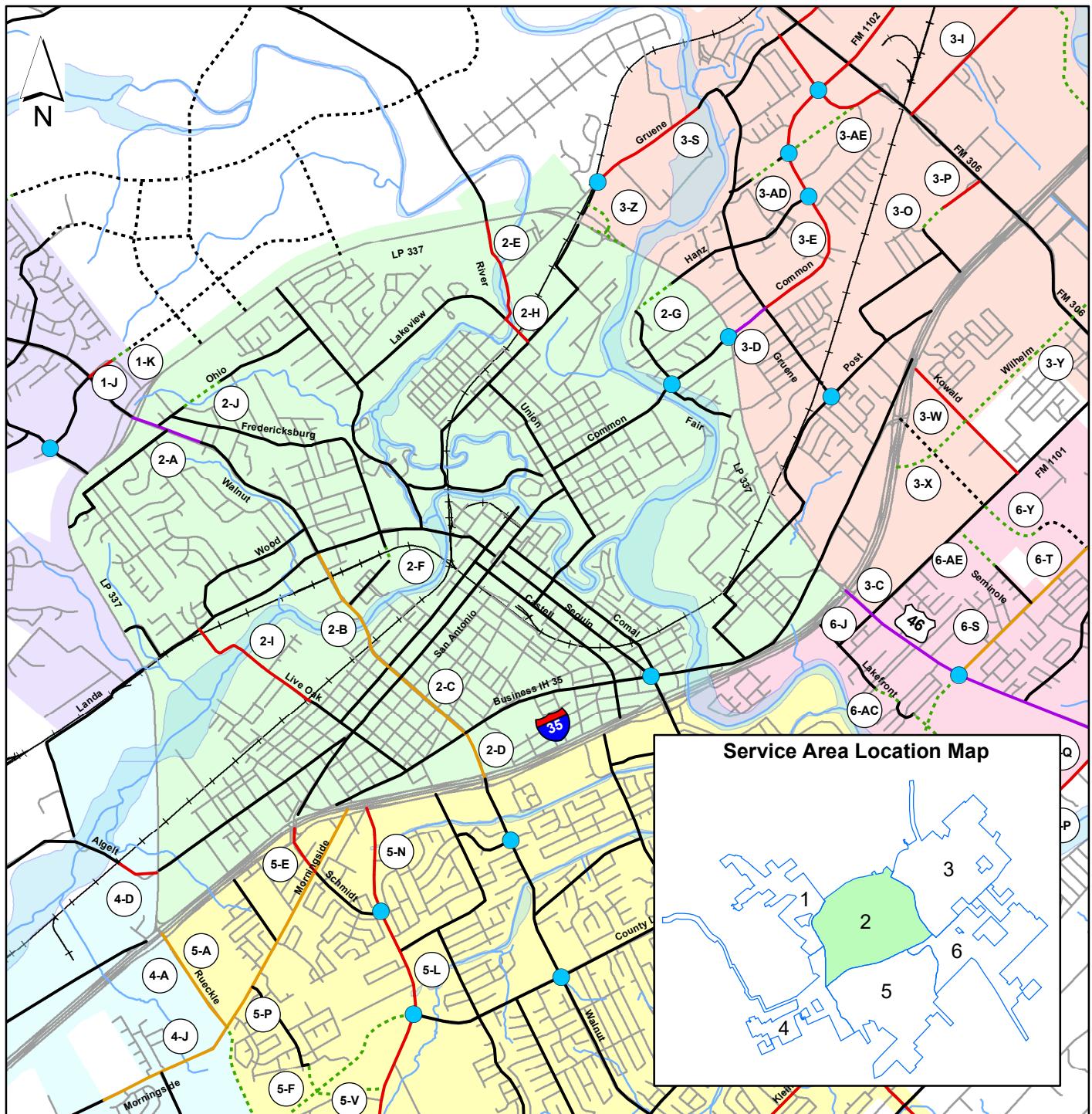
0 2,500 5,000
Feet

September 2019 Kimley-Horn



Table 3.B. 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area 2

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 2	2-A	Principal Arterial	Walnut (1)	LP 337 to Deer Trot Street	0.39	100%	\$ 571,000	\$ 571,000
	2-B	Principal Arterial	Walnut (2)	Landa Street to Mill Street	0.73	100%	\$ 6,847,953	\$ 6,847,953
	2-C	Principal Arterial	Walnut (3)	Mill Street to Business IH 35	0.54	100%	\$ 7,109,383	\$ 7,109,383
	2-D	Principal Arterial	Walnut (4)	Business IH 35 to IH 35	0.26	100%	\$ 1,853,497	\$ 1,853,497
	2-E	Minor Arterial	River	LP 337 to Lakeview Boulevard	0.55	100%	\$ 8,055,000	\$ 8,055,000
	2-F	Minor Collector	Fredericksburg	Academy Street to Landa Street	0.08	100%	\$ 1,081,120	\$ 1,081,120
	2-G	Minor Collector	Hanz	River Terrace to 1190' E of River Terrace	0.22	100%	\$ 246,500	\$ 246,500
	2-H	Minor Collector	Lakeview	Klingemann Street to Torrey Street	0.17	100%	\$ 2,257,000	\$ 2,257,000
	2-I	Minor Collector	Live Oak	Landa Street to Michigan Street	0.75	100%	\$ 5,812,000	\$ 5,812,000
	2-J	Minor Collector	Ohio	Canyon Drive to 1250' E of Canyon Drive	0.24	100%	\$ 383,960	\$ 383,960
	Intersection Improvements		Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
			Common and LP 337	Intersection Improvements and Turn Lanes				
			Fair and Common	Intersection Improvements				
			Business IH 35 and Seguin	Intersection Improvements and Turn Lanes				
			Rock and Gruene	Intersection Improvements				
			Update ITS and Traffic Management Infrastructure	-				



Legend

- New Projects
- Widening Projects
- Access Management Projects
- Completed or Funded Projects
- Non Impact Fee Eligible Existing Thoroughfares
- Non Impact Fee Eligible Proposed Thoroughfares
- Intersection Improvements

Service Area 1
Service Area 2
Service Area 3
Service Area 4
Service Area 5
Service Area 6

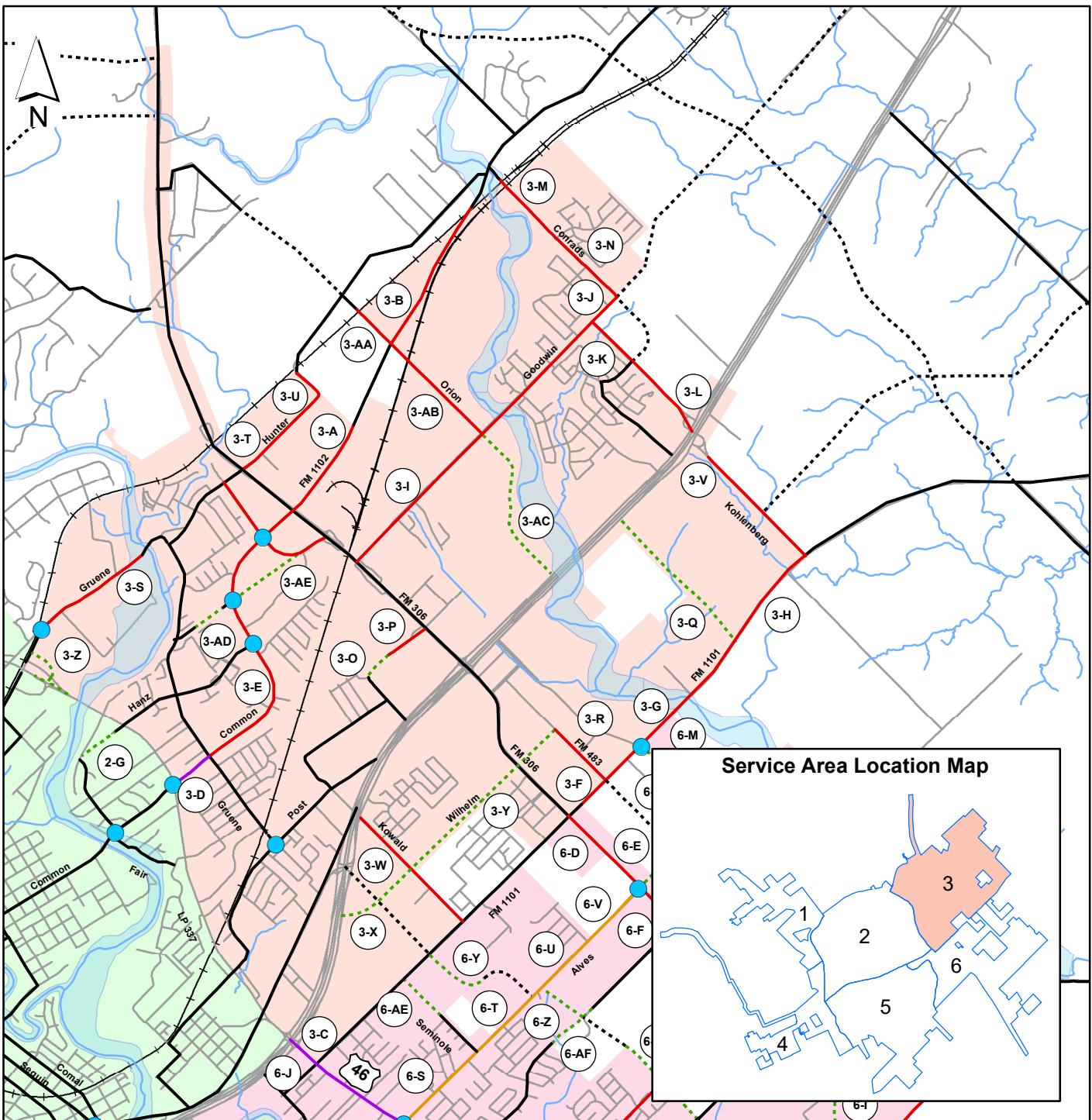


**Exhibit 4.B:
Service Area 2
Capital Improvement Plan**

0 2,500 5,000
Feet

Table 3.C. 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area 3

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area			
SA 3	3-A	Principal Arterial	FM 1102 (1)	FM 306 to City Limits	0.56	100%	\$ 1,010,200	\$ 1,010,200			
	3-B	Principal Arterial	FM 1102 (2)	Orion Drive to City Limits	0.85	100%	\$ 1,693,200	\$ 1,693,200			
	3-C, 6-J	Principal Arterial	SH 46 (1)	IH 35 to FM 1101	0.19	50%	\$ 278,000	\$ 139,000			
	3-D	Principal Arterial	Common (1)	LP 337 to Gruene Road	0.22	100%	\$ 326,000	\$ 326,000			
	3-E	Minor Arterial	Common (2)	Gruene Road to FM 306	1.64	100%	\$ 10,327,000	\$ 10,327,000			
	3-F	Minor Arterial	FM 1101 (1)	490' E of FM 306 to 2850' E of FM 306	0.45	50%	\$ 561,400	\$ 280,700			
	3-G, 6-M	Minor Arterial	FM 1101 (2)	2850' E of FM 306 to 4105' E of FM 306	0.24	50%	\$ 298,600	\$ 149,300			
	3-H	Minor Arterial	FM 1101 (3)	4105' E of FM 306 to Kohlenberg Road	1.10	50%	\$ 2,108,200	\$ 1,054,100			
	3-I	Minor Arterial	Goodwin (1)	FM 306 to Conrads Lane (South)	1.79	100%	\$ 12,918,000	\$ 12,918,000			
	3-J	Minor Arterial	Goodwin (2)	Conrads Lane (South) to Conrads Lane (North)	0.18	50%	\$ 1,142,000	\$ 571,000			
	3-K	Major Collector	Conrads (1)	Goodwin to 710' N of S IH-35	0.65	50%	\$ 3,476,000	\$ 1,738,000			
	3-L	Major Collector	Conrads (2)	710' N of S IH-35 to IH 35	0.13	100%	\$ 713,000	\$ 713,000			
	3-M	Minor Collector	Conrads (3)	City Limits to 295' S of City Limits	0.06	50%	\$ 1,692,000	\$ 846,000			
	3-N	Minor Collector	Conrads (4)	295' S of City Limits to Goodwin	0.81	100%	\$ 3,065,000	\$ 3,065,000			
	3-O	Minor Collector	Windgate Park (1)	Heather Glen Drive to 1230' W of FM 306	0.15	100%	\$ 173,420	\$ 173,420			
	3-P	Minor Collector	Windgate Park (2)	1230' W of FM 306 to FM 306	0.23	100%	\$ 880,000	\$ 880,000			
	3-Q	Minor Collector	Collector O	IH 35 to FM 1101	0.90	100%	\$ 1,254,250	\$ 1,254,250			
	3-R	Minor Collector	FM 483	Wilhelm to FM 1101	0.38	100%	\$ 1,433,000	\$ 1,433,000			
	3-S	Minor Collector	Gruene	Rock Street to 3545' E of Rock Street	0.67	100%	\$ 4,013,000	\$ 4,013,000			
	3-T	Minor Collector	Hunter (1)	FM 306 to 3020' E of FM 306	0.57	100%	\$ 2,157,000	\$ 2,157,000			
	3-U	Minor Collector	Hunter (2)	3020' E. of FM 306 to Railroad	0.16	50%	\$ 615,000	\$ 307,500			
	3-V	Minor Collector	Kohlenberg	3880' N of FM 1101 to FM 1101	0.73	50%	\$ 3,143,000	\$ 1,571,500			
	3-W	Minor Collector	Kowald	IH 35 to FM 1101	0.77	100%	\$ 2,919,000	\$ 2,919,000			
	3-X	Minor Collector	Wilhelml (1)	IH 35 to Kowald Lane	0.48	100%	\$ 545,490	\$ 545,490			
	3-Y	Minor Collector	Wilhelml (2)	Kowald Lane to FM 483	1.06	100%	\$ 1,208,140	\$ 1,208,140			
	3-Z	Minor Collector	Loop 337 Access Connection	Gruene Road to LP 337 Access Road	0.45	100%	\$ 514,460	\$ 514,460			
	3-AA	Minor Collector	Orion (1)	City Limits to Orion Drive Railroad Crossing	0.38	50%	\$ 2,177,000	\$ 1,088,500			
	3-AB	Minor Collector	Orion (2)	Orion Drive Railroad Crossing to Goodwin	0.55	100%	\$ 2,797,000	\$ 2,797,000			
	3-AC	Minor Collector	Orion (3)	Goodwin to IH 35	0.89	100%	\$ 1,010,360	\$ 1,010,360			
	3-AD	Minor Collector	Waterway (1)	660' E of Gruene Road to 345' W of Common Street	0.19	100%	\$ 205,320	\$ 205,320			
	3-AE	Minor Collector	Waterway (2)	Common Street to Old FM 306	0.42	100%	\$ 474,730	\$ 474,730			
SA 3	Intersection Improvements	Location		Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area			
		Common and LP 337		Intersection Improvements							
		Rock and Gruene		Intersection Improvements							
		Gruene and Post		Intersection Improvements							
		Hanz and Common		Intersection Improvements							
		Old FM 306 and Common		Intersection Improvements							
		Common and Waterway (Future)		Intersection Improvements							
		FM 1101 and Alves (Future)		Intersection Improvements							
		Update ITS and Traffic Management Infrastructure		-							



Legend

- New Projects
- Widening Projects
- Access Management Projects
- Completed or Funded Projects
- Non Impact Fee Eligible Existing Thoroughfares
- Non Impact Fee Eligible Proposed Thoroughfares
- Intersection Improvements

Service Area 1
Service Area 2
Service Area 3
Service Area 4
Service Area 5
Service Area 6



Exhibit 4.C: Service Area 3 Capital Improvement Plan

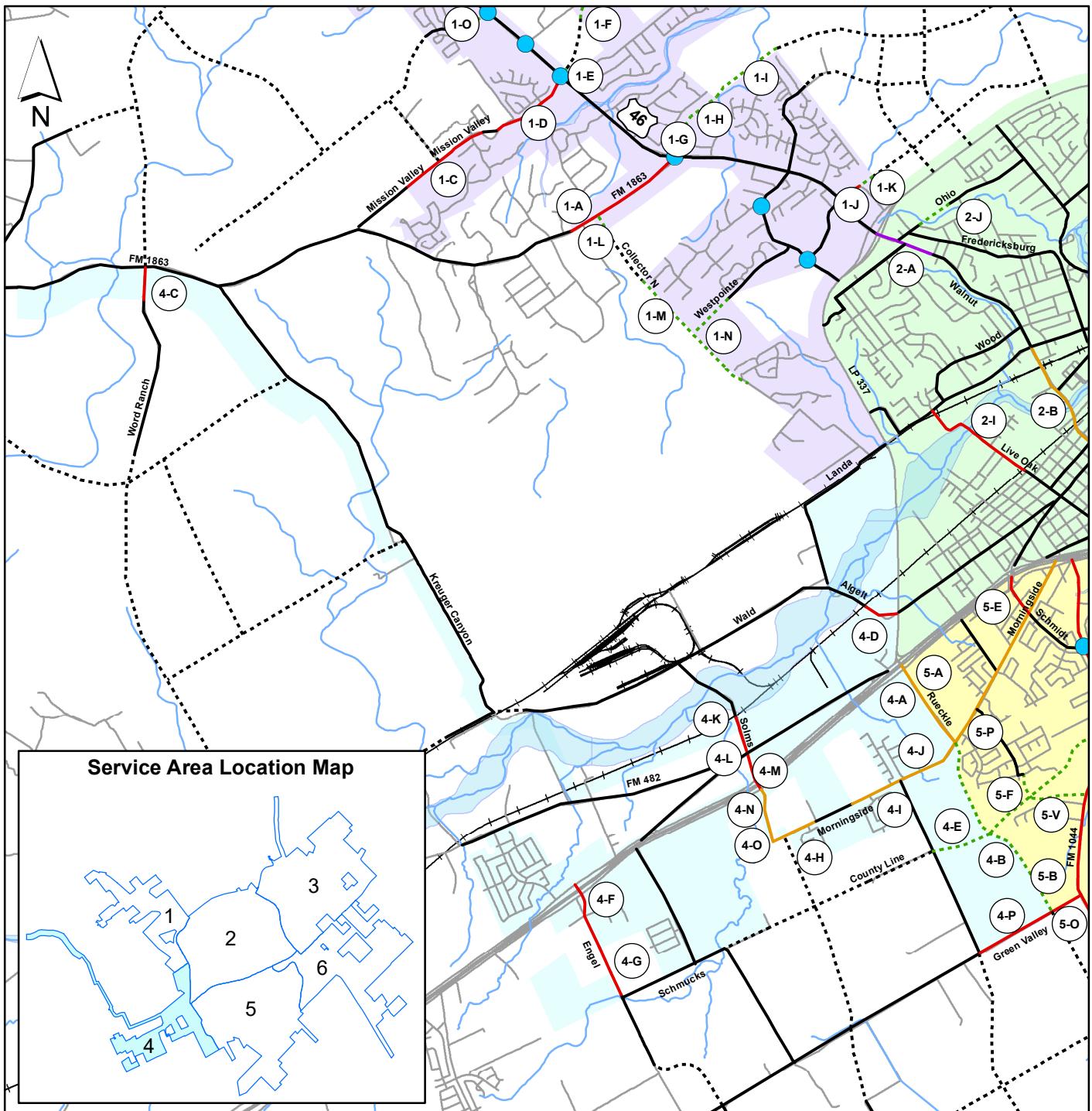
A scale bar with three horizontal lines. The first line is black and labeled '0'. The second line is white and labeled '2,500'. The third line is black and labeled '5,000'. To the right of the scale bar is the word 'Feet'.

September 2019



Table 3.D. 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area 4

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 4	4-A, 5-A	Parkway	Rueckle (1)	IH 35 to Morningside Drive	0.61	50%	\$ 2,921,150	\$ 1,460,575
	4-B, 5-B	Parkway	Rueckle (2)	Morningside Drive to Green Valley	1.29	50%	\$ 8,071,000	\$ 4,035,500
	4-C	Parkway	Word Ranch	FM 1863 to City Limits	0.21	100%	\$ 1,251,000	\$ 1,251,000
	4-D	Minor Arterial	Algelt	1130' W of LP 337 to LP 337	0.21	100%	\$ 1,344,000	\$ 1,344,000
	4-E	Minor Arterial	County Line (1)	CR 376 to Rueckle Road	0.39	100%	\$ 2,544,000	\$ 2,544,000
	4-F	Major Collector	Engel (1)	IH 35 to 2330' S of S IH-35 Frontage Road	0.44	100%	\$ 2,341,000	\$ 2,341,000
	4-G	Major Collector	Engel (2)	2330' S of S IH-35 Frontage Road to Schmucks Road	0.33	50%	\$ 1,729,000	\$ 864,500
	4-H	Major Collector	Morningside (1)	Solms Road to Bass Farm Road	0.30	50%	\$ 1,462,343	\$ 731,172
	4-I	Major Collector	Morningside (2)	1360' E of B. Farm Road to 2770' W of Rueckle Road	0.26	50%	\$ 1,235,554	\$ 617,777
	4-J	Major Collector	Morningside (3)	2770' W of Rueckle Road to Rueckle Road	0.52	100%	\$ 2,517,780	\$ 2,517,780
	4-K	Major Collector	Solms (1)	City Limits to 800' N of FM 482	0.08	100%	\$ 453,000	\$ 453,000
	4-L	Major Collector	Solms (2)	800' N of FM 482 to 640' S of FM 482	0.27	50%	\$ 1,447,000	\$ 723,500
	4-M	Major Collector	Solms (3)	640' S of FM 482 to IH 35	0.13	100%	\$ 674,000	\$ 674,000
	4-N	Major Collector	Solms (4)	IH 35 to 365' S of IH 35	0.07	100%	\$ 330,587	\$ 330,587
	4-O	Major Collector	Solms (5)	365' S of IH 35 to Morningside Drive	0.27	50%	\$ 1,320,606	\$ 660,303
	4-P	Major Collector	Green Valley (1)	CR 376 to Rueckle Road	0.54	50%	\$ 2,852,000	\$ 1,426,000
Intersection Improvements		Location		Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
-		Update ITS and Traffic Management Infrastructure		-				



Legend

- New Projects
- Widening Projects
- Access Management Projects
- Completed or Funded Projects
- Non Impact Fee Eligible Existing Thoroughfares
- Non Impact Fee Eligible Proposed Thoroughfares
- Intersection Improvements

- Service Area 1
- Service Area 2
- Service Area 3
- Service Area 4
- Service Area 5
- Service Area 6



**Exhibit 4.D:
Service Area 4
Capital Improvement Plan**

0 2,500 5,000
Feet



Table 3.E. 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area 5

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 5	4-A, 5-A	Parkway	Rueckle (1)	IH 35 to Morningside Drive	0.61	50%	\$ 2,921,150	\$ 1,460,575
	4-B, 5-B	Parkway	Rueckle (2)	Morningside Drive to Green Valley	1.29	50%	\$ 8,071,000	\$ 4,035,500
	5-C	Principal Arterial	FM 725	County Line Road to City Limits	2.02	100%	\$ 3,653,800	\$ 3,653,800
	5-D	Principal Arterial	Walnut (5)	Klein Road to Zipp Road	0.52	100%	\$ 4,908,000	\$ 4,908,000
	5-E	Minor Arterial	Schmidt	IH 35 to Morningside Drive	0.27	100%	\$ 1,684,000	\$ 1,684,000
	5-F	Minor Arterial	County Line (2)	Rueckle Road to FM 1044	1.04	100%	\$ 6,762,000	\$ 6,762,000
	5-G	Minor Arterial	County Line (3)	FM 725 to Chinaberry Lane	0.73	100%	\$ 4,560,000	\$ 4,560,000
	5-H	Minor Arterial	County Line (4)	Chinaberry Lane to Guadalupe River	0.17	100%	\$ 2,996,000	\$ 2,996,000
	5-I	Minor Arterial	Klein (1)	FM 1044 to 300' W of Legend Pond	1.23	50%	\$ 65,290	\$ 32,645
	5-J	Minor Arterial	Klein (2)	300' W of Legend Pond to Walnut	0.74	100%	\$ 39,104	\$ 39,104
	5-K	Minor Arterial	Klein (3)	SH 46 to FM 725	0.97	100%	\$ 6,434,000	\$ 6,434,000
	5-L	Minor Arterial	FM 1044 (1)	Schmidt Avenue to Green Valley Road	1.67	100%	\$ 2,165,400	\$ 2,165,400
	5-M	Minor Arterial	FM 1044 (2)	Green Valley Road to City Limits	0.56	50%	\$ 708,600	\$ 354,300
	5-N	Major Collector	FM 1044 (3)	IH 35 to Schmidt Avenue	0.56	100%	\$ 593,600	\$ 593,600
	5-O	Major Collector	Green Valley (2)	Rueckle Road to FM 1044	0.20	50%	\$ 1,041,000	\$ 520,500
	5-P	Major Collector	Morningside (4)	IH 35 to Rueckle Road	1.32	100%	\$ 6,356,496	\$ 6,356,496
	5-Q	Minor Collector	Rising Sun	FM 1044 to City Limits	0.15	100%	\$ 168,200	\$ 168,200
	5-R	Minor Collector	Legend Pond	Zipp to 1900' S of Zipp	0.36	50%	\$ 408,900	\$ 204,450
	5-S	Minor Collector	Pahmeyer	1165' S of Zipp Road to Skytrail	0.40	50%	\$ 453,270	\$ 226,635
	5-T	Minor Collector	Skytrail (1)	Legend Pond to 1530' E of Legend Pond	0.29	100%	\$ 329,440	\$ 329,440
	5-U	Minor Collector	Skytrail (2)	1530' E of Legend Pond to Pahmeyer Road	0.42	50%	\$ 479,080	\$ 239,540
	5-V	Minor Collector	Water	Daisy Meadow to FM 1044	0.51	100%	\$ 581,160	\$ 581,160
	5-W	Minor Collector	Zipp (1)	City Limits to 570' W of Legend Pond	0.98	50%	\$ 1,115,630	\$ 557,815
	5-X	Minor Collector	Zipp (2)	570' W of Legend Pond to 765' W of Pahmeyer Road	0.63	100%	\$ 719,780	\$ 719,780
	5-Y	Minor Collector	Zipp (3)	765' W of Pahmeyer Road to 300' E of Pahmeyer Road	0.20	100%	\$ 766,000	\$ 766,000
	5-Z	Minor Collector	Zipp (4)	300' E of Pahmeyer Road to Prado Verde	0.88	50%	\$ 3,333,000	\$ 1,666,500
		Intersection Improvements	Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
			Walnut and County Line	Intersection Improvements and Turn Lanes		100%	\$ 635,000	\$ 635,000
			Walnut and Gardenia	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			FM 1044 and County Line	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			FM 1044 and Schmidt	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			Klein and Klein Meadows	Intersection Improvements		50%	\$ 350,000	\$ 175,000
			Klein and Walnut	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			Update ITS and Traffic Management Infrastructure	-		1%	\$ 1,000,000	\$ 10,000

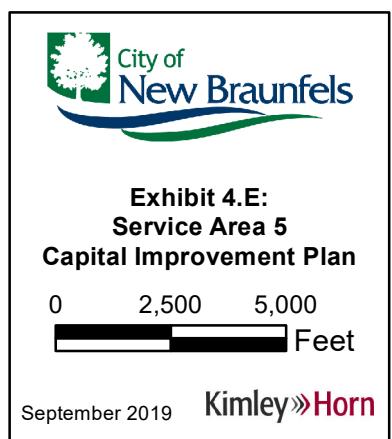
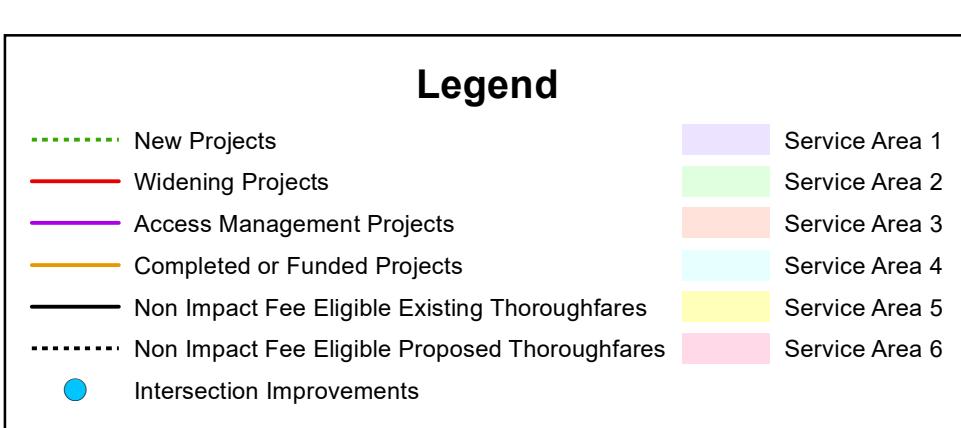
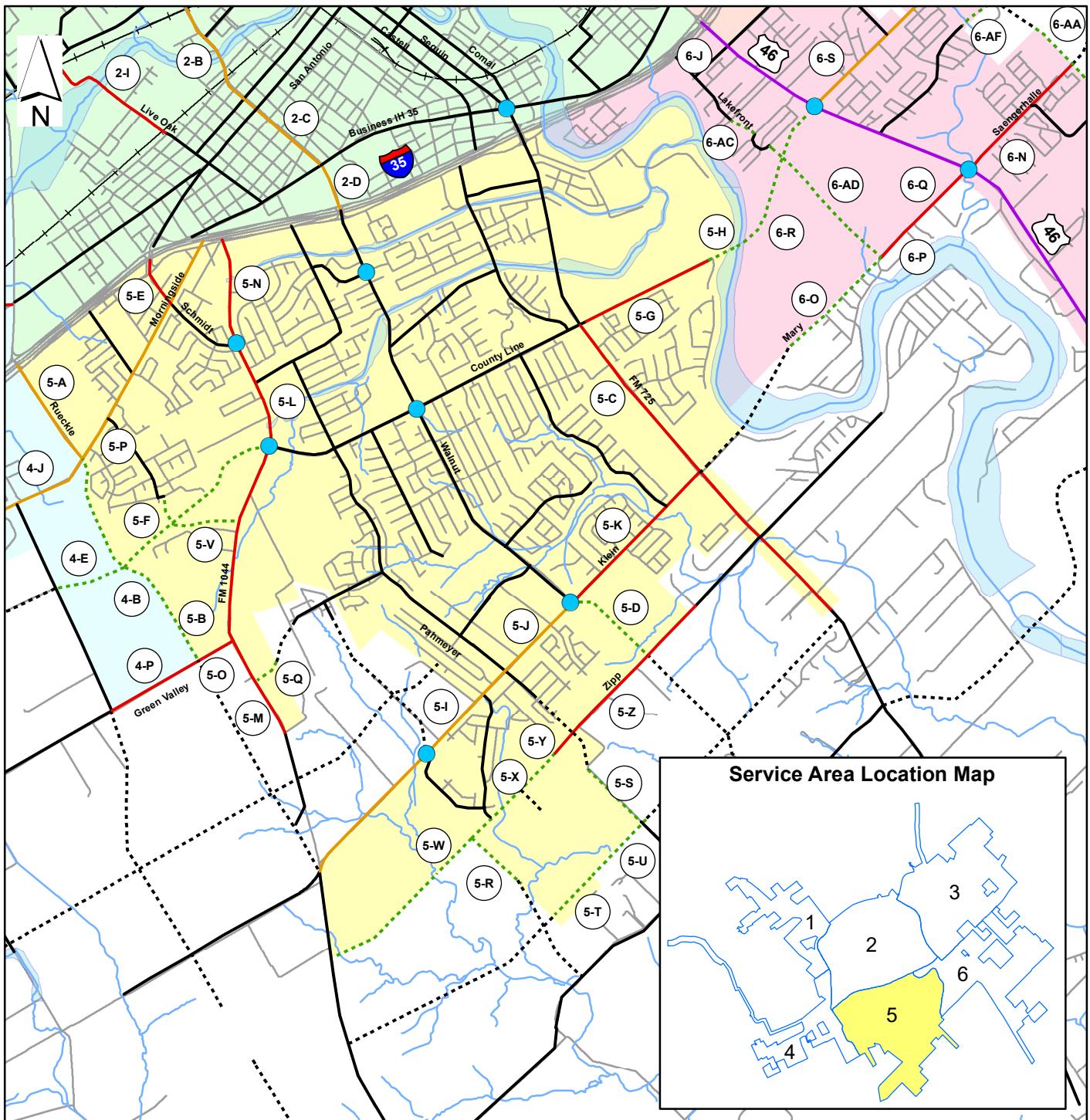
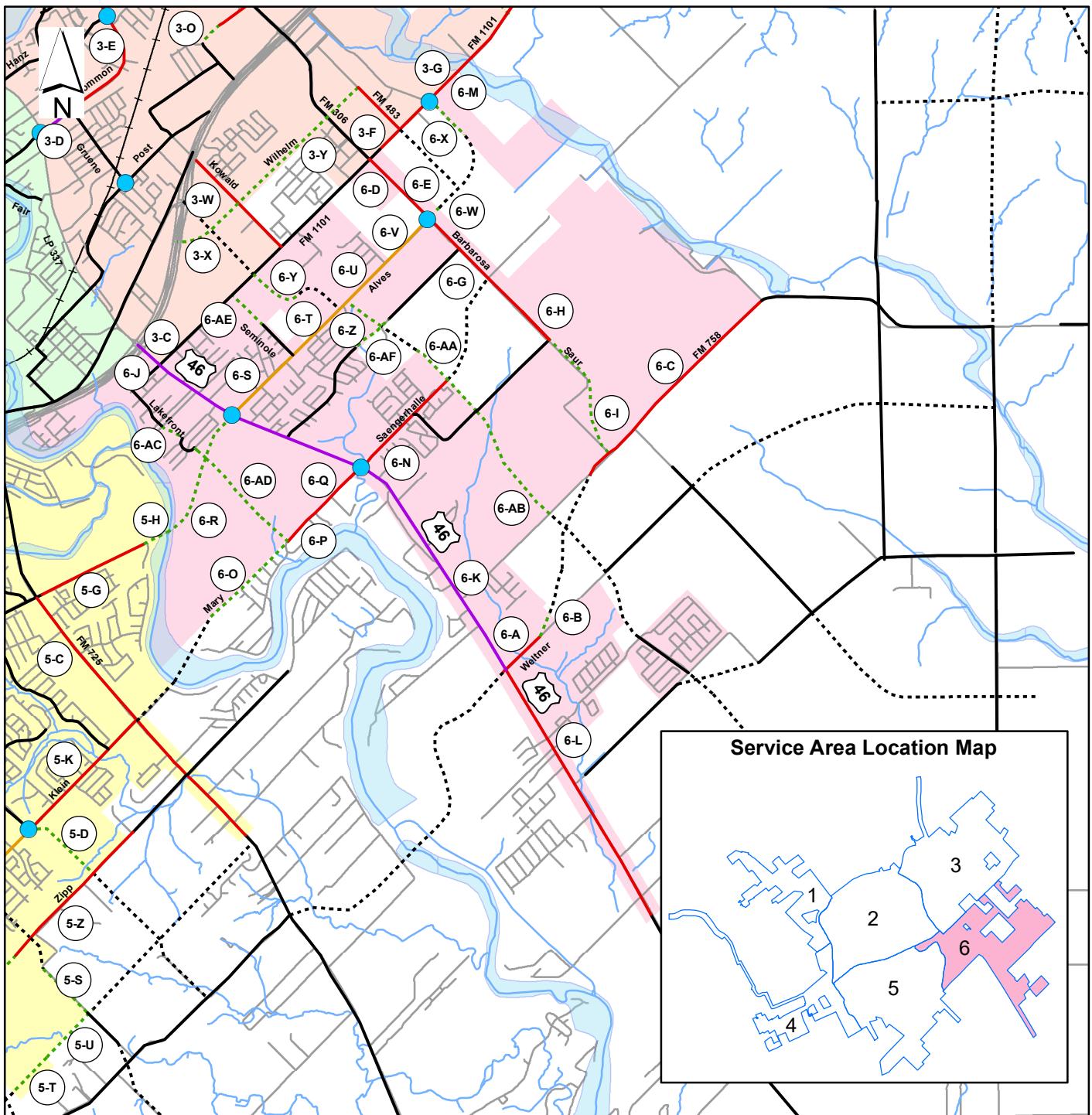




Table 3.F. 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area 6

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 6	6-A	Parkway	FM 758 (1)	SH 46 to 1700' E of SH 46	0.32	100%	\$ 460,800	\$ 460,800
	6-B	Parkway	FM 758 (2)	1700' E of SH 46 to City Limits	0.16	100%	\$ 202,000	\$ 202,000
	6-C	Parkway	FM 758 (3)	965' W of FM 306 to City Limits	1.56	50%	\$ 1,873,600	\$ 936,800
	6-D	Principal Arterial	Barbarosa (1)	FM 1101 to 1505' S of FM 1101	0.28	100%	\$ 2,582,000	\$ 2,582,000
	6-E	Principal Arterial	Barbarosa (2)	1505' S of FM 1101 to County Line Road	0.25	50%	\$ 2,307,000	\$ 1,153,500
	6-F	Principal Arterial	Barbarosa (3)	County Line Road to Three Mile Creek	0.27	100%	\$ 2,460,000	\$ 2,460,000
	6-G	Principal Arterial	Barbarosa (4)	Three Mile Creek to Westmeyer	0.26	50%	\$ 2,367,000	\$ 1,183,500
	6-H	Principal Arterial	Saur (1)	Westmeyer to Saengerhalle Road	0.56	50%	\$ 5,041,000	\$ 2,520,500
	6-I	Principal Arterial	Saur (2)	Saengerhalle Road to City Limits	0.87	100%	\$ 8,148,000	\$ 8,148,000
	3-C, 6-J	Principal Arterial	SH 46 (1)	IH 35 to FM 1101	0.19	50%	\$ 278,000	\$ 139,000
	6-K	Principal Arterial	SH 46 (2)	FM 1101 to Weltner Road	3.06	100%	\$ 4,500,000	\$ 4,500,000
	6-L	Principal Arterial	SH 46 (3)	Weltner Road to City Limits	1.81	100%	\$ 3,428,000	\$ 3,428,000
	3-G, 6-M	Minor Arterial	FM 1101 (2)	2850' E of FM 306 to 4105' E of FM 306	0.24	50%	\$ 298,600	\$ 149,300
	6-N	Minor Arterial	Saengerhalle	SH 46 to City Limits	0.78	100%	\$ 4,911,000	\$ 4,911,000
	6-O	Minor Arterial	Mary (1)	7060' W of SH 46 to 3415' W of SH 46	0.69	50%	\$ 4,898,000	\$ 2,449,000
	6-P	Minor Arterial	Mary (2)	3415' W of SH 46 to 270' W of SH 46	0.60	50%	\$ 3,746,000	\$ 1,873,000
	6-Q	Minor Arterial	Mary (3)	270' W of SH 46 to SH 46	0.05	100%	\$ 321,000	\$ 321,000
	6-R	Minor Arterial	County Line (5)	Guadalupe River to SH 46	0.88	100%	\$ 6,700,000	\$ 6,700,000
	6-S	Minor Arterial	Alves (1)	SH 46 to 620' E of Seminole Drive	0.66	100%	\$ 4,529,093	\$ 4,529,093
	6-T	Minor Arterial	Alves (2)	620' E of Seminole Drive to 830' E of Seminole Drive	0.04	50%	\$ 266,691	\$ 133,346
	6-U	Minor Arterial	Alves (3)	830' E of Seminole Drive to 1875' W of FM 306	0.71	100%	\$ 4,847,510	\$ 4,847,510
	6-V	Minor Arterial	Alves (4)	1875' W of FM 306 to FM 306	0.35	50%	\$ 2,428,544	\$ 1,214,272
	6-W	Major Collector	Alves (5)	FM 306 to City Limits	0.10	100%	\$ 574,000	\$ 574,000
	6-X	Major Collector	Alves (6)	FM 1101 to 1680' S of FM 1101	0.32	50%	\$ 1,753,000	\$ 876,500
	6-Y	Minor Collector	Collector C (1)	FM 1101 to Alves Lane	0.67	100%	\$ 873,480	\$ 873,480
	6-Z	Minor Collector	Collector C (2)	Alves Lane to Three Mile Creek	0.26	100%	\$ 298,120	\$ 298,120
	6-AA	Minor Collector	Collector C (3)	City Limits to Saengerhalle Road	0.55	50%	\$ 736,890	\$ 368,445
	6-AB	Minor Collector	Collector C (4)	Saengerhalle Road to City Limits	0.82	100%	\$ 1,042,550	\$ 1,042,550
	6-AC	Minor Collector	Lakefront (1)	785' S of Carolyn Cove to Lakefront Avenue	0.16	100%	\$ 178,640	\$ 178,640
	6-AD	Minor Collector	Lakefront (2)	Running River to Mary Blvd	0.85	100%	\$ 1,076,770	\$ 1,076,770
	6-AE	Minor Collector	Seminole	FM 1101 to Seminole Drive	0.27	100%	\$ 305,660	\$ 305,660
	6-AF	Minor Collector	Stonegate	3955' E of SH 46 to 3345' W of FM 306	0.28	50%	\$ 434,710	\$ 217,355
		Intersection Improvements	Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
6-1			SH 46 and Saengerhalle/Mary	Intersection Improvements		100%	\$ 350,000	\$ 350,000
6-2			SH 46 and County Line/Alves	Intersection Improvements		100%	\$ 350,000	\$ 350,000
6-3			Barbarosa and Alves	Intersection Improvements		75%	\$ 350,000	\$ 262,500
3-7, 6-4			FM 1101 and Alves (Future)	Intersection Improvements		50%	\$ 350,000	\$ 175,000
-			Update ITS and Traffic Management Infrastructure	-		3%	\$ 1,000,000	\$ 33,000



Legend

- New Projects
- Widening Projects
- Access Management Projects
- Completed or Funded Projects
- Non Impact Fee Eligible Existing Thoroughfares
- Non Impact Fee Eligible Proposed Thoroughfares
- Intersection Improvements

Service Area 1
Service Area 2
Service Area 3
Service Area 4
Service Area 5
Service Area 6



Exhibit 4.F: Service Area 6 Capital Improvement Plan

0 2,500 5,000
 Feet

September 2019

IV. METHODOLOGY FOR ROADWAY IMPACT FEES

A. Service Areas

The six (6) service areas used in the 2019 Roadway Impact Fee Study are shown in the previously referenced **Exhibit 3**. These service areas cover the entire corporate area of the City of New Braunfels (both limited and full purpose jurisdictions). 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 in the 2019 Roadway Impact Fee Study are consistent with the specification of Chapter 395 of the Texas Local Government Code.

B. Service Units

The “service unit” is a measure of consumption or use of the capital facilities by new development. In other words, it is the unit of measure used in the 2019 Roadway Impact Fee Study to quantify the supply and demand for roads in the City. For transportation purposes, the service unit is defined as a vehicle-mile. Below is the definition for vehicle-mile:

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

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

Total Vehicle-Miles of Demand: Based on the 10-year growth projections (Pg. 52). The demand is equal to PM Trip Rate (trips) * Trip Length (miles).

The capacity values used in the 2019 Roadway Impact Fee Study are based upon generally accepted thoroughfare capacity criteria (operatively at a Level of Service D). **Tables 4.A** and **4.B** show the service volumes as a function of the facility classification and type. **Table 4.A** represents the amount of capacity per thoroughfare class that is added to the roadway impact fee CIP, while **Table 4.B** represents capacity values attributable to existing facilities.

Table 4.A. Service Volumes for Proposed Facilities
 (used in Appendix B – Roadway Impact Fee CIP Service Units of Supply)

Thoroughfare Class	Lanes	Median Configuration	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
Principal Arterial	6	Divided	600
Parkway	4	Divided	580
Minor Arterial	4	Divided	580
Major Collector	4	Divided	420
Minor Collector	2	Undivided	420

Table 4.B. Service Volumes for Existing Facilities
 (used in Appendix C – Existing Roadway Facilities Inventory)

Roadway Type	Description	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
2U-R	Rural Cross-Section (i.e., gravel, dirt, etc.)	150
2U	Two lane undivided – built-out	420
2D	Two lane divided	460
3U	Three lane undivided (two-way, left-turn lane)	460
4U	Four lane undivided	420
4D	Four lane divided	580
5U	Five lane undivided	580
6D	Six lane divided	600

C. Cost Per Service Unit

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

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

D. Cost of the RIF CIP

All of the project costs for an arterial or collector facility which serve the overall transportation system are eligible to be included in the Roadway Impact Fee Capital Improvements Plan (RIF CIP). Chapter 395 of the Texas Local Government Code specifies that the allowable costs are “...including and limited to the:

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

The engineer's opinion of the probable costs of the projects in the RIF CIP is based, in part, on the calculation of a unit cost of construction. This means that a cost per linear foot of roadway is calculated based on an average price for the various components of roadway construction. This allows the probable cost to be determined by the type of facility being constructed, the number of lanes, and the length of the project. The cost for location specific items such as bridges, highway ramps, drainage structures, and any other special components are added to each project, as appropriate. The following is a detailed description of the costing worksheet/methodology for the RIF CIP.

1. Overview of RIF 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

**City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection**

Kimley-Horn and Associates, Inc.
updated: 6/5/2019

Project Information:		Description:	Project No.	3-I
Name:	Goodwin (1)			
Limits:	FM 306 to Conrads Lane (South)			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (If):	9430			
Service Area(s):	3			
This project consists of the widening of a two-lane undivided facility to a four-lane divided asphalt facility.				

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	31,288	cy	\$ 12.89	\$ 403,300
203	HMAC Pvmt, Type D (1.5" Comp. Depth) (5.5" Thick)	50,293	sy	\$ 29.79	\$ 1,498,238
303	Flexible Base (Complete in Place)	23,284	cy	\$ 32.70	\$ 761,385
403	Lime Treated Subgrade (6" Compacted Depth)	52,389	sy	\$ 6.00	\$ 314,333
503	One Course Surface Treatment	50,293	sy	\$ 4.79	\$ 240,905
603	Machine Laid Curb	37,720	If	\$ 17.02	\$ 641,994
703	Concrete Sidewalks	12,573	sy	\$ 44.56	\$ 560,268
803	6" Topsoil	6,985	cy	\$ 20.27	\$ 141,590
Paving Construction Cost Subtotal:					\$ 4,562,014

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 273,721
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 228,101
✓ Pavement Markings/Markers		3%	\$ 136,860
✓ Roadway Drainage	Standard Internal System	30%	\$ 1,368,604
✓ Illumination		6%	\$ 273,721
✓ Special Drainage Structures	Crosses Flood Plain	\$ 1,152,000	\$ 1,152,000
✓ Water	Minor Adjustments	6%	\$ 273,721
✓ Sewer	Minor Adjustments	4%	\$ 182,481
✓ Establish Turf / Erosion Control		3%	\$ 136,860
✓ Basic Landscaping		3%	\$ 136,860
Other:		\$0	\$ -
Allowance Subtotal:			\$ 4,162,929
Paving and Allowance Subtotal:			\$ 8,724,943
Construction Contingency:			5% \$ 436,247
Construction Cost TOTAL:			\$ 9,162,000

Impact Fee Project Cost Summary			
Item Description	Notes:	Allowance	Item Cost
Construction:		-	\$ 9,162,000
Engineering/Survey/Testing:		20%	\$ 1,832,400
Mobilization		11%	\$ 1,007,820
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 916,200
Impact Fee Project Cost TOTAL:			\$ 12,918,000

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 City of New Braunfels.

The planning level cost projections shall not supersede the City's design standards or the determination of the City 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 letter. The corresponding letter does not represent any prioritizations and is used only to identify projects. For example, Project 3-A is in Service Area 3 and is identified as Project A on the list.
- Name – A unique identifier for each project. In some cases, abbreviations are used for the project name.
- Limits – Represents the beginning and ending location for each project.
- Impact Fee Type – 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 MTP classification of the roadway. Modification to roadway element widths are utilized in cases where a portion of the facility currently exists and the road is only to be widened, or where the road is planned to be widened to an interim configuration. Examples of these are access management projects, median widening projects (widening that occurs in an existing median), and are designated in the summary sheets at the beginning of each service area's Conceptual Level Cost Projections in **Appendix A**. Other specialized cases are noted in the short description box located in this section.
- Thoroughfare Class – the ultimate classification of the roadway, if different from the Impact Fee Class based on determination of need in the 10-year window.
- Length (ft) – The distance measured in feet that is used to cost out the project.
- Service Area(s) – Represents the service area(s) where the project is located. Multiple service areas will be listed if the project lies along a service area boundary.

3. Construction Pay Items

A typical roadway project consists of several costs, including the following: planning, survey, design engineering, permitting, right-of way acquisition, and construction and testing. While the construction cost component of a project may consist of approximately 100 various pay items, a simplified approach was used for developing the conceptual level project costs. The pay items used in the 2019 RIF CIP are as follows:

- Unclassified street excavation;
- HMAC Surface courses (asphalt, in depth);
- Flexible roadway base;
- Lime treated subgrade;
- Surface treated prime coat;
- Illumination;
- Topsoil;
- Machine laid curb;
- Concrete sidewalks; and
- Landscape improvements.

4. Construction Component Allowances

A percentage of the paving construction cost is allotted for various major construction component allowances, as appropriate. These allowances include preparation of right-of-way (ROW), traffic control, pavement markings, roadway drainage, illumination, water and sewer adjustments, turf and erosion control, and landscaping and irrigation. These allowance percentages are also based on historical data.

In addition, lump sum dollar allowances are provided for special drainage structures (bridges and culverts) and railroad crossings. The paving and allowance subtotal is given a five percent (5%) construction 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 eleven percent (11%) of the construction cost total is added for mobilization. Percentages are also allotted ROW/easement acquisition in the amount of twenty percent (20%) for TxDOT roadways, ten percent (10%) for existing roadway alignments, and twenty percent (20%) for new roadway alignments.

6. Minor Collector Adjustment

Based on initial calculations of Project Costs for Minor Collector facilities, it was determined that an adjustment factor needed to be applied to ensure a more appropriate and suitable cost for this specific project type. To determine the total Impact Fee Project Cost of a newly constructed Minor Collector facility, a *delta* value was calculated based on the cross-sectional width of Collectors and Local Roads for the City of New Braunfels, shown below:

New Braunfels Roadway Impact Fee Minor Collector Adjustment Calculation	
	Calculate Delta.
Step 1	Collector Right-of-Way: 40 Feet Local Road Right-of-Way: 31 Feet "Delta": $(40 - 31) / 31 = 0.2903 = 29.0\%$

This 29.0% adjustment factor was applied to all project costs for new minor collectors in the City of New Braunfels. The adjustment represents the oversized participation that the City would credit/offset a development for building a minor collector. Minor collectors that need widening remained at the full cost of the roadway facility because this facility is anticipated to be widened by the City. If a developer improves an existing collector facility, full credit/offset will be given.

E. Summary of Roadway Impact Fee CIP Costs

Tables 5.A – 5.F are the 10-Year RIF CIP project lists for each service area with planning level project costs. Individual project cost worksheets can be seen in **Appendix A**, Conceptual Level Project Cost Projections. It should be noted that these tables reflect only conceptual-level opinions or assumptions regarding the portions of future project costs that are recoverable through impact fees. Actual project costs are likely to change with time and are dependent on market and economic conditions that cannot be predicted.

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

**Table 5.A. 10-Year RIF CIP
with Conceptual Level Cost Projections – Service Area 1**

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 1	1-A	Principal Arterial	FM 1863 (1)	City Limits to 810' E of City Limits	0.15	50%	\$ 277,800	\$ 138,900
	1-B	Principal Arterial	FM 1863 (2)	810' E of City Limits to SH 46	0.66	100%	\$ 1,200,200	\$ 1,200,200
	1-C	Minor Arterial	Mission Valley (1)	City Limits to City Limits	0.61	50%	\$ 3,846,000	\$ 1,923,000
	1-D	Minor Arterial	Mission Valley (2)	City Limits to SH 46	0.56	100%	\$ 3,497,000	\$ 3,497,000
	1-E	Minor Arterial	Mission Valley (3)	SH 46 to City Limits	0.06	100%	\$ 402,000	\$ 402,000
	1-F	Minor Arterial	Mission Valley (4)	City Limits to 895' E of City Limits	0.17	100%	\$ 1,105,000	\$ 1,105,000
	1-G	Minor Arterial	Roadway A (1)	SH 46 to 1495' E of SH 46	0.28	100%	\$ 1,847,000	\$ 1,847,000
	1-H	Minor Arterial	Roadway A (2)	1495' E of SH 46 to 2575' E of SH 46	0.20	100%	\$ 1,341,000	\$ 1,341,000
	1-I	Minor Arterial	Roadway A (3)	2575' E of SH 46 to City Limits	0.50	50%	\$ 3,645,000	\$ 1,822,500
	1-J	Major Collector	Roadway C (1)	SH 46 to 795' E of SH 46	0.15	100%	\$ 799,000	\$ 799,000
	1-K	Major Collector	Roadway C (2)	795' E of SH 46 to 1370' E of SH 46	0.11	100%	\$ 606,000	\$ 606,000
	1-L	Minor Collector	Collector N (1)	FM 1863 to City Limits	0.09	100%	\$ 106,720	\$ 106,720
	1-M	Minor Collector	Collector N (2)	City Limits to Stone Crossing	0.96	50%	\$ 1,093,010	\$ 546,505
	1-N	Minor Collector	Westpointe Drive	Collector N to 2750' W of Oak Run	0.31	100%	\$ 357,280	\$ 357,280
	1-O	Minor Collector	Old Mission Lane	1225' W of SH 46 to SH 46	0.23	100%	\$ 263,610	\$ 263,610
		Intersection Improvements	Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
			SH 46 and FM 1863	Intersection Improvements and Turn Lanes		100%	\$ 215,000	\$ 215,000
			Independence Drive and Oak Run Parkway	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			Oak Run Parkway and Hunter's Creek Drive	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			SH 46 and Hueco Springs Loop	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			SH 46 and Old Mission Lane (Future)	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			SH 46 and Mission Valley	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			Update ITS and Traffic Management Infrastructure	-		3%	\$ 1,000,000	\$ 33,000
Service Area Roadway Project Cost Subtotal								\$ 15,955,715
Service Area Intersection Project Cost Subtotal								\$ 1,998,000
2019 Roadway Impact Fee Study Cost Per Service Area								\$ 23,167
Total Cost in SERVICE AREA 1								\$ 17,976,882

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

**Table 5.B. 10-Year RIF CIP
with Conceptual Level Cost Projections – Service Area 2**

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 2	2-A	Principal Arterial	Walnut (1)	LP 337 to Deer Trot Street	0.39	100%	\$ 571,000	\$ 571,000
	2-B	Principal Arterial	Walnut (2)	Landa Street to Mill Street	0.73	100%	\$ 6,847,953	\$ 6,847,953
	2-C	Principal Arterial	Walnut (3)	Mill Street to Business IH 35	0.54	100%	\$ 7,109,383	\$ 7,109,383
	2-D	Principal Arterial	Walnut (4)	Business IH 35 to IH 35	0.26	100%	\$ 1,853,497	\$ 1,853,497
	2-E	Minor Arterial	River	LP 337 to Lakeview Boulevard	0.55	100%	\$ 8,055,000	\$ 8,055,000
	2-F	Minor Collector	Fredericksburg	Academy Street to Landa Street	0.08	100%	\$ 1,081,120	\$ 1,081,120
	2-G	Minor Collector	Hanz	River Terrace to 1190' E of River Terrace	0.22	100%	\$ 246,500	\$ 246,500
	2-H	Minor Collector	Lakeview	Klingemann Street to Torrey Street	0.17	100%	\$ 2,257,000	\$ 2,257,000
	2-I	Minor Collector	Live Oak	Landa Street to Michigan Street	0.75	100%	\$ 5,812,000	\$ 5,812,000
	2-J	Minor Collector	Ohio	Canyon Drive to 1250' E of Canyon Drive	0.24	100%	\$ 383,960	\$ 383,960
	Intersection Improvements		Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
	2-1, 3-1		Common and LP 337	Intersection Improvements and Turn Lanes		50%	\$ 425,000	\$ 212,500
	2-2		Fair and Common	Intersection Improvements		100%	\$ 350,000	\$ 350,000
	2-3		Business IH 35 and Seguin	Intersection Improvements and Turn Lanes		100%	\$ 425,000	\$ 425,000
	2-4, 3-2		Rock and Gruene	Intersection Improvements		50%	\$ 20,000	\$ 10,000
	-		Update ITS and Traffic Management Infrastructure	-		10%	\$ 1,000,000	\$ 102,000
							Service Area Roadway Project Cost Subtotal	\$ 34,217,413
							Service Area Intersection Project Cost Subtotal	\$ 1,099,500
							2019 Roadway Impact Fee Study Cost Per Service Area	\$ 23,167
							Total Cost in SERVICE AREA 2	\$ 35,340,080

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

**Table 5.C. 10-Year RIF CIP
with Conceptual Level Cost Projections – Service Area 3**

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area						
SA 3	3-A	Principal Arterial	FM 1102 (1)	FM 306 to City Limits	0.56	100%	\$ 1,010,200	\$ 1,010,200						
	3-B	Principal Arterial	FM 1102 (2)	Orion Drive to City Limits	0.85	100%	\$ 1,693,200	\$ 1,693,200						
	3-C, 6-J	Principal Arterial	SH 46 (1)	IH 35 to FM 1101	0.19	50%	\$ 278,000	\$ 139,000						
	3-D	Principal Arterial	Common (1)	LP 337 to Gruene Road	0.22	100%	\$ 326,000	\$ 326,000						
	3-E	Minor Arterial	Common (2)	Gruene Road to FM 306	1.64	100%	\$ 10,327,000	\$ 10,327,000						
	3-F	Minor Arterial	FM 1101 (1)	490' E of FM 306 to 2850' E of FM 306	0.45	50%	\$ 561,400	\$ 280,700						
	3-G, 6-M	Minor Arterial	FM 1101 (2)	2850' E of FM 306 to 4105' E of FM 306	0.24	50%	\$ 298,600	\$ 149,300						
	3-H	Minor Arterial	FM 1101 (3)	4105' E of FM 306 to Kohlenberg Road	1.10	50%	\$ 2,108,200	\$ 1,054,100						
	3-I	Minor Arterial	Goodwin (1)	FM 306 to Conrads Lane (South)	1.79	100%	\$ 12,918,000	\$ 12,918,000						
	3-J	Minor Arterial	Goodwin (2)	Conrads Lane (South) to Conrads Lane (North)	0.18	50%	\$ 1,142,000	\$ 571,000						
	3-K	Major Collector	Conrads (1)	Goodwin to 710' N of S IH-35	0.65	50%	\$ 3,476,000	\$ 1,738,000						
	3-L	Major Collector	Conrads (2)	710' N of S IH-35 to IH 35	0.13	100%	\$ 713,000	\$ 713,000						
	3-M	Minor Collector	Conrads (3)	City Limits to 295' S of City Limits	0.06	50%	\$ 1,692,000	\$ 846,000						
	3-N	Minor Collector	Conrads (4)	295' S of City Limits to Goodwin	0.81	100%	\$ 3,065,000	\$ 3,065,000						
	3-O	Minor Collector	Windgate Park (1)	Heather Glen Drive to 1230' W of FM 306	0.15	100%	\$ 173,420	\$ 173,420						
	3-P	Minor Collector	Windgate Park (2)	1230' W of FM 306 to FM 306	0.23	100%	\$ 880,000	\$ 880,000						
	3-Q	Minor Collector	Collector O	IH 35 to FM 1101	0.90	100%	\$ 1,254,250	\$ 1,254,250						
	3-R	Minor Collector	FM 483	Wilhelm to FM 1101	0.38	100%	\$ 1,433,000	\$ 1,433,000						
	3-S	Minor Collector	Gruene	Rock Street to 3545' E of Rock Street	0.67	100%	\$ 4,013,000	\$ 4,013,000						
	3-T	Minor Collector	Hunter (1)	FM 306 to 3020' E. of FM 306	0.57	100%	\$ 2,157,000	\$ 2,157,000						
	3-U	Minor Collector	Hunter (2)	3020' E. of FM 306 to Railroad	0.16	50%	\$ 615,000	\$ 307,500						
	3-V	Minor Collector	Kohlenberg	3880' N of FM 1101 to FM 1101	0.73	50%	\$ 3,143,000	\$ 1,571,500						
	3-W	Minor Collector	Kowald	IH 35 to FM 1101	0.77	100%	\$ 2,919,000	\$ 2,919,000						
	3-X	Minor Collector	Wilhelm (1)	IH 35 to Kowald Lane	0.48	100%	\$ 545,490	\$ 545,490						
	3-Y	Minor Collector	Wilhelm (2)	Kowald Lane to FM 483	1.06	100%	\$ 1,208,140	\$ 1,208,140						
	3-Z	Minor Collector	Loop 337 Access Connection	Gruene Road to LP 337 Access Road	0.45	100%	\$ 514,460	\$ 514,460						
	3-AA	Minor Collector	Orion (1)	City Limits to Orion Drive Railroad Crossing	0.38	50%	\$ 2,177,000	\$ 1,088,500						
	3-AB	Minor Collector	Orion (2)	Orion Drive Railroad Crossing to Goodwin	0.55	100%	\$ 2,797,000	\$ 2,797,000						
	3-AC	Minor Collector	Orion (3)	Goodwin to IH 35	0.89	100%	\$ 1,010,360	\$ 1,010,360						
	3-AD	Minor Collector	Waterway (1)	660' E of Gruene Road to 345' W of Common Street	0.19	100%	\$ 205,320	\$ 205,320						
	3-AE	Minor Collector	Waterway (2)	Common Street to Old FM 306	0.42	100%	\$ 474,730	\$ 474,730						
	Intersection Improvements	Location		Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area						
		Common and LP 337		Intersection Improvements										
		Rock and Gruene		Intersection Improvements										
		Gruene and Post		Intersection Improvements										
		Hanz and Common		Intersection Improvements										
		Old FM 306 and Common		Intersection Improvements										
		Common and Waterway (Future)		Intersection Improvements										
		FM 1101 and Alves (Future)		Intersection Improvements										
Update ITS and Traffic Management Infrastructure					-		20%							
Service Area Roadway Project Cost Subtotal								\$ 57,383,170						
Service Area Intersection Project Cost Subtotal								\$ 2,027,500						
2019 Roadway Impact Fee Study Cost Per Service Area								\$ 23,167						
Total Cost in SERVICE AREA 3								\$ 59,433,837						

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

**Table 5.D. 10-Year RIF CIP
with Conceptual Level Cost Projections – Service Area 4**

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area									
SA 4	4-A, 5-A	Parkway	Rueckle (1)	IH 35 to Morningside Drive	0.61	50%	\$ 2,921,150	\$ 1,460,575									
	4-B, 5-B	Parkway	Rueckle (2)	Morningside Drive to Green Valley	1.29	50%	\$ 8,071,000	\$ 4,035,500									
	4-C	Parkway	Word Ranch	FM 1863 to City Limits	0.21	100%	\$ 1,251,000	\$ 1,251,000									
	4-D	Minor Arterial	Algelt	1130' W of LP 337 to LP 337	0.21	100%	\$ 1,344,000	\$ 1,344,000									
	4-E	Minor Arterial	County Line (1)	CR 376 to Rueckle Road	0.39	100%	\$ 2,544,000	\$ 2,544,000									
	4-F	Major Collector	Engel (1)	IH 35 to 2330' S of S IH-35 Frontage Road	0.44	100%	\$ 2,341,000	\$ 2,341,000									
	4-G	Major Collector	Engel (2)	2330' S of S IH-35 Frontage Road to Schmucks Road	0.33	50%	\$ 1,729,000	\$ 864,500									
	4-H	Major Collector	Morningside (1)	Solms Road to Bass Farm Road	0.30	50%	\$ 1,462,343	\$ 731,172									
	4-I	Major Collector	Morningside (2)	1360' E of B. Farm Road to 2770' W of Rueckle Road	0.26	50%	\$ 1,235,554	\$ 617,777									
	4-J	Major Collector	Morningside (3)	2770' W of Rueckle Road to Rueckle Road	0.52	100%	\$ 2,517,780	\$ 2,517,780									
	4-K	Major Collector	Solms (1)	City Limits to 800' N of FM 482	0.08	100%	\$ 453,000	\$ 453,000									
	4-L	Major Collector	Solms (2)	800' N of FM 482 to 640' S of FM 482	0.27	50%	\$ 1,447,000	\$ 723,500									
	4-M	Major Collector	Solms (3)	640' S of FM 482 to IH 35	0.13	100%	\$ 674,000	\$ 674,000									
	4-N	Major Collector	Solms (4)	IH 35 to 365' S of IH 35	0.07	100%	\$ 330,587	\$ 330,587									
	4-O	Major Collector	Solms (5)	365' S of IH 35 to Morningside Drive	0.27	50%	\$ 1,320,606	\$ 660,303									
	4-P	Major Collector	Green Valley (1)	CR 376 to Rueckle Road	0.54	50%	\$ 2,852,000	\$ 1,426,000									
	-	Intersection Improvements	Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area									
	Update ITS and Traffic Management Infrastructure		-		1%		\$ 1,000,000	\$ 15,000									
								Service Area Roadway Project Cost Subtotal \$ 21,974,694									
								Service Area Intersection Project Cost Subtotal \$ 15,000									
								2019 Roadway Impact Fee Study Cost Per Service Area \$ 23,167									
								Total Cost in SERVICE AREA 4 \$ 22,012,861									

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

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

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 5	4-A, 5-A	Parkway	Rueckle (1)	IH 35 to Morningside Drive	0.61	50%	\$ 2,921,150	\$ 1,460,575
	4-B, 5-B	Parkway	Rueckle (2)	Morningside Drive to Green Valley	1.29	50%	\$ 8,071,000	\$ 4,035,500
	5-C	Principal Arterial	FM 725	County Line Road to City Limits	2.02	100%	\$ 3,653,800	\$ 3,653,800
	5-D	Principal Arterial	Walnut (5)	Klein Road to Zipp Road	0.52	100%	\$ 4,908,000	\$ 4,908,000
	5-E	Minor Arterial	Schmidt	IH 35 to Morningside Drive	0.27	100%	\$ 1,684,000	\$ 1,684,000
	5-F	Minor Arterial	County Line (2)	Rueckle Road to FM 1044	1.04	100%	\$ 6,762,000	\$ 6,762,000
	5-G	Minor Arterial	County Line (3)	FM 725 to Chinaberry Lane	0.73	100%	\$ 4,560,000	\$ 4,560,000
	5-H	Minor Arterial	County Line (4)	Chinaberry Lane to Guadalupe River	0.17	100%	\$ 2,996,000	\$ 2,996,000
	5-I	Minor Arterial	Klein (1)	FM 1044 to 300' W of Legend Pond	1.23	50%	\$ 65,290	\$ 32,645
	5-J	Minor Arterial	Klein (2)	300' W of Legend Pond to Walnut	0.74	100%	\$ 39,104	\$ 39,104
	5-K	Minor Arterial	Klein (3)	SH 46 to FM 725	0.97	100%	\$ 6,434,000	\$ 6,434,000
	5-L	Minor Arterial	FM 1044 (1)	Schmidt Avenue to Green Valley Road	1.67	100%	\$ 2,165,400	\$ 2,165,400
	5-M	Minor Arterial	FM 1044 (2)	Green Valley Road to City Limits	0.56	50%	\$ 708,600	\$ 354,300
	5-N	Major Collector	FM 1044 (3)	IH 35 to Schmidt Avenue	0.56	100%	\$ 593,600	\$ 593,600
	5-O	Major Collector	Green Valley (2)	Rueckle Road to FM 1044	0.20	50%	\$ 1,041,000	\$ 520,500
	5-P	Major Collector	Morningside (4)	IH 35 to Rueckle Road	1.32	100%	\$ 6,356,496	\$ 3,536,496
	5-Q	Minor Collector	Rising Sun	FM 1044 to City Limits	0.15	100%	\$ 168,200	\$ 168,200
	5-R	Minor Collector	Legend Pond	Zipp to 1900' S of Zipp	0.36	50%	\$ 408,900	\$ 204,450
	5-S	Minor Collector	Pahmeyer	1165' S of Zipp Road to Skytrail	0.40	50%	\$ 453,270	\$ 226,635
	5-T	Minor Collector	Skytrail (1)	Legend Pond to 1530' E of Legend Pond	0.29	100%	\$ 329,440	\$ 329,440
	5-U	Minor Collector	Skytrail (2)	1530' E of Legend Pond to Pahmeyer Road	0.42	50%	\$ 479,080	\$ 239,540
	5-V	Minor Collector	Water	Daisy Meadow to FM 1044	0.51	100%	\$ 581,160	\$ 581,160
	5-W	Minor Collector	Zipp (1)	City Limits to 570' W of Legend Pond	0.98	50%	\$ 1,115,630	\$ 557,815
	5-X	Minor Collector	Zipp (2)	570' W of Legend Pond to 765' W of Pahmeyer Road	0.63	100%	\$ 719,780	\$ 719,780
	5-Y	Minor Collector	Zipp (3)	765' W of Pahmeyer Road to 300' E of Pahmeyer Road	0.20	100%	\$ 766,000	\$ 766,000
	5-Z	Minor Collector	Zipp (4)	300' E of Pahmeyer Road to Prado Verde	0.88	50%	\$ 3,333,000	\$ 1,666,500
		Intersection Improvements	Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
			Walnut and County Line	Intersection Improvements and Turn Lanes		100%	\$ 635,000	\$ 635,000
			Walnut and Gardenia	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			FM 1044 and County Line	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			FM 1044 and Schmidt	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			Klein and Klein Meadows	Intersection Improvements		50%	\$ 350,000	\$ 175,000
			Klein and Walnut	Intersection Improvements		100%	\$ 350,000	\$ 350,000
			Update ITS and Traffic Management Infrastructure	-		1%	\$ 1,000,000	\$ 10,000
							Service Area Roadway Project Cost Subtotal	\$ 52,015,439
							Service Area Intersection Project Cost Subtotal	\$ 2,220,000
							2019 Roadway Impact Fee Study Cost Per Service Area	\$ 23,167
							Total Cost in SERVICE AREA 5	\$ 54,258,606

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

**Table 5.F. 10-Year RIF CIP
with Conceptual Level Cost Projections – Service Area 6**

Service Area	Proj. #	IF Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area					
SA 6	6-A	Parkway	FM 758 (1)	SH 46 to 1700' E of SH 46	0.32	100%	\$ 460,800	\$ 460,800					
	6-B	Parkway	FM 758 (2)	1700' E of SH 46 to City Limits	0.16	100%	\$ 202,000	\$ 202,000					
	6-C	Parkway	FM 758 (3)	965' W of FM 306 to City Limits	1.56	50%	\$ 1,873,600	\$ 936,800					
	6-D	Principal Arterial	Barbarosa (1)	FM 1101 to 1505' S of FM 1101	0.28	100%	\$ 2,582,000	\$ 2,582,000					
	6-E	Principal Arterial	Barbarosa (2)	1505' S of FM 1101 to County Line Road	0.25	50%	\$ 2,307,000	\$ 1,153,500					
	6-F	Principal Arterial	Barbarosa (3)	County Line Road to Three Mile Creek	0.27	100%	\$ 2,460,000	\$ 2,460,000					
	6-G	Principal Arterial	Barbarosa (4)	Three Mile Creek to Westmeyer	0.26	50%	\$ 2,367,000	\$ 1,183,500					
	6-H	Principal Arterial	Saur (1)	Westmeyer to Saengerhalle Road	0.56	50%	\$ 5,041,000	\$ 2,520,500					
	6-I	Principal Arterial	Saur (2)	Saengerhalle Road to City Limits	0.87	100%	\$ 8,148,000	\$ 8,148,000					
	3-C, 6-J	Principal Arterial	SH 46 (1)	IH 35 to FM 1101	0.19	50%	\$ 278,000	\$ 139,000					
	6-K	Principal Arterial	SH 46 (2)	FM 1101 to Weltner Road	3.06	100%	\$ 4,500,000	\$ 4,500,000					
	6-L	Principal Arterial	SH 46 (3)	Weltner Road to City Limits	1.81	100%	\$ 3,428,000	\$ 3,428,000					
	3-G, 6-M	Minor Arterial	FM 1101 (2)	2850' E of FM 306 to 4105' E of FM 306	0.24	50%	\$ 298,600	\$ 149,300					
	6-N	Minor Arterial	Saengerhalle	SH 46 to City Limits	0.78	100%	\$ 4,911,000	\$ 4,911,000					
	6-O	Minor Arterial	Mary (1)	7060' W of SH 46 to 3415' W of SH 46	0.69	50%	\$ 4,898,000	\$ 2,449,000					
	6-P	Minor Arterial	Mary (2)	3415' W of SH 46 to 270' W of SH 46	0.60	50%	\$ 3,746,000	\$ 1,873,000					
	6-Q	Minor Arterial	Mary (3)	270' W of SH 46 to SH 46	0.05	100%	\$ 321,000	\$ 321,000					
	6-R	Minor Arterial	County Line (5)	Guadalupe River to SH 46	0.88	100%	\$ 6,700,000	\$ 6,700,000					
	6-S	Minor Arterial	Alves (1)	SH 46 to 620' E of Seminole Drive	0.66	100%	\$ 4,529,093	\$ 4,529,093					
	6-T	Minor Arterial	Alves (2)	620' E of Seminole Drive to 830' E of Seminole Drive	0.04	50%	\$ 266,691	\$ 133,346					
	6-U	Minor Arterial	Alves (3)	830' E of Seminole Drive to 1875' W of FM 306	0.71	100%	\$ 4,847,510	\$ 4,847,510					
	6-V	Minor Arterial	Alves (4)	1875' W of FM 306 to FM 306	0.35	50%	\$ 2,428,544	\$ 1,214,272					
	6-W	Major Collector	Alves (5)	FM 306 to City Limits	0.10	100%	\$ 574,000	\$ 574,000					
	6-X	Major Collector	Alves (6)	FM 1101 to 1680' S of FM 1101	0.32	50%	\$ 1,753,000	\$ 876,500					
	6-Y	Minor Collector	Collector C (1)	FM 1101 to Alves Lane	0.67	100%	\$ 873,480	\$ 873,480					
	6-Z	Minor Collector	Collector C (2)	Alves Lane to Three Mile Creek	0.26	100%	\$ 298,120	\$ 298,120					
	6-AA	Minor Collector	Collector C (3)	City Limits to Saengerhalle Road	0.55	50%	\$ 736,890	\$ 368,445					
	6-AB	Minor Collector	Collector C (4)	Saengerhalle Road to City Limits	0.82	100%	\$ 1,042,550	\$ 1,042,550					
	6-AC	Minor Collector	Lakefront (1)	785' S of Carolyn Cove to Lakefront Avenue	0.16	100%	\$ 178,640	\$ 178,640					
	6-AD	Minor Collector	Lakefront (2)	Running River to Mary Blvd	0.85	100%	\$ 1,076,770	\$ 1,076,770					
	6-AE	Minor Collector	Seminole	FM 1101 to Seminole Drive	0.27	100%	\$ 305,660	\$ 305,660					
	6-AF	Minor Collector	Stonegate	3955' E of SH 46 to 3345' W of FM 306	0.28	50%	\$ 434,710	\$ 217,355					
	Intersection Improvements	Location		Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area					
		SH 46 and Saengerhalle/Mary		Intersection Improvements									
		SH 46 and County Line/Alves		Intersection Improvements									
		Barbarosa and Alves		Intersection Improvements									
		FM 1101 and Alves (Future)		Intersection Improvements									
Update ITS and Traffic Management Infrastructure					-	3%	\$ 1,000,000	\$ 33,000					
								Service Area Roadway Project Cost Subtotal					
								\$ 60,653,141					
								Service Area Intersection Project Cost Subtotal					
								\$ 1,170,500					
								2019 Roadway Impact Fee Study Cost Per Service Area					
								\$ 23,167					
								Total Cost in SERVICE AREA 6					
								\$ 61,846,808					

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

F. Service Unit Calculation

The basic service unit for the computation of New Braunfels's Roadway Impact Fees is the vehicle-mile of travel during the afternoon peak-hour (as explained on Pg. 34). 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 2019 to 2029 is based upon projected changes in residential units and employment for the period. To determine this growth, estimates of residential units, basic employment, service employment, and retail employment for 2019 were made, along with growth projections for each of these demographic statistics through 2029. The Land Use Assumptions section of this report details the growth estimates used for impact fee determination.

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

For non-residential land uses, the process is similar. The Land Use Assumptions section of this report provides existing and projected number of building square footages for three (3) categories of employment – basic, service, and retail.

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 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 National Household Travel Survey (NHTS) performed by the Federal Highway Administration (FHWA). The *ITE 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. For example, a stop at a nearby supermarket on the way home from work does not create a new trip onto the roadway network. These trips are called pass-by trips, and since the travel demand is accounted for in the land use calculations relative to the primary trip, it is necessary to discount the retail trip generation rates to avoid double counting trips. The next component of the *transportation demand factor* accounts for the length of each trip. The average trip length for each category is based on the *Regional Origin-Destination Travel Survey* conducted by the NHTS and similar sources.

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

Variables:

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

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

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%)

Chapter 395 of the Texas Local Government Code allows for a service area of six (6) miles; however, the maximum trip length was limited to five (5) miles in calculations based on service area distance approximations within the City of New Braunfels.

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 New Braunfels to both residential and non-residential land uses. To avoid counting these trips twice as both residential and non-residential trips, a 50% origin-destination (OD) reduction factor is applied. Therefore, only half of the trip length is assessed to each land use, and the total trip is only counted once. This methodology is consistent with that used in the National Household Travel Survey. These lengths were developed based on the *Regional Origin-Destination Travel Survey* conducted by the NHTS.

Table 6 shows the derivation of the *Transportation Demand Factor* for the residential land uses and the three (3) non-residential land use categories. The values utilized for all variables shown in the *transportation demand factor* equation are also shown in the table.

Table 6. Transportation Demand Factor Calculations

Variable	Residential, Single Family*	Residential, Multifamily*	Basic	Service	Retail*
T	0.99	0.44	0.63	1.15	3.81
P _b	0%	0%	0%	0%	34%
L	4.66	4.66	6.45	6.47	3.20
L _{max}	4.66	4.66	5.00	5.00	3.20
TDF	4.61	2.05	3.15	5.75	8.03

* L_{max} is less than 5 miles for residential and retail land uses; therefore this lower trip length is used for calculating the TDF for these land uses.

Variables:

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

The application of the demographic projections and the *transportation demand factors* are presented in the 10-Year Growth Projections in **Table 7**. This table shows the growth in total vehicle-miles by service area between the years 2019 – 2029.

Table 7. 10-Year Growth Projections

2019 - 2029 Growth Projections ¹							NON-RESIDENTIAL VEHICLE-MILES ⁵				TRANS. DEMAND FACTOR ⁶				NON-RESIDENTIAL VEHICLE-MILES ¹⁰				TOTAL VEHICLE MILES ¹¹
SERVICE AREA	RESIDENTIAL VEHICLE-MILES			NON-RESIDENTIAL SQUARE FEET ⁵			BASIC	SERVICE	BASIC ⁷	SERVICE ⁸	BASIC ⁹	SERVICE	BASIC	SERVICE	RETAIL	TOTAL			
	Single Family Units	Trip Rate	TDF ²	Multi-Family Units	Trip Rate	TDF ³	Vehicle Miles ⁴	Vehicle Miles ⁴	Vehicle Miles ⁴	Vehicle Miles ⁴	Vehicle Miles ⁴	Vehicle Miles ⁴	Vehicle Miles ⁴	Vehicle Miles ⁴	Vehicle Miles ⁴	Vehicle Miles ⁴			
1	927	0.99	0.44	216	0	4,715	0	48,000	740,000	0	0	0	0	276	5,942	6,218	10,533		
2	198	0	0	0	0	913	145,000	0	0	3,996,000	5,247,000	3,15	457	0	32,088	32,545	33,458		
3	2,190	4.61	3.061	2,05	1,791	16,371	1,998,000	396,000	29,000	44,000	3,15	5,75	8,03	6,297	2,277	42,133	50,707		
4	194	4.37	1,94	1,94	1,791	2,302	0	0	0	101,000	2,438	0	0	167	353	2,958	4,749		
5	413	194	194	301	5,845	86,000	49,000	535,000	0	0	0	0	0	0	811	811	3,113		
6	1,134	301	0	0	0	0	0	0	0	0	0	0	0	271	282	4,296	4,849		
Totals	5,056	4,209	31,936	3,004,000	522,000	10,663,000								9,463	3,002	85,623	98,088	130,024	

Notes:

¹ From City of New Braunfels 2019 Roadway Impact Fee Land Use Assumptions (Section II)

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

³ Transportation Demand Factor for each Service Area (from LUVMET) using Multi Family Housing (Mid-Rise) land use and trip generation rate

⁴ Calculated by multiplying TDF by the number of dwelling units

⁵ From City of New Braunfels 2019 Roadway Impact Fee Land Use Assumptions (Section II)

⁶ Trip generation rate and Transportation Demand Factors from LUVMET for each land use

⁷ 'Basic' corresponds to General Light Industrial land use and trip generation rate

⁸ 'Service' corresponds to General Office land use and trip generation rate

⁹ 'Retail' corresponds to Shopping Center land use and trip generation rate

¹⁰ Calculated by multiplying Transportation Demand Factor by the number of thousand square feet for each land use

¹¹ Residential plus non-residential vehicle-mile totals for each Service Area

**Table 7 (Continued). 10-Year Growth Projections
Vehicle Miles of Increase (2019-2029)**

VEHICLE-MILES 2029	
SERVICE AREA	VEH-MILES
1	10,933
2	33,458
3	67,078
4	4,749
5	3,113
6	10,694

1. Intersection ITS Calculations

When determining the total intersection project cost per service area for the City's impact fees, it was determined that updates to Intelligent Transportation System (ITS) and traffic management infrastructure needed to be considered in final calculations to represent these anticipated improvements for the next ten (10) year period to Year 2029. To estimate this cost, a growth percentage was calculated for each service area based on the projected vehicle-mile growth per service area (see **Table 7**) and the total number of vehicle-miles anticipated in the City by Year 2029, as shown below:

New Braunfels Roadway Impact Fee Intersection ITS Calculations	
Service Area 3	Calculate Percentage.
	Service Area 3 Projected 10-Year Vehicle-Mile Growth: 67,078 Overall Projected 10-Year Vehicle-Mile Total: 327,329 Percentage: $67,078 / 327,329 = .205 = 20\%$

The growth percentage for each service area was then applied to an intersection project cost of \$1,000,000 to determine the total cost per service area. Calculations for the anticipated 10-year vehicle-mile total can be found in **Appendix A**.

V. ROADWAY IMPACT FEE CALCULATION

A. Maximum Assessable Impact Fee Per Service Unit

This section presents the maximum assessable impact fee rate calculated for each service area. The maximum assessable impact fee is the sum of the eligible RIF CIP costs for the service area divided by the growth in travel attributable to new development projected to occur within the 10-year period. A majority of the components of this calculation have been described and presented in previous sections of this report. The purpose of this section is to document the computation for each service area and to demonstrate that the guidelines provided by Chapter 395 of the Texas Local Government Code have been addressed.

Table 8 illustrates the computation of the maximum assessable impact fee computed for each service area. Each row in the table is numbered to simplify explanation of the calculation. The calculation of the maximum assessable impact fee is shown in **Table 9**. The Roadway Impact Fee CIP consists of both roadway segment and intersection improvements. The roadway segment component is referred to as the “Roadway Impact Fee CIP,” while the intersection component is referred to as the “Intersection Impact Fee CIP.”

Table 8. Maximum Assessable Roadway Impact Fee Computation

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

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

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

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

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

5	<i>Total Cost of the Roadway Impact Fee CIP and RIF Study within the Service Area</i>	The sum of the total cost of the roadway projects within each service area (from Tables 5A-F . 10-Year Roadway Impact Fee CIP with Conceptual Level Cost Projections) and the Roadway Impact Fee study cost per service area
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This line simply identifies the sum of the total cost of all the roadway projects identified in each service area and the cost of the roadway impact fee study per service area.

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

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

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

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

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

11	<i>Cost of Roadway Impact Fee CIP Attributable to New Growth</i>	The result of multiplying the Cost of Net Capacity Added (Line 6) by the Percent of Capacity Added Attributable to New Growth, limited to 100% (Line 10).
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This value is the total Roadway Impact Fee CIP project costs (excluding financial costs) that may be recovered through impact fees. This line is determined considering the limitations to impact fees required by the Texas legislature.

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

13	Percent of <i>Intersection Capacity Added Attributable to New Growth</i>	The result of dividing Total Vehicle-Miles of New Demand (Line 8) by the vehicle-mile carrying capacity in each service area (Table 7).
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In order to ensure that the capacity added by the Intersection Impact Fee CIP does not exceed the amount needed to accommodate growth beyond the ten-year window, the anticipated vehicle mile growth in each service area is calculated as a percentage of the vehicle-mile carrying capacity.

14	Cost of <i>Intersection Impact Fee CIP Attributable to New Growth</i>	The result of multiplying the Cost of Net Capacity Added (Line 12) by the Percent of Capacity Added Attributable to New Growth (Line 13). (Line 12 * Line 13)
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This value is the total Intersection Impact Fee CIP project cost (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.

15	Cost of <i>Total Roadway Impact Fee CIP Attributable to New Growth</i>	The result of adding the Cost of the Roadway Impact Fee CIP Attributable to new growth (Line 11) to the Cost of the Intersection Impact Fee CIP Attributable to new growth (Line 14) (Line 11 + Line 14).
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This value is the Total Roadway Impact Fee CIP project cost (excluding financial costs) that may be recovered through impact fees. This line is determined considering the limitations to impact fees required by the Texas legislature.

B. Plan for Financing and the Ad Valorem Tax Credit

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

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

The plan is summarized, as prepared by Eddie Peacock, CPA, in **Appendix D, Plan for Awarding the Roadway Impact Fee Credit**. The following table summarizes the portions of **Table 9** that utilize this credit calculation.

Line	Title	Description
16	<i>Financing Costs</i>	(from Appendix D – Plan for Awarding the Roadway Impact Fee Credit)
17	<i>Interest Earnings</i>	(from Appendix D – Plan for Awarding the Roadway Impact Fee Credit)
18	<i>Cost of the Roadway Impact Fee CIP and Financing Attributable to New Growth</i>	The sum of the Cost of Capacity Added Attributable to New Growth, Financing Costs, and Interest Earnings. (Line 15 + Line 16 + Line 17)
19	<i>Pre-Credit Maximum Fee Per Service Unit</i>	Found by dividing the Cost of the CIP and Financing Attributable to New Growth (Line 18) by the Total Vehicle-Miles of New Demand Over Ten Years (Line 8). (Line 18 / Line 8)
20	<i>Credit for Ad Valorem Taxes</i>	A credit for the portion of ad valorem taxes projected to be generated by the new service units, as per Section 395.014 of the Local Government Code. (from Appendix D – Plan for Awarding the Roadway Impact Fee Credit)
21	<i>Recoverable Cost of the Roadway Impact Fee CIP and Financing</i>	The difference between the Cost of the CIP and Financing Attributable to New Growth (Line 18) and the Credit for Ad Valorem Taxes (Line 20). (Line 18 + Line 20)
22	<i>Maximum Assessable Fee Per Service Unit</i>	Found by dividing the Recoverable Cost of the CIP and Financing (Line 21) by the Total Vehicle-Miles of New Demand Over Ten Years (Line 8). (Line 21 / Line 8)



Table 9. Maximum Assessable Roadway Impact Fee

	SERVICE AREA:	1	2	3	4	5	6
1	TOTAL VEH-MI OF CAPACITY ADDED BY THE ROADWAY IMPACT FEE CIP (FROM ROADWAY IMPACT FEE CIP SERVICE UNITS OF SUPPLY, APPENDIX B)	8,279	9,438	23,809	7,861	32,467	29,222
2	TOTAL VEH-MI OF EXISTING DEMAND (FROM ROADWAY IMPACT FEE CIP SERVICE UNITS OF SUPPLY, APPENDIX B)	775	3,546	6,183	739	7,890	12,856
3	TOTAL VEH-MI OF EXISTING DEFICIENCIES (FROM EXISTING ROADWAY FACILITIES INVENTORY, APPENDIX C)	762	2,484	1,395	47	2,008	432
4	NET AMOUNT OF VEH-MI OF CAPACITY ADDED (LINE 1 - LINE 2 - LINE 3)	6,742	3,408	16,231	7,075	22,569	15,934
5	TOTAL COST OF THE ROADWAY IMPACT FEE CIP AND STUDY WITHIN SERVICE AREA (FROM TABLES 5A TO 5F)	\$ 15,978,882	\$ 34,240,580	\$ 57,406,337	\$ 21,997,861	\$ 52,038,606	\$ 60,676,308
6	COST OF NET CAPACITY SUPPLIED (LINE 4 / LINE 1) * (LINE 5)	\$ 13,012,396	\$ 12,364,049	\$ 39,134,876	\$ 19,798,355	\$ 36,173,940	\$ 33,085,220
7	COST TO MEET EXISTING NEEDS AND USAGE (LINE 5 - LINE 6)	\$ 2,966,486	\$ 21,876,531	\$ 18,271,461	\$ 2,199,506	\$ 15,864,666	\$ 27,591,088
8	TOTAL VEH-MI OF NEW DEMAND OVER TEN YEARS (FROM TABLE 7 AND LAND USE ASSUMPTIONS)	10,933	33,458	67,078	4,749	3,113	10,694
9	PERCENT OF CAPACITY ADDED ATTRIBUTABLE TO GROWTH (LINE 8 / LINE 4)	162.1%	981.7%	413.2%	67.1%	13.7%	67.1%
10	IF LINE 8 > LINE 4, REDUCE LINE 9 TO 100%, OTHERWISE NO CHANGE	100.0%	100.0%	100.0%	67.1%	13.7%	67.1%
11	COST OF ROADWAY IMPACT FEE CIP ATTRIBUTABLE TO GROWTH (LINE 6 * LINE 10)	\$ 13,012,396	\$ 12,364,049	\$ 39,134,876	\$ 13,284,696	\$ 4,955,830	\$ 22,200,183
12	TOTAL COST OF THE INTERSECTION IMPACT FEE CIP WITHIN SERVICE AREA (FROM TABLES 5A TO 5F)	\$ 1,998,000	\$ 1,099,500	\$ 2,027,500	\$ 15,000	\$ 2,220,000	\$ 1,170,500
13	PERCENT OF INTERSECTION CAPACITY ADDED ATTRIBUTABLE TO GROWTH (FROM TABLE 7 AND LAND USE ASSUMPTIONS)	44.0%	32.6%	62.2%	41.9%	5.9%	37.9%
14	COST OF INTERSECTION IMPACT FEE CIP ATTRIBUTABLE TO GROWTH (LINE 12 * LINE 13)	\$ 879,120	\$ 358,437	\$ 1,261,105	\$ 6,285	\$ 130,980	\$ 443,620
15	COST OF TOTAL ROADWAY IMPACT FEE CIP ATTRIBUTABLE TO GROWTH (LINE 11 + LINE 14)	\$ 13,891,516	\$ 12,722,486	\$ 40,395,981	\$ 13,290,981	\$ 5,086,810	\$ 22,643,803
16	FINANCING COSTS (FROM APPENDIX D)	\$ 4,568,279	\$ 4,183,839	\$ 13,284,374	\$ 4,370,791	\$ 1,672,818	\$ 7,446,502
17	INTEREST EARNINGS (FROM APPENDIX D)	\$ (1,215,508)	\$ (1,113,218)	\$ (3,534,648)	\$ (1,162,961)	\$ (445,096)	\$ (1,981,333)
18	COST OF THE ROADWAY IMPACT FEE CIP AND FINANCING ATTRIBUTABLE TO NEW GROWTH (LINE 15 + LINE 16 + LINE 17)	\$ 17,244,288	\$ 15,793,108	\$ 50,145,707	\$ 16,498,811	\$ 6,314,532	\$ 28,108,972
19	PRE-CREDIT MAXIMUM FEE PER SERVICE UNIT (LINE 18 / LINE 8)	\$ 1,577.27	\$ 472.03	\$ 747.57	\$ 3,474.17	\$ 2,028.44	\$ 2,628.48
20	CREDIT FOR AD VALOREM TAXES (FROM APPENDIX D)	\$ (5,586,263)	\$ (5,115,728)	\$ (16,243,944)	\$ (5,344,674)	\$ (2,045,565)	\$ (9,105,460)
21	RECOVERABLE COST OF ROADWAY IMPACT FEE CIP AND FINANCING (LINE 18 + LINE 20)	\$ 11,658,025	\$ 10,677,380	\$ 33,901,763	\$ 11,154,137	\$ 4,268,967	\$ 19,003,512
22	MAXIMUM ASSESSABLE FEE PER SERVICE UNIT (LINE 21 / LINE 8)	\$ 1,066	\$ 319	\$ 505	\$ 2,349	\$ 1,371	\$ 1,777

C. Service Unit Demand Per Unit of Development

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

The trip rates presented for each land use is a fundamental component of the LUVMET. The trip rate is the average number of trips generated during the afternoon peak hour by each land use per development unit. The next column in **Table 10**, if applicable to the land use, presents the percentage of trips to and from certain land uses reduced by pass-by trips, as previously discussed.

The definitive source of the trip generation and pass-by statistics is the *ITE Trip Generation Manual, 10th Edition*, the latest edition. This manual utilizes trip generation studies for a variety of land uses throughout the United States, and is the standard used by traffic engineers and transportation planners for traffic impact analysis, site design, and transportation planning. However, for land uses not contained within the 10th Edition of the *ITE Trip Generation Manual*, an alternative service unit demand could be calculated by completing a trip generation study based on the procedure identified in the *ITE Trip Generation Handbook*.

To convert vehicle trips to vehicle-miles, it is necessary to multiply trips by trip length. The trip length values are based on the *Regional Origin-Destination Travel Survey* conducted by the NHTS. The other adjustment to trip length is the 50% origin-destination reduction to avoid double counting of trips. At this stage, another important aspect of the state law is applied – the limit on transportation service unit demand. If the adjusted trip length is above six (6)

miles, the maximum trip length used for calculation is reduced to six (6) miles. This reduction, as discussed previously, limits the maximum trip length to the approximate size of the service areas.

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

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

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi)	Veh-MI Per Dev-Unit
COMMERCIAL											
Automobile Related											
Automated Car Wash	948	1,000 SF GFA	14.20	94%	B	0.85	1.20	50%	0.60	0.60	0.51
Automobile Care Center	942	1,000 SF GFA	3.11	40%	B	1.87	5.46	50%	2.73	2.73	5.11
Automobile Parts Sales	843	1,000 SF GFA	4.91	43%	A	2.80	5.46	50%	2.73	2.73	7.64
Automobile Sales (New)	840	1,000 SF GFA	2.43	20%	B	1.94	5.46	50%	2.73	2.73	5.30
Automobile Sales (Used)	841	1,000 SF GFA	3.75	20%	B	3.00	5.46	50%	2.73	2.73	8.19
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 with Convenience Market	945	Vehicle Fueling Position	13.99	56%	B	6.16	1.20	50%	0.60	0.60	3.70
Quick Lubrication Vehicle Shop	941	Servicing Positions	4.85	40%	B	2.91	5.46	50%	2.73	2.73	7.94
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Tire Store	848	1,000 SF GFA	3.98	28%	A	2.87	5.46	50%	2.73	2.73	7.84
Dining											
Coffee/Donut Shop with Drive-Thru Window	937	1,000 SF GFA	43.38	70%	B	13.01	1.20	50%	0.60	0.60	7.81
Coffee/Donut Shop without Drive-Thru Window	936	1,000 SF GFA	36.31	70%	B	10.89	1.20	50%	0.60	0.60	6.53
Drinking Place	925	1,000 SF GFA	11.36	50%	B	5.68	4.66	50%	2.33	2.33	13.23
Fast Food Restaurant with Drive-Thru Window	934	1,000 SF GFA	32.67	50%	A	16.34	4.66	50%	2.33	2.33	38.07
Fast Food Restaurant without Drive-Thru Window	933	1,000 SF GFA	28.34	50%	B	14.17	4.66	50%	2.33	2.33	33.02
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	9.77	43%	A	5.57	6.83	50%	3.42	3.42	19.05
Quality Restaurant	931	1,000 SF GFA	7.80	44%	A	4.37	6.83	50%	3.42	3.42	14.95
Other Retail											
Building Materials and Lumber Store	812	1,000 SF GFA	2.06	26%	B	1.52	6.39	50%	3.20	3.20	4.86
Convenience Market	851	1,000 SF GFA	49.11	51%	A	24.06	1.20	50%	0.60	0.60	14.44
Department Store	875	1,000 SF GFA	1.95	30%	B	1.37	6.39	50%	3.20	3.20	4.38
Discount Club	857	1,000 SF GFA	4.18	30%	B	2.93	6.39	50%	3.20	3.20	9.38
Electronics Superstore	863	1,000 SF GFA	4.26	40%	A	2.56	6.39	50%	3.20	3.20	8.19
Factory Outlet Center	823	1,000 SF GFA	2.29	30%	B	1.60	6.39	50%	3.20	3.20	5.12
Free-Standing Discount Store	815	1,000 SF GFA	4.83	30%	C	3.38	6.39	50%	3.20	3.20	10.82
Furniture Store	890	1,000 SF GFA	0.52	53%	A	0.24	6.39	50%	3.20	3.20	0.77
Hardware/Paint Store	816	1,000 SF GFA	2.68	26%	A	1.98	6.39	50%	3.20	3.20	6.34
Home Improvement Superstore	862	1,000 SF GFA	2.33	42%	A	1.35	6.39	50%	3.20	3.20	4.32
Nursery (Garden Center)	817	1,000 SF GFA	6.94	30%	B	4.86	6.39	50%	3.20	3.20	15.55
Nursery (Wholesale)	818	1,000 SF GFA	5.18	30%	B	3.63	6.39	50%	3.20	3.20	11.62
Pharmacy/Drugstore with Drive-Thru Window	881	1,000 SF GFA	10.29	49%	A	5.25	1.20	50%	0.60	0.60	3.15
Pharmacy/Drugstore without Drive-Thru Window	880	1,000 SF GFA	8.51	53%	A	4.00	1.20	50%	0.60	0.60	2.40
Shopping Center (Default Commercial)	820	1,000 SF GLA	3.81	34%	A	2.51	6.39	50%	3.20	3.20	8.03
Sporting Goods Superstore	861	1,000 SF GFA	2.02	30%	B	1.41	6.39	50%	3.20	3.20	4.51
Supermarket	850	1,000 SF GFA	9.24	36%	A	5.91	6.39	50%	3.20	3.20	18.91
Toy/Children's Superstore	864	1,000 SF GFA	5.00	30%	B	3.50	6.39	50%	3.20	3.20	11.20
INDUSTRIAL											
General Light Industrial (Default Industrial)	110	1,000 SF GFA	0.63			0.63	12.89	50%	6.45	5.00	3.15
Industrial Park	130	1,000 SF GFA	0.40			0.40	12.89	50%	6.45	5.00	2.00
Manufacturing	140	1,000 SF GFA	0.67			0.67	12.89	50%	6.45	5.00	3.35
Mini-Warehouse	151	1,000 SF GFA	0.17			0.17	12.89	50%	6.45	5.00	0.85
Utilities	170	1,000 SF GFA	2.27			2.27	12.89	50%	6.45	5.00	11.35
Warehousing	150	1,000 SF GFA	0.19			0.19	12.89	50%	6.45	5.00	0.95
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.49			0.49	7.66	50%	3.83	3.83	1.88
Day Care Center	565	1,000 SF GFA	11.12	44%	B	6.23	3.17	50%	1.59	1.59	9.91
Elementary School	520	Students	0.17			0.17	5.63	50%	2.82	2.82	0.48
High School	530	Students	0.14			0.14	5.63	50%	2.82	2.82	0.39
Junior / Community College	540	Students	0.11			0.11	5.63	50%	2.82	2.82	0.31
Library	590	1,000 SF GFA	8.16			8.16	5.63	50%	2.82	2.82	23.01
Middle School/Junior High School	522	Students	0.17			0.17	5.63	50%	2.82	2.82	0.48
Private School (K-8)	534	Students	0.26			0.26	5.63	50%	2.82	2.82	0.73
Private School (K-12)	536	Students	0.17			0.17	5.63	50%	2.82	2.82	0.48
University / College	550	Students	0.15			0.15	5.63	50%	2.82	2.82	0.42

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

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi)	Veh-Mi Per Dev-Unit
LODGING											
All Suites Hotel	311	Room	0.36			0.36	16.56	50%	8.28	5.00	1.80
Hotel	310	Room	0.60			0.60	16.56	50%	8.28	5.00	3.00
Motel	320	Room	0.38			0.38	16.56	50%	8.28	5.00	1.90
Resort Hotel	330	Room	0.41			0.41	16.56	50%	8.28	5.00	2.05
MEDICAL											
Clinic	630	1,000 SF GFA	3.28			3.28	10.00	50%	5.00	5.00	16.40
Hospital	610	Beds	1.89			1.89	10.00	50%	5.00	5.00	9.45
Nursing Home	620	Beds	0.22			0.22	10.00	50%	5.00	5.00	1.10
Animal Hospital/Veterinary Clinic	640	1,000 SF GFA	3.53	30%	B	2.47	10.00	50%	5.00	5.00	12.35
OFFICE											
Business Park	770	1,000 SF GFA	1.26			1.26	12.93	50%	6.47	5.00	6.30
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	12.93	50%	6.47	5.00	7.00
General Office Building (Default Office)	710	1,000 SF GFA	1.15			1.15	12.93	50%	6.47	5.00	5.75
Medical-Dental Office Building	720	1,000 SF GFA	3.46			3.46	12.93	50%	6.47	5.00	17.30
Office Park	750	1,000 SF GFA	1.33			1.33	12.93	50%	6.47	5.00	6.65
Research and Development Center	760	1,000 SF GFA	0.49			0.49	12.93	50%	6.47	5.00	2.45
Single Tenant Office Building	715	1,000 SF GFA	1.71			1.71	12.93	50%	6.47	5.00	8.55
State Motor Vehicles Department	731	1,000 SF GFA	5.20			5.20	12.93	50%	6.47	5.00	26.00
United States Post Office	732	1,000 SF GFA	11.21			11.21	12.92	50%	6.46	5.00	56.05
PORT AND TERMINAL											
Park-and-Ride with Bus Service	090	Parking Spaces	0.43			0.43	12.89	50%	6.44	5.00	2.15
Truck Terminal	030	1,000 SF GFA	1.87			1.87	12.89	50%	6.44	5.00	9.35
RECREATIONAL											
Batting Cages	433	Cages	2.22			2.22	16.56	50%	8.28	5.00	11.10
Golf Course	430	Holes	2.91			2.91	16.56	50%	8.28	5.00	14.55
Golf Driving Range	432	Driving Positions	1.25			1.25	16.56	50%	8.28	5.00	6.25
Health/Fitness Club	492	1,000 SF GFA	3.45			3.45	16.56	50%	8.28	5.00	17.25
Ice Skating Rink	465	1,000 SF GFA	1.33			1.33	16.56	50%	8.28	5.00	6.65
Miniature Golf Course	431	Holes	0.33			0.33	16.56	50%	8.28	5.00	1.65
Movie Theater	444	Screens	14.60			14.60	16.56	50%	8.28	5.00	73.00
Multiplex Movie Theater	445	Screens	13.73			13.73	16.56	50%	8.28	5.00	68.65
Multipurpose Recreational Facility	435	1,000 SF GFA	3.58			3.58	16.56	50%	8.28	5.00	17.90
Public Park	411	Acres	0.11			0.11	16.56	50%	8.28	5.00	0.55
Racquet / Tennis Club	491	Courts	3.82			3.82	16.56	50%	8.28	5.00	19.10
Recreational Community Center	495	1,000 SF GFA	2.31			2.31	16.56	50%	8.28	5.00	11.55
Soccer Complex	488	Fields	16.43			16.43	16.56	50%	8.28	5.00	82.15
Tennis Courts	490	Courts	4.21			4.21	16.56	50%	8.28	5.00	21.05
RESIDENTIAL											
Assisted Living	254	Beds	0.26			0.26	9.32	50%	4.66	4.66	1.21
Congregate Care Facility	253	Dwelling Unit	0.18			0.18	9.32	50%	4.66	4.66	0.84
Mobile Home Park	240	Dwelling Unit	0.46			0.46	9.32	50%	4.66	4.66	2.14
Multifamily Housing (High-Rise)	222	Dwelling Unit	0.36			0.36	9.32	50%	4.66	4.66	1.68
Multifamily Housing (Low-Rise)	220	Dwelling Unit	0.56			0.56	9.32	50%	4.66	4.66	2.61
Multifamily Housing (Mid-Rise) (Default Multifamily)	221	Dwelling Unit	0.44			0.44	9.32	50%	4.66	4.66	2.05
Senior Adult Housing-Attached	252	Dwelling Unit	0.26			0.26	9.32	50%	4.66	4.66	1.21
Senior Adult Housing-Detached	251	Dwelling Unit	0.30			0.30	9.32	50%	4.66	4.66	1.40
Single-Family Detached Housing (Default Single Family)	210	Dwelling Unit	0.99			0.99	9.32	50%	4.66	4.66	4.61
Timeshare	265	Dwelling Unit	0.63			0.63	9.32	50%	4.66	4.66	2.94
SERVICES											
Drive-In Bank	912	Drive-in Lanes	27.15	35%	A	17.65	5.46	50%	2.73	2.73	48.18
Hair Salon	918	1,000 SF GLA	1.45	30%	B	1.02	5.46	50%	2.73	2.73	2.78
Walk-In Bank	911	1,000 SF GFA	26.40	40%	B	15.84	5.46	50%	2.73	2.73	43.24

Key to Sources of Pass-by Rates:

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

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

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

Table 11. Land Use Descriptions

Land Use Category	ITE Land Use Code	Land Use Description
COMMERCIAL		
Automobile Related		
Automated Car Wash	948	Allows for the mechanical cleaning of vehicle exteriors
Automobile Care Center	942	Automobile repair and servicing including stereo installations and upholstering
Automobile Parts Sales	843	Retail sale of auto parts but no on-site vehicle repair
Automobile Sales (New)	840	Car dealerships, typically with automobile servicing, part sales, and car sales
Automobile Sales (Used)	841	Car dealerships, typically with automobile servicing, part sales, and used car sales
Gasoline/Service Station	944	Gasoline sales without convenience store or car wash; may include repair
Gasoline/Service Station with Convenience Market	945	Gasoline sales with convenience store where the primary business is gasoline sales
Quick Lubrication Vehicle Shop	941	Primary business is to perform oil changes and fluid/filter changes with other repair services not provided
Self-Service Car Wash	947	Has stalls for driver to park and wash the vehicle
Tire Store	848	Primary business is sales and installation of tires; usually do not have large storage or warehouse area
Dining		
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
Coffee/Donut Shop without Drive-Thru Window	936	Coffee and donut restaurants without drive-through windows, hold long store hours and have limited indoor seating
Drinking Place	925	Specialized location for the sale of alcoholic beverages and food at a bar
Fast Food Restaurant with Drive-Thru Window	934	High-turnover fast food restaurant for carry-out and eat-in customers with a drive-thru window
Fast Food Restaurant without Drive-Thru Window	933	High-turnover fast food restaurant for carry-out and eat-in customers, but without a drive-thru window
High Turnover (Sit-Down) Restaurant	932	Restaurants with turnover rates less than one hour; typically includes moderately-priced chain restaurants
Quality Restaurant	931	Restaurants with turnover rates of one hour or longer; typically require reservations
Other Retail		
Building Materials and Lumber Store	812	Free-standing stores that specialize in the sale of hardware, building materials, and lumber
Convenience Market	851	Markets that sell convenience foods, beer/wine, newspapers/magazines; do not have gasoline pumps
Department Store	875	Free-standing stores that specialize in the sale of apparel, footwear, bedding, home products, jewelry, etc.
Discount Club	857	Warehouse/discount store where shoppers pay a membership fee to take advantage of discounted prices on several items
Electronics Superstore	863	Free-standing stores that specialize in the sale of electronic merchandise
Factory Outlet Center	823	Shopping center that houses factory outlet stores
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
Furniture Store	890	Full-service retail facility that specializes in the sale of furniture and carpeting
Hardware/Paint Store	816	Free-standing store that specializes in the sale of hardware and paint supplies
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.
Nursery (Garden Center)	817	Building with a yard of planting or landscape stock; primarily serves the general public
Nursery (Wholesale)	818	Building with an outside storage area for planting or landscape stock; primarily serves contractors and suppliers
Pharmacy/Drugstore with Drive-Thru Window	881	Facilities that primarily sell prescription and non-prescription drugs with a drive-through window
Pharmacy/Drugstore without Drive-Thru Window	880	Facilities that primarily sell prescription and non-prescription drugs without a drive-through window
Shopping Center (Default Commercial)	820	Integrated group of commercial establishments; planning, owned, and managed as a unit
Sporting Goods Superstore	861	Free-standing store that specializes in the sale of athletic and outdoor-oriented merchandise
Supermarket	850	Primary business is sale of groceries, food, and household cleaning items; may include photo, pharmacy, video rental, and/or ATM
Toy/Children's Superstore	864	Businesses specializing in child-oriented merchandise
INDUSTRIAL		
General Light Industrial (Default Industrial)	110	Emphasis on activities other than manufacturing; typically employing fewer than 500 workers
Industrial Park	130	Contains a number of industrial or related facilities; can include manufacturing, service, and warehouse facilities
Manufacturing	140	Primary activity is conversion of raw materials or parts into finished products
Mini-Warehouse	151	Facilities with a number of units rented to others for the storage of goods
Utilities	170	Free-standing building that can house storage and equipment that support a local electrical, communication, water, or sewage utility
Warehousing	150	Devoted to storage of materials but may include office and maintenance areas
INSTITUTIONAL		
Church	560	Churches and houses of worship
Day Care Center	565	Generally includes facilities for care of pre-school aged children, generally includes classrooms, offices, eating areas, and playgrounds
Elementary School	520	Serves students who have not yet entered middle/junior high or high school
High School	530	Serves students who have completed middle/junior high school
Junior / Community College	540	Two-year junior, community, or technical colleges
Library	590	A public or private facility that houses shelved books, reading areas, and/or meeting rooms
Middle School/Junior High School	522	Serves students who have not yet entered high school
Private School (K-8)	534	Private school that serves students attending kindergarten through the eighth grade
Private School (K-12)	536	Private school that serves students attending kindergarten through the twelfth grade
University / College	550	Four-year universities or colleges that may or may not offer graduate programs

Table 11 (Cont'd). Land Use Descriptions

Land Use Category	ITE Land Use Code	Land Use Description
LODGING		
All Suites Hotel	311	Enhanced lodging facilities that typically have on-site restaurants, lounges, meeting and/or banquet rooms, or other retail shops and services
Hotel	310	Lodging facilities that typically have on-site restaurants, lounges, meeting and/or banquet rooms, or other retail shops and services
Motel	320	Lodging facilities that may have small on-site restaurant or buffet area but little or no meeting space
Resort Hotel	330	Lodging facilities that specifically cater to the tourist and vacation industry through recreational facilities and programs
MEDICAL		
Clinic	630	Facilities with limited diagnostic and outpatient care
Hospital	610	Medical and surgical facilities with overnight accommodations
Nursing Home	620	Rest and convalescent homes with residents who do little or no driving
Animal Hospital/Veterinary Clinic	640	Rest and convalescent homes with residents who do little or no driving
OFFICE		
Business Park	770	A group of flex-type or incubator buildings served by a common roadway system
Corporate Headquarters Building	714	Office building housing corporate headquarters of a single company or organization
General Office Building (Default Office)	710	Office buildings which house multiple tenants
Medical-Dental Office Building	720	Multi-tenant building with offices for physicians and/or dentists
Office Park	750	Office buildings (typically low-rise) in a campus setting and served by a common roadway system
Research and Development Center	760	Facility or facilities devoted to research and development activities
Single Tenant Office Building	715	Single tenant office buildings other than corporate headquarters
State Motor Vehicles Department	731	Office building where driver license testing, vehicle registration, or other related functions are administered
United States Post Office	732	Federal building that contains post office boxes, vehicle storage areas, and sorting and distributing facilities for mail
PORT AND TERMINAL		
Park-and-Ride with Bus Service	090	Point of good transfer between trucks or between trucks and rail
Truck Terminal	030	Point of good transfer between trucks or between trucks and rail
RECREATIONAL		
Batting Cages	433	Stand-alone facilities with one or more batting bays; may include game rooms or refreshment services
Golf Course	430	May include municipal courses and private country clubs; may have driving ranges, pro shops, and restaurant/banquet facilities
Golf Driving Range	432	Facilities with driving tees for practice; may provide individual or group lessons; may have pro shop and/or refreshment facilities
Health/Fitness Club	492	Privately-owned facility focusing on individual fitness or training; may include ancillary fitness facilities
Ice Skating Rink	465	Rinks for ice skating and related sports; may contain spectator areas and refreshment facilities
Miniature Golf Course	431	One or more individual putting courses; category should not be used when part of a larger entertainment center (with batting cages, video game centers, etc)
Movie Theater	444	Movie theater with audience seating, less than ten screens, lobby, and refreshment area.
Multiplex Movie Theater	445	Movie theater with audience seating, minimum of ten screens, lobby, and refreshment area.
Multipurpose Recreational Facility	435	Facilities with two or more of the following: batting cages, miniature golf, go-carts, golf driving range, video arcade, bumper boats, etc.
Public Park	411	Outdoor facilities that can feature boating/swimming facilities, hiking trails, ball fields, campsites, picnic areas, etc.
Racquet / Tennis Club	491	Indoor or outdoor facilities specifically designed for playing tennis; privately owned and may provide ancillary facilities
Recreational Community Center	495	Category includes racquet clubs, health/fitness clubs, can include facilities such as YMCA's
Soccer Complex	488	Outdoor facilities used for non-professional soccer games; can consist of multiple fields
Tennis Courts	490	Indoor or outdoor facilities specifically designed for playing tennis; may be public or private with limited ancillary facilities
RESIDENTIAL		
Assisted Living	254	Residential settings that provide either routine general protective oversight or assistance with activities.
Congregate Care Facility	253	Independent living development that provides centralized amenities and organized social/recreational activities
Mobile Home Park	240	Outdoor park consisting of manufactured homes that are sited and installed on permanent foundations
Multifamily Housing (High-Rise)	222	At least 3 rental dwelling units and more than ten levels (floors) per building
Multifamily Housing (Low-Rise)	220	At least 4 rental dwelling units per building
Multifamily Housing (Mid-Rise) (Default Multifamily)	221	At least 3 rental dwelling units and between three and ten levels (floors) per building
Senior Adult Housing-Attached	252	Consists of attached independent living developments that include limited social or recreation services
Senior Adult Housing-Detached	251	Consists of detached independent living developments that include amenities such as golf courses and swimming pools
Single-Family Detached Housing (Default Single Family)	210	Single-family detached homes on individual lots
Timeshare	265	Developments where multiple purchasers buy interests in the same property for the right to use the facility for a period of time each year
SERVICES		
Drive-In Bank	912	Banking facilities to conduct financial transactions from the vehicle; also usually apart of walk-in bank
Hair Salon	918	Facilities that specialize in cosmetic and beauty services including hair cutting and styling
Walk-In Bank	911	Banks with their own parking lots, no drive-in lanes but contain non-drive-through ATMs

VI. SAMPLE CALCULATIONS

The following section details two (2) examples of maximum assessable Roadway Impact Fee calculations.

Example 1:

Development Type - One (1) Unit of Single-Family Housing in Service Area 5

Roadway Impact Fee Calculation Steps – Example 1	
Step 1	Determine Development Unit and Vehicle-Miles Per Development Unit <i>From Table 10 [Land Use – Vehicle-Mile Equivalency Table]</i> Development Type: 1 Dwelling Unit of Single-Family Detached Housing Number of Development Units: 1 Dwelling Unit Veh-Mi Per Development Unit: 4.61
Step 2	Determine Maximum Assessable Impact Fee Per Service Unit (Vehicle-Mile) <i>From Table 9, Line 19 [Maximum Assessable Fee Per Service Unit]</i> Service Area 5: \$1,371
Step 3	Determine Maximum Assessable Impact Fee Impact Fee = # of Development Units * Veh-Mi Per Dev Unit * Max. Fee Per Service Unit Impact Fee = 1 * 4.61 * \$1,371 Maximum Assessable Impact Fee = \$6,320.31

Example 2:

Development Type – 100,000 square foot Home Improvement Superstore in Service Area 3

Roadway Impact Fee Calculation Steps – Example 2	
Step 1	Determine Development Unit and Vehicle-Miles Per Development Unit <i>From Table 10 [Land Use – Vehicle-Mile Equivalency Table]</i> Development Type: 100,000 square feet of Home Improvement Superstore Development Unit: 1,000 square feet of Gross Floor Area Veh-Mi Per Development Unit: 4.32
Step 2	Determine Maximum Assessable Impact Fee Per Service Unit (Vehicle-Mile) <i>From Table 9, Line 19 [Maximum Assessable Fee Per Service Unit]</i> Service Area 3: \$505
Step 3	Determine Maximum Assessable Impact Fee Impact Fee = # of Development Units * Veh-Mi Per Dev Unit * Max. Fee Per Service Unit Impact Fee = 100 * 4.32 * \$505 Maximum Assessable Impact Fee = \$218,160

VII. ADOPTION AND ADMINISTRATION OF ROADWAY IMPACT FEES

A. Adoption Process

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

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

B. Collection and Use of Roadway Impact Fees

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

VIII. CONCLUSIONS

The City of New Braunfels has established a process to implement the assessment and collection of Roadway Impact Fees through the adoption of an impact fee ordinance that is consistent with Chapter 395 of the Texas Local Government Code.

This report establishes the maximum allowable Roadway Impact Fee that could be assessed by the City of New Braunfels, as shown in the previously referenced **Table 9**.

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

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

Below is the listing of the 2019 Roadway Impact Fee Study's Maximum Assessable Impact Fee Per Service Unit (Vehicle-Mile):

Service Area	Maximum Fee Per Service Unit (per Vehicle-Mile)
1	\$1,066
2	\$319
3	\$505
4	\$2,349
5	\$1,371
6	\$1,777



APPENDICES

A. Conceptual Level Project Cost Projections

SERVICE AREA 1
SERVICE AREA 2
SERVICE AREA 3
SERVICE AREA 4
SERVICE AREA 5
SERVICE AREA 6
ITS CALCULATIONS

B. Roadway Impact Fee CIP Service Units of Supply

C. Existing Roadway Facilities Inventory

D. Plan for Awarding the Roadway Impact Fee Credit

Appendix A – Conceptual Level Project Cost Projections

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-A
Name:	FM 1863 (1)			
Limits:	City Limits to 810' E of City Limits			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (If):	810			
Service Area(s):	1, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	3,978	cy	\$ 12.89	\$ 51,270
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	6,480	sy	\$ 29.79	\$ 193,039
302	Flexible Base (Complete in Place)	2,960	cy	\$ 32.70	\$ 96,792
402	Lime Treated Subgrade (6" Compacted Depth)	6,660	sy	\$ 6.00	\$ 39,960
502	One Course Surface Treatment	6,480	sy	\$ 4.79	\$ 31,039
602	Machine Laid Curb	3,240	lf	\$ 17.02	\$ 55,145
702	Concrete Sidewalks	1,800	sy	\$ 44.56	\$ 80,208
802	6" Topsoil	870	cy	\$ 20.27	\$ 17,635
					Paving Construction Cost Subtotal: \$ 565,088

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 33,905
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 28,254
✓ Pavement Markings/Markers		3%	\$ 16,953
✓ Roadway Drainage	Standard Internal System	30%	\$ 169,526
✓ Illumination		6%	\$ 33,905
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 33,905
✓ Sewer	Minor Adjustments	4%	\$ 22,604
✓ Establish Turf / Erosion Control		3%	\$ 16,953
✓ Basic Landscaping		3%	\$ 16,953
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 372,958
		Paving and Allowance Subtotal:	\$ 938,046
		Construction Contingency:	5% \$ 46,902
		Construction Cost TOTAL:	\$ 985,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 985,000
Engineering/Survey/Testing:		20%	\$ 197,000
Mobilization		11%	\$ 108,350
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 98,500
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 277,800

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 City of New Braunfels.

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

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-B
Name:	FM 1863 (2)			
Limits:	810' E of City Limits to SH 46			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (lf):	3500			
Service Area(s):	1			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	17,187	cy	\$ 12.89	\$ 221,537
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	28,000	sy	\$ 29.79	\$ 834,120
302	Flexible Base (Complete in Place)	12,790	cy	\$ 32.70	\$ 418,237
402	Lime Treated Subgrade (6" Compacted Depth)	28,778	sy	\$ 6.00	\$ 172,667
502	One Course Surface Treatment	28,000	sy	\$ 4.79	\$ 134,120
602	Machine Laid Curb	14,000	lf	\$ 17.02	\$ 238,280
702	Concrete Sidewalks	7,778	sy	\$ 44.56	\$ 346,578
802	6" Topsoil	3,759	cy	\$ 20.27	\$ 76,200
					Paving Construction Cost Subtotal: \$ 2,441,739

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 146,504
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 122,087
✓ Pavement Markings/Markers		3%	\$ 73,252
✓ Roadway Drainage	Standard Internal System	30%	\$ 732,522
✓ Illumination		6%	\$ 146,504
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 146,504
✓ Sewer	Minor Adjustments	4%	\$ 97,670
✓ Establish Turf / Erosion Control		3%	\$ 73,252
✓ Basic Landscaping		3%	\$ 73,252
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,611,547
		Paving and Allowance Subtotal:	\$ 4,053,286
		Construction Contingency:	5% \$ 202,664
		Construction Cost TOTAL:	\$ 4,256,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 4,256,000
Engineering/Survey/Testing:		20%	\$ 851,200
Mobilization		11%	\$ 468,160
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 425,600
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 1,200,200

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-C
Name:	Mission Valley (1)			
Limits:	City Limits to City Limits			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	3235			
Service Area(s):	1, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	10,733	cy	\$ 12.89	\$ 138,354
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	17,253	sy	\$ 29.79	\$ 513,977
303	Flexible Base (Complete in Place)	7,988	cy	\$ 32.70	\$ 261,196
403	Lime Treated Subgrade (6" Compacted Depth)	17,972	sy	\$ 6.00	\$ 107,833
503	One Course Surface Treatment	17,253	sy	\$ 4.79	\$ 82,643
603	Machine Laid Curb	12,940	lf	\$ 17.02	\$ 220,239
703	Concrete Sidewalks	4,313	sy	\$ 44.56	\$ 192,202
803	6" Topsoil	2,396	cy	\$ 20.27	\$ 48,573
					Paving Construction Cost Subtotal: \$ 1,565,017

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 93,901
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 78,251
✓ Pavement Markings/Markers		3%	\$ 46,951
✓ Roadway Drainage	Standard Internal System	30%	\$ 469,505
✓ Illumination		6%	\$ 93,901
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 93,901
✓ Sewer	Minor Adjustments	4%	\$ 62,601
✓ Establish Turf / Erosion Control		3%	\$ 46,951
✓ Basic Landscaping		3%	\$ 46,951
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,032,911
		Paving and Allowance Subtotal:	\$ 2,597,929
		Construction Contingency:	5% \$ 129,896
		Construction Cost TOTAL:	\$ 2,728,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,728,000
Engineering/Survey/Testing:		20%	\$ 545,600
Mobilization		11%	\$ 300,080
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 272,800
			Impact Fee Project Cost TOTAL: \$ 3,846,000

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-D
Name:	Mission Valley (2)			
Limits:	City Limits to SH 46			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	2940			
Service Area(s):	1			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	9,755	cy	\$ 12.89	\$ 125,737
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	15,680	sy	\$ 29.79	\$ 467,107
303	Flexible Base (Complete in Place)	7,259	cy	\$ 32.70	\$ 237,378
403	Lime Treated Subgrade (6" Compacted Depth)	16,333	sy	\$ 6.00	\$ 98,000
503	One Course Surface Treatment	15,680	sy	\$ 4.79	\$ 75,107
603	Machine Laid Curb	11,760	lf	\$ 17.02	\$ 200,155
703	Concrete Sidewalks	3,920	sy	\$ 44.56	\$ 174,675
803	6" Topsoil	2,178	cy	\$ 20.27	\$ 44,144
					Paving Construction Cost Subtotal: \$ 1,422,303

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 85,338
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 71,115
✓ Pavement Markings/Markers		3%	\$ 42,669
✓ Roadway Drainage	Standard Internal System	30%	\$ 426,691
✓ Illumination		6%	\$ 85,338
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 85,338
✓ Sewer	Minor Adjustments	4%	\$ 56,892
✓ Establish Turf / Erosion Control		3%	\$ 42,669
✓ Basic Landscaping		3%	\$ 42,669
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 938,720
		Paving and Allowance Subtotal:	\$ 2,361,023
		Construction Contingency:	5% \$ 118,051
		Construction Cost TOTAL:	\$ 2,480,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,480,000
Engineering/Survey/Testing:		20%	\$ 496,000
Mobilization		11%	\$ 272,800
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 248,000
			Impact Fee Project Cost TOTAL: \$ 3,497,000

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 City of New Braunfels.

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

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-E
Name:	Mission Valley (3)	This project consists of the extension of Mission Valley Road as a four-lane divided asphalt facility.		
Limits:	SH 46 to City Limits			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	325			
Service Area(s):	1			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	1,078	cy	\$ 12.89	\$ 13,900
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	1,733	sy	\$ 29.79	\$ 51,636
303	Flexible Base (Complete in Place)	802	cy	\$ 32.70	\$ 26,241
403	Lime Treated Subgrade (6" Compacted Depth)	1,806	sy	\$ 6.00	\$ 10,833
503	One Course Surface Treatment	1,733	sy	\$ 4.79	\$ 8,303
603	Machine Laid Curb	1,300	lf	\$ 17.02	\$ 22,126
703	Concrete Sidewalks	433	sy	\$ 44.56	\$ 19,309
803	6" Topsoil	241	cy	\$ 20.27	\$ 4,880
Paving Construction Cost Subtotal:					\$ 157,227

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 9,434
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 4,717
✓ Roadway Drainage	Standard Internal System	30%	\$ 47,168
✓ Illumination		6%	\$ 9,434
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 9,434
✓ Sewer	Minor Adjustments	4%	\$ 6,289
✓ Establish Turf / Erosion Control		3%	\$ 4,717
✓ Basic Landscaping		3%	\$ 4,717
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 95,909	
		Paving and Allowance Subtotal:	
		\$ 253,136	
		Construction Contingency:	
		5% \$ 12,657	
		Construction Cost TOTAL:	
		\$ 266,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 266,000
Engineering/Survey/Testing:		20%	\$ 53,200
Mobilization		11%	\$ 29,260
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 53,200
Impact Fee Project Cost TOTAL:			\$ 402,000

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 City of New Braunfels.

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

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-F
Name:	Mission Valley (4)	This project consists of the extension of Mission Valley Road as a four-lane divided asphalt facility.		
Limits:	City Limits to 895' E of City Limits			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	895			
Service Area(s):	1			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	2,970	cy	\$ 12.89	\$ 38,277
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	4,773	sy	\$ 29.79	\$ 142,198
303	Flexible Base (Complete in Place)	2,210	cy	\$ 32.70	\$ 72,263
403	Lime Treated Subgrade (6" Compacted Depth)	4,972	sy	\$ 6.00	\$ 29,833
503	One Course Surface Treatment	4,773	sy	\$ 4.79	\$ 22,864
603	Machine Laid Curb	3,580	lf	\$ 17.02	\$ 60,932
703	Concrete Sidewalks	1,193	sy	\$ 44.56	\$ 53,175
803	6" Topsoil	663	cy	\$ 20.27	\$ 13,438
Paving Construction Cost Subtotal:					\$ 432,980

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 25,979	
Traffic Control	None Anticipated	0%	\$ -	
✓ Pavement Markings/Markers		3%	\$ 12,989	
✓ Roadway Drainage	Standard Internal System	30%	\$ 129,894	
✓ Illumination		6%	\$ 25,979	
Special Drainage Structures	None Anticipated	0%	\$ -	
✓ Water	Minor Adjustments	6%	\$ 25,979	
✓ Sewer	Minor Adjustments	4%	\$ 17,319	
✓ Establish Turf / Erosion Control		3%	\$ 12,989	
✓ Basic Landscaping		3%	\$ 12,989	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 264,118	
		Paving and Allowance Subtotal:	\$ 697,098	
		Construction Contingency:	5% \$ 34,855	
		Construction Cost TOTAL:		\$ 732,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 732,000
Engineering/Survey/Testing:		20%	\$ 146,400
Mobilization		11%	\$ 80,520
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 146,400
Impact Fee Project Cost TOTAL:			\$ 1,105,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-G
Name:	Roadway A (1)			
Limits:	SH 46 to 1495' E of SH 46			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	1495			
Service Area(s):	1			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	4,960	cy	\$ 12.89	\$ 63,938
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	7,973	sy	\$ 29.79	\$ 237,526
303	Flexible Base (Complete in Place)	3,691	cy	\$ 32.70	\$ 120,707
403	Lime Treated Subgrade (6" Compacted Depth)	8,306	sy	\$ 6.00	\$ 49,833
503	One Course Surface Treatment	7,973	sy	\$ 4.79	\$ 38,192
603	Machine Laid Curb	5,980	lf	\$ 17.02	\$ 101,780
703	Concrete Sidewalks	1,993	sy	\$ 44.56	\$ 88,823
803	6" Topsoil	1,107	cy	\$ 20.27	\$ 22,447
Paving Construction Cost Subtotal:					\$ 723,246

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 43,395	
Traffic Control	None Anticipated	0%	\$ -	
✓ Pavement Markings/Markers		3%	\$ 21,697	
✓ Roadway Drainage	Standard Internal System	30%	\$ 216,974	
✓ Illumination		6%	\$ 43,395	
Special Drainage Structures	None Anticipated	0%	\$ -	
✓ Water	Minor Adjustments	6%	\$ 43,395	
✓ Sewer	Minor Adjustments	4%	\$ 28,930	
✓ Establish Turf / Erosion Control		3%	\$ 21,697	
✓ Basic Landscaping		3%	\$ 21,697	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 441,180	
		Paving and Allowance Subtotal:	\$ 1,164,426	
		Construction Contingency:	5% \$ 58,221	
		Construction Cost TOTAL:		\$ 1,223,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,223,000
Engineering/Survey/Testing:		20%	\$ 244,600
Mobilization		11%	\$ 134,530
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 244,600
Impact Fee Project Cost TOTAL:			\$ 1,847,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-H
Name:	Roadway A (2)			
Limits:	1495' E of SH 46 to 2575' E of SH 46			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	1085			
Service Area(s):	1			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	3,600	cy	\$ 12.89	\$ 46,403
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	5,787	sy	\$ 29.79	\$ 172,385
303	Flexible Base (Complete in Place)	2,679	cy	\$ 32.70	\$ 87,604
403	Lime Treated Subgrade (6" Compacted Depth)	6,028	sy	\$ 6.00	\$ 36,167
503	One Course Surface Treatment	5,787	sy	\$ 4.79	\$ 27,718
603	Machine Laid Curb	4,340	lf	\$ 17.02	\$ 73,867
703	Concrete Sidewalks	1,447	sy	\$ 44.56	\$ 64,463
803	6" Topsoil	804	cy	\$ 20.27	\$ 16,291
Paving Construction Cost Subtotal:					\$ 524,898

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 31,494	
Traffic Control	None Anticipated	0%	\$ -	
✓ Pavement Markings/Markers		3%	\$ 15,747	
✓ Roadway Drainage	Standard Internal System	30%	\$ 157,469	
✓ Illumination		6%	\$ 31,494	
Special Drainage Structures	None Anticipated	0%	\$ -	
✓ Water	Minor Adjustments	6%	\$ 31,494	
✓ Sewer	Minor Adjustments	4%	\$ 20,996	
✓ Establish Turf / Erosion Control		3%	\$ 15,747	
✓ Basic Landscaping		3%	\$ 15,747	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 320,188	
		Paving and Allowance Subtotal:	\$ 845,085	
		Construction Contingency:	5% \$ 42,254	
		Construction Cost TOTAL:		\$ 888,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 888,000
Engineering/Survey/Testing:		20%	\$ 177,600
Mobilization		11%	\$ 97,680
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 177,600
Impact Fee Project Cost TOTAL:			\$ 1,341,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-I
Name:	Roadway A (3)			
Limits:	2575' E of SH 46 to City Limits			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	2630			
Service Area(s):	1, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	8,726	cy	\$ 12.89	\$ 112,479
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	14,027	sy	\$ 29.79	\$ 417,854
303	Flexible Base (Complete in Place)	6,494	cy	\$ 32.70	\$ 212,348
403	Lime Treated Subgrade (6" Compacted Depth)	14,611	sy	\$ 6.00	\$ 87,667
503	One Course Surface Treatment	14,027	sy	\$ 4.79	\$ 67,188
603	Machine Laid Curb	10,520	lf	\$ 17.02	\$ 179,050
703	Concrete Sidewalks	3,507	sy	\$ 44.56	\$ 156,257
803	6" Topsoil	1,948	cy	\$ 20.27	\$ 39,489
					Paving Construction Cost Subtotal: \$ 1,272,333

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 76,340
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 38,170
✓ Roadway Drainage	Standard Internal System	30%	\$ 381,700
✓ Illumination		6%	\$ 76,340
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000
✓ Water	Minor Adjustments	6%	\$ 76,340
✓ Sewer	Minor Adjustments	4%	\$ 50,893
✓ Establish Turf / Erosion Control		3%	\$ 38,170
✓ Basic Landscaping		3%	\$ 38,170
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,026,123
		Paving and Allowance Subtotal:	\$ 2,298,455
		Construction Contingency:	5% \$ 114,923
		Construction Cost TOTAL:	\$ 2,414,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,414,000
Engineering/Survey/Testing:		20%	\$ 482,800
Mobilization		11%	\$ 265,540
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 482,800
			Impact Fee Project Cost TOTAL: \$ 3,645,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-J
Name:	Roadway C (1)			
Limits:	SH 46 to 795' E of SH 46			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	795			
Service Area(s):	1			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	2,213	cy	\$ 12.89	\$ 28,529
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	3,710	sy	\$ 23.36	\$ 86,666
304	Flexible Base (Complete in Place)	1,727	cy	\$ 32.70	\$ 56,486
404	Lime Treated Subgrade (6" Compacted Depth)	3,887	sy	\$ 6.00	\$ 23,320
504	One Course Surface Treatment	3,710	sy	\$ 4.79	\$ 17,771
604	Machine Laid Curb	3,180	lf	\$ 17.02	\$ 54,124
704	Concrete Sidewalks	1,060	sy	\$ 44.56	\$ 47,234
804	6" Topsoil	530	cy	\$ 20.27	\$ 10,743
Paving Construction Cost Subtotal:					\$ 324,872

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 19,492
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 16,244
✓ Pavement Markings/Markers		3%	\$ 9,746
✓ Roadway Drainage	Standard Internal System	30%	\$ 97,462
✓ Illumination		6%	\$ 19,492
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 19,492
✓ Sewer	Minor Adjustments	4%	\$ 12,995
✓ Establish Turf / Erosion Control		3%	\$ 9,746
✓ Basic Landscaping		3%	\$ 9,746
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 214,415
		Paving and Allowance Subtotal:	\$ 539,287
		Construction Contingency:	5% \$ 26,964
		Construction Cost TOTAL:	
		\$ 567,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 567,000
Engineering/Survey/Testing:		20%	\$ 113,400
Mobilization		11%	\$ 62,370
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 56,700
Impact Fee Project Cost TOTAL:			\$ 799,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-K
Name:	Roadway C (2)			
Limits:	795' E of SH 46 to 1370' E of SH 46			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	580			
Service Area(s):	1			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	1,615	cy	\$ 12.89	\$ 20,813
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	2,707	sy	\$ 23.36	\$ 63,228
304	Flexible Base (Complete in Place)	1,260	cy	\$ 32.70	\$ 41,210
404	Lime Treated Subgrade (6" Compacted Depth)	2,836	sy	\$ 6.00	\$ 17,013
504	One Course Surface Treatment	2,707	sy	\$ 4.79	\$ 12,965
604	Machine Laid Curb	2,320	lf	\$ 17.02	\$ 39,486
704	Concrete Sidewalks	773	sy	\$ 44.56	\$ 34,460
804	6" Topsoil	387	cy	\$ 20.27	\$ 7,838
					Paving Construction Cost Subtotal: \$ 237,013

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 14,221
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 7,110
✓ Roadway Drainage	Standard Internal System	30%	\$ 71,104
✓ Illumination		6%	\$ 14,221
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 14,221
✓ Sewer	Minor Adjustments	4%	\$ 9,481
✓ Establish Turf / Erosion Control		3%	\$ 7,110
✓ Basic Landscaping		3%	\$ 7,110
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 144,578
		Paving and Allowance Subtotal:	\$ 381,591
		Construction Contingency:	5% \$ 19,080
		Construction Cost TOTAL:	\$ 401,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 401,000
Engineering/Survey/Testing:		20%	\$ 80,200
Mobilization		11%	\$ 44,110
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 80,200
			Impact Fee Project Cost TOTAL: \$ 606,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-L
Name:	Collector N (1)			
Limits:	FM 1863 to City Limits			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	495			
Service Area(s):	1			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	866	cy	\$ 12.89	\$ 11,166
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	2,200	sy	\$ 14.65	\$ 32,230
305	Flexible Base (Complete in Place)	866	cy	\$ 32.70	\$ 28,326
405	Lime Treated Subgrade (6" Compacted Depth)	2,310	sy	\$ 6.00	\$ 13,860
505	One Course Surface Treatment	2,200	sy	\$ 4.79	\$ 10,538
605	Machine Laid Curb	990	lf	\$ 17.02	\$ 16,850
705	Concrete Sidewalks	660	sy	\$ 44.56	\$ 29,410
805	6" Topsoil	73	cy	\$ 20.27	\$ 1,486
Paving Construction Cost Subtotal:					\$ 143,866

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 8,632
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 4,316
✓ Roadway Drainage	Standard Internal System	30%	\$ 43,160
✓ Illumination		6%	\$ 8,632
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 8,632
✓ Sewer	Minor Adjustments	4%	\$ 5,755
✓ Establish Turf / Erosion Control		3%	\$ 4,316
✓ Basic Landscaping		3%	\$ 4,316
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 87,758
		Paving and Allowance Subtotal:	\$ 231,625
		Construction Contingency:	5% \$ 11,581
		Construction Cost TOTAL:	
		\$ 244,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 244,000
Engineering/Survey/Testing:		20%	\$ 48,800
Mobilization		11%	\$ 26,840
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 48,800
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 106,720

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-M
Name:	Collector N (2)	This project consists of the construction of a new two-lane minor collector facility.		
Limits:	City Limits to Stone Crossing			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	5080			
Service Area(s):	1, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	8,890	cy	\$ 12.89	\$ 114,592
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	22,578	sy	\$ 14.65	\$ 330,764
305	Flexible Base (Complete in Place)	8,890	cy	\$ 32.70	\$ 290,703
405	Lime Treated Subgrade (6" Compacted Depth)	23,707	sy	\$ 6.00	\$ 142,240
505	One Course Surface Treatment	22,578	sy	\$ 4.79	\$ 108,148
605	Machine Laid Curb	10,160	lf	\$ 17.02	\$ 172,923
705	Concrete Sidewalks	6,773	sy	\$ 44.56	\$ 301,820
805	6" Topsoil	753	cy	\$ 20.27	\$ 15,255
Paving Construction Cost Subtotal:					\$ 1,476,445

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 88,587
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 44,293
✓ Roadway Drainage	Standard Internal System	30%	\$ 442,934
✓ Illumination		6%	\$ 88,587
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 88,587
✓ Sewer	Minor Adjustments	4%	\$ 59,058
✓ Establish Turf / Erosion Control		3%	\$ 44,293
✓ Basic Landscaping		3%	\$ 44,293
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 900,632	
		Paving and Allowance Subtotal:	
		\$ 2,377,077	
		Construction Contingency:	
		5% \$ 118,854	
		Construction Cost TOTAL:	
		\$ 2,496,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,496,000
Engineering/Survey/Testing:		20%	\$ 499,200
Mobilization		11%	\$ 274,560
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 499,200
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 1,093,010

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-N
Name:	Westpointe Drive	This project consists of the extension of Westpointe Drive as a two-lane minor collector facility.		
Limits:	Collector N to 2750' W of Oak Run			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	1660			
Service Area(s):	1			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	2,905	cy	\$ 12.89	\$ 37,445
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	7,378	sy	\$ 14.65	\$ 108,084
305	Flexible Base (Complete in Place)	2,905	cy	\$ 32.70	\$ 94,994
405	Lime Treated Subgrade (6" Compacted Depth)	7,747	sy	\$ 6.00	\$ 46,480
505	One Course Surface Treatment	7,378	sy	\$ 4.79	\$ 35,340
605	Machine Laid Curb	3,320	lf	\$ 17.02	\$ 56,506
705	Concrete Sidewalks	2,213	sy	\$ 44.56	\$ 98,626
805	6" Topsoil	246	cy	\$ 20.27	\$ 4,985
Paving Construction Cost Subtotal:					\$ 482,460

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 28,948
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 14,474
✓ Roadway Drainage	Standard Internal System	30%	\$ 144,738
✓ Illumination		6%	\$ 28,948
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 28,948
✓ Sewer	Minor Adjustments	4%	\$ 19,298
✓ Establish Turf / Erosion Control		3%	\$ 14,474
✓ Basic Landscaping		3%	\$ 14,474
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 294,301
		Paving and Allowance Subtotal:	\$ 776,761
		Construction Contingency:	5% \$ 38,838
		Construction Cost TOTAL:	\$ 816,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 816,000
Engineering/Survey/Testing:		20%	\$ 163,200
Mobilization		11%	\$ 89,760
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 163,200
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 357,280

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	1-O
Name:	Old Mission Lane	This project consists of the extension of Old Mission Lane as a two-lane minor collector facility.		
Limits:	1225' W of SH 46 to SH 46			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	1225			
Service Area(s):	1			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	2,144	cy	\$ 12.89	\$ 27,633
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	5,444	sy	\$ 14.65	\$ 79,761
305	Flexible Base (Complete in Place)	2,144	cy	\$ 32.70	\$ 70,101
405	Lime Treated Subgrade (6" Compacted Depth)	5,717	sy	\$ 6.00	\$ 34,300
505	One Course Surface Treatment	5,444	sy	\$ 4.79	\$ 26,079
605	Machine Laid Curb	2,450	lf	\$ 17.02	\$ 41,699
705	Concrete Sidewalks	1,633	sy	\$ 44.56	\$ 72,781
805	6" Topsoil	181	cy	\$ 20.27	\$ 3,679
Paving Construction Cost Subtotal:					\$ 356,033

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 21,362
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 10,681
✓ Roadway Drainage	Standard Internal System	30%	\$ 106,810
✓ Illumination		6%	\$ 21,362
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 21,362
✓ Sewer	Minor Adjustments	4%	\$ 14,241
✓ Establish Turf / Erosion Control		3%	\$ 10,681
✓ Basic Landscaping		3%	\$ 10,681
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 217,180	
		Paving and Allowance Subtotal:	
		\$ 573,212	
		Construction Contingency:	
		5% \$ 28,661	
		Construction Cost TOTAL:	
		\$ 602,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 602,000
Engineering/Survey/Testing:		20%	\$ 120,400
Mobilization		11%	\$ 66,220
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 120,400
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 263,610

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	2-A
Name:	Walnut (1)			
Limits:	LP 337 to Deer Trot Street			
Impact Fee Type:	AM			
Thoroughfare Class	Principal Arterial			
Length (lf):	2045			
Service Area(s):	2			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
106	Unclassified Street Excavation	2,171	cy	\$ 12.89	\$ 27,987
206	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	0	sy	\$ 14.65	\$ -
306	Flexible Base (Complete in Place)	0	cy	\$ 32.70	\$ -
406	Lime Treated Subgrade (6" Compacted Depth)	0	sy	\$ 6.00	\$ -
506	Illumination	2,045	lf	\$ 40.00	\$ 81,800
606	Machine Laid Curb	4,090	lf	\$ 17.02	\$ 69,612
706	Concrete Sidewalks	0	sy	\$ 44.56	\$ -
806	Landscape Improvements	2,045	lf	\$ 100.00	\$ 204,500
Paving Construction Cost Subtotal:					\$ 383,899

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
Prep ROW		0%	\$ -
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 19,195
✓ Pavement Markings/Markers		3%	\$ 11,517
Roadway Drainage	Standard Internal System	0%	\$ -
Illumination	See Pay Items	0%	\$ -
Special Drainage Structures	None Anticipated	0%	\$ -
Water	None Anticipated	0%	\$ -
Sewer	None Anticipated	0%	\$ -
Establish Turf / Erosion Control	Included in Landscape Improvements	0%	\$ -
Basic Landscaping	Included in Landscape Improvements	0%	\$ -
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 30,712
		Paving and Allowance Subtotal:	\$ 414,611
		Construction Contingency:	5% \$ 20,731
		Construction Cost TOTAL:	
		\$ 436,000	

Impact Fee Project Cost Summary			
Item Description	Notes:	Allowance	Item Cost
Construction:		-	\$ 436,000
Engineering/Survey/Testing:		20%	\$ 87,200
Mobilization		11%	\$ 47,960
Other			
ROW/Easement Acquisition:	No ROW Acquisition Costs Included	0%	\$ -
Impact Fee Project Cost TOTAL:			\$ 571,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	2-B
Name:	Walnut (2)			
Limits:	Landa Street to Mill Street			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (If):	3870			
Service Area(s):	2			

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	6,847,953
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:				\$ 6,847,953

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	2-C
Name:	Walnut (3)			
Limits:	Mill Street to Business IH 35			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (Lf):	2870			
Service Area(s):	2			

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	7,109,383
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:				\$ 7,109,383

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	2-D
Name:	Walnut (4)			
Limits:	Business IH 35 to IH 35			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (Lf):	1395			
Service Area(s):	2			

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	1,853,497
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:				\$ 1,853,497

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	2-E
Name:	River			
Limits:	LP 337 to Lakeview Boulevard			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	2915			
Service Area(s):	2			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	9,672	cy	\$ 12.89	\$ 124,668
203	HMAC Pvmt, Type D (1.5" Comp. Depth) (5.5" Thick)	15,547	sy	\$ 29.79	\$ 463,135
303	Flexible Base (Complete in Place)	7,198	cy	\$ 32.70	\$ 235,359
403	Lime Treated Subgrade (6" Compacted Depth)	16,194	sy	\$ 6.00	\$ 97,167
503	One Course Surface Treatment	15,547	sy	\$ 4.79	\$ 74,469
603	Machine Laid Curb	11,660	lf	\$ 17.02	\$ 198,453
703	Concrete Sidewalks	3,887	sy	\$ 44.56	\$ 173,190
803	6" Topsoil	2,159	cy	\$ 20.27	\$ 43,768
Paving Construction Cost Subtotal:					\$ 1,410,209

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 84,613
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 70,510
✓ Pavement Markings/Markers		3%	\$ 42,306
✓ Roadway Drainage	Standard Internal System	30%	\$ 423,063
✓ Illumination		6%	\$ 84,613
✓ Special Drainage Structures	Crosses Flood Plain	\$ 3,100,000	\$ 3,100,000
✓ Water	Minor Adjustments	6%	\$ 84,613
✓ Sewer	Minor Adjustments	4%	\$ 56,408
✓ Establish Turf / Erosion Control		3%	\$ 42,306
✓ Basic Landscaping		3%	\$ 42,306
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 4,030,738
		Paving and Allowance Subtotal:	\$ 5,440,947
		Construction Contingency: 5%	\$ 272,047
		Construction Cost TOTAL:	\$ 5,713,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 5,713,000
Engineering/Survey/Testing:		20%	\$ 1,142,600
Mobilization		11%	\$ 628,430
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 571,300
Impact Fee Project Cost TOTAL:			\$ 8,055,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	2-F
Name:	Fredericksburg			
Limits:	Academy Street to Landa Street			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	430			
Service Area(s):	2			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	753	cy	\$ 12.89	\$ 9,700
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	1,911	sy	\$ 14.65	\$ 27,998
305	Flexible Base (Complete in Place)	753	cy	\$ 32.70	\$ 24,607
405	Lime Treated Subgrade (6" Compacted Depth)	2,007	sy	\$ 6.00	\$ 12,040
505	One Course Surface Treatment	1,911	sy	\$ 4.79	\$ 9,154
605	Machine Laid Curb	860	lf	\$ 17.02	\$ 14,637
705	Concrete Sidewalks	573	sy	\$ 44.56	\$ 25,548
805	6" Topsoil	64	cy	\$ 20.27	\$ 1,291

Paving Construction Cost Subtotal: \$ 124,975

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 7,498
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 3,749
✓ Roadway Drainage	Standard Internal System	30%	\$ 37,492
✓ Illumination		6%	\$ 7,498
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 7,498
✓ Sewer	Minor Adjustments	4%	\$ 4,999
✓ Establish Turf / Erosion Control		3%	\$ 3,749
✓ Basic Landscaping		3%	\$ 3,749
✓ Other:	Railroad Overpass	\$2,150,000	\$2,150,000

**Allowances based on % of Paving Construction Cost Subtotal

Allowance Subtotal:	\$ 2,226,235
Paving and Allowance Subtotal:	\$ 2,351,209
Construction Contingency:	5%
Construction Cost TOTAL:	\$ 2,469,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,469,000
Engineering/Survey/Testing:		20%	\$ 493,800
Mobilization		11%	\$ 271,590
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 493,800
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 1,081,120

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	2-G
Name:	Hanz			
Limits:	River Terrace to 1190' E of River Terrace			
Impact Fee Type:	Minor Collector	This project consists of the construction of a new two-lane minor collector facility.		
Thoroughfare Class	Minor Collector			
Length (lf):	1190			
Service Area(s):	2			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	2,083	cy	\$ 12.89	\$ 26,843
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	5,289	sy	\$ 14.65	\$ 77,482
305	Flexible Base (Complete in Place)	2,083	cy	\$ 32.70	\$ 68,098
405	Lime Treated Subgrade (6" Compacted Depth)	5,553	sy	\$ 6.00	\$ 33,320
505	One Course Surface Treatment	5,289	sy	\$ 4.79	\$ 25,334
605	Machine Laid Curb	2,380	lf	\$ 17.02	\$ 40,508
705	Concrete Sidewalks	1,587	sy	\$ 44.56	\$ 70,702
805	6" Topsoil	176	cy	\$ 20.27	\$ 3,574
Paving Construction Cost Subtotal:					\$ 345,860

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
Prep ROW		0%	\$ -
Traffic Control		0%	\$ -
✓ Pavement Markings/Markers	None Anticipated	3%	\$ 10,376
✓ Roadway Drainage	Standard Internal System	30%	\$ 103,758
✓ Illumination		6%	\$ 20,752
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 20,752
✓ Sewer	Minor Adjustments	4%	\$ 13,834
✓ Establish Turf / Erosion Control		3%	\$ 10,376
✓ Basic Landscaping		3%	\$ 10,376
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 190,223
		Paving and Allowance Subtotal:	\$ 536,083
		Construction Contingency:	5% \$ 26,804
		Construction Cost TOTAL:	\$ 563,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 563,000
Engineering/Survey/Testing:		20%	\$ 112,600
Mobilization		11%	\$ 61,930
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 112,600
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 246,500

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	2-H
Name:	Lakeview	This project consists of the widening of Lakeview Boulevard as a two-lane minor collector facility.		
Limits:	Klingemann Street to Torrey Street			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	880			
Service Area(s):	2			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	1,540	cy	\$ 12.89	\$ 19,851
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	3,911	sy	\$ 14.65	\$ 57,298
305	Flexible Base (Complete in Place)	1,540	cy	\$ 32.70	\$ 50,358
405	Lime Treated Subgrade (6" Compacted Depth)	4,107	sy	\$ 6.00	\$ 24,640
505	One Course Surface Treatment	3,911	sy	\$ 4.79	\$ 18,734
605	Machine Laid Curb	1,760	lf	\$ 17.02	\$ 29,955
705	Concrete Sidewalks	1,173	sy	\$ 44.56	\$ 52,284
805	6" Topsoil	130	cy	\$ 20.27	\$ 2,643
Paving Construction Cost Subtotal:					\$ 255,762

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 15,346
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 12,788
✓ Pavement Markings/Markers		3%	\$ 7,673
✓ Roadway Drainage	Standard Internal System	30%	\$ 76,729
✓ Illumination		6%	\$ 15,346
✓ Special Drainage Structures	Crosses Flood Plain	\$ 600,000	\$ 600,000
✓ Water	Minor Adjustments	6%	\$ 15,346
✓ Sewer	Minor Adjustments	4%	\$ 10,230
✓ Establish Turf / Erosion Control		3%	\$ 7,673
✓ Basic Landscaping		3%	\$ 7,673
✓ Other:	Railroad Crossing	\$ 500,000	\$ 500,000
**Allowances based on % of Paving Construction Cost Subtotal			Allowance Subtotal: \$ 1,268,803
			Paving and Allowance Subtotal: \$ 1,524,565
			Construction Contingency: 5% \$ 76,228
			Construction Cost TOTAL: \$ 1,601,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,601,000
Engineering/Survey/Testing:		20%	\$ 320,200
Mobilization		11%	\$ 176,110
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 160,100
Impact Fee Project Cost TOTAL:			\$ 2,257,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	2-I
Name:	Live Oak	This project consists of the widening of Live Oak Avenue as a two-lane minor collector facility.		
Limits:	Landa Street to Michigan Street			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	3990			
Service Area(s):	2			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	6,983	cy	\$ 12.89	\$ 90,004
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	17,733	sy	\$ 14.65	\$ 259,793
305	Flexible Base (Complete in Place)	6,983	cy	\$ 32.70	\$ 228,328
405	Lime Treated Subgrade (6" Compacted Depth)	18,620	sy	\$ 6.00	\$ 111,720
505	One Course Surface Treatment	17,733	sy	\$ 4.79	\$ 84,943
605	Machine Laid Curb	7,980	lf	\$ 17.02	\$ 135,820
705	Concrete Sidewalks	5,320	sy	\$ 44.56	\$ 237,059
805	6" Topsoil	591	cy	\$ 20.27	\$ 11,982
Paving Construction Cost Subtotal:					\$ 1,159,649

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 69,579
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 57,982
✓ Pavement Markings/Markers		3%	\$ 34,789
✓ Roadway Drainage	Standard Internal System	30%	\$ 347,895
✓ Illumination		6%	\$ 69,579
✓ Special Drainage Structures	Crosses Flood Plain	\$ 1,000,000	\$ 1,000,000
✓ Water	Minor Adjustments	6%	\$ 69,579
✓ Sewer	Minor Adjustments	4%	\$ 46,386
✓ Establish Turf / Erosion Control		3%	\$ 34,789
✓ Basic Landscaping		3%	\$ 34,789
✓ Other:	Railroad Crossings (2)	\$1,000,000	\$ 1,000,000
**Allowances based on % of Paving Construction Cost Subtotal			Allowance Subtotal: \$ 2,765,368
			Paving and Allowance Subtotal: \$ 3,925,017
			Construction Contingency: 5% \$ 196,251
			Construction Cost TOTAL: \$ 4,122,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 4,122,000
Engineering/Survey/Testing:		20%	\$ 824,400
Mobilization		11%	\$ 453,420
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 412,200
Impact Fee Project Cost TOTAL:			\$ 5,812,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	2-J
Name:	Ohio	This project consists of the construction of a new two-lane minor collector facility.		
Limits:	Canyon Drive to 1250' E of Canyon Drive			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	1250			
Service Area(s):	2			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	2,188	cy	\$ 12.89	\$ 28,197
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	5,556	sy	\$ 14.65	\$ 81,389
305	Flexible Base (Complete in Place)	2,188	cy	\$ 32.70	\$ 71,531
405	Lime Treated Subgrade (6" Compacted Depth)	5,833	sy	\$ 6.00	\$ 35,000
505	One Course Surface Treatment	5,556	sy	\$ 4.79	\$ 26,611
605	Machine Laid Curb	2,500	lf	\$ 17.02	\$ 42,550
705	Concrete Sidewalks	1,667	sy	\$ 44.56	\$ 74,267
805	6" Topsoil	185	cy	\$ 20.27	\$ 3,754
Paving Construction Cost Subtotal:					\$ 363,298

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 21,798
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 10,899
✓ Roadway Drainage	Standard Internal System	30%	\$ 108,990
✓ Illumination		6%	\$ 21,798
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000
✓ Water	Minor Adjustments	6%	\$ 21,798
✓ Sewer	Minor Adjustments	4%	\$ 14,532
✓ Establish Turf / Erosion Control		3%	\$ 10,899
✓ Basic Landscaping		3%	\$ 10,899
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 471,612	
		Paving and Allowance Subtotal:	
		\$ 834,911	
		Construction Contingency: <input type="text" value="5%"/> \$ 41,746	
		Construction Cost TOTAL:	
		\$ 877,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 877,000
Engineering/Survey/Testing:		20%	\$ 175,400
Mobilization		11%	\$ 96,470
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 175,400
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 383,960

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-A
Name:	FM 1102 (1)			
Limits:	FM 306 to City Limits			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (lf):	2945			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	14,461	cy	\$ 12.89	\$ 186,408
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	23,560	sy	\$ 29.79	\$ 701,852
302	Flexible Base (Complete in Place)	10,762	cy	\$ 32.70	\$ 351,917
402	Lime Treated Subgrade (6" Compacted Depth)	24,214	sy	\$ 6.00	\$ 145,287
502	One Course Surface Treatment	23,560	sy	\$ 4.79	\$ 112,852
602	Machine Laid Curb	11,780	lf	\$ 17.02	\$ 200,496
702	Concrete Sidewalks	6,544	sy	\$ 44.56	\$ 291,620
802	6" Topsoil	3,163	cy	\$ 20.27	\$ 64,117
					Paving Construction Cost Subtotal: \$ 2,054,549

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 123,273
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 102,727
✓ Pavement Markings/Markers		3%	\$ 61,636
✓ Roadway Drainage	Standard Internal System	30%	\$ 616,365
✓ Illumination		6%	\$ 123,273
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 123,273
✓ Sewer	Minor Adjustments	4%	\$ 82,182
✓ Establish Turf / Erosion Control		3%	\$ 61,636
✓ Basic Landscaping		3%	\$ 61,636
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,356,002
		Paving and Allowance Subtotal:	\$ 3,410,551
		Construction Contingency:	5% \$ 170,528
		Construction Cost TOTAL:	\$ 3,582,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 3,582,000
Engineering/Survey/Testing:		20%	\$ 716,400
Mobilization		11%	\$ 394,020
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 358,200
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 1,010,200

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-B
Name:	FM 1102 (2)			
Limits:	Orion Drive to City Limits			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (lf):	4505			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	22,122	cy	\$ 12.89	\$ 285,150
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	36,040	sy	\$ 29.79	\$ 1,073,632
302	Flexible Base (Complete in Place)	16,463	cy	\$ 32.70	\$ 538,331
402	Lime Treated Subgrade (6" Compacted Depth)	37,041	sy	\$ 6.00	\$ 222,247
502	One Course Surface Treatment	36,040	sy	\$ 4.79	\$ 172,632
602	Machine Laid Curb	18,020	lf	\$ 17.02	\$ 306,700
702	Concrete Sidewalks	10,011	sy	\$ 44.56	\$ 446,095
802	6" Topsoil	4,839	cy	\$ 20.27	\$ 98,081

Paving Construction Cost Subtotal: \$ 3,142,866

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 188,572
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 157,143
✓ Pavement Markings/Markers		3%	\$ 94,286
✓ Roadway Drainage	Standard Internal System	30%	\$ 942,860
✓ Illumination		6%	\$ 188,572
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 188,572
✓ Sewer	Minor Adjustments	4%	\$ 125,715
✓ Establish Turf / Erosion Control		3%	\$ 94,286
✓ Basic Landscaping		3%	\$ 94,286
✓ Other:	Railroad Crossing	\$500,000	\$ 500,000

**Allowances based on % of Paving Construction Cost Subtotal

Allowance Subtotal: \$ 2,574,292

Paving and Allowance Subtotal: \$ 5,717,158
Construction Contingency: 5% \$ 285,858
Construction Cost TOTAL: \$ 6,004,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 6,004,000
Engineering/Survey/Testing:		20%	\$ 1,200,800
Mobilization		11%	\$ 660,440
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 600,400

Impact Fee Project Cost TOTAL (20% Contribution) \$ 1,693,200

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-C, 6-J
Name:	SH 46 (1)			
Limits:	IH 35 to FM 1101			
Impact Fee Type:	AM			
Thoroughfare Class	Principal Arterial			
Length (lf):	995			
Service Area(s):	3, 6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
106	Unclassified Street Excavation	1,056	cy	\$ 12.89	\$ 13,617
206	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	0	sy	\$ 14.65	\$ -
306	Flexible Base (Complete in Place)	0	cy	\$ 32.70	\$ -
406	Lime Treated Subgrade (6" Compacted Depth)	0	sy	\$ 6.00	\$ -
506	Illumination	995	lf	\$ 40.00	\$ 39,800
606	Machine Laid Curb	1,990	lf	\$ 17.02	\$ 33,870
706	Concrete Sidewalks	0	sy	\$ 44.56	\$ -
806	Landscape Improvements	995	lf	\$ 100.00	\$ 99,500
Paving Construction Cost Subtotal:					\$ 186,787

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
Prep ROW		0%	\$ -
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 9,339
✓ Pavement Markings/Markers		3%	\$ 5,604
Roadway Drainage	Standard Internal System	0%	\$ -
Illumination	See Pay Items	0%	\$ -
Special Drainage Structures	None Anticipated	0%	\$ -
Water	None Anticipated	0%	\$ -
Sewer	None Anticipated	0%	\$ -
Establish Turf / Erosion Control	Included in Landscape Improvements	0%	\$ -
Basic Landscaping	Included in Landscape Improvements	0%	\$ -
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 14,943
		Paving and Allowance Subtotal:	\$ 201,730
		Construction Contingency:	5% \$ 10,087
		Construction Cost TOTAL:	
		\$ 212,000	

Impact Fee Project Cost Summary			
Item Description	Notes:	Allowance	Item Cost
Construction:		-	\$ 212,000
Engineering/Survey/Testing:		20%	\$ 42,400
Mobilization		11%	\$ 23,320
Other			
ROW/Easement Acquisition:	No ROW Acquisition Costs Included	0%	\$ -
Impact Fee Project Cost TOTAL:			\$ 278,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-D
Name:	Common (1)			
Limits:	LP 337 to Gruene Road			
Impact Fee Type:	AM			
Thoroughfare Class	Principal Arterial			
Length (Lf):	1165			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
106	Unclassified Street Excavation	1,237	cy	\$ 12.89	\$ 15,944
206	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	0	sy	\$ 14.65	\$ -
306	Flexible Base (Complete in Place)	0	cy	\$ 32.70	\$ -
406	Lime Treated Subgrade (6" Compacted Depth)	0	sy	\$ 6.00	\$ -
506	Illumination	1,165	lf	\$ 40.00	\$ 46,600
606	Machine Laid Curb	2,330	lf	\$ 17.02	\$ 39,657
706	Concrete Sidewalks	0	sy	\$ 44.56	\$ -
806	Landscape Improvements	1,165	lf	\$ 100.00	\$ 116,500
Paving Construction Cost Subtotal:					\$ 218,700

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
Prep ROW		0%	\$ -	
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 10,935	
✓ Pavement Markings/Markers		3%	\$ 6,561	
Roadway Drainage	Standard Internal System	0%	\$ -	
Illumination	See Pay Items	0%	\$ -	
Special Drainage Structures	None Anticipated	0%	\$ -	
Water	None Anticipated	0%	\$ -	
Sewer	None Anticipated	0%	\$ -	
Establish Turf / Erosion Control	Included in Landscape Improvements	0%	\$ -	
Basic Landscaping	Included in Landscape Improvements	0%	\$ -	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 17,496	
		Paving and Allowance Subtotal:	\$ 236,196	
		Construction Contingency:	5% \$ 11,810	
		Construction Cost TOTAL:		\$ 249,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 249,000
Engineering/Survey/Testing:		20%	\$ 49,800
Mobilization		11%	\$ 27,390
Other			
ROW/Easement Acquisition:	No ROW Acquisition Costs Included	0%	\$ -
Impact Fee Project Cost TOTAL:			\$ 326,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-E
Name:	Common (2)			
Limits:	Gruene Road to FM 306			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	8685			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	28,816	cy	\$ 12.89	\$ 371,438
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	46,320	sy	\$ 29.79	\$ 1,379,873
303	Flexible Base (Complete in Place)	21,444	cy	\$ 32.70	\$ 701,233
403	Lime Treated Subgrade (6" Compacted Depth)	48,250	sy	\$ 6.00	\$ 289,500
503	One Course Surface Treatment	46,320	sy	\$ 4.79	\$ 221,873
603	Machine Laid Curb	34,740	lf	\$ 17.02	\$ 591,275
703	Concrete Sidewalks	11,580	sy	\$ 44.56	\$ 516,005
803	6" Topsoil	6,433	cy	\$ 20.27	\$ 130,404

Paving Construction Cost Subtotal: \$ 4,201,600

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 252,096
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 210,080
✓ Pavement Markings/Markers		3%	\$ 126,048
✓ Roadway Drainage	Standard Internal System	30%	\$ 1,260,480
✓ Illumination		6%	\$ 252,096
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 252,096
✓ Sewer	Minor Adjustments	4%	\$ 168,064
✓ Establish Turf / Erosion Control		3%	\$ 126,048
✓ Basic Landscaping		3%	\$ 126,048
Other:		\$0	\$ -

**Allowances based on % of Paving Construction Cost Subtotal

Allowance Subtotal: \$ 2,773,056

Paving and Allowance Subtotal: \$ 6,974,656

Construction Contingency: 5% \$ 348,733

Construction Cost TOTAL: \$ 7,324,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 7,324,000
Engineering/Survey/Testing:		20%	\$ 1,464,800
Mobilization		11%	\$ 805,640
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 732,400

Impact Fee Project Cost TOTAL: \$ 10,327,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-F
Name:	FM 1101 (1)			
Limits:	490' E of FM 306 to 2850' E of FM 306			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	2360			
Service Area(s):	3, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	7,830	cy	\$ 12.89	\$ 100,932
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	12,587	sy	\$ 29.79	\$ 374,957
303	Flexible Base (Complete in Place)	5,827	cy	\$ 32.70	\$ 190,548
403	Lime Treated Subgrade (6" Compacted Depth)	13,111	sy	\$ 6.00	\$ 78,667
503	One Course Surface Treatment	12,587	sy	\$ 4.79	\$ 60,290
603	Machine Laid Curb	9,440	lf	\$ 17.02	\$ 160,669
703	Concrete Sidewalks	3,147	sy	\$ 44.56	\$ 140,215
803	6" Topsoil	1,748	cy	\$ 20.27	\$ 35,435
					Paving Construction Cost Subtotal: \$ 1,141,713

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 68,503
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 57,086
✓ Pavement Markings/Markers		3%	\$ 34,251
✓ Roadway Drainage	Standard Internal System	30%	\$ 342,514
✓ Illumination		6%	\$ 68,503
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 68,503
✓ Sewer	Minor Adjustments	4%	\$ 45,669
✓ Establish Turf / Erosion Control		3%	\$ 34,251
✓ Basic Landscaping		3%	\$ 34,251
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 753,530
		Paving and Allowance Subtotal:	\$ 1,895,243
		Construction Contingency:	5% \$ 94,762
		Construction Cost TOTAL:	\$ 1,991,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,991,000
Engineering/Survey/Testing:		20%	\$ 398,200
Mobilization		11%	\$ 219,010
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 199,100
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 561,400

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-G, 6-M
Name:	FM 1101 (2)			
Limits:	2850' E of FM 306 to 4105' E of FM 306			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	1255			
Service Area(s):	3, 6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	4,164	cy	\$ 12.89	\$ 53,674
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	6,693	sy	\$ 29.79	\$ 199,394
303	Flexible Base (Complete in Place)	3,099	cy	\$ 32.70	\$ 101,330
403	Lime Treated Subgrade (6" Compacted Depth)	6,972	sy	\$ 6.00	\$ 41,833
503	One Course Surface Treatment	6,693	sy	\$ 4.79	\$ 32,061
603	Machine Laid Curb	5,020	lf	\$ 17.02	\$ 85,440
703	Concrete Sidewalks	1,673	sy	\$ 44.56	\$ 74,564
803	6" Topsoil	930	cy	\$ 20.27	\$ 18,844
					Paving Construction Cost Subtotal: \$ 607,140

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 36,428
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 30,357
✓ Pavement Markings/Markers		3%	\$ 18,214
✓ Roadway Drainage	Standard Internal System	30%	\$ 182,142
✓ Illumination		6%	\$ 36,428
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 36,428
✓ Sewer	Minor Adjustments	4%	\$ 24,286
✓ Establish Turf / Erosion Control		3%	\$ 18,214
✓ Basic Landscaping		3%	\$ 18,214
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 400,712
		Paving and Allowance Subtotal:	\$ 1,007,852
		Construction Contingency:	5% \$ 50,393
		Construction Cost TOTAL:	\$ 1,059,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,059,000
Engineering/Survey/Testing:		20%	\$ 211,800
Mobilization		11%	\$ 116,490
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 105,900
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 298,600

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-H
Name:	FM 1101 (3)			
Limits:	4105' E of FM 306 to Kohlenberg Road			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	5815			
Service Area(s):	3, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	19,294	cy	\$ 12.89	\$ 248,694
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	31,013	sy	\$ 29.79	\$ 923,887
303	Flexible Base (Complete in Place)	14,358	cy	\$ 32.70	\$ 469,507
403	Lime Treated Subgrade (6" Compacted Depth)	32,306	sy	\$ 6.00	\$ 193,833
503	One Course Surface Treatment	31,013	sy	\$ 4.79	\$ 148,554
603	Machine Laid Curb	23,260	lf	\$ 17.02	\$ 395,885
703	Concrete Sidewalks	7,753	sy	\$ 44.56	\$ 345,489
803	6" Topsoil	4,307	cy	\$ 20.27	\$ 87,311
					Paving Construction Cost Subtotal: \$ 2,813,161

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 168,790
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 140,658
✓ Pavement Markings/Markers		3%	\$ 84,395
✓ Roadway Drainage	Standard Internal System	30%	\$ 843,948
✓ Illumination		6%	\$ 168,790
✓ Special Drainage Structures	Crosses Flood Plain and Minor Creek	\$ 2,450,000	\$ 2,450,000
✓ Water	Minor Adjustments	6%	\$ 168,790
✓ Sewer	Minor Adjustments	4%	\$ 112,526
✓ Establish Turf / Erosion Control		3%	\$ 84,395
✓ Basic Landscaping		3%	\$ 84,395
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 4,306,686
		Paving and Allowance Subtotal:	\$ 7,119,847
		Construction Contingency:	5% \$ 355,992
		Construction Cost TOTAL:	\$ 7,476,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 7,476,000
Engineering/Survey/Testing:		20%	\$ 1,495,200
Mobilization		11%	\$ 822,360
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 747,600
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 2,108,200

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-I
Name:	Goodwin (1)			
Limits:	FM 306 to Conrads Lane (South)			
Impact Fee Type:	Minor Arterial	This project consists of the widening of a two-lane undivided facility to a four-lane divided asphalt facility.		
Thoroughfare Class	Minor Arterial			
Length (lf):	9430			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	31,288	cy	\$ 12.89	\$ 403,300
203	HMAC Pvmt, Type D (1.5" Comp. Depth) (5.5" Thick)	50,293	sy	\$ 29.79	\$ 1,498,238
303	Flexible Base (Complete in Place)	23,284	cy	\$ 32.70	\$ 761,385
403	Lime Treated Subgrade (6" Compacted Depth)	52,389	sy	\$ 6.00	\$ 314,333
503	One Course Surface Treatment	50,293	sy	\$ 4.79	\$ 240,905
603	Machine Laid Curb	37,720	lf	\$ 17.02	\$ 641,994
703	Concrete Sidewalks	12,573	sy	\$ 44.56	\$ 560,268
803	6" Topsoil	6,985	cy	\$ 20.27	\$ 141,590
Paving Construction Cost Subtotal:					\$ 4,562,014

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 273,721
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 228,101
✓ Pavement Markings/Markers		3%	\$ 136,860
✓ Roadway Drainage	Standard Internal System	30%	\$ 1,368,604
✓ Illumination		6%	\$ 273,721
✓ Special Drainage Structures	Crosses Flood Plain	\$ 1,152,000	\$ 1,152,000
✓ Water	Minor Adjustments	6%	\$ 273,721
✓ Sewer	Minor Adjustments	4%	\$ 182,481
✓ Establish Turf / Erosion Control		3%	\$ 136,860
✓ Basic Landscaping		3%	\$ 136,860
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 4,162,929	
		Paving and Allowance Subtotal:	
		\$ 8,724,943	
		Construction Contingency:	
		5% \$ 436,247	
		Construction Cost TOTAL:	
		\$ 9,162,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 9,162,000
Engineering/Survey/Testing:		20%	\$ 1,832,400
Mobilization		11%	\$ 1,007,820
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 916,200
Impact Fee Project Cost TOTAL:			\$ 12,918,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-J
Name:	Goodwin (2)			
Limits:	Conrads Lane (South) to Conrads Lane (North)			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	960			
Service Area(s):	3, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	3,185	cy	\$ 12.89	\$ 41,057
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	5,120	sy	\$ 29.79	\$ 152,525
303	Flexible Base (Complete in Place)	2,370	cy	\$ 32.70	\$ 77,511
403	Lime Treated Subgrade (6" Compacted Depth)	5,333	sy	\$ 6.00	\$ 32,000
503	One Course Surface Treatment	5,120	sy	\$ 4.79	\$ 24,525
603	Machine Laid Curb	3,840	lf	\$ 17.02	\$ 65,357
703	Concrete Sidewalks	1,280	sy	\$ 44.56	\$ 57,037
803	6" Topsoil	711	cy	\$ 20.27	\$ 14,414
					Paving Construction Cost Subtotal: \$ 464,426

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 27,866
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 23,221
✓ Pavement Markings/Markers		3%	\$ 13,933
✓ Roadway Drainage	Standard Internal System	30%	\$ 139,328
✓ Illumination		6%	\$ 27,866
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 27,866
✓ Sewer	Minor Adjustments	4%	\$ 18,577
✓ Establish Turf / Erosion Control		3%	\$ 13,933
✓ Basic Landscaping		3%	\$ 13,933
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 306,521
		Paving and Allowance Subtotal:	\$ 770,946
		Construction Contingency:	5% \$ 38,547
		Construction Cost TOTAL:	\$ 810,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 810,000
Engineering/Survey/Testing:		20%	\$ 162,000
Mobilization		11%	\$ 89,100
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 81,000
			Impact Fee Project Cost TOTAL: \$ 1,142,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-K
Name:	Conrads (1)			
Limits:	Goodwin to 710' N of S IH-35			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	3460			
Service Area(s):	3, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	9,632	cy	\$ 12.89	\$ 124,163
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	16,147	sy	\$ 23.36	\$ 377,186
304	Flexible Base (Complete in Place)	7,518	cy	\$ 32.70	\$ 245,839
404	Lime Treated Subgrade (6" Compacted Depth)	16,916	sy	\$ 6.00	\$ 101,493
504	One Course Surface Treatment	16,147	sy	\$ 4.79	\$ 77,343
604	Machine Laid Curb	13,840	lf	\$ 17.02	\$ 235,557
704	Concrete Sidewalks	4,613	sy	\$ 44.56	\$ 205,570
804	6" Topsoil	2,307	cy	\$ 20.27	\$ 46,756
					Paving Construction Cost Subtotal: \$ 1,413,907

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 84,834
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 70,695
✓ Pavement Markings/Markers		3%	\$ 42,417
✓ Roadway Drainage	Standard Internal System	30%	\$ 424,172
✓ Illumination		6%	\$ 84,834
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 84,834
✓ Sewer	Minor Adjustments	4%	\$ 56,556
✓ Establish Turf / Erosion Control		3%	\$ 42,417
✓ Basic Landscaping		3%	\$ 42,417
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 933,179
		Paving and Allowance Subtotal:	\$ 2,347,086
		Construction Contingency:	5% \$ 117,354
		Construction Cost TOTAL:	\$ 2,465,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,465,000
Engineering/Survey/Testing:		20%	\$ 493,000
Mobilization		11%	\$ 271,150
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 246,500
			Impact Fee Project Cost TOTAL: \$ 3,476,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-L
Name:	Conrads (2)			
Limits:	710' N of S IH-35 to IH 35			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	710			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	1,977	cy	\$ 12.89	\$ 25,478
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	3,313	sy	\$ 23.36	\$ 77,399
304	Flexible Base (Complete in Place)	1,543	cy	\$ 32.70	\$ 50,447
404	Lime Treated Subgrade (6" Compacted Depth)	3,471	sy	\$ 6.00	\$ 20,827
504	One Course Surface Treatment	3,313	sy	\$ 4.79	\$ 15,871
604	Machine Laid Curb	2,840	lf	\$ 17.02	\$ 48,337
704	Concrete Sidewalks	947	sy	\$ 44.56	\$ 42,183
804	6" Topsoil	473	cy	\$ 20.27	\$ 9,594
					Paving Construction Cost Subtotal: \$ 290,137

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 17,408
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 14,507
✓ Pavement Markings/Markers		3%	\$ 8,704
✓ Roadway Drainage	Standard Internal System	30%	\$ 87,041
✓ Illumination		6%	\$ 17,408
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 17,408
✓ Sewer	Minor Adjustments	4%	\$ 11,605
✓ Establish Turf / Erosion Control		3%	\$ 8,704
✓ Basic Landscaping		3%	\$ 8,704
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 191,490
		Paving and Allowance Subtotal:	\$ 481,627
		Construction Contingency:	5% \$ 24,081
		Construction Cost TOTAL:	\$ 506,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 506,000
Engineering/Survey/Testing:		20%	\$ 101,200
Mobilization		11%	\$ 55,660
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 50,600
			Impact Fee Project Cost TOTAL: \$ 713,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-M
Name:	Conrads (3)	This project consists of the widening of Conrads Lane as a two-lane minor collector facility.		
Limits:	City Limits to 295' S of City Limits			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	295			
Service Area(s):	3, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	516	cy	\$ 12.89	\$ 6,654
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	1,311	sy	\$ 14.65	\$ 19,208
305	Flexible Base (Complete in Place)	516	cy	\$ 32.70	\$ 16,881
405	Lime Treated Subgrade (6" Compacted Depth)	1,377	sy	\$ 6.00	\$ 8,260
505	One Course Surface Treatment	1,311	sy	\$ 4.79	\$ 6,280
605	Machine Laid Curb	590	lf	\$ 17.02	\$ 10,042
705	Concrete Sidewalks	393	sy	\$ 44.56	\$ 17,527
805	6" Topsoil	44	cy	\$ 20.27	\$ 886
Paving Construction Cost Subtotal:					\$ 85,738

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 5,144
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 4,287
✓ Pavement Markings/Markers		3%	\$ 2,572
✓ Roadway Drainage	Standard Internal System	30%	\$ 25,722
✓ Illumination		6%	\$ 5,144
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 5,144
✓ Sewer	Minor Adjustments	4%	\$ 3,430
✓ Establish Turf / Erosion Control		3%	\$ 2,572
✓ Basic Landscaping		3%	\$ 2,572
✓ Other:	Railroad Crossings (2)	\$1,000,000	\$ 1,000,000
**Allowances based on % of Paving Construction Cost Subtotal			Allowance Subtotal: \$ 1,056,587
			Paving and Allowance Subtotal: \$ 1,142,326
			Construction Contingency: 5% \$ 57,116
			Construction Cost TOTAL: \$ 1,200,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,200,000
Engineering/Survey/Testing:		20%	\$ 240,000
Mobilization		11%	\$ 132,000
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 120,000
Impact Fee Project Cost TOTAL:			\$ 1,692,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-N
Name:	Conrads (4)	This project consists of the widening of Conrads Lane as a two-lane minor collector facility.		
Limits:	295' S of City Limits to Goodwin			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	4290			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	7,508	cy	\$ 12.89	\$ 96,772
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	19,067	sy	\$ 14.65	\$ 279,327
305	Flexible Base (Complete in Place)	7,508	cy	\$ 32.70	\$ 245,495
405	Lime Treated Subgrade (6" Compacted Depth)	20,020	sy	\$ 6.00	\$ 120,120
505	One Course Surface Treatment	19,067	sy	\$ 4.79	\$ 91,329
605	Machine Laid Curb	8,580	lf	\$ 17.02	\$ 146,032
705	Concrete Sidewalks	5,720	sy	\$ 44.56	\$ 254,883
805	6" Topsoil	636	cy	\$ 20.27	\$ 12,883
Paving Construction Cost Subtotal:					\$ 1,246,840

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 74,810
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 62,342
✓ Pavement Markings/Markers		3%	\$ 37,405
✓ Roadway Drainage	Standard Internal System	30%	\$ 374,052
✓ Illumination		6%	\$ 74,810
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 74,810
✓ Sewer	Minor Adjustments	4%	\$ 49,874
✓ Establish Turf / Erosion Control		3%	\$ 37,405
✓ Basic Landscaping		3%	\$ 37,405
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 822,915
		Paving and Allowance Subtotal:	\$ 2,069,755
		Construction Contingency:	5%
		Construction Cost TOTAL:	
		\$ 2,174,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,174,000
Engineering/Survey/Testing:		20%	\$ 434,800
Mobilization		11%	\$ 239,140
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 217,400
Impact Fee Project Cost TOTAL:			\$ 3,065,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-O
Name:	Windgate Park (1)	This project consists of the extension of Windgate Park Lane as a two-lane minor collector facility.		
Limits:	Heather Glen Drive to 1230' W of FM 306			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	805			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	1,409	cy	\$ 12.89	\$ 18,159
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	3,578	sy	\$ 14.65	\$ 52,414
305	Flexible Base (Complete in Place)	1,409	cy	\$ 32.70	\$ 46,066
405	Lime Treated Subgrade (6" Compacted Depth)	3,757	sy	\$ 6.00	\$ 22,540
505	One Course Surface Treatment	3,578	sy	\$ 4.79	\$ 17,138
605	Machine Laid Curb	1,610	lf	\$ 17.02	\$ 27,402
705	Concrete Sidewalks	1,073	sy	\$ 44.56	\$ 47,828
805	6" Topsoil	119	cy	\$ 20.27	\$ 2,417
Paving Construction Cost Subtotal:					\$ 233,964

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 14,038
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 7,019
✓ Roadway Drainage	Standard Internal System	30%	\$ 70,189
✓ Illumination		6%	\$ 14,038
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 14,038
✓ Sewer	Minor Adjustments	4%	\$ 9,359
✓ Establish Turf / Erosion Control		3%	\$ 7,019
✓ Basic Landscaping		3%	\$ 7,019
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 142,718	
		Paving and Allowance Subtotal:	
		\$ 376,682	
		Construction Contingency:	
		5% \$ 18,834	
		Construction Cost TOTAL:	
		\$ 396,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 396,000
Engineering/Survey/Testing:		20%	\$ 79,200
Mobilization		11%	\$ 43,560
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 79,200
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 173,420

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-P
Name:	Windgate Park (2)			
Limits:	1230' W of FM 306 to FM 306			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	1230			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	2,153	cy	\$ 12.89	\$ 27,746
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	5,467	sy	\$ 14.65	\$ 80,087
305	Flexible Base (Complete in Place)	2,153	cy	\$ 32.70	\$ 70,387
405	Lime Treated Subgrade (6" Compacted Depth)	5,740	sy	\$ 6.00	\$ 34,440
505	One Course Surface Treatment	5,467	sy	\$ 4.79	\$ 26,185
605	Machine Laid Curb	2,460	lf	\$ 17.02	\$ 41,869
705	Concrete Sidewalks	1,640	sy	\$ 44.56	\$ 73,078
805	6" Topsoil	182	cy	\$ 20.27	\$ 3,694
					Paving Construction Cost Subtotal: \$ 357,486

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 21,449
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 17,874
✓ Pavement Markings/Markers		3%	\$ 10,725
✓ Roadway Drainage	Standard Internal System	30%	\$ 107,246
✓ Illumination		6%	\$ 21,449
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 21,449
✓ Sewer	Minor Adjustments	4%	\$ 14,299
✓ Establish Turf / Erosion Control		3%	\$ 10,725
✓ Basic Landscaping		3%	\$ 10,725
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 235,941
		Paving and Allowance Subtotal:	\$ 593,426
		Construction Contingency:	5% \$ 29,671
		Construction Cost TOTAL:	\$ 624,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 624,000
Engineering/Survey/Testing:		20%	\$ 124,800
Mobilization		11%	\$ 68,640
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 62,400
			Impact Fee Project Cost TOTAL: \$ 880,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-Q
Name:	Collector O			
Limits:	IH 35 to FM 1101			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	4760			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	8,330	cy	\$ 12.89	\$ 107,374
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	21,156	sy	\$ 14.65	\$ 309,929
305	Flexible Base (Complete in Place)	8,330	cy	\$ 32.70	\$ 272,391
405	Lime Treated Subgrade (6" Compacted Depth)	22,213	sy	\$ 6.00	\$ 133,280
505	One Course Surface Treatment	21,156	sy	\$ 4.79	\$ 101,335
605	Machine Laid Curb	9,520	lf	\$ 17.02	\$ 162,030
705	Concrete Sidewalks	6,347	sy	\$ 44.56	\$ 282,807
805	6" Topsoil	705	cy	\$ 20.27	\$ 14,294
					Paving Construction Cost Subtotal: \$ 1,383,441

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 83,006
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 41,503
✓ Roadway Drainage	Standard Internal System	30%	\$ 415,032
✓ Illumination		6%	\$ 83,006
✓ Special Drainage Structures	Minor Creek Crossings (2)	\$ 500,000	\$ 500,000
✓ Water	Minor Adjustments	6%	\$ 83,006
✓ Sewer	Minor Adjustments	4%	\$ 55,338
✓ Establish Turf / Erosion Control		3%	\$ 41,503
✓ Basic Landscaping		3%	\$ 41,503
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,343,899
		Paving and Allowance Subtotal:	\$ 2,727,339
		Construction Contingency:	5% \$ 136,367
		Construction Cost TOTAL:	\$ 2,864,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,864,000
Engineering/Survey/Testing:		20%	\$ 572,800
Mobilization		11%	\$ 315,040
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 572,800
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 1,254,250

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-R
Name:	FM 483	This project consists of the widening of FM 483 as a two-lane minor collector facility.		
Limits:	Wilhelm to FM 1101			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	2005			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	3,509	cy	\$ 12.89	\$ 45,228
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	8,911	sy	\$ 14.65	\$ 130,548
305	Flexible Base (Complete in Place)	3,509	cy	\$ 32.70	\$ 114,736
405	Lime Treated Subgrade (6" Compacted Depth)	9,357	sy	\$ 6.00	\$ 56,140
505	One Course Surface Treatment	8,911	sy	\$ 4.79	\$ 42,684
605	Machine Laid Curb	4,010	lf	\$ 17.02	\$ 68,250
705	Concrete Sidewalks	2,673	sy	\$ 44.56	\$ 119,124
805	6" Topsoil	297	cy	\$ 20.27	\$ 6,021
Paving Construction Cost Subtotal:					\$ 582,731

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 34,964
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 29,137
✓ Pavement Markings/Markers		3%	\$ 17,482
✓ Roadway Drainage	Standard Internal System	30%	\$ 174,819
✓ Illumination		6%	\$ 34,964
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 34,964
✓ Sewer	Minor Adjustments	4%	\$ 23,309
✓ Establish Turf / Erosion Control		3%	\$ 17,482
✓ Basic Landscaping		3%	\$ 17,482
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 384,602
		Paving and Allowance Subtotal:	\$ 967,333
		Construction Contingency:	5%
			\$ 48,367
		Construction Cost TOTAL:	\$ 1,016,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,016,000
Engineering/Survey/Testing:		20%	\$ 203,200
Mobilization		11%	\$ 111,760
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 101,600
Impact Fee Project Cost TOTAL:			\$ 1,433,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-S
Name:	Gruene			
Limits:	Rock Street to 3545' E of Rock Street			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	3545			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	6,204	cy	\$ 12.89	\$ 79,966
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	15,756	sy	\$ 14.65	\$ 230,819
305	Flexible Base (Complete in Place)	6,204	cy	\$ 32.70	\$ 202,863
405	Lime Treated Subgrade (6" Compacted Depth)	16,543	sy	\$ 6.00	\$ 99,260
505	One Course Surface Treatment	15,756	sy	\$ 4.79	\$ 75,469
605	Machine Laid Curb	7,090	lf	\$ 17.02	\$ 120,672
705	Concrete Sidewalks	4,727	sy	\$ 44.56	\$ 210,620
805	6" Topsoil	525	cy	\$ 20.27	\$ 10,646
					Paving Construction Cost Subtotal: \$ 1,030,315

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 61,819
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 51,516
✓ Pavement Markings/Markers		3%	\$ 30,909
✓ Roadway Drainage	Standard Internal System	30%	\$ 309,094
✓ Illumination		6%	\$ 61,819
✓ Special Drainage Structures	Crosses Flood Plain	\$ 1,000,000	\$ 1,000,000
✓ Water	Minor Adjustments	6%	\$ 61,819
✓ Sewer	Minor Adjustments	4%	\$ 41,213
✓ Establish Turf / Erosion Control		3%	\$ 30,909
✓ Basic Landscaping		3%	\$ 30,909
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,680,008
		Paving and Allowance Subtotal:	\$ 2,710,322
		Construction Contingency:	5% \$ 135,516
		Construction Cost TOTAL:	\$ 2,846,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,846,000
Engineering/Survey/Testing:		20%	\$ 569,200
Mobilization		11%	\$ 313,060
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 284,600
			Impact Fee Project Cost TOTAL: \$ 4,013,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-T
Name:	Hunter (1)			
Limits:	FM 306 to 3020' E. of FM 306			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	3020			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	5,285	cy	\$ 12.89	\$ 68,124
205	HMAC Pavement, Type D (1.5" Comp. Depth) (2.5" Thick)	13,422	sy	\$ 14.65	\$ 196,636
305	Flexible Base (Complete in Place)	5,285	cy	\$ 32.70	\$ 172,820
405	Lime Treated Subgrade (6" Compacted Depth)	14,093	sy	\$ 6.00	\$ 84,560
505	One Course Surface Treatment	13,422	sy	\$ 4.79	\$ 64,292
605	Machine Laid Curb	6,040	lf	\$ 17.02	\$ 102,801
705	Concrete Sidewalks	4,027	sy	\$ 44.56	\$ 179,428
805	6" Topsoil	447	cy	\$ 20.27	\$ 9,069
					Paving Construction Cost Subtotal: \$ 877,729

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 52,664
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 43,886
✓ Pavement Markings/Markers		3%	\$ 26,332
✓ Roadway Drainage	Standard Internal System	30%	\$ 263,319
✓ Illumination		6%	\$ 52,664
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 52,664
✓ Sewer	Minor Adjustments	4%	\$ 35,109
✓ Establish Turf / Erosion Control		3%	\$ 26,332
✓ Basic Landscaping		3%	\$ 26,332
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 579,301
		Paving and Allowance Subtotal:	\$ 1,457,030
		Construction Contingency:	5% \$ 72,852
		Construction Cost TOTAL:	\$ 1,530,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,530,000
Engineering/Survey/Testing:		20%	\$ 306,000
Mobilization		11%	\$ 168,300
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 153,000
			Impact Fee Project Cost TOTAL: \$ 2,157,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-U
Name:	Hunter (2)	This project consists of the widening of Hunter Road as a two-lane minor collector facility.		
Limits:	3020' E. of FM 306 to Railroad			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	860			
Service Area(s):	3, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	1,505	cy	\$ 12.89	\$ 19,399
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	3,822	sy	\$ 14.65	\$ 55,996
305	Flexible Base (Complete in Place)	1,505	cy	\$ 32.70	\$ 49,214
405	Lime Treated Subgrade (6" Compacted Depth)	4,013	sy	\$ 6.00	\$ 24,080
505	One Course Surface Treatment	3,822	sy	\$ 4.79	\$ 18,308
605	Machine Laid Curb	1,720	lf	\$ 17.02	\$ 29,274
705	Concrete Sidewalks	1,147	sy	\$ 44.56	\$ 51,095
805	6" Topsoil	127	cy	\$ 20.27	\$ 2,583
Paving Construction Cost Subtotal:					\$ 249,949

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 14,997
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 12,497
✓ Pavement Markings/Markers		3%	\$ 7,498
✓ Roadway Drainage	Standard Internal System	30%	\$ 74,985
✓ Illumination		6%	\$ 14,997
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 14,997
✓ Sewer	Minor Adjustments	4%	\$ 9,998
✓ Establish Turf / Erosion Control		3%	\$ 7,498
✓ Basic Landscaping		3%	\$ 7,498
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 164,967
		Paving and Allowance Subtotal:	\$ 414,916
		Construction Contingency:	5% \$ 20,746
		Construction Cost TOTAL:	\$ 436,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 436,000
Engineering/Survey/Testing:		20%	\$ 87,200
Mobilization		11%	\$ 47,960
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 43,600
Impact Fee Project Cost TOTAL:			\$ 615,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-V
Name:	Kohlenberg	This project consists of the widening of Kohlenberg Road as a two-lane minor collector facility.		
Limits:	3880' N of FM 1101 to FM 1101			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	3880			
Service Area(s):	3, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	6,790	cy	\$ 12.89	\$ 87,523
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	17,244	sy	\$ 14.65	\$ 252,631
305	Flexible Base (Complete in Place)	6,790	cy	\$ 32.70	\$ 222,033
405	Lime Treated Subgrade (6" Compacted Depth)	18,107	sy	\$ 6.00	\$ 108,640
505	One Course Surface Treatment	17,244	sy	\$ 4.79	\$ 82,601
605	Machine Laid Curb	7,760	lf	\$ 17.02	\$ 132,075
705	Concrete Sidewalks	5,173	sy	\$ 44.56	\$ 230,524
805	6" Topsoil	575	cy	\$ 20.27	\$ 11,651
Paving Construction Cost Subtotal:					\$ 1,127,679

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 67,661
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 56,384
✓ Pavement Markings/Markers		3%	\$ 33,830
✓ Roadway Drainage	Standard Internal System	30%	\$ 338,304
✓ Illumination		6%	\$ 67,661
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000
✓ Water	Minor Adjustments	6%	\$ 67,661
✓ Sewer	Minor Adjustments	4%	\$ 45,107
✓ Establish Turf / Erosion Control		3%	\$ 33,830
✓ Basic Landscaping		3%	\$ 33,830
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 994,268	
		Paving and Allowance Subtotal:	
		\$ 2,121,946	
		Construction Contingency:	
		5% \$ 106,097	
		Construction Cost TOTAL:	
		\$ 2,229,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,229,000
Engineering/Survey/Testing:		20%	\$ 445,800
Mobilization		11%	\$ 245,190
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 222,900
Impact Fee Project Cost TOTAL:			\$ 3,143,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-W
Name:	Kowald	This project consists of the widening of Kowald Lane as a two-lane minor collector facility.		
Limits:	IH 35 to FM 1101			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	4085			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	7,149	cy	\$ 12.89	\$ 92,147
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	18,156	sy	\$ 14.65	\$ 265,979
305	Flexible Base (Complete in Place)	7,149	cy	\$ 32.70	\$ 233,764
405	Lime Treated Subgrade (6" Compacted Depth)	19,063	sy	\$ 6.00	\$ 114,380
505	One Course Surface Treatment	18,156	sy	\$ 4.79	\$ 86,965
605	Machine Laid Curb	8,170	lf	\$ 17.02	\$ 139,053
705	Concrete Sidewalks	5,447	sy	\$ 44.56	\$ 242,703
805	6" Topsoil	605	cy	\$ 20.27	\$ 12,267
Paving Construction Cost Subtotal:					\$ 1,187,259

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 71,236	
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 59,363	
✓ Pavement Markings/Markers		3%	\$ 35,618	
✓ Roadway Drainage	Standard Internal System	30%	\$ 356,178	
✓ Illumination		6%	\$ 71,236	
Special Drainage Structures	None Anticipated	0%	\$ -	
✓ Water	Minor Adjustments	6%	\$ 71,236	
✓ Sewer	Minor Adjustments	4%	\$ 47,490	
✓ Establish Turf / Erosion Control		3%	\$ 35,618	
✓ Basic Landscaping		3%	\$ 35,618	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 783,591	
		Paving and Allowance Subtotal:	\$ 1,970,851	
		Construction Contingency:	5% \$ 98,543	
		Construction Cost TOTAL:		\$ 2,070,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,070,000
Engineering/Survey/Testing:		20%	\$ 414,000
Mobilization		11%	\$ 227,700
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 207,000
Impact Fee Project Cost TOTAL:			\$ 2,919,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-X
Name:	Wilhelm (1)			
Limits:	IH 35 to Kowald Lane			
Impact Fee Type:	Minor Collector	This project consists of the construction of a new two-lane minor collector facility.		
Thoroughfare Class	Minor Collector			
Length (lf):	2535			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	4,436	cy	\$ 12.89	\$ 57,183
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	11,267	sy	\$ 14.65	\$ 165,057
305	Flexible Base (Complete in Place)	4,436	cy	\$ 32.70	\$ 145,065
405	Lime Treated Subgrade (6" Compacted Depth)	11,830	sy	\$ 6.00	\$ 70,980
505	One Course Surface Treatment	11,267	sy	\$ 4.79	\$ 53,967
605	Machine Laid Curb	5,070	lf	\$ 17.02	\$ 86,291
705	Concrete Sidewalks	3,380	sy	\$ 44.56	\$ 150,613
805	6" Topsoil	376	cy	\$ 20.27	\$ 7,613
Paving Construction Cost Subtotal:					\$ 736,769

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 44,206
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 22,103
✓ Roadway Drainage	Standard Internal System	30%	\$ 221,031
✓ Illumination		6%	\$ 44,206
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 44,206
✓ Sewer	Minor Adjustments	4%	\$ 29,471
✓ Establish Turf / Erosion Control		3%	\$ 22,103
✓ Basic Landscaping		3%	\$ 22,103
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 449,429
		Paving and Allowance Subtotal:	\$ 1,186,199
		Construction Contingency:	5% \$ 59,310
		Construction Cost TOTAL:	
		\$ 1,246,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,246,000
Engineering/Survey/Testing:		20%	\$ 249,200
Mobilization		11%	\$ 137,060
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 249,200
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 545,490

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-Y
Name:	Wilhelm (2)	This project consists of the construction of a new two-lane minor collector facility.		
Limits:	Kowald Lane to FM 483			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	5615			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	9,826	cy	\$ 12.89	\$ 126,660
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	24,956	sy	\$ 14.65	\$ 365,599
305	Flexible Base (Complete in Place)	9,826	cy	\$ 32.70	\$ 321,318
405	Lime Treated Subgrade (6" Compacted Depth)	26,203	sy	\$ 6.00	\$ 157,220
505	One Course Surface Treatment	24,956	sy	\$ 4.79	\$ 119,537
605	Machine Laid Curb	11,230	lf	\$ 17.02	\$ 191,135
705	Concrete Sidewalks	7,487	sy	\$ 44.56	\$ 333,606
805	6" Topsoil	832	cy	\$ 20.27	\$ 16,862
Paving Construction Cost Subtotal:					\$ 1,631,937

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 97,916
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 48,958
✓ Roadway Drainage	Standard Internal System	30%	\$ 489,581
✓ Illumination		6%	\$ 97,916
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 97,916
✓ Sewer	Minor Adjustments	4%	\$ 65,277
✓ Establish Turf / Erosion Control		3%	\$ 48,958
✓ Basic Landscaping		3%	\$ 48,958
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 995,481	
		Paving and Allowance Subtotal:	
		\$ 2,627,418	
		Construction Contingency:	
		5% \$ 131,371	
		Construction Cost TOTAL:	
		\$ 2,759,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,759,000
Engineering/Survey/Testing:		20%	\$ 551,800
Mobilization		11%	\$ 303,490
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 551,800
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 1,208,140

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-Z
Name:	Loop 337 Access Connection	This project consists of the construction of a new two-lane minor collector facility.		
Limits:	Gruene Road to LP 337 Access Road			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	2390			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	4,183	cy	\$ 12.89	\$ 53,912
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	10,622	sy	\$ 14.65	\$ 155,616
305	Flexible Base (Complete in Place)	4,183	cy	\$ 32.70	\$ 136,768
405	Lime Treated Subgrade (6" Compacted Depth)	11,153	sy	\$ 6.00	\$ 66,920
505	One Course Surface Treatment	10,622	sy	\$ 4.79	\$ 50,880
605	Machine Laid Curb	4,780	lf	\$ 17.02	\$ 81,356
705	Concrete Sidewalks	3,187	sy	\$ 44.56	\$ 141,998
805	6" Topsoil	354	cy	\$ 20.27	\$ 7,177
Paving Construction Cost Subtotal:					\$ 694,627

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 41,678	
Traffic Control	None Anticipated	0%	\$ -	
✓ Pavement Markings/Markers		3%	\$ 20,839	
✓ Roadway Drainage	Standard Internal System	30%	\$ 208,388	
✓ Illumination		6%	\$ 41,678	
Special Drainage Structures	None Anticipated	0%	\$ -	
✓ Water	Minor Adjustments	6%	\$ 41,678	
✓ Sewer	Minor Adjustments	4%	\$ 27,785	
✓ Establish Turf / Erosion Control		3%	\$ 20,839	
✓ Basic Landscaping		3%	\$ 20,839	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 423,722	
		Paving and Allowance Subtotal:	\$ 1,118,349	
		Construction Contingency:	5% \$ 55,917	
		Construction Cost TOTAL:		\$ 1,175,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,175,000
Engineering/Survey/Testing:		20%	\$ 235,000
Mobilization		11%	\$ 129,250
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 235,000
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 514,460

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-AA
Name:	Orion (1)			
Limits:	City Limits to Orion Drive Railroad Crossing			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	2010			
Service Area(s):	3, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	3,518	cy	\$ 12.89	\$ 45,341
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	8,933	sy	\$ 14.65	\$ 130,873
305	Flexible Base (Complete in Place)	3,518	cy	\$ 32.70	\$ 115,022
405	Lime Treated Subgrade (6" Compacted Depth)	9,380	sy	\$ 6.00	\$ 56,280
505	One Course Surface Treatment	8,933	sy	\$ 4.79	\$ 42,791
605	Machine Laid Curb	4,020	lf	\$ 17.02	\$ 68,420
705	Concrete Sidewalks	2,680	sy	\$ 44.56	\$ 119,421
805	6" Topsoil	298	cy	\$ 20.27	\$ 6,036
					Paving Construction Cost Subtotal: \$ 584,184

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 35,051
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 29,209
✓ Pavement Markings/Markers		3%	\$ 17,526
✓ Roadway Drainage	Standard Internal System	30%	\$ 175,255
✓ Illumination		6%	\$ 35,051
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 35,051
✓ Sewer	Minor Adjustments	4%	\$ 23,367
✓ Establish Turf / Erosion Control		3%	\$ 17,526
✓ Basic Landscaping		3%	\$ 17,526
✓ Other:	Railroad Crossings (1)	\$500,000	\$ 500,000
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 885,561
		Paving and Allowance Subtotal:	\$ 1,469,745
		Construction Contingency:	5% \$ 73,487
		Construction Cost TOTAL:	\$ 1,544,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,544,000
Engineering/Survey/Testing:		20%	\$ 308,800
Mobilization		11%	\$ 169,840
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 154,400
			Impact Fee Project Cost TOTAL: \$ 2,177,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-AB
Name:	Orion (2)			
Limits:	Orion Drive Railroad Crossing to Goodwin			
Impact Fee Type:	Minor Collector	This project consists of the widening of Orion Drive as a two-lane minor collector facility.		
Thoroughfare Class	Minor Collector			
Length (lf):	2880			
Service Area(s):	3			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	5,040	cy	\$ 12.89	\$ 64,966
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	12,800	sy	\$ 14.65	\$ 187,520
305	Flexible Base (Complete in Place)	5,040	cy	\$ 32.70	\$ 164,808
405	Lime Treated Subgrade (6" Compacted Depth)	13,440	sy	\$ 6.00	\$ 80,640
505	One Course Surface Treatment	12,800	sy	\$ 4.79	\$ 61,312
605	Machine Laid Curb	5,760	lf	\$ 17.02	\$ 98,035
705	Concrete Sidewalks	3,840	sy	\$ 44.56	\$ 171,110
805	6" Topsoil	427	cy	\$ 20.27	\$ 8,649
Paving Construction Cost Subtotal:					\$ 837,040

Major Construction Component Allowances:**

Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 50,222
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 41,852
✓ Pavement Markings/Markers		3%	\$ 25,111
✓ Roadway Drainage	Standard Internal System	30%	\$ 251,112
✓ Illumination		6%	\$ 50,222
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 50,222
✓ Sewer	Minor Adjustments	4%	\$ 33,482
✓ Establish Turf / Erosion Control		3%	\$ 25,111
✓ Basic Landscaping		3%	\$ 25,111
✓ Other:	Railroad Crossings (1)	\$500,000	\$ 500,000

**Allowances based on % of Paving Construction Cost Subtotal

Allowance Subtotal: \$ 1,052,446

Paving and Allowance Subtotal: \$ 1,889,486

Construction Contingency: 5% \$ 94,474

Construction Cost TOTAL: \$ 1,984,000

Impact Fee Project Cost Summary

Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,984,000
Engineering/Survey/Testing:		20%	\$ 396,800
Mobilization		11%	\$ 218,240
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 198,400
Impact Fee Project Cost TOTAL:			\$ 2,797,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-AC
Name:	Orion (3)			
Limits:	Goodwin to IH 35			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	4695			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	8,216	cy	\$ 12.89	\$ 105,907
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	20,867	sy	\$ 14.65	\$ 305,697
305	Flexible Base (Complete in Place)	8,216	cy	\$ 32.70	\$ 268,671
405	Lime Treated Subgrade (6" Compacted Depth)	21,910	sy	\$ 6.00	\$ 131,460
505	One Course Surface Treatment	20,867	sy	\$ 4.79	\$ 99,951
605	Machine Laid Curb	9,390	lf	\$ 17.02	\$ 159,818
705	Concrete Sidewalks	6,260	sy	\$ 44.56	\$ 278,946
805	6" Topsoil	696	cy	\$ 20.27	\$ 14,099
					Paving Construction Cost Subtotal: \$ 1,364,549

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 81,873
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 40,936
✓ Roadway Drainage	Standard Internal System	30%	\$ 409,365
✓ Illumination		6%	\$ 81,873
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 81,873
✓ Sewer	Minor Adjustments	4%	\$ 54,582
✓ Establish Turf / Erosion Control		3%	\$ 40,936
✓ Basic Landscaping		3%	\$ 40,936
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 832,375
		Paving and Allowance Subtotal:	\$ 2,196,924
		Construction Contingency:	5% \$ 109,846
		Construction Cost TOTAL:	\$ 2,307,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,307,000
Engineering/Survey/Testing:		20%	\$ 461,400
Mobilization		11%	\$ 253,770
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 461,400
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 1,010,360

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-AD
Name:	Waterway (1)			
Limits:	660' E of Gruene Road to 345' W of Common Street			
Impact Fee Type:	Minor Collector	This project consists of the construction of a new two-lane minor collector facility.		
Thoroughfare Class	Minor Collector			
Length (lf):	990			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	1,733	cy	\$ 12.89	\$ 22,332
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	4,400	sy	\$ 14.65	\$ 64,460
305	Flexible Base (Complete in Place)	1,733	cy	\$ 32.70	\$ 56,653
405	Lime Treated Subgrade (6" Compacted Depth)	4,620	sy	\$ 6.00	\$ 27,720
505	One Course Surface Treatment	4,400	sy	\$ 4.79	\$ 21,076
605	Machine Laid Curb	1,980	lf	\$ 17.02	\$ 33,700
705	Concrete Sidewalks	1,320	sy	\$ 44.56	\$ 58,819
805	6" Topsoil	147	cy	\$ 20.27	\$ 2,973
Paving Construction Cost Subtotal:					\$ 287,732

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
Prep ROW		0%	\$ -
Traffic Control		0%	\$ -
✓ Pavement Markings/Markers	None Anticipated	3%	\$ 8,632
✓ Roadway Drainage	Standard Internal System	30%	\$ 86,320
✓ Illumination		6%	\$ 17,264
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 17,264
✓ Sewer	Minor Adjustments	4%	\$ 11,509
✓ Establish Turf / Erosion Control		3%	\$ 8,632
✓ Basic Landscaping		3%	\$ 8,632
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 158,253	
		Paving and Allowance Subtotal:	
		\$ 445,985	
		Construction Contingency: 5%	
		\$ 22,299	
		Construction Cost TOTAL:	
		\$ 469,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 469,000
Engineering/Survey/Testing:		20%	\$ 93,800
Mobilization		11%	\$ 51,590
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 93,800
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 205,320

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-AE
Name:	Waterway (2)	This project consists of the construction of a new two-lane minor collector facility.		
Limits:	Common Street to Old FM 306			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	2205			
Service Area(s):	3			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	3,859	cy	\$ 12.89	\$ 49,739
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	9,800	sy	\$ 14.65	\$ 143,570
305	Flexible Base (Complete in Place)	3,859	cy	\$ 32.70	\$ 126,181
405	Lime Treated Subgrade (6" Compacted Depth)	10,290	sy	\$ 6.00	\$ 61,740
505	One Course Surface Treatment	9,800	sy	\$ 4.79	\$ 46,942
605	Machine Laid Curb	4,410	lf	\$ 17.02	\$ 75,058
705	Concrete Sidewalks	2,940	sy	\$ 44.56	\$ 131,006
805	6" Topsoil	327	cy	\$ 20.27	\$ 6,622
Paving Construction Cost Subtotal:					\$ 640,859

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 38,452
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 19,226
✓ Roadway Drainage	Standard Internal System	30%	\$ 192,258
✓ Illumination		6%	\$ 38,452
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 38,452
✓ Sewer	Minor Adjustments	4%	\$ 25,634
✓ Establish Turf / Erosion Control		3%	\$ 19,226
✓ Basic Landscaping		3%	\$ 19,226
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 390,924	
		Paving and Allowance Subtotal:	
		\$ 1,031,782	
		Construction Contingency:	
		5% \$ 51,589	
		Construction Cost TOTAL:	
		\$ 1,084,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,084,000
Engineering/Survey/Testing:		20%	\$ 216,800
Mobilization		11%	\$ 119,240
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 216,800
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 474,730

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-A, 5-A
Name:	Rueckle (1)			
Limits:	IH 35 to Morningside Drive			
Impact Fee Type:	Parkway			
Thoroughfare Class	Parkway			
Length (If):	3210			
Service Area(s):	4, 5			
		This project was recently completed to widen the existing facility to a four-lane divided parkway as part of the 2013 Bond Program. This project was part of the Solms/Morningside/Rueckle construction project, which has a total cost of \$16,144,516. This section consists of approximately 18% of the total cost.		

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
City Contribution to Construction Cost:			\$ 2,921,150
Engineering/Survey/Testing:			
Other			
ROW/Easement Acquisition:			
Impact Fee Project Cost TOTAL:			\$ 2,921,150

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-B, 5-B
Name:	Rueckle (2)			
Limits:	Morningside Drive to Green Valley			
Impact Fee Type:	Parkway	This project consists of the extension of Rueckle Road to the City Limits as a four-lane divided parkway.		
Thoroughfare Class	Parkway			
Length (lf):	6835			
Service Area(s):	4, 5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
101	Unclassified Street Excavation	22,678	cy	\$ 12.89	\$ 292,318
201	HMAC Pvmt, Type D (1.5" Comp. Depth) (5.5" Thick)	36,453	sy	\$ 29.79	\$ 1,085,945
301	Flexible Base (Complete in Place)	16,877	cy	\$ 32.70	\$ 551,863
401	Lime Treated Subgrade (6" Compacted Depth)	37,972	sy	\$ 6.00	\$ 227,833
501	One Course Surface Treatment	36,453	sy	\$ 4.79	\$ 174,611
601	Shoulders - HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	27,340	sy	\$ 11.72	\$ 320,334
701	Concrete Sidewalks	9,113	sy	\$ 44.56	\$ 406,090
801	6" Topsoil	5,063	cy	\$ 20.27	\$ 102,626
Paving Construction Cost Subtotal:					\$ 3,161,620

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 189,697
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 94,849
✓ Roadway Drainage	Standard Internal System	30%	\$ 948,486
✓ Illumination		6%	\$ 189,697
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 189,697
✓ Sewer	Minor Adjustments	4%	\$ 126,465
✓ Establish Turf / Erosion Control		3%	\$ 94,849
✓ Basic Landscaping		3%	\$ 94,849
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,928,588
		Paving and Allowance Subtotal:	\$ 5,090,208
		Construction Contingency:	5%
			\$ 254,510
		Construction Cost TOTAL:	\$ 5,345,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 5,345,000
Engineering/Survey/Testing:		20%	\$ 1,069,000
Mobilization		11%	\$ 587,950
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 1,069,000
Impact Fee Project Cost TOTAL:			\$ 8,071,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-C
Name:	Word Ranch	This project consists of the widening of an existing two-lane facility to a four-lane divided parkway.		
Limits:	FM 1863 to City Limits			
Impact Fee Type:	Parkway			
Thoroughfare Class	Parkway			
Length (lf):	1100			
Service Area(s):	4			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
101	Unclassified Street Excavation	3,650	cy	\$ 12.89	\$ 47,045
201	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	5,867	sy	\$ 29.79	\$ 174,768
301	Flexible Base (Complete in Place)	2,716	cy	\$ 32.70	\$ 88,815
401	Lime Treated Subgrade (6" Compacted Depth)	6,111	sy	\$ 6.00	\$ 36,667
501	One Course Surface Treatment	5,867	sy	\$ 4.79	\$ 28,101
601	Shoulders - HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	4,400	sy	\$ 11.72	\$ 51,553
701	Concrete Sidewalks	1,467	sy	\$ 44.56	\$ 65,355
801	6" Topsoil	815	cy	\$ 20.27	\$ 16,516
Paving Construction Cost Subtotal:					\$ 508,820

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 30,529
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 25,441
✓ Pavement Markings/Markers		3%	\$ 15,265
✓ Roadway Drainage	Standard Internal System	30%	\$ 152,646
✓ Illumination		6%	\$ 30,529
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 30,529
✓ Sewer	Minor Adjustments	4%	\$ 20,353
✓ Establish Turf / Erosion Control		3%	\$ 15,265
✓ Basic Landscaping		3%	\$ 15,265
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 335,821
		Paving and Allowance Subtotal:	\$ 844,641
		Construction Contingency:	5% \$ 42,232
		Construction Cost TOTAL:	\$ 887,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 887,000
Engineering/Survey/Testing:		20%	\$ 177,400
Mobilization		11%	\$ 97,570
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 88,700
Impact Fee Project Cost TOTAL:			\$ 1,251,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-D
Name:	Algelt			
Limits:	1130' W of LP 337 to LP 337			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	1130			
Service Area(s):	4			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	3,749	cy	\$ 12.89	\$ 48,328
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	6,027	sy	\$ 29.79	\$ 179,534
303	Flexible Base (Complete in Place)	2,790	cy	\$ 32.70	\$ 91,237
403	Lime Treated Subgrade (6" Compacted Depth)	6,278	sy	\$ 6.00	\$ 37,667
503	One Course Surface Treatment	6,027	sy	\$ 4.79	\$ 28,868
603	Machine Laid Curb	4,520	lf	\$ 17.02	\$ 76,930
703	Concrete Sidewalks	1,507	sy	\$ 44.56	\$ 67,137
803	6" Topsoil	837	cy	\$ 20.27	\$ 16,967
					Paving Construction Cost Subtotal: \$ 546,668

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 32,800
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 27,333
✓ Pavement Markings/Markers		3%	\$ 16,400
✓ Roadway Drainage	Standard Internal System	30%	\$ 164,000
✓ Illumination		6%	\$ 32,800
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 32,800
✓ Sewer	Minor Adjustments	4%	\$ 21,867
✓ Establish Turf / Erosion Control		3%	\$ 16,400
✓ Basic Landscaping		3%	\$ 16,400
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 360,801
		Paving and Allowance Subtotal:	\$ 907,468
		Construction Contingency:	5% \$ 45,373
		Construction Cost TOTAL:	\$ 953,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 953,000
Engineering/Survey/Testing:		20%	\$ 190,600
Mobilization		11%	\$ 104,830
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 95,300
			Impact Fee Project Cost TOTAL: \$ 1,344,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-E
Name:	County Line (1)			
Limits:	CR 376 to Rueckle Road			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	2060			
Service Area(s):	4			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	6,835	cy	\$ 12.89	\$ 88,102
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	10,987	sy	\$ 29.79	\$ 327,293
303	Flexible Base (Complete in Place)	5,086	cy	\$ 32.70	\$ 166,326
403	Lime Treated Subgrade (6" Compacted Depth)	11,444	sy	\$ 6.00	\$ 68,667
503	One Course Surface Treatment	10,987	sy	\$ 4.79	\$ 52,626
603	Machine Laid Curb	8,240	lf	\$ 17.02	\$ 140,245
703	Concrete Sidewalks	2,747	sy	\$ 44.56	\$ 122,391
803	6" Topsoil	1,526	cy	\$ 20.27	\$ 30,931
					Paving Construction Cost Subtotal: \$ 996,580

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 59,795
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 29,897
✓ Roadway Drainage	Standard Internal System	30%	\$ 298,974
✓ Illumination		6%	\$ 59,795
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 59,795
✓ Sewer	Minor Adjustments	4%	\$ 39,863
✓ Establish Turf / Erosion Control		3%	\$ 29,897
✓ Basic Landscaping		3%	\$ 29,897
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 607,914
		Paving and Allowance Subtotal:	\$ 1,604,494
		Construction Contingency:	5% \$ 80,225
		Construction Cost TOTAL:	\$ 1,685,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,685,000
Engineering/Survey/Testing:		20%	\$ 337,000
Mobilization		11%	\$ 185,350
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 337,000
			Impact Fee Project Cost TOTAL: \$ 2,544,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-F
Name:	Engel (1)			
Limits:	IH 35 to 2330' S of S IH-35 Frontage Road			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	2330			
Service Area(s):	4			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	6,487	cy	\$ 12.89	\$ 83,612
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	10,873	sy	\$ 23.36	\$ 254,001
304	Flexible Base (Complete in Place)	5,063	cy	\$ 32.70	\$ 165,551
404	Lime Treated Subgrade (6" Compacted Depth)	11,391	sy	\$ 6.00	\$ 68,347
504	One Course Surface Treatment	10,873	sy	\$ 4.79	\$ 52,083
604	Machine Laid Curb	9,320	lf	\$ 17.02	\$ 158,626
704	Concrete Sidewalks	3,107	sy	\$ 44.56	\$ 138,433
804	6" Topsoil	1,553	cy	\$ 20.27	\$ 31,486
					Paving Construction Cost Subtotal: \$ 952,140

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 57,128
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 47,607
✓ Pavement Markings/Markers		3%	\$ 28,564
✓ Roadway Drainage	Standard Internal System	30%	\$ 285,642
✓ Illumination		6%	\$ 57,128
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 57,128
✓ Sewer	Minor Adjustments	4%	\$ 38,086
✓ Establish Turf / Erosion Control		3%	\$ 28,564
✓ Basic Landscaping		3%	\$ 28,564
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 628,412
		Paving and Allowance Subtotal:	\$ 1,580,552
		Construction Contingency:	5% \$ 79,028
		Construction Cost TOTAL:	\$ 1,660,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,660,000
Engineering/Survey/Testing:		20%	\$ 332,000
Mobilization		11%	\$ 182,600
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 166,000
			Impact Fee Project Cost TOTAL: \$ 2,341,000

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 City of New Braunfels.

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

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-G
Name:	Engel (2)			
Limits:	2330' S of S IH-35 Frontage Road to Schmucks Road			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	1720			
Service Area(s):	4, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	4,788	cy	\$ 12.89	\$ 61,722
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	8,027	sy	\$ 23.36	\$ 187,503
304	Flexible Base (Complete in Place)	3,737	cy	\$ 32.70	\$ 122,209
404	Lime Treated Subgrade (6" Compacted Depth)	8,409	sy	\$ 6.00	\$ 50,453
504	One Course Surface Treatment	8,027	sy	\$ 4.79	\$ 38,448
604	Machine Laid Curb	6,880	lf	\$ 17.02	\$ 117,098
704	Concrete Sidewalks	2,293	sy	\$ 44.56	\$ 102,191
804	6" Topsoil	1,147	cy	\$ 20.27	\$ 23,243
Paving Construction Cost Subtotal:					\$ 702,867

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 42,172	
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 35,143	
✓ Pavement Markings/Markers		3%	\$ 21,086	
✓ Roadway Drainage	Standard Internal System	30%	\$ 210,860	
✓ Illumination		6%	\$ 42,172	
Special Drainage Structures	None Anticipated	0%	\$ -	
✓ Water	Minor Adjustments	6%	\$ 42,172	
✓ Sewer	Minor Adjustments	4%	\$ 28,115	
✓ Establish Turf / Erosion Control		3%	\$ 21,086	
✓ Basic Landscaping		3%	\$ 21,086	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 463,892	
		Paving and Allowance Subtotal:	\$ 1,166,759	
		Construction Contingency:	5% \$ 58,338	
		Construction Cost TOTAL:		\$ 1,226,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,226,000
Engineering/Survey/Testing:		20%	\$ 245,200
Mobilization		11%	\$ 134,860
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 122,600
Impact Fee Project Cost TOTAL:			\$ 1,729,000

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-H
Name:	Morningside (1)			
Limits:	Solms Road to Bass Farm Road			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (If):	1610			
Service Area(s):	4, ETJ			
		This project was recently completed to widen the existing facility to a four-lane divided parkway as part of the 2013 Bond Program. This project was part of the Solms/Morningside/Rueckle construction project, which has a total cost of \$16,144,516. This section consists of approximately 9% of the total cost.		

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	1,462,343
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:				\$ 1,462,343

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-I
Name:	Morningside (2)			
Limits:	1360' E of B. Farm Road to 2770' W of Rueckle Road			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (If):	1360			
Service Area(s):	4, ETJ			
		This project was recently completed to widen the existing facility to a four-lane divided parkway as part of the 2013 Bond Program. This project was part of the Solms/Morningside/Rueckle construction project, which has a total cost of \$16,144,516. This section consists of approximately 8% of the total cost.		

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	1,235,554
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:				\$ 1,235,554

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-J
Name:	Morningside (3)			
Limits:	2770' W of Rueckle Road to Rueckle Road			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (If):	2770			
Service Area(s):	4			
		This project was recently completed to widen the existing facility to a four-lane divided parkway as part of the 2013 Bond Program. This project was part of the Solms/Morningside/Rueckle construction project, which has a total cost of \$16,144,516. This section consists of approximately 16% of the total cost.		

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	2,517,780
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:				\$ 2,517,780

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-K
Name:	Solms (1)			
Limits:	City Limits to 800' N of FM 482			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	450			
Service Area(s):	4			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	1,253	cy	\$ 12.89	\$ 16,148
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	2,100	sy	\$ 23.36	\$ 49,056
304	Flexible Base (Complete in Place)	978	cy	\$ 32.70	\$ 31,973
404	Lime Treated Subgrade (6" Compacted Depth)	2,200	sy	\$ 6.00	\$ 13,200
504	One Course Surface Treatment	2,100	sy	\$ 4.79	\$ 10,059
604	Machine Laid Curb	1,800	lf	\$ 17.02	\$ 30,636
704	Concrete Sidewalks	600	sy	\$ 44.56	\$ 26,736
804	6" Topsoil	300	cy	\$ 20.27	\$ 6,081
					Paving Construction Cost Subtotal: \$ 183,890

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 11,033
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 9,194
✓ Pavement Markings/Markers		3%	\$ 5,517
✓ Roadway Drainage	Standard Internal System	30%	\$ 55,167
✓ Illumination		6%	\$ 11,033
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 11,033
✓ Sewer	Minor Adjustments	4%	\$ 7,356
✓ Establish Turf / Erosion Control		3%	\$ 5,517
✓ Basic Landscaping		3%	\$ 5,517
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 121,367
		Paving and Allowance Subtotal:	\$ 305,257
		Construction Contingency:	5% \$ 15,263
		Construction Cost TOTAL:	\$ 321,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 321,000
Engineering/Survey/Testing:		20%	\$ 64,200
Mobilization		11%	\$ 35,310
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 32,100
			Impact Fee Project Cost TOTAL: \$ 453,000

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-L
Name:	Solms (2)			
Limits:	800' N of FM 482 to 640' S of FM 482			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	1440			
Service Area(s):	4, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	4,009	cy	\$ 12.89	\$ 51,675
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	6,720	sy	\$ 23.36	\$ 156,979
304	Flexible Base (Complete in Place)	3,129	cy	\$ 32.70	\$ 102,315
404	Lime Treated Subgrade (6" Compacted Depth)	7,040	sy	\$ 6.00	\$ 42,240
504	One Course Surface Treatment	6,720	sy	\$ 4.79	\$ 32,189
604	Machine Laid Curb	5,760	lf	\$ 17.02	\$ 98,035
704	Concrete Sidewalks	1,920	sy	\$ 44.56	\$ 85,555
804	6" Topsoil	960	cy	\$ 20.27	\$ 19,459
					Paving Construction Cost Subtotal: \$ 588,447

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 35,307
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 29,422
✓ Pavement Markings/Markers		3%	\$ 17,653
✓ Roadway Drainage	Standard Internal System	30%	\$ 176,534
✓ Illumination		6%	\$ 35,307
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 35,307
✓ Sewer	Minor Adjustments	4%	\$ 23,538
✓ Establish Turf / Erosion Control		3%	\$ 17,653
✓ Basic Landscaping		3%	\$ 17,653
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 388,375
		Paving and Allowance Subtotal:	\$ 976,822
		Construction Contingency:	5% \$ 48,841
		Construction Cost TOTAL:	\$ 1,026,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,026,000
Engineering/Survey/Testing:		20%	\$ 205,200
Mobilization		11%	\$ 112,860
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 102,600
			Impact Fee Project Cost TOTAL: \$ 1,447,000

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-M
Name:	Solms (3)			
Limits:	640' S of FM 482 to IH 35			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	670			
Service Area(s):	4			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	1,865	cy	\$ 12.89	\$ 24,043
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	3,127	sy	\$ 23.36	\$ 73,039
304	Flexible Base (Complete in Place)	1,456	cy	\$ 32.70	\$ 47,605
404	Lime Treated Subgrade (6" Compacted Depth)	3,276	sy	\$ 6.00	\$ 19,653
504	One Course Surface Treatment	3,127	sy	\$ 4.79	\$ 14,977
604	Machine Laid Curb	2,680	lf	\$ 17.02	\$ 45,614
704	Concrete Sidewalks	893	sy	\$ 44.56	\$ 39,807
804	6" Topsoil	447	cy	\$ 20.27	\$ 9,054
					Paving Construction Cost Subtotal: \$ 273,791

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 16,427
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 13,690
✓ Pavement Markings/Markers		3%	\$ 8,214
✓ Roadway Drainage	Standard Internal System	30%	\$ 82,137
✓ Illumination		6%	\$ 16,427
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 16,427
✓ Sewer	Minor Adjustments	4%	\$ 10,952
✓ Establish Turf / Erosion Control		3%	\$ 8,214
✓ Basic Landscaping		3%	\$ 8,214
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 180,702
		Paving and Allowance Subtotal:	\$ 454,493
		Construction Contingency:	5% \$ 22,725
		Construction Cost TOTAL:	\$ 478,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 478,000
Engineering/Survey/Testing:		20%	\$ 95,600
Mobilization		11%	\$ 52,580
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 47,800
			Impact Fee Project Cost TOTAL: \$ 674,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-N
Name:	Solms (4)			
Limits:	IH 35 to 365' S of IH 35			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (Lf):	365			
Service Area(s):	4			
		This project was recently completed to widen the existing facility to a four-lane divided parkway as part of the 2013 Bond Program. This project was part of the Solms/Morningside/Rueckle construction project, which has a total cost of \$16,144,516. This section consists of approximately 2% of the total cost.		

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	330,587
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:				\$ 330,587

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-O
Name:	Solms (5)			
Limits:	365' S of IH 35 to Morningside Drive			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (If):	1455			
Service Area(s):	4, ETJ			
		This project was recently completed to widen the existing facility to a four-lane divided parkway as part of the 2013 Bond Program. This project was part of the Solms/Morningside/Rueckle construction project, which has a total cost of \$16,144,516. This section consists of approximately 8% of the total cost.		

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	1,320,606
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:				\$ 1,320,606

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-P
Name:	Green Valley (1)			
Limits:	CR 376 to Rueckle Road			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	2840			
Service Area(s):	4, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	7,906	cy	\$ 12.89	\$ 101,914
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	13,253	sy	\$ 23.36	\$ 309,598
304	Flexible Base (Complete in Place)	6,171	cy	\$ 32.70	\$ 201,787
404	Lime Treated Subgrade (6" Compacted Depth)	13,884	sy	\$ 6.00	\$ 83,307
504	One Course Surface Treatment	13,253	sy	\$ 4.79	\$ 63,483
604	Machine Laid Curb	11,360	lf	\$ 17.02	\$ 193,347
704	Concrete Sidewalks	3,787	sy	\$ 44.56	\$ 168,734
804	6" Topsoil	1,893	cy	\$ 20.27	\$ 38,378
					Paving Construction Cost Subtotal: \$ 1,160,548

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 69,633
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 58,027
✓ Pavement Markings/Markers		3%	\$ 34,816
✓ Roadway Drainage	Standard Internal System	30%	\$ 348,164
✓ Illumination		6%	\$ 69,633
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 69,633
✓ Sewer	Minor Adjustments	4%	\$ 46,422
✓ Establish Turf / Erosion Control		3%	\$ 34,816
✓ Basic Landscaping		3%	\$ 34,816
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 765,962
		Paving and Allowance Subtotal:	\$ 1,926,510
		Construction Contingency:	5% \$ 96,325
		Construction Cost TOTAL:	\$ 2,023,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,023,000
Engineering/Survey/Testing:		20%	\$ 404,600
Mobilization		11%	\$ 222,530
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 202,300
			Impact Fee Project Cost TOTAL: \$ 2,852,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-A, 5-A
Name:	Rueckle (1)			
Limits:	IH 35 to Morningside Drive			
Impact Fee Type:	Parkway			
Thoroughfare Class	Parkway			
Length (Lf):	3210			
Service Area(s):	4, 5			
		This project was recently completed to widen the existing facility to a four-lane divided parkway as part of the 2013 Bond Program. This project was part of the Solms/Morningside/Rueckle construction project, which has a total cost of \$16,144,516. This section consists of approximately 18% of the total cost.		

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	2,921,150
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:			\$	2,921,150

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	4-B, 5-B
Name:	Rueckle (2)			
Limits:	Morningside Drive to Green Valley			
Impact Fee Type:	Parkway	This project consists of the extension of Rueckle Road to the City Limits as a four-lane divided parkway.		
Thoroughfare Class	Parkway			
Length (lf):	6835			
Service Area(s):	4, 5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
101	Unclassified Street Excavation	22,678	cy	\$ 12.89	\$ 292,318
201	HMAC Pvmt, Type D (1.5" Comp. Depth) (5.5" Thick)	36,453	sy	\$ 29.79	\$ 1,085,945
301	Flexible Base (Complete in Place)	16,877	cy	\$ 32.70	\$ 551,863
401	Lime Treated Subgrade (6" Compacted Depth)	37,972	sy	\$ 6.00	\$ 227,833
501	One Course Surface Treatment	36,453	sy	\$ 4.79	\$ 174,611
601	Shoulders - HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	27,340	sy	\$ 11.72	\$ 320,334
701	Concrete Sidewalks	9,113	sy	\$ 44.56	\$ 406,090
801	6" Topsoil	5,063	cy	\$ 20.27	\$ 102,626
Paving Construction Cost Subtotal:					\$ 3,161,620

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 189,697
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 94,849
✓ Roadway Drainage	Standard Internal System	30%	\$ 948,486
✓ Illumination		6%	\$ 189,697
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 189,697
✓ Sewer	Minor Adjustments	4%	\$ 126,465
✓ Establish Turf / Erosion Control		3%	\$ 94,849
✓ Basic Landscaping		3%	\$ 94,849
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,928,588
		Paving and Allowance Subtotal:	\$ 5,090,208
		Construction Contingency:	5%
		Construction Cost TOTAL:	\$ 5,345,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 5,345,000
Engineering/Survey/Testing:		20%	\$ 1,069,000
Mobilization		11%	\$ 587,950
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 1,069,000
Impact Fee Project Cost TOTAL:			\$ 8,071,000

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-C
Name:	FM 725			
Limits:	County Line Road to City Limits			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (lf):	10655			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	52,321	cy	\$ 12.89	\$ 674,422
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	85,240	sy	\$ 29.79	\$ 2,539,300
302	Flexible Base (Complete in Place)	38,937	cy	\$ 32.70	\$ 1,273,233
402	Lime Treated Subgrade (6" Compacted Depth)	87,608	sy	\$ 6.00	\$ 525,647
502	One Course Surface Treatment	85,240	sy	\$ 4.79	\$ 408,300
602	Machine Laid Curb	42,620	lf	\$ 17.02	\$ 725,392
702	Concrete Sidewalks	23,678	sy	\$ 44.56	\$ 1,055,082
802	6" Topsoil	11,444	cy	\$ 20.27	\$ 231,975

Paving Construction Cost Subtotal: \$ 7,433,350

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 446,001
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 371,667
✓ Pavement Markings/Markers		3%	\$ 223,000
✓ Roadway Drainage	Standard Internal System	30%	\$ 2,230,005
✓ Illumination		6%	\$ 446,001
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 446,001
✓ Sewer	Minor Adjustments	4%	\$ 297,334
✓ Establish Turf / Erosion Control		3%	\$ 223,000
✓ Basic Landscaping		3%	\$ 223,000
Other:		\$0	\$ -

**Allowances based on % of Paving Construction Cost Subtotal

Allowance Subtotal:	\$ 4,906,011
Paving and Allowance Subtotal:	\$ 12,339,361
Construction Contingency:	5%
Construction Cost TOTAL:	\$ 12,957,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 12,957,000
Engineering/Survey/Testing:		20%	\$ 2,591,400
Mobilization		11%	\$ 1,425,270
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 1,295,700
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 3,653,800

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-D
Name:	Walnut (5)			
Limits:	Klein Road to Zipp Road			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (lf):	2755			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	13,528	cy	\$ 12.89	\$ 174,381
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	22,040	sy	\$ 29.79	\$ 656,572
302	Flexible Base (Complete in Place)	10,068	cy	\$ 32.70	\$ 329,212
402	Lime Treated Subgrade (6" Compacted Depth)	22,652	sy	\$ 6.00	\$ 135,913
502	One Course Surface Treatment	22,040	sy	\$ 4.79	\$ 105,572
602	Machine Laid Curb	11,020	lf	\$ 17.02	\$ 187,560
702	Concrete Sidewalks	6,122	sy	\$ 44.56	\$ 272,806
802	6" Topsoil	2,959	cy	\$ 20.27	\$ 59,980
					Paving Construction Cost Subtotal: \$ 1,921,997

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 115,320
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 57,660
✓ Roadway Drainage	Standard Internal System	30%	\$ 576,599
✓ Illumination		6%	\$ 115,320
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 115,320
✓ Sewer	Minor Adjustments	4%	\$ 76,880
✓ Establish Turf / Erosion Control		3%	\$ 57,660
✓ Basic Landscaping		3%	\$ 57,660
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,172,418
		Paving and Allowance Subtotal:	\$ 3,094,415
		Construction Contingency:	5% \$ 154,721
		Construction Cost TOTAL:	\$ 3,250,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 3,250,000
Engineering/Survey/Testing:		20%	\$ 650,000
Mobilization		11%	\$ 357,500
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 650,000
			Impact Fee Project Cost TOTAL: \$ 4,908,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-E
Name:	Schmidt			
Limits:	IH 35 to Morningside Drive			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (Lf):	1415			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	4,695	cy	\$ 12.89	\$ 60,516
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	7,547	sy	\$ 29.79	\$ 224,815
303	Flexible Base (Complete in Place)	3,494	cy	\$ 32.70	\$ 114,248
403	Lime Treated Subgrade (6" Compacted Depth)	7,861	sy	\$ 6.00	\$ 47,167
503	One Course Surface Treatment	7,547	sy	\$ 4.79	\$ 36,149
603	Machine Laid Curb	5,660	lf	\$ 17.02	\$ 96,333
703	Concrete Sidewalks	1,887	sy	\$ 44.56	\$ 84,070
803	6" Topsoil	1,048	cy	\$ 20.27	\$ 21,246
					Paving Construction Cost Subtotal: \$ 684,544

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 41,073
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 34,227
✓ Pavement Markings/Markers		3%	\$ 20,536
✓ Roadway Drainage	Standard Internal System	30%	\$ 205,363
✓ Illumination		6%	\$ 41,073
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 41,073
✓ Sewer	Minor Adjustments	4%	\$ 27,382
✓ Establish Turf / Erosion Control		3%	\$ 20,536
✓ Basic Landscaping		3%	\$ 20,536
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 451,799
		Paving and Allowance Subtotal:	\$ 1,136,343
		Construction Contingency:	5% \$ 56,817
		Construction Cost TOTAL:	\$ 1,194,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,194,000
Engineering/Survey/Testing:		20%	\$ 238,800
Mobilization		11%	\$ 131,340
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 119,400
			Impact Fee Project Cost TOTAL: \$ 1,684,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-F
Name:	County Line (2)			
Limits:	Rueckle Road to FM 1044			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	5475			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	18,166	cy	\$ 12.89	\$ 234,153
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	29,200	sy	\$ 29.79	\$ 869,868
303	Flexible Base (Complete in Place)	13,519	cy	\$ 32.70	\$ 442,056
403	Lime Treated Subgrade (6" Compacted Depth)	30,417	sy	\$ 6.00	\$ 182,500
503	One Course Surface Treatment	29,200	sy	\$ 4.79	\$ 139,868
603	Machine Laid Curb	21,900	lf	\$ 17.02	\$ 372,738
703	Concrete Sidewalks	7,300	sy	\$ 44.56	\$ 325,288
803	6" Topsoil	4,056	cy	\$ 20.27	\$ 82,206
					Paving Construction Cost Subtotal: \$ 2,648,677

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 158,921
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 79,460
✓ Roadway Drainage	Standard Internal System	30%	\$ 794,603
✓ Illumination		6%	\$ 158,921
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 158,921
✓ Sewer	Minor Adjustments	4%	\$ 105,947
✓ Establish Turf / Erosion Control		3%	\$ 79,460
✓ Basic Landscaping		3%	\$ 79,460
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,615,693
		Paving and Allowance Subtotal:	\$ 4,264,370
		Construction Contingency:	5% \$ 213,219
		Construction Cost TOTAL:	\$ 4,478,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 4,478,000
Engineering/Survey/Testing:		20%	\$ 895,600
Mobilization		11%	\$ 492,580
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 895,600
			Impact Fee Project Cost TOTAL: \$ 6,762,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-G
Name:	County Line (3)			
Limits:	FM 725 to Chinaberry Lane			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	3835			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	12,724	cy	\$ 12.89	\$ 164,014
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	20,453	sy	\$ 29.79	\$ 609,305
303	Flexible Base (Complete in Place)	9,469	cy	\$ 32.70	\$ 309,641
403	Lime Treated Subgrade (6" Compacted Depth)	21,306	sy	\$ 6.00	\$ 127,833
503	One Course Surface Treatment	20,453	sy	\$ 4.79	\$ 97,971
603	Machine Laid Curb	15,340	lf	\$ 17.02	\$ 261,087
703	Concrete Sidewalks	5,113	sy	\$ 44.56	\$ 227,850
803	6" Topsoil	2,841	cy	\$ 20.27	\$ 57,582
					Paving Construction Cost Subtotal: \$ 1,855,283

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 111,317
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 92,764
✓ Pavement Markings/Markers		3%	\$ 55,659
✓ Roadway Drainage	Standard Internal System	30%	\$ 556,585
✓ Illumination		6%	\$ 111,317
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 111,317
✓ Sewer	Minor Adjustments	4%	\$ 74,211
✓ Establish Turf / Erosion Control		3%	\$ 55,659
✓ Basic Landscaping		3%	\$ 55,659
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,224,487
		Paving and Allowance Subtotal:	\$ 3,079,770
		Construction Contingency:	5% \$ 153,989
		Construction Cost TOTAL:	\$ 3,234,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 3,234,000
Engineering/Survey/Testing:		20%	\$ 646,800
Mobilization		11%	\$ 355,740
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 323,400
			Impact Fee Project Cost TOTAL: \$ 4,560,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-H
Name:	County Line (4)			
Limits:	Chinaberry Lane to Guadalupe River			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	885			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	2,936	cy	\$ 12.89	\$ 37,849
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	4,720	sy	\$ 29.79	\$ 140,609
303	Flexible Base (Complete in Place)	2,185	cy	\$ 32.70	\$ 71,456
403	Lime Treated Subgrade (6" Compacted Depth)	4,917	sy	\$ 6.00	\$ 29,500
503	One Course Surface Treatment	4,720	sy	\$ 4.79	\$ 22,609
603	Machine Laid Curb	3,540	lf	\$ 17.02	\$ 60,251
703	Concrete Sidewalks	1,180	sy	\$ 44.56	\$ 52,581
803	6" Topsoil	656	cy	\$ 20.27	\$ 13,288
					Paving Construction Cost Subtotal: \$ 428,142

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 25,689
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 12,844
✓ Roadway Drainage	Standard Internal System	30%	\$ 128,443
✓ Illumination		6%	\$ 25,689
✓ Special Drainage Structures	Crosses Guadalupe River	\$ 1,200,000	\$ 1,200,000
✓ Water	Minor Adjustments	6%	\$ 25,689
✓ Sewer	Minor Adjustments	4%	\$ 17,126
✓ Establish Turf / Erosion Control		3%	\$ 12,844
✓ Basic Landscaping		3%	\$ 12,844
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,461,167
		Paving and Allowance Subtotal:	\$ 1,889,309
		Construction Contingency:	5% \$ 94,465
		Construction Cost TOTAL:	\$ 1,984,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,984,000
Engineering/Survey/Testing:		20%	\$ 396,800
Mobilization		11%	\$ 218,240
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 396,800
			Impact Fee Project Cost TOTAL: \$ 2,996,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-I
Name:	Klein (1)			
Limits:	FM 1044 to 300' W of Legend Pond			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (If):	6505			
Service Area(s):	5, ETJ			

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	65,290
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:			\$	65,290

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-J
Name:	Klein (2)			
Limits:	300' W of Legend Pond to Walnut			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (If):	3895			
Service Area(s):	5			
This project was recently completed to be widened to a four-lane undivided asphalt facility as part of the 2013 Bond Program. This project was part of the Klein Road Phase 1 construction project, which has a total cost of \$10,439,326. This section consists of approximately 37% of the total cost.				

Impact Fee Project Cost Summary			
Item Description	Notes:	Allowance	Item Cost
City Contribution to Construction Cost:			\$ 39,104
Engineering/Survey/Testing:			
Other			
ROW/Easement Acquisition:			
Impact Fee Project Cost TOTAL:			\$ 39,104

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-K
Name:	Klein (3)			
Limits:	SH 46 to FM 725			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	5100			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	16,921	cy	\$ 12.89	\$ 218,116
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	27,200	sy	\$ 29.79	\$ 810,288
303	Flexible Base (Complete in Place)	12,593	cy	\$ 32.70	\$ 411,778
403	Lime Treated Subgrade (6" Compacted Depth)	28,333	sy	\$ 6.00	\$ 170,000
503	One Course Surface Treatment	27,200	sy	\$ 4.79	\$ 130,288
603	Machine Laid Curb	20,400	lf	\$ 17.02	\$ 347,208
703	Concrete Sidewalks	6,800	sy	\$ 44.56	\$ 303,008
803	6" Topsoil	3,778	cy	\$ 20.27	\$ 76,576
					Paving Construction Cost Subtotal: \$ 2,467,261

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 148,036
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 123,363
✓ Pavement Markings/Markers		3%	\$ 74,018
✓ Roadway Drainage	Standard Internal System	30%	\$ 740,178
✓ Illumination		6%	\$ 148,036
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000
✓ Water	Minor Adjustments	6%	\$ 148,036
✓ Sewer	Minor Adjustments	4%	\$ 98,690
✓ Establish Turf / Erosion Control		3%	\$ 74,018
✓ Basic Landscaping		3%	\$ 74,018
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,878,392
		Paving and Allowance Subtotal:	\$ 4,345,653
		Construction Contingency:	5% \$ 217,283
		Construction Cost TOTAL:	\$ 4,563,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 4,563,000
Engineering/Survey/Testing:		20%	\$ 912,600
Mobilization		11%	\$ 501,930
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 456,300
			Impact Fee Project Cost TOTAL: \$ 6,434,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-L
Name:	FM 1044 (1)			
Limits:	Schmidt Avenue to Green Valley Road			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	8795			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	29,181	cy	\$ 12.89	\$ 376,142
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	46,907	sy	\$ 29.79	\$ 1,397,350
303	Flexible Base (Complete in Place)	21,716	cy	\$ 32.70	\$ 710,115
403	Lime Treated Subgrade (6" Compacted Depth)	48,861	sy	\$ 6.00	\$ 293,167
503	One Course Surface Treatment	46,907	sy	\$ 4.79	\$ 224,683
603	Machine Laid Curb	35,180	lf	\$ 17.02	\$ 598,764
703	Concrete Sidewalks	11,727	sy	\$ 44.56	\$ 522,540
803	6" Topsoil	6,515	cy	\$ 20.27	\$ 132,055
					Paving Construction Cost Subtotal: \$ 4,254,816

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 255,289
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 212,741
✓ Pavement Markings/Markers		3%	\$ 127,644
✓ Roadway Drainage	Standard Internal System	30%	\$ 1,276,445
✓ Illumination		6%	\$ 255,289
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000
✓ Water	Minor Adjustments	6%	\$ 255,289
✓ Sewer	Minor Adjustments	4%	\$ 170,193
✓ Establish Turf / Erosion Control		3%	\$ 127,644
✓ Basic Landscaping		3%	\$ 127,644
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 3,058,178
		Paving and Allowance Subtotal:	\$ 7,312,994
		Construction Contingency:	5% \$ 365,650
		Construction Cost TOTAL:	\$ 7,679,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 7,679,000
Engineering/Survey/Testing:		20%	\$ 1,535,800
Mobilization		11%	\$ 844,690
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 767,900
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 2,165,400

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-M
Name:	FM 1044 (2)			
Limits:	Green Valley Road to City Limits			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	2980			
Service Area(s):	5, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	9,887	cy	\$ 12.89	\$ 127,448
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	15,893	sy	\$ 29.79	\$ 473,462
303	Flexible Base (Complete in Place)	7,358	cy	\$ 32.70	\$ 240,607
403	Lime Treated Subgrade (6" Compacted Depth)	16,556	sy	\$ 6.00	\$ 99,333
503	One Course Surface Treatment	15,893	sy	\$ 4.79	\$ 76,129
603	Machine Laid Curb	11,920	lf	\$ 17.02	\$ 202,878
703	Concrete Sidewalks	3,973	sy	\$ 44.56	\$ 177,052
803	6" Topsoil	2,207	cy	\$ 20.27	\$ 44,744
					Paving Construction Cost Subtotal: \$ 1,441,654

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 86,499
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 72,083
✓ Pavement Markings/Markers		3%	\$ 43,250
✓ Roadway Drainage	Standard Internal System	30%	\$ 432,496
✓ Illumination		6%	\$ 86,499
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 86,499
✓ Sewer	Minor Adjustments	4%	\$ 57,666
✓ Establish Turf / Erosion Control		3%	\$ 43,250
✓ Basic Landscaping		3%	\$ 43,250
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 951,492
		Paving and Allowance Subtotal:	\$ 2,393,146
		Construction Contingency:	5% \$ 119,657
		Construction Cost TOTAL:	\$ 2,513,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,513,000
Engineering/Survey/Testing:		20%	\$ 502,600
Mobilization		11%	\$ 276,430
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 251,300
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 708,600

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-N
Name:	FM 1044 (3)			
Limits:	IH 35 to Schmidt Avenue			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	2955			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	8,227	cy	\$ 12.89	\$ 106,041
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	13,790	sy	\$ 23.36	\$ 322,134
304	Flexible Base (Complete in Place)	6,421	cy	\$ 32.70	\$ 209,958
404	Lime Treated Subgrade (6" Compacted Depth)	14,447	sy	\$ 6.00	\$ 86,680
504	One Course Surface Treatment	13,790	sy	\$ 4.79	\$ 66,054
604	Machine Laid Curb	11,820	lf	\$ 17.02	\$ 201,176
704	Concrete Sidewalks	3,940	sy	\$ 44.56	\$ 175,566
804	6" Topsoil	1,970	cy	\$ 20.27	\$ 39,932
					Paving Construction Cost Subtotal: \$ 1,207,542

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 72,453
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 60,377
✓ Pavement Markings/Markers		3%	\$ 36,226
✓ Roadway Drainage	Standard Internal System	30%	\$ 362,263
✓ Illumination		6%	\$ 72,453
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 72,453
✓ Sewer	Minor Adjustments	4%	\$ 48,302
✓ Establish Turf / Erosion Control		3%	\$ 36,226
✓ Basic Landscaping		3%	\$ 36,226
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 796,978
		Paving and Allowance Subtotal:	\$ 2,004,520
		Construction Contingency:	5% \$ 100,226
		Construction Cost TOTAL:	\$ 2,105,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,105,000
Engineering/Survey/Testing:		20%	\$ 421,000
Mobilization		11%	\$ 231,550
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 210,500
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 593,600

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-O
Name:	Green Valley (2)			
Limits:	Rueckle Road to FM 1044			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	1035			
Service Area(s):	5, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	2,881	cy	\$ 12.89	\$ 37,141
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	4,830	sy	\$ 23.36	\$ 112,829
304	Flexible Base (Complete in Place)	2,249	cy	\$ 32.70	\$ 73,539
404	Lime Treated Subgrade (6" Compacted Depth)	5,060	sy	\$ 6.00	\$ 30,360
504	One Course Surface Treatment	4,830	sy	\$ 4.79	\$ 23,136
604	Machine Laid Curb	4,140	lf	\$ 17.02	\$ 70,463
704	Concrete Sidewalks	1,380	sy	\$ 44.56	\$ 61,493
804	6" Topsoil	690	cy	\$ 20.27	\$ 13,986
					Paving Construction Cost Subtotal: \$ 422,946

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 25,377
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 21,147
✓ Pavement Markings/Markers		3%	\$ 12,688
✓ Roadway Drainage	Standard Internal System	30%	\$ 126,884
✓ Illumination		6%	\$ 25,377
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 25,377
✓ Sewer	Minor Adjustments	4%	\$ 16,918
✓ Establish Turf / Erosion Control		3%	\$ 12,688
✓ Basic Landscaping		3%	\$ 12,688
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal: \$ 279,144	
		Paving and Allowance Subtotal: \$ 702,091	
		Construction Contingency: 5%	\$ 35,105
		Construction Cost TOTAL: \$ 738,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 738,000
Engineering/Survey/Testing:		20%	\$ 147,600
Mobilization		11%	\$ 81,180
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 73,800
			Impact Fee Project Cost TOTAL: \$ 1,041,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-P
Name:	Morningside (4)			
Limits:	IH 35 to Rueckle Road			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (If):	6985			
Service Area(s):	5			
		This project was recently completed to widen the existing facility to a four-lane divided parkway as part of the 2013 Bond Program. This project was part of the Solms/Morningside/Rueckle construction project, which has a total cost of \$16,144,516. This section consists of approximately 39% of the total cost.		

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	6,356,496
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:				\$ 6,356,496

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-Q
Name:	Rising Sun	This project consists of the construction of a new two-lane minor collector facility.		
Limits:	FM 1044 to City Limits			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	780			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	1,365	cy	\$ 12.89	\$ 17,595
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	3,467	sy	\$ 14.65	\$ 50,787
305	Flexible Base (Complete in Place)	1,365	cy	\$ 32.70	\$ 44,636
405	Lime Treated Subgrade (6" Compacted Depth)	3,640	sy	\$ 6.00	\$ 21,840
505	One Course Surface Treatment	3,467	sy	\$ 4.79	\$ 16,605
605	Machine Laid Curb	1,560	lf	\$ 17.02	\$ 26,551
705	Concrete Sidewalks	1,040	sy	\$ 44.56	\$ 46,342
805	6" Topsoil	116	cy	\$ 20.27	\$ 2,342
Paving Construction Cost Subtotal:					\$ 226,698

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 13,602	
Traffic Control	None Anticipated	0%	\$ -	
✓ Pavement Markings/Markers		3%	\$ 6,801	
✓ Roadway Drainage	Standard Internal System	30%	\$ 68,009	
✓ Illumination		6%	\$ 13,602	
Special Drainage Structures	None Anticipated	0%	\$ -	
✓ Water	Minor Adjustments	6%	\$ 13,602	
✓ Sewer	Minor Adjustments	4%	\$ 9,068	
✓ Establish Turf / Erosion Control		3%	\$ 6,801	
✓ Basic Landscaping		3%	\$ 6,801	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 138,286	
		Paving and Allowance Subtotal:	\$ 364,984	
		Construction Contingency:	5% \$ 18,249	
		Construction Cost TOTAL:		\$ 384,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 384,000
Engineering/Survey/Testing:		20%	\$ 76,800
Mobilization		11%	\$ 42,240
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 76,800
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 168,200

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-R
Name:	Legend Pond	This project consists of the construction of a new two-lane minor collector facility.		
Limits:	Zipp to 1900' S of Zipp			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	1900			
Service Area(s):	5, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	3,325	cy	\$ 12.89	\$ 42,859
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	8,444	sy	\$ 14.65	\$ 123,711
305	Flexible Base (Complete in Place)	3,325	cy	\$ 32.70	\$ 108,728
405	Lime Treated Subgrade (6" Compacted Depth)	8,867	sy	\$ 6.00	\$ 53,200
505	One Course Surface Treatment	8,444	sy	\$ 4.79	\$ 40,449
605	Machine Laid Curb	3,800	lf	\$ 17.02	\$ 64,676
705	Concrete Sidewalks	2,533	sy	\$ 44.56	\$ 112,885
805	6" Topsoil	281	cy	\$ 20.27	\$ 5,706
Paving Construction Cost Subtotal:					\$ 552,214

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 33,133	
Traffic Control	None Anticipated	0%	\$ -	
✓ Pavement Markings/Markers		3%	\$ 16,566	
✓ Roadway Drainage	Standard Internal System	30%	\$ 165,664	
✓ Illumination		6%	\$ 33,133	
Special Drainage Structures	None Anticipated	0%	\$ -	
✓ Water	Minor Adjustments	6%	\$ 33,133	
✓ Sewer	Minor Adjustments	4%	\$ 22,089	
✓ Establish Turf / Erosion Control		3%	\$ 16,566	
✓ Basic Landscaping		3%	\$ 16,566	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 336,850	
		Paving and Allowance Subtotal:	\$ 889,064	
		Construction Contingency:	5% \$ 44,453	
		Construction Cost TOTAL:		\$ 934,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 934,000
Engineering/Survey/Testing:		20%	\$ 186,800
Mobilization		11%	\$ 102,740
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 186,800
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 408,900

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-S
Name:	Pahmeyer	This project consists of the extension of Pahmeyer Road as a two-lane minor collector facility.		
Limits:	1165' S of Zipp Road to Skytrail			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	2105			
Service Area(s):	5, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	3,684	cy	\$ 12.89	\$ 47,484
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	9,356	sy	\$ 14.65	\$ 137,059
305	Flexible Base (Complete in Place)	3,684	cy	\$ 32.70	\$ 120,459
405	Lime Treated Subgrade (6" Compacted Depth)	9,823	sy	\$ 6.00	\$ 58,940
505	One Course Surface Treatment	9,356	sy	\$ 4.79	\$ 44,813
605	Machine Laid Curb	4,210	lf	\$ 17.02	\$ 71,654
705	Concrete Sidewalks	2,807	sy	\$ 44.56	\$ 125,065
805	6" Topsoil	312	cy	\$ 20.27	\$ 6,321
Paving Construction Cost Subtotal:					\$ 611,795

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 36,708
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 18,354
✓ Roadway Drainage	Standard Internal System	30%	\$ 183,538
✓ Illumination		6%	\$ 36,708
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 36,708
✓ Sewer	Minor Adjustments	4%	\$ 24,472
✓ Establish Turf / Erosion Control		3%	\$ 18,354
✓ Basic Landscaping		3%	\$ 18,354
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 373,195	
		Paving and Allowance Subtotal:	
		\$ 984,989	
		Construction Contingency:	
		5% \$ 49,249	
		Construction Cost TOTAL:	
		\$ 1,035,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,035,000
Engineering/Survey/Testing:		20%	\$ 207,000
Mobilization		11%	\$ 113,850
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 207,000
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 453,270

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-T
Name:	Skytrail (1)	This project consists of the extension of Skytrail Drive as a two-lane minor collector facility.		
Limits:	Legend Pond to 1530' E of Legend Pond			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	1530			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	2,678	cy	\$ 12.89	\$ 34,513
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	6,800	sy	\$ 14.65	\$ 99,620
305	Flexible Base (Complete in Place)	2,678	cy	\$ 32.70	\$ 87,554
405	Lime Treated Subgrade (6" Compacted Depth)	7,140	sy	\$ 6.00	\$ 42,840
505	One Course Surface Treatment	6,800	sy	\$ 4.79	\$ 32,572
605	Machine Laid Curb	3,060	lf	\$ 17.02	\$ 52,081
705	Concrete Sidewalks	2,040	sy	\$ 44.56	\$ 90,902
805	6" Topsoil	227	cy	\$ 20.27	\$ 4,595
Paving Construction Cost Subtotal:					\$ 444,677

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 26,681
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 13,340
✓ Roadway Drainage	Standard Internal System	30%	\$ 133,403
✓ Illumination		6%	\$ 26,681
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 26,681
✓ Sewer	Minor Adjustments	4%	\$ 17,787
✓ Establish Turf / Erosion Control		3%	\$ 13,340
✓ Basic Landscaping		3%	\$ 13,340
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 271,253	
		Paving and Allowance Subtotal:	
		\$ 715,931	
		Construction Contingency:	
		5% \$ 35,797	
		Construction Cost TOTAL:	
		\$ 752,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 752,000
Engineering/Survey/Testing:		20%	\$ 150,400
Mobilization		11%	\$ 82,720
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 150,400
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 329,440

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-U
Name:	Skytrail (2)			
Limits:	1530' E of Legend Pond to Pahmeyer Road			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	2225			
Service Area(s):	5, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	3,894	cy	\$ 12.89	\$ 50,190
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	9,889	sy	\$ 14.65	\$ 144,872
305	Flexible Base (Complete in Place)	3,894	cy	\$ 32.70	\$ 127,326
405	Lime Treated Subgrade (6" Compacted Depth)	10,383	sy	\$ 6.00	\$ 62,300
505	One Course Surface Treatment	9,889	sy	\$ 4.79	\$ 47,368
605	Machine Laid Curb	4,450	lf	\$ 17.02	\$ 75,739
705	Concrete Sidewalks	2,967	sy	\$ 44.56	\$ 132,195
805	6" Topsoil	330	cy	\$ 20.27	\$ 6,682
					Paving Construction Cost Subtotal: \$ 646,671

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 38,800
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 19,400
✓ Roadway Drainage	Standard Internal System	30%	\$ 194,001
✓ Illumination		6%	\$ 38,800
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 38,800
✓ Sewer	Minor Adjustments	4%	\$ 25,867
✓ Establish Turf / Erosion Control		3%	\$ 19,400
✓ Basic Landscaping		3%	\$ 19,400
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 394,470
		Paving and Allowance Subtotal:	\$ 1,041,141
		Construction Contingency:	5% \$ 52,057
		Construction Cost TOTAL:	\$ 1,094,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,094,000
Engineering/Survey/Testing:		20%	\$ 218,800
Mobilization		11%	\$ 120,340
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 218,800
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 479,080

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-V
Name:	Water	This project consists of the extension of Water Lane as a new two-lane minor collector facility.		
Limits:	Daisy Meadow to FM 1044			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	2700			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	4,725	cy	\$ 12.89	\$ 60,905
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	12,000	sy	\$ 14.65	\$ 175,800
305	Flexible Base (Complete in Place)	4,725	cy	\$ 32.70	\$ 154,508
405	Lime Treated Subgrade (6" Compacted Depth)	12,600	sy	\$ 6.00	\$ 75,600
505	One Course Surface Treatment	12,000	sy	\$ 4.79	\$ 57,480
605	Machine Laid Curb	5,400	lf	\$ 17.02	\$ 91,908
705	Concrete Sidewalks	3,600	sy	\$ 44.56	\$ 160,416
805	6" Topsoil	400	cy	\$ 20.27	\$ 8,108
Paving Construction Cost Subtotal:					\$ 784,725

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 47,083	
Traffic Control	None Anticipated	0%	\$ -	
✓ Pavement Markings/Markers		3%	\$ 23,542	
✓ Roadway Drainage	Standard Internal System	30%	\$ 235,417	
✓ Illumination		6%	\$ 47,083	
Special Drainage Structures	None Anticipated	0%	\$ -	
✓ Water	Minor Adjustments	6%	\$ 47,083	
✓ Sewer	Minor Adjustments	4%	\$ 31,389	
✓ Establish Turf / Erosion Control		3%	\$ 23,542	
✓ Basic Landscaping		3%	\$ 23,542	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 478,682	
		Paving and Allowance Subtotal:	\$ 1,263,407	
		Construction Contingency:	5% \$ 63,170	
		Construction Cost TOTAL:		\$ 1,327,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,327,000
Engineering/Survey/Testing:		20%	\$ 265,400
Mobilization		11%	\$ 145,970
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 265,400
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 581,160

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-W
Name:	Zipp (1)			
Limits:	City Limits to 570' W of Legend Pond			
Impact Fee Type:	Minor Collector	This project consists of the extension of Zipp Road as a two-lane minor collector facility.		
Thoroughfare Class	Minor Collector			
Length (lf):	5185			
Service Area(s):	5, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	9,074	cy	\$ 12.89	\$ 116,961
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	23,044	sy	\$ 14.65	\$ 337,601
305	Flexible Base (Complete in Place)	9,074	cy	\$ 32.70	\$ 296,712
405	Lime Treated Subgrade (6" Compacted Depth)	24,197	sy	\$ 6.00	\$ 145,180
505	One Course Surface Treatment	23,044	sy	\$ 4.79	\$ 110,383
605	Machine Laid Curb	10,370	lf	\$ 17.02	\$ 176,497
705	Concrete Sidewalks	6,913	sy	\$ 44.56	\$ 308,058
805	6" Topsoil	768	cy	\$ 20.27	\$ 15,570
Paving Construction Cost Subtotal:					\$ 1,506,962

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 90,418	
Traffic Control	None Anticipated	0%	\$ -	
✓ Pavement Markings/Markers		3%	\$ 45,209	
✓ Roadway Drainage	Standard Internal System	30%	\$ 452,089	
✓ Illumination		6%	\$ 90,418	
Special Drainage Structures	None Anticipated	0%	\$ -	
✓ Water	Minor Adjustments	6%	\$ 90,418	
✓ Sewer	Minor Adjustments	4%	\$ 60,278	
✓ Establish Turf / Erosion Control		3%	\$ 45,209	
✓ Basic Landscaping		3%	\$ 45,209	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 919,247	
		Paving and Allowance Subtotal:	\$ 2,426,209	
		Construction Contingency:	5% \$ 121,310	
		Construction Cost TOTAL:		\$ 2,548,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,548,000
Engineering/Survey/Testing:		20%	\$ 509,600
Mobilization		11%	\$ 280,280
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 509,600
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 1,115,630

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-X
Name:	Zipp (2)			
Limits:	570' W of Legend Pond to 765' W of Pahmeyer Road			
Impact Fee Type:	Minor Collector	This project consists of the extension of Zipp Road as a two-lane minor collector facility.		
Thoroughfare Class	Minor Collector			
Length (lf):	3345			
Service Area(s):	5			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	5,854	cy	\$ 12.89	\$ 75,455
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	14,867	sy	\$ 14.65	\$ 217,797
305	Flexible Base (Complete in Place)	5,854	cy	\$ 32.70	\$ 191,418
405	Lime Treated Subgrade (6" Compacted Depth)	15,610	sy	\$ 6.00	\$ 93,660
505	One Course Surface Treatment	14,867	sy	\$ 4.79	\$ 71,211
605	Machine Laid Curb	6,690	lf	\$ 17.02	\$ 113,864
705	Concrete Sidewalks	4,460	sy	\$ 44.56	\$ 198,738
805	6" Topsoil	496	cy	\$ 20.27	\$ 10,045
Paving Construction Cost Subtotal:					\$ 972,187

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 58,331
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 29,166
✓ Roadway Drainage	Standard Internal System	30%	\$ 291,656
✓ Illumination		6%	\$ 58,331
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 58,331
✓ Sewer	Minor Adjustments	4%	\$ 38,887
✓ Establish Turf / Erosion Control		3%	\$ 29,166
✓ Basic Landscaping		3%	\$ 29,166
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 593,034
		Paving and Allowance Subtotal:	\$ 1,565,221
		Construction Contingency:	5% \$ 78,261
		Construction Cost TOTAL:	\$ 1,644,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,644,000
Engineering/Survey/Testing:		20%	\$ 328,800
Mobilization		11%	\$ 180,840
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 328,800
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 719,780

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated:

9/24/2019

Project Information:

		Description:	Project No.	5-Y
Name:	Zipp (3)			
Limits:	765' W of Pahmeyer Road to 300' E of Pahmeyer Road			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	1070			
Service Area(s):	5			

Roadway Construction Cost Projection

No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	1,873	cy	\$ 12.89	\$ 24,137
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	4,756	sy	\$ 14.65	\$ 69,669
305	Flexible Base (Complete in Place)	1,873	cy	\$ 32.70	\$ 61,231
405	Lime Treated Subgrade (6" Compacted Depth)	4,993	sy	\$ 6.00	\$ 29,960
505	One Course Surface Treatment	4,756	sy	\$ 4.79	\$ 22,779
605	Machine Laid Curb	2,140	lf	\$ 17.02	\$ 36,423
705	Concrete Sidewalks	1,427	sy	\$ 44.56	\$ 63,572
805	6" Topsoil	159	cy	\$ 20.27	\$ 3,213

Paving Construction Cost Subtotal: \$ 310,984

Major Construction Component Allowances:**

Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 18,659
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 15,549
✓ Pavement Markings/Markers		3%	\$ 9,330
✓ Roadway Drainage	Standard Internal System	30%	\$ 93,295
✓ Illumination		6%	\$ 18,659
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 18,659
✓ Sewer	Minor Adjustments	4%	\$ 12,439
✓ Establish Turf / Erosion Control		3%	\$ 9,330
✓ Basic Landscaping		3%	\$ 9,330
Other:		\$0	\$ -

**Allowances based on % of Paving Construction Cost Subtotal

Allowance Subtotal: \$ 205,249

Paving and Allowance Subtotal: \$ 516,233

Construction Contingency: 5% \$ 25,812

Construction Cost TOTAL: \$ 543,000

Impact Fee Project Cost Summary

Item Description	Notes:	Allowance	Item Cost
Construction:		-	\$ 543,000
Engineering/Survey/Testing:		20%	\$ 108,600
Mobilization		11%	\$ 59,730
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 54,300

Impact Fee Project Cost TOTAL: \$ 766,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	5-Z
Name:	Zipp (4)			
Limits:	300' E of Pahmeyer Road to Prado Verde			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	4665			
Service Area(s):	5, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	8,164	cy	\$ 12.89	\$ 105,231
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	20,733	sy	\$ 14.65	\$ 303,743
305	Flexible Base (Complete in Place)	8,164	cy	\$ 32.70	\$ 266,955
405	Lime Treated Subgrade (6" Compacted Depth)	21,770	sy	\$ 6.00	\$ 130,620
505	One Course Surface Treatment	20,733	sy	\$ 4.79	\$ 99,313
605	Machine Laid Curb	9,330	lf	\$ 17.02	\$ 158,797
705	Concrete Sidewalks	6,220	sy	\$ 44.56	\$ 277,163
805	6" Topsoil	691	cy	\$ 20.27	\$ 14,009
					Paving Construction Cost Subtotal: \$ 1,355,830

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 81,350
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 67,791
✓ Pavement Markings/Markers		3%	\$ 40,675
✓ Roadway Drainage	Standard Internal System	30%	\$ 406,749
✓ Illumination		6%	\$ 81,350
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 81,350
✓ Sewer	Minor Adjustments	4%	\$ 54,233
✓ Establish Turf / Erosion Control		3%	\$ 40,675
✓ Basic Landscaping		3%	\$ 40,675
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 894,848
		Paving and Allowance Subtotal:	\$ 2,250,678
		Construction Contingency:	5% \$ 112,534
		Construction Cost TOTAL:	\$ 2,364,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,364,000
Engineering/Survey/Testing:		20%	\$ 472,800
Mobilization		11%	\$ 260,040
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 236,400
			Impact Fee Project Cost TOTAL: \$ 3,333,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-A
Name:	FM 758 (1)			
Limits:	SH 46 to 1700' E of SH 46			
Impact Fee Type:	Parkway			
Thoroughfare Class	Parkway			
Length (If):	1700			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
101	Unclassified Street Excavation	5,640	cy	\$ 12.89	\$ 72,705
201	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	9,067	sy	\$ 29.79	\$ 270,096
301	Flexible Base (Complete in Place)	4,198	cy	\$ 32.70	\$ 137,259
401	Lime Treated Subgrade (6" Compacted Depth)	9,444	sy	\$ 6.00	\$ 56,667
501	One Course Surface Treatment	9,067	sy	\$ 4.79	\$ 43,429
601	Shoulders - HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	6,800	sy	\$ 11.72	\$ 79,673
701	Concrete Sidewalks	2,267	sy	\$ 44.56	\$ 101,003
801	6" Topsoil	1,259	cy	\$ 20.27	\$ 25,525
Paving Construction Cost Subtotal:					\$ 786,358

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 47,181
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 39,318
✓ Pavement Markings/Markers		3%	\$ 23,591
✓ Roadway Drainage	Standard Internal System	30%	\$ 235,907
✓ Illumination		6%	\$ 47,181
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000
✓ Water	Minor Adjustments	6%	\$ 47,181
✓ Sewer	Minor Adjustments	4%	\$ 31,454
✓ Establish Turf / Erosion Control		3%	\$ 23,591
✓ Basic Landscaping		3%	\$ 23,591
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 768,996
		Paving and Allowance Subtotal:	\$ 1,555,354
		Construction Contingency: 5%	\$ 77,768
		Construction Cost TOTAL:	\$ 1,634,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,634,000
Engineering/Survey/Testing:		20%	\$ 326,800
Mobilization		11%	\$ 179,740
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 163,400
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 460,800

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-B
Name:	FM 758 (2)			
Limits:	1700' E of SH 46 to City Limits			
Impact Fee Type:	Parkway	This project consists of the extension of FM 758 to the City Limits as a four-lane divided parkway.		
Thoroughfare Class	Parkway			
Length (If):	855			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
101	Unclassified Street Excavation	2,837	cy	\$ 12.89	\$ 36,566
201	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	4,560	sy	\$ 29.79	\$ 135,842
301	Flexible Base (Complete in Place)	2,111	cy	\$ 32.70	\$ 69,033
401	Lime Treated Subgrade (6" Compacted Depth)	4,750	sy	\$ 6.00	\$ 28,500
501	One Course Surface Treatment	4,560	sy	\$ 4.79	\$ 21,842
601	Shoulders - HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	3,420	sy	\$ 11.72	\$ 40,071
701	Concrete Sidewalks	1,140	sy	\$ 44.56	\$ 50,798
801	6" Topsoil	633	cy	\$ 20.27	\$ 12,838
Paving Construction Cost Subtotal:					\$ 395,492

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 23,729
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 11,865
✓ Roadway Drainage	Standard Internal System	30%	\$ 118,647
✓ Illumination		6%	\$ 23,729
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 23,729
✓ Sewer	Minor Adjustments	4%	\$ 15,820
✓ Establish Turf / Erosion Control		3%	\$ 11,865
✓ Basic Landscaping		3%	\$ 11,865
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 241,250	
		Paving and Allowance Subtotal:	
		\$ 636,742	
		Construction Contingency: <input type="text" value="5%"/> \$ 31,837	
		Construction Cost TOTAL:	
		\$ 669,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 669,000
Engineering/Survey/Testing:		20%	\$ 133,800
Mobilization		11%	\$ 73,590
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 133,800
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 202,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-C
Name:	FM 758 (3)			
Limits:	965' W of FM 306 to City Limits			
Impact Fee Type:	Parkway			
Thoroughfare Class	Parkway			
Length (lf):	8240			
Service Area(s):	6, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
101	Unclassified Street Excavation	27,340	cy	\$ 12.89	\$ 352,406
201	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	43,947	sy	\$ 29.79	\$ 1,309,171
301	Flexible Base (Complete in Place)	20,346	cy	\$ 32.70	\$ 665,304
401	Lime Treated Subgrade (6" Compacted Depth)	45,778	sy	\$ 6.00	\$ 274,667
501	One Course Surface Treatment	43,947	sy	\$ 4.79	\$ 210,505
601	Shoulders - HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	32,960	sy	\$ 11.72	\$ 386,181
701	Concrete Sidewalks	10,987	sy	\$ 44.56	\$ 489,566
801	6" Topsoil	6,104	cy	\$ 20.27	\$ 123,722
					Paving Construction Cost Subtotal: \$ 3,811,522

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 228,691
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 190,576
✓ Pavement Markings/Markers		3%	\$ 114,346
✓ Roadway Drainage	Standard Internal System	30%	\$ 1,143,456
✓ Illumination		6%	\$ 228,691
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 228,691
✓ Sewer	Minor Adjustments	4%	\$ 152,461
✓ Establish Turf / Erosion Control		3%	\$ 114,346
✓ Basic Landscaping		3%	\$ 114,346
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 2,515,604
		Paving and Allowance Subtotal:	\$ 6,327,126
		Construction Contingency:	5% \$ 316,356
		Construction Cost TOTAL:	\$ 6,644,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 6,644,000
Engineering/Survey/Testing:		20%	\$ 1,328,800
Mobilization		11%	\$ 730,840
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 664,400
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 1,873,600

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-D
Name:	Barbarosa (1)			
Limits:	FM 1101 to 1505' S of FM 1101			
Impact Fee Type:	Principal Arterial	This project consists of the widening of a two-lane undivided facility to a six-lane divided asphalt facility.		
Thoroughfare Class	Principal Arterial			
Length (lf):	1505			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	7,390	cy	\$ 12.89	\$ 95,261
202	HMAC Pvmt, Type D (1.5" Comp. Depth) (5.5" Thick)	12,040	sy	\$ 29.79	\$ 358,672
302	Flexible Base (Complete in Place)	5,500	cy	\$ 32.70	\$ 179,842
402	Lime Treated Subgrade (6" Compacted Depth)	12,374	sy	\$ 6.00	\$ 74,247
502	One Course Surface Treatment	12,040	sy	\$ 4.79	\$ 57,672
602	Machine Laid Curb	6,020	lf	\$ 17.02	\$ 102,460
702	Concrete Sidewalks	3,344	sy	\$ 44.56	\$ 149,028
802	6" Topsoil	1,616	cy	\$ 20.27	\$ 32,766
Paving Construction Cost Subtotal:					\$ 1,049,948

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 62,997
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 52,497
✓ Pavement Markings/Markers		3%	\$ 31,498
✓ Roadway Drainage	Standard Internal System	30%	\$ 314,984
✓ Illumination		6%	\$ 62,997
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 62,997
✓ Sewer	Minor Adjustments	4%	\$ 41,998
✓ Establish Turf / Erosion Control		3%	\$ 31,498
✓ Basic Landscaping		3%	\$ 31,498
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 692,965
		Paving and Allowance Subtotal:	\$ 1,742,913
		Construction Contingency:	5% \$ 87,146
		Construction Cost TOTAL:	\$ 1,831,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,831,000
Engineering/Survey/Testing:		20%	\$ 366,200
Mobilization		11%	\$ 201,410
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 183,100
Impact Fee Project Cost TOTAL:			\$ 2,582,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-E
Name:	Barbarosa (2)			
Limits:	1505' S of FM 1101 to County Line Road			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (lf):	1345			
Service Area(s):	6, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	6,605	cy	\$ 12.89	\$ 85,133
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	10,760	sy	\$ 29.79	\$ 320,540
302	Flexible Base (Complete in Place)	4,915	cy	\$ 32.70	\$ 160,723
402	Lime Treated Subgrade (6" Compacted Depth)	11,059	sy	\$ 6.00	\$ 66,353
502	One Course Surface Treatment	10,760	sy	\$ 4.79	\$ 51,540
602	Machine Laid Curb	5,380	lf	\$ 17.02	\$ 91,568
702	Concrete Sidewalks	2,989	sy	\$ 44.56	\$ 133,185
802	6" Topsoil	1,445	cy	\$ 20.27	\$ 29,283
					Paving Construction Cost Subtotal: \$ 938,325

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 56,300
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 46,916
✓ Pavement Markings/Markers		3%	\$ 28,150
✓ Roadway Drainage	Standard Internal System	30%	\$ 281,498
✓ Illumination		6%	\$ 56,300
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 56,300
✓ Sewer	Minor Adjustments	4%	\$ 37,533
✓ Establish Turf / Erosion Control		3%	\$ 28,150
✓ Basic Landscaping		3%	\$ 28,150
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 619,295
		Paving and Allowance Subtotal:	\$ 1,557,620
		Construction Contingency:	5% \$ 77,881
		Construction Cost TOTAL:	\$ 1,636,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,636,000
Engineering/Survey/Testing:		20%	\$ 327,200
Mobilization		11%	\$ 179,960
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 163,600
			Impact Fee Project Cost TOTAL: \$ 2,307,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-F
Name:	Barbarosa (3)			
Limits:	County Line Road to Three Mile Creek			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (lf):	1435			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	7,047	cy	\$ 12.89	\$ 90,830
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	11,480	sy	\$ 29.79	\$ 341,989
302	Flexible Base (Complete in Place)	5,244	cy	\$ 32.70	\$ 171,477
402	Lime Treated Subgrade (6" Compacted Depth)	11,799	sy	\$ 6.00	\$ 70,793
502	One Course Surface Treatment	11,480	sy	\$ 4.79	\$ 54,989
602	Machine Laid Curb	5,740	lf	\$ 17.02	\$ 97,695
702	Concrete Sidewalks	3,189	sy	\$ 44.56	\$ 142,097
802	6" Topsoil	1,541	cy	\$ 20.27	\$ 31,242
					Paving Construction Cost Subtotal: \$ 1,001,113

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 60,067
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 50,056
✓ Pavement Markings/Markers		3%	\$ 30,033
✓ Roadway Drainage	Standard Internal System	30%	\$ 300,334
✓ Illumination		6%	\$ 60,067
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 60,067
✓ Sewer	Minor Adjustments	4%	\$ 40,045
✓ Establish Turf / Erosion Control		3%	\$ 30,033
✓ Basic Landscaping		3%	\$ 30,033
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 660,734
		Paving and Allowance Subtotal:	\$ 1,661,847
		Construction Contingency:	5% \$ 83,092
		Construction Cost TOTAL:	\$ 1,745,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,745,000
Engineering/Survey/Testing:		20%	\$ 349,000
Mobilization		11%	\$ 191,950
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 174,500
			Impact Fee Project Cost TOTAL: \$ 2,460,000

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-G
Name:	Barbarosa (4)			
Limits:	Three Mile Creek to Westmeyer			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (lf):	1380			
Service Area(s):	6, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	6,776	cy	\$ 12.89	\$ 87,349
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	11,040	sy	\$ 29.79	\$ 328,882
302	Flexible Base (Complete in Place)	5,043	cy	\$ 32.70	\$ 164,905
402	Lime Treated Subgrade (6" Compacted Depth)	11,347	sy	\$ 6.00	\$ 68,080
502	One Course Surface Treatment	11,040	sy	\$ 4.79	\$ 52,882
602	Machine Laid Curb	5,520	lf	\$ 17.02	\$ 93,950
702	Concrete Sidewalks	3,067	sy	\$ 44.56	\$ 136,651
802	6" Topsoil	1,482	cy	\$ 20.27	\$ 30,045
					Paving Construction Cost Subtotal: \$ 962,743

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 57,765
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 48,137
✓ Pavement Markings/Markers		3%	\$ 28,882
✓ Roadway Drainage	Standard Internal System	30%	\$ 288,823
✓ Illumination		6%	\$ 57,765
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 57,765
✓ Sewer	Minor Adjustments	4%	\$ 38,510
✓ Establish Turf / Erosion Control		3%	\$ 28,882
✓ Basic Landscaping		3%	\$ 28,882
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 635,410
		Paving and Allowance Subtotal:	\$ 1,598,153
		Construction Contingency:	5% \$ 79,908
		Construction Cost TOTAL:	\$ 1,679,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,679,000
Engineering/Survey/Testing:		20%	\$ 335,800
Mobilization		11%	\$ 184,690
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 167,900
			Impact Fee Project Cost TOTAL: \$ 2,367,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-H
Name:	Saur (1)			
Limits:	Westmeyer to Saengerhalle Road			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (lf):	2940			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	14,437	cy	\$ 12.89	\$ 186,091
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	23,520	sy	\$ 29.79	\$ 700,661
302	Flexible Base (Complete in Place)	10,744	cy	\$ 32.70	\$ 351,319
402	Lime Treated Subgrade (6" Compacted Depth)	24,173	sy	\$ 6.00	\$ 145,040
502	One Course Surface Treatment	23,520	sy	\$ 4.79	\$ 112,661
602	Machine Laid Curb	11,760	lf	\$ 17.02	\$ 200,155
702	Concrete Sidewalks	6,533	sy	\$ 44.56	\$ 291,125
802	6" Topsoil	3,158	cy	\$ 20.27	\$ 64,008
					Paving Construction Cost Subtotal: \$ 2,051,060

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 123,064
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 102,553
✓ Pavement Markings/Markers		3%	\$ 61,532
✓ Roadway Drainage	Standard Internal System	30%	\$ 615,318
✓ Illumination		6%	\$ 123,064
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 123,064
✓ Sewer	Minor Adjustments	4%	\$ 82,042
✓ Establish Turf / Erosion Control		3%	\$ 61,532
✓ Basic Landscaping		3%	\$ 61,532
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,353,700
		Paving and Allowance Subtotal:	\$ 3,404,760
		Construction Contingency:	5%
			\$ 170,238
		Construction Cost TOTAL:	\$ 3,575,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 3,575,000
Engineering/Survey/Testing:		20%	\$ 715,000
Mobilization		11%	\$ 393,250
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 357,500
			Impact Fee Project Cost TOTAL: \$ 5,041,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-I
Name:	Saur (2)	This project consists of the extension of Saur Lane to a six-lane divided asphalt facility.		
Limits:	Saengerhalle Road to City Limits			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (lf):	4575			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	22,466	cy	\$ 12.89	\$ 289,580
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	36,600	sy	\$ 29.79	\$ 1,090,314
302	Flexible Base (Complete in Place)	16,719	cy	\$ 32.70	\$ 546,696
402	Lime Treated Subgrade (6" Compacted Depth)	37,617	sy	\$ 6.00	\$ 225,700
502	One Course Surface Treatment	36,600	sy	\$ 4.79	\$ 175,314
602	Machine Laid Curb	18,300	lf	\$ 17.02	\$ 311,466
702	Concrete Sidewalks	10,167	sy	\$ 44.56	\$ 453,027
802	6" Topsoil	4,914	cy	\$ 20.27	\$ 99,605
Paving Construction Cost Subtotal:					\$ 3,191,701

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 191,502
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 95,751
✓ Roadway Drainage	Standard Internal System	30%	\$ 957,510
✓ Illumination		6%	\$ 191,502
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 191,502
✓ Sewer	Minor Adjustments	4%	\$ 127,668
✓ Establish Turf / Erosion Control		3%	\$ 95,751
✓ Basic Landscaping		3%	\$ 95,751
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 1,946,938	
		Paving and Allowance Subtotal:	
		\$ 5,138,639	
		Construction Contingency: <input type="text" value="5%"/> \$ 256,932	
		Construction Cost TOTAL:	
		\$ 5,396,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 5,396,000
Engineering/Survey/Testing:		20%	\$ 1,079,200
Mobilization		11%	\$ 593,560
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 1,079,200
Impact Fee Project Cost TOTAL:			\$ 8,148,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-C, 6-J
Name:	SH 46 (1)			
Limits:	IH 35 to FM 1101			
Impact Fee Type:	AM			
Thoroughfare Class	Principal Arterial			
Length (lf):	995			
Service Area(s):	3, 6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
106	Unclassified Street Excavation	1,056	cy	\$ 12.89	\$ 13,617
206	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	0	sy	\$ 14.65	\$ -
306	Flexible Base (Complete in Place)	0	cy	\$ 32.70	\$ -
406	Lime Treated Subgrade (6" Compacted Depth)	0	sy	\$ 6.00	\$ -
506	Illumination	995	lf	\$ 40.00	\$ 39,800
606	Machine Laid Curb	1,990	lf	\$ 17.02	\$ 33,870
706	Concrete Sidewalks	0	sy	\$ 44.56	\$ -
806	Landscape Improvements	995	lf	\$ 100.00	\$ 99,500
Paving Construction Cost Subtotal:					\$ 186,787

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
Prep ROW		0%	\$ -	
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 9,339	
✓ Pavement Markings/Markers		3%	\$ 5,604	
Roadway Drainage	Standard Internal System	0%	\$ -	
Illumination	See Pay Items	0%	\$ -	
Special Drainage Structures	None Anticipated	0%	\$ -	
Water	None Anticipated	0%	\$ -	
Sewer	None Anticipated	0%	\$ -	
Establish Turf / Erosion Control	Included in Landscape Improvements	0%	\$ -	
Basic Landscaping	Included in Landscape Improvements	0%	\$ -	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 14,943	
		Paving and Allowance Subtotal:	\$ 201,730	
		Construction Contingency:	5% \$ 10,087	
		Construction Cost TOTAL:		\$ 212,000

Impact Fee Project Cost Summary			
Item Description	Notes:	Allowance	Item Cost
Construction:		-	\$ 212,000
Engineering/Survey/Testing:		20%	\$ 42,400
Mobilization		11%	\$ 23,320
Other			
ROW/Easement Acquisition:	No ROW Acquisition Costs Included	0%	\$ -
Impact Fee Project Cost TOTAL:			\$ 278,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-K
Name:	SH 46 (2)			
Limits:	FM 1101 to Weltner Road			
Impact Fee Type:	AM			
Thoroughfare Class	Principal Arterial			
Length (Lf):	16135			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
106	Unclassified Street Excavation	17,131	cy	\$ 12.89	\$ 220,818
206	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	0	sy	\$ 14.65	\$ -
306	Flexible Base (Complete in Place)	0	cy	\$ 32.70	\$ -
406	Lime Treated Subgrade (6" Compacted Depth)	0	sy	\$ 6.00	\$ -
506	Illumination	16,135	lf	\$ 40.00	\$ 645,400
606	Machine Laid Curb	32,270	lf	\$ 17.02	\$ 549,235
706	Concrete Sidewalks	0	sy	\$ 44.56	\$ -
806	Landscape Improvements	16,135	lf	\$ 100.00	\$ 1,613,500
Paving Construction Cost Subtotal:					\$ 3,028,954

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
Prep ROW		0%	\$ -
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 151,448
✓ Pavement Markings/Markers		3%	\$ 90,869
Roadway Drainage	Standard Internal System	0%	\$ -
Illumination	See Pay Items	0%	\$ -
Special Drainage Structures	None Anticipated	0%	\$ -
Water	None Anticipated	0%	\$ -
Sewer	None Anticipated	0%	\$ -
Establish Turf / Erosion Control	Included in Landscape Improvements	0%	\$ -
Basic Landscaping	Included in Landscape Improvements	0%	\$ -
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 242,316
		Paving and Allowance Subtotal:	\$ 3,271,270
		Construction Contingency: 5%	\$ 163,564
		Construction Cost TOTAL:	\$ 3,435,000

Impact Fee Project Cost Summary			
Item Description	Notes:	Allowance	Item Cost
Construction:		-	\$ 3,435,000
Engineering/Survey/Testing:		20%	\$ 687,000
Mobilization		11%	\$ 377,850
Other			
ROW/Easement Acquisition:	No ROW Acquisition Costs Included	0%	\$ -
Impact Fee Project Cost TOTAL:			\$ 4,500,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-L
Name:	SH 46 (3)			
Limits:	Weltner Road to City Limits			
Impact Fee Type:	Principal Arterial			
Thoroughfare Class	Principal Arterial			
Length (lf):	9565			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
102	Unclassified Street Excavation	46,969	cy	\$ 12.89	\$ 605,429
202	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	76,520	sy	\$ 29.79	\$ 2,279,531
302	Flexible Base (Complete in Place)	34,954	cy	\$ 32.70	\$ 1,142,982
402	Lime Treated Subgrade (6" Compacted Depth)	78,646	sy	\$ 6.00	\$ 471,873
502	One Course Surface Treatment	76,520	sy	\$ 4.79	\$ 366,531
602	Machine Laid Curb	38,260	lf	\$ 17.02	\$ 651,185
702	Concrete Sidewalks	21,256	sy	\$ 44.56	\$ 947,148
802	6" Topsoil	10,274	cy	\$ 20.27	\$ 208,244
					Paving Construction Cost Subtotal: \$ 6,672,923

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 400,375
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 333,646
✓ Pavement Markings/Markers		3%	\$ 200,188
✓ Roadway Drainage	Standard Internal System	30%	\$ 2,001,877
✓ Illumination		6%	\$ 400,375
✓ Special Drainage Structures	Expand Existing Bridge	\$ 500,000	\$ 500,000
✓ Water	Minor Adjustments	6%	\$ 400,375
✓ Sewer	Minor Adjustments	4%	\$ 266,917
✓ Establish Turf / Erosion Control		3%	\$ 200,188
✓ Basic Landscaping		3%	\$ 200,188
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 4,904,129
		Paving and Allowance Subtotal:	\$ 11,577,052
		Construction Contingency:	5% \$ 578,853
		Construction Cost TOTAL:	\$ 12,156,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 12,156,000
Engineering/Survey/Testing:		20%	\$ 2,431,200
Mobilization		11%	\$ 1,337,160
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 1,215,600
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 3,428,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	3-G, 6-M
Name:	FM 1101 (2)			
Limits:	2850' E of FM 306 to 4105' E of FM 306			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	1255			
Service Area(s):	3, 6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	4,164	cy	\$ 12.89	\$ 53,674
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	6,693	sy	\$ 29.79	\$ 199,394
303	Flexible Base (Complete in Place)	3,099	cy	\$ 32.70	\$ 101,330
403	Lime Treated Subgrade (6" Compacted Depth)	6,972	sy	\$ 6.00	\$ 41,833
503	One Course Surface Treatment	6,693	sy	\$ 4.79	\$ 32,061
603	Machine Laid Curb	5,020	lf	\$ 17.02	\$ 85,440
703	Concrete Sidewalks	1,673	sy	\$ 44.56	\$ 74,564
803	6" Topsoil	930	cy	\$ 20.27	\$ 18,844
					Paving Construction Cost Subtotal: \$ 607,140

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 36,428
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 30,357
✓ Pavement Markings/Markers		3%	\$ 18,214
✓ Roadway Drainage	Standard Internal System	30%	\$ 182,142
✓ Illumination		6%	\$ 36,428
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 36,428
✓ Sewer	Minor Adjustments	4%	\$ 24,286
✓ Establish Turf / Erosion Control		3%	\$ 18,214
✓ Basic Landscaping		3%	\$ 18,214
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 400,712
		Paving and Allowance Subtotal:	\$ 1,007,852
		Construction Contingency:	5% \$ 50,393
		Construction Cost TOTAL:	\$ 1,059,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,059,000
Engineering/Survey/Testing:		20%	\$ 211,800
Mobilization		11%	\$ 116,490
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 105,900
Impact Fee Project Cost TOTAL (20% Contribution)			\$ 298,600

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-N
Name:	Saengerhalle	This project consists of the widening of a three-lane undivided facility as a four-lane divided asphalt facility.		
Limits:	SH 46 to City Limits			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	4130			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	13,703	cy	\$ 12.89	\$ 176,631
203	HMAC Pvmt, Type D (1.5" Comp. Depth) (5.5" Thick)	22,027	sy	\$ 29.79	\$ 656,174
303	Flexible Base (Complete in Place)	10,198	cy	\$ 32.70	\$ 333,459
403	Lime Treated Subgrade (6" Compacted Depth)	22,944	sy	\$ 6.00	\$ 137,667
503	One Course Surface Treatment	22,027	sy	\$ 4.79	\$ 105,508
603	Machine Laid Curb	16,520	lf	\$ 17.02	\$ 281,170
703	Concrete Sidewalks	5,507	sy	\$ 44.56	\$ 245,377
803	6" Topsoil	3,059	cy	\$ 20.27	\$ 62,011
Paving Construction Cost Subtotal:					\$ 1,997,998

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 119,880
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 99,900
✓ Pavement Markings/Markers		3%	\$ 59,940
✓ Roadway Drainage	Standard Internal System	30%	\$ 599,399
✓ Illumination		6%	\$ 119,880
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 119,880
✓ Sewer	Minor Adjustments	4%	\$ 79,920
✓ Establish Turf / Erosion Control		3%	\$ 59,940
✓ Basic Landscaping		3%	\$ 59,940
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 1,318,678	
		Paving and Allowance Subtotal:	
		\$ 3,316,676	
		Construction Contingency:	
		5% \$ 165,834	
		Construction Cost TOTAL:	
		\$ 3,483,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 3,483,000
Engineering/Survey/Testing:		20%	\$ 696,600
Mobilization		11%	\$ 383,130
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 348,300
Impact Fee Project Cost TOTAL:			\$ 4,911,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-O
Name:	Mary (1)	This project consists of the extension of Mary Boulevard as a four-lane divided asphalt facility.		
Limits:	7060' W of SH 46 to 3415' W of SH 46			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	3645			
Service Area(s):	6, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	12,094	cy	\$ 12.89	\$ 155,888
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	19,440	sy	\$ 29.79	\$ 579,118
303	Flexible Base (Complete in Place)	9,000	cy	\$ 32.70	\$ 294,300
403	Lime Treated Subgrade (6" Compacted Depth)	20,250	sy	\$ 6.00	\$ 121,500
503	One Course Surface Treatment	19,440	sy	\$ 4.79	\$ 93,118
603	Machine Laid Curb	14,580	lf	\$ 17.02	\$ 248,152
703	Concrete Sidewalks	4,860	sy	\$ 44.56	\$ 216,562
803	6" Topsoil	2,700	cy	\$ 20.27	\$ 54,729
Paving Construction Cost Subtotal:					\$ 1,763,366

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 105,802
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 52,901
✓ Roadway Drainage	Standard Internal System	30%	\$ 529,010
✓ Illumination		6%	\$ 105,802
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000
✓ Water	Minor Adjustments	6%	\$ 105,802
✓ Sewer	Minor Adjustments	4%	\$ 70,535
✓ Establish Turf / Erosion Control		3%	\$ 52,901
✓ Basic Landscaping		3%	\$ 52,901
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal: \$ 1,325,653	
		Paving and Allowance Subtotal: \$ 3,089,019	
		Construction Contingency: 5% \$ 154,451	
		Construction Cost TOTAL: \$ 3,244,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 3,244,000
Engineering/Survey/Testing:		20%	\$ 648,800
Mobilization		11%	\$ 356,840
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 648,800
Impact Fee Project Cost TOTAL:			\$ 4,898,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-P
Name:	Mary (2)			
Limits:	3415' W of SH 46 to 270' W of SH 46			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	3150			
Service Area(s):	6, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	10,451	cy	\$ 12.89	\$ 134,718
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	16,800	sy	\$ 29.79	\$ 500,472
303	Flexible Base (Complete in Place)	7,778	cy	\$ 32.70	\$ 254,333
403	Lime Treated Subgrade (6" Compacted Depth)	17,500	sy	\$ 6.00	\$ 105,000
503	One Course Surface Treatment	16,800	sy	\$ 4.79	\$ 80,472
603	Machine Laid Curb	12,600	lf	\$ 17.02	\$ 214,452
703	Concrete Sidewalks	4,200	sy	\$ 44.56	\$ 187,152
803	6" Topsoil	2,333	cy	\$ 20.27	\$ 47,297
					Paving Construction Cost Subtotal: \$ 1,523,896

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 91,434
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 76,195
✓ Pavement Markings/Markers		3%	\$ 45,717
✓ Roadway Drainage	Standard Internal System	30%	\$ 457,169
✓ Illumination		6%	\$ 91,434
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 91,434
✓ Sewer	Minor Adjustments	4%	\$ 60,956
✓ Establish Turf / Erosion Control		3%	\$ 45,717
✓ Basic Landscaping		3%	\$ 45,717
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,005,772
		Paving and Allowance Subtotal:	\$ 2,529,668
		Construction Contingency:	5% \$ 126,483
		Construction Cost TOTAL:	\$ 2,657,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,657,000
Engineering/Survey/Testing:		20%	\$ 531,400
Mobilization		11%	\$ 292,270
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 265,700
			Impact Fee Project Cost TOTAL: \$ 3,746,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-Q
Name:	Mary (3)			
Limits:	270' W of SH 46 to SH 46			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	270			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	896	cy	\$ 12.89	\$ 11,547
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	1,440	sy	\$ 29.79	\$ 42,898
303	Flexible Base (Complete in Place)	667	cy	\$ 32.70	\$ 21,800
403	Lime Treated Subgrade (6" Compacted Depth)	1,500	sy	\$ 6.00	\$ 9,000
503	One Course Surface Treatment	1,440	sy	\$ 4.79	\$ 6,898
603	Machine Laid Curb	1,080	lf	\$ 17.02	\$ 18,382
703	Concrete Sidewalks	360	sy	\$ 44.56	\$ 16,042
803	6" Topsoil	200	cy	\$ 20.27	\$ 4,054
					Paving Construction Cost Subtotal: \$ 130,620

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 7,837
✓ Traffic Control	Construction Phase Traffic Control	5%	\$ 6,531
✓ Pavement Markings/Markers		3%	\$ 3,919
✓ Roadway Drainage	Standard Internal System	30%	\$ 39,186
✓ Illumination		6%	\$ 7,837
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 7,837
✓ Sewer	Minor Adjustments	4%	\$ 5,225
✓ Establish Turf / Erosion Control		3%	\$ 3,919
✓ Basic Landscaping		3%	\$ 3,919
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 86,209
		Paving and Allowance Subtotal:	\$ 216,829
		Construction Contingency:	5% \$ 10,841
		Construction Cost TOTAL:	\$ 228,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 228,000
Engineering/Survey/Testing:		20%	\$ 45,600
Mobilization		11%	\$ 25,080
Other			
ROW/Easement Acquisition:	Existing Alignment	10%	\$ 22,800
			Impact Fee Project Cost TOTAL: \$ 321,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-R
Name:	County Line (5)			
Limits:	Guadalupe River to SH 46			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (lf):	4655			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
103	Unclassified Street Excavation	15,445	cy	\$ 12.89	\$ 199,084
203	HMAC Pavmt, Type D (1.5" Comp. Depth) (5.5" Thick)	24,827	sy	\$ 29.79	\$ 739,586
303	Flexible Base (Complete in Place)	11,494	cy	\$ 32.70	\$ 375,848
403	Lime Treated Subgrade (6" Compacted Depth)	25,861	sy	\$ 6.00	\$ 155,167
503	One Course Surface Treatment	24,827	sy	\$ 4.79	\$ 118,920
603	Machine Laid Curb	18,620	lf	\$ 17.02	\$ 316,912
703	Concrete Sidewalks	6,207	sy	\$ 44.56	\$ 276,569
803	6" Topsoil	3,448	cy	\$ 20.27	\$ 69,894
					Paving Construction Cost Subtotal: \$ 2,251,980

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 135,119
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 67,559
✓ Roadway Drainage	Standard Internal System	30%	\$ 675,594
✓ Illumination		6%	\$ 135,119
✓ Special Drainage Structures	Crosses Guadalupe River	\$ 600,000	\$ 600,000
✓ Water	Minor Adjustments	6%	\$ 135,119
✓ Sewer	Minor Adjustments	4%	\$ 90,079
✓ Establish Turf / Erosion Control		3%	\$ 67,559
✓ Basic Landscaping		3%	\$ 67,559
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,973,708
		Paving and Allowance Subtotal:	\$ 4,225,688
		Construction Contingency:	5% \$ 211,284
		Construction Cost TOTAL:	\$ 4,437,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 4,437,000
Engineering/Survey/Testing:		20%	\$ 887,400
Mobilization		11%	\$ 488,070
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 887,400
			Impact Fee Project Cost TOTAL: \$ 6,700,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-S
Name:	Alves (1)			
Limits:	SH 46 to 620' E of Seminole Drive			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (If):	3495			
Service Area(s):	6			

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	4,529,093
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:				\$ 4,529,093

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-T
Name:	Alves (2)			
Limits:	620' E of Seminole Drive to 830' E of Seminole Drive			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (If):	210			
Service Area(s):	6, ETJ			

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	266,691
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:			\$	266,691

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-U
Name:	Alves (3)			
Limits:	830' E of Seminole Drive to 1875' W of FM 306			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (If):	3740			
Service Area(s):	6			

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	4,847,510
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:				\$ 4,847,510

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-V
Name:	Alves (4)			
Limits:	1875' W of FM 306 to FM 306			
Impact Fee Type:	Minor Arterial			
Thoroughfare Class	Minor Arterial			
Length (If):	1875			
Service Area(s):	6, ETJ			
		This project was recently completed to widen the existing facility to a four-lane divided asphalt facility as part of the 2013 Bond Program. This project was part of the Alves Lane construction project, which has a total cost of \$12,071,838. This section consists of approximately 20% of the total cost.		

Impact Fee Project Cost Summary				
Item Description	Notes:	Allowance	Item Cost	
City Contribution to Construction Cost:			\$	2,428,544
Engineering/Survey/Testing:				
Other				
ROW/Easement Acquisition:				
Impact Fee Project Cost TOTAL:			\$	2,428,544

NOTE: The impact free project cost for this completed project is based on actual or budgeted construction costs provided by the City.

City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-W
Name:	Alves (5)			
Limits:	FM 306 to City Limits			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (Lf):	550			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	1,531	cy	\$ 12.89	\$ 19,737
204	HMAC Pavement, Type D (1.5" Comp. Depth) (4.5" Thick)	2,567	sy	\$ 23.36	\$ 59,957
304	Flexible Base (Complete in Place)	1,195	cy	\$ 32.70	\$ 39,079
404	Lime Treated Subgrade (6" Compacted Depth)	2,689	sy	\$ 6.00	\$ 16,133
504	One Course Surface Treatment	2,567	sy	\$ 4.79	\$ 12,294
604	Machine Laid Curb	2,200	lf	\$ 17.02	\$ 37,444
704	Concrete Sidewalks	733	sy	\$ 44.56	\$ 32,677
804	6" Topsoil	367	cy	\$ 20.27	\$ 7,432
Paving Construction Cost Subtotal:					\$ 224,754

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 13,485	
Traffic Control	None Anticipated	0%	\$ -	
✓ Pavement Markings/Markers		3%	\$ 6,743	
✓ Roadway Drainage	Standard Internal System	30%	\$ 67,426	
✓ Illumination		6%	\$ 13,485	
Special Drainage Structures	None Anticipated	0%	\$ -	
✓ Water	Minor Adjustments	6%	\$ 13,485	
✓ Sewer	Minor Adjustments	4%	\$ 8,990	
✓ Establish Turf / Erosion Control		3%	\$ 6,743	
✓ Basic Landscaping		3%	\$ 6,743	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 137,100	
		Paving and Allowance Subtotal:	\$ 361,854	
		Construction Contingency:	5% \$ 18,093	
		Construction Cost TOTAL:		\$ 380,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 380,000
Engineering/Survey/Testing:		20%	\$ 76,000
Mobilization		11%	\$ 41,800
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 76,000
Impact Fee Project Cost TOTAL:			\$ 574,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-X
Name:	Alves (6)	This project consists of the construction of a new four-lane undivided asphalt facility.		
Limits:	FM 1101 to 1680' S of FM 1101			
Impact Fee Type:	Major Collector			
Thoroughfare Class	Major Collector			
Length (lf):	1680			
Service Area(s):	6, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
104	Unclassified Street Excavation	4,677	cy	\$ 12.89	\$ 60,287
204	HMAC Pavmt, Type D (1.5" Comp. Depth) (4.5" Thick)	7,840	sy	\$ 23.36	\$ 183,142
304	Flexible Base (Complete in Place)	3,650	cy	\$ 32.70	\$ 119,367
404	Lime Treated Subgrade (6" Compacted Depth)	8,213	sy	\$ 6.00	\$ 49,280
504	One Course Surface Treatment	7,840	sy	\$ 4.79	\$ 37,554
604	Machine Laid Curb	6,720	lf	\$ 17.02	\$ 114,374
704	Concrete Sidewalks	2,240	sy	\$ 44.56	\$ 99,814
804	6" Topsoil	1,120	cy	\$ 20.27	\$ 22,702
Paving Construction Cost Subtotal:					\$ 686,521

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 41,191
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 20,596
✓ Roadway Drainage	Standard Internal System	30%	\$ 205,956
✓ Illumination		6%	\$ 41,191
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 41,191
✓ Sewer	Minor Adjustments	4%	\$ 27,461
✓ Establish Turf / Erosion Control		3%	\$ 20,596
✓ Basic Landscaping		3%	\$ 20,596
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 418,778	
		Paving and Allowance Subtotal:	
		\$ 1,105,299	
		Construction Contingency:	
		5% \$ 55,265	
		Construction Cost TOTAL:	
		\$ 1,161,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,161,000
Engineering/Survey/Testing:		20%	\$ 232,200
Mobilization		11%	\$ 127,710
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 232,200
Impact Fee Project Cost TOTAL:			\$ 1,753,000

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-Y
Name:	Collector C (1)			
Limits:	FM 1101 to Alves Lane			
Impact Fee Type:	Minor Collector	This project consists of the construction of a new two-lane minor collector facility.		
Thoroughfare Class	Minor Collector			
Length (lf):	3525			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	6,169	cy	\$ 12.89	\$ 79,515
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	15,667	sy	\$ 14.65	\$ 229,517
305	Flexible Base (Complete in Place)	6,169	cy	\$ 32.70	\$ 201,718
405	Lime Treated Subgrade (6" Compacted Depth)	16,450	sy	\$ 6.00	\$ 98,700
505	One Course Surface Treatment	15,667	sy	\$ 4.79	\$ 75,043
605	Machine Laid Curb	7,050	lf	\$ 17.02	\$ 119,991
705	Concrete Sidewalks	4,700	sy	\$ 44.56	\$ 209,432
805	6" Topsoil	522	cy	\$ 20.27	\$ 10,585
Paving Construction Cost Subtotal:					\$ 1,024,502

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 61,470
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 30,735
✓ Roadway Drainage	Standard Internal System	30%	\$ 307,351
✓ Illumination		6%	\$ 61,470
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000
✓ Water	Minor Adjustments	6%	\$ 61,470
✓ Sewer	Minor Adjustments	4%	\$ 40,980
✓ Establish Turf / Erosion Control		3%	\$ 30,735
✓ Basic Landscaping		3%	\$ 30,735
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 874,946
		Paving and Allowance Subtotal:	\$ 1,899,448
Construction Contingency: <input type="text" value="5%"/>			\$ 94,972
		Construction Cost TOTAL:	\$ 1,995,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,995,000
Engineering/Survey/Testing:		20%	\$ 399,000
Mobilization		11%	\$ 219,450
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 399,000
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 873,480

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-Z
Name:	Collector C (2)			
Limits:	Alves Lane to Three Mile Creek			
Impact Fee Type:	Minor Collector	This project consists of the construction of a new two-lane minor collector facility.		
Thoroughfare Class	Minor Collector			
Length (lf):	1385			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	2,424	cy	\$ 12.89	\$ 31,242
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	6,156	sy	\$ 14.65	\$ 90,179
305	Flexible Base (Complete in Place)	2,424	cy	\$ 32.70	\$ 79,257
405	Lime Treated Subgrade (6" Compacted Depth)	6,463	sy	\$ 6.00	\$ 38,780
505	One Course Surface Treatment	6,156	sy	\$ 4.79	\$ 29,485
605	Machine Laid Curb	2,770	lf	\$ 17.02	\$ 47,145
705	Concrete Sidewalks	1,847	sy	\$ 44.56	\$ 82,287
805	6" Topsoil	205	cy	\$ 20.27	\$ 4,159
Paving Construction Cost Subtotal:					\$ 402,535

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 24,152
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 12,076
✓ Roadway Drainage	Standard Internal System	30%	\$ 120,760
✓ Illumination		6%	\$ 24,152
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 24,152
✓ Sewer	Minor Adjustments	4%	\$ 16,101
✓ Establish Turf / Erosion Control		3%	\$ 12,076
✓ Basic Landscaping		3%	\$ 12,076
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 245,546	
		Paving and Allowance Subtotal:	
		\$ 648,081	
		Construction Contingency: <input type="text" value="5%"/> \$ 32,404	
		Construction Cost TOTAL:	
		\$ 681,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 681,000
Engineering/Survey/Testing:		20%	\$ 136,200
Mobilization		11%	\$ 74,910
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 136,200
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 298,120

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-AA
Name:	Collector C (3)			
Limits:	City Limits to Saengerhalle Road			
Impact Fee Type:	Minor Collector	This project consists of the construction of a new two-lane minor collector facility.		
Thoroughfare Class	Minor Collector			
Length (lf):	2890			
Service Area(s):	6, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	5,058	cy	\$ 12.89	\$ 65,191
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	12,844	sy	\$ 14.65	\$ 188,171
305	Flexible Base (Complete in Place)	5,058	cy	\$ 32.70	\$ 165,380
405	Lime Treated Subgrade (6" Compacted Depth)	13,487	sy	\$ 6.00	\$ 80,920
505	One Course Surface Treatment	12,844	sy	\$ 4.79	\$ 61,525
605	Machine Laid Curb	5,780	lf	\$ 17.02	\$ 98,376
705	Concrete Sidewalks	3,853	sy	\$ 44.56	\$ 171,705
805	6" Topsoil	428	cy	\$ 20.27	\$ 8,679
Paving Construction Cost Subtotal:					\$ 839,946

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 50,397
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 25,198
✓ Roadway Drainage	Standard Internal System	30%	\$ 251,984
✓ Illumination		6%	\$ 50,397
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000
✓ Water	Minor Adjustments	6%	\$ 50,397
✓ Sewer	Minor Adjustments	4%	\$ 33,598
✓ Establish Turf / Erosion Control		3%	\$ 25,198
✓ Basic Landscaping		3%	\$ 25,198
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 762,367	
		Paving and Allowance Subtotal:	
		\$ 1,602,313	
		Construction Contingency: 5%	
		\$ 80,116	
		Construction Cost TOTAL:	
		\$ 1,683,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 1,683,000
Engineering/Survey/Testing:		20%	\$ 336,600
Mobilization		11%	\$ 185,130
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 336,600
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 736,890

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-AB
Name:	Collector C (4)			
Limits:	Saengerhalle Road to City Limits			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	4310			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	7,543	cy	\$ 12.89	\$ 97,223
205	HMAC Pavmt, Type D (1.5" Comp. Depth) (2.5" Thick)	19,156	sy	\$ 14.65	\$ 280,629
305	Flexible Base (Complete in Place)	7,543	cy	\$ 32.70	\$ 246,640
405	Lime Treated Subgrade (6" Compacted Depth)	20,113	sy	\$ 6.00	\$ 120,680
505	One Course Surface Treatment	19,156	sy	\$ 4.79	\$ 91,755
605	Machine Laid Curb	8,620	lf	\$ 17.02	\$ 146,712
705	Concrete Sidewalks	5,747	sy	\$ 44.56	\$ 256,071
805	6" Topsoil	639	cy	\$ 20.27	\$ 12,943
Paving Construction Cost Subtotal:					\$ 1,252,653

Major Construction Component Allowances**:				
Item Description	Notes	Allowance	Item Cost	
✓ Prep ROW		6%	\$ 75,159	
Traffic Control	None Anticipated	0%	\$ -	
✓ Pavement Markings/Markers		3%	\$ 37,580	
✓ Roadway Drainage	Standard Internal System	30%	\$ 375,796	
✓ Illumination		6%	\$ 75,159	
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000	
✓ Water	Minor Adjustments	6%	\$ 75,159	
✓ Sewer	Minor Adjustments	4%	\$ 50,106	
✓ Establish Turf / Erosion Control		3%	\$ 37,580	
✓ Basic Landscaping		3%	\$ 37,580	
Other:		\$0	\$ -	
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 1,014,118	
		Paving and Allowance Subtotal:	\$ 2,266,772	
		Construction Contingency:	5% \$ 113,339	
		Construction Cost TOTAL:		\$ 2,381,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,381,000
Engineering/Survey/Testing:		20%	\$ 476,200
Mobilization		11%	\$ 261,910
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 476,200
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 1,042,550

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-AC
Name:	Lakefront (1)			
Limits:	785' S of Carolyn Cove to Lakefront Avenue			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	830			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	1,453	cy	\$ 12.89	\$ 18,723
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	3,689	sy	\$ 14.65	\$ 54,042
305	Flexible Base (Complete in Place)	1,453	cy	\$ 32.70	\$ 47,497
405	Lime Treated Subgrade (6" Compacted Depth)	3,873	sy	\$ 6.00	\$ 23,240
505	One Course Surface Treatment	3,689	sy	\$ 4.79	\$ 17,670
605	Machine Laid Curb	1,660	lf	\$ 17.02	\$ 28,253
705	Concrete Sidewalks	1,107	sy	\$ 44.56	\$ 49,313
805	6" Topsoil	123	cy	\$ 20.27	\$ 2,492
					Paving Construction Cost Subtotal: \$ 241,230

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 14,474
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 7,237
✓ Roadway Drainage	Standard Internal System	30%	\$ 72,369
✓ Illumination		6%	\$ 14,474
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 14,474
✓ Sewer	Minor Adjustments	4%	\$ 9,649
✓ Establish Turf / Erosion Control		3%	\$ 7,237
✓ Basic Landscaping		3%	\$ 7,237
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 147,150
		Paving and Allowance Subtotal:	\$ 388,381
		Construction Contingency:	5% \$ 19,419
		Construction Cost TOTAL:	\$ 408,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 408,000
Engineering/Survey/Testing:		20%	\$ 81,600
Mobilization		11%	\$ 44,880
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 81,600
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 178,640

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-AD
Name:	Lakefront (2)	This project consists of the construction of a new two-lane minor collector facility.		
Limits:	Running River to Mary Blvd			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	4470			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	7,823	cy	\$ 12.89	\$ 100,832
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	19,867	sy	\$ 14.65	\$ 291,047
305	Flexible Base (Complete in Place)	7,823	cy	\$ 32.70	\$ 255,796
405	Lime Treated Subgrade (6" Compacted Depth)	20,860	sy	\$ 6.00	\$ 125,160
505	One Course Surface Treatment	19,867	sy	\$ 4.79	\$ 95,161
605	Machine Laid Curb	8,940	lf	\$ 17.02	\$ 152,159
705	Concrete Sidewalks	5,960	sy	\$ 44.56	\$ 265,578
805	6" Topsoil	662	cy	\$ 20.27	\$ 13,423
Paving Construction Cost Subtotal:					\$ 1,299,155

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 77,949
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 38,975
✓ Roadway Drainage	Standard Internal System	30%	\$ 389,747
✓ Illumination		6%	\$ 77,949
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000
✓ Water	Minor Adjustments	6%	\$ 77,949
✓ Sewer	Minor Adjustments	4%	\$ 51,966
✓ Establish Turf / Erosion Control		3%	\$ 38,975
✓ Basic Landscaping		3%	\$ 38,975
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 1,042,485	
		Paving and Allowance Subtotal:	
		\$ 2,341,640	
		Construction Contingency:	
		5% \$ 117,082	
		Construction Cost TOTAL:	
		\$ 2,459,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 2,459,000
Engineering/Survey/Testing:		20%	\$ 491,800
Mobilization		11%	\$ 270,490
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 491,800
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 1,076,770

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 City of New Braunfels.

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-AE
Name:	Seminole	This project consists of the construction of a new two-lane minor collector facility.		
Limits:	FM 1101 to Seminole Drive			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	1420			
Service Area(s):	6			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	2,485	cy	\$ 12.89	\$ 32,032
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	6,311	sy	\$ 14.65	\$ 92,458
305	Flexible Base (Complete in Place)	2,485	cy	\$ 32.70	\$ 81,260
405	Lime Treated Subgrade (6" Compacted Depth)	6,627	sy	\$ 6.00	\$ 39,760
505	One Course Surface Treatment	6,311	sy	\$ 4.79	\$ 30,230
605	Machine Laid Curb	2,840	lf	\$ 17.02	\$ 48,337
705	Concrete Sidewalks	1,893	sy	\$ 44.56	\$ 84,367
805	6" Topsoil	210	cy	\$ 20.27	\$ 4,264
Paving Construction Cost Subtotal:					\$ 412,707

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 24,762
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 12,381
✓ Roadway Drainage	Standard Internal System	30%	\$ 123,812
✓ Illumination		6%	\$ 24,762
Special Drainage Structures	None Anticipated	0%	\$ -
✓ Water	Minor Adjustments	6%	\$ 24,762
✓ Sewer	Minor Adjustments	4%	\$ 16,508
✓ Establish Turf / Erosion Control		3%	\$ 12,381
✓ Basic Landscaping		3%	\$ 12,381
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	\$ 251,751
		Paving and Allowance Subtotal:	\$ 664,458
		Construction Contingency:	5%
			\$ 33,223
		Construction Cost TOTAL:	\$ 698,000

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 698,000
Engineering/Survey/Testing:		20%	\$ 139,600
Mobilization		11%	\$ 76,780
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 139,600
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 305,660

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City of New Braunfels
2019 Roadway Impact Fee Study
Conceptual Level Project Cost Projection

Kimley-Horn and Associates, Inc.

updated: 9/24/2019

Project Information:		Description:	Project No.	6-AF
Name:	Stonegate	This project consists of the construction of a new two-lane minor collector facility.		
Limits:	3955' E of SH 46 to 3345' W of FM 306			
Impact Fee Type:	Minor Collector			
Thoroughfare Class	Minor Collector			
Length (lf):	1485			
Service Area(s):	6, ETJ			

Roadway Construction Cost Projection					
No.	Item Description	Quantity	Unit	Unit Price	Item Cost
105	Unclassified Street Excavation	2,599	cy	\$ 12.89	\$ 33,498
205	HMAC Pvmt, Type D (1.5" Comp. Depth) (2.5" Thick)	6,600	sy	\$ 14.65	\$ 96,690
305	Flexible Base (Complete in Place)	2,599	cy	\$ 32.70	\$ 84,979
405	Lime Treated Subgrade (6" Compacted Depth)	6,930	sy	\$ 6.00	\$ 41,580
505	One Course Surface Treatment	6,600	sy	\$ 4.79	\$ 31,614
605	Machine Laid Curb	2,970	lf	\$ 17.02	\$ 50,549
705	Concrete Sidewalks	1,980	sy	\$ 44.56	\$ 88,229
805	6" Topsoil	220	cy	\$ 20.27	\$ 4,459
Paving Construction Cost Subtotal:					\$ 431,599

Major Construction Component Allowances**:			
Item Description	Notes	Allowance	Item Cost
✓ Prep ROW		6%	\$ 25,896
Traffic Control	None Anticipated	0%	\$ -
✓ Pavement Markings/Markers		3%	\$ 12,948
✓ Roadway Drainage	Standard Internal System	30%	\$ 129,480
✓ Illumination		6%	\$ 25,896
✓ Special Drainage Structures	Minor Creek Crossing	\$ 250,000	\$ 250,000
✓ Water	Minor Adjustments	6%	\$ 25,896
✓ Sewer	Minor Adjustments	4%	\$ 17,264
✓ Establish Turf / Erosion Control		3%	\$ 12,948
✓ Basic Landscaping		3%	\$ 12,948
Other:		\$0	\$ -
**Allowances based on % of Paving Construction Cost Subtotal		Allowance Subtotal:	
		\$ 513,275	
		Paving and Allowance Subtotal:	
		\$ 944,874	
		Construction Contingency: 5%	
		\$ 47,244	
		Construction Cost TOTAL:	
		\$ 993,000	

Impact Fee Project Cost Summary			
Item Description	Notes	Allowance	Item Cost
Construction:		-	\$ 993,000
Engineering/Survey/Testing:		20%	\$ 198,600
Mobilization		11%	\$ 109,230
Other			
ROW/Easement Acquisition:	New Roadway Alignment	20%	\$ 198,600
Impact Fee Project Cost TOTAL (29% Minor Collector Adjustment)			\$ 434,710

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Appendix B – Roadway Impact Fee CIP Service Units of Supply

City of New Braunfels - 2019 Roadway Impact Fee Study

CIP Service Units of Supply

Service Area 1

9/24/2019

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 ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
1-A	FM 1863 (1)	City Limits to 810' E of City Limits	0.15	6	Principal Arterial	770	50%	600	276	59	217	\$ 277,800	\$ 138,900
1-B	FM 1863 (2)	810' E of City Limits to SH 46	0.66	6	Principal Arterial	770	100%	600	2385	510	1875	\$ 1,200,200	\$ 1,200,200
1-C	Mission Valley (1)	City Limits to City Limits	0.61	4	Minor Arterial	203	50%	580	710	62	648	\$ 3,846,000	\$ 1,923,000
1-D	Mission Valley (2)	City Limits to SH 46	0.56	4	Minor Arterial	203	100%	580	1291	113	1,178	\$ 3,497,000	\$ 3,497,000
1-E	Mission Valley (3)	SH 46 to City Limits	0.06	4	Minor Arterial	New	100%	580	141	0	141	\$ 402,000	\$ 402,000
1-F	Mission Valley (4)	City Limits to 895' E of City Limits	0.17	4	Minor Arterial	New	100%	580	392	0	392	\$ 1,105,000	\$ 1,105,000
1-G	Roadway A (1)	SH 46 to 1495' E of SH 46	0.28	4	Minor Arterial	New	100%	580	655	0	655	\$ 1,847,000	\$ 1,847,000
1-H	Roadway A (2)	1495' E of SH 46 to 2575' E of SH 46	0.20	4	Minor Arterial	New	100%	580	475	0	475	\$ 1,341,000	\$ 1,341,000
1-I	Roadway A (3)	2575' E of SH 46 to City Limits	0.50	4	Minor Arterial	New	50%	580	578	0	578	\$ 3,645,000	\$ 1,822,500
1-J	Roadway C (1)	SH 46 to 795' E of SH 46	0.15	4	Major Collector	208	100%	420	252	31	221	\$ 799,000	\$ 799,000
1-K	Roadway C (2)	795' E of SH 46 to 1370' E of SH 46	0.11	4	Major Collector	New	100%	420	183	0	183	\$ 606,000	\$ 606,000
1-L	Collector N (1)	FM 1863 to City Limits	0.09	2	Minor Collector	New	100%	420	78	0	78	\$ 106,720	\$ 106,720
1-M	Collector N (2)	City Limits to Stone Crossing	0.96	2	Minor Collector	New	50%	420	404	0	404	\$ 1,093,010	\$ 546,505
1-N	Westpointe Drive	Collector N to 2750' W of Oak Run	0.31	2	Minor Collector	New	100%	420	264	0	264	\$ 357,280	\$ 357,280
1-O	Old Mission Lane	1225' W of SH 46 to SH 46	0.23	2	Minor Collector	New	100%	420	195	0	195	\$ 263,610	\$ 263,610
SUBTOTAL									8,279	775	7,504	\$ 20,386,620	\$ 15,955,715
2019 Roadway Impact Fee Study Cost Per Service Area													\$ 23,167
TOTAL COST IN SERVICE AREA 1													\$ 15,978,882

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

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

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

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280]. "n/a" are roadways that were not analyzed.

City of New Braunfels - 2019 Roadway Impact Fee Study

CIP Service Units of Supply

Service Area 2

9/24/2019

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	VEH-MI TOTAL DEMAND PK-HR	EXCESS CAPACITY PK-HR VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
2-A	Walnut (1)	LP 337 to Deer Trot Street	0.39	6	Principal Arterial	1612	100%	600	1391	623	768	\$ 571,000	\$ 571,000
2-B	Walnut (2)	Landa Street to Mill Street	0.73	6	Principal Arterial	1612	100%	600	2636	1180	1456	\$ 6,847,953	\$ 6,847,953
2-C	Walnut (3)	Mill Street to Business IH 35	0.54	6	Principal Arterial	1612	100%	600	1953	875	1,078	\$ 7,109,383	\$ 7,109,383
2-D	Walnut (4)	Business IH 35 to IH 35	0.26	6	Principal Arterial	1612	100%	600	949	425	524	\$ 1,853,497	\$ 1,853,497
2-E	River	LP 337 to Lakeview Boulevard	0.55	4	Minor Arterial	324	100%	580	1280	179	1,101	\$ 8,055,000	\$ 8,055,000
2-F	Fredericksburg	Academy Street to Landa Street	0.08	2	Minor Collector	New	100%	420	68	0	68	\$ 1,081,120	\$ 1,081,120
2-G	Hanz	River Terrace to 1190' E of River Terrace	0.23	2	Minor Collector	New	100%	420	189	0	189	\$ 246,500	\$ 246,500
2-H	Lakeview	Klingemann Street to Torrey Street	0.17	2	Minor Collector	235	100%	420	140	39	101	\$ 2,257,000	\$ 2,257,000
2-I	Live Oak	Landa Street to Michigan Street	0.75	2	Minor Collector	298	100%	420	634	225	409	\$ 5,812,000	\$ 5,812,000
2-J	Ohio	Canyon Drive to 1250' E of Canyon Drive	0.24	2	Minor Collector	New	100%	420	198	0	198	\$ 383,960	\$ 383,960
SUBTOTAL									9,438	3,546	5,892	\$ 34,217,413	\$ 34,217,413
													2019 Roadway Impact Fee Study Cost Per Service Area \$ 23,167
													TOTAL COST IN SERVICE AREA 2 \$ 34,240,580

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

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

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

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280]. "n/a" are roadways that were not analyzed.

City of New Braunfels - 2019 Roadway Impact Fee Study

CIP Service Units of Supply

Service Area 3

9/24/2019

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 ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
3-A	FM 1102 (1)	FM 306 to City Limits	0.56	6	Principal Arterial	498	100%	600	2006	277	1,729	\$ 1,010,200	\$ 1,010,200
3-B	FM 1102 (2)	Orion Drive to City Limits	0.85	6	Principal Arterial	498	100%	600	3068	424	2644	\$ 1,693,200	\$ 1,693,200
3-C, 6-J	SH 46 (1)	IH 35 to FM 1101	0.19	6	AM	3710	50%	0	0	349	-349	\$ 278,000	\$ 139,000
3-D	Common (1)	LP 337 to Gruene Road	0.22	6	AM	1678	100%	0	0	370	-370	\$ 326,000	\$ 326,000
3-E	Common (2)	Gruene Road to FM 306	1.64	4	Minor Arterial	1642	100%	580	3814	2,700	1,114	\$ 10,327,000	\$ 10,327,000
3-F	FM 1101 (1)	490' E of FM 306 to 2850' E of FM 306	0.45	4	Minor Arterial	156	50%	580	518	35	483	\$ 561,400	\$ 280,700
3-G, 6-M	FM 1101 (2)	2850' E of FM 306 to 4105' E of FM 306	0.24	4	Minor Arterial	220	50%	580	275	26	249	\$ 298,600	\$ 149,300
3-H	FM 1101 (3)	4105' E of FM 306 to Kohlenberg Road	1.10	4	Minor Arterial	530	50%	580	1276	292	984	\$ 2,108,200	\$ 1,054,100
3-I	Goodwin (1)	FM 306 to Conrads Lane (South)	1.79	4	Minor Arterial	330	100%	580	4142	589	3,553	\$ 12,918,000	\$ 12,918,000
3-J	Goodwin (2)	Conrads Lane (South) to Conrads Lane (North)	0.18	4	Minor Arterial	119	50%	580	210	11	199	\$ 1,142,000	\$ 571,000
3-K	Conrads (1)	Goodwin to 710' N of S IH-35	0.65	4	Major Collector	462	50%	420	550	151	399	\$ 3,476,000	\$ 1,738,000
3-L	Conrads (2)	710' N of S IH-35 to IH 35	0.13	4	Major Collector	462	100%	420	226	62	164	\$ 713,000	\$ 713,000
3-M	Conrads (3)	City Limits to 295' S of City Limits	0.06	2	Minor Collector	116	50%	420	23	3	20	\$ 1,692,000	\$ 846,000
3-N	Conrads (4)	295' S of City Limits to Goodwin	0.81	2	Minor Collector	116	100%	420	682	94	588	\$ 3,065,000	\$ 3,065,000
3-O	Windgate Park (1)	Heather Glen Drive to 1230' W of FM 306	0.15	2	Minor Collector	New	100%	420	128	0	128	\$ 173,420	\$ 173,420
3-P	Windgate Park (2)	1230' W of FM 306 to FM 306	0.23	2	Minor Collector	58	100%	420	196	14	182	\$ 880,000	\$ 880,000
3-Q	Collector O	IH 35 to FM 1101	0.90	2	Minor Collector	New	100%	420	757	0	757	\$ 1,254,250	\$ 1,254,250
3-R	FM 483	Wilhelm to FM 1101	0.38	2	Minor Collector	58	100%	420	319	22	297	\$ 1,433,000	\$ 1,433,000
3-S	Gruene	Rock Street to 3545' E of Rock Street	0.67	2	Minor Collector	552	100%	420	564	370	194	\$ 4,013,000	\$ 4,013,000
3-T	Hunter (1)	FM 306 to 3020' E. of FM 306	0.57	2	Minor Collector	365	100%	420	480	209	271	\$ 2,157,000	\$ 2,157,000
3-U	Hunter (2)	3020' E. of FM 306 to Railroad	0.16	2	Minor Collector	365	50%	420	68	30	38	\$ 615,000	\$ 307,500
3-V	Kohlenberg	3880' N of FM 1101 to FM 1101	0.73	2	Minor Collector	58	50%	420	308	21	287	\$ 3,143,000	\$ 1,571,500
3-W	Kowald	IH 35 to FM 1101	0.77	2	Minor Collector	118	100%	420	650	91	559	\$ 2,919,000	\$ 2,919,000
3-X	Wilhelm (1)	IH 35 to Kowald Lane	0.48	2	Minor Collector	New	100%	420	403	0	403	\$ 545,490	\$ 545,490
3-Y	Wilhelm (2)	Kowald Lane to FM 483	1.06	2	Minor Collector	New	100%	420	893	0	893	\$ 1,208,140	\$ 1,208,140
3-Z	Loop 337 Access Connection	Gruene Road to LP 337 Access Road	0.45	2	Minor Collector	New	100%	420	380	0	380	\$ 514,460	\$ 514,460
3-AA	Orion (1)	City Limits to Orion Drive Railroad Crossing	0.38	2	Minor Collector	58	50%	420	160	11	149	\$ 2,177,000	\$ 1,088,500
3-AB	Orion (2)	Orion Drive Railroad Crossing to Goodwin	0.55	2	Minor Collector	58	100%	420	458	32	426	\$ 2,797,000	\$ 2,797,000
3-AC	Orion (3)	Goodwin to IH 35	0.89	2	Minor Collector	New	100%	420	747	0	747	\$ 1,010,360	\$ 1,010,360
3-AD	Waterway (1)	660' E of Gruene Road to 345' W of Common Street	0.19	2	Minor Collector	New	100%	420	157	0	157	\$ 205,320	\$ 205,320
3-AE	Waterway (2)	Common Street to Old FM 306	0.42	2	Minor Collector	New	100%	420	351	0	351	\$ 474,730	\$ 474,730
SUBTOTAL									23,809	6,183	17,626	\$ 65,128,770	\$ 57,383,170

2019 Roadway Impact Fee Study Cost Per Service Area \$ 23,167

TOTAL COST IN SERVICE AREA 3 \$ 57,406,337

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

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

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

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280]. "n/a" are roadways that were not analyzed.

City of New Braunfels - 2019 Roadway Impact Fee Study

CIP Service Units of Supply

Service Area 4

9/24/2019

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 ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY PK-HR VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
4-A, 5-A	Rueckle (1)	IH 35 to Morningside Drive	0.61	4	Principal Arterial	932	50%	600	729	283	446	\$ 2,921,150	\$ 1,460,575
4-B, 5-B	Rueckle (2)	Morningside Drive to Green Valley	1.29	4	Parkway	New	50%	580	1501	0	1501	\$ 8,071,000	\$ 4,035,500
4-C	Word Ranch	FM 1863 to City Limits	0.21	4	Parkway	58	100%	580	483	12	471	\$ 1,251,000	\$ 1,251,000
4-D	Algelt	1130' W of LP 337 to LP 337	0.21	4	Minor Arterial	300	100%	580	495	64	431	\$ 1,344,000	\$ 1,344,000
4-E	County Line (1)	CR 376 to Rueckle Road	0.39	4	Minor Arterial	New	100%	580	905	0	905	\$ 2,544,000	\$ 2,544,000
4-F	Engel (1)	IH 35 to 2330' S of S IH-35 Frontage Road	0.44	4	Major Collector	172	100%	420	740	76	664	\$ 2,341,000	\$ 2,341,000
4-G	Engel (2)	2330' S of S IH-35 Frontage Road to Schmucks Road	0.33	4	Major Collector	172	50%	420	273	28	245	\$ 1,729,000	\$ 864,500
4-H	Morningside (1)	Solms Road to Bass Farm Road	0.30	4	Major Collector	932	50%	420	256	142	114	\$ 1,462,343	\$ 731,172
4-I	Morningside (2)	1360' E of B. Farm Road to 2770' W of Rueckle Road	0.26	4	Major Collector	58	50%	420	216	7	209	\$ 1,235,554	\$ 617,777
4-J	Morningside (3)	2770' W of Rueckle Road to Rueckle Road	0.52	4	Major Collector	58	100%	420	880	30	850	\$ 2,517,780	\$ 2,517,780
4-K	Solms (1)	City Limits to 800' N of FM 482	0.08	4	Major Collector	280	100%	420	143	24	119	\$ 453,000	\$ 453,000
4-L	Solms (2)	800' N of FM 482 to 640' S of FM 482	0.27	4	Major Collector	280	50%	420	228	38	190	\$ 1,447,000	\$ 723,500
4-M	Solms (3)	640' S of FM 482 to IH 35	0.13	4	Major Collector	58	100%	420	213	7	206	\$ 674,000	\$ 674,000
4-N	Solms (4)	IH 35 to 365' S of IH 35	0.07	4	Major Collector	58	100%	420	116	4	112	\$ 330,587	\$ 330,587
4-O	Solms (5)	365' S of IH 35 to Morningside Drive	0.27	4	Major Collector	58	50%	420	231	8	223	\$ 1,320,606	\$ 660,303
4-P	Green Valley (1)	CR 376 to Rueckle Road	0.54	4	Major Collector	58	50%	420	452	16	436	\$ 2,852,000	\$ 1,426,000
SUBTOTAL									7,861	739	7,122	\$ 32,494,020	\$ 21,974,694

2019 Roadway Impact Fee Study Cost Per Service Area \$ 23,167

TOTAL COST IN SERVICE AREA 4 \$ 21,997,861

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

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

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

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280]. "n/a" are roadways that were not analyzed.

City of New Braunfels - 2019 Roadway Impact Fee Study

CIP Service Units of Supply

Service Area 5

9/24/2019

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 ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY PK-HR VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
4-A, 5-A	Rueckle (1)	IH 35 to Morningside Drive	0.61	4	Principal Arterial	932	50%	600	729	283	446	\$ 2,921,150	\$ 1,460,575
4-B, 5-B	Rueckle (2)	Morningside Drive to Green Valley	1.29	4	Parkway	New	50%	580	1501	0	1501	\$ 8,071,000	\$ 4,035,500
5-C	FM 725	County Line Road to City Limits	2.02	6	Principal Arterial	1822	100%	600	7265	3,677	3,588	\$ 3,653,800	\$ 3,653,800
5-D	Walnut (5)	Klein Road to Zipp Road	0.52	6	Principal Arterial	New	100%	600	1877	0	1,877	\$ 4,908,000	\$ 4,908,000
5-E	Schmidt	IH 35 to Morningside Drive	0.27	4	Minor Arterial	493	100%	580	621	132	489	\$ 1,684,000	\$ 1,684,000
5-F	County Line (2)	Rueckle Road to FM 1044	1.04	4	Minor Arterial	New	100%	580	2404	0	2,404	\$ 6,762,000	\$ 6,762,000
5-G	County Line (3)	FM 725 to Chinaberry Lane	0.73	4	Minor Arterial	42	100%	580	1684	30	1,654	\$ 4,560,000	\$ 4,560,000
5-H	County Line (4)	Chinaberry Lane to Guadalupe River	0.17	4	Minor Arterial	New	100%	580	389	0	389	\$ 2,996,000	\$ 2,996,000
5-L	FM 1044 (1)	Schmidt Avenue to Green Valley Road	1.67	4	Minor Arterial	793	100%	580	3864	1,321	2,543	\$ 2,165,400	\$ 2,165,400
5-M	FM 1044 (2)	Green Valley Road to City Limits	0.56	4	Minor Arterial	793	50%	580	654	223	431	\$ 708,600	\$ 354,300
5-I	Klein (1)	FM 1044 to 300' W of Legend Pond	1.23	4	Minor Arterial	601	50%	580	1428	370	1,058	\$ 65,290	\$ 32,645
5-J	Klein (2)	300' W of Legend Pond to Walnut	0.74	4	Minor Arterial	601	100%	580	1711	443	1,268	\$ 39,104	\$ 39,104
5-K	Klein (3)	SH 46 to FM 725	0.97	4	Minor Arterial	601	100%	580	2241	581	1,660	\$ 6,434,000	\$ 6,434,000
5-N	FM 1044 (3)	IH 35 to Schmidt Avenue	0.56	4	Major Collector	793	100%	420	939	443	496	\$ 593,600	\$ 593,600
5-O	Green Valley (2)	Rueckle Road to FM 1044	0.20	4	Major Collector	58	50%	420	164	6	158	\$ 1,041,000	\$ 520,500
5-P	Morningside (4)	IH 35 to Rueckle Road	1.32	4	Major Collector	264	100%	420	2221	349	1,872	\$ 6,356,496	\$ 6,356,496
5-Q	Rising Sun	FM 1044 to City Limits	0.15	2	Minor Collector	New	100%	420	124	0	124	\$ 168,200	\$ 168,200
5-R	Legend Pond	Zipp to 1900' S of Zipp	0.36	2	Minor Collector	New	50%	420	151	0	151	\$ 408,900	\$ 204,450
5-S	Pahmeyer	1165' S of Zipp Road to Skytrail	0.40	2	Minor Collector	New	50%	420	167	0	167	\$ 453,270	\$ 226,635
5-T	Skytrail (1)	Legend Pond to 1530' E of Legend Pond	0.29	2	Minor Collector	New	100%	420	243	0	243	\$ 329,440	\$ 329,440
5-U	Skytrail (2)	1530' E of Legend Pond to Pahmeyer Road	0.42	2	Minor Collector	New	50%	420	177	0	177	\$ 479,080	\$ 239,540
5-V	Water	Daisy Meadow to FM 1044	0.51	2	Minor Collector	New	100%	420	429	0	429	\$ 581,160	\$ 581,160
5-W	Zipp (1)	City Limits to 570' W of Legend Pond	0.98	2	Minor Collector	New	50%	420	412	0	412	\$ 1,115,630	\$ 557,815
5-X	Zipp (2)	570' W of Legend Pond to 765' W of Pahmeyer Road	0.63	2	Minor Collector	New	100%	420	531	0	531	\$ 719,780	\$ 719,780
5-Y	Zipp (3)	765' W of Pahmeyer Road to 300' E of Pahmeyer Road	0.20	2	Minor Collector	50	100%	420	170	10	160	\$ 766,000	\$ 766,000
5-Z	Zipp (4)	300' E of Pahmeyer Road to Prado Verde	0.88	2	Minor Collector	50	50%	420	371	22	349	\$ 3,333,000	\$ 1,666,500
SUBTOTAL									32,467	7,890	24,577	\$ 61,313,899	\$ 52,015,439

2019 Roadway Impact Fee Study Cost Per Service Area \$ 23,167

TOTAL COST IN SERVICE AREA 5 \$ 52,038,606

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

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

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

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280]. "n/a" are roadways that were not analyzed.

City of New Braunfels - 2019 Roadway Impact Fee Study

CIP Service Units of Supply

Service Area 6

9/24/2019

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 ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY PK-HR VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
6-A	FM 758 (1)	SH 46 to 1700' E of SH 46	0.32	4	Principal Arterial	204	100%	600	771	66	705	\$ 460,800	\$ 460,800
6-B	FM 758 (2)	1700' E of SH 46 to City Limits	0.16	4	Parkway	New	100%	580	376	0	376	\$ 202,000	\$ 202,000
6-C	FM 758 (3)	965' W of FM 306 to City Limits	1.56	4	Parkway	204	50%	580	1809	159	1,650	\$ 1,873,600	\$ 936,800
6-D	Barbarosa (1)	FM 1101 to 1505' S of FM 1101	0.28	6	Principal Arterial	250	100%	600	1025	71	954	\$ 2,582,000	\$ 2,582,000
6-E	Barbarosa (2)	1505' S of FM 1101 to County Line Road	0.25	6	Principal Arterial	250	50%	600	459	32	427	\$ 2,307,000	\$ 1,153,500
6-F	Barbarosa (3)	County Line Road to Three Mile Creek	0.27	6	Principal Arterial	250	100%	600	976	68	908	\$ 2,460,000	\$ 2,460,000
6-G	Barbarosa (4)	Three Mile Creek to Westmeyer	0.26	6	Principal Arterial	250	50%	600	469	33	436	\$ 2,367,000	\$ 1,183,500
6-H	Saur (1)	Westmeyer to Saengerhalle Road	0.56	6	Principal Arterial	250	50%	600	1001	70	931	\$ 5,041,000	\$ 2,520,500
6-I	Saur (2)	Saengerhalle Road to City Limits	0.87	6	Principal Arterial	New	100%	600	3117	0	3,117	\$ 8,148,000	\$ 8,148,000
3-C, 6-J	SH 46 (1)	IH 35 to FM 1101	0.19	6	AM	3200	50%	0	0	301	-301	\$ 278,000	\$ 139,000
6-K	SH 46 (2)	FM 1101 to Weltner Road	3.06	6	AM	2400	100%	0	0	7,333	-7,333	\$ 4,500,000	\$ 4,500,000
6-L	SH 46 (3)	Weltner Road to City Limits	1.81	6	Principal Arterial	2400	100%	600	6522	4,348	2,174	\$ 3,428,000	\$ 3,428,000
3-G, 6-M	FM 1101 (2)	2850' E of FM 306 to 4105' E of FM 306	0.24	4	Minor Arterial	153	50%	580	275	18	257	\$ 298,600	\$ 149,300
6-N	Saengerhalle	SH 46 to City Limits	0.78	4	Minor Arterial	98	100%	580	1814	77	1,737	\$ 4,911,000	\$ 4,911,000
6-O	Mary (1)	7060' W of SH 46 to 3415' W of SH 46	0.69	4	Minor Arterial	New	50%	580	800	0	800	\$ 4,898,000	\$ 2,449,000
6-P	Mary (2)	3415' W of SH 46 to 270' W of SH 46	0.60	4	Minor Arterial	136	50%	580	692	41	651	\$ 3,746,000	\$ 1,873,000
6-Q	Mary (3)	270' W of SH 46 to SH 46	0.05	4	Minor Arterial	136	100%	580	117	7	110	\$ 321,000	\$ 321,000
6-R	County Line (5)	Guadalupe River to SH 46	0.88	4	Minor Arterial	New	100%	580	2044	0	2,044	\$ 6,700,000	\$ 6,700,000
6-S	Alves (1)	SH 46 to 620' E of Seminole Drive	0.66	4	Minor Arterial	153	100%	580	1534	101	1,433	\$ 4,529,093	\$ 4,529,093
6-T	Alves (2)	620' E of Seminole Drive to 830' E of Seminole Drive	0.04	4	Minor Arterial	153	50%	580	45	3	42	\$ 266,691	\$ 133,346
6-U	Alves (3)	830' E of Seminole Drive to 1875' W of FM 306	0.71	4	Minor Arterial	153	100%	580	1642	108	1,534	\$ 4,847,510	\$ 4,847,510
6-V	Alves (4)	1875' W of FM 306 to FM 306	0.35	4	Minor Arterial	115	50%	580	411	20	391	\$ 2,428,544	\$ 1,214,272
6-W	Alves (5)	FM 306 to City Limits	0.10	4	Major Collector	New	100%	420	174	0	174	\$ 574,000	\$ 574,000
6-X	Alves (6)	FM 1101 to 1680' S of FM 1101	0.32	4	Major Collector	New	50%	420	267	0	267	\$ 1,753,000	\$ 876,500
6-Y	Collector C (1)	FM 1101 to Alves Lane	0.67	2	Minor Collector	New	100%	420	560	0	560	\$ 873,480	\$ 873,480
6-Z	Collector C (2)	Alves Lane to Three Mile Creek	0.26	2	Minor Collector	New	100%	420	220	0	220	\$ 298,120	\$ 298,120
6-AA	Collector C (3)	City Limits to Saengerhalle Road	0.55	2	Minor Collector	New	50%	420	230	0	230	\$ 736,890	\$ 368,445
6-AB	Collector C (4)	Saengerhalle Road to City Limits	0.82	2	Minor Collector	New	100%	420	685	0	685	\$ 1,042,550	\$ 1,042,550
6-AC	Lakefront (1)	785' S of Carolyn Cove to Lakefront Avenue	0.16	2	Minor Collector	New	100%	420	132	0	132	\$ 178,640	\$ 178,640
6-AD	Lakefront (2)	Running River to Mary Blvd	0.85	2	Minor Collector	New	100%	420	711	0	711	\$ 1,076,770	\$ 1,076,770
6-AE	Seminole	FM 1101 to Seminole Drive	0.27	2	Minor Collector	New	100%	420	226	0	226	\$ 305,660	\$ 305,660
6-AF	Stonegate	3955' E of SH 46 to 3345' W of FM 306	0.28	2	Minor Collector	New	50%	420	118	0	118	\$ 434,710	\$ 217,355
SUBTOTAL									29,222	12,856	16,366	\$ 73,867,658	\$ 60,653,141
2019 Roadway Impact Fee Study Cost Per Service Area													\$ 23,167
TOTAL COST IN SERVICE AREA 6													\$ 60,676,308

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

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

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

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280]. "n/a" are roadways that were not analyzed.



Appendix C – Existing Roadway Facilities Inventory

City of New Braunfels - 2019 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

9/24/2019

Service Area 1

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		CLASS	FUTURE LANES	PM PEAK HOUR VOL	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴				
					NB/EB		SB/WB				NB/EB		SB/WB		NB/EB		SB/WB		NB/EB		SB/WB		
					NB	EB	SB	WB	NB	EB	SB	WB	NB	EB	SB	WB	NB	EB	SB	WB	NB	EB	
Aligelt/Wald/Landa	215' W of LP 337	LP 337	215	0.04	1	1	2-U	Minor Collector	2-U	100	200	50%	420	420	9	9	2	4	7	4			
Aligelt/Wald/Landa	2970' W of LP 337	215' W of LP 337	2,756	0.52	1	1	2-U	Minor Collector	2-U	100	200	50%	420	420	110	110	26	52	84	57			
FM 1863	810' E of City Limits	390' W of SH 46	3,110	0.59	1	1	2-U	Principal Arterial	6-D	336	434	100%	420	420	247	247	198	256	49	-8		8	
FM 1863	390' W of SH 46	SH 46	388	0.07	1	1	2-U	Principal Arterial	6-D	336	434	100%	420	420	31	31	25	32	6	-1		1	
FM 1863	City Limits	810' E of City Limits	809	0.15	1	1	2-U	Principal Arterial	6-D	336	434	50%	420	420	32	32	26	33	6	-1		1	
FM 2722	SH 46	City Limits	587	0.11	3	3	4-U	Minor Arterial	4-D	284	284	100%	420	420	140	140	32	32	109	109			
Hueco Springs Loop	805' W of City Limits	City Limits	801	0.15	1	1	2-U	Minor Arterial	4-D	n/a	50%	420	420	32	32								
Independence	Oak Run Parkway	180' W of SH 46	2,245	0.43	1	1	3-U	Major Collector	4-U	480	461	100%	460	460	196	196	204	196	-9	0	9	0	
Independence	180' W of SH 46	SH 46	175	0.03	1	1	3-U	Major Collector	4-U	480	461	100%	460	460	15	15	16	15	-1	0	1	0	
Mission Valley	City Limits	City Limits	3,233	0.61	1	1	2-U	Minor Arterial	4-D	95	108	50%	420	420	129	129	29	33	100	96			
Mission Valley	290' W of SH 46	SH 46	285	0.05	1	1	2-U	Minor Arterial	4-D	95	108	100%	420	420	23	23	5	6	18	17			
Mission Valley	City Limits	Olympic Drive	1,820	0.34	1	1	2-U	Minor Arterial	4-D	95	108	100%	420	420	145	145	33	37	112	108			
Mission Valley	Olympic Drive	290' W of SH 46	831	0.16	1	1	2-U	Minor Arterial	4-D	95	108	100%	420	420	66	66	15	17	51	49			
Oak Run	1195' W of SH 46	210' W of SH 46	986	0.19	2	2	4-U-BL	Major Collector	4-U	454	178	100%	420	420	157	157	85	33	72	124			
Oak Run	2110' N of SH 46	350' W of City Limits	925	0.18	1	1	2-D-BL	Major Collector	4-U	250	209	100%	460	460	81	81	44	37	37	44			
Oak Run	350' W of City Limits	City Limits	350	0.07	1	1	3-U-BL	Major Collector	4-U	250	209	100%	460	460	30	30	17	14	14	17			
Oak Run	455' N of LP 337	LP 337	452	0.09	2	2	4-D	Major Collector	4-U	250	209	100%	580	580	99	99	21	18	78	81			
Oak Run	660' N of LP 337	455' N of LP 337	209	0.04	2	2	4-D	Major Collector	4-U	250	209	100%	580	580	46	46	10	8	36	38			
Oak Run	Independence Drive	660' N of LP 337	546	0.10	2	2	4-D	Major Collector	4-U	250	209	100%	580	580	120	120	26	22	94	98			
Oak Run	265' W of Independence Drive	260	0.05	2	2	4-D	Major Collector	4-U	454	178	100%	580	580	57	57	22	9	35	48				
Oak Run	265' W of Independence Drive	895' W of Independence Drive	632	0.12	2	2	4-D	Major Collector	4-U	454	178	100%	580	580	139	139	54	21	85	118			
Oak Run	895' W of Independence Drive	1190' W of Independence Drive	295	0.06	2	2	4-D	Major Collector	4-U	454	178	100%	580	580	65	65	25	10	39	55			
Oak Run	1190' W of Independence Drive	2210' S of SH 46	706	0.13	2	2	4-D	Major Collector	4-U	454	178	100%	580	580	155	155	61	24	94	131			
Oak Run	2210' S of SH 46	1475' W of SH 46	735	0.14	2	2	4-U-BL	Major Collector	4-U	454	178	100%	420	420	117	117	63	25	54	92			
Oak Run	1475' W of SH 46	1195' W of SH 46	283	0.05	2	2	4-U-BL	Major Collector	4-U	454	178	100%	420	420	45	45	24	10	21	35			
Oak Run	210' W of SH 46	SH 46	206	0.04	2	2	4-D-BL	Major Collector	4-U	454	178	100%	580	580	45	45	18	7	28	38			
Oak Run	SH 46	1305' N of SH 46	1,301	0.25	1	1	2-D-BL	Major Collector	4-U	250	209	100%	460	460	113	113	62	51	52	62			
Oak Run	1305' N of SH 46	2110' N of SH 46	806	0.15	1	1	3-U-BL	Major Collector	4-U	250	209	100%	460	460	70	70	38	32	32	38			
Old Mission Lane	City Limits	1225' W of SH 46	1,082	0.20	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	86	86								
Roadway C	320' E of SH 46	795' E of SH 46	474	0.09	1	1	3-U	Major Collector	4-U	66	142	100%	460	460	41	41	6	13	35	29			
Roadway C	SH 46	320' E of SH 46	316	0.06	1	1	3-U	Major Collector	4-U	66	142	100%	460	460	28	28	4	9	24	19			
SH 46	990' E of Independence Drive	LP 337	697	0.13	3	3	6-D	Principal Arterial	6-D	1,477	1,571	100%	600	600	238	238	195	207	43	30			
SH 46	City Limits	1295' E of City Limits	1,294	0.25	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	284	284	264	322	21	-37	37		
SH 46	1295' E of City Limits	3405' E of City Limits	2,110	0.40	2	2	4-D	Principal Arterial	6-D	1,076	1,312	100%	580	580	464	464	430	524	34	-61	61		
SH 46	3405' E of City Limits	560' W of Collector J (Future)	578	0.11	2	2	4-D	Principal Arterial	6-D	1,076	1,312	100%	580	580	127	127	118	144	9	-17	17		
SH 46	560' W of Collector J (Future)	Collector J (Future)	558	0.11	2	2	4-D	Principal Arterial	6-D	1,076	1,312	100%	580	580	123	123	114	139	9	-16	16		
SH 46	Collector J (Future)	415' S of Collector J (Future)	414	0.08	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	91	91	84	103	7	-12	12		
SH 46	Hueco Springs Loop	375' N of Mission Valley Road	1,288	0.24	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	283	283	263	320	20	-37	37		
SH 46	375' N of Mission Valley Road	Mission Valley Road	372	0.07	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	82	82	76	92	6	-11	11		
SH 46	Mission Valley Road	1830' S of Mission Valley Road	1,826	0.35	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	401	401	372	454	29	-53	53		
SH 46	1830' S of Mission Valley Road	2330' S of Mission Valley Road	505	0.10	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	111	111	103	126	8	-15	15		
SH 46	2330' S of Mission Valley Road	1660' N of FM 1863	795	0.15	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	175	175	162	198	13	-23	23		
SH 46	1660' N of FM 1863	1180' N of FM 1863	480	0.09	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	105	105	98	119	8	-14	14		
SH 46	1180' N of FM 1863	875' W of FM 1863	308	0.06	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	68	68	63	77	5	-9	9		
SH 46	875' W of FM 1863	625' W of FM 1863	248	0.05	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	54	54	50	62	4	-7	7		
SH 46	625' W of FM 1863	445' W of FM 1863	180	0.03	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	40	40	37	45	3	-5	5		
SH 46	445' W of FM 1863	255' W of FM 1863	189	0.04	2	2	5-U	Principal Arterial	6-D	1,076	1,312	100%	580	580	42	42	39	47	3	-5	5		
SH 46	255' W of FM 1863	520' E of FM 1863	765	0.14	2	2	5-U	Principal Arterial	6-D	1,367	2,067	100%	580	580	168	168	198	299	-30	-131	30	131	
SH 46	520' E of FM 1863	995' E of FM 1863	472	0.09	3	3	6-D	Principal Arterial	6-D	1,367	2,067	100%	600	600	161	161	122	185	39	-24	24		
SH 46	995' E of FM 1863	Oak Run Point	210	0.04	3	3	6-D	Principal Arterial	6-D	1,367	2,067	100%	600	600	72	72	54	82	17	-11	11		
SH 46	Oak Run Point	395' E of Oak Run Point	393	0.07	3	3	6-D	Principal Arterial	6-D	1,367	2,067	100%	600	600	134	134	102	154	32	-20	20		
SH 46	395' E of Oak Run Point	1215' E of Oak Run Point	817	0.15	3	3	6-D	Principal Arterial	6-D	1,367	2,067	100%	600	600	279	279	212	320	67	-41	41		
SH 46	1215' E of Oak Run Point	835' W of Oak Run Parkway	614	0.12	3	3	6-D	Principal Arterial	6-D	1,367	2,067	100%	600	600	209	209	159	240					

City of New Braunfels - 2019 Roadway Impact Fee Study

Existing Roadway Facilities Inventory

Service Area 1

9/24/2019

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

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

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

4. Existing Deficiencies Pk-Hr Veh-Mi = [Veh-Mi Demand Pk-Hr Total] - [Veh-Mi Supply Pk-Hr Total]

4. Existing Deficiencies FRTM - VMT-M = [VMT-M Demand FRTM Total] - [VMT-M Supply FRTM Total]

Note 2: Peak hour data unavailable for roadways listed as "n/a".

City of New Braunfels - 2019 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area 2

9/24/2019

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		CLASS	FUTURE LANES	PM PEAK HOUR VOL	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴					
					NB/EB		SB/WB				NB/EB		SB/WB		NB/EB		SB/WB		NB/EB		SB/WB			
Academy	SH 46	1180' E of SH 46	1,687	0.32	1	1	2-D	Minor Collector	2-U	27	100%	460	460	147	147	9	7	138	140					
Business IH 35	4155' W of SH 46	SH 46	4,152	0.79	2	2	5-U	Minor Arterial	4-D	800	100%	580	580	912	912	629	629	283	283					
Business IH 35	2010' E of FM 725	LP 337	4,267	0.81	2	2	5-U	Minor Arterial	4-D	626	100%	580	580	937	937	506	506	432	432					
Business IH 35	Academy Avenue	FM 725	2,198	0.42	2	2	5-U	Minor Arterial	4-D	800	100%	580	580	483	483	333	333	150	150					
Business IH 35	FM 725	880' E of FM 725	876	0.17	2	2	5-U	Minor Arterial	4-D	800	100%	580	580	193	193	133	133	60	60					
Business IH 35	880' E of FM 725	2010' E of FM 725	1,131	0.21	2	2	4-U	Minor Arterial	4-D	864	100%	420	420	180	180	185	185	-5	-5	5	5			
Business IH 35	SH 46	Academy Avenue	3,345	0.63	2	2	5-U	Minor Arterial	4-D	800	100%	580	580	735	735	507	507	228	228					
CALIFORNIA BLVD	1000' S of LP 337	Ohio	442	0.08	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	35	35									
CALIFORNIA BLVD	670' S of LP 337	1000' S of LP 337	328	0.06	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	26	26									
CALIFORNIA BLVD	425' S of LP 337	670' S of LP 337	249	0.05	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	20	20									
CALIFORNIA BLVD	1105' S of Ohio	455' N of Lakeview	513	0.10	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	41	41									
CALIFORNIA BLVD	415' N of Lakeview	Lakeview	413	0.08	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	33	33									
CALIFORNIA BLVD	455' N of Lakeview	415' N of Lakeview	41	0.01	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	3	3									
CALIFORNIA BLVD	560' S of Ohio	1105' S of Ohio	550	0.10	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	44	44									
CALIFORNIA BLVD	560' S of Ohio	555	0.11	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	44	44										
CALIFORNIA BLVD	LP 337	425' S of LP 337	421	0.08	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	33	33									
CALIFORNIA BLVD	Lakeview	270' S of Lakeview	266	0.05	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	21	21									
Castell	1050' S of San Antonio Street	1370' N of Business IH-35	2,301	0.44	1	1	2-U	Major Collector	4-U	181	227	100%	420	420	183	183	79	99	104	84				
Castell	Mill Street	San Antonio Street	473	0.09	1	1	2-U	Major Collector	4-U	181	227	100%	420	420	38	38	16	20	21	17				
Castell	San Antonio Street	1050' S of San Antonio Street	1,046	0.20	1	1	2-U	Major Collector	4-U	181	227	100%	420	420	83	83	36	45	47	38				
Castell	985' N of N Business IH-35	N Business IH-35	981	0.19	1	1	2-U	Major Collector	4-U	181	227	100%	420	420	78	78	34	42	44	36				
Church Hill/Post	935' E of Rusk	1355' E of Rusk	420	0.08	1	1	2-U-BL	Minor Collector	2-U	n/a	100%	420	420	33	33									
Church Hill/Post	200' W of LP 337	LP 337	196	0.04	1	1	2-U-BL	Minor Collector	2-U	n/a	100%	420	420	16	16									
Church Hill/Post	1355' E of Rusk	200' W of LP 337	1,169	0.22	1	1	2-U-BL	Minor Collector	2-U	n/a	100%	420	420	93	93									
Church Hill/Post	Rusk	520' E of Rusk	518	0.10	1	1	2-U-BL	Minor Collector	2-U	n/a	100%	420	420	41	41									
Church Hill/Post	520' E of Rusk	935' E of Rusk	415	0.08	1	1	2-U-BL	Minor Collector	2-U	n/a	100%	420	420	33	33									
Comal	San Antonio Street	1185' N of Business IH-35	4,231	0.80	1	1	2-U-BL	Minor Collector	2-U	145	138	100%	420	420	337	337	116	111	220	226				
Comal	860' N of N Business IH-35	N Business IH-35	856	0.16	1	1	2-U-BL	Minor Collector	2-U	145	138	100%	420	420	68	68	22	45	46					
Comal	1185' N of N Business IH-35	860' N of N Business IH-35	325	0.06	1	1	2-U	Minor Collector	2-U	145	138	100%	420	420	26	26	9	9	17	17				
Common	Union Avenue	Fair Lane	4,117	0.78	2	2	4-U	Principal Arterial	6-D	696	696	100%	420	420	655	655	543	543	112	112				
Common	Fair Lane	LP 337	2,049	0.39	2	2	5-U	Principal Arterial	6-D	696	696	100%	580	580	450	450	270	270	180	180				
Elizabeth	Landa Park Drive	620' N of Hinman Island Drive	1,759	0.33	1	1	2-U	Minor Collector	2-U	218	250	100%	420	420	140	140	73	83	67	57				
Elizabeth	620' N of Hinman Island Drive	Torrey Street	920	0.17	1	1	2-U	Minor Collector	2-U	218	250	100%	420	420	73	73	38	44	35	30				
Fair	1440' N of Common Street	Common Street	1,439	0.27	1	1	2-U	Minor Collector	2-U	7	12	100%	420	420	114	114	2	3	113	111				
Fair	880' W of Summerwood Drive	220' W of Summerwood Drive	661	0.13	1	1	2-U	Minor Collector	2-U	7	12	100%	420	420	53	53	1	2	52	51				
Fair	2350' N of Common Street	1440' N of Common Street	910	0.17	1	1	2-U	Minor Collector	2-U	7	12	100%	420	420	72	72	1	2	71	70				
Fair	Common Street	785' S of Common Street	784	0.15	1	1	2-U	Minor Collector	2-U	7	12	100%	420	420	62	62	1	2	61	61				
Fair	220' W of Summerwood Drive	Summerwood Drive	219	0.04	1	1	2-U	Minor Collector	2-U	7	12	100%	420	420	17	17	0	0	17	17				
Fair	785' S of Common Street	1100' S of Common Street	313	0.06	1	1	2-U	Minor Collector	2-U	7	12	100%	420	420	25	25	0	1	24	24				
Fredericksburg	200' N of Oakcrest Drive	Ohio Avenue	5,379	1.02	1	1	2-U	Minor Collector	2-U	67	95	100%	420	420	428	428	68	97	360	331				
Fredericksburg	Landa Street	200' N of Oakcrest Drive	2,805	0.53	1	1	2-U	Minor Collector	2-U	67	95	100%	420	420	223	223	36	50	188	173				
Garden	Castell Avenue	Comal Avenue	927	0.18	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	74	74									
Gruene	1145' S of LP 337	LP 337	1,143	0.22	1	1	2-U	Minor Collector	2-U	134	134	100%	420	420	91	91	29	29	62	62				
Gruene	Torrey Street	705' N of Torrey Street	702	0.13	1	1	2-U	Minor Collector	2-U	134	134	100%	420	420	56	56	18	18	38	38				
Gruene	705' N of Torrey Street	1145' S of LP 337	332	0.06	1	1	2-U	Minor Collector	2-U	134	134	100%	420	420	26	26	8	8	18	18				
Gruene	LP 337	Rock Street	1,000	0.19	1	1	2-U	Minor Collector	2-U	134	134	50%	420	420	40	40	13	27	27	27				
Hanz	255' W of LP 337	LP 337	255	0.05	1	1	2-U	Minor Collector	2-U	n/a	100%	420	420	20	20									
Hinman Island	220' E of Elizabeth Avenue	Liberty Avenue	2,783	0.53	1	1	2-U	Minor Collector	2-U	119	131	100%	420	420	221	221	63	69	159	152				
Hinman Island	Elizabeth Avenue	220' E of Elizabeth Avenue	220	0.04	1	1	2-U	Minor Collector	2-U	119	131	100%	420	420	17	17	5	5	13	12				
Kerlick	Ridge Hill Drive	SH 46	3,423	0.65	1	1	2-U	Minor Collector	2-U	115	115	100%	420	420	272	272	75	75	198	198				
Kerlick	Ridge Hill Drive	SH 46	3,423	0.65	1	1	2-U	Minor Collector	2-U	115	115	100%	420	420	272	272	75	75	198	198				
Lakeview	1835' N of Klingemann Street	1835' N of Klingemann Street	1,839	0.35	1	1	2-U	Minor Collector	2-U	121	114	100%	420	420	146	146	42	40	104	107				
Lakeview	1625' W of Tuscan Ridge Drive	California Boulevard	1,631	0.31	1	1	2-U	Minor Collector	2-U	121	114	100%	420	420	130	130	37	35	92	95				
Lakeview	Klingemann Street	Torrey Street	878	0.17	1	1	2-U	Minor Collector	2-U	121	114	100%	420	420	70	70	20	19	50	51				
Landa	Zink St	San Antonio Street	1,129	0.21	2	2	4-U	Minor Arterial	4-D	905	888	100%	420	420	180	180	194	190	-14	-10	14	10		
Landa	Live Oak Avenue	SH 46	4,104	0.78	2	2	5-U	Major Collector	4-U	905	888	100%	580	580	902	902	703	690	198	211				
Landa	LP 337 Access Road	Live Oak Avenue	1,176	0.22	1	1	2-U	Major Collector	4-U	905	888	100%	420	420	94	94	202	198	-108	-104	108	104		
Landa	SH 46	Fredericksburg Road	1,785																					

City of New Braunfels - 2019 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area 2

9/24/2019

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		CLASS	FUTURE LANES	PM PEAK HOUR VOL	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴			
					NB/EB		SB/WB				NB/EB		SB/WB		NB/EB		SB/WB		NB/EB		SB/WB	
LANDA PARK DR	1615' S of Lakeview	2135' S of Lakeview	521	0.10	1	1	2-U	Minor Collector	2-U	296	240	100%	420	420	41	41	29	24	12	18		
LANDA PARK DR	2135' S of Lakeview	1245' N of Elizabeth	232	0.04	1	1	2-U	Minor Collector	2-U	296	240	100%	420	420	18	18	13	11	5	8		
LANDA PARK DR	1245' N of Elizabeth	930' N of Elizabeth	319	0.06	1	1	2-U	Minor Collector	2-U	296	240	100%	420	420	25	25	18	14	7	11		
LANDA PARK DR	270' S of Lakeview	1475' S of Lakeview	1,208	0.23	1	1	2-U	Minor Collector	2-U	296	240	100%	420	420	96	96	68	55	28	41		
LANDA PARK DR	930' N of Elizabeth	750' N of Elizabeth	177	0.03	1	1	2-U	Minor Collector	2-U	296	240	100%	420	420	14	14	10	8	4	6		
LANDA PARK DR	1475' S of Lakeview	1615' S of Lakeview	140	0.03	1	1	2-U	Minor Collector	2-U	296	240	100%	420	420	11	11	8	6	3	5		
LANDA PARK DR	750' N of Elizabeth	290' N of Elizabeth	465	0.09	1	1	2-U	Minor Collector	2-U	296	240	100%	420	420	37	37	26	21	11	-21		21
Lincoln/Union	San Antonio Street	Lincoln Street	1,581	0.30	1	1	2-U	Minor Collector	2-U	121	150	100%	420	420	126	126	36	45	90	81		
Lincoln/Union	Comal Avenue	225' E of Comal Avenue	224	0.04	1	1	2-U	Minor Collector	2-U	219	219	100%	420	420	18	18	9	9	9	9		
Lincoln/Union	225' E of Comal Avenue	500' E of Comal Avenue	273	0.05	1	1	2-U	Minor Collector	2-U	219	219	100%	420	420	22	22	11	11	10	10		
Lincoln/Union	500' E of Comal Avenue	Union Avenue	1,159	0.22	1	1	2-U	Minor Collector	2-U	219	219	100%	420	420	92	92	48	48	44	44		
Live Oak	Michigan Street	N Business IH-35	3,308	0.63	1	1	2-U	Minor Collector	2-U	152	146	100%	420	420	263	263	95	91	168	172		
Live Oak	Mc Gar Street	355 N of Michigan Street	1,293	0.24	1	1	2-U	Minor Collector	2-U	152	146	100%	420	420	103	103	37	36	66	67		
Live Oak	205' N of Michigan Street	Michigan Street	201	0.04	1	1	2-U	Minor Collector	2-U	152	146	100%	420	420	16	16	6	6	10	10		
Live Oak	355' N of Michigan Street	205' N of Michigan Street	153	0.03	1	1	2-U	Minor Collector	2-U	152	146	100%	420	420	12	12	4	4	8	8		
Live Oak	Landa Street	Dry Comal Creek	1,336	0.25	1	1	2-U	Minor Collector	2-U	152	146	100%	420	420	106	106	38	37	68	69		
Live Oak	Dry Comal Creek	Mc Gar Street	1,003	0.19	1	1	2-U	Minor Collector	2-U	152	146	100%	420	420	80	80	29	28	51	52		
LP 337 Access Road	LP 337	Landa Street	1,443	0.27	1	1	2-U-BL	Major Collector	4-U	905	888	100%	420	420	115	115	247	243	-133	-128	133	128
McKenna	Porter Street	N Business IH-35	1,179	0.22	1	1	2-U	Minor Collector	2-U	37	34	100%	420	420	94	94	8	8	85	86		
Mill	SH 46	Castell Avenue	3,758	0.71	1	1	2-U	Minor Collector	2-U	294	294	100%	420	420	299	299	209	209	90	90		
Mill	Castell Avenue	1600' E of Castell Avenue	1,596	0.30	1	1	2-U	Major Collector	4-U	294	294	100%	420	420	127	127	89	89	38	38		
Mill	1600' E of Castell Avenue	2005' E of Castell Avenue	408	0.08	1	1	2-U	Major Collector	4-U	294	294	100%	420	420	32	32	23	23	10	10		
Mill	Live Oak Avenue	SH 46	2,039	0.39	1	1	2-U	Minor Collector	2-U	294	294	100%	420	420	162	162	114	114	49	49		
Ohio	2155' E of SH 46	4035' E of SH 46	1,877	0.36	1	1	2-U	Minor Collector	2-U	79	95	100%	420	420	149	149	28	34	121	116		
Ohio	SH 46	910' E of SH 46	909	0.17	1	1	2-U	Minor Collector	2-U	79	95	100%	420	420	72	72	14	16	59	56		
Ohio	4035' E of SH 46	5110' E of SH 46	1,075	0.20	1	1	2-U	Minor Collector	2-U	79	95	100%	420	420	86	86	16	19	69	66		
Porter	McKenna Avenue	Rusk Street	878	0.17	1	1	2-U-BL	Minor Collector	2-U	n/a	n/a	100%	420	420	70	70						
RIDGE HILL DR	655' E of LP 337	Mission Hills	277	0.05	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	22	22						
RIDGE HILL DR	LP 337	655' E of LP 337	654	0.12	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	52	52						
River	LP 337	Rock Street	1,644	0.31	1	1	2-U	Minor Arterial	4-D	162	162	100%	420	420	131	131	50	50	80	80		
River	Rock Street	225' E of Lakeview Boulevard	1,047	0.20	1	1	2-U	Minor Arterial	4-D	162	162	100%	420	420	83	83	32	32	51	51		
River	225' E of Lakeview Boulevard	Lakeview Boulevard	221	0.04	1	1	2-U	Minor Arterial	4-D	162	162	100%	420	420	18	18	7	7	11	11		
Rusk	Broadway	Porter Street	442	0.08	1	1	2-U	Minor Collector	2-U	37	34	100%	420	420	35	35	3	3	32	32		
S CASTELL AVE	750' S of Business IH 35	1000' S of Business IH 35	250	0.05	1	1	2-U	Minor Collector	2-U	181	227	100%	420	420	20	20	9	11	11	9		
S CASTELL AVE	Business IH 35	385' S of Business IH 35	384	0.07	1	1	2-U	Minor Collector	2-U	181	227	100%	420	420	31	31	13	17	17	14		
S CASTELL AVE	385' S of Business IH 35	750' S of Business IH 35	362	0.07	1	1	2-U	Minor Collector	2-U	181	227	100%	420	420	29	29	12	16	16	13		
San Antonio	LP 337	245' W of Spur Street	6,158	1.17	1	1	2-U	Major Collector	4-U	177	177	100%	420	420	490	490	206	206	283	283		
San Antonio	745' W of Union Avenue	Union Avenue	740	0.14	1	1	2-U	Minor Arterial	4-D	875	875	100%	420	420	59	59	123	123	-64	-64	64	64
San Antonio	245' W of Spur Street	Spur Street	244	0.05	1	1	2-U	Major Collector	4-U	177	177	100%	420	420	19	19	8	8	11	11		
San Antonio	SH 46	1925' E of SH 46	1,921	0.36	1	1	2-U	Minor Arterial	4-D	560	560	100%	420	420	153	153	204	204	-51	-51	51	51
San Antonio	4040' W of Union Avenue	2950' W of Union Avenue	1,091	0.21	2	2	4-U	Minor Arterial	4-D	859	859	100%	420	420	174	174	177	177	-4	-4	4	4
San Antonio	2950' W of Union Avenue	2480' W of Union Avenue	471	0.09	2	2	4-U	Minor Arterial	4-D	859	859	100%	420	420	75	75	77	77	-2	-2	2	2
San Antonio	2115' W of Union Avenue	1395' W of Union Avenue	722	0.14	2	2	4-U	Minor Arterial	4-D	859	859	100%	420	420	115	115	118	118	-3	-3	3	3
San Antonio	1395' W of Union Avenue	745' W of Union Avenue	650	0.12	1	1	2-U	Minor Arterial	4-D	859	859	100%	420	420	52	52	106	106	-54	-54	54	54
San Antonio	2150' E of SH 46	3090' E of SH 46	940	0.18	1	1	2-U	Minor Arterial	4-D	859	859	100%	420	420	75	75	153	153	-78	-78	78	78
San Antonio	2480' W of Union Avenue	2115' W of Union Avenue	364	0.07	2	2	4-U	Minor Arterial	4-D	859	859	100%	420	420	58	58	59	59	-1	-1	1	1
San Antonio	Live Oak Avenue	SH 46	1,968	0.37	1	1	2-U	Minor Arterial	4-D	461	461	100%	420	420	157	157	172	172	-15	-15	15	15
San Antonio	1925' E of SH 46	2150' E of SH 46	225	0.04	1	1	2-U	Minor Arterial	4-D	859	859	100%	420	420	18	18	37	37	-19	-19	19	19
Seguin	855' S of San Antonio Street	1715' N of Business IH-35	2,697	0.51	2	2	4-U	Minor Arterial	4-D	1,078	1,078	100%	420	420	429	429	551	551	-122	-122	122	122
Seguin	985' N of Business IH-35	N Business IH-35	983	0.19	2	2	4-U	Minor Arterial	4-D	1,078	1,078	100%	420	420	156	156	201	201	-44	-44	44	44
Seguin	San Antonio Street	855' S of San Antonio Street	853	0.16	2	2	4-U	Minor Arterial	4-D	1,078	1,078	100%	420	420	136	136	174	174	-38	-38	38	38
Seguin	1715' N of N Business IH-35	985' N of N Business IH-35	729	0.14	2	2	4-U	Minor Arterial	4-D	1,078	1,078	100%	420	420	116	116	149	149	-33	-33	33	33
Seguin	N Business IH-35	IH 35	751	0.14	2	3	4-U	Minor Arterial	4-D	1,078	1,078	100%	420	420	119	119	153	153	-34	-34	26	34
Spur	1780' W of Live Oak Avenue	Live Oak Avenue	1,779	0.34	2	2	4-U	Minor Arterial	4-D	177	177	100%	420	420	283	283	60	60	223	223		
Spur	2810' W of Live Oak Avenue	2125' W of Live Oak Avenue	690	0.13	2	2	4-U	Minor Arterial	4-D	177	177	100%	420	420	110	110</						

City of New Braunfels - 2019 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area 2

9/24/2019

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXIST LANES	CLASS	FUTURE LANES	PM PEAK HOUR VOL	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR VEH-MI ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴		
					NB/EB	SB/WB						NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	
Walnut	N Business IH-35	175' S of N Business IH-35	171	0.03	3	2	4-D	Principal Arterial	6-D	785	827	100%	580	580	56	37	25	27	31	11		
Walnut	300' N of N Business IH-35	N Business IH-35	296	0.06	2	2	4-D	Principal Arterial	6-D	785	827	100%	580	580	65	65	44	46	21	19		
Walnut	Eikel Street	Katy Street	278	0.05	2	2	4-D	Principal Arterial	6-D	785	827	100%	580	580	61	61	41	44	20	18		
Walnut	345' S of Academy Boulevard (Fr)	Eikel Street	775	0.15	2	2	4-U	Principal Arterial	6-D	785	827	100%	420	420	123	123	115	121	8	2		
Walnut	265' N of Landa Street	Landa Street	264	0.05	2	2	4-D	Principal Arterial	6-D	785	827	100%	580	580	58	58	39	41	19	17		
Walnut	1620' N of Landa Street	265' N of Landa Street	1,353	0.26	2	2	5-U	Principal Arterial	6-D	785	827	100%	580	580	297	297	201	212	96	85		
Walnut	2390' S of Ohio Avenue	1620' N of Landa Street	1,992	0.38	2	2	4-U	Principal Arterial	6-D	785	827	100%	420	420	317	317	296	312	21	5		
Walnut	2090' S of Ohio Avenue	2390' S of Ohio Avenue	297	0.06	2	2	4-D	Principal Arterial	6-D	785	827	100%	580	580	65	65	44	47	21	19		
Walnut	LP 337	405' S of LP 337	404	0.08	3	2	4-D	Principal Arterial	6-D	785	827	100%	580	580	133	89	60	63	73	25		
Walnut	405' S of LP 337	Ohio Avenue	334	0.06	3	2	5-U	Principal Arterial	6-D	785	827	100%	580	580	110	73	50	52	60	21		
Walnut	Katy Street	Mill Street	720	0.14	2	2	4-D	Principal Arterial	6-D	785	827	100%	580	580	158	158	107	113	51	45		
Walnut	Deer Trot Street	2090' S of Ohio Avenue	787	0.15	2	2	5-U	Principal Arterial	6-D	785	827	100%	580	580	173	173	117	123	56	50		
Wood	350' N of Landa Street	200' W of Moss Rock Drive	560	0.11	1	1	2-U	Minor Collector	2-U	785	827	100%	420	420	45	45	83	88	-39	-43	39	43
Wood	Clearfield Drive	SH 46	1,042	0.20	1	1	2-U	Minor Collector	2-U	785	827	100%	420	420	83	83	155	163	-72	-80	72	80
Wood	1445' W of Clearfield Drive	Clearfield Drive	1,443	0.27	1	1	2-U	Minor Collector	2-U	17	17	100%	420	420	115	115	5	5	110	110		
Wood	200' W of Moss Rock Drive	1445' W of Clearfield Drive	712	0.13	1	1	2-U	Minor Collector	2-U	17	17	100%	420	420	57	57	2	2	54	54		
Wood	Landa Street	350' N of Landa Street	347	0.07	1	1	2-U	Minor Collector	2-U	17	17	100%	420	420	28	28	1	1	26	26		
SUBTOTAL			175,262	33									20,319	20,349	12,712	12,881	6,853	6,714	1,285	1,199		
													40,668		25,592		13,567		2,484			

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

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

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

4. Existing Deficiencies Pk-Hr Veh-Mi = [Veh-Mi Demand Pk-Hr Total] - [Veh-Mi Supply Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280]. "n/a" are roadways that were not analyzed. Most of these roadways were 2 Lane Collectors or bridges over I-35 included as intersection projects.

Note 2: Peak hour data unavailable for roadways listed as "n/a".

City of New Braunfels - 2019 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area 3

9/24/2019

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		CLASS	FUTURE LANES	PM PEAK HOUR VOL	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴			
					NB/EB		SB/WB				NB/EB		SB/WB		NB/EB		SB/WB		NB/EB		SB/WB	
					NB	EB	SB	WB	NB	EB	SB	WB	NB	EB	SB	WB	NB	EB	SB	WB	NB	EB
Business IH 35	LP 337	IH 35	4,550	0.86	1	1	2-U	Minor Arterial	4-D	261	261	100%	420	420	362	362	225	225	137	137		
Business IH 35	LP 337	IH 35	1,659	0.31	1	1	2-U	Minor Arterial	4-D	261	261	100%	420	420	132	132	82	82	50	50		
Church Hill/Post	Gruene Drive	S IH-35 Frontage Road	3,710	0.70	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	295	295						
Church Hill/Post	LP 337	625' E of LP 337	524	0.10	1	1	2-U-BL	Minor Collector	2-U	n/a	n/a	100%	420	420	42	42						
Church Hill/Post	625' E of LP 337	1165' W of Anhalt Drive	1,726	0.33	1	1	2-U-BL	Minor Collector	2-U	n/a	n/a	100%	420	420	137	137						
Church Hill/Post	1165' W of Anhalt Drive	Anhalt Drive	1,164	0.22	1	1	2-U-BL	Minor Collector	2-U	n/a	n/a	100%	420	420	93	93						
Church Hill/Post	Anhalt Drive	Gruene Drive	667	0.13	1	1	2-U-BL	Minor Collector	2-U	n/a	n/a	100%	420	420	53	53						
Church Hill/Post	LP 337	190' E of LP 337	190	0.04	1	1	2-U-BL	Minor Collector	2-U	n/a	n/a	100%	420	420	15	15						
Common	Gruene Road	315' N of Waterway Lane	5,817	1.10	1	1	3-U	Minor Arterial	4-D	719	923	100%	460	460	507	507	792	1,017	-285	-510	285	510
Common	LP 337	765' W of Gruene Road	403	0.08	2	2	5-U	Principal Arterial	6-D	813	865	100%	580	580	89	89	62	66	26	23		
Common	740' W of Gruene Road	Gruene Road	737	0.14	2	2	5-U	Principal Arterial	6-D	813	865	100%	580	580	162	162	113	121	48	41		
Common	315' N of Waterway Lane	FM 306	2,864	0.54	1	1	2-U	Minor Arterial	4-D	719	923	100%	420	420	228	228	390	501	-162	-273	162	273
Common	765' W of Gruene Road	740' W of Gruene Road	24	0.00	2	2	5-U	Principal Arterial	6-D	813	865	100%	580	580	5	5	4	4	2	1		
Conrads	710' N of S IH-35	S IH-35 Frontage Road	713	0.14	1	1	2-U	Major Collector	4-U	231	231	50%	420	420	28	28	16	16	13	13		
Conrads	1975' N of S IH-35	1310' N of S IH-35	489	0.09	1	1	2-U	Major Collector	4-U	231	231	50%	420	420	19	19	11	11	9	9		
Conrads	Goodwin	1975' N of S IH-35	1,566	0.30	0	1	2-U	Major Collector	4-U	58	58	50%	420	420	0	62	9	9	-9	54	9	
Conrads	Goodwin	1975' N of S IH-35	808	0.15	0	1	2-U	Major Collector	4-U	58	58	50%	420	420	0	32	4	4	-4	28	4	
Conrads	1310' N of S IH-35	S IH-35 Frontage Road	594	0.11	1	1	2-U	Major Collector	4-U	58	58	50%	420	420	24	24	3	3	20	20		
CONRADSLN	City Limits	295' S of City Limits	291	0.06	1	1	2-U	Minor Collector	2-U	58	58	50%	420	420	12	12	2	2	10	10		
CONRADSLN	3410' S of City Limits	Goodwin	1,170	0.22	1	1	2-U	Minor Collector	2-U	58	58	100%	420	420	93	93	13	13	80	80		
CONRADSLN	2245' S of City Limits	3410' S of City Limits	1,166	0.22	1	1	2-U	Minor Collector	2-U	58	58	100%	420	420	93	93	13	13	80	80		
CONRADSLN	295' S of City Limits	2245' S of City Limits	1,953	0.37	1	1	2-U	Minor Collector	2-U	58	58	100%	420	420	155	155	21	21	134	134		
FM 1101	4165' W of Kohlenberg Road	Kohlenberg Road	4,164	0.79	1	1	2-U	Minor Arterial	4-D	78	78	50%	420	420	166	166	31	31	135	135		
FM 1101	490' E of FM 306	2850' E of FM 306	2,356	0.45	1	1	3-U	Minor Arterial	4-D	78	78	50%	460	460	103	103	17	17	85	85		
FM 1101	1410' W of FM 306	975' W of FM 306	439	0.08	1	1	3-U	Minor Arterial	4-D	265	265	50%	460	460	19	19	11	11	8	8		
FM 1101	4100' E of FM 306	5745' E of FM 306	1,646	0.31	1	1	2-U	Minor Arterial	4-D	265	265	50%	420	420	65	65	41	41	24	24		
FM 1101	2850' E of FM 306	4105' E of FM 306	1,253	0.24	1	1	2-U	Minor Arterial	4-D	110	110	50%	420	420	50	50	13	13	37	37		
FM 1101	SH 46	825' E of Seminole Drive (Future)	4,205	0.80	1	1	3-U	Minor Arterial	4-D	110	110	50%	460	460	183	183	44	44	139	139		
FM 1101	825' E of Seminole Drive (Future)	420' W of Kowald Lane	1,068	0.20	1	1	3-U	Minor Arterial	4-D	110	110	50%	460	460	47	47	11	11	35	35		
FM 1101	Kowald Lane	650' E of Kowald Lane	648	0.12	1	1	3-U	Minor Arterial	4-D	110	110	50%	460	460	28	28	7	7	21	21		
FM 1101	650' E of Kowald Lane	1440' E of Kowald Lane	789	0.15	1	1	3-U	Minor Arterial	4-D	265	265	50%	460	460	34	34	20	20	15	15		
FM 1101	1440' E of Kowald Lane	1925' W of FM 306	825	0.16	1	1	3-U	Minor Arterial	4-D	110	110	50%	460	460	36	36	9	9	27	27		
FM 1101	975' W of FM 306	FM 306	971	0.18	1	1	3-U	Minor Arterial	4-D	110	110	50%	460	460	42	42	10	10	32	32		
FM 1101	420' W of Kowald Lane	Kowald Lane	418	0.08	1	1	3-U	Minor Arterial	4-D	110	110	50%	460	460	18	18	4	4	14	14		
FM 1101	1925' W of FM 306	1410' W of FM 306	516	0.10	1	1	3-U	Minor Arterial	4-D	110	110	50%	460	460	22	22	5	5	17	17		
FM 1101	FM 306	490' E of FM 306	485	0.09	1	1	3-U	Minor Arterial	4-D	110	110	50%	460	460	21	21	5	5	16	16		
FM 1102	FM 306	City Limits	2,942	0.56	1	1	2-U	Principal Arterial	6-D	249	249	100%	420	420	234	234	139	139	95	95		
FM 1102	Orion Drive	City Limits	4,500	0.85	1	1	2-U	Principal Arterial	6-D	249	249	100%	420	420	358	358	212	212	146	146		
FM 306	1560' S of IH-35	FM 1101	3,787	0.72	2	2	4-D	Principal Arterial	6-D	777	777	100%	580	580	832	832	557	557	275	275		
FM 306	505' S of IH-35	1560' S of IH-35	1,054	0.20	2	2	4-D	Principal Arterial	6-D	777	777	100%	580	580	232	232	155	155	76	76		
FM 306	N IH-35 Frontage Road	505' S of IH-35	505	0.10	2	2	4-D	Principal Arterial	6-D	777	777	100%	580	580	111	111	74	74	37	37		
FM 306	Longhorn Industrial Road	IH 35	1,507	0.29	2	2	4-D-BL	Principal Arterial	6-D	777	777	100%	580	580	331	331	222	222	109	109		
FM 306	Hunter Road	Longhorn Industrial Road	6,777	1.28	2	2	4-D-BL	Principal Arterial	6-D	777	777	100%	580	580	1,489	1,489	997	997	492	492		
FM 306	9640' S of City Limits	2235' N of Hunter Road	669	0.13	2	2	5-U-BL	Principal Arterial	6-D	777	777	100%	580	580	147	147	98	98	49	49		
FM 306	City Limits	9640' S of City Limits	9,638	1.83	2	2	5-U-BL	Principal Arterial	6-D	777	777	100%	580	580	2,117	2,117	1,418	1,418	699	699		
FM 306	2235' N of Hunter Road	1690' N of Hunter Road	541	0.10	2	2	4-D-BL	Principal Arterial	6-D	777	777	100%	580	580	119	119	80	80	39	39		
FM 306	1690' N of Hunter Road	1130' N of Hunter Road	562	0.11	2	2	4-D-BL	Principal Arterial	6-D	777	777	100%	580	580	123	123	83	83	41	41		
FM 306	1130' N of Hunter Road	Hunter Road	1,125	0.21	2	2	4-D-BL	Principal Arterial	6-D	777	777	100%	580	580	247	247	166	166	82	82		
FM 483	Wilhelm	FM 1101	2,002	0.38	0	0	2-U	Minor Collector	2-U	29	29	100%	420	420	0	0	11	11	-11	-11	11	11
Goodwin	Dove Hollow Drive	Conrads Lane (South)	1,840	0.35	1	1	2-U	Minor Arterial	4-D	165	165	100%	420	420	146	146	58	58	89	89		
Goodwin	FM 306	1570' E of FM 306	1,566	0.30	1	1	2-U	Minor Arterial	4-D	165	165	100%	420	420	125	125	49	49	76	76		
Goodwin	1570' E of FM 306	2845' E of FM 306	1,279	0.24	1	1	3-U	Minor Arterial	4-D	165	165	100%	460	460	111	111	40	40	71	71		
Goodwin	2845' E of FM 306	1410' E of Orion Drive (Future)	3,580	0.68	1	1	2-U	Minor Arterial	4-D	165	165	100%	420	420	285	285	112	112	173	173		
Goodwin	1410' E of Orion Drive (Future)	Dove Hollow Drive	1,161	0.22	1	1	3-U	Minor Arterial	4-D	165	165	100%	460									

City of New Braunfels - 2019 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

9/24/2019

Service Area 3

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		CLASS	FUTURE LANES	PM PEAK HOUR VOL	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴							
					NB/EB						NB/EB		SB/WB		NB/EB		SB/WB		NB/EB		SB/WB					
					NB/EB	SB/WB					NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB				
Hanz	485' W of Gruene Road	Gruene Road	481	0.09	1	1	2-U	Minor Collector	2-U	184	105	100%	420	420	38	38	17	10	22	29						
HEATHER GLEN DR	1915' E of Kowald Lane	2205' E of Kowald Lane	290	0.05	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	23	23										
HEATHER GLEN DR	Kowald Lane	1630' E of Kowald Lane	1,627	0.31	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	129	129										
HEATHER GLEN DR	2205' E of Kowald Lane	Nissan Way	604	0.11	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	48	48										
HEATHER GLEN DR	1630' E of Kowald Lane	1915' E of Kowald Lane	285	0.05	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	23	23										
Hunter	Gruene Road	FM 306	2,927	0.55	1	1	2-U-BL	Minor Collector	2-U	246	119	100%	420	420	233	233	136	66	96	167						
Hunter	FM 306	3,020' E. of FM 306	2,036	0.39	1	1	2-U	Minor Collector	2-U	246	119	100%	420	420	162	162	95	46	67	116						
Hunter	860' N of City Limits	City Limits	859	0.16	1	1	2-U	Minor Collector	2-U	246	119	50%	420	420	34	34	20	10	14	24						
Hunter	3,020' E. of FM 306	Railroad	983	0.19	1	1	2-U	Minor Collector	2-U	246	119	100%	420	420	78	78	46	22	32	56						
Kohlenberg	3880 N of FM 1101	FM 1101	3,878	0.73	1	1	2-U	Minor Collector	2-U	29	29	50%	420	420	154	154	11	11	144	144						
Kowald	IH 35	FM 1101	4,083	0.77	1	1	2-U	Minor Collector	2-U	59	59	100%	420	420	325	325	46	46	279	279						
Lonesome Quail	Morning Quail	S IH-35 Frontage Road	2,952	0.56	1	1	2-U	Minor Collector	2-U	12	12	100%	420	420	235	235	7	7	228	228						
MORNING QUAIL	350' E of Lonesome Quail	545' E of Lonesome Quail	194	0.04	1	1	2-U	Minor Collector	2-U	12	12	100%	420	420	15	15	0	0	15	15						
MORNING QUAIL	835' E of Lonesome Quail	City Limits	207	0.04	1	1	2-U	Minor Collector	2-U	12	12	100%	420	420	16	16	0	0	16	16						
MORNING QUAIL	545' E of Lonesome Quail	835' E of Lonesome Quail	290	0.05	1	1	2-U	Minor Collector	2-U	12	12	100%	420	420	23	23	1	1	22	22						
MORNING QUAIL	Lonesome Quail	175' E of Lonesome Quail	171	0.03	1	1	2-U	Minor Collector	2-U	12	12	100%	420	420	14	14	0	0	13	13						
MORNING QUAIL	175' E of Lonesome Quail	350' E of Lonesome Quail	179	0.03	1	1	2-U	Minor Collector	2-U	12	12	100%	420	420	14	14	0	0	14	14						
N KOWALD LN	Heather Glen Road	Post Road	1,185	0.22	1	1	2-U	Minor Collector	2-U	59	59	100%	420	420	94	94	13	13	81	81						
NISSAN WAY	IH 35	Heather Glen Drive	751	0.14	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	60	60										
NISSAN WAY	Heather Glen Drive	Collector M	822	0.16	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	65	65										
Old FM 308	Common Street	FM 306	2,063	0.39	1	1	2-U	Minor Collector	2-U	54	54	100%	420	420	164	164	21	21	143	143						
Old FM 308	Hunter Road	Common Street	1,930	0.37	1	1	2-U	Minor Collector	2-U	54	54	100%	420	420	153	153	20	20	134	134						
ORION DR	1355' S of City Limits	Orion Drive Railroad Crossing of C	656	0.12	1	1	2-U	Minor Collector	2-U	29	29	50%	420	420	26	26	2	2	24	24						
ORION DR	City Limits	1355' S of City Limits	1,352	0.26	1	1	2-U	Minor Collector	2-U	29	29	50%	420	420	54	54	4	4	50	50						
ORION DR	Orion Drive Railroad Crossing	Goodwin	2,880	0.55	1	1	2-U	Minor Collector	2-U	29	29	100%	420	420	229	229	16	16	213	213						
SH 46	IH 35	FM 1101	994	0.19	2	2	5-U	Principal Arterial	6-D	1,855	1,855	50%	580	580	109	109	175	175	-65	-65	65	65				
Waterway	Gruene Road	660' E of Gruene Road	659	0.12	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	52	52										
Waterway	345 W of Common Street	Common Street	345	0.07	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	27	27										
Windgate Park	FM 306	1230' W of FM 306	1,229	0.23	1	1	2-U	Minor Collector	2-U	29	29	100%	420	420	98	98	7	7	91	91						
SUBTOTAL			154,357	29											14,686	14,780	8,052	8,092	5,570	5,625	536	859				
															29,466		16,144		11,195		1,395					

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

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

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

4. Existing Deficiencies Pk-Hr Veh-Mi = [Veh-Mi Demand Pk-Hr Total] - [Veh-Mi Supply Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280]. "n/a" are roadways that were not analyzed. Most of these roadways were 2 Lane Collectors or bridges over I-35 included as intersection projects.

Note 2: Peak hour data unavailable for roadways listed as "n/a".

City of New Braunfels - 2019 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area 4

9/24/2019

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		CLASS	FUTURE LANES	PM PEAK HOUR VOL	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴				
					NB/EB		SB/WB				NB/EB		SB/WB		NB/EB		SB/WB		NB/EB		SB/WB		
Altgelt/Wald/Landa	Altgelt Road	2970' W of LP 337	3,203	0.61	1	1	2-U	Minor Collector	2-U	100	200	50%	420	420	127	127	30	61	97	67			
Altgelt/Wald/Landa	215' W of LP 337	LP 337	215	0.04	1	1	2-U	Minor Collector	2-U	100	200	50%	420	420	9	9	2	4	7	4			
Altgelt/Wald/Landa	2970' W of LP 337	215' W of LP 337	2,756	0.52	1	1	2-U	Minor Collector	2-U	100	200	50%	420	420	110	110	26	52	84	57			
CR 376A/Ron Rd	1335' S of Morningside Drive	Green Valley Road	5,030	0.95	1	1	2-U	Minor Collector	2-U	29	29	50%	420	420	200	200	14	14	186	186			
CR 376A/Ron Rd	Morningside Drive	1335' S of Morningside Drive	1,330	0.25	1	1	2-U	Minor Collector	2-U	29	29	100%	420	420	106	106	7	7	99	99			
Deepenschmidt Rd	2115' S of NI IH-35 Frontage Road	Schmucks Road	2,244	0.42	1	1	2-U	Minor Collector	2-U	17	17	100%	420	420	178	178	7	7	171	171			
Deepenschmidt Rd	N IH-35 Frontage Road	2115' S of N IH-35 Frontage Road	2,112	0.40	1	1	2-U	Minor Collector	2-U	17	17	100%	420	420	168	168	7	7	161	161			
Engel	S IH-35 Frontage Road	N IH-35 Frontage Road	322	0.06	1	1	2-U	Major Collector	4-U	86	86	100%	420	420	26	26	5	5	20	20			
Engel	N IH-35 Frontage Road	2330' S of S IH-35 Frontage Road	2,005	0.38	1	1	2-U	Major Collector	4-U	86	86	100%	420	420	159	159	33	33	127	127			
Engel	2005' S of IH 35	900' N of Schmucks Road	896	0.17	1	1	2-U	Major Collector	4-U	86	86	50%	420	420	36	36	7	7	28	28			
Engel	900' N of Schmucks Road	Schmucks Road	822	0.16	1	1	2-U	Major Collector	4-U	86	86	50%	420	420	33	33	7	7	26	26			
FM 1863	575' E of City Limits	800' W of Word Ranch Rd	3,118	0.59	1	1	2-U	Principal Arterial	6-D	185	185	50%	420	420	124	124	55	55	69	69			
FM 1863	1200' E of Word Ranch Rd	Kreuger Canyon	1,370	0.26	1	1	2-U	Principal Arterial	6-D	185	185	50%	420	420	54	54	24	24	30	30			
FM 1863	800' W of Word Ranch Rd	1200' E of Word Ranch Rd	2,005	0.38	1	1	2-U	Principal Arterial	6-D	185	185	50%	420	420	80	80	35	35	45	45			
FM 1863	City Limits	575' E of City Limits	573	0.11	1	1	2-U	Principal Arterial	6-D	185	185	50%	420	420	23	23	10	10	13	13			
FM 482	Solms Road	IH 35	5,444	1.03	1	1	2-U	Minor Arterial	4-D	128	128	100%	420	420	433	433	132	132	301	301			
FM 482	330' W of Marigold Way	740' E of Marigold Way	1,065	0.20	1	1	2-U	Minor Arterial	4-D	128	128	50%	420	420	42	42	13	13	29	29			
Green Valley	CR 376	2840' E of CR 376	2,840	0.54	1	1	2-U	Major Collector	4-U	29	29	50%	420	420	113	113	8	8	105	105			
Kreuger Canyon	3850' S of FM 1863	3690' N of Collector G (Future)	3,297	0.62	1	1	2-U	Major Collector	4-U	31	35	50%	420	420	131	131	10	11	121	120			
Kreuger Canyon	3690' N of Collector G (Future)	655' N of Collector G (Future)	3,038	0.58	1	1	2-U	Major Collector	4-U	31	35	50%	420	420	121	121	9	10	112	111			
Kreuger Canyon	4515' S of Collector G (Future)	Wald	2,136	0.40	1	1	2-U	Major Collector	4-U	31	35	50%	420	420	85	85	6	7	79	78			
Kreuger Canyon	Collector G (Future)	4515' S of Collector G (Future)	4,511	0.85	1	1	2-U	Major Collector	4-U	31	35	50%	420	420	179	179	13	15	166	164			
Kreuger Canyon	FM 1863	1495' S of FM 1863	1,494	0.28	1	1	2-U	Major Collector	4-U	31	35	50%	420	420	59	59	4	5	55	54			
Kreuger Canyon	1495' S of FM 1863	3850' S of FM 1863	2,356	0.45	1	1	2-U	Major Collector	4-U	31	35	50%	420	420	94	94	7	8	87	86			
Kreuger Canyon	655' N of Collector G (Future)	Collector G (Future)	654	0.12	1	1	2-U	Major Collector	4-U	31	35	50%	420	420	26	26	2	2	24	24			
Morningside	Solms Road	Bass Farm Road	1,606	0.30	1	1	2-U	Major Collector	4-U	138	157	50%	420	420	64	64	21	24	43	40			
Morningside	Bass Farm Road	1355' E of Bass Farm Road	1,354	0.26	2	2	2-U	Major Collector	4-U	138	157	100%	420	420	215	215	35	40	180	175			
Morningside	2770' W of Rueckle Road	Rueckle Road	2,765	0.52	1	1	2-U	Major Collector	4-U	138	157	100%	420	420	220	220	72	82	148	138			
Morningside	1360' E of Bass Farm Road	2710' E of Bass Farm Road	1,357	0.26	1	1	2-U	Major Collector	4-U	138	157	50%	420	420	54	54	18	20	36	34			
Old Highway 81	IH 35	S IH-35 Frontage Road	628	0.12	1	1	2-U	Minor Arterial	4-D	128	128	100%	420	420	50	50	15	15	35	35			
Rueckle	IH 35	Morningside Drive	3,208	0.61	1	1	2-U	Parkway	4-D	357	575	50%	420	420	128	128	108	175	19	47	47		
Schmucks	City Limits	Weston Road	2,246	0.43	1	1	2-U	Minor Arterial	4-D	29	6	50%	420	420	89	89	6	1	83	88			
Solms	365' S of IH-35	Morningside Drive	1,450	0.27	1	1	2-U	Major Collector	4-U	29	29	50%	420	420	58	58	4	4	54	54			
Solms	IH 35 Frontage Road	S IH-35 Frontage Road	348	0.07	1	1	2-U	Major Collector	4-U	29	29	100%	420	420	28	28	2	2	26	26			
Solms	800' N of FM 482	640' S of FM 482	1,436	0.27	1	1	2-U	Major Collector	4-U	29	29	50%	420	420	57	57	4	4	53	53			
Solms	City Limits	800' N of FM 482	448	0.08	1	1	2-U	Major Collector	4-U	29	29	100%	420	420	36	36	2	2	33	33			
Solms	640' S of FM 482	IH 35 Frontage Road	320	0.06	1	1	2-U	Major Collector	4-U	29	29	100%	420	420	25	25	2	2	24	24			
Solms	IH 35	365' S of IH-35	363	0.07	1	1	2-U	Major Collector	4-U	29	29	100%	420	420	29	29	2	2	27	27			
Wald	Wald Road	1130' W of LP 337	1,366	0.26	1	1	2-U	Minor Arterial	4-D	140	140	50%	420	420	54	54	18	18	36	36			
Wald	City Limits	Kreuger Canyon	540	0.10	1	1	2-U	Minor Arterial	4-D	140	140	100%	420	420	43	43	14	14	29	29			
Wald	1130' W of LP 337	LP 337	1,127	0.21	1	1	2-U	Minor Arterial	4-D	140	140	100%	420	420	90	90	30	30	60	60			
Word Ranch	FM 1863	1100' S of FM 1863	1,100	0.21	1	1	2-U	Parkway	4-D	29	29	100%	420	420	87	87	6	6	81	81			
SUBTOTAL			76,495	14											4,043	4,043	834	980	3,209	3,063	0	47	
															8,086	8,086	1,814	1,814	6,272	6,272		47	

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

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

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

4. Existing Deficiencies Pk-Hr Veh-Mi = [Veh-Mi Demand Pk-Hr Total] - [Veh-Mi Supply Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280]. "n/a" are roadways that were not analyzed. Most of these roadways were 2 Lane Collectors or bridges over I-35 included as intersection projects.

Note 2: Peak hour data unavailable for roadways listed as "n/a."

City of New Braunfels - 2019 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area 5

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXIST LANES	CLASS	FUTURE LANES	PM PEAK HOUR VOL		% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴					
					NB/EB	SB/WB				NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB		
Collector A	City Limits	Pahmeyer Road	1,539	0.29	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	122	122	4	4	118	118						
County Line	SH 46	FM 725	5,362	1.02	2	2	4-D	Minor Arterial	4-D	584	584	100%	580	580	1,178	1,178	593	593	585	585						
County Line	950' E of FM 725	Chinaberry Lane	2,882	0.55	1	1	2-U	Minor Arterial	4-D	34	8	100%	420	420	229	229	19	4	211	225						
County Line	FM 725	950' E of FM 725	950	0.18	1	1	2-U	Minor Arterial	4-D	34	8	100%	420	420	76	76	6	1	69	74						
County Line	FM 1044	Pahmeyer Road	1,888	0.36	2	2	5-U	Minor Arterial	4-D	151	248	100%	580	580	415	415	54	89	361	326						
County Line	Pahmeyer Road	SH 46	2,580	0.49	2	2	4-D	Minor Collector	4-D	584	584	100%	580	580	567	567	285	285	281	281						
Divine Way	SH 46	3145' E of SH 46	3,145	0.60	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	250	250	9	9	241	241						
Dove Crossing	County Line Road	375' N of Klein Road	5,855	1.11	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	30	30	1	1	29	29						
Dove Crossing	375' N of Klein Road	Klein Road	372	0.07	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	30	30										
FM 1044	700' S of County Line Road	640' N of Green Valley Road	4,343	0.82	1	1	2-U	Minor Arterial	4-D	396	397	100%	420	420	345	345	326	327	20	19						
FM 1044	715' N of Lorna Verde Drive	IH 35	793	0.15	1	1	2-U	Major Collector	4-U	396	397	100%	420	420	63	63	60	60	4	3						
FM 1044	530' S of Green Valley Road	City Limits	2,450	0.46	1	1	2-U	Minor Arterial	4-D	396	397	50%	420	420	97	97	92	92	6	5						
FM 1044	640' N of Green Valley Road	Green Valley Road	635	0.12	1	1	3-U	Minor Arterial	4-D	396	397	100%	460	460	55	55	48	48	8	8						
FM 1044	Schmidt Avenue	Old Marion Road	1,257	0.24	1	1	3-U	Minor Arterial	4-D	396	397	100%	460	460	110	110	94	95	15	15						
FM 1044	County Line Road	700' S of County Line Road	697	0.13	2	1	3-U	Minor Arterial	4-D	396	397	100%	460	460	121	61	52	52	69	8						
FM 1044	515' N of County Line Road	County Line Road	515	0.10	1	2	3-U	Minor Arterial	4-D	396	397	100%	460	460	45	90	39	39	6	51						
FM 1044	435' S of Old Marion Road	515' N of County Line Road	913	0.17	1	1	2-U	Minor Arterial	4-D	396	397	100%	420	420	73	73	68	69	4	4						
FM 1044	Old Marion Road	435' S of Old Marion Road	433	0.08	2	1	3-U	Minor Arterial	4-D	396	397	100%	460	460	75	38	32	33	43	5						
FM 1044	Schmidt Avenue	385' N of Schmidt Avenue	381	0.07	1	1	3-U	Major Collector	4-U	396	397	100%	460	460	33	33	29	29	5	5						
FM 1044	1030' N of Schmidt Avenue	Lorna Verde Drive	415	0.08	2	1	3-U	Major Collector	4-U	396	397	100%	460	460	72	36	31	31	41	5						
FM 1044	Lorna Verde Drive	715' N of Lorna Verde Drive	713	0.13	1	1	2-U	Major Collector	4-U	396	397	100%	420	420	57	57	53	54	3	3						
FM 1044	530' S of Green Valley Road	526	0.10	1	1	3-U	Minor Arterial	4-D	396	397	50%	460	460	23	23	20	20	3	3							
FM 725	IH 35	315' S of IH 35	315	0.06	3	3	6-D	Principal Arterial	6-D	1,371	1,370	100%	600	600	107	107	82	82	26	26						
FM 725	315' S of IH 35	715' S of IH 35	400	0.08	3	2	6-D	Principal Arterial	6-D	1,371	1,370	100%	600	600	136	91	104	104	33	-13	13					
FM 725	715' S of IH 35	1635' N of County Line Road	3,363	0.64	2	2	5-U	Principal Arterial	6-D	1,371	1,370	100%	580	580	739	739	873	873	-134	-134	134	134				
FM 725	1635' N of County Line Road	485' N of County Line Road	1,150	0.22	2	2	5-U	Principal Arterial	6-D	1,371	1,370	100%	580	580	253	253	299	299	-46	-46	46	46				
FM 725	485' N of County Line Road	County Line Road	483	0.09	2	3	5-U	Principal Arterial	6-D	1,371	1,370	100%	580	580	106	159	125	125	-19	-34	19	9				
FM 725	County Line Road	645' S of County Line Road	644	0.12	3	2	2-U	Principal Arterial	6-D	911	911	100%	420	420	154	102	111	111	43	-9	9					
FM 725	645' S of County Line Road	1095' S of County Line Road	447	0.08	2	1	2-U	Principal Arterial	6-D	911	911	100%	420	420	71	36	77	77	-6	-42	6	42				
FM 725	1095' S of County Line Road	925' N of Southbank Boulevard	390	0.07	1	2	2-U	Principal Arterial	6-D	911	911	100%	420	420	31	62	67	67	-36	-5	36	5				
FM 725	925' N of Southbank Boulevard	465' N of Southbank Boulevard	462	0.09	1	1	2-U	Principal Arterial	6-D	911	911	100%	420	420	37	37	80	80	-43	-43	43	43				
FM 725	465' N of Southbank Boulevard	Southbank Boulevard	462	0.09	1	2	2-U	Principal Arterial	6-D	911	911	100%	420	420	37	73	80	80	-43	-6	43	6				
FM 725	Southbank Boulevard	585' S of Southbank Boulevard	583	0.11	2	1	2-U	Principal Arterial	6-D	911	911	100%	420	420	93	46	101	101	-8	-54	8	54				
FM 725	585' S of Southbank Boulevard	525' N of Klein Road	1,760	0.33	1	1	2-U	Principal Arterial	6-D	911	911	100%	420	420	140	140	304	304	-164	-164	164	164				
FM 725	525' N of Klein Road	Klein Road	521	0.10	1	3	2-U	Principal Arterial	6-D	911	911	100%	420	420	41	124	90	90	-48	34	48					
FM 725	Klein Road	615' S of Klein Road	614	0.12	2	1	2-U	Principal Arterial	6-D	911	911	100%	420	420	98	49	106	106	-8	-57	8	57				
FM 725	615' S of Klein Road	1735' S of Klein Road	1,118	0.21	1	1	2-U	Principal Arterial	6-D	911	911	100%	420	420	89	89	193	193	-104	-104	104	104				
FM 725	1735' S of Klein Road	385' N of Zipp Road	445	0.08	1	1	2-U	Principal Arterial	6-D	911	911	100%	420	420	35	35	77	77	-41	-41	41	41				
FM 725	385' N of Zipp Road	Zipp Road	383	0.07	1	2	2-U	Principal Arterial	6-D	911	911	100%	420	420	30	61	66	66	-36	-5	36	5				
FM 725	505' S of Zipp Road	505' S of Zipp Road	501	0.09	3	1	2-U	Principal Arterial	6-D	911	911	100%	420	420	119	40	86	86	33	-47	47					
FM 725	505' S of Zipp Road	1195' S of Zipp Road	691	0.13	1	1	2-U	Principal Arterial	6-D	911	911	100%	420	420	55	55	119	119	-64	-64	64	64				
FM 725	1195' S of Zipp Road	1845' S of Zipp Road	655	0.12	2	1	3-U	Principal Arterial	6-D	911	911	100%	460	460	114	57	113	113	1	-56	56					
FM 725	1845' S of Zipp Road	City Limits	443	0.08	1	1	2-U	Principal Arterial	6-D	911	911	100%	420	420	35	35	76	76	-41	-41	41	41				
FM 725	1845' S of Zipp Road	2385' S of Zipp Road	537	0.10	1	1	2-U	Principal Arterial	6-D	911	911	100%	420	420	43	43	93	93	-50	-50	50	50				
Gardena	Mesquite Drive	SH 46	1,747	0.33	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	139	139	5	5	134	134						
Green Valley	Rueckle Road	FM 1044	1,030	0.20	1	1	2-U	Major Collector	4-U	29	29	50%	420	420	41	41	3	3	38	38						
Klein	555' E of SH 46	535' W of FM 725	4,014	0.76	1	1	2-U	Minor Arterial	4-D	232	369	100%	420	420	319	319	176	281	143	39						
Klein	FM 1044	2260' E of FM 1044	2,257	0.43	1	1	2-U	Minor Arterial	4-D	232	369	50%	420	420	90	90	50	79	40	11						
Klein	2260' E of FM 1044	330' W of Klein Meadows	1,914	0.36	1	1	2-U	Minor Arterial	4-D	232	369	50%	420	420	76	76	42	67	34	9						
Klein	330' W of Klein Meadows	1790' W of Legend Pond	840	0.16	1	1	2-U	Minor Arterial	4-D	232	369	50%	420	420	33	33	18	29	15	4						
Klein	300' W of Legend Pond	830' W of SH 46	3,068	0.58	1	1	2-U	Minor Arterial	4-D	232	369	100%	420	420	244	244	135	214	109	30						
Klein	830' W of SH 46	SH 46	826	0.16	1	1	2-U	Minor Arterial	4-D	232	369	100%	420	420	66	66	36	58	29	8						
Klein	535' W of FM 725	FM 725	535	0.10	1	1	2-U	Minor Arterial	4-D	232	369	100%	420													

City of New Braunfels - 2019 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

9/24/2019

Service Area 5

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXIST LANES	CLASS	FUTURE LANES	PM PEAK HOUR VOL		% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴				
					NB/EB	SB/WB				NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	
Pahmeyer	1235' N of Rising Sun	680' N of Rising Sun	556	0.11	1	1	2-D-BL	Minor Collector	2-U	15	15	100%	460	460	48	48	2	2	47	47					
Pahmeyer	450' S of Settlers Crossing	Klein Road	1,212	0.23	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	96	96	3	3	93	93					
Pahmeyer	Klein Road	1000' S of Klein Road	998	0.19	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	79	79	3	3	77	77					
Pahmeyer	680' N of Rising Sun	Rising Sun	679	0.13	1	1	2-U-BL	Minor Collector	2-U	15	15	100%	420	420	54	54	2	2	52	52					
Rueckle	IH 35	Morningside Drive	3,208	0.61	1	1	2-U	Parkway	4-D	357	575	50%	420	420	128	128	108	175	19	-47			47		
Schmidt	Morningside Drive	FM 1044	2,302	0.44	1	1	2-U	Minor Arterial	4-D	203	290	100%	420	420	183	183	89	126	95	57					
Schmidt	750' N of Morningside Drive	Morningside Drive	745	0.14	1	1	2-U	Minor Arterial	4-D	203	290	100%	420	420	59	59	29	41	31	-41			41		
Schmidt	IH 35	750' N of Morningside Drive	668	0.13	1	1	2-U	Minor Arterial	4-D	203	290	100%	420	420	53	53	26	37	27	16					
Settlers Crossing	Pahmeyer Road	275 E of Pahmeyer Road	274	0.05	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	22	22	1	1	21	21					
Settlers Crossing	820' E of Pahmeyer Road	1420' W of SH 44	607	0.12	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	48	48	2	2	47	47					
Settlers Crossing	275' E of Pahmeyer Road	820' E of Pahmeyer Road	542	0.10	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	43	43	2	2	42	42					
SETTLERS CROSSING	1025' W of Walnut	2345' W of Walnut	897	0.17	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	71	71	3	3	69	69					
SETTLERS CROSSING	Walnut	1025 W of Walnut	1,022	0.19	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	81	81	3	3	78	78					
SETTLERS CROSSING	1025 W of Walnut	2345' W of Walnut	422	0.08	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	34	34	1	1	32	32					
Sungate	County Line Road	1715' N of Settlers Crossing	4,122	0.78	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	328	328	12	12	316	316					
Trade Center	McQueeney Road	FM 725	2,061	0.39	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	164	164	6	6	158	158					
Walnut	Tumbleweed Drive	County Line Road	4,484	0.85	2	2	4-U	Principal Arterial	6-D	896	755	100%	420	420	713	713	761	641	-48	72	48				
Walnut	665' N of Klein Road	Klein Road	663	0.13	2	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	146	146	113	95	33	51					
Walnut	685' E of Settlers Crossing	665 N of Klein Road	256	0.05	2	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	56	56	43	37	13	20					
Walnut	685' E of Settlers Crossing	685' E of Settlers Crossing	684	0.13	2	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	150	150	116	98	34	52					
Walnut	Divine Way	Settlers Crossing	853	0.16	2	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	187	187	145	122	43	65					
Walnut	350' W of Divine Way	Divine Way	350	0.07	2	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	77	77	59	50	17	27					
Walnut	910' S of Jerad Street	350' W of Divine Way	1,097	0.21	2	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	241	241	186	157	55	84					
Walnut	Jerad Street	910' S of Jerad Street	909	0.17	2	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	200	200	154	130	45	70					
Walnut	880' S of Frances Street	Jerad Street	396	0.07	2	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	87	87	67	57	20	30					
Walnut	Frances Street	880' S of Frances Street	878	0.17	2	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	193	193	149	125	44	67					
Walnut	825' S of County Line Road	Frances Street	233	0.04	2	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	51	51	39	33	12	18					
Walnut	515' S of County Line Road	825' S of County Line Road	311	0.06	2	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	68	68	53	44	16	24					
Walnut	County Line Road	515' S of County Line Road	513	0.10	3	2	4-D	Principal Arterial	6-D	896	755	100%	580	580	169	113	87	73	82	39					
Walnut	370' S of N IH-35 Frontage Road	Tumbleweed Drive	1,194	0.23	2	2	5-U	Principal Arterial	6-D	896	755	100%	580	580	262	262	203	171	60	92					
Walnut	IH 35	370' S of N IH-35 Frontage Road	369	0.07	2	2	5-U	Principal Arterial	6-D	896	755	100%	580	580	81	81	63	53	18	28					
Water	IH 35	Morningside	2,098	0.40	1	1	2-U	Minor Collector	2-U	15	15	100%	420	420	167	167	6	6	161	161					
Zipp	300' E of Pahmeyer Road	Walnut extension (Future)	2,731	0.52	1	1	2-U	Minor Collector	2-U	25	25	50%	420	420	109	109	6	6	102	102					
Zipp	FM 725	City Limits	450	0.09	1	1	2-U	Minor Collector	2-U	25	25	100%	420	420	36	36	2	2	34	34					
Zipp	City Limits	FM 725	307	0.06	1	1	2-U	Minor Collector	2-U	25	25	100%	420	420	24	24	1	1	23	23					
Zipp	765' W of Pahmeyer Road	300' E of Pahmeyer Road	1,066	0.20	1	1	2-U	Minor Collector	2-U	25	25	100%	420	420	85	85	5	5	80	80					
Zipp	Walnut extension (Future)	Prado Verde	1,929	0.37	1	1	2-U	Minor Collector	2-U	25	25	50%	420	420	77	77	5	5	72	72					
SUBTOTAL			153,497	29											16,048	15,713	8,653	8,781	7,396	6,932	939	1,069			
															31,761		17,434		14,328		2,008				

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

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

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

4. Existing Deficiencies Pk-Hr Veh-Mi = [Veh-Mi Demand Pk-Hr Total] - [Veh-Mi Supply Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280]. "n/a" are roadways that were not analyzed.

Note 2: Peak hour data unavailable for roadways listed as "n/a".

City of New Braunfels - 2019 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

9/24/2019

Service Area 6

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		CLASS	FUTURE LANES	PM PEAK HOUR VOL	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴									
					NB/EB		SB/WB				NB/EB		SB/WB		NB/EB		SB/WB		NB/EB		SB/WB							
					NB	EB	SB	WB	NB	EB	SB	WB	NB	EB	SB	WB	NB	EB	SB	WB	NB	EB	SB	WB				
Alves	830' E of Seminole Drive	1875' W of FM 306	3,737	0.71	1	1	2-U	Minor Arterial	4-D	79	74	100%	420	420	297	297	56	52	241	245								
Alves	SH 46	620' E of Seminole Drive	3,491	0.66	1	1	2-U	Minor Arterial	4-D	79	74	100%	420	420	278	278	52	49	225	229								
Alves	620' E of Seminole Drive	830' E of Seminole Drive	206	0.04	1	1	2-U	Minor Arterial	4-D	79	74	50%	420	420	8	8	2	1	7	7								
Alves	1875' W of FM 306	FM 306	1,872	0.35	1	1	2-U	Minor Arterial	4-D	44	71	50%	420	420	74	74	8	13	67	62								
Avery Ranch	Avery Parkway	Pieper Road	2,057	0.39	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	164	164												
Barbarosa	County Line Road	Three Mile Creek	1,432	0.27	1	1	2-U	Principal Arterial	6-D	96	154	100%	420	420	114	114	26	42	88	72								
Barbarosa	FM 1101	1505' S of FM 1101	1,504	0.28	1	1	2-U	Principal Arterial	6-D	96	154	100%	420	420	120	120	27	44	92	76								
Barbarosa	1505' S of FM 1101	County Line Road	1,345	0.25	1	1	2-U	Principal Arterial	6-D	96	154	50%	420	420	55	55	13	20	42	35								
FM 1101	SH 46	825' E of Seminole Drive (Future)	4,205	0.80	1	1	3-U	Minor Arterial	4-D	265	265	50%	460	460	183	183	106	106	78	78								
FM 1101	825' E of Seminole Drive (Future)	420' W of Kowald Lane	1,068	0.20	1	1	3-U	Minor Arterial	4-D	265	265	50%	460	460	47	47	27	27	20	20								
FM 1101	Kowald Lane	650' E of Kowald Lane	648	0.12	1	1	3-U	Minor Arterial	4-D	265	265	50%	460	460	28	28	16	16	12	12								
FM 1101	650' E of Kowald Lane	1440' E of Kowald Lane	789	0.15	1	1	3-U	Minor Arterial	4-D	265	265	50%	460	460	34	34	20	20	15	15								
FM 1101	1440' E of Kowald Lane	1925' W of FM 306	825	0.16	1	1	3-U	Minor Arterial	4-D	265	265	50%	460	460	36	36	21	21	15	15								
FM 1101	975' W of FM 306	FM 306	971	0.18	1	1	3-U	Minor Arterial	4-D	265	265	50%	460	460	42	42	24	24	18	18								
FM 1101	420' W of Kowald Lane	Kowald Lane	418	0.08	1	1	3-U	Minor Arterial	4-D	265	265	50%	460	460	18	18	10	10	8	8								
FM 1101	1925' W of FM 306	1410' W of FM 306	516	0.10	1	1	3-U	Minor Arterial	4-D	56	42	50%	460	460	22	22	3	2	20	20								
FM 1101	FM 306	490' E of FM 306	485	0.09	1	1	3-U	Minor Arterial	4-D	68	68	50%	460	460	21	21	3	3	18	18								
FM 1101	4165' W of Kohlenberg Road	Kohlenberg Road	4,164	0.79	1	1	2-U	Minor Arterial	4-D	68	68	50%	420	420	166	166	27	27	139	139								
FM 1101	2850' E of FM 306	4105' E of FM 306	1,253	0.24	1	1	2-U	Minor Arterial	4-D	79	74	50%	420	420	50	50	9	9	40	41								
FM 306	Westmeyer	1615' S of Westmeyer	1,616	0.31	1	1	2-U	Principal Arterial	6-D	96	154	50%	420	420	64	64	15	24	50	41								
FM 306	1615' S of Westmeyer	Saengerhalle	1,322	0.25	1	1	2-U	Principal Arterial	6-D	96	154	50%	420	420	53	53	12	19	41	33								
FM 306	1615' S of Westmeyer	Saengerhalle	1,322	0.25	1	1	2-U	Principal Arterial	6-D	96	154	50%	420	420	53	53	12	19	41	33								
FM 306	1615' S of Westmeyer	Saengerhalle	1,322	0.25	1	1	2-U	Principal Arterial	6-D	96	154	50%	420	420	53	53	12	19	41	33								
FM 758	FM 306	City Limits	7,272	1.38	1	1	2-U	Parkway	4-D	102	102	50%	420	420	289	289	70	70	219	219								
FM 758	SH 46	1700' E of SH 46	1,696	0.32	1	1	2-U	Parkway	4-D	102	102	100%	420	420	135	135	33	33	102	102								
FM 758	965' W of FM 306	FM 306	964	0.18	1	1	2-U	Parkway	4-D	102	102	50%	420	420	38	38	9	9	29	29								
Freiheit	Lakefront Avenue	SH 46	1,204	0.23	1	1	2-U	Minor Collector	2-U	29	29	100%	420	420	96	96	7	7	89	89								
Lakefront	Freiheit Road	Carolyn Cove	785	0.15	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	62	62												
Lakefront	Lakefront Avenue (Future)	807	0.15	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	64	64													
Lakefront	IH 35	Freiheit Road	759	0.14	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	60	60												
Lakefront	Carolyn Cove	785' S of Carolyn Cove	781	0.15	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	62	62												
Lakefront	Running River	Lakefront Avenue (Future)	121	0.02	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	10	10												
Mary	3415' W of SH 46	270' W of SH 46	3,149	0.60	1	1	2-U	Minor Arterial	4-D	68	68	50%	420	420	125	125	20	20	105	105								
Mary	270' W of SH 46	SH 46	266	0.05	1	1	2-U	Minor Arterial	4-D	68	68	100%	420	420	21	21	3	3	18	18								
Saengerhalle	Collector C	FM 306	3,396	0.64	1	1	2-U	Minor Collector	2-U	56	42	50%	420	420	135	135	18	14	117	122								
Saengerhalle	SH 46	Saengerhalle Road	2,537	0.48	1	1	2-U	Minor Arterial	4-D	56	42	100%	420	420	202	202	27	20	175	182								
Saengerhalle RD	Saengerhalle Road	800' E of Saengerhalle Road	798	0.15	1	1	2-U	Minor Arterial	4-D	56	42	100%	420	420	63	63	8	6	55	57								
SAENGERHALLE RD	Westmeyer	375' S of Westmeyer	374	0.07	1	1	2-U	Minor Collector	2-U	56	42	100%	420	420	30	30	4	3	26	27								
SAENGERHALLE RD	Collector C	2,521	0.48	1	1	2-U	Minor Collector	2-U	56	42	100%	420	420	201	201	27	20	174	181									
Seminole	Seminole Drive (Future)	465' N of County Line Road	953	0.18	1	1	2-U	Minor Collector	2-U	n/a	n/a	50%	420	420	38	38												
Seminole	465' N of County Line Road	County Line Road	464	0.09	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%	420	420	37	37												
SH 46	Weltner Road	2170' S of Weltner Road	2,167	0.41	2	2	5-U	Principal Arterial	6-D	1,200	1,200	100%	580	580	476	476	492	492	-16	-16	16	16						
SH 46	FM 1101	FM 758	13,251	2.51	2	2	5-U	Principal Arterial	6-D	1,200	1,200	100%	580	580	2,911	2,911	3,012	3,012	-100	-100	100	100						
SH 46	3860' S of Avery Parkway	City Limits	3,022	0.57	2	2	5-U	Principal Arterial	6-D	1,200	1,200	100%	580	580	664	664	687	687	-23	-23	23	23						
SH 46	2020' S of Avery Parkway	3860' S of Avery Parkway	1,838	0.35	2	2	5-U	Principal Arterial	6-D	1,200	1,200	100%	580	580	404	404	418	418	-14	-14	14	14						
SH 46	645' S of Avery Parkway	2020' S of Avery Parkway	1,379	0.26	2	2	5-U	Principal Arterial	6-D	1,200	1,200	100%	580	580	303	303	313	313	-10	-10	10	10						
SH 46	Avery Parkway	645' S of Avery Parkway	643	0.12	3	3	5-U	Principal Arterial	6-D	1,200	1,200	100%	580	580	212	212	146	146	66	66								
SH 46	2170' S of Weltner Road	Avery Parkway	517	0.10	2	3	5-U	Principal Arterial	6-D	1,200	1,200	100%	580	580	114	114	170	117	-4	53	4	4						
SH 46	1375' N of Weltner Road	Weltner Road	1,371	0.26	2	2	5-U	Principal Arterial	6-D	1,200	1,200	100%	580	580	301	301	312	312	-10	-10	10	10						
SH 46	FM 758	1375' N of Weltner Road	1,510	0.29	3	2	5-U	Principal Arterial	6-D	1,200	1,200	100%	600	600	515	515	343	343	343	343	0	0						
SH 46	IH 35	FM 1101	994	0.19	2	2	5-U	Principal Arterial	6-D	1,600	1,600	50%	580	580	109	109	151	151	-41	-41	41	41						
Stonegate	SH 46	3965' E of SH 46	3,955	0.75	1	1	2-U	Minor Collector	2-U	n/a	n/a	100%																



Appendix D – Plan for Awarding the Roadway Impact Fee Credit

(as prepared by Eddie Peacock, CPA.)

**City of New Braunfels, Texas
2019 Roadway Impact Fee Update
Plan for Awarding the Roadway Impact Fee Credit**

Texas Local Government Code Section 395 "Financing Capital Improvements Required by New Development in Municipalities, Counties, and Certain Other Local Governments" requires the Capital Improvements Plan (CIP) to contain specific enumeration of a plan for awarding the impact fee credit.

Section 395.014, Texas Local Government Code states:

"... (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:

(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...."

City of New Braunfels street CIP improvements are funded from ad valorem tax-supported debt and roadway impact fees. The portion of ad valorem tax generated by the new service units during the ten-year period is estimated to equal the interest and sinking (I&S) tax levy necessary to fund ten years of debt service payments for new debt issued to fund the growth-related street CIP projects.

The maximum impact fee is expressed in dollars per vehicle-mile. The RWIF credit per vehicle -mile is calculated by dividing the annual portion of estimated property tax by the current total vehicle-mile of demand. The cumulative total vehicle-miles by service area are derived from the total projected ten-year demand of vehicle miles by service area applied equally over the ten-year period:

Annual Amount of Ad Valorem Tax Generated by Growth Used for the Payment of Debt					
Service Area	Cost of Growth-Related CIP	I&S Tax Levy = Annual Debt Payment [1]	Projected 10-Year Demand Veh-Mi	RWIF Credit - \$ per Veh-Mi	
1	\$ 13,891,516	\$ 1,015,630	10,933	\$ 92.90	
2	12,722,486	930,160	33,458	27.80	
3	40,395,981	2,953,410	67,078	44.03	
4	13,290,981	971,724	4,749	204.62	
5	5,086,810	371,904	3,113	119.47	
6	22,643,803	1,655,522	10,694	154.81	

[1] 20-year amortization at 4% interest rate

City of New Braunfels, Texas
2019 Roadway Impact Fee Update
Plan for Awarding the Roadway Impact Fee Credit

The credit per vehicle mile is multiplied times the ten-year cumulative total of vehicle miles of demand by service area to equal the CIP credit by service area:

New Braunfels 2019 Roadway Impact Fee Study Update						
New Roadway Vehicle-Miles and Credit per Service Area - 10 Year Impact Fee Period						
Service Area	Projected 10yr Demand (Veh-Miles)	Annual Demand (Veh-Miles)	10 YR Cumulative Demand Total	RWIF Credit - \$ per Veh-Mi	CIP Credit by Service Area	
1	10,933	1,093	60,132	\$ 92.90	\$ 5,586,263	
2	33,458	3,346	184,019	27.80	5,115,728	
3	67,078	6,708	368,929	44.03	16,243,944	
4	4,749	475	26,120	204.62	5,344,674	
5	3,113	311	17,122	119.47	2,045,565	
6	10,694	1,069	58,817	154.81	9,105,460	

Financing Costs are added to the cost of RWIF attributable to growth to determine the net cost attributable to new growth:

New Braunfels 2019 Roadway Impact Fee Study Update				
Net Cost Attributable to New Growth				
Service Area	Cost Attributable to New Growth	Net Financing Costs	Net Cost Attributable to New Growth	
1	\$ 13,891,516	\$ 3,352,772	\$ 17,244,288	
2	12,722,486	3,070,622	15,793,108	
3	40,395,981	9,749,726	50,145,707	
4	13,290,981	3,207,830	16,498,811	
5	5,086,810	1,227,722	6,314,532	
6	22,643,803	5,465,170	28,108,973	

City of New Braunfels, Texas
2019 Roadway Impact Fee Update
Plan for Awarding the Roadway Impact Fee Credit

Calculation of the maximum impact fee after the credit by service area (column I) is illustrated in the following table:

City of New Braunfels 2019 Impact Fee Study Update									
Calculation of the Maximum Impact Fee After the the Credit by Service Area									
Service Area	(A)	(B)	(C)	(D)	(E) (C) X (D)	(F)	(G) (F) - (E)	(H) (F) / (A)	(I) (G) / (A)
	Projected 10yr Demand (veh-miles)	Annual Demand (veh-miles)	Cumulative Demand Total	\$ PER VEH-MI CREDIT	CIP Credit by Service Area	Net Cost Attributable to Growth	Attributable to Growth Less Credit	Base Maximum Impact Fee	Maximum Impact Fee after Credit
1	10,933	1,093	60,132	\$ 92.90	\$ 5,586,263	\$ 17,244,288	\$ 11,658,025	\$ 1,577.27	\$ 1,066.32
2	33,458	3,346	184,019	27.80	5,115,728	15,793,108	10,677,380	472.03	319.13
3	67,078	6,708	368,929	44.03	16,243,944	50,145,707	33,901,763	747.57	505.41
4	4,749	475	26,120	204.62	5,344,674	16,498,811	11,154,137	3,474.17	2,348.73
5	3,113	311	17,122	119.47	2,045,565	6,314,532	4,268,967	2,028.44	1,371.34
6	10,694	1,069	58,817	154.81	9,105,460	28,108,973	19,003,513	2,628.48	1,777.03
Totals					\$ 43,441,633	\$ 134,105,419	\$ 90,663,785		

The CIP credit by service area (column E) is subtracted from the cost attributable to growth by service area (column F) to result in the cost attributable to growth less credit by service area (column G).

The maximum impact fee per vehicle-mile after the credit per service area (column I) is calculated by dividing the cost attributable to growth less credit (column G) divided by the projected 10-year demand (Column A).

A comparison to the base maximum impact fee and 50% reduction follows:

City of New Braunfels 2019 Impact Fee Study Update						
Comparison of the Base Maximum Impact Fee to the 50% Maximum Impact Fee and Maximum Impact fee after the Credit by Service Area						
Service Area	Base Maximum Impact Fee	Fee per Service Unit @ 50% Discount	50% Alternative	Maximum Impact Fee after the Credit	% of Base Maximum Impact Fee	After the Credit Maximum Fee per Single Family
			Maximum Fee per Dwelling Unit			Dwelling Unit
1	\$1,577.27	\$788.64	\$3,943.20	\$1,066.32	67.61%	\$5,331.60
2	472.03	236.02	1,180.10	319.13	67.61%	1,595.65
3	747.57	373.79	1,868.95	505.41	67.61%	2,527.05
4	3,474.17	1,737.09	8,685.45	2,348.73	67.61%	11,743.65
5	2,028.44	1,014.22	5,071.10	1,371.34	67.61%	6,856.70
6	2,628.48	1,314.24	6,571.20	1,777.03	67.61%	8,885.15

**City of New Braunfels, Texas
2019 Roadway Impact Fee Update
Plan for Awarding the Roadway Impact Fee Credit**

**APPENDIX
FINANCING COSTS BY SERVICE AREA**

CITY OF NEW BRAUNFELS					
SCHEDULE OF PROJECTED DEBT ISSUANCE AND NET INTEREST COST [1]					
ROADWAY AREA 1 IMPACT FEE CAPITAL IMPROVEMENTS PLAN					
FOR THE TEN YEAR PERIOD 2020 TO 2029					
AREA 1					
YEAR	YEAR	DEBT ISSUE	TOTAL CIP INTEREST EXPENSE		GROWTH RELATED
			INTEREST	INTEREST TOTAL	
			SERIES	ALL SERIES	
			2020		
1	2020	13,891,516.00	551,060.95	551,060.95	551,060.95
2	2021	-	532,292.38	532,292.38	532,292.38
3	2022	-	512,765.56	512,765.56	512,765.56
4	2023	-	492,449.86	492,449.86	492,449.86
5	2024	-	471,313.40	471,313.40	471,313.40
6	2025	-	449,323.03	449,323.03	449,323.03
7	2026	-	426,444.25	426,444.25	426,444.25
8	2027	-	402,641.16	402,641.16	402,641.16
9	2028	-	377,876.43	377,876.43	377,876.43
10	2029	-	352,111.21	352,111.21	352,111.21
		13,891,516.00	4,568,279.23	4,568,279.23	4,568,279.23
INTEREST REVENUE					
		AVG BAL	TEN YEAR PERIOD 2020-2029		GROWTH RELATED
1	2020	13,196,940.20	230,946.45	230,946.45	
2	2021	11,807,788.60	206,636.30	206,636.30	206,636.30
3	2022	10,418,637.00	182,326.15	182,326.15	182,326.15
4	2023	9,029,485.40	158,015.99	158,015.99	158,015.99
5	2024	7,640,333.80	133,705.84	133,705.84	133,705.84
6	2025	6,251,182.20	109,395.69	109,395.69	109,395.69
7	2026	4,862,030.60	85,085.54	85,085.54	85,085.54
8	2027	3,472,879.00	60,775.38	60,775.38	60,775.38
9	2028	2,083,727.40	36,465.23	36,465.23	36,465.23
10	2029	694,575.80	12,155.08	12,155.08	12,155.08
		1,215,507.65	1,215,507.65	1,215,507.65	
NET INTEREST EXPENSE				<u>3,352,771.58</u>	<u>3,352,771.58</u>

[1] Assumptions: 1) Total Area 1 CIP cost is financed by 1 bond series, 2) interest rate on bond series is 4%, 3) bond proceeds are fully expended equally over the 10 year period, and 4) the annual investment rate of return is 1.75%.

**City of New Braunfels, Texas
2019 Roadway Impact Fee Update
Plan for Awarding the Roadway Impact Fee Credit**

CITY OF NEW BRAUNFELS						
SCHEDULE OF PROJECTED DEBT ISSUANCE AND NET INTEREST COST [1]						
ROADWAY AREA 2 IMPACT FEE CAPITAL IMPROVEMENTS PLAN						
FOR THE TEN YEAR PERIOD 2020 TO 2029						
AREA 2						
YEAR	YEAR	DEBT ISSUE	TOTAL CIP INTEREST EXPENSE		GROWTH	
			INTEREST	INTEREST TOTAL	RELATED	100.00%
			SERIES	ALL SERIES		
			2020			
1	2020	12,722,486	504,687	504,687	504,687	
2	2021	-	487,498	487,498	487,498	
3	2022	-	469,614	469,614	469,614	
4	2023	-	451,008	451,008	451,008	
5	2024	-	431,650	431,650	431,650	
6	2025	-	411,511	411,511	411,511	
7	2026	-	390,557	390,557	390,557	
8	2027	-	368,757	368,757	368,757	
9	2028	-	346,077	346,077	346,077	
10	2029	-	322,480	322,480	322,480	
		12,722,486	4,183,839	4,183,839	4,183,839	
INTEREST REVENUE						
		AVG BAL	TEN YEAR PERIOD 2020-2029		GROWTH	
			INTEREST	INTEREST TOTAL	RELATED	
1	2020	12,086,362	211,511	211,511	211,511	
2	2021	10,814,113	189,247	189,247	189,247	
3	2022	9,541,865	166,983	166,983	166,983	
4	2023	8,269,616	144,718	144,718	144,718	
5	2024	6,997,367	122,454	122,454	122,454	
6	2025	5,725,119	100,190	100,190	100,190	
7	2026	4,452,870	77,925	77,925	77,925	
8	2027	3,180,622	55,661	55,661	55,661	
9	2028	1,908,373	33,397	33,397	33,397	
10	2029	636,124	11,132	11,132	11,132	
			1,113,218	1,113,218	1,113,218	
NET INTEREST EXPENSE			\$ 3,070,622	\$ 3,070,622		
[1] Assumptions: 1) Total Area 2 CIP cost is financed by 1 bond series, 2) interest rate on bond series is 4%, 3) bond proceeds are fully expended equally over the 10 year period, and 4) the investment rate of return is 1.75%.						

**City of New Braunfels, Texas
2019 Roadway Impact Fee Update
Plan for Awarding the Roadway Impact Fee Credit**

CITY OF NEW BRAUNFELS					
SCHEDULE OF PROJECTED DEBT ISSUANCE AND NET INTEREST COST [1]					
ROADWAY AREA 3 IMPACT FEE CAPITAL IMPROVEMENTS PLAN					
FOR THE TEN YEAR PERIOD 2020 TO 2029					
AREA 3					
YEAR	YEAR	DEBT ISSUE	TOTAL CIP INTEREST EXPENSE	GROWTH	
			TEN YEAR PERIOD 2020-2029	RELATED	
			INTEREST	INTEREST TOTAL	100.00%
			SERIES	ALL SERIES	
			2020		
1	2020	40,395,981	1,602,464	1,602,464	1,602,464
2	2021	-	1,547,885	1,547,885	1,547,885
3	2022	-	1,491,102	1,491,102	1,491,102
4	2023	-	1,432,025	1,432,025	1,432,025
5	2024	-	1,370,561	1,370,561	1,370,561
6	2025	-	1,306,614	1,306,614	1,306,614
7	2026	-	1,240,083	1,240,083	1,240,083
8	2027	-	1,170,865	1,170,865	1,170,865
9	2028	-	1,098,850	1,098,850	1,098,850
10	2029	-	1,023,926	1,023,926	1,023,926
		40,395,981	13,284,374	13,284,374	13,284,374
INTEREST REVENUE					
		AVG BAL	TEN YEAR PERIOD 2020-2029	GROWTH	
			RELATED		
1	2020	38,376,182	671,583	671,583	671,583
2	2021	34,336,584	600,890	600,890	600,890
3	2022	30,296,986	530,197	530,197	530,197
4	2023	26,257,388	459,504	459,504	459,504
5	2024	22,217,790	388,811	388,811	388,811
6	2025	18,178,191	318,118	318,118	318,118
7	2026	14,138,593	247,425	247,425	247,425
8	2027	10,098,995	176,732	176,732	176,732
9	2028	6,059,397	106,039	106,039	106,039
10	2029	2,019,799	35,346	35,346	35,346
			3,534,648	3,534,648	3,534,648
		NET INTEREST EXPENSE	\$ 9,749,726	\$ 9,749,726	

[1] Assumptions: 1) Total Area 3 CIP cost is financed by 1 bond series, 2) interest rate on bond series is 4%, 3) bond proceeds are fully expended equally over the 10 year period, and 4) the investment rate of return is 1.75%.

**City of New Braunfels, Texas
2019 Roadway Impact Fee Update
Plan for Awarding the Roadway Impact Fee Credit**

CITY OF NEW BRAUNFELS					
SCHEDULE OF PROJECTED DEBT ISSUANCE AND NET INTEREST COST [1]					
ROADWAY AREA 4 IMPACT FEE CAPITAL IMPROVEMENTS PLAN					
FOR THE TEN YEAR PERIOD 2020 TO 2029					
AREA 4					
YEAR	YEAR	DEBT ISSUE	TOTAL CIP INTEREST EXPENSE		GROWTH RELATED
			INTEREST SERIES	INTEREST TOTAL ALL SERIES	
2020					
1	2020	13,290,981	527,238	527,238	527,238
2	2021	-	509,281	509,281	509,281
3	2022	-	490,599	490,599	490,599
4	2023	-	471,161	471,161	471,161
5	2024	-	450,938	450,938	450,938
6	2025	-	429,899	429,899	429,899
7	2026	-	408,009	408,009	408,009
8	2027	-	385,235	385,235	385,235
9	2028	-	361,541	361,541	361,541
10	2029	-	336,889	336,889	336,889
		13,290,981	4,370,791	4,370,791	4,370,791
INTEREST REVENUE					
		AVG BAL	TEN YEAR PERIOD 2020-2029		GROWTH RELATED
1	2020	12,626,432	220,963	220,963	220,963
2	2021	11,297,334	197,703	197,703	197,703
3	2022	9,968,236	174,444	174,444	174,444
4	2023	8,639,138	151,185	151,185	151,185
5	2024	7,310,040	127,926	127,926	127,926
6	2025	5,980,941	104,666	104,666	104,666
7	2026	4,651,843	81,407	81,407	81,407
8	2027	3,322,745	58,148	58,148	58,148
9	2028	1,993,647	34,889	34,889	34,889
10	2029	664,549	11,630	11,630	11,630
			1,162,961	1,162,961	1,162,961
NET INTEREST EXPENSE			\$ 3,207,830	\$ 3,207,830	

[1] Assumptions: 1) Total Area 4 CIP cost is financed by 1 bond series, 2) interest rate on bond series is 4%, 3) bond proceeds are fully expended equally over the 10 year period, and 4) the investment rate of return is 1.75%.

**City of New Braunfels, Texas
2019 Roadway Impact Fee Update
Plan for Awarding the Roadway Impact Fee Credit**

CITY OF NEW BRAUNFELS					
SCHEDULE OF PROJECTED DEBT ISSUANCE AND NET INTEREST COST [1]					
ROADWAY AREA 5 IMPACT FEE CAPITAL IMPROVEMENTS PLAN					
FOR THE TEN YEAR PERIOD 2020 TO 2029					
AREA 5					
YEAR	YEAR	DEBT ISSUE	TOTAL CIP INTEREST EXPENSE		GROWTH
			TEN YEAR PERIOD 2020-2029	RELATED	
			INTEREST	INTEREST TOTAL	100.00%
			SERIES	ALL SERIES	
			2020		
1	2020	5,086,810	201,788	201,788	201,788
2	2021	-	194,915	194,915	194,915
3	2022	-	187,765	187,765	187,765
4	2023	-	180,326	180,326	180,326
5	2024	-	172,586	172,586	172,586
6	2025	-	164,534	164,534	164,534
7	2026	-	156,156	156,156	156,156
8	2027	-	147,440	147,440	147,440
9	2028	-	138,371	138,371	138,371
10	2029	-	128,936	128,936	128,936
		5,086,810	1,672,818	1,672,818	1,672,818
INTEREST REVENUE					
		AVG BAL	TEN YEAR PERIOD 2014-2023		GROWTH
			INTEREST	REVENUE	RELATED
1	2020	4,832,470	84,568	84,568	84,568
2	2021	4,323,789	75,666	75,666	75,666
3	2022	3,815,108	66,764	66,764	66,764
4	2023	3,306,427	57,862	57,862	57,862
5	2024	2,797,746	48,961	48,961	48,961
6	2025	2,289,065	40,059	40,059	40,059
7	2026	1,780,384	31,157	31,157	31,157
8	2027	1,271,703	22,255	22,255	22,255
9	2028	763,022	13,353	13,353	13,353
10	2029	254,341	4,451	4,451	4,451
		445,096	445,096	445,096	445,096
NET INTEREST EXPENSE			<u>\$ 1,227,722</u>	<u>\$ 1,227,722</u>	

[1] Assumptions: 1) Total Area 5 CIP cost is financed by 1 bond series, 2) interest rate on bond series is 4%, 3) bond proceeds are fully expended equally over the 10 year period, and 4) the investment rate of return is 1.75%.

**City of New Braunfels, Texas
2019 Roadway Impact Fee Update
Plan for Awarding the Roadway Impact Fee Credit**

CITY OF NEW BRAUNFELS					
SCHEDULE OF PROJECTED DEBT ISSUANCE AND NET INTEREST COST [1]					
ROADWAY AREA 6 IMPACT FEE CAPITAL IMPROVEMENTS PLAN					
FOR THE TEN YEAR PERIOD 2020 TO 2029					
YEAR	YEAR	DEBT ISSUE	TOTAL CIP INTEREST EXPENSE	GROWTH	
			TEN YEAR PERIOD 2020-2029	RELATED	
			INTEREST	INTEREST TOTAL	100.00%
			SERIES	ALL SERIES	
			2020		
1	2020	22,643,803	898,254	898,254	898,254
2	2021	-	867,661	867,661	867,661
3	2022	-	835,831	835,831	835,831
4	2023	-	802,716	802,716	802,716
5	2024	-	768,262	768,262	768,262
6	2025	-	732,417	732,417	732,417
7	2026	-	695,124	695,124	695,124
8	2027	-	656,323	656,323	656,323
9	2028	-	615,956	615,956	615,956
10	2029	-	573,957	573,957	573,957
		22,643,803	7,446,502	7,446,502	7,446,502
INTEREST REVENUE					
		AVG BAL	TEN YEAR PERIOD 2020-2029	GROWTH	
			INTEREST	RELATED	
1	2020	21,511,613	376,453	376,453	376,453
2	2021	19,247,233	336,827	336,827	336,827
3	2022	16,982,852	297,200	297,200	297,200
4	2023	14,718,472	257,573	257,573	257,573
5	2024	12,454,092	217,947	217,947	217,947
6	2025	10,189,711	178,320	178,320	178,320
7	2026	7,925,331	138,693	138,693	138,693
8	2027	5,660,951	99,067	99,067	99,067
9	2028	3,396,570	59,440	59,440	59,440
10	2029	1,132,190	19,813	19,813	19,813
			1,981,333	1,981,333	1,981,333
NET INTEREST EXPENSE			\$ 5,465,170	\$ 5,465,170	

[1] Assumptions: 1) Total Area 6 CIP cost is financed by 1 bond series, 2) interest rate on bond series is 4%, 3) bond proceeds are fully expended equally over the 10 year period, and 4) the investment rate of return is 1.75%.