

THE STATE OF TEXAS §
COUNTY OF BRAZORIA §
CITY OF MANVEL §



NOTICE OF A MEETING
MANVEL CAPITAL IMPROVEMENTS ADVISORY COMMITTEE
July 7, 2026

NOTICE IS HEREBY GIVEN
6:00 P.M.

Pursuant to Chapter 551, Title 5 of the Texas Government Code, the Texas Open Meetings Act, notice is hereby given that the Capital Improvements Advisory Committee will convene a regular meeting at the Manvel City Hall, located at 20031 Hwy 6, Manvel Tx 77578 for the purpose of discussing and if appropriate, take action with respect to the following items:

NOTE: The CIAC of the City of Manvel reserves the right to discuss any items in Closed Session whenever authorized under the Texas Open Meetings Act, Chapter 551, of the Texas Government Code. They may discuss the items on this agenda in any order.

This facility is wheelchair accessible and accessible parking spaces are available. Requests for accommodations or interpreter services must be made 48 hours prior to this meeting. Please contact the City Secretary at 281-489-0630 for further information.

Regular Session

Call To Order

Roll Call

Crystal Sarmiento, Place 1
Keatha Davenport, Place 2
Jason Hoelscher, Place 3
Matt Lawson, Place 4
Alina Rogers, Place 5

Pledge

Pledge of Allegiance and Texas Pledge: "Honor the Texas flag; I pledge allegiance to thee Texas, one state under God, one and indivisible.

Public Comments: "Comment Card" Required

o Members of the public with business before the board, NOT scheduled on the agenda as a public hearing (that have submitted a public comment card) may have three (3) minutes to address the board. o The board may not participate in any discussion and cannot vote on the subject you present unless it is listed on the agenda as an action item.

Regular Agenda

- A. Consideration and possible action to elect a Chairman.
- B. Consideration and possible action to elect a Vice Chairman.

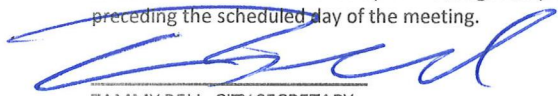
Roadway Impact Fee

- A. Receive a presentation on the cost per service unit calculations, impact fees for a roadway impact fee program, and potential fee collection considerations.
- B. Consideration and possible action to forward a recommendation to City Council on the proposed cost per service unit calculations, roadway impact fees, and fee collection methodology for the City's Roadway Impact Fee Program.

Adjourn

CERTIFICATION

I, Tammy Bell, City Secretary for the City of Manvel, do hereby certify that the foregoing Agenda of the City of Manvel is true and correct; and that I posted such notice on the bulletin board at the Manvel City Hall. A place convenient and readily accessible to the public on June 30, 2026, in accordance with the Texas Open Meetings Act (Tex. Gov't. Code §551.001 et.seq). Said notice remained posted for at least 3 business days preceding the scheduled day of the meeting.



TAMMY BELL, CITY SECRETARY
CITY OF MANVEL, TEXAS



Roadway Impact Fee Study

Cost per Service Unit/Impact Fee Calculations, Benchmarking, and Policy Considerations

July 7, 2026



Funding Mechanism for Implementing the Plan...

MANVEL
2045

Manvel Comprehensive Plan

MANVEL, TX - YOUR VOICE, OUR FUTURE



**Manvel 2045
Comprehensive Plan**

April 2026 DRAFT

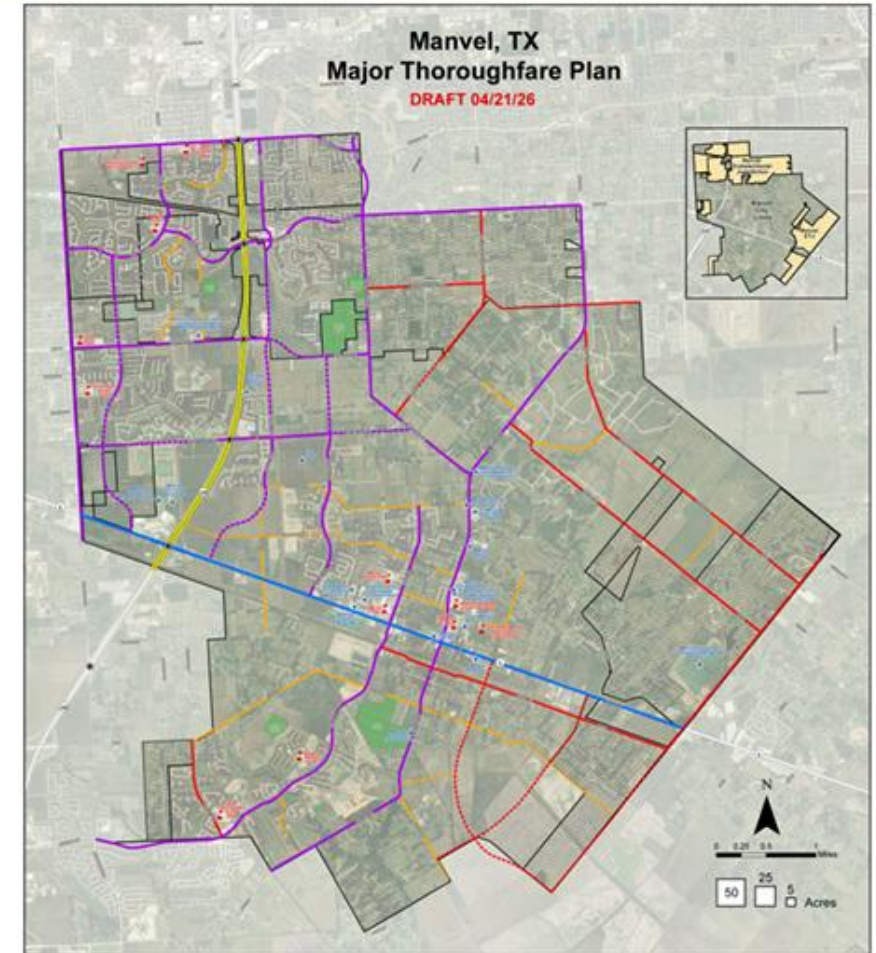


Manvel, TX

Cover

MANVEL
2045

2026 Major Thoroughfare Plan Update



- Legend**
- | | | |
|--|--|--|
| <ul style="list-style-type: none"> Manvel City Limits Manvel Extraterritorial Jurisdiction Parcel Boundary Public Facility School Park | <ul style="list-style-type: none"> Grade Separated Interchange Limited Access Highway (SH 288) Major Thoroughfare (120' ROW) Parkway (120' ROW) Proposed Parkway (120' ROW) | <ul style="list-style-type: none"> Arterial (100' ROW) Proposed Arterial (100' ROW) Collector (80' ROW) Proposed Collector (80' ROW) |
|--|--|--|
- NOTE: A Parkway with similar design characteristics, effectively functions as an Arterial class roadway.

What are Impact Fees?



Finance mechanism

Mechanism for funding the infrastructure necessary to accommodate new development



One-time fee for new development

Assessed to new development for a portion of costs related to specific capital improvements



Limited to **water, wastewater, road, and drainage facilities** per Chapter 395 TLGC

*Structured approach to assessment of fees
and fair share cost to new development*



WHO PAYS FOR GROWTH?



IMPACT FEES

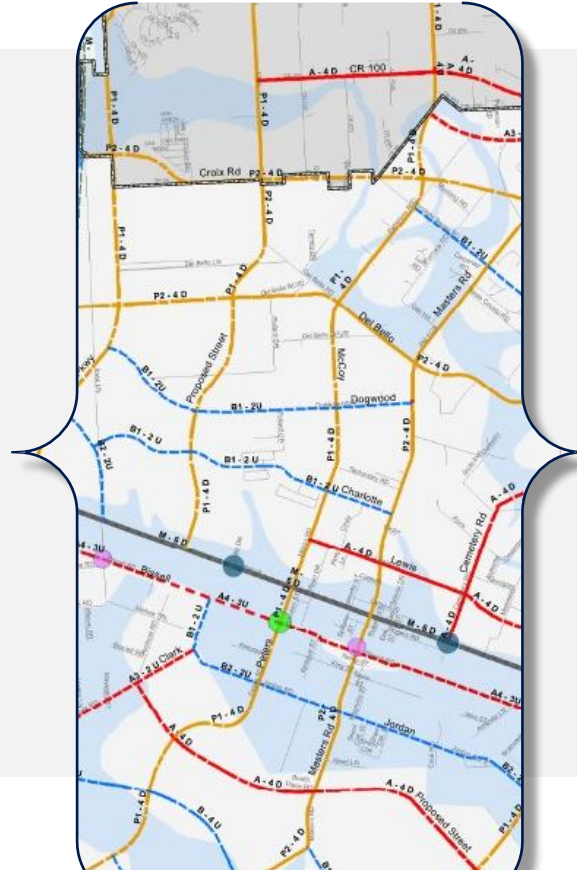
NO IMPACT FEES

IMPACT FEES

New development
shares in part of this
responsibility

A stylized illustration of a person in a dark suit and white shirt, holding a large white document with a black dollar sign (\$) on it. The person is pointing their right arm towards the right. To the left of the person is a large, light gray gear with several black triangular spikes or teeth. The background is a light gray circle with a green arrow pointing down towards the top left corner.

New development shares in part of this responsibility



NO IMPACT FEES

Existing and future
taxpayers build all
capital facilities

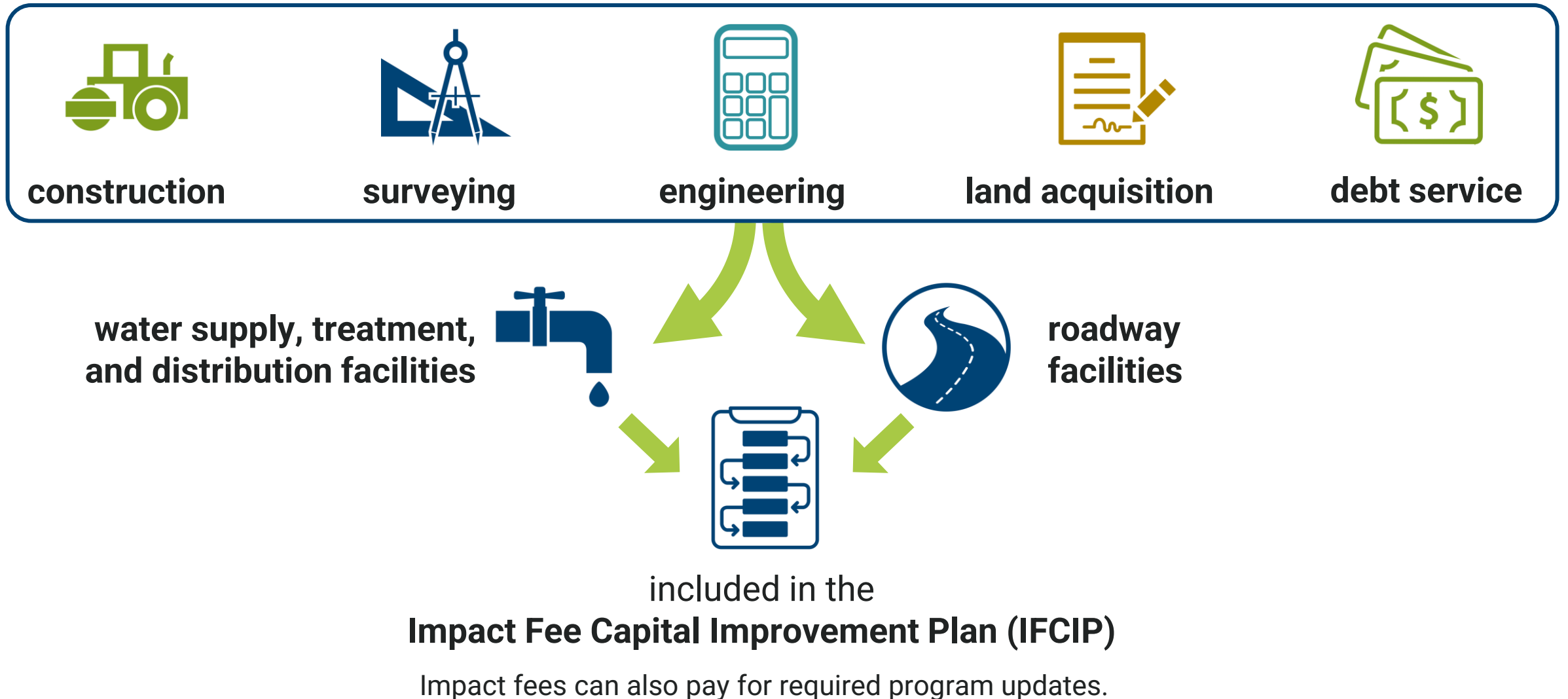
A stylized illustration of a person in a suit holding a large document with a dollar sign on it. The person is pointing towards the left. Behind them is a large, light gray gear-like shape with several triangular teeth pointing outwards. The entire illustration is set against a light gray background.

Existing and future
taxpayers build all
capital facilities



Premise: New development should share in the cost of public infrastructure required to serve it

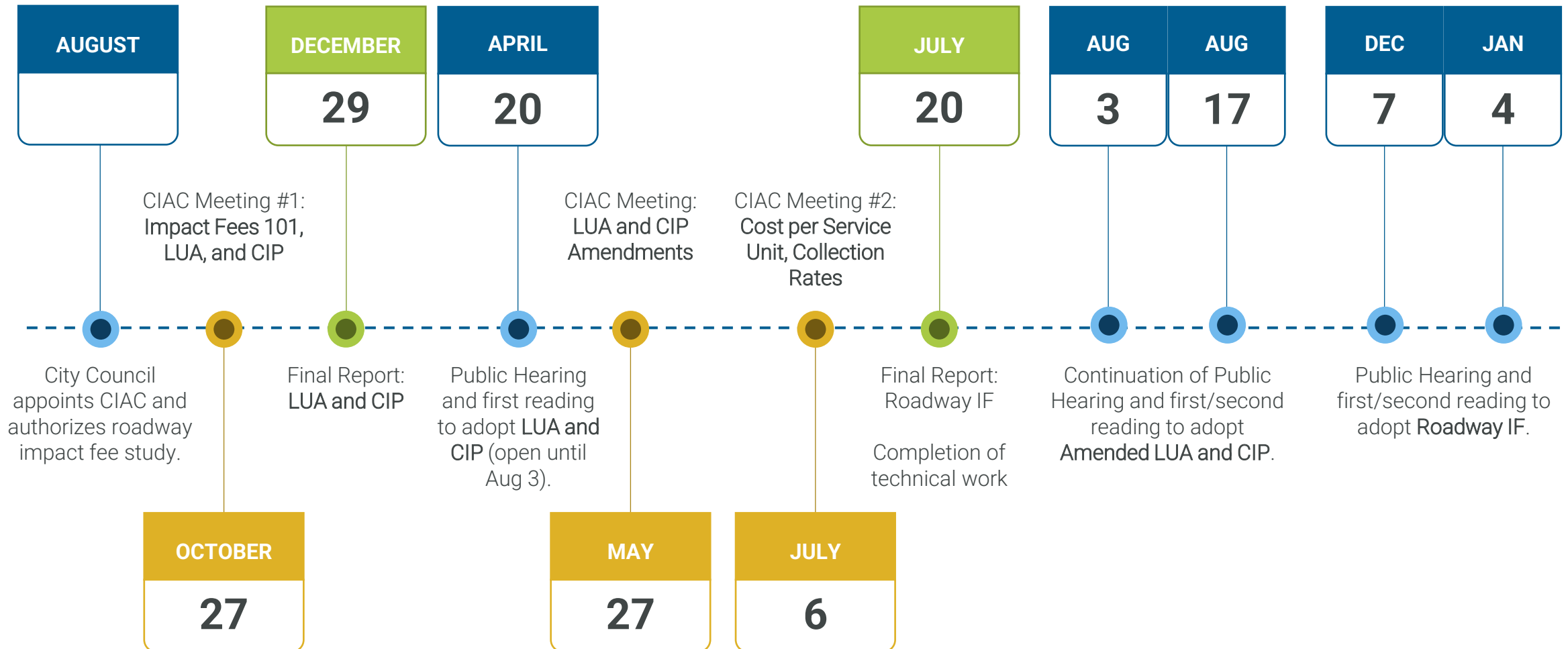
What Can Impact Fees Pay For?



Study Process

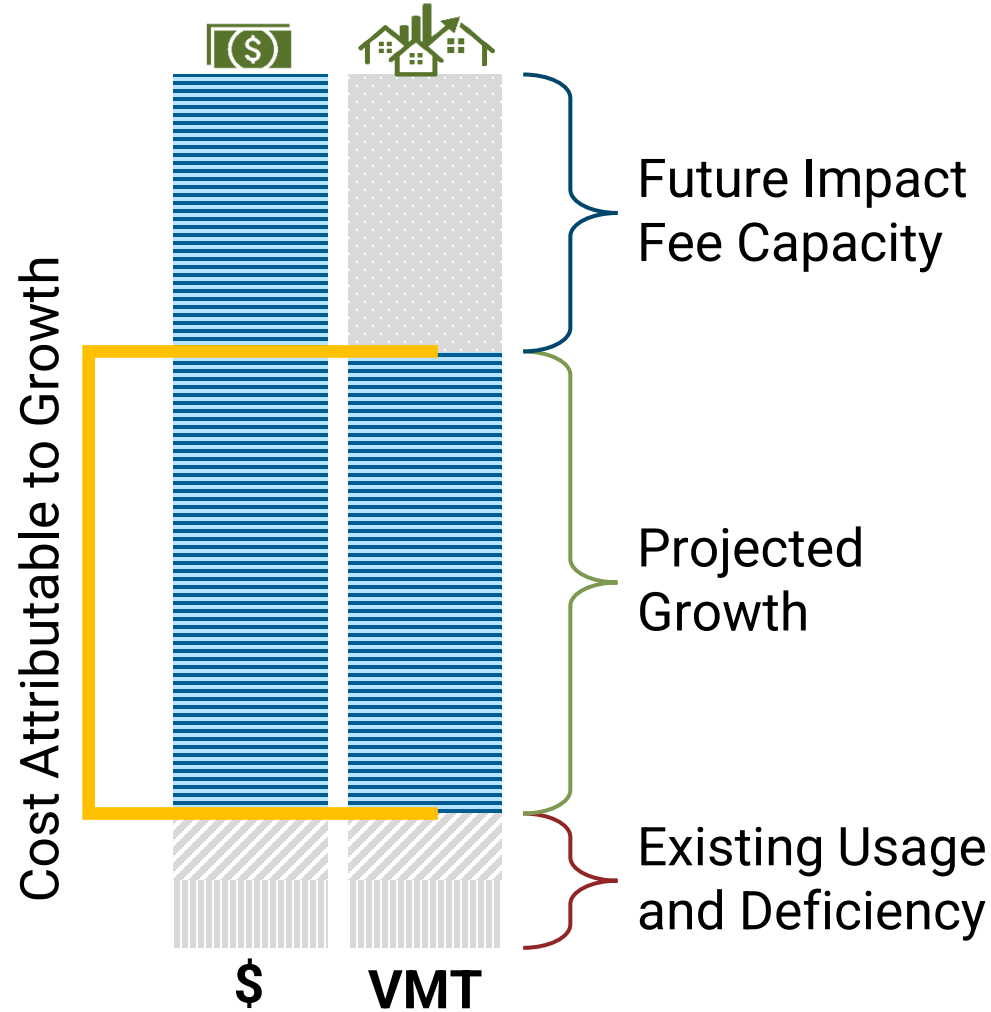


Schedule



Cost per Service Unit Calculation

Cost per Service Unit Calculation



$$\text{Impact Fee per Service Unit} = \frac{\text{Credited Cost Attributable to Growth}}{\text{Projected Growth}}$$

- Prepared by Service Area
- Defines Max Allowable that the city may charge per service unit

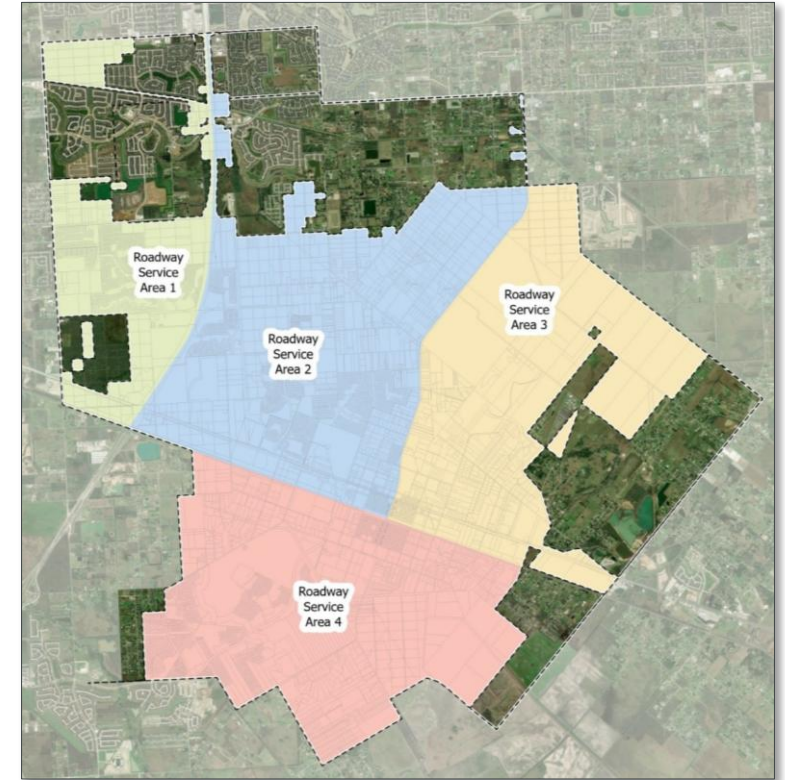
Refresher:

- Land Use Assumptions
- Roadway IFCIP

Source: Land Use Assumptions & Capital Improvements Plan Report for Roadway Impact Fees, Amended April 30, 2026.

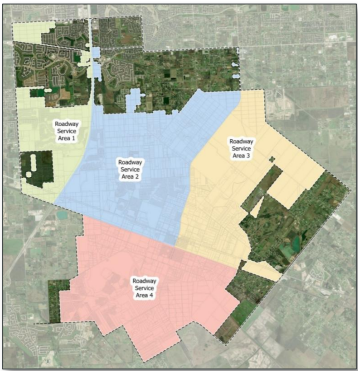
Land Use/Growth Assumptions

- 10-year growth projections by Service Area
- Based on trend/forecasted community growth
- Population/employment used to derive demand from future development
- Basis for CIP development



Growth Projections

Sources: Census Bureau (ACS), Houston-Galveston Area Council (H-GAC), known future development



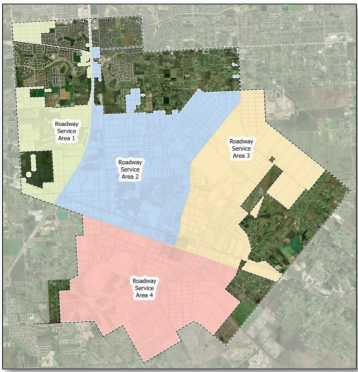
Population	2025	2035	Net Growth	CAGR
	20,050	47,300	27,250	8.96%

Total Population			
Service Area	2025	2035	Total Net Growth
1	8,357	12,230	3,873
2	6,390	14,102	7,712
3	1,362	9,598	8,236
4	3,941	11,370	7,429
Total	20,050	47,300	27,250

Roadway Impact Fee Program Development: Technical Report, June 2026, Table 3, Page 8.

Growth Projections

Sources: Census Bureau (ACS), Houston-Galveston Area Council (H-GAC), known future development



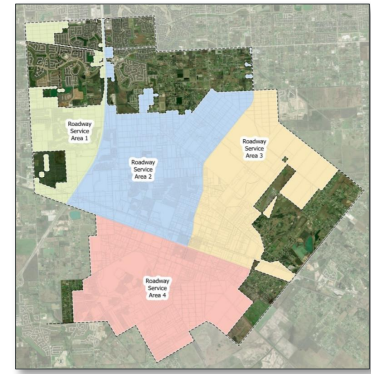
Employment	2025	2035	Net Growth	CAGR
TOTAL	12,490	27,930	15,440	8.38%

Total Employment			
Service Area	2025	2035	Net Growth
1	1,086	1,777	691
2	5,864	8,128	2,264
3	911	1,307	396
4	4,629	16,718	12,089
Total	12,490	27,930	15,440

Table 4, page 9.

10-Year Growth (VMT)

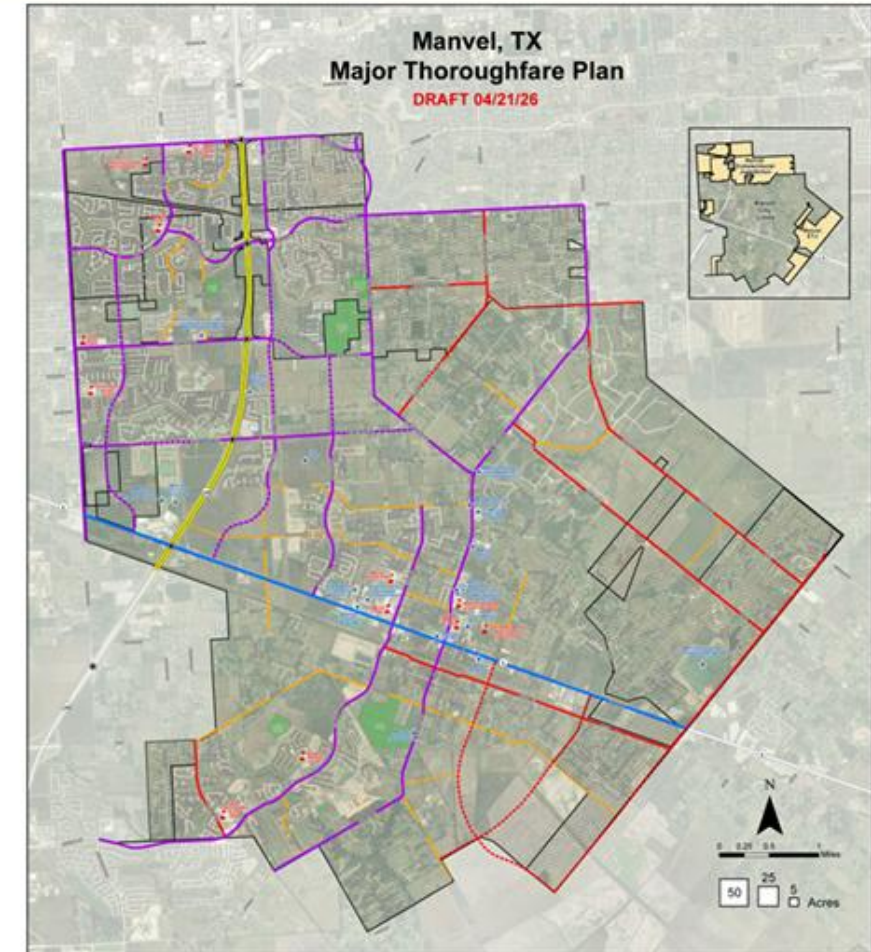
By Service Area



Service Area	Residential Growth Vehicle-Miles	Basic Emp Growth Vehicle-Miles	Service Emp Growth Vehicle-Miles	Retail Emp Growth Vehicle-Miles	Total Growth Vehicle-Miles
1	5,239	21	902	1,172	7,334
2	10,436	362	5,553	683	17,034
3	11,144	0	928	225	12,297
4	10,053	0	28,990	6,146	45,189
Total	36,872	383	36,373	8,226	81,854

Table 9, page 21.

Updated Thoroughfare Plan (Adopted May 4, 2026)

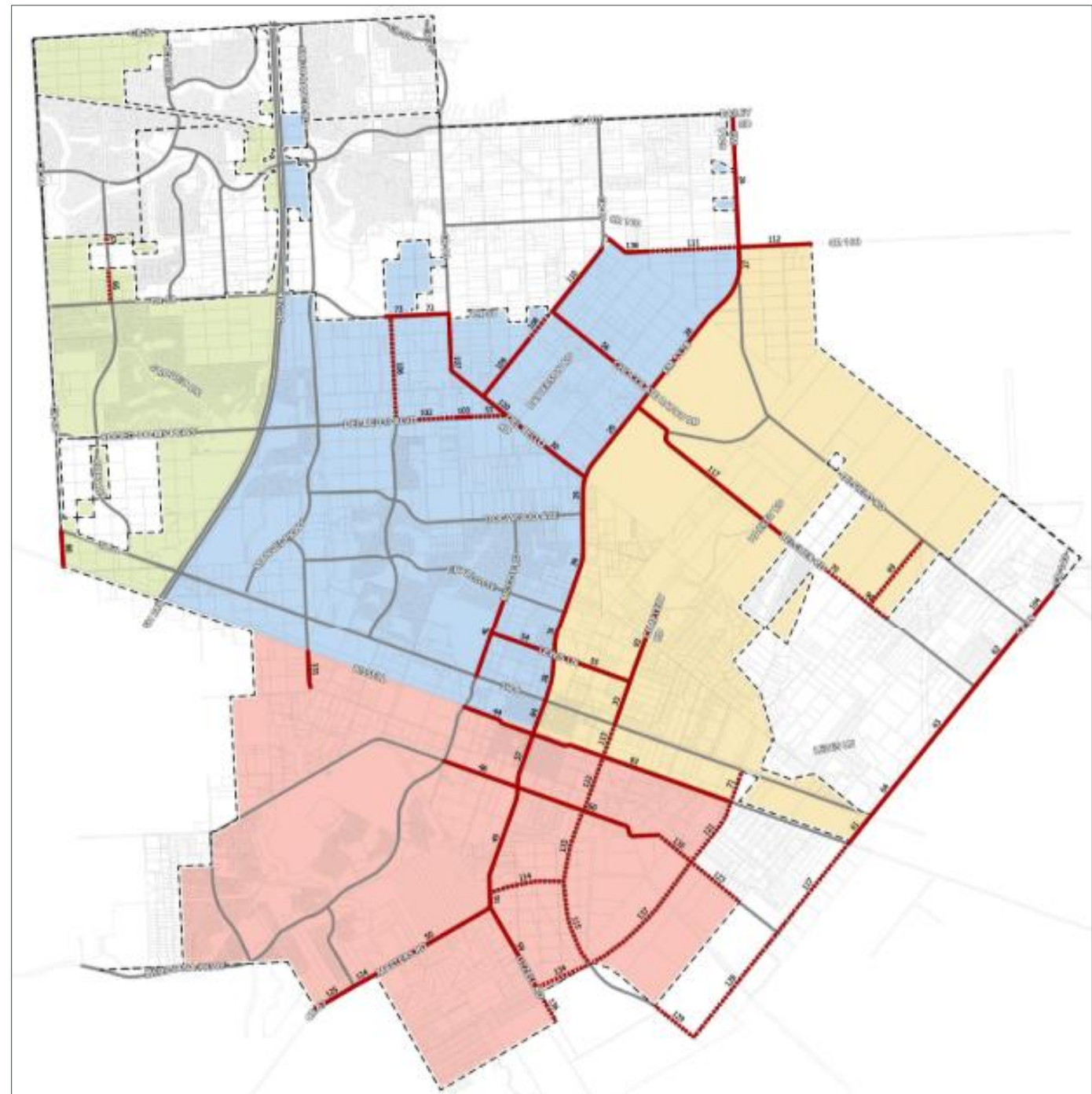


- Legend**
- | | | |
|--|--|---|
| <ul style="list-style-type: none"> Manvel City Limits Manvel Extraterritorial Jurisdiction Parcel Boundary Public Facility School Park | <p>City Thoroughfare Classifications</p> <ul style="list-style-type: none"> Grade Separated Interchange Limited Access Highway (SH 288) Major Thoroughfare (120' ROW) Parkway (120' ROW) Proposed Parkway (120' ROW) | <ul style="list-style-type: none"> Arterial (100' ROW) Proposed Arterial (100' ROW) Collector (80' ROW) Proposed Collector (80' ROW) <p>NOTE: A Parkway with similar design characteristics, effectively functions as an Arterial class roadway</p> |
|--|--|---|

Amended Road Impact Fee CIP

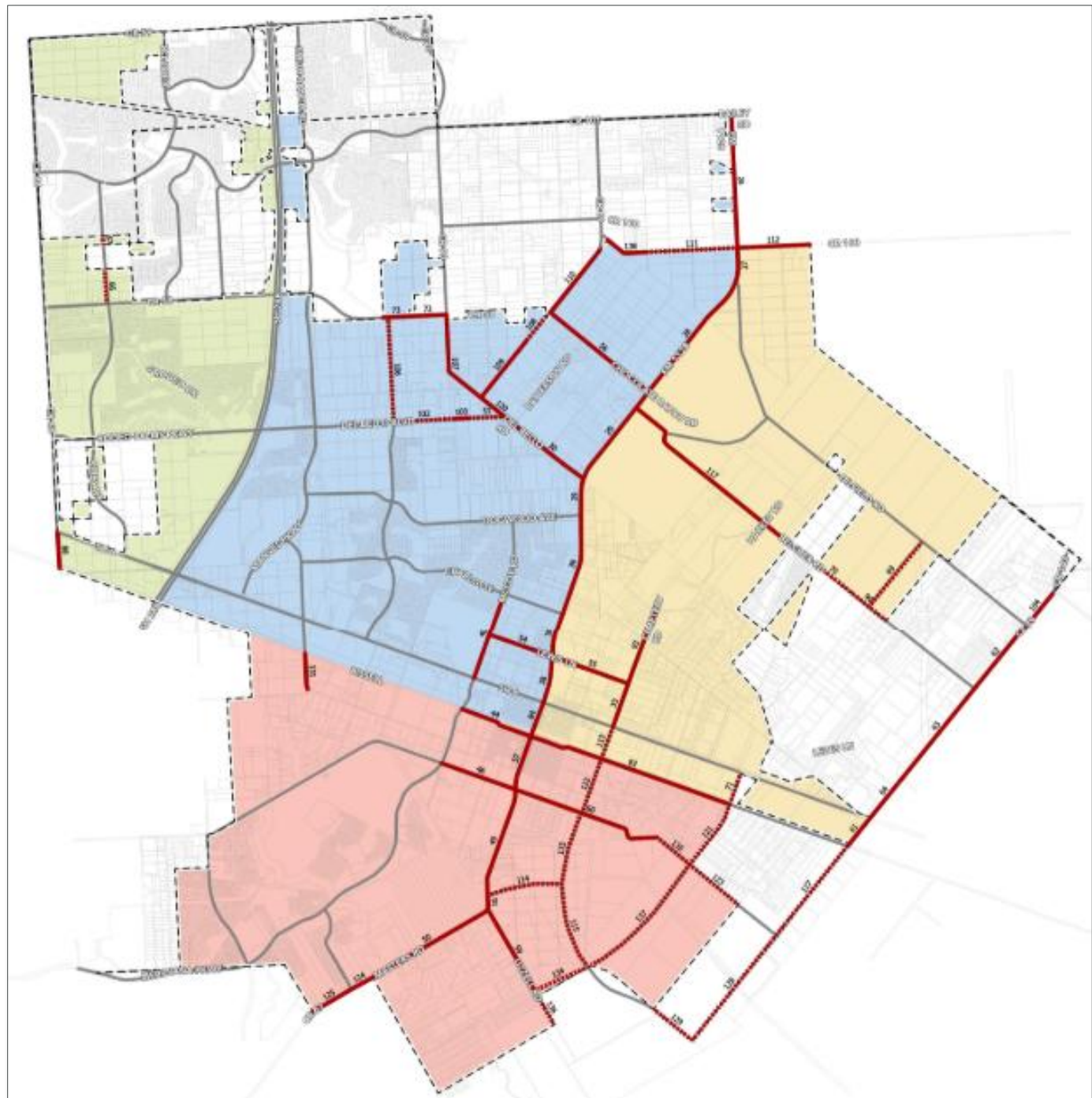
(Presented May 27, 2026)

- 73 Project segments
- Capacity enhancing projects
 - Widenings
 - New roadways
 - New lanes only



Project Costing

- 73 Projects
- Total Project Cost: \$432.9M
- Total Eligible Cost: \$426.9M
- Percent attributable to Growth: 95%-100% (SA3-95%)
- Cost Estimates: unit cost, worksheets (Report Appendix E)

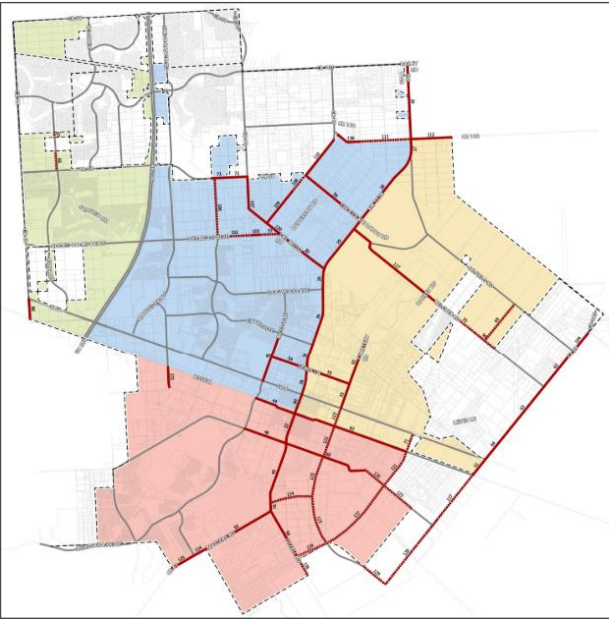


Roadway CIP Projects (Sample: SA 1 and 2)

Map Ref #	ID	Shared Service Area	Roadway	From	To	% in Service Area	Length (mi)	Existing Lanes	Eligible Improvement (added lanes)	Type	Total Impact Fee Eligible Cost
Service Area 1											
88	1-CR48	X	CR-48	SH-6	S City Limit	50%	0.27	2	2	DA	\$1,586,980
67	1-KBY-1	-	Kirby Dr (A)	City Limits	City Limits	100%	0.06	0	4	DA	\$1,109,552
66	1-KBY-2	-	Kirby Dr (B)	CR-58	City Limits	100%	0.26	0	4	DA	\$4,443,435
							0.59				\$7,139,967
Service Area 2											
56	2-CHB		Chocolate Bayou Rd	Lira Rd	FM 1128	100%	0.94	2	2	UA	\$8,129,460
138	2-OMR-1	X	Old Massey Ranch (CR-100)	330' E of Old Chocolate Bayou Rd (CR-89)	Patterson Rd	50%	0.67	2	2	DA	\$1,913,556
111	2-OMR-2	X	Old Massey Ranch (CR-100)	Patterson Rd	Masters Rd (FM 1128)	50%	0.33	0	4	DA	\$5,646,127
73	2-CRX-1		Croix Rd (CR-58)	Oak Crest Pkwy	1035' E of Oak Crest Pkwy	100%	0.20	2	2	DA	\$2,697,454
72	2-CRX-2	X	Croix Rd (CR-58)	1035' E of Oak Crest Pkwy	Del Bello Rd	50%	0.28	2	2	DA	\$1,901,698
102	2-DBB-1		Del Bello Blvd EXT A	Pollard Blvd	Pollard Drive	100%	0.45	0	4	DA	\$8,415,233
103	2-DBB-2		Del Bello Blvd	Pollard Drive	Del Bello Blvd EXT B	100%	0.12	2	2	DA	\$1,623,153
51	2-DBB-3		Del Bello Blvd EXT B	Del Bello Blvd	Del Bello Rd (CR-90)	100%	0.19	0	4	DA	\$3,562,830
107	2-DBR-1		Del Bello Rd (CR-90)	Croix Rd (CR-58)	Lira Rd	100%	0.73	2	2	DA	\$8,784,136
120	2-DBR-2		Del Bello Rd (CR-90)	Lira Rd	Patterson Rd	100%	0.32	2	2	DA	\$4,370,348
30	2-DBR-3		Del Bello Rd (CR-90)	Patterson Rd	Masters Rd (FM 1128)	100%	0.65	2	2	DA	\$8,974,558
54	2-LWS		Lewis Ln	Mccoy Rd	Masters Rd (FM 1128)	100%	0.50	2	2	UC	\$5,238,735
109	2-LIRA-1		Lira Rd	Del Bello Blvd	Lira Rd EXT	100%	0.55	2	2	DA	\$7,871,815
108	2-LIRA-2		Lira Rd EXT	Lira Rd	City Limit	100%	0.59	0	4	DA	\$9,636,792
110	2-LIRA-3	X	Lira Rd	Old Chocolate Bayou	N City Limit	50%	0.22	2	2	DA	\$1,279,285
40	2-MCC-1		Mccoy Rd	Charlotte St	SH 6	100%	0.68	2	2	DA	\$8,116,210
26	2-MSTR-1	X	Masters Rd (FM 1128)	Bailey Ave (CR-101)	Old Massey Ranch (CR-100)	50%	1.00	2	2	DA	\$6,753,127
27	2-MSTR-2	3	Masters Rd (FM 1128)	Old Massey Ranch (CR-100)	Oilfield Rd	50%	0.26	2	2	DA	\$1,746,200
28	2-MSTR-3	3	Masters Rd (FM 1128)	Oilfield Rd	Chocolate Bayou Rd	50%	1.04	2	2	DA	\$6,996,428
29	2-MSTR-4	3	Masters Rd (FM 1128)	Chocolate Bayou Rd	Dogwood Ave	50%	1.08	2	2	DA	\$7,240,316
39	2-MSTR-5	3	Masters Rd (FM 1128)	Dogwood Ave	Charlotte St	50%	0.76	2	2	DA	\$5,128,135
38	2-MSTR-6	3	Masters Rd (FM 1128)	Charlotte St	SH 6	50%	0.69	2	2	DA	\$4,599,971
84	2-MSTR-7	3	Masters Rd (FM 1128)	SH-6	Railroad	50%	0.23	2	2	DA	\$1,602,540
106	2-NEW-1		New Road 2A	Croix Rd (CR-58)	Del Bello Blvd	100%	0.78	0	4	DA	\$14,297,757
							13.26				\$136,525,863

Table 10, pages 25-27.

Roadway IFCIP: Capacity Provided and 10-Year Growth



	E	F	E / F (Max 100%)
Service Area	Net Capacity Supplied by CIP (veh-mi)	Projected 10- Year Growth (veh-mi)	Percent Of CIP Attributable to New Dev. (10-Yr.)
1	1,032	7,334	100%
2	15,716	17,034	100%
3	12,862	12,297	96%
4	21,584	45,189	100%
Total	51,194	81,854	100%

Table 12, page 29.

Cost Per Service Unit Calculation

(Cost per Vehicle-Mile)

	E	F	G = E - F	H	I = G / H
Service Area	Total Eligible CIP Costs Attributable to New Growth	Credit for Ad Valorem Taxes	Recoverable Cost of CIP and Financing	Total Projected Growth (veh-mi)	Maximum Allowable Cost per Service Unit
1	\$7,139,967	(\$596,824)	\$6,543,144	7,334	\$892
2	\$135,192,519	(\$13,652,019)	\$121,540,500	17,034	\$7,135
3	\$102,784,455	(\$21,580,123)	\$81,204,332	12,297	\$6,604
4	\$181,754,167	(\$36,605,425)	\$145,148,741	45,189	\$3,212
Total	\$426,871,108	(\$72,434,391)	\$354,436,717	81,854	

Table 15, page 32.

Cost per Service Unit and Impact Fee Calculation

Cost Per Service Unit Summary

Service Area	Max. Allowable Cost per Service Unit
1	\$892
2	\$7,135
3	\$6,604
4	\$3,212

Land Use Equivalency Table

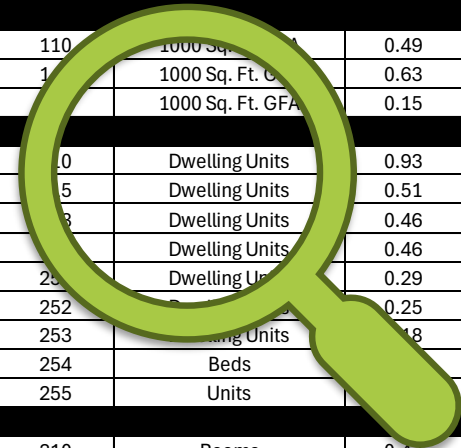
- Service Unit Generation for specific land use types
- Categorized by major land use type
 - 5 major land use classes; specific land uses within each class
- Trip Generation
 - Institute of Transportation Engineers, 12th Ed. or local rates, if available
 - PM Peak Hour by typical development unit
(i.e., Residential = D.U.; Office, Retail, Industrial = 1000 GFA)
 - Adjusted for pass-by and diverted trips
- Trip Length
 - Travel model data (H-GAC, NHTS)
 - Adjusted to account ½ of trip

**Major Land Use
Categories**
Residential
Office
Commercial
Industrial
Institutional



Roadway Service Unit Equivalency Table (Clipped Image)

Land Use Description	ITE Code	Development Unit	PM Peak Hour Trip Gen Rate Adjusted	Adjusted Trip Length (mi)	Service Unit Equivalency
Industrial					
General Light Industrial	110	1000 Sq. Ft. GFA	0.49	4.74	2.32
Manufacturing	140	1000 Sq. Ft. GFA	0.63	4.74	2.99
Warehouse	150	1000 Sq. Ft. GFA	0.15	4.74	0.71
Residential					
Single-Family Detached Housing	210	Dwelling Units	0.93	4.20	3.91
Single-Family Attached Housing	215	Dwelling Units	0.51	4.20	2.14
Affordable Housing - Income Limits	223	Dwelling Units	0.46	4.20	1.93
Mobile Home Park	240	Dwelling Units	0.46	4.20	1.93
Senior Adult Housing - Single-Family	251	Dwelling Units	0.29	3.81	1.10
Senior Adult Housing - Multifamily	252	Dwelling Units	0.25	3.81	0.95
Congregate Care Facility	253	Dwelling Units	0.18	3.81	0.69
Assisted Living	254	Beds	0.24	3.81	0.91
Continuing Care Retirement Community	255	Units	0.19	3.81	0.72
Lodging					
Hotel	310	Rooms	0.47	3.03	1.42
All Suites Hotel	311	Rooms	0.34	3.03	1.03



Land Use Description	ITE Code	Development Unit	PM Peak Hour Trip Gen Rate Adjusted	Adjusted Trip Length (mi)	Service Unit Equivalency
Industrial					
General Light Industrial	110	1000 Sq. Ft. GFA	0.49	4.74	2.32
Manufacturing	140	1000 Sq. Ft. GFA	0.63	4.74	2.99
Warehouse	150	1000 Sq. Ft. GFA	0.15	4.74	0.71
Residential					
Single-Family Detached Housing	210	Dwelling Units	0.93	4.20	3.91
Single-Family Attached Housing	215	Dwelling Units	0.51	4.20	2.14
Affordable Housing - Income Limits	223	Dwelling Units	0.46	4.20	1.93
Mobile Home Park	240	Dwelling Units	0.46	4.20	1.93
Senior Adult Housing - Single-Family	251	Dwelling Units	0.29	3.81	1.10
Senior Adult Housing - Multifamily	252	Dwelling Units	0.25	3.81	0.95
Congregate Care Facility	253	Dwelling Units	0.18	3.81	0.69
Assisted Living	254	Beds	0.24	3.81	0.91
Continuing Care Retirement Community	255	Units	0.19	3.81	0.72
Lodging					
Hotel	310	Rooms	0.47	3.03	1.42
All Suites Hotel	311	Rooms	0.34	3.03	1.03

Sample Impact Fee Calculation

ROADWAYS - A Two Step Process:

Step 1: Determine number of service units (vehicle-miles) generated by the development using the equivalency table.

No. of Development
Units (e.g., sq. ft)

x

Vehicle-miles
per development unit

=

Development's
Vehicle-miles

Step 2: Calculate the impact fee based on the fee per service unit for the roadway service area where the development is located.

Development's
Vehicle-miles

x

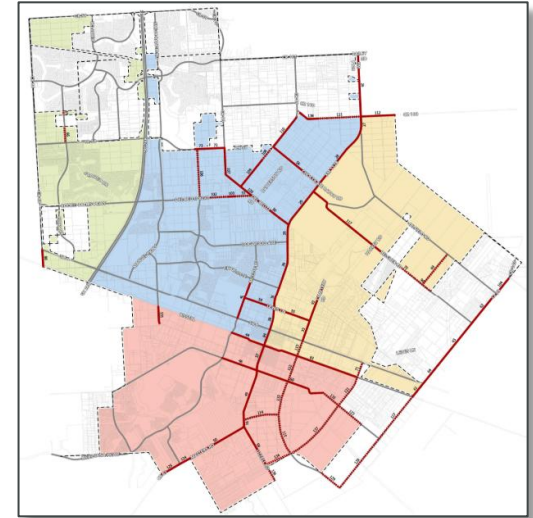
Cost per
Vehicle-mile

=

Impact Fee due
from Developer

Example Impact Fee Calculation

Example: Development located in Service Area 4 with collection rate for Roads of \$3,212 per vehicle-mile.



1 Single-Family Dwelling

Roads: 1 dwelling unit x 3.91 veh-miles/dwelling unit = 3.91 veh-miles
3.91 veh-miles x \$3,212/veh-mile = \$12,558.00

Total Road Impact Fee: \$12,558.00

Cost Per Service Unit Summary

Service Area	Max. Allowable Cost per Service Unit
1	\$892
2	\$7,135
3	\$6,604
4	\$3,212

Impact Fee Policy Considerations



- Across the board percentage
- Uniform Fee (\$ per SF residence)
- Residential vs. Non-residential
- Special Considerations
 - Incremental Increases
 - Targeted Policy

Technical

Definition of Max.
Assessable Fee
per service unit

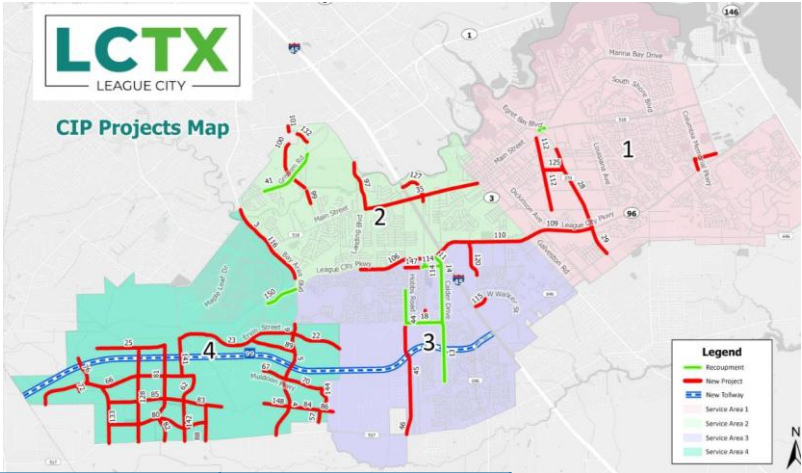
Policy

Identification of
Policy Driven
Collection Rate

Collection Approach: League City (2018)

Service Area	Max. Allowable Cost per Service Unit	Residential Single Family Collection Rate	Residential Non-Single Family Collection Rate	Non-Residential Collection Rate
1	\$892	\$323	\$323	\$323
2	\$7,135	\$1,120	\$3,632	\$908
3	\$6,604	\$1,153	\$1,153	\$865
4	\$3,212	\$1,120	\$1,120	\$865

Collection Approach: League City (2024)



Serv. Area	2018 Credited Max Allowable Cost per Service Unit	2024 Credited Max Allowable Cost per Service Unit	Residential Single-Family Collection Rate	Residential Non-Single-Family Collection Rate	Non-Residential Collection Rate
1	\$323	\$1,172	\$750/\$1,172	\$1,172	\$865
2	\$3,632	\$2,056	\$1,671	\$2,056	\$865
3	\$1,153	\$1,671	\$1,671	\$1,671	\$865
4	\$1,120	\$1,842	\$1,671	\$1,842	\$865

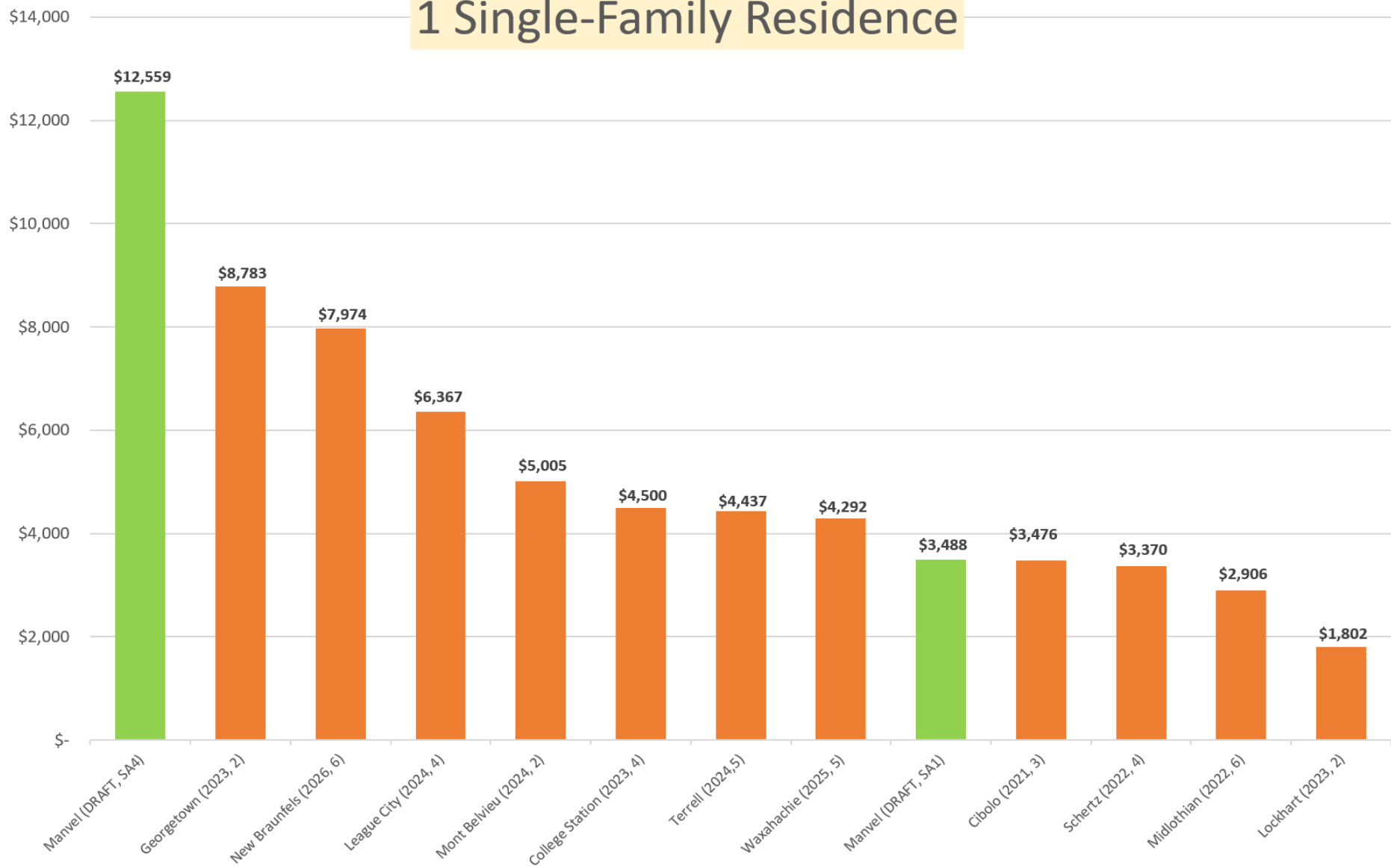
Benchmarking

Roadway Impact Fee Per Development Unit: Typical Land Uses (Service Area 4; \$/VM: \$3,212)

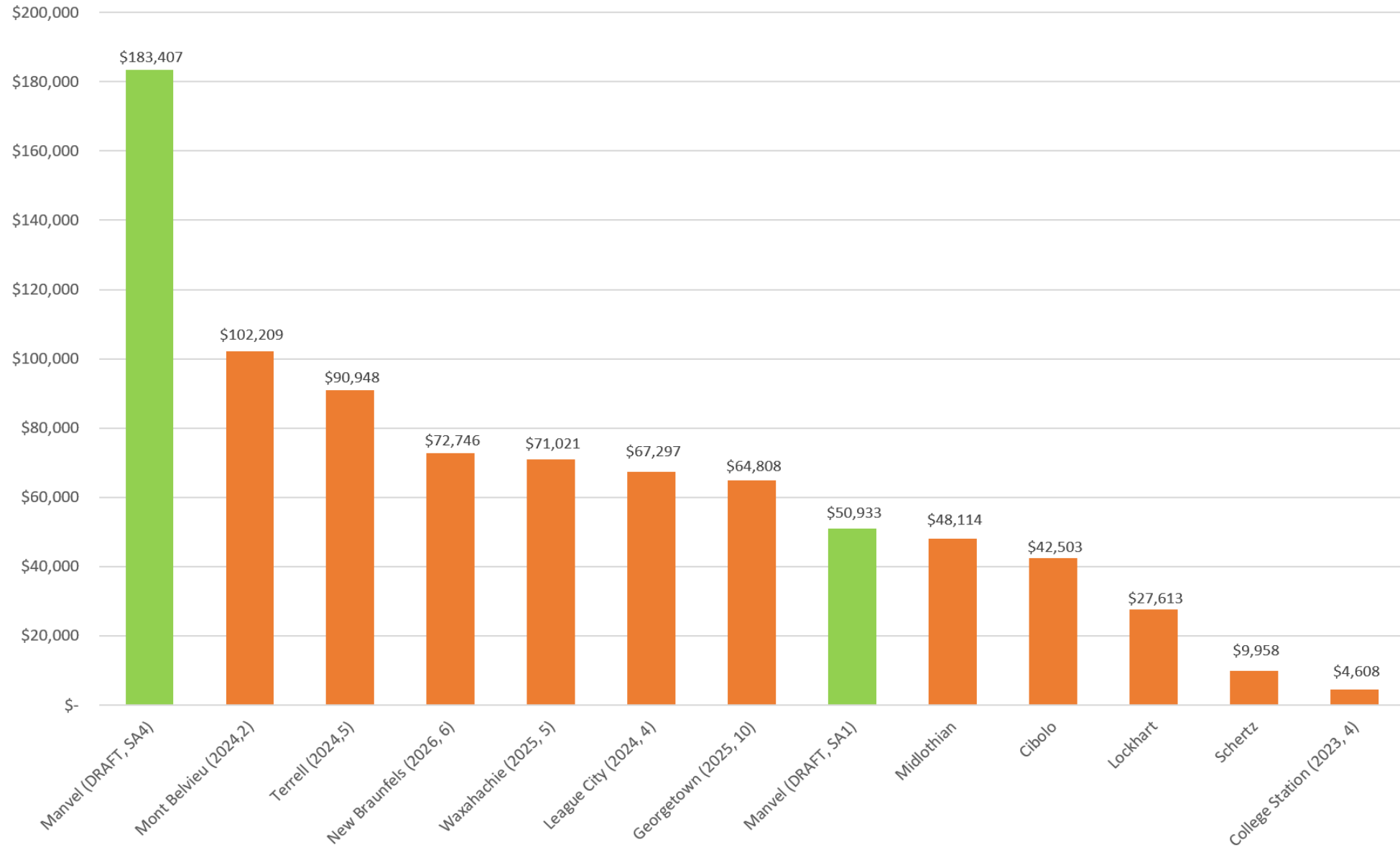
ITE Land Use	ITE Code	Development Unit	Size	Service Unit Equivalency	Fee
General Light Industrial	110	1,000 Sq Ft GFA	100,000 sq ft	2.32	\$745,193
Single-family detached housing	210	Dwelling Units	1 unit	3.91	\$12,558
General Office	720	1,000 Sq Ft GFA	10,000 sq ft	5.71	\$183,407
Shopping Plaza w/Supermarket	821	1,000 Sq Ft GFA	50,000 sq ft	9.69	\$1,556,233
Fast Food Restaurant	934	1,000 Sq Ft GFA	1,500 sq ft	5.57	\$17,891

Service Area	Max. Allowable Cost per Service Unit
1	\$892
2	\$7,135
3	\$6,604
4	\$3,212

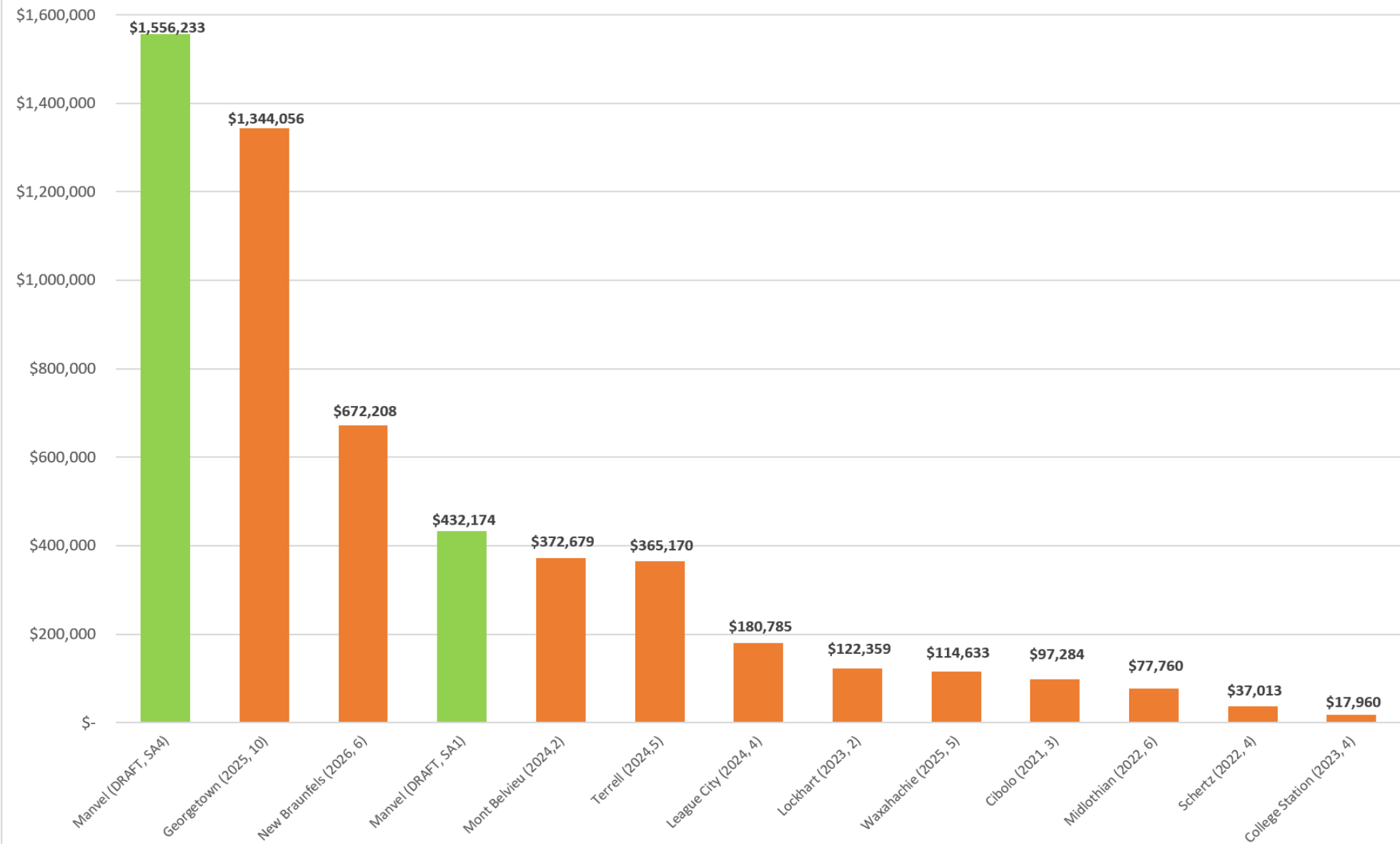
DRAFT Road Impact Fee
1 Single-Family Residence



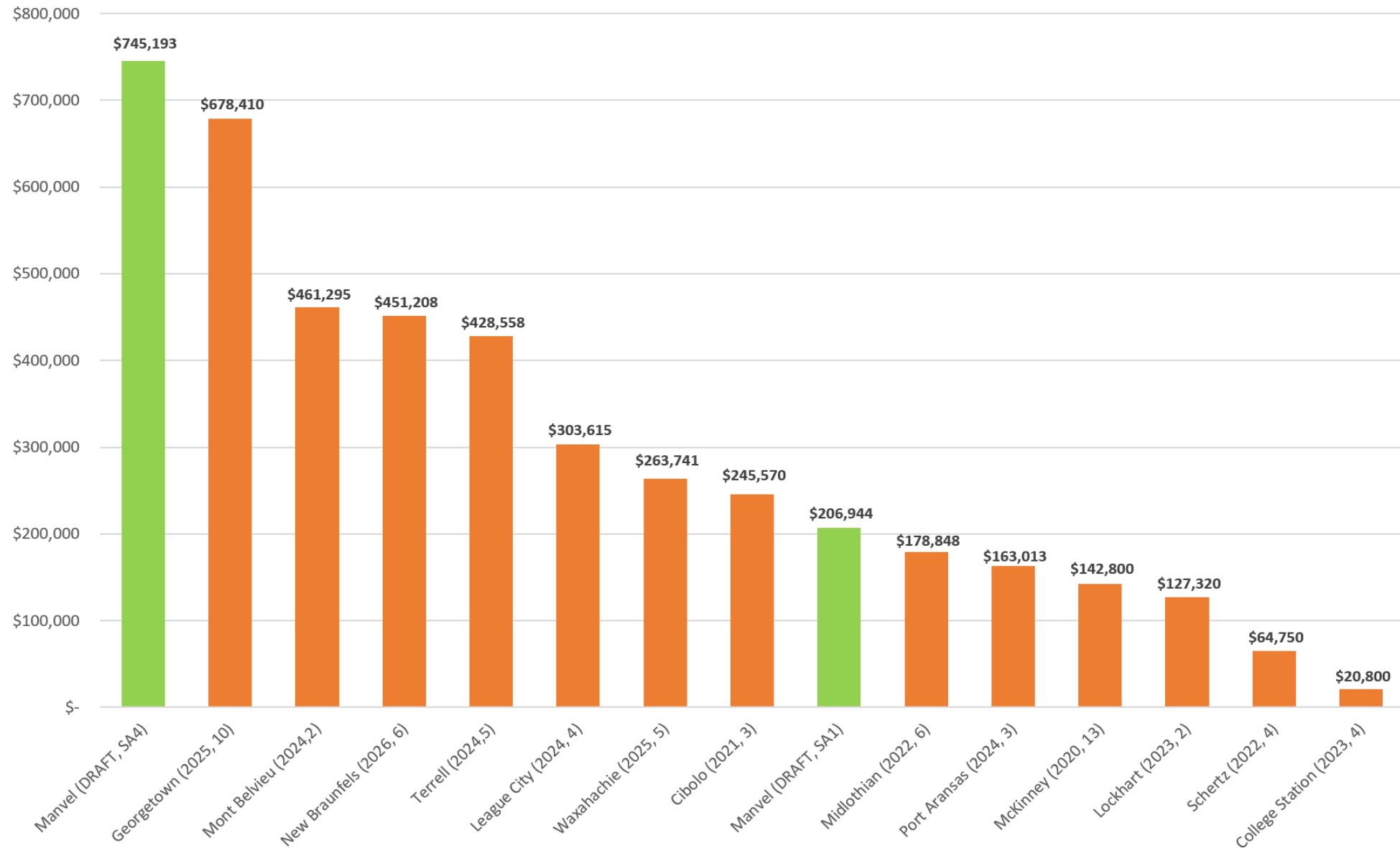
DRAFT Road Impact Fee 50,000 Sq. ft. General Office



DRAFT Road Impact Fee
50,000 Sq. Ft. Shopping Center



DRAFT Road Impact Fee 100,000 Sq. ft. Gen. Light Industrial



Impact Fee Policy Considerations



- Across the board percentage
- Uniform Fee (\$ per SF residence)
- Residential vs. Non-residential
- Special Considerations
 - Incremental Increases
 - Targeted Policy

Technical

Definition of Max.
Assessable Fee
per service unit

Policy

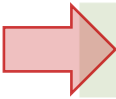
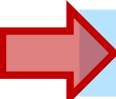
Identification of
Policy Driven
Collection Rate

Cost Per Service Unit Summary

Service Area	Max. Allowable Cost per Service Unit
1	\$892
2	\$7,135
3	\$6,604
4	\$3,212

CIAC Next Steps and Action Items

Schedule

	June 25	<u>CIAC Meeting #2</u> : Impact Fee calculations, potential collection rates and benchmarking. LUA/CIP amended letter signature	CIAC
	July 20	Impact Fee Report to City Staff (for use with Resolution calling for Public Hearing)	FNI
	July 24	Amended CIAC written comments to LUA/CIP to City Secretary/City Council (<i>before</i> 5th business day of the PH)	CIAC
	Aug 3	Public Hearing (cont.) on LUA and CIP; 1st Reading of Ordinance adopting LUA/CIP (<i>adoption within 30 days of PH</i>)	City Council
	Aug 17	LUA and CIP; 2nd Reading of Ordinance adopting LUA/CIP (<i>adoption within 30 days of PH</i>)	City Council
	Aug 17	Resolution by City Council establishing Public Hearing to consider possible road impact fee; report available to public.	City Council
	October 18	Published Notice of Public Hearing on impact fee (before 30 th day before PH)	City Staff
	November 23	CIAC filing of written comments to City Secretary/City Council (<i>before</i> 5th business day of the PH)	CIAC
	December 7	Public Hearing to consider/adopt Impact Fees (affirmative vote or 2/3 of members); 1st Reading of Ordinance	City Council
	January 4, 2027	2nd Reading of Ordinance (<i>adoption within 30 days of PH</i>)	City Council

Next Steps

July 7, 2026

Today

- CIAC Meeting #3: Discuss impact fee calculations, benchmarking, and recommendations

November 23, 2026

CIAC Action

- Provide a written recommendation to City Council road impact fee rates

December 7, 2026

- Public hearing to consider adoption of road impact fees

Action Items:

- Consider Road Impact Fees and Collection Rate (Today)
- Written Recommendation to City (due by November 23, 2026)
 - To be provided to City Council for Public Hearing consideration

Q&A Session





Thank You!

Roadway Impact Fee Study

July 9, 2026



ROADWAY IMPACT FEE PROGRAM DEVELOPMENT: TECHNICAL REPORT

DRAFT

June 2026

Prepared for:



Prepared by:



FREESE AND NICHOLS, INC.

12770 Merit Drive, Ste. 900
Dallas, Texas 75251
214-217-2200

FNI Project Number: MNV25505

ROADWAY IMPACT FEE PROGRAM DEVELOPMENT: TECHNICAL REPORT

DRAFT
June 2026

Prepared for:



DRAFT
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- Appendix B:** Existing Roadway Capacity Analysis
- Appendix C:** Roadway IFCIP-Eligible Service Units of Supply
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List of Abbreviations

Abbreviation	Full Nomenclature
ACS	American Community Survey
CIP	Capital Improvement Plan
CAGR	Compound Annual Growth Rate
FNI	Freese and Nichols, Inc.
GFA	Gross Floor Area
GLA	Gross Leasable Area
H-GAC	Houston-Galveston Area Council
ITE	Institute for Transportation Engineers
LUA	Land Use Assumptions
NAICS	North American Industry Classification System
City	City of Manvel
TLGC	Texas Local Government Code
TAZ	Traffic Analysis Zone
Veh-Mi	Vehicle-Miles, the service unit for roadway fees

EXECUTIVE SUMMARY

Purpose and Methodology

The Land Use Assumptions and Capital Improvement Plan (CIP) Report establishes the analytical foundation for roadway impact fees in the City of Manvel, Texas, in accordance with Chapter 395 of the Texas Local Government Code (TLGC). The report incorporates the previously approved growth projections, service areas, and roadway capital improvements (Land Use Assumptions and Capital Improvements Plan Report for Roadway Impact Fees, January 2026, Amended, April 30, 2026) necessary to accommodate development through a ten-year planning horizon to 2035.

Additionally, it presents the calculation of service units, service unit equivalents, and the resulting maximum allowable cost per service unit for roadway impact fees. The methodology ensures that impact fees do not exceed the proportionate share of roadway capacity consumed by new development and that collected revenues are expended in accordance with statutory limitations.

The roadway impact fee program has also been developed in compliance with the administrative and procedural requirements of Chapter 395, including review by a Capital Improvements Advisory Committee, public notice, and a two-step public hearing process before the City Council.

Land Use Assumptions (Growth Projections)

A key component at the outset of the development of the impact fees is the establishment of land use assumptions (LUA) that address growth and development over a 10-year planning period (TLGC Section 395.001(5)). Growth and future development projections were formulated based on assumptions pertaining to the type, location, quantity, and timing of various future land uses within the community. These LUAs, which include population and employment projections, served as the basis for the preparation of impact fee CIP (IFCIP). Using data from U.S. Census Bureau American Community Survey (ACS), the Houston-Galveston Area Council (H-GAC), the City future land use plan, water and wastewater service connection data, and input from City staff, Freese and Nichols, Inc. (FNI) developed growth projections to estimate travel demand for the planning period.

The City's population is projected to grow from approximately 20,050 in 2025 to 47,300 by 2035, while employment is expected to increase from 12,490 to 27,930 over the same period. These population and employment projections—8.96% and 8.38% compound annual growth, respectively—reflect the continuation of moderate residential expansion and commercial development consistent with the City's Comprehensive Plan.

Roadway Impact Fee Analysis

Capital improvements identified for the roadway impact fee program are rooted in the City's Thoroughfare Plan, capital improvement planning, city staff input, and 10-year land use assumptions.

Vehicle-miles of travel in the PM peak hour were determined to be the most effective service unit for calculating and assessing impact fees. Vehicle-miles establish a relationship between the intensity of land development and the demand on the roadway system using published trip generation data and average trip length. The PM peak hour is used as a more precise approach to determining capacity, utilization, and adequacy, and it is typically used for roadway design.

Projected growth, expressed in terms of vehicle-miles over the 10-year planning period, was based on population and employment data developed as part of land use assumptions. Based on this growth, the projected vehicle-miles of demand generated in the 10-year period was calculated to be **81,854** veh-mi, largely driven by residential, retail industry, and service industry growth. This is shown in **Table 1**.

Table 1: 10-Year Projected Vehicle-Miles of New Demand

Service Area	Total Growth Vehicle-Miles
1	7,334
2	17,034
3	12,297
4	45,189
Total	81,854

Projects identified in the program include both new roadways and roadway widenings and are defined as Arterial or Collector Class facilities in the current official City Thoroughfare Plan. Projects identified in the impact fee CIP reflect new system capacity enhancements and are aimed at facilitating continued growth in the City. Cost estimates for new projects include construction, engineering, right-of-way, and debt service on an individual project basis.

The proposed Roadway Impact Fee-Eligible CIP includes **73** eligible new project segments encompassing approximately **51,349** veh-mi of new capacity and totaling **\$432,927,004**. In service areas 1, 2, and 4, 100% of the capacity provided by the CIP is necessitated due to growth over the next decade. In service area 3, 96% of the CIP capacity is attributable to future growth, resulting in an overall program total of **\$426,871,108** in projects that are impact fee eligible. State legislation requires that a credit be applied for the portion of ad-valorem tax and utility service revenues generated by new service units during the program period that is used for payment of improvements, or a credit equal to 50% of the total projected cost of implementing a roadway impact fee capital improvements program be given. A detailed credit analysis determined credits for Service areas 1, 2, 3, and 4 to be **8.3%**, **10.1%**, **21.0%**, and **20.1%** respectively. Applying total

credit value of **\$72,434,391** to the CIP, the credited recoverable CIP projects total **\$354,436,717** attributable to new development over the 10-year planning period.

The cost per service unit was calculated based on the cost attributable to new development and the projected 10-year demand. After applying the calculated credit to the CIP cost, the maximum allowable cost per service unit was determined.

The determination of fees due from new development is based upon the size of development, its associated service unit generation (equivalency table) and the cost per service unit derived and/or the adopted collection rate for each service area. The impact fee calculation is detailed in **Table 2**.

Table 2: Maximum Roadway Impact Fee Calculation

	Service Area 1	Service Area 2	Service Area 3	Service Area 4
Total Eligible Capital Improvement Costs	\$7,139,967	\$135,192,519	\$107,507,007	\$181,754,167
Percent CIP Attributable to Growth ⁽¹⁾	100.00%	100.00%	95.61%	100.00%
Total Eligible CIP Costs Attributable to Growth ⁽²⁾	\$7,139,967	\$135,192,519	\$102,784,455	\$181,754,167
Credit-Adjusted Eligible Costs ⁽³⁾	\$6,543,144	\$121,540,500	\$81,204,332	\$145,148,741
Growth in Service Units ⁽⁴⁾	7,334	17,034	12,297	45,189
Maximum Credited Fee per Service Unit ⁽⁵⁾	\$892	\$7,135	\$6,604	\$3,212

(1) Percent of CIP Necessitated by Growth.

(2) Cost of CIP Necessitated by Growth.

(3) Per Chapter 395, cost of the CIP after calculated credit adjustment.

(4) Per 10-Year Land Use Assumptions.

(5) Total Credit-Adjusted Eligible Costs divided by the Growth in Service Units.

1.0 PURPOSE & METHODOLOGY

Codified in Chapter 395 of the Texas Local Government Code (TLGC), the legislation authorizes cities to collect a one-time fee from new developments to finance new construction or expansion of capital improvements such as roads, water and wastewater treatment and distribution facilities, and drainage facilities. The law stipulates that all fees collected from new development must not exceed the maximum amount calculated by the methodology described therein. The law further contains specific requirements for program development, administration, fee assessment, and collection.

The first phase in the process of development of this impact fee program was the establishment of land use assumptions (LUAs) and a capital improvement plan (CIP) to address growth and development for a 10-year planning period (TLGC Section 395.001(5)). The land use assumptions, which include population and employment projections, served as the basis for preparing impact fee capital improvement plans for roadway facilities. This phase was completed with the adoption of the LUA/CIP report in April 2026.

This report summarizes the contents of the LUA/CIP report and outlines the calculation of the maximum allowable cost per service unit.

Methodology

The data in this report has been formulated using reasonable and generally accepted planning principles for the preparation of impact fee systems in Texas and meets the requirements of the TLGC Section 395 for the establishment of impact fees. For the formulation of this program, the following work tasks were undertaken:

1. **Service area structure** was defined for the roadway impact fee system.
2. Current and historical population and employment data were gathered from the U.S. Census Bureau American Community Survey (ACS), the Houston-Galveston Area Council (H-GAC), the City future land use plan, and input

Impact Fee revenue can pay for:

Construction contract price

Surveying and engineering fees

Land acquisition costs

Fees paid to the consultant preparing or updating the impact fee capital improvement plan (CIP)

Projected interest charges and other finance costs for projects identified in the CIP

Impact Fee revenue cannot pay for:

Construction, acquisition, or expansion of public facilities or assets other than those identified on the CIP

Repair, operation, or maintenance of existing or new capital improvements

Upgrading, updating, expanding, or replacing existing capital improvements to serve existing development to meet stricter safety, efficiency, environmental, or regulatory standards

Upgrading, updating, expanding, or replacing existing capital improvements to provide better service to existing development

Administrative and operating costs of the political subdivision

Principal payments and interest or other finance charges on bonds or other indebtedness, except as allowed above.

from City staff. These served as a basis for future growth (**land use assumptions**). A compound annual growth rate (CAGR) of 8.96% was recommended for 10-year population growth in the roadway service area (City Limits). A CAGR of 8.38% was recommended for 10-year employment growth in the roadway service area (City Limits).

3. **Vehicle-miles of travel** in the evening (PM) peak hour was identified as the service unit of measure for analyses and roadway impact fee calculations.
4. An **existing conditions analysis** was conducted on Manvel thoroughfares for lane geometries, roadway classifications and segment lengths. New arterial and/or collector streets not previously assessed were added to the program database. Traffic volume data collected in November 2025 was used to determine roadway capacity, current utilization, and any capacity deficiencies by service area.
5. Projected **10-year growth** was calculated for service areas based on land use assumptions (projections of population and employment growth) and translated into residential, office, commercial and industrial VMT using service unit equivalencies. Trip rate data was obtained from *Trip Generation, Twelfth Edition* by the Institute of Transportation Engineers, and trip length statistics for Manvel were obtained from the H-GAC travel demand model.
6. A **capital improvements plan (CIP)** to address projected growth was developed by service area based upon discussions with City Staff and consideration of recommendations from the Master Thoroughfare Plan.
7. **Roadway costs** associated with construction, engineering, right-of-way, and project financing for capital improvement projects were prepared by Freese and Nichols. Costs for study updates are eligible for recovery and were included in the total project cost. Roadway cost data was compiled and tabulated by service area.
8. The cost of capacity supplied, cost attributable to new development, and the **maximum cost per service unit** were calculated for each service area. A credit analysis was completed to determine what portion of the total CIP cost could be discounted based on future ad valorem tax value. The maximum allowable cost per service unit was then adjusted for that credit accordingly in each service area.
9. This report was prepared to document the procedures, findings, and conclusions.

2.0 LAND USE ASSUMPTIONS

2.1 Data Collection Zones and Service Area Maps

2.1.1 Service Areas

TLGC Chapter 395 requires that service areas be defined for impact fees to ensure that facility improvements are located in close proximity to areas generating needs. Legislative requirements stipulate that roadway service areas be limited to a six-mile maximum and must be located within the current City Limits. Roadway service areas are different from water and wastewater systems, which can include the City Limits and its ETJ or other defined service area. This is primarily because roadway systems are "open" to both local and regional (non-City) use as opposed to a defined level of utilization from residents within a water and wastewater system. The City of Manvel was divided into four service areas to consider program expansion as the city grows. The service areas are illustrated in **Figure 1**.

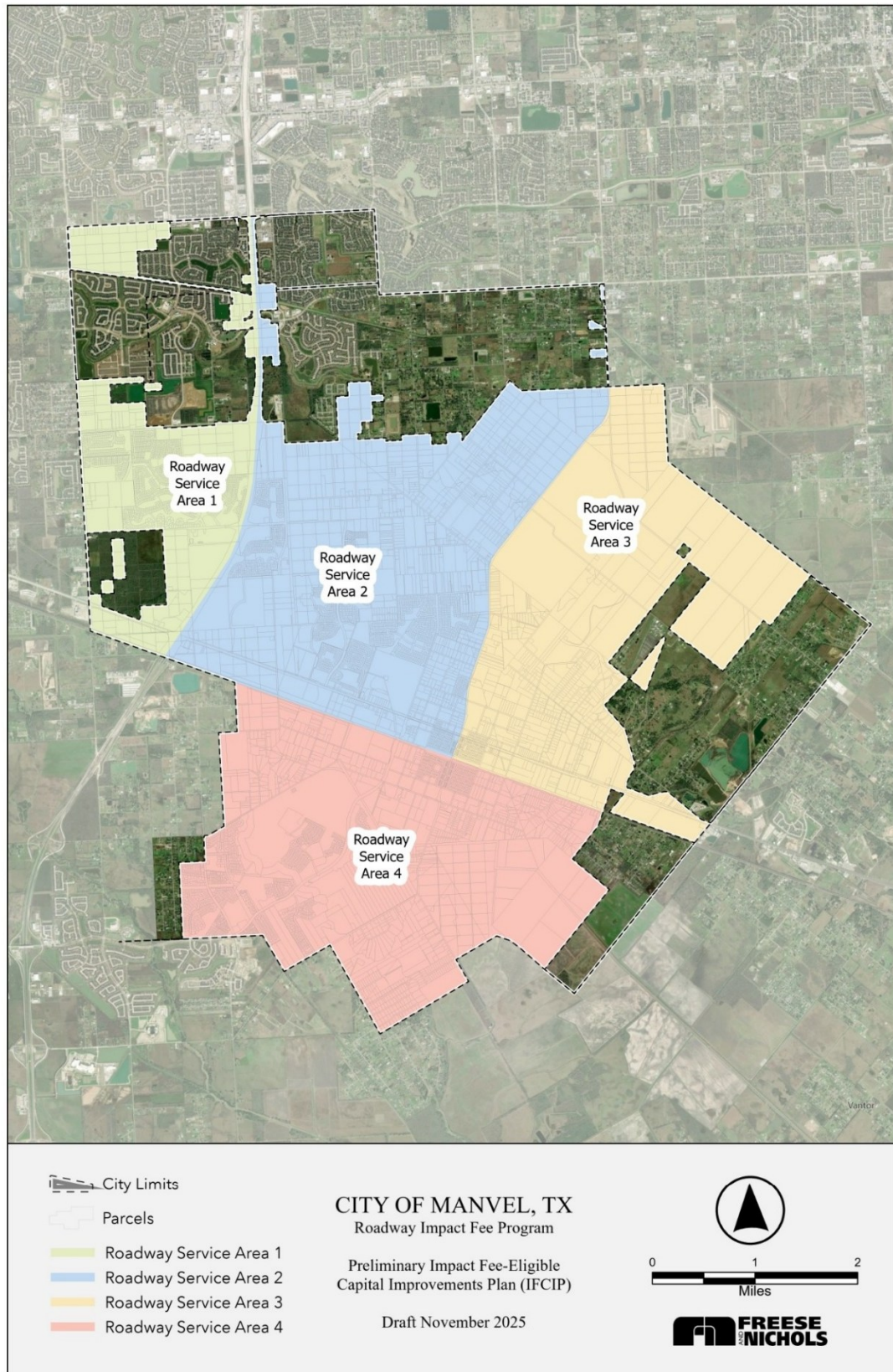
2.2 Population and Employment Projections

The land use assumptions and future growth projections take into consideration several factors influencing development patterns, including the following:

- The character, type, density, and quantity of existing development
- Availability of land for future expansion
- Current and historical growth trends of population and development within the City
- Location and configuration of vacant land
- Known or anticipated development projects as defined by City staff

For the land use assumptions process, the existing population and employment projections were calculated using US Census, ACS, H-GAC, and City data. FNI prepared a projections database to determine population and employment 10-year forecasts with input from City staff. A series of assumptions were made to arrive at reasonable growth rates for population and employment.

Figure 1: City of Manvel Roadway Service Areas



2.2.1 Population

Generally, the following assumption served as the basis for initiating 10-year projections:

Future land uses will occur based on similar trends of the past and will conform with the anticipated future development and redevelopment opportunities as forecasted in the Manvel Comprehensive Plan and other special area plans.

Population growth for the whole City was projected using the sources listed in the previous section and subsequently assigned to each service area using information regarding known future developments and development trends, availability of current residentially zoned land within the City, and data from H-GAC's regional travel demand model allocated geographically by Traffic Analysis Zone (TAZ). Based on these sources, a CAGR of approximately 8.96% aligns with residential growth expectations within the City of Manvel. This will result in a total population increase of approximately 27,250 persons over 10 years. The roadway service area population projections are presented in **Table 3**.

Table 3: Roadway Service Area Population Projections

Total Population				
Service Area	2025	2035	Total Net Growth	Compound Annual Growth Rate
1	8,357	12,230	3,873	
2	6,390	14,102	7,712	
3	1,362	9,598	8,236	
4	3,941	11,370	7,429	
Total	20,050	47,300	27,250	8.96%

2.2.2 Employment

Employment for each service area was broken down into basic, retail, and service uses as defined by the North American Industry Classification System (NAICS) code. Each of these employment types generate unique types of demand for roadway usage, hence the breakdown. **Basic Employment** includes land use activities that produce goods and services exported outside the local economy, such as manufacturing, construction, transportation, wholesale trade, warehousing, and other industrial uses. **Retail Employment** includes land use activities that provide for the retail sale of goods that primarily serve households and whose location choice is oriented to the household sector, such as grocery stores, restaurants, and shopping centers. **Service Employment** includes land use activities that provide personal and professional services such as financial, insurance, government, and other professional administrative offices.

TAZ data and ACS data was used to project employment within the roadway service area. Based on known development trends, Census data, and TAZ data, a CAGR of approximately 8.38% aligns with employment expectations within the City of Manvel. This will result in a total employment

increase of approximately 15,440 jobs over 10 years. **Table 4** and **Table 5** show the projected employment.

Table 4: Projected Employment/Non-residential Growth by Type

Employment by Type								
Service Area	2025				2035			
	Basic	Service	Retail	Total	Basic	Service	Retail	Total
1	70	371	645	1,086	76	687	1,014	1,777
2	170	2,714	2,980	5,864	274	4,659	3,195	8,128
3	240	426	245	911	240	751	316	1,307
4	480	3,199	950	4,629	480	13,353	2,885	16,718
Total	960	6,710	4,820	12,490	1,070	19,450	7,410	27,930

Table 5: Projected Total Employment Growth

Total Employment				
Service Area	2025	2035	Net Growth	Compound Annual Growth Rate
1	1,086	1,777	691	
2	5,864	8,128	2,264	
3	911	1,307	396	
4	4,629	16,718	12,089	
Total	12,490	27,930	15,440	8.38%

3.0 IMPACT FEE SERVICE UNITS

Service units establish a relationship between roadway projects and demand placed on the street system by development, as well as the ability to calculate and assess impact fees for specific development proposals. As defined in Chapter 395, "Service unit means a standardized measure of consumption, use, generation, or discharge attributable to an individual unit of development in accordance with generally accepted engineering or planning standards for a particular category of capital improvements or facility expansions."

To determine the roadway impact fee for a particular development, the service unit must accurately identify the impact that the development will have on the major roadway system (i.e., arterial and collector roads) serving the development. This impact is a combination of the number of new trips generated by the development, the particular peaking characteristics of the land-use(s) within the development, and the length of each new trip on the transportation system.

The service unit must also reflect the capacity which is provided by the roadway system, and the demand placed on the system during the time in which peak, or design, conditions are present on the system. Transportation facilities are designed and constructed to accommodate volumes expected to occur during the peak hours (design hours). These volumes typically occur during the peak hours as motorists travel to and from work.

The vehicle-mile during the evening (PM) peak hour was retained as the service unit for impact fees in Manvel. This service unit establishes a more precise measure of capacity, utilization, and intensity of land development through the use of published trip generation data. It also recognizes legislative requirements with regards to trip length. This service unit has been tested and validated since the inception of impact fee legislation in Texas.

3.1 Service Units

Service units create a link between supply (roadway projects) and demand (development). Both can be expressed as a combination of the number of vehicles traveling during the peak hour and the distance traveled by these vehicles in miles.

3.1.1 Service Unit Supply

For roadway capital project improvements, the number of service units provided during the peak hour is simply the product of the capacity of the roadway in one hour and the length of the product. For example:

Given a four-lane divided roadway project with a 665 vehicle per hour per lane capacity and a length of two miles, the number of service units provided is:

$$665 \text{ vehicles per hour per lane} \times 4 \text{ lanes} \times 2 \text{ miles} = 5,320 \text{ vehicles-miles}$$

3.1.2 Service Unit Demand

The demand placed on the system can be expressed in a similar manner. For example, a development generating 100 vehicle trips in the PM peak hour with an average trip length of two miles would generate:

$$100 \text{ vehicle-trips} \times 2 \text{ miles/trip} = 200 \text{ vehicle-miles}$$

Similarly, demand placed on the existing roadway network is calculated in the same manner with a known traffic volume (peak hour roadway counts collected by the city) on a street and a given segment length.

3.2 Service Units for New Development

An important objective in the development of the impact fee system is the development of a specific service unit equivalency for individual developments. The vehicle-miles generated by a new development are a function of the trip generation and average trip length characteristics of that development. The following describes the process used to develop the vehicle-equivalency table, which relates land use types and sizes to the resulting vehicle-miles of demand created by that development.

3.2.1 Trip Generation

Trip generation information for the PM peak hour was based on data published in the Twelfth Edition of *Trip Generation* by the Institute of Transportation Engineers (ITE). *Trip Generation* is a reference publication that contains travel characteristics of over 300 land uses across the nation and is based on empirical data gathered from over 5,500 studies that were reported to the Institute by public agencies, developers, and consulting firms.

Pass-by and Diverted Trips Adjustments

The actual "traffic impact" of a specific site for impact fee purposes is based on the amount of traffic added to the street system. To accurately estimate new trips generated by a new development, adjustments must be made to trip generation rates and equations to account for

pass-by and diverted trips. The added traffic is adjusted so that each development is assigned only a portion of trips associated with that particular development, reducing the possibility of over-counting by counting only primary trips generated.

Pass-by trips are those trips that are already on a particular route for a different purpose and simply stop at a particular development on that route. For example, a stop at a convenience store on the way home from the office is a pass-by trip for the convenience store. A pass-by trip does not create an additional burden on the street system and therefore should not be counted in the assessment of impact fees of the convenience store. A diverted trip is a similar situation, except that a diversion is made from the regular route to make an interim stop. On a system-wide basis, this trip places a slightly additional burden on the street system but in many cases, this burden is minimal.

Trip generation rates were reduced by the percentages presented in **Table 6** in an effort to isolate the primary trip purpose. Adjustments were based on studies conducted by ITE and other published studies.

With approval by the City Engineer, an Applicant may also conduct a local study to confirm rates in *Trip Generation* or to change rates reflecting local conditions. In such cases, a minimum of three comparable sites should be counted. Selected sites should be isolated in nature with driveways that specifically serve the specific development and no other land uses. The results should be plotted on the scatter diagram of the selected land use contained in *Trip Generation* for comparison purposes. It is recommended that no change be approved unless the results show a variation of at least fifteen percent across the range of the sample size surveyed.

3.2.2 Trip Length

Trip lengths (in miles) are used in conjunction with site trip generation to estimate vehicle-miles of travel. Trip length data was based on information gathered from the H-GAC travel demand model, tailored to the City of Manvel and comparable peer cities.

Table 6 summarizes the average trip lengths compiled from the forecast model. These trip lengths represent the average distance that a vehicle will travel between an origin and destination of which either the origin or destination contains the land-use category identified below. A localization adjustment of 85% was made to net out the portion of trip length on the federal highway system and tolled freeway main lane facilities, since the impact fee system does not include these facilities in the Chapter 395 legislation.

Origin and Destination Adjustments

The assessment of an individual development's impact fee is based on the premise that each vehicle trip has an origin and a destination, and that the development end should pay for one-half of the cost necessary to complete each trip. To prevent the potential of double charging, trip lengths were divided by two to reflect half of the vehicle trip associated with development. **Table 6** also illustrates the adjusted trip length.

Finally, as the service area structure was based on a six-mile boundary, those land uses that exhibited adjusted trip lengths greater than six miles would be truncated to this threshold.

3.2.3 Service Unit Equivalency

The result of combining the trip generation and trip length information is an equivalency table which establishes the service unit rate for various land uses. These service unit rates are based on an appropriate development unit for each land use. For example, a dwelling unit is the basis for residential uses, while 1,000 gross square feet of floor area is the basis for office, commercial, and industrial uses. Other less common land uses use appropriate independent variables.

Separate rates have been established for specific land uses within the broader categories of residential, commercial, industrial, and institutional to reflect the differences between land uses within the categories. However, even with these specific land use types, information is not available for every conceivable land use; so, engineering judgement must be used when needed. The equivalency table is illustrated in **Table 6**.

Table 6: Land Use Vehicle-Mile Equivalency

A	B	C	D	E	F	G D x (1 - E - F)	H	I H x 0.85	J Min(I x 0.5, 6)	K G x J
Land Use Description	ITE Code	Development Unit	PM Peak Hour Trip Gen Rate	Pass-by Rate (%)	Diverted Rate (%)	PM Peak Hour Trip Gen Rate Adjusted	Average Trip Length (mi)	Localized Trip Length (mi)	Adjusted Trip Length (mi)	Service Unit Equivalency
Industrial										
General Light Industrial	110	1000 Sq. Ft. GFA	0.49	0%	0%	0.49	11.15	9.48	4.74	2.32
Manufacturing	140	1000 Sq. Ft. GFA	0.63	0%	0%	0.63	11.15	9.48	4.74	2.99
Warehouse	150	1000 Sq. Ft. GFA	0.15	0%	0%	0.15	11.15	9.48	4.74	0.71
Residential										
Single-Family Detached Housing	210	Dwelling Units	0.93	0%	0%	0.93	9.87	8.39	4.20	3.91
Single-Family Attached Housing	215	Dwelling Units	0.51	0%	0%	0.51	9.87	8.39	4.20	2.14
Affordable Housing - Income Limits	223	Dwelling Units	0.46	0%	0%	0.46	9.87	8.39	4.20	1.93
Mobile Home Park	240	Dwelling Units	0.46	0%	0%	0.46	9.87	8.39	4.20	1.93
Senior Adult Housing - Single-Family	251	Dwelling Units	0.29	0%	0%	0.29	8.95	7.61	3.81	1.10
Senior Adult Housing - Multifamily	252	Dwelling Units	0.25	0%	0%	0.25	8.95	7.61	3.81	0.95
Congregate Care Facility	253	Dwelling Units	0.18	0%	0%	0.18	8.95	7.61	3.81	0.69
Assisted Living	254	Beds	0.24	0%	0%	0.24	8.95	7.61	3.81	0.91
Continuing Care Retirement Community	255	Units	0.19	0%	0%	0.19	8.95	7.61	3.81	0.72
Lodging										
Hotel	310	Rooms	0.47	0%	0%	0.47	7.13	6.06	3.03	1.42
All Suites Hotel	311	Rooms	0.34	0%	0%	0.34	7.13	6.06	3.03	1.03
Recreational										
Golf Course	430	Holes	2.86	0%	0%	2.86	6.35	5.40	2.70	7.72
Batting Cages	433	Batting Cages	2.22	0%	0%	2.22	6.35	5.40	2.70	5.99
Bowling Alley	437	Bowling Lanes	1.30	0%	0%	1.30	6.35	5.40	2.70	3.51
Movie Theater	445	Movie Screens	13.11	0%	0%	13.11	6.35	5.40	2.70	35.40
Health/Fitness Club	492	1000 Sq. Ft. GFA	3.77	0%	0%	3.77	6.35	5.40	2.70	10.18
Athletic Club	493	1000 Sq. Ft. GFA	3.38	0%	0%	3.38	6.35	5.40	2.70	9.13

Table 6 continued from previous page.

A	B	C	D	E	F	G D x (1 - E - F)	H	I H x 0.85	J Min(I x 0.5, 6)	K G x J
Land Use Description	ITE Code	Development Unit	PM Peak Hour Trip Gen Rate	Pass-by Rate (%)	Diverted Rate (%)	PM Peak Hour Trip Gen Rate Adjusted	Average Trip Length (mi)	Localized Trip Length (mi)	Adjusted Trip Length (mi)	Service Unit Equivalency
Institutional										
Private School (K-8)	530	Students	0.26	0%	0%	0.26	6.23	5.30	2.65	0.69
Private School (K-12)	532	Students	0.19	0%	0%	0.19	6.23	5.30	2.65	0.50
Charter Elementary School	536	Students	0.16	0%	0%	0.16	6.23	5.30	2.65	0.42
Junior/Community College	540	Students	0.11	0%	0%	0.11	6.99	5.94	2.97	0.33
Church	560	1000 Sq. Ft. GFA	0.43	0%	0%	0.43	6.99	5.94	2.97	1.28
Day Care Center	565	Students	0.79	44%	32%	0.19	6.23	5.30	2.65	0.50
Medical										
Hospital	610	Beds	1.69	0%	0%	1.69	11.30	9.61	4.81	8.13
Nursing Home	620	Beds	0.22	0%	0%	0.22	11.30	9.61	4.81	1.06
Walk-In Clinic	630	1000 Sq. Ft. GFA	3.67	0%	0%	3.67	11.30	9.61	4.81	17.65
Animal Hospital/Veterinary Clinic	640	1000 Sq. Ft. GFA	3.53	0%	0%	3.53	11.30	9.61	4.81	16.98
Free-Standing Emergency Room	650	1000 Sq. Ft. GFA	1.52	0%	0%	1.52	11.30	9.61	4.81	7.31
Office										
General Office Building	710	1000 Sq. Ft. GFA	1.18	0%	0%	1.18	11.38	9.67	4.84	5.71
Small Office Building	712	1000 Sq. Ft. GFA	2.16	0%	0%	2.16	11.38	9.67	4.84	10.45
Medical-Dental Office Building - Stand-Alone	720	1000 Sq. Ft. GFA	3.42	0%	0%	3.42	11.38	9.67	4.84	16.55
Office Park	750	1000 Sq. Ft. GFA	1.21	0%	0%	1.21	11.38	9.67	4.84	5.86
Retail										
Tractor Supply Store	810	1000 Sq. Ft. GFA	1.40	0%	0%	1.40	6.35	5.40	2.70	3.78
Building Materials and Lumber Store	812	1000 Sq. Ft. GFA	1.59	0%	0%	1.59	6.35	5.40	2.70	4.29
Free-Standing Discount Store	815	1000 Sq. Ft. GFA	4.86	20%	39%	1.98	6.35	5.40	2.70	5.35
Hardware/Paint Store	816	1000 Sq. Ft. GFA	2.98	26%	30%	1.33	6.35	5.40	2.70	3.59
Nursery (Garden Center)	817	1000 Sq. Ft. GFA	6.58	0%	0%	6.58	6.35	5.40	2.70	17.77
Shopping Center – GLA >150k	820	1000 Sq. Ft. GLA	3.26	26%	29%	1.47	6.35	5.40	2.70	3.97

Table 6 continued from previous page.

A	B	C	D	E	F	G D x (1 - E - F)	H	I H x 0.85	J Min(I x 0.5, 6)	K G x J
Land Use Description	ITE Code	Development Unit	PM Peak Hour Trip Gen Rate	Pass-by Rate (%)	Diverted Rate (%)	PM Peak Hour Trip Gen Rate Adjusted	Average Trip Length (mi)	Localized Trip Length (mi)	Adjusted Trip Length (mi)	Service Unit Equivalency
Shopping Plaza (GLA 40-150k) - Supermarket - Yes	821	1000 Sq. Ft. GLA	8.58	40%	18%	3.59	6.35	5.40	2.70	9.69
Shopping Plaza (GLA 40-150k) - Supermarket - No	821	1000 Sq. Ft. GLA	4.76	40%	18%	1.99	6.35	5.40	2.70	5.37
Strip Retail Plaza (GLA <40k)	822	1000 Sq. Ft. GLA	6.29	0%	0%	6.29	5.35	4.55	2.28	14.34
Tire Store	848	1000 Sq. Ft. GFA	3.85	25%	5%	2.70	6.35	5.40	2.70	7.29
Supermarket	850	1000 Sq. Ft. GFA	8.79	24%	27%	4.26	6.35	5.40	2.70	11.50
Discount Club	857	1000 Sq. Ft. GFA	4.21	34%	0%	2.78	6.35	5.40	2.70	7.51
Sporting Goods Superstore	861	1000 Sq. Ft. GFA	2.09	0%	0%	2.09	6.35	5.40	2.70	5.64
Electronics Superstore	863	1000 Sq. Ft. GFA	4.25	40%	33%	1.15	6.35	5.40	2.70	3.11
Pet Supply Superstore	866	1000 Sq. Ft. GFA	3.55	0%	0%	3.55	6.35	5.40	2.70	9.59
Office Supply Superstore	867	1000 Sq. Ft. GFA	2.77	0%	0%	2.77	6.35	5.40	2.70	7.48
Department Store	875	1000 Sq. Ft. GFA	1.95	0%	0%	1.95	6.35	5.40	2.70	5.27
Pharmacy/Drugstore with Drive-Thru Window	881	1000 Sq. Ft. GFA	10.24	49%	13%	3.89	1.20	1.02	0.51	1.98
Liquor Store	899	1000 Sq. Ft. GFA	16.71	0%	0%	16.71	6.35	5.40	2.70	45.12
Services										
Walk-in Bank	911	1000 Sq. Ft. GFA	12.13	0%	0%	12.13	6.35	5.40	2.70	32.75
Drive-in Bank	912	1000 Sq. Ft. GFA	21.03	35%	7%	12.15	6.35	5.40	2.70	32.81
Fast Casual Restaurant	930	1000 Sq. Ft. GFA	14.35	0%	0%	14.35	5.00	4.25	2.13	30.57
Fine Dining Restaurant	931	1000 Sq. Ft. GFA	8.10	44%	14%	3.44	5.00	4.25	2.13	7.33
High-Turnover (Sit-Down) Restaurant	932	1000 Sq. Ft. GFA	9.18	43%	17%	3.65	5.00	4.25	2.13	7.77
Fast-Food Restaurant with Drive-Thru Window	934	1000 Sq. Ft. GFA	31.60	55%	10%	10.92	1.20	1.02	0.51	5.57
Fast-Food Restaurant with Drive-Thru Window and No Indoor Seating	935	Drive-Thru Lanes	59.50	31%	26%	25.59	1.20	1.02	0.51	13.05
Coffee/Donut Shop without Drive-Thru Window	936	1000 Sq. Ft. GFA	31.53	0%	0%	31.53	1.20	1.02	0.51	16.08
Coffee/Donut Shop with Drive-Thru Window	937	1000 Sq. Ft. GFA	39.00	0%	0%	39.00	1.20	1.02	0.51	19.89
Quick Lubrication Vehicle Shop	941	Servicing Positions	4.85	0%	0%	4.85	5.00	4.25	2.13	10.33
Automobile Care Center	942	1000 Sq. Ft. GFA	4.90	0%	0%	4.90	5.00	4.25	2.13	10.44

Table 6 continued from previous page.

A	B	C	D	E	F	G D x (1 - E - F)	H	I H x 0.85	J Min(I x 0.5, 6)	K G x J
Land Use Description	ITE Code	Development Unit	PM Peak Hour Trip Gen Rate	Pass-by Rate (%)	Diverted Rate (%)	PM Peak Hour Trip Gen Rate Adjusted	Average Trip Length (mi)	Localized Trip Length (mi)	Adjusted Trip Length (mi)	Service Unit Equivalency
Gasoline/Service Station	944	Fueling Positions	14.23	57%	22%	2.96	1.20	1.02	0.51	1.51
Convenience Store/Gas Station - GFA 2-4k	945	Fueling Positions	15.85	56%	29%	2.35	1.20	1.02	0.51	1.20
Convenience Store/Gas Station - GFA 4-5.5k	945	Fueling Positions	19.15	56%	29%	2.84	1.20	1.02	0.51	1.45
Convenience Store/Gas Station - GFA 5.5-10k	945	Fueling Positions	21.08	56%	29%	3.12	1.20	1.02	0.51	1.59
Self-Service Car Wash	947	Wash Stalls	4.69	0%	0%	4.69	5.00	4.25	2.13	9.99
Automated Car Wash	948	1000 Sq. Ft. GFA	24.40	0%	0%	24.40	5.00	4.25	2.13	51.97
Wine Tasting Room	970	1000 Sq. Ft. GFA	9.84	0%	0%	9.84	6.35	5.40	2.70	26.57
Drinking Place	975	1000 Sq. Ft. GFA	6.44	0%	0%	6.44	6.35	5.40	2.70	17.39

4.0 ELIGIBLE CAPITAL IMPROVEMENT PLANS

The roadway impact fee CIP was developed for the City to provide infrastructure based on forecast growth assumptions. The eligible existing and future improvements were designed to provide the required capacity to meet roadway demands through the next 10 years and are sized to 20-year conditions. The roadway projects required to meet growth in the 10-year period were used in the impact fee analysis and calculation. Impact fee eligible projects are rooted in the official City of Manvel Thoroughfare Plan.

4.1 Existing Roadway Systems

An inventory of the collector and arterial roadway facilities within the City Limits was conducted to determine existing conditions throughout the City. This analysis determined the capacity provided by the existing roadway system, the demand currently placed on the system, and the potential existence of deficiencies on the roadway system. Updated data for the inventory was obtained from traffic volume counts and field reconnaissance of current roadway sections.

The roadways were divided into segments based on volume changes, major intersections, service area boundaries, and capacity changes. The length, number of lanes, cross-section, and peak hour volume data were obtained for each roadway segment. Lane capacities were assigned to each segment based on its functional street classification, the associated roadway lane capacities, and the existing number of lanes. Lane capacities used in all analyses are shown in **Table 7**.

Table 7: Roadway Facility Vehicle-Mile Lane Capacities

Roadway Type	Capacity (vehicles per hour per lane)
UC - Undivided Collector	510
DC - Divided Collector	565
SC – Special Collector, includes two-way left turn lane (TWLTL)	565
UA - Undivided Arterial	590
DA - Divided Arterial	665
SA – Special Arterial, includes two-way left turn lane (TWLTL)	665

4.1.1 Existing Roadway Volumes

Existing directional peak hour volumes were obtained from automated traffic counts on major roadways (as identified in the Thoroughfare Plan as arterial or collector status) throughout the City in October 2025. To minimize the total number of counts, data was collected in at locations where traffic volumes would typically represent link volumes on the major segments within the immediate area. For segments not counted, existing volumes were used, or estimates were developed based on data from adjoining roadway counts. Data was compiled for roadway segments throughout the

City and entered into the database for use in calculations. The unit for many of these calculations is vehicle-miles (veh-mi), and the existing roadway capacity analysis is shown in **Appendix B**.

4.1.2 Vehicle-Miles of Existing Capacity

An analysis of the total capacity for each service area was performed. For each roadway segment, the existing vehicle-miles of capacity supplied was calculated using the following equation:

$$\text{Vehicle-Miles of Capacity} = \text{Link capacity per peak hour per lane} \times \text{Number lanes} \times \text{Segment length}$$

A summary of the current capacity available on the roadway system is shown in **Table 8**. It is important to note that the roadway capacity depicted in the table is system-wide for most major roadways and not restricted to those roadways proposed in the impact fee CIP. Directional calculations of capacity were performed separately.

4.1.3 Vehicle-Miles of Existing Demand

The level of current usage in terms of vehicle-miles was calculated for each roadway segment. The vehicle-miles of existing demand were calculated by the following equation:

$$\text{Vehicle-Miles of Demand} = \text{Peak hour volume} \times \text{Segment length}$$

Appendix B also lists total vehicle-miles of demand. For each roadway segment, the existing vehicle-miles of excess capacity and/or deficiencies were calculated. Each direction was evaluated to determine if vehicle demands exceeded the available capacity. If demand exceeded capacity in one or both directions, the deficiency was deducted from the supply associated with the impact fee CIP. A summary of existing capacity, demand, excess capacity, and deficiencies by roadway service area is shown in **Table 8**.

Table 8: Existing Capacity, Demand, Excess Capacity, and Deficiencies

Service Area	Capacity (veh-mi)	Demand (veh-mi)	Excess Capacity (veh-mi)	Deficiencies (veh-mi)
1	17,622	9,083	8,539	0
2	24,685	11,091	13,749	155
3	19,162	11,256	7,906	0
4	20,298	4,158	16,140	0
Total	81,767	35,588	46,334	155

4.2 Projected Growth

The projected growth for the transportation service area is represented by the increase in the number of new vehicle-miles generated over the 10-year planning period. The basis for calculating new demand was the population and employment projections outlined in previous sections. Employment data was provided in terms of the number of jobs.

Projected vehicle-miles of demand were calculated based on the growth expected to occur during the 10-year planning period, and on the associated service unit generation for each of the population and employment data components (basic, service and retail). Separate calculations were performed for each data component and were then aggregated for the service area. Vehicle-miles of demand for population growth were based on dwelling units, and vehicle-miles of demand for employment were based on the number of employees and estimates of square footage per employee.

Information extracted from the regional travel demand model provides information on average trip lengths for four general types of land uses. These trip lengths, in conjunction with trip rate data published in *ITE Trip Generation, 12th Edition*, were converted into service unit equivalencies by specific land use type. Other information used to tailor data to the City of Manvel included an evaluation of trip lengths in adjacent cities and a comparison to average trip length values from the H-GAC travel demand model. These equivalencies are:

- 3.91 vehicle-miles per dwelling unit for residential.
- 2.32 vehicle-miles per thousand square feet for basic employment.
- 5.71 vehicle-miles per thousand square feet for service employment.
- 3.97 vehicle-miles per thousand square feet of retail employment.

Table 9 lists the projected vehicle-miles of demand over the 10-year planning period for the City.

Table 9: 10-Year Projected Vehicle-Miles of New Demand

Service Area	A	B	C = A / B	D	E = C x D
	Additional Population	Persons per Dwelling Unit	Added Dwelling Units	Vehicle-Miles per Dwelling Unit	Total Vehicle-Miles
Estimated Residential Growth Vehicle-Mile Trip Generation					
1	3,873	2.89	1,340	3.91	5,239
2	7,712		2,669		10,436
3	8,236		2,850		11,144
4	7,429		2,571		10,053
Total	27,250		9,430		36,872
Service Area	A	B	C = A x B	D	E = C/1,000 x D
	Additional Employees	Square Feet per Employee	Added Square Feet	Vehicle-Miles per 1,000 Square Feet	Total Vehicle-Miles
Estimated Basic Employment Growth Vehicle-Mile Trip Generation					
1	6	1,500	9,000	2.32	21
2	104		156,000		362
3	0		0		0
4	0		0		0
Total	110		165,000		383
Estimated Service Employment Growth Vehicle-Mile Trip Generation					
1	316	500	158,000	5.71	902
2	1,945		972,500		5,553
3	325		162,500		928
4	10,154		5,077,000		28,990
Total	12,740		6,370,000		36,373
Estimated Retail Employment Growth Vehicle-Mile Trip Generation					
1	369	800	295,200	3.97	1,172
2	215		172,000		683
3	71		56,800		225
4	1,935		1,548,000		6,146
Total	2,590		2,072,000		8,226
Service Area	Residential Growth Vehicle-Miles	Basic Emp Growth Vehicle-Miles	Service Emp Growth Vehicle-Miles	Retail Emp Growth Vehicle-Miles	Total Growth Vehicle-Miles
1	5,239	21	902	1,172	7,334
2	10,436	362	5,553	683	17,034
3	11,144	0	928	225	12,297
4	10,053	0	28,990	6,146	45,189
Total	36,872	383	36,373	8,226	81,854

4.3 Capital Improvements Plan

4.3.1 Eligible Improvements

The roadway impact fee CIP aims to address the long-term growth expected for the City, provide the ability to credit development-driven road improvements against assessed impact fees, and reduce program amendment needs to incorporate eligible facilities not in the impact fee program. To this end, most arterial and collector roads on the Thoroughfare Plan were initially incorporated into the impact fee program, with adjustments made to remove developer-implemented improvements (information per City staff). The approach of all remaining roadways satisfies recently adopted legislation regarding “funded” roads through the impact fee program.

Legislative mandate stipulates that the impact fee CIP contain only those roadways classified as *arterial* or *collector* status facilities that are included in the City’s adopted Thoroughfare Plan. Impact fee legislation also allows for the recoupment of costs for previously constructed facilities as well as projects currently under construction. City staff stated that there would be no recoupment projects; only new roadway projects would be included in the impact fee program.

4.3.2 Eligible Costs

In general, those costs associated with the design, right-of-way acquisition, and construction and financing of all items necessary to implement the roadway projects identified in the capital improvements plan are eligible. These estimates are based on the ultimate roadway section identified by functional classification in the Master Thoroughfare Plan. It is important to note that upon completion of the capital improvements identified in the CIP, the city must recalculate the impact fee using the *actual* costs incurred during facility implementation.

The following details the individual cost components of the impact fee CIP.

- **Construction:** Construction costs include those costs which are normally associated with construction, including: paving, dirt work (including sub-grade preparation, embankment fill and excavation), clearing and grubbing, retaining walls or other slope protection measures, and general drainage items which are necessary in order to build the roadway and allow the roadway to fulfill its vehicle carrying capability. Individual items may include bridges, culverts, inlets and storm sewers, junction boxes, manholes, curbs and/or gutters, and channel linings and other erosion protection appurtenances. Other items included in cost estimates may include sidewalks, traffic control devices at select locations (initial cost only), ancillary adjustments to existing utilities, and minimal sodding/landscaping. Unit costing from recently completed projects from Manvel, city project bid tabs, and TxDOT twelve-month averages were used in the development of planning level cost estimates.
- **Engineering:** These are the costs associated with the design and surveying necessary to construct the roadway. Because the law specifically references fees, it has been

understood that in-house City design and surveying cannot be included. Only those services that are contracted can be included and it may be necessary to use outside design and surveying firms to perform the work. For planned projects, a fee of 15% based on typical engineering contracts was used to estimate these fees.

- Right-of-Way: Any land acquisition cost estimated to be necessary to construct a roadway can be included in the cost estimate. For planning purposes, only the additional amount of land needed to bring a roadway right-of-way to thoroughfare standard was considered. For example, if a 120' right-of-way for an arterial road was needed and 80' of right-of-way currently existed, only 40' would be considered in the acquisition cost.

The cost for right-of-way may vary based on location of project. A conservative \$1.00 per needed square foot was used in the calculation.

- Debt Service: Predicted interest charges and finance costs may be included in determining the amount of impact fees only if the impact fees are used for the payment of principal and interest on bonds, notes, or other obligations issued by the city to finance capital improvements identified in the impact fee capital improvements plans. They cannot be used to reimburse bond funds for other facilities.
- Previous Assessments: The cost for any previous assessments collected by the city on projects identified on the impact fee CIP must be removed from program consideration. Collected assessments are deposited into separate fund accounts dedicated to each road service area. Unspent collections are maintained in an existing fund balance until designated for expenditure.
- Study Updates: The fees 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 can be included in the impact fee.

The impact fee calculations consider only the cost necessitated by new development during the ten-year planning period. For example, if only 60% of the capacity provided by the impact fee CIP is attributable to growth over the planning period, then only 60% of the cost associated with those facilities was included in the calculation.

4.3.3 Staff Input and Project Availability

The roadway CIP aligns with the City Thoroughfare Plan with City Staff providing input to project development based on planning activities forecasted to occur over the 10-year planning period. The road impact fee CIP was also presented to the CIAC for comment and approval in May 2026.

4.3.4 Impact Fee CIP

The impact fee CIP includes 73 project segments that advance the implementation of the Thoroughfare Plan network. Projects identified include only new lanes added to achieve

Thoroughfare Plan standards, and, thus, only new capacity is provided by the CIP. For example, if two lanes of a future four-lane arterial exist, the two new lanes of added capacity are incorporated into the program.

Project costs were prepared based on planning level estimates compiled by FNI. Project cost worksheets were prepared for each impact fee project and include costing for construction, engineering, and right-of-way can be found in **Appendix F**. Additionally, the cost of one impact fee study update (year five of the 10-year program) and the cost of debt service was included and allocated by project capacity. The full cost for the road impact fee CIP program totals **\$432,927,004**. **Table 10** and **Figure 2** illustrate the capital improvement projects and their associated total cost, inclusive of debt service and study update costs, for the road impact fee program.

Table 10: Roadway System Eligible IFCIP Project Costs

Map Ref #	ID	Shared Service Area	Roadway	From	To	% in Service Area	Length (mi)	Existing Lanes	Eligible Improvement (added lanes)	Type	Total Impact Fee Eligible Cost
Service Area 1											
88	1-CR48	X	CR-48	SH-6	S City Limit	50%	0.27	2	2	DA	\$1,586,980
67	1-KBY-1	-	Kirby Dr (A)	City Limits	City Limits	100%	0.06	0	4	DA	\$1,109,552
66	1-KBY-2	-	Kirby Dr (B)	CR-58	City Limits	100%	0.26	0	4	DA	\$4,443,435
							0.59				\$7,139,967
Service Area 2											
56	2-CHB		Chocolate Bayou Rd	Lira Rd	FM 1128	100%	0.94	2	2	UA	\$8,129,460
138	2-OMR-1	X	Old Massey Ranch (CR-100)	330' E of Old Chocolate Bayou Rd (CR-89)	Patterson Rd	50%	0.67	2	2	DA	\$1,913,556
111	2-OMR-2	X	Old Massey Ranch (CR-100)	Patterson Rd	Masters Rd (FM 1128)	50%	0.33	0	4	DA	\$5,646,127
73	2-CRX-1		Croix Rd (CR-58)	Oak Crest Pkwy	1035' E of Oak Crest Pkwy	100%	0.20	2	2	DA	\$2,697,454
72	2-CRX-2	X	Croix Rd (CR-58)	1035' E of Oak Crest Pkwy	Del Bello Rd	50%	0.28	2	2	DA	\$1,901,698
102	2-DBB-1		Del Bello Blvd EXT A	Pollard Blvd	Pollard Drive	100%	0.45	0	4	DA	\$8,415,233
103	2-DBB-2		Del Bello Blvd	Pollard Drive	Del Bello Blvd EXT B	100%	0.12	2	2	DA	\$1,623,153
51	2-DBB-3		Del Bello Blvd EXT B	Del Bello Blvd	Del Bello Rd (CR-90)	100%	0.19	0	4	DA	\$3,562,830
107	2-DBR-1		Del Bello Rd (CR-90)	Croix Rd (CR-58)	Lira Rd	100%	0.73	2	2	DA	\$8,784,136
120	2-DBR-2		Del Bello Rd (CR-90)	Lira Rd	Patterson Rd	100%	0.32	2	2	DA	\$4,370,348
30	2-DBR-3		Del Bello Rd (CR-90)	Patterson Rd	Masters Rd (FM 1128)	100%	0.65	2	2	DA	\$8,974,558
54	2-LWS		Lewis Ln	Mccoy Rd	Masters Rd (FM 1128)	100%	0.50	2	2	UC	\$5,238,735
109	2-LIRA-1		Lira Rd	Del Bello Blvd	Lira Rd EXT	100%	0.55	2	2	DA	\$7,871,815
108	2-LIRA-2		Lira Rd EXT	Lira Rd	City Limit	100%	0.59	0	4	DA	\$9,636,792
110	2-LIRA-3	X	Lira Rd	Old Chocolate Bayou	N City Limit	50%	0.22	2	2	DA	\$1,279,285
40	2-MCC-1		Mccoy Rd	Charlotte St	SH 6	100%	0.68	2	2	DA	\$8,116,210
26	2-MSTR-1	X	Masters Rd (FM 1128)	Bailey Ave (CR-101)	Old Massey Ranch (CR-100)	50%	1.00	2	2	DA	\$6,753,127
27	2-MSTR-2	3	Masters Rd (FM 1128)	Old Massey Ranch (CR-100)	Oilfield Rd	50%	0.26	2	2	DA	\$1,746,200
28	2-MSTR-3	3	Masters Rd (FM 1128)	Oilfield Rd	Chocolate Bayou Rd	50%	1.04	2	2	DA	\$6,996,428
29	2-MSTR-4	3	Masters Rd (FM 1128)	Chocolate Bayou Rd	Dogwood Ave	50%	1.08	2	2	DA	\$7,240,316
39	2-MSTR-5	3	Masters Rd (FM 1128)	Dogwood Ave	Charlotte St	50%	0.76	2	2	DA	\$5,128,135
38	2-MSTR-6	3	Masters Rd (FM 1128)	Charlotte St	SH 6	50%	0.69	2	2	DA	\$4,599,971
84	2-MSTR-7	3	Masters Rd (FM 1128)	SH-6	Railroad	50%	0.23	2	2	DA	\$1,602,540
106	2-NEW-1		New Road 2A	Croix Rd (CR-58)	Del Bello Blvd	100%	0.78	0	4	DA	\$14,297,757
							13.26				\$136,525,863

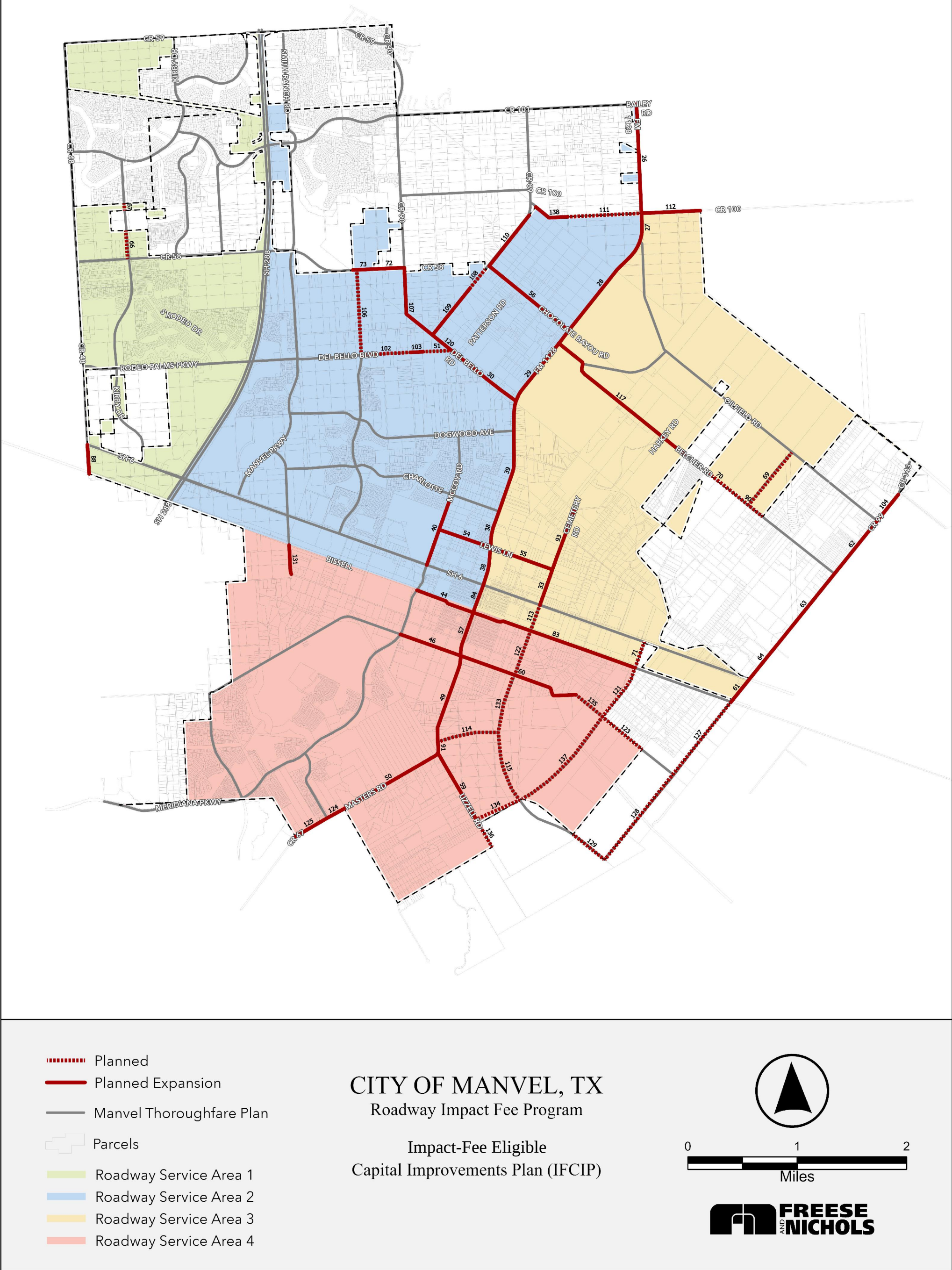
Table 10 continued from previous page.

Map Ref #	ID	Shared Service Area	Roadway	From	To	% in Service Area	Length (mi)	Existing Lanes	Eligible Improvement (added lanes)	Type	Total Impact Fee Eligible Cost
Service Area 3											
117	3-BELC-1		Belcher Rd	Masters Rd (FM 1128)	50' W of Hal McLain	100%	1.56	2	2	DA	\$18,734,737
70	3-BELC-2		Belcher Rd	900' E of Frey Rd	2250' W of City Limit	100%	0.25	0	4	DA	\$4,605,717
90	3-BELC-3	X	Belcher Rd	2250' W of City Limit	W City Limit	50%	0.42	0	4	DA	\$3,913,158
93	3-CEM-1		Cemetery Rd	Scott Ave	Lewis Ln	100%	0.34	2	2	UC	\$3,025,747
33	3-CEM-2		Cemetery Rd	Lewis Ln	SH 6	100%	0.58	2	2	UC	\$5,090,514
104	3-CR99-1	X	CR-99	170' S of Heights Rd	Oilfield Rd	50%	0.26	2	2	DA	\$1,576,668
62	3-CR99-2	X	CR-99	Oilfield Rd	Belcher Rd	50%	0.62	2	2	DA	\$3,701,396
63	3-CR99-3	X	CR-99	Belcher Rd	Lewis Ln	50%	0.79	2	2	DA	\$4,696,092
64	3-CR99-4	X	CR-99	Lewis Ln	SH-6	50%	0.45	2	2	DA	\$2,671,454
61	3-CR99-5	X	CR-99	SH-6	Alvin-Manvel Rd	50%	0.31	2	2	DA	\$1,843,744
55	3-LEW		Lewis Ln	Masters Rd (FM 1128)	Cemetery Rd	100%	0.60	2	2	UC	\$5,238,884
27	3-MSTR-1	2	Masters Rd (FM 1128)	Old Massey Ranch (CR-100)	Oilfield Rd	50%	0.26	2	2	DA	\$1,746,200
28	3-MSTR-2	2	Masters Rd (FM 1128)	Oilfield Rd	Chocolate Bayou Rd	50%	1.04	2	2	DA	\$6,996,428
29	3-MSTR-3	2	Masters Rd (FM 1128)	Chocolate Bayou Rd	Dogwood Ave	50%	1.08	2	2	DA	\$7,240,316
39	3-MSTR-4	2	Masters Rd (FM 1128)	Dogwood Ave	Charlotte St	50%	0.76	2	2	DA	\$5,128,135
38	3-MSTR-5	2	Masters Rd (FM 1128)	Charlotte St	SH 6	50%	0.69	2	2	DA	\$4,599,971
84	3-MSTR-6	2	Masters Rd (FM 1128)	SH-6	Railroad	50%	0.23	2	2	DA	\$1,602,540
69	3-NEW-1		New Road 3A	Oilfield Rd	Belcher Rd	100%	0.62	0	4	DA	\$10,582,287
71	3-NEW-2		New Road 3B	Bissel Rd	City Limit	100%	0.25	0	4	DA	\$4,283,871
113	3-NEW-3		New Road 3C	SH 6	Bissel Rd	100%	0.25	0	4	DA	\$4,099,033
112	3-OMR		Old Massey Ranch (CR-100)	Masters Rd (FM 1128)	635' W of Holland Rd	100%	0.54	2	2	DA	\$6,130,114
							11.90				\$107,507,007

Table 10 continued from previous page.

Map Ref #	ID	Shared Service Area	Roadway	From	To	% in Service Area	Length (mi)	Existing Lanes	Eligible Improvement (added lanes)	Type	Total Impact Fee Eligible Cost
Service Area 4											
44	4-BIS-1		Bissell Rd	Meridiana Pkwy	Masters Rd	100%	0.56	2	2	UA	\$6,228,778
83	4-BIS-2		Bissell Rd	Masters Rd	E City Limit	100%	1.57	2	2	UA	\$17,406,851
131	4-IOWA		Iowa Ln	Bissel St	Bullard Pkwy	100%	0.27	2	2	UC	\$2,367,527
46	4-JOR-1		Jordan St	Meridiana Pkwy	Masters Rd	100%	0.58	2	1	SC*	\$6,682,086
60	4-JOR-2		Jordan St	Masters Rd	Jordan St EXT A	100%	1.15	2	1	SC*	\$13,157,553
135	4-JOR-3		Jordan St EXT A	Jordan St	New Road 4G	100%	0.32	0	3	SC	\$3,772,329
123	4-JOR-4	X	Jordan St EXT B	New Road 4G	E City Limits	50%	0.47	0	3	SC	\$2,799,733
57	4-MSTR-1		Masters Rd (CR-67)	Railroad	Jordan St	100%	0.81	2	2	DA	\$10,964,518
49	4-MSTR-2		Masters Rd (CR-67)	Jordan St	New Road 4C	100%	1.00	2	2	DA	\$13,648,561
91	4-MSTR-3		Masters Rd (CR-67)	New Road 4C	Uzzell Rd	100%	0.11	2	2	DA	\$1,459,781
50	4-MSTR-4		Masters Rd (CR-67)	Uzzell Rd	Hanselman Rd	100%	1.00	2	2	DA	\$13,569,240
124	4-MSTR-5	X	Masters Rd (CR-67)	Hanselman Rd	Cumulus Dr	50%	0.18	2	2	DA	\$1,207,431
125	4-MSTR-6	X	Masters Rd (CR-67)	Cumulus Dr	1760' S of Cumulus Dr	50%	0.34	2	2	DA	\$2,242,219
122	4-NEW-1		New Road 4A	Bissel Rd	Jordan St	100%	0.43	0	4	DA	\$6,982,077
133	4-NEW-2		New Road 4B	Jordan St	New Road 4C	100%	0.54	0	4	DA	\$8,992,610
114	4-NEW-3		New Road 4C	Masters Rd (FM 1128)	New Road 4D	100%	0.56	0	4	UA	\$5,205,779
115	4-NEW-4		New Road 4D	New Road 4C	E City Limit	100%	0.66	0	4	DA	\$11,076,618
137	4-NEW-5		New Road 4E	Jordan St EXT A	New Road 4D	100%	1.06	0	4	UA	\$17,555,845
134	4-NEW-6		New Road 4F	New Road 4D	Uzzell Rd	100%	0.44	0	4	UA	\$7,371,170
121	4-NEW-7	X	New Road 4G	Alvin-Manvel Rd	Jordan St EXT A	50%	0.54	0	4	UA	\$163,988
127	4-NEW-8	X	New Road 4H	Alvin-Manvel Rd	Jordan St EXT B	50%	0.84	0	4	UA	\$6,957,498
128	4-NEW-9	X	New Road 4I	Jordan St EXT B	New Road 4J	50%	1.00	0	4	UA	\$8,306,233
129	4-NEW-10	X	New Road 4J	E City Limit	New Road 4I	50%	0.37	0	4	DA	\$3,079,232
59	4-UZZ-1		Uzzell Rd	Masters Rd	New Road 4F	100%	0.75	2	2	UA	\$8,511,758
136	4-UZZ-2	X	Uzzell Rd EXT	New Road 4F	1315' W of Kings Dr	50%	0.25	0	4	UA	\$2,044,753
							15.80				\$181,754,167
							41.55				\$432,927,004

Figure 2: Roadway System Impact Fee Eligible Projects



4.3.5 Projected Capacity Available for New Growth

The capacity provided and the net capacity provided by the proposed CIP are summarized in **Table 11**. Net capacity provided by the proposed CIP takes into consideration current traffic on those roadways and any deficiencies in the network from the existing conditions analysis described in Section 4.1 Existing Roadway Systems. A detailed listing by project of the capacity supplied can be found in **Appendix C**.

Table 11: Capacity and Net Capacity Provided by the Proposed CIP

Service Area	A	B	C = A – B	D	E = C – D
	Capacity Supplied by CIP (veh-mi)	Existing Utilization on IFCIP-Eligible Network (veh-mi)	Excess Capacity (veh-mi)	Existing Deficiencies (veh-mi)	Net Capacity Supplied by CIP (veh-mi)
1	1,032	0	1,032	0	1,032
2	15,871	0	15,871	(155)	15,716
3	12,862	0	12,862	0	12,862
4	21,584	0	21,584	0	21,584
Total	51,349	0	51,349	(155)	51,194

A comparison of net capacity provided by the proposed CIP relative to 10-year needs is listed in **Table 12**. The percent attributable to new growth is a direct result of the land use assumptions described earlier in the report. Based on the land use assumptions, **100%** of the capacity provided by the CIP, on average citywide, is expected to be consumed by 10-year growth.

Table 12: Capacity and Net Capacity Provided by the Proposed CIP

	E	F	E / F (Max 100%)
Service Area	Net Capacity Supplied by CIP (veh-mi)	Projected 10-Year Growth (veh-mi)	Percent Of CIP Attributable to New Dev. (10-Yr.)
1	1,032	7,334	100%
2	15,716	17,034	100%
3	12,862	12,297	95.61%
4	21,584	45,189	100%
Total	51,194	81,854	

4.3.6 Cost of Roadway Improvements

The total cost of the impact fee CIP—including debt service, study update costs, the cost to meet existing deficiencies, and the cost of net capacity available from CIP projects to serve 10-year

growth (by service area)—is shown in **Table 13**. Debt service assumptions are stated in **Section 5.0**. A detailed listing of cost by project segment for each service area used to derive the cost of existing utilization and deficiencies can be found in **Appendix D**. **Appendix E** contains the planning level cost estimate worksheets for eligible projects in the impact fee program.

Table 13: Capacity and Net Capacity Provided by the Proposed CIP

	A	B	C = A - B
Service Area	Total Cost of Proposed IFCIP Projects	Cost to Meet Existing Deficiencies on CIP Roadways	Cost of Net Capacity Supplied (subtracting deficiencies)
1	\$7,139,967	\$0	\$7,139,967
2	\$136,525,863	(\$1,333,344)	\$135,192,519
3	\$107,507,007	\$0	\$107,507,007
4	\$181,754,167	\$0	\$181,754,167
Total	\$432,927,004	(\$1,333,344)	\$431,593,660

4.3.7 Cost Attributable to New Growth

The cost per service unit varies by service area because of the net capacity being provided by the proposed projects, variations in cost of CIP and the number of service units necessitated by new growth in each impact fee service area. Where net capacity supplied is greater than demand, the cost per service unit is simply the cost of the net capacity divided by the number of service units provided. If net capacity supplied is *less* than projected new demand, then the cost per service unit is calculated by dividing the total cost of net supply by the portion of new demand attributable and necessary by development. **Table 14** lists the cost of net capacity supplied by the CIP and, based on the portion attributable to growth, the total eligible CIP costs attributable to new development. **Appendix F** contains a summary of the calculation.

Table 14: Capacity and Net Capacity Provided by the Proposed CIP

	C	D	E = C x D
Service Area	Cost of Net Capacity Supplied	Portion of CIP Attributable to New Growth	Total Eligible CIP Costs Attributable to New Growth
1	\$7,139,967	100%	\$7,139,967
2	\$135,192,519	100%	\$135,192,519
3	\$107,507,007	95.61%	\$102,784,455
4	\$181,754,167	100%	\$181,754,167
Total	\$431,593,660		\$426,871,108

5.0 CALCULATION OF IMPACT FEES

This section discusses the calculation of the cost per service unit and the calculation of roadway impact fees. The roadway impact fee will vary by specific land uses proposed and size/intensity of impact from the development. Examples are included to better illustrate the method by which the roadway impact fees are calculated.

TLGC Chapter 395 states that the maximum allowable roadway impact fees may not exceed the amount that is determined by dividing the cost of capital improvements required by the total number vehicle-miles of growth during the 10-year impact fee eligibility period. TLGC 395 provides two options for calculating roadway impact fees. A City may utilize:

- §395.014(a)(7)(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”
- §395.014(a)(7)(B) “in the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan.”

The City elected to use the rate credit analysis option per §395.014(a)(7)(A).

5.1.1 Debt Service Interest Calculation

Eligible interest included in the impact fee is based on both existing and future financing of impact fee eligible facilities. Existing financing reflects outstanding debt associated with facilities that contain excess capacity available to serve new development, while future financing reflects assumed debt associated with planned capital improvements.

For future impact fee eligible facilities, interest costs are based on assumed debt service schedules agreed on by City staff. These schedules are applied to projects anticipated to be debt funded. The assumed schedules are developed based on 20-year financing period with 4% interest assumption, and the resulting interest costs are included in the impact fee calculation. The rate credit and debt service is summarized in **Appendix G**.

5.1.2 Ad Valorem Tax Credit Calculation

TLGC Chapter 395 prescribes that a utility must provide credit to account for any portion of ad valorem tax or utility service revenues that would also be reflected in the developed impact fees and paid by new service units in the program period.

The purpose of this credit is to ensure that new development is not charged twice for the portion of capital improvements attributable to that growth. The credit may be calculated in a manner consistent with the operation of the impact fee fund and the City’s approach to financing capital improvements.

It should be noted that the credit is not a determination of the total ad valorem tax revenue generated by new vehicle miles, but it is a credit for the portion of ad valorem tax revenue that is used for payment of improvements that are included in the Roadway Impact Fee CIPs.

Theoretically, the credit determination could be zero (\$0) if the City does not utilize any of the new vehicle mile ad valorem revenue to fund improvements that are included in the Impact Fee CIPs. It is assumed that the debt-funded projects could also potentially be funded by ad valorem tax revenue.

Since payments made through ad valorem tax revenue will consist of not only the revenue generated by new vehicle miles in the defined service area, but also existing property owners throughout the City, the portion attributable to the new vehicle miles in the defined service area must be isolated. This portion is the value of the credit. Across all years and service areas, the total ad valorem tax revenue credited against CIP costs is **\$72,434,391**.

5.2 Maximum Allowable Cost per Service Unit

Table 15 summarizes the calculation of the maximum allowable roadway impact fees for Manvel by service area. **Appendix F** contains a summary of the full calculation.

Table 15: Recoverable Portion of CIP Less Ad Valorem Credit

	E	F	G = E - F	H	I = G / H
Service Area	Total Eligible CIP Costs Attributable to New Growth	Credit for Ad Valorem Taxes	Recoverable Cost of CIP and Financing	Total Projected Growth (veh-mi)	Maximum Allowable Cost per Service Unit
1	\$7,139,967	(\$596,824)	\$6,543,144	7,334	\$892
2	\$135,192,519	(\$13,652,019)	\$121,540,500	17,034	\$7,135
3	\$102,784,455	(\$21,580,123)	\$81,204,332	12,297	\$6,604
4	\$181,754,167	(\$36,605,425)	\$145,148,741	45,189	\$3,212
Total	\$426,871,108	(\$72,434,391)	\$354,436,717	81,854	

5.3 Calculation of Roadway Impact Fees

The calculation of roadway impact fees for new development involves a two-step process. *Step One* is the calculation of the total number of service units that will be generated by the development. *Step Two* is the calculation of the impact fee due from the new development.

Step 1: Determine number of service units (vehicle-miles) generated by the development using the equivalency table.

$$\begin{array}{ccccc} \text{No. of Development} & \times & \text{Vehicle-miles} & = & \text{Development's} \\ \text{Units} & & \text{per development unit} & & \text{Vehicle-miles} \end{array}$$

Step 2: Calculate the impact fee based on the fee per service unit for the service area where the development is located.

$$\begin{array}{ccccc} \text{Development's} & \times & \text{Fee per} & = & \text{Impact fee due from} \\ \text{Vehicle-miles} & & \text{vehicle-mile} & & \text{Development} \end{array}$$

Examples: The following fees would be assessed to new developments in Manvel in Service Area 4 if the cost per service unit were **\$3,212**.

1 Single-Family Dwelling

$$1 \text{ dwelling unit} \times 3.91 \text{ vehicle-miles/dwelling unit} = \mathbf{3.91 \text{ vehicle-miles}}$$

$$3.91 \text{ vehicle-miles} \times \$3,212/\text{vehicle-mile} = \mathbf{\$12,558.92}$$

10,000 square foot (s.f.) Office Building

$$10 (1,000 \text{ s.f. units}) \times 5.71 \text{ vehicle-miles/1,000 s.f. units} = \mathbf{57.10 \text{ vehicle-miles}}$$

$$57.10 \text{ vehicle-miles} \times \$3,212/\text{vehicle-mile} = \mathbf{\$183,405.20}$$

20,000 s.f. Retail Center

$$20 (1,000 \text{ s.f. units}) \times 3.97 \text{ vehicle-miles/1,000 s.f. units} = \mathbf{79.40 \text{ vehicle-miles}}$$

$$79.40 \text{ vehicle-miles} \times \$3,212/\text{vehicle-mile} = \mathbf{\$255,032.80}$$

100,000 s.f. Light Industrial

$$100 (1,000 \text{ s.f. units}) \times 2.32 \text{ vehicle-miles/1,000 s.f. units} = \mathbf{232 \text{ vehicle-miles}}$$

$$232 \text{ vehicle-miles} \times \$3,212/\text{vehicle-mile} = \mathbf{\$745,184.00}$$

APPENDIX A:

LAND USE EQUIVALENCY DEFINITIONS

APPENDIX B:

EXISTING ROADWAY CAPACITY ANALYSIS

DEFINITIONS

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): DA = divided arterial UA = undivided arterial DC = divided collector UC = undivided collector SC = special collector (roadway with continuous left turn) SA = special arterial (roadway with continuous left turn)
PEAK HOUR VOLUME	The existing volume of cars on the roadway segment traveling during the afternoon (P.M.) peak hour of travel. A and B indicate the two directions of travel. Direction A is a northbound or eastbound and direction B is southbound or westbound. If only one half of the roadway is located within the service area (see % in service area), the opposing direction will have no volume in the service area.
% IN SERVICE AREA	If the roadway is located on the boundary of the service area (with the city limits running along the centerline of the roadway), then half of the roadway is inventoried in the service area and the other half is not. This value is either 50% or 100%.
SUPPLY (VEH-MI)	The number of total service units (vehicle-miles) supplied within the service area, based on the length, and established capacity of the roadway type.
DEMAND (VEH-MI)	The total service units (vehicle-miles) of demand created by existing traffic on the roadway segment in the afternoon peak hour.
EXCESS CAPACITY (VEH-MI)	The number of service units supplied but unused by existing traffic in the afternoon peak hour.
EXISTING DEFICIENCY (VEH-MI)	The number of service units of demand in excess of the service units supplied.

NOTE: Excess capacity and existing deficiencies are calculated separately for each direction. It is possible to have excess capacity in one direction and an existing deficiency in the other. When both directions have excess capacity or deficiencies, the total for both directions are presented.

Appendix B: Existing Roadway Capacity Analysis (1 of 3)

Shared Service Area	Roadway	From	To	% in Serv. Area	Length (mi)	Lanes	Type	PM Peak Hr Lane Capacity	Peak Hour Volumes			Supply (veh-mi)	Demand (veh-mi)	Excess Capacity (veh-mi)	Existing Deficiency (veh-mi)
									A	B	Total				
Service Area 1															
-	Bailey Rd (CR101)	Bailey Ave (City Limits)	E City Limits	100%	0.28	4	UA	590	905	928	1,833	661	513	148	0
-	Croix Rd (CR 58)	Alameda School Rd (CR 48)	460' East of Rodeo Dr (City Limit)	100%	0.82	4	DA	665	720	800	1,520	2,181	1,246	935	0
-	Croix Rd (CR 58)	Croix Pkwy (CR 84; City Limit)	Laigle Rd (CR 85)	100%	0.34	4	DA	665	655	999	1,654	904	562	342	0
-	Alameda School Rd (CR 48)	Magnolia Pkwy (CR 59)	90' South of Mustang Bayou (City Limits)	100%	0.42	4	DA	665	600	700	1,300	1,117	546	571	0
-	Alameda School Rd (CR 48)	4610 CR 48 (City Limit)	Croix Rd (CR 58)	100%	0.51	4	DA	665	611	746	1,357	1,357	692	665	0
-	Old Airline Rd (CR 48)	Croix Rd (CR 58)	Rio Lindo St/Palm Desert Dr	100%	0.28	4	DA	665	611	746	1,357	745	380	365	0
-	Old Airline Rd (CR 48)	Rio Lindo St/Palm Desert Dr	SH 6	100%	1.40	4	DA	665	518	718	1,236	3,724	1,730	1,994	0
-	Iowa Colony Rd (CR 48)	SH 6	Entrance to 16400 SH 6	50%	0.06	4	UA	590	0	268	268	71	16	55	0
-	Iowa Colony Rd (CR 48)	Entrance to 16400 SH 6	S City Limits	50%	0.21	2	UA	590	0	268	268	124	56	68	0
-	Rodeo Dr	Croix Rd (CR 58)	Palm Desert Dr	100%	0.34	2	UC	510	100	130	230	347	78	269	0
-	Rodeo Dr	Palm Desert Dr	Oakland Park Dr	100%	0.14	2	UC	510	100	130	230	143	32	111	0
-	Rodeo Dr	Oakland Park Dr	Atascadero Dr	100%	0.71	2	UC	510	137	174	311	724	221	503	0
-	Rodeo Dr	Atascadero Dr	Rodeo Palms Pkwy	100%	0.12	4	DC	565	137	174	311	271	37	234	0
-	Rodeo Palms Pkwy	Rodeo Palms Blvd	Rodeo Dr	100%	0.14	4	DA	665	137	137	342	372	38	334	0
-	Rodeo Palms Pkwy	Rodeo Dr	SH 288	100%	0.19	4	DA	665	170	140	310	505	59	447	0
-	Kirby Dr	Broad Reach Rd	End of Road	100%	0.31	4	DA	665	45	37	82	825	25	799	0
-	SH 6	Old Airline Rd (CR 48)	Kirby Dr	100%	0.52	6	DA	665	1,467	1,734	3,201	2,075	1,665	410	0
-	SH 6	Kirby Dr	SH-288	100%	0.37	6	DA	665	1,467	1,734	3,201	1,476	1,184	292	0
												17,622	9,083	8,539	0
Service Area 2															
-	Croix Rd (CR 58)	SH 288	City Limit	100%	0.12	2	DA	665	258	224	482	160	58	102	0
-	Bailey Rd (CR101)	SH 288	E City Limits	100%	0.17	4	UA	590	928	905	1,833	401	312	90	0
-	Old Chocolate Bayou Rd	Patterson Rd	Masters Rd (FM 1128)	100%	0.63	2	UC	510	18	25	43	643	27	616	0
-	Patterson Rd	4824 Patterson Rd	Old Chocolate Bayou Rd (CR 89)	100%	0.38	2	UA	590	254	169	34	448	161	288	0
-	Patterson Rd	Old Chocolate Bayou Rd (CR 89)	Del Bello Rd (CR 90)	100%	0.81	2	UA	590	13	21	34	956	28	928	0
-	Del Bello Rd (CR 90)	Criox Rd CR-58)	Patterson Rd	100%	1.05	2	UA	590	254	169	423	1,239	444	795	0
-	Del Bello Rd (CR 90)	Patterson Rd	Masters Rd (FM 1128)	100%	0.65	2	UA	590	254	169	423	767	275	492	0
-	Del Bello Blvd	SH 288	Manvel Pkwy	100%	0.39	4	DA	665	86	110	196	1,037	76	961	0
-	Del Bello Blvd	Manvel Pkwy	Pollard Blvd	100%	0.59	2	UA	590	26	30	56	696	33	663	0
-	Del Bello Blvd	6105 Del Bello Blvd	6403 Del Bello Blvd	100%	0.10	2	UA	590	5	12	17	118	2	116	0
-	Manvel Pkwy	Del Bello Blvd	Lake View Dr	100%	0.35	2	UA	590	28	12	40	413	14	399	0
-	Manvel Pkwy	Del Bello Blvd	Autumn Breeze Dr	100%	0.19	2	UA	590	19	36	55	224	10	214	0
-	Pollard Blvd	SH 6	Charlotte St	100%	0.68	4	DA	665	79	109	188	1,809	128	1,681	0
-	Pollard Blvd	Charlotte St	450' South of Del Bello Blvd	100%	0.94	2	UA	590	60	50	188	1,109	103	1,006	0
-	Pollard Blvd	450' South of Del Bello Blvd	Del Bello Blvd	100%	0.09	4	DA	665	60	28	88	239	8	231	0
-	Dogwood Ave	Pollard Dr	McCoy Rd	100%	0.39	2	UC	510	1	3	4	398	2	396	0
-	Dogwood Ave	McCoy Rd	Masters Rd (FM 1128)	100%	0.51	2	UC	510	15	40	55	520	28	492	0

Appendix B continued from previous page (2 of 3).															
Shared Service Area	Roadway	From	To	% in Serv. Area	Length (mi)	Lanes	Type	PM Peak Hr Lane Capacity	Peak Hour Volumes			Supply (veh-mi)	Demand (veh-mi)	Excess Capacity (veh-mi)	Existing Deficiency (veh-mi)
									A	B	Total				
-	Charlotte St	Livingston Dr	McCoy Rd	100%	0.46	2	DC	565	57	85	9	520	65	454	0
-	Charlotte St	McCoy Rd	Masters Rd (FM 1128)	100%	0.46	2	UC	510	30	50	80	469	37	432	0
-	McCoy Rd	Dogwood Ave	Tankersley Rd	100%	0.40	2	DA	665	125	147	168	532	109	423	0
-	McCoy Rd	Tankersley Rd	Charlotte St	100%	0.17	2	DA	665	135	157	292	226	50	176	0
-	McCoy Rd	Charlotte St	Lewis Ln	100%	0.34	2	DA	665	160	184	344	452	117	335	0
-	McCoy Rd	Lewis Ln	SH 6	100%	0.34	3	SA	665	187	207	394	452	134	318	0
-	McCoy Rd	SH 6	Rodgers Rd	100%	0.09	4	DA	665	382	448	399	239	75	165	0
3	Masters (FM 1128)	Old Massey Ranch Rd (CR 90)	Oilfield Rd (CR 98)	50%	0.26	2	UA	590	0	610	610	153	159	0	5
3	Masters (FM 1128)	Oilfield Rd (CR 98)	Old Chocolate Bayou Rd (CR 89)	50%	1.04	2	UA	590	0	574	574	614	597	17	0
3	Masters (FM 1128)	Old Chocolate Bayou Rd (CR 89)	Del Bello Rd (CR 90)	50%	0.81	2	UA	590	0	576	576	478	467	11	0
3	Masters (FM 1128)	Del Bello Rd (CR 90)	Dogwood Ave	50%	0.27	2	UA	590	0	660	660	159	178	0	19
3	Masters (FM 1128)	Dogwood Ave	Charlotte St	50%	0.76	2	UA	590	0	670	22	448	509	0	61
3	Masters (FM 1128)	Charlotte St	Lewis Ln	50%	0.34	2	UA	590	0	685	685	201	233	0	32
3	Masters (FM 1128)	Lewis Ln	SH 6	50%	0.35	2	UA	590	0	698	698	207	244	0	38
3	Masters (FM 1128)	SH 6	Bissell Rd	50%	0.27	2	UA	590	0	363	363	159	98	61	0
-	Lewis Ln	McCoy Rd	Masters (FM 1128)	100%	0.50	2	UA	590	60	70	130	590	65	525	0
-	SH 6	McCoy Rd	Masters (FM 1128)	100%	0.55	6	DA	665	1,658	1,705	3,363	2,195	1,850	345	0
-	SH 6	SH-288	Pollard Blvd	100%	1.19	6	DA	665	1,796	1,725	3,521	4,748	4,190	558	0
-	Meridiana Pkwy	SH-6	Bissel Rd	100%	0.25	4	DA	665	382	448	830	665	208	458	0
												24,685	11,091	13,749	155
Service Area 3															
2	Masters (FM 1128)	Old Massey Rnch Rd (CR 90)	Oilfield Rd (CR 98)	50%	0.26	2	UA	590	529	0	529	153	138	16	0
2	Masters (FM 1128)	Oilfield Rd (CR 98)	Old Chocolate Bayou Rd (CR 89)	50%	1.04	2	UA	590	442	0	22	614	460	154	0
2	Masters (FM 1128)	Old Chocolate Bayou Rd (CR 89)	Del Bello Rd (CR 90)	50%	0.81	2	UA	590	460	0	1,016	478	373	105	0
2	Masters (FM 1128)	Del Bello Rd (CR 90)	Dogwood Ave	50%	0.27	2	UA	590	470	0	470	159	127	32	0
2	Masters (FM 1128)	Dogwood Ave	Charlotte St	50%	0.76	2	UA	590	505	0	505	448	384	65	0
2	Masters (FM 1128)	Charlotte St	Lewis Ln	50%	0.34	2	UA	590	528	0	528	201	180	21	0
2	Masters (FM 1128)	Lewis Ln	SH 6	50%	0.35	2	UA	590	573	0	1,271	207	201	6	0
-	Oilfield Rd (CR 98)	Masters (FM 1128)	E. City Limits	100%	3.53	2	UA	590	13	14	27	4,165	95	4,070	0
-	Belcher Rd (CR 397)	Masters (FM 1128)	E. City Limits	100%	0.29	2	UA	590	15	25	40	342	12	331	0
-	Cemetery Rd	Scott Ave	Lewis Ln	100%	0.58	2	UA	590	20	22	42	684	24	660	0
-	Cemetery Rd	Lewis Ln	SH 6	100%	0.34	2	UA	590	30	32	62	401	21	380	0
-	Lewis Ln	Masters (FM 1128)	Cemetery Rd	100%	0.60	2	UA	590	40	50	90	708	54	654	0
-	SH 6	Masters (FM 1128)	Cemetery Rd	100%	0.55	6	DA	665	1,887	1,665	3,552	2,195	1,954	241	0
-	SH 6	Cemetery Rd	Pearland Sites Rd (E. City Limits)	100%	2.03	6	DA	665	1,903	1,643	3,546	8,100	7,198	901	0
-	Pearland Sites Rd.	SH-6	Bissel Rd (CR-190)	100%	0.26	2	UA	590	57	85	142	307	37	270	0
												19,162	11,256	7,906	0

Appendix B continued from previous page (3 of 3).															
Shared Service Area	Roadway	From	To	% in Serv. Area	Length (mi)	Lanes	Type	PM Peak Hr Lane Capacity	Peak Hour Volumes			Supply (veh-mi)	Demand (veh-mi)	Excess Capacity (veh-mi)	Existing Deficiency (veh-mi)
									A	B	Total				
Service Area 4															
-	Bissell Rd (CR-190)	Under Meridiana Pkwy	Masters (CR 67)	100%	0.56	2	UA	590	17	17	34	661	19	642	0
-	Bissell Rd (CR-190)	Masters (CR 67)	E. City Limits	100%	1.56	2	UA	590	98	73	171	1,841	267	1,574	0
-	Jordan St (CR 90)	Kirchner Rd	Meridiana Pkwy	100%	0.86	2	UC	510	35	33	117	877	58	819	0
-	Jordan St (CR 90)	Meridiana Pkwy	Masters (CR 67)	100%	0.59	2	UC	510	38	27	65	602	38	563	0
-	Jordan St (CR 90)	Masters (CR 67)	8030 Jordan St	100%	0.86	2	UC	510	36	16	52	877	45	832	0
-	Clark Rd (CR 90)	W. City Limits	Kirchner Rd	100%	1.40	2	DA	665	56	48	104	1,862	146	1,716	0
-	Meridiana Pkwy	Bissel Rd	Jordan St	100%	0.25	4	DA	665	382	448	830	665	208	458	0
-	Meridiana Pkwy	Jordan St	Sora Dr/Cumulus Dr	100%	1.49	4	DA	665	369	406	775	3,963	1,155	2,809	0
-	Meridiana Pkwy	Sora Dr/Cumulus Dr	Pursley Blvd	100%	0.71	4	DA	665	341	365	706	1,889	501	1,387	0
-	Meridiana Pkwy	Pursley Blvd	S. City Limits	100%	0.04	4	DA	665	422	345	767	106	31	76	0
-	Cumulus Rd	Meridiana Pkwy	Masters (CR 67)	100%	0.67	2	UC	510	50	50	100	683	67	616	0
-	Masters (CR 67)	Bissell Rd	Jordan St	100%	0.41	2	UA	590	215	347	562	484	230	253	0
-	Masters (CR 67)	Jordan St	Uzzelle Rd	100%	0.92	2	UA	590	182	246	428	1,086	394	692	0
-	Masters (CR 67)	Uzzelle Rd	Hanselman Rd	100%	1.00	2	UA	590	159	255	414	1,180	414	766	0
-	Masters (CR 67)	Hanselman Rd	Cumulus Dr	50%	0.17	2	UA	590	0	215	215	100	37	64	0
-	Masters (CR 67)	Cumulus Dr	W. City Limits	50%	0.33	2	UA	590	0	205	205	195	68	127	0
-	Uzzelle Rd	Masters (CR 67)	Kings Dr	100%	0.75	2	UC	510	49	15	64	765	48	717	0
-	Pursley Blvd	W. City Limits	Montane Grove Dr	100%	0.17	2	UA	590	250	175	425	201	72	128	0
-	Pursley Blvd	Montane Grove Dr	Meridiana Pkwy	100%	0.85	4	DA	665	250	175	425	2,261	361	1,900	0
												20,298	4,158	16,140	0
												81,767	35,588	46,334	155

APPENDIX C:

ROADWAY IFCIP-ELIGIBLE SERVICE UNITS OF SUPPLY

Appendix C: Roadway System Eligible CIP Projects (1 of 3)

							A		B		C	D = A x B x C	E	F = D - E
Map Ref #	ID	Shared Service Area	Roadway	From	To	% in Service Area	Length (mi)	Existing Lanes	Eligible Improvement (added lanes)	Type	Lane Capacity	New Capacity Provided	Existing Utilization	Net Capacity Provided (veh-mi)
Service Area 1														
88	1-CR48	X	CR-48	SH-6	S City Limit	50%	0.27	2	2	DA	665	180	0	180
67	1-KBY-1	-	Kirby Dr (A)	City Limits	City Limits	100%	0.06	0	4	DA	665	160	0	160
66	1-KBY-2	-	Kirby Dr (B)	CR-58	City Limits	100%	0.26	0	4	DA	665	692	0	692
							0.59					1,032		1,032
Service Area 2														
56	2-CHB		Chocolate Bayou Rd	Lira Rd	FM 1128	100%	0.94	2	2	UA	590	1,109	0	1,109
138	2-OMR-1	X	Old Massey Ranch (CR-100)	330' E of Old Chocolate Bayou Rd (CR-89)	Patterson Rd	50%	0.67	2	2	DA	665	446	0	446
111	2-OMR-2	X	Old Massey Ranch (CR-100)	Patterson Rd	Masters Rd (FM 1128)	50%	0.33	0	4	DA	665	439	0	439
73	2-CRX-1		Croix Rd (CR-58)	Oak Crest Pkwy	1035' E of Oak Crest Pkwy	100%	0.20	2	2	DA	665	266	0	266
72	2-CRX-2	X	Croix Rd (CR-58)	1035' E of Oak Crest Pkwy	Del Bello Rd	50%	0.28	2	2	DA	665	186	0	186
102	2-DBB-1		Del Bello Blvd EXT A	Pollard Blvd	Pollard Drive	100%	0.45	0	4	DA	665	1,197	0	1,197
103	2-DBB-2		Del Bello Blvd	Pollard Drive	Del Bello Blvd EXT B	100%	0.12	2	2	DA	665	160	0	160
51	2-DBB-3		Del Bello Blvd EXT B	Del Bello Blvd	Del Bello Rd (CR-90)	100%	0.19	0	4	DA	665	505	0	505
107	2-DBR-1		Del Bello Rd (CR-90)	Croix Rd (CR-58)	Lira Rd	100%	0.73	2	2	DA	665	971	0	971
120	2-DBR-2		Del Bello Rd (CR-90)	Lira Rd	Patterson Rd	100%	0.32	2	2	DA	665	426	0	426
30	2-DBR-3		Del Bello Rd (CR-90)	Patterson Rd	Masters Rd (FM 1128)	100%	0.65	2	2	DA	665	865	0	865
54	2-LWS		Lewis Ln	Mccoy Rd	Masters Rd (FM 1128)	100%	0.50	2	2	UC	510	510	0	510
109	2-LIRA-1		Lira Rd	Del Bello Blvd	Lira Rd EXT	100%	0.55	2	2	DA	665	732	0	732
108	2-LIRA-2		Lira Rd EXT	Lira Rd	City Limit	100%	0.59	0	4	DA	665	1,569	0	1,569
110	2-LIRA-3	X	Lira Rd	Old Chocolate Bayou	N City Limit	50%	0.22	2	2	DA	665	146	0	146
40	2-MCC-1		Mccoy Rd	Charlotte St	SH 6	100%	0.68	2	2	DA	665	904	0	904
26	2-MSTR-1	X	Masters Rd (FM 1128)	Bailey Ave (CR-101)	Old Massey Ranch (CR-100)	50%	1.00	2	2	DA	665	665	0	665
27	2-MSTR-2	3	Masters Rd (FM 1128)	Old Massey Ranch (CR-100)	Oilfield Rd	50%	0.26	2	2	DA	665	173	0	173
28	2-MSTR-3	3	Masters Rd (FM 1128)	Oilfield Rd	Chocolate Bayou Rd	50%	1.04	2	2	DA	665	692	0	692
29	2-MSTR-4	3	Masters Rd (FM 1128)	Chocolate Bayou Rd	Dogwood Ave	50%	1.08	2	2	DA	665	718	0	718
39	2-MSTR-5	3	Masters Rd (FM 1128)	Dogwood Ave	Charlotte St	50%	0.76	2	2	DA	665	505	0	505
38	2-MSTR-6	3	Masters Rd (FM 1128)	Charlotte St	SH 6	50%	0.69	2	2	DA	665	459	0	459
84	2-MSTR-7	3	Masters Rd (FM 1128)	SH-6	Railroad	50%	0.23	2	2	DA	665	153	0	153
106	2-NEW-1		New Road 2A	Croix Rd (CR-58)	Del Bello Blvd	100%	0.78	0	4	DA	665	2,075	0	2,075
							13.26					15,871		15,871

Appendix C continued from previous page (2 of 3).														
							A		B		C	D = A x B x C	E	F = D - E
Map Ref #	ID	Shared Service Area	Roadway	From	To	% in Service Area	Length (mi)	Existing Lanes	Eligible Improvement (added lanes)	Type	Lane Capacity	New Capacity Provided	Existing Utilization	Net Capacity Provided (veh-mi)
Service Area 3														
117	3-BELC-1		Belcher Rd	Masters Rd (FM 1128)	50' W of Hal McLain	100%	1.56	2	2	DA	665	2,075	0	2,075
70	3-BELC-2		Belcher Rd	900' E of Frey Rd	2250' W of City Limit	100%	0.25	0	4	DA	665	665	0	665
90	3-BELC-3	X	Belcher Rd	2250' W of City Limit	W City Limit	50%	0.42	0	4	DA	665	559	0	559
93	3-CEM-1		Cemetery Rd	Scott Ave	Lewis Ln	100%	0.34	2	2	UC	510	347	0	347
33	3-CEM-2		Cemetery Rd	Lewis Ln	SH 6	100%	0.58	2	2	UC	510	592	0	592
104	3-CR99-1	X	CR-99	170' S of Heights Rd	Oilfield Rd	50%	0.26	2	2	DA	665	173	0	173
62	3-CR99-2	X	CR-99	Oilfield Rd	Belcher Rd	50%	0.62	2	2	DA	665	412	0	412
63	3-CR99-3	X	CR-99	Belcher Rd	Lewis Ln	50%	0.79	2	2	DA	665	525	0	525
64	3-CR99-4	X	CR-99	Lewis Ln	SH-6	50%	0.45	2	2	DA	665	299	0	299
61	3-CR99-5	X	CR-99	SH-6	Alvin-Manvel Rd	50%	0.31	2	2	DA	665	206	0	206
55	3-LEW		Lewis Ln	Masters Rd (FM 1128)	Cemetery Rd	100%	0.60	2	2	UC	510	612	0	612
27	3-MSTR-1	2	Masters Rd (FM 1128)	Old Massey Ranch (CR-100)	Oilfield Rd	50%	0.26	2	2	DA	665	173	0	173
28	3-MSTR-2	2	Masters Rd (FM 1128)	Oilfield Rd	Chocolate Bayou Rd	50%	1.04	2	2	DA	665	692	0	692
29	3-MSTR-3	2	Masters Rd (FM 1128)	Chocolate Bayou Rd	Dogwood Ave	50%	1.08	2	2	DA	665	718	0	718
39	3-MSTR-4	2	Masters Rd (FM 1128)	Dogwood Ave	Charlotte St	50%	0.76	2	2	DA	665	505	0	505
38	3-MSTR-5	2	Masters Rd (FM 1128)	Charlotte St	SH 6	50%	0.69	2	2	DA	665	459	0	459
84	3-MSTR-6	2	Masters Rd (FM 1128)	SH-6	Railroad	50%	0.23	2	2	DA	665	153	0	153
69	3-NEW-1		New Road 3A	Oilfield Rd	Belcher Rd	100%	0.62	0	4	DA	665	1,649	0	1,649
71	3-NEW-2		New Road 3B	Bissel Rd	City Limit	100%	0.25	0	4	DA	665	665	0	665
113	3-NEW-3		New Road 3C	SH 6	Bissel Rd	100%	0.25	0	4	DA	665	665	0	665
112	3-OMR		Old Massey Ranch (CR-100)	Masters Rd (FM 1128)	635' W of Holland Rd	100%	0.54	2	2	DA	665	718	0	718
							10.82					12,862		12,862

Appendix C continued from previous page (3 of 3).														
							A		B		C	D = A x B x C	E	F = D - E
Map Ref #	ID	Shared Service Area	Roadway	From	To	% in Service Area	Length (mi)	Existing Lanes	Eligible Improvement (added lanes)	Type	Lane Capacity	New Capacity Provided	Existing Utilization	Net Capacity Provided (veh-mi)
Service Area 4														
44	4-BIS-1		Bissell Rd	Meridiana Pkwy	Masters Rd	100%	0.56	2	2	UA	590	661	0	661
83	4-BIS-2		Bissell Rd	Masters Rd	E City Limit	100%	1.57	2	2	UA	590	1,853	0	1,853
131	4-IOWA		Iowa Ln	Bissel St	Bullard Pkwy	100%	0.27	2	2	UC	510	275	0	275
46	4-JOR-1		Jordan St	Meridiana Pkwy	Masters Rd	100%	0.58	2	1	SC*	55	87	0	87
60	4-JOR-2		Jordan St	Masters Rd	Jordan St EXT A	100%	1.15	2	1	SC*	55	173	0	173
135	4-JOR-3		Jordan St EXT A	Jordan St	New Road 4G	100%	0.32	0	3	SC	565	362	0	362
123	4-JOR-4	X	Jordan St EXT B	New Road 4G	E City Limits	50%	0.47	0	3	SC	565	266	0	266
57	4-MSTR-1		Masters Rd (CR-67)	Railroad	Jordan St	100%	0.81	2	2	DA	665	1,077	0	1,077
49	4-MSTR-2		Masters Rd (CR-67)	Jordan St	New Road 4C	100%	1.00	2	2	DA	665	1,330	0	1,330
91	4-MSTR-3		Masters Rd (CR-67)	New Road 4C	Uzzell Rd	100%	0.11	2	2	DA	665	146	0	146
50	4-MSTR-4		Masters Rd (CR-67)	Uzzell Rd	Hanselman Rd	100%	1.00	2	2	DA	665	1,330	0	1,330
124	4-MSTR-5	X	Masters Rd (CR-67)	Hanselman Rd	Cumulus Dr	50%	0.18	2	2	DA	665	120	0	120
125	4-MSTR-6	X	Masters Rd (CR-67)	Cumulus Dr	1760' S of Cumulus Dr	50%	0.34	2	2	DA	665	226	0	226
122	4-NEW-1		New Road 4A	Bissel Rd	Jordan St	100%	0.43	0	4	DA	665	1,144	0	1,144
133	4-NEW-2		New Road 4B	Jordan St	New Road 4C	100%	0.54	0	4	DA	665	1,436	0	1,436
114	4-NEW-3		New Road 4C	Masters Rd (FM 1128)	New Road 4D	100%	0.56	0	4	UA	590	1,322	0	1,322
115	4-NEW-4		New Road 4D	New Road 4C	E City Limit	100%	0.66	0	4	DA	665	1,756	0	1,756
137	4-NEW-5		New Road 4E	Jordan St EXT A	New Road 4D	100%	1.06	0	4	UA	590	2,502	0	2,502
134	4-NEW-6		New Road 4F	New Road 4D	Uzzell Rd	100%	0.44	0	4	UA	590	1,038	0	1,038
121	4-NEW-7	X	New Road 4G	Alvin-Manvel Rd	Jordan St EXT A	50%	0.54	0	4	UA	590	637	0	637
127	4-NEW-8	X	New Road 4H	Alvin-Manvel Rd	Jordan St EXT B	50%	0.84	0	4	UA	590	991	0	991
128	4-NEW-9	X	New Road 4I	Jordan St EXT B	New Road 4J	50%	1.00	0	4	UA	590	1,180	0	1,180
129	4-NEW-10	X	New Road 4J	E City Limit	New Road 4I	50%	0.37	0	4	DA	665	492	0	492
59	4-UZZ-1		Uzzell Rd	Masters Rd	New Road 4F	100%	0.75	2	2	UA	590	885	0	885
136	4-UZZ-2	X	Uzzell Rd EXT	New Road 4F	1315' W of Kings Dr	50%	0.25	0	4	UA	590	295	0	295
							15.80					21,584	0	21,584
Total												51,349	0	51,349
*For roadways with one added TWLTL, the TWLTL capacity is added to each existing through lane.														

APPENDIX D:

ROADWAY IFCIP-ELIGIBLE COST ANALYSIS

Appendix D: Roadway IFCIP-Eligible Cost Analysis (1 of 3)

Map Ref ID	ID	Roadway	From	To	Length (mi)	Pre-Program Lanes	Improve-ment Lanes	Type	% in Serv. Area	Construction	Engineering	ROW	Interest Cost	Portion of Study Update	Total Impact Fee Eligible Cost
Service Area 1															
88	1-CR48	CR-48	SH-6	S City Limit	0.27	2	2	DA	50%	\$1,813,900	\$272,100	\$70,400	\$508,517	\$263	\$1,586,980
67	1-KBY-1	Kirby Dr (A)	City Limits	City Limits	0.06	0	4	DA	100%	\$620,000	\$93,000	\$40,800	\$355,518	\$234	\$1,109,552
66	1-KBY-2	Kirby Dr (B)	CR-58	City Limits	0.26	0	4	DA	100%	\$2,481,400	\$372,200	\$165,100	\$1,423,725	\$1,011	\$4,443,435
					0.59					\$4,915,300	\$737,300	\$276,300	\$2,287,760	\$1,507	\$7,139,967
Service Area 2															
56	2-CHB	Chocolate Bayou Rd	Lira Rd	FM 1128	0.94	2	2	UA	100%	\$4,759,600	\$713,900	\$49,500	\$2,604,840	\$1,620	\$8,129,460
138	2-OMR-1	Old Massey Ranch (CR-100)	330' E of Old Chocolate Bayou Rd (CR-89)	Patterson Rd	0.67	2	2	DA	50%	\$2,200,600	\$330,100	\$69,000	\$613,055	\$651	\$1,913,556
111	2-OMR-2	Old Massey Ranch (CR-100)	Patterson Rd	Masters Rd (FM 1128)	0.33	0	4	DA	50%	\$6,362,300	\$954,300	\$355,800	\$1,809,286	\$641	\$5,646,127
73	2-CRX-1	Croix Rd (CR-58)	Oak Crest Pkwy	1035' E of Oak Crest Pkwy	0.20	2	2	DA	100%	\$1,539,700	\$231,000	\$62,000	\$864,365	\$389	\$2,697,454
72	2-CRX-2	Croix Rd (CR-58)	1035' E of Oak Crest Pkwy	Del Bello Rd	0.28	2	2	DA	50%	\$2,171,000	\$325,700	\$87,400	\$609,376	\$272	\$1,901,698
102	2-DBB-1	Del Bello Blvd EXT A	Pollard Blvd	Pollard Drive	0.45	0	4	DA	100%	\$4,725,800	\$708,900	\$282,400	\$2,696,384	\$1,748	\$8,415,233
103	2-DBB-2	Del Bello Blvd	Pollard Drive	Del Bello Blvd EXT B	0.12	2	2	DA	100%	\$926,800	\$139,000	\$37,000	\$520,119	\$234	\$1,623,153
51	2-DBB-3	Del Bello Blvd EXT B	Del Bello Blvd	Del Bello Rd (CR-90)	0.19	0	4	DA	100%	\$2,000,800	\$300,100	\$119,600	\$1,141,593	\$738	\$3,562,830
107	2-DBR-1	Del Bello Rd (CR-90)	Croix Rd (CR-58)	Lira Rd	0.73	2	2	DA	100%	\$4,988,100	\$748,200	\$231,700	\$2,814,718	\$1,418	\$8,784,136
120	2-DBR-2	Del Bello Rd (CR-90)	Lira Rd	Patterson Rd	0.32	2	2	DA	100%	\$2,494,500	\$374,200	\$100,600	\$1,400,426	\$622	\$4,370,348
30	2-DBR-3	Del Bello Rd (CR-90)	Patterson Rd	Masters Rd (FM 1128)	0.65	2	2	DA	100%	\$5,122,000	\$768,300	\$207,200	\$2,875,794	\$1,263	\$8,974,558
54	2-LWS	Lewis Ln	Mccoy Rd	Masters Rd (FM 1128)	0.50	2	2	UC	100%	\$3,040,000	\$456,000	\$63,300	\$1,678,690	\$745	\$5,238,735
109	2-LIRA-1	Lira Rd	Del Bello Blvd	Lira Rd EXT	0.55	2	2	DA	100%	\$4,511,500	\$676,700	\$160,100	\$2,522,446	\$1,069	\$7,871,815
108	2-LIRA-2	Lira Rd EXT	Lira Rd	City Limit	0.59	0	4	DA	100%	\$5,584,400	\$837,700	\$124,700	\$3,087,700	\$2,292	\$9,636,792
110	2-LIRA-3	Lira Rd	Old Chocolate Bayou	N City Limit	0.22	2	2	DA	50%	\$1,491,200	\$223,700	\$23,400	\$409,922	\$213	\$1,279,285
40	2-MCC-1	Mccoy Rd	Charlotte St	SH 6	0.68	2	2	DA	100%	\$4,622,600	\$693,400	\$198,200	\$2,600,690	\$1,320	\$8,116,210
26	2-MSTR-1	Masters Rd (FM 1128)	Bailey Ave (CR-101)	Old Massey Ranch (CR-100)	1.00	2	2	DA	50%	\$7,818,800	\$1,172,800	\$184,800	\$2,163,956	\$971	\$6,753,127
27	2-MSTR-2	Masters Rd (FM 1128)	Old Massey Ranch (CR-100)	Oilfield Rd	0.26	2	2	DA	50%	\$2,051,300	\$307,700	\$13,800	\$559,548	\$253	\$1,746,200
28	2-MSTR-3	Masters Rd (FM 1128)	Oilfield Rd	Chocolate Bayou Rd	1.04	2	2	DA	50%	\$8,171,000	\$1,225,700	\$110,300	\$2,241,917	\$1,011	\$6,996,428
29	2-MSTR-4	Masters Rd (FM 1128)	Chocolate Bayou Rd	Dogwood Ave	1.08	2	2	DA	50%	\$8,455,900	\$1,268,400	\$114,100	\$2,320,067	\$1,049	\$7,240,316
39	2-MSTR-5	Masters Rd (FM 1128)	Dogwood Ave	Charlotte St	0.76	2	2	DA	50%	\$5,954,800	\$893,200	\$120,300	\$1,643,247	\$738	\$5,128,135
38	2-MSTR-6	Masters Rd (FM 1128)	Charlotte St	SH 6	0.69	2	2	DA	50%	\$5,435,300	\$815,300	\$0	\$1,474,001	\$670	\$4,599,971
84	2-MSTR-7	Masters Rd (FM 1128)	SH-6	Railroad	0.23	2	2	DA	50%	\$1,850,600	\$277,600	\$49,400	\$513,516	\$223	\$1,602,540
106	2-NEW-1	New Road 2A	Croix Rd (CR-58)	Del Bello Blvd	0.78	0	4	DA	100%	\$7,983,700	\$1,197,600	\$532,200	\$4,581,227	\$3,031	\$14,297,757
					13.26					\$104,262,300	\$15,639,500	\$3,296,800	\$43,746,882	\$23,181	\$136,525,863

Appendix D continued from previous page (2 of 3)															
Map Ref ID	ID	Roadway	From	To	Length (mi)	Pre-Program Lanes	Improve-ment Lanes	Type	% in Serv. Area	Construction	Engineering	ROW	Interest Cost	Portion of Study Update	Total Impact Fee Eligible Cost
Service Area 3															
117	3-BELC-1	Belcher Rd	Masters Rd (FM 1128)	50 W of Hal McLain	1.56	2	2	DA	100%	\$10,637,400	\$1,595,600	\$495,500	\$6,003,206	\$3,031	\$18,734,737
70	3-BELC-2	Belcher Rd	900' E of Frey Rd	2250' W of City Limit	0.25	0	4	DA	100%	\$2,651,800	\$397,800	\$79,400	\$1,475,746	\$971	\$4,605,717
90	3-BELC-3	Belcher Rd	2250' W of City Limit	W City Limit	0.42	0	4	DA	50%	\$4,394,300	\$659,100	\$263,600	\$1,253,842	\$816	\$3,913,158
93	3-CEM-1	Cemetery Rd	Scott Ave	Lewis Ln	0.34	2	2	UC	100%	\$1,756,000	\$263,400	\$36,300	\$969,540	\$507	\$3,025,747
33	3-CEM-2	Cemetery Rd	Lewis Ln	SH 6	0.58	2	2	UC	100%	\$2,954,200	\$443,100	\$61,200	\$1,631,150	\$865	\$5,090,514
104	3-CR99-1	CR-99	170' S of Heights Rd	Oilfield Rd	0.26	2	2	DA	50%	\$1,790,600	\$268,600	\$83,200	\$505,215	\$253	\$1,576,668
62	3-CR99-2	CR-99	Oilfield Rd	Belcher Rd	0.62	2	2	DA	50%	\$4,201,900	\$630,300	\$197,300	\$1,186,044	\$602	\$3,701,396
63	3-CR99-3	CR-99	Belcher Rd	Lewis Ln	0.79	2	2	DA	50%	\$5,331,400	\$799,700	\$250,000	\$1,504,775	\$767	\$4,696,092
64	3-CR99-4	CR-99	Lewis Ln	SH-6	0.45	2	2	DA	50%	\$3,042,900	\$456,400	\$130,700	\$856,018	\$437	\$2,671,454
61	3-CR99-5	CR-99	SH-6	Alvin-Manvel Rd	0.31	2	2	DA	50%	\$2,100,500	\$315,100	\$89,700	\$590,794	\$301	\$1,843,744
55	3-LEW	Lewis Ln	Masters Rd (FM 1128)	Cemetery Rd	0.60	2	2	UC	100%	\$3,040,000	\$456,000	\$63,300	\$1,678,690	\$894	\$5,238,884
27	3-MSTR-1	Masters Rd (FM 1128)	Old Massey Ranch (CR-100)	Oilfield Rd	0.26	2	2	DA	50%	\$2,051,300	\$307,700	\$13,800	\$559,548	\$253	\$1,746,200
28	3-MSTR-2	Masters Rd (FM 1128)	Oilfield Rd	Chocolate Bayou Rd	1.04	2	2	DA	50%	\$8,171,000	\$1,225,700	\$110,300	\$2,241,917	\$1,011	\$6,996,428
29	3-MSTR-3	Masters Rd (FM 1128)	Chocolate Bayou Rd	Dogwood Ave	1.08	2	2	DA	50%	\$8,455,900	\$1,268,400	\$114,100	\$2,320,067	\$1,049	\$7,240,316
39	3-MSTR-4	Masters Rd (FM 1128)	Dogwood Ave	Charlotte St	0.76	2	2	DA	50%	\$5,954,800	\$893,200	\$120,300	\$1,643,247	\$738	\$5,128,135
38	3-MSTR-5	Masters Rd (FM 1128)	Charlotte St	SH 6	0.69	2	2	DA	50%	\$5,435,300	\$815,300	\$0	\$1,474,001	\$670	\$4,599,971
84	3-MSTR-6	Masters Rd (FM 1128)	SH-6	Railroad	0.23	2	2	DA	50%	\$1,850,600	\$277,600	\$49,400	\$513,516	\$223	\$1,602,540
69	3-NEW-1	New Road 3A	Oilfield Rd	Belcher Rd	0.62	0	4	DA	100%	\$5,909,000	\$886,400	\$393,800	\$3,390,678	\$2,409	\$10,582,287
71	3-NEW-2	New Road 3B	Bissel Rd	City Limit	0.25	0	4	DA	100%	\$2,392,400	\$358,900	\$159,000	\$1,372,599	\$971	\$4,283,871
113	3-NEW-3	New Road 3C	SH 6	Bissel Rd	0.25	0	4	DA	100%	\$2,381,100	\$357,200	\$46,400	\$1,313,362	\$971	\$4,099,033
112	3-OMR	Old Massey Ranch (CR-100)	Masters Rd (FM 1128)	635' W of Holland Rd	0.54	2	2	DA	100%	\$3,621,600	\$543,200	\$0	\$1,964,265	\$1,049	\$6,130,114
					11.90					\$88,124,000	\$13,218,700	\$2,757,300	\$34,448,221	\$18,786	\$107,507,007

Appendix D continued from previous page (3 of 3)															
Map Ref ID	ID	Roadway	From	To	Length (mi)	Pre-Program Lanes	Improve-ment Lanes	Type	% in Serv. Area	Construction	Engineering	ROW	Interest Cost	Portion of Study Update	Total Impact Fee Eligible Cost
Service Area 4															
44	4-BIS-1	Bissell Rd	Meridiana Pkwy	Masters Rd	0.56	2	2	UA	100%	\$3,679,900	\$552,000	\$0	\$1,995,912	\$965	\$6,228,778
83	4-BIS-2	Bissell Rd	Masters Rd	E City Limit	1.57	2	2	UA	100%	\$10,283,800	\$1,542,600	\$0	\$5,577,744	\$2,706	\$17,406,851
131	4-IOWA	Iowa Ln	Bissel St	Bullard Pkwy	0.27	2	2	UC	100%	\$1,374,200	\$206,100	\$28,200	\$758,625	\$402	\$2,367,527
46	4-JOR-1	Jordan St	Meridiana Pkwy	Masters Rd	0.58	2	1	TWLTL	100%	\$3,894,600	\$584,200	\$61,700	\$2,141,459	\$127	\$6,682,086
60	4-JOR-2	Jordan St	Masters Rd	Jordan St EXT A	1.15	2	1	TWLTL	100%	\$7,668,500	\$1,150,300	\$121,800	\$4,216,700	\$253	\$13,157,553
135	4-JOR-3	Jordan St EXT A	Jordan St	New Road 4G	0.32	0	3	SC	100%	\$2,112,900	\$316,900	\$133,200	\$1,208,801	\$529	\$3,772,329
123	4-JOR-4	Jordan St EXT B	New Road 4G	E City Limits	0.47	0	3	SC	50%	\$3,135,000	\$470,300	\$199,100	\$897,144	\$389	\$2,799,733
57	4-MSTR-1	Masters Rd (CR-67)	Railroad	Jordan St	0.81	2	2	DA	100%	\$6,365,700	\$954,900	\$128,900	\$3,513,445	\$1,573	\$10,964,518
49	4-MSTR-2	Masters Rd (CR-67)	Jordan St	New Road 4C	1.00	2	2	DA	100%	\$7,789,000	\$1,168,400	\$315,700	\$4,373,519	\$1,943	\$13,648,561
91	4-MSTR-3	Masters Rd (CR-67)	New Road 4C	Uzzell Rd	0.11	2	2	DA	100%	\$842,800	\$126,400	\$22,600	\$467,768	\$213	\$1,459,781
50	4-MSTR-4	Masters Rd (CR-67)	Uzzell Rd	Hanselman Rd	1.00	2	2	DA	100%	\$7,788,000	\$1,168,200	\$263,000	\$4,348,097	\$1,943	\$13,569,240
124	4-MSTR-5	Masters Rd (CR-67)	Hanselman Rd	Cumulus Dr	0.18	2	2	DA	50%	\$1,418,400	\$212,800	\$9,500	\$386,906	\$175	\$1,207,431
125	4-MSTR-6	Masters Rd (CR-67)	Cumulus Dr	1760' S of Cumulus Dr	0.34	2	2	DA	50%	\$2,634,000	\$395,100	\$17,700	\$718,489	\$330	\$2,242,219
122	4-NEW-1	New Road 4A	Bissel Rd	Jordan St	0.43	0	4	DA	100%	\$4,045,800	\$606,900	\$90,600	\$2,237,106	\$1,671	\$6,982,077
133	4-NEW-2	New Road 4B	Jordan St	New Road 4C	0.54	0	4	DA	100%	\$5,137,400	\$770,600	\$201,200	\$2,881,313	\$2,097	\$8,992,610
114	4-NEW-3	New Road 4C	Masters Rd (FM 1128)	New Road 4D	0.56	0	4	UA	100%	\$2,867,700	\$430,200	\$238,200	\$1,667,749	\$1,931	\$5,205,779
115	4-NEW-4	New Road 4D	New Road 4C	E City Limit	0.66	0	4	DA	100%	\$6,240,200	\$936,000	\$348,800	\$3,549,053	\$2,565	\$11,076,618
137	4-NEW-5	New Road 4E	Jordan St EXT A	New Road 4D	1.06	0	4	UA	100%	\$9,884,400	\$1,482,700	\$559,900	\$5,625,191	\$3,654	\$17,555,845
134	4-NEW-6	New Road 4F	New Road 4D	Uzzell Rd	0.44	0	4	UA	100%	\$4,150,800	\$622,600	\$234,400	\$2,361,854	\$1,516	\$7,371,170
121	4-NEW-7	New Road 4G	Alvin-Manvel Rd	Jordan St EXT A	0.54	0	4	UA	50%	\$182,300	\$27,300	\$12,000	\$52,257	\$930	\$163,988
127	4-NEW-8	New Road 4H	Alvin-Manvel Rd	Jordan St EXT B	0.84	0	4	UA	50%	\$7,834,800	\$1,175,200	\$443,500	\$2,229,301	\$1,447	\$6,957,498
128	4-NEW-9	New Road 4I	Jordan St EXT B	New Road 4J	1.00	0	4	UA	50%	\$9,353,100	\$1,403,000	\$530,000	\$2,661,460	\$1,723	\$8,306,233
129	4-NEW-10	New Road 4J	E City Limit	New Road 4I	0.37	0	4	DA	50%	\$3,469,700	\$520,500	\$193,600	\$986,613	\$719	\$3,079,232
59	4-UZZ-1	Uzzell Rd	Masters Rd	New Road 4F	0.75	2	2	UA	100%	\$4,908,800	\$736,300	\$137,900	\$2,727,465	\$1,293	\$8,511,758
136	4-UZZ-2	Uzzell Rd EXT	New Road 4F	1315' W of Kings Dr	0.25	0	4	UA	50%	\$2,303,100	\$345,500	\$129,700	\$655,172	\$431	\$2,044,753
					15.80					\$119,364,900	\$17,905,000	\$4,421,200	\$58,239,141	\$31,525	\$181,754,167
	Total				41.55					\$316,666,500	\$47,500,500	\$10,751,600	\$138,722,004	\$75,000	\$432,927,004

APPENDIX E:

PLANNING LEVEL COST ESTIMATES

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Masters Rd (FM 1128)
Bailey Ave (CR-101) to Old Massey Ranch (CR-100)

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	5,281		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	53	STA	\$ 265,000
2	Unclassified Street Excavation	18,000	CY	\$ 360,000
3	8" Lime Stabilized Subgrade	28,200	SY	\$ 225,600
4	Lime for Stabilization (48 lb/SY)	680	TON	\$ 238,000
5	Concrete Pavement (CRCP - 9")	27,000	SY	\$ 2,700,000
6	Curb & Gutter	10,570	LF	\$ 422,800
7	Concrete Sidewalk and Ramps	63,380	SF	\$ 760,560
8	Furnishing and Placing Topsoil	23,500	SY	\$ 235,000
Paving Estimate Subtotal:				\$ 5,206,960
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	104,200
10	Traffic Control	5%	\$	260,400
11	Erosion Control	3%	\$	156,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	781,100
13	Landscaping	2%	\$	104,200
14	Illumination	3%	\$	156,300
Other Components Estimate Subtotal:				\$ 1,562,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 6,769,460
Mobilization				5% \$ 338,500
Contingency				10% \$ 710,800
Construction Cost Estimate Total:				\$ 7,818,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	7,818,800
Engineering/Survey/Testing		15.0%	\$	1,172,800
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 184,800	\$ 184,800
Impact Fee Project Cost Estimate Total:				\$ 9,176,400

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Masters Rd (FM 1128)
Old Massey Ranch (CR-100) to Oilfield Rd

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,377		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	14	STA	\$ 5,000.00 \$ 70,000
2	Unclassified Street Excavation	4,700	CY	\$ 20.00 \$ 94,000
3	8" Lime Stabilized Subgrade	7,400	SY	\$ 8.00 \$ 59,200
4	Lime for Stabilization (48 lb/SY)	180	TON	\$ 350.00 \$ 63,000
5	Concrete Pavement (CRCP - 9")	7,100	SY	\$ 100.00 \$ 710,000
6	Curb & Gutter	2,760	LF	\$ 40.00 \$ 110,400
7	Concrete Sidewalk and Ramps	16,530	SF	\$ 12.00 \$ 198,360
8	Furnishing and Placing Topsoil	6,100	SY	\$ 10.00 \$ 61,000
Paving Estimate Subtotal:				\$ 1,365,960
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	27,400
10	Traffic Control	5%	\$	68,300
11	Erosion Control	3%	\$	41,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	204,900
13	Landscaping	2%	\$	27,400
14	Illumination	3%	\$	41,000
Other Components Estimate Subtotal:				\$ 410,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,775,960
Mobilization				5% \$ 88,800
Contingency				10% \$ 186,500
Construction Cost Estimate Total:				\$ 2,051,300

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,051,300
Engineering/Survey/Testing		15.0%	\$	307,700
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 13,800	\$ 13,800
Impact Fee Project Cost Estimate Total:				\$ 2,372,800

City of Manvel, TX Planning Level Cost Estimate Worksheet

Masters Rd (FM 1128)
Oilfield Rd to Chocolate Bayou Rd

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	5,516		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	56	STA	\$ 5,000.00
2	Unclassified Street Excavation	18,800	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	29,500	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	710	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	28,200	SY	\$ 100.00
6	Curb & Gutter	11,040	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	66,200	SF	\$ 12.00
8	Furnishing and Placing Topsoil	24,500	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 5,441,500
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	108,900
10	Traffic Control	5%	\$	272,100
11	Erosion Control	3%	\$	163,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	816,300
13	Landscaping	2%	\$	108,900
14	Illumination	3%	\$	163,300
Other Components Estimate Subtotal:				\$ 1,632,800
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 7,074,300
Mobilization				5% \$ 353,800
Contingency				10% \$ 742,900
Construction Cost Estimate Total:				\$ 8,171,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	8,171,000
Engineering/Survey/Testing		15.0%	\$	1,225,700
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 110,300	\$ 110,300
Impact Fee Project Cost Estimate Total:				\$ 9,507,000

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Masters Rd (FM 1128)
Chocolate Bayou Rd to Dogwood Ave

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	5,704		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	58	STA	\$ 290,000
2	Unclassified Street Excavation	19,500	CY	\$ 390,000
3	8" Lime Stabilized Subgrade	30,500	SY	\$ 244,000
4	Lime for Stabilization (48 lb/SY)	730	TON	\$ 255,500
5	Concrete Pavement (CRCP - 9")	29,200	SY	\$ 2,920,000
6	Curb & Gutter	11,410	LF	\$ 456,400
7	Concrete Sidewalk and Ramps	68,450	SF	\$ 821,400
8	Furnishing and Placing Topsoil	25,400	SY	\$ 254,000
Paving Estimate Subtotal:				\$ 5,631,300
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	112,700
10	Traffic Control	5%	\$	281,600
11	Erosion Control	3%	\$	169,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	844,700
13	Landscaping	2%	\$	112,700
14	Illumination	3%	\$	169,000
Other Components Estimate Subtotal:				\$ 1,689,700
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 7,321,000
Mobilization				5% \$ 366,100
Contingency				10% \$ 768,800
Construction Cost Estimate Total:				\$ 8,455,900

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	8,455,900
Engineering/Survey/Testing		15.0%	\$	1,268,400
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 114,100	\$ 114,100
Impact Fee Project Cost Estimate Total:				\$ 9,838,400

City of Manvel, TX Planning Level Cost Estimate Worksheet

Del Bello Rd (CR-90)
Patterson Rd to Masters Rd (FM 1128)

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	3,454		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	35	STA	\$ 175,000
2	Unclassified Street Excavation	11,800	CY	\$ 236,000
3	8" Lime Stabilized Subgrade	18,500	SY	\$ 148,000
4	Lime for Stabilization (48 lb/SY)	440	TON	\$ 154,000
5	Concrete Pavement (CRCP - 9")	17,700	SY	\$ 1,770,000
6	Curb & Gutter	6,910	LF	\$ 276,400
7	Concrete Sidewalk and Ramps	41,450	SF	\$ 497,400
8	Furnishing and Placing Topsoil	15,400	SY	\$ 154,000
Paving Estimate Subtotal:				\$ 3,410,800
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	68,300
10	Traffic Control	5%	\$	170,600
11	Erosion Control	3%	\$	102,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	511,700
13	Landscaping	2%	\$	68,300
14	Illumination	3%	\$	102,400
Other Components Estimate Subtotal:				\$ 1,023,700
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 4,434,500
Mobilization				5% \$ 221,800
Contingency				10% \$ 465,700
Construction Cost Estimate Total:				\$ 5,122,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	5,122,000
Engineering/Survey/Testing		15.0%	\$	768,300
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$	207,200
Impact Fee Project Cost Estimate Total:				\$ 6,097,500

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Cemetery Rd

Lewis Ln to SH 6

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	3,061		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	25		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	31	STA	\$ 5,000.00	\$ 155,000
2	Unclassified Street Excavation	5,700	CY	\$ 20.00	\$ 114,000
3	8" Lime Stabilized Subgrade	9,200	SY	\$ 8.00	\$ 73,600
4	Lime for Stabilization (48 lb/SY)	220	TON	\$ 350.00	\$ 77,000
5	Concrete Pavement (CRCP - 9")	8,600	SY	\$ 100.00	\$ 860,000
6	Curb & Gutter	6,130	LF	\$ 40.00	\$ 245,200
7	Concrete Sidewalk and Ramps	30,610	SF	\$ 12.00	\$ 367,320
8	Furnishing and Placing Topsoil	7,500	SY	\$ 10.00	\$ 75,000
Paving Estimate Subtotal:					\$ 1,967,120

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 39,400
10	Traffic Control	5%	\$ 98,400
11	Erosion Control	3%	\$ 59,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$ 295,100
13	Landscaping	2%	\$ 39,400
14	Illumination	3%	\$ 59,100
Other Components Estimate Subtotal:			\$ 590,500

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -

I, II, & III Construction Subtotal: \$ 2,557,620

Mobilization 5% \$ 127,900

Contingency 10% \$ 268,600

Construction Cost Estimate Total: \$ 2,954,200

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 2,954,200
Engineering/Survey/Testing		15.0%	\$ 443,100
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 61,200	\$ 61,200

Impact Fee Project Cost Estimate Total: \$ 3,458,500

City of Manvel, TX Planning Level Cost Estimate Worksheet

Masters Rd (FM 1128)

Charlotte St to SH 6

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	3,661		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	37	STA	\$ 5,000.00
2	Unclassified Street Excavation	12,500	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	19,600	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	470	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	18,800	SY	\$ 100.00
6	Curb & Gutter	7,330	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	43,940	SF	\$ 12.00
8	Furnishing and Placing Topsoil	16,300	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 3,619,780
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	72,400
10	Traffic Control	5%	\$	181,000
11	Erosion Control	3%	\$	108,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	543,000
13	Landscaping	2%	\$	72,400
14	Illumination	3%	\$	108,600
Other Components Estimate Subtotal:				\$ 1,086,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 4,705,780
Mobilization				5% \$ 235,300
Contingency				10% \$ 494,200
Construction Cost Estimate Total:				\$ 5,435,300

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	5,435,300
Engineering/Survey/Testing		15.0%	\$	815,300
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ -	\$	-
Impact Fee Project Cost Estimate Total:				\$ 6,250,600

City of Manvel, TX Planning Level Cost Estimate Worksheet

Masters Rd (FM 1128)
Dogwood Ave to Charlotte St

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	4,011		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	41	STA	\$ 205,000
2	Unclassified Street Excavation	13,700	CY	\$ 274,000
3	8" Lime Stabilized Subgrade	21,400	SY	\$ 171,200
4	Lime for Stabilization (48 lb/SY)	510	TON	\$ 178,500
5	Concrete Pavement (CRCP - 9")	20,600	SY	\$ 2,060,000
6	Curb & Gutter	8,030	LF	\$ 321,200
7	Concrete Sidewalk and Ramps	48,140	SF	\$ 577,680
8	Furnishing and Placing Topsoil	17,800	SY	\$ 178,000
Paving Estimate Subtotal:				\$ 3,965,580
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	79,400
10	Traffic Control	5%	\$	198,300
11	Erosion Control	3%	\$	119,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	594,900
13	Landscaping	2%	\$	79,400
14	Illumination	3%	\$	119,000
Other Components Estimate Subtotal:				\$ 1,190,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 5,155,580
Mobilization				5% \$ 257,800
Contingency				10% \$ 541,400
Construction Cost Estimate Total:				\$ 5,954,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	5,954,800
Engineering/Survey/Testing		15.0%	\$	893,200
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 120,300	\$	120,300
Impact Fee Project Cost Estimate Total:				\$ 6,968,300

City of Manvel, TX Planning Level Cost Estimate Worksheet

Mccoy Rd
Charlotte St to SH 6

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	3,604		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	26		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	37	STA	\$ 5,000.00 \$ 185,000
2	Unclassified Street Excavation	7,000	CY	\$ 20.00 \$ 140,000
3	8" Lime Stabilized Subgrade	11,300	SY	\$ 8.00 \$ 90,400
4	Lime for Stabilization (48 lb/SY)	270	TON	\$ 350.00 \$ 94,500
5	Concrete Pavement (CRCP - 9")	10,500	SY	\$ 100.00 \$ 1,050,000
6	Curb & Gutter	7,210	LF	\$ 40.00 \$ 288,400
7	Concrete Sidewalk and Ramps	86,500	SF	\$ 12.00 \$ 1,038,000
8	Furnishing and Placing Topsoil	19,200	SY	\$ 10.00 \$ 192,000
Paving Estimate Subtotal:				\$ 3,078,300
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	61,600
10	Traffic Control	5%	\$	154,000
11	Erosion Control	3%	\$	92,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	461,800
13	Landscaping	2%	\$	61,600
14	Illumination	3%	\$	92,400
Other Components Estimate Subtotal:				\$ 923,800
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 4,002,100
Mobilization				5% \$ 200,200
Contingency				10% \$ 420,300
Construction Cost Estimate Total:				\$ 4,622,600

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	4,622,600
Engineering/Survey/Testing		15.0%	\$	693,400
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 198,200	\$ 198,200
Impact Fee Project Cost Estimate Total:				\$ 5,514,200

City of Manvel, TX Planning Level Cost Estimate Worksheet

Bissell Rd

Meridiana Pkwy to Masters Rd

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	2,945		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	26		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	30	STA	\$ 150,000
2	Unclassified Street Excavation	5,700	CY	\$ 114,000
3	8" Lime Stabilized Subgrade	9,200	SY	\$ 73,600
4	Lime for Stabilization (48 lb/SY)	220	TON	\$ 77,000
5	Concrete Pavement (CRCP - 9")	8,600	SY	\$ 860,000
6	Curb & Gutter	5,890	LF	\$ 235,600
7	Concrete Sidewalk and Ramps	70,680	SF	\$ 848,160
8	Furnishing and Placing Topsoil	9,200	SY	\$ 92,000
Paving Estimate Subtotal:				\$ 2,450,360
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	49,100
10	Traffic Control	5%	\$	122,600
11	Erosion Control	3%	\$	73,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	367,600
13	Landscaping	2%	\$	49,100
14	Illumination	3%	\$	73,600
Other Components Estimate Subtotal:				\$ 735,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 3,185,960
Mobilization				5% \$ 159,300
Contingency				10% \$ 334,600
Construction Cost Estimate Total:				\$ 3,679,900

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	3,679,900
Engineering/Survey/Testing		15.0%	\$	552,000
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ -	\$	-
Impact Fee Project Cost Estimate Total:				\$ 4,231,900

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Jordan St

Meridiana Pkwy to Masters Rd

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	3,087		
Right-of-Way Width (ft.):	80		
Median Type:	TWLT		
Pavement Width (BOC to BOC):	39		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	31	STA	\$ 5,000.00
2	Unclassified Street Excavation	9,000	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	14,100	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	340	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	13,400	SY	\$ 100.00
6	Curb & Gutter	6,180	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	30,870	SF	\$ 12.00
8	Furnishing and Placing Topsoil	6,900	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 2,593,440
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	51,900
10	Traffic Control	5%	\$	129,700
11	Erosion Control	3%	\$	77,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	389,100
13	Landscaping	2%	\$	51,900
14	Illumination	3%	\$	77,900
Other Components Estimate Subtotal:				\$ 778,400
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 3,371,840
Mobilization				5% \$ 168,600
Contingency				10% \$ 354,100
Construction Cost Estimate Total:				\$ 3,894,600

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	3,894,600
Engineering/Survey/Testing		15.0%	\$	584,200
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 61,700	\$ 61,700
Impact Fee Project Cost Estimate Total:				\$ 4,540,500

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Masters Rd (CR-67)

Jordan St to New Road 4C

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	5,261		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	53	STA	\$ 5,000.00 \$ 265,000
2	Unclassified Street Excavation	18,000	CY	\$ 20.00 \$ 360,000
3	8" Lime Stabilized Subgrade	28,100	SY	\$ 8.00 \$ 224,800
4	Lime for Stabilization (48 lb/SY)	670	TON	\$ 350.00 \$ 234,500
5	Concrete Pavement (CRCP - 9")	26,900	SY	\$ 100.00 \$ 2,690,000
6	Curb & Gutter	10,530	LF	\$ 40.00 \$ 421,200
7	Concrete Sidewalk and Ramps	63,140	SF	\$ 12.00 \$ 757,680
8	Furnishing and Placing Topsoil	23,400	SY	\$ 10.00 \$ 234,000
Paving Estimate Subtotal:				\$ 5,187,180
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%		\$ 103,800
10	Traffic Control	5%		\$ 259,400
11	Erosion Control	3%		\$ 155,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%		\$ 778,100
13	Landscaping	2%		\$ 103,800
14	Illumination	3%		\$ 155,700
Other Components Estimate Subtotal:				\$ 1,556,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 6,743,680
Mobilization				5% \$ 337,200
Contingency				10% \$ 708,100
Construction Cost Estimate Total:				\$ 7,789,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	7,789,000
Engineering/Survey/Testing		15.0%	\$	1,168,400
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 315,700	\$ 315,700
Impact Fee Project Cost Estimate Total:				\$ 9,273,100

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Masters Rd (CR-67)
Uzzell Rd to Hanselman Rd

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	5,260		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	53	STA	\$ 265,000
2	Unclassified Street Excavation	18,000	CY	\$ 360,000
3	8" Lime Stabilized Subgrade	28,100	SY	\$ 224,800
4	Lime for Stabilization (48 lb/SY)	670	TON	\$ 234,500
5	Concrete Pavement (CRCP - 9")	26,900	SY	\$ 2,690,000
6	Curb & Gutter	10,520	LF	\$ 420,800
7	Concrete Sidewalk and Ramps	63,120	SF	\$ 757,440
8	Furnishing and Placing Topsoil	23,400	SY	\$ 234,000
Paving Estimate Subtotal:				\$ 5,186,540
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	103,800
10	Traffic Control	5%	\$	259,400
11	Erosion Control	3%	\$	155,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	778,000
13	Landscaping	2%	\$	103,800
14	Illumination	3%	\$	155,600
Other Components Estimate Subtotal:				\$ 1,556,200
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 6,742,740
Mobilization				5% \$ 337,200
Contingency				10% \$ 708,000
Construction Cost Estimate Total:				\$ 7,788,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	7,788,000
Engineering/Survey/Testing		15.0%	\$	1,168,200
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 263,000	\$	263,000
Impact Fee Project Cost Estimate Total:				\$ 9,219,200

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Del Bello Blvd EXT B
Pollard Drive to Del Bello Blvd EXT B

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	997		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	70		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	10	STA	\$ 50,000
2	Unclassified Street Excavation	5,200	CY	\$ 104,000
3	8" Lime Stabilized Subgrade	8,000	SY	\$ 64,000
4	Lime for Stabilization (48 lb/SY)	190	TON	\$ 66,500
5	Concrete Pavement (CRCP - 9")	7,800	SY	\$ 780,000
6	Curb & Gutter	2,000	LF	\$ 80,000
7	Concrete Sidewalk and Ramps	11,970	SF	\$ 143,640
8	Furnishing and Placing Topsoil	4,400	SY	\$ 44,000
Paving Estimate Subtotal:				\$ 1,332,140
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	26,700
10	Traffic Control	5%	\$	66,700
11	Erosion Control	3%	\$	40,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	199,900
13	Landscaping	2%	\$	26,700
14	Illumination	3%	\$	40,000
Other Components Estimate Subtotal:				\$ 400,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,732,140
Mobilization				5% \$ 86,700
Contingency				10% \$ 181,900
Construction Cost Estimate Total:				\$ 2,000,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,000,800
Engineering/Survey/Testing		15.0%	\$	300,100
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 119,600	\$ 119,600
Impact Fee Project Cost Estimate Total:				\$ 2,420,500

City of Manvel, TX Planning Level Cost Estimate Worksheet

Lewis Ln

Mccoy Rd to Masters Rd (FM 1128)

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	3,164		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	25		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	32	STA	\$ 160,000
2	Unclassified Street Excavation	5,900	CY	\$ 118,000
3	8" Lime Stabilized Subgrade	9,500	SY	\$ 76,000
4	Lime for Stabilization (48 lb/SY)	230	TON	\$ 80,500
5	Concrete Pavement (CRCP - 9")	8,800	SY	\$ 880,000
6	Curb & Gutter	6,330	LF	\$ 253,200
7	Concrete Sidewalk and Ramps	31,640	SF	\$ 379,680
8	Furnishing and Placing Topsoil	7,700	SY	\$ 77,000
Paving Estimate Subtotal:				\$ 2,024,380
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	40,500
10	Traffic Control	5%	\$	101,300
11	Erosion Control	3%	\$	60,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	303,700
13	Landscaping	2%	\$	40,500
14	Illumination	3%	\$	60,800
Other Components Estimate Subtotal:				\$ 607,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,631,980
Mobilization				5% \$ 131,600
Contingency				10% \$ 276,400
Construction Cost Estimate Total:				\$ 3,040,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	3,040,000
Engineering/Survey/Testing		15.0%	\$	456,000
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 63,300	\$ 63,300
Impact Fee Project Cost Estimate Total:				\$ 3,559,300

City of Manvel, TX Planning Level Cost Estimate Worksheet

Lewis Ln

Masters Rd (FM 1128) to Cemetery Rd

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	3,164		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	25		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	32	STA	\$ 5,000.00
2	Unclassified Street Excavation	5,900	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	9,500	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	230	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	8,800	SY	\$ 100.00
6	Curb & Gutter	6,330	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	31,640	SF	\$ 12.00
8	Furnishing and Placing Topsoil	7,700	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 2,024,380
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	40,500
10	Traffic Control	5%	\$	101,300
11	Erosion Control	3%	\$	60,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	303,700
13	Landscaping	2%	\$	40,500
14	Illumination	3%	\$	60,800
Other Components Estimate Subtotal:				\$ 607,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,631,980
Mobilization				5% \$ 131,600
Contingency				10% \$ 276,400
Construction Cost Estimate Total:				\$ 3,040,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	3,040,000
Engineering/Survey/Testing		15.0%	\$	456,000
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 63,300	\$ 63,300
Impact Fee Project Cost Estimate Total:				\$ 3,559,300

City of Manvel, TX Planning Level Cost Estimate Worksheet

Chocolate Bayou Rd

Lira Rd to FM 1128

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	4,946		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	25		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	50	STA	\$ 250,000
2	Unclassified Street Excavation	9,200	CY	\$ 184,000
3	8" Lime Stabilized Subgrade	14,900	SY	\$ 119,200
4	Lime for Stabilization (48 lb/SY)	360	TON	\$ 126,000
5	Concrete Pavement (CRCP - 9")	13,800	SY	\$ 1,380,000
6	Curb & Gutter	9,900	LF	\$ 396,000
7	Concrete Sidewalk and Ramps	49,460	SF	\$ 593,520
8	Furnishing and Placing Topsoil	12,100	SY	\$ 121,000
Paving Estimate Subtotal:				\$ 3,169,720
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	63,400
10	Traffic Control	5%	\$	158,500
11	Erosion Control	3%	\$	95,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	475,500
13	Landscaping	2%	\$	63,400
14	Illumination	3%	\$	95,100
Other Components Estimate Subtotal:				\$ 951,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 4,120,720
Mobilization				5% \$ 206,100
Contingency				10% \$ 432,700
Construction Cost Estimate Total:				\$ 4,759,600

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	4,759,600
Engineering/Survey/Testing		15.0%	\$	713,900
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 49,500	\$ 49,500
Impact Fee Project Cost Estimate Total:				\$ 5,523,000

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Masters Rd (CR-67)

Railroad to Jordan St

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	4,297		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	43	STA	\$ 215,000
2	Unclassified Street Excavation	14,700	CY	\$ 294,000
3	8" Lime Stabilized Subgrade	23,000	SY	\$ 184,000
4	Lime for Stabilization (48 lb/SY)	550	TON	\$ 192,500
5	Concrete Pavement (CRCP - 9")	22,000	SY	\$ 2,200,000
6	Curb & Gutter	8,600	LF	\$ 344,000
7	Concrete Sidewalk and Ramps	51,570	SF	\$ 618,840
8	Furnishing and Placing Topsoil	19,100	SY	\$ 191,000
Paving Estimate Subtotal:				\$ 4,239,340
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	84,800
10	Traffic Control	5%	\$	212,000
11	Erosion Control	3%	\$	127,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	636,000
13	Landscaping	2%	\$	84,800
14	Illumination	3%	\$	127,200
Other Components Estimate Subtotal:				\$ 1,272,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 5,511,340
Mobilization				5% \$ 275,600
Contingency				10% \$ 578,700
Construction Cost Estimate Total:				\$ 6,365,700

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	6,365,700
Engineering/Survey/Testing		15.0%	\$	954,900
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 128,900	\$ 128,900
Impact Fee Project Cost Estimate Total:				\$ 7,449,500

City of Manvel, TX Planning Level Cost Estimate Worksheet

Uzzell Rd

Masters Rd to New Road 4F

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	3,941		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	26		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	40	STA	\$ 200,000
2	Unclassified Street Excavation	7,600	CY	\$ 152,000
3	8" Lime Stabilized Subgrade	12,300	SY	\$ 98,400
4	Lime for Stabilization (48 lb/SY)	300	TON	\$ 105,000
5	Concrete Pavement (CRCP - 9")	11,400	SY	\$ 1,140,000
6	Curb & Gutter	7,890	LF	\$ 315,600
7	Concrete Sidewalk and Ramps	94,590	SF	\$ 1,135,080
8	Furnishing and Placing Topsoil	12,300	SY	\$ 123,000
Paving Estimate Subtotal:				\$ 3,269,080
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	65,400
10	Traffic Control	5%	\$	163,500
11	Erosion Control	3%	\$	98,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	490,400
13	Landscaping	2%	\$	65,400
14	Illumination	3%	\$	98,100
Other Components Estimate Subtotal:				\$ 980,900
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 4,249,980
Mobilization				\$ 212,500
Contingency				\$ 446,300
Construction Cost Estimate Total:				\$ 4,908,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	4,908,800
Engineering/Survey/Testing		15.0%	\$	736,300
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 137,900	\$ 137,900
Impact Fee Project Cost Estimate Total:				\$ 5,783,000

City of Manvel, TX Planning Level Cost Estimate Worksheet

Jordan St
Masters Rd to Jordan St EXT A

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	6,089		
Right-of-Way Width (ft.):	80		
Median Type:	TWLT		
Pavement Width (BOC to BOC):	39		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	61	STA	\$ 305,000
2	Unclassified Street Excavation	17,600	CY	\$ 352,000
3	8" Lime Stabilized Subgrade	27,800	SY	\$ 222,400
4	Lime for Stabilization (48 lb/SY)	670	TON	\$ 234,500
5	Concrete Pavement (CRCP - 9")	26,400	SY	\$ 2,640,000
6	Curb & Gutter	12,180	LF	\$ 487,200
7	Concrete Sidewalk and Ramps	60,890	SF	\$ 730,680
8	Furnishing and Placing Topsoil	13,500	SY	\$ 135,000
Paving Estimate Subtotal:				\$ 5,106,780
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	102,200
10	Traffic Control	5%	\$	255,400
11	Erosion Control	3%	\$	153,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	766,100
13	Landscaping	2%	\$	102,200
14	Illumination	3%	\$	153,300
Other Components Estimate Subtotal:				\$ 1,532,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 6,639,280
Mobilization				5% \$ 332,000
Contingency				10% \$ 697,200
Construction Cost Estimate Total:				\$ 7,668,500

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	7,668,500
Engineering/Survey/Testing		15.0%	\$	1,150,300
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 121,800	\$ 121,800
Impact Fee Project Cost Estimate Total:				\$ 8,940,600

City of Manvel, TX Planning Level Cost Estimate Worksheet

CR-99

SH-6 to Alvin-Manvel Rd

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,630		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	26		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	17	STA	\$ 5,000.00 \$ 85,000
2	Unclassified Street Excavation	3,200	CY	\$ 20.00 \$ 64,000
3	8" Lime Stabilized Subgrade	5,100	SY	\$ 8.00 \$ 40,800
4	Lime for Stabilization (48 lb/SY)	120	TON	\$ 350.00 \$ 42,000
5	Concrete Pavement (CRCP - 9")	4,800	SY	\$ 100.00 \$ 480,000
6	Curb & Gutter	3,260	LF	\$ 40.00 \$ 130,400
7	Concrete Sidewalk and Ramps	39,120	SF	\$ 12.00 \$ 469,440
8	Furnishing and Placing Topsoil	8,700	SY	\$ 10.00 \$ 87,000
Paving Estimate Subtotal:				\$ 1,398,640
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	28,000
10	Traffic Control	5%	\$	70,000
11	Erosion Control	3%	\$	42,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	209,800
13	Landscaping	2%	\$	28,000
14	Illumination	3%	\$	42,000
Other Components Estimate Subtotal:				\$ 419,800
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,818,440
Mobilization				5% \$ 91,000
Contingency				10% \$ 191,000
Construction Cost Estimate Total:				\$ 2,100,500

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,100,500
Engineering/Survey/Testing		15.0%	\$	315,100
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 89,700	\$ 89,700
Impact Fee Project Cost Estimate Total:				\$ 2,505,300

City of Manvel, TX

Planning Level Cost Estimate Worksheet

CR-99

Oilfield Rd to Belcher Rd

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	3,288		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	26		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	33	STA	\$ 5,000.00
2	Unclassified Street Excavation	6,400	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	10,300	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	250	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	9,500	SY	\$ 100.00
6	Curb & Gutter	6,580	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	78,920	SF	\$ 12.00
8	Furnishing and Placing Topsoil	17,500	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 2,798,140
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	56,000
10	Traffic Control	5%	\$	140,000
11	Erosion Control	3%	\$	84,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	419,800
13	Landscaping	2%	\$	56,000
14	Illumination	3%	\$	84,000
Other Components Estimate Subtotal:				\$ 839,800
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 3,637,940
Mobilization				5% \$ 181,900
Contingency				10% \$ 382,000
Construction Cost Estimate Total:				\$ 4,201,900

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	4,201,900
Engineering/Survey/Testing		15.0%	\$	630,300
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 197,300	\$ 197,300
Impact Fee Project Cost Estimate Total:				\$ 5,029,500

City of Manvel, TX

Planning Level Cost Estimate Worksheet

CR-99

Belcher Rd to Lewis Ln

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	4,167		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	26		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	42	STA	\$ 210,000
2	Unclassified Street Excavation	8,100	CY	\$ 162,000
3	8" Lime Stabilized Subgrade	13,000	SY	\$ 104,000
4	Lime for Stabilization (48 lb/SY)	310	TON	\$ 108,500
5	Concrete Pavement (CRCP - 9")	12,100	SY	\$ 1,210,000
6	Curb & Gutter	8,340	LF	\$ 333,600
7	Concrete Sidewalk and Ramps	100,010	SF	\$ 1,200,120
8	Furnishing and Placing Topsoil	22,200	SY	\$ 222,000
Paving Estimate Subtotal:				\$ 3,550,220
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	71,100
10	Traffic Control	5%	\$	177,600
11	Erosion Control	3%	\$	106,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	532,600
13	Landscaping	2%	\$	71,100
14	Illumination	3%	\$	106,600
Other Components Estimate Subtotal:				\$ 1,065,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 4,615,820
Mobilization				5% \$ 230,800
Contingency				10% \$ 484,700
Construction Cost Estimate Total:				\$ 5,331,400

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	5,331,400
Engineering/Survey/Testing		15.0%	\$	799,700
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 250,000	\$ 250,000
Impact Fee Project Cost Estimate Total:				\$ 6,381,100

City of Manvel, TX

Planning Level Cost Estimate Worksheet

CR-99

Lewis Ln to SH-6

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	2,377		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	26		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	24	STA	\$ 120,000
2	Unclassified Street Excavation	4,600	CY	\$ 92,000
3	8" Lime Stabilized Subgrade	7,400	SY	\$ 59,200
4	Lime for Stabilization (48 lb/SY)	180	TON	\$ 63,000
5	Concrete Pavement (CRCP - 9")	6,900	SY	\$ 690,000
6	Curb & Gutter	4,760	LF	\$ 190,400
7	Concrete Sidewalk and Ramps	57,050	SF	\$ 684,600
8	Furnishing and Placing Topsoil	12,700	SY	\$ 127,000
Paving Estimate Subtotal:				\$ 2,026,200
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	40,600
10	Traffic Control	5%	\$	101,400
11	Erosion Control	3%	\$	60,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	304,000
13	Landscaping	2%	\$	40,600
14	Illumination	3%	\$	60,800
Other Components Estimate Subtotal:				\$ 608,200
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,634,400
Mobilization				5% \$ 131,800
Contingency				10% \$ 276,700
Construction Cost Estimate Total:				\$ 3,042,900

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	3,042,900
Engineering/Survey/Testing		15.0%	\$	456,400
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 130,700	\$ 130,700
Impact Fee Project Cost Estimate Total:				\$ 3,630,000

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Kirby Dr (B)
CR-58 to S City Limit

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,376		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	50		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	14	STA	\$ 70,000
2	Unclassified Street Excavation	5,100	CY	\$ 102,000
3	8" Lime Stabilized Subgrade	8,000	SY	\$ 64,000
4	Lime for Stabilization (48 lb/SY)	190	TON	\$ 66,500
5	Concrete Pavement (CRCP - 9")	7,700	SY	\$ 770,000
6	Curb & Gutter	2,760	LF	\$ 110,400
7	Concrete Sidewalk and Ramps	33,030	SF	\$ 396,360
8	Furnishing and Placing Topsoil	7,300	SY	\$ 73,000
Paving Estimate Subtotal:				\$ 1,652,260
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	33,100
10	Traffic Control	5%	\$	82,700
11	Erosion Control	3%	\$	49,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	247,900
13	Landscaping	2%	\$	33,100
14	Illumination	3%	\$	49,600
Other Components Estimate Subtotal:				\$ 496,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,148,260
Mobilization				5% \$ 107,500
Contingency				10% \$ 225,600
Construction Cost Estimate Total:				\$ 2,481,400

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,481,400
Engineering/Survey/Testing		15.0%	\$	372,200
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 165,100	\$ 165,100
Impact Fee Project Cost Estimate Total:				\$ 3,018,700

City of Manvel, TX Planning Level Cost Estimate Worksheet

Kirby Dr (A)
City Limit to S City Limit

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	340		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	50		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	4	STA	\$ 5,000.00
2	Unclassified Street Excavation	1,300	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	2,000	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	50	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	1,900	SY	\$ 100.00
6	Curb & Gutter	680	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	8,160	SF	\$ 12.00
8	Furnishing and Placing Topsoil	1,800	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 412,620
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	8,300
10	Traffic Control	5%	\$	20,700
11	Erosion Control	3%	\$	12,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	61,900
13	Landscaping	2%	\$	8,300
14	Illumination	3%	\$	12,400
Other Components Estimate Subtotal:				\$ 124,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 536,620
Mobilization				5% \$ 26,900
Contingency				10% \$ 56,400
Construction Cost Estimate Total:				\$ 620,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	620,000
Engineering/Survey/Testing		15.0%	\$	93,000
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 40,800	\$ 40,800
Impact Fee Project Cost Estimate Total:				\$ 753,800

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 3A
Oilfield Rd to Belcher Rd

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	3,282		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	50		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	33	STA	\$ 5,000.00
2	Unclassified Street Excavation	12,200	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	19,000	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	460	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	18,300	SY	\$ 100.00
6	Curb & Gutter	6,570	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	78,770	SF	\$ 12.00
8	Furnishing and Placing Topsoil	17,500	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 3,935,040
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	78,800
10	Traffic Control	5%	\$	196,800
11	Erosion Control	3%	\$	118,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	590,300
13	Landscaping	2%	\$	78,800
14	Illumination	3%	\$	118,100
Other Components Estimate Subtotal:				\$ 1,180,900
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 5,115,940
Mobilization				5% \$ 255,800
Contingency				10% \$ 537,200
Construction Cost Estimate Total:				\$ 5,909,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	5,909,000
Engineering/Survey/Testing		15.0%	\$	886,400
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 393,800	\$	393,800
Impact Fee Project Cost Estimate Total:				\$ 7,189,200

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Belcher Rd

900' E of Frey Rd to 2250' W of City Limit

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,323		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	70		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	14	STA	\$ 70,000
2	Unclassified Street Excavation	6,900	CY	\$ 138,000
3	8" Lime Stabilized Subgrade	10,600	SY	\$ 84,800
4	Lime for Stabilization (48 lb/SY)	250	TON	\$ 87,500
5	Concrete Pavement (CRCP - 9")	10,300	SY	\$ 1,030,000
6	Curb & Gutter	2,650	LF	\$ 106,000
7	Concrete Sidewalk and Ramps	15,880	SF	\$ 190,560
8	Furnishing and Placing Topsoil	5,900	SY	\$ 59,000
Paving Estimate Subtotal:				\$ 1,765,860
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	35,400
10	Traffic Control	5%	\$	88,300
11	Erosion Control	3%	\$	53,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	264,900
13	Landscaping	2%	\$	35,400
14	Illumination	3%	\$	53,000
Other Components Estimate Subtotal:				\$ 530,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,295,860
Mobilization				5% \$ 114,800
Contingency				10% \$ 241,100
Construction Cost Estimate Total:				\$ 2,651,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,651,800
Engineering/Survey/Testing		15.0%	\$	397,800
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 79,400	\$ 79,400
Impact Fee Project Cost Estimate Total:				\$ 3,129,000

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 3B
Bissel Rd to City Limit

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,325		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	50		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	14	STA	\$ 70,000
2	Unclassified Street Excavation	5,000	CY	\$ 100,000
3	8" Lime Stabilized Subgrade	7,700	SY	\$ 61,600
4	Lime for Stabilization (48 lb/SY)	180	TON	\$ 63,000
5	Concrete Pavement (CRCP - 9")	7,400	SY	\$ 740,000
6	Curb & Gutter	2,650	LF	\$ 106,000
7	Concrete Sidewalk and Ramps	31,800	SF	\$ 381,600
8	Furnishing and Placing Topsoil	7,100	SY	\$ 71,000
Paving Estimate Subtotal:				\$ 1,593,200
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	31,900
10	Traffic Control	5%	\$	79,700
11	Erosion Control	3%	\$	47,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	239,000
13	Landscaping	2%	\$	31,900
14	Illumination	3%	\$	47,800
Other Components Estimate Subtotal:				\$ 478,100
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,071,300
Mobilization				5% \$ 103,600
Contingency				10% \$ 217,500
Construction Cost Estimate Total:				\$ 2,392,400

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction	Excludes cost of potential RR bridge	-	\$	2,392,400
Engineering/Survey/Testing		15.0%	\$	358,900
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 159,000	\$ 159,000
Impact Fee Project Cost Estimate Total:				\$ 2,910,300

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Croix Rd (CR-58)

1035' E of Oak Crest Pkwy to Del Bello Rd

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,457		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	15	STA	\$ 75,000
2	Unclassified Street Excavation	5,000	CY	\$ 100,000
3	8" Lime Stabilized Subgrade	7,800	SY	\$ 62,400
4	Lime for Stabilization (48 lb/SY)	190	TON	\$ 66,500
5	Concrete Pavement (CRCP - 9")	7,500	SY	\$ 750,000
6	Curb & Gutter	2,920	LF	\$ 116,800
7	Concrete Sidewalk and Ramps	17,490	SF	\$ 209,880
8	Furnishing and Placing Topsoil	6,500	SY	\$ 65,000
Paving Estimate Subtotal:				\$ 1,445,580
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	29,000
10	Traffic Control	5%	\$	72,300
11	Erosion Control	3%	\$	43,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	216,900
13	Landscaping	2%	\$	29,000
14	Illumination	3%	\$	43,400
Other Components Estimate Subtotal:				\$ 434,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,879,580
Mobilization				5% \$ 94,000
Contingency				10% \$ 197,400
Construction Cost Estimate Total:				\$ 2,171,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,171,000
Engineering/Survey/Testing		15.0%	\$	325,700
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 87,400	\$ 87,400
Impact Fee Project Cost Estimate Total:				\$ 2,584,100

City of Manvel, TX
Planning Level Cost Estimate Worksheet

Croix Rd (CR-58)

Oak Crest Pkwy to 1035' E of Oak Crest Pkwy

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,034		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	11	STA	\$ 55,000
2	Unclassified Street Excavation	3,600	CY	\$ 72,000
3	8" Lime Stabilized Subgrade	5,600	SY	\$ 44,800
4	Lime for Stabilization (48 lb/SY)	130	TON	\$ 45,500
5	Concrete Pavement (CRCP - 9")	5,300	SY	\$ 530,000
6	Curb & Gutter	2,070	LF	\$ 82,800
7	Concrete Sidewalk and Ramps	12,410	SF	\$ 148,920
8	Furnishing and Placing Topsoil	4,600	SY	\$ 46,000
Paving Estimate Subtotal:				\$ 1,025,020
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	20,600
10	Traffic Control	5%	\$	51,300
11	Erosion Control	3%	\$	30,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	153,800
13	Landscaping	2%	\$	20,600
14	Illumination	3%	\$	30,800
Other Components Estimate Subtotal:				\$ 307,900
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,332,920
Mobilization				\$ 66,700
Contingency				\$ 140,000
Construction Cost Estimate Total:				\$ 1,539,700

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	1,539,700
Engineering/Survey/Testing		15.0%	\$	231,000
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 62,000	\$ 62,000
Impact Fee Project Cost Estimate Total:				\$ 1,832,700

City of Manvel, TX Planning Level Cost Estimate Worksheet

Bissell Rd

Masters Rd to E City Limit

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	8,270		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	26		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	83	STA	\$ 415,000
2	Unclassified Street Excavation	16,000	CY	\$ 320,000
3	8" Lime Stabilized Subgrade	25,800	SY	\$ 206,400
4	Lime for Stabilization (48 lb/SY)	620	TON	\$ 217,000
5	Concrete Pavement (CRCP - 9")	23,900	SY	\$ 2,390,000
6	Curb & Gutter	16,540	LF	\$ 661,600
7	Concrete Sidewalk and Ramps	198,480	SF	\$ 2,381,760
8	Furnishing and Placing Topsoil	25,700	SY	\$ 257,000
Paving Estimate Subtotal:				\$ 6,848,760
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	137,000
10	Traffic Control	5%	\$	342,500
11	Erosion Control	3%	\$	205,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	1,027,400
13	Landscaping	2%	\$	137,000
14	Illumination	3%	\$	205,500
Other Components Estimate Subtotal:				\$ 2,054,900
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 8,903,660
Mobilization				5% \$ 445,200
Contingency				10% \$ 934,900
Construction Cost Estimate Total:				\$ 10,283,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	10,283,800
Engineering/Survey/Testing		15.0%	\$	1,542,600
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ -	\$	-
Impact Fee Project Cost Estimate Total:				\$ 11,826,400

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Masters Rd (FM 1128)

SH 6 to Railroad

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,236		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	13	STA	\$ 5,000.00
2	Unclassified Street Excavation	4,300	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	6,600	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	160	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	6,400	SY	\$ 100.00
6	Curb & Gutter	2,480	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	14,840	SF	\$ 12.00
8	Furnishing and Placing Topsoil	5,500	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 1,232,080
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	24,700
10	Traffic Control	5%	\$	61,700
11	Erosion Control	3%	\$	37,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	184,900
13	Landscaping	2%	\$	24,700
14	Illumination	3%	\$	37,000
Other Components Estimate Subtotal:				\$ 370,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,602,080
Mobilization				5% \$ 80,200
Contingency				10% \$ 168,300
Construction Cost Estimate Total:				\$ 1,850,600

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	1,850,600
Engineering/Survey/Testing		15.0%	\$	277,600
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 49,400	\$	49,400
Impact Fee Project Cost Estimate Total:				\$ 2,177,600

City of Manvel, TX

Planning Level Cost Estimate Worksheet

CR-48

SH-6 to S City Limit

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,407		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	26		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	15	STA	\$ 75,000
2	Unclassified Street Excavation	2,800	CY	\$ 56,000
3	8" Lime Stabilized Subgrade	4,400	SY	\$ 35,200
4	Lime for Stabilization (48 lb/SY)	110	TON	\$ 38,500
5	Concrete Pavement (CRCP - 9")	4,100	SY	\$ 410,000
6	Curb & Gutter	2,820	LF	\$ 112,800
7	Concrete Sidewalk and Ramps	33,770	SF	\$ 405,240
8	Furnishing and Placing Topsoil	7,500	SY	\$ 75,000
Paving Estimate Subtotal:				\$ 1,207,740
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	24,200
10	Traffic Control	5%	\$	60,400
11	Erosion Control	3%	\$	36,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	181,200
13	Landscaping	2%	\$	24,200
14	Illumination	3%	\$	36,300
Other Components Estimate Subtotal:				\$ 362,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,570,340
Mobilization				5% \$ 78,600
Contingency				10% \$ 164,900
Construction Cost Estimate Total:				\$ 1,813,900

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	1,813,900
Engineering/Survey/Testing		15.0%	\$	272,100
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 70,400	\$ 70,400
Impact Fee Project Cost Estimate Total:				\$ 2,156,400

City of Manvel, TX Planning Level Cost Estimate Worksheet

Belcher Rd

2250' W of City Limit to W City Limit

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	2,197		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	70		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	22	STA	\$ 5,000.00 \$ 110,000
2	Unclassified Street Excavation	11,400	CY	\$ 20.00 \$ 228,000
3	8" Lime Stabilized Subgrade	17,600	SY	\$ 8.00 \$ 140,800
4	Lime for Stabilization (48 lb/SY)	420	TON	\$ 350.00 \$ 147,000
5	Concrete Pavement (CRCP - 9")	17,100	SY	\$ 100.00 \$ 1,710,000
6	Curb & Gutter	4,400	LF	\$ 40.00 \$ 176,000
7	Concrete Sidewalk and Ramps	26,370	SF	\$ 12.00 \$ 316,440
8	Furnishing and Placing Topsoil	9,800	SY	\$ 10.00 \$ 98,000
Paving Estimate Subtotal:				\$ 2,926,240
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	58,600
10	Traffic Control	5%	\$	146,400
11	Erosion Control	3%	\$	87,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	439,000
13	Landscaping	2%	\$	58,600
14	Illumination	3%	\$	87,800
Other Components Estimate Subtotal:				\$ 878,200
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 3,804,440
Mobilization				5% \$ 190,300
Contingency				10% \$ 399,500
Construction Cost Estimate Total:				\$ 4,394,300

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	4,394,300
Engineering/Survey/Testing		15.0%	\$	659,100
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 263,600	\$ 263,600
Impact Fee Project Cost Estimate Total:				\$ 5,317,000

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Masters Rd (CR-67)

New Road 4C to Uzzell Rd

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	565		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	6	STA	\$ 5,000.00
2	Unclassified Street Excavation	2,000	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	3,100	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	70	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	2,900	SY	\$ 100.00
6	Curb & Gutter	1,130	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	6,780	SF	\$ 12.00
8	Furnishing and Placing Topsoil	2,500	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 560,860
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	11,300
10	Traffic Control	5%	\$	28,100
11	Erosion Control	3%	\$	16,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	84,200
13	Landscaping	2%	\$	11,300
14	Illumination	3%	\$	16,900
Other Components Estimate Subtotal:				\$ 168,700
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 729,560
Mobilization				5% \$ 36,500
Contingency				10% \$ 76,700
Construction Cost Estimate Total:				\$ 842,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	842,800
Engineering/Survey/Testing		15.0%	\$	126,400
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 22,600	\$ 22,600
Impact Fee Project Cost Estimate Total:				\$ 991,800

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Cemetery Rd
Scott Ave to Lewis Ln

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	1,813		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	25		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	19	STA	\$ 5,000.00 \$ 95,000
2	Unclassified Street Excavation	3,400	CY	\$ 20.00 \$ 68,000
3	8" Lime Stabilized Subgrade	5,500	SY	\$ 8.00 \$ 44,000
4	Lime for Stabilization (48 lb/SY)	130	TON	\$ 350.00 \$ 45,500
5	Concrete Pavement (CRCP - 9")	5,100	SY	\$ 100.00 \$ 510,000
6	Curb & Gutter	3,630	LF	\$ 40.00 \$ 145,200
7	Concrete Sidewalk and Ramps	18,130	SF	\$ 12.00 \$ 217,560
8	Furnishing and Placing Topsoil	4,400	SY	\$ 10.00 \$ 44,000
Paving Estimate Subtotal:				\$ 1,169,260
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	23,400
10	Traffic Control	5%	\$	58,500
11	Erosion Control	3%	\$	35,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	175,400
13	Landscaping	2%	\$	23,400
14	Illumination	3%	\$	35,100
Other Components Estimate Subtotal:				\$ 350,900
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,520,160
Mobilization				5% \$ 76,100
Contingency				10% \$ 159,700
Construction Cost Estimate Total:				\$ 1,756,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	1,756,000
Engineering/Survey/Testing		15.0%	\$	263,400
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 36,300	\$ 36,300
Impact Fee Project Cost Estimate Total:				\$ 2,055,700

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Del Bello Blvd EXT A
Pollard Blvd to Pollard Drive

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	2,353		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	70		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	24	STA	\$ 5,000.00
2	Unclassified Street Excavation	12,300	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	18,900	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	450	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	18,400	SY	\$ 100.00
6	Curb & Gutter	4,710	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	28,240	SF	\$ 12.00
8	Furnishing and Placing Topsoil	10,500	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 3,146,980
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	63,000
10	Traffic Control	5%	\$	157,400
11	Erosion Control	3%	\$	94,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	472,100
13	Landscaping	2%	\$	63,000
14	Illumination	3%	\$	94,500
Other Components Estimate Subtotal:				\$ 944,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 4,091,480
Mobilization				5% \$ 204,600
Contingency				10% \$ 429,700
Construction Cost Estimate Total:				\$ 4,725,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	4,725,800
Engineering/Survey/Testing		15.0%	\$	708,900
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 282,400	\$	282,400
Impact Fee Project Cost Estimate Total:				\$ 5,717,100

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Del Bello Blvd

Pollard Drive to Del Bello Blvd EXT B

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	616		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	7	STA	\$ 35,000
2	Unclassified Street Excavation	2,100	CY	\$ 42,000
3	8" Lime Stabilized Subgrade	3,300	SY	\$ 26,400
4	Lime for Stabilization (48 lb/SY)	80	TON	\$ 28,000
5	Concrete Pavement (CRCP - 9")	3,200	SY	\$ 320,000
6	Curb & Gutter	1,240	LF	\$ 49,600
7	Concrete Sidewalk and Ramps	7,400	SF	\$ 88,800
8	Furnishing and Placing Topsoil	2,700	SY	\$ 27,000
Paving Estimate Subtotal:				\$ 616,800
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	12,400
10	Traffic Control	5%	\$	30,900
11	Erosion Control	3%	\$	18,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	92,600
13	Landscaping	2%	\$	12,400
14	Illumination	3%	\$	18,600
Other Components Estimate Subtotal:				\$ 185,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 802,300
Mobilization				\$ 40,200
Contingency				\$ 84,300
Construction Cost Estimate Total:				\$ 926,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	926,800
Engineering/Survey/Testing		15.0%	\$	139,000
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 37,000	\$ 37,000
Impact Fee Project Cost Estimate Total:				\$ 1,102,800

City of Manvel, TX

Planning Level Cost Estimate Worksheet

CR-99

170' S of Heights Rd to Oilfield Rd

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,386		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	26		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	14	STA	\$ 5,000.00
2	Unclassified Street Excavation	2,700	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	4,400	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	110	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	4,100	SY	\$ 100.00
6	Curb & Gutter	2,780	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	33,270	SF	\$ 12.00
8	Furnishing and Placing Topsoil	7,400	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 1,192,140
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	23,900
10	Traffic Control	5%	\$	59,700
11	Erosion Control	3%	\$	35,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	178,900
13	Landscaping	2%	\$	23,900
14	Illumination	3%	\$	35,800
Other Components Estimate Subtotal:				\$ 358,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,550,140
Mobilization				5% \$ 77,600
Contingency				10% \$ 162,800
Construction Cost Estimate Total:				\$ 1,790,600

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	1,790,600
Engineering/Survey/Testing		15.0%	\$	268,600
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 83,200	\$ 83,200
Impact Fee Project Cost Estimate Total:				\$ 2,142,400

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 2A

Croix Rd (CR-58) to Del Bello Blvd

Roadway Information:			
Functional Classification:	Major Thoroughfares	No. of Lanes:	4
Length (lf):	4,435		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	50		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	45	STA	\$ 225,000
2	Unclassified Street Excavation	16,500	CY	\$ 330,000
3	8" Lime Stabilized Subgrade	25,700	SY	\$ 205,600
4	Lime for Stabilization (48 lb/SY)	620	TON	\$ 217,000
5	Concrete Pavement (CRCP - 9")	24,700	SY	\$ 2,470,000
6	Curb & Gutter	8,870	LF	\$ 354,800
7	Concrete Sidewalk and Ramps	106,440	SF	\$ 1,277,280
8	Furnishing and Placing Topsoil	23,700	SY	\$ 237,000
Paving Estimate Subtotal:				\$ 5,316,680
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$ 106,400	
10	Traffic Control	5%	\$ 265,900	
11	Erosion Control	3%	\$ 159,600	
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$ 797,600	
13	Landscaping	2%	\$ 106,400	
14	Illumination	3%	\$ 159,600	
Other Components Estimate Subtotal:				\$ 1,595,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 6,912,180
Mobilization				\$ 345,700
Contingency				\$ 725,800
Construction Cost Estimate Total:				\$ 7,983,700

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$ 7,983,700	
Engineering/Survey/Testing		15.0%	\$ 1,197,600	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 532,200	\$ 532,200
Impact Fee Project Cost Estimate Total:				\$ 9,713,500

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Del Bello Rd (CR-90)

Croix Rd (CR-58) to Lira Rd

Roadway Information:			
Functional Classification:	Major Thoroughfares	No. of Lanes:	4
Length (lf):	3,862		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	38		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	39	STA	\$ 195,000
2	Unclassified Street Excavation	10,900	CY	\$ 218,000
3	8" Lime Stabilized Subgrade	17,200	SY	\$ 137,600
4	Lime for Stabilization (48 lb/SY)	410	TON	\$ 143,500
5	Concrete Pavement (CRCP - 9")	16,400	SY	\$ 1,640,000
6	Curb & Gutter	7,730	LF	\$ 309,200
7	Concrete Sidewalk and Ramps	38,620	SF	\$ 463,440
8	Furnishing and Placing Topsoil	21,500	SY	\$ 215,000
Paving Estimate Subtotal:				\$ 3,321,740
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	66,500
10	Traffic Control	5%	\$	166,100
11	Erosion Control	3%	\$	99,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	498,300
13	Landscaping	2%	\$	66,500
14	Illumination	3%	\$	99,700
Other Components Estimate Subtotal:				\$ 996,800
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 4,318,540
Mobilization				\$ 216,000
Contingency				\$ 453,500
Construction Cost Estimate Total:				\$ 4,988,100

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	4,988,100
Engineering/Survey/Testing		15.0%	\$	748,200
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 231,700	\$ 231,700
Impact Fee Project Cost Estimate Total:				\$ 5,968,000

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Lira Rd EXT
Lira Rd to City Limit

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	3,118		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	56		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	32	STA	\$ 5,000.00
2	Unclassified Street Excavation	13,000	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	20,100	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	480	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	19,500	SY	\$ 100.00
6	Curb & Gutter	6,240	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	56,130	SF	\$ 12.00
8	Furnishing and Placing Topsoil	9,700	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 3,718,960
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	74,400
10	Traffic Control	5%	\$	186,000
11	Erosion Control	3%	\$	111,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	557,900
13	Landscaping	2%	\$	74,400
14	Illumination	3%	\$	111,600
Other Components Estimate Subtotal:				\$ 1,115,900
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 4,834,860
Mobilization				5% \$ 241,800
Contingency				10% \$ 507,700
Construction Cost Estimate Total:				\$ 5,584,400

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	5,584,400
Engineering/Survey/Testing		15.0%	\$	837,700
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 124,700	\$ 124,700
Impact Fee Project Cost Estimate Total:				\$ 6,546,800

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Lira Rd

Del Bello Blvd to Lira Rd EXT

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	3,558		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	32		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and a bike lane		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	36	STA	\$ 5,000.00 \$ 180,000
2	Unclassified Street Excavation	8,500	CY	\$ 20.00 \$ 170,000
3	8" Lime Stabilized Subgrade	13,500	SY	\$ 8.00 \$ 108,000
4	Lime for Stabilization (48 lb/SY)	320	TON	\$ 350.00 \$ 112,000
5	Concrete Pavement (CRCP - 9")	12,700	SY	\$ 100.00 \$ 1,270,000
6	Curb & Gutter	7,120	LF	\$ 40.00 \$ 284,800
7	Concrete Sidewalk and Ramps	64,050	SF	\$ 12.00 \$ 768,600
8	Furnishing and Placing Topsoil	11,100	SY	\$ 10.00 \$ 111,000
Paving Estimate Subtotal:				\$ 3,004,400
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	60,100
10	Traffic Control	5%	\$	150,300
11	Erosion Control	3%	\$	90,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	450,700
13	Landscaping	2%	\$	60,100
14	Illumination	3%	\$	90,200
Other Components Estimate Subtotal:				\$ 901,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 3,906,000
Mobilization				5% \$ 195,300
Contingency				10% \$ 410,200
Construction Cost Estimate Total:				\$ 4,511,500

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	4,511,500
Engineering/Survey/Testing		15.0%	\$	676,700
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 160,100	\$ 160,100
Impact Fee Project Cost Estimate Total:				\$ 5,348,300

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Lira Rd

Old Chocolate Bayou to N City Limit

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	1,170		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	32		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and a bike lane		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	12	STA	\$ 5,000.00
2	Unclassified Street Excavation	2,800	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	4,500	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	110	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	4,200	SY	\$ 100.00
6	Curb & Gutter	2,340	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	21,060	SF	\$ 12.00
8	Furnishing and Placing Topsoil	3,600	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 992,820
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	19,900
10	Traffic Control	5%	\$	49,700
11	Erosion Control	3%	\$	29,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	149,000
13	Landscaping	2%	\$	19,900
14	Illumination	3%	\$	29,800
Other Components Estimate Subtotal:				\$ 298,100
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,290,920
Mobilization				5% \$ 64,600
Contingency				10% \$ 135,600
Construction Cost Estimate Total:				\$ 1,491,200

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	1,491,200
Engineering/Survey/Testing		15.0%	\$	223,700
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 23,400	\$ 23,400
Impact Fee Project Cost Estimate Total:				\$ 1,738,300

City of Manvel, TX
Planning Level Cost Estimate Worksheet

Old Massey Ranch (CR-100)
Patterson Rd to Masters Rd (FM 1128)

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	3,558		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	56		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	36	STA	\$ 5,000.00
2	Unclassified Street Excavation	14,800	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	23,000	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	550	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	22,200	SY	\$ 100.00
6	Curb & Gutter	7,120	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	64,050	SF	\$ 12.00
8	Furnishing and Placing Topsoil	11,100	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 4,236,900
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	84,800
10	Traffic Control	5%	\$	211,900
11	Erosion Control	3%	\$	127,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	635,600
13	Landscaping	2%	\$	84,800
14	Illumination	3%	\$	127,200
Other Components Estimate Subtotal:				\$ 1,271,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 5,508,400
Mobilization				5% \$ 275,500
Contingency				10% \$ 578,400
Construction Cost Estimate Total:				\$ 6,362,300

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	6,362,300
Engineering/Survey/Testing		15.0%	\$	954,300
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 355,800	\$ 355,800
Impact Fee Project Cost Estimate Total:				\$ 7,672,400

City of Manvel, TX Planning Level Cost Estimate Worksheet

Old Massey Ranch (CR-100)

Masters Rd (FM 1128) to 635' W of Holland Rd

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	2,851		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	32		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and a bike lane		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	29	STA	\$ 145,000
2	Unclassified Street Excavation	6,800	CY	\$ 136,000
3	8" Lime Stabilized Subgrade	10,800	SY	\$ 86,400
4	Lime for Stabilization (48 lb/SY)	260	TON	\$ 91,000
5	Concrete Pavement (CRCP - 9")	10,200	SY	\$ 1,020,000
6	Curb & Gutter	5,710	LF	\$ 228,400
7	Concrete Sidewalk and Ramps	51,320	SF	\$ 615,840
8	Furnishing and Placing Topsoil	8,900	SY	\$ 89,000
Paving Estimate Subtotal:				\$ 2,411,640
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	48,300
10	Traffic Control	5%	\$	120,600
11	Erosion Control	3%	\$	72,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	361,800
13	Landscaping	2%	\$	48,300
14	Illumination	3%	\$	72,400
Other Components Estimate Subtotal:				\$ 723,800
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 3,135,440
Mobilization				5% \$ 156,800
Contingency				10% \$ 329,300
Construction Cost Estimate Total:				\$ 3,621,600

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	3,621,600
Engineering/Survey/Testing		15.0%	\$	543,200
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ -	\$	-
Impact Fee Project Cost Estimate Total:				\$ 4,164,800

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 3C

SH 6 to Bissel Rd

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	1,325		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	56		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	14	STA	\$ 70,000
2	Unclassified Street Excavation	5,500	CY	\$ 110,000
3	8" Lime Stabilized Subgrade	8,600	SY	\$ 68,800
4	Lime for Stabilization (48 lb/SY)	210	TON	\$ 73,500
5	Concrete Pavement (CRCP - 9")	8,300	SY	\$ 830,000
6	Curb & Gutter	2,650	LF	\$ 106,000
7	Concrete Sidewalk and Ramps	23,850	SF	\$ 286,200
8	Furnishing and Placing Topsoil	4,100	SY	\$ 41,000
Paving Estimate Subtotal:				\$ 1,585,500
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	31,800
10	Traffic Control	5%	\$	79,300
11	Erosion Control	3%	\$	47,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	237,900
13	Landscaping	2%	\$	31,800
14	Illumination	3%	\$	47,600
Other Components Estimate Subtotal:				\$ 476,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,061,500
Mobilization				5% \$ 103,100
Contingency				10% \$ 216,500
Construction Cost Estimate Total:				\$ 2,381,100

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,381,100
Engineering/Survey/Testing		15.0%	\$	357,200
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 46,400	\$ 46,400
Impact Fee Project Cost Estimate Total:				\$ 2,784,700

City of Manvel, TX Planning Level Cost Estimate Worksheet

New Road 4C

Masters Rd (FM 1128) to New Road 4D

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	2,978		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	25		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	30	STA	\$ 150,000
2	Unclassified Street Excavation	5,600	CY	\$ 112,000
3	8" Lime Stabilized Subgrade	9,000	SY	\$ 72,000
4	Lime for Stabilization (48 lb/SY)	220	TON	\$ 77,000
5	Concrete Pavement (CRCP - 9")	8,300	SY	\$ 830,000
6	Curb & Gutter	5,960	LF	\$ 238,400
7	Concrete Sidewalk and Ramps	29,780	SF	\$ 357,360
8	Furnishing and Placing Topsoil	7,300	SY	\$ 73,000
Paving Estimate Subtotal:				\$ 1,909,760
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	38,200
10	Traffic Control	5%	\$	95,500
11	Erosion Control	3%	\$	57,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	286,500
13	Landscaping	2%	\$	38,200
14	Illumination	3%	\$	57,300
Other Components Estimate Subtotal:				\$ 573,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,482,760
Mobilization				5% \$ 124,200
Contingency				10% \$ 260,700
Construction Cost Estimate Total:				\$ 2,867,700

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,867,700
Engineering/Survey/Testing		15.0%	\$	430,200
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 238,200	\$ 238,200
Impact Fee Project Cost Estimate Total:				\$ 3,536,100

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 4D

New Road 4C to E City Limit

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	3,488		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	56		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	35	STA	\$ 175,000
2	Unclassified Street Excavation	14,500	CY	\$ 290,000
3	8" Lime Stabilized Subgrade	22,500	SY	\$ 180,000
4	Lime for Stabilization (48 lb/SY)	540	TON	\$ 189,000
5	Concrete Pavement (CRCP - 9")	21,800	SY	\$ 2,180,000
6	Curb & Gutter	6,980	LF	\$ 279,200
7	Concrete Sidewalk and Ramps	62,790	SF	\$ 753,480
8	Furnishing and Placing Topsoil	10,900	SY	\$ 109,000
Paving Estimate Subtotal:				\$ 4,155,680
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	83,200
10	Traffic Control	5%	\$	207,800
11	Erosion Control	3%	\$	124,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	623,400
13	Landscaping	2%	\$	83,200
14	Illumination	3%	\$	124,700
Other Components Estimate Subtotal:				\$ 1,247,000
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 5,402,680
Mobilization				5% \$ 270,200
Contingency				10% \$ 567,300
Construction Cost Estimate Total:				\$ 6,240,200

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	6,240,200
Engineering/Survey/Testing		15.0%	\$	936,000
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 348,800	\$ 348,800
Impact Fee Project Cost Estimate Total:				\$ 7,525,000

City of Manvel, TX Planning Level Cost Estimate Worksheet

Belcher Rd

Masters Rd (FM 1128) to 50 W of Hal McLain

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	8,258		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	38		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	83	STA	\$ 415,000
2	Unclassified Street Excavation	23,300	CY	\$ 466,000
3	8" Lime Stabilized Subgrade	36,800	SY	\$ 294,400
4	Lime for Stabilization (48 lb/SY)	880	TON	\$ 308,000
5	Concrete Pavement (CRCP - 9")	34,900	SY	\$ 3,490,000
6	Curb & Gutter	16,520	LF	\$ 660,800
7	Concrete Sidewalk and Ramps	82,580	SF	\$ 990,960
8	Furnishing and Placing Topsoil	45,900	SY	\$ 459,000
Paving Estimate Subtotal:				\$ 7,084,160
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	141,700
10	Traffic Control	5%	\$	354,300
11	Erosion Control	3%	\$	212,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	1,062,700
13	Landscaping	2%	\$	141,700
14	Illumination	3%	\$	212,600
Other Components Estimate Subtotal:				\$ 2,125,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 9,209,760
Mobilization				5% \$ 460,500
Contingency				10% \$ 967,100
Construction Cost Estimate Total:				\$ 10,637,400

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	10,637,400
Engineering/Survey/Testing		15.0%	\$	1,595,600
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 495,500	\$ 495,500
Impact Fee Project Cost Estimate Total:				\$ 12,728,500

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Del Bello Rd (CR-90)

Lira Rd to Patterson Rd

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,677		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	17	STA	\$ 5,000.00
2	Unclassified Street Excavation	5,800	CY	\$ 20.00
3	8" Lime Stabilized Subgrade	9,000	SY	\$ 8.00
4	Lime for Stabilization (48 lb/SY)	220	TON	\$ 350.00
5	Concrete Pavement (CRCP - 9")	8,600	SY	\$ 100.00
6	Curb & Gutter	3,360	LF	\$ 40.00
7	Concrete Sidewalk and Ramps	20,130	SF	\$ 12.00
8	Furnishing and Placing Topsoil	7,500	SY	\$ 10.00
Paving Estimate Subtotal:				\$ 1,660,960
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	33,300
10	Traffic Control	5%	\$	83,100
11	Erosion Control	3%	\$	49,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	249,200
13	Landscaping	2%	\$	33,300
14	Illumination	3%	\$	49,900
Other Components Estimate Subtotal:				\$ 498,700
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,159,660
Mobilization				5% \$ 108,000
Contingency				10% \$ 226,800
Construction Cost Estimate Total:				\$ 2,494,500

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,494,500
Engineering/Survey/Testing		15.0%	\$	374,200
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 100,600	\$ 100,600
Impact Fee Project Cost Estimate Total:				\$ 2,969,300

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 4G

Alvin-Manvel Rd to Jordan St EXT A

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	100		
Right-of-Way Width (ft.):	120		
Median Type:	None		
Pavement Width (BOC to BOC):	50		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	1	STA	\$ 5,000.00
2	Unclassified Street Excavation	400	CY	\$ 8,000
3	8" Lime Stabilized Subgrade	600	SY	\$ 4,800
4	Lime for Stabilization (48 lb/SY)	10	TON	\$ 3,500
5	Concrete Pavement (CRCP - 9")	600	SY	\$ 60,000
6	Curb & Gutter	200	LF	\$ 8,000
7	Concrete Sidewalk and Ramps	2,400	SF	\$ 28,800
8	Furnishing and Placing Topsoil	300	SY	\$ 3,000
Paving Estimate Subtotal:				\$ 121,100
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	2,500
10	Traffic Control	5%	\$	6,100
11	Erosion Control	3%	\$	3,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	18,200
13	Landscaping	2%	\$	2,500
14	Illumination	3%	\$	3,700
Other Components Estimate Subtotal:				\$ 36,700
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 157,800
Mobilization				\$ 7,900
Contingency				\$ 16,600
Construction Cost Estimate Total:				\$ 182,300

Impact Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 182,300
Engineering/Survey/Testing		15.0%	\$ 27,300
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 12,000	\$ 12,000
Impact Fee Project Cost Estimate Total:			\$ 221,600

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 4A
Bissel Rd to Jordan St

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	2,266		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	56		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	23	STA	\$ 5,000.00 \$ 115,000
2	Unclassified Street Excavation	9,400	CY	\$ 20.00 \$ 188,000
3	8" Lime Stabilized Subgrade	14,700	SY	\$ 8.00 \$ 117,600
4	Lime for Stabilization (48 lb/SY)	350	TON	\$ 350.00 \$ 122,500
5	Concrete Pavement (CRCP - 9")	14,100	SY	\$ 100.00 \$ 1,410,000
6	Curb & Gutter	4,540	LF	\$ 40.00 \$ 181,600
7	Concrete Sidewalk and Ramps	40,790	SF	\$ 12.00 \$ 489,480
8	Furnishing and Placing Topsoil	7,000	SY	\$ 10.00 \$ 70,000
Paving Estimate Subtotal:				\$ 2,694,180
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	53,900
10	Traffic Control	5%	\$	134,800
11	Erosion Control	3%	\$	80,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	404,200
13	Landscaping	2%	\$	53,900
14	Illumination	3%	\$	80,900
Other Components Estimate Subtotal:				\$ 808,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 3,502,780
Mobilization				5% \$ 175,200
Contingency				10% \$ 367,800
Construction Cost Estimate Total:				\$ 4,045,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	4,045,800
Engineering/Survey/Testing		15.0%	\$	606,900
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 90,600	\$ 90,600
Impact Fee Project Cost Estimate Total:				\$ 4,743,300

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Jordan St EXT B
New Road 4G to E City Limits

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	2,489		
Right-of-Way Width (ft.):	80		
Median Type:	TWLT		
Pavement Width (BOC to BOC):	39		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	25	STA	\$ 125,000
2	Unclassified Street Excavation	7,200	CY	\$ 144,000
3	8" Lime Stabilized Subgrade	11,400	SY	\$ 91,200
4	Lime for Stabilization (48 lb/SY)	270	TON	\$ 94,500
5	Concrete Pavement (CRCP - 9")	10,800	SY	\$ 1,080,000
6	Curb & Gutter	4,980	LF	\$ 199,200
7	Concrete Sidewalk and Ramps	24,890	SF	\$ 298,680
8	Furnishing and Placing Topsoil	5,500	SY	\$ 55,000
Paving Estimate Subtotal:				\$ 2,087,580
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	41,800
10	Traffic Control	5%	\$	104,400
11	Erosion Control	3%	\$	62,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	313,200
13	Landscaping	2%	\$	41,800
14	Illumination	3%	\$	62,700
Other Components Estimate Subtotal:				\$ 626,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,714,180
Mobilization				5% \$ 135,800
Contingency				10% \$ 285,000
Construction Cost Estimate Total:				\$ 3,135,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	3,135,000
Engineering/Survey/Testing		15.0%	\$	470,300
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 199,100	\$ 199,100
Impact Fee Project Cost Estimate Total:				\$ 3,804,400

City of Manvel, TX Planning Level Cost Estimate Worksheet

Masters Rd (CR-67)
Hanselman Rd to Cumulus Dr

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	952		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	10	STA	\$ 50,000
2	Unclassified Street Excavation	3,300	CY	\$ 66,000
3	8" Lime Stabilized Subgrade	5,100	SY	\$ 40,800
4	Lime for Stabilization (48 lb/SY)	120	TON	\$ 42,000
5	Concrete Pavement (CRCP - 9")	4,900	SY	\$ 490,000
6	Curb & Gutter	1,910	LF	\$ 76,400
7	Concrete Sidewalk and Ramps	11,430	SF	\$ 137,160
8	Furnishing and Placing Topsoil	4,200	SY	\$ 42,000
Paving Estimate Subtotal:				\$ 944,360
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	18,900
10	Traffic Control	5%	\$	47,300
11	Erosion Control	3%	\$	28,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	141,700
13	Landscaping	2%	\$	18,900
14	Illumination	3%	\$	28,400
Other Components Estimate Subtotal:				\$ 283,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,227,960
Mobilization				5% \$ 61,400
Contingency				10% \$ 129,000
Construction Cost Estimate Total:				\$ 1,418,400

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	1,418,400
Engineering/Survey/Testing		15.0%	\$	212,800
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 9,500	\$ 9,500
Impact Fee Project Cost Estimate Total:				\$ 1,640,700

City of Manvel, TX Planning Level Cost Estimate Worksheet

Masters Rd (CR-67)

Cumulus Dr to 1760' S of Cumulus Dr

Roadway Information:			
Functional Classification:	Parkway	No. of Lanes:	4
Length (lf):	1,770		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	46		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and bike lanes		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	18	STA	\$ 5,000.00 \$ 90,000
2	Unclassified Street Excavation	6,100	CY	\$ 20.00 \$ 122,000
3	8" Lime Stabilized Subgrade	9,500	SY	\$ 8.00 \$ 76,000
4	Lime for Stabilization (48 lb/SY)	230	TON	\$ 350.00 \$ 80,500
5	Concrete Pavement (CRCP - 9")	9,100	SY	\$ 100.00 \$ 910,000
6	Curb & Gutter	3,540	LF	\$ 40.00 \$ 141,600
7	Concrete Sidewalk and Ramps	21,240	SF	\$ 12.00 \$ 254,880
8	Furnishing and Placing Topsoil	7,900	SY	\$ 10.00 \$ 79,000
Paving Estimate Subtotal:				\$ 1,753,980
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	35,100
10	Traffic Control	5%	\$	87,700
11	Erosion Control	3%	\$	52,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	263,100
13	Landscaping	2%	\$	35,100
14	Illumination	3%	\$	52,700
Other Components Estimate Subtotal:				\$ 526,400
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,280,380
Mobilization				5% \$ 114,100
Contingency				10% \$ 239,500
Construction Cost Estimate Total:				\$ 2,634,000

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,634,000
Engineering/Survey/Testing		15.0%	\$	395,100
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 17,700	\$ 17,700
Impact Fee Project Cost Estimate Total:				\$ 3,046,800

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 4H

Alvin-Manvel Rd to Jordan St EXT B

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	4,435		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	50		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	45	STA	\$ 225,000
2	Unclassified Street Excavation	16,500	CY	\$ 330,000
3	8" Lime Stabilized Subgrade	25,700	SY	\$ 205,600
4	Lime for Stabilization (48 lb/SY)	620	TON	\$ 217,000
5	Concrete Pavement (CRCP - 9")	24,700	SY	\$ 2,470,000
6	Curb & Gutter	8,870	LF	\$ 354,800
7	Concrete Sidewalk and Ramps	106,440	SF	\$ 1,277,280
8	Furnishing and Placing Topsoil	13,800	SY	\$ 138,000
Paving Estimate Subtotal:				\$ 5,217,680
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	104,400
10	Traffic Control	5%	\$	260,900
11	Erosion Control	3%	\$	156,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	782,700
13	Landscaping	2%	\$	104,400
14	Illumination	3%	\$	156,600
Other Components Estimate Subtotal:				\$ 1,565,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 6,783,280
Mobilization				5% \$ 339,200
Contingency				10% \$ 712,300
Construction Cost Estimate Total:				\$ 7,834,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	7,834,800
Engineering/Survey/Testing		15.0%	\$	1,175,200
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 443,500	\$ 443,500
Impact Fee Project Cost Estimate Total:				\$ 9,453,500

City of Manvel, TX Planning Level Cost Estimate Worksheet

New Road 4I

Jordan St EXT B to New Road 4J

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	5,300		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	50		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	53	STA	\$ 265,000
2	Unclassified Street Excavation	19,700	CY	\$ 394,000
3	8" Lime Stabilized Subgrade	30,700	SY	\$ 245,600
4	Lime for Stabilization (48 lb/SY)	740	TON	\$ 259,000
5	Concrete Pavement (CRCP - 9")	29,500	SY	\$ 2,950,000
6	Curb & Gutter	10,600	LF	\$ 424,000
7	Concrete Sidewalk and Ramps	127,200	SF	\$ 1,526,400
8	Furnishing and Placing Topsoil	16,500	SY	\$ 165,000
Paving Estimate Subtotal:				\$ 6,229,000
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	124,600
10	Traffic Control	5%	\$	311,500
11	Erosion Control	3%	\$	186,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	934,400
13	Landscaping	2%	\$	124,600
14	Illumination	3%	\$	186,900
Other Components Estimate Subtotal:				\$ 1,868,900
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 8,097,900
Mobilization				\$ 404,900
Contingency				\$ 850,300
Construction Cost Estimate Total:				\$ 9,353,100

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	9,353,100
Engineering/Survey/Testing		15.0%	\$	1,403,000
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 530,000	\$ 530,000
Impact Fee Project Cost Estimate Total:				\$ 11,286,100

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 4J

E City to New Road 4I

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	1,936		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	56		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	20	STA	\$ 100,000
2	Unclassified Street Excavation	8,100	CY	\$ 162,000
3	8" Lime Stabilized Subgrade	12,500	SY	\$ 100,000
4	Lime for Stabilization (48 lb/SY)	300	TON	\$ 105,000
5	Concrete Pavement (CRCP - 9")	12,100	SY	\$ 1,210,000
6	Curb & Gutter	3,880	LF	\$ 155,200
7	Concrete Sidewalk and Ramps	34,850	SF	\$ 418,200
8	Furnishing and Placing Topsoil	6,000	SY	\$ 60,000
Paving Estimate Subtotal:				\$ 2,310,400
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	46,300
10	Traffic Control	5%	\$	115,600
11	Erosion Control	3%	\$	69,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	346,600
13	Landscaping	2%	\$	46,300
14	Illumination	3%	\$	69,400
Other Components Estimate Subtotal:				\$ 693,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 3,004,000
Mobilization				5% \$ 150,200
Contingency				10% \$ 315,500
Construction Cost Estimate Total:				\$ 3,469,700

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	3,469,700
Engineering/Survey/Testing		15.0%	\$	520,500
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 193,600	\$ 193,600
Impact Fee Project Cost Estimate Total:				\$ 4,183,800

City of Manvel, TX

Planning Level Cost Estimate Worksheet

Iowa Ln
Bissel St to Bullard Pkwy

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	1,411		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	25		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	15	STA	\$ 75,000
2	Unclassified Street Excavation	2,700	CY	\$ 54,000
3	8" Lime Stabilized Subgrade	4,300	SY	\$ 34,400
4	Lime for Stabilization (48 lb/SY)	100	TON	\$ 35,000
5	Concrete Pavement (CRCP - 9")	4,000	SY	\$ 400,000
6	Curb & Gutter	2,830	LF	\$ 113,200
7	Concrete Sidewalk and Ramps	14,110	SF	\$ 169,320
8	Furnishing and Placing Topsoil	3,400	SY	\$ 34,000
Paving Estimate Subtotal:				\$ 914,920
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	18,300
10	Traffic Control	5%	\$	45,800
11	Erosion Control	3%	\$	27,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	137,300
13	Landscaping	2%	\$	18,300
14	Illumination	3%	\$	27,500
Other Components Estimate Subtotal:				\$ 274,700
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,189,620
Mobilization				5% \$ 59,500
Contingency				10% \$ 125,000
Construction Cost Estimate Total:				\$ 1,374,200

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	1,374,200
Engineering/Survey/Testing		15.0%	\$	206,100
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 28,200	\$ 28,200
Impact Fee Project Cost Estimate Total:				\$ 1,608,500

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 4B

Jordan St to New Road 4C

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	2,874		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	56		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	29	STA	\$ 145,000
2	Unclassified Street Excavation	12,000	CY	\$ 240,000
3	8" Lime Stabilized Subgrade	18,600	SY	\$ 148,800
4	Lime for Stabilization (48 lb/SY)	450	TON	\$ 157,500
5	Concrete Pavement (CRCP - 9")	17,900	SY	\$ 1,790,000
6	Curb & Gutter	5,750	LF	\$ 230,000
7	Concrete Sidewalk and Ramps	51,740	SF	\$ 620,880
8	Furnishing and Placing Topsoil	8,900	SY	\$ 89,000
Paving Estimate Subtotal:				\$ 3,421,180
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	68,500
10	Traffic Control	5%	\$	171,100
11	Erosion Control	3%	\$	102,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	513,200
13	Landscaping	2%	\$	68,500
14	Illumination	3%	\$	102,700
Other Components Estimate Subtotal:				\$ 1,026,700
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 4,447,880
Mobilization				5% \$ 222,400
Contingency				10% \$ 467,100
Construction Cost Estimate Total:				\$ 5,137,400

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	5,137,400
Engineering/Survey/Testing		15.0%	\$	770,600
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 201,200	\$ 201,200
Impact Fee Project Cost Estimate Total:				\$ 6,109,200

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 4F

New Road 4D to Uzzell Rd

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	2,344		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	50		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	24	STA	\$ 120,000
2	Unclassified Street Excavation	8,700	CY	\$ 174,000
3	8" Lime Stabilized Subgrade	13,600	SY	\$ 108,800
4	Lime for Stabilization (48 lb/SY)	330	TON	\$ 115,500
5	Concrete Pavement (CRCP - 9")	13,100	SY	\$ 1,310,000
6	Curb & Gutter	4,690	LF	\$ 187,600
7	Concrete Sidewalk and Ramps	56,260	SF	\$ 675,120
8	Furnishing and Placing Topsoil	7,300	SY	\$ 73,000
Paving Estimate Subtotal:				\$ 2,764,020
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	55,300
10	Traffic Control	5%	\$	138,300
11	Erosion Control	3%	\$	83,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	414,700
13	Landscaping	2%	\$	55,300
14	Illumination	3%	\$	83,000
Other Components Estimate Subtotal:				\$ 829,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 3,593,620
Mobilization				5% \$ 179,700
Contingency				10% \$ 377,400
Construction Cost Estimate Total:				\$ 4,150,800

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	4,150,800
Engineering/Survey/Testing		15.0%	\$	622,600
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 234,400	\$	234,400
Impact Fee Project Cost Estimate Total:				\$ 5,007,800

City of Manvel, TX Planning Level Cost Estimate Worksheet

Jordan St EXT A
Jordan St to New Road 4G

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	1,665		
Right-of-Way Width (ft.):	80		
Median Type:	TWLT		
Pavement Width (BOC to BOC):	39		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	17	STA	\$ 85,000
2	Unclassified Street Excavation	4,900	CY	\$ 98,000
3	8" Lime Stabilized Subgrade	7,600	SY	\$ 60,800
4	Lime for Stabilization (48 lb/SY)	180	TON	\$ 63,000
5	Concrete Pavement (CRCP - 9")	7,300	SY	\$ 730,000
6	Curb & Gutter	3,330	LF	\$ 133,200
7	Concrete Sidewalk and Ramps	16,650	SF	\$ 199,800
8	Furnishing and Placing Topsoil	3,700	SY	\$ 37,000
Paving Estimate Subtotal:				\$ 1,406,800
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	28,200
10	Traffic Control	5%	\$	70,400
11	Erosion Control	3%	\$	42,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	211,100
13	Landscaping	2%	\$	28,200
14	Illumination	3%	\$	42,300
Other Components Estimate Subtotal:				\$ 422,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,829,300
Mobilization				5% \$ 91,500
Contingency				10% \$ 192,100
Construction Cost Estimate Total:				\$ 2,112,900

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,112,900
Engineering/Survey/Testing		15.0%	\$	316,900
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 133,200	\$ 133,200
Impact Fee Project Cost Estimate Total:				\$ 2,563,000

City of Manvel, TX Planning Level Cost Estimate Worksheet

Uzzell Rd EXT

New Road 4F to 1315' W of Kings Dr

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	1,297		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	50		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	13	STA	\$ 65,000
2	Unclassified Street Excavation	4,900	CY	\$ 98,000
3	8" Lime Stabilized Subgrade	7,500	SY	\$ 60,000
4	Lime for Stabilization (48 lb/SY)	180	TON	\$ 63,000
5	Concrete Pavement (CRCP - 9")	7,300	SY	\$ 730,000
6	Curb & Gutter	2,600	LF	\$ 104,000
7	Concrete Sidewalk and Ramps	31,130	SF	\$ 373,560
8	Furnishing and Placing Topsoil	4,000	SY	\$ 40,000
Paving Estimate Subtotal:				\$ 1,533,560
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	30,700
10	Traffic Control	5%	\$	76,700
11	Erosion Control	3%	\$	46,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	230,100
13	Landscaping	2%	\$	30,700
14	Illumination	3%	\$	46,100
Other Components Estimate Subtotal:				\$ 460,400
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,993,960
Mobilization				\$ 99,700
Contingency				\$ 209,400
Construction Cost Estimate Total:				\$ 2,303,100

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,303,100
Engineering/Survey/Testing		15.0%	\$	345,500
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 129,700	\$ 129,700
Impact Fee Project Cost Estimate Total:				\$ 2,778,300

City of Manvel, TX

Planning Level Cost Estimate Worksheet

New Road 4E

Jordan St EXT A to New Road 4D

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	5,599		
Right-of-Way Width (ft.):	100		
Median Type:	None		
Pavement Width (BOC to BOC):	50		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	56	STA	\$ 280,000
2	Unclassified Street Excavation	20,800	CY	\$ 416,000
3	8" Lime Stabilized Subgrade	32,400	SY	\$ 259,200
4	Lime for Stabilization (48 lb/SY)	780	TON	\$ 273,000
5	Concrete Pavement (CRCP - 9")	31,200	SY	\$ 3,120,000
6	Curb & Gutter	11,200	LF	\$ 448,000
7	Concrete Sidewalk and Ramps	134,380	SF	\$ 1,612,560
8	Furnishing and Placing Topsoil	17,400	SY	\$ 174,000
Paving Estimate Subtotal:				\$ 6,582,760
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	131,700
10	Traffic Control	5%	\$	329,200
11	Erosion Control	3%	\$	197,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	987,500
13	Landscaping	2%	\$	131,700
14	Illumination	3%	\$	197,500
Other Components Estimate Subtotal:				\$ 1,975,100
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 8,557,860
Mobilization				5% \$ 427,900
Contingency				10% \$ 898,600
Construction Cost Estimate Total:				\$ 9,884,400

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	9,884,400
Engineering/Survey/Testing		15.0%	\$	1,482,700
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 559,900	\$ 559,900
Impact Fee Project Cost Estimate Total:				\$ 11,927,000

City of Manvel, TX Planning Level Cost Estimate Worksheet

Old Massey Ranch (CR-100)

330' E of Old Chocolate Bayou Rd (CR-89) to Patterson Rd

Roadway Information:			
Functional Classification:	Arterial	No. of Lanes:	4
Length (lf):	1,724		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC to BOC):	32		
Description:	Widen roadway to thoroughfare standard - adding 2 lanes and a bike lane		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	18	STA	\$ 90,000
2	Unclassified Street Excavation	4,100	CY	\$ 82,000
3	8" Lime Stabilized Subgrade	6,600	SY	\$ 52,800
4	Lime for Stabilization (48 lb/SY)	160	TON	\$ 56,000
5	Concrete Pavement (CRCP - 9")	6,200	SY	\$ 620,000
6	Curb & Gutter	3,450	LF	\$ 138,000
7	Concrete Sidewalk and Ramps	31,040	SF	\$ 372,480
8	Furnishing and Placing Topsoil	5,400	SY	\$ 54,000
Paving Estimate Subtotal:				\$ 1,465,280
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	29,400
10	Traffic Control	5%	\$	73,300
11	Erosion Control	3%	\$	44,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	\$	219,800
13	Landscaping	2%	\$	29,400
14	Illumination	3%	\$	44,000
Other Components Estimate Subtotal:				\$ 439,900
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	\$ -	\$ -
16	Bridge Structures	None	\$ -	\$ -
17	Traffic Signals	None	\$ -	\$ -
18	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,905,180
Mobilization				\$ 95,300
Contingency				\$ 200,100
Construction Cost Estimate Total:				\$ 2,200,600

Impact Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	2,200,600
Engineering/Survey/Testing		15.0%	\$	330,100
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 69,000	\$ 69,000
Impact Fee Project Cost Estimate Total:				\$ 2,599,700

APPENDIX F:

SERVICE AREA SUMMARY

Maximum Allowable Cost Per Service Unit Calculation Summary

		Service Area 1	Service Area 2	Service Area 3	Service Area 4	Total
1	Total Vehicle-Miles of Capacity Added by CIP	1,032	15,871	12,862	21,584	51,349
	<i>Table 11</i>					
2	Total Vehicle-Miles of Deficiencies on Existing Roads	0	155	0	0	155
	<i>Table 8</i>					
3	Net Vehicle-Mile Capacity Added by CIP	1,032	15,716	12,862	21,584	51,194
	<i>Line 1 - 2</i>					
4	Net Vehicle-Mile Capacity Added by CIP %	100.00%	99.02%	100.00%	100.00%	
	<i>Line 3 / 1</i>					
5	Total Impact Fee Eligible Cost	\$7,139,967	\$136,525,863	\$107,507,007	\$181,754,167	\$432,927,004
	<i>Appendix D</i>					
6	Cost to Meet Existing Utilization	\$0	\$1,333,344	\$0	\$0	\$1,333,344
	<i>Line 5 * 4</i>					
7	Cost of Net Capacity	\$7,139,967	\$135,192,519	\$107,507,007	\$181,754,167	\$431,593,660
	<i>Line 5 - 6</i>					
8	Total Vehicle-Miles of New Demand Over 10 Years	7,334	17,034	12,297	45,189	81,854
	<i>Table 9</i>					
9	Net Portion of CIP Attributable to New Growth	100.00%	100.00%	95.61%	100.00%	
	<i>Line 8 / 3 (Maximum of 1.0 or 100%)</i>					
10	Cost of CIP Attributable to New Growth	\$7,139,967	\$135,192,519	\$102,784,455	\$181,754,167	\$426,871,108
	<i>Line 7 * 9</i>					
11	Pre-Credit Cost per Service Unit	\$974	\$7,937	\$8,358	\$4,022	\$974
	<i>Line 10 / 8</i>					
12	Total Credit in Service Area	\$596,824	\$13,652,019	\$21,580,123	\$36,605,425	\$72,434,391
	<i>Appendix G</i>					
13	Credit-Adjusted Cost of CIP Attributable to New Growth	\$6,543,144	\$121,540,500	\$81,204,332	\$145,148,741	\$354,436,717
	<i>Line 10 - 12</i>					
14	Credit-Adjusted Cost per Service Unit	\$892	\$7,135	\$6,604	\$3,212	\$5,228
	<i>Line 13 / 8</i>					
15	Credit Percent	8.36%	10.10%	21.00%	20.14%	
	<i>Line (11 - 14) / 11</i>					

APPENDIX G:

AD VALOREM TAX CREDIT ANALYSIS

Area	Service Area: 1														
Proposed CIP Cost	\$4,850,700														
Issue Year	CIP Cost	Interest	Term	Category	Total	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
2026				Debt Service	\$2,355,692	\$117,785	\$117,785	\$117,785	\$117,785	\$117,785	\$117,785	\$117,785	\$117,785	\$117,785	\$117,785
	\$1,600,731	4.00%	20	Principal	\$1,600,731	\$53,755	\$55,906	\$58,142	\$60,467	\$62,886	\$65,402	\$68,018	\$70,738	\$73,568	\$76,511
				Interest	\$754,961	\$64,029	\$61,879	\$59,643	\$57,317	\$54,898	\$52,383	\$49,767	\$47,046	\$44,217	\$41,274
2029				Debt Service	\$2,355,692				\$117,785	\$117,785	\$117,785	\$117,785	\$117,785	\$117,785	\$117,785
	\$1,600,731	4.00%	20	Principal	\$1,600,731				\$53,755	\$55,906	\$58,142	\$60,467	\$62,886	\$65,402	\$68,018
				Interest	\$754,961				\$64,029	\$61,879	\$59,643	\$57,317	\$54,898	\$52,383	\$49,767
2032				Debt Service	\$2,427,076							\$121,354	\$121,354	\$121,354	\$121,354
	\$1,649,238	4.00%	20	Principal	\$1,649,238							\$55,384	\$57,600	\$59,904	\$62,300
				Interest	\$777,838							\$65,970	\$63,754	\$61,450	\$59,054
Service Area: 1 Total Debt Service					\$7,138,460	\$117,785	\$117,785	\$117,785	\$235,569	\$235,569	\$235,569	\$356,923	\$356,923	\$356,923	\$356,923
Service Area: 1 Principal					\$4,850,700	\$53,755	\$55,906	\$58,142	\$114,223	\$118,792	\$123,543	\$183,869	\$191,224	\$198,873	\$206,828
Service Area: 1 Interest					\$2,287,760	\$64,029	\$61,879	\$59,643	\$121,346	\$116,777	\$112,026	\$173,054	\$165,699	\$158,050	\$150,095
Service Area: 1 Total Debt Service Related to New Growth					\$7,138,460	\$117,785	\$117,785	\$117,785	\$235,569	\$235,569	\$235,569	\$356,923	\$356,923	\$356,923	\$356,923
Service Area: 1 Principal Related to New Growth					\$4,850,700	\$53,755	\$55,906	\$58,142	\$114,223	\$118,792	\$123,543	\$183,869	\$191,224	\$198,873	\$206,828
Service Area: 1 Interest Related to New Growth					\$2,287,760	\$64,029	\$61,879	\$59,643	\$121,346	\$116,777	\$112,026	\$173,054	\$165,699	\$158,050	\$150,095
Service Area: 1 Total Cumulative VMDs					N/A	15,392	16,125	16,859	17,592	18,325	19,058	19,791	20,525	21,258	21,991
Service Area: 1 Cost per Additional VMD					N/A	\$7.65	\$7.30	\$6.99	\$13.39	\$12.86	\$12.36	\$18.03	\$17.39	\$16.79	\$16.23
Service Area: 1 Cumulative New VMDs in 10-Year Period					N/A	733	1,466	2,200	2,933	3,666	4,399	5,132	5,866	6,599	7,332
Service Area: 1 Portion Paid by Growth in 10-Year Period					\$596,824	\$5,611	\$10,711	\$15,368	\$39,273	\$47,127	\$54,376	\$92,559	\$102,003	\$110,795	\$119,001

Area	Service Area: 2														
Proposed CIP Cost	\$92,755,800														
Issue Year	CIP Cost	Interest	Term	Category	Total	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
2026				Debt Service	\$45,045,885	\$2,252,294	\$2,252,294	\$2,252,294	\$2,252,294	\$2,252,294	\$2,252,294	\$2,252,294	\$2,252,294	\$2,252,294	\$2,252,294
	\$30,609,414	4.00%	20	Principal	\$30,609,414	\$1,027,918	\$1,069,034	\$1,111,796	\$1,156,268	\$1,202,518	\$1,250,619	\$1,300,644	\$1,352,670	\$1,406,776	\$1,463,047
				Interest	\$14,436,471	\$1,224,377	\$1,183,260	\$1,140,498	\$1,096,027	\$1,049,776	\$1,001,675	\$951,650	\$899,625	\$845,518	\$789,247
2029				Debt Service	\$45,045,885				\$2,252,294	\$2,252,294	\$2,252,294	\$2,252,294	\$2,252,294	\$2,252,294	\$2,252,294
	\$30,609,414	4.00%	20	Principal	\$30,609,414				\$1,027,918	\$1,069,034	\$1,111,796	\$1,156,268	\$1,202,518	\$1,250,619	\$1,300,644
				Interest	\$14,436,471				\$1,224,377	\$1,183,260	\$1,140,498	\$1,096,027	\$1,049,776	\$1,001,675	\$951,650
2032				Debt Service	\$46,410,912							\$2,320,546	\$2,320,546	\$2,320,546	\$2,320,546
	\$31,536,972	4.00%	20	Principal	\$31,536,972							\$1,059,067	\$1,101,429	\$1,145,487	\$1,191,306
				Interest	\$14,873,940							\$1,261,479	\$1,219,116	\$1,175,059	\$1,129,240
Service Area: 2 Total Debt Service					\$136,502,682	\$2,252,294	\$2,252,294	\$2,252,294	\$4,504,589	\$4,504,589	\$4,504,589	\$6,825,134	\$6,825,134	\$6,825,134	\$6,825,134
Service Area: 2 Principal					\$92,755,800	\$1,027,918	\$1,069,034	\$1,111,796	\$2,184,185	\$2,271,553	\$2,362,415	\$3,515,978	\$3,656,617	\$3,802,882	\$3,954,997
Service Area: 2 Interest					\$43,746,882	\$1,224,377	\$1,183,260	\$1,140,498	\$2,320,403	\$2,233,036	\$2,142,174	\$3,309,156	\$3,168,517	\$3,022,252	\$2,870,137
Service Area: 2 Total Debt Service Related to New Growth					\$136,502,682	\$2,252,294	\$2,252,294	\$2,252,294	\$4,504,589	\$4,504,589	\$4,504,589	\$6,825,134	\$6,825,134	\$6,825,134	\$6,825,134
Service Area: 2 Principal Related to New Growth					\$92,755,800	\$1,027,918	\$1,069,034	\$1,111,796	\$2,184,185	\$2,271,553	\$2,362,415	\$3,515,978	\$3,656,617	\$3,802,882	\$3,954,997
Service Area: 2 Interest Related to New Growth					\$43,746,882	\$1,224,377	\$1,183,260	\$1,140,498	\$2,320,403	\$2,233,036	\$2,142,174	\$3,309,156	\$3,168,517	\$3,022,252	\$2,870,137
Service Area: 2 Total Cumulative VMDs					N/A	28,152	29,855	31,559	33,262	34,965	36,668	38,371	40,075	41,778	3,481
Service Area: 2 Cost per Additional VMD					N/A	\$80.00	\$75.44	\$71.37	\$135.43	\$128.83	\$122.85	\$177.87	\$170.31	\$163.37	\$156.97
Service Area: 2 Cumulative New VMDs in 10-Year Period					N/A	1,703	3,406	5,110	6,813	8,516	10,219	11,922	13,626	15,329	17,032
Service Area: 2 Portion Paid by Growth in 10-Year Period					\$13,652,019	\$136,263	\$256,979	\$364,665	\$922,646	\$1,097,128	\$1,255,401	\$2,120,641	\$2,320,586	\$2,504,228	\$2,673,482

Area	Service Area: 3														
Proposed CIP Cost	\$73,040,000														
Issue Year	CIP Cost	Interest	Term	Category	Total	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
2026				Debt Service	\$35,471,113	\$1,773,556	\$1,773,556	\$1,773,556	\$1,773,556	\$1,773,556	\$1,773,556	\$1,773,556	\$1,773,556	\$1,773,556	\$1,773,556
	\$24,103,200	4.00%	20	Principal	\$24,103,200	\$809,428	\$841,805	\$875,477	\$910,496	\$946,916	\$984,792	\$1,024,184	\$1,065,152	\$1,107,758	\$1,152,068
				Interest	\$11,367,913	\$964,128	\$931,751	\$898,079	\$863,060	\$826,640	\$788,763	\$749,371	\$708,404	\$665,798	\$621,488
2029				Debt Service	\$35,471,113				\$1,773,556	\$1,773,556	\$1,773,556	\$1,773,556	\$1,773,556	\$1,773,556	\$1,773,556
	\$24,103,200	4.00%	20	Principal	\$24,103,200				\$809,428	\$841,805	\$875,477	\$910,496	\$946,916	\$984,792	\$1,024,184
				Interest	\$11,367,913				\$964,128	\$931,751	\$898,079	\$863,060	\$826,640	\$788,763	\$749,371
2032				Debt Service	\$36,545,995							\$1,827,300	\$1,827,300	\$1,827,300	\$1,827,300
	\$24,833,600	4.00%	20	Principal	\$24,833,600							\$833,956	\$867,314	\$902,007	\$938,087
				Interest	\$11,712,395							\$993,344	\$959,986	\$925,293	\$889,213
Service Area: 3 Total Debt Service					\$107,488,221	\$1,773,556	\$1,773,556	\$1,773,556	\$3,547,111	\$3,547,111	\$3,547,111	\$5,374,411	\$5,374,411	\$5,374,411	\$5,374,411
Service Area: 3 Principal					\$73,040,000	\$809,428	\$841,805	\$875,477	\$1,719,924	\$1,788,721	\$1,860,269	\$2,768,636	\$2,879,381	\$2,994,557	\$3,114,339
Service Area: 3 Interest					\$34,448,221	\$964,128	\$931,751	\$898,079	\$1,827,188	\$1,758,391	\$1,686,842	\$2,605,775	\$2,495,030	\$2,379,854	\$2,260,072
Service Area: 3 Total Debt Service Related to New Growth					\$102,766,494	\$1,695,647	\$1,695,647	\$1,695,647	\$3,391,294	\$3,391,294	\$3,391,294	\$5,138,325	\$5,138,325	\$5,138,325	\$5,138,325
Service Area: 3 Principal Related to New Growth					\$69,831,510	\$773,871	\$804,826	\$837,019	\$1,644,371	\$1,710,146	\$1,778,552	\$2,647,016	\$2,752,896	\$2,863,012	\$2,977,533
Service Area: 3 Interest Related to New Growth					\$32,934,985	\$921,776	\$890,821	\$858,628	\$1,746,923	\$1,681,148	\$1,612,743	\$2,491,309	\$2,385,428	\$2,275,312	\$2,160,792
Service Area: 3 Total Cumulative VMDs					N/A	5,902	7,131	8,361	9,591	10,821	12,050	13,280	14,510	15,739	16,969
Service Area: 3 Cost per Additional VMD					N/A	\$287.32	\$237.77	\$202.80	\$353.60	\$313.41	\$281.43	\$386.92	\$354.13	\$326.46	\$302.81
Service Area: 3 Cumulative New VMDs in 10-Year Period					N/A	1,230	2,459	3,689	4,919	6,149	7,378	8,608	9,838	11,067	12,297
Service Area: 3 Portion Paid by Growth in 10-Year Period					\$21,580,123	\$353,311	\$584,776	\$748,157	\$1,739,281	\$1,927,025	\$2,076,451	\$3,330,611	\$3,483,816	\$3,613,082	\$3,723,612

Area	Service Area: 4														
Proposed CIP Cost	\$123,483,500														
Issue Year	CIP Cost	Interest	Term	Category	Total	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
2026				Debt Service	\$59,968,472	\$2,998,424	\$2,998,424	\$2,998,424	\$2,998,424	\$2,998,424	\$2,998,424	\$2,998,424	\$2,998,424	\$2,998,424	\$2,998,424
	\$40,749,555	4.00%	20	Principal	\$40,749,555	\$1,368,441	\$1,423,179	\$1,480,106	\$1,539,310	\$1,600,883	\$1,664,918	\$1,731,515	\$1,800,776	\$1,872,807	\$1,947,719
				Interest	\$19,218,917	\$1,629,982	\$1,575,245	\$1,518,317	\$1,459,113	\$1,397,541	\$1,333,505	\$1,266,909	\$1,197,648	\$1,125,617	\$1,050,705
2029				Debt Service	\$59,968,472				\$2,998,424	\$2,998,424	\$2,998,424	\$2,998,424	\$2,998,424	\$2,998,424	\$2,998,424
	\$40,749,555	4.00%	20	Principal	\$40,749,555				\$1,368,441	\$1,423,179	\$1,480,106	\$1,539,310	\$1,600,883	\$1,664,918	\$1,731,515
				Interest	\$19,218,917				\$1,629,982	\$1,575,245	\$1,518,317	\$1,459,113	\$1,397,541	\$1,333,505	\$1,266,909
2032				Debt Service	\$61,785,698							\$3,089,285	\$3,089,285	\$3,089,285	\$3,089,285
	\$41,984,390	4.00%	20	Principal	\$41,984,390							\$1,409,909	\$1,466,306	\$1,524,958	\$1,585,956
				Interest	\$19,801,308							\$1,679,376	\$1,622,979	\$1,564,327	\$1,503,329
Service Area: 4 Total Debt Service					\$181,722,641	\$2,998,424	\$2,998,424	\$2,998,424	\$5,996,847	\$5,996,847	\$5,996,847	\$9,086,132	\$9,086,132	\$9,086,132	\$9,086,132
Service Area: 4 Principal					\$123,483,500	\$1,368,441	\$1,423,179	\$1,480,106	\$2,907,752	\$3,024,062	\$3,145,024	\$4,680,735	\$4,867,964	\$5,062,683	\$5,265,190
Service Area: 4 Interest					\$58,239,141	\$1,629,982	\$1,575,245	\$1,518,317	\$3,089,095	\$2,972,785	\$2,851,823	\$4,405,397	\$4,218,168	\$4,023,449	\$3,820,942
Service Area: 4 Total Debt Service Related to New Growth					\$181,722,641	\$2,998,424	\$2,998,424	\$2,998,424	\$5,996,847	\$5,996,847	\$5,996,847	\$9,086,132	\$9,086,132	\$9,086,132	\$9,086,132
Service Area: 4 Principal Related to New Growth					\$123,483,500	\$1,368,441	\$1,423,179	\$1,480,106	\$2,907,752	\$3,024,062	\$3,145,024	\$4,680,735	\$4,867,964	\$5,062,683	\$5,265,190
Service Area: 4 Interest Related to New Growth					\$58,239,141	\$1,629,982	\$1,575,245	\$1,518,317	\$3,089,095	\$2,972,785	\$2,851,823	\$4,405,397	\$4,218,168	\$4,023,449	\$3,820,942
Service Area: 4 Total Cumulative VMDs					N/A	23,671	28,189	32,708	37,227	41,746	46,264	50,783	55,302	59,820	64,339
Service Area: 4 Cost per Additional VMD					N/A	\$126.67	\$106.37	\$91.67	\$161.09	\$143.65	\$129.62	\$178.92	\$164.30	\$151.89	\$141.22
Service Area: 4 Cumulative New VMDs in 10-Year Period					N/A	4,519	9,037	13,556	18,075	22,594	27,112	31,631	36,150	40,668	45,187
Service Area: 4 Portion Paid by Growth in 10-Year Period					\$36,605,425	\$572,394	\$961,282	\$1,242,718	\$2,911,661	\$3,245,614	\$3,514,331	\$5,659,435	\$5,939,431	\$6,177,126	\$6,381,433