



Innovative approaches
Practical results
Outstanding service

TECHNICAL MEMORANDUM



2021 Roadway Impact Fee Program Amendment

March 2, 2022



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2021 Roadway Impact Fee Program Amendment



FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

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In response to annexations which occurred in 2021, the City of Schertz authorized Freese and Nichols, Inc. (FNI) to perform an impact fee analysis update on the City's roadway systems to incorporate revised city limit boundaries from recent annexations and programmed capital improvements consistent with the Master Thoroughfare Plan in these areas. This analysis of roadways systems serves as an interim update to the initial Impact Fee program adopted March 27, 2018 (Ordinance 18-M-13). The purpose of this technical memorandum is to update the service areas and capital improvements, as necessary, for the update of the unit cost to provide service (cost per roadway vehicle-mile). It was determined that there would be no change in Land Use Assumptions after a review of city growth rates and consultation with City Staff. The methodology used herein satisfies the requirements of the Texas Local Government Code Chapter 395 and is consistent with the methodological approach of the initial program in 2018.

Annexations occurred in Service Areas 1, 2 and 3. There were no changes made within Service Area 4. The analyses will focus on these service areas with documentation of all service areas located in the Appendices.

As part of the impact fee update, FNI conducted meetings with the city's Capital Improvements Advisory Committee (CIAC), City Staff, and the City Council. The CIAC's role included review and comment to (no change in) land use assumptions, Impact Fee Capital Improvements Plans (IFCIP), and comments to the City Council.

METHODOLOGY

To update the roadway impact fee program, a series of work tasks were undertaken and are described below.

1. Meetings were held with the City of Schertz Staff to review the annexations, changes in the impact fee CIP, and the methodology to be used in the update.
2. Roadway service area structure was updated for areas affected by annexations.
3. Vehicle-miles of travel in the PM peak hour were retained as the service unit measure for roadway impact fee calculations.
4. A roadway conditions inventory was updated for newly annexed roadways to include lane geometries, roadway classifications and segment lengths, as necessary, of facilities in the impact fee program.
5. Projected growth (service units) by service area over the ten-year planning period was retained using the initial Land Use Assumptions and Land Use Equivalency Table.
6. The roadway impact fee capital improvements program (IFCIP) was reviewed to incorporate additional projects in the annexed areas.
7. Roadway cost data of construction, engineering, and right-of-way for amended impact fee projects were compiled by service area.

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8. The cost of capacity provided, maximum cost per service unit, and cost attributable to new development were calculated for each service area.
9. A technical memorandum was prepared to document the procedures and findings of the analysis.

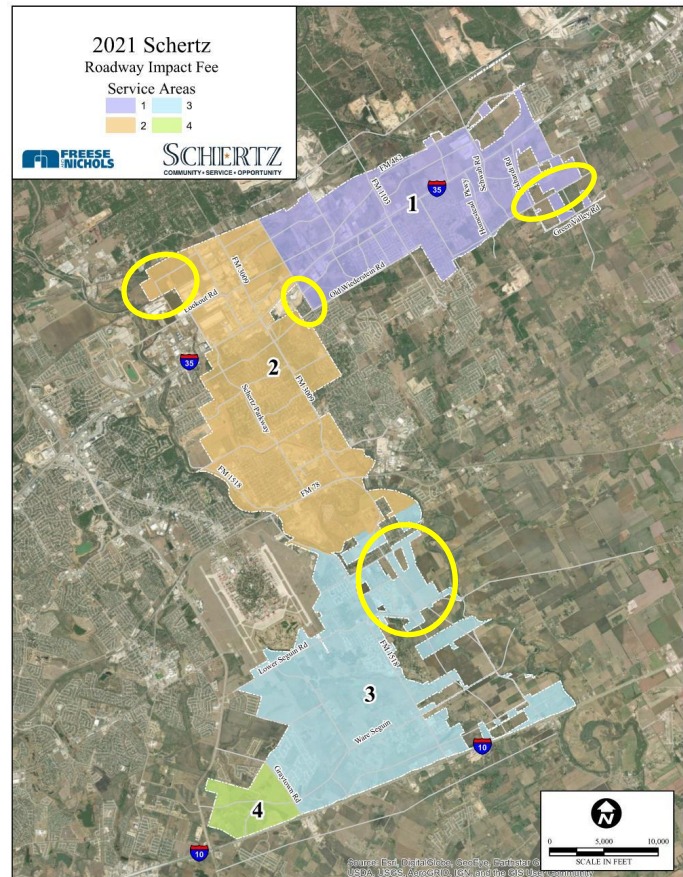
SERVICE AREAS

Roadway service areas define areas to be served by impact fee projects. More importantly, these geographic areas are defined to ensure that facility improvements are near new growth generating the need. Chapter 395 of the Texas Local Government Codes mandates that service areas for roadway programs be limited to a maximum six miles and within city limits.

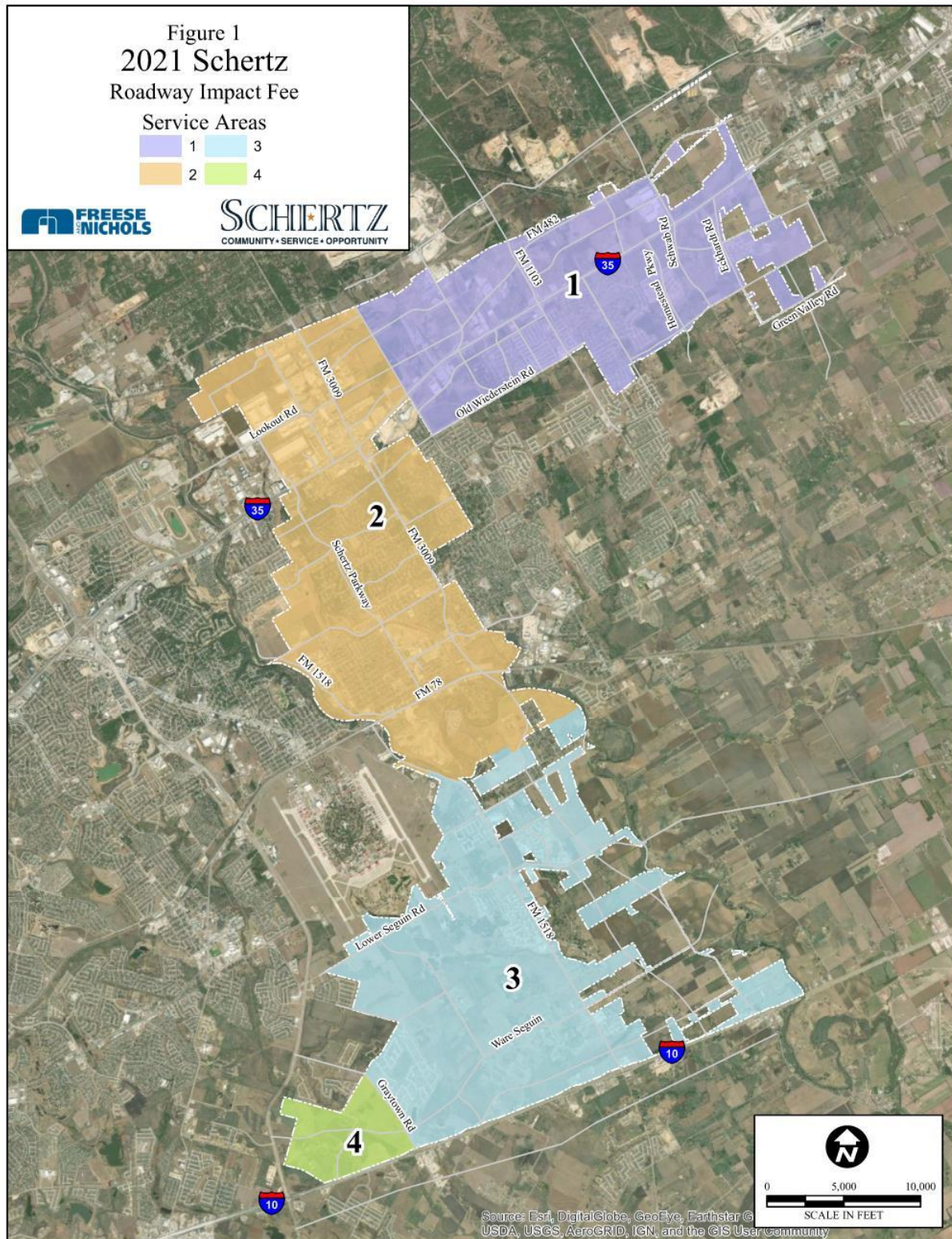
Schertz's service areas for roads were established in the City's initial impact fee program and were adjusted to incorporate the development annexations within Service Areas 1, 2, and 3 (highlighted in the image to the right). Figure 1 illustrates the amended roadway impact fee service area structure.

LAND USE ASSUMPTIONS

Growth defined in terms of land use assumptions, serve to determine the need and timing of capital improvements to serve future development. This ten-year forecast examined population and employment net growth between 2017 and 2027 and was rooted in analysis of historic growth trends over the past 3, 5, and ten-years and documented as part of the impact fee program implementation process. Given the recent nature of the land use assumptions analysis, the pandemic and economic slowdown, and resurgence/continued growth, the initial ten-year forecast was deemed acceptable for this programmatic update. Hence, no changes were made to the initial ten-year assumptions. **Table 1** and **Table 2**, summarize the forecasted population and employment growth which, in addition to the roadway impact fee capital improvement plan, will serve as basis for the cost per service unit calculation.



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Table 1: Initial Impact Fee Population Projections

TEN-YEAR POPULATION PROJECTION CITY OF SCHERTZ				
Roadway Service Areas	2017 Population	2027 Population	Pop. Added	Pct. Change
1	9,239	12,211	2,972	32%
2	28,280	32,169	3,889	14%
3	2,809	12,454	9,645	343%
4	11	68	57	518%
City Total	40,339	56,902	16,563	41%

Source: 2017 Schertz Roadway Impact Fee Study

Table 2: Initial Impact Fee Employment Projections

TEN-YEAR EMPLOYMENT PROJECTION CITY OF SCHERTZ				
Roadway Service Area	Total Employment (Employees)		Emp. Added	Pct. Change
	2017	2027		
1	2,206	3,812	1,606	73%
2	8,587	11,304	2,717	32%
3	408	1,111	703	172%
4	0	20	20	--
City Total	11,201	16,247	5,046	45%

Source: 2017 Schertz Roadway Impact Fee Study

Projected Vehicle-Miles of New Demand

Projected vehicle-miles of demand were calculated based on this net population and employment growth forecasted to occur over the 10-year planning period and the service unit generation for each of the population and employment data components. These values were retained from the 2017 Impact Fee Study, as summarized in **Table 3**.

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Table 3: Impact Fee 10-Year Projected Service Unit Growth

SERVICE AREA	PROJECTED 10-YEAR GROWTH (VEHICLE-MILES)
1	10,461
2	17,905
3	14,918
4	124
City Total	43,408

CAPITAL IMPROVEMENTS PLAN

The impact fee capital improvements plan is aimed at facilitating the implementation of the ultimate thoroughfare network. Projects incorporated into the impact fee program are rooted in the city's official Thoroughfare Plan.

Eligible Projects

Legislative mandate stipulates that the impact fee CIP contain only those roadways which are included on the City's official Thoroughfare Plan that are classified as arterial or collector status facilities. A review of the Thoroughfare Plan identified projects which were eligible for consideration by impact fees. Impact fee legislation also allows for the recoupment of costs for previously constructed facilities. Only costs incurred by the City may be considered for impact fees. Roadways constructed with private funding cannot be included for impact fee consideration. Additionally, state facilities are eligible for inclusion to the impact fee system; however, only costs incurred by the City may be eligible for consideration.

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. 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 and make refunds if the actual cost is less than the impact fee paid by greater than 10 percent. To prevent this situation, conservative estimates of project cost are considered.

Only the cost necessitated by new development will be utilized for impact fee consideration. For example, if only 60% of the capacity provided by the impact fee CIP is needed over the ten-year window, then only 60% of the cost associated with those facilities is considered in the cost per service unit calculation.

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Capital Improvements Plan

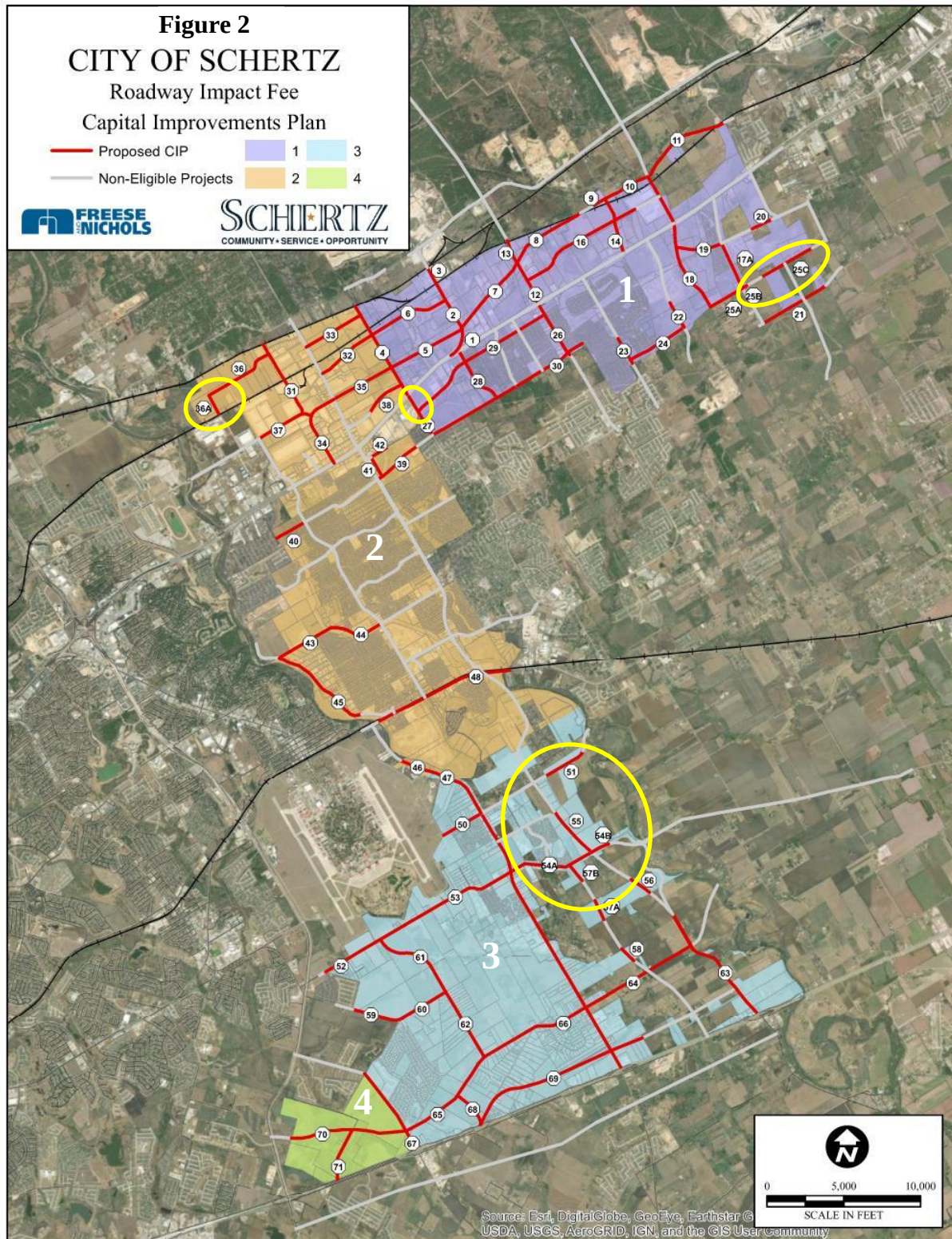
Using the initial impact fee program capital improvements plan as the base for this update, several projects were added to the capital improvement projects or modified. These project additions were coordinated through City Staff and are listed below in **Table 4**.

Table 4: IFCIP Project Additions/Modifications; 2021 Update

Service Area	Project No.	Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Thoroughfare Plan Description
1	25B/C	Big John Lane	Eckhardt	City Limits	New	0.06	2	Residential Collector
		<i>Comment: Incorporation of Parklands II Addition.</i>						
1	25C	Big John Lane	City Limits	Eastern City Limits	New	0.68	2	Residential Collector
		<i>Comment: Incorporation of Parklands II Addition.</i>						
1	27	N/S Connector(1) /Cibolo Valley	IH 35	Old Wiederstein Rd	New	0.55	4	Secondary Arterial
		<i>Comment: Amended project cost of \$1.3M per Development Agreement on Cibolo Valley Drive.</i>						
2	36A	E/W Connector (7)/Tejas Way	W City Limits	Doerr Lane	New	0.65	3	Commercial Collector A
		<i>Comment: Annexation of property and incorporation of thoroughfare extension.</i>						
3/X	51	RAF - Burnette	Schaefer Rd	E City Limits	New	0.55	4	Secondary Arterial
		<i>Comment: Annexation of Sadlebrook Addition.</i>						
3	54A	Lower Seguin Rd	W of Canopy Bend	E City Limits	New	1.08	4	Secondary Arterial
		<i>Comment: Annexation of Sadlebrook Addition.</i>						
3	54B	Lower Seguin Rd	W of Canopy Bend	E City Limits	New	0.23	4	Secondary Arterial
		<i>Comment: Annexation of Sadlebrook Addition.</i>						
3	55	N/S Connector (3)	S. of Schaefer/Raf Burnette	Lower Seguin Rd	New	0.66	4	Principal Arterial
		<i>Comment: Annexation of Sadlebrook Addition.</i>						
3	57B	N/S Connector (4)	Lower Seguin Rd	S City Limit/Carmel Ranch	New	0.24	2	Residential Collector
		<i>Comment: Annexation of Carmel Ranch Addition.</i>						

Project cost estimates were prepared for new additions to the program using a unit cost approach consistent with the methodology of the initial program. Project costs for the initially identified IFCIP program were unchanged unless a project was completed, in which then actual costs were input into the database. **Figure 2** and **Table 5** illustrate and list the capital improvement projects and their associated total cost for the impact fee system. The full list of IFCIP projects and cost for all service areas can be found in the Appendices.

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Table 5: IFCIP Project Listing

Serv Area	Project No.	Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Type Rdwy	Pct. in Serv. Area	Total Project Cost
	1	FM 2252	IH 35	FM 482	New	0.32	4	DA	100%	\$1,566,800
	1	2 FM 2252	FM 482	Railroad Tracks	New	0.64	4	DA	100%	\$3,146,000
1/X	3	FM 2252	Railroad Tracks	N City Limits	New	0.22	4	DA	50%	\$509,850
1/2	4	N/S Connector (1)	IH 35	Railroad Tracks	New	1.25	4	DA	50%	\$3,202,650
1	5	E/W Connector (1)	N/S Connector (1)	FM 2252	New	0.99	4	DA	100%	\$5,513,000
1	6	E/W Connector (2)	N/S Connector (1)	FM 2252	New	0.99	2	UC	100%	\$4,269,000
1	7	FM 482	FM 2252	Hubertus Rd	New	1.05	4	DA	100%	\$5,456,100
1	8	FM 482	Hubertus Rd	Railroad Tracks	New	1.00	4	DA	100%	\$5,147,800
1	9	FM 482	800' W of Friesenhahn	Friesenhahn Ln	New	0.15	4	DA	100%	\$754,100
1/X	10	FM 482	Friesenhahn Ln	Schwab Rd	New	0.59	4	DA	50%	\$1,530,000
1	11	FM 482	Schwab Rd	E City Limits	New	1.20	4	DA	100%	\$6,205,500
1	12	Hubertus Rd	IH 35	FM 482	New	0.57	4	DA	100%	\$2,855,700
1	13	Hubertus Rd	FM 482	N City Limits	New	0.30	4	DA	100%	\$1,572,300
1	14	Friesenhahn Ln	IH 35	FM 482	New	0.72	3	SC	100%	\$1,343,600
1	15	Schwab Rd	IH 35	FM 482	New	0.63	6	DA	100%	\$4,374,700
1	16	E/W Connector (3)	Hubertus Rd	David Lack Blvd	New	1.59	3	SC	100%	\$6,110,000
1	17A	Eckhardt Rd	Froboese Ln	Green Valley Rd	New	1.11	2	UC	100%	\$3,727,100
1	18	Schwab Rd	IH 35	S City Limits	New	1.14	4	DA	100%	\$5,680,700
1	19	Froboese Ln	Schwab Rd	Eckhardt Rd	New	0.57	2	UC	100%	\$2,030,400
1	20	Froboese Ln	2200' E of Eckhardt	E City Limits	New	0.26	2	UC	100%	\$890,000
1	21	Green Valley Rd	W City Limits	E City Limits	New	0.87	4	DA	100%	\$4,199,500
1	22	Homestead Pkwy	End Ex Homestead Pkwy	S City Limits	New	0.33	2	UC	100%	\$1,178,500
1	23	Country Club Blvd	Scenic Links	S City Limits	New	0.35	2	UC	100%	\$1,257,100
1	24	E/W Connector (4)	Country Club Blvd	Homestead Pkwy	New	0.77	2	UC	100%	\$2,671,200
1	25A	E/W Connector (4)	Schwab Rd	Eckhardt Rd	New	0.45	2	UC	100%	\$1,602,000
1/X	25B	Big John Lane	Eckhardt Rd	City Limits	New	0.06	2	UC	50%	\$50,675
1/X	25C	E/W Connector (4)	City Limits	E. City Limits	New	0.68	2	UC	50%	\$608,625
1	26	FM 1103	IH 35	Old Wiederstein Rd	New	0.70	4	DA	100%	\$2,000,000
1	27	N/S Conn. (1)/Cibola Valley	IH 35	Old Wiederstein Rd	New	0.55	4	DA	100%	\$1,300,000
1	28	N/S Connector (2)	IH 35	Old Wiederstein Rd	New	0.73	4	DA	100%	\$3,635,700
1	29	E/W Connector (5)	N/S Connector (1)	FM 1103	New	2.00	2	UC	100%	\$7,097,200
1/X	30	Old Wiederstein Rd	N/S Connector (1)	Cherry Tree Dr	New	2.17	4	DA	50%	\$5,143,600
Sub-total SA 1						24.96				\$96,629,400
2	31	Doerr Ln	N City Limits	Lookout Rd	New	0.91	3	SC	100%	\$3,249,900
2/1	4	N/S Connector (1)	IH 35	Railroad Tracks	New	1.25	4	DA	50%	\$3,130,900
2	32	E/W Connector (2)	FM 3009	N/S Connector (1)	New	0.81	2	UC	100%	\$3,386,200
2	33	E/W Connector (6)	FM 3009	N/S Connector (1)	New	0.81	2	UC	100%	\$3,386,100
2	34	Mid-Cities Pkwy	IH 35	FM 3009	New	0.98	3	SC	100%	\$3,293,700
2	35	E/W Connector (1)	FM 3009	N/S Connector (1)	New	0.81	4	DA	100%	\$4,190,900
2	36	E/W Conn. (7)/Tejas Way	W City Limits	Doerr Ln	Recoup	0.65	3	SC	100%	\$2,231,100
2	36A	Tejas Way	Existing Tejas Way	UP RR/City Limit	New	0.52	3	SC	100%	\$1,647,800
2	37	Lookout Rd	Tri-County Pkwy	Schertz Pkwy	New	0.74	3	SC	100%	\$2,743,600
2	38	Four Oaks Ln	End of Ex .Four Oaks Ln	N/S Connector (1)	New	0.54	3	SC	100%	\$1,977,300
2	39	Wiederstein Rd	E City Limits	FM 3009	New	0.64	4	DA	100%	\$3,079,800
2	40	Wiederstein Rd	Schertz Pkwy	W City Limits	New	0.41	2	UC	100%	\$1,294,700
2	41	Baptist Health Dr	Ripps-Kreusler	Wiederstein Rd	New	0.27	3	SC	100%	\$992,900
2	42	Ripps-Kreusler	Baptist Health Dr	End of Ripps Kreusler	New	0.22	3	SC	100%	\$803,900
2	43	Maske Rd	FM 1518	Oak St	New	0.54	3	SC	100%	\$1,827,600
2	44	Maske Rd Realignment	Oak St	Schertz Pkwy	New	0.88	2	UC	100%	\$3,645,200
2	45	FM 1518/Main St	Maske Rd	Oak St	New	1.30	3	SA	100%	\$4,494,500
2	46	FM 1518	N City Limits	SA 3 Limit	New	0.36	6	DA	100%	\$436,300
2/3	47	FM 1518	SA 3 Limit	Schertz Pkwy Ext.	New	0.39	6	DA	50%	\$222,650
2	48	FM 78/John Peterson Blvd	W City Limits	E City Limits	New	1.81	6	DA	100%	\$2,683,780
Sub-total SA 2						14.86				\$48,718,830

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Table 5 (continued): IFCIP Project Listing

Serv Area	Project No.	Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Type Rdwy	Pct. in Serv. Area	Total Project Cost
3/2	47	FM 1518	SA 2 Limit	Schertz Pkwy Ext.	New	0.39	6	DA	50%	\$222,650
3	49	FM 1518	Schertz Pkwy Ext.	IH 10	New	4.09	6	DA	100%	\$5,165,000
3	50	Schaefer Rd	W City Limits	FM 1518	New	0.48	2	UC	100%	\$1,536,700
3/X	51	RAF - Burnette	Schaefer Rd	E City Limits	New	0.55	4	DA	100%	\$2,559,000
3/X	52	Lower Seguin Rd	W City Limits	E of Bates Dr	New	0.35	3	SA	50%	\$686,450
3	53	Lower Seguin Rd	E of Bates Dr	W of Canopy Bend	New	1.76	3	SA	100%	\$6,998,900
3	54A	Lower Seguin Rd	W of Canopy Bend	E City Limits	New	1.08	4	DA	100%	\$4,917,900
3	54B	Lower Seguin Rd	W of Canopy Bend	E City Limits	New	0.23	4	DA	100%	\$1,063,700
3	55	N/S Connector (3)	S. of Schaefer/Raf Burnette	Lower Seguin Rd	New	0.66	4	DA	100%	\$3,338,500
3	56	N/S Connector (3)	N City Limits	S City Limits	New	0.27	4	DA	100%	\$1,380,400
3	57A	N/S Connector (4)	N City Limits	S City Limits	New	0.26	2	UC	100%	\$894,600
3	57B	N/S Connector (4)	Lower Seguin Rd	S City Limit/Carmel Ranch	New	0.24	2	UC	100%	\$838,000
3	58	N/S Connector (4)	N City Limits	S City Limits	New	0.21	2	UC	100%	\$725,000
3/X	59	W Ware Seguin Rd	W City Limits	Boeing Dr	New	0.57	2	UC	50%	\$900,550
3	60	W Ware Seguin Rd	Boeing Dr	N/S Connector (5)	New	0.67	2	UC	100%	\$2,236,900
3	61	N/S Connector (5)	Lower Seguin Rd	W Ware Seguin Rd	New	1.10	2	UC	100%	\$3,780,500
3	62	N/S Connector (5)	W Ware Seguin Rd	E Ware Seguin Rd	New	0.93	2	UC	100%	\$3,227,400
3	63	Trainer Hale Rd (N/S)	Weir Rd	IH 10	New	1.66	4	DA	100%	\$8,020,500
3	64	Trainer Hale Rd (E/W)	FM 1518	Trainer Hale Rd (N/S)	New	1.51	4	DA	100%	\$7,710,300
3	65	Ware Seguin Rd	Graytown Rd	N/S Connector (5)	New	1.35	3	SA	100%	\$4,736,300
3	66	E Ware Seguin Rd	N/S Connector (5)	FM 1518	New	1.41	3	SA	100%	\$4,739,900
3/4	67	Graytown Rd	Boeing Dr	IH 10	New	1.11	3	SA	50%	\$2,000,600
3	68	N/S Connector (6)	Ware Seguin Rd	IH 10	New	0.47	3	SC	100%	\$1,712,600
3	69	E/W Connector (8)	IH 10	E City Limits	New	2.33	3	SC	100%	\$8,482,300
Sub-total SA 3						23.67				\$77,874,650
4/3	67	Graytown Rd	Boeing Dr	IH 10	New	1.11	3	SA	50%	\$2,000,600
4	70	Binz-Engleman Rd	W City Limits	Graytown Rd	New	1.30	3	SA	100%	\$4,667,000
4	71	Scenic Lake Dr	Binz-Engleman Rd	IH 10	New	0.77	3	SC	100%	\$2,777,400
Sub-total SA 4						3.19				\$9,445,000
Totals:						66.68				\$232,667,880

Notes:

- DA- Divided arterial
- SA- Special arterial (with two way left turn lane)
- SC- Special collector (with two way left turn lane)
- UC- Undivided collector

Projected Vehicle-Miles Capacity Available for New Growth

The vehicle-miles of new capacity supply were calculated consistent with the initial program for capacity supplied. The equation used was:

$$\text{Vehicle-Miles of New Capacity} = \text{Link capacity per peak hour per lane} \times \text{No. of Lanes} \times \text{Length of segment (miles)}$$

Vehicle-miles of new capacity provided by the CIP are listed in **Table 6**. Also depicted is the net capacity provided by the CIP (removal of existing traffic consuming capacity from improvements). The Appendix contains details of the capacity calculations provided by the CIP program for all service areas.

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Table 6: Updated Vehicle-Miles of IFCIP Capacity Provided

	A	B	C = A - B	D	E = C - D
SERVICE AREA	CAPACITY SUPPLIED BY CIP (VEH-MI)	EXISTING UTILIZATION ON CIP ROADS (VEH-MI)	EXCESS CAPACITY (VEH-MI)	EXISTING VEH-MILES OF DEFICIENCIES	VEH-MILES OF NET CAPACITY SUPPLIED
1	45,583	2,747	43,835	0	43,835
2	25,783	6,998	18,785	0	18,785
3	47,756	7,311	40,446	0	40,446
4	3,359	130	3,229	0	3,229
City Total	122,481	17,186	105,295	0	105,295

A comparison of net capacity provided by the updated CIP relative to 10-year demands (from land use assumptions) reveals sufficient capacity to address growth attributable to new development. **Table 7** summarizes the percentage of CIP attributable to new development.

Table 7: Projected Demand and Percent Attributable to 10-Year Growth

	A	B	B / A
SERVICE AREA	VEH-MILES OF NET CAPACITY SUPPLIED	PROJECTED 10-YEAR GROWTH (VEH-MI)	PERCENT OF CIP ATTRIBUTABLE TO 10-YEAR GROWTH
1	43,835	10,461	24.4
2	18,785	17,905	95.3
3	40,446	14,918	36.9
4	3,229	124	3.8
City Total	105,295	43,408	41.2

Cost of Roadway Improvements

The total cost, including study update costs, and cost of net capacity supplied to implement the roadway improvements plan projects by service area are shown in **Table 8**. If traffic exists on proposed CIP project roadways or there are any deficiencies present on the current network within each respective service area (existing utilization), the total system cost is adjusted to reflect the net capacity being made available by the impact fee program. In other words, only the excess or unused portion of the CIP and its associated costs are considered eligible. Per state law, a credit for the

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portion of ad-valorem tax revenues generated by improvements over the program period, or a credit equal to 50% of the total projected cost of implementing the capital improvements plan, must be given. A detailed listing by project segment in each service area can be found in the Appendix.

Table 8: Summary of IFCIP Cost and Cost of Net Capacity Provided

SERVICE AREA	TOTAL COST OF PROPOSED IFCIP PROJECTS	COST TO MEET EXISTING UTILIZATION ON CIP ROADWAYS	COST OF NET CAPACITY SUPPLIED BY CIP
1	\$96,666,616	\$5,826,582	\$90,840,034
2	\$48,739,881	\$13,228,990	\$35,510,891
3	\$77,913,641	\$11,927,108	\$65,986,533
4	\$9,447,742	\$365,721	\$9,082,022
Total	\$232,767,880	\$31,348,401	201,419,479

CALCULATION OF IMPACT FEES

Cost Attributable to New Development

The cost attributable to new development within this cost of net capacity is calculated by comparing the projected vehicle-miles of demand to the net capacity supplied by the IFCIP. If the demand is higher than the net IFCIP capacity provided, then the full cost of the net capacity is attributable to new development. If there is more net capacity than required to meet the project demand, then the cost attributable to new development is the proportional amount of the cost of net capacity based on the ratio of projected demand to net capacity supplied by the IFCIP.

For this update, all of Schertz's roadway service areas are projected to have a demand by new development that consumes only a portion of the full net capacity supplied by the IFCIP. This is shown in **Table 9**.

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Table 9: Roadway Improvements Plan Cost Attributable to New Development

SERVICE AREA	COST OF NET CAPACITY SUPPLIED	PCT. OF CIP ATTRIBUTABLE TO NEW DEV. (10-YR)	COST ATTRIBUTABLE TO NEW DEV.	DEBT SERVICE ATTRIBUTABLE TO NEW DEVELOPMENT	COST ATTRIBUTABLE TO NEW DEV.
1	\$90,840,034	24.4	\$22,184,410	\$2,679,760	\$24,864,170
2	\$35,510,891	95.3	\$33,846,739	\$3,978,291	\$37,825,030
3	\$65,986,533	36.9	\$24,339,036	\$2,865,171	\$27,204,207
4	\$9,082,022	3.8	\$349,633	\$41,588	\$391,221
Total	201,419,479	41.2	\$80,719,818	\$9,564,810	\$90,284,628

Credit Analysis

Per Chapter 395, the cost of the CIP must be credited for ad-valorem tax generated through new development either through a credit analysis or a flat 50% credit. The City of Schertz opted to perform the credit analysis in lieu of the 50% credit to determine the maximum allowable fee per service unit. No changes were made to the credit analysis as there were no changes in the 10-year Land Use Assumptions (and hence the resultant VMT growth). **Table 10** lists the CIP credit and resultant CIP cost attributable to growth (less credit).

Table 10: CIP Credit and Resultant Cost Attributable to New Development

SERVICE AREA	COST ATTRIBUTABLE TO NEW DEV.	CIP CREDIT	TOTAL COST ATTRIBUTABLE TO NEW DEV.
1	\$24,864,170	\$7,974,490	\$16,889,680
2	\$37,825,030	\$13,649,051	\$24,175,979
3	\$27,204,207	\$11,371,991	\$15,832,216
4	\$391,221	\$94,525	\$296,696
Total	\$90,284,628	\$33,090,057	\$57,194,571

Cost per Service Unit

The cost per service unit is calculated by dividing the cost of the CIP necessitated and attributable to new demand (net cost) by the projected service units of growth over the 10-year planning period.

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Table 11 lists the calculation and results of the cost per service unit calculation by service area. The actual cost per service unit reflects the true burden to the City for the implementation of the roadway capital improvements program. Based on the credit analysis, the maximum rate after credit reflects the maximum amount per service unit that can be charged to comply with state statute. The Appendix details the maximum fee per service unit calculation for each service area.

Table 11: Cost per Service Unit Summary

	A	B	C	D= B /A	E = C /A
SERVICE AREA	PROJECTED 10-YEAR GROWTH (VEH-MI)	TOTAL COST ATTRIBUTABLE TO NEW DEVELOPMENT	TOTAL COST ATTRIBUTABLE TO DEV. (LESS CREDIT)	BASE COST PER SERVICE UNIT	MAXIMUM ALLOWABLE COST PER SERVICE UNIT (AFTER CREDIT)
1	10,461	\$24,864,170	\$16,889,680	\$2,409.84	\$1,614.54
2	17,905	\$37,825,030	\$24,175,979	\$2,090.20	\$1,350.25
3	14,918	\$27,204,207	\$15,832,216	\$1,806.78	\$1,061.26
4	124	\$391,221	\$296,696	\$3,155.02	\$2,386.93
Total	43,408	\$90,284,628	\$57,194,571		

These updated cost per service unit rates (maximum allowable) are compared in **Table 12** to the rates calculated in the initial Impact Fee study as well as the current collection rates set at the conclusion of that study. There are slight variations to the cost per service unit in each service area. The updated cost per service unit do not have a negative effect to existing collection rates if the same collection rate is desired to be maintained.

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Table 12: Cost per Service Unit Comparison to Initial Impact Fee Study

Service Area	Maximum Credited Cost per Service Unit			COLLECTION RATE			
	2017 STUDY	2021 STUDY UPDATE	DIFF.	RESIDENTIAL		NON-RESIDENTIAL	
				Mar 2021 - 2022	Mar 2022 Forward	Mar 2018 - 2021	Mar 2021 Forward
1	\$1,647.53	\$1,614.54	(\$32.99)	\$900.00	\$1,000.00	\$100.00	\$175.00
2	\$1,327.89	\$1,350.25	\$22.36	\$900.00	\$1,000.00	\$100.00	\$175.00
3	\$1,044.48	\$1,061.26	\$16.78	\$900.00	\$1,000.00	\$100.00	\$175.00
4	\$2,392.72	\$2,386.93	(\$5.79)	\$900.00	\$1,000.00	\$100.00	\$175.00

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Appendices

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APPENDIX A: ROADWAY IMPROVEMENT PLAN PROJECTS

TECHNICAL MEMORANDUM

Definitions

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): UC = undivided collector DC = divided collector UA = undivided arterial DA = divided arterial SC = special collector (roadway with continuous left turn) SA = special arterial (roadway with continuous left turn) OW = one-way roadway
PK-HR VOLUME	The existing volumes of cars on the roadway segment traveling during the afternoon (P.M.) peak hour of travel.
% 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%.
VEH-MI SUPPLY TOTAL	The number of total service units (vehicle-miles) supplied within the service area, based on the length, and established capacity of the roadway type.
VEH-MI TOTAL DEMAND PK-HR	The total service unit (vehicle-mile) demand created by existing traffic on the roadway segment in the afternoon peak hour.
EXCESS CAPACITY PK-HR VEH-MI	The number of service units supplied but unused by existing traffic in the afternoon peak hour.

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Serv Area	Project No.	Project Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Type	Pct. in Rwy/Serv. Area	Peak Hour Volume* A	B	Total	PK Hr Total	PK Hr Total	MT Demand	Excess	CIP VMT
1	1	FM 2252	IH 35	FM 482	New	0.32	4	DA	100%	73	250	323	853	102	751	0	0
1	2	FM 2252	FM 482	Railroad Tracks	New	0.64	4	DA	100%	73	250	323	1726	206	1519	0	0
1/X	3	FM 2252	Railroad Tracks	N City Limits	New	0.22	4	DA	50%	0	250	250	299	55	244	0	0
1/2	4	N/S Connector (1)	IH 35	Railroad Tracks	New	1.25	4	DA	50%	0	0	0	1691	0	1691	0	0
1	5	E/W Connector (1)	N/S Connector (1)	FM 2252	New	0.99	4	DA	100%	0	0	0	2668	0	2668	0	0
1	6	E/W Connector (2)	N/S Connector (1)	FM 2252	New	0.99	2	UC	100%	0	0	0	988	0	988	0	0
1	7	FM 482	FM 2252	Hubertus Rd	New	1.05	4	DA	100%	46	52	98	2841	103	2738	0	0
1	8	FM 482	Hubertus Rd	Railroad Tracks	New	1.00	4	DA	100%	46	52	98	2705	98	2607	0	0
1	9	FM 482	800' W of Friesenhahn	Friesenhahn Ln	New	0.15	4	DA	100%	46	52	98	405	15	390	0	0
1/X	10	FM 482	Friesenhahn Ln	Schwab Rd	New	0.59	4	DA	50%	46	0	46	797	27	769	0	0
1	11	FM 482	Schwab Rd	E City Limits	New	1.20	4	DA	100%	46	52	98	3240	118	3122	0	0
1	12	Hubertus Rd	IH 35	FM 482	New	0.57	4	DA	100%	30	57	87	1529	49	1480	0	0
1	13	Hubertus Rd	FM 482	N City Limits	New	0.30	4	DA	100%	0	0	0	821	0	821	0	0
1	14	Friesenhahn Ln	IH 35	FM 482	New	0.72	3	SC	100%	50	50	100	789	72	717	0	0
1	15	Schwab Rd	IH 35	FM 482	New	0.63	6	DA	100%	120	315	435	2548	274	2274	0	0
1	16	E/W Connector (3)	Hubertus Rd	David Lack Blvd	New	1.59	3	SC	100%	0	0	0	1754	0	1754	0	0
1	17A	Eckhardt Rd	Frobese Ln	Green Valley Rd	New	1.11	2	UC	100%	19	11	30	1110	33	1077	0	0
1	18	Schwab Rd	IH 35	S City Limits	New	1.14	4	DA	100%	0	0	0	3078	0	3078	0	0
1	19	Frobese Ln	Schwab Rd	Eckhardt Rd	New	0.57	2	UC	100%	0	0	0	573	0	573	0	0
1	20	Frobese Ln	2200' E of Eckhardt	E City Limits	New	0.26	2	UC	100%	0	0	0	260	0	260	0	0
1	21	Green Valley Rd	W City Limits	E City Limits	New	0.87	4	DA	100%	10	10	20	2352	17	2335	0	0
1	22	Homestead Pkwy	End Ex Homestead Pkwy	S City Limits	New	0.33	2	UC	100%	0	0	0	326	0	326	0	0
1	23	Country Club Blvd	Scenic Links	S City Limits	New	0.35	2	UC	100%	0	0	0	350	0	350	0	0
1	24	E/W Connector (4)	Country Club Blvd	Homestead Pkwy	New	0.77	2	UC	100%	0	0	0	770	0	770	0	0
1	25A	E/W Connector (4)	Schwab Rd	Eckhardt Rd	New	0.45	2	UC	100%	10	10	20	451	9	442	0	0
1/X	25B	Big John Lane	Eckhardt Rd	City Limits	New	0.68	2	UC	50%	0	0	0	28	0	28	0	0
1/X	25C	E/W Connector (4)	City Limits	E. City Limits	New	0.68	2	UC	50%	0	0	0	342	0	342	0	0
1	26	FM 1103	IH 35	Old Wiederstein Rd	New	0.70	4	DA	100%	590	1020	1610	1894	1129	764	0	0
1	27	N/S Conn. (1)/Cibola Valley	IH 35	Old Wiederstein Rd	New	0.55	4	DA	100%	50	50	100	1485	55	1430	0	0
1	28	N/S Connector (2)	IH 35	Old Wiederstein Rd	New	0.73	4	DA	100%	0	0	0	1983	0	1983	0	0
1	29	E/W Connector (5)	N/S Connector (1)	FM 1103	New	2.00	2	UC	100%	0	0	0	1998	0	1998	0	0
1/X	30	Old Wiederstein Rd	N/S Connector (1)	Cherry Tree Dr	New	2.17	4	DA	50%	0	177	177	2930	384	2545	0	0
Sub-total SA 1													45583	2747	42835	0	0
2	31	Doerr Ln	N City Limits	Lookout Rd	New	0.91	3	SC	100%	50	50	100	1004	91	913	0	0
2/1	4	N/S Connector (1)	IH 35	Railroad Tracks	New	1.25	4	DA	50%	0	0	0	1691	0	1691	0	0
2	32	E/W Connector (2)	FM 3009	N/S Connector (1)	New	0.81	2	UC	100%	0	0	0	810	0	810	0	0
2	33	E/W Connector (6)	FM 3009	N/S Connector (1)	New	0.81	2	UC	100%	0	0	0	810	0	810	0	0
2	34	Mid-Cities Pkwy	IH 35	FM 3009	New	0.98	3	SC	100%	0	0	0	1082	0	1082	0	0
2	35	E/W Connector (1)	FM 3009	N/S Connector (1)	New	0.81	4	DA	100%	0	0	0	2200	0	2200	0	0
2	36	E/W Conn. (7)/Tejas Way	W City Limits	Doerr Ln	Recoup	0.65	3	SC	100%	0	0	0	717	0	717	0	0
2	36A	Tejas Way	Existing Tejas Way	UP RR/City Limit	New	0.52	3	SC	100%	0	0	0	574	0	574	0	0
2	37	Lookout Rd	Tri-County Pkwy	Schertz Pkwy	New	0.74	3	SC	100%	133	219	352	815	261	554	0	0
2	38	Four Oaks Ln	End of Ex .Four Oaks Ln	N/S Connector (1)	New	0.54	3	SC	100%	0	0	0	598	0	598	0	0

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Serv Area	Project No.	Project Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Type	Pct. in Rdw	Peak Hour Volume* A	B	Total	PK Hr Total	Supply VMT	Demand	Excess	CIP VMT
2	39	Wiederstein Rd	E City Limits	FM 3009	New	0.64	4	DA	100%	0	0	0	1737	0	0	1737	0
2	40	Wiederstein Rd	Schertz Pkwy	W City Limits	New	0.41	2	UC	100%	100	100	200	406	81	325	0	0
2	41	Baptist Health Dr	Ripps-Kreusler	Wiederstein Rd	New	0.27	3	SC	100%	0	0	0	302	0	302	0	0
2	42	Ripps-Kreusler	Baptist Health Dr	End of Ripps Kreusler	New	0.22	3	SC	100%	0	0	0	245	0	245	0	0
2	43	Maske Rd	FM 1518	Oak St	New	0.54	3	SC	100%	97	105	202	595	109	486	0	0
2	44	Maske Rd Realignment	Oak St	Schertz Pkwy	New	0.88	2	UC	100%	0	0	0	875	0	875	0	0
2	45	FM 1518/Main St	Maske Rd	Oak St	New	1.30	3	SA	100%	397	351	748	1753	971	782	0	0
2	46	FM 1518	N City Limits	SA 3 Limit	New	0.36	6	DA	100%	755	508	1263	1465	457	1008	0	0
2/3	47	FM 1518	SA 3 Limit	Schertz Pkwy Ext.	New	0.39	6	DA	50%	755	0	755	793	296	497	0	0
2	48	FM 78/John Peterson Blvd	W City Limits	E City Limits	New	1.81	6	DA	100%	1525	1096	2621	7311	4732	2580	0	0
Sub-total SA 2						14.86							25783	6998	18785	0	0
3/2	47	FM 1518	SA 2 Limit	Schertz Pkwy Ext.	New	0.39	6	DA	50%	0	508	508	793	199	594	0	0
3	49	FM 1518	Schertz Pkwy Ext.	IH 10	New	4.09	6	DA	100%	755	508	1263	16565	5166	11399	0	0
3/3	50	Schaefer Rd	W City Limits	FM 1518	New	0.48	2	UC	100%	100	100	200	478	96	383	0	0
3/3	51	RAF - Burnette	Schaefer Rd	E City Limits	New	0.55	4	DA	100%	50	50	100	1472	55	1417	0	0
3/3	52	Lower Seguin Rd	W City Limits	E of Tates Dr	New	0.35	3	SA	50%	304	0	304	237	107	130	0	0
3	53	Lower Seguin Rd	E of Tates Dr	W of Canopy Bend	New	1.76	3	SA	100%	304	188	492	2376	866	1510	0	0
3	54A	Lower Seguin Rd	W of Canopy Bend	E City Limits	New	1.08	4	DA	100%	37	16	53	2903	57	2846	0	0
3	54B	Lower Seguin Rd	W of Canopy Bend	E City Limits	New	0.23	4	DA	100%	37	16	53	626	12	614	0	0
3	55	N/S Connector (3)	S. of Schaefer/Raf Burnette	Lower Seguin Rd	New	0.66	4	DA	100%	0	0	0	1776	0	1776	0	0
3	56	N/S Connector (3)	N City Limits	S City Limits	New	0.27	4	DA	100%	0	0	0	716	0	716	0	0
3	57A	N/S Connector (4)	N City Limits	S City Limits	New	0.26	2	UC	100%	0	0	0	256	0	256	0	0
3	57B	N/S Connector (4)	Lower Seguin Rd	S City Limit/Carmel Ranch	New	0.24	2	UC	100%	0	0	0	243	0	243	0	0
3	58	N/S Connector (4)	N City Limits	S City Limits	New	0.21	2	UC	100%	0	0	0	211	0	211	0	0
3/3	59	W Ware Seguin Rd	W City Limits	Boeing Dr	New	0.57	2	UC	50%	0	20	20	283	11	272	0	0
3	60	W Ware Seguin Rd	Boeing Dr	N/S Connector (5)	New	0.67	2	UC	100%	19	20	39	669	26	642	0	0
3	61	N/S Connector (5)	Lower Seguin Rd	W Ware Seguin Rd	New	1.10	2	UC	100%	20	19	39	1104	43	1061	0	0
3	62	N/S Connector (5)	W Ware Seguin Rd	E Ware Seguin Rd	New	0.93	2	UC	100%	20	19	39	932	36	895	0	0
3	63	Trainer Hale Rd (N/S)	Weir Rd	IH 10	New	1.66	4	DA	100%	50	50	100	4480	166	4314	0	0
3	64	Trainer Hale Rd (E/W)	FM 1518	Trainer Hale Rd (N/S)	New	1.51	4	DA	100%	50	50	100	4070	151	3920	0	0
3	65	Ware Seguin Rd	Graytown Rd	N/S Connector (5)	New	1.35	3	SA	100%	0	0	0	1828	0	1828	0	0
3	66	E Ware Seguin Rd	N/S Connector (5)	FM 1518	New	1.41	3	SA	100%	20	19	39	1910	55	1855	0	0
3/4	67	Graytown Rd	Boeing Dr	IH 10	New	1.11	3	SA	50%	238	0	238	752	265	487	0	0
3	68	N/S Connector (6)	Ware Seguin Rd	IH 10	New	0.47	3	SC	100%	0	0	0	512	0	512	0	0
3	69	E/W Connector (8)	IH 10	E City Limits	New	2.33	3	SC	100%	0	0	0	2563	0	2563	0	0
Sub-total SA 3						23.67							47756	7311	40446	0	0
4/3	67	Graytown Rd	Boeing Dr	IH 10	New	1.11	3	SA	50%	0	89	89	752	99	653	0	0
4	70	Binz-Engleman Rd	W City Limits	Graytown Rd	New	1.30	3	SA	100%	0	0	0	1760	0	1760	0	0
4	71	Scenic Lake Dr	Binz-Engleman Rd	IH 10	New	0.77	3	SC	100%	20	20	40	847	31	816	0	0
Sub-total SA 4						3.19							3359	130	3229	0	0
Totals:						66.68							122,481	17,186	105,295	0	0

**APPENDIX B: ROADWAY IMPROVEMENT PLAN COST
ANALYSIS**

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Definitions

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): UC = undivided collector DC = divided collector UA = undivided arterial DA = divided arterial SC = special collector (roadway with continuous left turn) SA = special arterial (roadway with continuous left turn) OW = one-way roadway
% 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%.
TOTAL SEGMENT COST	The estimated cost (in dollars) of the entire segment of the proposed improvement.
TOTAL COST IN SERVICE AREA	The estimated cost (in dollars) of the portion of the proposed roadway improvement within the service area.

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Serv Area	Project No.	Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Type	Pct. in Rdwy Serv. Ared	Roadway Project Costs			Total Project Cost	Prorated Study Update Cost	Service Area Total Cost (100%)
										Engineering	ROW	Construction			
1	1	FM 2252	IH 35	FM 482	New	0.32	4	DA	100%	\$100,000	\$38,000	\$1,428,800	\$1,566,800	\$696	\$1,567,496
1	2	FM 2252	FM 482	Railroad Tracks	New	0.64	4	DA	100%	\$205,800	\$0	\$2,940,200	\$3,146,000	\$1,409	\$3,147,409
1/X	3	FM 2252	Railroad Tracks	N City Limits	New	0.22	4	DA	50%	\$33,350	\$0	\$476,500	\$509,850	\$244	\$510,094
1/2	4	N/S Connector (1)	IH 35	Railroad Tracks	New	1.25	4	DA	50%	\$194,950	\$222,750	\$2,784,950	\$3,202,650	\$1,380	\$3,204,030
1	5	E/W Connector (1)	N/S Connector (1)	FM 2252	New	0.99	4	DA	100%	\$337,600	\$352,800	\$4,822,600	\$5,513,000	\$2,179	\$5,515,179
1	6	E/W Connector (2)	N/S Connector (1)	FM 2252	New	0.99	2	UC	100%	\$261,300	\$274,400	\$3,733,300	\$4,269,000	\$807	\$4,269,807
1	7	FM 482	FM 2252	Hubertus Rd	New	1.05	4	DA	100%	\$343,300	\$207,900	\$4,904,900	\$5,456,100	\$2,319	\$5,458,419
1	8	FM 482	Hubertus Rd	Railroad Tracks	New	1.00	4	DA	100%	\$323,800	\$196,000	\$4,626,000	\$5,147,800	\$2,209	\$5,150,009
1	9	FM 482	800 W of Friesenhahn	Friesenhahn Ln	New	0.15	4	DA	100%	\$47,400	\$30,000	\$876,700	\$754,100	\$331	\$754,431
1/X	10	FM 482	Friesenhahn Ln	Schwab Rd	New	0.59	4	DA	50%	\$96,250	\$58,400	\$1,375,350	\$1,530,000	\$650	\$1,530,650
1	11	FM 482	Schwab Rd	E City Limits	New	1.20	4	DA	100%	\$390,400	\$237,600	\$5,577,500	\$6,205,500	\$2,645	\$6,208,145
1	12	Hubertus Rd	IH 35	FM 482	New	0.57	4	DA	100%	\$178,000	\$135,400	\$2,542,300	\$2,855,700	\$1,248	\$2,856,948
1	13	Hubertus Rd	FM 482	N City Limits	New	0.30	4	DA	100%	\$93,500	\$142,600	\$1,336,200	\$1,571,300	\$670	\$1,571,970
1	14	Friesenhahn Ln	IH 35	FM 482	New	0.72	3	SC	100%	\$85,400	\$38,000	\$1,220,200	\$1,343,600	\$644	\$1,344,244
1	15	Schwab Rd	IH 35	FM 482	New	0.63	6	DA	100%	\$268,200	\$274,400	\$3,832,100	\$4,374,700	\$2,080	\$4,376,780
1	16	E/W Connector (3)	Hubertus Rd	David Lack Blvd	New	1.59	3	SC	100%	\$370,900	\$440,700	\$5,298,400	\$6,110,000	\$1,432	\$6,111,432
1	17A	Eckhardt Rd	Froboese Ln	Green Valley Rd	New	1.11	2	UC	100%	\$238,100	\$87,900	\$3,401,100	\$3,727,100	\$906	\$3,728,006
1	18	Schwab Rd	IH 35	S City Limits	New	1.14	4	DA	100%	\$345,100	\$406,300	\$4,929,300	\$5,680,700	\$2,513	\$5,683,213
1	19	Froboese Ln	Schwab Rd	Eckhardt Rd	New	0.57	2	UC	100%	\$122,500	\$158,000	\$1,749,900	\$2,030,400	\$468	\$2,030,868
1	20	Froboese Ln	2200' E of Eckhardt	E City Limits	New	0.26	2	UC	100%	\$56,200	\$31,100	\$802,700	\$890,000	\$212	\$890,212
1	21	Green Valley Rd	W City Limits	E City Limits	New	0.87	4	DA	100%	\$293,500	\$172,300	\$3,763,700	\$4,199,500	\$1,921	\$4,201,421
1	22	Homestead Pkwy	End Ex Homestead Pkwy	S City Limits	New	0.33	2	UC	100%	\$71,100	\$91,500	\$1,015,900	\$1,178,500	\$266	\$1,178,766
1	23	Country Club Blvd	Scenic Links	S City Limits	New	0.35	2	UC	100%	\$97,000	\$97,000	\$1,084,200	\$1,257,100	\$286	\$1,257,386
1	24	E/W Connector (4)	Country Club Blvd	Homestead Pkwy	New	0.77	2	UC	100%	\$160,800	\$213,800	\$2,296,600	\$2,671,200	\$629	\$2,671,829
1	25A	E/W Connector (4)	Schwab Rd	Eckhardt Rd	New	0.45	2	UC	100%	\$96,600	\$124,700	\$1,380,700	\$1,602,000	\$368	\$1,602,368
1/X	25B	Big John Lane	Eckhardt Rd	City Limits	New	0.06	2	UC	50%	\$3,050	\$3,850	\$43,775	\$50,675	\$23	\$50,698
1/X	25C	E/W Connector (4)	City Limits	E. City Limits	New	0.68	2	UC	50%	\$36,700	\$47,350	\$524,575	\$608,625	\$279	\$608,904
1	26	FM 1103	IH 35	Old Wiederstein Rd	New	0.70	4	DA	100%	\$0	\$0	\$2,000,000	\$2,000,000	\$1,546	\$2,001,546
1	27	N/S Conn. (1)/Cibola Valley	IH 35	Old Wiederstein Rd	New	0.55	4	DA	100%	\$0	\$0	\$1,300,000	\$1,300,000	\$1,212	\$1,301,212
1	28	N/S Connector (2)	IH 35	Old Wiederstein Rd	New	0.73	4	DA	100%	\$220,800	\$260,200	\$3,635,700	\$3,637,319	\$1,619	\$3,637,319
1	29	E/W Connector (5)	N/S Connector (1)	FM 1103	New	2.00	2	UC	100%	\$428,100	\$554,000	\$6,115,100	\$7,097,200	\$1,632	\$7,098,832
1/X	30	Old Wiederstein Rd	N/S Connector (1)	Cherry Tree Dr	New	2.17	4	DA	50%	\$328,050	\$129,900	\$4,686,650	\$5,143,600	\$2,392	\$5,145,992
Sub-total SA 1										\$5,776,650	\$5,027,850	\$85,824,900	\$96,629,400	\$37,216	\$96,666,616
2	31	Doerr Ln	N City Limits	Lookout Rd	New	0.91	3	SC	100%	\$212,600	\$0	\$3,037,300	\$3,249,900	\$820	\$3,250,720
2/1	4	N/S Connector (1)	IH 35	Railroad Tracks	New	1.25	4	DA	50%	\$190,250	\$222,750	\$2,717,900	\$3,130,900	\$1,380	\$3,132,280
2	32	E/W Connector (2)	FM 3009	N/S Connector (1)	New	0.81	2	UC	100%	\$206,800	\$224,500	\$2,954,900	\$3,386,200	\$661	\$3,386,861
2	33	E/W Connector (6)	FM 3009	N/S Connector (1)	New	0.81	2	UC	100%	\$206,800	\$224,500	\$2,954,800	\$3,386,100	\$661	\$3,386,761
2	34	Mid-Cities Pkwy	IH 35	FM 3009	New	0.98	3	SC	100%	\$215,500	\$0	\$3,078,200	\$3,293,700	\$883	\$3,294,583
2	35	E/W Connector (1)	FM 3009	N/S Connector (1)	New	0.81	4	DA	100%	\$288,700	\$288,700	\$3,646,900	\$4,190,900	\$1,797	\$4,192,697
2	36	E/W Conn. (7)/Tejas Way	W City Limits	Doerr Ln	Recoup	0.65	3	SC	100%	\$134,200	\$180,200	\$1,916,700	\$2,231,100	\$585	\$2,231,685
2	36A	Tejas Way	Existing Tejas Way	UP RR/City Limit	New	0.52	3	SC	100%	\$99,100	\$133,000	\$1,415,700	\$1,647,800	\$468	\$1,648,268
2	37	Lookout Rd	Tri-County Pkwy	Schertz Pkwy	New	0.74	3	SC	100%	\$179,500	\$0	\$2,564,100	\$2,743,600	\$666	\$2,744,266
2	38	Four Oaks Ln	End of Ex. Four Oaks Ln	N/S Connector (1)	New	0.54	3	SC	100%	\$119,600	\$149,700	\$1,708,000	\$1,977,300	\$488	\$1,977,788
2	39	Wiederstein Rd	E City Limits	FM 3009	New	0.64	4	DA	100%	\$166,600	\$228,100	\$2,665,100	\$3,079,800	\$1,418	\$3,081,218
2	40	Wiederstein Rd	Schertz Pkwy	W City Limits	New	0.41	2	UC	100%	\$84,700	\$0	\$1,210,000	\$1,294,700	\$331	\$1,295,031
2	41	Baptist Health Dr	Ripps-Kreusler	Wiederstein Rd	New	0.27	3	SC	100%	\$60,100	\$74,800	\$858,000	\$992,900	\$247	\$993,147
2	42	Ripps-Kreusler	Baptist Health Dr	End of Ripps Kreusler	New	0.22	3	SC	100%	\$48,600	\$61,000	\$694,300	\$803,900	\$200	\$804,100
2	43	Mask Rd	FM 1518	Oak St	New	0.54	3	SC	100%	\$119,600	\$0	\$1,708,000	\$1,827,600	\$486	\$1,828,086
2	44	Mask Rd Realignment	Oak St	Schertz Pkwy	New	0.88	2	UC	100%	\$222,500	\$243,900	\$3,178,800	\$3,645,200	\$715	\$3,645,915
2	45	FM 1518/Main St	Mask Rd	Oak St	New	1.30	3	SA	100%	\$294,000	\$0	\$4,200,500	\$4,494,500	\$1,431	\$4,495,931

TECHNICAL MEMORANDUM

Serv Area	Project No.	Roadway	From	To	Project Status	Length (mi)	No. of Lanes	Type	Pct. in Rdwy Serv. Area	Roadway Project Costs			Total Project Cost	Prorated Study Update Cost	Service Area Total Cost (100%)
										Engineering	ROW	Construction			
2	46	FM 1518	N City Limits	SA 3 Limit	New	0.36	6	DA	100%	\$27,400	\$17,100	\$391,800	\$436,300	\$1,196	\$437,496
2/3	47	FM 1518	SA 3 Limit	Schertz Pkwy Ext.	New	0.39	6	DA	50%	\$13,950	\$9,250	\$199,450	\$222,650	\$648	\$223,298
2	48	FM 78/John Peterson Blvd	W City Limits	E City Limits	New	1.81	6	DA	100%	\$175,600	\$0	\$2,508,180	\$2,683,780	\$5,969	\$2,689,749
Sub-total SA 2										\$3,062,700	\$2,057,500	\$43,608,630	\$48,718,830	\$21,051	\$48,739,881
3/2	47	FM 1518	SA 2 Limit	Schertz Pkwy Ext.	New	0.39	6	DA	50%	\$13,950	\$9,250	\$199,450	\$222,650	\$648	\$223,298
3	49	FM 1518	Schertz Pkwy Ext.	IH 10	New	4.09	6	DA	100%	\$327,300	\$162,000	\$4,675,700	\$5,165,000	\$13,524	\$5,178,524
3	50	Schaefer Rd	W City Limits	FM 1518	New	0.48	2	UC	100%	\$99,300	\$19,000	\$1,418,400	\$1,536,700	\$391	\$1,537,091
3/X	51	RAF - Burnette	Schaefer Rd	E City Limits	New	0.55	4	DA	100%	\$160,300	\$108,900	\$2,289,800	\$2,559,000	\$1,202	\$2,560,202
3/X	52	Lower Seguin Rd	W City Limits	E of Tates Dr	New	0.35	3	SA	50%	\$44,450	\$6,950	\$635,050	\$686,450	\$193	\$686,643
3	53	Lower Seguin Rd	E of Tates Dr	W of Canopy Bend	New	1.76	3	SA	100%	\$43,300	\$69,700	\$6,475,900	\$6,968,900	\$1,940	\$7,000,840
3	54A	Lower Seguin Rd	W of Canopy Bend	E City Limits	New	1.08	4	DA	100%	\$313,400	\$127,700	\$4,476,800	\$4,917,900	\$2,370	\$4,920,270
3	54B	Lower Seguin Rd	W of Canopy Bend	E City Limits	New	0.23	4	DA	100%	\$67,800	\$27,600	\$968,300	\$1,063,700	\$511	\$1,064,211
3	55	N/S Connector (3)	S. of Schaefer/Raf Burnette	Lower Seguin Rd	New	0.66	4	DA	100%	\$198,000	\$312,600	\$2,827,900	\$3,338,500	\$1,450	\$3,339,950
3	56	N/S Connector (3)	N City Limits	S City Limits	New	0.27	4	DA	100%	\$81,900	\$128,300	\$1,170,200	\$1,380,400	\$585	\$1,380,985
3	57A	N/S Connector (4)	N City Limits	S City Limits	New	0.26	2	UC	100%	\$53,800	\$72,100	\$768,700	\$894,600	\$209	\$894,809
3	57B	N/S Connector (4)	Lower Seguin Rd	S City Limit/Carmel Ranch	New	0.24	2	UC	100%	\$50,400	\$67,500	\$720,100	\$838,000	\$199	\$838,199
3	58	N/S Connector (4)	N City Limits	S City Limits	New	0.21	2	UC	100%	\$43,600	\$58,200	\$623,200	\$725,000	\$172	\$725,172
3/X	59	W Ware Seguin Rd	W City Limits	Boeing Dr	New	0.57	2	UC	50%	\$58,900	\$0	\$841,650	\$900,550	\$231	\$900,781
3	60	W Ware Seguin Rd	Boeing Dr	N/S Connector (5)	New	0.67	2	UC	100%	\$146,300	\$0	\$2,090,600	\$2,236,900	\$546	\$2,237,446
3	61	N/S Connector (5)	Lower Seguin Rd	W Ware Seguin Rd	New	1.10	2	UC	100%	\$227,400	\$304,900	\$3,248,200	\$3,780,500	\$901	\$3,781,401
3	62	N/S Connector (5)	W Ware Seguin Rd	E Ware Seguin Rd	New	0.93	2	UC	100%	\$208,700	\$36,800	\$2,981,900	\$3,227,400	\$761	\$3,228,161
3	63	Trainer Hale Rd (N/S)	Weir Rd	IH 10	New	1.66	4	DA	100%	\$498,900	\$394,400	\$7,127,200	\$8,024,500	\$3,657	\$8,028,157
3	64	Trainer Hale Rd (E/W)	FM 1518	Trainer Hale Rd (N/S)	New	1.51	4	DA	100%	\$500,500	\$59,800	\$7,150,000	\$7,710,300	\$3,323	\$7,713,623
3	65	E Ware Seguin Rd	Graytown Rd	N/S Connector (5)	New	1.35	3	SA	100%	\$278,400	\$481,100	\$3,976,800	\$4,736,300	\$1,493	\$4,737,793
3	66	E Ware Seguin Rd	N/S Connector (5)	FM 1518	New	1.41	3	SA	100%	\$259,100	\$167,500	\$4,273,300	\$4,739,900	\$1,559	\$4,741,459
3/4	67	Graytown Rd	Boeing Dr	IH 10	New	1.11	3	SA	50%	\$126,550	\$65,950	\$1,808,100	\$2,000,600	\$614	\$2,001,214
3	68	N/S Connector (6)	Ware Seguin Rd	IH 10	New	0.47	3	SC	100%	\$103,500	\$130,300	\$1,478,800	\$1,712,600	\$418	\$1,713,018
3	69	E/W Connector (8)	IH 10	E City Limits	New	2.33	3	SC	100%	\$512,700	\$545,900	\$7,323,700	\$8,482,300	\$2,093	\$8,484,393
Sub-total SA 3										\$4,868,490	\$3,456,450	\$60,549,750	\$77,874,650	\$38,991	\$77,913,641
4/3	67	Graytown Rd	Boeing Dr	IH 10	New	1.11	3	SA	50%	\$126,550	\$65,950	\$1,808,100	\$2,000,600	\$614	\$2,001,214
4	70	Binz-Engleman Rd	W City Limits	Graytown Rd	New	1.30	3	SA	100%	\$275,000	\$463,300	\$3,928,700	\$4,667,000	\$1,437	\$4,668,437
4	71	Scenic Lake Dr	Binz-Engleman Rd	IH 10	New	0.77	3	SC	100%	\$177,700	\$61,000	\$2,538,700	\$2,777,400	\$691	\$2,778,091
Sub-total SA 4										\$579,250	\$590,250	\$8,275,500	\$9,445,000	\$2,742	\$9,447,742
Totals:						66.68				\$14,277,050	\$11,132,050	\$207,258,780	\$232,667,880	\$100,000	\$232,767,880

TECHNICAL MEMORANDUM

APPENDIX C: ROADWAY SERVICE AREA ANALYSIS SUMMARY

TECHNICAL MEMORANDUM

2021 Schertz Roadway Impact Fee Update*

Service Area Analysis Summary

Service Area Summary														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Service Area	Capacity Supplied by CIP (veh-mi)	Existing Utilization (veh-mi)	Existing Deficiencies (veh-mi)	Net Capacity Supplied by CIP (veh-mi)	Total Project Cost of CIP	Cost of Capacity Supplied	Cost to Meet Existing Utilization	Projected 10yr Growth (veh-miles)	Pcnt. of CIP Attributable to New Dev. (10-yr)	Debt Service Attributable to New Dev.	Cost Attributable to New Dev.	CIP Credit per Credit Analysis	Maximum Credited Cost per Service Unit	Full Cost per Service Unit (veh-mi)
1	45,583	2,747	0	42,835	\$96,666,616	\$90,840,034	\$5,826,582	10,461	24.4	\$2,679,760	\$24,864,170	\$7,974,490	\$1,614.54	\$2,409.84
2	25,783	6,998	0	18,785	\$48,739,881	\$35,510,891	\$13,228,990	17,905	95.3	\$3,978,291	\$37,825,030	\$13,649,051	\$1,350.25	\$2,090.20
3	47,756	7,311	0	40,446	\$77,913,641	\$65,986,533	\$11,927,108	14,918	36.9	\$2,865,171	\$27,204,207	\$11,371,991	\$1,061.26	\$1,806.78
4	3,359	130	0	3,229	\$9,447,742	\$9,082,022	\$365,721	1.24		\$41,588	\$391,221	\$94,525	\$2,386.93	\$3,155.02
Totals	122,481	17,186	0	105,295	232,767,880	201,419,479	31,348,401	43,408	41.2	\$9,564,810	\$90,284,628	\$33,090,057	\$1,317.59	\$2,072.87
													Member Average	

1. TOTAL VEH-MI OF CAPACITY SUPPLIED BY CIP (TVMCAP)

2. TOTAL VEH-MI OF EXISTING DEMAND (VMEXT)

3. TOTAL VEH-MI OF EXISTING DEFICIENCIES (VMADEF)

4. NET AMOUNT OF ROADWAY CAPACITY SUPPLIED (NVMCAP) =

NVMCAP = TVMCAP - VMEXT - VMADEF

5. TOTAL COST OF CIP WITHIN STUDY AREA (TVMCOST)

6. COST OF NET CAPACITY SUPPLIED (NCVMCAP) =

NCVMCAP = (NVMCAP * TVMCAP) / TVMCOST

7. COST TO MEET EXISTING NEEDS AND USAGE (EXCOST) =

EXCOST = TVMCOST - NCVMCAP

8. TOTAL VEH-MI OF NEW DEMAND OVER TEN YEARS (TNEWDEM)

9. PERCENT OF CIP ATTRIBUTABLE TO NEW DEVELOPMENT (NPCNT) =

IF TNEWDEM > NVMCAP, NPCNT = 100%

IF TNEWDEM < NVMCAP, NPCNT = (TNEWDEM / NVMCAP) * 100

10. DEBT SERVICE ATTRIBUTABLE TO NEW DEVELOPMENT (DSDEM) =

11. COST OF CIP ATTRIBUTABLE TO NEW DEVELOPMENT (NCVDEM) =

NCVDEM = (TNEWDEM / NVMCAP) * NCVMCAP + DSDEM

12. CIP CREDIT PER CREDIT ANALYSIS (CCRED)

13. COST PER SERVICE UNIT = (MAX FEE)

14. BASE COST PER SERVICE UNIT (BASE FEE)

BASE FEE = NCVDEM / TNEWDEM

*Amendments to Service Area 1, 2 and 3 include:

SA3: Project 51 - Schaefer/Raf Bennett; Secondary Arterial (90'); extension of city limits
 SA3: Project 54A/54B - Lower Seguin Road, Secondary Arterial (90' ROW); extension of city limits
 SA3: Project 55 - N/S Connector (120' ROW) from Schaefer/Raf Burnett; extension of city limits
 SA3: Project 57B - Addition of Res Collector (70' ROW) from Lower Seguin Rd; extension of city limits
 SA3: Project 25B/25C - Big John Lane (Res. Collector, 70' ROW); extension of city limits
 SA1: Project 27 - Wiederstein Road (Prin. Art., 120' ROW); Amended Cost per Dev. Agreement
 SA1: Project 36A - Tejas Way Extension (Comm. Collector, 70' ROW)

Roadway Capital Recovery Fee Ordinance 18-M-13

Service Area	Maximum Credited Cost per Service Unit		COLLECTION RATE		
	2017 Study	2021 Study Update	Difference	RESIDENTIAL	NON-RESIDENTIAL
				Mar-2021 - 2022	Mar-2022 Forward
1	\$1,647.53	\$1,614.54	(\$32.99)	\$900.00	\$1,000.00
2	\$1,327.89	\$1,350.25	\$22.36	\$900.00	\$1,000.00
3	\$1,044.48	\$1,061.26	\$16.78	\$900.00	\$1,000.00
4	\$2,392.72	\$2,386.93	(\$5.79)	\$900.00	\$1,000.00
				\$100.00	\$175.00
				\$100.00	\$175.00