RESOLUTION NO. 2008-10-173 (R)

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MCKINNEY, TEXAS, APPROVING THE AMENDMENT OF THE CAPITAL IMPROVEMENTS PLAN FOR ROADWAY IMPACT FEES FOR THE 2007-2008 ROADWAY IMPACT FEE UPDATE.

WHEREAS, per Texas Local Government Code Section 395.052, a city imposing a roadway impact fee shall update the land use assumptions and capital improvements plan at least every five years; and

WHEREAS, the City of McKinney, Texas held a public hearing and approved the updated Land Use Assumptions for the 2007-2008 Roadway Impact Fee Update on April 1, 2008;

WHEREAS, per Texas Local Government Code Section 395.054, the City of McKinney, Texas has held a public hearing to consider the amendment of the Capital Improvements Plan for Roadway Impact Fees for the 2007-2008 Roadway Impact Fee Update; and

WHEREAS, per Texas Local Government Code Section 395.054, the City of McKinney, Texas is required to adopt an ordinance, order, or resolution approving the amendment of the capital improvements plan.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MCKINNEY, TEXAS, THAT:

Section 1. The City Council of the City of McKinney, Texas approves the amendment of the Capital Improvements Plan for Roadway Impact Fees for the 2007-2008 Roadway Impact Fee Update.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF MCKINNEY, COLLIN COUNTY, TEXAS ON THIS THE 21st DAY OF OCTOBER 2008.

City of McKinney

BILL WHITFIELD
Mayor

ATTEST:

SANDY HART, TRMC, MMC
City Secretary
BEVERLY COVINGTON, TRMC, CMC
Deputy City Secretary

APPROVED AS TO FORM:

MARK S. HOUSER
City Attorney

EXHIBIT 2

2007 - 2008
Roadway Impact Fee Update

City of McKinney, TX

Prepared by:

Kimley-Horn
and Associates, Inc.

801 Cherry Street, Unit 11
Suite 950
Fort Worth, TX 76102
817.335.6511

October 2008

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EXHIBIT 2

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I. INTRODUCTION

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

Chapter 395 mandates that impact fees be reviewed and updated at least every five (5) years. Accordingly, the City of McKinney has initiated a review of its Land Use Assumptions, Roadway Improvements Plan, and Impact Fees. The City has retained Kimley-Horn and Associates, Inc, to provide professional transportation engineering services for the update of their Roadway Impact Fees. This report includes the update of the impact fee calculation in accordance with Chapter 395 and the adopted revisions to the Land Use Assumptions and the Roadway Improvements Plan.

This report introduces and references two of the basic inputs to the Roadway Impact Fee: the **Land Use Assumptions** and the **Roadway Improvements Plan (RIP)**. Information from these two components is used extensively in the remainder of the report. This report consists of a detailed discussion of the methodology for the computation of impact fees. This discussion - **Methodology for Roadway Impact Fees** and **Impact Fee Calculation** addresses each of the components of the computation and modifications required for the update. The components include:

- Service Areas
- Service Units
- Cost Per Service Unit
- Cost of the RIP
- Service Unit Calculation
- Maximum Assessable Impact Fee Per Service Unit
- Service Unit Demand Per Unit of Development

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

II. ROADWAY IMPACT FEE CALCULATION INPUTS

A. LAND USE ASSUMPTIONS

In order to assess an impact fee, Land Use Assumptions must be developed to provide the basis for population and employment growth projections within a political subdivision. As defined by Chapter 395 of the Texas Local Government Code, these assumptions include a description of changes in land uses, densities, and population in the service area. The Land Use Assumptions used in this report were developed by City of McKinney staff and are presented in a separate report titled *Land Use Assumptions Report 2007-2008 Impact Fee Update (Land Use Assumptions)*. These Land Use Assumptions were adopted by City Council on April 1, 2008.

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

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

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

Employment: Square feet of building area based on retail, service, and basic land uses. Each classification has unique trip making characteristics.

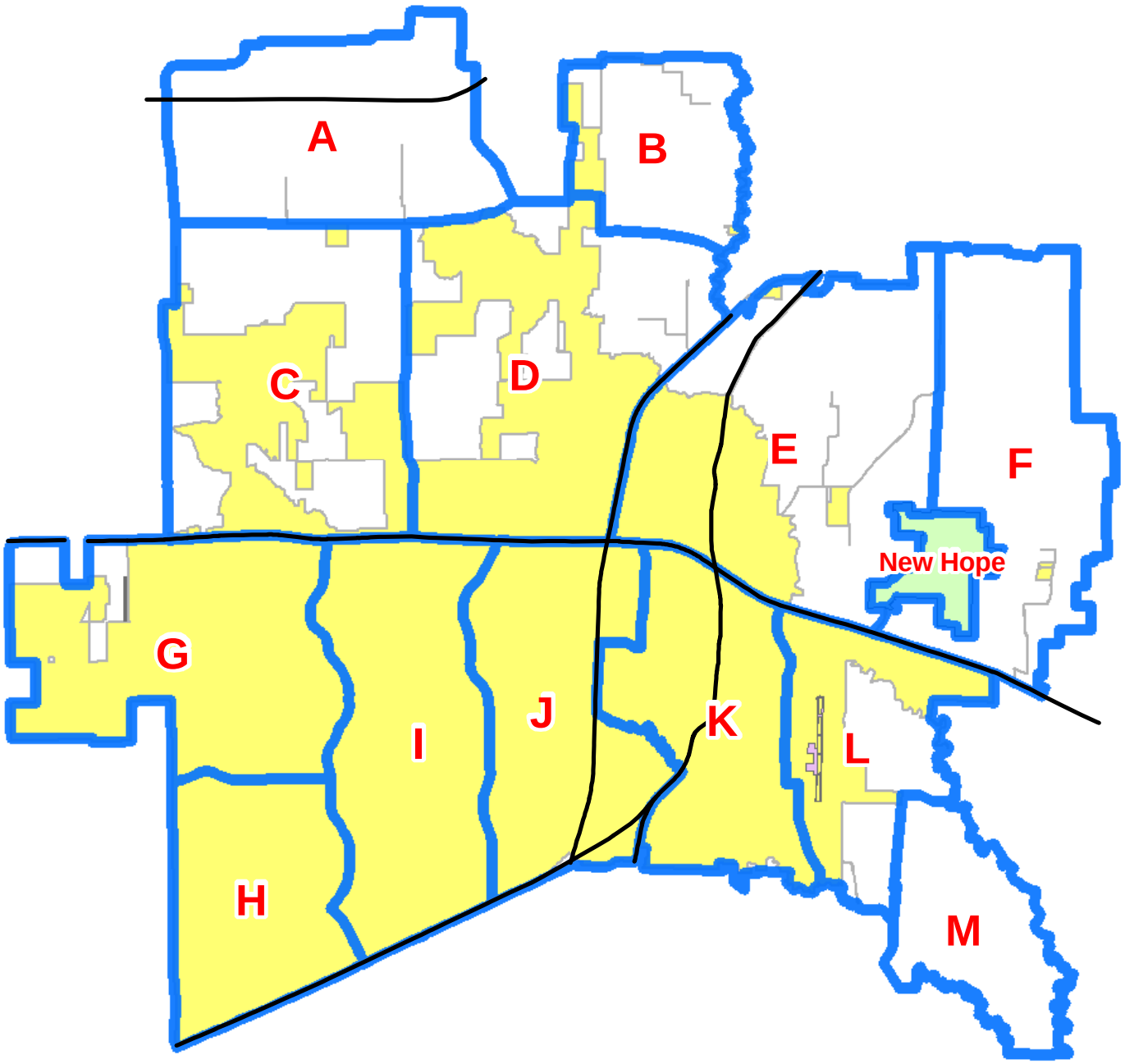
Retail: Land use activities which provide for the retail sale of goods that primarily serve households and whose location choice is oriented toward the household sector, such as grocery stores and restaurants.

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

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

The geographic boundaries of the impact fee service areas for roadway facilities are shown in **Exhibit 1**. The City of McKinney is divided into thirteen (13) service areas, each based upon a six (6) mile limit as required in Chapter 395.

Table 1 summarizes the residential and non-residential projections by service area within the City of McKinney for 2007, as well as the residential and non-residential projections by service area within the City of McKinney for 2017. The Build Out projections (which include areas within the current city limits and extraterritorial jurisdiction) are provided for reference purposes only. The information provided in **Table 1** was taken from the previously referenced *Land Use Assumptions Report 2007-2008 Impact Fee Update*.



Impact Fee Service Areas

Exhibit #1
Roadway
Impact Fee Update

McKINNEY TEXAS
Unique by nature.

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Miles

October 2008

Kimley-Horn and Associates, Inc.

Legend
- Service Area Boundaries
- McKinney City Limits

EXHIBIT 2

Table 1. Residential and Non-Residential Projections for the City of McKinney

Service Area	Year	Residential		Non-Residential (Square Feet)			
		Population	Units	Basic	Service	Retail	Total
A	2007	0	0	0	0	0	0
		0.00%		0.00%	0.00%	0.00%	0.00%
	2017	0	0	0	0	0	0
		0.00%		0.00%	0.00%	0.00%	0.00%
	Build Out	19,037	6,587	0	14,023,700	14,182,420	28,206,120
B	2007	0	0	0	0	0	0
		0.00%		0.00%	0.00%	0.00%	0.00%
	2017	7,812	2,703	0	953	520	1,473
		32.42%		0.00%	0.03%	0.04%	0.03%
	Build Out	24,097	8,338	0	2,990,373	1,277,280	4,267,653
C	2007	1,510	522	31,416	164,650	42,574	238,640
		2.52%		100.00%	2.31%	1.27%	2.28%
	2017	11,129	3,851	31,416	1,296,204	461,238	1,788,858
		18.54%		100.00%	18.22%	13.81%	17.06%
	Build Out	60,017	20,767	31,416	7,115,514	3,339,375	10,486,305
D	2007	7,728	2,674	39,270	2,937,356	224,224	3,200,850
		11.61%		100.00%	36.30%	6.31%	27.40%
	2017	13,686	4,736	39,270	3,915,619	612,938	4,567,827
		20.56%		100.00%	48.40%	17.26%	39.10%
	Build Out	66,566	23,033	39,270	8,090,854	3,551,324	11,681,448
E	2007	2,013	697	1,955,646	1,007,658	1,613,562	4,576,866
		9.36%		9.81%	23.84%	21.39%	14.43%
	2017	2,527	874	2,662,506	1,572,414	2,049,418	6,284,338
		11.75%		13.35%	37.20%	27.17%	19.82%
	Build Out	21,499	7,439	19,941,306	4,226,500	7,543,123	31,710,929
F	2007	3	1	0	0	0	0
		0.02%		0.00%	0.00%	0.00%	0.00%
	2017	169	59	0	17,467	9,542	27,009
		1.15%		0.00%	1.25%	0.81%	1.05%
	Build Out	14,856	5,140	0	1,393,941	1,180,382	2,574,323
G	2007	27,706	9,587	0	974,728	688,283	1,663,011
		55.09%		0.00%	74.07%	24.83%	39.31%
	2017	47,180	16,325	0	1,310,615	1,511,406	2,822,021
		93.82%		0.00%	99.60%	54.52%	66.70%
	Build Out	50,289	17,401	142,943	1,315,882	2,772,010	4,230,835

Table 1. Residential and Non-Residential Projections for the City of McKinney (cont.)

Service Area	Year	Residential		Non-Residential (Square Feet)			
		Population	Units	Basic	Service	Retail	Total
H	2007	9,133	3,160	0	717,874	943,728	1,661,602
		29.36%		0.00%	19.63%	16.21%	17.53%
	2017	24,766	8,570	0	1,978,859	1,701,120	3,679,979
		79.62%		0.00%	54.11%	29.22%	38.83%
	Build Out	31,107	10,764	0	3,657,416	5,820,923	9,478,339
I	2007	28,313	9,797	0	1,837,494	865,675	2,703,169
		57.48%		0.00%	61.53%	28.25%	41.99%
	2017	41,270	14,280	0	2,592,611	1,353,226	3,945,837
		83.78%		0.00%	86.82%	44.16%	61.30%
	Build Out	49,261	17,045	386,652	2,986,224	3,064,514	6,437,390
J	2007	20,947	7,248	1,610,070	3,483,994	2,398,347	7,492,411
		69.89%		83.13%	66.89%	42.97%	58.87%
	2017	27,493	9,513	1,610,070	4,221,686	3,221,794	9,053,550
		91.73%		83.13%	81.06%	57.72%	71.14%
	Build Out	29,971	10,371	1,936,796	5,208,256	5,581,612	12,726,664
K	2007	17,738	6,138	3,683,681	6,704,548	1,603,610	11,991,839
		83.84%		49.99%	91.68%	87.53%	72.62%
	2017	19,701	6,817	4,186,337	7,084,005	1,745,804	13,016,146
		93.12%		56.81%	96.87%	95.29%	78.82%
	Build Out	21,157	7,321	7,368,778	7,313,098	1,832,095	16,513,971
L	2007	107	37	0	3,543,268	411,633	3,954,901
		100.00%		0.00%	100.00%	100.00%	19.72%
	2017	107	37	408,408	3,543,268	411,633	4,363,309
		100.00%		2.54%	100.00%	100.00%	21.76%
	Build Out	107	37	16,100,700	3,543,268	411,633	20,055,601
M	2007	0	0	0	0	0	0
		n/a		0.00%	0.00%	0.00%	0.00%
	2017	0	0	0	0	0	0
		n/a		0.00%	0.00%	0.00%	0.00%
	Build Out	0	0	2,513,280	118,548	63,864	2,695,692

B. ROADWAY IMPROVEMENTS PLAN

The City has identified the City-funded transportation projects needed to accommodate the projected growth within the City. The Roadway Improvements Plan (RIP) for Roadway Impact Fees is made up of:

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

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

The RIP for Roadway Impact Fees for the 2007-2008 Impact Fee Update is listed in **Table 2** and mapped in **Exhibit 2 (see also back pocket).** The table shows the length of each project as well as the facility's Master Thoroughfare Plan classification. The RIP was developed in conjunction with input from City of McKinney staff and represents those projects that will be needed to accommodate the growth projected in the *Land Use Assumptions Report 2007-2008 Impact Fee Update*.

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
A	A-1, D-1	M6D	Future Arterial B (2)	CCR 168 to E. City Limits	0.30	50%

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
B	B-1	M6D	Hardin Blvd. (1)	CCR 204 to CCR 206	0.07	100%
	B-2	M6D	Hardin Blvd. (2)	CCR 206 to Future Fannin Rd.	0.33	100%
	B-3	M6D	Hardin Blvd. (3)	Future Fannin Rd. to CCR 226	0.46	100%
	B-4, D-19	M6D	Hardin Blvd. (4)	CCR 226 to Future Arterial B	0.40	50%
	B-5	G4D	Fannin Rd.	Future Hardin Blvd. to CCR 227	0.06	100%
	S-2		Signal Installation	Hardin Blvd. & Fannin Rd.		75%

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
C	C-1	M6D	Future Arterial B (1)	CCR 165 to E. City Limits	0.29	50%
	C-2	M6D	FM 1461 (1)	Custer Road to 665' E. of Custer Road	0.37	50%
	C-3	M6D	FM 1461 (2)	2,180' W. of CCR 165 to 1,160' E. of CCR 165	0.63	50%
	C-4	M6D	Bloomdale Rd. (1)	Custer Rd. to 475' E. of CCR 124	0.67	50%
	C-5	M6D	Bloomdale Rd. (2)	475' E. of CCR 124 to 2,135' W. of Future Ridge Rd.	0.93	100%
	C-6	M6D	Bloomdale Rd. (3)	2,135' W. of Future Ridge Rd. to 575' W. of Future Ridge Rd.	0.30	50%
	C-7	M6D	Bloomdale Rd. (4)	575' W. of Future Ridge Rd. to Future Ridge Rd.	0.11	100%
	C-8	M6D	Bloomdale Rd. (5)	1,965' E. of Ridge Rd. to Lake Forest Dr.	0.62	50%
	C-9	M6D	Wilmeth Rd. (1)	495' E. of Custer Rd. to Future Stonebridge Dr.	0.94	100%
	C-10	M6D	Wilmeth Rd. (2)	1,670' W. of Stover Ck. to Stover Ck.	0.32	50%
	C-11	M6D	Wilmeth Rd. (3)	1,275' W. of Ridgeknoll to Ridgeknoll	0.24	50%
	C-12	M6D (1/3)	Wilmeth Rd. (4)	Ridgeknoll to 265' W. of Sunnyside Dr.	0.24	50%
	C-13	M6D (1/3)	Wilmeth Rd. (5)	265' W. of Sunnyside Dr. to Lake Forest Dr.	0.27	100%
	C-14	M6D	Stonebridge Dr. (1)	2,100' S. of FM 1461 to US 380	2.49	100%
	C-15	M6D	Ridge Rd. (1)	CCR 168 to 1,520' S. of CCR 168	0.29	50%
	C-16	M6D	Ridge Rd. (2)	FM 1461 to Baxter Well	0.56	100%
	C-17	M6D	Ridge Rd. (3)	Baxter Well to 2,130' S. of Bloomdale Rd.	0.84	50%
	C-18	M6D	Ridge Rd. (4)	Wilson Creek to US 380	0.17	100%
	C-19	M6D	Lake Forest Dr. (1)	Bloomdale Rd. to 1,080' N. of Birchwood	0.49	50%
	C-20	M6D (2/3)	Lake Forest Dr. (2)	1,080' N. of Birchwood to Wilmeth Rd.	0.54	25%
	C-21, D-15	M6D (2/3)	Lake Forest Dr. (3)	Wilmeth (CCR 161) to Summit View	0.33	50%
	C-22, D-16	M6D	Lake Forest Dr. (4)	Summit View to US 380	0.62	50%
	C-23	P6D	Custer Rd. (1)	FM 1461 to 2,590' N. of Bloomdale	0.48	100%
	S-1		Signal Installation	Future Arterial B & Ridge Rd.		50%
	S-4		Signal Installation	Custer Rd. & FM 1461		75%
	S-5		Signal Installation	Ridge Rd. & FM 1461		50%
	S-6		Signal Installation	Custer Rd. & Bloomdale Rd.		25%
	S-7		Signal Installation	Stonebridge Dr. & Bloomdale Rd.		100%
	S-8		Signal Installation	Ridge Rd. & Bloomdale Rd.		50%
	S-9		Signal Installation	Lake Forest Dr. & Bloomdale Rd.		25%
	S-10		Signal Installation	Stonebridge Dr. & Wilmeth Rd.		50%
	S-12		Signal Installation	Stonebridge Dr. & US 380		50%
	S-13		Signal Installation	Forest Ridge Dr. & US 380		50%
	S-14		Signal Installation	Ridge Rd. & US 380		50%

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
D	A-1, D-1	M6D	Future Arterial B (2)	CCR 168 to E. City Limits	0.30	50%
	D-2	M6D	Future Arterial B (3)	W. City Limits. to CCR 229	0.41	100%
	D-3	M6D	Future Arterial C (1)	435' E. of Lake Forest Dr. to 835' W. of Future Unnamed B	0.57	50%
	D-4	M6D	Future Arterial C (2)	835' W. of Future Unnamed B to CCR 202	1.77	100%
	D-5	M6D	Bloomdale Rd. (6)	1,470' E. of Future Unnamed B to 1,250 E. of CCR 1007	0.29	100%
	D-6	M6D	Bloomdale Rd. (7)	1,250 E. of CCR 1007 to CCR 1007	0.24	50%
	D-7	M6D	Bloomdale Rd. (8)	CCR 1007 to Community Ave.	0.86	100%
	D-8	M6D	Bloomdale Rd. (9)	Community Ave. to US 75	0.44	100%
	D-9	M6D	Wilmeth Rd. (6)	Lake Forest Dr. to CCR 943	0.90	50%
	D-10	M6D	Wilmeth Rd. (7)	CCR 943 to 2,290 W. of Hardin Blvd.	0.25	100%
	D-11	M6D	Wilmeth Rd. (8)	2,290 W. of Hardin Blvd. to Hardin Blvd.	0.43	50%
	D-12	M6D (1/3)	Wilmeth Rd. (9)	Hardin Blvd. to James Pitts	1.05	100%
	D-13	M6D	Wilmeth Rd. (10)	James Pitts to US 75 SBFR	0.12	100%
	D-14	M6D	Lake Forest Dr. (5)	180' S. of Future Arterial C to 495' S. of Baxter Well	0.64	50%
	C-21, D-15	M6D (2/3)	Lake Forest Dr. (3)	Wilmeth (CCR 161) to Summit View	0.33	50%
	C-22, D-16	M6D	Lake Forest Dr. (4)	Summit View to US 380	0.62	50%
	D-17	M6D	Future Unnamed B (1)	Future Arterial C to 2,280' S. of Future Arterial C	0.43	100%
	D-18	M6D	Future Unnamed B (2)	2,050' N. of Wilmeth Rd. to Wilmeth Rd.	0.39	100%
	B-4, D-19	M6D	Hardin Blvd. (4)	CCR 226 to Future Arterial B	0.40	50%
	D-20	M6D	Hardin Blvd. (5)	2,730' N. of Future Arterial C to Future Arterial C	0.52	100%
	D-21	M6D	Hardin Blvd. (6)	Future Arterial C to Community Ave.	0.86	100%
	D-22	M6D	Hardin Blvd. (7)	CCR 164 (Bloomdale) to 1,805' N. of Wilmeth Rd.	0.80	100%
	D-23	M6D (1/3)	Hardin Blvd. (8)	Wilmeth Rd. to US 380	1.19	100%
	D-24	M4U	Community Ave. (1)	Future Hardin Blvd. to E. City Limits	0.36	100%
	D-25	M4U	Community Ave. (2)	N. City Limits to 2,585' N. of Bloomdale Rd.	0.19	100%
	D-26	M4U (1/2)	Community Ave. (3)	2,585' N. of Bloomdale Rd. to Bloomdale Rd.	0.49	100%
	D-27	M4U (1/2)	Community Ave. (4)	Bloomdale Rd. to 115' S. of Brinlee Branch	0.45	100%
	D-28	M4U	Community Ave. (5)	115' S. of Brinlee Branch to US 380	1.34	100%
	S-3		Signal Installation	Hardin Blvd. & Future Arterial B		25%
	S-11		Signal Installation	Lake Forest Dr. & Wilmeth Rd.		25%
	S-15		Signal Installation	Unnamed B & FM 1461		100%
	S-16		Signal Installation	Hardin Blvd. & FM 1461		100%
	S-17		Signal Installation	Hardin Blvd. & Community Ave.		75%
	S-18		Signal Installation	Hardin Blvd. & Bloomdale Rd.		100%
	S-19		Signal Installation	Community Ave. & Bloomdale Rd.		100%
	S-20		Signal Installation	Unnamed B & Wilmeth Rd.		75%
	S-21		Signal Installation	Hardin Blvd. & Wilmeth Rd.		50%

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
E	E-1	M6D	Bloomdale Rd. (10)	US 75 NBFR to Redbud Blvd. (CCR 273)	0.06	100%
	E-2	M6D	Bloomdale Rd. (11)	Redbud Blvd. to 600' W. of Shawnee	0.25	100%
	E-3	M6D (2/3)	Bloomdale Rd. (12)	600' W. of Shawnee to SH 5	0.77	100%
	E-4	M6D	FM 543 (1)	Honey Creek to Bloomdale Rd.	0.38	100%
	E-5	M6D	Wilmeth Rd. (11)	US 75 NBFR to Redbud Blvd.	0.26	100%
	E-6	M6D (1/3) OUTSIDE	Wilmeth Rd. (12)	Redbud Blvd. to 2,000 E. of Redbud Blvd.	0.38	100%
	E-7	M6D (2/3)	Wilmeth Rd. (13)	2,000 E. of Redbud Blvd.to SH 5	0.52	100%
	E-8	M6D	Wilmeth Rd. (14)	SH 5 to McIntyre Rd.	0.39	100%
	E-9	M6D	Wilmeth Rd. (15)	1,610' E. of SH 5 to E. City Limits	0.49	100%
	E-10	M4D	Redbud Blvd. (1)	Bloomdale to 1,070' N. of Wilmeth Rd.	0.51	100%
	E-11	M4D (1/2)	Redbud Blvd. (2)	1,070' N. of Wilmeth Rd. to Wilmeth Rd.	0.20	100%
	E-12	M4D	Redbud Blvd. (3)	Wilmeth Rd. to 430' S. of Wilmeth Rd.	0.08	100%
	E-13	M6D	Airport Dr. (1)	SH 5 to E. City Limits (RR)	0.94	100%
	E-14	M6D	Airport Dr. (2)	N. City Limits (McIntyre) to US 380	1.57	100%
	E-15	M6D	FM 2933	Woodlawn Road to CCR 335	0.50	100%
	S-22		Signal Installation	Redbud Blvd. & Bloomdale Rd.		100%
	S-23		Signal Installation	Airport Dr. & Bloomdale Rd.		100%
	S-24		Signal Installation	Redbud Blvd. & Wilmeth Rd.		100%
	S-25		Signal Installation	SH 5 & Wilmeth Rd.		100%
	S-26		Signal Installation	Airport Dr. & Wilmeth Rd.		75%

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

No Impact Fee Eligible Roadway Projects

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
G	G-1	M6D	Virginia Pkwy. (1)	Coit Rd. to 575' W. of Independence Pkwy.	0.92	100%
	G-2	M6D	Virginia Pkwy. (2)	575' W. of Independence Pkwy. to Independence Pkwy.	0.11	50%
	G-3	M6D	Virginia Pkwy. (3)	Independence Pkwy. to 935' W. of Virginia Hills	0.46	100%
	G-4	M6D	Virginia Pkwy. (4)	935' W. of Virginia Hills to Custer Rd.	0.51	100%
	G-5	M6D (1/3)	Virginia Pkwy. (5)	Custer Rd. to St. Gabriel Way	1.01	100%
	G-6	M6D	Virginia Pkwy. (6)	St. Gabriel Way to Ridge Rd.	1.13	100%
	G-7	M6D	Westridge Blvd. (1)	Coit Rd. to 1,685' E. of Coit Rd.	0.32	50%
	G-8	M6D (2/3)	Westridge Blvd. (2)	1,685' E. of Coit Rd. to Eden	0.16	100%
	G-9	M6D (1/3)	Westridge Blvd. (3)	Eden to Independence Pkwy.	0.56	100%
	G-10	M6D (1/3)	Westridge Blvd. (4)	Independence Pkwy. to Memory	0.49	100%
	G-11	M6D (2/3)	Westridge Blvd. (5)	Memory to Custer Rd.	0.50	50%
	G-12, H-1	G4D	Eldorado Pkwy. (1)	Custer Rd. to Ridge Rd.	2.05	50%
	G-13	M4D	Glen Oaks Dr. (1)	Stonebridge Dr. to Ridge Rd.	0.90	100%
	G-14	M6D	Coit Rd. (1)	2,360 N. of Virginia to 2,780 S. of Virginia	0.97	50%
	G-15	M6D	Coit Rd. (2)	Westridge Rd. to S. City Limits	0.49	50%
	G-16	M6D	Independence Pkwy. (1)	2,580' N. of Virginia Pkwy. to 1,355' N. of Virginia Pkwy.	0.23	100%
	G-17	M6D	Independence Pkwy. (2)	1,355' N. of Virginia Pkwy to Virginia Pkwy.	0.26	50%
	G-18	M6D (2/3)	Independence Pkwy. (3)	Virginia Pkwy. to 435' N. of Northgate	0.54	100%
	G-19	M6D (1/3)	Independence Pkwy. (4)	435' N. of Northgate to S. City Limits	0.94	100%
	G-20	P6D	Custer Rd. (2)	US 380 to Virginia Pkwy.	1.03	100%
	G-21	P6D	Custer Rd. (3)	Virginia Pkwy. to Westridge Blvd.	1.01	100%
	G-22	G4D	Stonebridge Dr. (2)	US 380 to Eldorado Pkwy.	3.97	100%
	G-23	G4D	Alma Rd. (1)	Stonebridge Dr. to Eldorado Pkwy.	0.44	100%
	G-24, I-11	G4D	Ridge Rd. (5)	US 380 to 1,055' N. of Creekside Dr.	1.11	50%
	G-25, I-12	G4D	Ridge Rd. (6)	1,055' N. of Creekside Dr. to Eldorado Pkwy.	2.02	50%
	G-26	M6D	Independence Pkwy. (5)	3,100' N. of Virginia Pkwy. to 2,580' N. of Virginia Pkwy.	0.10	50%
	S-12		Signal Installation	Stonebridge Dr. & US 380		50%
	S-13		Signal Installation	Forest Ridge Dr. & US 380		50%
	S-14		Signal Installation	Ridge Rd. & US 380		25%
	S-27		Signal Installation	Coit Rd. & Virginia Pkwy.		50%
	S-28		Signal Installation	Independence Pkwy. & Virginia Pkwy.		100%
	S-29		Signal Installation	Coit Rd. & Westridge Rd.		25%
	S-30		Signal Installation	Independence Pkwy. & Westridge Rd.		100%
	S-31		Signal Installation	Custer Rd. & Westridge Rd.		75%
	S-32		Signal Installation	Stonebridge Dr. & Alma Dr.		100%
	S-33		Signal Installation	Ridge Rd. & Glen Oaks Dr.		50%
	S-34		Signal Installation	Alma Rd. & Eldorado Pkwy.		50%

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
H	G-12, H-1	G4D	Eldorado Pkwy. (1)	Custer Rd. to Ridge Rd.	2.05	50%
	H-2	G4D	Stonebridge Dr. (3)	Custer Rd. to Eldorado Pkwy.	0.84	100%
	H-3	M4D	Silverado Trl. (1)	Custer Rd. to 140' W. of La Tierra Linda	0.44	100%
	H-4	M4D	Silverado Trl. (2)	Alma Rd. to 120' W. of Alfalfa Dr.	0.20	100%
	H-5	M4D (1/2)	Silverado Trl. (3)	120' W. of Alfalfa Dr. to 115' E. Furrow Dr.	0.29	100%
	H-6	M4D	Silverado Trl. (4)	115' E. Furrow Dr. to Existing FM 720	0.21	100%
	H-7	M6D (1/3)	McKinney Ranch Pkwy. (1)	Stacy Rd. to Ridge Rd.	0.86	100%
	H-8	P6D (1/3)	Stacy Rd. (1)	Custer Rd. to Existing FM 720	1.40	100%
	H-9	P6D (1/3)	Stacy Rd. (2)	Existing FM 720 to Ridge Rd.	0.64	100%
	H-10, I-10	P6D (1/3)	Stacy Rd. (3)	Ridge Rd. to SH 121 (S. City Limits)	0.82	50%
	H-11	G4D	Collin McKinney Pkwy. (1)	4,125' W. of Alma to Alma (Couplet)	0.33	100%
	H-12	M6D	Exchange Blvd.	Collin McKinney Pkwy. To SH 121	0.65	100%
	H-13	G4D	Alma Rd. (2)	Eldorado to 805' S. of Beaver Ck.	0.38	100%
	H-14	G4D (1/2)	Alma Rd. (3)	805' S. of Beaver Ck. to Silverado Trl.	0.38	100%
	H-15	M6D (2/3)	Alma Rd. (4)	Silverado Trl. to 450' S. of Heritage Palms	0.47	100%
	H-16	M6D	Alma Rd. (5)	Stacy Rd. to SH 121	1.47	100%
	H-17, I-13	G4D	Ridge Rd. (7)	Eldorado Pkwy. to McKinney Ranch Pkwy.	1.08	50%
	H-18, I-14	M6D (1/3)	Ridge Rd. (8)	McKinney Ranch Pkwy. to Stacy Rd.	0.66	50%
	H-19	M6D (1/3)	Alma Rd. (6)	545' N. of Stacy Rd. to Stacy Rd.	0.10	100%
	S-34		Signal Installation	Alma Rd. & Eldorado Pkwy.		50%
	S-35		Signal Installation	Custer Rd. & Silverado Trl.		50%
	S-36		Signal Installation	Alma Rd. & Silverado Trl.		100%
	S-37		Signal Installation	FM 720 & Silverado Trl.		100%
	S-38		Signal Installation	Alma Rd. & Stacy Rd.		100%
	S-39		Signal Installation	FM 720 & Stacy Rd.		100%
	S-40		Signal Installation	Ridge Rd. & Stacy Rd.		75%
	S-41		Signal Installation	Collin McKinney Pkwy. & Exchange Blvd.		100%
	S-42		Signal Installation	Collin McKinney Pkwy. & Alma Rd.		100%
	S-43		Signal Installation	Collin McKinney Pkwy. & Stacy Rd.		50%

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
I	I-1	M6D	Virginia Pkwy. (6)	Ridge Rd. to 1,035' E. of Ridge Rd.	0.20	100%
	I-2	M6D (1/3)	Virginia Pkwy. (7)	1,035' E. of Ridge Rd. to 1,100' W. of Hardin Blvd.	1.43	100%
	I-3	M4D	Glen Oaks Dr. (2)	Ridge Rd. to Lake Forest Dr.	0.46	100%
	I-4	G4D	Eldorado Pkwy. (2)	Ridge Rd. to Hardin Blvd.	2.07	100%
	I-5	M6D (1/3)	McKinney Ranch Pkwy. (2)	Ridge Rd. to Hardin Blvd.	1.80	100%
	I-6	G4D	Collin McKinney Pkwy. (2)	Stacy Rd. to Village Park	0.52	100%
	I-7	G4D	Collin McKinney Pkwy. (3)	Lake Forest Dr. to Cottonwood Creek	0.31	100%
	I-8	G4D (1/2)	Collin McKinney Pkwy. (4)	Cottonwood Creek to 1,110' E. of Tina	0.55	100%
	I-9	G4D	Collin McKinney Pkwy. (5)	1,110' E. of Tina to Hardin Blvd.	0.18	100%
	H-10, I-10	P6D (1/3)	Stacy Rd. (3)	Ridge Rd. to SH 121 (S. City Limits)	0.82	50%
	G-24, I-11	G4D	Ridge Rd. (5)	US 380 to 1,055' N. of Creekside Dr.	1.11	50%
	G-25, I-12	G4D	Ridge Rd. (6)	1,055' N. of Creekside Dr. to Eldorado Pkwy.	2.02	50%
	H-17, I-13	G4D	Ridge Rd. (7)	Eldorado Pkwy. to McKinney Ranch Pkwy.	1.08	50%
	H-18, I-14	M6D (1/3)	Ridge Rd. (8)	McKinney Ranch Pkwy. to Stacy Rd.	0.66	50%
	I-15	G4D (1/2)	Lake Forest Dr. (6)	US 380 to 1,105' N. of Raincrest	0.67	100%
	I-16	G4D	Lake Forest Dr. (7)	1,105' N. of Raincrest to Grampian Way	0.40	100%
	I-17	G4D	Lake Forest Dr. (8)	Grampian Way to McKinney Ranch Pkwy.	3.21	100%
	I-18	M6D (1/3)	Lake Forest Dr. (9)	McKinney Ranch Pkwy. to SH 121	1.04	100%
	I-19, J-10	G4D	Hardin Blvd. (9)	US 380 to Virginia Pkwy.	1.57	50%
	I-20, J-11	G4D	Hardin Blvd. (10)	Virginia Pkwy. to Provine Road	1.17	50%
	I-21, J-12	G4D	Hardin Blvd. (11)	730' N. of Eldorado Pkwy. to Eldorado Pkwy.	0.14	50%
	I-22, J-13	G4D	Hardin Blvd. (12)	Trailwood to McKinney Ranch Pkwy.	0.26	50%
	I-23, J-14	M6D (1/3)	Hardin Blvd. (13)	McKinney Ranch Pkwy. to SH 121	0.57	50%
	S-14		Signal Installation	Ridge Rd. & US 380		25%
	S-33		Signal Installation	Ridge Rd. & Glen Oaks Dr.		50%
	S-40		Signal Installation	Ridge Rd. & Stacy Rd.		25%
	S-43		Signal Installation	Collin McKinney Pkwy. & Stacy Rd.		50%
	S-44		Signal Installation	Lake Forest Dr. & Glen Oaks Dr.		100%
	S-45		Signal Installation	Hardin Blvd. & White Ave.		50%
	S-46		Signal Installation	Eldorado Pkwy. & Highlands Dr.		100%
	S-47		Signal Installation	Lake Forest Dr. & Highlands Dr.		100%
	S-48		Signal Installation	Lake Forest Dr. & Collin McKinney Pkwy.		100%
	S-49		Signal Installation	Hardin Blvd. & Collin McKinney Pkwy.		50%

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
J	J-1	M4D	White Ave. (1)	Future Hardin Blvd. to Bois D'Arc	0.23	100%
	J-2	M4D (1/2)	White Ave. (2)	Bois D'Arc to Community Ave.	0.93	100%
	J-3	M4D	White Ave. (3)	Community Ave. to US 75	0.46	100%
	J-4	G4D	Eldorado Pkwy. (2)	Kingsbury Dr. to Wilson Creek (SA J/K Boundary)	0.34	100%
	J-5	M6D (1/3)	McKinney Ranch Pkwy. (3)	Hardin Blvd. to 500' E. of Hardin Blvd.	0.09	100%
	J-6	M6D	McKinney Ranch Pkwy. (4)	500' E. of Hardin Blvd. to US 75 SBFR	0.77	100%
	J-7	G4D	Collin McKinney Pkwy. (6)	Hardin Blvd. to McKinney Ranch Pkwy.	0.72	100%
	J-8	M4U	Collin McKinney Pkwy. (7)	McKinney Ranch Pkwy. to 720' W. of Test Dr.	0.36	100%
	J-9	M4U (1/2)	Collin McKinney Pkwy. (8)	720' W. of Test Dr. to Craig Dr.	0.40	100%
	I-19, J-10	G4D	Hardin Blvd. (9)	US 380 to Virginia Pkwy.	1.57	50%
	I-20, J-11	G4D	Hardin Blvd. (10)	Virginia Pkwy. to Provine Road	1.17	50%
	I-21, J-12	G4D	Hardin Blvd. (11)	730' N. of Eldorado Pkwy. to Eldorado Pkwy.	0.14	50%
	I-22, J-13	G4D	Hardin Blvd. (12)	Trailwood to McKinney Ranch Pkwy.	0.26	50%
	I-23, J-14	M6D (1/3)	Hardin Blvd. (13)	McKinney Ranch Pkwy. to SH 121	0.57	50%
	J-15	M4U	Community Ave. (6)	US 380 to White Ave.	0.61	100%
	J-16	M4D	Medical Center Dr. (1)	Eldorado Pkwy. to Spur 399	0.75	100%
	J-17	M4U	Medical Center Dr. (2)	Spur 399 to Old Frisco Rd.	0.33	100%
	S-45		Signal Installation	Hardin Blvd. & White Ave.		50%
	S-49		Signal Installation	Hardin Blvd. & Collin McKinney Pkwy.		50%
	S-50		Signal Installation	Community Ave. & White Ave.		100%
	S-51		Signal Installation	Collin McKinney Pkwy. & Craig Dr.		100%
	S-52		Signal Installation	McKinney Ranch Pkwy. & Collin McKinney Pkwy.		100%
	S-53		Signal Installation	Redbud Blvd. & Virginia St.		50%

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

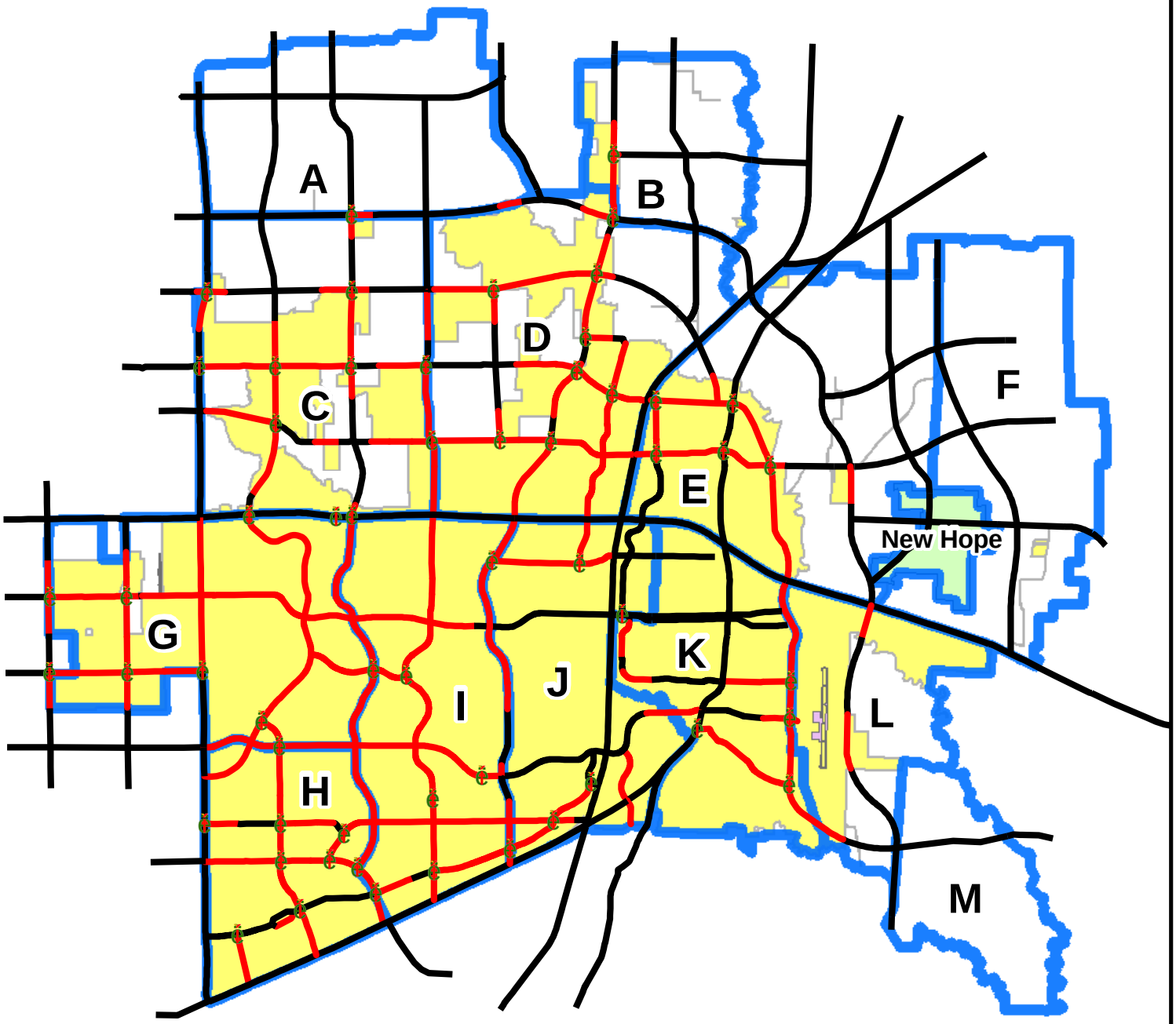
Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
K	K-1	M4U	Wilson Creek Blvd. (1)	490' S. of Virginia Pkwy. to Rockhill Rd.	0.23	100%
	K-2	M4D	Wilson Creek Blvd. (2)	Rockhill Rd. to 1,415' S. of Rockhill Rd.	0.27	100%
	K-3	M4D	Wilson Creek Blvd. (3)	Parkview Ave. to Finch Creek	0.42	100%
	K-4	M4U (1/2)	Elm St. (1)	SH 5 to Rockwall St.	0.29	100%
	K-5	M4U	Elm St. (2)	Rockwall St. to Millwood Rd.	0.25	100%
	K-6	M4U	Elm St. (3)	Millwood Rd. to Airport Dr.	0.37	100%
	K-7	G4D	Eldorado Pkwy. (3)	Wilson Creek to SH 5	0.40	100%
	K-8	M6D (1/3)	Industrial Blvd. (1)	Millwood Rd. to Airport Dr.	0.35	100%
	K-9	M6D (2/3)	Old Mill Rd. (1)	SH 5 to Union Pacific RR	0.41	100%
	K-10	M6D	Old Mill Rd. (2)	Union Pacific RR to Airport Dr.	1.09	100%
	K-11, L-1	M6D (1/3)	Airport Dr. (3)	US 380 to 355' S. of US 380	0.07	50%
	K-12, L-2	M6D (2/3)	Airport Dr. (4)	355' S. of US 380 to 385' N. of Industrial Blvd.	1.75	50%
	K-13, L-3	M6D (1/3)	Airport Dr. (5) / Country Ln.	385' N. of Industrial Blvd. to FM 546	0.49	50%
	K-14	M6D (1/3)	Airport Dr. (6) / Country Ln.	FM 546 to 2,110' N. of CCR 326	0.31	100%
	K-15	M6D	Airport Dr. (7)	2,110' N. of CCR 326 to SA K/L boundary	0.81	100%
	S-53		Signal Installation	Redbud Blvd. & Virginia St.		50%
	S-54		Signal Installation	Airport Dr. & Wilson Creek Pkwy.		50%
	S-55		Signal Installation	Airport Dr. & Industrial Blvd.		50%
	S-56		Signal Installation	Airport Dr. & Old Mill Rd.		100%
	S-57		Signal Installation	SH 5 & Old Mill Rd.		100%

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area
L	K-11, L-1	M6D (1/3)	Airport Dr. (3)	US 380 to 355' S. of US 380	0.07	50%
	K-12, L-2	M6D (2/3)	Airport Dr. (4)	355' S. of US 380 to 385' N. of Industrial Blvd.	1.75	50%
	K-13, L-3	M6D (1/3)	Airport Dr. (5) / Country Ln.	385' N. of Industrial Blvd. to FM 546	0.49	50%
	L-4	M6D	Airport Dr. (8)	SA K/L boundary to E. City Limits	0.42	100%
	L-5	M6D	Unnamed D (1)	US 380 to Trinity River (S. City Limits)	0.44	100%
	L-6	M6D	Unnamed D (2)	Enloe to FM 546	0.73	100%
	L-7	M6D (1/3)	Industrial Blvd. (2)	Airport Dr. to 585' E. of Airport Dr.	0.11	100%
	S-54		Signal Installation	Airport Dr. & Wilson Creek Pkwy.		50%
	S-55		Signal Installation	Airport Dr. & Industrial Blvd.		50%

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

No Impact Fee Eligible Roadway Projects



Roadway Impact Fee RIP

Exhibit #2
Roadway
Impact Fee Update

McKINNEY TEXAS
Unique by nature.

0 1 2
Miles

October 2008

Kimley-Horn and Associates, Inc.

Legend

- Other Thoroughfare Facilities
- Impact Fee Eligible Projects
- Service Area Boundaries
- McKinney City Limits

EXHIBIT 2

III. METHODOLOGY FOR ROADWAY IMPACT FEES

A. SERVICE AREAS

The thirteen (13) service areas used in the 2007-2008 Roadway Impact Fee Update are shown in the previously referenced **Exhibit 1**. These service areas cover the entire corporate boundary of the City of McKinney. Chapter 395 of the Texas Local Government Code specifies that "the service area is limited to an area within the corporate boundaries of the political subdivision and shall not exceed six (6) miles." The service areas used in the 2007-2008 Roadway Impact Fee Update are approximately the same as in the previous impact fee update (adopted in 2003) with some minor modifications to accommodate recent annexations and the realignment of roadways that were formerly used as boundaries.

B. SERVICE UNITS

The "service unit" is a measure of consumption or use of the roadway facilities by new development. In other words, it is the measure of supply and demand for roads in the City. For transportation purposes, the service unit is defined as a vehicle-mile. On the supply side, this is a lane-mile of an arterial street. On the demand side, this is a vehicle-trip of one-mile in length. The application of this unit as an estimate of either supply or demand is based on travel during the afternoon peak hour of traffic. This time period is commonly used as the basis for transportation planning and the estimation of trips created by new development.

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

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

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

Roadway Type (MTP Classifications)	Median Configuration	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
M4U – Minor Arterial	Undivided	525
M5U – Minor Arterial	TWLTL	625
M4D – Minor Arterial	Divided	700
G4D – Greenway Arterial	Divided	700
M6D – Major Arterial	Divided	700
P6D – Principal Arterial	Divided	780

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

Roadway Type	Description	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
2U-R	Rural Cross-Section (i.e. gravel, dirt, etc.)	150
2U	Two lane undivided	475
2D	Two lane divided	525
3U	Three lane undivided (TWLTL)	525
4U	Four lane undivided (TWLTL)	525
4D	Four lane divided	700
5U	Five lane undivided (TWLTL)	625
6D	Six lane divided	700
7U	Seven lane undivided (TWLTL)	700
RA2U	Regional Arterial – Two lane undivided (TWLTL)	700
RA4D	Regional Arterial – Four lane divided	800
RA5U	Regional Arterial – Five lane undivided (TWLTL)	800
RA6D	Regional Arterial – Six lane divided	850

C. COST PER SERVICE UNIT

A fundamental step in the impact fee process is to establish the cost for each service unit. In the case of the roadway impact fee, this is the cost for each vehicle-mile of travel. This cost per service unit is the cost to construct a roadway (lane-mile) needed to accommodate a vehicle-mile of travel at a level of service corresponding to the City's standards. The cost per service unit is calculated for each service area based on a specific list of projects within that service area.

The second component of the cost per service unit is the number of service units in each service area. This number is the measure of the growth in transportation demand that is projected to occur in the ten-year period. Chapter 395 requires that Impact Fees be assessed only to pay for growth projected to occur in the city limits within the next ten-years, a concept that will be covered in a later section of this report (**see Section III.E**). As noted earlier, the units of demand are vehicle-miles of travel.

D. COST OF THE RIP

The costs that may be included in the cost per service unit are all of the implementation costs for the Impact Fee Update, as well as project costs for arterial system elements within the Roadway Improvements Plan. Chapter 395 of the Texas Local Government Code specifies that the allowable costs are "…including and limited to the:

1. Construction contract price;
2. Surveying and engineering fees;

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

The engineer's opinion of the probable costs of the projects in the RIP is based, in part, on the calculation of a unit cost of construction. This means that a cost per linear foot of roadway is calculated based on an average price for the various components of roadway construction. This allows the probable cost to be determined by the type of facility being constructed, the number of lanes, and the length of the project. The costs for location-specific items such as bridges, highway ramps, drainage structures, and any other special components are added to each project as appropriate. In addition, based upon discussions with City of McKinney staff, State, Collin County, and developer driven projects in which the City has contributed a portion of the total project cost have been included in the RIP as lump sum costs. For future projects on the state highway system, a separate costing methodology was utilized that incorporated design criteria and unit prices unique to state highway projects. Based on discussions with City of McKinney staff, it was determined that, on average, 50% of state highway system projects would be funded by the City.

A typical roadway project consists of a number of costs, including the following: construction, design engineering, survey, and right-of way acquisition. While the construction cost component of a project may actually consist of approximately 100 various pay items, a simplified approach was used for developing the conceptual level project costs. Each new project's construction cost was divided into two cost components: roadway construction cost and major construction component allowances. The roadway construction components consist of the following pay items: (1) unclassified street excavation, (2) lime stabilization, (3) concrete pavement, and (4) topsoil. A fifth pay item (HMAC Underlayment) is allotted for state highway system projects. The unit prices for these pay items are based on recently completed construction projects.

Based on the above paving construction cost subtotal, a percentage of this total is calculated to allot for major construction component allowances. These allowances include preparation of right-of-way, traffic control, pavement markings/markers, roadway drainage, special drainage structures, incidental water and sewer relocations, turf/erosion control, and illumination. These allowance percentages are also based on historical data. The paving and allowance subtotal is given a fifteen percent (15%) contingency to determine the construction cost total. To determine the total Impact Fee Project Cost, a percentage of the construction cost total is added for engineering, surveying, testing, mobilization, and right-of-way/easement acquisition. While the percentage is fixed for a majority of these allowances, the percentage of right-of-way acquisition costs vary between 20% for existing roadway alignments and 35% for new roadway alignments. Based on a compilation of recently completed projects, 35% is a reasonable value for new roadway alignments, while 20% is appropriate for roadway widenings where a portion of the ROW is already in place.

The construction costs are variable based on the proposed Master Thoroughfare Plan classification of the roadway. Additional classifications are utilized in cases where a portion of the facility currently exists. The following indications are used for these projects: (1/2) for facilities where half the facility still needs to be constructed; (2/3) for future six-lane divided facilities where two lanes currently exist; (1/3) for future six-lane divided facilities where only the

two lanes within the median are needed; and $(1/3)^{Outside}$ for future six-lane divided facilities where the outside two lanes are needed.

Table 4 is the RIP project list for each service area with conceptual level project cost projections. Detailed cost projections and methodology used for each individual project can be seen in **Appendix A,** Conceptual Level Project Cost Projections. It should be noted that these tables reflect only conceptual-level opinions or assumptions regarding the portions of future project costs that are potentially recoverable through impact fees. Actual costs of construction are likely to change with time and are dependent on market and economic conditions that cannot be precisely predicted at this time.

This RIP establishes the list of projects for which Impact Fees may be utilized. Essentially, it establishes a list of projects for which an impact fee funding program can be established. This is different from a City's construction CIP, which provides a broad list of capital projects for which the City is committed to building. The cost projections utilized in this study should not be utilized for the City's building program or construction CIP.

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
A	A-1, D-1	M6D	Future Arterial B (2)	CCR 168 to E. City Limits	0.30	50%	$ 2,154,000	$ 1,077,000
							Service Area Project Cost Subtotal	**$ 1,077,000**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA A	**$ 1,086,615**

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
B	B-1	M6D	Hardin Blvd. (1)	CCR 204 to CCR 206	0.07	100%	$ 394,000	$ 394,000
	B-2	M6D	Hardin Blvd. (2)	CCR 206 to Future Fannin Rd.	0.33	100%	$ 1,872,000	$ 1,872,000
	B-3	M6D	Hardin Blvd. (3)	Future Fannin Rd. to CCR 226	0.46	100%	$ 2,615,000	$ 2,615,000
	B-4, D-19	M6D	Hardin Blvd. (4)	CCR 226 to Future Arterial B	0.4	50%	$ 2,248,000	$ 1,124,000
	B-5	G4D	Fannin Rd.	Future Hardin Blvd. to CCR 227	0.06	100%	$ 254,000	$ 254,000
	S-2		Signal Installation	Hardin Blvd. & Fannin Rd.		75%	$ 150,000	$ 112,500
							Service Area Project Cost Subtotal	**$ 6,371,500**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA B	**$ 6,381,115**

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
C	C-1	M6D	Future Arterial B (1)	CCR 165 to E. City Limits	0.29	50%	$ 1,600,000	$ 800,000
	C-2	M6D	FM 1461 (1)	Custer Road to 665' E. of Custer Road	0.37	50%	$ 1,765,000	$ 882,500
	C-3	M6D	FM 1461 (2)	2,180' W. of CCR 165 to 1,160' E. of CCR 165	0.63	50%	$ 3,008,500	$ 1,504,250
	C-4	M6D	Bloomdale Rd. (1)	Custer Rd. to 475' E. of CCR 124	0.67	50%	$ 3,768,000	$ 1,884,000
	C-5	M6D	Bloomdale Rd. (2)	475' E. of CCR 124 to 2,135' W. of Future Ridge Rd.	0.93	100%	$ 5,418,000	$ 5,418,000
	C-6	M6D	Bloomdale Rd. (3)	2,135' W. of Future Ridge Rd. to 575' W. of Future Ridge Rd	0.3	50%	$ 1,869,000	$ 934,500
	C-7	M6D	Bloomdale Rd. (4)	575' W. of Future Ridge Rd. to Future Ridge Rd.	0.11	100%	$ 822,000	$ 822,000
	C-8	M6D	Bloomdale Rd. (5)	1,965' E. of Ridge Rd. to Lake Forest Dr.	0.62	50%	$ 3,492,000	$ 1,746,000
	C-9	M6D	Wilmeth Rd. (1)	495' E. of Custer Rd. to Future Stonebridge Dr.	0.94	100%	$ 5,765,000	$ 5,765,000
	C-10	M6D	Wilmeth Rd. (2)	1,670' W. of Stover Ck. to Stover Ck.	0.32	50%	$ 1,775,000	$ 887,500
	C-11	M6D	Wilmeth Rd. (3)	1,275' W. of Ridgeknoll to Ridgeknoll	0.24	50%	$ 1,356,000	$ 678,000
	C-12	M6D (1/3)	Wilmeth Rd. (4)	Ridgeknoll to 265' W. of Sunnyside Dr.	0.24	50%	$ 393,000	$ 252,898
	C-13	M6D (1/3)	Wilmeth Rd. (5)	265' W. of Sunnyside Dr. to Lake Forest Dr.	0.27	100%	$ 724,000	$ 724,000
	C-14	M6D	Stonebridge Dr. (1)	2,100' S. of FM 1461 to US 380	2.49	100%	$ 15,981,000	$ 15,981,000
	C-15	M6D	Ridge Rd. (1)	CCR 168 to 1,520' S. of CCR 168	0.29	50%	$ 1,616,000	$ 808,000
	C-16	M6D	Ridge Rd. (2)	FM 1461 to Baxter Well	0.56	100%	$ 3,199,000	$ 3,199,000
	C-17	M6D	Ridge Rd. (3)	Baxter Well to 2,130' S. of Bloomdale Rd.	0.84	50%	$ 4,704,000	$ 2,352,000
	C-18	M6D	Ridge Rd. (4)	Wilson Creek to US 380	0.17	100%	$ 966,000	$ 966,000
	C-19	M6D	Lake Forest Dr. (1)	Bloomdale Rd. to 1,080' N. of Birchwood	0.49	50%	$ 2,748,000	$ 1,374,000
	C-20	M6D (2/3)	Lake Forest Dr. (2)	1,080' N. of Birchwood to Wilmeth Rd.	0.54	25%	$ 2,069,000	$ 517,250
	C-21, D-15	M6D (2/3)	Lake Forest Dr. (3)	Wilmeth (CCR 161) to Summit View	0.33	50%	$ 1,769,000	$ 884,500
	C-22, D-16	M6D	Lake Forest Dr. (4)	Summit View to US 380	0.62	50%	$ 3,481,000	$ 1,740,500
	C-23	P6D	Custer Rd. (1)	FM 1461 to 2,590' N. of Bloomdale	0.48	100%	$ 2,362,000	$ 2,362,000
	S-1		Signal Installation	Future Arterial B & Ridge Rd.		50%	$ 150,000	$ 75,000
	S-4		Signal Installation	Custer Rd. & FM 1461		75%	$ 150,000	$ 112,500
	S-5		Signal Installation	Ridge Rd. & FM 1461		50%	$ 150,000	$ 75,000
	S-6		Signal Installation	Custer Rd. & Bloomdale Rd.		25%	$ 150,000	$ 37,500
	S-7		Signal Installation	Stonebridge Dr. & Bloomdale Rd.		100%	$ 150,000	$ 150,000
	S-8		Signal Installation	Ridge Rd. & Bloomdale Rd.		50%	$ 150,000	$ 75,000
	S-9		Signal Installation	Lake Forest Dr. & Bloomdale Rd.		25%	$ 150,000	$ 37,500
	S-10		Signal Installation	Stonebridge Dr. & Wilmeth Rd.		50%	$ 150,000	$ 75,000
	S-12		Signal Installation	Stonebridge Dr. & US 380		50%	$ 150,000	$ 75,000
	S-13		Signal Installation	Forest Ridge Dr. & US 380		50%	$ 150,000	$ 75,000
	S-14		Signal Installation	Ridge Rd. & US 380		50%	$ 150,000	$ 75,000
							Service Area Project Cost Subtotal	**$ 53,345,398**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA C	**$ 53,355,013**

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
D	A-1, D-1	M6D	Future Arterial B (2)	CCR 168 to E. City Limits	0.30	50%	$ 2,154,000	$ 1,077,000
	D-2	M6D	Future Arterial B (3)	W. City Limits. to CCR 229	0.41	100%	$ 2,335,000	$ 2,335,000
	D-3	M6D	Future Arterial C (1)	435' E. of Lake Forest Dr. to 835' W. of Future Unnamed B	0.57	50%	$ 5,072,000	$ 2,536,000
	D-4	M6D	Future Arterial C (2)	835' W. of Future Unnamed B to CCR 202	1.77	100%	$ 11,866,000	$ 11,866,000
	D-5	M6D	Bloomdale Rd. (6)	1,470' E. of Future Unnamed B to 1,250 E. of CCR 1007	0.29	100%	$ 1,638,000	$ 1,638,000
	D-6	M6D	Bloomdale Rd. (7)	1,250 E. of CCR 1007 to CCR 1007	0.24	50%	$ 1,329,000	$ 664,500
	D-7	M6D	Bloomdale Rd. (8)	CCR 1007 to Community Ave.	0.86	100%	$ 5,342,000	$ 5,342,000
	D-8	M6D	Bloomdale Rd. (9)	Community Ave. to US 75	0.44	100%	$ 230,455	$ 230,455
	D-9	M6D	Wilmeth Rd. (6)	Lake Forest Dr. to CCR 943	0.90	50%	$ 5,572,000	$ 2,786,000
	D-10	M6D	Wilmeth Rd. (7)	CCR 943 to 2,290 W. of Hardin Blvd.	0.25	100%	$ 1,387,000	$ 1,387,000
	D-11	M6D	Wilmeth Rd. (8)	2,290 W. of Hardin Blvd. to Hardin Blvd.	0.43	50%	$ 2,434,000	$ 1,217,000
	D-12	M6D (1/3)	Wilmeth Rd. (9)	Hardin Blvd. to James Pitts	1.05	100%	$ 2,718,000	$ 2,718,000
	D-13	M6D	Wilmeth Rd. (10)	James Pitts to US 75 SBFR	0.12	100%	$ 654,000	$ 654,000
	D-14	M6D	Lake Forest Dr. (5)	180' S. of Future Arterial C to 495' S. of Baxter Well	0.64	50%	$ 3,577,000	$ 1,788,500
	C-21, D-15	M6D (2/3)	Lake Forest Dr. (3)	Wilmeth (CCR 161) to Summit View	0.33	50%	$ 1,769,000	$ 884,500
	C-22, D-16	M6D	Lake Forest Dr. (4)	Summit View to US 380	0.62	50%	$ 3,481,000	$ 1,740,500
	D-17	M6D	Future Unnamed B (1)	Future Arterial C to 2,280' S. of Future Arterial C	0.43	100%	$ 2,424,000	$ 2,424,000
	D-18	M6D	Future Unnamed B (2)	2,050' N. of Wilmeth Rd. to Wilmeth Rd.	0.39	100%	$ 2,180,000	$ 2,180,000
	B-4, D-19	M6D	Hardin Blvd. (4)	CCR 226 to Future Arterial B	0.40	50%	$ 2,248,000	$ 1,124,000
	D-20	M6D	Hardin Blvd. (5)	2,730' N. of Future Arterial C to Future Arterial C	0.52	100%	$ 2,930,000	$ 2,930,000
	D-21	M6D	Hardin Blvd. (6)	Future Arterial C to Community Ave.	0.86	100%	$ 6,746,000	$ 6,746,000
	D-22	M6D	Hardin Blvd. (7)	CCR 164 (Bloomdale) to 1,805' N. of Wilmeth Rd.	0.80	100%	$ 5,020,000	$ 5,020,000
	D-23	M6D (1/3)	Hardin Blvd. (8)	Wilmeth Rd. to US 380	1.19	100%	$ 4,114,000	$ 4,114,000
	D-24	M4U	Community Ave. (1)	Future Hardin Blvd. to E. City Limits	0.36	100%	$ 1,222,000	$ 1,222,000
	D-25	M4U	Community Ave. (2)	N. City Limits to 2,585' N. of Bloomdale Rd.	0.19	100%	$ 648,000	$ 648,000
	D-26	M4U (1/2)	Community Ave. (3)	2,585' N. of Bloomdale Rd. to Bloomdale Rd.	0.49	100%	$ 1,155,000	$ 1,155,000
	D-27	M4U (1/2)	Community Ave. (4)	Bloomdale Rd. to 115' S. of Brinlee Branch	0.45	100%	$ 929,000	$ 929,000
	D-28	M4U	Community Ave. (5)	115' S. of Brinlee Branch to US 380	1.34	100%	$ 1,229,487	$ 1,229,487
	S-3		Signal Installation	Hardin Blvd. & Future Arterial B		25%	$ 150,000	$ 37,500
	S-11		Signal Installation	Lake Forest Dr. & Wilmeth Rd.		25%	$ 150,000	$ 37,500
	S-15		Signal Installation	Unnamed B & FM 1461		100%	$ 150,000	$ 150,000
	S-16		Signal Installation	Hardin Blvd. & FM 1461		100%	$ 150,000	$ 150,000
	S-17		Signal Installation	Hardin Blvd. & Community Ave.		75%	$ 150,000	$ 112,500
	S-18		Signal Installation	Hardin Blvd. & Bloomdale Rd.		100%	$ 150,000	$ 150,000
	S-19		Signal Installation	Community Ave. & Bloomdale Rd.		100%	$ 150,000	$ 150,000
	S-20		Signal Installation	Unnamed B & Wilmeth Rd.		75%	$ 150,000	$ 112,500
	S-21		Signal Installation	Hardin Blvd. & Wilmeth Rd.		50%	$ 150,000	$ 75,000
							Service Area Project Cost Subtotal	**$ 69,560,942**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA D	**$ 69,570,557**

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
E	E-1	M6D	Bloomdale Rd. (10)	US 75 NBFR to Redbud Blvd. (CCR 273)	0.06	100%	$ 356,000	$ 356,000
	E-2	M6D	Bloomdale Rd. (11)	Redbud Blvd. to 600' W. of Shawnee	0.25	100%	$ 1,897,000	$ 1,897,000
	E-3	M6D (2/3)	Bloomdale Rd. (12)	600' W. of Shawnee to SH 5	0.77	100%	$ 2,926,000	$ 2,926,000
	E-4	M6D	FM 543 (1)	Honey Creek to Bloomdale Rd.	0.38	100%	$ 1,998,000	$ 1,998,000
	E-5	M6D	Wilmeth Rd. (11)	US 75 NBFR to Redbud Blvd.	0.26	100%	$ 1,467,000	$ 1,467,000
	E-6	M6D (1/3) OUTSIDE	Wilmeth Rd. (12)	Redbud Blvd. to 2,000 E. of Redbud Blvd.	0.38	100%	$ 963,000	$ 963,000
	E-7	M6D (2/3)	Wilmeth Rd. (13)	2,000 E. of Redbud Blvd.to SH 5	0.52	100%	$ 2,328,000	$ 2,328,000
	E-8	M6D	Wilmeth Rd. (14)	SH 5 to McIntyre Rd.	0.39	100%	$ 2,685,000	$ 2,685,000
	E-9	M6D	Wilmeth Rd. (15)	1,610' E. of SH 5 to E. City Limits	0.49	100%	$ 6,951,000	$ 6,951,000
	E-10	M4D	Redbud Blvd. (1)	Bloomdale to 1,070' N. of Wilmeth Rd.	0.51	100%	$ 2,424,000	$ 2,424,000
	E-11	M4D (1/2)	Redbud Blvd. (2)	1,070' N. of Wilmeth Rd. to Wilmeth Rd.	0.20	100%	$ 563,000	$ 563,000
	E-12	M4D	Redbud Blvd. (3)	Wilmeth Rd. to 430' S. of Wilmeth Rd.	0.08	100%	$ 141,581	$ 141,581
	E-13	M6D	Airport Dr. (1)	SH 5 to E. City Limits (RR)	0.94	100%	$ 6,227,000	$ 6,227,000
	E-14	M6D	Airport Dr. (2)	N. City Limits (McIntyre) to US 380	1.57	100%	$ 10,314,000	$ 10,314,000
	E-15	M6D	FM 2933	Woodlawn Road to CCR 335	0.50	100%	$ 2,355,500	$ 2,355,500
	S-22		Signal Installation	Redbud Blvd. & Bloomdale Rd.		100%	$ 150,000	$ 150,000
	S-23		Signal Installation	Airport Dr. & Bloomdale Rd.		100%	$ 150,000	$ 150,000
	S-24		Signal Installation	Redbud Blvd. & Wilmeth Rd.		100%	$ 150,000	$ 150,000
	S-25		Signal Installation	SH 5 & Wilmeth Rd.		100%	$ 150,000	$ 150,000
	S-26		Signal Installation	Airport Dr. & Wilmeth Rd.		75%	$ 150,000	$ 112,500
							Service Area Project Cost Subtotal	**$ 44,308,581**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA E	**$ 44,318,196**

Table 4.F. Roadway Improvement Plan for Roadway Impact Fees – Service Area F

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
F								
	No Impact Fee Eligible Roadway Projects							
							Service Area Project Cost Subtotal	**$ -**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA F	**$ 9,615**

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
G	G-1	M6D	Virginia Pkwy. (1)	Coit Rd. to 575' W. of Independence Pkwy.	0.92	100%	$ 5,177,000	$ 5,177,000
	G-2	M6D	Virginia Pkwy. (2)	575' W. of Independence Pkwy. to Independence Pkwy.	0.11	50%	$ 612,000	$ 306,000
	G-3	M6D	Virginia Pkwy. (3)	Independence Pkwy. to 935' W. of Virginia Hills	0.46	100%	$ 2,562,000	$ 2,562,000
	G-4	M6D	Virginia Pkwy. (4)	935' W. of Virginia Hills to Custer Rd.	0.51	100%	$ 2,844,000	$ 2,844,000
	G-5	M6D (1/3)	Virginia Pkwy. (5)	Custer Rd. to St. Gabriel Way	1.01	100%	$ 2,141,000	$ 2,141,000
	G-6	M6D	Virginia Pkwy. (6)	St. Gabriel Way to Ridge Rd.	1.13	100%	$ 1,241,246	$ 1,241,246
	G-7	M6D	Westridge Blvd. (1)	Coit Rd. to 1,685' E. of Coit Rd.	0.32	50%	$ 1,810,000	$ 905,000
	G-8	M6D (2/3)	Westridge Blvd. (2)	1,685' E. of Coit Rd. to Eden	0.16	100%	$ 602,000	$ 602,000
	G-9	M6D (1/3)	Westridge Blvd. (3)	Eden to Independence Pkwy.	0.56	100%	$ 641,000	$ 641,000
	G-10	M6D (1/3)	Westridge Blvd. (4)	Independence Pkwy. to Memory	0.49	100%	$ 1,132,000	$ 1,132,000
	G-11	M6D (2/3)	Westridge Blvd. (5)	Memory to Custer Rd.	0.5	50%	$ 2,401,000	$ 1,444,000
	G-12, H-1	G4D	Eldorado Pkwy. (1)	Custer Rd. to Ridge Rd.	2.05	50%	$ 1,600,015	$ 800,008
	G-13	M4D	Glen Oaks Dr. (1)	Stonebridge Dr. to Ridge Rd.	0.9	100%	$ 695,753	$ 695,753
	G-14	M6D	Coit Rd. (1)	2,360 N. of Virginia to 2,780 S. of Virginia	0.97	50%	$ 5,463,000	$ 2,731,500
	G-15	M6D	Coit Rd. (2)	Westridge Rd. to S. City Limits	0.49	50%	$ 2,774,000	$ 1,387,000
	G-16	M6D	Independence Pkwy. (1)	2,580' N. of Virginia Pkwy. to 1,355' N. of Virginia Pkwy.	0.23	100%	$ 1,315,000	$ 1,315,000
	G-17	M6D	Independence Pkwy. (2)	1,355' N. of Virginia Pkwy to Virginia Pkwy.	0.26	50%	$ 1,455,000	$ 727,500
	G-18	M6D (2/3)	Independence Pkwy. (3)	Virginia Pkwy. to 435' N. of Northgate	0.54	100%	$ 2,047,000	$ 2,047,000
	G-19	M6D (1/3)	Independence Pkwy. (4)	435' N. of Northgate to S. City Limits	0.94	100%	$ 1,075,000	$ 1,075,000
	G-20	P6D	Custer Rd. (2)	US 380 to Virginia Pkwy.	1.03	100%	$ 4,994,500	$ 4,994,500
	G-21	P6D	Custer Rd. (3)	Virginia Pkwy. to Westridge Blvd.	1.01	100%	$ 4,875,000	$ 4,875,000
	G-22	G4D	Stonebridge Dr. (2)	US 380 to Eldorado Pkwy.	3.97	100%	$ 1,757,169	$ 1,757,169
	G-23	G4D	Alma Rd. (1)	Stonebridge Dr. to Eldorado Pkwy.	0.44	100%	$ 339,666	$ 339,666
	G-24, I-11	G4D	Ridge Rd. (5)	US 380 to 1,055' N. of Creekside Dr.	1.11	50%	$ 4,706,000	$ 2,353,000
	G-25, I-12	G4D	Ridge Rd. (6)	1,055' N. of Creekside Dr. to Eldorado Pkwy.	2.02	50%	$ 3,104,771	$ 1,552,386
	G-26	M6D	Independence Pkwy. (5)	3,100' N. of Virginia Pkwy. to 2,580' N. of Virginia Pkwy.	0.1	50%	$ 559,000	$ 279,500
	S-12		Signal Installation	Stonebridge Dr. & US 380		50%	$ 150,000	$ 75,000
	S-13		Signal Installation	Forest Ridge Dr. & US 380		50%	$ 150,000	$ 75,000
	S-14		Signal Installation	Ridge Rd. & US 380		25%	$ 150,000	$ 37,500
	S-27		Signal Installation	Coit Rd. & Virginia Pkwy.		50%	$ 150,000	$ 75,000
	S-28		Signal Installation	Independence Pkwy. & Virginia Pkwy.		100%	$ 150,000	$ 150,000
	S-29		Signal Installation	Coit Rd. & Westridge Rd.		25%	$ 150,000	$ 37,500
	S-30		Signal Installation	Independence Pkwy. & Westridge Rd.		100%	$ 150,000	$ 150,000
	S-31		Signal Installation	Custer Rd. & Westridge Rd.		75%	$ 150,000	$ 112,500
	S-32		Signal Installation	Stonebridge Dr. & Alma Dr.		100%	$ 150,000	$ 150,000
	S-33		Signal Installation	Ridge Rd. & Glen Oaks Dr.		50%	$ 150,000	$ 75,000
	S-34		Signal Installation	Alma Rd. & Eldorado Pkwy.		50%	$ 150,000	$ 75,000
							Service Area Project Cost Subtotal	**$ 46,937,727**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA G	**$ 46,947,342**

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
H	G-12, H-1	G4D	Eldorado Pkwy. (1)	Custer Rd. to Ridge Rd.	2.05	50%	$ 1,600,015	$ 800,008
	H-2	G4D	Stonebridge Dr. (3)	Custer Rd. to Eldorado Pkwy.	0.84	100%	$ 860,900	$ 860,900
	H-3	M4D	Silverado Trl. (1)	Custer Rd. to 140' W. of La Tierra Linda	0.44	100%	$ 3,618,000	$ 3,618,000
	H-4	M4D	Silverado Trl. (2)	Alma Rd. to 120' W. of Alfalfa Dr.	0.20	100%	$ 794,000	$ 794,000
	H-5	M4D (1/2)	Silverado Trl. (3)	120' W. of Alfalfa Dr. to 115' E. Furrow Dr.	0.29	100%	$ 669,000	$ 669,000
	H-6	M4D	Silverado Trl. (4)	115' E. Furrow Dr. to Existing FM 720	0.21	100%	$ 844,000	$ 844,000
	H-7	M6D (1/3)	McKinney Ranch Pkwy. (1)	Stacy Rd. to Ridge Rd.	0.86	100%	$ 988,000	$ 988,000
	H-8	P6D (1/3)	Stacy Rd. (1)	Custer Rd. to Existing FM 720	1.40	100%	$ 1,837,000	$ 1,837,000
	H-9	P6D (1/3)	Stacy Rd. (2)	Existing FM 720 to Ridge Rd.	0.64	100%	$ 731,000	$ 731,000
	H-10, I-10	P6D (1/3)	Stacy Rd. (3)	Ridge Rd. to SH 121 (S. City Limits)	0.82	50%	$ 5,090,000	$ 2,545,000
	H-11	G4D	Collin McKinney Pkwy. (1)	4,125' W. of Alma to Alma (Couplet)	0.33	100%	$ 1,676,564	$ 1,676,564
	H-12	M6D	Exchange Blvd.	Collin McKinney Pkwy. To SH 121	0.65	100%	$ 4,144,000	$ 4,144,000
	H-13	G4D	Alma Rd. (2)	Eldorado to 805' S. of Beaver Ck.	0.38	100%	$ 373,519	$ 373,519
	H-14	G4D (1/2)	Alma Rd. (3)	805' S. of Beaver Ck. to Silverado Trl.	0.38	100%	$ 699,000	$ 699,000
	H-15	M6D (2/3)	Alma Rd. (4)	Silverado Trl. to 450' S. of Heritage Palms	0.47	100%	$ 1,799,000	$ 1,799,000
	H-16	M6D	Alma Rd. (5)	Stacy Rd. to SH 121	1.47	100%	$ 588,973	$ 588,973
	H-17, I-13	G4D	Ridge Rd. (7)	Eldorado Pkwy. to McKinney Ranch Pkwy.	1.08	50%	$ 1,830,132	$ 915,066
	H-18, I-14	M6D (1/3)	Ridge Rd. (8)	McKinney Ranch Pkwy. to Stacy Rd.	0.66	50%	$ 762,000	$ 381,000
	H-19	M6D (1/3)	Alma Rd. (6)	545' N. of Stacy Rd. to Stacy Rd.	0.10	100%	$ 193,000	$ 193,000
	S-34		Signal Installation	Alma Rd. & Eldorado Pkwy.		50%	$ 150,000	$ 75,000
	S-35		Signal Installation	Custer Rd. & Silverado Trl.		50%	$ 150,000	$ 75,000
	S-36		Signal Installation	Alma Rd. & Silverado Trl.		100%	$ 150,000	$ 150,000
	S-37		Signal Installation	FM 720 & Silverado Trl.		100%	$ 150,000	$ 150,000
	S-38		Signal Installation	Alma Rd. & Stacy Rd.		100%	$ 150,000	$ 150,000
	S-39		Signal Installation	FM 720 & Stacy Rd.		100%	$ 150,000	$ 150,000
	S-40		Signal Installation	Ridge Rd. & Stacy Rd.		75%	$ 150,000	$ 112,500
	S-41		Signal Installation	Collin McKinney Pkwy. & Exchange Blvd.		100%	$ 150,000	$ 150,000
	S-42		Signal Installation	Collin McKinney Pkwy. & Alma Rd.		100%	$ 150,000	$ 150,000
	S-43		Signal Installation	Collin McKinney Pkwy. & Stacy Rd.		50%	$ 150,000	$ 75,000
							Service Area Project Cost Subtotal	**$ 25,694,530**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA H	**$ 25,704,145**

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
I	I-1	M6D	Virginia Pkwy. (6)	Ridge Rd. to 1,035' E. of Ridge Rd.	0.2	100%	$ 171,848	$ 171,848
	I-2	M6D (1/3)	Virginia Pkwy. (7)	1,035' E. of Ridge Rd. to 1,100' W. of Hardin Blvd.	1.43	100%	$ 2,362,000	$ 2,362,000
	I-3	M4D	Glen Oaks Dr. (2)	Ridge Rd. to Lake Forest Dr.	0.46	100%	$ 470,554	$ 470,554
	I-4	G4D	Eldorado Pkwy. (2)	Ridge Rd. to Hardin Blvd.	2.07	100%	$ 2,274,730	$ 2,274,730
	I-5	M6D (1/3)	McKinney Ranch Pkwy. (2)	Ridge Rd. to Hardin Blvd.	1.8	100%	$ 9,170,000	$ 9,170,000
	I-6	G4D	Collin McKinney Pkwy. (2)	Stacy Rd. to Village Park	0.52	100%	$ 2,209,000	$ 2,209,000
	I-7	G4D	Collin McKinney Pkwy. (3)	Lake Forest Dr. to Cottonwood Creek	0.31	100%	$ 1,322,000	$ 1,322,000
	I-8	G4D (1/2)	Collin McKinney Pkwy. (4)	Cottonwood Creek to 1,110' E. of Tina	0.55	100%	$ 2,116,000	$ 2,116,000
	I-9	G4D	Collin McKinney Pkwy. (5)	1,110' E. of Tina to Hardin Blvd.	0.18	100%	$ 753,000	$ 753,000
	H-10, I-10	P6D (1/3)	Stacy Rd. (3)	Ridge Rd. to SH 121 (S. City Limits)	0.82	50%	$ 5,090,000	$ 2,545,000
	G-24, I-11	G4D	Ridge Rd. (5)	US 380 to 1,055' N. of Creekside Dr.	1.11	50%	$ 4,706,000	$ 2,353,000
	G-25, I-12	G4D	Ridge Rd. (6)	1,055' N. of Creekside Dr. to Eldorado Pkwy.	2.02	50%	$ 3,104,771	$ 1,552,386
	H-17, I-13	G4D	Ridge Rd. (7)	Eldorado Pkwy. to McKinney Ranch Pkwy.	1.08	50%	$ 1,830,132	$ 915,066
	H-18, I-14	M6D (1/3)	Ridge Rd. (8)	McKinney Ranch Pkwy. to Stacy Rd.	0.66	50%	$ 762,000	$ 381,000
	I-15	G4D (1/2)	Lake Forest Dr. (6)	US 380 to 1,105' N. of Raincrest	0.67	100%	$ 3,605,000	$ 3,605,000
	I-16	G4D	Lake Forest Dr. (7)	1,105' N. of Raincrest to Grampian Way	0.4	100%	$ 324,765	$ 324,765
	I-17	G4D	Lake Forest Dr. (8)	Grampian Way to McKinney Ranch Pkwy.	3.21	100%	$ 2,192,535	$ 2,192,535
	I-18	M6D (1/3)	Lake Forest Dr. (9)	McKinney Ranch Pkwy. to SH 121	1.04	100%	$ 1,855,000	$ 1,855,000
	I-19, J-10	G4D	Hardin Blvd. (9)	US 380 to Virginia Pkwy.	1.57	50%	$ 7,150,000	$ 3,575,000
	I-20, J-11	G4D	Hardin Blvd. (10)	Virginia Pkwy. to Provine Road	1.17	50%	$ 2,076,796	$ 1,038,398
	I-21, J-12	G4D	Hardin Blvd. (11)	730' N. of Eldorado Pkwy. to Eldorado Pkwy.	0.14	50%	$ 206,641	$ 103,321
	I-22, J-13	G4D	Hardin Blvd. (12)	Trailwood to McKinney Ranch Pkwy.	0.26	50%	$ 469,128	$ 234,564
	I-23, J-14	M6D (1/3)	Hardin Blvd. (13)	McKinney Ranch Pkwy. to SH 121	0.57	50%	$ 1,645,000	$ 822,500
	S-14		Signal Installation	Ridge Rd. & US 380		25%	$ 150,000	$ 37,500
	S-33		Signal Installation	Ridge Rd. & Glen Oaks Dr.		50%	$ 150,000	$ 75,000
	S-40		Signal Installation	Ridge Rd. & Stacy Rd.		25%	$ 150,000	$ 37,500
	S-43		Signal Installation	Collin McKinney Pkwy. & Stacy Rd.		50%	$ 150,000	$ 75,000
	S-44		Signal Installation	Lake Forest Dr. & Glen Oaks Dr.		100%	$ 150,000	$ 150,000
	S-45		Signal Installation	Hardin Blvd. & White Ave.		50%	$ 150,000	$ 75,000
	S-46		Signal Installation	Eldorado Pkwy. & Highlands Dr.		100%	$ 150,000	$ 150,000
	S-47		Signal Installation	Lake Forest Dr. & Highlands Dr.		100%	$ 150,000	$ 150,000
	S-48		Signal Installation	Lake Forest Dr. & Collin McKinney Pkwy.		100%	$ 150,000	$ 150,000
	S-49		Signal Installation	Hardin Blvd. & Collin McKinney Pkwy.		50%	$ 150,000	$ 75,000
							Service Area Project Cost Subtotal	**$ 43,321,666**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA I	**$ 43,331,281**

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
J	J-1	M4D	White Ave. (1)	Future Hardin Blvd. to Bois D'Arc	0.23	100%	$ 931,000	$ 931,000
	J-2	M4D (1/2)	White Ave. (2)	Bois D'Arc to Community Ave.	0.93	100%	$ 4,320,000	$ 4,320,000
	J-3	M4D	White Ave. (3)	Community Ave. to US 75	0.46	100%	$ 653,830	$ 653,830
	J-4	G4D	Eldorado Pkwy. (2)	Kingsbury Dr. to Wilson Creek (SA J/K Boundary)	0.34	100%	$ 1,079,000	$ 1,079,000
	J-5	M6D (1/3)	McKinney Ranch Pkwy. (3)	Hardin Blvd. to 500' E. of Hardin Blvd.	0.09	100%	$ 410,000	$ 410,000
	J-6	M6D	McKinney Ranch Pkwy. (4)	500' E. of Hardin Blvd. to US 75 SBFR	0.77	100%	$ 4,720,000	$ 4,720,000
	J-7	G4D	Collin McKinney Pkwy. (6)	Hardin Blvd. to McKinney Ranch Pkwy.	0.72	100%	$ 3,529,000	$ 3,529,000
	J-8	M4U	Collin McKinney Pkwy. (7)	McKinney Ranch Pkwy. to 720' W. of Test Dr.	0.36	100%	$ 1,214,000	$ 1,214,000
	J-9	M4U (1/2)	Collin McKinney Pkwy. (8)	720' W. of Test Dr. to Craig Dr.	0.4	100%	$ 731,000	$ 731,000
	I-19, J-10	G4D	Hardin Blvd. (9)	US 380 to Virginia Pkwy.	1.57	50%	$ 7,150,000	$ 3,575,000
	I-20, J-11	G4D	Hardin Blvd. (10)	Virginia Pkwy. to Provine Road	1.17	50%	$ 2,076,796	$ 1,038,398
	I-21, J-12	G4D	Hardin Blvd. (11)	730' N. of Eldorado Pkwy. to Eldorado Pkwy.	0.14	50%	$ 206,641	$ 103,321
	I-22, J-13	G4D	Hardin Blvd. (12)	Trailwood to McKinney Ranch Pkwy.	0.26	50%	$ 469,128	$ 234,564
	I-23, J-14	M6D (1/3)	Hardin Blvd. (13)	McKinney Ranch Pkwy. to SH 121	0.57	50%	$ 1,645,000	$ 822,500
	J-15	M4U	Community Ave. (6)	US 380 to White Ave.	0.61	100%	$ 563,236	$ 563,236
	J-16	M4D	Medical Center Dr. (1)	Eldorado Pkwy. to Spur 399	0.75	100%	$ 823,918	$ 823,918
	J-17	M4U	Medical Center Dr. (2)	Spur 399 to Old Frisco Rd.	0.33	100%	$ 361,481	$ 361,481
	S-45		Signal Installation	Hardin Blvd. & White Ave.		50%	$ 150,000	$ 75,000
	S-49		Signal Installation	Hardin Blvd. & Collin McKinney Pkwy.		50%	$ 150,000	$ 75,000
	S-50		Signal Installation	Community Ave. & White Ave.		100%	$ 150,000	$ 150,000
	S-51		Signal Installation	Collin McKinney Pkwy. & Craig Dr.		100%	$ 150,000	$ 150,000
	S-52		Signal Installation	McKinney Ranch Pkwy. & Collin McKinney Pkwy.		100%	$ 150,000	$ 150,000
	S-53		Signal Installation	Redbud Blvd. & Virginia St.		50%	$ 150,000	$ 75,000
							Service Area Project Cost Subtotal	**$ 25,785,248**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA J	**$ 25,794,863**

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
K	K-1	M4U	Wilson Creek Blvd. (1)	490' S. of Virginia Pkwy. to Rockhill Rd.	0.23	100%	$ 198,241	$ 198,241
	K-2	M4D	Wilson Creek Blvd. (2)	Rockhill Rd. to 1,415' S. of Rockhill Rd.	0.27	100%	$ 190,799	$ 190,799
	K-3	M4D	Wilson Creek Blvd. (3)	Parkview Ave. to Finch Creek	0.42	100%	$ 835,037	$ 835,037
	K-4	M4U (1/2)	Elm St. (1)	SH 5 to Rockwall St.	0.29	100%	$ 915,000	$ 915,000
	K-5	M4U	Elm St. (2)	Rockwall St. to Millwood Rd.	0.25	100%	$ 126,917	$ 126,917
	K-6	M4U	Elm St. (3)	Millwood Rd. to Airport Dr.	0.37	100%	$ 1,719,000	$ 1,719,000
	K-7	G4D	Eldorado Pkwy. (3)	Wilson Creek to SH 5	0.4	100%	$ 1,402,631	$ 1,402,631
	K-8	M6D (1/3)	Industrial Blvd. (1)	Millwood Rd. to Airport Dr.	0.35	100%	$ 989,000	$ 989,000
	K-9	M6D (2/3)	Old Mill Rd. (1)	SH 5 to Union Pacific RR	0.41	100%	$ 2,956,000	$ 2,956,000
	K-10	M6D	Old Mill Rd. (2)	Union Pacific RR to Airport Dr.	1.09	100%	$ 6,187,000	$ 6,187,000
	K-11, L-1	M6D (1/3)	Airport Dr. (3)	US 380 to 355' S. of US 380	0.07	50%	$ 164,000	$ 82,000
	K-12, L-2	M6D (2/3)	Airport Dr. (4)	355' S. of US 380 to 385' N. of Industrial Blvd.	1.75	50%	$ 8,130,000	$ 4,065,000
	K-13, L-3	M6D (1/3)	Airport Dr. (5) / Country Ln.	385' N. of Industrial Blvd. to FM 546	0.49	50%	$ 1,154,000	$ 577,000
	K-14	M6D (1/3)	Airport Dr. (6) / Country Ln.	FM 546 to 2,110' N. of CCR 326	0.31	100%	$ 496,000	$ 496,000
	K-15	M6D	Airport Dr. (7)	2,110' N. of CCR 326 to SA K/L boundary	0.81	100%	$ 4,584,000	$ 4,584,000
	S-53		Signal Installation	Redbud Blvd. & Virginia St.		50%	$ 150,000	$ 75,000
	S-54		Signal Installation	Airport Dr. & Wilson Creek Pkwy.		50%	$ 150,000	$ 75,000
	S-55		Signal Installation	Airport Dr. & Industrial Blvd.		50%	$ 150,000	$ 75,000
	S-56		Signal Installation	Airport Dr. & Old Mill Rd.		100%	$ 150,000	$ 150,000
	S-57		Signal Installation	SH 5 & Old Mill Rd.		100%	$ 150,000	$ 150,000
							Service Area Project Cost Subtotal	**$ 25,848,625**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA K	**$ 25,858,240**

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

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
L	K-11, L-1	M6D (1/3)	Airport Dr. (3)	US 380 to 355' S. of US 380	0.07	50%	$ 164,000	$ 82,000
	K-12, L-2	M6D (2/3)	Airport Dr. (4)	355' S. of US 380 to 385' N. of Industrial Blvd.	1.75	50%	$ 8,130,000	$ 4,065,000
	K-13, L-3	M6D (1/3)	Airport Dr. (5) / Country Ln.	385' N. of Industrial Blvd. to FM 546	0.49	50%	$ 1,154,000	$ 577,000
	L-4	M6D	Airport Dr. (8)	SA K/L boundary to E. City Limits	0.42	100%	$ 2,357,000	$ 2,357,000
	L-5	M6D	Unnamed D (1)	US 380 to Trinity River (S. City Limits)	0.44	100%	$ 2,491,000	$ 2,491,000
	L-6	M6D	Unnamed D (2)	Enloe to FM 546	0.73	100%	$ 4,117,000	$ 4,117,000
	L-7	M6D (1/3)	Industrial Blvd. (2)	Airport Dr. to 585' E. of Airport Dr.	0.11	100%	$ 322,000	$ 322,000
	S-54		Signal Installation	Airport Dr. & Wilson Creek Pkwy.		50%	$ 150,000	$ 75,000
	S-55		Signal Installation	Airport Dr. & Industrial Blvd.		50%	$ 150,000	$ 75,000
							Service Area Project Cost Subtotal	**$ 14,161,000**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA L	**$ 14,170,615**

Table 4.M. Roadway Improvement Plan for Roadway Impact Fees – Service Area M

Service Area	Proj. #	Class	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
M								
	No Impact Fee Eligible Roadway Projects							
							Service Area Project Cost Subtotal	**$ -**
							Roadway Impact Fee Update Cost (Per Service Area)	**$ 9,615**
							Total Cost in SERVICE AREA M	**$ 9,615**

Notes:

a. The planning level cost projections have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of McKinney.

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

c. The project cost total within each Service Area may differ from the total shown in the Summary sheets contained within **Appendix A** due to some projects that are split between multiple service areas.

E. SERVICE UNIT CALCULATION

The basic service unit for the computation of McKinney's roadway impact fees is the vehicle-mile of travel during the afternoon peak-hour. To determine the cost per service unit, it is necessary to project the growth in vehicle-miles of travel for the service area for the ten-year period.

The growth in vehicle-miles from 2007 to 2017 is based upon projected changes in residential and non-residential growth for the period. In order to determine this growth, baseline estimates of population, basic square feet, service square feet, and retail square feet for 2007 were made by the City, along with projections for each of these demographic statistics through 2017. The *Land Use Assumptions Report 2007-2008 Impact Fee Update* details the growth estimates used for impact fee determination.

The residential and non-residential statistics in the Land Use Assumptions provide the "independent variables" that are used to calculate the existing (2007) and projected (2017) transportation service units used to establish the roadway impact fee maximum rates within each service area. The roadway demand service units (vehicle-miles) for each service area are the sum of the vehicle-miles "generated" by each category of land use in the service area.

For the purpose of impact fees, all developed and developable land is categorized as either residential or non-residential. For residential land uses, the existing and projected population is converted to dwelling units. The number of dwelling units in each service area is multiplied by a

transportation demand factor to compute the vehicle-miles of travel that occur during the afternoon peak hour. This factor computes the average amount of demand caused by the residential land uses in the service area. The *transportation demand factor* is discussed in more detail below.

For non-residential land uses, the process is similar. The Land Use Assumptions provide existing and projected number of building square footages for three (3) categories of non-residential land uses– basic, service, and retail. These categories correspond to an aggregation of other specific land use categories based on the NAICS (North American Industrial Classification System).

Building square footage is the most common independent variable for the estimation of non-residential trips in the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 7th Edition.* This statistic is more appropriate than the number of employees because building square footage is tied more closely to trip generation and is known at the time of application for any development or development modification that would require the assessment of an impact fee.

The existing and projected Land Use Assumptions for the dwelling units and the square footage of basic, service, and retail land uses provide the basis for the projected increase in vehicle-miles of travel. As noted earlier, a *transportation demand factor* is applied to these values and then summed to calculate the total peak hour vehicle-miles of demand for each service area.

The *transportation demand factors* are aggregate rates derived from two sources – the *ITE Trip Generation Manual, 7th Edition* and the latest Regional Origin-Destination Travel Survey performed by NCTCOG. The *ITE Trip Generation Manual, 7th Edition* provides the number of trips that are produced or attracted to the land use for each dwelling unit, square foot of building, or other corresponding unit. For the retail category of land uses, the rate is adjusted to account for the fact that a percentage of retail trips are made by people who would otherwise be traveling past that particular establishment anyway, such as a trip between work and home. These trips are called pass-by trips, and since the travel demand is accounted for in the land use calculations relative to the primary trip, it is necessary to discount the retail rate to avoid double counting trips.

The next component of the *transportation demand factor* accounts for the length of each trip. The average trip length for each category is based on the region-wide travel characteristics survey conducted by NCTCOG.

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

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

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

Variables:

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

The maximum trip length, for land uses which are characterized by longer average trip lengths (primarily residential uses), has been limited to a length based on the nature of the roadway network within the service area, along with consideration of the existing City boundaries. Although Chapter 395 of the Texas Local Government Code allows for a service area diameter of six (6) miles, the City of McKinney has set service area boundaries in anticipation of the ultimate corporate limits. Therefore, the individual service areas have different trip characteristics. In order to account for these differences, the values shown in **Table 5** were used for calculation of the *transportation demand factor* for each service area.

Table 5. Maximum Trip Lengths by Service Area

Service Area	Max. Trip Length (mi)	Service Area	Max. Trip Length (mi)
A	0.30	**H**	4.65
B	0.80	**I**	6.00
C	3.10	**J**	6.00
D	5.80	**K**	5.30
E	4.80	**L**	3.50
F	0.00	**M**	0.00
G	6.00		

The adjustment made to the average trip length statistic in the computation of the maximum trip length is the origin-destination reduction. This adjustment is made because the roadway impact fee is charged to both the origin and destination end of the trip. For example, impact fee methodology will account for a trip from home to work within McKinney to both residential and non-residential land uses. To avoid counting these trips as both residential and non-residential trips, a 50% origin-destination (OD) reduction factor is applied. Therefore, only half of the trip length is assessed to each land use.

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

Table 6A. Transportation Demand Factor Calculations – Service Area C Example

Variable	Residential	Basic	Service	Retail
T	1.01	0.98	1.49	3.75
P_b	0%	0%	0%	34%
L	17.21	10.02	10.92	6.43
L_{max} *	3.10	3.10	3.10	3.10
TDF	**3.13**	**3.04**	**4.62**	**7.69**

Table 6B. Transportation Demand Factor Calculations – Service Area I Example

Variable	Residential	Basic	Service	Retail
T	1.01	0.98	1.49	5.06
P_b	0%	0%	0%	30%
L	17.21	10.02	10.92	6.43
L_{max} *	6.00	5.01	5.46	3.22
TDF	**6.06**	**4.91**	**8.14**	**11.38**

***** L_{max} is less than 6 miles for non-residential land uses; therefore this lower trip length is used for calculating the TDF for non-residential land uses

The application of the demographic projections and the *transportation demand factors* are presented in the 10-Year Growth Projections in **Table 7**. This table shows the total vehicle-miles by service area for the years 2007 and 2017. These estimates and projections lead to the Vehicle-miles of Travel for both 2007 and 2017.

Table 7. 10-Year Growth Projections

Year 2007

SERVICE AREA	RESIDENTIAL VEHICLE-MILES				SQUARE FEET[4]			TRANS. DEMAND FACTOR[5]			NON-RESIDENTIAL VEHICLE-MILES[9]				TOTAL VEHICLE MILES[10]
	POPULATION[1]	DWELLING UNITS[1]	TDF[2]	VEHICLE MILES[3]	BASIC	SERVICE	RETAIL	BASIC[6]	SERVICE[7]	RETAIL[8]	BASIC	SERVICE	RETAIL	TOTAL	
A	0	0	0.30	0	0	0	0	0.29	0.45	1.06	0	0	0	0	0
B	0	0	0.81	0	0	0	0	0.78	1.19	2.83	0	0	0	0	0
C	1,510	522	3.13	1,635	31,416	164,650	42,574	3.04	4.62	10.97	96	761	467	1,324	2,959
D	7,728	2,674	5.86	15,670	39,270	2,937,356	224,224	4.91	8.14	11.38	193	23,910	2,552	26,655	42,325
E	2,013	697	4.85	3,378	1,955,646	1,007,658	1,613,562	4.70	7.15	11.38	9,192	7,205	18,362	34,759	38,137
F	3	1	0.00	0	0	0	0	0.00	0.00	0.00	0	0	0	0	0
G	27,706	9,587	6.06	58,096	0	974,728	688,283	4.91	8.14	11.38	0	7,934	7,833	15,767	73,863
H	9,133	3,160	4.70	14,853	0	717,874	943,728	4.56	6.93	11.38	0	4,975	10,740	15,715	30,568
I	28,313	9,797	6.06	59,369	0	1,837,494	865,675	4.91	8.14	11.38	0	14,957	9,851	24,808	84,177
J	20,947	7,248	6.06	43,923	1,610,070	3,483,994	2,398,347	4.91	8.14	11.38	7,905	28,360	27,293	63,558	107,481
K	17,738	6,138	5.35	32,837	3,683,681	6,704,548	1,603,610	4.91	7.90	11.38	18,087	52,966	18,249	89,302	122,139
L	107	37	3.54	131	0	3,543,268	411,633	3.43	5.22	11.38	0	18,496	4,684	23,180	23,311
M	0	0	0.00	0	0	0	0	0.00	0.00	0.00	0	0	0	0	0
Totals	**115,198**	**39,861**		**229,892**	**7,320,083**	**21,371,570**	**8,791,636**				**35,473**	**159,564**	**100,031**	**295,068**	**524,960**

Year 2017

SERVICE AREA	RESIDENTIAL VEHICLE-MILES				SQUARE FEET[4]			TRANS. DEMAND FACTOR[5]			NON-RESIDENTIAL VEHICLE-MILES[9]				TOTAL VEHICLE MILES[10]
	POPULATION[1]	DWELLING UNITS[1]	TDF[2]	VEHICLE MILES[3]	BASIC	SERVICE	RETAIL	BASIC[6]	SERVICE[7]	RETAIL[8]	BASIC	SERVICE	RETAIL	TOTAL	
A	0	0	0.30	0	0	0	0	0.29	0.45	1.06	0	0	0	0	0
B	7,812	2,703	0.81	2,189	0	953	520	0.78	1.19	2.83	0	1	1	2	2,191
C	11,129	3,851	3.13	12,054	31,416	1,296,204	461,238	3.04	4.62	10.97	96	5,988	5,060	11,144	23,198
D	13,686	4,736	5.86	27,753	39,270	3,915,619	612,938	4.91	8.14	11.38	193	31,873	6,975	39,041	66,794
E	2,527	874	4.85	4,239	2,662,506	1,572,414	2,049,418	4.70	7.15	11.38	12,514	11,243	23,322	47,079	51,318
F	169	59	0.00	0	0	17,467	9,542	0.00	0.00	0.00	0	0	0	0	0
G	47,180	16,325	6.06	98,930	0	1,310,615	1,511,406	4.91	8.14	11.38	0	10,668	17,200	27,868	126,798
H	24,766	8,570	4.70	40,279	0	1,978,859	1,701,120	4.56	6.93	11.38	0	13,713	19,359	33,072	73,351
I	41,270	14,280	6.06	86,537	0	2,592,611	1,353,226	4.91	8.14	11.38	0	21,104	15,400	36,504	123,041
J	27,493	9,513	6.06	57,649	1,610,070	4,221,686	3,221,794	4.91	8.14	11.38	7,905	34,365	36,664	78,934	136,583
K	19,701	6,817	5.35	36,471	4,186,337	7,084,005	1,745,804	4.91	7.90	11.38	20,555	55,964	19,867	96,386	132,857
L	107	37	3.54	131	408,408	3,543,268	411,633	3.43	5.22	11.38	1,401	18,496	4,684	24,581	24,712
M	0	0	0.00	0	0	0	0	0.00	0.00	0.00	0	0	0	0	0
Totals	**195,840**	**67,765**		**366,232**	**8,938,007**	**27,533,702**	**13,078,639**				**42,664**	**203,415**	**148,532**	**394,611**	**760,843**

VEHICLE-MILES OF INCREASE[11] (2007 - 2017)

SERVICE AREA	VEH-MILES
A	0
B	2,191
C	20,239
D	24,469
E	13,181
F	0
G	52,935
H	42,783
I	38,864
J	29,102
K	10,718
L	1,401
M	0
Total	235,883

Notes:

[1] From *Land Use Assumptions Report 2007-2008 Impact Fee Update*

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

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

[4] From *Land Use Assumptions Report 2007-2008 Impact Fee Update*

[5] *Trip generation rate* and Transportation Demand Factors from LUVMET for each land use

[6] 'Basic' corresponds to General Light Industrial land use and *trip generation rate*

[7] 'Service' corresponds to General Office land use and *trip generation rate*

[8] 'Retail' corresponds to Free-Standing Retail land use and *trip generation rate*

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

[10] Residential plus non-residential vehicle-mile totals for each Service Area

[11] Total Vehicle-Miles (2007) subtracted from Total Vehicle-Miles (2017)

IV. IMPACT FEE CALCULATIONS

A. MAXIMUM ASSESSABLE IMPACT FEE PER SERVICE UNIT

This section presents the maximum assessable impact fee rate calculated for each service area. The maximum assessable impact fee is the sum of the eligible Impact Fee RIP costs for the service area divided by the growth in travel attributable to new development projected to occur within the 10-year period. A majority of the components of this calculation have been described and presented in previous sections of this report. The purpose of this section is to document the computation for each service area and to demonstrate that the guidelines provided by Chapter 395 of the Texas Local Government Code have been addressed. **Table 8** illustrates the computation of the maximum assessable impact fee computed for each service area. Each row in the table is numbered to simplify explanation of the calculation.

Line	Title	Description
1	*Total Vehicle-Miles of Capacity Added by the RIP*	The total number of vehicle-miles added to the service area based on the capacity, length, and number of lanes in each project (from **Appendix B** – RIP Service Units of Supply)

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

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

A number of facilities identified in the Impact Fee RIP have traffic currently utilizing a portion of their existing capacity. This line displays the total amount of capacity along these facilities currently be used by existing traffic.

3	*Total Vehicle-Miles of Existing Deficiencies*	Number of vehicle-miles of travel that are not accommodated by the existing roadway system (from **Appendix C** – Existing Roadway Facilities Inventory)

In order to ensure that existing deficiencies on the City's roadway network are not recoverable through impact fees, this line is based on the entire roadway network within the service area. Any roadway within the service area that is deficient – even those not identified on the Impact Fee RIP – will have these additional trips removed from the calculation.

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

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

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

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

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

Using the ratio of vehicle-miles added by the Impact Fee RIP available to serve future growth to the total vehicle-miles added, the total cost of the Impact Fee RIP is reduced to the amount available for future growth (i.e. excluding existing usage and deficiencies).

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

This line is provided for information purposes only – it is to present the portion of the total cost of the Impact Fee RIP that is required to meet existing demand.

8	*Total Vehicle-Miles of New Demand over Ten Years*	Based upon the growth projection provided in the **Land Use Assumptions**, an estimate of the number of new vehicle-miles within the service area over the next ten years. (from **Table 7**)

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

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

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

11	*Cost of Capacity Added Attributable to New Growth*	The result of multiplying the Cost of Net Capacity Added (**Line 6**) by the Percent of Capacity Added Attributable to New Growth, limited to 100% (**Line 9**).

This value is the total Impact Fee RIP project costs (excluding financial costs) that may be recovered through impact fees. This line is determined considering the limitations to impact fees required by the Texas legislature.

B. PLAN FOR AWARDING THE ROADWAY IMPACT FEE CREDIT

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

> "(7) A plan for awarding:
> (A) a credit for the portion of ad valorem tax and utility service revenues generated by new service units during the program period that is used for the payment of improvements, including the payment of debt, that are included in the capital improvements plan; or
> (B) In the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan…"

The plan following 395.014(7)(A) is summarized, as prepared by R.W. Beck, Inc., in **Appendix D** and **E,** Plan for Awarding the Roadway Impact Fee Credit. The following table summarizes the portions of **Table 8** that utilize this credit calculation.

Line	Title	Description
12	*Principal Paid on Existing Debt Funded Project Costs*	(from **Appendix D** – Plan for Awarding the Roadway Impact Fee Credit)
13	*Financing Costs*	(from **Appendix D** – Plan for Awarding the Roadway Impact Fee Credit)
14	*Existing Fund Balance*	(from **Appendix D** – Plan for Awarding the Roadway Impact Fee Credit)
15	*Interest Earnings*	(from **Appendix D** – Plan for Awarding the Roadway Impact Fee Credit)
16	*Cost of the RIP and Financing Attributable to New Growth*	The sum of the Cost of Capacity Added Attributable to New Growth, Financing Costs, and Interest Earnings. (**Line 11 + Line 12 + Line 13 + Line 14 + Line 15**)
17	*Pre-Credit Maximum Fee Per Service Unit*	Found by dividing the Cost of the RIP and Financing Attributable to New Growth (**Line 16**) by the Total Vehicle-Miles of New Demand Over Ten Years (**Line 8**). (**Line 16 / Line 8**)
18	*Credit for Ad Valorem Taxes*	A credit for the portion of ad valorem taxes projected to be generated by the new service units, as per Section 395.014 of the Local Government Code. (from **Appendix D** – Plan for Awarding the Roadway Impact Fee Credit)
19	*Recoverable Cost of RIP and Financing*	The difference between the Cost of the RIP and Financing Attributable to New Growth (**Line 16**) and the Credit for Ad Valorem Taxes (**Line 18**). (**Line 16 + Line 18**)
20	*Maximum Assessable Fee Per Service Unit*	Found by dividing the Recoverable Cost of the RIP and Financing (**Line 19**) by the Total Vehicle-Miles of New Demand Over Ten Years (**Line 8**). (**Line 19 / Line 8**)

C. FINANCIAL COMPONENT OF IMPACT FEE DETERMINATION

The impact fee determination method employed by R.W. Beck is developed through a financial based model, which fully recognizes the requirements of Chapter 395, including the recognition of debt and/or non-debt funding, interest earnings, fund balances, and applicable credits associated with the use of ad valorem taxes. In developing the components of the financial model several assumptions must be made, including

- Funding;
  - Method of funding (i.e. debt or non-debt financing)
  - The level of funding (e.g. 50% debt / 50% non-debt)
  - Cost of financing
  - Debt repayment structure
- Timing and Level of Expenditures and Revenues
- Interest Earnings
- Annual Service Unit Growth
- Portion of Ad Valorem Tax Revenue Used to Fund Impact Fee Capital Improvements

While the assumptions employed in the maximum assessable impact fee determination provide a reasonable basis for forecasting, these assumptions may not necessarily reflect actual future conditions. To address this, Chapter 395 requires the monitoring of impact fees through the Capital Improvements Advisory Committee, and allows for the option to update or revise impact fees to reflect the actual implementation of the impact fee program.

Once the cost of capacity added that is attributable to growth (Table 8 line 11) is determined, it must then be decided how the cost will be funded, debt and/or non-debt. Based on the City's historical practices, it is assumed that the City will debt finance 50% of the new impact fee projects and non-debt fund 50% of the new impact fee projects. For debt financing of the new impact fee projects, the cost of financing is based on estimates of future debt costs for bonds issued with 20-year terms, as shown in **Appendix E**. Debt service payments for each future debt issue are assumed to remain constant over the issue's term.

For projects that have been financed through existing debt issues, a weighted average cost of the City's outstanding GO/CO debt was used to determine financing costs for these projects. For projects during the Pre-2003 period, it was assumed that debt was issued in 2000. For projects during the 2003-2008 period, it was assumed that debt was issued in 2003. Debt service payments were assumed to be constant for these hypothetical debt issues.

Currently, the exact timing and annual level of capital expenditures over the 10-year forecast is indeterminate; therefore, it is assumed that capital expenditures will occur in equal amounts over the 10-year program period. It is also assumed, that for debt-financed new impact fee capital projects, debt will be issued in equal annual amounts for years 1 through 10.

Table 8. Maximum Assessable Roadway Impact Fee

	SERVICE AREA:	A	B	C	D	E	F	G	H	I	J	K	L	M
1	TOTAL VEH-MI OF CAPACITY ADDED BY THE RIP (FROM RIP UNITS OF SUPPLY, **APPENDIX B)**	630	4,620	38,912	54,642	29,497	0	66,632	40,740	51,409	22,262	22,771	11,991	0
2	TOTAL VEH-MI OF EXISTING DEMAND (FROM RIP UNITS OF SUPPLY, **APPENDIX B**)	0	12	883	2,207	1,046	0	16,878	7,578	20,889	4,296	2,674	1,193	0
3	TOTAL VEH-MI OF EXISTING DEFICIENCIES (FROM EXISTING FACILITIES INVENTORY, **APPENDIX C**)	0	0	0	7	7	0	278	376	414	0	115	115	0
4	NET AMOUNT OF VEH-MI OF CAPACITY ADDED (LINE 1 - LINE 2 - LINE 3)	630	4,608	38,029	52,428	28,444	0	49,476	32,786	30,106	17,966	19,982	10,683	0
5	TOTAL COST OF THE RIP WITHIN SERVICE AREA (FROM **TABLE 4)**	$ 1,086,615	$ 6,381,115	$ 53,355,013	$ 69,570,557	$ 44,318,196	$ 9,615	$ 46,947,342	$ 25,704,145	$ 43,331,281	$ 25,794,863	$ 25,858,240	$ 14,170,615	$ 9,615
6	COST OF NET CAPACITY SUPPLIED (LINE 4 / LINE 1) * (LINE 5)	$ 1,086,615	$ 6,364,541	$ 52,144,269	$ 66,751,678	$ 42,736,101	$ -	$ 34,859,627	$ 20,685,717	$ 25,375,548	$ 20,817,110	$ 22,691,114	$ 12,624,859	$ -
7	COST TO MEET EXISTING NEEDS AND USAGE (LINE 5 - LINE 6)	$ -	$ 16,574	$ 1,210,744	$ 2,818,879	$ 1,582,095	$ 9,615	$ 12,087,715	$ 5,018,428	$ 17,955,733	$ 4,977,753	$ 3,167,126	$ 1,545,756	$ 9,615
8	TOTAL VEH-MI OF NEW DEMAND OVER TEN YEARS (FROM **TABLE 7** and **Land Use Assumptions**)	0	2,191	20,239	24,469	13,181	0	52,935	42,783	38,864	29,102	10,718	1,401	0
9	PERCENT OF CAPACITY ADDED ATTRIBUTABLE TO GROWTH (LINE 8 / LINE 4)	0.0%	47.5%	53.2%	46.6%	46.3%	0.0%	106.9%	130.4%	129.0%	161.9%	53.6%	13.1%	0.0%
10	IF LINE 8 > LINE 4, REDUCE LINE 9 TO 100%, OTHERWISE NO CHANGE	0.0%	47.5%	53.2%	46.6%	46.3%	0.0%	100.0%	100.0%	100.0%	100.0%	53.6%	13.1%	0.0%
11	COST OF CAPACITY ADDED ATTRIBUTABLE TO GROWTH (LINE 6 * LINE 10)	$ -	$ 3,023,157	$ 27,740,751	$ 31,106,282	$ 19,786,815	$ -	$ 34,859,627	$ 20,685,717	$ 25,375,548	$ 20,817,110	$ 12,162,437	$ 1,653,857	$ -
12	PRINCIPAL PAID ON EXISTING DEBT FUNDED PROJECT COSTS (FROM **APPENDIX D**)	$ -	$ -	$ (82,374)	$ (667,459)	$ (119,520)	$ -	$ (1,797,996)	$ (1,401,370)	$ (3,538,897)	$ (1,812,415)	$ (691,242)	$ (24,493)	$ -
13	FINANCING COSTS (FROM **APPENDIX D**)	$ -	$ 898,899	$ 8,260,176	$ 9,184,817	$ 5,851,777	$ -	$ 9,064,712	$ 6,030,931	$ 7,019,120	$ 5,753,308	$ 3,467,238	$ 492,475	$ -
14	EXISTING FUND BALANCE (FROM **APPENDIX D**)	$ -	$ -	$ (105,000)	$ (472,371)	$ (119,853)	$ -	$ (501,012)	$ (1,168,229)	$ (876,475)	$ (867,267)	$ (744,573)	$ (55,463)	$ -
15	INTEREST EARNINGS (FROM **APPENDIX D**)	$ -	$ (507,537)	$ (4,614,241)	$ (4,918,288)	$ (3,275,315)	$ -	$ (4,784,035)	$ (2,862,712)	$ (2,526,318)	$ (2,700,344)	$ (1,790,058)	$ (271,121)	$ -
16	COST OF RIP AND FINANCING ATTRIBUTABLE TO GROWTH (LINE 11 + LINE 12 + LINE 13 + LINE 14 + LINE 15)	$ -	$ 3,414,520	$ 31,199,312	$ 34,232,981	$ 22,123,904	$ -	$ 36,841,296	$ 21,284,338	$ 25,452,979	$ 21,190,391	$ 12,403,801	$ 1,795,255	$ -
17	PRE-CREDIT MAX FEE PER SERVICE UNIT ($ PER VEH-MI) (LINE 16 / LINE 8)	$ -	$ 1,558	$ 1,542	$ 1,399	$ 1,678	$ -	$ 696	$ 497	$ 655	$ 728	$ 1,157	$ 1,281	$ -
18	CREDIT FOR AD VALOREM TAXES (FROM **APPENDIX D**)	$ -	$ (1,896)	$ (161,228)	$ (245,941)	$ (76,088)	$ -	$ (636,723)	$ (366,884)	$ (537,872)	$ (257,468)	$ (50,423)	$ (753)	$ -
19	RECOVERABLE COST OF RIP AND FINANCING (LINE 16 + LINE 18)	$ -	$ 3,412,624	$ 31,038,084	$ 33,987,040	$ 22,047,817	$ -	$ 36,204,573	$ 20,917,454	$ 24,915,107	$ 20,932,924	$ 12,353,379	$ 1,794,502	$ -
20	MAX ASSESSABLE FEE PER SERVICE UNIT ($ PER VEH-MI) (LINE 19 / LINE 8)	$ -	$ 1,558	$ 1,534	$ 1,389	$ 1,673	$ -	$ 684	$ 489	$ 641	$ 719	$ 1,153	$ 1,281	$ -

D. SERVICE UNIT DEMAND PER UNIT OF DEVELOPMENT

The roadway impact fee is determined by multiplying the impact fee rate by the number of service units projected for the proposed development. For this purpose, the City utilizes the Land Use/Vehicle-Mile Equivalency Table (LUVMET), presented in **Table 9**. This table lists the predominant land uses that may occur within the City of McKinney. For each land use, the development unit that defines the development's magnitude with respect to transportation demand is shown. Although every possible use cannot be anticipated, the majority of uses are found in this table. If the exact use is not listed, one similar in trip-making characteristics can serve as a reasonable proxy. The individual land uses are grouped into categories, such as residential, office, commercial, industrial, and institutional.

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

The source of the trip generation and pass-by statistics is the *ITE Trip Generation Manual, 7th Edition*, the latest edition of the definitive source for trip generation data. This manual utilizes trip generation studies for a variety of land uses throughout the United States, and is the standard used by traffic engineers and transportation planners for traffic impact analysis, site design, and transportation planning.

To convert vehicle trips to vehicle-miles, it is necessary to multiply trips by trip length. The adjusted trip length values are based on the *Regional Origin-Destination Travel Survey* performed by the North Central Texas Council of Governments (NCTCOG). The other adjustment to trip length is the 50% origin-destination reduction to avoid double counting of trips. At this stage, another important aspect of the state law is applied – the limit on transportation service unit demand. If the adjusted trip length is above the maximum trip length within the service area, the maximum trip length used for calculation is reduced to the corresponding value. This reduction, as discussed previously, limits the maximum trip length to the approximate size of the service areas.

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

E. LAND USE DESCRIPTIONS

In the process of assessing and collecting roadway impact fees within the City of McKinney, there are instances in which questions have arisen as to the appropriate application of the Land Use / Vehicle-Mile Equivalency Table (LUVMET) when the type of land use may seem to fit into multiple categories. **Table 10** provides the City with a more detailed description of the various land uses for the *ITE Trip Generation Manual, 7th Edition* for a reference.

Table 9.A. Service Area A - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - A	Veh-Mi Per Dev-Unit SA - A
										0.30	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	0.30	1.97
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	0.30	0.29
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	0.30	0.20
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	0.30	0.26
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	0.30	0.18
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	0.30	0.08
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	0.30	0.30
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	0.30	0.19
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	0.30	0.16
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	0.30	0.18
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	0.30	0.07
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	0.30	0.18
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	0.30	0.14
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	0.30	0.38
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	0.30	0.09
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	0.30	0.49
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	0.30	0.71
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	0.30	0.10
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	0.30	4.09
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	0.30	1.01
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	0.30	0.20
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	0.30	3.95
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	0.30	0.05
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	0.30	0.04
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	0.30	0.04
University / College	550	Students	0.21			0.21	4.20	50%	2.10	0.30	0.06
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	0.30	1.55
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	0.30	0.39
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	0.30	0.07
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	0.30	0.42
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	0.30	0.45
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	0.30	1.12
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	0.30	0.52
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	0.30	0.45
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	0.30	0.61
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	0.30	1.02
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.30	1.77
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	0.30	0.63
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	0.30	0.93
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.30	1.00
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.30	2.09
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	0.30	1.09
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	0.30	5.20
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	0.30	1.87
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	0.30	1.26
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	0.30	1.06
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	0.30	0.80
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	0.30	0.52
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	0.30	1.32
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	0.30	0.74
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	0.30	2.01
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	0.30	1.05
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	0.30	5.97
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	0.30	7.27

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

Table 9.B. Service Area B - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - B	Veh-Mi Per Dev-Unit SA - B
										0.80	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	0.80	5.24
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	0.80	0.78
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	0.80	0.54
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	0.80	0.69
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	0.80	0.47
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	0.80	0.21
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	0.80	0.81
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	0.80	0.50
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	0.80	0.42
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	0.80	0.47
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	0.80	0.18
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	0.80	0.47
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	0.80	0.38
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	0.80	1.00
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	0.80	0.24
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	0.80	1.31
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	0.80	1.89
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	0.80	0.26
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	0.80	10.91
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	0.80	2.68
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	0.80	0.53
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	0.80	10.54
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	0.80	0.12
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	0.80	0.11
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	0.80	0.10
University / College	550	Students	0.21			0.21	4.20	50%	2.10	0.80	0.17
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	0.80	4.14
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	0.80	1.04
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	0.80	0.18
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	0.80	1.12
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	0.80	1.19
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	0.80	2.98
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	0.80	1.38
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	0.80	1.20
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	0.80	1.62
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	0.80	2.73
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.60	3.53
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	0.80	1.69
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	0.80	2.49
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.60	4.19
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	0.80	2.90
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	0.80	13.86
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	0.80	4.98
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	0.80	3.35
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	0.80	2.83
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	0.80	2.13
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	0.80	1.38
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	0.80	3.52
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	0.80	1.98
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	0.80	5.35
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	0.80	2.79
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	0.80	15.91
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	0.80	19.39

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

EXHIBIT 2

Table 9.C. Service Area C - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - C	Veh-Mi Per Dev-Unit SA - C
										3.10	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	3.10	20.31
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	3.10	3.04
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	3.10	2.11
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	3.10	2.67
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	3.10	1.83
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	3.10	0.81
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	3.10	3.13
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	3.10	1.92
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	3.10	1.61
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	3.10	1.83
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	3.10	0.68
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	3.10	1.83
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	3.10	1.46
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	3.10	3.88
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	3.10	0.93
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	3.10	5.08
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	3.10	7.32
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	3.10	1.02
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	3.10	42.28
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	3.10	10.39
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	2.10	1.39
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	2.10	27.68
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	2.10	0.32
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	2.10	0.29
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	2.10	0.25
University / College	550	Students	0.21			0.21	4.20	50%	2.10	2.10	0.44
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	3.10	16.06
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	3.10	4.03
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	3.10	0.68
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	3.10	4.34
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	3.10	4.62
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	3.10	11.53
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	3.10	5.36
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	3.10	4.65
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	3.10	6.29
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	3.10	10.57
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.60	3.53
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	3.10	6.54
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	3.10	9.64
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.60	4.19
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	3.10	11.22
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	2.40	41.48
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	2.40	14.90
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	2.40	10.04
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	3.10	10.97
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	3.10	8.25
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	3.10	5.33
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	3.10	13.64
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	3.10	7.69
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	3.10	20.74
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	3.10	10.82
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	1.70	33.71
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	1.70	41.09

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

Table 9.D. Service Area D - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - D	Veh-Mi Per Dev-Unit SA - D
										5.80	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	5.01	32.82
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	5.01	4.91
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	5.01	3.41
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	5.01	4.31
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	5.42	3.19
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	5.42	1.41
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	5.80	5.86
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	5.80	3.60
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	5.80	3.02
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	5.80	3.42
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	5.80	1.28
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	3.22	1.90
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	3.22	1.51
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	3.22	4.02
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	3.22	0.96
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	3.22	5.27
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	3.22	7.59
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	3.22	1.06
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	3.22	43.85
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	3.22	10.77
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	2.10	1.39
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	2.10	27.68
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	2.10	0.32
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	2.10	0.29
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	2.10	0.25
University / College	550	Students	0.21			0.21	4.20	50%	2.10	2.10	0.44
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	3.78	19.55
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	3.78	4.91
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	3.78	0.83
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	5.46	7.64
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	5.46	8.14
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	5.46	20.31
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	5.46	9.45
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	5.46	8.19
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	3.22	6.53
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	3.22	10.96
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.60	3.53
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	3.22	6.78
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	3.22	10.00
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.60	4.19
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	3.22	11.64
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	2.40	41.48
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	2.40	14.90
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	2.40	10.04
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	3.22	11.38
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	3.22	8.55
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	3.22	5.53
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	3.22	14.15
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	3.22	7.97
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	3.22	21.51
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	3.22	11.22
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	1.70	33.71
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	1.70	41.09

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

EXHIBIT 2

Table 9.E. Service Area E - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - E	Veh-Mi Per Dev-Unit SA - E
										4.80	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	4.80	31.44
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	4.80	4.70
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	4.80	3.26
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	4.80	4.13
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	4.80	2.83
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	4.80	1.25
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	4.80	4.85
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	4.80	2.98
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	4.80	2.50
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	4.80	2.83
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	4.80	1.06
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	3.22	1.90
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	3.22	1.51
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	3.22	4.02
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	3.22	0.96
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	3.22	5.27
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	3.22	7.59
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	3.22	1.06
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	3.22	43.85
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	3.22	10.77
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	2.10	1.39
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	2.10	27.68
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	2.10	0.32
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	2.10	0.29
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	2.10	0.25
University / College	550	Students	0.21			0.21	4.20	50%	2.10	2.10	0.44
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	3.78	19.55
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	3.78	4.91
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	3.78	0.83
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	4.80	6.72
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	4.80	7.15
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	4.80	17.86
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	4.80	8.30
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	4.80	7.20
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	3.22	6.53
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	3.22	10.96
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.60	3.53
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	3.22	6.78
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	3.22	10.00
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.60	4.19
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	3.22	11.64
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	2.40	41.48
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	2.40	14.90
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	2.40	10.04
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	3.22	11.38
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	3.22	8.55
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	3.22	5.53
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	3.22	14.15
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	3.22	7.97
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	3.22	21.51
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	3.22	11.22
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	1.70	33.71
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	1.70	41.09

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

Table 9.F. Service Area F - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - F	Veh-Mi Per Dev-Unit SA - F
										0.00	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	0.00	0.00
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	0.00	0.00
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	0.00	0.00
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	0.00	0.00
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	0.00	0.00
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	0.00	0.00
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	0.00	0.00
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	0.00	0.00
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	0.00	0.00
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	0.00	0.00
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	0.00	0.00
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	0.00	0.00
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	0.00	0.00
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	0.00	0.00
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	0.00	0.00
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	0.00	0.00
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	0.00	0.00
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	0.00	0.00
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	0.00	0.00
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	0.00	0.00
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	0.00	0.00
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	0.00	0.00
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	0.00	0.00
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	0.00	0.00
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	0.00	0.00
University / College	550	Students	0.21			0.21	4.20	50%	2.10	0.00	0.00
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	0.00	0.00
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	0.00	0.00
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	0.00	0.00
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	0.00	0.00
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	0.00	0.00
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	0.00	0.00
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	0.00	0.00
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	0.00	0.00
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	0.00	0.00
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	0.00	0.00
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.00	0.00
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	0.00	0.00
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	0.00	0.00
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.00	0.00
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.00	0.00
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	0.00	0.00
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	0.00	0.00
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	0.00	0.00
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	0.00	0.00
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	0.00	0.00
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	0.00	0.00
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	0.00	0.00
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	0.00	0.00
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	0.00	0.00
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	0.00	0.00
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	0.00	0.00
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	0.00	0.00
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	0.00	0.00

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

Table 9.G. Service Area G - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - G	Veh-Mi Per Dev-Unit SA - G
										6.00	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	5.01	32.82
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	5.01	4.91
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	5.01	3.41
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	5.01	4.31
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	5.42	3.19
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	5.42	1.41
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	6.00	6.06
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	6.00	3.72
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	6.00	3.12
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	6.00	3.54
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	6.00	1.32
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	3.22	1.90
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	3.22	1.51
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	3.22	4.02
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	3.22	0.96
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	3.22	5.27
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	3.22	7.59
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	3.22	1.06
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	3.22	43.85
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	3.22	10.77
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	2.10	1.39
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	2.10	27.68
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	2.10	0.32
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	2.10	0.29
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	2.10	0.25
University / College	550	Students	0.21			0.21	4.20	50%	2.10	2.10	0.44
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	3.78	19.55
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	3.78	4.91
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	3.78	0.83
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	5.46	7.64
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	5.46	8.14
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	5.46	20.31
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	5.46	9.45
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	5.46	8.19
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	3.22	6.53
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	3.22	10.96
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.60	3.53
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	3.22	6.78
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	3.22	10.00
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.60	4.19
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	3.22	11.64
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	2.40	41.48
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	2.40	14.90
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	2.40	10.04
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	3.22	11.38
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	3.22	8.55
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	3.22	5.53
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	3.22	14.15
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	3.22	7.97
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	3.22	21.51
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	3.22	11.22
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	1.70	33.71
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	1.70	41.09

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

EXHIBIT 2

Table 9.H. Service Area H - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - H	Veh-Mi Per Dev-Unit SA - H
										4.65	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	4.65	30.46
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	4.65	4.56
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	4.65	3.16
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	4.65	4.00
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	4.65	2.74
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	4.65	1.21
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	4.65	4.70
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	4.65	2.88
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	4.65	2.42
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	4.65	2.74
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	4.65	1.02
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	3.22	1.90
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	3.22	1.51
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	3.22	4.02
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	3.22	0.96
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	3.22	5.27
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	3.22	7.59
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	3.22	1.06
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	3.22	43.85
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	3.22	10.77
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	2.10	1.39
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	2.10	27.68
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	2.10	0.32
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	2.10	0.29
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	2.10	0.25
University / College	550	Students	0.21			0.21	4.20	50%	2.10	2.10	0.44
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	3.78	19.55
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	3.78	4.91
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	3.78	0.83
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	4.65	6.51
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	4.65	6.93
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	4.65	17.30
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	4.65	8.04
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	4.65	6.98
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	3.22	6.53
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	3.22	10.96
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.60	3.53
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	3.22	6.78
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	3.22	10.00
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.60	4.19
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	3.22	11.64
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	2.40	41.48
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	2.40	14.90
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	2.40	10.04
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	3.22	11.38
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	3.22	8.55
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	3.22	5.53
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	3.22	14.15
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	3.22	7.97
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	3.22	21.51
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	3.22	11.22
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	1.70	33.71
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	1.70	41.09

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

EXHIBIT 2

Table 9.I. Service Area I - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - I	Veh-Mi Per Dev-Unit SA - I
										6.00	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	5.01	32.82
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	5.01	4.91
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	5.01	3.41
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	5.01	4.31
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	5.42	3.19
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	5.42	1.41
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	6.00	6.06
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	6.00	3.72
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	6.00	3.12
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	6.00	3.54
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	6.00	1.32
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	3.22	1.90
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	3.22	1.51
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	3.22	4.02
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	3.22	0.96
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	3.22	5.27
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	3.22	7.59
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	3.22	1.06
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	3.22	43.85
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	3.22	10.77
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	2.10	1.39
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	2.10	27.68
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	2.10	0.32
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	2.10	0.29
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	2.10	0.25
University / College	550	Students	0.21			0.21	4.20	50%	2.10	2.10	0.44
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	3.78	19.55
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	3.78	4.91
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	3.78	0.83
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	5.46	7.64
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	5.46	8.14
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	5.46	20.31
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	5.46	9.45
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	5.46	8.19
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	3.22	6.53
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	3.22	10.96
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.60	3.53
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	3.22	6.78
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	3.22	10.00
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.60	4.19
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	3.22	11.64
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	2.40	41.48
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	2.40	14.90
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	2.40	10.04
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	3.22	11.38
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	3.22	8.55
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	3.22	5.53
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	3.22	14.15
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	3.22	7.97
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	3.22	21.51
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	3.22	11.22
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	1.70	33.71
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	1.70	41.09

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

EXHIBIT 2

Table 9.J. Service Area J - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - J	Veh-Mi Per Dev-Unit SA - J
										6.00	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	5.01	32.82
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	5.01	4.91
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	5.01	3.41
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	5.01	4.31
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	5.42	3.19
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	5.42	1.41
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	6.00	6.06
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	6.00	3.72
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	6.00	3.12
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	6.00	3.54
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	6.00	1.32
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	3.22	1.90
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	3.22	1.51
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	3.22	4.02
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	3.22	0.96
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	3.22	5.27
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	3.22	7.59
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	3.22	1.06
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	3.22	43.85
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	3.22	10.77
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	2.10	1.39
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	2.10	27.68
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	2.10	0.32
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	2.10	0.29
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	2.10	0.25
University / College	550	Students	0.21			0.21	4.20	50%	2.10	2.10	0.44
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	3.78	19.55
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	3.78	4.91
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	3.78	0.83
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	5.46	7.64
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	5.46	8.14
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	5.46	20.31
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	5.46	9.45
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	5.46	8.19
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	3.22	6.53
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	3.22	10.96
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.60	3.53
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	3.22	6.78
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	3.22	10.00
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.60	4.19
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	3.22	11.64
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	2.40	41.48
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	2.40	14.90
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	2.40	10.04
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	3.22	11.38
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	3.22	8.55
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	3.22	5.53
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	3.22	14.15
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	3.22	7.97
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	3.22	21.51
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	3.22	11.22
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	1.70	33.71
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	1.70	41.09

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

Table 9.K. Service Area K - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - K	Veh-Mi Per Dev-Unit SA - K
										5.30	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	5.01	32.82
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	5.01	4.91
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	5.01	3.41
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	5.01	4.31
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	5.30	3.13
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	5.30	1.38
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	5.30	5.35
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	5.30	3.29
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	5.30	2.76
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	5.30	3.13
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	5.30	1.17
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	3.22	1.90
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	3.22	1.51
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	3.22	4.02
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	3.22	0.96
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	3.22	5.27
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	3.22	7.59
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	3.22	1.06
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	3.22	43.85
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	3.22	10.77
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	2.10	1.39
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	2.10	27.68
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	2.10	0.32
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	2.10	0.29
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	2.10	0.25
University / College	550	Students	0.21			0.21	4.20	50%	2.10	2.10	0.44
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	3.78	19.55
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	3.78	4.91
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	3.78	0.83
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	5.30	7.42
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	5.30	7.90
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	5.30	19.72
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	5.30	9.17
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	5.30	7.95
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	3.22	6.53
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	3.22	10.96
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.60	3.53
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	3.22	6.78
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	3.22	10.00
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.60	4.19
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	3.22	11.64
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	2.40	41.48
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	2.40	14.90
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	2.40	10.04
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	3.22	11.38
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	3.22	8.55
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	3.22	5.53
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	3.22	14.15
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	3.22	7.97
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	3.22	21.51
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	3.22	11.22
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	1.70	33.71
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	1.70	41.09

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

EXHIBIT 2

Table 9.L. Service Area L - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - L	Veh-Mi Per Dev-Unit SA - L
										3.50	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	3.50	22.93
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	3.50	3.43
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	3.50	2.38
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	3.50	3.01
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	3.50	2.07
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	3.50	0.91
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	3.50	3.54
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	3.50	2.17
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	3.50	1.82
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	3.50	2.07
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	3.50	0.77
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	3.22	1.90
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	3.22	1.51
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	3.22	4.02
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	3.22	0.96
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	3.22	5.27
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	3.22	7.59
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	3.22	1.06
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	3.22	43.85
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	3.22	10.77
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	2.10	1.39
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	2.10	27.68
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	2.10	0.32
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	2.10	0.29
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	2.10	0.25
University / College	550	Students	0.21			0.21	4.20	50%	2.10	2.10	0.44
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	3.50	18.13
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	3.50	4.55
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	3.50	0.77
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	3.50	4.90
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	3.50	5.22
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	3.50	13.02
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	3.50	6.06
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	3.50	5.25
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	3.22	6.53
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	3.22	10.96
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.60	3.53
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	3.22	6.78
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	3.22	10.00
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.60	4.19
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	3.22	11.64
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	2.40	41.48
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	2.40	14.90
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	2.40	10.04
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	3.22	11.38
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	3.22	8.55
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	3.22	5.53
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	3.22	14.15
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	3.22	7.97
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	3.22	21.51
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	3.22	11.22
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	1.70	33.71
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	1.70	41.09

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

EXHIBIT 2

Table 9.M. Service Area M - Land Use / Vehicle-Mile Equivalency Table

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	NCTCOG Trip Length (mi)	Adj. For O-D	Adj. Trip Length (mi)	Max Trip Length (mi) SA - M	Veh-Mi Per Dev-Unit SA - M
										0.00	
PORT AND TERMINAL											
Truck Terminal	030	Acre	6.55			6.55	10.02	50%	5.01	0.00	0.00
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.98			0.98	10.02	50%	5.01	0.00	0.00
General Heavy Industrial	120	1,000 SF GFA	0.68			0.68	10.02	50%	5.01	0.00	0.00
Industrial Park	130	1,000 SF GFA	0.86			0.86	10.02	50%	5.01	0.00	0.00
Warehousing	150	1,000 SF GFA	0.59			0.59	10.83	50%	5.42	0.00	0.00
Mini-Warehouse	151	1,000 SF GFA	0.26			0.26	10.83	50%	5.42	0.00	0.00
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	1.01			1.01	17.21	50%	8.61	0.00	0.00
Apartment/Multi-family	220	Dwelling Unit	0.62			0.62	17.21	50%	8.61	0.00	0.00
Residential Condominium/Townhome	230	Dwelling Unit	0.52			0.52	17.21	50%	8.61	0.00	0.00
Mobile Home Park	240	Dwelling Unit	0.59			0.59	17.21	50%	8.61	0.00	0.00
Assisted Living	254	Dwelling Unit	0.22			0.22	17.21	50%	8.61	0.00	0.00
LODGING											
Hotel	310	Room	0.59			0.59	6.43	50%	3.22	0.00	0.00
Motel / Other Lodging Facilities	320	Room	0.47			0.47	6.43	50%	3.22	0.00	0.00
RECREATIONAL											
Driving Range	432	Tee	1.25			1.25	6.43	50%	3.22	0.00	0.00
Golf Course	430	Acre	0.30			0.30	6.43	50%	3.22	0.00	0.00
Health/Rec. Clubs and Facilities	495	1,000 SF GFA	1.64			1.64	6.43	50%	3.22	0.00	0.00
Ice Rink	465	1,000 SF GFA	2.36			2.36	6.43	50%	3.22	0.00	0.00
Miniature Golf	431	Hole	0.33			0.33	6.43	50%	3.22	0.00	0.00
Multiplex Movie Theater	445	Screens	13.64			13.64	6.43	50%	3.22	0.00	0.00
Racquet / Tennis Club	491	Court	3.35			3.35	6.43	50%	3.22	0.00	0.00
INSTITUTIONAL											
Church	560	1,000 SF GFA	0.66			0.66	4.20	50%	2.10	0.00	0.00
Day Care Center	565	1,000 SF GFA	13.18			13.18	4.20	50%	2.10	0.00	0.00
Primary/Middle School (1-8)	522	Students	0.15			0.15	4.20	50%	2.10	0.00	0.00
High School (9-12)	530	Students	0.14			0.14	4.20	50%	2.10	0.00	0.00
Jr / Community College	540	Students	0.12			0.12	4.20	50%	2.10	0.00	0.00
University / College	550	Students	0.21			0.21	4.20	50%	2.10	0.00	0.00
MEDICAL											
Clinic	630	1,000 SF GFA	5.18			5.18	7.55	50%	3.78	0.00	0.00
Hospital	610	Beds	1.30			1.30	7.55	50%	3.78	0.00	0.00
Nursing Home	620	Beds	0.22			0.22	7.55	50%	3.78	0.00	0.00
OFFICE											
Corporate Headquarters Building	714	1,000 SF GFA	1.40			1.40	10.92	50%	5.46	0.00	0.00
General Office Building	710	1,000 SF GFA	1.49			1.49	10.92	50%	5.46	0.00	0.00
Medical/Dental Office	720	1,000 SF GFA	3.72			3.72	10.92	50%	5.46	0.00	0.00
Single Tenant Office Building	715	1,000 SF GFA	1.73			1.73	10.92	50%	5.46	0.00	0.00
Office/Business Park	750	1,000 SF GFA	1.50			1.50	10.92	50%	5.46	0.00	0.00
COMMERCIAL											
Automobile Related											
Automobile Care Center	942	1,000 SF GFA	3.38	40%	B	2.03	6.43	50%	3.22	0.00	0.00
Automobile Parts Sales	843	1,000 SF GFA	5.98	43%	A	3.41	6.43	50%	3.22	0.00	0.00
Gasoline/Service Station w/ Conv Market	945	Fueling Position	13.38	56%	B	5.89	1.20	50%	0.60	0.00	0.00
New and Used Car Sales	841	1,000 SF GFA	2.64	20%	B	2.11	6.43	50%	3.22	0.00	0.00
Quick Lubrication Vehicle Center	941	Service Position	5.19	40%	B	3.11	6.43	50%	3.22	0.00	0.00
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.00	0.00
Automated Car Wash	948	1,000 SF GFA	11.64	40%	B	6.98	1.20	50%	0.60	0.00	0.00
Tire Store	848	1,000 SF GFA	5.03	28%	A	3.62	6.43	50%	3.22	0.00	0.00
Dining											
Fast Food Restaurant	934	1,000 SF GFA	34.64	50%	A	17.32	4.79	50%	2.40	0.00	0.00
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	10.92	43%	A	6.22	4.79	50%	2.40	0.00	0.00
Sit Down Restaurant	931	1,000 SF GFA	7.49	44%	A	4.19	4.79	50%	2.40	0.00	0.00
Other Retail											
Free-Standing Retail Store	815	1,000 SF GFA	5.06	30%	C	3.54	6.43	50%	3.22	0.00	0.00
Garden Center (Nursery)	817	1,000 SF GFA	3.80	30%	B	2.66	6.43	50%	3.22	0.00	0.00
Home Improvement Superstore	862	1,000 SF GFA	2.45	30%	B	1.72	6.43	50%	3.22	0.00	0.00
Pharmacy/Drugstore	881	1,000 SF GFA	8.62	49%	A	4.40	6.43	50%	3.22	0.00	0.00
Shopping Center	820	1,000 SF GFA	3.75	34%	A	2.48	6.43	50%	3.22	0.00	0.00
Supermarket	850	1,000 SF GFA	10.45	36%	A	6.69	6.43	50%	3.22	0.00	0.00
Toy/Children's Superstore	864	1,000 SF GFA	4.99	30%	B	3.49	6.43	50%	3.22	0.00	0.00
SERVICES											
Bank (Walk-In)	911	1,000 SF GFA	33.15	40%	B	19.89	3.39	50%	1.70	0.00	0.00
Bank (Drive In)	912	1,000 SF GFA	45.74	47%	A	24.24	3.39	50%	1.70	0.00	0.00

Key to Sources of Pass-by Rates:

A: October 1998 ITE Trip Generation handbook

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

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

Table 10. Land Use Descriptions

Land Use Category	ITE Land Use Code	Land Use Description
PORT AND TERMINAL		
Truck Terminal	030	Point of good transfer between trucks, between trucks and rail, or between trucks and ports.
INDUSTRIAL		
General Light Industrial	110	Emphasis on activities other than manufacturing with minimal office space; typically employing fewer than 500 workers
General Heavy Industrial	120	Primary activity is conversion of raw materials or parts into finished products; high number of employees per industrial plant
Industrial Park	130	Area containing a number of industries or related facilities
Warehousing	150	Devoted to storage of materials but may included office and maintenance areas
Mini-Warehouse	151	Facilities with a number of units rented to others for the storage of goods; typically refered to as "self-storage" facilities.
RESIDENTIAL		
Single-Family Detached Housing	210	Single-family detached homes on individual lots
Apartment/Multi-family	220	At least 3 rental dwelling units per building
Residential Condominium/Townhome	230	Single-family ownership units that have at least one other single-family owned unit within the same building
Mobile Home Park	240	Typically installed on permanent foundations; may have community facilities (e.g. swimming pools, laundry)
Assisted Living	254	Residential settings that provide either routine general protective oversight or assistance with activities.
LODGING		
Hotel	310	Lodging facilities that typically have on-site restaurants, lounges, meeting and/or banquet rooms, or other retail shops and services
Motel / Other Lodging Facilities	320	Lodging facilities that provide sleeping accomodations and often a restaurant. They provide little or no meeting space and few services.
RECREATIONAL		
Driving Range	432	Facilities with driving tees for practice; may provide individual or group lessons; may have prop shop and/or refreshment facilities
Golf Course	430	May include municipal courses and private country clubs; may have driving ranges, pro shops, and restaurant/banquet facilities
Health/Rec. Clubs and Facilities	495	Category includes racquet clubs, health/fitness clubs, can include facilities such as YMCA's
Ice Rink	465	Rinks for ice skating and related sports; may contain spectator areas and refreshment facilities
Miniature Golf	431	One or more individual putting courses; category should not be used when part of a larger entertainment center(with batting cages, video game centers, etc)
Multiplex Movie Theater	445	Movie theater with audience seating, minimum of ten screens, lobby, and refreshment area.
Racquet / Tennis Club	491	Indoor or outdoor facilities specifically designed for playing tennis but also may provide facilities as swimming, whirlpools, saunas, etc.
INSTITUTIONAL		
Church	560	Churches and houses of worship
Day Care Center	565	Generally includes facilities for care of pre-school aged children, generally includes classrooms, offices, eating areas, and playgrounds
Primary/Middle School (1-8)	522	
High School (9-12)	530	
Jr / Community College	540	
University / College	550	
MEDICAL		
Clinic	630	Facilities with limited diagnostic and outpatient care, but is unable to provide prolonged in-house medical and surgical
Hospital	610	Medical and surgical facilities with overnight accommodations
Nursing Home	620	Primary function is to care for persons who are unable to care for themselves. Rest and convalescent homes with residents who do little or no driving
OFFICE		
Corporate Headquarters Building	714	Office building housing corporate headquarters of a single company or organization
General Office Building	710	Office buildings which house multiple tenants
Medical/Dental Office	720	Multi-tenant building with offices for physicians and/or dentists
Single Tenant Office Building	715	Single tenant office buildings other than corporate headquarters
Office/Business Park	750	Office buildings (typically low-rise) in a campus setting and served by a common roadway system
COMMERCIAL		
Automobile Related		
Automobile Care Center	942	Automobile repair and servicing including stereo installations and upholstering
Automobile Parts Sales	843	Retail sale of auto parts but no on-site vehicle repair
Gasoline/Service Station w/ Conv Market	945	Gasoline sales with convenience store where the primary business is gasoline sales
New and Used Car Sales	841	New car dealerships, typically with automobile servicing, part sales, and used car sales
Quick Lubrication Vehicle Center	941	Primary business is to perform oil changes and fluid/filter changes with other repair services not provided
Self-Service Car Wash	947	Has stalls for driver to park and wash the vehicle
Automated Car Wash	948	Facilities that allow for the mechanical clean of the exterior of vehicles. Manual cleaning and car detailing may also take place.
Tire Store	848	Primary business is sales and installation of tires; usually do not have large storage or warehouse area
Dining		
Fast Food Restaurant	934	High-turnover fast food restaurant for carry-out and eat-in customers with a drive-thru window or drive-in service.
High Turnover (Sit-Down) Restaurant	932	Restaurants with turnover rates less than one hour; typically includes moderately-priced chain restaurants
Sit Down Restaurant	931	Restaurants with turnover rates of one hour or longer; typically require reservations
Other Retail		
Free-Standing Retail Store	815	Category includes free-standing stores with off-street parking; typically offer a variety of products and services with long store hours
Garden Center (Nursery)	817	Building with a yard of planting or landscape stock; may have office, storage, shipping or greenhouse facilities
Home Improvement Superstore	862	Warehouse-type facilities offering a large variety of products and services including lumber, tool, paint, lighting, and fixtures, among other items.
Pharmacy/Drugstore	881	Includes facilities with and without drive-thru windows
Shopping Center	820	Integrated group of commercial establishments; planning, owned, and managed as a unit
Supermarket	850	Primary business is sale of groceries, food, and household cleaning items; may include photo, pharmacy, video rental, and/or ATM;
Toy/Children's Superstore	864	Businesses specializing in child-oriented merchandise
SERVICES		
Bank (Walk-In)	911	Bank without drive-thru lanes
Bank (Drive In)	912	Bank with drive-thru lanes

V. SAMPLE CALCULATIONS

The following section details two (2) examples of maximum assessable roadway impact fee calculations.

Example 1:

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

Roadway Impact Fee Calculation Steps – Example 1	
Step 1	**Determine Development Unit and Vehicle-Miles Per Development Unit**
	From Table 9 [Land Use – Vehicle-mile Equivalency Table] Development Type: 1 Dwelling Unit of Single-Family Detached Housing Number of Development Units: 1 Dwelling Unit Veh-Mi Per Development Unit: 3.13
Step 2	**Determine Maximum Assessable Impact Fee Per Service Unit**
	From Table 8, Line 20 [Maximum Assessable Fee Per Service Unit] Service Area C: $1,534
Step 3	**Determine Maximum Assessable Impact Fee**
	Impact Fee = # of Development Units * Veh-Mi Per Dev Unit * Max. Fee Per Service Unit Impact Fee = 1 * 3.13* $1,534 Maximum Assessable Impact Fee = $4,801.42

Example 2:

- **Development Type – 125,000 square foot Home Improvement Superstore in Service Area I**

Roadway Impact Fee Calculation Steps – Example 2	
Step 1	**Determine Development Unit and Vehicle-Miles Per Development Unit**
	From Table 9 [Land Use – Vehicle-mile Equivalency Table] Development Type: 125,000 square feet of Home Improvement Superstore Development Unit: 1,000 square feet of Gross Floor Area Veh-Mi Per Development Unit: 5.53
Step 2	**Determine Maximum Assessable Impact Fee Per Service Unit**
	From Table 8, Line 20 [Maximum Assessable Fee Per Service Unit] Service Area I: $641
Step 3	**Determine Maximum Assessable Impact Fee**
	Impact Fee = # of Development Units * Veh-Mi Per Dev Unit * Max. Fee Per Service Unit Impact Fee = 125 * 5.53 * $641 Maximum Assessable Impact Fee = $443,091.25

VI. CONCLUSION

The City of McKinney has established a process to implement the assessment and collection of roadway impact fees through the adoption of an impact fee ordinance that is consistent with Chapter 395 of the Texas Local Government Code.

This report establishes the maximum allowable roadway impact fee that could be assessed by the City of McKinney within each of the thirteen (13) service areas. The maximum assessable roadway impact fees calculated in this report are presented in **Table 8.**

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

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

APPENDICES

A. CONCEPTUAL LEVEL PROJECT COST PROJECTIONS

SERVICE AREA A
SERVICE AREA B
SERVICE AREA C
SERVICE AREA D
SERVICE AREA E
SERVICE AREA G
SERVICE AREA H
SERVICE AREA I
SERVICE AREA J
SERVICE AREA K
SERVICE AREA L

B. RIP SERVICE UNITS OF SUPPLY

C. EXISTING ROADWAY FACILITIES INVENTORY

D. PLAN FOR AWARDING THE ROADWAY IMPACT FEE CREDIT SUMMARY

E. PLAN FOR AWARDING THE ROADWAY IMPACT FEE CREDIT SUPPORTING EXHIBITS