EL PASO WATER UTILITIES
PUBLIC SERVICE BOARD

December 27, 2013

Mayor and City Council
City of El Paso
300 North Campbell
El Paso, Texas 79901

Dear Mayor and City Council:

On March 24, 2009, City Council approved a resolution adopting land use assumptions and a capital improvements plan under which impact fees would be imposed to help finance water and wastewater capital improvements and facility expansion costs attributed to projected new development in three service areas (Northeast, Westside and Eastside). In accordance with Chapter 395 of the Texas Local Government Code, the City must update its land use assumptions and capital improvements plan at least every five years. This initial five-year period began the day City Council adopted the capital improvements plan.

The City Development Department provided you with the proposed revised land use assumptions on December 10, 2013. The next step is to review the capital improvements plan and determine if revisions are needed based on these revised land use assumptions. El Paso Water Utilities (EPWU) staff reviewed the capital improvements plan adopted in 2009 and made revisions accordingly. The proposed revised capital improvements plan is included in the report submitted to you today.

The final step in this five-year update process is to update the impact fees based on the proposed revised land use assumptions and capital improvements plan. The proposed revised impact fees, as calculated by EPWU's consultant, Raftelis Financial Consultants, Incorporated, are also included in the provided report. With the transmittal of this letter, the report will be submitted to the Public Service Board, the Capital Improvements Advisory Committee and the City Plan Commission for their review. At its regularly scheduled meeting on January 7, 2014, City Council will be asked to adopt an order establishing a Public Hearing to review the amendments to the land use assumptions, capital improvements plan and the impact fees.

Should you have any questions regarding the report or update process, please contact Marcela Navarrete, Vice President, at (915) 594-5614.

Sincerely,

John E. Balliew, P.E.
President and CEO

Attachments

Cc: Public Service Board
City Plan Commission
Capital Improvements Advisory Committee

El Paso Water Utilities Public Service Board

Preliminary Report
Water and Wastewater Impact Fees – 2014 Update

December 26, 2013

RAFTELIS
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December 26, 2013

Ms. Marcela Navarrete, CPA
Vice President
Strategic, Financial and Management Services
El Paso Water Utilities-Public Service Board
1154 Hawkins Blvd
El Paso, Texas 79961-0001

Re: *Preliminary* Report – Water and Wastewater Impact Fees, 2014 Update

Dear Ms. Navarrete:

On behalf of Raftelis Financial Consultants, Inc., I am pleased to submit this *Preliminary* Report: *Water and Wastewater Impact Fees – 2014 Update* for consideration by the El Paso Water Utilities-Public Service Board (EWPU-PSB) and the City of El Paso. Our *Preliminary* Report documents the 2014 water and wastewater impact fees developed in accordance with Texas Statutes, Local Government Code, Chapter 395. This *Preliminary* Report is subject to change based on the review and input to be provided by both the City Council and City's Capital Improvement Advisory Committee (CIAC); review expected to be completed in January of 2014 and after which this report will be finalized.

We acknowledge and appreciate the input and direction provided by you, Felipe Lopez, Jr., and David Coronado and specifically, your input in the development of the land use assumptions, service units and the capital improvement plan.

Thank you for this opportunity to again be of service to the EPWU-PSB. Please direct any questions regarding this letter to me at 720.638.8790.

Sincerely,

RAFTELIS FINANCIAL CONSULTANTS, INC.

Richard D. Giardina, CPA
Executive Vice President

TABLE OF CONTENTS

PROJECT OVERVIEW 1
IMPACT FEE METHODOLOGY 2
LAND USE ASSUMPTIONS AND SERVICE UNIT CHARACTERISTICS 2
10-YEAR POPULATION AND SERVICE UNIT PROJECTIONS 4
PROPOSED CAPITAL IMPROVEMENT FACILITIES 5
MAXIMUM IMPACT FEE CALCULATION 5
IMPACT FEE CREDITS 6
IMPACT FEE ASSESSMENT SCHEDULE 7

LIST OF TABLES

Table 1 - Land Use Assumptions 3
Table 2 - Equivalent Service Unit Flows 4
Table 3 - 2024 Population and Service Units 4
Table 4 - Maximum Impact Fee per Service Unit Equivalent 6
Table 5 - Impact Fee Credits per Service Unit Equivalent 7
Table 6 - Northeast Water and Wastewater Impact Fee Assessment Schedule 8
Table 7 - Northeast Impact Fee Comparison Schedule 9
Table 8 - Westside Impact Fee Comparison Schedule 9
Table 9 - Eastside Impact Fee Comparison Schedule 9

LIST OF ATTACHMENTS

Attachment A: Impact Fee Service Area Maps
Attachment B: Land Use Assumptions
Attachment C: Capital Improvements Plan
Attachment D: Capital Improvement Plan Cost Projection
Attachment E: Impact Fee Calculation by Service Area
Attachment F: Maximum Impact Fee Calculation
Attachment G: Impact Fee Credit Calculation
Attachment H: Impact Fee Assessment Schedules

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PROJECT OVERVIEW

El Paso Water Utilities (EPWU) retained Raftelis Financial Consultants, Inc. (RFC) to update the current EPWU Water and Wastewater Impact Fees and to do so in accordance with applicable State law – Texas Statutes, Local Government Code, Chapter 395 (State Impact Fee Statutes).

This report documents the 2014 update of the water and wastewater impact fees and replaces the previous EPWU 2009 Water and Wastewater Impact Fees – Report Addendum[1] (the 2009 Report).

Consistent with the 2009 adopted impact fees, this update determined fees for the same three water and wastewater service areas (Northeast, Westside, and Eastside – referred to as "EPWU service areas"). The EPWU service areas include portions or all of the service areas defined in the 2008 Halff Report[2] and other areas not defined in the Halff Report, as listed below.

Northeast Area

- 01, Northeast Master Plan
- 05A, NW Fort Bliss A
- 05B, NW Fort Bliss B
- 05C, NW Fort Bliss C

Westside Area

- 02, Westside Master Plan
- 03A, Westside
- 03E, I-10/375 1050 Master Plan
- 04A, NW Artcraft A
- 04B, NW Artcraft B
- 04C, NW Artcraft C
- 04D, Westside
- 04E, Westside
- Westside – other areas

Eastside Area

- 08B, Eastside Master Plan
- 12, South Montana
- 12B, South Montana
- 06, South Fort Bliss
- 08, East Battle
- 10B, South Fort Bliss B

[1] Water and Wastewater Impact Fees – Report Addendum, Red Oak Consulting, March 26, 2009
[2] Halff Report, Section 5.7 Annexation Assessment Recommendations, Page 73, September 29, 2008.

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The calculated water and wastewater impact fees would only be charged within the respective EPWU defined service areas. Development outside the EPWU defined areas would not pay an impact fee.

Maps depicting the EPWU service areas are provided in **Attachment A**; the service areas have not changed from those adopted in the 2009 impact fee process**.**

Calculations and results in this memorandum are based on numerical analysis using rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places. Therefore the sums and products generated may not exactly equal the sum or product if the reader replicates the calculation with the factors shown in the memorandum (due to rounding).

IMPACT FEE METHODOLOGY

The impact fee calculations for both water and wastewater service are generally based on the incremental method. Under the incremental method, new customers pay a fee representing their proportionate share of the expansion-related costs of new facilities necessitated by and attributable to new development. The impact fee is calculated using a projected 10-year capital improvement plan (CIP) that includes projects with capacity to serve future development as well as the growth-related facilities that were included in the 2009 Report; facilities that were necessary to serve new development and provided the basis of the existing fees.

To calculate the impact fee per service unit, the value of the expansion or growth-related CIP is divided by the total service units associated with the capacity provided by CIP. This results in a cost per unit. A service unit represents the water and wastewater flows in gallons per day (gpd) for a single family residential or equivalent unit with a water meter size less than 1-inch.

LAND USE ASSUMPTIONS AND SERVICE UNIT CHARACTERISTICS

Impact fees in Texas must meet the requirements of the Texas Statutes, Local Government Code, Chapter 395 (State Impact Fee Statutes). In accordance with the State Impact Fee Statutes, the land use assumptions provided in **Attachment B** were used to arrive at the residential service units (SUs) and population per residential service area shown in Table 1. The average persons per residential unit used is 3.06 persons per household based on County average[3] as shown in the Land Use Assumptions Technical Report: 2014 Update (LUA Update). The LUA Update used data

[3] Land Use Assumptions Technical Report: 2014 Update (Draft) submitted to the Mayor and City Council from the City's Development Department on December 10, 2013, page 11.

obtained from master plans prepared by or on behalf of EPWU, and other sources generally used by EPWU in projecting water and wastewater service demands.

Table 1 - Land Use Assumptions

Service Area	Total Residential Service Units (Build-Out)	Average Household Size Persons/SU	Population per Service Area
Northeast			
01	14,191	3.06	43,424
05A	16,195	3.06	49,556
05B	14,657	3.06	44,850
05C	9,881	3.06	30,234
Westside			
02	5,331	3.06	16,313
03A	344	3.06	1,054
03E	2,850	3.06	8,722
04A	5,727	3.06	17,526
04B	3,041	3.06	9,307
04C	381	3.06	1,165
04D	750	3.06	2,296
04E	1,951	3.06	5,971
Other	3,282	3.06	10,043
Eastside			
08B	17,188	3.06	52,596
12	5,004	3.06	15,313
12B	3,202	3.06	9,798
06	334	3.06	1,022
08	9,496	3.06	29,058
10B.	2,528	3.06	7,736
Total	**116,335**	**3.06**	**355,986**

These land use and demographic assumptions (Table 1) were used to determine residential service units and future capacity requirements. Utility capacity characteristics should also include a commercial and industrial component (and result in a reasonable planning or design criteria) and this is reflected in the use of 3.5 persons per service unit shown in Table 2, as opposed to the 3.06 persons per service unit shown in Table 1.

Utilizing 3.5 persons per service unit, other generally accepted engineering or planning standards (EPWU planning or design criteria), and historical data and trends applicable to EPWU's service area, Table 2 summarizes the water and wastewater flow, or capacity, for an equivalent service unit.

Table 2 - Equivalent Service Unit Flows

Description	Water	Wastewater
Average Usage per Capita (gallons per day - gpd)	115	**70**
Ratio of Maximum Day Demand to Average Day Demand	1.71[1]	**1.39**
Maximum Day Demand per Capita (gpd)	197	**98**
Persons per Service Unit	3.50	**3.50**
Flows per Equivalent Service Unit (gpd)[2]	688	**341**

1. Elevated water storage capacity is calculated based on 50% of Maximum Day Demand.
2. Equivalent service unit flows represent flow to a residential, commercial, or industrial user with a water meter size less than 1-inch.

The flows per service unit (688 and 341 gallons per day for water and wastewater, respectively) are used to calculate the number of facility service units in Attachment E and F.

10-YEAR POPULATION AND SERVICE UNIT PROJECTIONS

When considering future water and wastewater investments, it is difficult to provide an exact matching between population and/or development growth and the necessary capital investment to serve only the expected development within a given timeframe. The timeframe when the additional capacity is fully utilized will depend upon the actual rate of development or growth.

Table 3 presents the population and development units for the water and wastewater impact fee areas under consideration.

Table 3 - 2024 Population and Service Units

Service Area	Developable Acres[1]	Population	Residential Service Units	Non-Residential Service Unit Equivalents	Total Service Units
Northeast	1,464	24,193	7,906	3,500	11,407
Westside	855	22,982	7,511	7,513	15,024
Eastside	2,184	33,059	10,804	2,771	13,575
Total	**4,503**	**80,235**	**26,220**	**13,784**	**40,005**

1. Developable Acres is calculated using the 2024 estimated percent developed acres less the 2014 percent developed acres, multiplied by the total acreage. These values and all other values are obtained from the LUA Update.

PROPOSED CAPITAL IMPROVEMENT FACILITIES

In accordance with the State Impact Fee Statutes, proposed capital improvements were prepared by Felipe Lopez, Jr., P.E., Engineering Division Manager, with the EPWU. Mr. Lopez is a professional engineer licensed to perform professional engineering services in the State of Texas. The capital improvements include facilities necessitated by and attributable to new development within the next 10 years. These same facilities were contained in the EPWU 2009 Impact Fee Report; with the addition of the Jonathan Rogers Water Treatment Plant expansion. Descriptions of the proposed capital improvements are provided in **Attachment C**. The complete list of CIP projects, including capital costs, for each service area is provided in **Attachment D**. CIP capital and financing costs, capacity, facility service units, unit cost of capacity, and weighted average cost of capacity for each service area is provided in **Attachment E**.

MAXIMUM IMPACT FEE CALCULATION

The capital projects identified in EPWU's 10-year CIP will result in capacity in both the water and wastewater systems that will serve development beyond the 10-year planning period. As such, it is necessary to allocate the cost of the growth-related CIP not just to the projected development/population occurring over the 10-year period, but to the total number of new service units that can be served by the planned capacity additions; to do otherwise would overstate the cost or impact fee to those service units developed in the 10-year planning period. It should be noted, however, that although the 10-year CIP serves capacity beyond the 10-year period, it does not provide capacity through ultimate build-out of the service areas.

This approach to determining the impact fee does not rely on estimates of when growth will occur, but assigns the cost of new capacity (provided by the CIP) to all units that will be served by that capacity regardless of when they may occur. The service unit totals (as shown on Table 3), are used in the maximum impact fee calculation, as shown in the following section.

The LUA Update includes new service unit projections for the 10 years ending in 2024 (from Table 3) that are less than the total new service units served by the EPWU planned capacity additions as reported in the 10-year CIP. Therefore, in accordance with the State Impact Fee Statutes, the maximum impact fee per service unit is calculated by dividing the costs of that portion of the CIP necessitated by and attributable to projected new service units by the total projected new service units served by the CIP.

Attachment F lists the cost of capital improvements, financing costs, facility service units, new service units through 2024, the portion of the CIP required through 2024, and the maximum impact fee per unit. Assuming 35 percent debt funding of the CIP, financing costs reflect the net present

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value of interest and transaction costs for a 20-year, five percent loan. Table 4 provides a summary of the maximum impact fee per service unit equivalent.

Table 4 - Maximum Impact Fee per Service Unit Equivalent

Service Area	Projected New Service Units (through 2024)	Maximum Impact Fee per Unit
Northeast		
Water	11,407	$3,561
Wastewater	11,407	538
Total Northeast		$4,099
Westside		
Water	15,024	$1,044
Wastewater	15,024	1,711
Total Westside		$2,755
Eastside		
Water	13,575	$2,809
Wastewater	13,575	1,698
Total Eastside		$4,508

IMPACT FEE CREDITS

In order to establish equity between existing and new customers, impact fee credits for the portion of ad valorem tax and utility service revenues generated by new service units are required by the State Impact Fee Statutes. The Statute provides two options when calculating the credit:

- A credit against the impact fee 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 capital improvements, including the payment of debt, that are included in the capital improvements plan; or

- In the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan.

Since no City of El Paso ad valorem tax revenues will be used to fund EPWU capital improvements or associated debt service, a credit component based on ad valorem tax revenues is not appropriate, nor therefore, required. However, a credit is warranted that recognizes the portion of utility service revenues generated by new service units during the capital improvements program period that might be used for the payment of capital improvements, including the payment of debt, that are included in the CIP upon which the fees are based. The credit recognizes the cost of debt included in the maximum impact fees shown in Table 4 and the applicable service area impact fee determination.

Because utility service revenues are the primary pledge in the repayment of debt, the calculated credit represents an apportionment (to each forecast new service unit) of the utility service revenue projected to be paid by a new service unit that may be used to retire the debt used to finance the growth-related CIP (including principal, the net present value of interest, and issuance costs). Application of a credit determined in this way ensures that a new service unit will not pay twice for the utility capital improvements and related financing costs attributable to that new unit, i.e., once through the impact fee and a second time through utility service revenues.

The impact fee credit was determined to be 11.7 percent for water and 20.3 percent for wastewater. **Attachment G** provides the projection of service units, debt service, and the debt service credit. These values are stated as a percentage of the maximum impact fee per unit as shown in Table 5 on a per-unit equivalent basis.

Table 5 - Impact Fee Credits per Service Unit Equivalent

		Water		Wastewater			Total
Service Area	**Maximum Impact Fee**	**Impact Fee Credit (11.7%)**	**Net Impact Fee**	**Maximum Impact Fee**	**Impact Fee Credit (20.3%)**	**Net Impact Fee**	**Net Impact Fee**
Northeast	$3,561	($416)	$3,145	$538	($109)	$429	$3,574
Westside	$1,044	($122)	$922	$1,711	($347)	$1,364	$2,286
Eastside	$2,809	($328)	$2,481	$1,698	($344)	$1,354	$3,835

Impact fee credits are calculated on a system-wide approach to recognize that utility service revenues, which are used to pay for debt service and for which the credits are included to account for, are generated from system-wide rates. The credits will be applied uniformly across all meter sizes (i.e., the credit is the percent of the maximum impact fee for each meter size).

IMPACT FEE ASSESSMENT SCHEDULE

The impact fee assessment schedule is the result of calculating the net impact fee cost per service unit using the incremental method for a single family service unit equivalent (less than 1-inch meter) using best available information, and scaling-up impact fees for 1-inch and larger meters, regardless of development type. Impact fees for larger meters are the product of the ¾-inch meter and the respective American Water Works Association (AWWA) -"maximum rated safe operating flow, gpm" ratio[4].

[4] *M1 Manual of Supply Practices, Principles of Water Rates, Fees, and Charges*, Sixth Edition, Table VI.2-5, page 274, American Water Works Association. The Meter Capacity Ratio values in Table 6 of this report are

The AWWA meter capacity ratios are based on the rated maximum flow capacity (in gallons per minute) between meters of varying sizes. The meter capacity ratio is used as a proxy to represent the ratio of potential water demand for larger meter sizes to that of a ¾-inch meter, and is therefore used to escalate impact fees for meter sizes of 1-inch and larger. Table 6 summarizes the Northeast service area impact fees based on differing demands as defined by the meter capacity ratio.

Table 6 - Northeast Water and Wastewater Impact Fee Assessment Schedule (Net Fee after Credit)

Meter Size	Meter Capacity Ratio	Water	Wastewater	Total
Less than 1-inch	1.00	$3,145	$429	$3,574
1-inch	1.67	5,252	716	5,969
1½-inch	3.33	10,473	1,429	11,901
2-inch	5.33	16,763	2,287	19,049
3-inch	10.00	31,450	4,290	35,740
4-inch	16.67	52,427	7,151	59,579
6-inch	33.33	104,823	14,299	119,121
8-inch	53.33	167,723	22,879	190,601

A similar schedule of impact fees for all the service areas (Northeast, Eastside, and Westside) is provided in **Attachment H**.

Tables 7, 8 and 9 compare the current and proposed water, wastewater and total impact fees (net fee after the credit) for each service area.

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derived by dividing the Maximum Rated Safe Operating Flow, gpm (flow rate) of the larger meter size by the flow rate for the ¾-inch meter size from Table VI.2-5 of the M1 Manual.

Table 7 - Northeast Impact Fee Comparison Schedule (Net Fee after Credit)

Meter Size	Water		Wastewater		Total		Change in Total Fee	
	Current	Proposed	Current	Proposed	Current	Proposed	$	%
Less than 1-inch	$1,570	$3,145	$388	$429	$1,958	$3,574	$1,616	82.5%
1-inch	2,622	5,252	648	716	3,270	5,969	2,699	82.5%
1½-inch	5,228	10,473	1,292	1,429	6,520	11,901	5,381	82.5%
2-inch	8,368	16,763	2,068	2,287	10,436	19,049	8,613	82.5%
3-inch	15,700	31,450	3,880	4,290	19,580	35,740	16,160	82.5%
4-inch	26,172	52,427	6,468	7,151	32,640	59,579	26,939	82.5%
6-inch	52,328	104,823	12,932	14,299	65,260	119,121	53,861	82.5%
8-inch	83,728	167,723	20,692	22,879	104,420	190,601	86,181	82.5%

Table 8 - Westside Impact Fee Comparison Schedule (Net Fee after Credit)

Meter Size	Water		Wastewater		Total		Change in Total Fee	
	Current	Proposed	Current	Proposed	Current	Proposed	$	%
Less than 1-inch	$879	$922	$1,236	$1,364	$2,115	$2,286	$171	8.1%
1-inch	1,468	1,540	2,064	2,278	3,532	3,818	286	8.1%
1½-inch	2,927	3,070	4,116	4,542	7,043	7,612	569	8.1%
2-inch	4,685	4,914	6,588	7,270	11,273	12,184	911	8.1%
3-inch	8,790	9,220	12,360	13,640	21,150	22,860	1,710	8.1%
4-inch	14,653	15,370	20,604	22,738	35,257	38,108	2,851	8.1%
6-inch	29,297	30,730	41,196	45,462	70,493	76,192	5,699	8.1%
8-inch	46,877	49,170	65,916	72,742	112,793	121,912	9,119	8.1%

Table 9 - Eastside Impact Fee Comparison Schedule (Net Fee after Credit)

Meter Size	Water		Wastewater		Total		Change in Total Fee	
	Current	Proposed	Current	Proposed	Current	Proposed	$	%
Less than 1-inch	$929	$2,481	$1,227	$1,354	$2,156	$3,835	$1,679	77.9%
1-inch	1,551	4,143	2,049	2,261	3,601	6,404	2,804	77.9%
1½-inch	3,094	8,262	4,086	4,509	7,179	12,771	5,591	77.9%
2-inch	4,952	13,224	6,540	7,217	11,491	20,441	8,949	77.9%
3-inch	9,290	24,810	12,270	13,540	21,560	38,350	16,790	77.9%
4-inch	15,486	41,358	20,454	22,571	35,941	63,929	27,989	77.9%
6-inch	30,964	82,692	40,896	45,129	71,859	127,821	55,961	77.9%
8-inch	49,544	132,312	65,436	72,209	114,979	204,521	89,541	77.9%

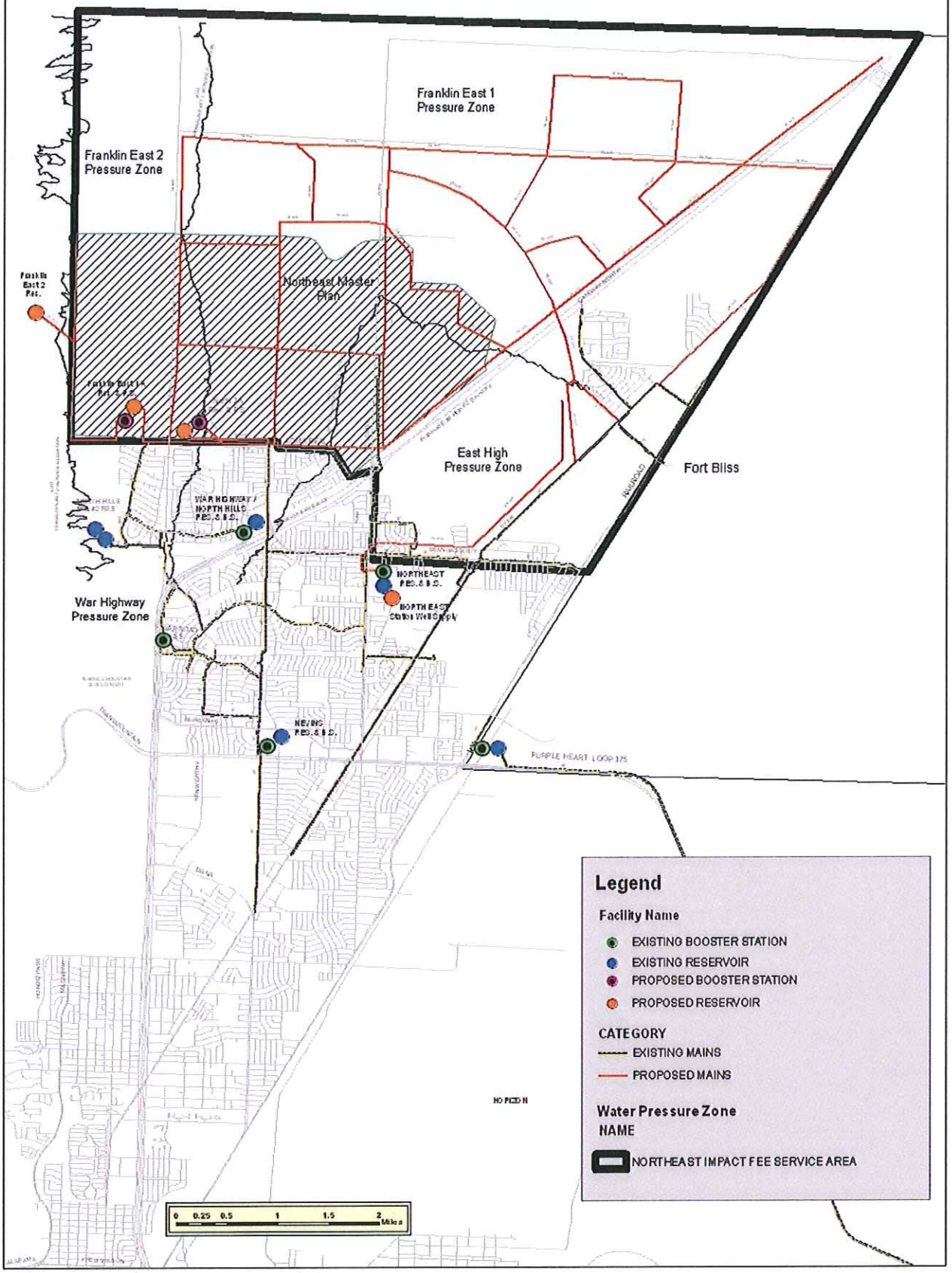
ATTACHMENTS

Attachment A

Impact Fee Service Area Maps

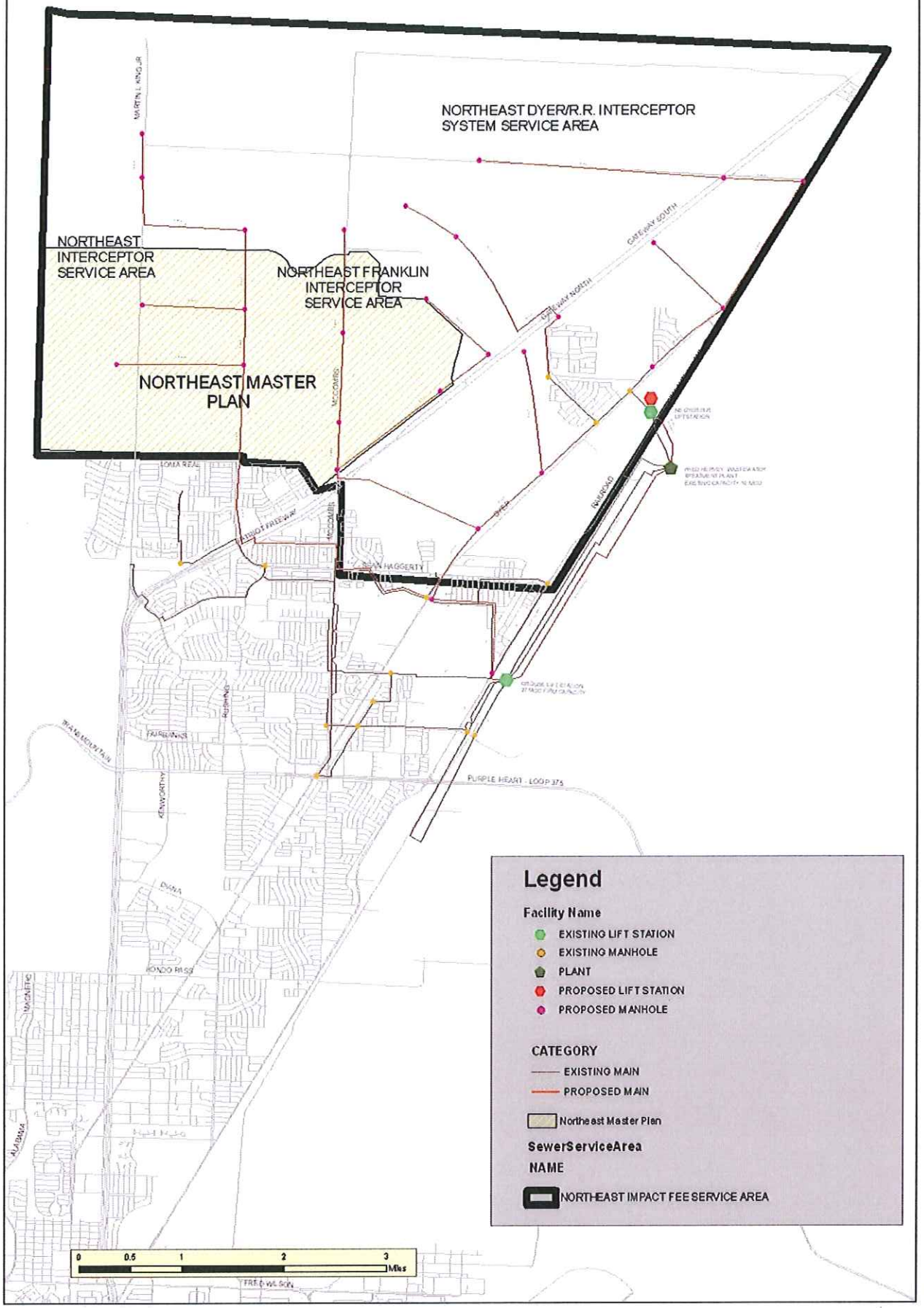
Attachment A

NORTHEAST WATER IMPACT FEE SERVICE AREA MAP



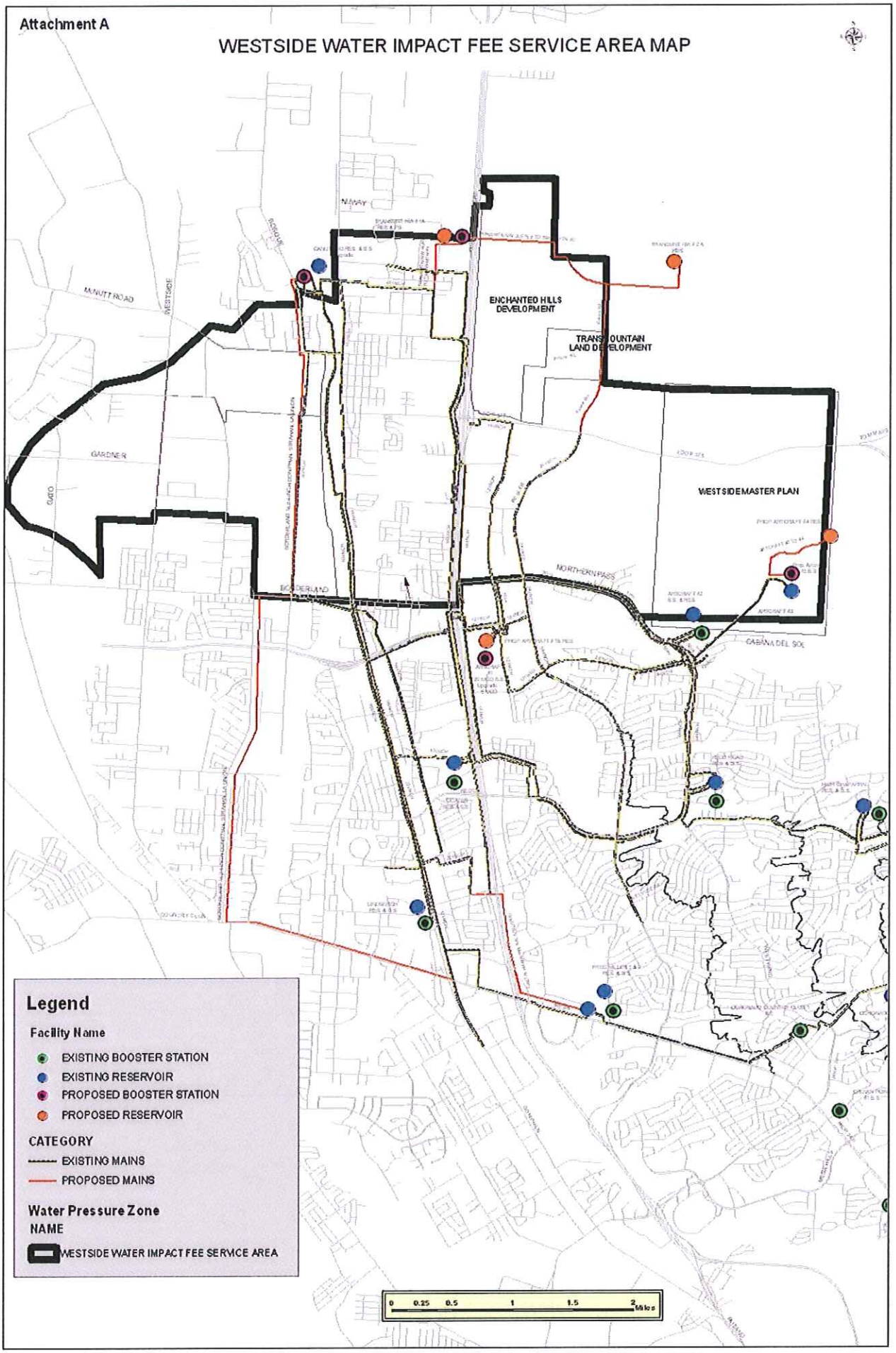
Attachment A

NORTHEAST SEWER IMPACT FEE SERVICE AREA MAP



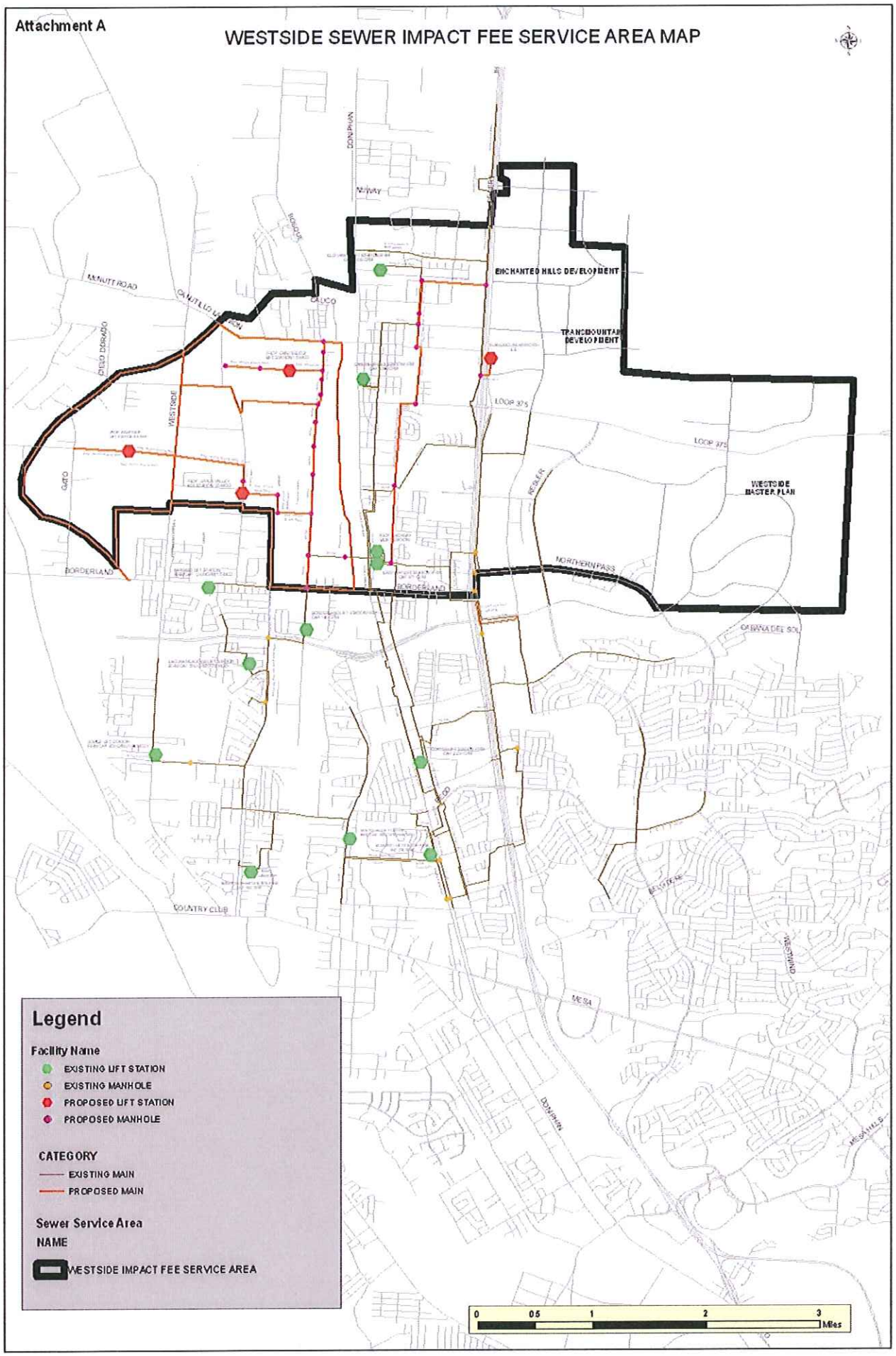
Attachment A

WESTSIDE WATER IMPACT FEE SERVICE AREA MAP



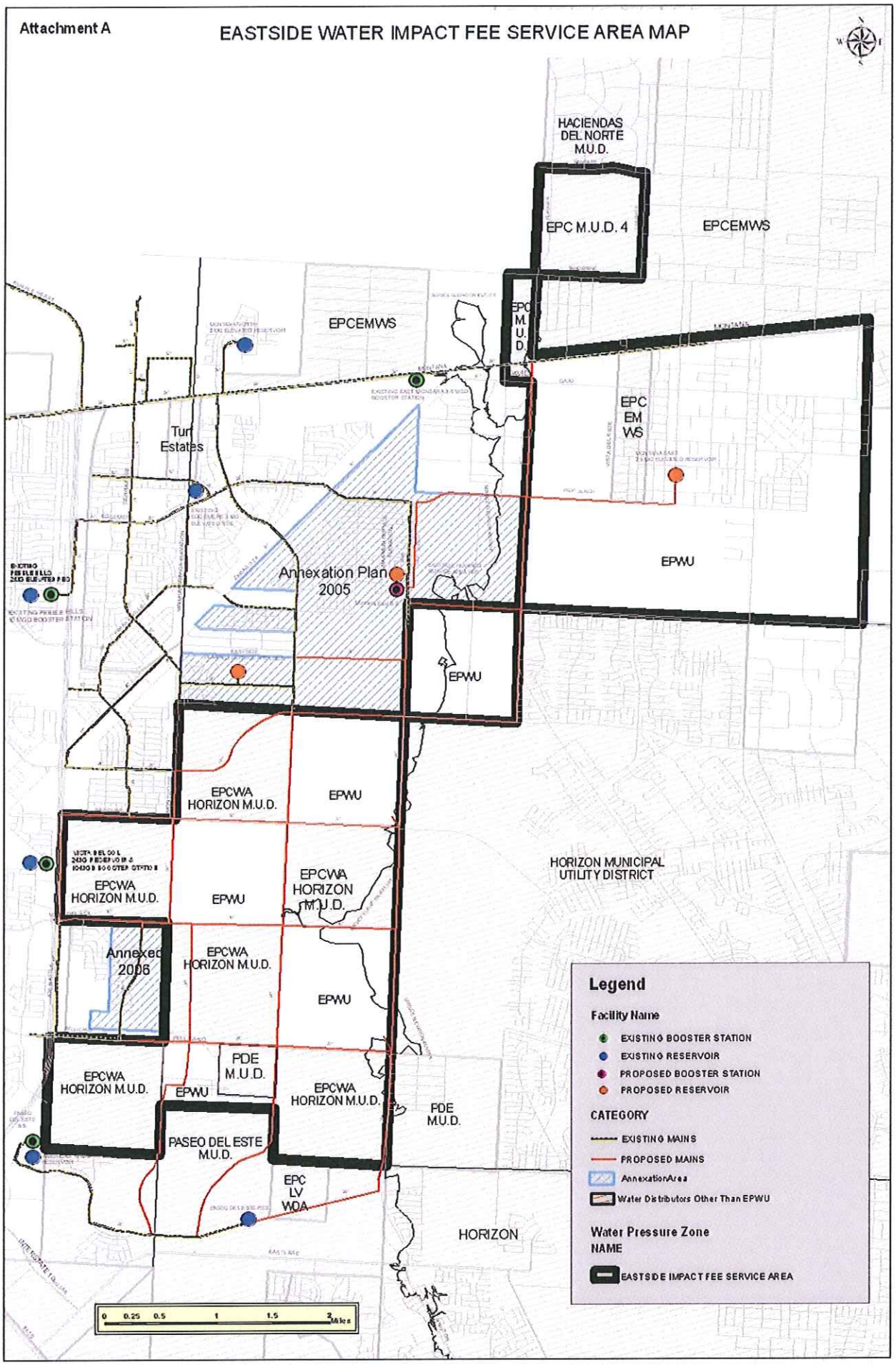
Attachment A

WESTSIDE SEWER IMPACT FEE SERVICE AREA MAP



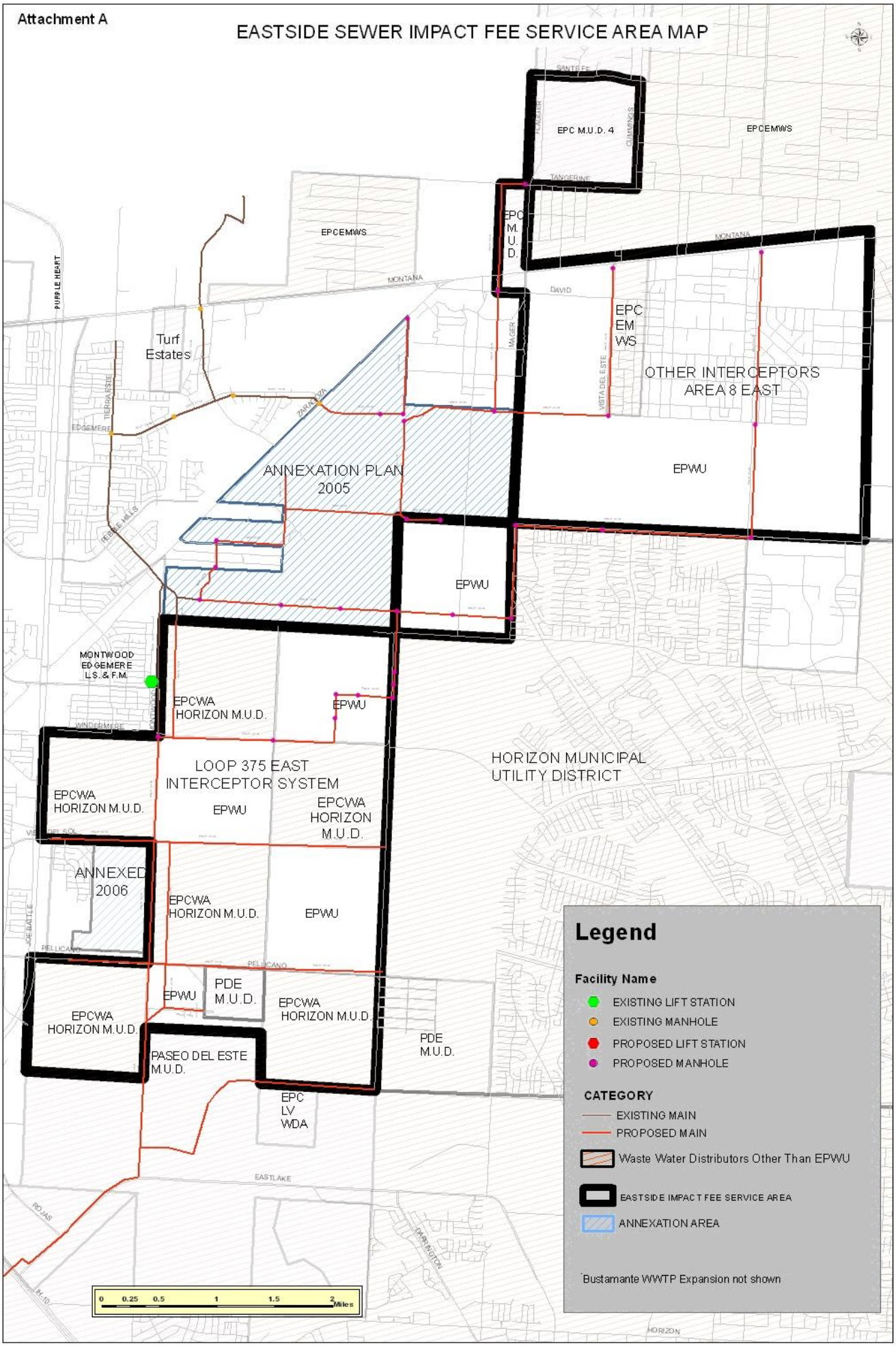
Attachment A

EASTSIDE WATER IMPACT FEE SERVICE AREA MAP



Attachment A

EASTSIDE SEWER IMPACT FEE SERVICE AREA MAP



ATTACHMENTS

Attachment B

Land Use Assumptions

ATTACHMENT B
Water and Wastewater Impact Fee Study
Land Use Assumptions

Service Area	Total Acreage	Non-Residential										Conventional Residential					SmartCode Residential					Context Zones Residential				RMU Residential						GMU Residential				
		Transportation	Commercial	Industrial	Mixed Use	Parkland	Floodplain	Open	Agriculture	Undeveloped	Institutional/Utilities	Low	Medium	Medium-High	High	Total	T-3	T-4	T-4O	T-5	Total	C-3	C-4	C-5	Total	Single Family	Duplex	Triplex	Quadraplex	Apartments	Total	Low	Low'	Medium	High	Total
Northeast																																				
01 Northeast MP	4,835	818	391			264		760		20	227					0					0	81	81	15	177						0	380	1,279	299	220	####
05A Northwest Fort Bliss A	4,812	321	13			38		288			674		3,028	229	51	3,309					0	7			7						0	93	70			162
05B Northwest Fort Bliss B	4,929	524	258	1,371		36		460			61		197	1,778	62	2,037	54	93	9	27	183				0						0					0
05C Northwest Fort Bliss C	4,520	148		317	0	23		51			1,788		2,191		2	2,193					0				0						0					0
Northeast Subtotal	**19,095**	**1,811**	**661**	**1,688**	**0**	**362**	**0**	**1,558**	**0**	**20**	**2,750**	**0**	**5,417**	**2,007**	**115**	**7,539**	**54**	**93**	**9**	**27**	**183**	**88**	**81**	**15**	**184**	**0**	**0**	**0**		**0**	**0**	**472**	**1,349**	**299**	**220**	**####
Westside																																				
02 Westside MP	1,589	196	76			92		858								0	99	170	40	58	367				0						0					0
03A Northwest Vinton A	294	22	145								51		77			77					0				0						0					0
03E I-10375 MP	1,132	126	206			78	66	30			32		489			489					0				0	70	10	3	3	17	105					0
04A Northwest Artcraft A	1,639	75				4		142		144			1,273			1,273					0				0						0					0
04B Northwest Artcraft B	807	41	37			12		25			16		676			676					0				0						0					0
04C Northwest Artcraft C	159	5		27		2				41	3		80		2	82					0				0						0					0
04D Northwest Artcraft D	218	25	11							25			147		10	157					0				0						0					0
04E Canutillo	801	133	131	39				11	1	39	48		349	21	28	398					0				0						0					0
Other	2,348	301	826	319							201		656	24	21	701					0				0						0					0
Westside Subtotal	**8,986**	**923**	**1,433**	**385**	**0**	**188**	**66**	**1,066**	**1**	**249**	**350**	**0**	**3,747**	**45**	**61**	**3,853**	**99**	**170**	**40**	**58**	**367**	**0**	**0**	**0**	**0**	**70**	**10**	**3**		**17**	**105**	**0**	**0**	**0**	**0**	**0**
Eastside																																				
08B Eastside MP	4,826	385	224	461	0	239		151			448		245	2,661	13	2,919					0				0						0					0
12 South Montana	2,919	331	230	155						220	162	1,401	350		70	1,821					0				0						0					0
12B South Montana B	785	26		108						13		4	413	215	5	638					0				0						0					0
06 South Fort Bliss	118	3		41									74			74					0				0						0					0
08 East Battle	2,826	161	29			2				766	48		947	872		1,820					0				0						0					0
10B South Floor Bliss B	538	21											471		45	517					0				0						0					0
Eastside Subtotal	**12,013**	**927**	**483**	**765**	**0**	**241**	**0**	**151**	**0**	**1,000**	**658**	**1,405**	**2,502**	**3,748**	**133**	**7,788**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total	**40,094**	**3,661**	**2,577**	**2,837**	**0**	**791**	**66**	**2,776**	**1**	**1,270**	**3,758**	**1,405**	**11,666**	**5,799**	**309**	**19,179**	**153**	**263**	**49**	**84**	**550**	**88**	**81**	**15**	**184**	**70**	**10**	**3**		**17**	**105**	**472**	**1,349**	**299**	**220**	**####

ATTACHMENT B (continued)
Water and Wastewater Impact Fee Study
Land Use Assumptions

Residential Land Use Densities and Development Characteristics	
Residential Land Use Type	Maximum Dwelling Units per Acre
Low Density	2
Medium Density	4.5
Medium High Density	6
High Density	9

SmartCode Densities by Right	
Transect Zone	Base Residential Units per Acre
T-3 Sub-Urban Zone	6
T-4 General Urban Zone	15
T-4O General Urban Zone - Ope	20
T-5 Urban Center Zone	24

Context Densities	
Context Zone	Residential Units per Acre
Context Zone 3	3.6
Context Zone 4	6.4
Context Zone 5	15.034

Non-Residential Densities	
Land Use	Service Units per Acre
Commercial	7.25
Industrial	7.25

GMU Densities	
Residential Land Use Type	Service Units per Acre
Low	3.5
Low'	5.5
Medium	7.2
High	12

RMU Densities	
Residential Land Use Type	Service Units per Acre
Single Family	4
Duplex	6
Triplex	8
Quadraplex	10
Apartments	14

ATTACHMENTS

Attachment C

Capital Improvements Plan

EL PASO WATER UTILITIES
PUBLIC SERVICE BOARD

INTEROFFICE MEMORANDUM

To: Richard D. Giardina
Raftelis Financial Consultants, Inc.
Executive Vice President

Date: December 27, 2013

Copy: Marcela Navarrete, C.P.A.
El Paso Water Utilities
Vice President of Strategic, Financial and Management Services

From: Felipe Lopez, Jr., P.E.
El Paso Water Utilities
Utility Engineering Division Manager.
Engineering Services

Re: **Water and Wastewater Future Capital Improvements**

In preparation of the El Paso Water Utilities Impact Fee Study, and in accordance with the Texas State Statues, Local Government Code, Chapter 395, attached please find a description of the future capital improvements for the El Paso Water Utilities.

Attachment C contains a description of the future 10-year capital improvements and facility expansions necessitated by and attributed to new development based on the proposed service areas.

Attachment D contains a list of the proposed 10-year capital improvements and facility expansions, and costs necessitated by and attributed to new development based on the proposed services areas.

We trust that this information provides the capital improvements and costs required to complete the Impact Fee Study and meet the letter and intent of the Texas State Statues.

Please feel free to contact me with any questions.

Attachments: 2

STATE OF TEXAS
FELIPE LOPEZ JR.
89824
LICENSED
PROFESSIONAL ENGINEER

12/27/13

ATTACHMENT C
El Paso Water Utilities-Public Service Board
Water and Wastewater Impact Fee Study
Description of Capital Improvement Facilities

Associated Water

WATER SUPPLY AND TREATMENT SYSTEM

JONATHAN ROGERS EXPANSION – The efforts by EPWU to continually acquire new rights to water and to meet growth in the eastside and northeast have led to the situation where a plant expansion is needed to be able to take the additional water. This item is for a 20 MGD expansion of the existing plant.

RESERVOIRS

NORTH 2 TANK #2A – This projects consists of constructing two elevated water storage tanks that will meet demand of growth in the East High Pressure Zone as also provide suction storage for North 2 Pumping Station; which will pump water in to the Franklin East 1 Pressure Zone. The proposed tanks will be elevated tanks with an overflow elevation of 4138 ft. Water supply to the North 2 tanks will be provided by the Northeast Pumping Station via a transmission main that will extends parallel to US 54. Furthermore, the North 2 tank site will also accommodate a pumping station that will ultimately transfer 22.3 MGD to the Franklin East #1 Pressure Zone. Initial pumping capacity of the North 2 Pumping Station is 11 MGD.

FRANKLIN EAST #1A - A 2.5 MG Reservoir and a 3 MG future reservoir to serve the Franklin East I Pressure Zone, North of the Future Land development and west of US54. These Reservoirs are needed to meet future growth development of the lower reaches of the areas east of War Highway and to the State line.

TRANSMOUNTAIN NORTHWEST #1A – Two proposed (4 MG & 4 MG) tanks north of Transmountain on the Westside, at the same overflow elevation of Artcraft No. 1, to meet growth.

TRANSMOUNTAIN NORTHWEST #2A – Two proposed (3 MG & 3 MG) tanks north of Transmountain on the Westside, at the same overflow elevation of Artcraft No. 2, to meet growth.

EASTSIDE PLANNED SERVICE AREA (PSA) - New reservoirs to serve areas east of Loop 375. Future projects include the Tierra Del Este (Ranchos Real) 2 MG and Ventanas 2 MG new elevated tanks.

ARTCRAFT NO. 4 RESERVOIR – A 2 MG ground storage tank located on the west foothills of the Franklin Mountains, to serve future development in the upper service areas east of I-10 near Transmountain Road.

FRANKLIN EAST #2 – A 3 MG storage reservoir to be located in the upper reaches of the Franklin Mountains in NE El Paso. This structure will provide service to the Franklin East 2 Pressure Zone and future growth between the eastern foothills of the mountain and War Highway (Martin Luther King Blvd.).

ATTACHMENT C
El Paso Water Utilities-Public Service Board
Water and Wastewater Impact Fee Study
Description of Capital Improvement Facilities

NORTHEAST STATION WELL SUPPLY TANK (I.F.) – A new 2 MG ground storage supply tank in Northeast El Paso, at the intersection of Sean Haggerty Drive and McCombs Blvd., adjacent to the Northeast Booster Station. This tank is needed to augment the existing storage capacity of the Northeast Well production system, and to accommodate future supply from the Sherman Well Field. This storage tank will also allow for additional pumping capacity to be installed at the Northeast Booster Station for pumping into the Northeast (East High) Pressure Zone and upper zone pumping, related future growth and current peak demands.

MONTANA EAST – A series of storage facilities have been conceptually planned to provide service outside the city to about 12 square miles of potential development along north and south of the Montana Ave. corridor, extending about 8 miles east of Loop 375. These areas include Hillcrest Estates, Vista Del Este, various properties owned by the People of Texas, and other private developers. Service to these areas would be contingent on agreements by those owners with the City to be annexed into the City. EPWU's long range plan projects a multi-year three phase approach to extend pipelines, construct elevated storage tanks (3 totaling 6.5 MG), and one pump station (15 MGD Phase I plus additional 10 MGD Phase 2) to supply these areas.

DISTRIBUTION PUMPING EQUIPMENT

ARTCRAFT #1 – A 20 MGD pumping station located at Northwestern and Paseo Del Norte (Artcraft Rd) in Northwest El Paso, was completed in late 2002 and will supply Artcraft #2 Reservoir. An additional 5 MGD will be added under this project to meet future demands.

SUNSET PUMP STATION – The new Sunset Pumping Station will be a two component pump station. The existing pumping station will be replaced with a new pump station which will include larger pumps and discharge header. This pumping station will continue to meet the West High Pressure Zones' Year 2015 peak summer day water demand. The second component is a new pump station that will transfer treated surface water from the Canal Plant to the Upper Valley Pressure Zone. The pumping station will transfer 16.4 MGD as indicated in the 2004 Distribution Modeling System Report to optimize treated surface water and meet demand associated to growth.

NORTH 2 PUMP STATION – Initial 11.8 MGD to future 22.3 MGD pump station at the North 2 Tank site to meet future summer peak-day demands in the Franklin East Pressure Zones #1

TRANSMOUNTAIN NORTHWEST #1 PUMP STATION - Proposed pump station north of Transmountain on the Westside, to pump from Transmountain #1 Reservoir to Transmountain #2 Reservoir, to meet growth.

ARTCRAFT #3 PUMP STATION (I.F.) – A 3.0 MGD pumping station in Northwest El Paso will supply Artcraft #4 reservoir.

FRANKLIN EAST #1 PUMP STATION – A new 4.75 MGD pump station to be located west of Martin Luther King Blvd near the North Hills Subdivisions which will provide pumping

supply from the Franklin East #1A and #1B Reservoirs to the Franklin East #2 Reservoir and associated Pressure Zone, and to supply future development.

MONTANA EAST (3 MGD) - Pump Stations have been conceptually planned to provide service outside the city to about 12-square miles of potential development along north and south of the Montana Ave. corridor, extending about 8-miles east of Loop 375. These areas include Hillcrest Estates, Vista Del Este, various properties owned by the People of Texas, and other private developers. Service to these areas would be contingent on agreements by those owners with the City to be annexed into the City. EPWU's long-range plan projects a multi-year three-phase approach to extend pipelines and construct elevated storage tanks.

CANUTILLO PUMP STATION UPGRADE – Pump station to be equipped with lower head (180') replacement pumps to allow them to operate at better efficiency points and maximize flow pumping to the system. Consideration will be given to increase the station's pumping capacity from its current 37 MGD to 50 or 60 MGD based upon future availability of supply to meet future peak demand.

DISTRIBUTION LINES

CANUTILLO/UV TRANSMISSION MAIN - NORTHWEST PHASE IV – Part of an existing major system of large diameter pipelines that extends and delivers water supply from the Canutillo Well Field and the Upper Valley (Arsenic) Water Treatment Plant in Vinton, to all major areas of Northwest El Paso. Phase I (completed in 2001) consisted of a 48-inch main from Lindbergh Pump Station to vicinity of Artcraft Road at Interstate 10. Phase II (completed in 2002) is a 60-inch from Artcraft Road/I10 to Canutillo Pump Station. Phase IV will consist of a 36-inch line extending from the Phase I – 48-inch line from Graphite & Mace to the Fred Miller Storage site.

NORTH 2 TO FRANKLIN EAST #1 (I.F.) - This 36/24-inch transmission line shall convey water from the North 2 Booster Station to the other reservoirs floating within the Franklin East #1 PZ.

FRANKLIN EAST #1 TO #2 - This 24-inch/16-inch transmission line shall convey water from the Franklin East 1 Pump Station to the Franklin East #2 Reservoirs.

TRANSMOUNTAIN NW SUPPLY TO TRANSMOUNTAIN #1 - A proposed transmission main on the Westside, from the Canutillo Main to the Transmountain Reservoir #1, to meet growth.

TRANSMOUNTAIN NW SUPPLY TO TRANSMOUNTAIN #2 - A proposed transmission main on the Westside, from the Transmountain Pumping Station #1 to the Transmountain Reservoir #2, to meet growth.

ATTACHMENT C
El Paso Water Utilities-Public Service Board
Water and Wastewater Impact Fee Study
Description of Capital Improvement Facilities

BORDERLAND 16"/24" DONIPHAN, STRAHAN, LA UNION – Part of the Northwest System upgrades to meet future growth on the west side. The project consists of the installation of a 36-inch transmission main. Also, there is an extension of a 16-inch or larger line from Galindo/Doniphan Drive, west along Borderland to Strahan Road.

EASTSIDE PLANNED SERVICE AREA (PSA)– Proposed transmission main lines necessary to serve areas east of Loop 375. Extensions of transmission mains associated with the construction of three proposed new elevated tanks to serve new annexation will be completed concurrent with completion of those tanks and as development progresses. Other projects within this program are the Paseo Del Este 24-Inch Transmission Pipelines and Master Meter Phase I and Phase II Projects constructed in conjunction with the Paseo Del Este #1, one 3.0 MG elevated tank and the Paseo Del Este Booster Pump Station to provide service to the areas east of Loop 375 in the vicinity of Eastlake Drive. Also includes Pellicano 24-inch and 16-inch transmission mains, from Sun Fire to Aircoupe.

ARTCRAFT #3 BOOSTER STATION TO ARTCRAFT #4 RESERVOIR - 2800 LF of 24-inch pipe to connect the booster station to the reservoir.

MONTANA EAST – Distribution facilities have been conceptually planned to provide service outside the city to about 12 square miles of potential development along north and south of the Montana Ave. corridor, extending about 8 miles east of Loop 375. These areas include Hillcrest Estates, Vista Del Este (Backman), various properties owned by the People of Texas, and other private developers. Service to these areas would be contingent on agreements by those owners with the City to be annexed into the City. EPWU's long-range plan projects a multi-year three-phase approach to extend pipelines, construct elevated storage tanks and a major pump station. This CIP Item considers the design and future construction of a backbone network of water transmission mains (16" to 36") to supply these areas.

DYER / RR WATER LINE – A series of planned water pipelines to convey water to the far northeast part of the city. The proposed pipeline will tie into the NE Franklin Distribution Line near the intersection of Stan Roberts Drive and US 54, then run east along Stan Roberts to Dyer and run south along Dyer.

NE FRANKLIN DISTRIBUTION LINE – A network of water distribution lines generally 16" to 24" to be constructed within the Franklin East #1 and #2 Pressure Zones service areas (NE Master Planned areas) in response to and in step with new emerging developments.

ATTACHMENT C
El Paso Water Utilities-Public Service Board
Water and Wastewater Impact Fee Study
Description of Capital Improvement Facilities

Associated Wastewater

COLLECTION LINES

NE DYER/RR INTERCEPTOR - Series of gravity sewer lines extending from the New Mexico-Texas boundary near Stan Roberts Dr. and Dyer that convey wastewater flows to the Fred Hervey Reclamation Plant. This system will service future development in the Northeast including the existing Futureland Subdivision.

OTHER EAST INTERCEPTORS – Sewer trunk collectors related to master planned development along Zaragosa and Loop 375 as per 1980 Facility Plan and newly annexed areas requests for service by developers. Includes oversized collectors for which the EPWU participates.

LOOP 375 EAST INTERCEPTOR SYSTEM - These multi-phase, multi-year interceptors will serve the entire ETJ area east of Loop 375, including GLO and proposed MUDS. A master plan study for this area was completed in 1997. It includes relieving Saul Kleinfield Interceptors and Playa Drain (Mesa Drain and Valley) Interceptors. Three major interceptor systems comprise this program. The Eastside Interceptor System that extends from Montana Avenue south to I-10 and continuing to Carl Longuemare; the Mesa Drain (Relief) System; and the Valley Interceptor System; a parallel new system to relieve the existing overloaded Mesa Drain Interceptor is currently under construction and has been named the Mesa Drain Valley Interceptor System (Phase 1A completed in 2001, Phase 1B completed in 2002, Phase 1C completed in 2012, and Phase 5). The Eastside Interceptor System to be completed in phases will convey flows from Paseo Del Este Subdivision through four master meters in 2007, the Montwood Lift Station, offload flows from the existing Mesa Drain Valley System and connect to Mesa Drain Phase 1C. All interceptors in this program will ultimately transport flow to the Roberto R. Bustamante Wastewater Treatment Plant.

TRANSMOUNTAIN NORTHWEST INTERCEPTORS – Proposed sewer interceptors necessary to serve areas north of Transmountain Road and east of I-10 on the Westside to meet growth. Future projects scheduled for construction may depend on development progress.

NE INTERCEPTOR SYSTEM – A 30-inch diameter sanitary sewer pipeline that is designed to collect and convey wastewater flows from the Sandstone Ranch Subdivision and a portion of land in the Northeast area. The sanitary sewer pipeline will extend along the future Sean Haggerty Blvd (north of US-54), south crossing the US Highway 54 along the existing Sean Haggerty Blvd, to the existing Grouse Street Lift Station or to the future Northeast Lift Station, where the wastewater will ultimately be treated at the Fred Hervey Water Reclamation Plant. This is a multi-year, multi-phase project.

MOWAD-WESTWAY INTERCEPTOR – A proposed 33-inch diameter wastewater collector system in Northwest El Paso, which will extend from the vicinity of the existing Westway collector/force main system near Canutillo Heights west of Interstate 10, then southerly connecting to the new Easy Way II Lift Station. This system will convey about 11 MGD of

wastewater generated from future developments along west and east of I-10 and north of Transmountain Road.

NE FRANKLIN SERVICE AREA – Approximately 53,000 LF of 12", 15", 18", 21" and 30" sewer pipeline that is designed to collect and convey wastewater flows from the proposed Northeast Service Area. Flows will be collected from near the Texas-New Mexico border, south crossing US Highway 54 to be delivered to the existing Grouse Street Lift Station, where the wastewater will ultimately be treated at the Fred Hervey Water Reclamation Plant. This is a multi-year, multi-phase project.

PUMPING STATIONS AND FORCE MAINS

MONTWOOD / EDGEMERE LIFT STATION & FORCE MAIN – In order to collect and transport the wastewater flows from the development of the Zaragosa Triangle, the Montwood Lift Station needs to be upgraded. The existing station was designed to discharge into the Saul Kleinfeld Interceptor (SKI). In this phase, the Montwood Lift Station will elevate the sewage and re-direct the flow to the Eastside Interceptor System Phase 4B. In addition to the upgrades, the existing Montwood Submersible Lift Station will be taken off-line.

TRANSMOUNTAIN NORTH LIFT STATION & FORCE MAIN – This proposed station to be constructed along the east side of I-10 about a mile north of Transmountain Road in NW El Paso to provide service to future Transmountain North developments to meet growth. Following additional studies, this project may be integrated with by the Mowad-Westway Interceptor System.

NE DYER/RAILROAD LIFT STATION – Project consists of an initial phase to upgrade the existing 0.5 MGD Futureland Lift Station to 1.3 MGD service capacity. As part of the utility's ultimate facility wastewater plan for in-fill development areas in the vicinity of the Dyer to Railroad Drive Corridor between McCombs and the State Line, a 5 MGD expandable to a future 11 MGD wastewater lift station is proposed which will convey sewage generated from this area to the Fred Hervey Water Reclamation Plant.

UPPER VALLEY THREE LIFT STATIONS – A series of lift stations (1.5, 2.5, 3.5 MGD) proposed for new developments (subject to annexation rules) north of Borderland along the Strahan Road corridor. These stations will ultimately discharge into a proposed Strahan Interceptor that will extend and connect into the Easy Way II Lift Station.

TREATMENT PLANT EXPANSION

BUSTAMANTE WWTP EXPANSION – Multi-phase construction project to expand the Roberto Bustamante WWTP from 39 MGD to 54 MGD.

ATTACHMENTS

Attachment D

Capital Improvement Plan Cost Projection

ATTACHMENT D
Water and Wastewater Impact Fee Study
Proposed Capital Improvements and Costs

Northeast Service Area - Water			**Capital Cost**
Water Supply and Treatment System			
Jonathan Rogers WTP Expansion		$	15,000,000.00
Water Distribution System			
Reservoirs			
North 2 Tank #2A (5)			3,600,000
Franklin East #1A (4)			4,100,000
Franklin East #2 (3)			3,100,000
NE Station Well Supply Tank (2)			2,200,000
	Subtotal		13,000,000
Distribution Pumping Equipment			
North Two Pump Station (11.8 MGD)			2,500,000
Franklin East #1 (4.75 MGD)			1,900,000
	Subtotal		4,400,000
Distribution Lines			
North 2 to Franklin East #1			4,100,000
Dyer/RR Waterline			3,600,000
NE Franklin Distribution Line			18,200,000
Franklin East #1 to #2			3,200,000
	Subtotal		29,100,000
Total Water CIP		**$**	**61,500,000**

Northeast Service Area - Wastewater			**Capital Cost**
Wastewater Treatment System			
No wastewater treatment CIP proposed		$	-
Collection System			
Lines			
NE Dyer/RR Interceptor			5,200,000
NE Interceptor System (EPWU-NEMP)			2,200,000
NE Franklin Service Area			3,570,000
	Subtotal		10,970,000
Pumping & Force Mains			
NE Dyer/RR Lift Station (7MGD)			2,580,000
Total Wastewater CIP		**$**	**13,550,000**

ATTACHMENT D (continued)
Water and Wastewater Impact Fee Study
Proposed Capital Improvements and Costs

Westside Service Area - Water		**Capital Cost**
Water Supply and Treatment System		
No water supply or treatment system CIP proposed		$ -
Water Distribution System		
Reservoirs		
TransMountain NW #1A (4)		3,600,000
TransMountain NW #2A (3)		5,400,000
Artcraft #4 Tank (2)		3,500,000
	Subtotal	12,500,000
Distribution Pumping Equipment		
Artcraft #1-NW-WFMP		450,000
Sunset Pump Station Upgrade (16.4 MGD) (46% towards growth)		1,020,000
TransMountain NW #1 Pump Station		2,000,000
Artcraft #3 Pump Station		2,000,000
Canutillo Pump Station Upgrade		400,000
	Subtotal	5,870,000
Distribution Lines		
Canut/UV Trns Mn-NW PH IV (36")		5,700,000
TransMtn NW Supply to TransMtn #1		800,000
TransMtn NW Supply to TransMtn #2		2,000,000
Borderland 16"/24" Doniphan, Strahan, La Union		12,500,000
Artcraft #3 to #4 Trans Mountain		850,000
	Subtotal	21,850,000
Total Water CIP		**$ 40,220,000**

Westside Service Area - Wastewater		**Capital Cost**
Wastewater Treatment System		
No wastewater treatment CIP proposed		$ -
Collection System		
Lines		
TransMountain NW Interceptors		3,700,000
Mowad-Westway Interceptor		7,000,000
	Subtotal	10,700,000
Pumping & Force Mains		
TransMountain North LS & FM (0.344 MGD for development)		150,000
Upper Valley 3 LS (1.5+2.5+3.5MGD)		7,100,000
	Subtotal	7,250,000
Total Wastewater CIP		**$ 17,950,000**

ATTACHMENT D (continued)
Water and Wastewater Impact Fee Study
Proposed Capital Improvements and Costs

Eastside Service Area - Water			**Capital Cost**
Water Supply and Treatment System			
Jonathan Rogers WTP Expansion		$	19,400,000.00
Water Distribution System			
Reservoirs			
Montana East (2.5)			2,750,000
Eastside PSA Reservoirs (2.0 + 2.0)			6,000,000
	Subtotal		8,750,000
Distribution Pumping Equipment			
Montana East (3 MGD)			1,200,000
Distribution Lines			
Eastside Planned Service Area			9,000,000
Montana East Supply Line			4,500,000
	Subtotal		13,500,000
Total Water CIP			**42,850,000**

Eastside Service Area - Wastewater			**Capital Cost**
Wastewater Treatment System			
Bustamante WWTP Expansion from 39 to 54 MGD		$	33,000,000
Collection System			
Lines			
Other Interceptors (Area 8 East)			10,000,000
Loop 375 East Interceptor System			40,300,000
	Subtotal		50,300,000
Pumping & Force Mains			
Montwood/Edgemere Lift Station & FM			850,000
Total Wastewater CIP		**$**	**84,150,000**

ATTACHMENTS

Attachment E

Impact Fee Calculation by Service Area

ATTACHMENT E
Water and Wastewater Impact Fee Study
Northeast Service Area

Water Service Unit Flows (Max Day) **688** gpd

Line No.	Northeast Service Area - Water		Capital Cost	Capacity (MGD)	Total Service Units	Unit Cost of Capacity	Weighted Average
	Water Supply and Treatment System						
1	Jonathan Rogers WTP Expansion		15,000,000	7.00	10,174	$ 1,474	$ 1,474
	Debt Issued						
2	Jonathan Rogers WTP Expansion		5,335,000				
	NPV of Interest						
3	Jonathan Rogers WTP Expansion		2,261,777	7.0	10,174	222	222
	Water Distribution System						
	Reservoirs						
4	North 2 Tank #2A (5)		$ 3,600,000	5.0	0	-	
5	Franklin East #1A (4)		4,100,000	4.0	11,628	$ 353	
6	Franklin East #2 (3)		3,100,000	3.0	8,721	355	
7	NE Station Well Supply Tank (2)		2,200,000	2.0	0	-	
8		Subtotal	13,000,000		20,349		$639
	Debt Issued						
9	North 2 Tank #2A & 2B (5)		1,285,000				
10	Franklin East #1A (4)		1,460,000				
11	Franklin East #2 (3)		1,105,000				
12	NE Station Well Supply Tank		785,000				
13		Subtotal	4,635,000				
	NPV of Interest						
14	North 2 Tank #2A & 2B (5)		544,777		0	-	
15	Franklin East #1A (4)		618,968		11,628	53	
16	Franklin East #2 (3)		468,466		8,721	54	
17	NE Station Well Supply Tank		332,801		0	-	
18		Subtotal	1,965,012		20,349		97
	Distribution Pumping Equipment						
19	North Two Pump Station (11.8 MGD)		2,500,000	11.8	17,151	146	
20	Franklin East #1 (4.75 MGD)		1,900,000	3.3	4,840	393	
21		Subtotal	4,400,000		21,991		200
	Debt Issued						
22	North Two Pump Station (11.8 MGD)		890,000				
23	Franklin East #1 (4.75 MGD)		680,000				
24		Subtotal	1,570,000				
	NPV of Interest						
25	North Two Pump Station (11.8 MGD)		377,316		17,151	22	
26	Franklin East #1 (4.75 MGD)		288,286		4,840	60	
27		Subtotal	665,603		21,991		30
	Distribution Lines						
28	North 2 to Franklin East #1		4,100,000			799	
29	Dyer/RR Waterline		3,600,000	22.3	32,413	799	
30	NE Franklin Distribution Line		18,200,000			799	
31	Franklin East #1 to #2		3,200,000		4,840	661	
32		Subtotal	29,100,000		37,253		781
	Debt Issued						
33	North 2 to Franklin East #1		1,460,000				
34	Dyer/RR Waterline		1,285,000				
35	NE Franklin Distribution Line		6,475,000				
36	Franklin East #1 to #2		1,140,000				
37		Subtotal	10,360,000				
	NPV of Interest						
38	North 2 to Franklin East #1		618,968			19	
39	Dyer/RR Waterline		544,777		32,413	19	
40	NE Franklin Distribution Line		2,745,081			19	
41	Franklin East #1 to #2		483,304		4,840	$ 100	
42		Subtotal	$ 4,392,129		37,253		118
43	**Maximum Water Impact Fee - Northeast Service Area (Capital and Financing)**						**$ 3,561**

ATTACHMENT E (continued)
Water and Wastewater Impact Fee Study
Northeast Service Area

Wastewater Service Unit Flows (Max Day) **341** gpd

Line No.	Northeast Service Area - Wastewater		Capital Cost	Capacity (MGD)	Total Service Units	Unit Cost of Capacity	Weighted Average
	Wastewater Treatment System						
1	No wastewater treatment CIP proposed		-	-	-	-	-
	Collection System						
	Lines						
2	NE Dyer/RR Interceptor		$ 5,200,000		11,497	$ 452	
3	NE Interceptor System (EPWU-NEMP)		2,200,000		19,182	115	
4	NE Franklin Service Area		3,570,000		14,089	253	
5		Subtotal	10,970,000		44,768		$ 245
	Debt Issued						
6	NE Dyer/RR Interceptor		1,850,000				
7	NE Interceptor System (EPWU-NEMP)		785,000				
8	NE Franklin Service Area		1,270,000				
9		Subtotal	3,905,000				
	NPV of Interest						
10	NE Dyer/RR Interceptor		784,309		11,497	68	
11	NE Interceptor System (EPWU-NEMP)		332,801		19,182	17	
12	NE Franklin Service Area		538,417		14,089	38	
13		Subtotal	1,655,528		44,768		37
	Pumping & Force Mains						
14	NE Dyer/RR Lift Station (7 MGD)		2,580,000	7.0	11,614	222	222
	Debt Issued						
15	NE Dyer/RR Lift Station (7 MGD)		920,000				
	NPV of Interest						
16	NE Dyer/RR Lift Station (7 MGD)		$ 390,035		11,614	$ 34	34
17	**Maximum Wastewater Impact Fee - Northeast Service Area (Capital and Financing)**						**$ 538**
18	**Maximum Northeast Water and Wastewater Impact Fee**						**$ 4,099**

ATTACHMENT E (continued)
Water and Wastewater Impact Fee Study
Westside Service Area

Water Service Unit Flows (Max Day) **688** gpd

Line No.	Westside Service Area		Capital Cost	Capacity (MGD)	Total Service Units	Unit Cost of Capacity	Weighted Average
	Water Supply and Treatment System						
1	No water supply or treatment system CIP proposed		-	-	-	-	-
	Water Distribution System						
	Reservoirs						
1	TransMountain NW #1A (4)		$ 3,600,000	4.0	11,628	$ 310	
2	TransMountain NW #2A (3)		5,400,000	3.0	8,721	619	
3	Artcraft #4 Tank (2)		3,500,000	2.0	5,814	602	
4		Subtotal	12,500,000		26,163		$ 478
	Debt Issued						
5	TransMountain NW #1A (4)		1,285,000				
6	TransMountain NW #2A (3)		1,925,000				
7	Artcraft #4 Tank (2)		1,245,000				
8		Subtotal	4,455,000				
	NPV of Interest						
9	TransMountain NW #1A (4)		544,777		11,628	47	
10	TransMountain NW #2A (3)		816,105		8,721	94	
11	Artcraft #4 Tank (2)		527,819		5,814	91	
12		Subtotal	1,888,700		26,163		72
	Distribution Pumping Equipment						
13	Artcraft #1-NW-WFMP		450,000	5.0	7,267	62	
14	Sunset Pump Station Upgrade (16.4 MGD) (46% towards growth)		1,020,000	7.6	11,076	92	
15	TransMountain NW #1 Pump Station		2,000,000	3.0	4,360	459	
16	Artcraft #3 Pump Station		2,000,000	3.0	4,360	459	
17	Canutillo PS Upgrade		400,000	4.0	5,814	69	
18		Subtotal	5,870,000		32,878		179
	Debt Issued						
19	Artcraft #1-NW-WFMP		165,000				
20	Sunset Pump Station Upgrade (16.4 MGD) (46% towards growth)		365,000				
21	TransMountain NW #1 Pump Station		715,000				
22	Artcraft #3 Pump Station		715,000				
23	Canutillo PS Upgrade		145,000				
24		Subtotal	2,105,000				
	NPV of Interest						
25	Artcraft #1-NW-WFMP		69,952		7,267	10	
26	Sunset Pump Station Upgrade (16.4 MGD) (46% towards growth)		154,742		11,076	14	
27	TransMountain NW #1 Pump Station		303,125		4,360	70	
28	Artcraft #3 Pump Station		303,125		4,360	70	
29	Canutillo PS Upgrade		61,473		5,814	11	
30		Subtotal	892,416		32,878		27
	Distribution Lines						
31	Canut/UV Trns Mn-NW PH IV (36")		5,700,000	22.0	31,977	178	
32	TransMtn NW Supply to TransMtn #1		800,000	22.0	31,977	88	
33	TransMtn NW Supply to TransMtn #2		2,000,000			88	
34	Borderland 16"/24" Doniphan, Strahan, La Union		12,500,000	10.0	14,535	860	
35	Artcraft #3 to #4 Trans Mountain		850,000	6.0	8,721	97	
36		Subtotal	21,850,000		87,209		251
	Debt Issued						
37	Canut/UV Trns Mn-NW PH IV (36")		2,030,000				
38	TransMtn NW Supply to TransMtn #1		285,000				
39	TransMtn NW Supply to TransMtn #2		715,000				
40	Borderland 16"/24" Doniphan, Strahan, La Union		4,445,000				
41	Artcraft #3 to #4 Trans Mountain		305,000				
42		Subtotal	7,780,000				
	NPV of Interest						
43	Canut/UV Trns Mn-NW PH IV (36")		860,620		31,977	27	
44	TransMtn NW Supply to TransMtn #1		120,826		31,977	13	
45	TransMtn NW Supply to TransMtn #2		303,125			13	
46	Borderland 16"/24" Doniphan, Strahan, La Union		1,884,461		14,535	130	
47	Artcraft #3 to #4 Trans Mountain		129,305		8,721	$ 15	
48		Subtotal	$ 3,298,337		87,209		38
49	**Maximum Water Impact Fee - Westside Service Area (Capital and Financing)**						**$ 1,044**

ATTACHMENT E (continued)
Water and Wastewater Impact Fee Study
Westside Service Area

Wastewater Service Unit Flows (Max Day) **341** gpd

Line No.	Westside Service Area		Capital Cost	Capacity (MGD)	Total Service Units	Unit Cost of Capacity	Weighted Average
	Wastewater Treatment System						
1	No wastewater treatment CIP proposed		-	-	-	-	-
	Collection System						
	Lines						
2	TransMountain NW Interceptors		$ 3,700,000		5,485	$ 675	
3	Mowad-Westway Interceptor		7,000,000		10,500	667	
4		Subtotal	10,700,000		15,985		$ 669
	Debt Issued						
5	TransMountain NW Interceptors		1,320,000				
6	Mowad-Westway Interceptor		2,490,000				
7		Subtotal	3,810,000				
	NPV of Interest						
8	TransMountain NW Interceptors		559,615		5,485	102	
9	Mowad-Westway Interceptor		1,055,637		10,500	101	
10		Subtotal	1,615,252		15,985		101
	Pumping & Force Mains						
11	TransMountain North LS & FM (0.344 MGD for development)		150,000	0.344	1,009	149	
12	Upper Valley 3 LS (1.5+2.5+3.5 MGD)		7,100,000	7.5	7,864	903	
13		Subtotal	7,250,000		8,873		817
	Debt Issued						
14	TransMountain North LS & FM		55,000				
15	Upper Valley 3 LS (1.5+2.5+3.5 MGD)		2,525,000				
16		Subtotal	2,580,000				
	NPV of Interest						
17	TransMountain North LS & FM		23,317	0.344	1,009	23	
18	Upper Valley 3 LS (1.5+2.5+3.5 MGD)		1,070,476	7.5	7,864	$ 136	
19		Subtotal	$ 1,093,793		8,873		123
20	**Maximum Wastewater Impact Fee - Westside Service Area (Capital and Financing)**						**$ 1,711**
21	**Maximum Water and Wastewater Impact Fee - Westside Area**						**$ 2,755**

ATTACHMENT E (continued)
Water and Wastewater Impact Fee Study
Eastside Service Area

Water Service Unit Flows (Max Day) **688** gpd

Line No.	Eastside Service Area		Capital Cost	Capacity (MGD)	Total Service Units	Unit Cost of Capacity	Weighted Average
	Water Supply and Treatment System						
1	Jonathan Rogers WTP Expansion		19,400,000.00	9.0	13,081	1,483	1,483
	Debt Issued						
2	Jonathan Rogers WTP Expansion		6,900,000				
	NPV of Interest						
3	Jonathan Rogers WTP Expansion		2,925,260	9.0	13,081	224	224
	Water Distribution System						
	Reservoirs						
4	Montana East (2.5)		$ 2,750,000	2.5	7,267	$ 378	
5	Eastside PSA Reservoirs (2.0 + 2.0)		6,000,000	4.0	11,628	516	
6		Subtotal	8,750,000		18,895		$ 463
	Debt Issued						
7	Montana East (2.5)		980,000				
8	Eastside PSA Reservoirs (2.0 + 2.0)		2,135,000				
9		Subtotal	3,115,000				
	NPV of Interest						
10	Montana East (2.5)		415,472	2.5	7,267	57	
11	Eastside PSA Reservoirs (2.0 + 2.0)		905,135	4.0	11,628	78	
12		Subtotal	1,320,606		18,895		70
	Distribution Pumping Equipment						
13	Montana East (3 MGD)		1,200,000	3.0	4,360	275	275
	Debt Issued						
14	Montana East (3 MGD)		430,000				
	NPV of Interest						
15	Montana East (3 MGD)		182,299	3.0	4,360	42	42
	Distribution Lines						
16	Eastside Planned Service Area		9,000,000	20.0	29,070	310	
17	Montana East Supply Line		4,500,000	22.3	32,413	139	
18		Subtotal	13,500,000		61,483		220
	Debt Issued						
19	Eastside Planned Service Area		3,205,000				
20	Montana East Supply Line		1,605,000				
21		Subtotal	4,810,000				
	NPV of Interest						
22	Eastside Planned Service Area		1,358,762		29,070	47	
23	Montana East Supply Line		680,441		32,413	$ 21	
24		Subtotal	$ 2,039,203		61,483		33
25	**Maximum Water Impact Fee - Eastside Service Area (Capital and Financing)**						**$ 2,809**

ATTACHMENT E (continued)
Water and Wastewater Impact Fee Study
Eastside Service Area

Wastewater Service Unit Flows (Max Day) **341** gpd

Line No.	Eastside Service Area		Capital Cost	Capacity (MGD)	Total Service Units	Unit Cost of Capacity	Weighted Average
	Wastewater Treatment System						
1	Bustamante WWTP Expansion from 39 to 54 MGD		$ 33,000,000	15.0	43,988	$ 750	$ 750
	Debt Issued						
2	Bustamante WWTP Expansion from 39 to 54 MGD		11,735,000				
	NPV of Interest						
3	Bustamante WWTP Expansion from 39 to 54 MGD		4,975,062	15.0	43,988	113	113
	Collection System						
	Lines						
1	Other Interceptors (Area 8 East)		10,000,000		23,055	434	
2	Loop 375 East Interceptor System		40,300,000		54,422	741	649
3		Subtotal	50,300,000		77,477		
	Debt Issued						
4	Other Interceptors (Area 8 East)		3,560,000				
5	Loop 375 East Interceptor System		14,335,000				
6		Subtotal	17,895,000				
	NPV of Interest						
7	Other Interceptors (Area 8 East)		1,509,265		23,055	65	
8	Loop 375 East Interceptor System		6,077,334		54,422	112	98
9		Subtotal	7,586,598		77,477		
	Pumping & Force Mains						
10	Montwood/Edgemere Lift Station & FM		850,000		11,143	76	76
	Debt Issued						
11	Montwood/Edgemere Lift Station & FM		305,000				
12	**NPV of Interest**						
13	Montwood/Edgemere Lift Station & FM		$ 129,305		11,143	$ 12	12
14	**Maximum Wastewater Impact Fee - Eastside Service Area (Capital and Financing)**						**$ 1,698**
15	**Maximum Eastside Water and Wastewater Impact Fee**						**$ 4,508**

ATTACHMENTS

Attachment F

Maximum Impact Fee Calculation

ATTACHMENT F
Water and Wastewater Impact Fee Study
Maximum Impact Fee Per Service Unit

Service Area and Category of Capital Improvement	Capital Improvement Costs	Amount Financed	Financing Costs (NPV of Interest)	Facility Service Units	Projected New Service Units through 2024	Portion of Capital Improvements and Financing	Maximum Impact Fee per Unit
Northeast							
Water							
Treatment	$15,000,000	5,335,000	2,261,777	10,174	11,407	19,352,958	1,697
Reservoirs	13,000,000	4,635,000	1,965,012	20,349	11,407	8,388,975	735
Pumping	4,400,000	1,570,000	665,603	21,991	11,407	2,627,557	230
Distribution Lines	29,100,000	10,360,000	4,392,129	37,253	11,407	10,255,434	899
Total Water	61,500,000	21,900,000	9,284,521	N/A	11,407	40,624,923	3,561
Wastewater							
Treatment	0	0	0	-	11,407	0	0
Collection Lines	10,970,000	3,905,000	1,655,528	44,768	11,407	3,217,016	282
Pumping[1]	2,580,000	920,000	390,035	11,614	11,407	2,970,035	256
Total Wastewater	13,550,000	4,825,000	2,045,562	N/A	11,407	6,187,051	538
Total Northeast Area	**$75,050,000**	**$26,725,000**	**$11,330,083**	**N/A**	**11,407**	**$46,811,974**	**$4,099**
Westside							
Water							
Treatment	$0	$0	$0	-	-	$0	$0
Reservoirs	12,500,000	4,455,000	1,888,700	26,163	15,024	8,262,721	550
Pumping	5,870,000	2,105,000	892,416	32,878	15,024	3,090,177	206
Distribution Lines	21,850,000	7,780,000	3,298,337	87,209	15,024	4,332,435	288
Total Water	40,220,000	14,340,000	6,079,453	N/A	15,024	15,685,332	1,044
Wastewater							
Treatment	0	0	0	-	-	0	0
Collection Lines	10,700,000	3,810,000	1,615,252	15,985	15,024	11,574,873	770
Pumping	7,250,000	2,580,000	1,093,793	8,873	15,024	14,128,255	940
Total Wastewater	17,950,000	6,390,000	2,709,045	N/A	15,024	25,703,128	1,711
Total Westside Area	**$58,170,000**	**$20,730,000**	**$8,788,498**	**N/A**	**15,024**	**$41,388,460**	**$2,755**
Eastside							
Water							
Treatment	$19,400,000	$6,900,000	$2,925,260	13,081	13,575	23,167,666	1,707
Reservoirs	8,750,000	3,115,000	1,320,606	18,895	13,575	7,235,034	533
Pumping[1]	1,200,000	430,000	182,299	4,360	13,575	1,382,299	317
Distribution Lines	13,500,000	4,810,000	2,039,203	61,483	13,575	3,430,968	253
Total Water	42,850,000	15,255,000	6,467,368	N/A	13,575	35,215,967	2,809
Wastewater							
Treatment	33,000,000	11,735,000	4,975,062	43,988	13,575	11,719,294	863
Collection Lines	50,300,000	17,895,000	7,586,598	77,477	13,575	10,142,501	747
Pumping	850,000	305,000	129,305	11,143	13,575	1,193,042	88
Total Wastewater	84,150,000	29,935,000	12,690,965	N/A	13,575	23,054,837	1,698
Total Eastside Area	**$127,000,000**	**$45,190,000**	**$19,158,333**	**N/A**	**13,575**	**$58,270,804**	**$4,508**

Notes
(1) Pumping service units are based on the lesser of the facility service units or the projected new service units through 2024.

ATTACHMENTS

Attachment G

Impact Fee Credit Calculation

ATTACHMENT G
Water and Wastewater Impact Fee Study
Impact Fee Credit Calculation

Systemwide Water Credit Calculation

Line No.		Total (All Years)	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
1	Principal Payments	$51,495,000	$1,557,342	$1,635,209	$1,716,970	$1,802,818	$1,892,959	$1,987,607	$2,086,987	$2,191,337	$2,300,903
2	Interest Payments (present value)	21,831,342	2,452,143	2,264,746	2,086,274	1,916,299	1,754,419	1,600,248	1,453,418	1,313,580	1,180,400
3	Principal and Present Value of Interest	$73,326,342	$4,009,485	$3,899,956	$3,803,243	$3,719,118	$3,647,378	$3,587,855	$3,540,405	$3,504,916	$3,481,304
4	Beginning Year Service Units		235,504	239,504	243,505	247,505	251,506	255,507	259,507	263,508	267,508
5	Incremental Service Units		4,001	4,001	4,001	4,001	4,001	4,001	4,001	4,001	4,001
6	Total Service Units		239,504	243,505	247,505	251,506	255,507	259,507	263,508	267,508	271,509
7	Debt Service Credit per Unit	**$276**	$17	$16	$15	$15	$14	$14	$13	$13	$13

Notes:
1. Present value calculations apply a 5 percent discount rate.

ATTACHMENT G
Water and Wastewater Impact Fee Study
Impact Fee Credit Calculation

Systemwide Water Credit Calculation

Line No.		FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
1	Principal Payments	$2,415,949	$2,536,746	$2,663,583	$2,796,763	$2,936,601	$3,083,431	$3,237,602	$3,399,482	$3,569,456	$3,747,929	$3,935,326
2	Interest Payments (present value)	1,053,563	932,766	817,721	708,154	603,804	504,424	409,776	319,635	233,787	152,026	74,159
3	Principal and Present Value of Interest	$3,469,512	$3,469,512	$3,481,304	$3,504,916	$3,540,405	$3,587,855	$3,647,378	$3,719,118	$3,803,243	$3,899,956	$4,009,485
4	Beginning Year Service Units	271,509	275,510	275,510	275,510	275,510	275,510	275,510	275,510	275,510	275,510	275,510
5	Incremental Service Units	4,001	0	0	0	0	0	0	0	0	0	0
6	Total Service Units	275,510	275,510	275,510	275,510	275,510	275,510	275,510	275,510	275,510	275,510	275,510
7	Debt Service Credit per Unit	$13	$13	$13	$13	$13	$13	$13	$13	$14	$14	$15

Notes:
1. Present value calculations apply a 5 percent discount rate.

ATTACHMENT G (continued)
Water and Wastewater Impact Fee Study
Impact Fee Credit Calculation

Systemwide Wastewater Credit Calculation

Line No.		Total (All Years)	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
1	Principal Payments	$41,150,000	$1,244,482	$1,306,707	$1,372,042	$1,440,644	$1,512,676	$1,588,310	$1,667,726	$1,751,112	$1,838,667
5	Interest Payments (present value)	$17,445,572	1,959,524	1,809,774	1,667,155	1,531,328	1,401,968	1,278,769	1,161,436	1,049,690	943,266
6	Principal and Present Value of Interest	$58,595,572	$3,204,006	$3,116,481	$3,039,197	$2,971,972	$2,914,644	$2,867,079	$2,829,161	$2,800,802	$2,781,933
7	Beginning Year Service Units		180,752	184,752	188,753	192,753	196,754	200,755	204,755	208,756	212,756
8	Incremental Service Units		4,001	4,001	4,001	4,001	4,001	4,001	4,001	4,001	4,001
9	Total Service Units		184,752	188,753	192,753	196,754	200,755	204,755	208,756	212,756	216,757
10	Debt Service Credit per Unit	**$278**	$17	$17	$16	$15	$15	$14	$14	$13	$13

Notes:
1. Present value calculations apply a 5 percent discount rate.

ATTACHMENT G (continued)
Water and Wastewater Impact Fee Study
Impact Fee Credit Calculation

Systemwide Wastewater Credit Calculation

Line No.		FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
1	Principal Payments	$1,930,601	$2,027,131	$2,128,487	$2,234,912	$2,346,657	$2,463,990	$2,587,190	$2,716,549	$2,852,377	$2,994,995	$3,144,745
5	Interest Payments (present value)	841,909	745,379	653,446	565,890	482,504	403,089	327,455	255,423	186,821	121,485	59,261
6	Principal and Present Value of Interest	$2,772,510	$2,772,510	$2,781,933	$2,800,802	$2,829,161	$2,867,079	$2,914,644	$2,971,972	$3,039,197	$3,116,481	$3,204,006
7	Beginning Year Service Units	216,757	220,758	220,758	220,758	220,758	220,758	220,758	220,758	220,758	220,758	220,758
8	Incremental Service Units	4,001	0	0	0	0	0	0	0	0	0	0
9	Total Service Units	220,758	220,758	220,758	220,758	220,758	220,758	220,758	220,758	220,758	220,758	220,758
10	Debt Service Credit per Unit	$13	$13	$13	$13	$13	$13	$13	$13	$14	$14	$15

Notes:
1. Present value calculations apply a 5 percent discount rate.

ATTACHMENTS

Attachment H

Impact Fee Assessment Schedules

ATTACHMENT H
Water and Wastewater Impact Fee Study
Impact Fee Assessment Schedules (Net Fee after Credit)

Northeast

Meter Size	Meter Capacity Ratio	Water	Wastewater	Total
Less than 1-inch	1.00	$3,145	$429	$3,574
1-inch	1.67	5,252	716	5,969
1½-inch	3.33	10,473	1,429	11,901
2-inch	5.33	16,763	2,287	19,049
3-inch	10.00	31,450	4,290	35,740
4-inch	16.67	52,427	7,151	59,579
6-inch	33.33	104,823	14,299	119,121
8-inch	53.33	167,723	22,879	190,601

Westside

Meter Size	Meter Capacity Ratio	Water	Wastewater	Total
Less than 1-inch	1.00	$922	$1,364	$2,286
1-inch	1.67	1,540	2,278	3,818
1½-inch	3.33	3,070	4,542	7,612
2-inch	5.33	4,914	7,270	12,184
3-inch	10.00	9,220	13,640	22,860
4-inch	16.67	15,370	22,738	38,108
6-inch	33.33	30,730	45,462	76,192
8-inch	53.33	49,170	72,742	121,912

Eastside

Meter Size	Meter Capacity Ratio	Water	Wastewater	Total
Less than 1-inch	1.00	$2,481	$1,354	$3,835
1-inch	1.67	4,143	2,261	6,404
1½-inch	3.33	8,262	4,509	12,771
2-inch	5.33	13,224	7,217	20,441
3-inch	10.00	24,810	13,540	38,350
4-inch	16.67	41,358	22,571	63,929
6-inch	33.33	82,692	45,129	127,821
8-inch	53.33	132,312	72,209	204,521