WATER AND WASTEWATER IMPACT FEE UPDATE 2015

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WATER AND WASTEWATER IMPACT FEE UPDATE 2015

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City of Seguin, Texas

1.0 INTRODUCTION

The 70th Texas legislature passed Senate Bill 336 (subsequently Chapter 395 of the Local Government Code) regulating various types of utility fees, defined in the legislation as "impact fees". Such fees included not only traditional impact fees, but also lot, acreage, frontage and other typical utility fees, as well as facility dedication requirements. The legislation laid out very specific requirements for the technical development of impact fees as well as the procedures necessary for enactment of impact fee programs. Seguin completed its original water and wastewater impact fees under the requirements of the Chapter in 2000 the initial fee program extended from 2000-2005. Fees were updated in 2005 to create a second impact fee program running from 2005-2015. Fees were then updated again in 2010 to create a third impact fee program running from 2010-2020.

In 2007, the Schertz-Seguin Local Government Corporation (SSLGC), which provides many of the water facilities used to serve Seguin, enacted its own water impact fee which is charged to new development within Seguin. In order to avoid double-charges to new development, Seguin updated its water impact fee in two stages to remove all SSLGC facility costs from the City fee. (A) Immediately after the SSLGC enacted its fees, Seguin removed all SSLGC projects from its impact fee program and immediately lowered its fee accordingly. (B) Shortly thereafter in 2007, Seguin performed a full update of the water fee, including various changes in the capital improvement program (in addition to the SSLGC changes), resulting in the later fees that are charged currently.

Since Chapter 395 requires an update of fee programs at least every five years, the City needs to update its water and sewer fee currently, since it has not been updated since 2010. Upon City Staff recommendation, the update will create a new impact fee program running from 2015-2025, which will result in the current program being truncated to the 2010-2015 period (rather than the original 2010-2020 planning horizon). This report represents the update of fee programs for the 2015-2025 period. Thus, the City will have four (4) programs in effect:

- 1987 – 2005: For properties that were platted between June 20, 1987 (date of passage of State enabling legislation) and August 2, 2005 (date of program update).
- 2005 – 2010: For properties platted between August 3, 2005 and the date of passage of the program developed on January 14, 2011.
- 2010 – 2015: For properties platted between January 15, 2011 and the date of passage of the program being developed in this update.
- 2015 – 2025: For properties platted after the date of the ordinance updated through this study; for properties where new development will occur without platting (such as redevelopment needing a larger meter size, or conversion of septic tanks to the City system); and properties platted prior to June 20, 1987.

The purpose of the early sections of this report (which is the revised version of earlier impact fee reports) is to orient City officials and staff, the Advisory Committee and the public to the general environment in which impact fees are developed. Later sections of the report document the formulation of such fees.

Section 2.0 of this report presents the legal context for fee development. ***Section 3.0*** highlights a few technical and policy issues pertinent to the study, most of which have been resolved in earlier fee studies. ***Section 4.0*** presents a particular fee development model – the Equity Residual Model – which responds to the requirements of Chapter 395 and constitutional issues.

Section 5.0 contains the technical data which is the basis for the 2015-2025 fee calculation: land use and planning data, unit usage statistics and capital improvements plan.

Actual fee calculation is shown in ***Section 6.0***. ***Section 7.0*** contains recommendations from the consultants and the Advisory Committee. ***Section 8.0*** contains a copy of Chapter 395 of the Texas Local Government Code and ***Section 9.0*** contains various administrative documents such as resolutions, public notices, public information packets, etc. Finally, references are provided in ***Section 10.0***.

5.0 TECHNICAL BASIS FOR FEE CALCULATION

This chapter presents water and wastewater impact fee technical development.

5.1 LAND USE AND PLANNING ASSUMPTIONS

Chapter 395 requires the following in the land use and planning assumptions:

- Definition of the service area
- Projections in changes in land uses, densities, intensities and population within the service area for full buildout and the next 10 years
- Land use assumptions differentiated by at least residential, commercial and industrial land uses

The following sections provide a discussion of these assumptions.

5.1.1 Service Area Definition

Figure 5-1 illustrates the Water Service Area and ***Figure 5-2*** illustrates the Wastewater Service Area. The service area for the water utility is somewhat smaller than the corporate city limits. The sewer service area is considerably larger, including areas not only within the City limits, but also areas currently in the City's extraterritorial jurisdiction (ETJ) that are likely to be provided sewer service, but which may not receive City water. (Other water providers in the City or the ETJ are Springs Hill Water Supply Corporation, Crystal Clear Water Supply Corporation, Green Valley Special Utility District, and the Guadalupe-Blanco River Authority (GBRA)). The service areas represent the general geographic bases for planning the utility capital improvement programs, used to formulate the fees. The impact fees service areas are conceptual in nature and do not necessarily represent a definitive commitment for service by the City; the service area boundaries also do not necessarily represent limits to service potential or fee assessment (which is governed by specific provisions for fee application in Chapter 395).

FIGURE 5-1

Provided by TRC Engineers

FIGURE 5-2

Provided by TRC Engineers

5.1.2 Land Use Assumptions

It is the intent of Seguin's Chapter 395 effort to utilize system-wide land use and planning approaches, as provided in §395.0455. That section provides:

> In lieu of adopting land use assumptions for each service area, a political subdivision may, except for storm water, drainage, flood control, and roadway facilities, adopt system wide land use assumptions which cover all of the area subject to the jurisdiction of the political subdivision for the purpose of imposing impact fees under this chapter… After adoption of system wide and use assumptions, a political subdivision is not required to adopt additional land use assumptions for a service area for water supply, treatment and distribution facilities or wastewater collection and treatment facilities as a prerequisite to the adoption of a capital improvements plan or impact fee, provided the capital improvements plan and impact fee are consistent with the system wide land use assumptions.

Table 5-1 shows current and projected land use assumptions for the water utility, while ***Table 5-2*** shows similar information for the wastewater utility. Land uses were derived by TRC Engineers from the City's most recently updated zoning maps and expected development. Land uses for 2025 were assumed to have increased at the same rate as the population increase and discussions with City staff.

TABLE 5-1

POPULATION AND LAND USE PROJECTIONS FOR THE CITY OF SEGUIN
Water Utility

LAND USE	2015		2025		Full Buildout	
	ACRES	%	ACRES	%	ACRES	%
Residential	2,563	27.32%	2,650	28.25%	2,800	29.85%
Right of Way	1,406	14.99%	1,450	15.46%	1,500	15.99%
Commercial	1,856	19.78%	2,000	21.32%	2,200	23.45%
Industrial	817	8.71%	1,000	10.66%	1,200	12.79%
Public	1,154	12.30%	1,175	12.53%	1,200	12.79%
Nonurban	1,585	16.90%	1,106	11.79%	481	5.13%
TOTAL ACREAGE	***9,381***	***100.00%***	***9,381***	***100.00%***	***9,381***	***100.00%***
City Limit Population (a)	30,006		36,577		60,009	
Service Population (b)	25,295		29,356		36,702	
Population per Urban Acre	4.83		5.20		5.92	
Population per Total Acre	2.70		3.13		3.91	

Sources:

(a) From City Staff 11-18-2015

(b) From Freese and Nichols Water Master Plan dated 8-11-2015

TABLE 5-2
POPULATION AND LAND USE PROJECTIONS FOR THE CITY OF SEGUIN
Wastewater Utility

LAND USE	2015		2025		Full Buildout	
	ACRES	%	ACRES	%	ACRES	%
Residential	10,093	15.52%	12,000	18.45%	13,500	20.76%
Right of Way	4,950	7.61%	5,050	7.76%	5,300	8.15%
Commercial	3,275	5.04%	3,725	5.73%	3,500	5.38%
Industrial	1,645	2.53%	1,750	2.69%	2,000	3.08%
Public	2,870	4.41%	2,950	4.54%	3,000	4.61%
Nonurban	42,205	64.89%	39,563	60.83%	37,738	58.02%
TOTAL ACREAGE	***65,038***	***100.00%***	***65,038***	***100.00%***	***65,038***	***100.00%***
City Limit Population (a)	30,006		36,577		60,009	
Service Population (b)	27,373		33,369		54,745	
Population per Urban Acre	1.82		1.91		2.88	
Population per Total Acre	0.42		0.51		0.84	

Sources:

(a) Based on annual growth of 2% per year – City Staff 11-18-2015

(b) Based on number of residential customers on October 22, 2015 (6,740); plus number of apartments (2,062) times occupancy rate of 85.0% equaling 1,648 occupied apartment units; to yield 8,493 housing units. Number of housing units times 3.29 persons per household for residential customers and 2.0 per household for occupied apartment units; equals service household population of 25,680. Added is the Texas Lutheran University population of 1,300 times 67% living on campus, plus nursing home population of 822, equaling a total sewer service population in 2015 of 27,373.

5.2 CAPITAL IMPROVEMENTS PROGRAM PLAN

Chapter 395 requires the following elements be included in the Capital Improvements Plan (CIP) used as the basis for impact fees:

- Table of service usage for each category of capital improvements and a conversion table of service units per acre (or other measure) of residential, commercial and industrial land uses
- Projections of total service units for new development, within the service area:
  - At full buildout
  - Within 10 years or less
- Description of existing capital improvements, including:
  - Existing capital improvements within the service area
  - Analysis of total capacity of existing improvements Analysis of current usage of existing improvements Analysis of commitments for usage of existing capacity
  - Costs to upgrade, update, improve, expand or replace for existing needs

- Description of capital improvements needed to serve new development within the next 10 years or less (based on adopted service area, land use and unit usage assumptions), including:
  - All or portions of the existing CIP All or portions of the future CIP
  - Costs associated with both existing and future CIP facilities needed for new development

In addition, the legislation provides that the CIP may include construction price, survey and engineering fees, land acquisition costs (including "soft" costs), and the costs of consulting work to develop Chapter 395 fees.

Various assumptions used in the development of the CIP are shown in ***Table 5·3*** and ***Table 5-4.***

TABLE 5-3
CAPACITY DEMAND FOR EACH NEW WATER LUE

FACILITY	BASIS	CAPACITY PER LUE
Supply	Peak Day	1,143 gallons daily
Treatment	Peak Day	1,143 gallons daily
Booster Pumps	Peak Day	1,143 gallons daily
Ground Storage	TCEQ Standard	100 gallons
Elevated Storage	TCEQ Standard	100 gallons
Major Transmission	Engineering Analysis	2,160 gallons daily

Source: TRC Engineers, Inc.

TABLE 5-4
CAPACITY DEMAND FOR EACH NEW WASTEWATER LUE

FACILITY	BASIS	CAPACITY PER LUE
Treatment	Peak Day	860 gallons/day
Pumping	Peak Day	860 gallons/day
Major Collection	Engineering Analysis	860 gallons/day

Source: TRC Engineers, Inc.

5.2.1 Conversion Table

Section 395.014(a)(4) of the Impact Fee Act requires:

> . . . an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, and industrial. . . .

Unit usage statistics were converted into living units equivalent (LUE's) as determined by water meter size, as discussed in ***Section 3.3***, to provide a common unit of measurement for all unit usage

figures for water and sewer.

Table 5-5 illustrates the use of water meters of various sizes in determining the LUE capacity of any individual customer. ***Table 5-6*** applies this conversion table to current Seguin active retail water meters (with the exception of multifamily master meters). Water meter size was selected as the unit determinant for fee collection for the following reasons:

- It allows the use of an American Water Works Association (AWWA) published standard.
- This standard includes both safe continuous flow and safe maximum flow which will there by accommodate all requests for service.
- These standards are those used by building owners, professional engineers and architects, and City staff for sizing meters and plumbing fixtures.
- Meters are a physical element which can be maintained and controlled by the City, thus allowing the monitoring of the accuracy of meter sizing.
- The City can require any necessary replacement of meters which can be shown to have been sized too small for a development and collect additional impact fees required by the change in meters.
- Particularly in the larger meter sizes, the builder may have to pay for more capacity than needed for the development, thus resulting in a potential payment above actual costs.

  However, these large-meter customers will be able to use that excess capacity if later building expansions occur or if use patterns change. Moreover, the capacity purchased would be a marketable amenity which would add value to the property.
- The use of water meter size allows equitable cost assignment to each of the three customer classes identified in Chapter 395 (residential, commercial and industrial).

Since water meter size is the basis for calculation of both water and wastewater fees, the base fee should be applied to the smallest meter size used by the City. The following policies were suggested by the Consultants:

- The standard used for the ratio of the continuous duty maximum flow rate would be derived from AWWA C700-C703 (in gallons per minute - gpm).
- The City's smallest water meter (5/8") would be the base unit for impact fee assessment.
- The ratio of each larger meter's continuous duty maximum flow rate to the rate of the base meter would determine the fee multiplier and the scale for other calculations relating to this fee.
- The Impact Fee Ordinance should have the schedule published as shown in ***Table 5-5***, which includes both compound and turbine meters.
- The use of a turbine meter, in connection with displacement meters in a compound meter installation, would require the use of the turbine meter schedule.

- The impact fee assessment should be adjusted when the City determines that unique water pressure conditions of the system result in a meter size which is not indicative of actual flow (as when pressure is unusually low or high). In this instance, the ordinance should provide for individual review.

Responsive to these recommendations, ***Table 5-5*** shows a conversion table for various types and sizes of water meters in the Seguin water system. Because the fee calculation was based on water meter size, the LUE/meter conversion table applies equally to all land uses, except for master-metered residential units, discussed below. ***Table 5-6*** shows the current number of LUE's on the Seguin water system.

Although master-metered residences uses can be charged an impact fee based on meter size like all other customers, fees applied to the use of a master meter between the City service line and the ultimate users can be perceived as somewhat inequitable. For example, if the master meter is one used by a wholesale customer, it is likely that there are far more LUEs behind the master meter than are suggested by the meter size. Thus, an impact fee to a wholesale customer that was based on meter size would tend to charge less per ultimate user than comparable retail users, and thus lower housing costs and unfairly decrease cost recovery for housing outside the City's retail service area and perhaps outside the City limits. Thus, it is equitable to bypass the meter for wholesale customers and charge a fee based on the number of LUEs behind the master meter.

A similar argument can be made regarding apartment buildings and other types of multifamily housing that use master meters. Studies in nearby communities (e.g., San Antonio) have shown that apartments typically use approximately half as much water per apartment unit as a typical detached household. Thus,

TABLE 5-5
LUE EQUIVALENCIES FOR VARIOUS TYPES AND SIZED OF WATER METERS

METER TYPE	METER SIZE	CONTINUOUS DUTY MAXIMUM RATE (gpm)	RATIO TO 5/8" METER
SIMPLE	5/8" x 3/4"	10	1.0
SIMPLE	3/4"	15	1.5
SIMPLE	1"	25	2.5
SIMPLE	1-1/2"	50	5.0
SIMPLE	2"	80	8.0
COMPOUND	2"	80	8.0
TURBINE	2"	100	10.0
COMPOUND	3"	160	16.0
TURBINE	3"	240	24.0
COMPOUND	4"	250	25.0
TURBINE	4"	420	42.0
COMPOUND	6"	500	50.0
TURBINE	6"	920	92.0
COMPOUND	8"	800	80.0
TURBINE	8"	1600	160.0
COMPOUND	10"	1150	115.0
TURBINE	10"	2500	250.0
TURBINE	12"	3300	330.0

Source: AWWA Standards C700, C701, C702, C703.

In regard to wastewater fees, some concern is typically expressed that water meters are not always a reasonable means of calculating wastewater flows, particularly for certain consumptive types of commercial uses (car washes, restaurants) or industrial processes. Additionally, any land use might have a large meter for irrigation purposes, thus over representing its wastewater flows. However, experience has indicated that few such customers choose to have a separate wastewater meter because of the installation and maintenance expense incurred. Because no alternative means for assessing flow is technically feasible, the consultants recommended that the water meter also be adopted as the basis for wastewater impact fees.

However, given the potential that some consumptive commercial and industrial customers may be considerably overcharged for sewer capacity demand when water meter size is used for calculating wastewater impact fees, the ordinance provides for exceptions. Specifically, the ordinance permits individual wastewater customers to present data, prepared by a professional engineer, documenting expected wastewater flow below that indicated by meter-size determinations for a lower sewer fee. For irrigation-only water meters, the fee payer only pays the water impact fee, with no sewer impact fee.

TABLE 5-6
CURRENT METER COUNT AND ESTIMATION OF LIVING UNITS EQUIVALENT

METER SIZE (Excluding Residential and Wholesale Master Meters)	LUEs PER METER (b)	NUMBER OF METERS (a)	NUMBER OF RETAIL LUEs (Excluding Residential Master Meters)
5/8”	1.0	6,716	6,716
3/4”	1.5	0	0
1”	2.5	240	600
1-1/4”, 1-1/2”	5.0	125	625
2”	8.0	203	1,624
3”	16.0	30	480
4”	25.0	15	375
6”	50.0	7	350
8”	80.0	1	80
Total		***7,337***	***10,850***
Water Service Population			25,295
Sewer Service Population			27,373
Population/LUE			2.33

Sources:
(a) City of Seguin, 10-22-2015.

(b) See *Table 5-5*.

5.2.2 Projected Service Units for New Development

Chapter 395 also requires the projection of service units for new development in the service area. Estimated demand-per-capita standards ***(Table 5-3*** and ***Table 5-4)*** were applied to projected populations shown in ***Table 5-1*** and ***Table 5-2*** to yield the estimated water and wastewater service demands shown in ***Tables 5-7*** and ***5-8*****,** expressed in LUE's. As required by the legislation, projections are shown for both 2025 and ultimate buildout.

TABLE 5-7
ESTIMATED WATER SERVICE DEMAND BY FACILITY TYPE

FACILITY TYPE	VOLUME		
	2015	2025	BUILDOUT
LUE'S (a)	10,850	12,592	15,743
WATER SUPPLY PEAK MGD: (b)			
Estimated Demand	12.400	14.391	17.992
Existing Capacity (g)	7.450	7.450	7.450
Excess/(Deficiency)	***(4.950)***	***(6.941)***	***(10.542)***
WATER TREATMENT PEAK MGD: (c)			
Estimated Demand	12.400	14.391	17.992
Existing Capacity (g)	10.529	10.529	10.529
Excess/(Deficiency)	***(1.872)***	***(3.862)***	***(7.463)***
BOOSTER PUMP MGD: (d)			
Estimated Demand	12.400	14.391	17.992
Existing Capacity (g)	10.224	10.224	10.224
Excess/(Deficiency)	***(2.176)***	***(4.167)***	***(7.768)***
GROUND STORAGE MG: (e)			
Estimated Demand	1.085	1.259	1.574
Existing Capacity (g)	5.140	5.140	5.140
Excess/(Deficiency)	***4.055***	***3.881***	***3.566***
ELEVATED WATER STORAGE MG: (f)			
Estimated Demand	1.085	1.259	1.574
Existing Capacity (g)	3.500	3.500	3.500
Excess/(Deficiency)	***2.415***	***2.241***	***1.926***

(a) 2015 LUE's based on count of equivalent meters. 2025 and ultimate LUE's determined by 2015 persons per LUE (LUE = 2.33 persons).
(b) Capacity Demand= 1,143 gallons/LUE/day.
(c) Capacity Demand= 1,143 gallons/LUE/day.
(d) Capacity Demand= 1,143 gallons/LUE/day.
(e) Capacity Demand= 100 gallons/LUE.
(f) Capacity Demand= 100 gallons/LUE.
(g) Existing Capacity details are contained in *Table 5-9*.

TABLE 5-8
ESTIMATED WASTEWATER SERVICE DEMAND BY FACILITY TYPE

FACILITY TYPE	VOLUME		
	2015	2025	BUILDOUT
LUE'S (a)	11,741	14,313	23,482
WASTEWATER TREATMENT PEAK MGD:			
Estimated Demand (b)	10.101	12.313	20.201
Existing Capacity (c)	7.330	7.330	7.330
Excess/(Deficiency)	***(2.771)***	***(4.983)***	***(12.871)***
WASTEWATER PUMPING:			
Estimated Demand (b)	10.101	12.313	20.201
Existing Capacity (c)	9.634	9.634	9.634
Excess/(Deficiency)	***(0.467)***	***(2.679)***	***(10.567)***

(a) Same number of LUE's per person as water.
(b) Capacity demand = 860 gallons/LUE/daily. Apparent pumping deficiency cured by use of treatment plant rather than pumps for some flows.
(c) Existing Capacity details are contained in *Table 5-10*.

5.2.3 CIP Development for Existing and Future Needs

Several steps were necessary in order to perform the required inventory of existing facilities; develop the 10-year CIP; and allocate the capacity and associated costs to the appropriate customer groups.

First, as discussed above, projected service demands for each utility were expressed in LUE's. These demands were then used to project specific facility needs for both existing and future customers. ***Tables 5-7*** and ***5-8*** show current needs and deficiencies for existing 2015 customers, if any, and projected capacity needs for future growth.

There is currently a deficiency in water supply/treatment capacity which is being cured by the addition of new facilities by the Schertz-Seguin Local Government Corporation (SSLGC). These facilities are not part of the fee base for Seguin's impact fee, but are instead funded through SSLGC impact fees.

The deficiency shown for wastewater treatment plant capacity is being cured by several plant expansion projects, while the apparent deficiency shown for wastewater pumping is mitigated by the fact that some flows are directed to the plant without the need to use current or future lift stations (and thus there is no real pumping deficiency).

Although not reflected in ***Table 5-7*** or ***Table 5-B***, both the water and sewer systems will require additional lines by 2025, which are addressed in the capital improvements program (see ***Table 5-9*** and ***Table 5-10***). Also, there will be a need for additional pumping and elevated water storage facilities due to locational operational requirements of the system.

Tables 5-9 and ***5-10*** present the inventory of facilities as required in Chapter 395. They show the required allocation of existing and future CIP facility needs for existing development; future development within the next ten years; and excess capacity for subsequent future development. For each generation of utility customers, these tables show facility needs which will be met by a combination of Existing Facilities and Future Facilities.

Cost allocations are also shown in ***Tables 5-9*** and ***5-10***. Cost estimates for each facility were taken from actual costs of existing facilities; projected costs of future facilities were developed by TRC Engineers or from the Water Master Plan by Freese and Nichols. Costs were expressed on a per-LUE basis. Finally, an appropriate cost share was attributed to 2015-2025 growth, as determined from capacity allocations shown. Total capital costs for 2015-2025 growth were then summed for each utility.

5.2.4 Conclusions of CIP Analysis and Capital Cost Allocation

In addition to existing facilities, demand calculations indicate that the City of Seguin may need to purchase additional water rights in the next ten years (recovered through SSLGC impact fees rather than City impact fees). Additional pumping facilities and major lines will also be required to provide for future growth.

For the sewer utility, an expansion will be required to all three wastewater treatment plants. Additional lift stations and major lines will also be required In addition, there may be a need for "localized" lift stations within the service area. The location and cost of these are unknown; lift station fees would be equal to the pro-rata cost of the station for each new development, and would not be precisely calculated in the fee ordinance.

In addition to capital costs, the City is permitted to add the costs of the study to the fee amount, as is shown in the ***Table 5-11***, following. As a final cost calculation, costs for each facility type, per LUE, were weighted according to the capacity demand on both existing and future facilities. The results of the cost analysis are shown in ***Table 5-11***.

TABLE 5-9
WATER CIP INVENTORY AND COSTING

FACILITY		TOTAL CONSTRUCT COST	FACILITY CAPACITY (mgd or gals)				2015-2025	
TYPE	NAME		TOTAL	CURRENT CUST.	2015-2025 GROWTH	POST-2025 GROWTH	CAPITAL COST TOTAL	COST PER LUE (a)
SUPPLY								
EXISTING FACILITIES			PEAK MGD					
	Wells 1-12	$0	7.450	7.450	0.000	0.000	$0	
	Subtotal Existing Facilities	***$0***	***7.450***	***7.450***	***0.000***	***0.000***	***$0***	
	TOTAL WATER SUPPLY	***$0***	***7.450***	***7.450***	***0.000***	***0.000***	***$0***	***$0.00***
TREATMENT								
EXISTING FACILITIES			PEAK MGD					
	Water Treatment Plant	$0	10.529	10.529	0.000	0.000	$0	
	Subtotal Existing Treatment	***$0***	***10.529***	***10.529***	***0.000***	***0.000***	***$0***	
	TOTAL WATER TREATMENT	***$0***	***10.529***	***10.529***	***0.000***	***0.000***	***$0***	***$0.00***
PUMPING								
EXISTING FACILITIES			PEAK MGD					
	High Service Pumping	$0	10.224	10.224	0.000	0.000	$0	
	Subtotal Existing Pumpage	***$0***	***10.224***	***10.224***	***0.000***	***0.000***	***$0***	
FUTURE FACILITIES								
	Starke WTP Pump Station	$5,980,000	5.184	0.000	0.500	4.684	$576,775	
	West Pump Station	$1,950,000	2.016	0.000	0.000	2.016	$0	
	SH 123 Bypass Pump Station	$1,625,000	4.032	2.176	1.491	0.365	$600,911	
	Subtotal Future Facilities	***$9,555,000***	***11.232***	***2.176***	***1.991***	***7.065***	***$1,177,686***	
	TOTAL WATER PUMPAGE	***$9,555,000***	***21.456***	***12.400***	***1.991***	***7.065***	***$1,177,686***	***$676.09***
GROUND STORAGE								
EXISTING FACILITIES			MG					
	Nixon Water Treatment Plant	$0	2.000	1.085	0.174	0.741	$0	
	Starke Park	$750,000	3.000	0.945	0.000	2.055	$0	
	SH 123 Bypass	$50,000	0.140	0.140	0.000	0.000	$0	
	Subtotal Existing Facilities	***$800,000***	***3.140***	***1.085***	***0.000***	***2.055***	***$0***	
FUTURE FACILITIES			MG					
	SH 123 Ground Storage Tank	$1,300,000	0.750	0.140	0.174	0.436	$301,947	
	SH 123 Ground Storage Tank	$1,300,000	0.750	0.000	0.000	0.750	$0	
	West Ground Storage Tank	$1,560,000	1.000	0.000	0.000	1.000	$0	
	Subtotal Future Facilities	***$4,160,000***	***2.500***	***0.140***	***0.174***	***2.186***	***$301,947***	
	TOTAL GROUND STORAGE	***$4,960,000***	***5.500***	***1.085***	***0.174***	***4.241***	***$301,947***	***$173.34***
ELEVATED STORAGE								
EXISTING FACILITIES			MG					
	Continental	$2,800,000	1.000	0.150	0.174	0.676	$487,200	
	Lucille	$1,126,000	1.000	0.369	0.000	0.631	$0	
	Kingsbury	$400,000	1.000	0.365	0.000	0.635	$0	
	Ireland	$197,000	0.500	0.201	0.000	0.299	$0	
	Subtotal Existing Facilities	***$4,523,000***	***3.500***	***1.085***	***0.174***	***2.241***	***$487,200***	
	TOTAL ELEVATED STORAGE	***$4,523,000***	***3.500***	***1.085***	***0.174***	***2.241***	***$487,200***	***$279.69***

TABLE 5-9
WATER CIP INVENTORY AND COSTING

FACILITY		TOTAL CONSTRUCT COST	FACILITY CAPACITY (mgd or gals)				2015-2025	
TYPE	NAME		TOTAL	CURRENT CUST.	2015-2025 GROWTH	POST-2025 GROWTH	CAPITAL COST TOTAL	COST PER LUE (a)
MAJOR TRANSMISSION LINES								
EXISTING FACILITIES (b)			MGD					
	42" Water Supply Line from Nixon WTP	$0	31.023	15.507	2.490	13.027	$0	
	30" Water Supply Line form Nixon WTP	$0	15.863	7.929	1.273	6.661	$0	
	24" River/Cedar St. & 16" Lucille Tank	$1,054,670	10.152	10.044	0.108	0.000	$11,220	
	16" Boening, Waveshore, Vaughan, San Antonio & Cedar St.	$840,699	4.512	4.464	0.048	0.000	$8,944	
	16" Milam to WTP	$196,700	4.512	4.464	0.048	0.000	$2,093	
	16" River and Milam	$606,945	4.512	4.464	0.048	0.000	$6,457	
	Subtotal Existing Facilities	***$2,699,014***	***23.688***	***23.436***	***0.252***	***0.000***	***$28,713***	
FUTURE FACILITIES (c)			MG					
	Major Transmission Lines	$19,563,750	52.522	0.000	3.511	49.011	$1,316,475	
	Subtotal Future Facilities	***$19,563,750***	***52.522***	***0.000***	***3.511***	***49.011***	***$1,345,188***	
TOTAL TRANSMISSION LINES		***$22,262,764***	***76.210***	***23.436***	***3.763***	***49.011***	***$1,905,636***	***$772.24***
TOTALS		***$41,300,764***					***$3,312,021***	***$1,901.36***

*SSLGC facilities are not included in Seguin's impact fee base. SSLGC is in the process of upgrading its infrastructure. For purpose of the impact fee, facilities are shown but not included in the capacity, growth, or capital cost.

(a) Assumes the following gals to LUE conversion factors:

Treatment/Supply/Pumpage: 1,143 gals daily
Ground/Elevated Storage: 100 gals

(b) Incomplete inventory of existing facilities; existing customers use capacity in other lines. Future customers use capacity in existing main trunk lines as well as in future transmission lines.

(c) Includes typical facilities for service to new development. Costs are based on the following projects. Similar projects may be substituted, dependent on actual development demand.

10" Water Hwy. 123 from IH-10 to Strempel Rd.	$543,400	1.762	0.000	0.140	1.622	$43,176
12" Northeastern Upper Pressure Plan Water Line	$1,842,620	2.538	0.000	0.180	2.358	$130,682
12" Eastern I-10 Water Line	$626,340	2.538	0.000	0.150	2.388	$37,018
8" Water Line along Hwy. 46	$355,680	1.128	0.000	0.150	0.978	$47,298
12" CR 102 Water Line	$654,680	2.538	0.000	0.160	2.378	$41,272
12" Pressure Plane Boundary Water Line	$676,520	2.538	0.000	0.150	2.388	$39,983
12" Northwestern Upper Press. Plane Water Line	$811,200	2.538	0.000	0.160	2.378	$51,139
12" Western Upper Pressure Plane Water Line	$1,591,070	2.538	0.000	0.180	2.358	$112,842
12" Along Geronimo Creek/Railroad	$926,640	2.538	0.000	0.180	2.358	$65,719
12" Water Along East Mountain/Walnut	$1,302,000	2.538	0.000	0.170	2.368	$87,210
16" North Austin Street Water Line	$1,548,430	4.512	0.000	0.301	4.211	$103,297
16" West PS Lower Pressure Plane Connection	$693,030	4.512	0.000	0.240	4.272	$36,863
16" Along 8th Street to IH-10	$1,630,200	4.512	0.000	0.300	4.212	$108,391
16" SH 123 PS Discharge Water Line	$1,307,020	4.512	0.000	0.350	4.162	$101,387
16" Water Line to SH 123 Bypass Pump Station	$1,971,450	4.512	0.000	0.300	4.212	$131,080
16" Water Line to Highway 123 EST	$1,914,770	4.512	0.000	0.300	4.212	$127,312
8" Northeastern Upper Pressure Plane Water Line	$729,560	1.128	0.000	0.050	1.078	$32,339
8" Eastern Upper Pressure Plane Water Line	$439,140	1.128	0.000	0.050	1.078	$19,465

Note: Totals may not add due to rounding. Source: TRC Engineers, Inc. 2015.

TABLE 5-10
WASTEWATER CIP INVENTORY AND COSTING

FACILITY		TOTAL CONSTRUCT COST	FACILITY CAPACITY (mgd or gals)				2015-2025	
TYPE	NAME		TOTAL	CURRENT CUST.	2015-2025 GROWTH	POST-2025 GROWTH	CAPITAL COST TOTAL	COST PER LUE (a)
TREATMENT								
EXISTING FACILITIES			PEAK MGD					
	Walnut Creek WWTP	$5,392,408	4.900	4.900	0.000	0.000	$0	
	GBRA WWTP	$0	0.300	0.300	0.000	0.000	$0	
	Geronimo Creek WWTP	$5,655,641	2.130	2.130	0.000	0.000	$0	
	Subtotal Existing Facilities	***$11,048,049***	***7.330***	***7.330***	***0.000***	***0.000***	***$0***	
FUTURE FACILITIES								
	Walnut Creek WWTP Expansion	$18,000,000	3.700	2.271	1.362	0.067	$6,625,946	
	GBRA WWTP Expansion	$3,000,000	0.300	0.000	0.100	0.200	$1,000,000	
	Geronimo Creek WWTP Expansion	$10,000,000	1.250	0.500	0.750	0.000	$6,000,000	
	Subtotal Future Facilities	***$31,000,000***	***5.250***	***2.771***	***2.212***	***0.267***	***$13,625,946***	
TOTAL WASTEWATER TREATMENT		***$42,048,049***	***12.580***	***10.101***	***2.212***	***0.267***	***$13,625,946***	***$5,297.98***
PUMPING								
EXISTING FACILITIES			MGD					
	All lift Stations	$2,200,000	9.634	10.101	0.000	0.000	$0	
	Subtotal Future Facilities	***$2,200,000***	***9.634***	***10.101***	***0.000***	***0.000***	***$0***	
FUTURE FACILITIES								
	IH-10 Lift Station & Force Main	$465,850	0.432	0.000	0.200	0.232	$215,671	
	River Oak Dr. Lift Station & Force Main	$1,000,000	0.684	0.000	0.200	0.484	$292,398	
	SH123 Bypass S. Lift Station & FM	$2,200,000	0.864	0.000	0.200	0.664	$509,259	
	Burgess Street Lift Station Upgrade	$800,000	0.432	0.000	0.200	0.232	$370,370	
	Mill Creek Lift Station Upgrade	$453,000	0.864	0.000	0.250	0.614	$131,076	
	Navarro Lift Station Upgrade	$546,000	0.864	0.000	0.277	0.587	$175,049	
	Localized Lift Stations	(b)		0.000				
	Subtotal Future Facilities	***$5,464,850 (b)***	***4.140***	***0.000***	***1.327***	***2.813***	***$1,693,824 (b)***	
TOTAL WASTEWATER PUMPAGE		***$7,664,850 (b)***	***13.774***	***10.101****	***1.327***	***2.813***	***$1,693,824 (b)***	***$658.58 (b)***
MAJOR COLLECTION LINES								
EXISTING FACILITIES (c)			MG					
	Geronimo Creek (16", 18", 20", 30")	$3,089,137	6.345	1.500	0.200	4.645	$97,372	
	Geronimo Creek IV & V (15" & 18")	$5,000,000	2.284	1.000	0.200	1.084	$437,828	
	Court Street to Plant (15" & 18")	$350,000	2.284	2.000	0.090	0.194	$13,792	
	Geronimo Crk Ph I & II 18" & 24" Gravity	$304,195	4.061	1.500	0.070	2.491	$5,243	
	Geronimo Crk Phase III 12" Gravity	$407,449	1.015	0.500	0.070	0.445	$28,100	
	Westside (24" & 18")	$480,000	4.061	3.601	0.090	0.370	$10,638	
	Subtotal Existing Facilities	***$9,630,781***	***20.050***	***10.101***	***0.720***	***9.229***	***$592,973***	
FUTURE FACILITIES								
	Major Collection Lines	$27,184,727	32.419	0.000	1.492	30.927	$1,041,003	
	Subtotal Future Facilities	***$27,184,727***	***32.419***	***0.000***	***1.492***	***30.927***	***$1,041,003***	
TOTAL TRANSMISSION LINES		***$36,815,508***	***52.469***	***10.101***	***2.212***	***40.156***	***$1,633,976***	***$635.31***
WASTEWATER CONSTRUCTION COST TOTAL		***$86,528,407***					***$16,953,745***	***$6,591.88 (b)***

*A portion of the flow is directed to the treatment plants without flowing through any future or existing lift stations (Beau Perry 10 6 10), thus demand is somewhat less than shown in Table 5-4.

(a) Assumes the following gals to LUE conversion factors:

Treatment:	860	gals daily
Pumpage:	860	gals daily
Collection:	860	gals daily

(b) Fee payers requiring construction of additional new lift station will also be assessed cost of their pro-rata share of the facilities.

(c) Incomplete inventory of existing facilities. New growth uses these major trunk lines which serve all customers, as well as more localized collection lines.

(d) Includes typical facilities for service to new development. Costs are based on the following projects. Similar projects may be substituted, dependent on actual development demand.

Walnut Branch 30" Gravity	$4,000,000	6.345	0.000	0.400	5.945	$252,167
Mill Creek 12" Gravity	$1,410,000	1.015	0.000	0.200	0.815	$277,833
Mill Creek 18" Gravity	$1,930,000	2.284	0.000	0.200	2.084	$169,002
S.H. 123 Bypass North 12" Gravity	$442,125	1.015	0.000	0.100	0.915	$43,559
S.H. 123 North 12" Gravity	$558,112	1.015	0.000	0.030	0.985	$16,496
F.M. 725 12" Gravity	$276,325	1.015	0.000	0.020	0.995	$5,445
S.H. 123 Bypass South 12" Gravity	$1,200,000	1.015	0.000	0.050	0.965	$59,113
123 Bypass 12" Gravity	$461,910	1.015	0.000	0.100	0.915	$45,508
Southland Spring Road 15" Gravity	$653,000	1.586	0.000	0.021	1.565	$8,646
IH-10 12" Gravity	$325,000	1.015	0.000	0.030	0.985	$9,606
Tor Drive 12" Gravity	$534,425	1.015	0.000	0.000	1.015	$0
Lake McQueeny Sanitary Sewer System	$6,500,000	2.284	0.000	0.000	2.284	$0
Turtle Lane Sanitary Sewer System	$3,650,000	1.015	0.000	0.000	1.015	$0
F.M. 20 12" Gravity	$543,125	1.015	0.000	0.030	0.985	$16,053
IH 10 / US 90 18" Gravity	$1,100,000	2.284	0.000	0.030	2.254	$14,448
Aldama Street from I-10 to Kingsbury Street 18" Gravity	$765,230	2.284	0.000	0.081	2.203	$27,138
Heideke Street from Baxter Street to Martindale 15" Gravity	$325,125	1.586	0.000	0.070	1.516	$14,350
Heideke Street from Martindale to IH-10 15" Gravity	$510,350	1.586	0.000	0.070	1.516	$22,525
Hueber Road 12" Gravity	$270,000	1.015	0.000	0.030	0.985	$7,980
Rudeloff Road 10" Gravity	$1,730,000	1.015	0.000	0.030	0.985	$51,133

Note: Totals may not add due to rounding.
Source: TRC Engineers, 2015.

TABLE 5-11
SUMMARY OF CAPITAL COSTING

UTILITY	FACILITY TYPE	COST/LUE *
WATER	Supply	$0.00
	Treatment	$0.00
	Pumping	$676.09
	Ground Storage	$173.34
	Elevated Storage	$279.69
	Major Transmission	$772.24
	Study Costs	$10.91
TOTAL WATER CAPITAL COSTS		***$1,912.27***
WASTEWATER	Treatment	$5,297.98
	Pumping **	$658.58
	Major Collection	$635.31
	Study Costs	$7.39
TOTAL WASTEWATER CAPITAL COSTS		***$6,599.26***
TOTAL WATER AND WASTEWATER CAPITAL COSTS		***$8,511.53***

* An LUE is equal to use by a typical household with a 5/8" water meter for the water and sewer utilities.`

** Fee payers will also pay all costs for localized lift stations, if any.

6.0 FEE CALCULATION

As noted in earlier discussion, Chapter 395 states that the maximum fee amount may not exceed the full capital cost per unit. The statute also requires:

> *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 in the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan.*

The Equity Residual Model described in ***Section 4.0*** was used in fee calculation for the water and sewer utilities. ***Table 6-1*** contains calculations of rate credits for the water utility, and *Table 6-2* shows similar calculations for the wastewater utility. These tables show the dollar amount of capital debt service payback proportionately attributed to each LUE of existing service.

Table 6-3 shows the remainder of the fee calculation process. According to Chapter 395, the City may either calculate actual rate credits, or it may simply reduce the construction costs by 50% to approximate a fee credit. ***Table 6-3*** performs both rate calculations for each type of facility, for each utility. The higher fee between the two credit approaches is then shown in the right-most column.

Table 6-4 shows maximum fee amounts for various sizes of water meters.

TABLE 6-1
CATEGORIZATION OF UTILITY DEBT
WATER UTILITY

FACILITY TYPE/NAME	BOND ISSUE			FACILITY CAPACITY		
	Issuance Date	Utility Allocation of Issue Amount	Remaining Principal (a)	TOTAL	FOR CURRENT CUST.	Total Per LUE
WATER PUMPING				MGD		
Existing						
Pumping		$ -	$ -			
Future						
Pumping	Prospective	$9,555,000.00	$9,555,000.00	11.23	2.18	$ 170.61
Sub Total Pumping		***$ 9,555,000.00***	***$ 9,555,000.00***			***$ 170.61***
GROUND STORAGE				MG		
Existing						
Ground Storage		$ -	$ -			
Future						
Ground Storage	Prospective	$ 4,160,000.00	$ 4,160,000.00	2.50	0.14	$ 21.47
Sub Total Ground Storage		***$ 4,160,000.00***	***$ 4,160,000.00***			***$ 21.47***
ELEVATED STORAGE				MG		
Existing						
Misc. Storage Facilities	2011	$ 462,301.48	$ 73,809.00	3.5	1.085	$ 2.11
Ireland & Kingsbury Tanks	2015	$ 457,441.00	$ 457,441.00	3.5	1.085	$ 13.07
Future						
Elevated Storage		$ -	$ -			
Sub Total Elevated Storage		***$ 919,742.48***	***$ 531,250.00***			***$ 15.18***
TRANSMISSION				MGD		
Misc. Lines	2010	$ 1,546,381.58	$ 1,500,000.00	23.69	23.44	$ 136.78
Misc. Lines	2011	$ 218,852.39	$ 34,941.00	23.69	23.44	$ 3.19
Misc. Lines	2013	$ 2,560,835.63	$ 1,136,342.00	23.69	23.44	$ 103.62
Misc. Lines	2014	$ 1,700,000.00	$ 1,700,000.00	23.69	23.44	$ 155.02
Misc. Lines	2015	$ 622,912.00	$ 622,912.00	23.69	23.44	$ 56.80
Transmission [a]	Prospective	$ 19,563,750.00	$ 19,563,750.00	52.52	-	$ -
Sub Total Transmission		***$ 19,782,602.39***	***$ 19,598,691.00***			***$ 136.78***
TOTAL WATER		***$ 34,417,344.87***	***$ 33,844,941.00***	***$ -***	***$ -***	***$ 344.04***

(a) Includes engineering costs and contingencies.

TABLE 6-2
CATEGORIZATION OF UTILITY DEBT
WASTEWATER UTILITY

FACILITY TYPE/NAME	BOND ISSUE			FACILITY CAPACITY		
	Issuance Date	Utility Allocation of Issue Amount	Outstanding Principal	TOTAL	FOR CURRENT CUST.	Total Per LUE
TREATMENT				MGD		
Existing						
WWTP Improvements	2014	$ 3,550,348.56	$ 3,450,000.00	7.33	7.33	$ 293.83
Future						
Treatment	Prospective	$ 31,000,000.00	$ 31,000,000.00	5.25	2.77	$ 1,393.55
Sub Total Treatment		***$ 34,550,348.56***	***$ 34,450,000.00***			***$ 1,687.38***
PUMPING				MGD		
Pumping Additions	2013	$ 39,437.99	$ 17,253.00	9.634	9.634	$ 1.47
		$ -	$ -			
Future						
Pumping	Prospective	$ 5,464,850.00	$ 5,464,850.00	4.14	-	$ -
Sub Total Pumping		***$ 5,504,287.99***	***$ 5,482,103.00***			***$ 1.47***
COLLECTION				MGD		
Misc. Lines	2010	$ 6,288,618.42	$ 6,100,000.00	20.05	10.10	$ 261.74
Misc. Lines	2011	$ 218,852.39	$ 34,941.00	20.05	10.10	$ 1.50
Misc. Lines	2013	$ 1,478,489.01	$ 646,797.00	20.05	10.10	$ 27.75
Misc. Lines	2014	$ 4,888,161.06	$ 4,750,000.00	20.05	10.10	$ 203.81
Misc. Lines	2015	$ 1,959,180.00	$ 1,959,180.00	20.05	10.10	$ 84.06
Elevated Storage	Prospective	$ 27,184,727.00	$ 27,184,727.00	32.42	-	$ -
Sub Total Collection		***$ 42,018,027.88***	***$ 40,675,645.00***			***$ 578.86***
TOTAL WATER		***$ 82,072,664.43***	***$ 80,607,748.00***			***$ 2,267.71***

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(a) Includes engineering costs and contingency costs.

TABLE 6-2
WATER AND WASTEWATER MAXIMUM IMPACT FEES

UTILITY	FACILITY	COST/ LUE*	ALTERNATIVE		MAXIMUM FEE		HIGHER OF A OR B
			A Rate Credit	B 50% Credit	A Rate Credit	B 50% Credit	
WATER	Pumping	676.09	170.61	338.04	505.48	338.04	505.48
	Ground Storage	173.34	21.47	86.67	151.87	86.67	151.87
	Elevated Storage	279.69	15.18	139.85	264.51	139.85	264.51
	Transmission	772.24	136.78	386.12	635.47	386.12	635.47
	Study Costs	10.91	-	5.45	10.91	5.45	10.91
Total Water		**1,912.27**	**344.04**	**956.14**	**1,568.23**	**956.14**	**1,568.23**
Wastewater	Treatment	5,297.98	1,687.38	2,648.99	3,610.60	2,648.99	3,610.60
	Lift Stations (a)	658.58	1.47	329.29	657.12	329.29	657.12
	Collection	635.31	578.86	317.66	56.45	317.66	317.66
	Study Costs	7.39	-	3.69	7.39	3.69	7.39
Total Wastewater		**6,599.26**	**2,267.71**	**3,299.63**	**4,331.55**	**3,299.63**	**4,592.76**
TOTAL WATER AND WASTEWATER		***8,511.53***	***2,611.75***	***4,255.77***	***5,899.79***	***4,255.77***	***6,160.99***

* *An LUE is equal to use by a typical household with a 5/8" water meter.*

(a) *Fee payers requiring construction of additional new lift stations will also be charged the cost of their prorate shares of those facilities.*

TABLE 6-2
WATER AND WASTEWATER MAXIMUM IMPACT FEES

METER TYPE	METER SIZE	MULTIPLIER	MAXIMUM IMPACT FEE		
			WATER	WASTEWATER	BOTH
SIMPLE	5/8 X 3/4"	1.0	$ 1,568.23	$ 4,592.76	$ 6,160.99
SIMPLE	3/4"	1.5	$ 2,352.35	$ 6,889.13	$ 9,241.48
SIMPLE	1"	2.5	$ 3,920.58	$ 11,481.89	$ 15,402.47
SIMPLE	1 1/2"	5.0	$ 7,841.17	$ 22,963.78	$ 30,804.95
SIMPLE	2"	8.0	$ 12,545.87	$ 36,742.05	$ 49,287.91
COMPOUND	2"	8.0	$ 12,545.87	$ 36,742.05	$ 49,287.91
TURBINE	2"	10.0	$ 15,682.33	$ 45,927.56	$ 61,609.89
COMPOUND	3'	16.0	$ 25,091.73	$ 73,484.09	$ 98,575.83
TURBINE	3"	24.0	$ 37,637.60	$ 110,226.14	$ 147,863.74
COMPOUND	4"	25.0	$ 39,205.83	$ 114,818.89	$ 154,024.73
TURBINE	4"	42.0	$ 65,865.80	$ 192,895.74	$ 258,761.54
COMPOUND	6"	50.0	$ 78,411.67	$ 229,637.78	$ 308,049.45
TURBINE	6"	92.0	$ 144,277.47	$ 422,533.52	$ 566,810.99
COMPOUND	8"	80.0	$ 125,458.67	$ 367,420.46	$ 492,879.13
TURBINE	8"	160.0	$ 250,917.34	$ 734,840.91	$ 985,758.25
COMPOUND	10"	115.0	$ 180,346.84	$ 528,166.91	$ 708,513.74
TURBINE	10"	250.0	$ 392,058.34	$ 1,148,188.92	$ 1,540,247.27
TURBINE	12"	330.0	$ 517,517.01	$ 1,515,609.38	$ 2,033,126.39