

Technical Report

CITY OF BASTROP, TEXAS

LAND USE ASSUMPTION & IMPACT FEE REPORT

NOVEMBER, 2016



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One of the most effective growth management tools available to municipal utilities is the use of impact fees. Through the implementation of impact fees, growth is required to pay for itself through the collection of upfront fees. Therefore, a portion of the cost burden of new infrastructure is kept out of the user's fees. In the State of Texas, impact fees should be adopted according to the guidelines set forth in Chapter 395 of the Local Government Code.

Chapter 395 of the Texas Local Government Code provides specific requirements that cities in Texas must abide by while determining, assessing, and collecting Impact Fees. The process outlined for the implementation of fees includes:

1. Development of Land Use Assumptions (LUA);
2. Development of Capital Improvement Plan (CIP) based on LUA;
3. Public hearing on LUA and CIP;
4. Adoption of LUA and CIP;
5. Development of maximum impact fees;
6. Public hearing on impact fees;
7. Adoption of impact fees.

Nelisa Heddin Consulting, LLC (NH Consulting) has been hired by the City of Bastrop (City) to determine the land use assumptions and the maximum allowable impact fee, per requirements set forth in Chapter 395 of the Local Government Code.

In developing impact fees to be charged to the City's customers, it was first necessary to develop a future assumption of system growth. Next, capital improvements which are necessary to meet the needs of that growth are identified. Finally, a maximum allowable impact fee may be determined. Making this determination involves a systematic progression of steps. This report is intended to outline the methodology utilized by NH Consulting and summarize the results of the analysis.

Purpose of Report



Step 1: Land Use Assumptions

Chapter 395 of the Local Government Code specifies that Land Use Assumptions “includes a description of the service area and projections of change in land uses, densities, intensities and population in the service area over at least a 10-year period.” In order for the City to impose an impact fee, the City must first adopt Land Use Assumptions. Chapter 395 (395.0455) further identifies the following as requirements for the adoption of Land use Assumptions:

- a) Except for storm water, drainage, flood control and roadway facilities, the City may adopt a systemwide land use assumptions;
- b) Prior to adopting land use assumptions, the City shall follow the public notice, hearing and other requirements for adoption as outlined in Chapter 395; and
- c) After adoption of the land use assumptions, the City is not required to adopt additional land use assumptions for the service area for water supply, treatment and distribution facilities or wastewater collection and treatment facilities as a prerequisite to adoption of a capital improvements plan or impact fee, provided the capital improvements plan and impact fee are consistent with the systemwide land use assumption.

Service Area

The City of Bastrop provides water and wastewater service to areas as defined within its water and wastewater CCN as shown on Exhibits 1 and 2.

Service Unit Equivalent

As described above, Chapter 395 requires the City to establish “a definitive table establishing the specific level or quantity of use, consumption, generation, or discharge of a service unit for each category of capital improvements or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, and industrial.” NH Consulting recommends utilizing the American Waterworks Association’s (AWWA) published standard meter size conversion factors as a means of meeting this requirement. This allows the City to objectively apply these standards to customers for assessing an impact fee as the meters are generally sized to accommodate required use. NH Consulting recommends the following meter size conversion table as a means of determining SUEs for each customer.





Table 1: Meter Equivalency Factors

Meter Type	Meter Size	Ratio to 5/8" Meter
SIMPLE	5/8"	1.00
SIMPLE	3/4"	1.50
SIMPLE	1"	2.50
SIMPLE	1 1/2"	5.00
SIMPLE	2"	8.00
COMPOUND	2"	8.00
TURBINE	2"	10.00
COMPOUND	3"	16.00
TURBINE	3"	24.00
COMPOUND	4"	25.00
TURBINE	4"	42.00
COMPOUND	6"	50.00
TURBINE	6"	92.00
COMPOUND	8"	80.00
TURBINE	8"	160.00
COMPOUND	10"	115.00
TURBINE	10"	250.00
TURBINE	12"	330.00

NH Consulting recommends that apartments be calculated at a ratio of .5 SUE per apartment unit.

Using these recommended SUE conversion factors, as illustrated on Table 2, the City provided water service to approximately 2,995 connections that represent 6,202 SUEs; which is the equivalent of 2.01 SUEs per connection. The City estimates the 6,202 SUEs serve a total population of 8,130 people; meaning that each SUE provides service to 1.31 people per SUE.

As of December, 2015, the City provided wastewater service to approximately 5,676 SUEs, which provided service to 7,960 people; meaning each wastewater SUE provides service to 1.40 people per SUE.



Table 2: Determination of Current SUEs

Meter Type	Meter Size	Ratio to 5/8" Meter	December, 2015 Connection Count	Service Units
SIMPLE	5/8"	1.00	1	1
SIMPLE	3/4"	1.50	2,649	3,974
SIMPLE	1"	2.50	139	348
SIMPLE	1 1/2"	5.00	63	315
SIMPLE	2"	8.00	99	792
COMPOUND	2"	8.00	-	-
TURBINE	2"	10.00	-	-
COMPOUND	3"	16.00	7	112
TURBINE	3"	24.00	4	96
COMPOUND	4"	25.00	5	125
TURBINE	4"	42.00		-
COMPOUND	6"	50.00	-	-
TURBINE	6"	92.00	1	92
COMPOUND	8"	80.00		-
TURBINE	8"	160.00		-
COMPOUND	10"	115.00		-
TURBINE	10"	250.00		-
TURBINE	12"	330.00		-
Apartments			<u>27</u>	<u>348</u>
TOTAL			2,995	6,202

Future SUEs

The next step in the analysis involves making projections of future population and growth on the system. In so doing, the City provided NH Consulting with estimates of current land use, by usage type. NH Consulting assumed 3.85% growth to make a determination of future growth, as illustrated on Table 3.



Table 3: Future Land Use Assumptions, Acres Developed

Land Use (Acres)	2016	2026	Build Out
Single Family Residential	1,697	2,476	3,616
Retail/Office	96	140	211
Commercial	1,181	1,723	2,274
Industrial	174	254	459
Parks and Open Space and Agriculture	748	748	748
TOTAL Developed ACREAGE	3,896	5,341	7,307

Current land usage and acreage are used to determine service population per acre of developed land; the City’s water service area consists of approximately 3,896 developed acres that provides service to approximately 8,130 people or 2.09 people per acre. The current population per acre of developed land is then used to make projections of future service population (by multiplying 2.09 people per acre times future acreage to be developed). Future water and wastewater SUE projections are made by multiplying the SUE per person times the future population projections as illustrated on Table 4 below.

Table 4: Future Land Use Assumptions, Service Unit Equivalents and Population

	2016	2026	2055
Population	10,581	13,596	17,700
Water Service Population	8,130	11,145	15,249
Sewer Service Population	7,960	10,975	15,079
Water SUEs	4,877	6,686	9,147
Sewer SUEs	5,676	7,826	10,752
Water Service Population per Acre (Total Acres)	2.09		



Step 2: Capital Improvements Plan

Chapter 395 defines the Capital Improvements Plan as “a plan required by this chapter that identifies capital improvements or facility expansions for which impact fees may be assessed.” Further, Chapter 395 specifies that the Capital Improvements Plan “must contain specific enumeration of the following items:

- 1) a description of the existing capital improvements within the service area and the costs to upgrade, update, improve, expand, or replace the improvements to meet existing needs and usage and stricter safety, efficiency, environmental, or regulatory standards, which shall be prepared by a qualified professional engineer licensed to perform the professional engineering services in this state;
- 2) an analysis of the total capacity, the level of current usage, and commitments for usage of capacity of the existing capital improvements, which shall be prepared by a qualified professional engineer licensed to perform the professional engineering services in this state;
- 3) a description of all or the parts of the capital improvements or facility expansions and their costs necessitated by and attributable to new development in the service area based on the approved land use assumptions, which shall be prepared by a qualified professional engineer licensed to perform the professional engineering services in this state;
- 4) a definitive table establishing the specific level or quantity of use, consumption, generation, or discharge of a service unit for each category of capital improvements or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, and industrial;
- 5) the total number of projected service units necessitated by and attributable to new development within the service area based on the approved land use assumptions and calculated in accordance with generally accepted engineering or planning criteria;
- 6) the projected demand for capital improvements or facility expansions required by new service units projected over a reasonable period of time, not to exceed 10 years; and
- 7) a plan for awarding:
 - a. a credit for the portion of ad valorem tax and utility service revenues generated by new service units during the program period that is used for the payment of improvements, including the payment of debt, that are included in the capital improvements plan; or
 - b. in the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan.”

Items payable by an impact fee include construction, surveying and engineering, land acquisition costs, fees paid for preparation of impact fee study, and interest and finance charges. The impact fee may not be used to pay:

- 1) construction, acquisition, or expansion of public facilities or assets other than capital improvements or facility expansions identified in the capital improvements plan;
- 2) repair, operation, or maintenance of existing or new capital improvements or facility expansions;
- 3) upgrading, updating, expanding, or replacing existing capital improvements to serve existing development in order to meet stricter safety, efficiency, environmental, or regulatory standards;
- 4) upgrading, updating, expanding, or replacing existing capital improvements to provide better service to existing development;
- 5) administrative and operating costs of the political subdivision, except the Edwards Underground Water District or a river authority that is authorized elsewhere by state law to charge fees that function as impact fees may use impact fees to pay its administrative and operating costs; or
- 6) principal payments and interest or other finance charges on bonds or other indebtedness, except as allowed by Section 395.012.



NH Consulting has worked closely with the City to identify projects that fall within these guidelines. These projects include existing infrastructure as well as planned future improvements.

Capacity Requirements Assumptions

In identifying future facilities needs of the system and allocating those needs to growth as required by Chapter 395, assumptions must be made as to the capacity demands for each new water and wastewater service unit equivalent (SUE) on the system. City staff provided facilities requirements assumptions to be utilized for this analysis as outlined on Tables 3 and 4 below.

Table 5: Water Facility Capacity Assumptions

Water Facilities	Basis	Capacity per SUE
Supply	Peak Day (gallons per day)	864
Booster Pumps	Peak Day (gallons per day)	864
Total Storage	TCEQ Requirement (gallons)	200
Elevated Storage	TCEQ Requirement (gallons)	100

Table 6: Wastewater Facility Capacity Assumptions

Wastewater Facilities	Basis	Capacity per SUE
Treatment	Average Day (gallons per day) - current flows	145
Treatment	Average Day (gallons per day) - growth	250
Pumping	Engineering Analysis (gallons per day)	875

Capacity Requirements Projections

Using the assumed future SUEs as outlined on Table 4 and the water and wastewater capacity per SUE assumptions outlined on Tables 5 and 6, NH Consulting made projections of future facility demand requirements, as outlined on Tables 7 and 8.



Table 7: Water Facility Capacity Requirement Projections

Projected Required Capacity (Gallons)		2016	2026	2055 (4)
Supply	Peak Day (gallons per day)	5,358,096	7,345,425	10,049,703
Booster Pumps	Peak Day (gallons per day)	5,358,096	7,345,425	10,049,703
Total Storage	TCEQ Requirement (gallons)	1,240,300	1,700,330	2,326,320
Elevated Storage	TCEQ Requirement (gallons)	620,150	850,165	1,163,160

Table 8: Wastewater Facility Capacity Requirement Projections

Projected Required Capacity (Gallons)		2016	2026	2055
Treatment	Average Day (gallons per day) - current flows	823,020	823,020	823,020
Treatment	Average Day (gallons per day) - growth	-	537,550	1,269,027
TOTAL Treatment		823,020	1,360,570	2,092,047
Pumping	Engineering Analysis (gallons per day)	4,966,500	6,847,927	9,408,096

Capital Improvements Plan and Capacity Projections

City staff provided a listing of existing facilities and future facilities that will support future growth along with the cost and capacity of those facilities. Estimated timing for construction of future facilities was provided by City staff for each project. Using this information, NH Consulting then projected future system capacities for each system component. The future system capacities were compared to the future system requirements outlined above. Schedules 1 and 2 outline the results of these projections.

Capital Improvements Plan and Cost Allocations

Once the Capital Improvements Plan has been established, the next step in the analysis is to allocate costs of the existing and future facilities that are attributable to growth within the ten-year growth horizon. Costs are allocated based upon the pro-rata share of facility capacity that is anticipated to be utilized by the growth within the planning period. The system cost allocations are presented on Schedules 3 and 4.



Step 3: Determination of Maximum Allowable Fee

NH Consulting determined a maximum allowable impact fee, which collects all revenues to pay for allowable projects and related fees within the ten-year study period. Schedules 5 and 6 provide the impact fee reserve fund cash flow analysis detailing all expenses and revenues.

Chapter 395 does require the City to outline a “plan for awarding:

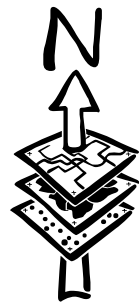
- a. a credit for the portion of ad valorem tax and utility service revenues generated by new service units during the program period that is used for the payment of improvements, including the payment of debt, that are included in the capital improvements plan; or
- b. in the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan.”

In discussions with City staff, it is NH Consulting’s understanding that the City wishes to provide a credit equal 50% of the total projected cost of implementing the capital improvements plan. The maximum impact fee and the recommended impact fee providing the 50% credit are outlined on Table 9 below.

Table 9: Maximum Allowable Fee, and Fee with 50% Credit

	Maximum Allowable Fee	50% of CIP
Water Impact Fee	\$2,706	\$1,353
Wastewater Impact Fee	\$6,792	\$3,396

Exhibit 1



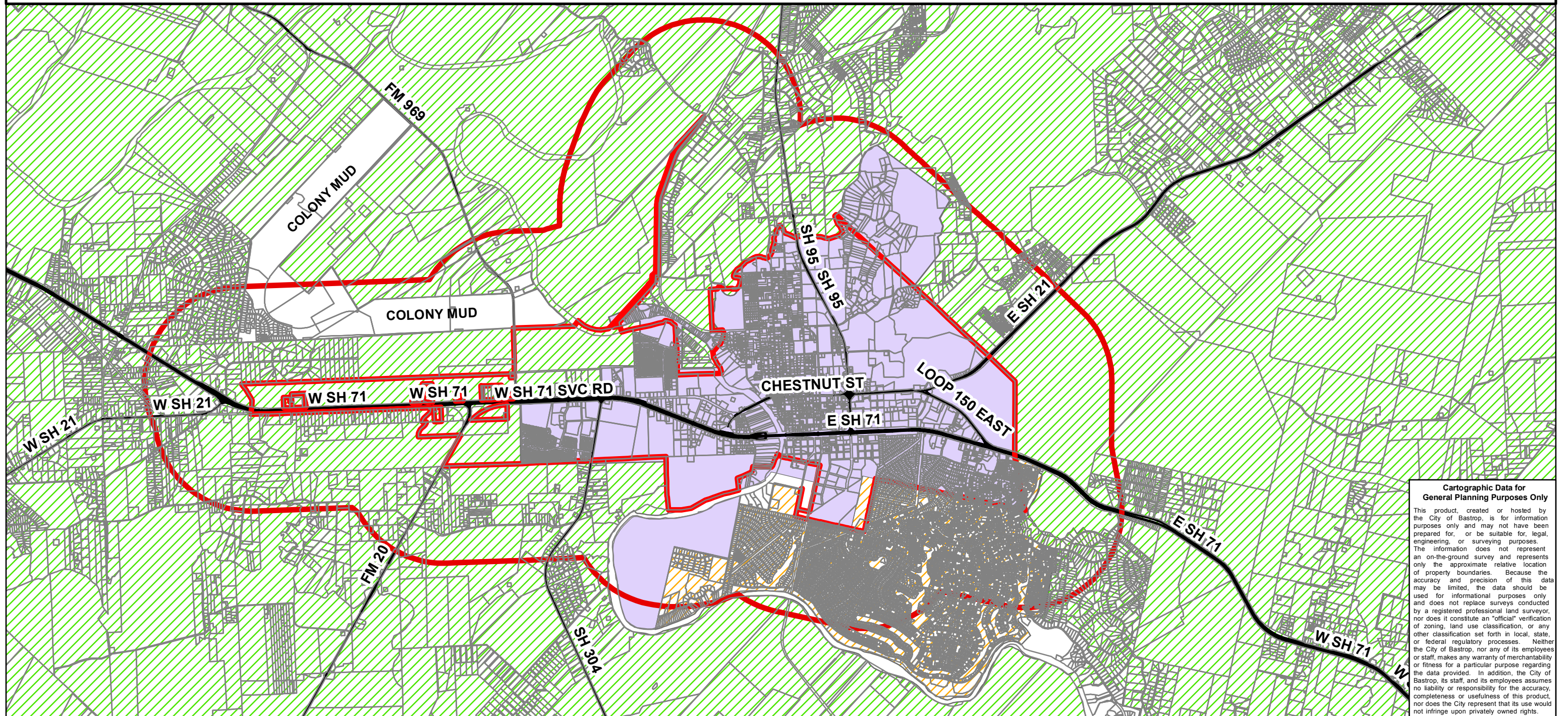
WATER CCN BOUNDARIES

Legend

- City Limits
- 1 Mile ETJ

Water CCN Boundary

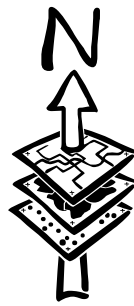
- CITY OF BASTROP
- AQUA WSC
- BASTROP COUNTY WCID 2



Cartographic Data for General Planning Purposes Only







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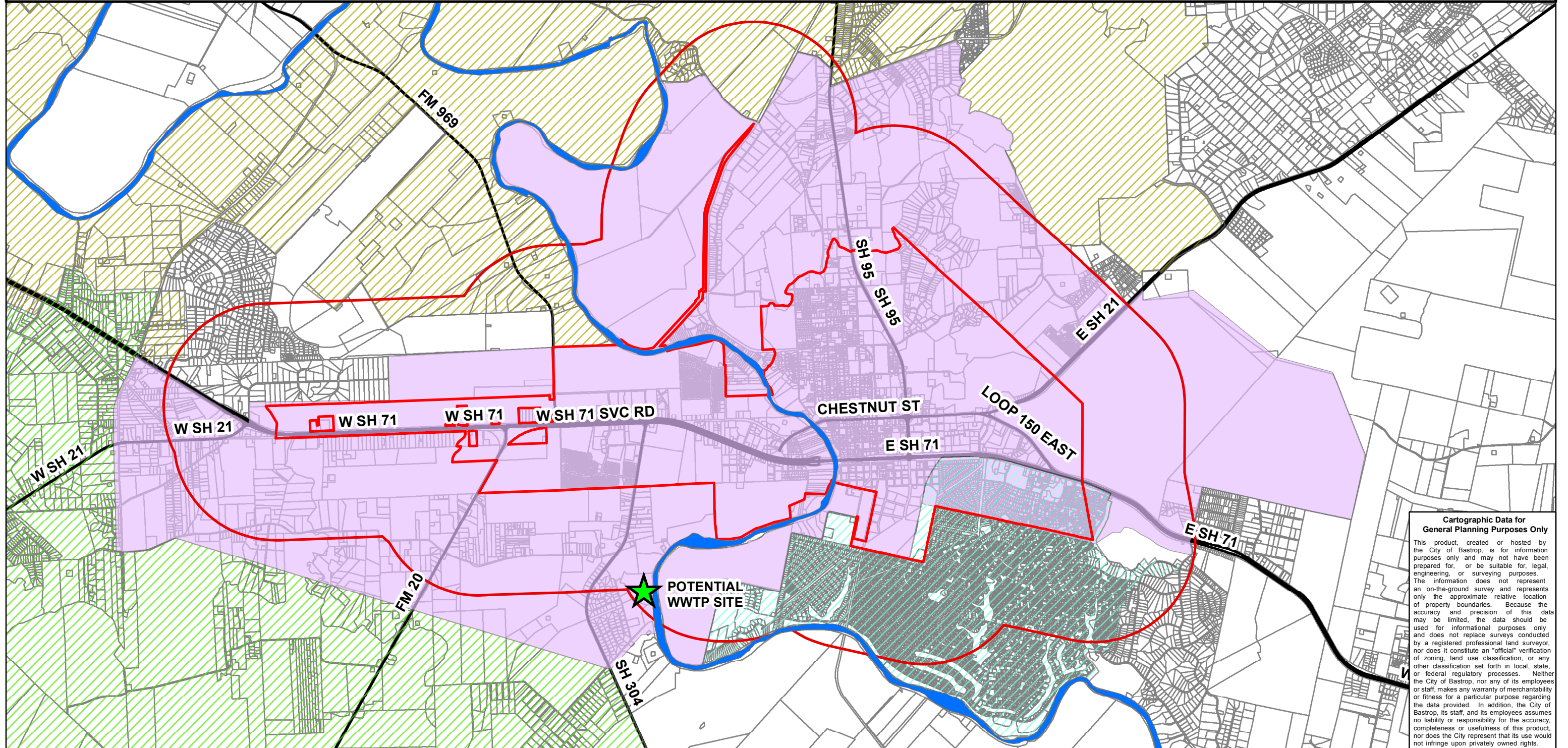
Exhibit 2



SEWER CCN BOUNDARIES

Legend

-  City Limits
-  1 Mile ETJ
- Sewer CCN Boundary**
 -  CITY OF BASTROP
 -  AQUA WSC
 -  LCRA
 -  BASTROP COUNTY WCID 2



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Schedules

City of Bastrop, Texas
 Water and Wastewater Department
 Impact Fee Study



Schedule 1
 Water Capital Improvement Plan Inventory

Water Supply	Year Planned	Total Construction Cost	Total Facility Capacity	Units	2016	2026	2055
Existing Facilities							
Willow Street Plant (Wells C-G)		\$ 781,865	3,319,200	Average Ga	3,319,200	3,319,200	3,319,200
Bob Bryan Park Site Phase 1 (Wells H and I)		\$ 424,853	1,224,000	Average Ga	1,224,000	1,224,000	1,224,000
Bob Bryan Park Side Phase 2		\$ 1,462,720	1,152,000	Average Ga	1,152,000	1,152,000	1,152,000
Future Facilities							
Additional water supply*	2017	\$ 1,000,000	1,058,400	Average Ga	-	1,058,400	1,058,400
TOTAL WATER SUPPLY			6,753,600		5,695,200	6,753,600	6,753,600
Capacity Required					5,358,096	10,049,703	-
Percent Used					94%	149%	0%

*Per City, combined additional water supply and New River Crossing to provide supplies for 2500 SUEs. Used gpd water supply requirements per SUE to convert to average day capacity provided.

Water Pumping	Year Planned	Total Construction Cost	Total Facility Capacity	Units	2016	2026	2055
Existing Facilities							
Willow High Service 1		\$ 9,962	720,000	Peak Hour	720,000	720,000	720,000
Willow High Service 2		\$ 9,962	720,000	Peak Hour	720,000	720,000	720,000
Willow High Service 3		\$ 9,962	720,000	Peak Hour	720,000	720,000	720,000
Willow High Service 4		\$ 19,638	768,000	Peak Hour	768,000	768,000	768,000
Willow High Service 5		\$ 19,638	768,000	Peak Hour	768,000	768,000	768,000
Willow High Service 6		\$ 19,638	768,000	Peak Hour	768,000	768,000	768,000
Bob Bryant High Service 1		\$ 74,815	1,344,000	Peak Hour	1,344,000	1,344,000	1,344,000
Bob Bryant High Service 2		\$ 74,815	1,344,000	Peak Hour	1,344,000	1,344,000	1,344,000
Bob Bryant Transfer Pump 1		\$ 20,000	384,000	Peak Hour	384,000	384,000	384,000
Bob Bryant Transfer Pump 2		\$ 20,000	384,000	Peak Hour	384,000	384,000	384,000
Loop 150 Tank Yard Pump 1		\$ 4,862	384,000	Peak Hour	384,000	384,000	384,000
Loop 150 Tank Yard Pump 2		\$ 4,862	384,000	Peak Hour	384,000	384,000	384,000
				Peak Hour	-	-	-
				Peak Hour	-	-	-
TOTAL WATER PUMPING			8,688,000		8,688,000	8,688,000	8,688,000



Schedule 1
 Water Capital Improvement Plan Inventory

Ground Storage	Year Planned	Total Construction Cost	Total Facility Capacity	Units	2016	2026	2055
Existing Facilities							
Bob Bryant (Tank 4)		\$ 263,080	285,000	Gallons	285,000	285,000	285,000
GST Re-Use at WWTP		\$ 128,762	40,000		40,000	40,000	40,000
Tank 1 at Willow Street		\$ 350,000	500,000		500,000	500,000	500,000
Tank 2 at Willow Street		\$ 350,000	500,000	Gallons	500,000	500,000	500,000
Future Facilities							
				Gallons	-	-	-
TOTAL GROUND STORAGE			1,325,000		1,325,000	1,325,000	1,325,000

Elevated Storage	Year Planned	Total Construction Cost	Total Facility Capacity	Units	2016	2026	2055
Existing Facilities							
EST at Loop 150		\$ 375,000	250,000	Gallons	250,000	250,000	250,000
Standpipe at Loop 150		\$ 700,000	1,000,000	Gallons	1,000,000	1,000,000	1,000,000
GST at Loop 150		\$ 140,000	225,000	Gallons	225,000	225,000	225,000
Future Facilities							
Elevated tower west at HWY 20 (supply)	2017	\$ 3,800,000	1,000,000	Gallons	-	1,000,000	1,000,000
TOTAL ELEVATED STORAGE			2,475,000		1,475,000	2,475,000	2,475,000



Schedule 1
 Water Capital Improvement Plan Inventory

Transmission Lines	Year Planned	Total Construction		Units	2016	2026	2055
		Cost	Total SUEs				
Existing Facilities							
8-inch line on Old Austin Hwy		\$ 146,590	1,000		1,000	1,000	1,000
12-inch line on Perkins/Higgins		\$ 96,491	1,000		1,000	1,000	1,000
12-inch line on Eskew/Loop 150		\$ 48,904	1,000		1,000	1,000	1,000
Hunters Crossing Blvd (16-inch)		\$ 100,160	1,200		1,200	1,200	1,200
Downtown Feeder (8"-inch)		\$ -	450		450	450	450
Willow/Wilson Connection (6-inch)		\$ -	250		250	250	250
Loop 150 Standpipe Feeder (10, 12-inch)		\$ -	1,000		1,000	1,000	1,000
SH 95 North (12-inch)		\$ -	1,000		1,000	1,000	1,000
Hoffman Road (8-inch)		\$ -	450		450	450	450
Loop 150 West Feeder (12-inch)		\$ -	1,000		1,000	1,000	1,000
SH 71 (North Line) (12-inch)		\$ -	1,000		1,000	1,000	1,000
SH 71 (South Line) (12-inch)		\$ -	1,000		1,000	1,000	1,000
Hasler Blvd (12-inch)		\$ -	1,000		1,000	1,000	1,000
Agnes Street (12-inch)		\$ -	1,000		1,000	1,000	1,000
SH 71 (West Line) (12-inch)		\$ -	1,000		1,000	1,000	1,000
Hunters Point Drive (12, 16-inch)		\$ -	1,200		1,200	1,200	1,200
Elevated Tank Feeder (12, 16-inch)		\$ -	1,200		1,200	1,200	1,200
SH 71 East/Buc-ee's (12-inch)		\$ -	1,000		1,000	1,000	1,000
Ground Storage Tank Feeder (12-inch)		\$ -	1,000		1,000	1,000	1,000
Loop 150 River Crossing (8-inch)		\$ -	450		450	450	450
Bob Bryant Feeder (12-inch)		\$ -	1,000		1,000	1,000	1,000
Blair Avenue (12-inch)		\$ -	1,000		1,000	1,000	1,000
Future Facilities							
Phase II Infrastructure for Well & Transmissi	2017	\$ 5,800,000	2,500			2,500	2,500
16" watermain crossing under river	2017	\$ 1,200,000	250			250	250
Watermain Replacement Pine Street Size In	2017	\$ 250,000	100			100	100
Carter & Mesquite Water Line Extensions	2018	\$ 700,000	250			250	250
Riverwood Waterline Improvements (Size Ir	2018	\$ 1,000,000	250			250	250
Transmission Main Extension Hunters Cross	2018	\$ 1,200,000	250			250	250
Watermain ext. piney ridge Hoffman to end	2019	\$ 350,000	250			250	250
Additional Water Main ext. to Pineforest	2019	\$ 850,000	250			250	250
Watermain ext. Tahitian drive to McAllister	2019	\$ 650,000	250			250	250
Water main ext. Arena Dr to Pitt	2020	\$ 350,000	250			250	250
Watermain ext (hwy 21) east to City Limits	2020	\$ 350,000	250			250	250
Tahitian Dr. Deadend to Mahalua Dr.	2020	\$ 250,000	250			250	250
Mahalua Dr. to Hulu Ct	2020	\$ 250,000	250			250	250
Water Main Ext SH304 to WWTP 3	2021	\$ 800,000	250			250	250
Watermain ext. Blakey Ln (Deadend to Char	2021	\$ 350,000	250			250	250



Schedule 2
 Wastewater Capital Improvement Plan Inventory

Wastewater Treatment	Year Planned	Total Construction Cost	Total Facility Capacity	Units	2016	2026	2055
Existing Facilities							
WWTP No. 1		\$ 505,014	1,060,000	Average Gallons per Day	1,060,000	1,060,000	1,060,000
WWTP No. 2		\$ 654,392	340,000	Average Gallons per Day	340,000	340,000	340,000
Future Facilities							
1 MGD WWTP # 3 Construction/Design	2018	\$ 10,553,000	1,000,000	Average Gallons per Day	-	1,000,000	1,000,000
TOTAL WASTEWATER TREATMENT			2,400,000		1,400,000	2,400,000	2,400,000

Wastewater Pumping	Year Planned	Total Construction Cost	Total Facility Capacity	Units	2016	2026	2055
Existing Facilities							
Home Depot LS		\$ 70,000	115,200	Gallons per Day	115,200	115,200	115,200
Riverside Grove LS		\$ 69,500	662,400	Gallons per Day	662,400	662,400	662,400
Old Austin LS		\$ 52,000	180,000	Gallons per Day	180,000	180,000	180,000
Central LS		\$ 255,730	1,339,200	Gallons per Day	1,339,200	1,339,200	1,339,200
Hunters Crossing LS		\$ 100,000	751,680	Gallons per Day	751,680	751,680	751,680
River LS		\$ 100,000	648,000	Gallons per Day	648,000	648,000	648,000
North Pecan LS		\$ 66,500	475,200	Gallons per Day	475,200	475,200	475,200
Lincoln LS		\$ 50,000	48,960	Gallons per Day	48,960	48,960	48,960
Wilson LS 1		\$ 15,000	72,000	Gallons per Day	72,000	72,000	72,000
Wilson LS 2		\$ 15,000	72,000	Gallons per Day	72,000	72,000	72,000
Fisherman Park LS		\$ 225,930	329,000	Gallons per Day	329,000	329,000	329,000
Main Street LS		\$ 100,000	648,000	Gallons per Day	648,000	648,000	648,000
Mauna LOA SL		\$ 250,000	432,000	Gallons per Day	432,000	432,000	432,000
WWTP		\$ 50,000	1,080,000	Gallons per Day	1,080,000	1,080,000	1,080,000
Industrial		\$ 200,000	662,400	Gallons per Day	662,400	662,400	662,400
Gills Branch LS		\$ 250,000	648,000	Gallons per Day	648,000	648,000	648,000
Future Facilities							
				Gallons per Day	-	-	-
				Gallons per Day	-	-	-
				Gallons per Day	-	-	-
TOTAL WASTEWATER PUMPING			8,164,040		8,164,040	8,164,040	8,164,040



Schedule 2
 Wastewater Capital Improvement Plan Inventory

Major Collection Lines	Year Planned	Total Construction Cost	Total Facility Capacity	Units	2016	2026	2055
Existing Facilities							
MLK Street Gravity Main		\$ 146,590	3,192,000	Gallons	3,192,000	3,192,000	3,192,000
Pecan Street Gravity Main		\$ 171,255	3,192,000	Gallons	3,192,000	3,192,000	3,192,000
Central LS Force Main		\$ 143,956	1,762,000	Gallons	1,762,000	1,762,000	1,762,000
North Pecan LS Force Main		\$ 5,775	282,000	Gallons	282,000	282,000	282,000
Existing Facilities							
Highway 71 Pipe Bursting Project (Expansion from 10" to 15")		\$ 659,000	1,117	SUEs	1,117	1,117	1,117
Fayette St Improvement (Expansion from 12" to 18")		\$ 230,837	1,502	SUEs	1,502	1,502	1,502
Future Facilities							
24" wastewater main installation for WWTP #	2017	\$ 750,000	3,941	SUEs		3,941	3,941
Trunk line # 1 36" Wastewater main install (ca	2017	\$ 1,223,000	636	SUEs		636	636
Trunk line # 2 WBV to 304 (capacity)	2017	\$ 735,000	5,506	SUEs		5,506	5,506
Trunk line # 3 FM 304 (capacity)	2017	\$ 1,822,000	1,584	SUEs		1,584	1,584
WW main ext Hwy 71 City Limits to Home De	2017	\$ 800,000	1,650	SUEs		1,650	1,650
Trunk line # 4 FM 304 & WWTP # 3 connectior	2018	\$ 1,100,000	6,747	SUEs		6,747	6,747
WW main ext Hay 21/Loop 150	2019	\$ 300,000	1,650	SUEs		1,650	1,650
WW main ext. HSH 71 McAllister to Tahitian C	2019	\$ 600,000	1,010	SUEs		1,010	1,010
Carter & Mesquite WW Main ext	2019	\$ 600,000	560	SUEs		560	560
WW Main ext. SH 71 (Duff dr. to SH 21)	2020	\$ 1,000,000	1,650	SUEs		1,650	1,650
wastewater main ext. Blakey Ln. (deadend to	2021	\$ 450,000	1,010	SUEs		1,010	1,010
Trunk line # 4 FM 304 & WWTP # 3 connection	2018	\$ 1,100,000	22,400	SUEs		22,400	22,400
12" Force Main and Central Lift Station	2018	\$ 208,000	3,500			3,500	3,500



Schedule 3
 Water Capital Cost Allocation

Water Supply Facilities	Year Planned	Total Construction Cost	Total Facility Capacity	Units	Current Capacity Used	Capacity Used 2026	Capacity Beyond 2026	Percent Allocation Current	Percent Allocation 2016-2026	Percent Allocation Beyond 2024	Cost Allocation to Current	Cost Allocation to 2016-2026	Cost Allocation Beyond 2026
Existing Facilities													
Willow Street Plant (Wells C-G)		\$ 781,865	3,319,200	Average Gallons per Day									
Bob Bryan Park Site Phase 1 (Wells H and I)		\$ 424,853	1,224,000	Average Gallons per Day									
Bob Bryan Park Side Phase 2		\$ 1,462,720	1,152,000	Average Gallons per Day									
Future Facilities													
Additional water supply	2017	\$ 1,000,000	1,058,400	Average Gallons per Day									
TOTAL WATER SUPPLY		\$ 3,669,438	6,753,600		5,358,096	6,753,600	6,753,600	79%	21%	-	\$ 2,911,218	\$ 758,220	\$ -
													TRUE
TOTAL Capacity Required					5,358,096	7,345,425	10,049,703						

Water Pumping Facilities	Year Planned	Total Construction Cost	Total Facility Capacity	Units	Current Capacity Used	Capacity Used 2026	Capacity Beyond 2026	Percent Allocation Current	Percent Allocation 2016-2026	Percent Allocation Beyond 2024	Cost Allocation to Current	Cost Allocation to 2016-2026	Cost Allocation Beyond 2026
Existing Facilities													
Willow High Service 1		\$ 9,962	720,000	Peak Hour Gallons									
Willow High Service 2		\$ 9,962	720,000	Peak Hour Gallons									
Willow High Service 3		\$ 9,962	720,000	Peak Hour Gallons									
Willow High Service 4		\$ 19,638	768,000	Peak Hour Gallons									
Willow High Service 5		\$ 19,638	768,000	Peak Hour Gallons									
Willow High Service 6		\$ 19,638	768,000	Peak Hour Gallons									
Bob Bryant High Service 1		\$ 74,815	1,344,000	Peak Hour Gallons									
Bob Bryant High Service 2		\$ 74,815	1,344,000	Peak Hour Gallons									
Bob Bryant Transfer Pump 1		\$ 20,000	384,000	Peak Hour Gallons									
Bob Bryant Transfer Pump 2		\$ 20,000	384,000	Peak Hour Gallons									
Loop 150 Tank Yard Pump 1		\$ 4,862	384,000	Peak Hour Gallons									
Loop 150 Tank Yard Pump 2		\$ 4,862	384,000	Peak Hour Gallons									
Future Facilities													
				Peak Hour Gallons									
				Peak Hour Gallons									
TOTAL WATER PUMPING		\$ 288,154	8,688,000		5,358,096	7,345,425	8,688,000	62%	23%	15%	\$ 177,711	\$ 65,913	\$ 44,529
													TRUE
TOTAL Capacity Required					5,358,096	7,345,425	10,049,703						



Ground Storage	Year Planned	Total Construction Cost	Total Facility Capacity	Units	Current Capacity Used	Capacity Used 2026	Capacity Beyond 2026	Percent Allocation Current	Percent Allocation 2016-2026	Percent Allocation Beyond 2024	Cost Allocation to Current	Cost Allocation to 2016-2026	Cost Allocation Beyond 2026
Existing Facilities													
Bob Bryant (Tank 4)		\$ 263,080	285,000	Gallons									
GST Re-Use at WWTP		\$ 128,762	40,000										
Tank 1 at Willow Street		\$ 350,000	500,000										
Tank 2 at Willow Street		\$ 350,000	500,000	Gallons									
Future Facilities													
				Gallons									
TOTAL GROUND STORAGE		\$ 1,091,842	1,325,000		620,150	850,165	1,163,160	47%	17%	36%	\$ 511,023	\$ 189,540	\$ 391,279
													TRUE
TOTAL Capacity Required					620,150	850,165	1,163,160						

Elevated Storage	Year Planned	Total Construction Cost	Total Facility Capacity	Units	Current Capacity Used	Capacity Used 2026	Capacity Beyond 2026	Percent Allocation Current	Percent Allocation 2016-2026	Percent Allocation Beyond 2024	Cost Allocation to Current	Cost Allocation to 2016-2026	Cost Allocation Beyond 2026
Existing Facilities													
EST at Loop 150		\$ 375,000	250,000	Gallons									
Standpipe at Loop 150		\$ 700,000	1,000,000	Gallons									
GST at Loop 150		\$ 140,000	225,000	Gallons									
Future Facilities													
Elevated tower west at HWY 20 (supply)	2017	\$ 3,800,000	1,000,000	Gallons									
TOTAL ELEVATED STORAGE		\$ 5,015,000	2,475,000		620,150	850,165	1,163,160	25%	9%	66%	\$ 1,256,587	\$ 466,071	\$ 3,292,343
													TRUE
TOTAL Capacity Required					620,150	850,165	1,163,160						



Schedule 3
 Water Capital Cost Allocation

Transmission Lines	Year Planned	Total Construction Cost	Total LUEs	Current Capacity Used	Capacity Used 2026	Capacity Beyond 2026	Percent Allocation Current	Percent Allocation 2016-2026	Percent Allocation Beyond 2024	Cost Allocation to Current	Cost Allocation to 2016-2026	Cost Allocation Beyond 2026
Existing Facilities												
8-inch line on Old Austin Hwy		\$ 146,590	1,000									
12-inch line on Perkins/Higgins		\$ 96,491	1,000									
12-inch line on Eskew/Loop 150		\$ 48,904	1,000									
Hunters Crossing Blvd (16-inch)		\$ 100,160	1,200									
Downtown Feeder (8-inch)		\$ 148,500	450									
Willow/Wilson Connection (6-inch)		\$ -	250									
Loop 150 Standpipe Feeder (10, 12-inch)		\$ 1,058,750	1,000									
SH 95 North (12-inch)		\$ 437,600	1,000									
Hoffman Road (8-inch)		\$ 77,000	450									
Loop 150 West Feeder (12-inch)		\$ 303,300	1,000									
Eskew St (12-Inch)		\$ 102,900										
Higgins St (12-Inch)		\$ 73,500										
SH 71 (North Line) (12-inch)		\$ 280,000	1,000									
SH 71 (South Line) (12-inch)		\$ 444,500	1,000									
Hasler Blvd (12-inch)		\$ 119,000	1,000									
Agnes Street (12-inch)		\$ 41,300	1,000									
Old Austin Highway (8, 12 Inch)		\$ 647,700										
SH 71 (West Line) (12-inch)		\$ 13,050	1,000									
Hunters Point Drive (12, 16-inch)		\$ 57,750	1,200									
Elevated Tank Feeder (12, 16-inch)		\$ 852,500	1,200									
Hasler Shores Feeder (8 Inch)		\$ 120,000										
SH 71 East/Buc-ee's (12-inch)		\$ -	1,000									
Ground Storage Tank Feeder (12-inch)		\$ 375,900	1,000									
Loop 150 River Crossing (8-inch)		\$ 102,850	450									
Bob Bryant Feeder (12-inch)		\$ 66,750	1,000									
Blair Avenue (12-inch)		\$ 19,500	1,000									
Future Facilities												
Phase II Infrastructure for Well & Transmission main	2017	\$ 5,800,000	2,500									
16" watermain crossing under river	2017	\$ 1,200,000	250									
Watermain Replacement Pine Street Size Increase	2017	\$ 250,000	100									
Carter & Mesquite Water Line Extensions	2018	\$ 700,000	250									
Riverwood Waterline Improvements (Size Increase)	2018	\$ 1,000,000	250									
Transmission Main Extension Hunters Crossing to ET	2018	\$ 1,200,000	250									
Watermain ext. piney ridge Hoffman to end of CCN	2019	\$ 350,000	250									
Additional Water Main ext. to Pineforest	2019	\$ 850,000	250									
Watermain ext. Tahitian drive to McAllister	2019	\$ 650,000	250									
Water main ext. Arena Dr to Pitt	2020	\$ 350,000	250									
Watermain ext (hwy 21) east to City Limits	2020	\$ 350,000	250									
Tahitian Dr. Deadend to Mahalua Dr.	2020	\$ 250,000	250									
Mahalua Dr. to Hulu Ct	2020	\$ 250,000	250									
Water Main Ext SH304 to WWTP 3	2021	\$ 800,000	250									
Watermain ext. Blakey Ln (Deadend to Charles)	2021	\$ 350,000	250									
TOTAL Transmission Lines		\$20,084,495		3,606	5,261	11,632	31%	14%	55%	\$ 6,226,545	\$ 2,858,188	\$ 10,999,762
												TRUE
TOTAL Capacity Required				3,606	5,261	11,632						
TOTAL ALLOCABLE COST										\$ 10,572,061	\$ 4,148,392	\$ 14,336,635



Schedule 4
 Wastewater Capital Cost Allocation

Wastewater Treatment Facilities	Year Planned	Total Construction Cost	Total Facility Capacity	Units	Current Capacity Used	Capacity Used 2026	Capacity Beyond 2026	Percent Allocation Current	Percent Allocation 2016-2026	Percent Allocation Beyond 2024	Cost Allocation to Current	Cost Allocation to 2016-2026	Cost Allocation Beyond 2026
Existing Facilities													
WWTP No. 1		\$ 505,014	1,060,000	Average Gallons per Day									
WWTP No. 2		\$ 654,392	340,000	Average Gallons per Day									
Future Facilities													
1 MGD WWTP # 3 Construction/Design	2018	\$ 10,553,000	1,000,000	Average Gallons per Day									
TOTAL WASTEWATER TREATMENT		\$ 11,712,406	2,400,000		823,020	1,360,570	2,092,047	34%	22%	43%	\$ 4,016,477	\$ 2,623,337	\$ 5,072,592
													TRUE
TOTAL Capacity Required					823,020	1,360,570	2,092,047						

Wastewater Pumping	Year Planned	Total Construction Cost	Total Facility Capacity	Units	Current Capacity Used	Capacity Used 2026	Capacity Beyond 2026	Percent Allocation Current	Percent Allocation 2016-2026	Percent Allocation Beyond 2024	Cost Allocation to Current	Cost Allocation to 2016-2026	Cost Allocation Beyond 2026
Existing Facilities													
Home Depot LS		\$ 70,000	115,200	Gallons per Day									
Riverside Grove LS		\$ 69,500	662,400	Gallons per Day									
Old Austin LS		\$ 52,000	180,000	Gallons per Day									
Central LS		\$ 255,730	1,339,200	Gallons per Day									
Hunters Crossing LS		\$ 100,000	751,680	Gallons per Day									
River LS		\$ 100,000	648,000	Gallons per Day									
North Pecan LS		\$ 66,500	475,200	Gallons per Day									
Lincoln LS		\$ 50,000	48,960	Gallons per Day									
Wilson LS 1		\$ 15,000	72,000	Gallons per Day									
Wilson LS 2		\$ 15,000	72,000	Gallons per Day									
Fisherman Park LS		\$ 225,930	329,000	Gallons per Day									
Main Street LS		\$ 100,000	648,000	Gallons per Day									
Mauna LOA SL		\$ 250,000	432,000	Gallons per Day									
WWTP		\$ 50,000	1,080,000	Gallons per Day									
Industrial		\$ 200,000	662,400	Gallons per Day									
Gills Branch LS		\$ 250,000	648,000	Gallons per Day									
Future Facilities													
				Gallons per Day									
				Gallons per Day									
				Gallons per Day									
TOTAL WASTEWATER PUMPING		\$ 1,869,660	8,164,040		4,966,500	6,847,927	9,408,096	61%	23%	16%	\$ 1,137,386	\$ 430,869	\$ 301,405
													TRUE
TOTAL Capacity Required					4,966,500	6,847,927	9,408,096						



Schedule 4
 Wastewater Capital Cost Allocation

Major Collection Lines	Year Planned	Total Construction Cost	Total Facility Capacity	Units	Current Capacity Used	Capacity Used 2026	Capacity Beyond 2026	Percent Allocation Current	Percent Allocation 2016-2026	Percent Allocation Beyond 2024	Cost Allocation to Current	Cost Allocation to 2016-2026	Cost Allocation Beyond 2026
Existing Facilities													
MLK Street Gravity Main		\$ 146,590	3,192,000	Gallons									
Pecan Street Gravity Main		\$ 171,255	3,192,000	Gallons									
Central LS Force Main		\$ 143,956	1,762,000	Gallons									
North Pecan LS Force Main		\$ 5,775	282,000	Gallons									
TOTAL WASTEWATER Collection Lines		\$ 467,576	8,428,000		8,428,000	8,428,000	8,428,000	100%	0%	0%	\$ 467,576	\$ -	\$ -
Existing Facilities													
Highway 71 Pipe Bursting Project (Expansion from 10" to 15")		\$ 659,000	1,117		560	557		50%	0%	50%	\$ 330,385	\$ (1,770)	\$ 330,385
Fayette St Improvement (Expansion from 12" to 18")		\$ 230,837	1,502		1,010	492		67%	-34%	67%	\$ 155,223	\$ (79,610)	\$ 155,223
Future Facilities													
24" wastewater main installation for WWTP # 3 (capacity)	2017	\$ 750,000	3,941	SUEs		636	3,305	0%	16%	84%	\$ -	\$ 121,035	\$ 628,965
Trunk line # 1 36" Wastewater main install (capacity)	2017	\$ 1,223,000	636	SUEs		636	-	0%	100%	0%	\$ -	\$ 1,223,000	\$ -
Trunk line # 2 WBV to 304 (capacity)	2017	\$ 735,000	5,506	SUEs		1,584	3,922	0%	29%	71%	\$ -	\$ 211,449	\$ 523,551
Trunk line # 3 FM 304 (capacity)	2017	\$ 1,822,000	1,584	SUEs		1,584	-	0%	100%	0%	\$ -	\$ 1,822,000	\$ -
WW main ext Hwy 71 City Limits to Home Depot	2017	\$ 800,000	1,650	SUEs		1,650	-	0%	100%	0%	\$ -	\$ 800,000	\$ -
Trunk line # 4 FM 304 & WWTP # 3 connection (Capacity)	2018	\$ 1,100,000	6,747	SUEs		2,150	4,597	0%	32%	68%	\$ -	\$ 350,559	\$ 749,441
WW main ext Hay 21/Loop 150	2019	\$ 300,000	1,650	SUEs		1,650	-	0%	100%	0%	\$ -	\$ 300,000	\$ -
WW main ext. HSH 71 McAllister to Tahitian Dr	2019	\$ 600,000	1,010	SUEs		1,010	-	0%	100%	0%	\$ -	\$ 600,000	\$ -
Carter & Mesquite WW Main ext	2019	\$ 600,000	560	SUEs		560	-	0%	100%	0%	\$ -	\$ 600,000	\$ -
WW Main ext. SH 71 (Duff dr. to SH 21)	2020	\$ 1,000,000	1,650	SUEs		1,650	-	0%	100%	0%	\$ -	\$ 1,000,000	\$ -
wastewater main ext. Blakey Ln. (deadend to Charles)	2021	\$ 450,000	1,010	SUEs		1,010	-	0%	100%	0%	\$ -	\$ 450,000	\$ -
TOTAL WASTEWATER Collection Lines		\$ 9,819,837									\$ 485,608	\$ 7,396,664	\$ 2,387,565
TOTAL ALLOCABLE COST											\$ 6,107,047	\$ 10,450,870	\$ 7,761,562

City of Bastrop, Texas
 Water and Wastewater Department
 Impact Fee Study



Schedule 5
 Water Impact Fee Calculation

Maximum Allowable Impact Fee \$ 2,706

Year	Beginning Balance	Water Impact Fee Study	Debt Service	Total Annual Expenditures	Total New SUEs	Impact Fee Revenues at 100% Collection	Net Balance Change	Balance Subtotal Before Interest	Interest Income	Ending Balance
2016		(18,000)		(18,000)			(18,000)	(18,000)		(18,000)
2017	(18,000)		(305,246)	(305,246)	193	521,959	216,713	198,713	1,391	200,104
2018	200,104		(305,246)	(305,246)	200	542,054	236,808	436,912	3,058	439,971
2019	439,971		(305,246)	(305,246)	208	562,923	257,677	697,648	4,884	702,532
2020	702,532		(305,246)	(305,246)	216	584,596	279,350	981,881	6,873	988,755
2021	988,755	(18,000)	(305,246)	(323,246)	224	607,103	283,857	1,272,612	8,908	1,281,520
2022	1,281,520		(305,246)	(305,246)	233	630,476	325,230	1,606,750	11,247	1,617,997
2023	1,617,997		(305,246)	(305,246)	242	654,750	349,504	1,967,501	13,773	1,981,274
2024	1,981,274		(305,246)	(305,246)	251	679,957	374,712	2,355,985	16,492	2,372,477
2025	2,372,477		(305,246)	(305,246)	261	706,136	400,890	2,773,367	19,414	2,792,781
2026	2,792,781		(305,246)	(305,246)	271	733,322	428,076	3,220,857	22,546	3,243,403
2027	3,243,403		(305,246)	(305,246)		-	(305,246)	2,938,157	20,567	2,958,724
2028	2,958,724		(305,246)	(305,246)			(305,246)	2,653,478	18,574	2,672,052
2029	2,672,052		(305,246)	(305,246)			(305,246)	2,366,806	16,568	2,383,374
2030	2,383,374		(305,246)	(305,246)			(305,246)	2,078,128	14,547	2,092,675
2031	2,092,675		(305,246)	(305,246)			(305,246)	1,787,429	12,512	1,799,941
2032	1,799,941		(305,246)	(305,246)			(305,246)	1,494,695	10,463	1,505,158
2033	1,505,158		(305,246)	(305,246)			(305,246)	1,199,912	8,399	1,208,311
2034	1,208,311		(305,246)	(305,246)			(305,246)	903,065	6,321	909,387
2035	909,387		(305,246)	(305,246)			(305,246)	604,141	4,229	608,370
2036	608,370		(305,246)	(305,246)			(305,246)	303,124	2,122	305,246
2037	305,246		(305,246)	(305,246)			(305,246)	0	0	0

TOTAL ALLOCABLE COST \$ 4,148,392
 Interest Assumption 4%
 Term 20

Annual Debt Payment (\$305,245.93)

Annual Interest Income 0.70%

City of Bastrop, Texas
 Water and Wastewater Department
 Impact Fee Study



Schedule 6
 Wastewater Impact Fee Calculation

Maximum Allowable Impact Fee \$ 6,792

Year	Beginning Balance	Water Impact Fee Study	Debt Service	Total Annual Expenditures	Total New SUEs	Impact Fee Revenues at 100% Collection	Net Balance Change	Balance Subtotal Before Interest	Interest Income	Ending Balance
2016		(18,000)		(18,000)			(18,000)	(18,000)		(18,000)
2017	(18,000)		(768,993)	(768,993)	193	1,310,271	541,278	523,278	3,663	526,941
2018	526,941		(768,993)	(768,993)	200	1,360,717	591,724	1,118,665	7,831	1,126,495
2019	1,126,495		(768,993)	(768,993)	208	1,413,104	644,111	1,770,607	12,394	1,783,001
2020	1,783,001		(768,993)	(768,993)	216	1,467,509	698,516	2,481,516	17,371	2,498,887
2021	2,498,887	(18,000)	(768,993)	(786,993)	224	1,524,008	737,015	3,235,902	22,651	3,258,553
2022	3,258,553		(768,993)	(768,993)	233	1,582,682	813,689	4,072,242	28,506	4,100,748
2023	4,100,748		(768,993)	(768,993)	242	1,643,616	874,622	4,975,370	34,828	5,010,198
2024	5,010,198		(768,993)	(768,993)	251	1,706,895	937,902	5,948,100	41,637	5,989,736
2025	5,989,736		(768,993)	(768,993)	261	1,772,610	1,003,617	6,993,353	48,953	7,042,307
2026	7,042,307		(768,993)	(768,993)	271	1,840,856	1,071,863	8,114,169	56,799	8,170,969
2027	8,170,969		(768,993)	(768,993)		-	(768,993)	7,401,975	51,814	7,453,789
2028	7,453,789		(768,993)	(768,993)			(768,993)	6,684,796	46,794	6,731,589
2029	6,731,589		(768,993)	(768,993)			(768,993)	5,962,596	41,738	6,004,334
2030	6,004,334		(768,993)	(768,993)			(768,993)	5,235,341	36,647	5,271,988
2031	5,271,988		(768,993)	(768,993)			(768,993)	4,502,995	31,521	4,534,516
2032	4,534,516		(768,993)	(768,993)			(768,993)	3,765,523	26,359	3,791,881
2033	3,791,881		(768,993)	(768,993)			(768,993)	3,022,888	21,160	3,044,048
2034	3,044,048		(768,993)	(768,993)			(768,993)	2,275,055	15,925	2,290,980
2035	2,290,980		(768,993)	(768,993)			(768,993)	1,521,987	10,654	1,532,641
2036	1,532,641		(768,993)	(768,993)			(768,993)	763,648	5,346	768,993
2037	768,993		(768,993)	(768,993)			(768,993)	(0)	(0)	(0)

TOTAL ALLOCABLE COST \$ 10,450,870
 Interest Assumption 4%
 Term 20

Annual Debt Payment (\$768,993.29)

Annual Interest Income 0.70%