

# ***2019 Update of the Water and Wastewater Impact Fees of the City of Boerne***

*Prepared for:*



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## **1.0 Introduction and Summary**

The City of Boerne (City) is in the process of updating its water and wastewater impact fees to keep the fee current with its service area and updated CIP information. This report presents HDR Engineering, Inc.'s (HDR) maximum impact fee determination for consideration by the City's Capital Improvements Advisory Committee and the Boerne City Council.

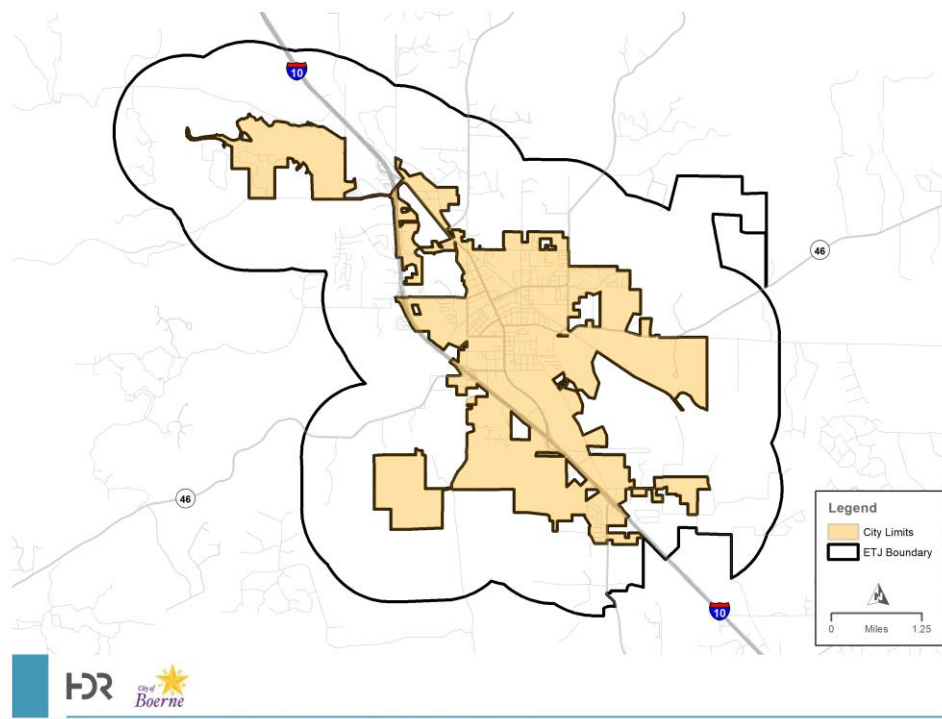
The methodology to determine the maximum fee amount considers two options. Consistent with State law, each fee component is calculated with either: (1) consideration of a credit for other methods of payments for utility capital by a new customer, such as through utility rates or taxes, or alternatively, (2) a reduction of maximum fee amount equal to 50% of the unit capital cost of providing new service. By maximum amounts, this means that the determined fee amount was calculated as the highest that can be lawfully levied by the City, given the prospective land uses and capital improvements plan, the cost of existing and new utility capacity, and consideration of a credit to new customers for capital contributions made through rate payments. The City Council can decide to enact fees less than the maximum amounts shown in this report.

As detailed later in this report, the maximum impact fees were developed in component pieces. For instance, the overall water fee is comprised of separate amounts for water supply, treatment, pumping, elevated storage, ground storage, transmission and reclaimed water. This will facilitate the consideration of offsets or credits from the applicable fee if a developer builds and dedicates eligible facilities to the City or the City provides wholesale service to a neighboring utility and wishes to charge only certain portions of the fee. The maximum fee amounts do not include capital costs for facilities required to be provided by developers at their own expense.

Planning, service demand, and design factor assumptions used in the water and wastewater facility sizing and costing were developed by HDR with City staff assistance. Data on current utility demand, existing utility assets, needed future facilities, outstanding utility debt, and prospective cash versus debt financing were obtained from or coordinated with the City of Boerne staff. HDR combined these elements into the maximum impact fee calculations presented in this report.

## 2.0 Utility Service and Fee Application Area

The City's ETJ was generally used as the primary basis for the impact fee service area of the City shown in Figure 1; however, the ETJ boundary was modified to specifically include the Esparanza development on the northeast. This fee application area boundary will comprise the area in which Boerne may levy the impact fees, in-part or in-full, if City service is provided. This boundary does not, however, imply a legal obligation of the City of Boerne to serve beyond its incorporated limits. If the City does not provide service, in full or in-part, then the impact fees would not apply.



**Figure 1. Water and Wastewater Impact Fees Application Area**

### 3.0 Land Use Assumptions

Table 1 provides an estimate of the current and future land use patterns of the potential service area with information obtained from the Boerne 2018 Master Plan – Technical Plan adopted August 28, 2018. As indicated, about 35.9% of the total ETJ area is currently in residential land uses with 6.6% in commercial/school/churches land uses and 57.5% in various other land use types or undeveloped.

**Table 1.**  
**Current and Projected Land Use**

| <i>Item</i>  | <i>Current</i> |              | <i>Future<br/>(Including ETJ)</i> |              |
|--|----------------|--------------|-----------------------------------|--------------|
|  | <i>Acres</i>   | <i>%</i>     | <i>Acres</i>                      | <i>%</i>     |
| Rural Residential  | 4,038          | 15.0%        | 3,500                             | 13.0%        |
| Single-Family Residential  | 5,288          | 19.7%        | 9,500                             | 35.4%        |
| Multi-Family Residential   | 136            | 0.5%         | 200                               | 0.7%         |
| Mobile/Manufactured Homes  | 181            | 0.7%         | 200                               | 0.7%         |
| Commercial/Schools/Churches  | 1,769          | 6.6%         | 2,500                             | 9.3%         |
| Utility/Transportation   | 322            | 1.2%         | 400                               | 1.5%         |
| Industrial   | 48             | 0.2%         | 100                               | 0.4%         |
| Government Owned/Parks   | 909            | 3.4%         | 1,000                             | 3.7%         |
| <b>Subtotal Developed</b>  | <b>12,691</b>  | <b>47.3%</b> | <b>17,400</b>                     | <b>64.8%</b> |
|  |                |              |                                   |              |
| Agricultural/Undeveloped/<br>Open Space  | 14,142         | 52.7%        | 9,433                             | 35.2%        |
| <b>Total Land Use Acreage</b>  | <b>26,833</b>  | <b>100%</b>  | <b>26,833</b>                     | <b>100%</b>  |
| Source: Boerne 2018 Master Plan – Technical Plan adopted August 28, 2018.<br>Future land use is estimated using projected growth rates in number of water<br>and wastewater connections. |                |              |                                   |              |

Over time as the City grows into its future utility service area, developed land areas will both increase and become a higher percentage of overall land uses. Projected residential land uses are expected to increase to 49.8% of total potential service land area and commercial/school/church land use is expected to increase to 9.3% of total land use. It is estimated that undeveloped land or land that is not served by City utilities will shrink to 35.2% of the total future ETJ.

Table 2 shows the current population as well as the projected future population for both the water and wastewater utilities' service area.

**Table 2.**  
**Water and Wastewater Service Area Population**

| <i>Utility</i> | <i>2019</i> | <i>2028</i> | <i>% Increase</i> |
|----------------|-------------|-------------|-------------------|
| Water          | 16,354      | 20,424      | 24.9%             |
| Wastewater     | 16,369      | 20,442      | 24.9%             |

#### **4.0 Current and Projected Utility Demand and Supply**

Table 3 relates the number of water, reclaimed water, and wastewater utility connections by water meter size and what is termed a Living Unit Equivalent (or LUE) conversion factor for meters of varying sizes. The values in Table 3 represent the number of LUEs as of April 2019. A typical single family residential house in Boerne uses a 5/8" water meter and that is considered to be one LUE. Based on American Water Works Association standards, the equivalent number of 5/8" meters can be determined for water meters of larger size. In this manner, meters of larger size (i.e., larger potential service demands) can be couched in terms of the equivalent demand of a number of typical single family homes. For this reason, the LUE concept is a useful tool for being able to apply a base fee amount to service requests of varying meter sizes.

Tables 4 and 5 summarize the City's current and projected water and wastewater service demands and existing supply (service) capabilities by facility. Current and future service demands are also compared with the existing service capacity of the utility systems.

Water demand was forecast using population forecasts from the 2018 Master Plan, meter count/LUE estimates from the City Utility Billing Section, and a dry-year per capita water use statistic used by the City in their water supply and treatment facility planning efforts. Wastewater demand was forecast using population forecasts from the 2018 Master Plan.

With the anticipated rapid growth of the City and surrounding area, potable water utility demand in certain service areas is expected to exceed the available capacity of treated water supply, water pumping, ground storage and elevated storage during the planning period. Additional facilities need was also identified for wastewater pumping, within the future 10-year period.

**Table 3.**  
**LUE Equivalent Conversion Factors**

| <b>Water<br/>Meter Size</b>   | <b>Living Units<br/>Equivalent (LUEs)<br/>per Meter (a)</b> | <b>Number of<br/>Meters<br/>in 2019 (b)</b> | <b>Number of<br/>LUEs<br/>in 2019</b> |
|---|---|---|---------------------------------------|
| <b>Water</b>  |   |   |                                       |
| 5/8"  | 1.0   | 5,529                                       | 5,529                                 |
| 3/4"  | 1.5   | 29  | 44                                    |
| 1"  | 2.5   | 48  | 120                                   |
| 1.5"  | 5.0   | 53  | 265                                   |
| 2"  | 8.0   | 114   | 912                                   |
| 3"  | 16.0  | 9   | 144                                   |
| 4"  | 25.0  | 2   | 50                                    |
| 6"  | 50.0  | 2   | 100                                   |
| <b>Total Water</b>  |   | <b>5,786</b>                                | <b>7,164</b>                          |
| <b>Reclaimed Water</b>  |   |   |                                       |
| 5/8"  | 1.0   | 296   | 296                                   |
| 1.5"  | 5.0   | 6   | 30                                    |
| <b>Total Reclaimed<br/>Water</b>  |   | <b>302</b>                                  | <b>326</b>                            |
| <b>Wastewater (c)</b>   |   |   |                                       |
| 5/8"  | 1.0   | 5,529                                       | 5,529                                 |
| 3/4"  | 1.5   | 29  | 44                                    |
| 1"  | 2.5   | 48  | 120                                   |
| 1.5"  | 5.0   | 53  | 265                                   |
| 2"  | 8.0   | 114   | 912                                   |
| 3"  | 16.0  | 9   | 144                                   |
| 4"  | 25.0  | 2   | 50                                    |
| 6"  | 50.0  | 2   | 100                                   |
| <b>Total Wastewater</b>   |   | <b>5,786</b>                                | <b>7,164</b>                          |
| (a) Derived from AWWA C700-C703 standards for continuous rated flow performance scaled to 5/8" meter. |   |   |                                       |
| (b) Source: City of Boerne, meter count as of April 2019.   |   |   |                                       |
| (c) Based on water meter size.  |   |   |                                       |



**Table 4.**  
**Estimated Water Service Demands and Available Capacity**

| <b>Facility Type</b>            | <b>2019</b> | <b>2028</b> | <b>10-yr Demand Increment</b> |
|---------------------------------|-------------|-------------|-------------------------------|
| <b>Supply</b>                   |             |             |                               |
| Existing 2019 Capacity (mgd)    | 4.823       | 4.823       |                               |
| Est. Service Demand             | 2.515       | 3.064       | 0.549                         |
| Excess (Deficiency)             | 2.308       | 1.759       |                               |
| Existing 2019 Capacity (LUEs) * | 14,082      | 14,082      |                               |
| Est. Service Demand             | 7,343       | 8,946       | 1,604                         |
| Excess (Deficiency)             | 6,740       | 5,136       |                               |
| <b>Treatment</b>                |             |             |                               |
| Existing 2019 Capacity (mgd)    | 5.579       | 5.579       |                               |
| Est. Service Demand             | 5.205       | 6.342       | 1.137                         |
| Excess (Deficiency)             | 0.374       | (0.763)     |                               |
| Existing 2019 Capacity (LUEs) * | 7,870       | 7,870       |                               |
| Est. Service Demand             | 7,343       | 8,946       | 1,604                         |
| Excess (Deficiency)             | 527         | (1,076)     |                               |
| <b>Pumping</b>                  |             |             |                               |
| Existing 2019 Capacity (mgd)    | 6.931       | 6.931       |                               |
| Est. Service Demand             | 6.286       | 7.659       | 1.373                         |
| Excess (Deficiency)             | 0.644       | (0.729)     |                               |
| Existing 2019 Capacity (LUEs) * | 8,095       | 8,095       |                               |
| Est. Service Demand             | 7,343       | 8,946       | 1,604                         |
| Excess (Deficiency)             | 752         | (851)       |                               |
| <b>Ground Storage</b>           |             |             |                               |
| Existing 2019 Capacity (mg)     | 3.000       | 3.000       |                               |
| Est. Service Demand             | 2.515       | 3.064       | 0.549                         |
| Excess (Deficiency)             | 0.485       | (0.064)     |                               |
| Existing 2019 Capacity (LUEs) * | 8,760       | 8,760       |                               |
| Est. Service Demand             | 7,343       | 8,946       | 1,604                         |
| Excess (Deficiency)             | 1,417       | (186)       |                               |
| <b>Elevated Storage</b>         |             |             |                               |
| Existing 2019 Capacity (mg)     | 1.700       | 1.700       |                               |
| Est. Service Demand             | 1.469       | 1.789       | 0.321                         |
| Excess (Deficiency)             | 0.231       | (0.089)     |                               |
| Existing 2019 Capacity (LUEs) * | 8,500       | 8,500       |                               |
| Est. Service Demand             | 7,343       | 8,946       | 1,604                         |
| Excess (Deficiency)             | 1,157       | (446)       |                               |
| <b>Transmission</b>             |             |             |                               |
| Existing 2019 Capacity (mgd)    | 26.600      | 26.600      |                               |
| Est. Service Demand             | 8.801       | 10.723      | 1.922                         |
| Excess (Deficiency)             | 14.834      | 13.230      |                               |
| Existing 2019 Capacity (LUEs) * | 22,176      | 22,176      |                               |
| Est. Service Demand             | 7,343       | 8,946       | 1,604                         |
| Excess (Deficiency)             | 14,834      | 13,230      |                               |

**Table 4.**  
**Estimated Water Service Demands and Available Capacity (cont.)**

| <b>Reclaimed Water</b>              |       |                                   |       |
|-------------------------------------|-------|-----------------------------------|-------|
| Existing 2019 Capacity (mgd)        | 2.500 | 2.500                             |       |
| Est. Service Demand                 | 0.440 | 0.603                             | 0.163 |
| Excess (Deficiency)                 | 2.060 | 1.897                             |       |
|                                     |       |                                   |       |
| Existing 2019 Capacity (LUEs) *     | 7,300 | 7,300                             |       |
| Est. Service Demand                 | 1,285 | 1,761                             | 476   |
| Excess (Deficiency)                 | 6,015 | 5,539                             |       |
| * Assume LUE conversion factor of : |       |                                   |       |
|                                     | 342   | gpd/LUE for wtr supply facilities |       |
|                                     | 709   | gpd/LUE for treatment             |       |
|                                     | 856   | gpd/LUE for pumping               |       |
|                                     | 342   | gals/LUE for ground storage       |       |
|                                     | 200   | gals/LUE for elevated storage     |       |
|                                     | 1,199 | gpd/LUE for transmission          |       |
|                                     | 1,350 | gpd/LUE for reclaimed water       |       |

**Table 5.**  
**Estimated Wastewater Service Demands and Available Capacity**

| <b>Facility Type</b>                | <b>2019</b> | <b>2028</b>              | <b>10-yr Demand Increment</b> |
|-------------------------------------|-------------|--------------------------|-------------------------------|
| <b>Treatment</b>                    |             |                          |                               |
| Existing 2019 Capacity (mgd)        | 2.900       | 2.900                    |                               |
| Est. Service Demand                 | 1.982       | 2.415                    | 0.433                         |
| Excess (Deficiency)                 | 0.918       | 0.485                    |                               |
| Existing 2019 Capacity (LUEs) *     | 10,741      | 10,741                   |                               |
| Est. Service Demand                 | 7,343       | 8,946                    | 1,604                         |
| Excess (Deficiency)                 | 3,398       | 1,795                    |                               |
| <b>Pumping</b>                      |             |                          |                               |
| Existing 2019 Capacity (mgd)        | 1.272       | 1.272                    |                               |
| Est. Service Demand**               | 1.140       | 1.389                    | 0.249                         |
| Excess (Deficiency)                 | 0.132       | (0.117)                  |                               |
| Existing 2019 Capacity (LUEs) *     | 1,884       | 1,884                    |                               |
| Est. Service Demand                 | 1,689       | 2,058                    | 369                           |
| Excess (Deficiency)                 | 196         | (173)                    |                               |
| <b>Interceptors</b>                 |             |                          |                               |
| Existing 2019 Capacity (mgd)        | 24.557      | 24.557                   |                               |
| Est. Service Demand                 | 6.939       | 8.454                    | 1.515                         |
| Excess (Deficiency)                 | 17.618      | 16.103                   |                               |
| Existing 2019 Capacity (LUEs) *     | 25,986      | 25,986                   |                               |
| Est. Service Demand                 | 7,343       | 8,946                    | 1,604                         |
| Excess (Deficiency)                 | 18,644      | 17,040                   |                               |
| * Assume LUE conversion factor of : | 270         | gpd/LUE for ww treatment |                               |
|                                     | 675         | gpd/LUE for ww pumping   |                               |
|                                     | 945         | gpd/LUE for interceptors |                               |
| ** Assumes:                         | 23.0%       | of ww demand pumped      |                               |

## **5.0 Identified Major Capital Improvement Needs and Costs**

Given the projected growth in water and wastewater demands, existing capacity, and the modeling of infrastructure needs, various additional facilities have been identified to meet the needs for the next 10 years. The City's 10-year capital need for new capacity totals \$25.0 million for water and \$29.8 million for wastewater (see Appendix A).

Given the considerable growth facing the City in the next ten years, improvements are needed in the areas of water treatment, pumping, ground storage, elevated storage, water transmission and the reclaimed water system. Boerne will also need noticeable improvements to its wastewater system, including a wastewater treatment plant expansion. Improvements are also identified for wastewater pumping (lift stations) and interceptor pipelines that would serve future growth.

Specific projects that accomplish these service capacity goals are identified in Tables 6a and 6b along with their cost, capacity, unit cost, and allocation of existing and projected demand to these facilities. A weighted unit cost of service (\$ per SU) is then calculated by facility type, based on the proportionate share of use of existing versus new facility capacity by the growth anticipated over the next ten years.

| Table 6a.  |                      |              |        |                                 |                                      |                                |
|--|----------------------|--------------|--------|---------------------------------|--------------------------------------|--------------------------------|
| Water CIP Inventory and Costing                                    |                      |              |        |                                 |                                      |                                |
| Facility Name  | Construction<br>Cost | Capacity     |        | Construction<br>Cost<br>per LUE | Facility Capacity Allocations (LUEs) |                                |
|  |                      | Total        | LUEs   |                                 | Existing<br>Customers                | Growth Use in<br>Next 10 Years |
| <b>WATER SUPPLY</b>  |                      |              |        |                                 |                                      |                                |
| <i>EXISTING FACILITIES</i>   |                      | mgd          |        |                                 |                                      |                                |
| Boerne City Lake   |                      | 0.7          | 2,171  |                                 |                                      |                                |
| Groundwater Wells  |                      | 0.9          | 2,628  |                                 |                                      |                                |
| WCRWSP   |                      | 3.2          | 9,283  |                                 |                                      |                                |
| Subtotal Existing Facilities                                       | \$10,711,173         | 4.8          | 14,082 | \$ 761                          | 7,343                                | 1,604                          |
| <i>FUTURE FACILITIES</i>   |                      |              |        |                                 |                                      |                                |
| Subtotal Future Facilities   | -                    | -            | -      | \$ -                            | -                                    | -                              |
| TOTAL WATER SUPPLY   | \$10,711,173         | 4.8          | 14,082 |                                 | 7,343                                | 1,604                          |
| AVERAGE CAPITAL COST PER NEW LUE = \$                              |                      |              |        | 761                             |                                      |                                |
| <b>WATER TREATMENT - PRODUCTION</b>                                |                      |              |        |                                 |                                      |                                |
| <i>EXISTING FACILITIES</i>   |                      | peak day mgd |        |                                 |                                      |                                |
| Water Treatment - WTP  |                      | 1.5          | 2,116  |                                 |                                      |                                |
| WCRWSP   |                      | 3.2          | 4,484  |                                 |                                      |                                |
| Groundwater Wells  |                      | 0.9          | 1,270  |                                 |                                      |                                |
| Subtotal Existing Facilities                                       | \$ 381,513           | 5.6          | 7,870  | \$ 48                           | 7,343                                | 527                            |
| <i>FUTURE FACILITIES</i>   |                      |              |        |                                 |                                      |                                |
| WTP Expansion  | \$18,000,000         | 2.5          | 3,527  | \$ 5,104                        |                                      |                                |
| Subtotal Future Facilities   | \$18,000,000         | 2.5          | 3,527  | \$ 5,104                        | -                                    | 1,076                          |
| TOTAL WATER TREATMENT  | \$18,381,513         | 8.1          | 11,397 |                                 | 7,343                                | 1,604                          |
| AVERAGE CAPITAL COST PER NEW LUE = \$                              |                      |              |        | 3,442                           |                                      |                                |
| <b>PUMPING</b>   |                      |              |        |                                 |                                      |                                |
| <i>EXISTING FACILITIES</i>   |                      | peak hr mgd  |        |                                 |                                      |                                |
| WTP High Service Pumps   |                      | 1.4          | 1,682  |                                 |                                      |                                |
| Groundwater Wells  |                      | 1.7          | 1,986  |                                 |                                      |                                |
| Menger Springs Pump Station  |                      | 0.8          | 923    |                                 |                                      |                                |
| WCRWSP Pump Station  | \$ 797,398           | 3.0          | 3,504  |                                 |                                      |                                |
| Subtotal Existing Facilities                                       | \$ 797,398           | 6.9          | 8,095  | \$ 99                           | 7,343                                | -                              |
| <i>FUTURE FACILITIES</i>   |                      |              |        |                                 |                                      |                                |
| WCRWSP Pump Station Expansion                                      | \$ 252,000           | 1.5          | 1,752  | \$ 144                          |                                      |                                |
| WTP High Service Pumps   | \$ 313,000           | 6.0          | 7,008  | \$ 45                           |                                      |                                |
| Subtotal Future Facilities   | \$ 565,000           | 7.5          | 8,760  | \$ 64                           | -                                    | 1,604                          |
| TOTAL PUMPING  | \$ 1,362,398         | 14.4         | 16,855 |                                 | 7,343                                | 1,604                          |
| AVERAGE CAPITAL COST PER NEW LUE = \$                              |                      |              |        | 64                              |                                      |                                |
| <b>GROUND STORAGE</b>  |                      |              |        |                                 |                                      |                                |
| <i>EXISTING FACILITIES</i>   |                      | mill. gals.  |        |                                 |                                      |                                |
| WTP Clearwell  | \$ 871,145           | 2.0          | 5,840  |                                 |                                      |                                |
| WCRWSP Tank  | \$ 413,956           | 1.0          | 2,920  |                                 |                                      |                                |
| Subtotal Existing Facilities                                       | \$ 1,285,101         | 3.0          | 8,760  | \$ 147                          | 7,343                                | 1,417                          |
| <i>FUTURE FACILITIES</i>   |                      |              |        |                                 |                                      |                                |
| Regent Park Standpipe (Oversizing)                                 | \$ 250,000           | 0.500        | 1,460  |                                 |                                      |                                |
| Subtotal Future Facilities   | \$ 250,000           | 0.500        | 1,460  | \$ 171                          | -                                    | 186                            |
| TOTAL GROUND STORAGE   | \$ 1,535,101         | 3.500        | 10,220 |                                 | 7,343                                | 1,604                          |
| AVERAGE CAPITAL COST PER NEW LUE = \$                              |                      |              |        | 150                             |                                      |                                |
| <b>ELEVATED STORAGE</b>  |                      |              |        |                                 |                                      |                                |
| <i>EXISTING FACILITIES</i>   |                      | mill. gals.  |        |                                 |                                      |                                |
| Highland Standpipe   | \$ 507,761           | 1.000        | 5,000  |                                 |                                      |                                |
| Miller Springs Standpipe Level II                                  |                      | 0.100        | 500    |                                 |                                      |                                |
| Esperanza Potable Tank   |                      | 0.100        | 500    |                                 |                                      |                                |
| Menger Springs Standpipe   | \$ 360,891           | 0.500        | 2,500  |                                 |                                      |                                |
| Subtotal Existing Facilities                                       | \$ 868,652           | 1.700        | 8,500  | \$ 102                          | 7,343                                | 1,157                          |
| <i>FUTURE FACILITIES</i>   |                      |              |        |                                 |                                      |                                |
| Esperanza Standpipe (Oversizing)                                   | \$ 500,000           | 1.000        | 5,000  |                                 |                                      |                                |
| Subtotal Future Facilities   | \$ 500,000           | 1.000        | 5,000  | \$ 100                          | -                                    | 446                            |
| TOTAL ELEVATED STORAGE   | \$ 1,368,652         | 2.700        | 13,500 |                                 | 7,343                                | 1,604                          |
| AVERAGE CAPITAL COST PER NEW LUE = \$                              |                      |              |        | 102                             |                                      |                                |
| <b>TRANSMISSION</b>  |                      |              |        |                                 |                                      |                                |
| <i>EXISTING FACILITIES</i>   |                      | peak hr mgd  |        |                                 |                                      |                                |
| Boerne South Main  | \$ 753,260           | 3.0          | 2,503  |                                 |                                      |                                |
| Menger Creek Main  | \$ 186,167           | 1.5          | 1,251  |                                 |                                      |                                |
| WCRWSP Transmission Main   | \$ 232,724           | 4.5          | 3,754  |                                 |                                      |                                |
| John's Road Water Main   | \$ 233,977           | 1.5          | 1,251  |                                 |                                      |                                |
| WTP Transmission Line  | \$ 3,243,000         | 5.2          | 4,338  |                                 |                                      |                                |
| Misc. Mains  | \$ 1,890,294         | 9.4          | 7,826  |                                 |                                      |                                |
| Old San Antonio Road   | \$ 445,000           | 1.5          | 1,251  |                                 |                                      |                                |
| Subtotal Existing Facilities                                       | \$ 6,984,422         | 26.6         | 22,176 | \$ 315                          | 7,343                                | 1,000                          |
| <i>FUTURE FACILITIES</i>   |                      |              |        |                                 |                                      |                                |
| Water Loop South of Hwy 46   | \$ 2,335,000         | 4.4          | 3,671  |                                 |                                      |                                |
| Various Transmission Main Oversizing                               | \$ 175,000           | 4.4          | 3,671  |                                 |                                      |                                |
| Subtotal Future Facilities   | \$ 2,510,000         | 8.8          | 7,342  | \$ 342                          | -                                    | 604                            |
| TOTAL TRANSMISSION   | \$ 9,494,422         | 35.4         | 29,518 |                                 | 7,343                                | 1,604                          |
| AVERAGE CAPITAL COST PER NEW LUE = \$                              |                      |              |        | 325                             |                                      |                                |
| <b>RECLAIMED</b>   |                      |              |        |                                 |                                      |                                |
| <i>EXISTING FACILITIES</i>   |                      | mgd          |        |                                 |                                      |                                |
| Current Reclaimed Water Facilities (Pipeline)                      | \$ 1,066,636         |              |        |                                 |                                      |                                |
| Reuse Line from Brown's Creek Lift Station to Hwy 46               | \$ 423,005           |              |        |                                 |                                      |                                |
| Reuse Line from Brown's Creek Lift Station to Racheds at Creekside | \$ 428,623           |              |        |                                 |                                      |                                |
| Current Reclaimed Water Facilities (Treatment)                     | \$ 1,073,464         | 2.5          | 2,086  |                                 |                                      |                                |
| Subtotal Existing Facilities                                       | \$ 2,991,728         | 2.5          | 2,086  | \$ 1,434                        | 1,285                                | 100                            |
| <i>FUTURE FACILITIES</i>   |                      |              |        |                                 |                                      |                                |
| Ranches at Creekside Reclaimed Water                               | \$ 1,093,315         |              |        |                                 |                                      |                                |
| Reclaimed Water Main Extension                                     | \$ 850,000           | 3.0          | 2,503  |                                 |                                      |                                |
| Reclaimed Water Storage Tank                                       | \$ 1,200,000         |              |        |                                 |                                      |                                |
| Subtotal Future Facilities   | \$ 3,143,315         | 3.0          | 2,503  | \$ 1,256                        | 1,285                                | 376                            |
| TOTAL RECLAIMED WATER  | \$ 6,135,043         | 5.5          | 4,589  |                                 | 2,570                                | 476                            |
| AVERAGE CAPITAL COST PER NEW LUE = \$                              |                      |              |        | 1,293                           |                                      |                                |
| <b>WATER TOTAL</b>   |                      |              |        |                                 |                                      |                                |
|  | Existing             | \$24,019,987 |        |                                 |                                      |                                |
|  | Future               | \$24,968,315 |        |                                 |                                      |                                |
|  | Total                | \$48,988,302 |        |                                 |                                      |                                |
| AVERAGE CAPITAL COST PER NEW LUE = \$                              |                      |              |        | 6,136                           |                                      |                                |

| Table 6b.<br>Wastewater CIP Inventory and Costing     |                      |              |        |                                 |                                      |                                |
|---|----------------------|--------------|--------|---------------------------------|--------------------------------------|--------------------------------|
| Facility Name   | Construction<br>Cost | Capacity     |        | Construction<br>Cost<br>per LUE | Facility Capacity Allocations (LUEs) |                                |
|   |                      | Total        | LUEs   |                                 | Existing<br>Customers                | Growth Use in<br>Next 10 Years |
| TREATMENT   |                      |              |        |                                 |                                      |                                |
| EXISTING FACILITIES                                   |                      |              | mgd    |                                 |                                      |                                |
| Esser Road WWTP                                       | \$ 3,618,080         | 1.5          | 5,556  |                                 |                                      |                                |
| Old San Antonio Road WWTRC                            | \$30,741,836         | 1.4          | 5,185  |                                 |                                      |                                |
| Subtotal Existing Facilities                          | \$34,359,916         | 2.9          | 10,741 | \$ 3,199                        | 7,343                                | 1,000                          |
| FUTURE FACILITIES                                     |                      |              |        |                                 |                                      |                                |
| Old San Antonio Road WWTRC Expansion                  | \$12,000,000         | 1.3          | 4,815  |                                 |                                      |                                |
| Subtotal Future Facilities                            | \$12,000,000         | 1.3          | 4,815  | \$ 2,492                        | -                                    | 604                            |
| TOTAL TREATMENT                                       | \$46,359,916         | 4.2          | 15,556 |                                 | 7,343                                | 1,604                          |
| AVERAGE CAPITAL COST PER NEW LUE = \$                 |                      |              |        | 2,933                           |                                      |                                |
| WASTEWATER PUMPING                                    |                      |              |        |                                 |                                      |                                |
| EXISTING FACILITIES                                   |                      |              | mgd    |                                 |                                      |                                |
| LS#1 Deer Creek                                       |                      | 0.1          | 107    |                                 |                                      |                                |
| LS#7 School   |                      | 0.4          | 533    |                                 |                                      |                                |
| LS#8 Meadowlands                                      | \$ 127,300           | 0.2          | 320    |                                 |                                      |                                |
| Scenic Loop Business Park (Buie) Lift Station         | \$ 86,000            | 0.3          | 444    |                                 |                                      |                                |
| Winding River Lift Station                            |                      | 0.1          | 213    |                                 |                                      |                                |
| Sutter Mills (Kendall Creek) Lift Station             |                      | 0.2          | 267    |                                 |                                      |                                |
| Subtotal Existing Facilities                          | \$ 213,300           | 1.3          | 1,884  | \$ 113                          | 1,689                                | -                              |
| FUTURE FACILITIES                                     |                      |              |        |                                 |                                      |                                |
| School Lift Station Upgrade/Expansion                 | \$ 3,392,000         | 4.1          | 6,074  |                                 |                                      |                                |
| WTP to WWTRC Transfer Station                         | \$ 1,040,600         | 0.3          | 444    |                                 |                                      |                                |
| Subtotal Future Facilities                            | \$ 4,432,600         | 4.4          | 6,519  | \$ 680                          | -                                    | 369                            |
| TOTAL WASTEWATER PUMPING                              | \$ 4,645,900         | 5.7          | 8,403  |                                 | 1,689                                | 369                            |
| AVERAGE CAPITAL COST PER NEW LUE = \$                 |                      |              |        | 680                             |                                      |                                |
| INTERCEPTORS  |                      |              |        |                                 |                                      |                                |
| EXISTING FACILITIES                                   |                      |              | mgd    |                                 |                                      |                                |
| Menger Creek Sewer                                    | \$ 531,925           | 1.7          | 1,778  |                                 |                                      |                                |
| South Sewer - Boerne South                            | \$ 313,344           | 0.5          | 521    |                                 |                                      |                                |
| Misc. Main Sewers                                     | \$ 2,164,218         | 7.2          | 7,646  |                                 |                                      |                                |
| Menger to WWTRC Gravity Pipeline                      | \$ 1,130,000         | 3.5          | 3,704  |                                 |                                      |                                |
| Browns to WWTRC Gravity Pipeline                      | \$ 2,620,000         | 5.1          | 5,397  |                                 |                                      |                                |
| Brown's Creek - North of Highway 46 area (Oversizing) | \$ 80,000            | 2.0          | 2,116  |                                 |                                      |                                |
| Menger Springs Oversizing                             | \$ 49,691            | 1.3          | 1,418  |                                 |                                      |                                |
| Old Stan Antonio Road Extension                       | \$ 173,000           | 0.4          | 423    |                                 |                                      |                                |
| WWTRC Interceptor                                     | \$ 2,209,830         | 1.0          | 1,058  |                                 |                                      |                                |
| Fabra Interceptor                                     | \$ 227,296           | 1.0          | 1,058  |                                 |                                      |                                |
| Kendall Creek Estates                                 | \$ 39,275            | 0.8          | 868    |                                 |                                      |                                |
| Subtotal Existing Facilities                          | \$ 9,538,579         | 24.6         | 25,986 | \$ 367                          | 7,343                                | 1,000                          |
| FUTURE FACILITIES                                     |                      |              |        |                                 |                                      |                                |
| School Lift Station Transmission Pipeline Upgrade     | \$ 1,630,000         | 0.8          | 847    |                                 |                                      |                                |
| Future Oversizing                                     | \$ 100,000           | 1.0          | 1,058  |                                 |                                      |                                |
|   |                      |              | -      |                                 |                                      |                                |
| Cibolo Creek Extension                                | \$ 9,193,000         | 2.0          | 2,116  |                                 |                                      |                                |
| North Cibolo (Phase 2) - Oversizing                   | \$ 1,020,000         | 1.0          | 1,058  |                                 |                                      |                                |
| Sugg's Creek Sewer Extension                          | \$ 1,400,000         | 2.0          | 2,116  |                                 |                                      |                                |
| Subtotal Future Facilities                            | \$13,343,000         | 6.8          | 7,196  | \$ 1,854                        |                                      | 604                            |
| TOTAL INTERCEPTORS                                    | \$22,881,579         | 31.4         | 33,182 |                                 | 7,343                                | 1,604                          |
| AVERAGE CAPITAL COST PER NEW LUE = \$                 |                      |              |        | 927                             |                                      |                                |
|   |                      |              |        |                                 |                                      |                                |
| Existing  |                      | \$44,111,795 |        |                                 |                                      |                                |
| Future  |                      | \$29,775,600 |        |                                 |                                      |                                |
| Total   |                      | \$73,887,395 |        |                                 |                                      |                                |
| AVERAGE CAPITAL COST PER NEW LUE = \$                 |                      |              |        | 4,540                           |                                      |                                |

## **6.0 Consideration of Other Methods of Capital Payment**

For utilities that charge an impact fee, the new customer pays for capital in two ways: (1) initially through the up-front impact fee, and (2) over the longer-term through utility rate payments, where typically some portion of customer rate payments also funds capital projects.

The 77th Texas Legislature amended Chapter 395 of the Local Government to require either: (1) a calculated credit for rate payments be reflected in the fee amount, or (2) a credit equal to 50% of the total projected cost of the capital improvements plan be given in calculating the maximum fee amount.

Table 7 indicates the estimated cost per LUE that is projected to be borne in the utility rates by the average new customer. The rate credit calculation considered: (1) existing capital obligations to wholesale providers, (2) existing debt, (3) future debt payments incurred in the year in which the facilities would be built and financed, and (4) the projected LUEs at the mid-point year of the weighted average life of the debt for the facilities that are part of the impact fee calculation for each utility.

## **7.0 Alternative Impact Fee Calculations**

Table 8 summarizes the unit capital cost of providing new service and the two alternative credit calculations for new customers. The alternative approach that calculates a specific rate credit (Option A) results in the maximum impact fee calculation of \$5,743 per LUE for water and \$3,814 per LUE for wastewater, totaling \$9,557 per LUE.

As shown in Table 8, the alternative 50% of capital cost method for calculating a rate credit (Option B) results in a lesser water impact fee of \$3,072 per LUE and wastewater fee of \$2,274 per LUE, yielding an overall \$5,346 per LUE.

**Table 7.**  
**Existing or Anticipated Debt to be Paid through Utility Rates**

| <i>Facility Type</i>               | <i>Est. Debt<br/>in Rates</i> | <i>Mid-Point<br/>LUEs</i> | <i>Est. Debt in<br/>Rates per LUE</i> |
|------------------------------------|-------------------------------|---------------------------|---------------------------------------|
| <b>WATER UTILITY</b>               |                               |                           |                                       |
| <b>Supply</b>                      |                               |                           |                                       |
| Existing Debt                      | \$ 4,907                      | 8,144                     | \$ 1                                  |
| Series 2019-2028 New Growth        | 0                             | 8,144                     | 0                                     |
| <b>Subtotal Water Supply</b>       | <b>4,907</b>                  |                           | <b>1</b>                              |
| <b>Treatment</b>                   |                               |                           |                                       |
| Existing Debt                      | 0                             | 8,144                     | 0                                     |
| Series 2019-2028 New Growth        | 1,142,029                     | 8,144                     | 140                                   |
| <b>Subtotal Water Treatment</b>    | <b>1,142,029</b>              |                           | <b>140</b>                            |
| <b>Pumping</b>                     |                               |                           |                                       |
| Existing Debt                      | 4,146                         | 8,144                     | 1                                     |
| Series 2019-2028 New Growth        | 35,847                        | 8,144                     | 4                                     |
| <b>Subtotal Water Pumping</b>      | <b>39,993</b>                 |                           | <b>5</b>                              |
| <b>Ground Storage</b>              |                               |                           |                                       |
| Existing Debt                      | 6,665                         | 8,144                     | 1                                     |
| Series 2019-2028 New Growth        | 15,862                        | 8,144                     | 2                                     |
| <b>Subtotal Ground Storage</b>     | <b>22,527</b>                 |                           | <b>3</b>                              |
| <b>Elevated Storage</b>            |                               |                           |                                       |
| Existing Debt                      | 1,889                         | 8,144                     | 0                                     |
| Series 2019-2028 New Growth        | 31,723                        | 8,144                     | 4                                     |
| <b>Subtotal Elevated Storage</b>   | <b>33,612</b>                 |                           | <b>4</b>                              |
| <b>Transmission</b>                |                               |                           |                                       |
| Existing Debt                      | 7,321                         | 8,144                     | 1                                     |
| Series 2019-2028 New Growth        | 159,250                       | 8,144                     | 20                                    |
| <b>Subtotal Transmission Lines</b> | <b>166,571</b>                |                           | <b>20</b>                             |
| <b>Reclaimed Water</b>             |                               |                           |                                       |
| Existing Debt                      | 2,227                         | 1,523                     | 1                                     |
| Series 2019-2028 New Growth        | 338,485                       | 1,523                     | 222                                   |
| <b>Subtotal Reclaimed Water</b>    | <b>340,712</b>                |                           | <b>224</b>                            |
| <b>Total Water</b>                 |                               |                           | <b>\$397</b>                          |



**Table 7.**  
**Existing or Anticipated Debt to be Paid through Utility Rates (cont.)**

| <b>WASTEWATER UTILITY</b>          |                  |       |                |
|------------------------------------|------------------|-------|----------------|
| <b>Treatment</b>                   |                  |       |                |
| Existing Debt                      | \$ 1,982,343     | 8,144 | \$ 243         |
| Series 2019-2028 New Growth        | 1,137,442        | 8,144 | 140            |
| <b>Subtotal WWTP</b>               | <b>3,119,785</b> |       | <b>383</b>     |
| <b>Pumping</b>                     |                  |       |                |
| Existing Debt                      | 287,659          | 8,144 | 35             |
| Series 2019-2028 New Growth        | 420,152          | 8,144 | 52             |
| <b>Subtotal Wastewater Pumping</b> | <b>707,811</b>   |       | <b>87</b>      |
| <b>Interceptors</b>                |                  |       |                |
| Existing Debt                      | 856,722          | 8,144 | 105            |
| Series 2019-2028 New Growth        | 1,264,741        | 8,144 | 155            |
| <b>Subtotal Interceptors</b>       | <b>2,121,463</b> |       | <b>260</b>     |
| <b>Total Wastewater</b>            |                  |       | <b>\$730</b>   |
| <b>Total Water and Wastewater</b>  |                  |       | <b>\$1,127</b> |

**Table 8.**  
**Derivation of Alternative Maximum Water and Wastewater  
Impact Fee Amounts**

| Item                            | Capital Cost<br>of<br>New Service<br>per LUE | Optional Adjustments       |                                    | Option A | Option B | Highest<br>of<br>Option A<br>or B |
|---------------------------------|--|----------------------------|------------------------------------|----------|----------|-----------------------------------|
|                                 |  | Option A<br>Rate<br>Credit | Option B<br>50% Cost<br>Adjustment |          |          |                                   |
| WATER                           |  |                            |                                    |          |          |                                   |
| Supply                          | \$ 761                                       | \$ 1                       | \$ 380                             | \$ 760   | \$ 380   |                                   |
| Treatment                       | 3,442  | 140                        | 1,721                              | 3,301    | 1,721    |                                   |
| Pumping                         | 64   | 5                          | 32                                 | 60       | 32       |                                   |
| Ground Storage                  | 150  | 3                          | 75                                 | 147      | 75       |                                   |
| Elevated Storage                | 102  | 4                          | 51                                 | 97       | 51       |                                   |
| Transmission                    | 325  | 20                         | 163                                | 305      | 163      |                                   |
| Reclaimed Water                 | 1,293  | 224                        | 647                                | 1,070    | 647      |                                   |
| Allocated Impact Fee Study Cost | 4  |                            |                                    | 4        | 4        |                                   |
| Total Water                     | \$6,140                                      | \$397                      | \$3,068                            | \$5,743  | \$3,072  | \$5,743                           |
| WASTEWATER                      |  |                            |                                    |          |          |                                   |
| Treatment                       | \$ 2,933                                     | \$ 383                     | \$ 1,466                           | \$ 2,550 | \$ 1,466 |                                   |
| Pumping                         | 680  | 87                         | 340                                | 593      | 340      |                                   |
| Interceptors                    | 927  | 260                        | 464                                | 667      | 464      |                                   |
| Allocated Impact Fee Study Cost | 4  |                            |                                    | 4        | 4        |                                   |
| Total Wastewater                | \$4,544                                      | \$730                      | \$2,270                            | \$3,814  | \$2,274  | \$3,814                           |
| TOTAL WATER/WASTEWATER          | \$10,684                                     | \$1,127                    | \$5,338                            | \$9,557  | \$5,346  | \$9,557                           |

The fee methodology was replicated for each major facility type in the utility system (e.g., supply, treatment, pumping, elevated storage, ground storage, and transmission) so that the total fee amount is the sum of the component facility fees. This provides a basis for extending the fee to wholesale customers of the City or granting fee offsets if a developer cost-participates with the City on CIP projects.

For comparison purposes, the current impact fees of other near-by cities are listed in Table 9.

**Table 9.**  
**Area Impact Fee Comparison**

| <i>City/Utility</i>         | <i>Water</i>   | <i>Wastewater</i> | <i>Total</i>   |
|-----------------------------|----------------|-------------------|----------------|
| Universal City              | \$2,741        | \$861             | \$3,602        |
| Leander                     | \$3,880        | \$1,615           | \$5,495        |
| Round Rock                  | \$4,025        | \$2,099           | \$6,124        |
| Kyle                        | \$3,535        | \$2,826           | \$6,361        |
| Buda                        | \$3,595        | \$3,515           | \$7,110        |
| Fredericksburg              | \$3,707        | \$3,480           | \$7,187        |
| San Antonio Water System*   | \$4,918        | \$2,356           | \$7,274        |
| <b>Boerne – Current</b>     | <b>\$4,081</b> | <b>\$3,218</b>    | <b>\$7,299</b> |
| Austin                      | \$5,400        | \$2,200           | \$7,600        |
| Fair Oaks Ranch             | \$6,209        | \$2,290           | \$8,499        |
| <b>Boerne – New Maximum</b> | <b>\$5,743</b> | <b>\$3,814</b>    | <b>\$9,557</b> |
| New Braunfels Utilities     | \$7,989        | \$3,251           | \$11,240       |
| Georgetown                  | \$6,921        | \$4,348           | \$11,269       |

\* The San Antonio Water System (SAWS) has multiple impact fees depending on service area, the impact fees shown are an average of all fees. The base water impact fees range from \$4,749 to \$5,097 and the base wastewater impact fees range from \$1,171 to \$4,022.

## **8. Advisory Committee Actions and Recommendations**

The following summarizes the Capital Improvements Advisory Committee activities during the impact fee updating process:

- On September 23rd, the Committee met to:
  - Review Chapter 395 Impact Fee process and requirements;
  - Review methodology for maximum fee calculation;
  - Review population and land use information;
  - Review CIP information;
  - Review unit cost calculation and maximum fee calculation; and
  - Receive draft report for review.
- On October 7th, the Committee met to:
  - Discuss various possible recommendations to the City Council; and
  - By unanimous vote, approved the following:
    - use of the land use and capital improvements data underlying the maximum impact fee calculations;
    - the validity of calculation of the maximum water and wastewater impact fee amounts;
    - a recommendation that the City Council adopt the maximum impact fees amounts; and
    - adoption of the Advisory Committee Report to be forwarded to City Council.

**Appendix A**  
**Summary of 10-Year Water & Wastewater**  
**CIP Projects**

| <b>Water Capital Projects</b>                     | <b>Cost</b>         |
|---|---------------------|
| <b>WATER TREATMENT</b>                            |                     |
| WTP Expansion                                     | \$18,000,000        |
| <b>WATER PUMPING</b>                              |                     |
| WCRWSP Pump Station Expansion                     | 252,000             |
| WTP High Service Pumps                            | 313,000             |
| <b>GROUND STORAGE</b>                             |                     |
| Regent Park Standpipe (Oversizing)                | 250,000             |
| <b>ELEVATED STORAGE</b>                           |                     |
| Esperanza Standpipe (Oversizing)                  | 500,000             |
| <b>TRANSMISSION</b>                               |                     |
| Water Loop South of Hwy 46                        | 2,335,000           |
| Various Transmission Main Oversizing              | 175,000             |
| <b>RECLAIMED WATER</b>                            |                     |
| Ranches at Creekside Reclaimed Water              | 1,093,315           |
| Reclaimed Water Main Extension                    | 850,000             |
| Reclaimed Water Storage Tank                      | 1,200,000           |
| <b>Total 10-Year Projects for Growth</b>          | <b>\$24,968,315</b> |
| <b>Wastewater Capital Projects</b>                | <b>Cost</b>         |
| <b>WASTEWATER TREATMENT</b>                       |                     |
| Old San Antonio Road WWTRC Expansion              | \$12,000,000        |
| <b>PUMPING (Lift Stations)</b>                    |                     |
| School Lift Station Upgrade/Expansion             | 3,392,000           |
| WTP to WWTRC Transfer Lift Station                | 1,040,600           |
| <b>INTERCEPTORS</b>                               |                     |
| School Lift Station Transmission Pipeline Upgrade | 1,630,000           |
| Future Oversizing                                 | 100,000             |
| Cibolo Creek Extension                            | 9,193,000           |
| North Cibolo (Phase 2) – Oversizing               | 1,020,000           |
| Sugg's Creek Sewer Extension                      | 1,400,000           |
| <b>Total 10-Year Projects for Growth</b>          | <b>\$29,775,600</b> |

**Appendix B**  
**LUE Fee Conversion Table**

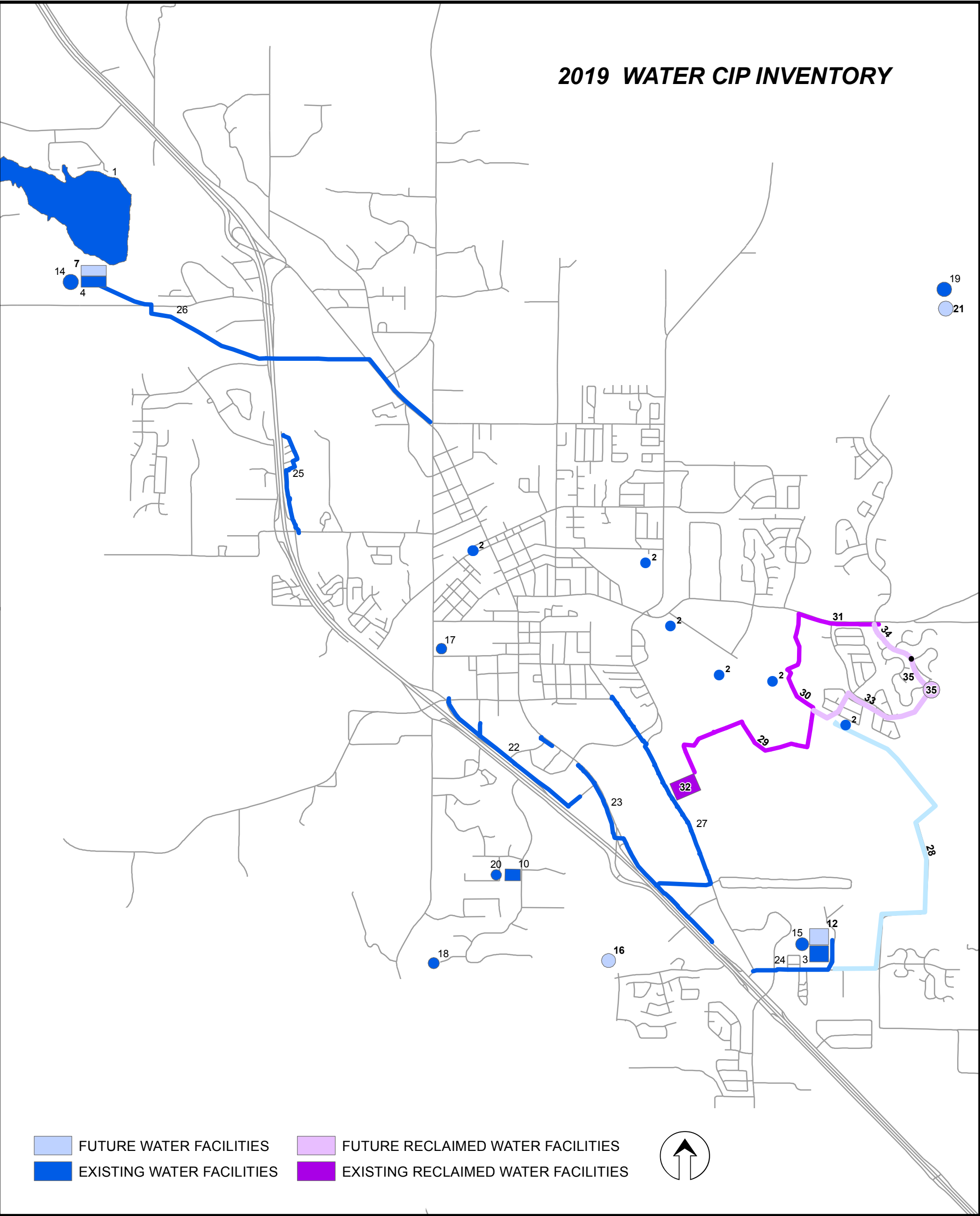
| <b>Meter Size</b>   | <b>Living Units Equivalent (LUEs) per Meter (a)</b> | <b>Maximum Base Fee per 5/8" Meter (b)</b> | <b>Maximum Impact Fee by Meter Size</b> |
|---|---|--|---|
| <b>WATER UTILITY</b>  |   |  |   |
| 5/8"  | 1.0   | <b>\$5,743</b>                             | \$5,743                                 |
| 3/4"  | 1.5   |  | \$8,615                                 |
| 1"  | 2.5   |  | \$14,358                                |
| 1.5"  | 5.0   |  | \$28,715                                |
| 2"  | 8.0   |  | \$45,944                                |
| 3"  | 16.0  |  | \$91,888                                |
| 4"  | 25.0  |  | \$143,575                               |
| 6"  | 50.0  |  | \$287,150                               |
| 8"  | 80.0  |  | \$459,440                               |
| 10"   | 115.0   |  | \$660,445                               |
| <b>WASTEWATER UTILITY</b>   |   |  |   |
| 5/8"  | 1.0   | <b>\$3,814</b>                             | \$3,814                                 |
| 3/4"  | 1.5   |  | \$5,721                                 |
| 1"  | 2.5   |  | \$9,535                                 |
| 1.5"  | 5.0   |  | \$19,070                                |
| 2"  | 8.0   |  | \$30,512                                |
| 3"  | 16.0  |  | \$61,024                                |
| 4"  | 25.0  |  | \$95,350                                |
| 6"  | 50.0  |  | \$190,700                               |
| 8"  | 80.0  |  | \$305,120                               |
| 10"   | 115.0   |  | \$438,610                               |
| (a) Derived from AWWA C700-C703 standards for continuous rated flow performance scaled to 5/8" meter. |   |  |   |
| (b) Based on maximum fee presented to Impact Fee Advisory Committee on September 23, 2019.            |   |  |   |

***Appendix C  
Water and Wastewater CIP Inventory Maps***



| 2019 WATER CIP INVENTORY |   |                   |                    |
|--------------------------|---|-------------------|--------------------|
| Water Supply             |   | Construction Cost | Capacity (MGD)     |
| Existing                 |   |                   |                    |
| 1                        | Boerne City Lake  |                   | 0.700              |
| 2                        | Groundwater Wells   | \$ 10,711,173     | 0.900              |
| 3                        | WCRWSP  |                   | 3.200              |
| Future                   |   |                   |                    |
|                          | None  |                   |                    |
| Water Treatment          |   | Construction Cost | Capacity (MGD)     |
| Existing                 |   |                   |                    |
| 4                        | Water Treatment Plant                                     |                   | 1.500              |
| 3                        | WCRWSP  | \$ 381,513        | 3.200              |
| 2                        | Groundwater Wells   |                   | 0.900              |
| Future                   |   |                   |                    |
| 7                        | WTP Expansion   | \$ 18,000,000     | 2.500              |
| Water Pumping            |   | Construction Cost | Capacity (MGD)     |
| Existing                 |   |                   |                    |
| 4                        | WTP High Service Pumps                                    |                   | 1.400              |
| 2                        | Groundwater Wells   |                   | 1.700              |
| 10                       | Menger Springs Pump Station                               |                   | 0.800              |
| 3                        | WCRWSP Pump Station                                       | \$ 797,398        | 3.000              |
| Future                   |   |                   |                    |
| 12                       | WCRWSP Pump Station Expansion                             | \$ 252,000        | 1.500              |
| 7                        | WTP High Service Pumps                                    | \$ 313,000        | 6.000              |
| Ground Storage           |   | Construction Cost | Capacity (Gallons) |
| Existing                 |   |                   |                    |
| 14                       | WTP Clearwell   | \$ 871,145        | 2.000              |
| 15                       | WCRWSP Tank   | \$ 413,956        | 1.000              |
| Future                   |   |                   |                    |
| 16                       | Regent Park Standpipe (Oversizing)                        | \$ 250,000        | 0.500              |
| Elevated Storage         |   | Construction Cost | Capacity (Gallons) |
| Existing                 |   |                   |                    |
| 17                       | Highland Standpipe  | \$ 507,761        | 1.000              |
| 18                       | Miller Springs Standpipe Level II                         |                   | 0.100              |
| 19                       | Esperanza Potable Tank                                    |                   | 0.100              |
| 20                       | Menger Springs Standpipe                                  | \$ 360,891        | 0.500              |
| Future                   |   |                   |                    |
| 21                       | Esperanza Standpipe (Oversizing)                          | \$ 500,000        | 1.000              |
| Transmission             |   | Construction Cost | Capacity (MGD)     |
| Existing                 |   |                   |                    |
| 22                       | Boerne South Main   | \$ 753,260        | 3.000              |
| 23                       | Menger Creek Main   | \$ 186,167        | 1.500              |
| 24                       | WCRWSP Transmission Main                                  | \$ 232,724        | 4.500              |
| 25                       | John's Road Water Main                                    | \$ 233,977        | 1.500              |
| 26                       | WTP Transmission Line                                     | \$ 3,243,000      | 5.200              |
|                          | Misc. Mains   | \$ 1,890,294      | 9.400              |
| 27                       | Old San Antonio Road                                      | \$ 445,000        | 1.500              |
| Future                   |   |                   |                    |
| 28                       | Water Loop South of Hwy 46                                | \$ 2,335,000      | 4.400              |
|                          | Various Transmission Main Oversizing                      | \$ 175,000        | 4.400              |
| Reclaimed                |   | Construction Cost | Capacity (MGD)     |
| Existing                 |   |                   |                    |
| 29                       | Current Reclaimed Water Facilities (Pipeline)             | \$ 1,066,636      | 2.500              |
| 30                       | Reuse line from Brown's Creek Lift Station to Hwy 46      | \$ 531,000        |                    |
| 31                       | Reclaimed line from Brown's Creek Lift Station to Ranches | \$ 524,000        |                    |
| 32                       | Current Reclaimed Water Facilities (Treatment)            | \$ 1,073,464      |                    |
| Future                   |   |                   |                    |
| 33                       | Ranches at Creekside Reclaimed Water                      | \$ 1,093,315      | 1.000              |
| 34                       | Reclaimed Water Main Extension                            | \$ 850,000        |                    |
| 35                       | Reclaimed Water Storage Tank                              | \$ 1,200,000      |                    |



2019 WATER CIP INVENTORY



2019 WASTEWATER CIP INVENTORY

| Wastewater Treatment    |   | Construction Cost | Capacity (MGD) |
|-------------------------|---|-------------------|----------------|
| Existing                |   |                   |                |
| 1                       | Esser Road WWTP                                   | \$ 3,618,080      | 1.500          |
| 2                       | Old San Antonio road WWTRC                        | \$ 30,741,836     | 1.400          |
| Future                  |   |                   |                |
| 3                       | Old San Antonio Road WWTRC Expansion              | \$ 12,000,000     | 1.300          |
| Wastewater Pumping      |   | Construction Cost | Capacity (MGD) |
| Existing                |   |                   |                |
| 4                       | LS #1 - Deer Creek                                |                   | 0.100          |
| 5                       | LS #2 - School                                    |                   | 0.400          |
| 6                       | LS #3 - Meadowlands                               | \$ 127,300        | 0.200          |
| 7                       | Scenic Loop Business Park (Buie) Lift Station     | \$ 86,000         | 0.300          |
| 8                       | Winding River Lift Station                        |                   | 0.100          |
| 9                       | Sutter Mills (Kendall Creek) Lift Station         |                   | 0.200          |
| Future                  |   |                   |                |
| 10                      | School Lift Station Upgrade/Expansion             | \$ 3,392,000      | 4.100          |
| 11                      | WTP to WWTRC Transfer Station                     | \$ 1,040,600      | 0.300          |
| Wastewater Interceptors |   | Construction Cost | Capacity (MGD) |
| Existing                |   |                   |                |
| 12                      | Menger Creek Sewer                                | \$ 531,925        | 1.700          |
| 13                      | South Sewer - Boerne Creek                        | \$ 313,344        | 0.500          |
|                         | Misc. Main Sewers                                 | \$ 2,164,218      | 7.200          |
| 15                      | Menger to WWTRC Gravity Pipeline                  | \$ 1,130,000      | 3.500          |
| 16                      | Browns to WWTRC Gravity Pipeline                  | \$ 2,620,000      | 5.100          |
| 17                      | Brown's Creek - North of Hwy 46 Area (Oversizing) | \$ 80,000         | 2.000          |
| 18                      | Menger Springs Oversizing                         | \$ 49,691         | 1.300          |
| 19                      | Old San Antonio Road Extension                    | \$ 173,000        | 0.400          |
| 20                      | WWTRC Interceptor                                 | \$ 2,209,830      | 1.000          |
| 21                      | Fabra Interceptor                                 | \$ 227,296        | 1.000          |
| 22                      | Kendall Creek Estates                             | \$ 39,275         | 0.800          |
| Future                  |   |                   |                |
| 23                      | School Lift Station Transmission Pipeline Upgrade | \$ 1,630,000      | 0.800          |
|                         | Future Oversizing                                 | \$ 100,000        | 1.000          |
| 24                      | Cibolo Creek Extension                            | \$ 9,193,000      | 0.000          |
| 25                      | North Cibolo (Phase 2) - Oversizing               | \$ 1,020,000      | 1.000          |
| 26                      | Sugg's Creek Sewer Extension                      | \$ 1,400,000      | 2.000          |

# 2019 WASTEWATER CIP INVENTORY

-  FUTURE FACILITIES
-  EXISTING FACILITIES

