

TECHNICAL MEMO – FINAL


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KSA Project Number: 102943

Subject: Revise and update impact fee analysis from the 2022 Water and Wastewater Master Plans

INTRODUCTION AND SCOPE

KSA Engineers was retained by the City of Sanger to update the impact fee calculation provided in the 2022 Water and Wastewater Master Plan to include impact fee calculation based on usage categories. The scope of work included:

- 1) Review, tabulate and sort water meter data and categorize meters based on usage category (such as Residential Water, Multi-Family Residential, Commercial Water, Multi-Unit Commercial, Residential Irrigation, Commercial Irrigation, No-Charge Municipality, and No Water-Sewer Only).
- 2) Calculate equivalent service units based on monthly usage for each category.
- 3) Estimate/project equivalent service unit ratios for future 5, 10, and 20 year development.
- 4) Calculate and update impact fee analysis based on estimates equivalent service unit ratios for each category.

ANALYSIS METHODOLOGY – EQUIVALENT SERVICE UNITS

Equivalent Service Units are used to equate the amount of water used by larger commercial connections to the amount of water used by residential connections. Chapter 395 of the Local Government Code requires that impact fees be based on a defined service unit. A "service unit" is a standard measure of consumption (water use), or discharge (sewer generation). This memo defines a service unit to be a residential water meter, or RES connection. This is a typical water meter used in a single family detached dwelling. Equivalent Service Units are the total number of connections associated with an entity that has a larger consumption/discharge than a standard residential connection. In this memo these connections are classified as Multi-Family Residential, Commercial, Multi-Unit Commercial, Residential Irrigation, Commercial Irrigation, No Charge Municipality, and No Water-Sewer Only connections. Each of these classifications is assigned a multiplier based on consumption. For example, a Commercial entity has a multiplier of 2.5, meaning a commercial entity that falls into this classification would be accountable for 2.5 times the impact fee associated with a single residential connection.

KSA utilized the 2023 billing history provided by the City and averaged the monthly consumption of each user classification. The meters were sorted by the rate table and associated category. To calculate the equivalent service unit (ESU) ratio, the average usage was divided by the residential average usage. This ratio was then used to calculate the total number of future connections. The analysis is summarized in Tables 1 and 2 below.

The estimated number of future meters for each category is based on the current percentage of meters of each category in the 2023 billing report provided by the City.

Table 1: Calculated Equivalent Service Unit Factor per 2023 water meter data

Customer Class	Rate Table	# of Current Meters	% of Total Meters	Avg Monthly Usage per Class (GAL)	Avg Monthly Usage per Class (GPM)	Calc ESU Factor
Res	010-01	3260	91%	5,749	0.13	1.0
Multi-Res	010-02	27	1%	73,508	1.70	12.8
Com	010-03	211	6%	14,229	0.33	2.5
Multi-Com	010-04	17	0%	16,766	0.39	2.9
Res Irrig	010-A01	13	0%	6,674	0.15	1.2
Com Irrig	010-A02	29	1%	21,039	0.49	3.7
No Charge W	010-NC	23	1%	73,655	1.70	12.8
No W Only S	010-SWO	2	0%	66,449	1.54	11.6
Total Current Meters		3582	100%			

Table 2: Total Future Equivalent Service Units – 5, 10 & 20 year ESUs

Meter Type	5 Year – 2025 Additional Meters	10 Year – 2030 Additional Meters	20 Years – 2040 Additional Meters	Total Meters Added Through 5, 10 & 20 Year Plans	Calc ESU Factor	Estimated ESUs for 5, 10 & 20 Year Plans
Res	528	615	1564	2708	1.0	2708
Multi-Res	4	5	13	22	12.8	287
Com	34	40	101	175	2.5	434
Multi-Com	3	3	8	14	2.9	41
Res Irrig	2	2	6	11	1.2	13
Com Irrig	5	5	14	24	3.7	88
No Charge W	4	4	11	19	12.8	245
No W, Only S	0	0	1	2	11.6	19
Total Additional Meters	580	676	1719	Total Additional Equivalent Service Units		3815

GENERAL – IMPACT FEE ANALYSIS

Chapter 395 of the Local Government Code is an act that provides guidelines for financing capital improvements that are required to support new development in municipalities, counties, and certain other local governments. The basis for determination for an impact fee requires the preparation of a land use plan and growth assumption. The 2022 Master Plan report uses the NCTCOG population estimate and growth rate to make growth assumptions, and uses the City provided Growth Area Map from the comprehensive plan as a land use guideline.

The Local Government Code allows the maximum impact fee to be charged if revenues from future ad valorem taxes, and water and sewer bills are included as credit in the analysis. If these future revenues are not accounted for in the analysis the maximum impact fee that can be assessed is 50% of the calculated maximum fee. For the purposes of this memo, future revenues and ad valorem taxes are not accounted for. The following items were accounted for in the impact fee calculation:

- Estimated costs of water system improvements
- Estimated costs of collection system improvements
- Estimated costs of water supply improvements
- Estimated costs of sewer treatment improvements
- NCTCOG population projections
- Equivalent Service Unit Analysis

Estimated cost of water improvements:

Water Improvements	Cost
2025 Water System Improvements ¹	\$2,528,036.00
2030 Water System Improvements ¹	\$3,953,250.00
2040 Water System Improvements ¹	\$4,496,000.00
Total Water System Improvements Cost	\$10,977,286.00

Note 1: Estimated costs of improvements are from the 2022 Water Master Plan.

Estimated cost of sewer improvements:

Sewer Improvements	Cost
2025 Sewer System Improvements ¹	\$2,191,400.00
2030 Sewer System Improvements ¹	\$3,937,375.00
2040 Sewer System Improvements ¹	\$3,379,275.00
Construction Cost of Wastewater Treatment Plant Improvements ²	\$2,000,000.00
Total Sewer System Improvements Cost	\$11,508,050.00

Note 1: Estimated costs of improvements are from the 2022 Wastewater Master Plan.

Note 2: Future construction cost of wastewater treatment plant and blower improvements.

ANALYSIS METHODOLOGY - IMPACT FEE ANALYSIS

The impact fee was calculated by estimating the cost of each improvement required to provide water and sewer service to the extents of the Future Land Use Map. The total costs of these improvements were divided by the number of future connections to be served (considering the Equivalent Service Unit connections for larger users). This provides a per connection cost for the improvements. The Impact Fee Analysis is briefly described as follows:

$$\text{Water Impact Fee} = \frac{\text{Total Cost of Water Improvements}}{\text{Total Connections Added (Equivalent Service Unit)}} = \$2,877.40$$

$$\text{Sewer Impact Fee} = \frac{\text{Total Cost of Sewer Improvements}}{\text{Total Connections Added (Equivalent Service Unit)}} = \$3016.53$$

$$\begin{aligned}\text{Total Impact Fee} &= \text{Water Impact Fee} + \text{Sewer Impact Fee} = \$5,893.93 \\ 50\% \text{ of the Total Impact Fee} &= \$2,946.96\end{aligned}$$

Technical Memo – Water and Wastewater Improvements Impact Fee Analysis – City of Sanger, Texas

This fee accounts for Equivalent Service Units (ESU), and a larger user would pay the impact fee multiplied by their equivalent service factor i.e. a Commercial entity would pay the Commercial equivalent service multiplier (2.5) multiplied by the impact fee.