Prepared for
San Antonio Water System

2023 Water and Wastewater Impact Fee Update

Capital Improvement Program Eligible Cost Calculations

Capital Improvements Advisory Committee

October 25, 2023

Impact Fee Calculation

Land Use Assumptions Plan

Provides number of ***added service units***

Capital Improvements Plan

Provides ***cost of eligible capital improvements***

$$\textbf{CALCULATED IMPACT FEE} = \frac{\textbf{cost of eligible capital improvements}}{\text{added service units}}$$

Types of Impact Fees

Water Delivery

Flow

System Development

Water Supply

Wastewater Collection

Wastewater Treatment

01

Eligible Water System Capital Costs

Water Delivery - Flow

Water Delivery – Flow

- Cost allocation is based on maximum hour demand (MHD)
- Looped distribution system makes existing and future capacities difficult to pinpoint
- Estimated capacity approach assumes distribution mains increase as needed to maintain 10% excess capacity

$$Estimated\ Capacity\ MGD = \frac{Max\ Hour\ Demand\ MGD}{90\%}$$

Water Delivery – Flow

- Cost associated with available existing capacity (10%) is allocated to impact fee calculation first

If 2033 MHD ≥ 2023 Estimated Capacity:

$$Allocation\ of\ Existing\ Capacity\ Cost = \frac{2023\ Estimated\ Capacity\ -\ 2023\ MHD}{2023\ Estimated\ Capacity}$$

If 2033 MHD < 2023 Estimated Capacity:

$$Allocation\ of\ Existing\ Capacity\ Cost = \frac{2033\ MHD - 2023\ MHD}{2023\ Estimated\ Capacity}$$

Water Delivery – Flow

- If available existing capacity is insufficient to serve projected growth, a percentage of future CIP capacity is included in the fee calculation

If 2033 MHD ≥ 2023 Estimated Capacity:

$$Allocation\ of\ Future\ CIP\ Cost$$

$$= \frac{2033\ MHD - 2023\ Estimated\ Capacity}{2033\ Estimated\ Capacity - 2023\ Estimated\ Capacity}$$

02

Eligible Water System Capital Costs

Water Delivery – System Development

Water Delivery – System Development (Well Pumps)

- Total available capacity is the sum of existing available capacity (2023) and future CIP capacity (2024 – 2033) for the combined system
- Eligible value based on the percentage of total available capacity required to serve 10-year study period demand

$$\text{Total Available Capacity } MGD = \text{Existing Available Capacity } MGD + \text{Future CIP Capacity } MGD$$

$$\text{Allocation of Well Pump Costs} = \frac{2033\ MDD\ MGD - 2023\ MDD\ MGD}{\text{Total Available Well Pump Capacity } MGD}$$

Well pump allocation percentage is applied to costs associated with existing available capacity and future CIP costs.

Water Delivery – System Development (Pump Stations and Transmission Mains)

- Cost allocation is based on MHD by service area
- Eligible value based on the percentage of total available capacity required to serve 10-year study period demand

$$\text{Total Available Capacity } MGD = \text{Existing Available Capacity } MGD + \text{Future CIP Capacity } MGD$$

$$\text{Allocation of Costs} = \frac{2033\ MHD\ MGD - 2023\ MHD\ MGD}{\text{Total Available Capacity } MGD}$$

Pump Station and Transmission Main allocation percentages for each service area are applied to costs associated with existing available capacity and future CIP costs.

Water Delivery – System Development (Storage Tanks)

- Cost allocation is based on MHD by service area
- MHD is driven by TCEQ requirements (100 gallons per connection of elevated storage tank capacity and 200 gallons per connection of total storage tank capacity)
- Eligible value based on the percentage of total available capacity required to serve 10-year study period demand

$$\text{Total Available Capacity } MGD$$
$$= \text{Existing Available Capacity } MGD + \text{Future CIP Capacity } MGD$$

$$\text{Allocation of Costs} = \frac{2033\ MHD\ MGD - 2023\ MHD\ MGD}{\text{Total Available Capacity } MGD}$$

Storage Tank allocation percentages for each service area are applied to costs associated with existing available capacity and future CIP costs.

03

Eligible Wastewater System Capital Costs

Wastewater Treatment

- Cost allocation is based on average daily flow (ADF) by service area
- Eligible value based on the percentage of total available capacity required to serve 10-year study period demand

$$\text{Total Available Capacity } MGD = \text{Existing Available Capacity } MGD + \text{Future CIP Capacity } MGD$$

$$\text{Allocation of Wastewater Treatment Costs} = \frac{2033\ ADF\ MGD - 2023\ ADF\ MGD}{\text{Total Available Capacity } MGD}$$

Wastewater Treatment allocation percentage is applied to costs associated with existing available capacity and future CIP costs.

Wastewater Collection

- 3 sewersheds with 6 service areas:
  - Medio Creek
  - Upper Medina → Lower Medina
    - Upper Medina unit cost = Upper Medina capital costs / Upper Medina EDUs
    - Lower Medina unit cost = Lower Medina capital costs / (Upper Medina EDUs + Lower Medina EDUs)
    - Upper Medina impact fee = Upper Medina unit cost + Lower Medina unit cost
    - Lower Medina impact fee = Lower Medina unit cost
  - Upper Collection → Middle Collection → Lower Collection
    - Upper Collection unit cost = Upper Collection capital costs / Upper Collection EDUs
    - Middle Collection unit cost = Middle Collection capital costs / (Upper Collection EDUs + Middle Collection EDUs)
    - Lower Collection unit cost = Lower Collection capital costs / (Upper Collection EDUs + Middle Collection EDUs + Lower Collection EDUs)
    - Upper Collection impact fee = Upper Collection unit cost + Middle Collection unit cost + Lower Collection unit cost
    - Middle Collection impact fee = Middle Collection unit cost + Lower Collection unit cost
    - Lower Collection impact fee = Lower Collection unit cost

Wastewater Collection

- Cost allocation is based on wet weather peak flow (WWPF) by service area
- Eligibility of CIP project costs is determined for each project based on modeled demands

If study period demand ≥ existing available capacity:

$$Allocation\ of\ Existing\ Capacity\ Cost$$

$$= \frac{2023\ Capacity\ - 2023\ WWPF}{2023\ Capacity}$$

If study period demand < existing available capacity:

$$Allocation\ of\ Existing\ Capacity\ Cost$$

$$= \frac{2033\ WWPF - 2023\ WWPF}{2023\ Capacity}$$

Questions?