**Impact Fee Calculation**

Calculated Impact Fee = \( \frac{\text{Cost of Eligible CIP}}{\text{Added EDUs}} \)

- LUAP provides number of added EDUs
- CIP provides cost of eligible capital improvements
  - Extensions and expansions
  - Pipeline upsizing
- Study period for LUAP and CIP is 10 years
  - How many EDUs are expected to be added in 10-year study period?
  - What is the cost of the capacity that is required to serve these added EDUs?
Impact Fee Components

Water Supply

Water Delivery
System Development

Water Delivery
Flow

Wastewater Collection

Wastewater Treatment
Water Delivery / System Development Components

- **Well Pumps**
- **Elevated Storage Tanks**
- **Transmission Mains**
- **Ground Storage Tanks**
- **High Service and Booster Pump Stations**
Water Delivery / System Development Value – Well Pumps

Existing value of well pumps is $123,454,536

• Valuation method is Original Cost (OC)
• Value is not depreciated
• Value excludes contributed assets

Value of well pumps CIP projects is $17,060,000

• Value is in 2018 dollars
• Value does not include financing costs
Allocation of Water Delivery / System Development / Well Pumps Value to Impact Fee

Allocation is based on maximum day demand (MDD)

- 2018 population is 1,851,348; 2028 population is 2,190,178
- Average Day Demand (ADD) = \( \frac{290 \text{ gpd per EDU}}{2.39 \text{ persons per EDU}} \)
- ADD = 121 gallons per capita per day (gpcd)
- Maximum day peaking factor (MDPF) is 1.78 (Water Infrastructure Plan)
- MDD = ADD * MDPF * Population
- 2018 MDD = 121 gpcd * 1.78 * 1,851,348 = 398.7 mgd
- 2028 MDD = 121 gpcd * 1.78 * 2,190,178 = 471.7 mgd
- Study Period Demand = 2028 MDD – 2018 MDD
- Study Period Demand = 471.7 mgd – 398.7 mgd = 73.0 mgd
Allocation of Water Delivery / System Development / Well Pumps Value to Impact Fee

Total available capacity is 171.9 mgd

- 2018 Capacity = 533.6 mgd
- Existing Available Capacity = 2018 Capacity – 2018 MDD
- Existing Available Capacity = 533.6 mgd – 398.7 mgd = 134.9 mgd
- Future CIP Capacity = 37.0 mgd
- Total Available Capacity = Existing Available Capacity + Future CIP Capacity
- Total Available Capacity = 134.9 mgd + 37.0 mgd = 171.9 mgd

Impact fee eligible allocation is 42.5%

- Allocation = \( \frac{\text{Study Period Demand}}{\text{Total Available Capacity}} \)
- Allocation = \( \frac{73.0 \text{ mgd}}{171.9 \text{ mgd}} \) = 42.5%
Water Delivery / System Development Components

- Well Pumps
- Elevated Storage Tanks
- Transmission Mains
- Ground Storage Tanks
- High Service and Booster Pump Stations
Water Delivery / System Development Value – Elevated Storage Tanks

Existing value of elevated storage tanks is $72,527,322

- Valuation method is Original Cost (OC)
- Value is not depreciated
- Value excludes contributed assets

Value of elevated storage tanks CIP projects is $41,381,885

- Value is in 2018 dollars
- Value does not include financing costs
Allocation is based on TCEQ requirements

- TCEQ requires minimum 100 gallons per connection of EST capacity, but WIP may recommend a higher minimum for each service area

- 1 connection = 1.64 EDUs

- \( EST \) Capacity Requirement = \( Minimum \text{ gal/conn} \times \frac{No. \text{ EDUs}}{1.64} \)

- Study Period Requirement = 2028 \( EST \) Capacity Requirement – 2018 \( EST \) Capacity Requirement
High Service Area Study Period Requirement

- 2018 EST Capacity Requirement = $219 \frac{gal}{conn} \times \frac{23,755 \text{ EDU}}{1.64} = 3.2 \text{ MG}$
- 2028 EST Capacity Requirement = $219 \frac{gal}{conn} \times \frac{30,600 \text{ EDU}}{1.64} = 4.1 \text{ MG}$
- Study Period Requirement = $4.09 \text{ MG} - 3.17 \text{ MG} = 0.9 \text{ MG}$
 Allocation of Water Delivery / System Development / Elevated Storage Tanks Value to Impact Fee

Total available capacity for High Service Area is 7.2 MG

- 2018 Capacity = 5.4 MG
- Existing Available Capacity = 2018 Capacity − 2018 EST Capacity Requirement
- Existing Available Capacity = 5.4 MG − 3.2 MG = 2.2 MG
- Future CIP Capacity = 5.0 MG
- Total Available Capacity = Existing Available Capacity + Future CIP Capacity
- Total Available Capacity = 2.2 MG + 5.0 MG = 7.2 MG

Impact fee eligible allocation for High Service Area is 12.7%

- Allocation = \( \frac{\text{Study Period Requirement}}{\text{Total Available Capacity}} \)
- Allocation = \( \frac{0.9 \text{ MG}}{7.2 \text{ MG}} = 12.7\% \)
Allocation of Water Delivery / System Development / Elevated Storage Tanks Value to Impact Fee

Middle Service Area Study Period Requirement

• 2018 EST Capacity Requirement = 136 \( \frac{gal}{conn} \) * \( \frac{262,228 \text{ EDU}}{1.64} \) = 21.7 MG

• 2028 EST Capacity Requirement = 136 \( \frac{gal}{conn} \) * \( \frac{318,707 \text{ EDU}}{1.64} \) = 26.4 MG

• Study Period Requirement = 26.4 MG – 21.7 MG = 4.7 MG
Total available capacity for Middle Service Area is 21.9 MG

- 2018 Capacity = 40.6 MG
- Existing Available Capacity = 2018 Capacity – 2018 EST Capacity Requirement
- Existing Available Capacity = 40.6 MG – 21.7 MG = 18.9 MG
- Future CIP Capacity = 3.0 MG
- Total Available Capacity = Existing Available Capacity + Future CIP Capacity
- Total Available Capacity = 18.9 MG + 3.0 MG = 21.9 MG

Impact fee eligible allocation for Middle Service Area is 21.4%

- Allocation = \( \frac{\text{Study Period Requirement}}{\text{Total Available Capacity}} \)
- Allocation = \( \frac{4.7 \text{ MG}}{21.9 \text{ MG}} = 21.4\% \)
Allocation of Water Delivery / System Development / Elevated Storage Tanks Value to Impact Fee

Low Service Area Study Period Requirement

• 2018 EST Capacity Requirement = 103 \( \frac{gal}{conn} \) * \( \frac{488,639 \text{ EDU}}{1.64} \) = 30.7 MG

• 2028 EST Capacity Requirement = 103 \( \frac{gal}{conn} \) * \( \frac{567,086 \text{ EDU}}{1.64} \) = 35.6 MG

• Study Period Requirement = 35.6 MG − 30.7 MG = 4.9 MG
Allocation of Water Delivery / System Development / Elevated Storage Tanks Value to Impact Fee

Total available capacity for Low Service Area is 22.0 MG

- 2018 Capacity = 48.2 MG
- Existing Available Capacity = 2018 Capacity – 2018 EST Capacity Requirement
- Existing Available Capacity = 48.2 MG – 30.7 MG = 17.5 MG
- Future CIP Capacity = 4.5 MG
- Total Available Capacity = Existing Available Capacity + Future CIP Capacity
- Total Available Capacity = 17.5 MG + 4.5 MG = **22.0 MG**

Impact fee eligible allocation for Low Service Area is 22.4%

- Allocation = \( \frac{\text{Study Period Requirement}}{\text{Total Available Capacity}} \)
- Allocation = \( \frac{4.9 \text{ MG}}{22.0 \text{ MG}} \) = **22.4%**
Water Delivery / System Development Components

- Well Pumps
- Elevated Storage Tanks
- Transmission Mains
- Ground Storage Tanks
- High Service and Booster Pump Stations
Water Delivery / System Development Value – Ground Storage Tanks

Existing value of ground storage tanks is $65,495,466

- Valuation method is Original Cost (OC)
- Value is not depreciated
- Value excludes contributed assets

Value of ground storage tanks CIP projects is $29,421,250

- Value is in 2018 dollars
- Value does not include financing costs
Allocation of Water Delivery / System Development / Ground Storage Tanks Value to Impact Fee

Allocation is based on TCEQ requirements

• TCEQ requires minimum 200 gallons per connection of storage capacity, but WIP may recommend a higher minimum for each service area

• 1 connection = 1.64 EDUs

• \( GST \) Capacity Requirement = \( Minimum \; gal/conn \times \frac{No. \; EDUs}{1.64} \)

• Study Period Requirement = 2028 \( GST \) Capacity Requirement – 2018 \( GST \) Capacity Requirement
High Service Area Study Period Requirement

• 2018 GST Capacity Requirement = 13 \( \frac{\text{gal}}{\text{conn}} \) \* \( \frac{23,755 \text{ EDU}}{1.64} \) = 0.19 MG
• 2028 GST Capacity Requirement = 13 \( \frac{\text{gal}}{\text{conn}} \) \* \( \frac{30,600 \text{ EDU}}{1.64} \) = 0.24 MG
• Study Period Requirement = 0.24 MG − 0.19 MG = 0.05 MG
Total available capacity for High Service Area is 10.6 MG

- 2018 Capacity = 10.8 MG
- Existing Available Capacity = 2018 Capacity – 2018 GST Capacity Requirement
- Existing Available Capacity = 10.8 MG – 0.19 MG = 10.6 MG
- Future CIP Capacity = 0.0 MG
- Total Available Capacity = Existing Available Capacity + Future CIP Capacity
- Total Available Capacity = 10.6 MG + 0.0 MG = 10.6 MG

Impact fee eligible allocation for High Service Area is 0.5%

- Allocation = \( \frac{\text{Study Period Requirement}}{\text{Total Available Capacity}} \)
- Allocation = \( \frac{0.05 \text{ MG}}{10.6 \text{ MG}} = 0.5\% \)
Allocation of Water Delivery / System Development / Ground Storage Tanks Value to Impact Fee

Middle Service Area Study Period Requirement

- 2018 GST Capacity Requirement = $64 \frac{\text{gal}}{\text{conn}} \times \frac{262,228 \text{ EDU}}{1.64} = 10.2 \text{ MG}$
- 2028 GST Capacity Requirement = $64 \frac{\text{gal}}{\text{conn}} \times \frac{318,707 \text{ EDU}}{1.64} = 12.4 \text{ MG}$
- Study Period Requirement = 12.4 MG − 10.2 MG = 2.2 MG
Allocation of Water Delivery / System Development / Ground Storage Tanks Value to Impact Fee

Total available capacity for Middle Service Area is 69.8 MG

- 2018 Capacity = 67.5 MG
- Existing Available Capacity = 2018 Capacity – 2018 GST Capacity Requirement
- Existing Available Capacity = 67.5 MG – 10.2 MG = 57.3 MG
- Future CIP Capacity = 12.5 MG
- Total Available Capacity = Existing Available Capacity + Future CIP Capacity
- Total Available Capacity = 57.3 MG + 12.5 MG = 69.8 MG

Impact fee eligible allocation for Middle Service Area is 3.2%

- Allocation = \( \frac{\text{Study Period Requirement}}{\text{Total Available Capacity}} \)
- Allocation = \( \frac{2.2 \text{ MG}}{69.8 \text{ MG}} = 3.2\% \)
Allocation of Water Delivery / System Development / Ground Storage Tanks Value to Impact Fee

Low Service Area Study Period Requirement

• 2018 GST Capacity Requirement = $97 \frac{\text{gal}}{\text{conn}} \times \frac{488,639 \text{ EDU}}{1.64} = 28.9 \text{ MG}$

• 2028 GST Capacity Requirement = $97 \frac{\text{gal}}{\text{conn}} \times \frac{567,086 \text{ EDU}}{1.64} = 33.5 \text{ MG}$

• Study Period Requirement = $33.5 \text{ MG} - 28.9 \text{ MG} = 4.6 \text{ MG}$
Allocation of Water Delivery / System Development / Ground Storage Tanks Value to Impact Fee

- Total available capacity for Low Service Area is 72.7 MG

  - 2018 Capacity = 100.6 MG
  - Existing Available Capacity = 2018 Capacity – 2018 EST Capacity Requirement
  - Existing Available Capacity = 100.6 MG – 28.9 MG = 71.7 MG
  - Future CIP Capacity = 1.0 MG
  - Total Available Capacity = Existing Available Capacity + Future CIP Capacity
  - Total Available Capacity = 71.7 MG + 1.0 MG = 72.7 MG

- Impact fee eligible allocation for Low Service Area is 6.4%

  - Allocation = \( \frac{\text{Study Period Requirement}}{\text{Total Available Capacity}} \)
  - Allocation = \( \frac{4.6 \text{ MG}}{72.7 \text{ MG}} = 6.4\% \)
Water Delivery / System Development Components

- Well Pumps
- Elevated Storage Tanks
- Transmission Mains
- Ground Storage Tanks
- High Service and Booster Pump Stations
Water Delivery / System Development Value – Pump Stations

Existing value of pump stations is $149,832,114
- Valuation method is Original Cost (OC)
- Value is not depreciated
- Value excludes contributed assets

Value of pump station CIP projects is $36,502,193
- Value is in 2018 dollars
- Value does not include financing costs
Allocation of Water Delivery / System Development / Pump Stations Value to Impact Fee

Allocation is based on maximum hour demand (MHD)

- Average day demand (ADD) and maximum hour peaking factor (MHPF) are found in Water Infrastructure Plan
- Average Day Demand (ADD) = 121 gpcd
- Maximum Hour Peaking Factor (MHPF) = 3.31
- \( MHD = ADD \times MHPF \times Population \)
- Study Period Demand = 2028 MHD – 2018 MHD
Allocation of Water Delivery / System Development / Pump Stations Value to Impact Fee

High Service Area Study Period Requirement

- 2018 $MHD = 121 \text{ gpcd} \times 3.31 \times 56,774 = 22.7 \text{ mgd}$
- 2028 $MHD = 121 \text{ gpcd} \times 3.31 \times 73,134 = 29.3 \text{ mgd}$
- Study Period Demand $= 29.3 \text{ mgd} - 22.7 \text{ mgd} = 6.6 \text{ mgd}$
Allocation of Water Delivery / System Development / Pump Stations Value to Impact Fee

Total available capacity for High Service Area is 41.0 mgd

- 2018 Capacity = 60.9 mgd
- Existing Available Capacity = 2018 Capacity – 2018 MHD
- Existing Available Capacity = 60.9 mgd – 22.7 mgd = 38.2 mgd
- Future CIP Capacity = 2.8 mgd
- Total Available Capacity = Existing Available Capacity + Future CIP Capacity
- Total Available Capacity = 38.2 mgd + 2.8 mgd = 41.0 mgd

Impact fee eligible allocation for High Service Area is 16.0%

- Allocation = \( \frac{\text{Study Period Demand}}{\text{Total Available Capacity}} \)
- Allocation = \( \frac{6.6 \text{ mgd}}{41.0 \text{ mgd}} = 16.0\% \)
Allocation of Water Delivery / System Development / Pump Stations Value to Impact Fee

Middle Service Area Study Period Requirement

• 2018 \( MHD = 121 \text{ gpcd} \times 3.31 \times 626,725 = 251.0 \text{ mgd} \)
• 2028 \( MHD = 121 \text{ gpcd} \times 3.31 \times 761,709 = 305.1 \text{ mgd} \)
• Study Period Demand = 305.1 mgd − 251.0 mgd = 54.1 mgd
Allocation of Water Delivery / System Development / Pump Stations Value to Impact Fee

Total available capacity for Middle Service Area is 214.0 mgd

- 2018 Capacity = 440.0 mgd
- Existing Available Capacity = 2018 Capacity – 2018 MHD
- Existing Available Capacity = 440.0 mgd – 251.0 mgd = 189.0 mgd
- Future CIP Capacity = 25.0 mgd
- Total Available Capacity = Existing Available Capacity + Future CIP Capacity
- Total Available Capacity = 189.0 mgd + 25.0 mgd = 214.0 mgd

Impact fee eligible allocation for Middle Service Area is 25.3%

- Allocation = \( \frac{\text{Study Period Demand}}{\text{Total Available Capacity}} \)
- Allocation = \( \frac{54.1 \text{ mgd}}{214.0 \text{ mgd}} \) = 25.3%
Low Service Area Study Period Requirement

- 2018 MHD = 121 gpcd * 3.31 * 1,167,848 = 467.7 mgd
- 2028 MHD = 121 gpcd * 3.31 * 1,355,336 = 542.8 mgd
- Study Period Demand = 542.8 mgd - 467.7 mgd = 75.1 mgd
Allocation of Water Delivery / System Development / Pump Stations Value to Impact Fee

Total available capacity for Low Service Area is 56.8 mgd

- 2018 Capacity = 521.0 mgd
- Existing Available Capacity = 2018 Capacity – 2018 MHD
- Existing Available Capacity = 521.0 mgd – 467.7 mgd = 53.3 mgd
- Future CIP Capacity = 3.5 mgd
- Total Available Capacity = Existing Available Capacity + Future CIP Capacity
- Total Available Capacity = 53.3 mgd + 3.5 mgd = 56.8 mgd

Impact fee eligible allocation for Low Service Area is 100%

- Allocation = \( \frac{\text{Study Period Demand}}{\text{Total Available Capacity}} \)
- Allocation = \( \frac{75.1 \text{ mgd}}{56.8 \text{ mgd}} = 132.2\% \)
Water Delivery / System Development Components

- Well Pumps
- Elevated Storage Tanks
- Transmission Mains
- Ground Storage Tanks
- High Service and Booster Pump Stations
Water Delivery / System Development Value – Transmission Mains

Existing value of transmission mains is $64,207,721
- Valuation method is Original Cost (OC)
- Value is not depreciated
- Value excludes contributed assets

Value of transmission mains CIP projects is $123,753,410
- Value is in 2018 dollars
- Value does not include financing costs
Allocation is based on allocation of pump stations (MHD)

- High Service Area = 16.0%
- Middle Service Area = 25.3%
- Low Service Area = 100%
## Water Delivery / System Development CIP – Eligible Value

<table>
<thead>
<tr>
<th>Component</th>
<th>Service Area</th>
<th>Total Cost</th>
<th>Eligible %</th>
<th>Eligible Cost*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Stations</td>
<td>High</td>
<td>$ 9,690,234</td>
<td>16.0%</td>
<td>$ 1,551,807</td>
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<td>13,466,844</td>
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<td>14,614,629</td>
<td>100%</td>
<td>14,614,629</td>
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<td>Ground Storage</td>
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<td>0.5%</td>
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<td>Low</td>
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<td>Elevated Storage</td>
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<td>Well Pumps</td>
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<td><strong>TOTAL</strong></td>
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<td>$ 421,729,316</td>
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<td>$ 110,456,330</td>
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* Costs shown do not include financing charges.