

# Capital Improvements Plan (CIP) Wastewater Treatment and Collection

Capital Improvements Advisory Committee  
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**WATER**  
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OUR BUSINESS  
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# Impact Fee Calculation

Today's  
focus

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

- 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



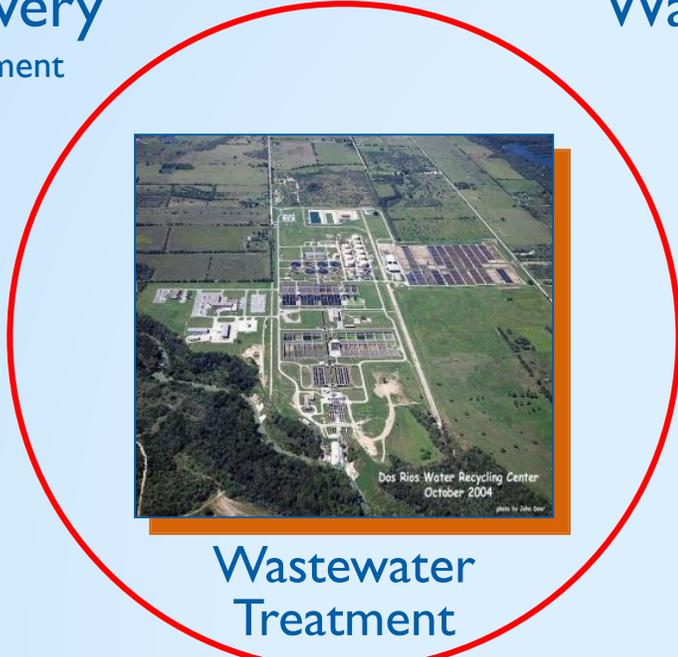
Water Delivery  
System Development



Water Delivery  
Flow



Wastewater  
Collection



Wastewater  
Treatment

# Wastewater Treatment Value

Existing value of treatment facilities is  
**\$467,385,565**

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

Value of treatment CIP projects is  
**\$205,866,624**

- Value is in 2018 dollars
- Value does not include financing costs

# Allocation of Wastewater Treatment Value to Impact Fee

Allocation is based on average daily flow (ADF)

- $1 \text{ WW EDU} = 200 \text{ gpd}$
- $ADF = \text{No. of EDUs} * 200 \text{ gpd}$
- $\text{Study Period Demand} = 2028 \text{ ADF} - 2018 \text{ ADF}$

# Allocation of Wastewater Treatment Value to Impact Fee

## Medio Creek Service Area Study Period Requirement

- $2018\ ADF = 50,039\ EDUs * 200\ gpd = 10.0\ mgd$
- $2028\ ADF = 65,207\ EDUs * 200\ gpd = 13.0\ mgd$
- $Study\ Period\ Demand = 13.0\ mgd - 10.0\ mgd = 3.0\ mgd$

# Allocation of Wastewater Treatment Value to Impact Fee

Impact fee eligible allocation for Medio Creek Service Area equity is 19.0%

- 2018 Capacity = 16.0 mgd
- Existing Available Capacity = 2018 Capacity – 2018 ADF
- Existing Available Capacity = 16.0 mgd – 10.0 mgd = 6.0 mgd
- Is existing available capacity greater than study period demand? **Yes**
  - 6.0 mgd > 3.0 mgd
- Allocation =  $\frac{\text{Study Period Demand}}{\text{2018 Capacity}}$
- Allocation =  $\frac{3.0 \text{ mgd}}{16.0 \text{ mgd}} = \mathbf{19.0\%}$

Impact fee eligible allocation for Medio Creek Service Area CIP is 19.0%

- Future CIP Cost = \$21,066,640
- Eligibility of CIP is determined for each project based on portion of project that will be used by study period growth
- Eligible CIP Cost = \$3,994,235 or 19.0%

# Allocation of Wastewater Treatment Value to Impact Fee

## Leon Creek / Dos Rios Service Area Study Period Requirement

- $2018\ ADF = 670,330\ EDUs * 200\ gpd = 134.1\ mgd$
- $2028\ ADF = 787,002\ EDUs * 200\ gpd = 157.4\ mgd$
- $Study\ Period\ Demand = 157.4\ mgd - 134.1\ mgd = 23.3\ mgd$

# Allocation of Wastewater Treatment Value to Impact Fee

Impact fee eligible allocation for Leon Creek / Dos Rios Service Area equity is 13.7%

- 2018 Capacity = 171.0 mgd
- Existing Available Capacity = 2018 Capacity – 2018 ADF
- Existing Available Capacity = 171.0 mgd – 134.1 mgd = 36.9 mgd
- Is existing available capacity greater than study period demand? **Yes**
  - 36.9 mgd > 23.3 mgd
- Allocation =  $\frac{\text{Study Period Demand}}{\text{2018 Capacity}}$
- Allocation =  $\frac{23.3 \text{ mgd}}{171.0 \text{ mgd}} = 13.7\%$

Impact fee eligible allocation for Leon Creek / Dos Rios Service Area CIP is 9.5%

- Future CIP Cost = \$184,799,984
- Eligibility of CIP is determined for each project based on portion of project that will be used by study period growth
- Eligible CIP Cost = **\$17,502,298 or 9.5%**

# Wastewater Treatment CIP – Eligible Value

Service Area	Equity Value	Equity Eligible %	CIP Value	CIP Eligible %	Eligible Cost*
Medio Creek	\$ 39,990,209	19.0%	\$ 21,066,640	19.0%	\$ 11,576,379
Leon Creek / Dos Rios	427,395,356	13.7%	184,799,984	9.5%	75,824,018
<b>TOTAL</b>	<b>\$ 467,385,565</b>	<b>14.1%</b>	<b>\$ 205,866,624</b>	<b>10.4%</b>	<b>\$ 87,400,397</b>

\* Costs shown do not include financing charges.

# Impact Fee Components



Water Supply



Water Delivery  
System Development



Water Delivery  
Flow



Wastewater  
Collection



Wastewater  
Treatment

# Wastewater Collection Value

Existing value of collection system is  
**\$707,190,405**

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

Value of collection system CIP projects is  
**\$907,457,962**

- Value is in 2018 dollars
- Value does not include financing costs

# Allocation of Wastewater Collection Value to Impact Fee

Allocation is based on wet weather peak flow (WWPF)

- $1 \text{ WW EDU} = 650 \text{ gpd}$
- $PWWF = \text{No. of EDUs} * 650 \text{ gpd}$
- $\text{Study Period Demand} = 2028 \text{ PWWF} - 2018 \text{ PWWF}$

# Allocation of Wastewater Collection Value to Impact Fee

## Medio Creek Service Area Study Period Requirement

- $2018\ PWWF = 50,039\ EDUs * 650\ gpd = 32.5\ mgd$
- $2028\ PWWF = 65,207\ EDUs * 650\ gpd = 42.4\ mgd$
- $Study\ Period\ Demand = 42.4\ mgd - 32.5\ mgd = 9.9\ mgd$

# Allocation of Wastewater Collection Value to Impact Fee

Impact fee eligible allocation for Medio Creek Service Area equity is 18.2%

- 2018 Capacity = 83,487 EDUs or 54.3 mgd
- Existing Available Capacity = 2018 Capacity – 2018 PWWF
- Existing Available Capacity = 54.3 mgd – 32.5 mgd = 21.8 mgd
- Is existing available capacity greater than study period demand? **Yes**
  - 21.8 mgd > 9.9 mgd
- Allocation =  $\frac{\text{Study Period Demand}}{\text{2018 Capacity}}$
- Allocation =  $\frac{9.9 \text{ mgd}}{54.3 \text{ mgd}} = \mathbf{18.2\%}$

Impact fee eligible allocation for Medio Creek Service Area CIP is 14.9%

- Future CIP Cost = \$13,690,000
- Eligibility of CIP is determined for each project based on modeled demands
- Eligible CIP Cost = \$2,034,242 or **14.9%**

# Allocation of Wastewater Collection Value to Impact Fee

## Upper Medina Service Area Study Period Requirement

- 2018 *PWWF* = 18,534 *EDUs* \* 650 *gpd* = **12.0 *mgd***
- 2028 *PWWF* = 30,201 *EDUs* \* 650 *gpd* = **19.6 *mgd***
- *Study Period Demand* = 19.6 *mgd* – 12.0 *mgd* = **7.6 *mgd***

# Allocation of Wastewater Collection Value to Impact Fee

Impact fee eligible allocation for Upper Medina Service Area equity is 16.2%

- 2018 Capacity = 46.8 mgd
- Existing Available Capacity = 2018 Capacity – 2018 PWWF
- Existing Available Capacity = 46.8 mgd – 12.0 mgd = 34.8 mgd
- Is existing available capacity greater than study period demand? **Yes**
  - 34.8 mgd > 7.6 mgd
- Allocation =  $\frac{\text{Study Period Demand}}{\text{2018 Capacity}}$
- Allocation =  $\frac{7.6 \text{ mgd}}{46.8 \text{ mgd}} = \mathbf{16.2\%}$

Impact fee eligible allocation for Upper Medina Service Area CIP is 12.2%

- Future CIP Cost = \$2,565,000
- Eligibility of CIP is determined for each project based on modeled demands
- Eligible CIP Cost = **\$313,345** or **12.2%**

# Allocation of Wastewater Collection Value to Impact Fee

## Lower Medina Service Area Study Period Requirement

- 2018 *PWWF* = 25,516 *EDUs* \* 650 *gpd* = **16.6 *mgd***
- 2028 *PWWF* = 41,593 *EDUs* \* 650 *gpd* = **27.0 *mgd***
- *Study Period Demand* = 27.0 *mgd* – 16.6 *mgd* = **10.4 *mgd***

\* Number of EDUs includes Upper Medina service area EDUs because they flow through the Lower Medina service area.

# Allocation of Wastewater Collection Value to Impact Fee

Impact fee eligible allocation for Lower Medina Service Area equity is 15.0%

- 2018 Capacity = 69.5 mgd
- Existing Available Capacity = 2018 Capacity – 2018 PWWF
- Existing Available Capacity = 69.5 mgd – 16.6 mgd = 52.9 mgd
- Is existing available capacity greater than study period demand? **Yes**
  - 52.9 mgd > 10.4 mgd
- Allocation =  $\frac{\text{Study Period Demand}}{\text{2018 Capacity}}$
- Allocation =  $\frac{10.4 \text{ mgd}}{69.5 \text{ mgd}} = \mathbf{15.0\%}$

Impact fee eligible allocation for Lower Medina Service Area CIP is 0%

- Future CIP Cost = \$0
- Eligibility of CIP is determined for each project based on modeled demands
- Eligible CIP Cost = **\$0 or 0%**

# Allocation of Wastewater Collection Value to Impact Fee

## Upper Collection Service Area Study Period Requirement

- 2018 *PWWF* = 175,165 *EDUs* \* 650 *gpd* = **113.9 *mgd***
- 2028 *PWWF* = 214,554 *EDUs* \* 650 *gpd* = **139.5 *mgd***
- *Study Period Demand* = 139.5 *mgd* – 113.9 *mgd* = **25.6 *mgd***

# Allocation of Wastewater Collection Value to Impact Fee

Impact fee eligible allocation for Upper Collection Service Area equity is 17.0%

- 2018 Capacity = 150.9 mgd
- Existing Available Capacity = 2018 Capacity – 2018 PWWF
- Existing Available Capacity = 150.9 mgd – 113.9 mgd = 37.0 mgd
- Is existing available capacity greater than study period demand? **Yes**
  - 37.0 mgd > 25.6 mgd
- Allocation =  $\frac{\text{Study Period Demand}}{\text{2018 Capacity}}$
- Allocation =  $\frac{25.6 \text{ mgd}}{150.9 \text{ mgd}} = \mathbf{17.0\%}$

Impact fee eligible allocation for Upper Collection Service Area CIP is 6.9%

- Future CIP Cost = \$53,628,280
- Eligibility of CIP is determined for each project based on modeled demands
- Eligible CIP Cost = **\$3,684,315 or 6.9%**

# Allocation of Wastewater Collection Value to Impact Fee

## Middle Collection Service Area Study Period Requirement

- 2018 *PWWF* = 419,123 *EDUs* \* 650 *gpd* = **272.4 *mgd***
- 2028 *PWWF* = 480,281 *EDUs* \* 650 *gpd* = **312.2 *mgd***
- *Study Period Demand* = 312.2 *mgd* – 272.4 *mgd* = **39.8 *mgd***

\* Number of EDUs includes Upper Collection service area EDUs because they flow through the Middle Collection service area.

# Allocation of Wastewater Collection Value to Impact Fee

Impact fee eligible allocation for Middle Collection Service Area equity is 11.4%

- 2018 Capacity = 348.5 mgd
- Existing Available Capacity = 2018 Capacity – 2018 PWWF
- Existing Available Capacity = 348.5 mgd – 272.4 mgd = 76.1 mgd
- Is existing available capacity greater than study period demand? **Yes**
  - 76.1 mgd > 39.8 mgd
- Allocation =  $\frac{\text{Study Period Demand}}{\text{2018 Capacity}}$
- Allocation =  $\frac{39.8 \text{ mgd}}{348.5 \text{ mgd}} = \mathbf{11.4\%}$

Impact fee eligible allocation for Middle Collection Service Area CIP is 3.0%

- Future CIP Cost = \$409,984,079
- Eligibility of CIP is determined for each project based on modeled demands
- Eligible CIP Cost = **\$12,244,952 or 3.0%**

# Allocation of Wastewater Collection Value to Impact Fee

## Lower Collection Service Area Study Period Requirement

- 2018 *PWWF* = 644,814 *EDUs* \* 650 *gpd* = **419.1 *mgd***
- 2028 *PWWF* = 745,409 *EDUs* \* 650 *gpd* = **484.5 *mgd***
- *Study Period Demand* = 484.5 *mgd* – 419.1 *mgd* = **65.4 *mgd***

\* Number of EDUs includes Upper Collection and Middle Collection service areas EDUs because they flow through the Lower Collection service area.

# Allocation of Wastewater Collection Value to Impact Fee

Impact fee eligible allocation for Lower Collection Service Area equity is 11.9%

- 2018 Capacity = 547.8 mgd
- Existing Available Capacity = 2018 Capacity – 2018 PWWF
- Existing Available Capacity = 547.8 mgd – 419.1 mgd = 128.7 mgd
- Is existing available capacity greater than study period demand? **Yes**
  - 128.7 mgd > 65.4 mgd
- Allocation =  $\frac{\text{Study Period Demand}}{\text{2018 Capacity}}$
- Allocation =  $\frac{65.4 \text{ mgd}}{547.8 \text{ mgd}} = \mathbf{11.9\%}$

Impact fee eligible allocation for Lower Collection Service Area CIP is 5.4%

- Future CIP Cost = \$427,590,604
- Eligibility of CIP is determined for each project based on modeled demands
- Eligible CIP Cost = **\$23,136,264** or **5.4%**

# Wastewater Collection CIP – Eligible Value

Service Area	Equity Value	Equity Eligible %	CIP Value	CIP Eligible %	Eligible Cost*
Medio Creek	\$ 31,513,446	18.2%	\$ 13,690,000	14.9%	\$ 7,759,602
Upper Medina	27,177,209	16.2%	2,565,000	12.2%	4,717,206
Lower Medina	40,374,029	15.0%	0	0%	6,068,473
Upper Collection	87,631,849	17.0%	53,628,280	6.9%	18,552,207
Middle Collection	203,372,251	11.4%	409,984,079	3.0%	35,329,837
Lower Collection	318,121,621	11.9%	427,590,604	5.4%	61,107,160
<b>TOTAL</b>	<b>\$ 707,190,405</b>	<b>13.0%</b>	<b>\$ 907,457,962</b>	<b>4.6%</b>	<b>\$ 133,534,485</b>

\* Costs shown do not include financing charges.

\*\* Lower Medina eligible cost is divided by sum of Upper Medina and Lower Medina EDUs to determine unit cost.

\*\*\* Middle Collection eligible cost is divided by sum of Upper Collection and Middle Collection EDUs to determine unit cost.

\*\*\*\* Lower Collection is divided by sum of Upper Collection, Middle Collection, and Lower Collection EDUs to determine unit cost.



Questions?