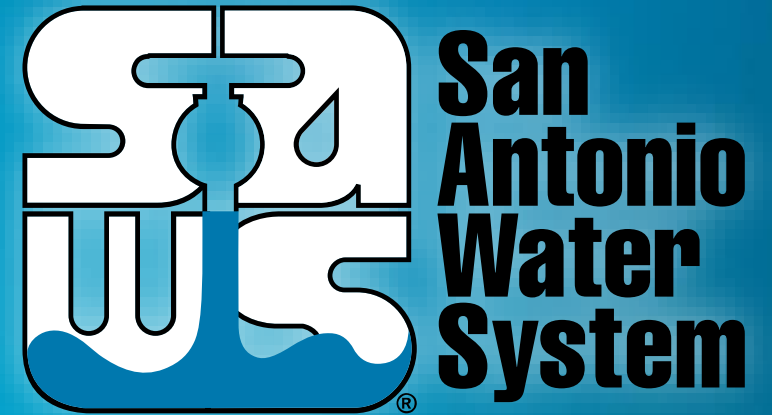


# Recap of Water and Wastewater EDU Definition and LUAP

Tracey Lehmann, P.E.  
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MAKING SAN ANTONIO  
**WATERFUL** 

Capital Improvements Advisory Committee  
August 22, 2018

# Water EDU Calculation

$$\begin{aligned} \text{EDU} &= \frac{\text{Annual Water Distribution (5 year average)}}{\text{Annual EDUs (5 year average)} \times 365 \text{ days}} \\ &= \frac{77.2 \text{ BG}}{729,144 \times 365 \text{ days}} \\ &= 290 \text{ gpd} \end{aligned}$$

# Water EDU: SAWS Staff Recommendation

- Change SAWS Definition of Water EDU
  - Current: 313 gpd
  - Proposed: 290 gpd
- Affects Water Supply Impact Fee
  - 8% additional supplies available
- Does Not Affect Water Flow & System Development Impact Fees
  - Design criteria based on regulations

# Wastewater EDU Calculation

$$\begin{aligned} \text{EDU} &= \frac{\text{Annual WRC Flow (5 year average)}}{\text{Annual EDUs (5 year average) x 365 days}} \\ &= \frac{48,331 \text{ MG}}{679,740 \times 365 \text{ days}} \\ &= 195 \text{ gpd average daily flow} \end{aligned}$$

Recommend EDU = 200 gpd average daily flow

# Inflow/Infiltration (I/I) Into Wastewater System

- EPA Consent Decree
- Extensive Sewer Flow Monitoring
- Recalibration of Sewer Model
- Excessive Amounts of I/I into Sewer System from Stormwater
  - Average of Three Major Sewersheds
    - Total I/I / Serviced Acres
    - 173 MGD / 292,870 Acres = 591 Gals per Acre of I/I
    - Recommend 600 Gals per Acre of I/I\*

\*Typically Assumes 4 EDUs per Acre

# Wastewater EDU: SAWS Staff Recommendation

- Change SAWS Definition of Wastewater EDU
  - Current: 240 gpd average daily flow
  - Proposed: 200 gpd average daily flow
- Change Design Standard for I/I (stormwater)
  - Current: 300 gallons per acre
  - Proposed: 600 gallons per acre
- Impact of Change
  - 17% additional treatment capacity available
  - 4% additional collection system capacity available\*

\*Assumes 4 EDUs per Acre

# Types of Water Impact Fees

Water Flow



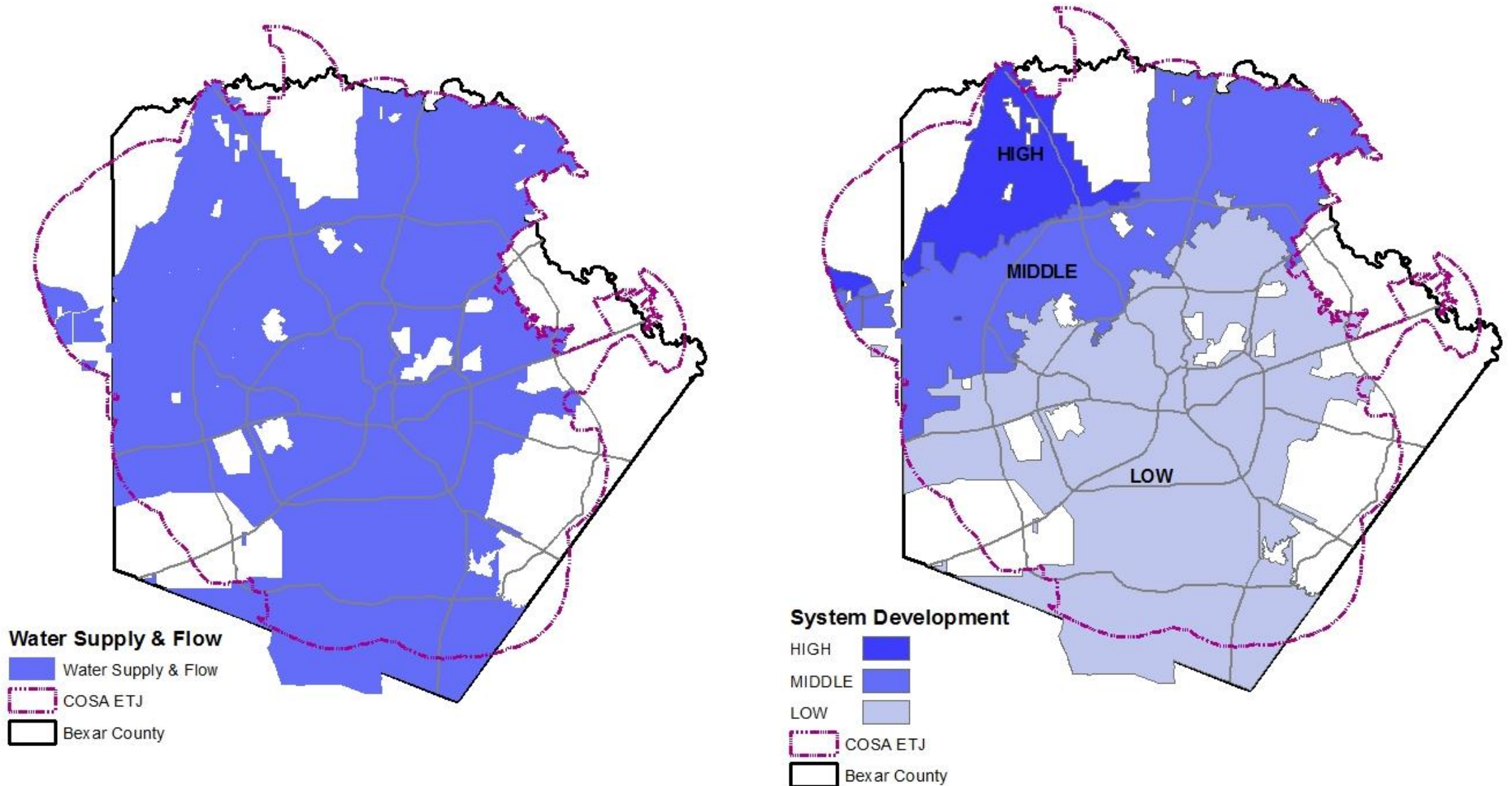
Water System Development



Water Supply



# Map of Water Impact Fee Service Areas





# Calculation of Water LUAP

Year	Data from 2014-2023 Land Use Assumptions Plan (LUAP)			Counter Services Data New EDUs/Year	Cumulative EDUs	Population/EDU (WMP Pop/EDUs)	Data from 2017 Water Management Plan (WMP)				Proposed 2019-2028 Water LUAP Total EDUs
	EDUs	Pop/EDU	Population				Population	Growth Rate	Annual EDUs @ 2.39	Cumulative EDUs @2.39	
2013	<b>697,710</b>	2.40	<b>1,674,505</b>	9,043	<b>697,710</b>	2.40	1,671,625			699,425	<b>774,623</b>
2014	707,292			14,093	711,803	2.41	1,712,446	2.44%	17,080	716,505	
2015	716,874			18,405	730,208	2.39	1,742,390	1.75%	12,529	729,033	
2016	726,456			15,708	745,916	2.39	1,783,426	2.36%	17,170	746,203	
2017	736,038			14,165	760,081	2.39	1,819,116	2.00%	14,933	761,136	
2018	745,620						1,851,348	1.77%	13,486	774,623	
2019	755,202						1,885,309	1.83%	14,210	788,832	
2020	764,784						1,919,271	1.80%	14,210	803,042	
2021	774,366						1,953,134	1.76%	14,169	817,211	
2022	783,948						1,986,998	1.73%	14,169	831,380	
2023	<b>793,528</b>	2.40	<b>1,904,466</b>				2,020,861	1.70%	14,169	845,549	
2024							2,054,724	1.68%	14,169	859,717	
2025							2,088,588	1.65%	14,169	873,886	
2026							2,122,451	1.62%	14,169	888,055	
2027							2,156,315	1.60%	14,169	902,224	
2028							2,190,178	1.57%	14,169	916,393	<b>916,393</b>

Averages

14,283

2.39

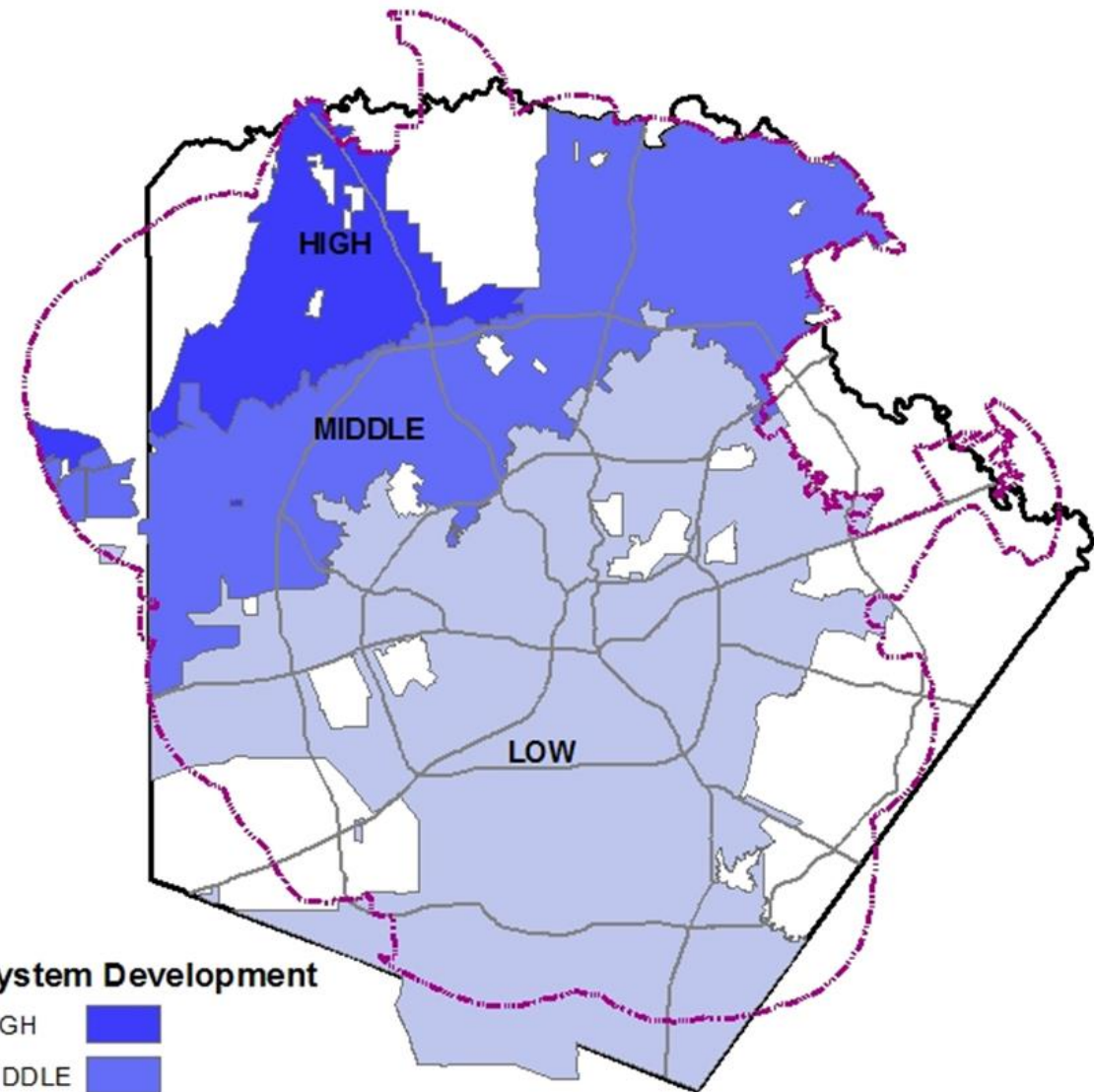
1.818%

14,465






# Water LUAP

## Service Areas

- Water Supply: 141,770 EDUs
- Flow: 141,770 EDUs
- System Development:
  - High Elevation: 6,845 EDUs
  - Middle Elevation: 56,478 EDUs
  - Low Elevation: 78,447 EDUs



### System Development

- HIGH 
- MIDDLE 
- LOW 
-  COSA ETJ
-  Bexar County

# Types of Wastewater Impact Fees

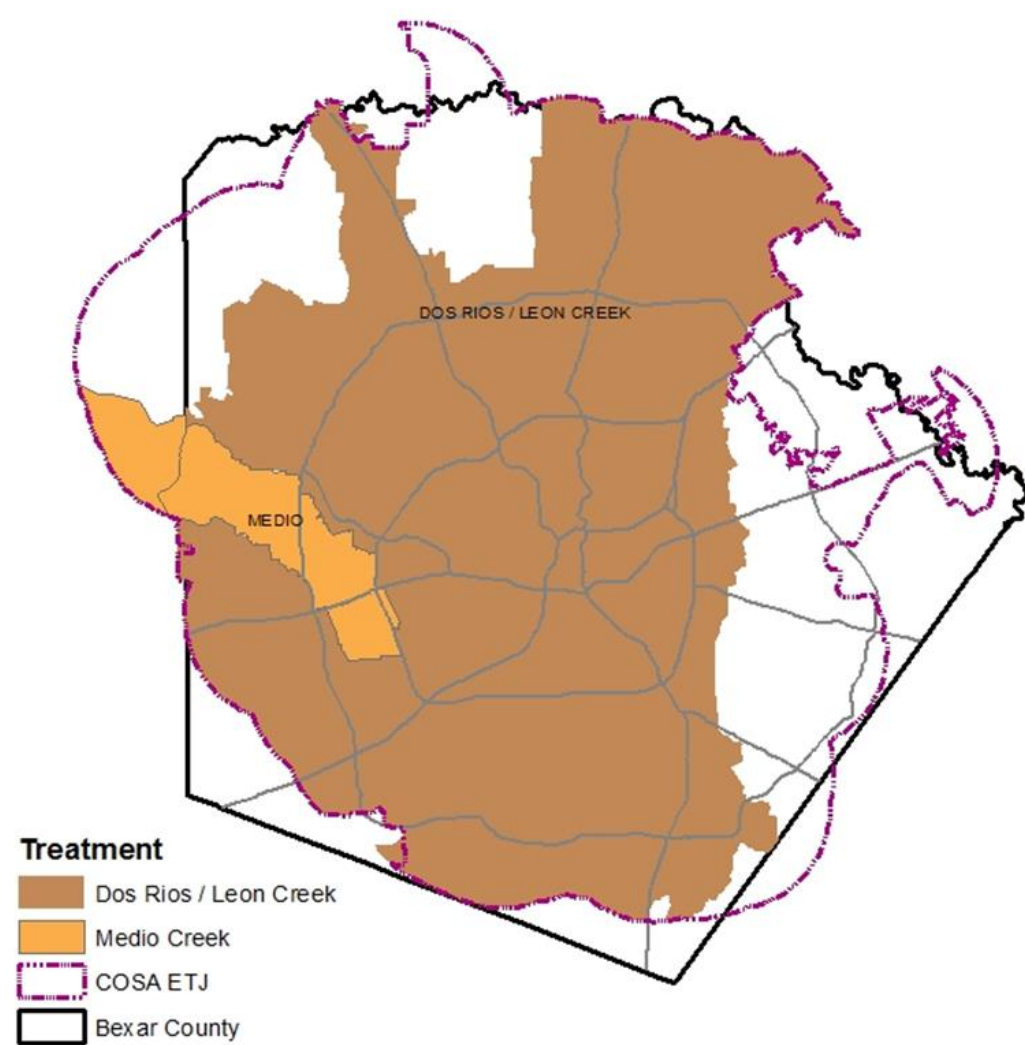
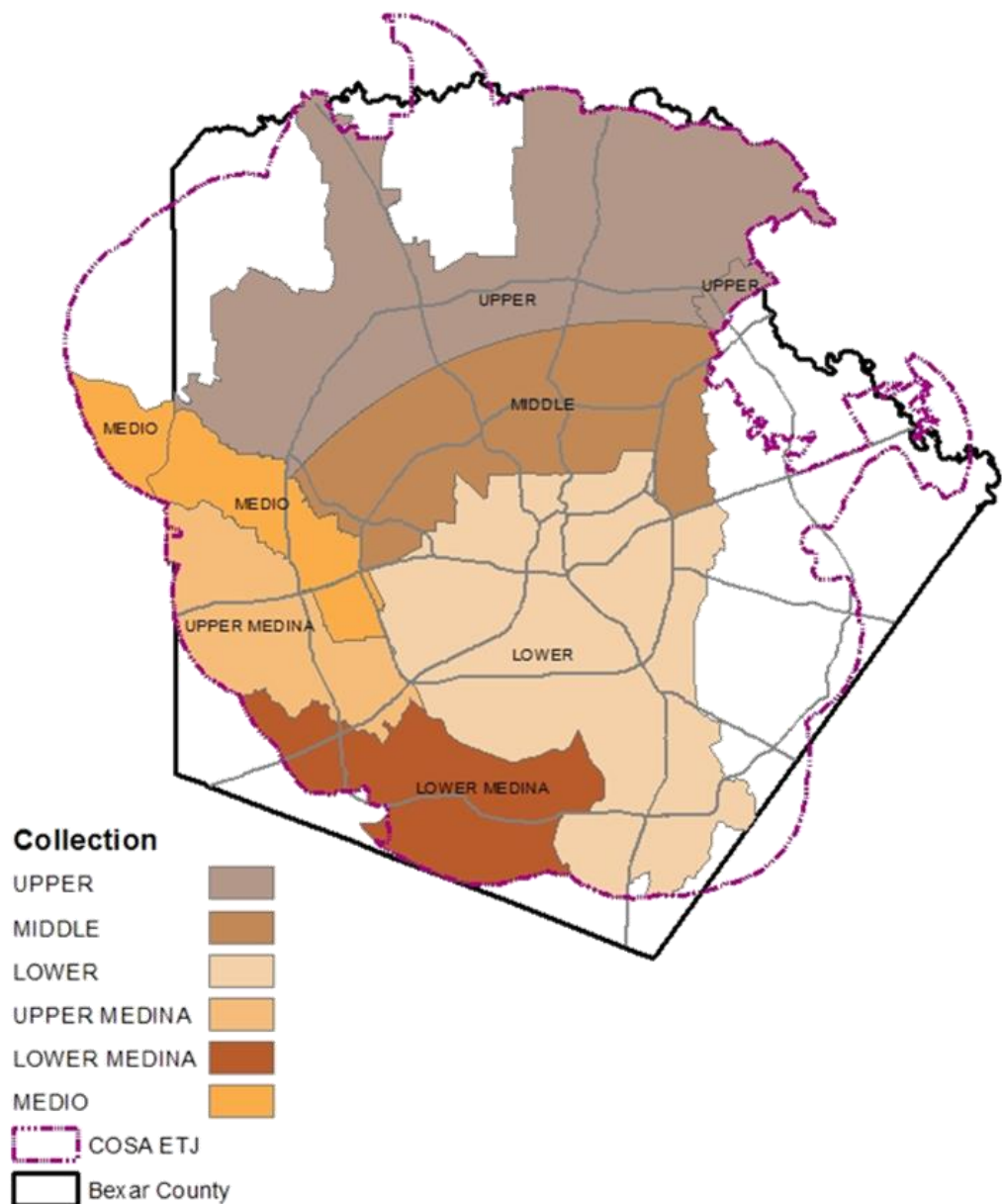
## Wastewater Collection



## Wastewater Treatment



# Map of Wastewater Impact Fee Service Areas



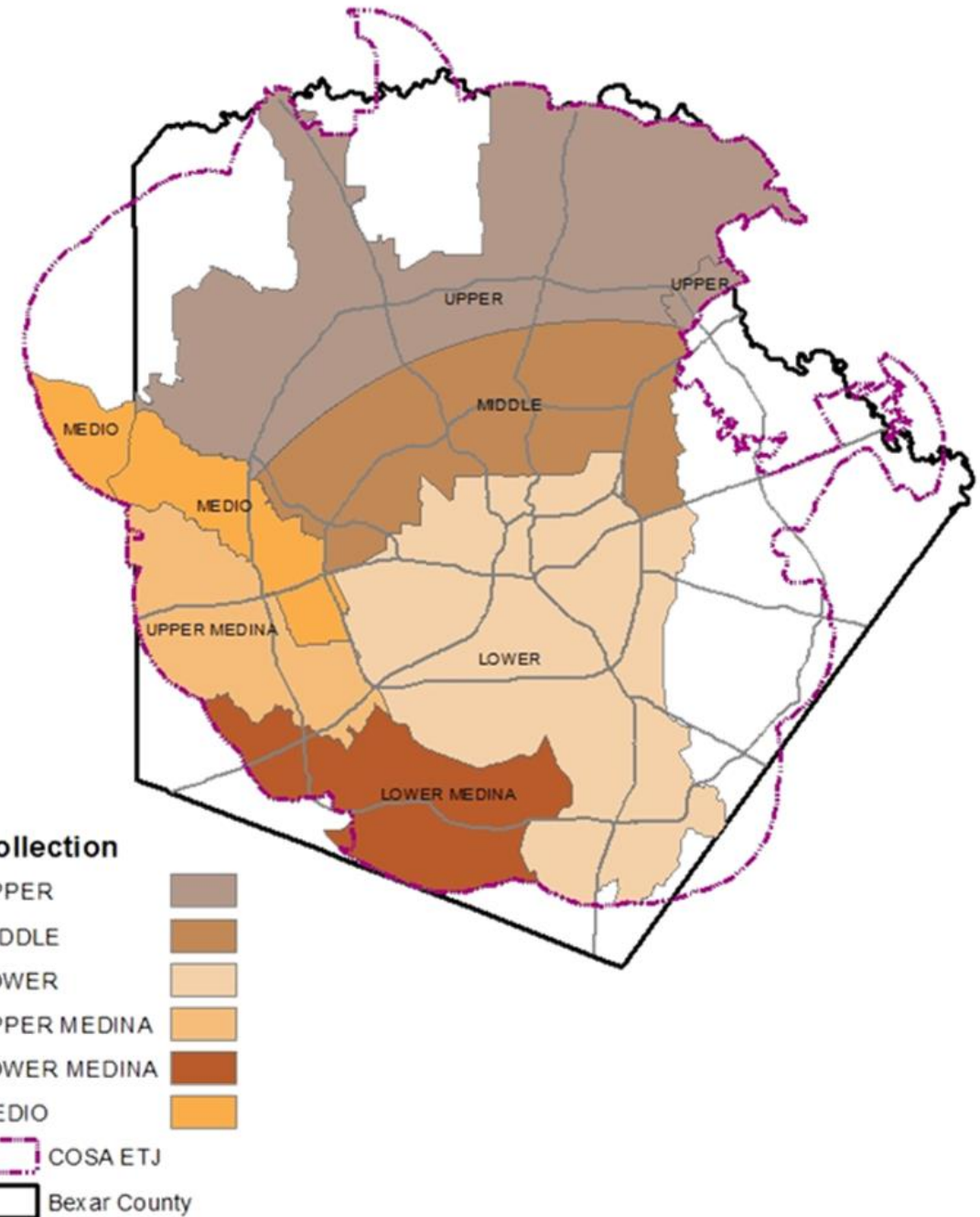
# Calculation of Wastewater LUAP

Year	Data from 2014-2023 Land Use Assumptions Plan (LUAP)			Counter Services Data		Population/ EDU (WMP Pop / EDUs)	Data from 2017 Water Management Plan (WMP)				Proposed 2019 -2028 WasteWater LUAP EDUs
	EDUs	Pop/EDU	Population	New EDUs/Year	Cumulative EDUs		Population	Growth Rate	Annual EDUs @ 2.57	Cumulative EDUs @2.57	
2013	<b>655,623</b>	2.39	<b>1,566,937</b>	8,436	<b>655,623</b>	2.55	1,671,625			655,623	
2014	665,182			10,639	666,262	2.57	1,712,446	2.442%	10,639	666,262	
2015	674,741			14,910	681,172	2.56	1,742,390	1.749%	14,910	681,172	
2016	684,300			11,183	692,355	2.58	1,783,426	2.355%	11,183	692,355	
2017	693,859			10,932	703,287	2.59	1,819,116	2.001%	10,932	703,287	
2018	703,418						1,851,348	1.772%	17,082	720,369	<b>720,369</b>
2019	712,977						1,885,309	1.834%	13,214	733,583	
2020	722,536						1,919,271	1.801%	13,215	746,798	
2021	732,095						1,953,134	1.764%	13,176	759,974	
2022	741,654						1,986,998	1.734%	13,176	773,151	
2023	751,212		1,795,397				2,020,861	1.704%	13,176	786,327	
2024							2,054,724	1.676%	13,176	799,504	
2025							2,088,588	1.648%	13,176	812,680	
2026							2,122,451	1.621%	13,176	825,856	
2027							2,156,315	1.595%	13,176	839,033	
2028							2,190,178	1.570%	13,176	852,209	<b>852,209</b>
Averages				11,220		2.57		1.818%	13,106		<b>131,840</b>

# Wastewater LUAP

## Service Areas

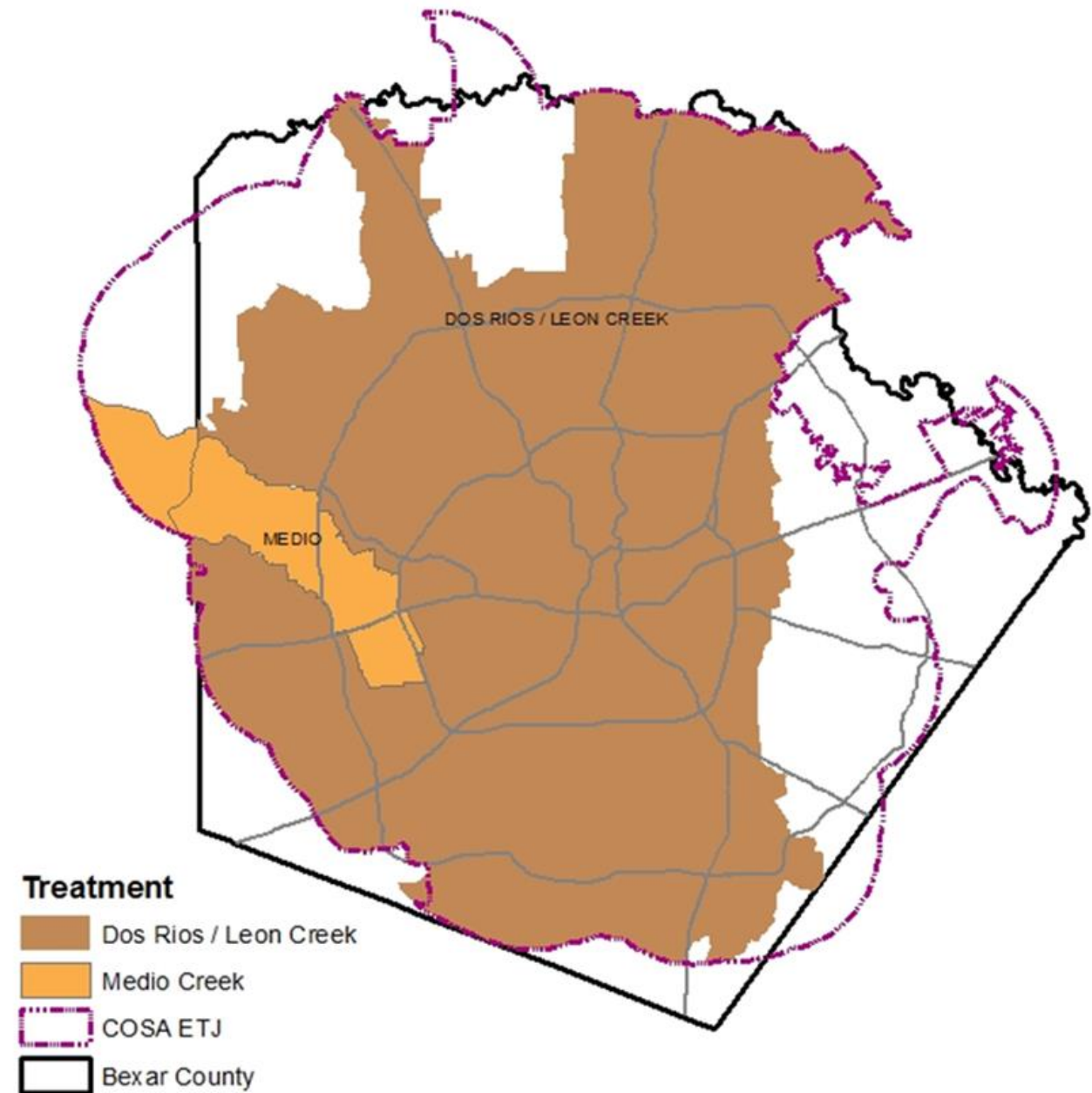
- Collection:
  - Upper: 39,389 EDUs
  - Middle: 21,769 EDUs
  - Lower: 39,438 EDUs
  - Upper Medina: 11,667 EDUs
  - Lower Medina: 4,410 EDUs
  - Medio: 15,167 EDUs



# Wastewater LUAP

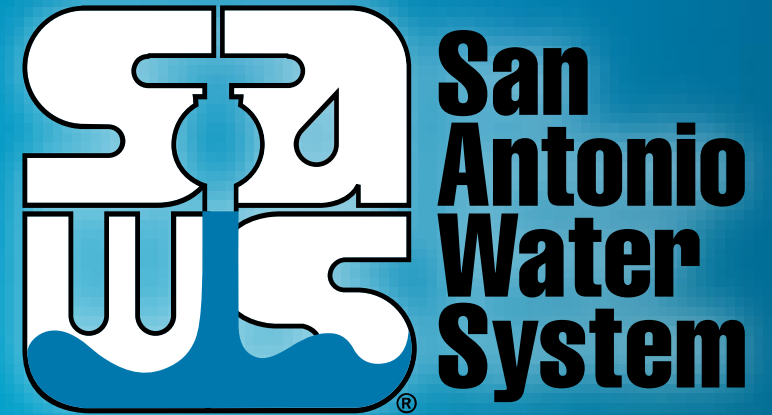
## Service Areas

- Treatment:
  - Dos Rios: 116,673 EDUs
  - Medio: 15,167 EDUs



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