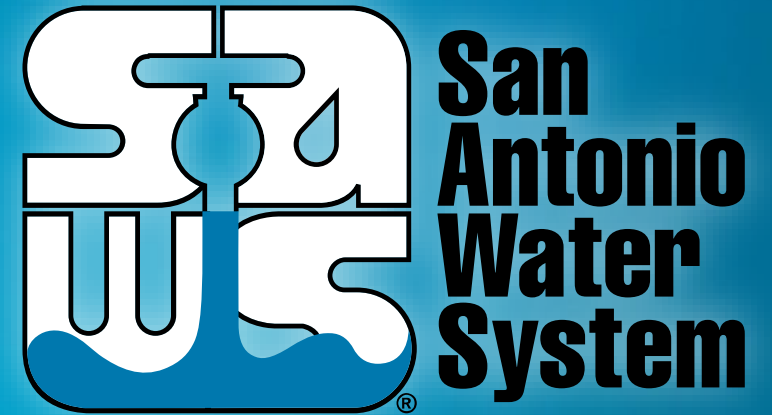


Water and Wastewater Land Use Assumptions Plan (LUAP)

Tracey Lehmann, P.E.
Senior Director - Development



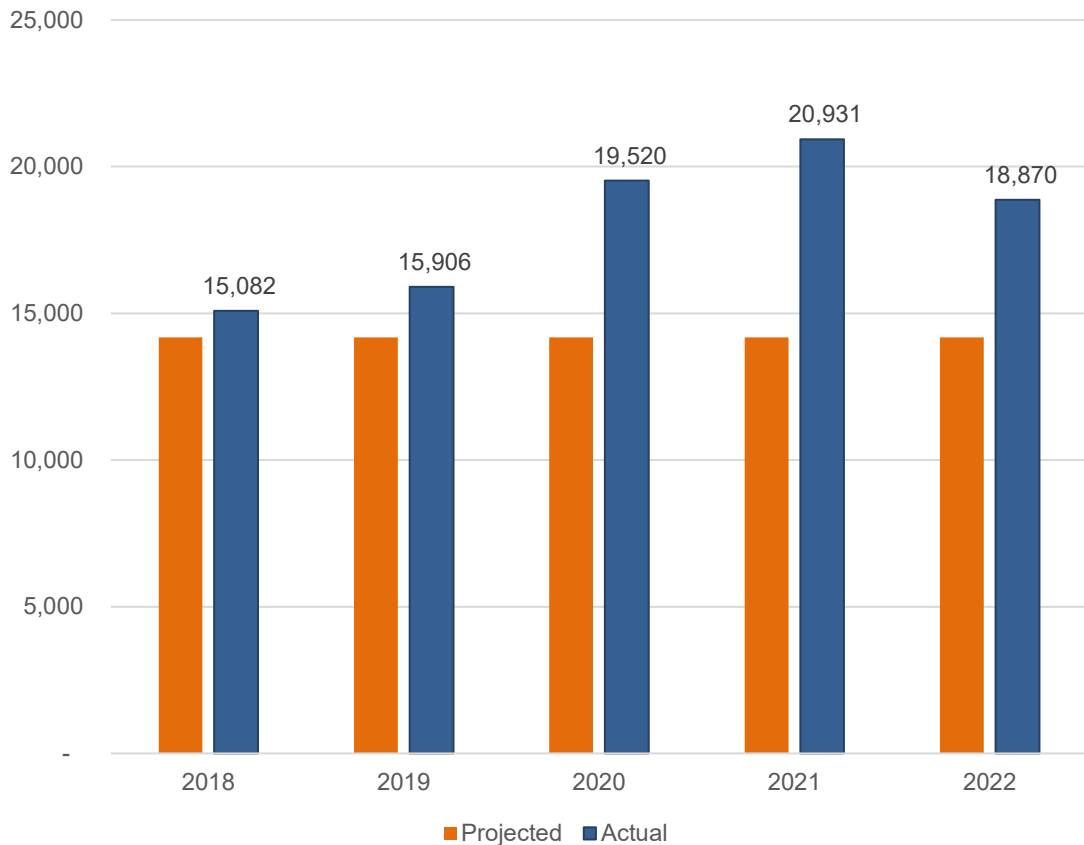
MAKING SAN ANTONIO
WATERFUL

Capital Improvements Advisory Committee
August 23, 2023

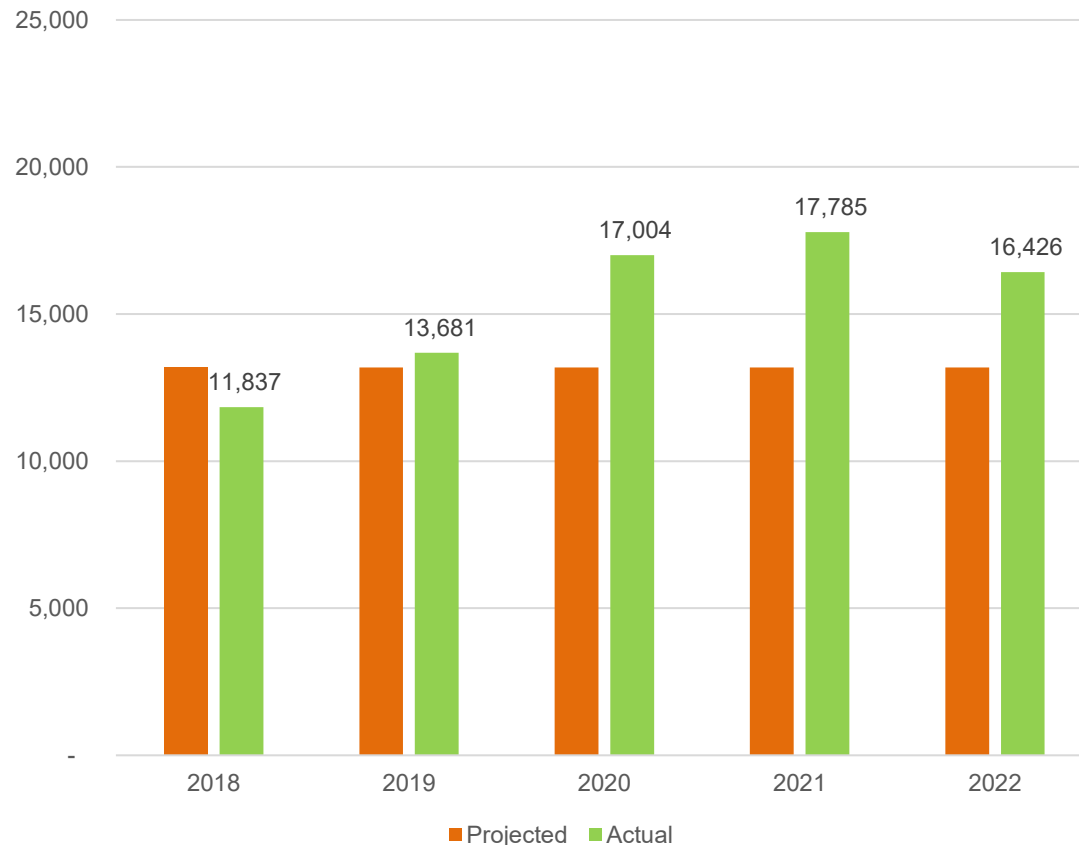
EDU Growth

Projected Vs. Actual

Water EDUs



Sewer EDUs



Types of Water Impact Fees

Water Delivery Flow



Water Delivery System Development



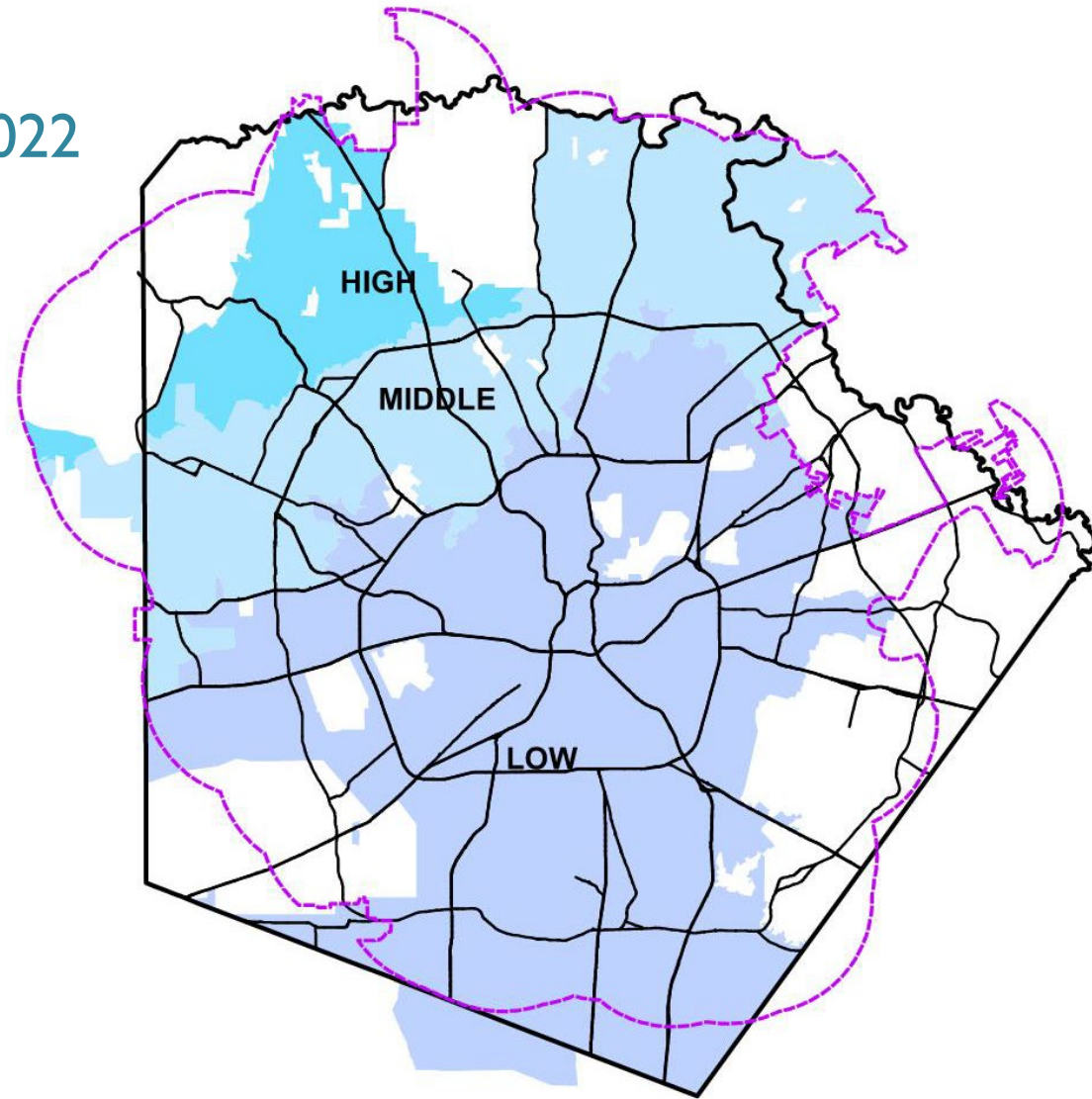
Water Supply



Water Service Area

Service Areas – EDUs Added From 2018-2022

- High – 7,007
- Middle – 38,540
- Low – 44,765



Types of Wastewater Impact Fees

Wastewater Collection



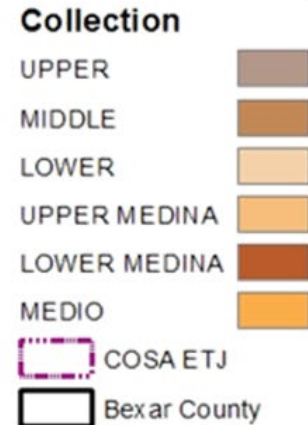
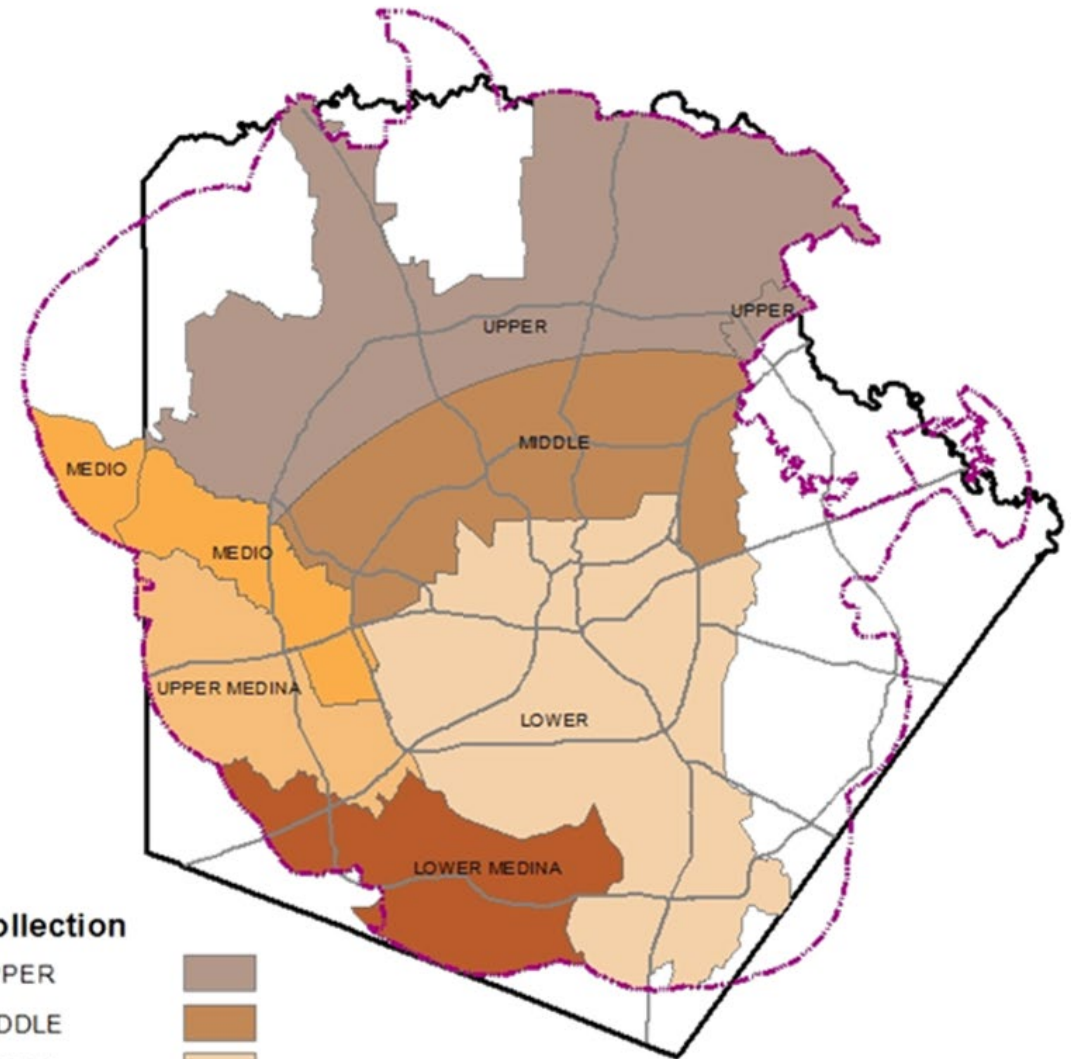
Wastewater Treatment



Wastewater Service Area

Service Areas – EDUs Added From 2018-2022

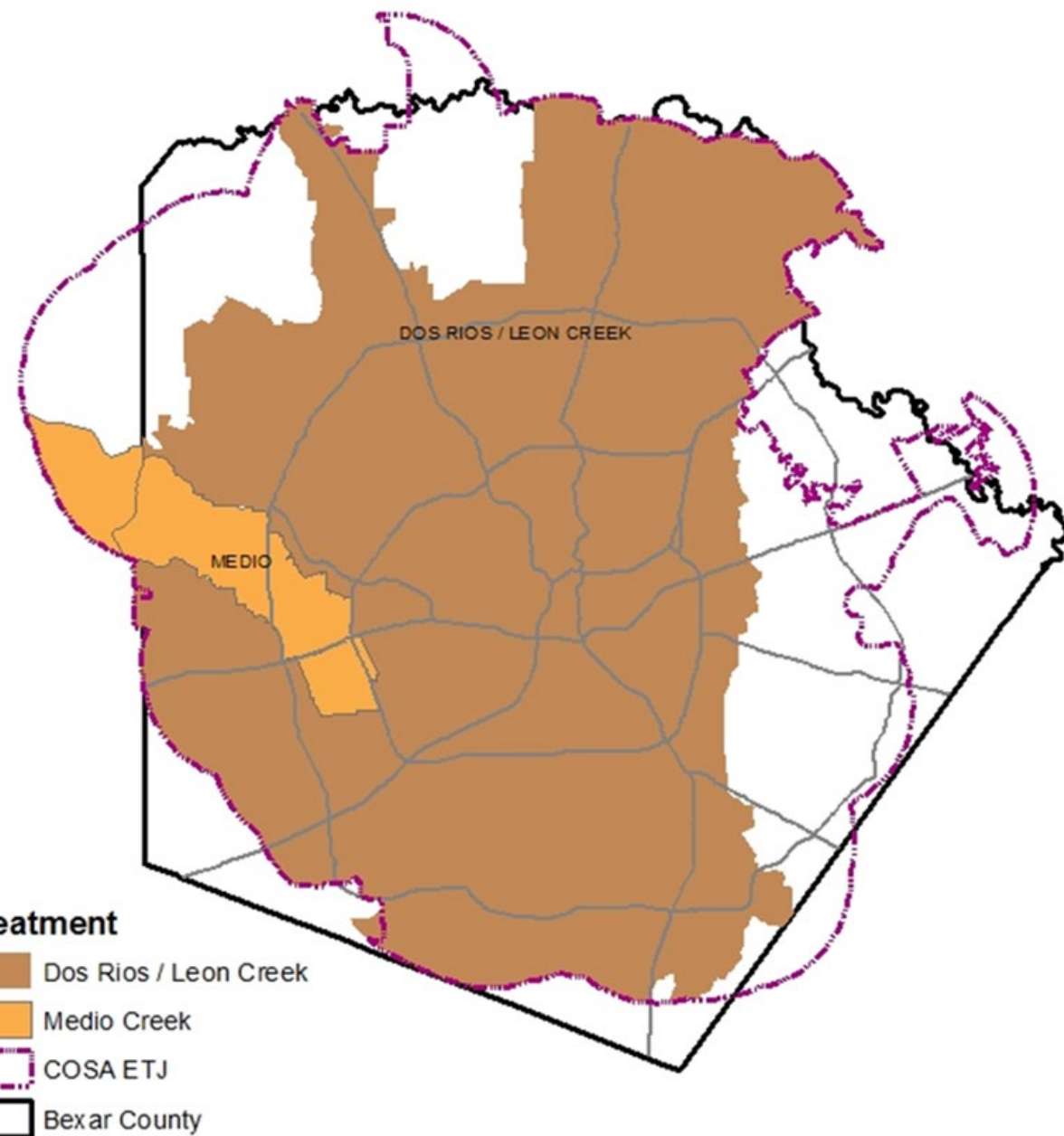
- **Collection:**
 - Upper: 30,143
 - Middle: 9,441
 - Lower: 16,294
 - Upper Medina: 13,507
 - Lower Medina: 1,217
 - Medio: 6,132



Wastewater Service Area

Service Areas – EDUs Added From 2018-2022

- Treatment:
 - Dos Rios: 70,602
 - Medio: 6,132



Population Projections

2023 Water Management Plan

- Population projections 2022-2075.
- The population from 2022 – 2040 is 2,042,120 to 2,736,140.

2022	2030	2040
2,042,120	2,349,371	2,736,140



2023 WMP Population Projections Used for LUAP

Population Projection Development

The population projections for the 2023 Water Management Plan were developed using the:

- 2021 SAWS Population Estimate
- AAMPO 2021 growth rates 2023-2040
- TWDB 2021 growth rates 2041-2070
- 5-Year trend analysis 2071-2075

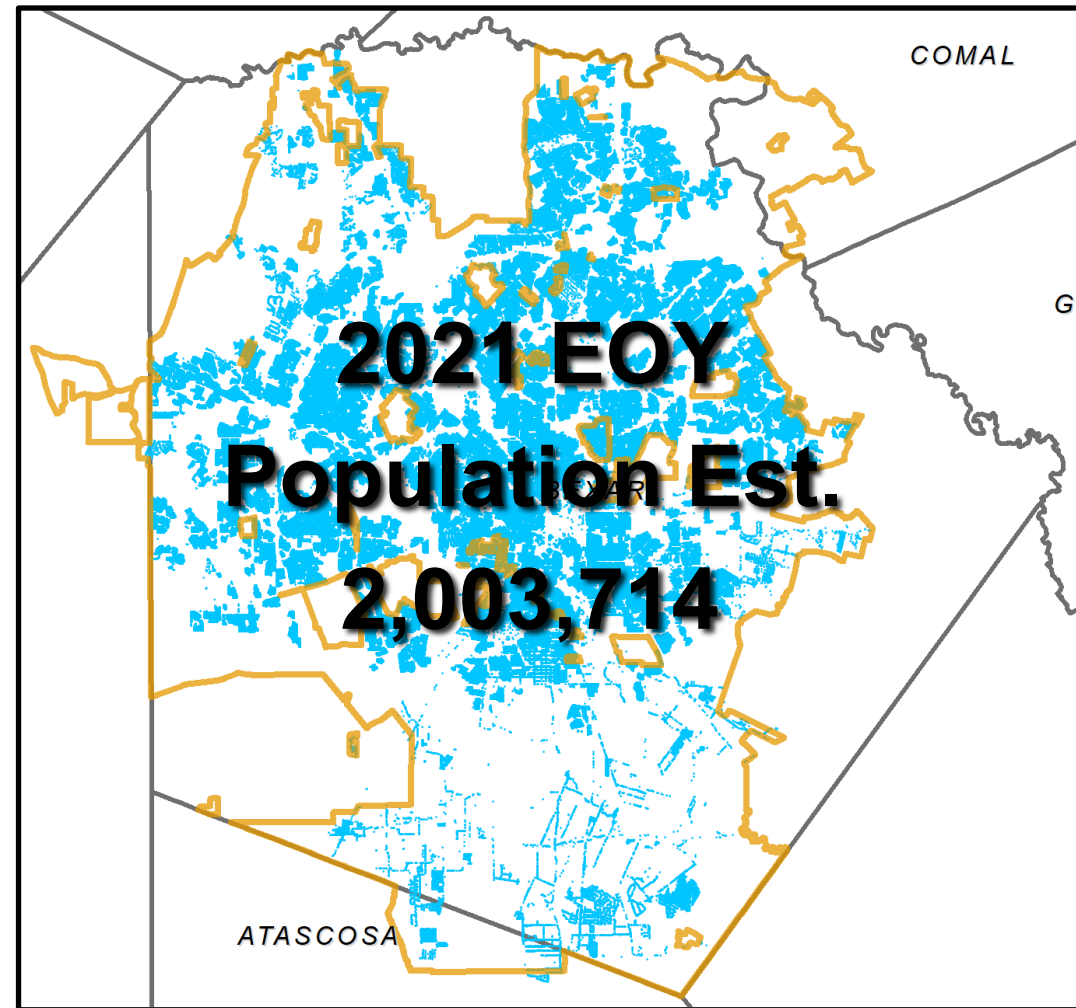


2021 End-of-Year Population Estimate

Population Projection Development

Data used to determine SAWS EOY Population Estimate

- Active Residential Connections – **511,989**
- Active Apartment Connections with associated Units – **231,777**
- SAWS Persons per connection factor – **2.75**
- Multifamily Occupancy rate **93.5%** (ALN, Bercadia, and TAMU – TX Qrtly Apartment Report 3rd Qtr. 2021)



Utilizing AAMPO Population Projection

Population Projection Development

Using the 2021 EOY Population Est. of **2,003,714** and the growth rates from the Projections developed by AAMPO in 2021 provided SAWS with a 2040 population projection of **2,736,140**

2021 EOY Pop Est
2,003,714

Year	AAMPO Growth Rate	Population Projection
2022	1.92%	2,042,120
2023	1.88%	2,080,527
2024	1.85%	2,118,933
2025	1.81%	2,157,339
2026	1.78%	2,195,746
2027	1.75%	2,234,152
2028	1.72%	2,272,558
2029	1.69%	2,310,964
2030	1.66%	2,349,371
2031	1.65%	2,388,048

Year	AAMPO Growth Rate	Population Projection
2032	1.62%	2,426,725
2033	1.59%	2,465,402
2034	1.57%	2,504,079
2035	1.54%	2,542,756
2036	1.52%	2,581,433
2037	1.50%	2,620,109
2038	1.48%	2,658,786
2039	1.45%	2,697,463
2040	1.43%	2,736,140

EDU Projections

Year	Water EDUs/Year
2018	15,082
2019	15,906
2020	19,520
2021	20,931
2022	18,870

Year	Wastewater EDUs/ Year
2018	11,837
2019	13,681
2020	17,004
2021	17,785
2022	16,426

Year	AAMPO Growth Rate	Population Projection
2022	1.92%	2,042,120
2023	1.88%	2,080,527
2024	1.85%	2,118,933
2025	1.81%	2,157,339
2026	1.78%	2,195,746
2027	1.75%	2,234,152
2028	1.72%	2,272,558
2029	1.69%	2,310,964
2030	1.66%	2,349,371
2031	1.65%	2,388,048
2032	1.62%	2,426,725
2033	1.59%	2,465,402



EDU Projections

10-year Growth Potential

- Water – 161,030
- Wastewater – 148,129

Calculation of LUAP - Water

Year	Water Management Plan Population	Growth Rate	Actual		Population /EDU	Forecasted @ 2.39		Proposed 2024 - 2033 LUAP EDUs
			Annual EDUs	Cumulative EDUs		Annual EDUs	Cumulative EDUs	
2013	1,671,625		9,043	697,710	2.40			
2014	1,712,446	2.442%	14,093	711,803	2.41			
2015	1,742,390	1.749%	18,405	730,208	2.39			
2016	1,783,426	2.355%	15,708	745,916	2.39			
2017	1,819,116	2.001%	14,165	760,081	2.39			
2018	1,851,348	1.772%	15,082	775,163	2.39			
2019	1,885,309	1.834%	15,906	791,068	2.38			
2020	1,919,271	1.801%	19,520	810,588	2.37			
2021	2,003,714	4.400%	20,931	831,519	2.41			
2022	2,042,120	1.917%	18,866	850,385	2.40			
2023	2,080,527	1.881%				16,069	870,481	870,481
2024	2,118,933	1.846%				16,069	886,550	
2025	2,157,339	1.813%				16,069	902,619	
2026	2,195,746	1.780%				16,069	918,688	
2027	2,234,152	1.749%				16,069	934,757	
2028	2,272,558	1.719%				16,069	950,826	
2029	2,310,964	1.690%				16,069	966,895	
2030	2,349,371	1.662%				16,069	982,964	
2031	2,388,048	1.646%				16,182	999,146	
2032	2,426,725	1.620%				16,182	1,015,328	
2033	2,465,402	1.594%				16,182	1,031,510	1,031,510
Average (Total)		1.964%	16,172		2.39	2024-2033 Growth		161,030
Average (5 year)			18,061		2.39			

Calculation of LUAP - Water

Year	Water Management Plan Population	Growth Rate	Actual		Population /EDU	Forecasted @ 2.39		Proposed 2024 - 2033 LUAP EDUs
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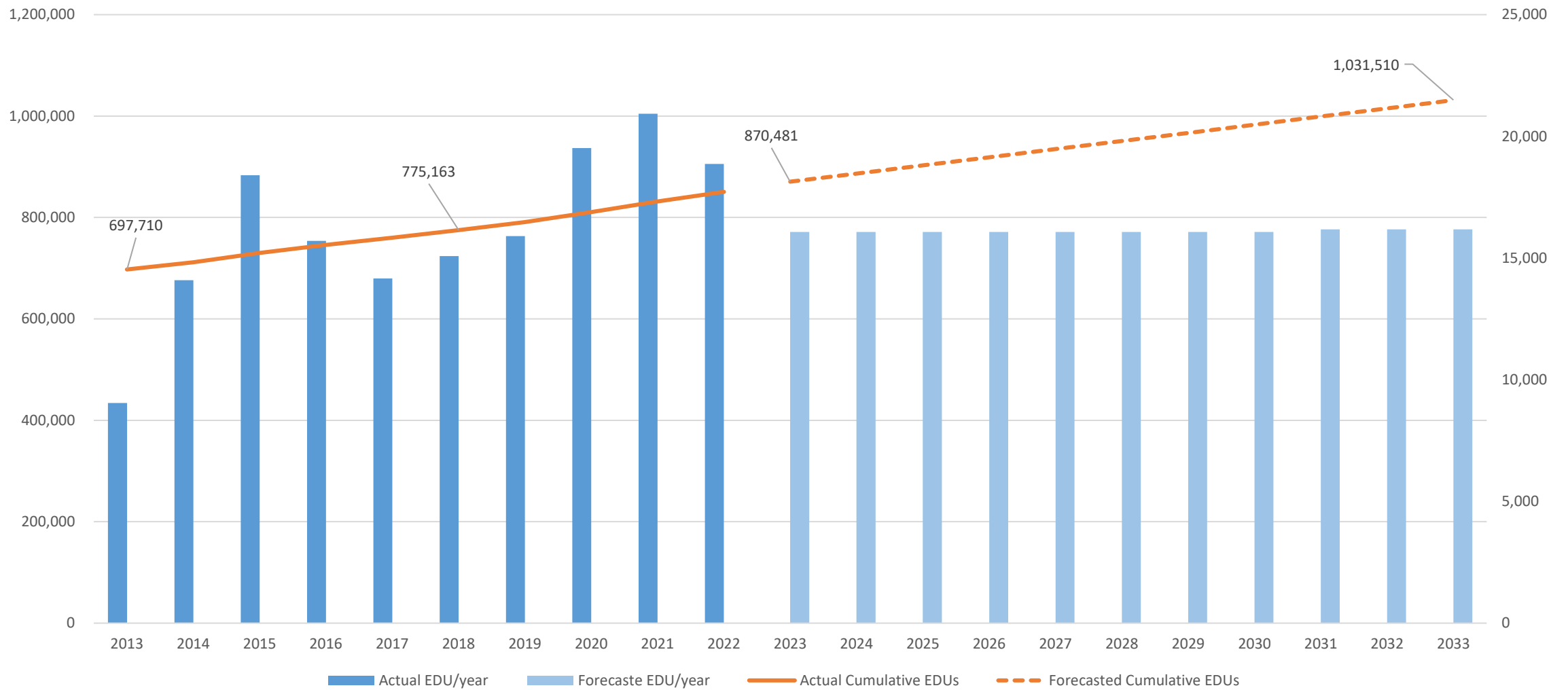
Calculation of LUAP - Water

Year	Water Management Plan Population	Growth Rate	Actual		Population /EDU	Forecasted @ 2.39		Proposed 2024 - 2033 LUAP EDUs
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Average (5 year)			18,061		2.39			

Calculation of LUAP - Water

Year	Water Management Plan Population	Growth Rate	Actual		Population /EDU	Forecasted @ 2.39		Proposed 2024 - 2033 LUAP EDUs
			Annual EDUs	Cumulative EDUs		Annual EDUs	Cumulative EDUs	
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2014	1,712,446	2.442%	14,093	711,803	2.41			
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2016	1,783,426	2.355%	15,708	745,916	2.39			
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2019	1,885,309	1.834%	15,906	791,068	2.38			
2020	1,919,271	1.801%	19,520	810,588	2.37			
2021	2,003,714	4.400%	20,931	831,519	2.41			
2022	2,042,120	1.917%	18,866	850,385	2.40			
2023	2,080,527	1.881%				16,069	870,481	870,481
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Average (Total)		1.964%	16,172		2.39	2024-2033 Growth		161,030
Average (5 year)			18,061		2.39			

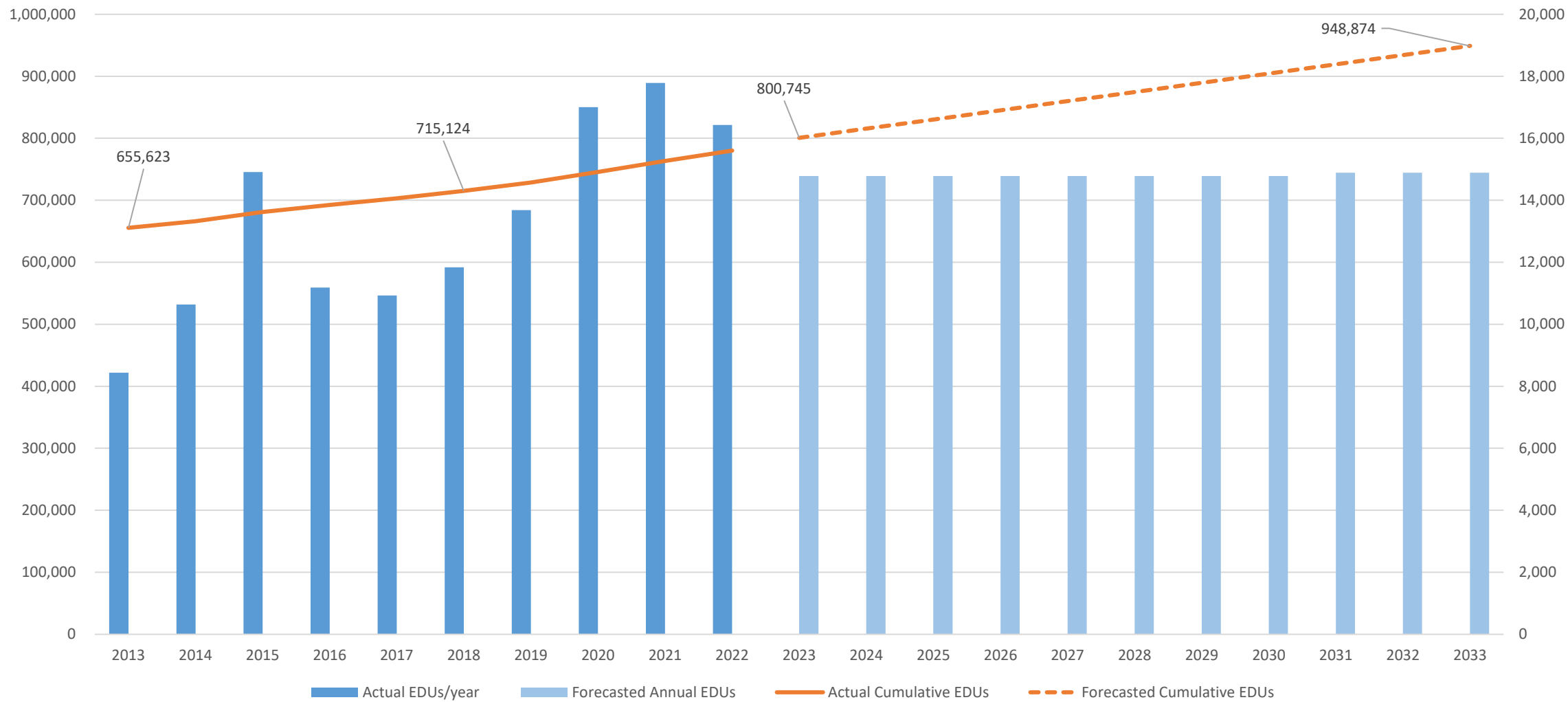
Actual/Forecasted Annual & Cumulative EDUs - Water



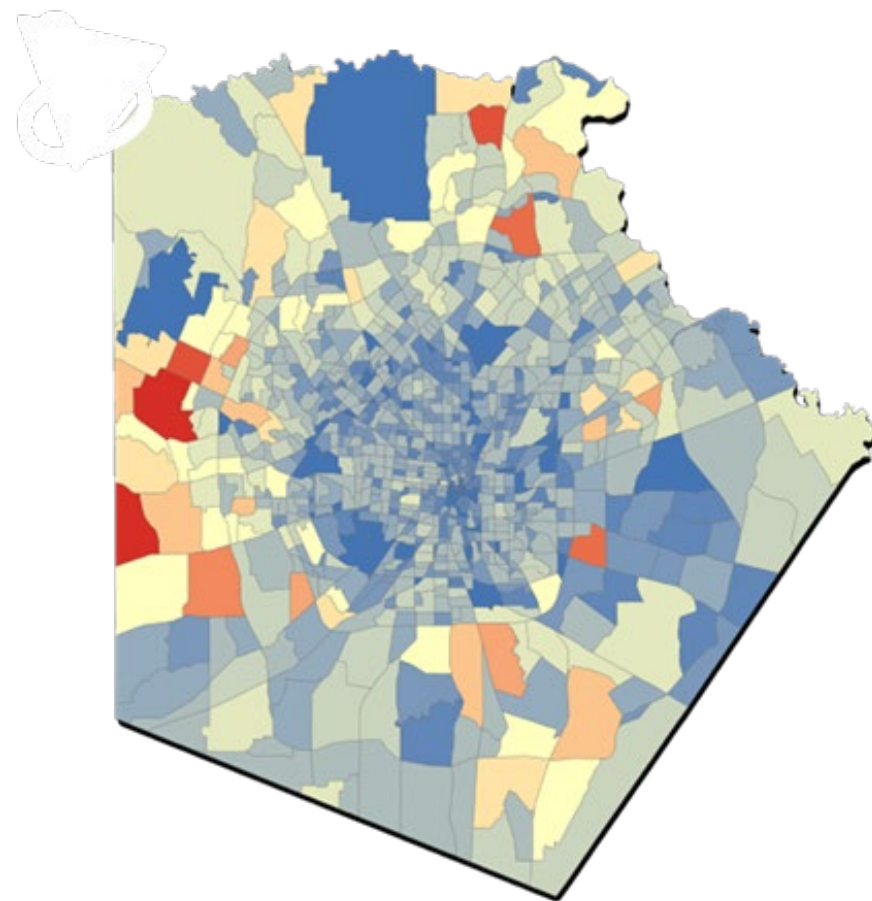
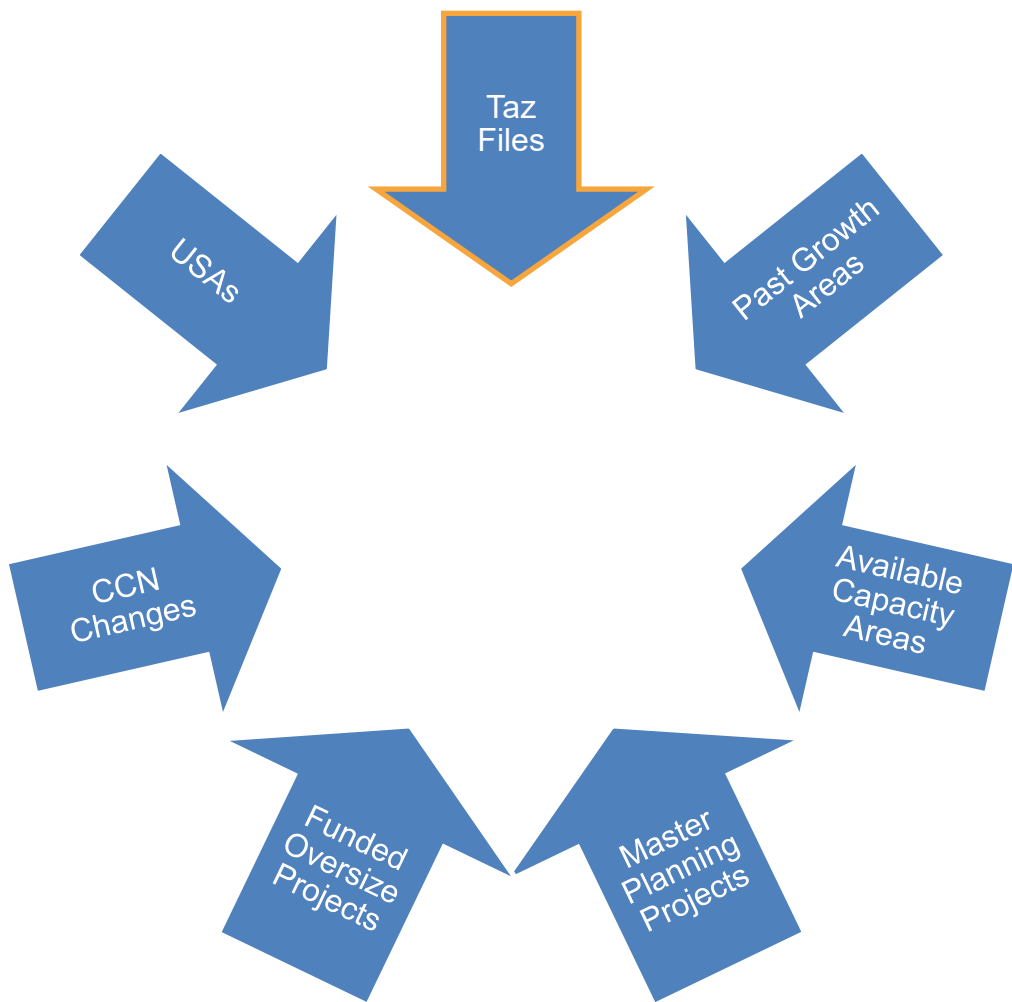
Calculation of LUAP - Sewer

Year	Water Mangement Plan Population	Growth Rate	Actual		Population /EDU	Forecasted @ 2.60		Proposed 2024 - 2033 LUAP EDUs
			Annual EDUs	Cumulative EDUs		Annual EDUs	Cumulative EDUs	
2013	1,671,625		8,436	655,623	2.55			
2014	↑ 1,712,446	2.442%	10,639	666,262	2.57			
2015	1,742,390	1.749%	14,910	681,172	2.56			
2016	1,783,426	2.355%	11,183	692,355	2.58			
2017	1,819,116	2.001%	10,932	703,287	2.59			
2018	1,851,348	1.772%	11,837	715,124	2.59			
2019	↓ 1,885,309	1.834%	13,681	728,805	2.59			
2020	1,919,271	1.801%	17,004	745,809	2.57			
2021	2,003,714	4.400%	17,785	763,594	2.62			
2022	2,042,120	1.917%	16,426	780,020	2.62			
2023	2,080,527	1.881%				14,783	800,745	800,745
2024	2,118,933	1.846%				14,782	815,526	
2025	2,157,339	1.813%				14,782	830,308	
2026	2,195,746	1.780%				14,782	845,090	
2027	2,234,152	1.749%				14,782	859,871	
2028	2,272,558	1.719%				14,782	874,653	
2029	2,310,964	1.690%				14,782	889,435	
2030	2,349,371	1.662%				14,782	904,216	
2031	2,388,048	1.646%				14,886	919,102	
2032	2,426,725	1.620%				14,886	933,988	
2033	2,465,402	1.594%				14,886	948,874	948,874
Average (Total)		1.964%	13,283		2.59	2024-2033 Growth		148,129
Average (5 year)			15,347		2.60			

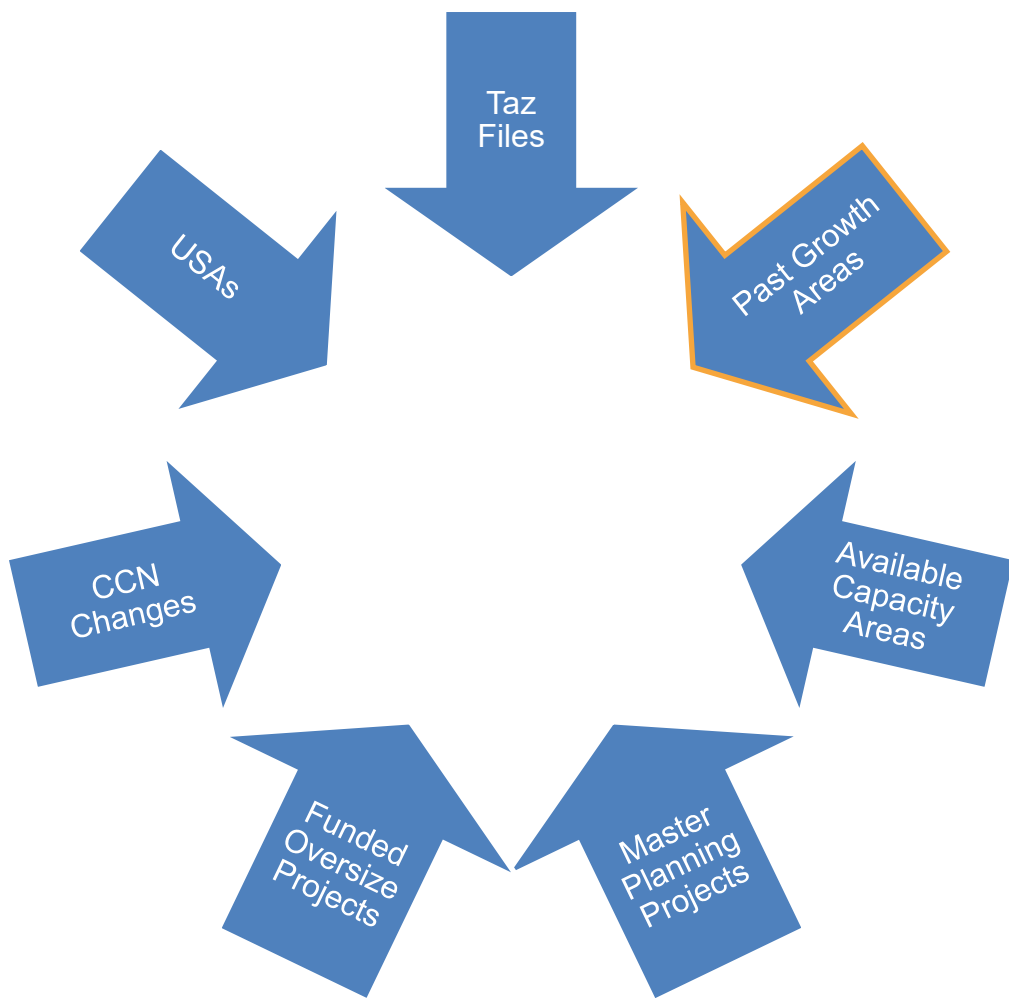
Actual/Forecasted Annual & Cumulative EDUs - Sewer



EDU Distribution



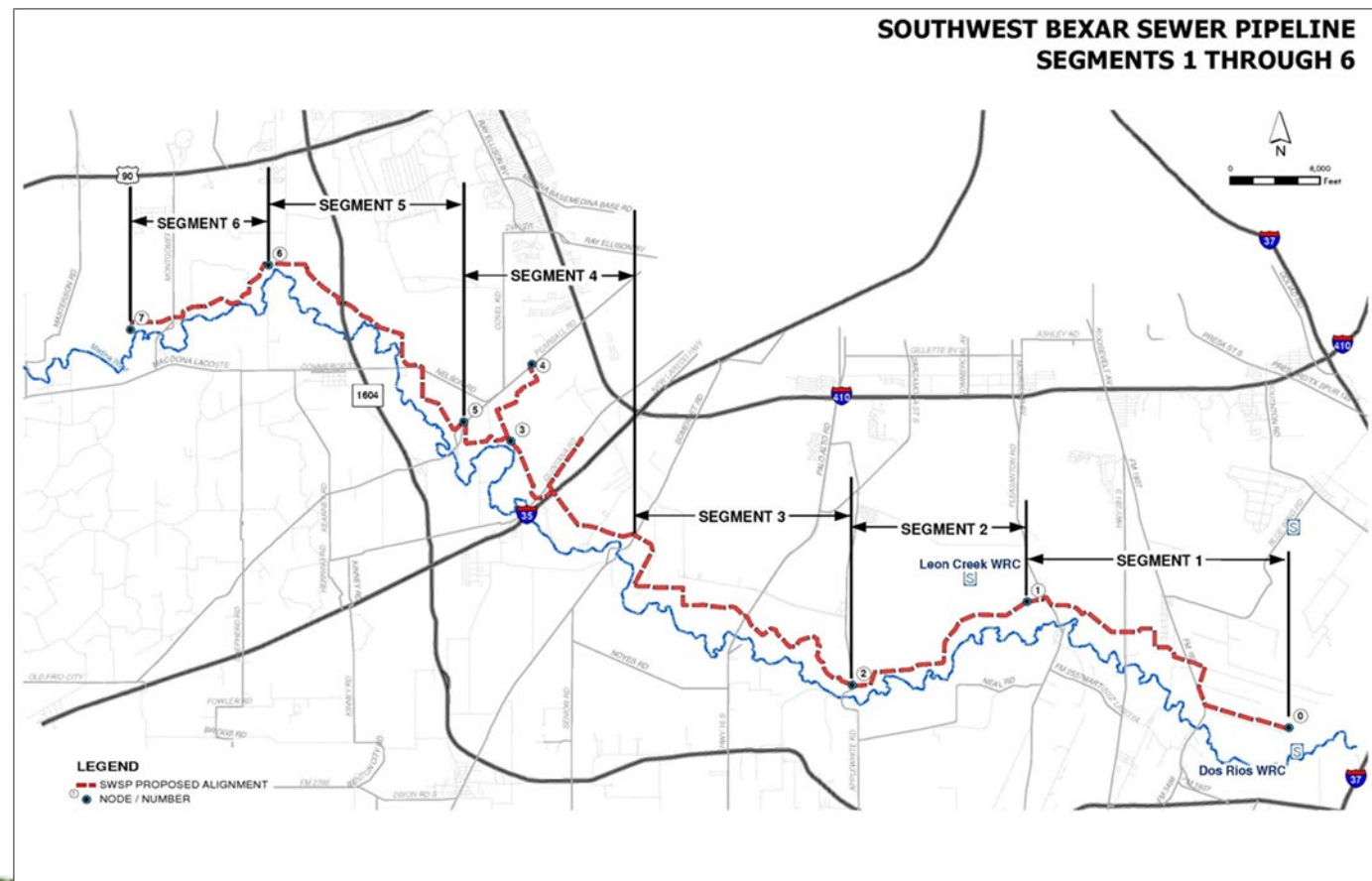
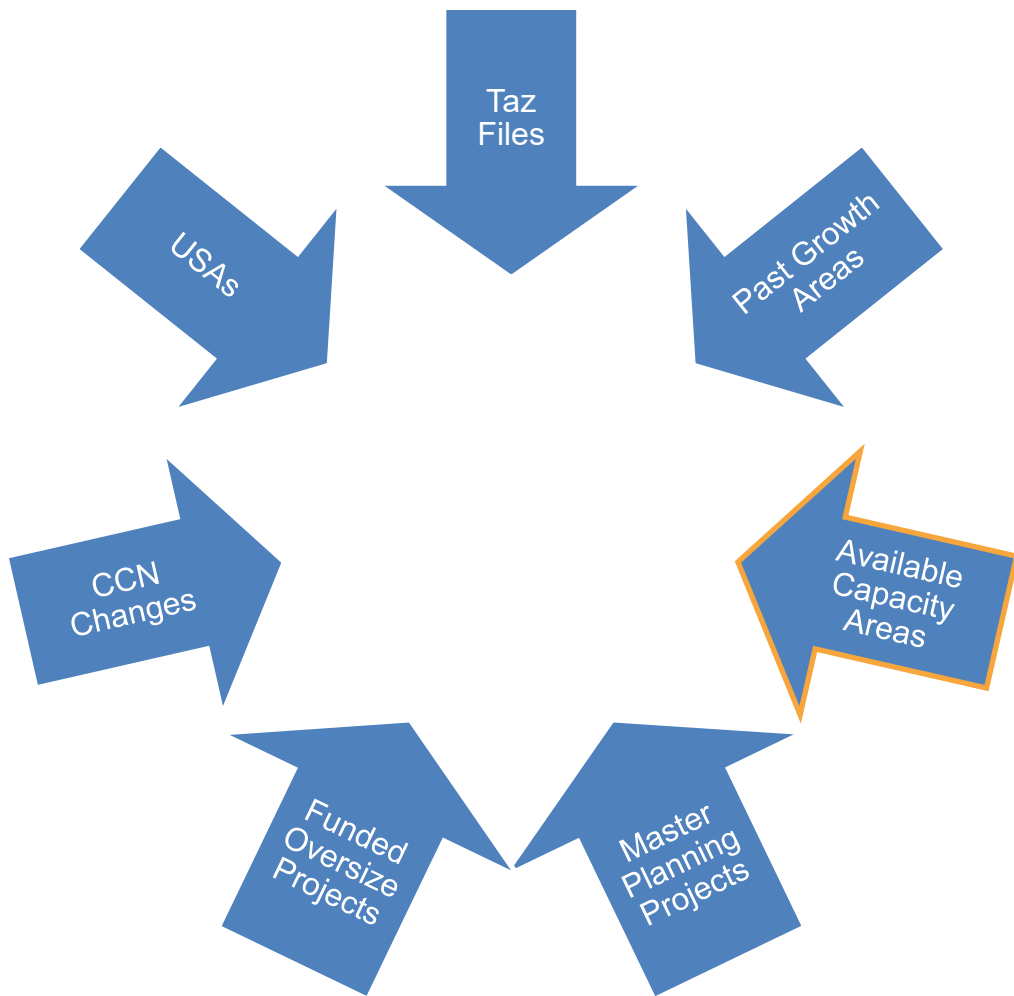
EDU Distribution



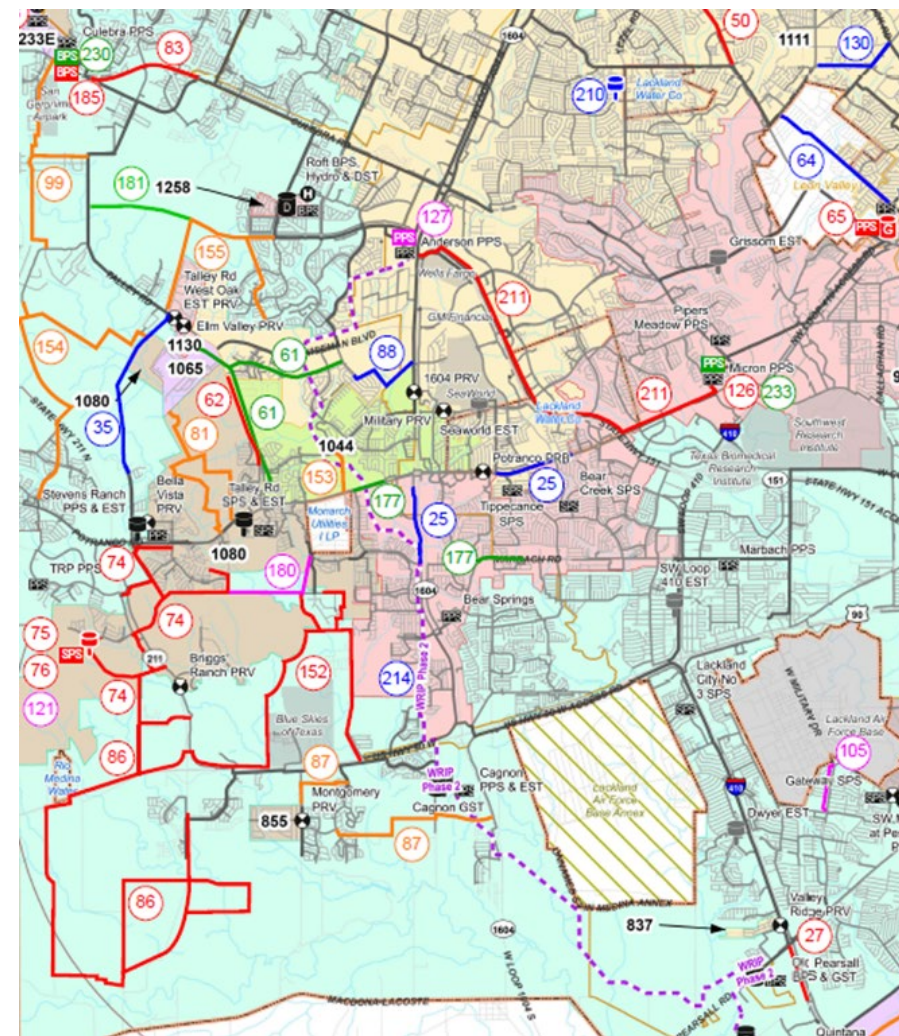
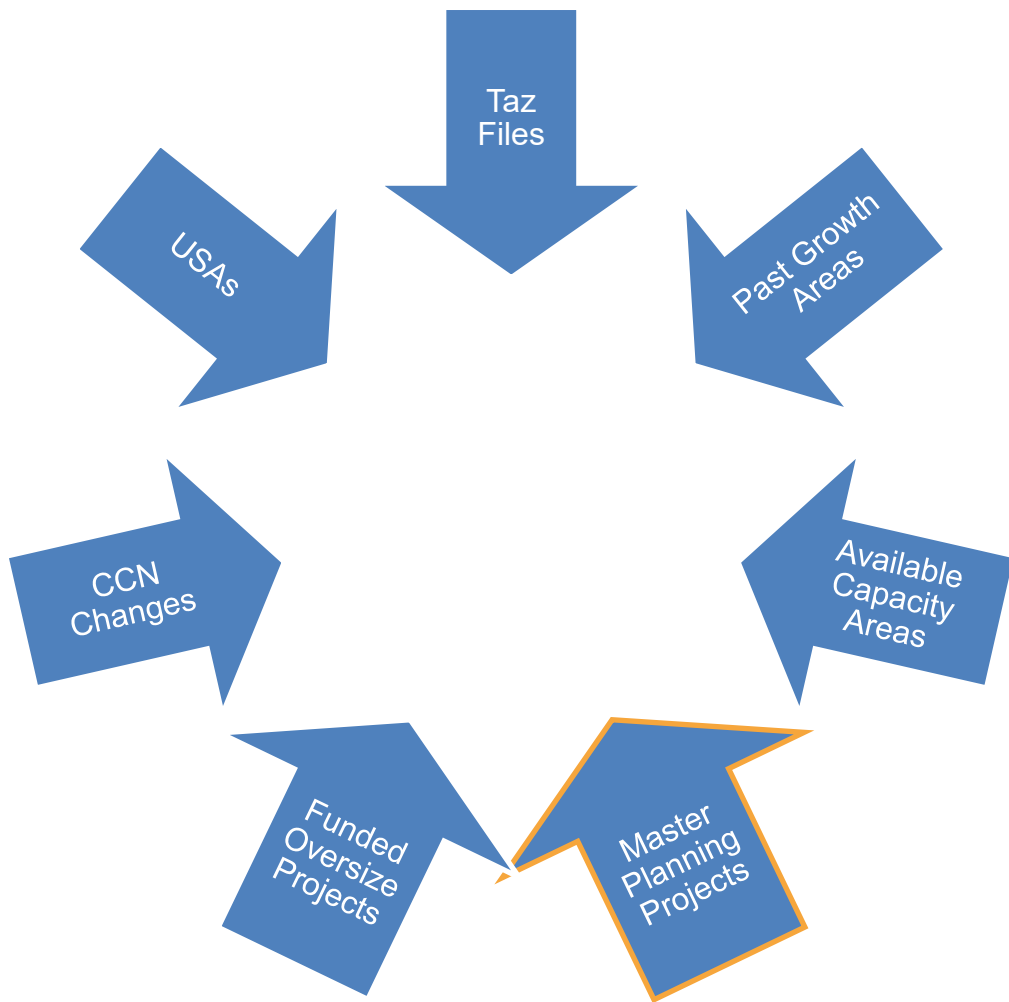
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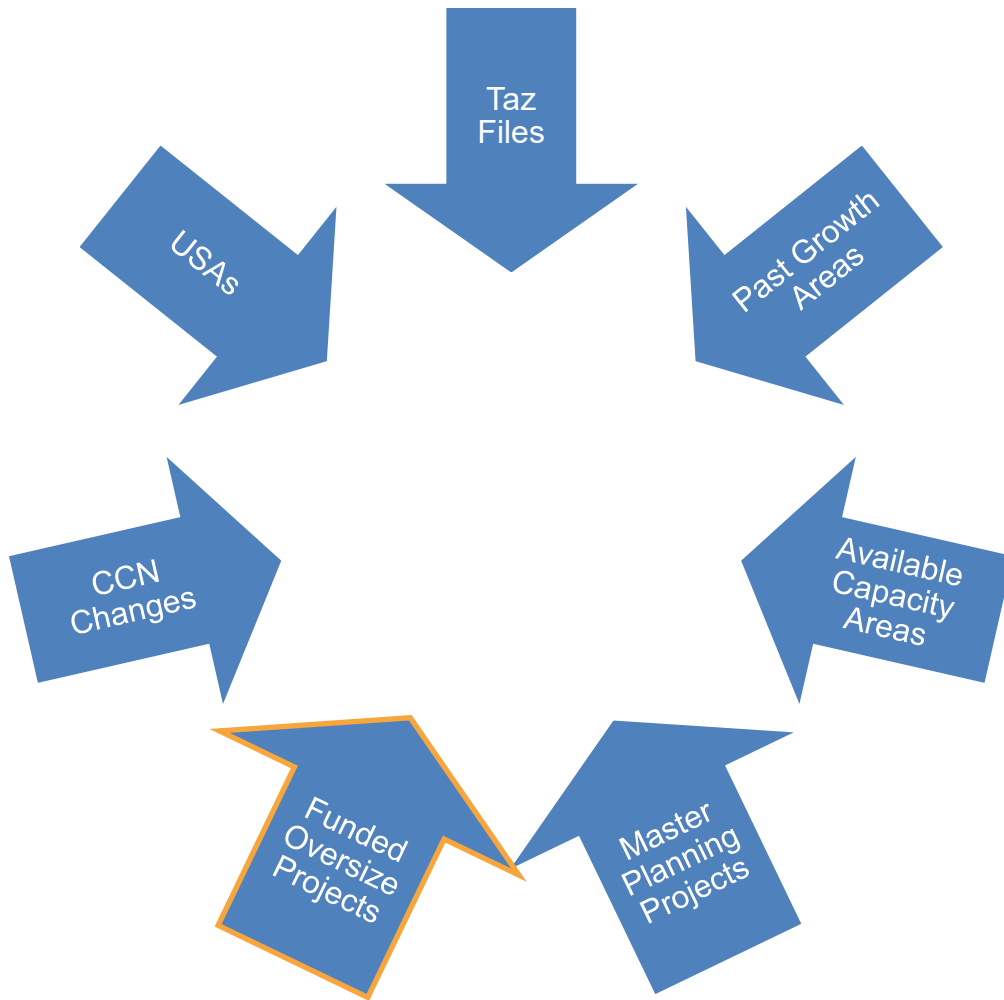
EDU Distribution



EDU Distribution

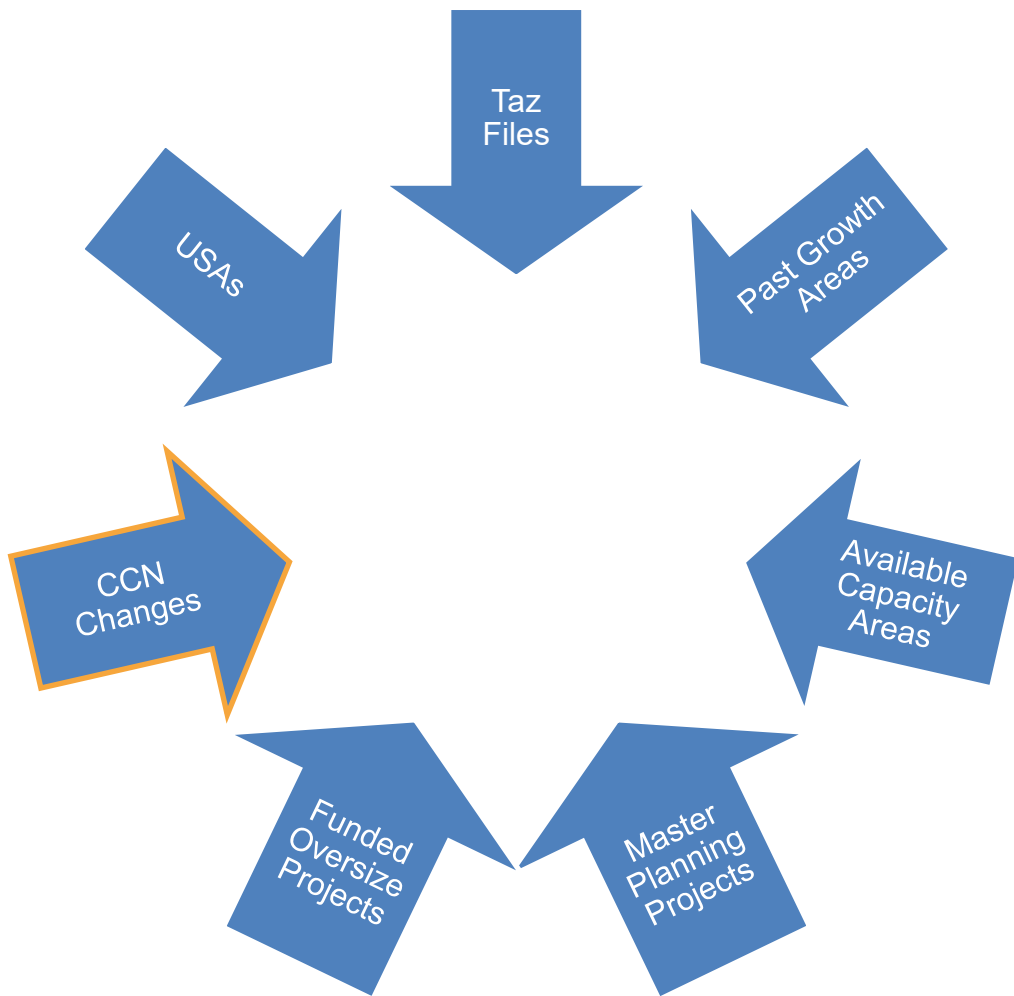


EDU Distribution

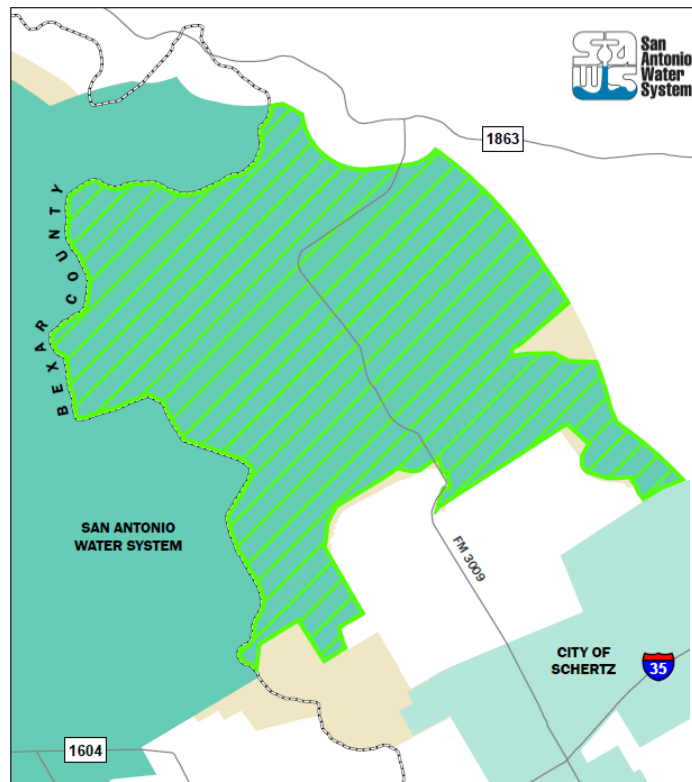


SAWS 2024 Capital Improvements Program - Planning		8/2/2023	
Category / Project	Director/Group	Phase	Cost Estimate
Water Delivery			
Corporate			
General Legal Services	Legal	Acquisition	144,194
Eastside Operations Center Fuel Facility	Facilities	Construction	5,000,000
Water Delivery OCCC	Finance	Construction	7,750,000
Mains - New			
Mathis Rd.: Hardy Rd. to Waterwood Pass Approach Main	Pipelines	Construction	4,048,000
Blanco Rd. to Orsinger Ln. Pressure Zone 1111 24-inch Water Main - Add	Pipelines	Construction	5,000,000
IH-10: Boerne Stage Rd. to Heuermann Rd. 36-inch Water Main (Phase A)	Pipelines	Construction	24,605,900
Water Main Oversizing	Development	Construction	36,641,912
West Grosenbacher Road New Water Main	Pipelines	Design	675,674
Mains - Replacement			
Governmental Mains	Pipelines	Construction	40,000,000
Dead End Water Main Elimination Construction - 2024	Pipelines	Construction	6,300,000
Highland-Goliad Water Main Replacement	Pipelines	Construction	12,381,360
Valves, Services and Meter Replacements	D&C	Construction	17,000,000
Water Main Replacement Geotechnical Services Contract	Construction Inspe	Design	200,000
Water Main Replacement Engineering Contract	Pipelines	Design	4,250,000
Production			
Production Facilities Engineering Contract	PMP	Design	1,500,000
Evans PZ 1258 Booster Station Improvements Project	PMP	Design	750,000
Patton 2.0 MG Elevated Storage Tank	PMP	Design	2,800,000
Indian Hills and Verano Elevated Storage Tanks	PMP	Construction	31,991,978
Silver Mountain Pump Station Upgrades	PMP	Construction	8,000,000
Knights Cross Standpipe No. 2	Ops Spt	Construction	8,500,000
Old Pearsall Pump Station Test Well	PMP	Construction	500,000

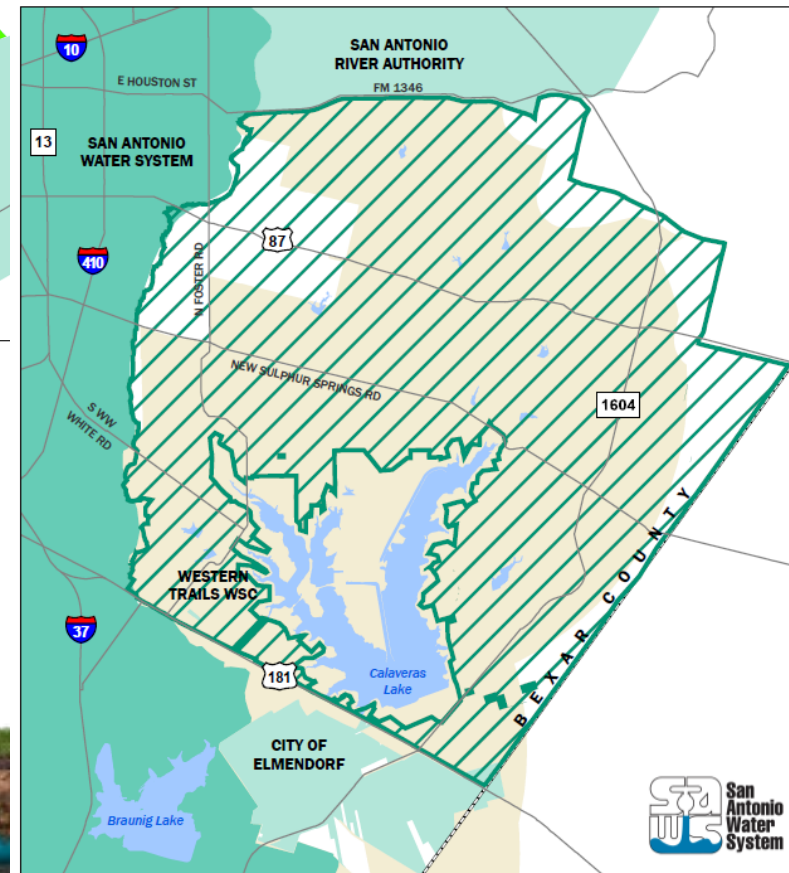
EDU Distribution



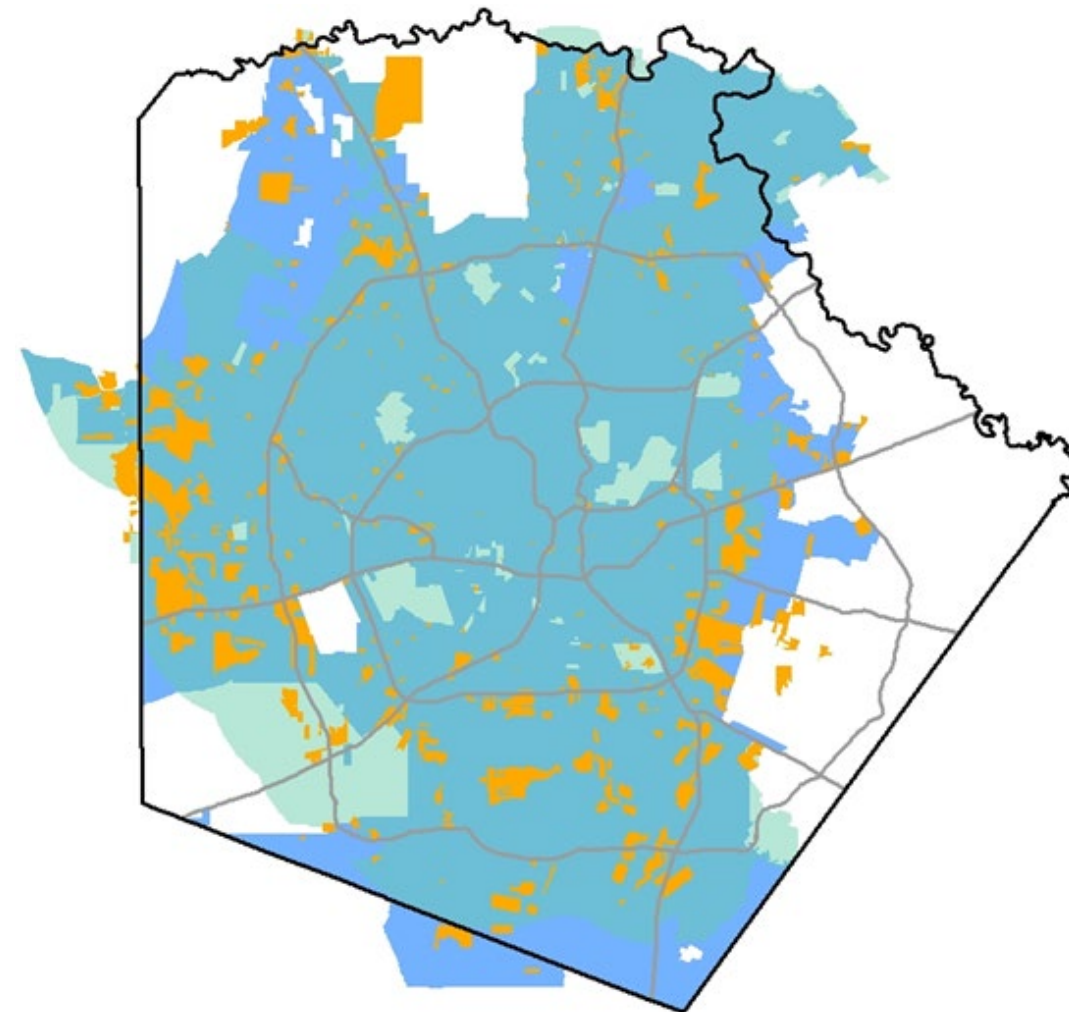
NE: Proposed Wastewater CCN Reduction



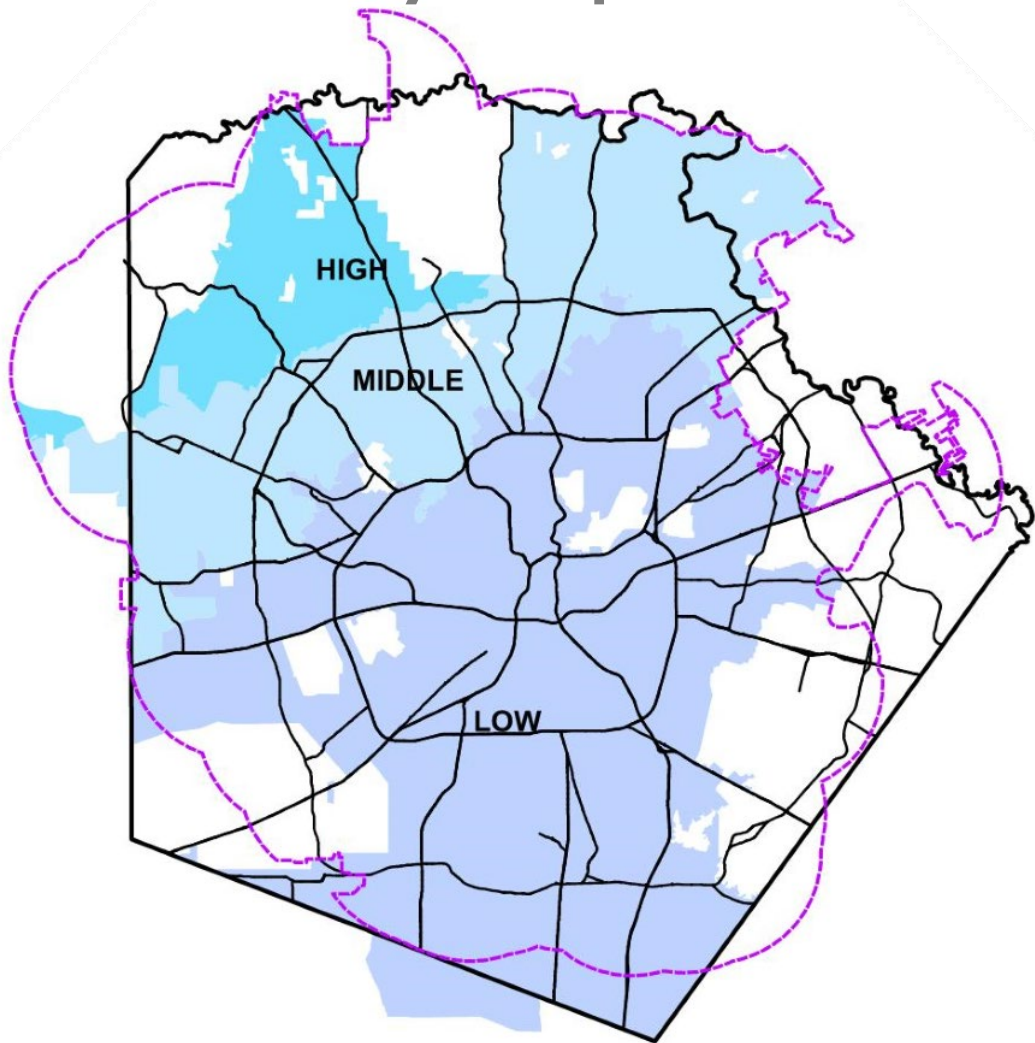
SE: Proposed Wastewater CCN Addition



EDU Distribution

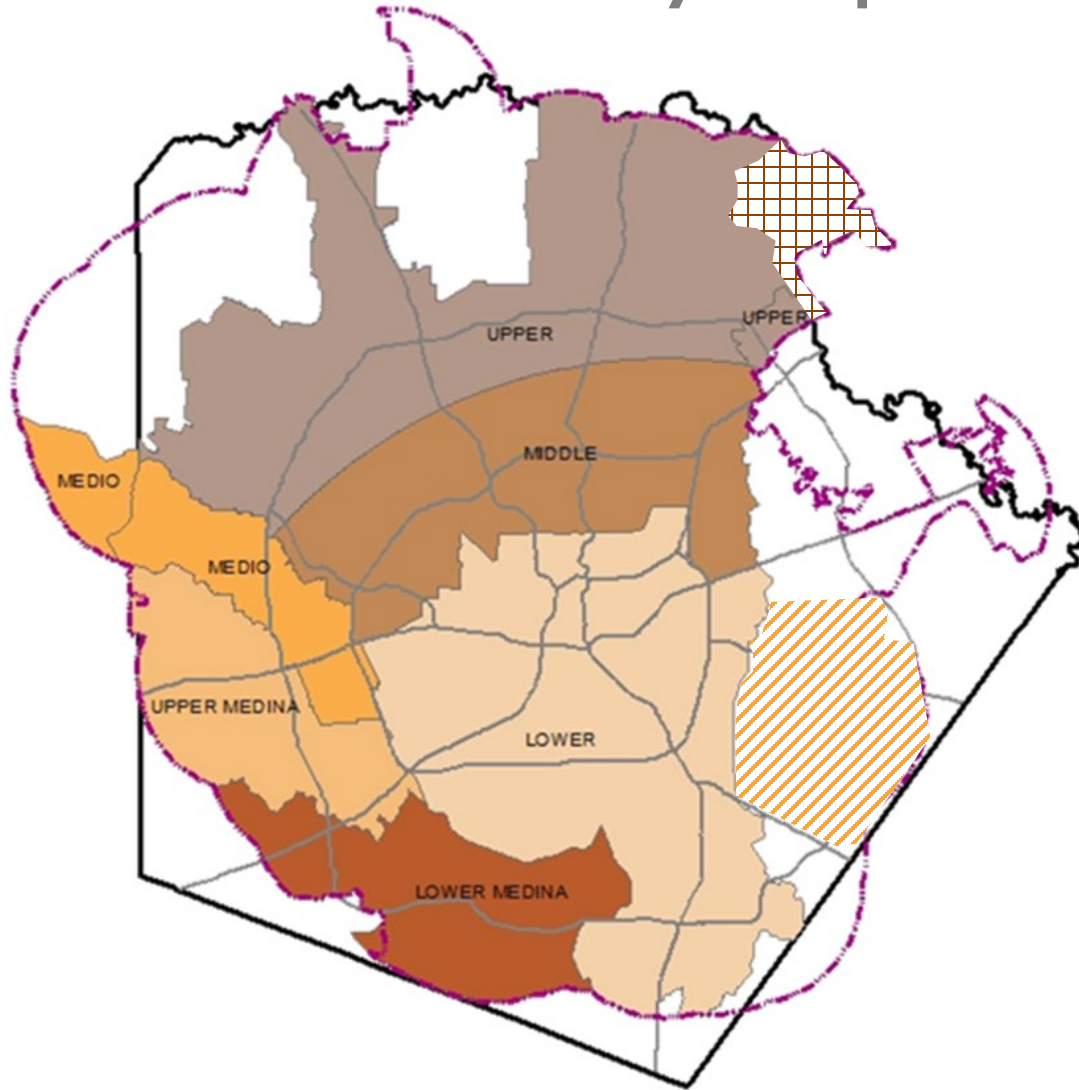


EDUs by Impact Fee Zone



Impact Fee Zone	EDUs		
	2024	2033	Change
HIGH	30,602	42,566	11,964
MIDDLE	302,617	361,209	58,592
LOW	537,262	627,735	90,474
Total	870,481	1,031,510	161,030

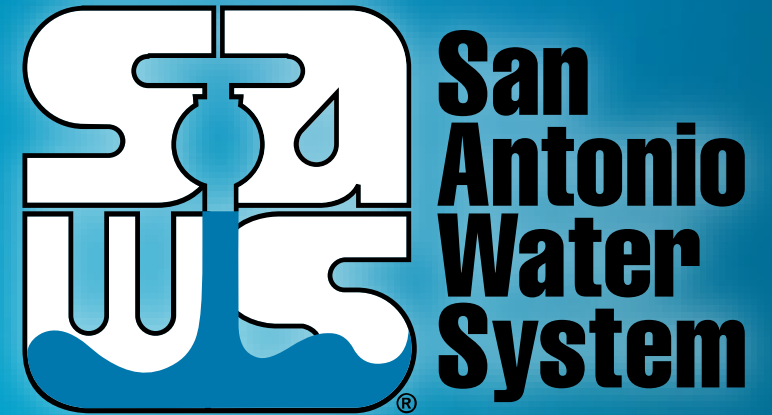
Breakdown by Impact Fee Zone



Impact Fee Zone	EDUs		
	2024	2033	Change
UPPER	205,757	239,304	33,547
MIDDLE	253,500	259,781	6,281
LOWER	243,296	292,864	49,568
MEDIO	56,533	81,263	24,730
UPPER MEDINA	33,231	59,225	25,995
LOWER MEDINA	8,429	16,437	8,008
Total	800,745	948,874	148,129

Water and Wastewater Land Use Assumptions Plan (LUAP)

Tracey Lehmann, P.E.
Senior Director - Development



MAKING SAN ANTONIO
WATERFUL

Capital Improvements Advisory Committee
August 23, 2023