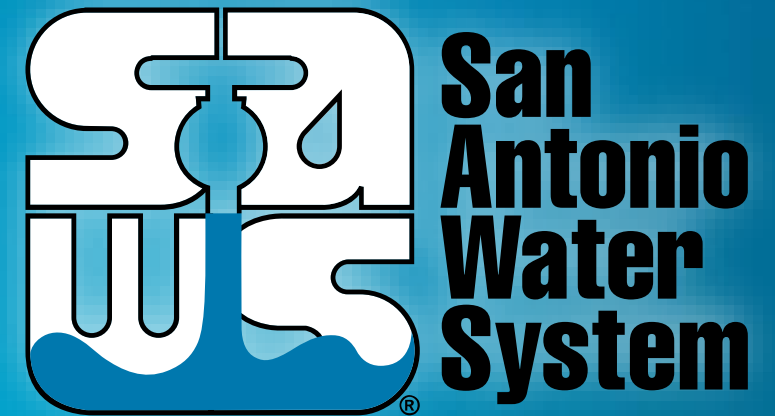


Water and Wastewater Equivalent Dwelling Units (EDU)

Tracey B. Lehmann, P.E.

Senior Director of Development Engineering



MAKING SAN ANTONIO
WATERFUL



Capital Improvements Advisory Committee

July 26, 2023

SAWS by the Numbers

One of the nation's largest municipally owned utilities

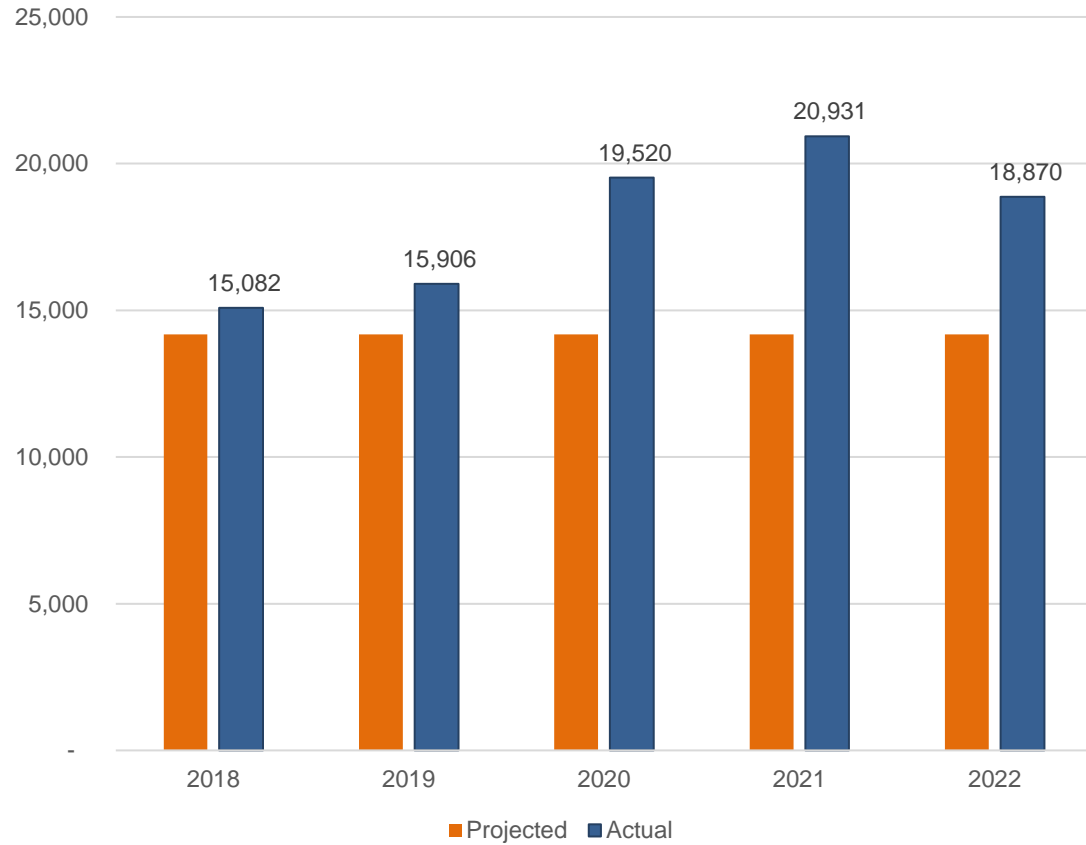
- Over 2.0 million population
- 928 square mile service area
- 13,543 miles of pipe (water & wastewater)
- 4 major treatment plants
- \$978 million budget
- \$2.9 billion 5-year capital program
- 1,874 employees



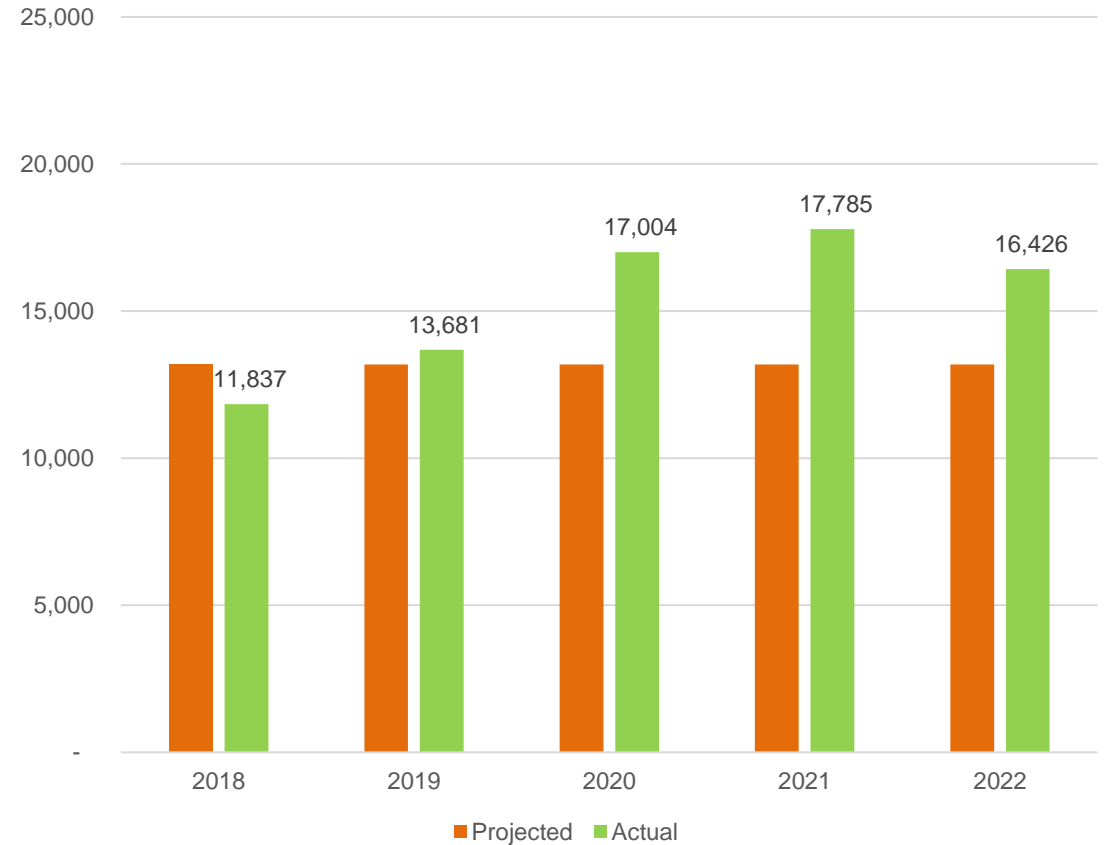
EDU Growth

Projected Vs. Actual

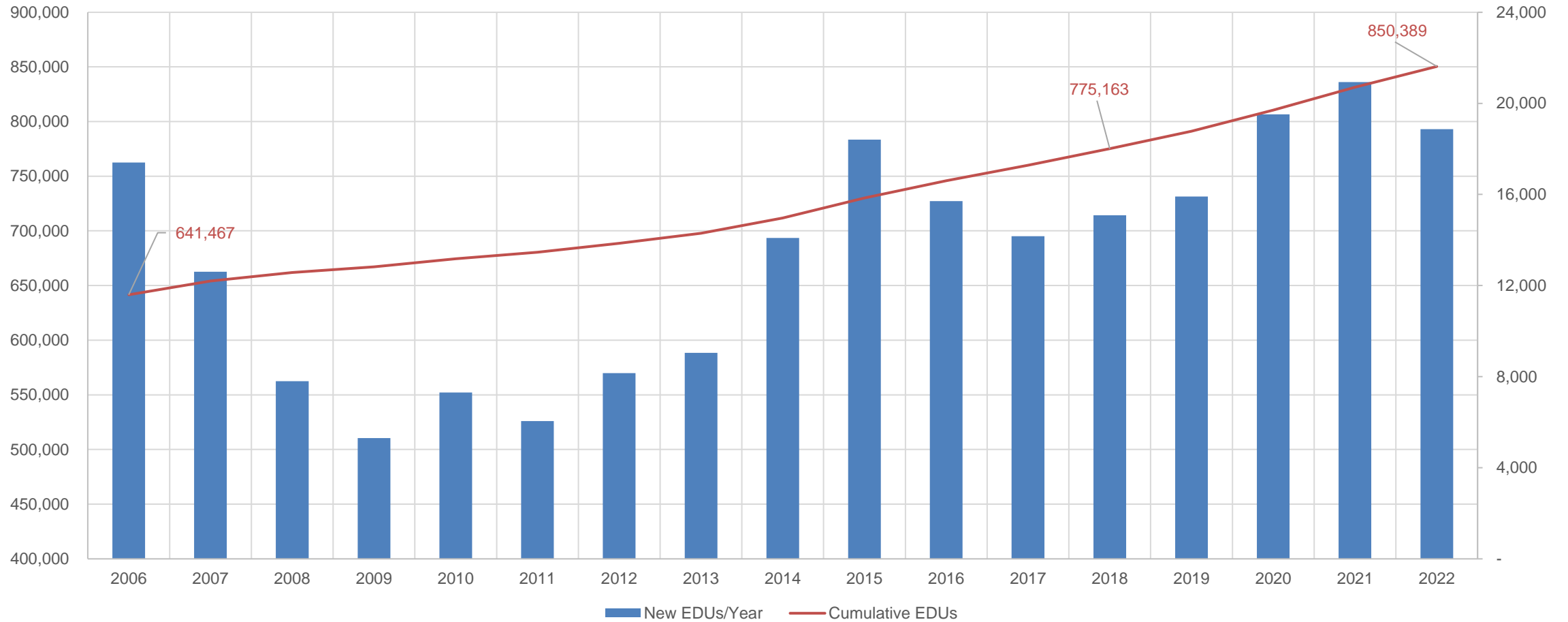
Water EDUs



Sewer EDUs



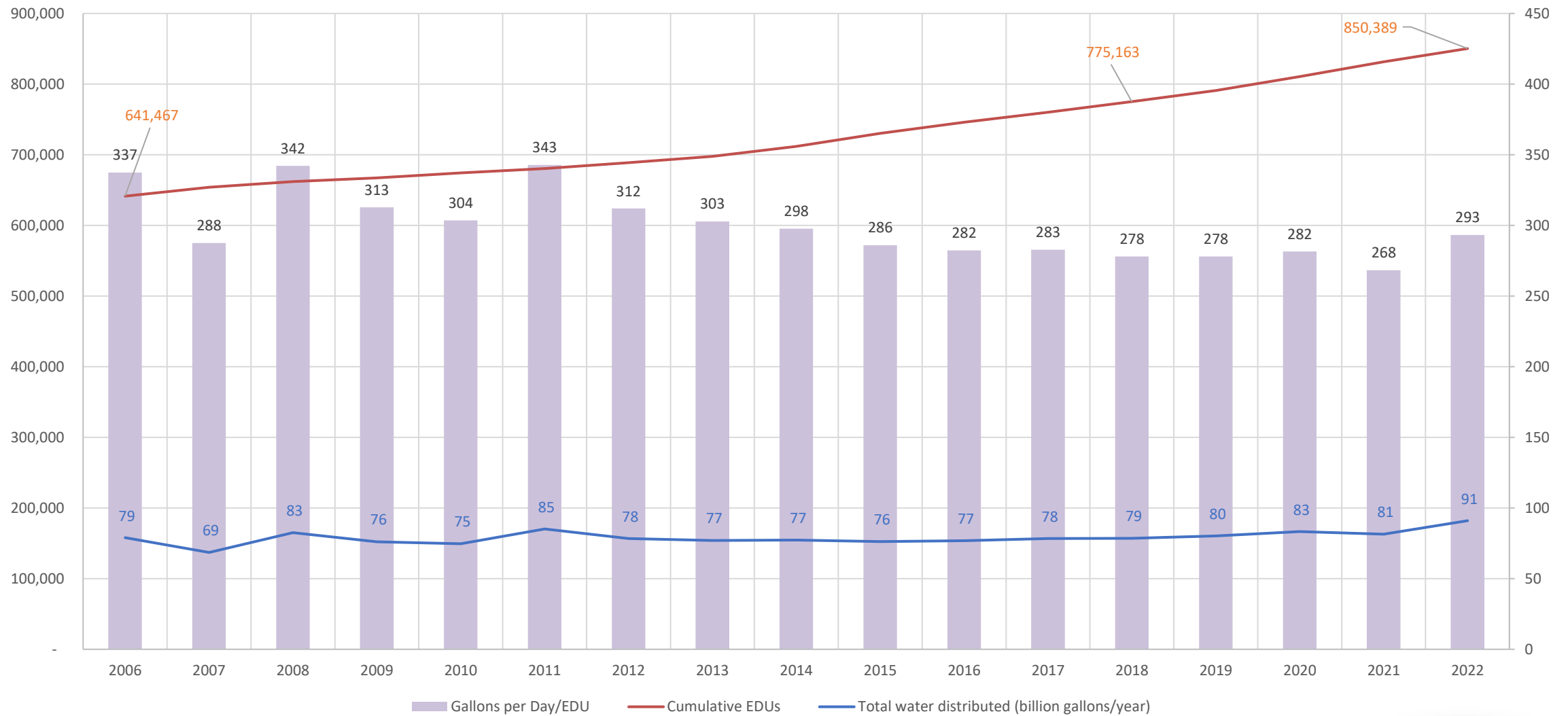
New Water EDUs/Year Versus Cumulative Water EDUs



Water EDU Calculation

$$\text{EDU} = \frac{\text{Annual Pumpage (5 year average)}}{\text{Annual EDUs (5 year average) x 365 days}}$$

Gallons of Water per EDU



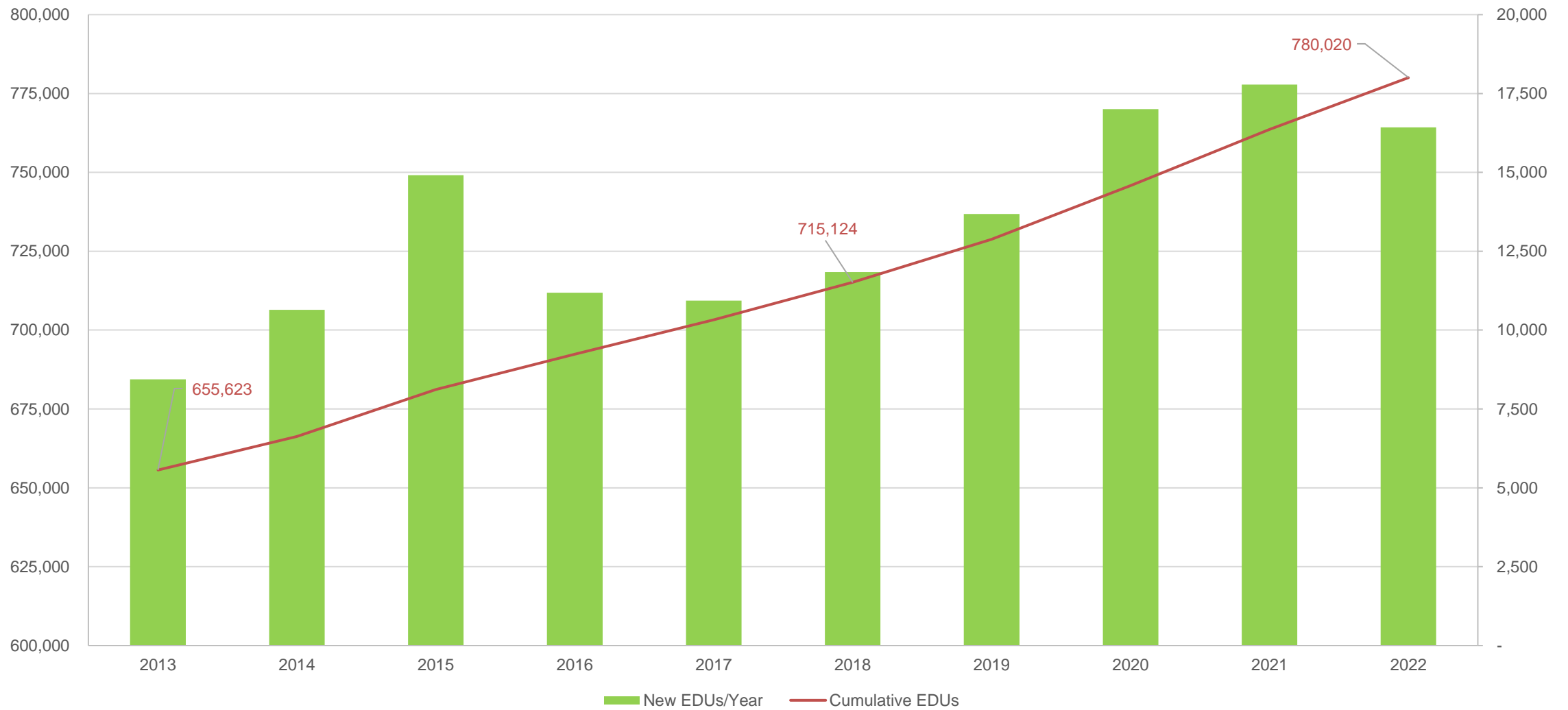
Water EDU Calculation

$$\begin{aligned}
 \text{EDU} &= \frac{83 \text{ BGal}}{811,745 \times 365 \text{ days}} \\
 &= 280 \text{ Gallons/day}
 \end{aligned}$$

Year	New EDUs	Cumulative EDUs	Pumpage (Bgal/yr)
2018	15,082	775,163	79
2019	15,906	791,068	80
2020	19,520	810,588	83
2021	20,931	831,519	81
2022	18,870	850,389	91
Average	18,062	811,745	83

Recommend not changing current EDU = 290 Gallons/day

New Sewer EDUs/Year Versus Cumulative Sewer EDUs



Wastewater EDU Calculation

$$\text{EDU} = \frac{\text{Annual WRC Flow (5 year average)}}{\text{Annual EDUs (5 year average) x 365 days}}$$

Wastewater Recycling Centers (WRC) Flow (MG)

- Three active WRCs in SAWS System

Year	Medio Creek	Leon Creek	SMC (Dos Rios)	Total Flow
2018	2,497	13,109	34,564	50,170
2019	3,669	10,907	34,434	49,009
2020	3,673	10,655	31,757	46,085
2021	3,785	11,327	34,606	49,719
2022	3,465	11,901	32,828	48,195
Average	3,418	11,580	33,638	48,636

Gallons of Wastewater per EDU



Average Daily Flow vs. Peak Wet Weather

- Water Recycling Center (WRC)
 - Average Daily Flow
 - 200 gpd
- Collection System
 - Peak Wet Weather Flow (5-year, 6-Hour Storm)
 - $200 \text{ gpd} * 2.5 \text{ Peaking Factor} + 600 \text{ gal per acre}$
 - Inflow and Infiltration (I/I)



Wastewater EDU Calculation

Year	New EDUs	Cumulative EDUs	Flow (Mgal/yr)
2018	11,837	715,124	50,170
2019	13,681	728,805	49,009
2020	17,004	745,809	46,085
2021	17,785	763,594	49,719
2022	16,426	780,020	48,195
Average	15,347	746,670	48,636

$$\text{EDU} = \frac{48,636 \text{ MG}}{746,670 \times 365 \text{ days}}$$

= 178 gpd average daily flow

Recommend not changing current EDU = 200 Gallons/day

SAWS Staff Recommendation

- No change to current EDU definition
 - Water EDU = 290 gpd average daily flow
 - Wastewater EDU = 200 gpd average daily flow

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