Wastewater Treatment Plant Study

Scope: Build-out conditions require 0.6 MGD wastewater treatment capacity, which could be accomplished through upgrade/expansion of existing WWTP, construction of new WWTP or a combination or both.

Budget: $251,931 (FY2021-2022) – Study

Consulting Firm: Garver, LLC, San Antonio, TX

Aerial view of existing WWTP

Justification and Impact

- TCEQ requires WWTP permit holders to begin planning for expansion when 75% capacity reached (2023) and begin construction when 90% capacity reached (2026). City will exceed permitted capacity in 2028.
- Current site does not meet buffer zone requirements and frequent odor complaints from adjacent property owners.

Project Timeline (subject to change)

Mar 2022 – Contract awarded
Mar 2022 – Kickoff Meeting
Sept 2022 – 1st Presentation to Council
Oct 2022 – 2nd Presentation to Council

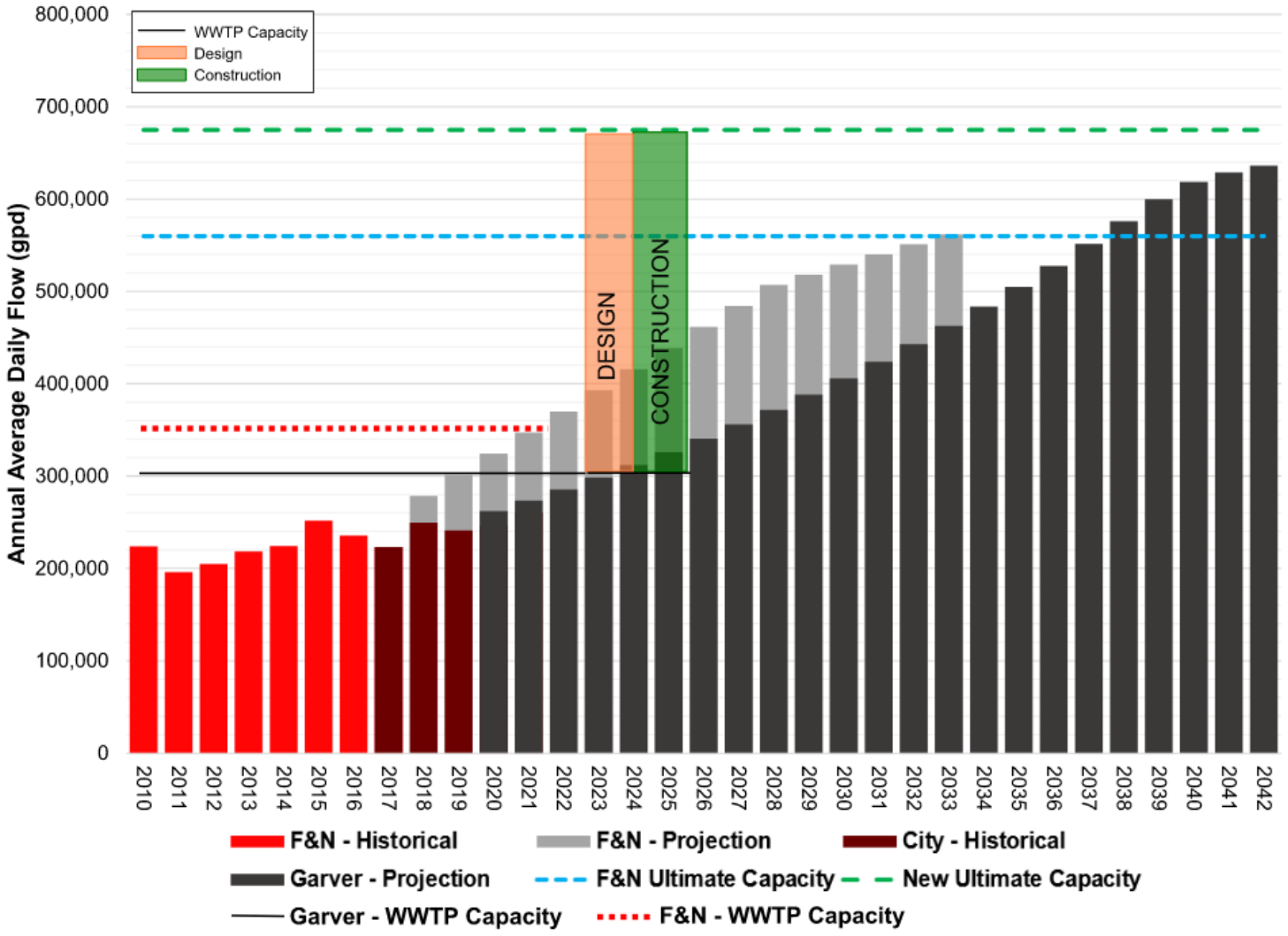
% Completed: 47

Status Update: Draft site feasibility analysis regarding expansion options under review

Wastewater Treatment Plant Study

Master Plan Validation Highlights

- Ultimate build-out projected to occur in 2042 vice 2033
- Ultimate capacity projection increased from 0.56MGD to 0.675 MGD
- Current capacity limited to 0.30 MGD due to treatment process components
- Design for expansion needs to start next FY
- Construction for expansion needs to start in the 2024 timeframe



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Expansion Options Evaluated:

1) Construction of 100% of the required capacity at the City's existing WWTP site.

2) Constructing a new greenfield facility on the proposed 5-acre City-owned property.

3) A combination of Options No. 1 and No. 2, where the existing site would remain at calculated capacity and a new facility would be constructed.

4) Constructing a scalping facility that would serve potential new growth areas. The scalping facility would focus on treating and reusing water while sending solids through the collection system to be treated by the existing WWTP.

5) Connecting a portion of the City's collection system to the San Antonio Wastewater System (SAWS) to manage the flows beyond the existing WWTP permitted capacity.

Note: Several of these options have sub-options considering treatment technology and new sewer main alignment

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Economic Factors:

- Base Capital Cost (2022 for South Central TX region)
- Market Pricing/Materials Contingency
- Construction Contingency
- Contractor Mobilization, Overhead & Profit
- Engineering Services

Non-Economic Factors:

- Optimization of Processes
- Flexible and Modular Planning
- Environmental Consciousness
- Innovation and Reliable Treatment Processes

Evaluation Category	Objective	Criteria
Optimization	O1: Energy reduction	O1.1: is the energy use at the plant site less than the mean of the alternatives?
	O2: Land Use	O2.1 will this alternative reduce the additional land requirement?
Planning	P1: Protect public health and safety	P1.1: is this alternative safer than other alternatives?
	P2: Preserve community reputation, status, and economic vitality	P2.1: will this alternative enhance the perception of the community local to the facility?
		P2.2: will this alternative enhance the perception of the community within the Fair Oaks Ranch service area?
	P3: Contribute to industry leadership	P3.1: does the alternative provide an innovative solution?
Environmental	E1: Minimize local impact	E1.1: is there a positive impact on the efficiency and effectiveness of plant operations?
	E2: Minimize global impact	E2.1: is the chemical use less than the mean of the alternatives?
	E3: Resource Recovery	E3.1: will the alternative help achieve resource recovery?
Treatment	T1: Maximize treatment reliability	T1.1: proven and reliable technology?
	T2: Manageable process complexity	T2.1: is the operation man hours estimate less than the mean of the alternatives?
	T3: Flexibility to meet future regulatory requirements	T3.1: will the alternative meet future regulatory requirements with minimal additional capital investment?

Wastewater Treatment Plant Study

WWTP Study Presentation to Council

on

September 15, 2022