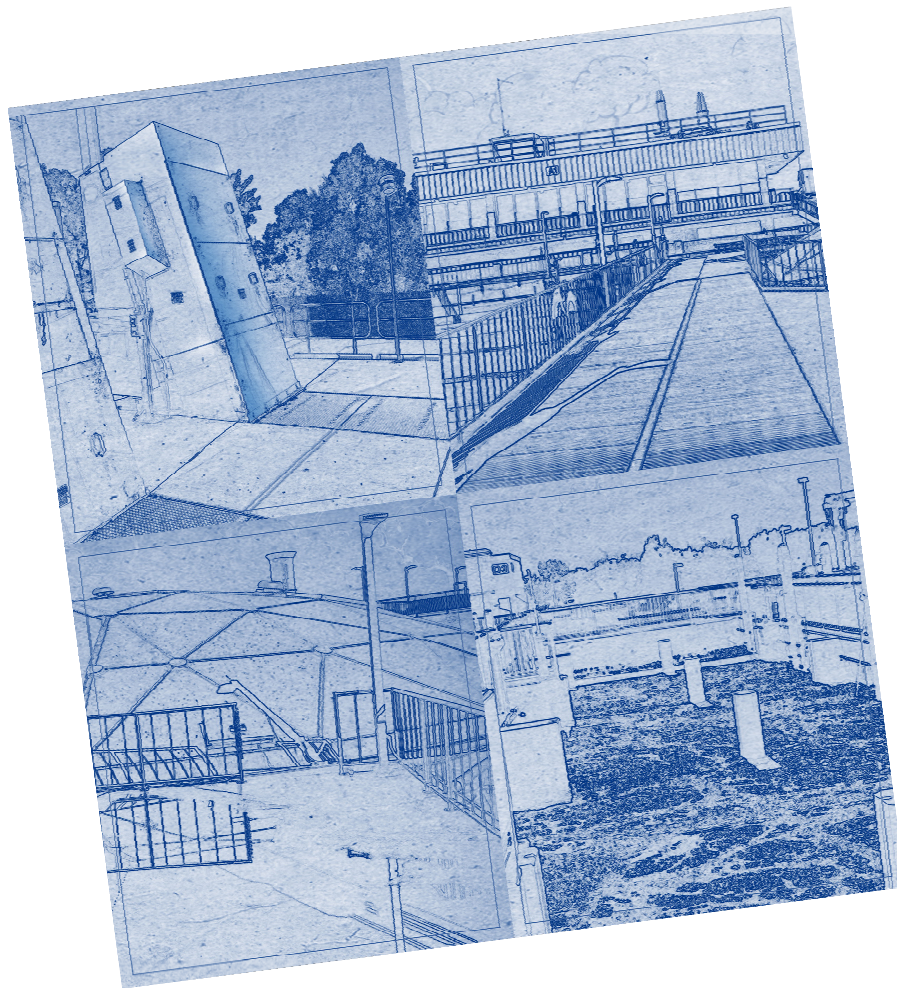




Wastewater Treatment Plant Master Plan

Board Presentation No.5

October 6, 2021



We will Focus on the Results from Two Areas Today



Condition Assessment

Prioritize near, intermediate, and long-term needs.



Wastewater Process Optimization

Meet regulatory requirements in a financially sustainable manner.

Provide Near-term solutions that allow flexibility for long-term objectives.



Energy Management

Drive towards energy self-sufficiency.

Position District to best implement and manage conservation practices and increase efficiency.



Recycled Water & Potable Reuse

Improve level of service throughout facility.

Position District to navigate changes in recycled water and evolving regulations/permitting.



Biosolids Management

Provide flexibility to navigate emerging biosolids markets.

Position district to best implement and manage practices.



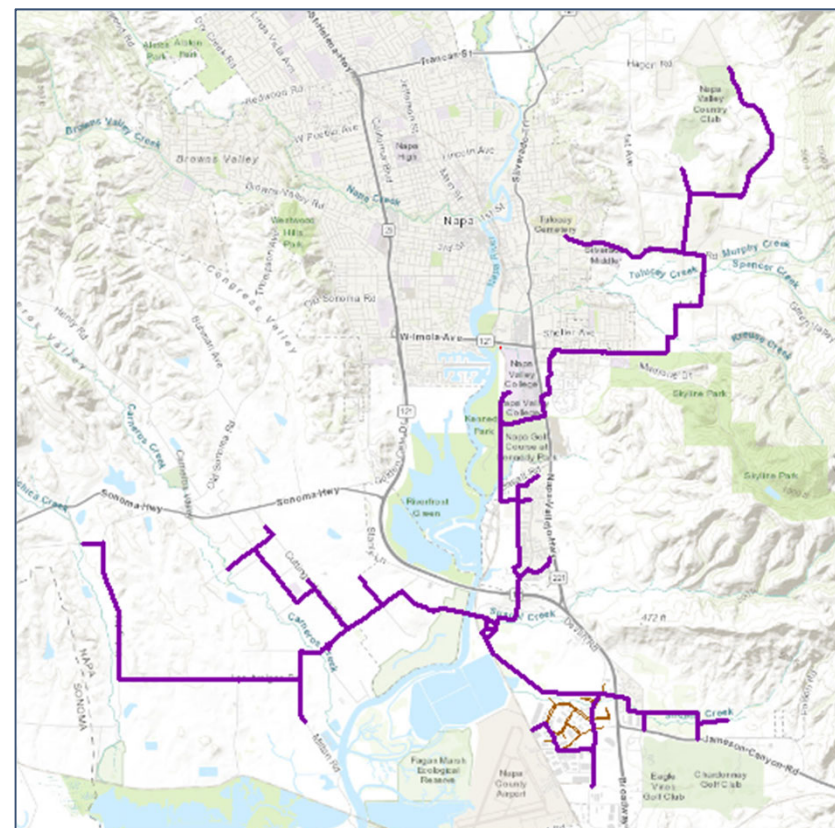
CIP & Plan Development

Utilize trigger-based solutions and tools that best leverages existing infrastructures and minimizes impacts to rate payers.

Recycled Water Allocation

Recycled Water Allocation

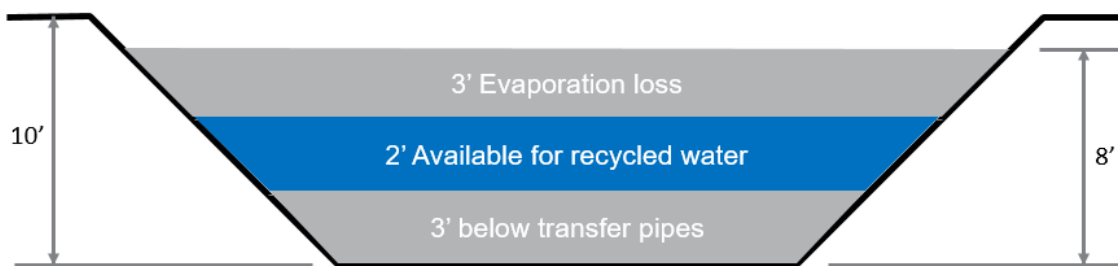
- Summer allocation season: May 1 – Oct. 31
- Current summer allocation: 3,700 AF (established in 2011)
 - Based on WWTP influent flow from May 1 – Oct. 31 (2011 master plan)



Recycled Water Allocation

- The summer allocation needs to be updated due to:
 - Changes in WWTP influent flows
 - New NPDES permit (ability to operate the ponds differently)
- The current allocation doesn't account for water conservation(↓) or pond contributions (↑)

- Area of Ponds 2, 3, and 4: 230 acre-feet (Pond 1 remains full to provide treatment)
- $(230 \text{ AF}) \times (2' \text{ depth}) = 460 \text{ acre-feet available for recycled water}$



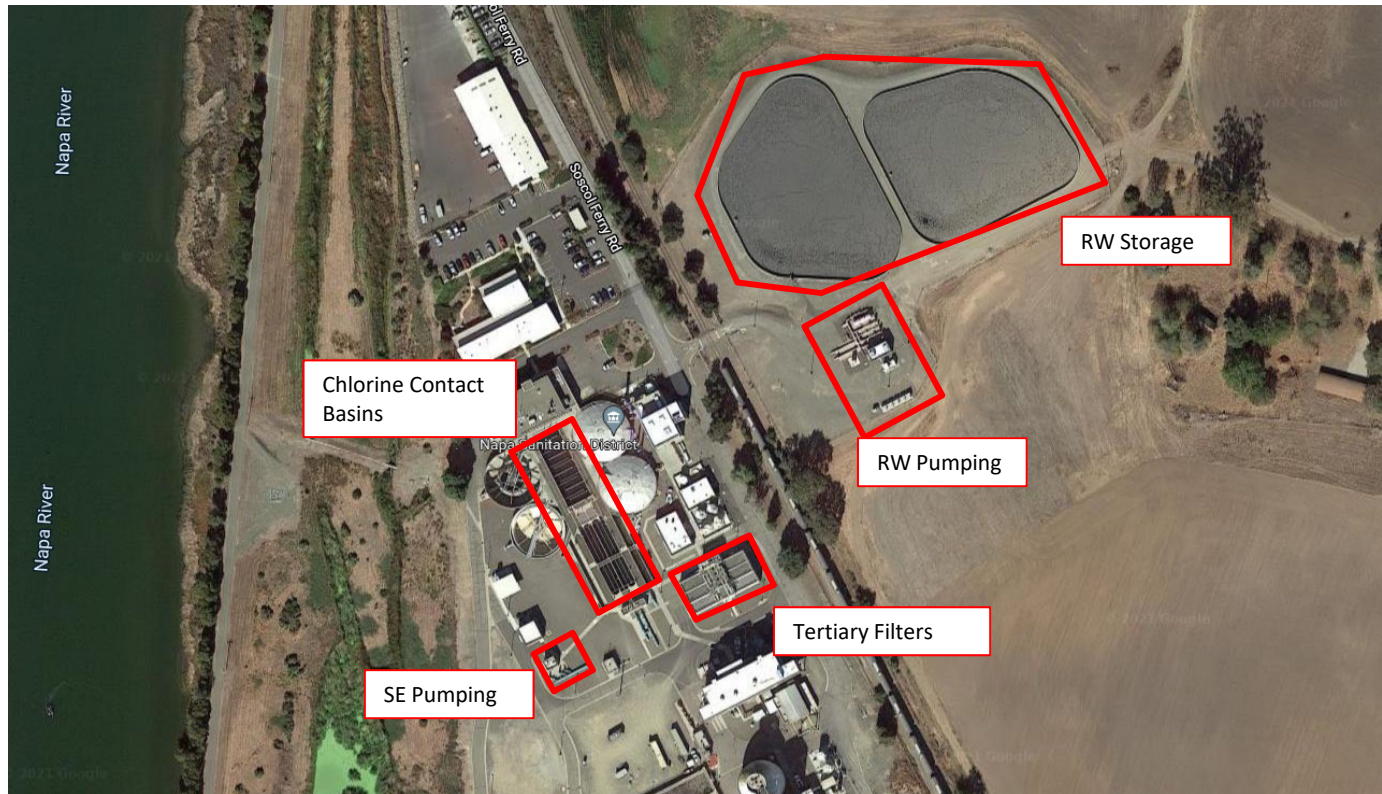
Recycled Water Allocation

- The master plan will study the range of allocation alternatives for the Board to consider
 - Consider wet years vs. dry years
- A new allocation policy will be discussed at an upcoming Board meeting (Spring 2022)



Recycled Water Treatment Upgrades

Recycled Water Treatment and Pump Station Components



Future Treatment Upgrades

- Existing infrastructure meets the current needs
- The master plan will identify projects to meet future demands and provide increased reliability
- Projects may include:
 - Soscot RW Pump Station – Additional capacity may be needed once demand reaches a certain level (approx. 2030+)
 - RW Storage – Increased reliability during peak demand
 - Secondary Effluent Pump Station – Potential to add 4th pump for redundancy



Potable Reuse

Potable Reuse and the Master Plan

- The master plan will evaluate:
 - The amount of water available for potable reuse
 - Where to construct the advanced treatment facilities
- Potable reuse discussions are occurring at the local and State level.
- The first phase of the local discussion is occurring as part of the Drought Contingency Plan.



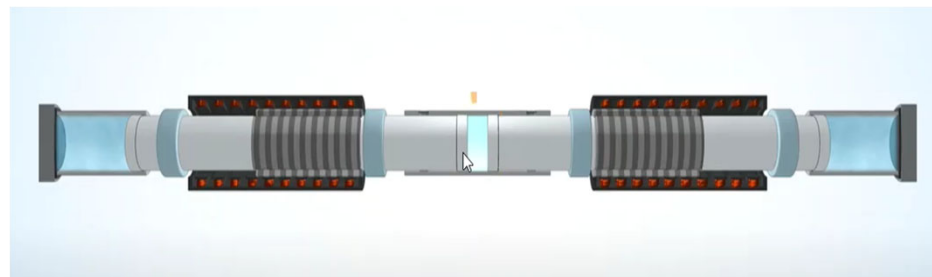
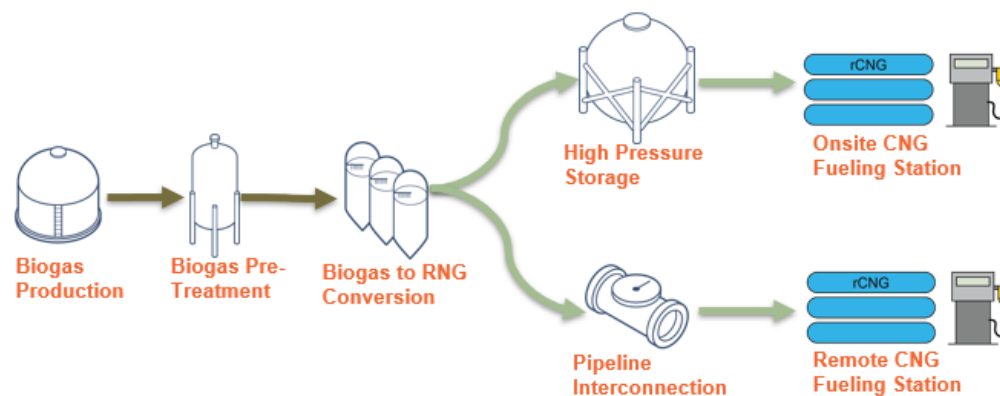
Energy Update

Linear Generator Analysis

- The master plan studied many alternatives

1. The existing cogeneration engine
2. Existing engine + Linear Generator
3. Linear Generator Only
4. New, larger cogeneration engine
5. Renewable Natural Gas (RNG) options

- Under the appropriate agreement terms, the analysis still supports the linear generator
- The master plan will continue to evaluate NapaSan's energy portfolio



Questions?