

## **Planning for the Future: SJW Infrastructure Improvements**

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#### WEBINAR AGENDA



#### WHERE YOUR DOLLAR GOES IN 2025



SAN JOSE WATER



#### 2,400 miles of pipelines

**340** booster pumps and motors

90 wells

**105** tanks and reservoirs

232,000 meters and service lines

20,000 fire hydrants

**\$11.6B** infrastructure replacement value





# Let's prioritize!

#### Asset Risk





Pipe Replacement Rankings



### **Probability of Failure**

Physical deterioration due to age or condition











### **Consequence of Failure**



How many customers are affected? What is the impact to public health? How long can asset be out of service?

What is the cost to restore service?

What is the environmental impact of chlorinated discharges?





### **Business Risk Exposure**

Prioritize tanks with high PoF and CoF



Additional Considerations





*Flexible joint for inlet/outlet pipe* 





#### As Needed Replacement Rate

As needed action result in waves of replacement





#### Sustainable Replacement Rate

Stabilize long-term risk and impact to water rates





### **Project Development**

#### **Alternatives Analysis**

Replace or retrofit?

System optimization

Comparison of alternatives

#### Deficiencies

- Structural
- Water age
- Sanitary









#### Leaking and cracks in lining



Tank #1 under construction

#### **Recommended Alternative**

- Replace over retrofit
- Two new 8-million gallon pre-stressed concrete tanks
- Consolidate storage
- New tanks raised to higher elevation for better pressures



#### **Capital Improvement Program**

Assets  $\rightarrow$  Projects  $\rightarrow$  General Rate Case Budgets





Project Prioritization Regulatory Directives Permits and Constructability Budgetary Constraints



## Let's size infrastructure!

### **Future Population**

• 2025 UWMP update (expected summer 2026) with revised projections out to 2050

SJW Service Area Population Estimates					
2020	2025	2030	2035	2040	2045
997,817	1,069,633	1,127,593	1,191,337	1,261,145	1,335,044



ASSOCIATION OF BAY AREA GOVERNMENTS METROPOLITAN TRANSPORTATION

COMMISSION







2020 Urban Water Management Plan



#### **Future Demand**

- Population growth and conservation over time
- Rebound in demands yet to be seen
- Upcoming 2025 UWMP update





Goal is **redundancy** and **reliability** 



Handle daily fluctuation in demands

Buffer for emergency response

**Residential**: Typically 1,500 gpm for 2 hours **Commercial/Industrial**: Typically 2,000 gpm for 2 hours to 3,500 gpm for 3 hours

(can be lower or higher based on fire dept reqs)

gpm = gallons per minute







Pressure Zone

Sizing assumes firm capacity, ability to meet demands with largest input out of service

Input

Input



Tank fills during off-peak energy









### Water Main Sizing

Pipelines sized for maximum flow and to minimize head loss

- For fire flows, minimum 20 psi pressure from hydrant
- Otherwise, rule of thumb is **maximum 5 ft per second** velocity



Calibrated hydraulic model used to size pipelines





21.5

> 18.5 18

## **Green Energy Initiatives**

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Solar systems

Battery pack



Hydroturbines

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#### **Pump Optimization**



Power & vibration monitors



Pump optimization system



## **Questions?**