

Facilities Overview and Update on Regional Capital Improvement Program

Steven Delight, PE, DSRSD
Engineering Services Director
Pleasanton/DSRSD Liaison Meeting
March 20, 2023



**Dublin San Ramon
Services District**
Water, wastewater, recycled water

Then and Now



Incoming Collections System Mains



Dublin/San Ramon Line



Pleasanton Lines

- *East Amador*
- *Highland Oaks*
- *Sewer line 6*
- *Sewer line 8*



Regional Wastewater Treatment Facility



Biosolids Treatment



Thickener



Facultative Lagoons

Dedicated Land Disposal Area

STONERIDGE DRIVE

Construction Projects

Past - Present - Future

Digester #4



Digester #4



Foul Air Line Replacement



Primary Sedimentation Upgrade



Primary Sedimentation Upgrade



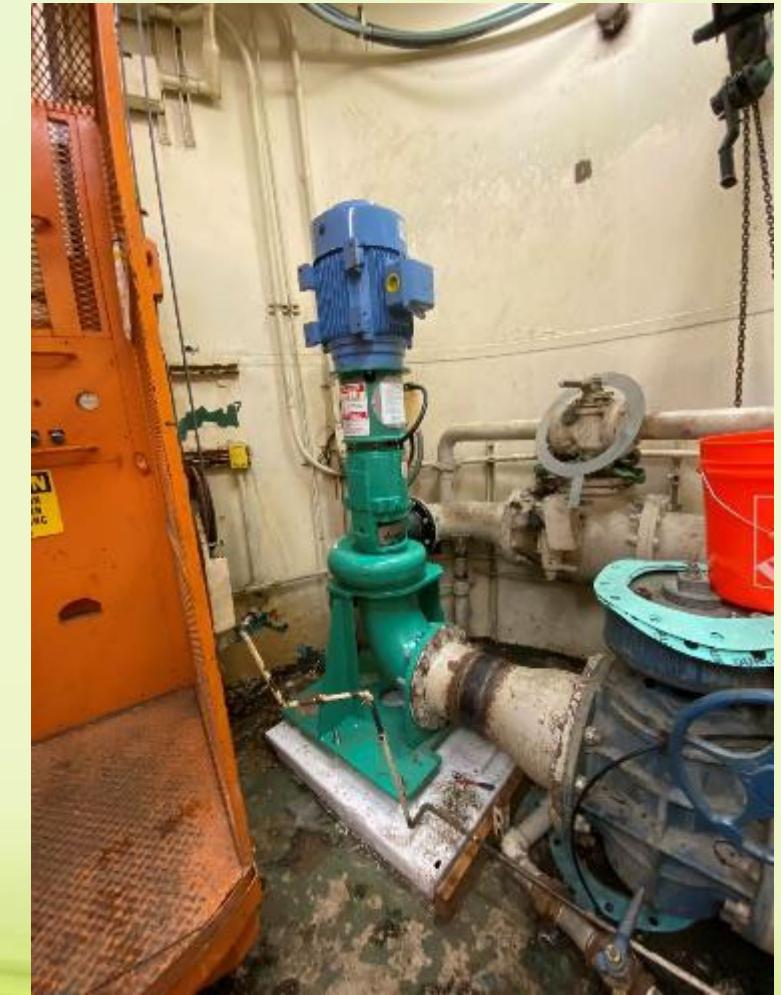
Construction Projects

Past - Present - Future

Alum Addition



EALS Upgrades



Flare Replacement



Biogas Skid Upgrade



Hypochlorite Building Replacement



SCADA Upgrade



Energy Master Plan

Goal: Develop a long-term strategy to ensure greater energy efficiency and reliability for the District



**STRATEGIC
PLAN**
FYE 2022 - 2026
Updated April 2021

STRATEGIC GOALS AND ACTION ITEMS

Maintain our financial stability and sustainability

- Implement early preventative maintenance and rehabilitation measures to save on greater deferred costs long-term
- Strive to limit future utility rate increases to general inflation trends by responsibly managing District assets and costs
- Update the District's reserve policies

Make additional investment in information systems that provide a strong return on investment

- Expand the use of our electronic records management program
- Replace our finance, utility billing, human resources, and permitting software system by 2022
- Successfully transition to Microsoft 365 online environment
- Expand and enhance our Supervisory Control and Data Acquisition Systems (SCADA)
- Strengthen cybersecurity and network resiliency capabilities

Update our business practices and procedures

- Integrate our business enterprise systems (Geographic Information System, Computerized Maintenance and Management System, Laboratory Information Management System, SCADA, and Records Management System) to more effectively access and share data across the District
- Review and revise our Joint Powers Authority and other inter-agency agreements to address changing conditions
- Embrace a safety culture by updating the District's environmental health and safety programs
- Coordinate with neighboring agencies to provide more efficient and cost-effective services

Develop a fully integrated Asset Management Program to guide the District's business decisions

- Increase equipment inspections and document all corrective maintenance activities to improve scheduling of preventative maintenance and asset replacement
- Identify and assess the performance of critical assets in each business enterprise to prioritize capital projects
- Optimize efficient and effective use of capital replacement resources in the long term

Enhance the leadership, professional, and technical skills of the District's staff to meet the challenges of staffing transitions over the next five years

- Diversify and strengthen the skills of staff through multi-agency professional development programs, stretch assignments, and active employee engagement
- Develop a succession plan for key positions where feasible

Enhance our ability to respond to emergencies and maintain business continuity

- Complete and implement a comprehensive update of our Emergency Response Plan that builds an enduring emergency preparedness and response culture
- Create an inventory of emergency assets, equipment, and materials in stock
- Integrate ongoing emergency training into District operations and conduct District-wide Incident Command System exercises to assess and improve District capabilities
- Explore coordination of emergency planning with partner agencies and the cities we serve

Meet the objectives of the District's water supply policy by developing and implementing an integrated recycled and potable water program

- Pursue new supplies to meet long-term recycled water demands
- Work collaboratively with our Tri-Valley partners in the development of a more diversified and resilient water supply
- Build public awareness of long-term water supply challenges and opportunities

Develop a long-term strategy to ensure greater energy efficiency and reliability for the District

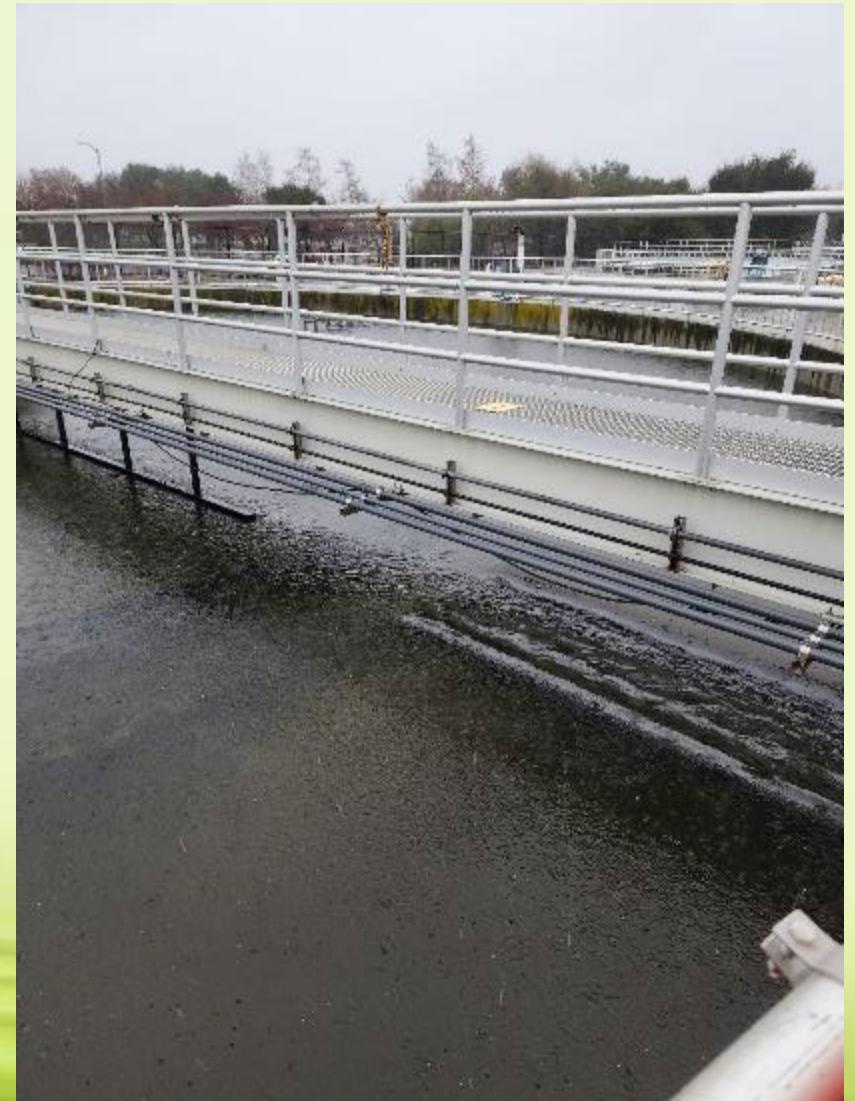
- Develop a District energy policy and District energy master plan that evaluates sustainable energy sources and a long-term fleet management program
- Develop phased targets for complying with State long-term greenhouse gas emissions mandates

Collaborate with partner agencies to monitor evolving regulatory requirements for constituents of emerging concern and explore potential compliance and mitigation strategies

Construction Projects

Past - Present - Future

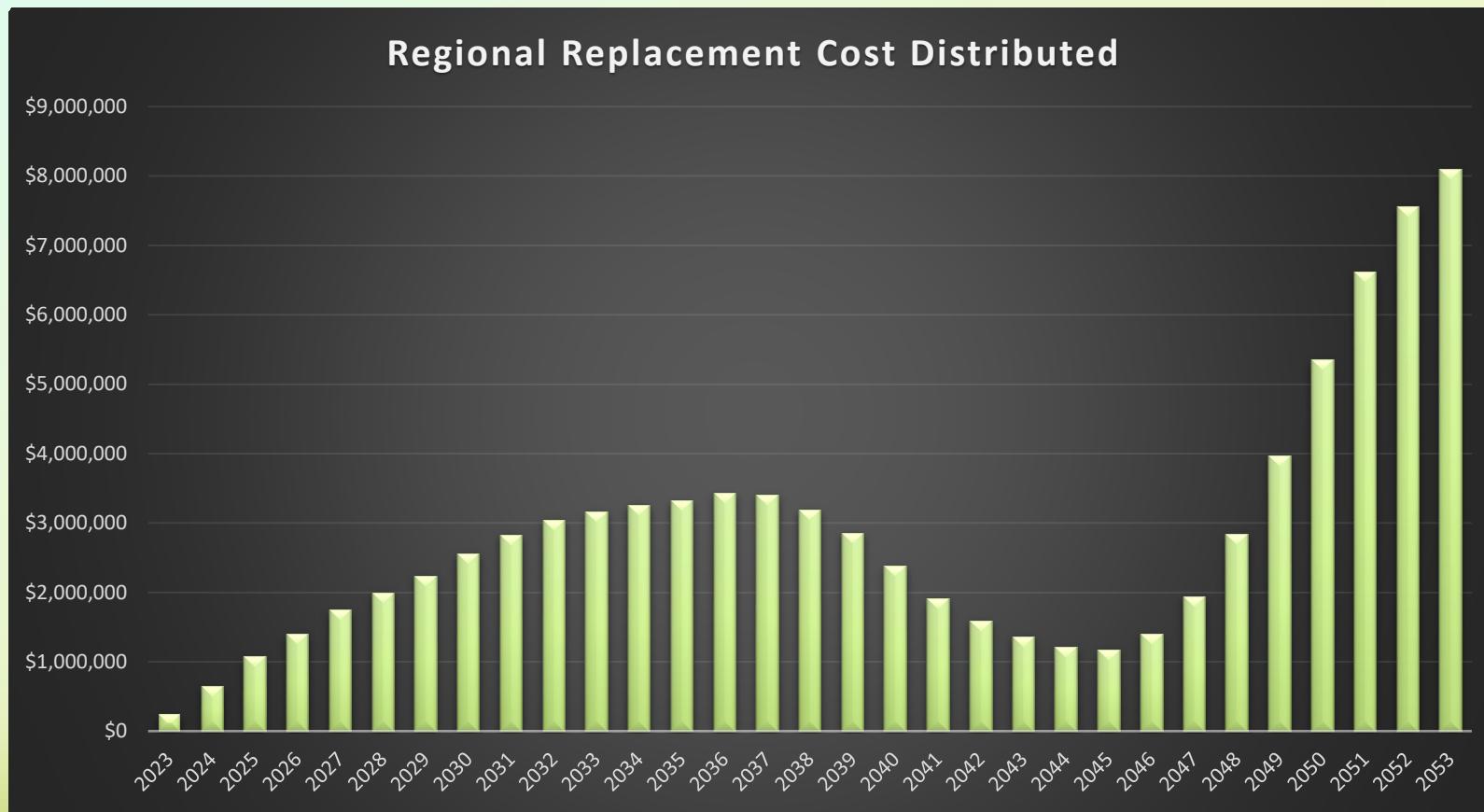
Wet Weather Flow Capacity



Fencing and Security



Replacement Model





Questions?

**Steven Delight, PE, DSRSD
Engineering Services Director**

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March 20, 2023**

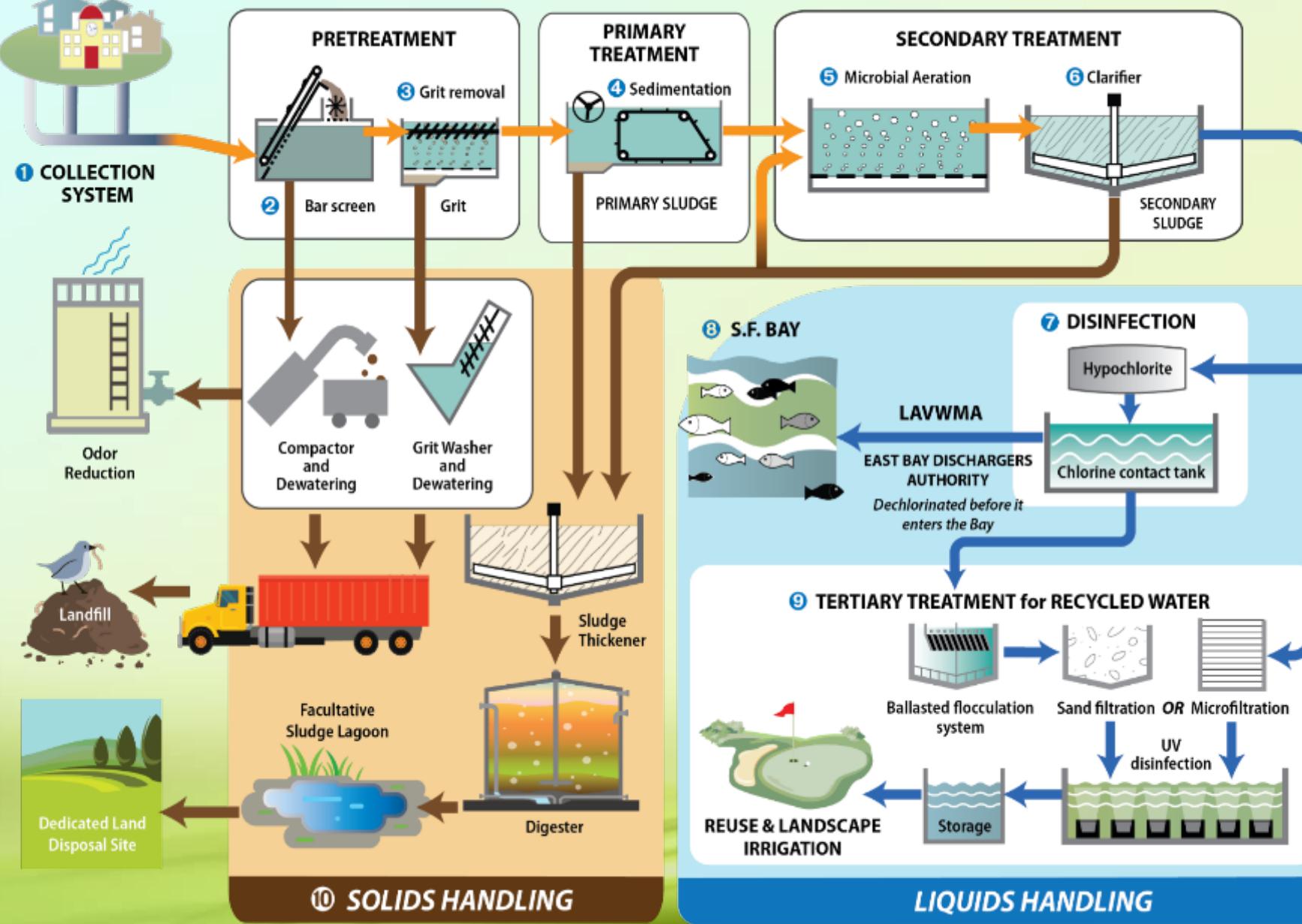
Digestion Capacity and Cleaning

- » 2018 – Added a fourth digester; increased biosolids treatment time from 24 days to 36 days
- » 2019 – Cleaned digesters #1 & 2
- » 2021 – Cleaned digester #3
- » 2023 – Will clean digester #4

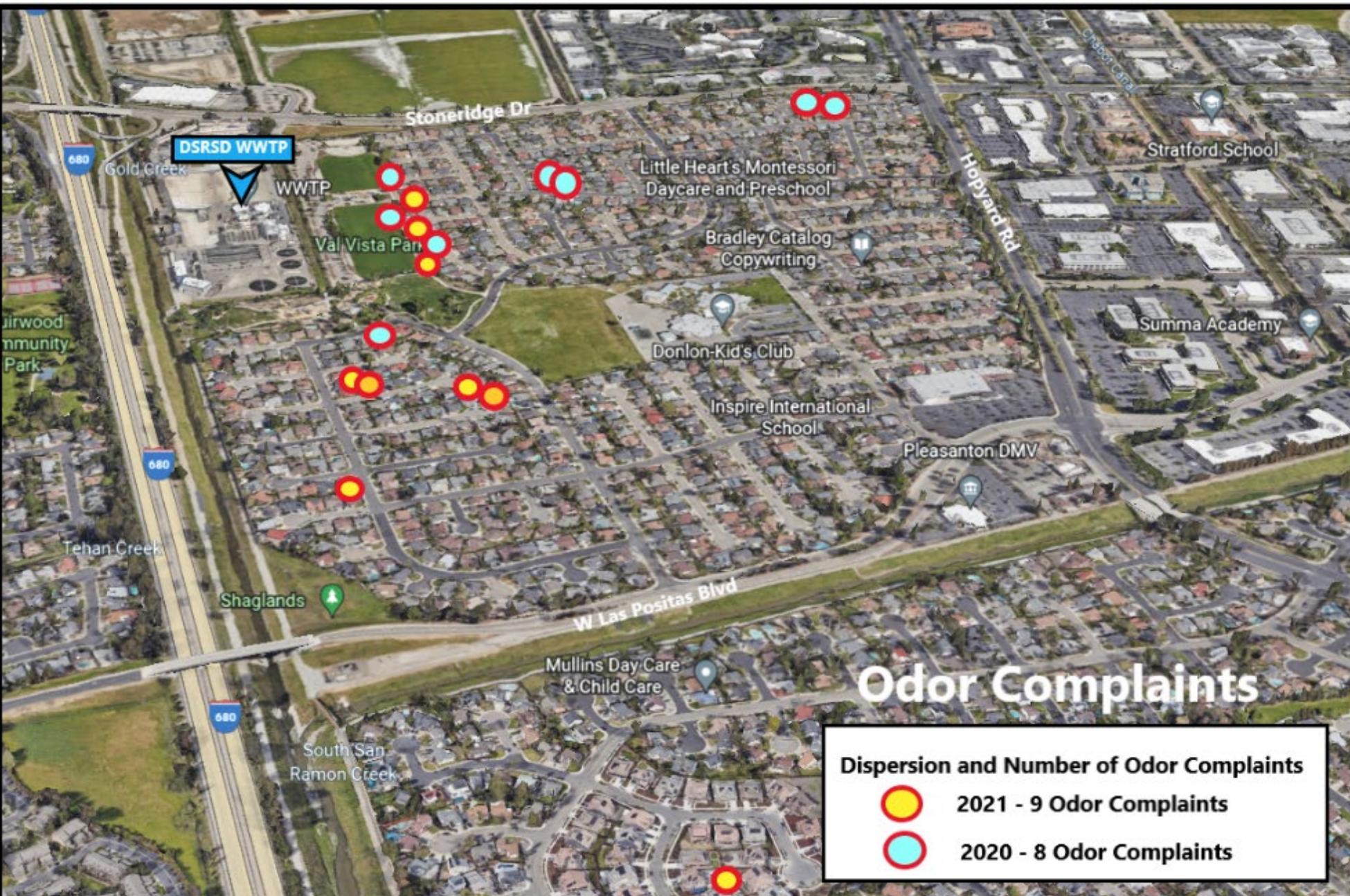


Homes and Businesses

REGIONAL WASTEWATER TREATMENT FACILITY



- » **Designed treatment capacity:** **17 million gallons/day**
- » **Current average daily wastewater flow:** **11 million gallons/day**
- » **Recycles ~50 % of wastewater annually (landscape -irrigation)**



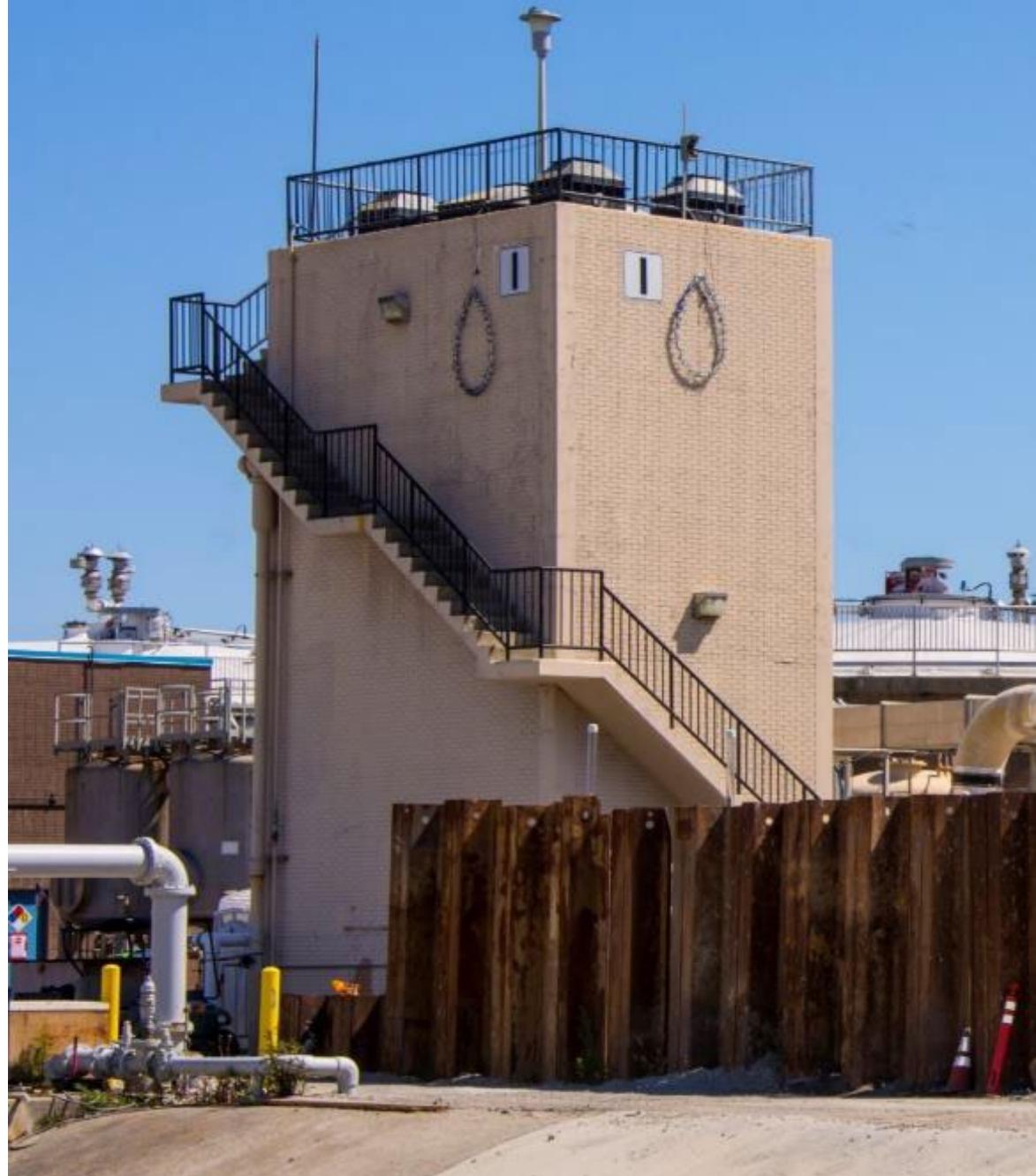
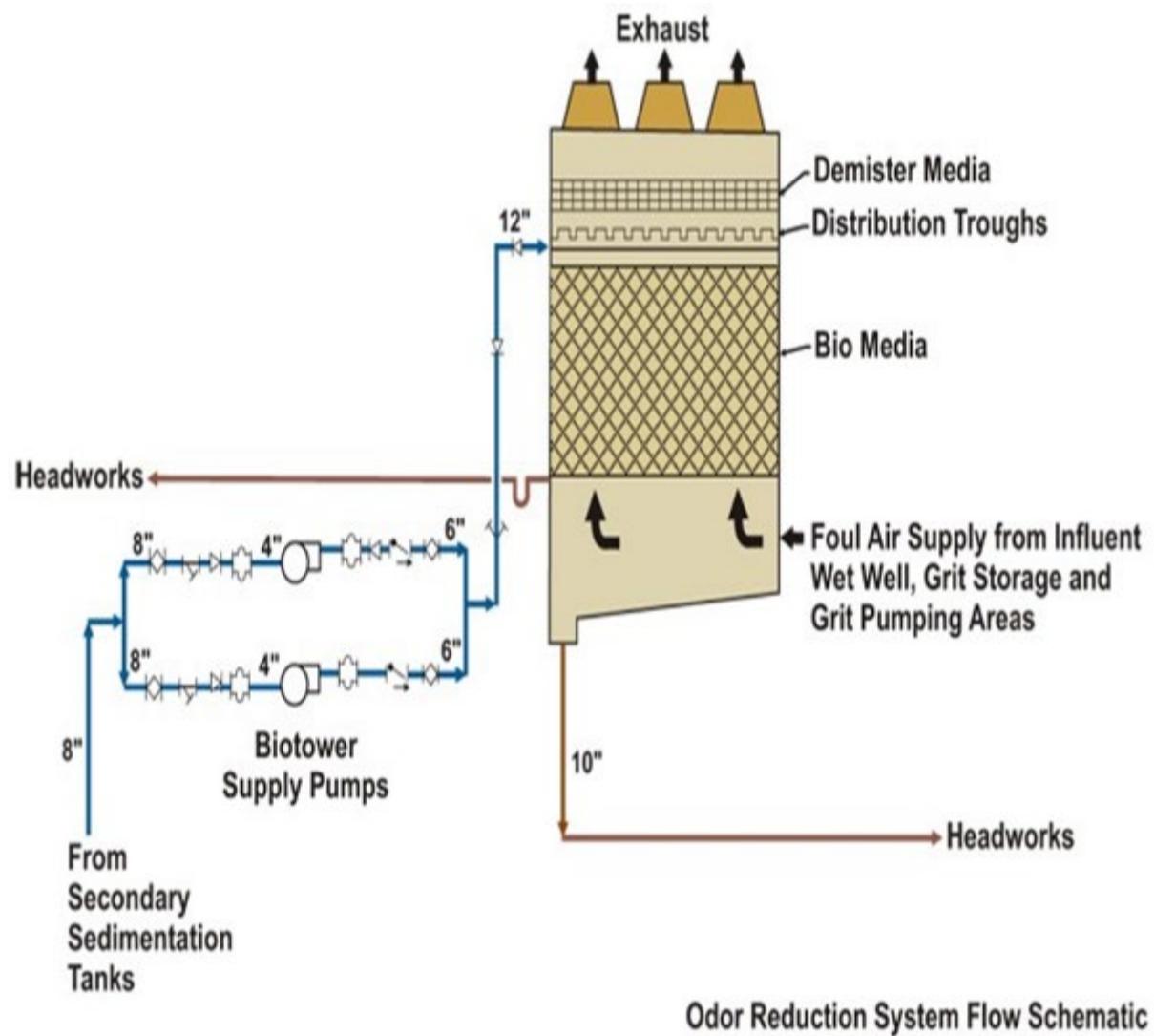
Dublin San Ramon Services District
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WWTP Dispersion and Number of Odor Complaints

Odor Control Facilities

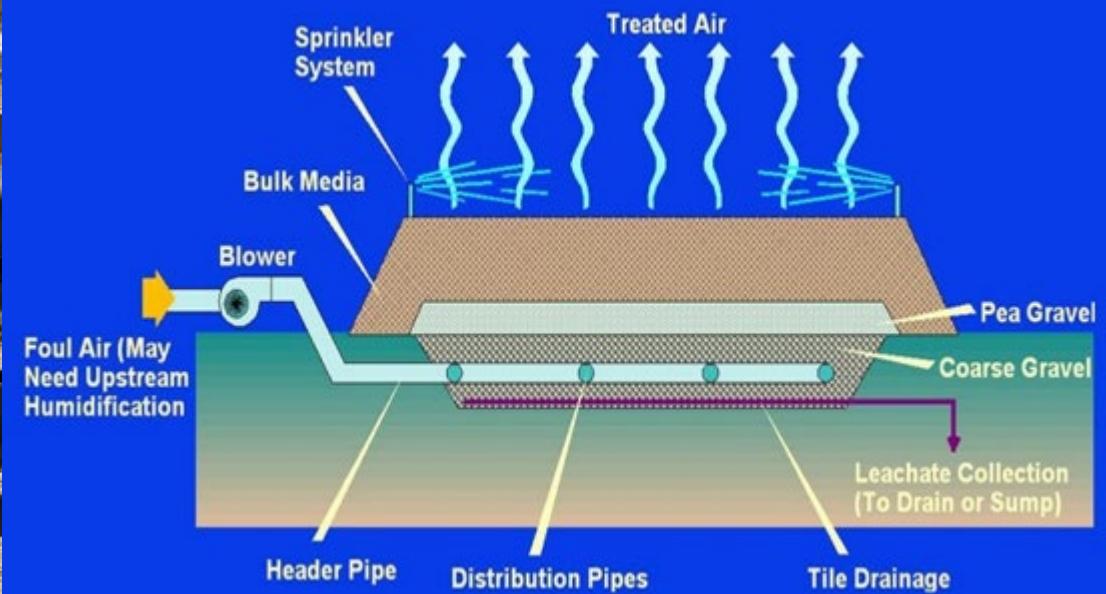


Odor Reduction Tower





Soil Bed Biofilters



Biosolids Harvesting



Scope of Phase 1 and 2

Phase 1

State of the District Energy Baseline



Benchmarking	Visioning &, Opportunities Assessment	Board Meeting No.1 Guiding Principles	Alternatives and Cost Evaluation	Board Meeting No.2 Policy Development	Master Plan Report with Specific Energy Policy	Develop Energy Capital Improvements Plan	Board Meeting No.3 Approve Energy CIP
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Feb Mar Apr May Jun Jul Aug Sep Oct

2022

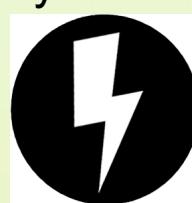
2023

Types of “Energy”

Energy Demands

Thermal
(Natural
Gas)

Fuel



Electricity



Heat
Recovery



Energy Production

Renewables



Biogas



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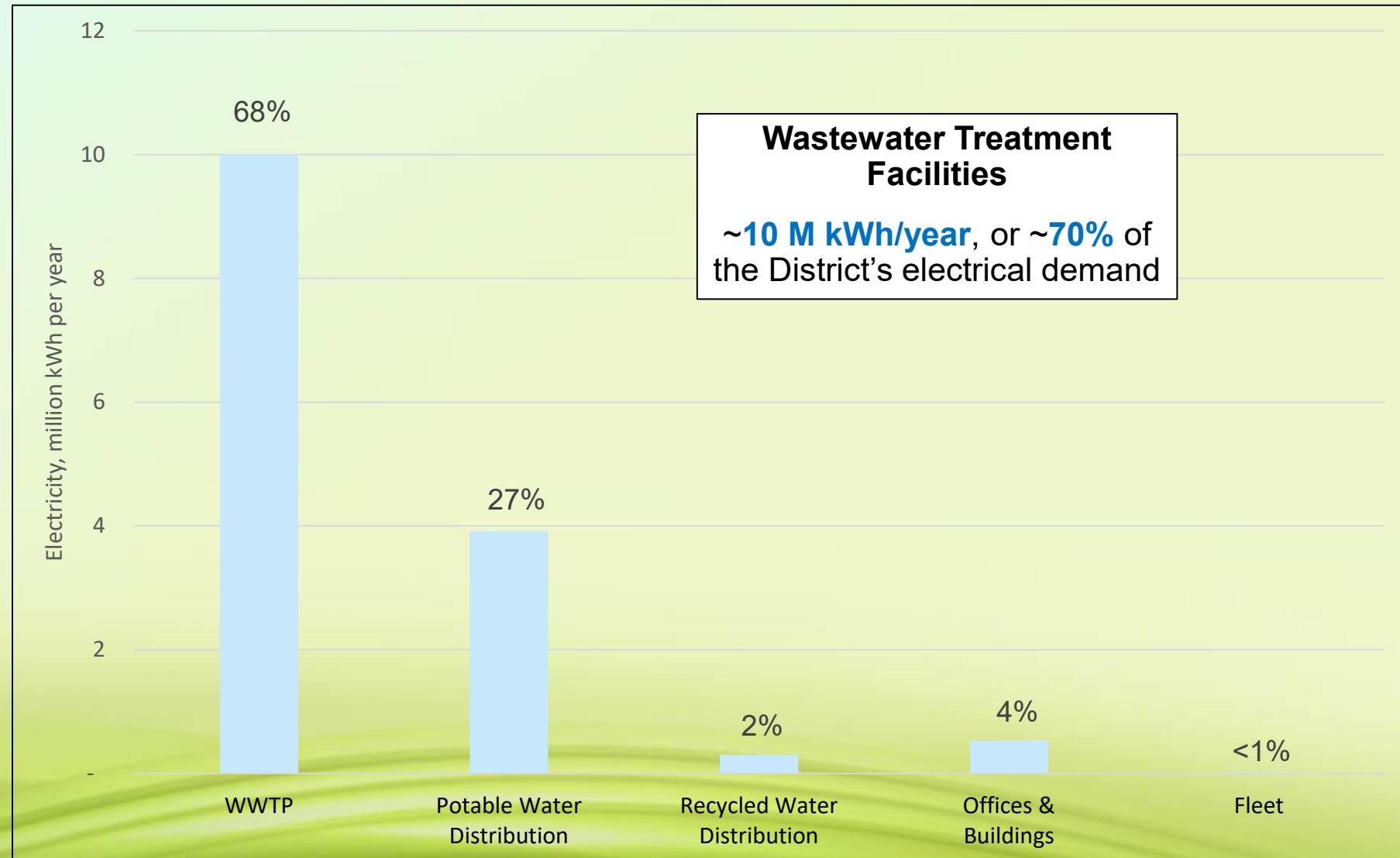
Electrical Energy Demand



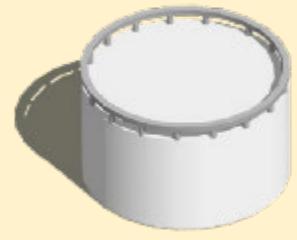
Total
Electrical
Demand:
~15 M kWh/year



~2,500 Homes



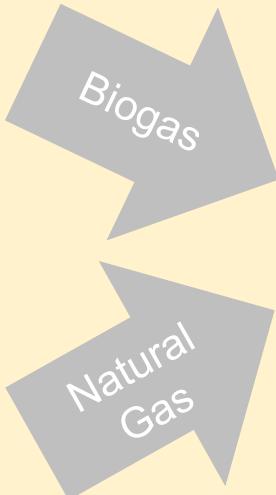
Energy Generation and Heat Recovery through Cogeneration



Anaerobic
Digester

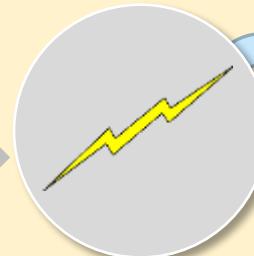


Pacific Gas
and Electric



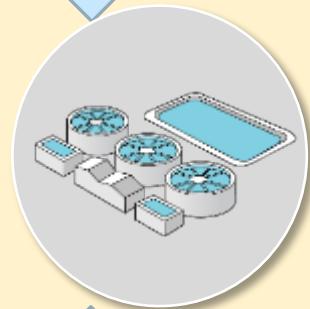
Cogeneration

Electricity



~ 9.5 M kWh/yr

Energy
recovery
for WWTP
Operation



Heat Energy

$\sim 325,000$ therms/yr

Energy Production: 9,500,000 kWh/year

Heat Recovery: Provides nearly all the thermal energy requirements for the WWTP