Driving Sustainability – The Local Perspective
Mariana Chavez-Vazquez Deputy Director CIP
ESD City of San Jose
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Regional Wastewater Facility (RWF) Service Area

- Largest advanced wastewater facility on the West Coast
  - 167 MGD capacity
  - 2,600 acre site

- Regional Facility Serves
  - 1.4 million people
  - 17,000 businesses
  - across 8 cities & County areas

- Continually operating 24/7 since 1956
Plant History and Plant Master Plan

- 1956: Primary Treatment
- 1964: Secondary Treatment
- 1979: Tertiary / Advanced Treatment
- 1997: Biological Nutrient Removal / South Bay Water Recycling
- 2008: Plant Master Plan Planning and EIR
- 2013: Plant Master Plan Adopted
From Planning (PMP) to Execution (CIP)

1. Aging Infrastructure
2. Regulations
   - 2a. Discharge to Bay
   - 2b. Air Emissions
   - 2c. Biosolids Disposal or Reuse
3. Community Values
   - 3a. Odor Control
   - 3b. Achieving Sustainability
   - 3c. Diversify Plant Land Uses
4. Flows and Loads
5. Sea Level Rise

PMP Drivers - 2013

CIP Vision, Mission & Goals - 2015
RWF CIP – 2014 to Date

- Largest Capital Program in CSJ
- $2.1 Billion over 30 years
- The 2021-2025 adopted CIP includes $1.2 Billion in funding ($760 Million for construction)
- Both DBB and DB Projects
- Portfolio of Projects: Energy, Liquids, Biosolids and Facilities
Sustainability and Resilience Initiatives

- **ENERGY**
  - Emergency Diesel Generators (Completed 2017)
  - New Cogeneration Facility (Completed 2021)

- **BIOSOLIDS PROCESS AND MANAGEMENT**
  - Digester and Thickener Facilities Upgrade (Substantial Completion 2022)
  - New Dewatering Facility (DB Project to be commissioned 2025)
  - Biosolids Management Transition (On-going)

- **SEA LEVEL RISE AND FLOOD PROTECTION**
  - Coordination with USACE for future Shoreline Levee
  - Flood Protection (In Planning Phase)
Energy – Where did we start?

- Installed in 1962
- Heat used for Meso Digesters

Engine Blowers (8 units)

- Installed in 1984 and 1995 (8.4 MW)
- Engines from 1950s already out of service

I/C Engines (3 units)
Emergency Diesel Generator ($15M) – 2017

- 25,000 gallons Diesel Storage
- 12 MW installed Capacity (4 Units)
CHP Facility ($93M) - 2021

- 14MW Installed
- Fueled by Biogas and Natural Gas
- BAT, largest engine of this type in a WWTP
- Gas cleaning System – H2S and Siloxane
- All Heat for Thermo Digesters and Building Heating
Energy Independence, Reliability and Resilience

- **Solids from treatment process**
- **Sludge**
- **FOG Receiving Station**
- **Temperature Digesters (2021)**
- **Biogas (Gas increase, Higher CH₄ content)**
- **Natural Gas (PG&E)**
- **Landfill Gas (LG) from Newby Island**
- **Gas Cleaning**
- **Cogeneration Facility (2021) 14MW**
- **Heat**
- **Digested Sludge**
- **PG&E**
- **Solar Panels**
- **FoG**
- **Electricity**
- **RWF Power Grid**
- **Emergency Diesel Generation (2017) 12 MW**
Current and Future Biosolids Management

Current Practice: ~3,000 truck trips to transport 50k-60k wet tons of biosolids from drying beds for ADC to Newby Island Landfill (75%-80% dry)

Future Practice: ~5,000 truck trips to transport ~120k wet tons of biosolids from the Dewatering Facility for beneficial use (20%-25% dry)
Dewatering Facility – 2025 ($130M)

Cake Bins and Load out Bays

Dewatering Building (Centrifuges, Process Area, Operations and Maintenance staff areas)
All Biosolids to be Beneficially Reused

1. Beneficial Use
   - Composting
   - Land Application
   - Fertilizer Manufacturing
Biosolids Use Diversification

Thermophilic Digesters (2021)

Digested Sludge
More VSS destruction, less volume

Thermophilic Digesters (2025)

Dewatered Biosolids

P3

Land Application

Composting

Other Beneficial Use
Questions?

Longfin Smelt

Burrowing Owl