



East Bay Municipal Utility District

EBMUD: A Renewed Look at Revenues

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Presentation Overview

- 💧 Background
- 💧 Resource Recovery Program
- 💧 Other Revenue Enhancements
 - Laboratory Contract Services
 - Storm Water Inspections
 - Regional FOG Program
- 💧 Looking Forward

East Bay Municipal Utility District

- Regional water and wastewater public agency serving the east San Francisco Bay
- Drinking water system serves 1.3 million people
- Wastewater system serves 630,000 people



EBMUD's Wastewater Treatment Plant

- 💧 Secondary treatment for up to 170 MGD.
- 💧 Currently, treating 85 MGD.
- 💧 Significant excess capacity.

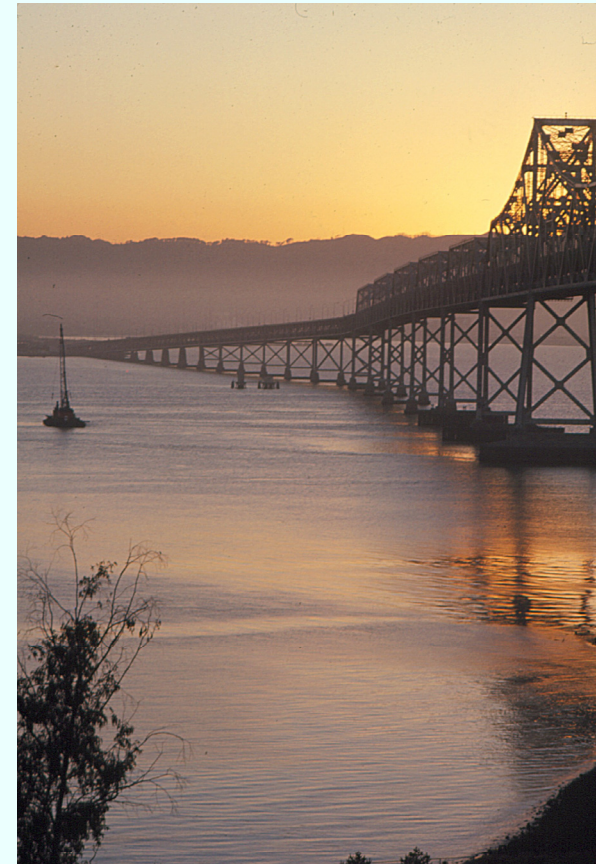


Excess Capacity

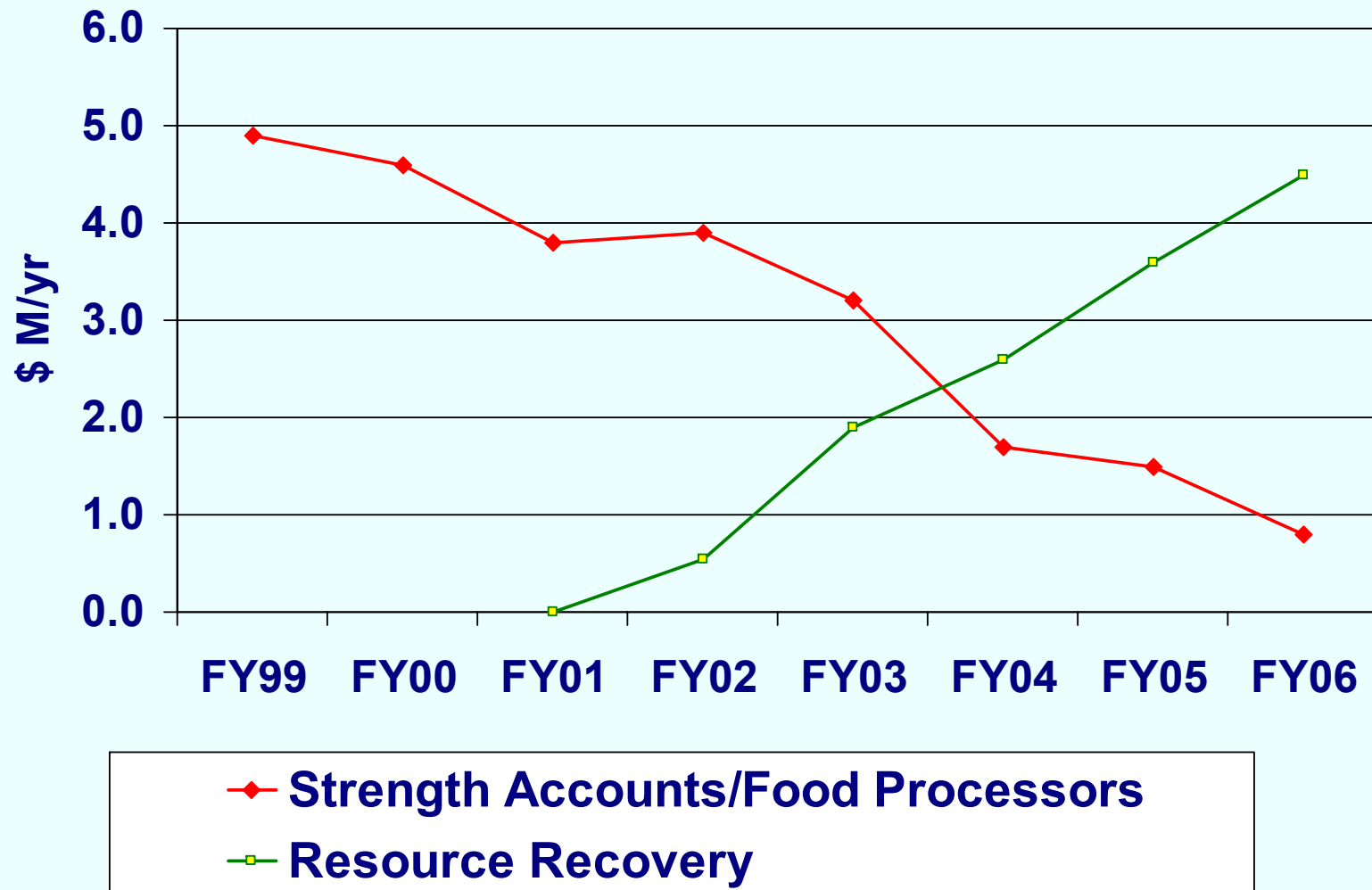
- 💧 In 1970s, EBMUD had 6 large food processors in service area
- 💧 Design for secondary expansion projected 6-8 additional food processors
- 💧 Subsequently, all major food processors have left the area to due to urbanization and high property value

Utilization of Excess Capacity

- In 2000, EBMUD had an intensive but ultimately unsuccessful effort to work with two neighboring communities to tie-in to EBMUD wastewater treatment system
- Resource Recovery was developed in 2001 to utilize this capacity by accepting trucked wastes
- While the initial plan was for acceptance of septage and fats, oil and grease (FOG) from restaurants, the program received a “jumpstart” via 30+ trucks/week of poultry blood



R2 Program Revenue Comparison



Status of R2 Program

- ◆ Accept deliveries 24-7, 365 days/year
- ◆ Two truck offloading stations
- ◆ Detailed acceptance, permitting and load-tracking software program
- ◆ Over 150 customers and 300 permitted waste streams
- ◆ Currently receive 2500-3000 trucks/month

R2 Acceptance of Liquid & Solid Wastes

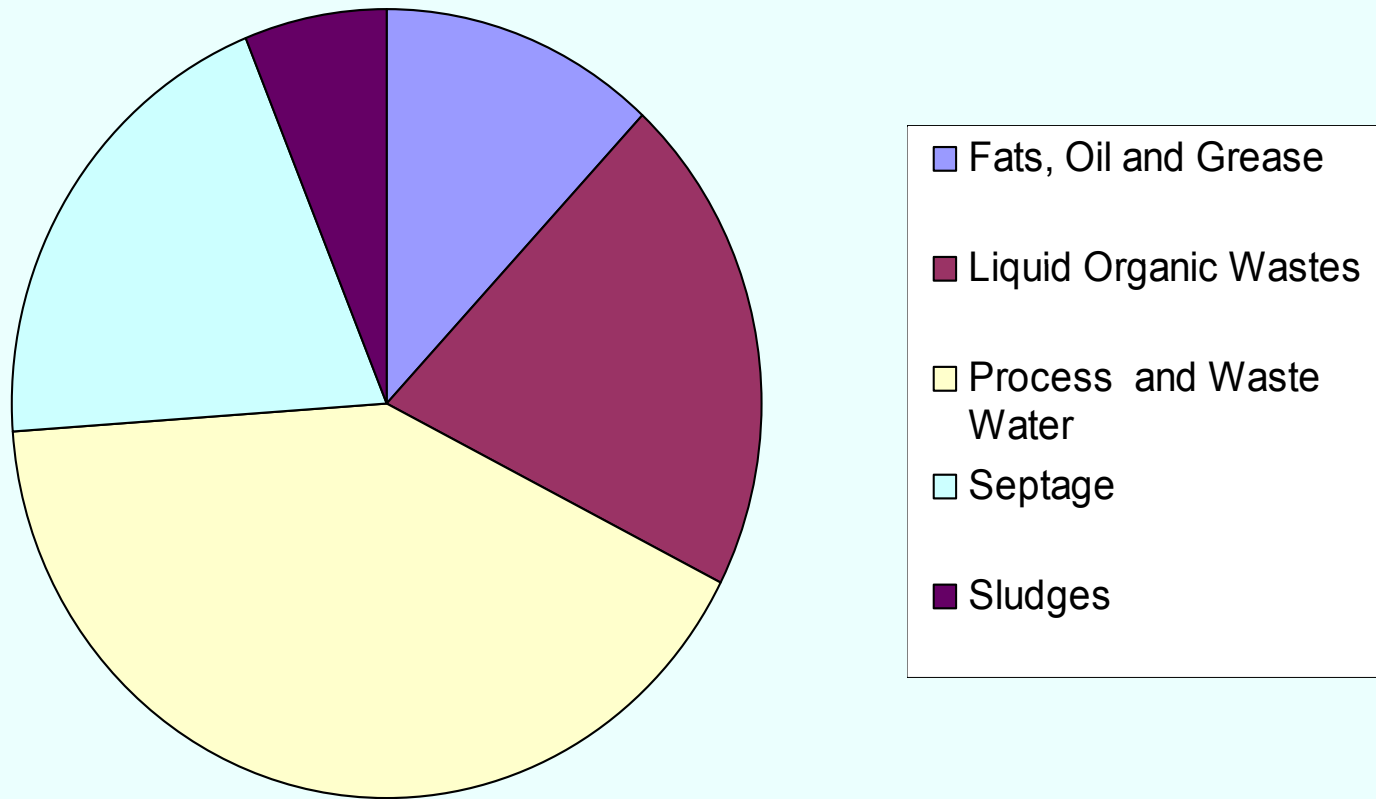
Liquid Receiving Station



High Strength Station

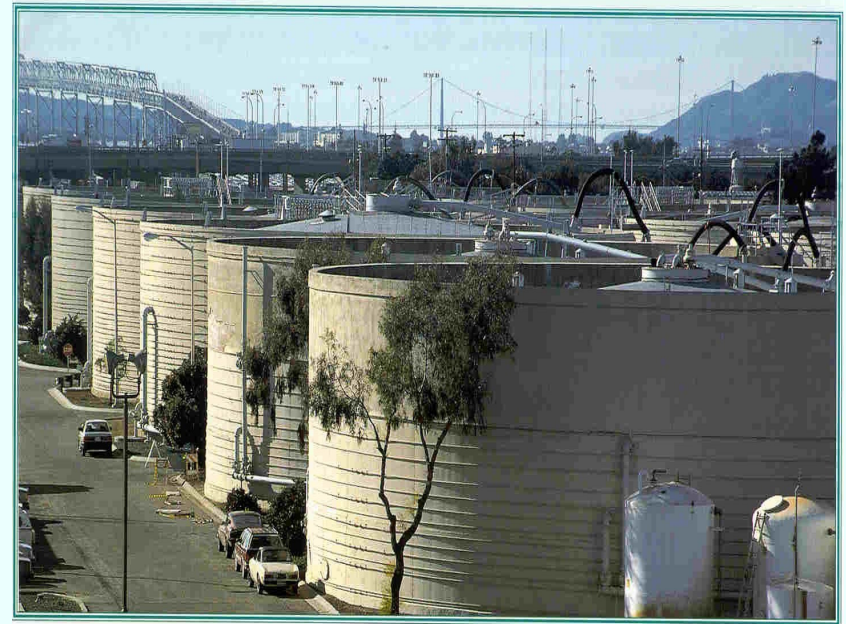


Materials Currently Processed

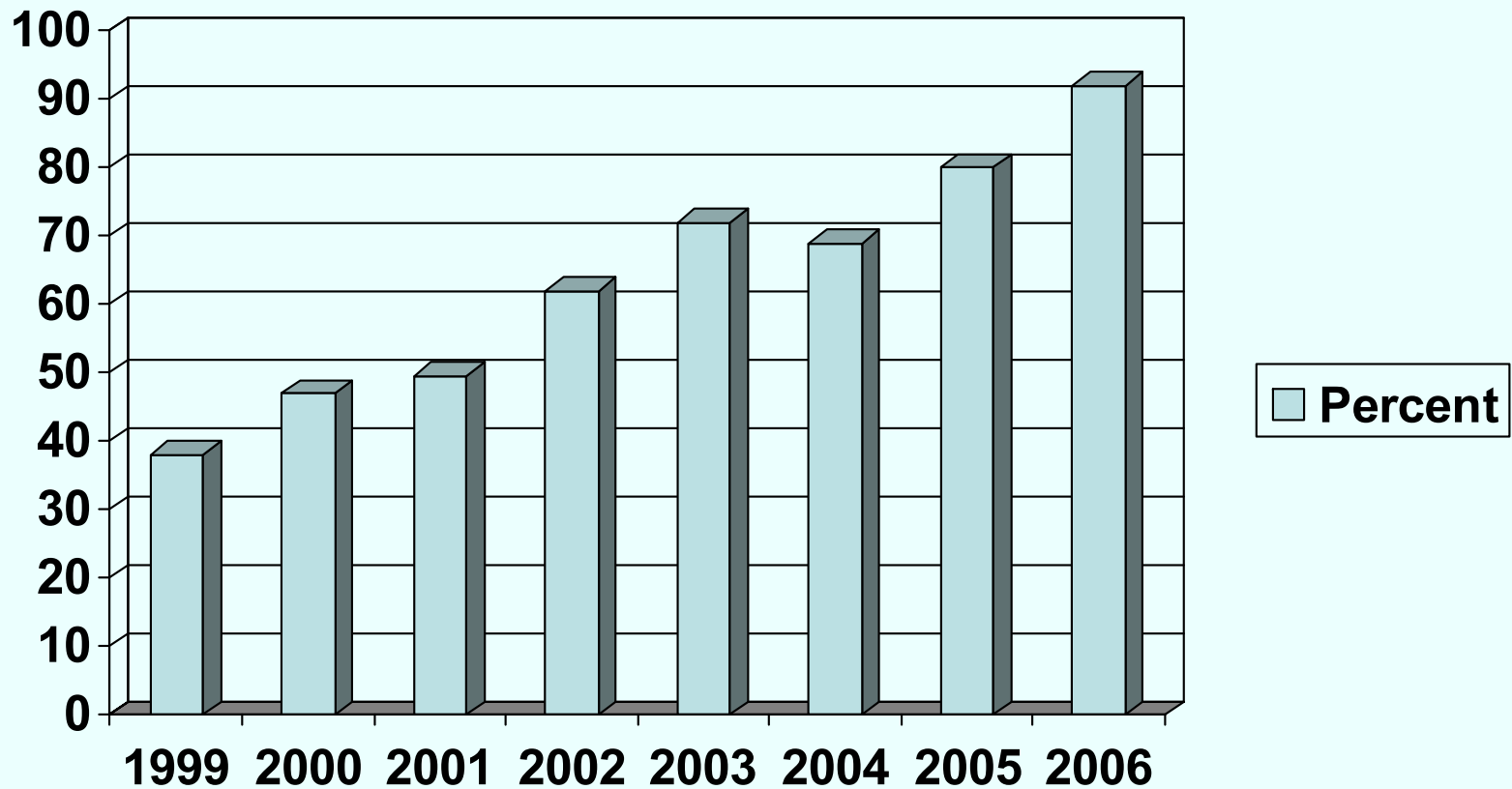


Resource Recovery Program Benefits

- Organic-rich wastes, such as food waste, added directly to digesters increase methane production
- Methane gas, a renewable form of green energy, fuels a 6-megawatt on-site power plant
- Diverts waste from landfills
- Revenue stream reduces the upward pressure on the community's wastewater rates while creating a net environmental benefit



Average Energy Production Since R2 Inception (% of plant demand)



R2 Food Waste Pilot

- 💧 Commercial food waste is collected, pre-sorted, and ground by hauler before delivery
- 💧 Pilot receives up to 1-2 loads/day (20-40 tons)
- 💧 Material is discharged into underground tanks, processed through a pulper, and anaerobically digested
- 💧 Food waste pilot started in 2004



Food Waste Delivery



Current Food Waste Direction

- 💧 Working towards permanent food waste handling/processing facility
- 💧 Increasing interest from local communities as landfill diversion and recycling goals are pursued
- 💧 Sustainable disposal option
 - Utilization of a regional POTW to manage locally-produced food waste
 - Tapping high energy content of food waste is “highest and best use” for material

R2 Program Challenges

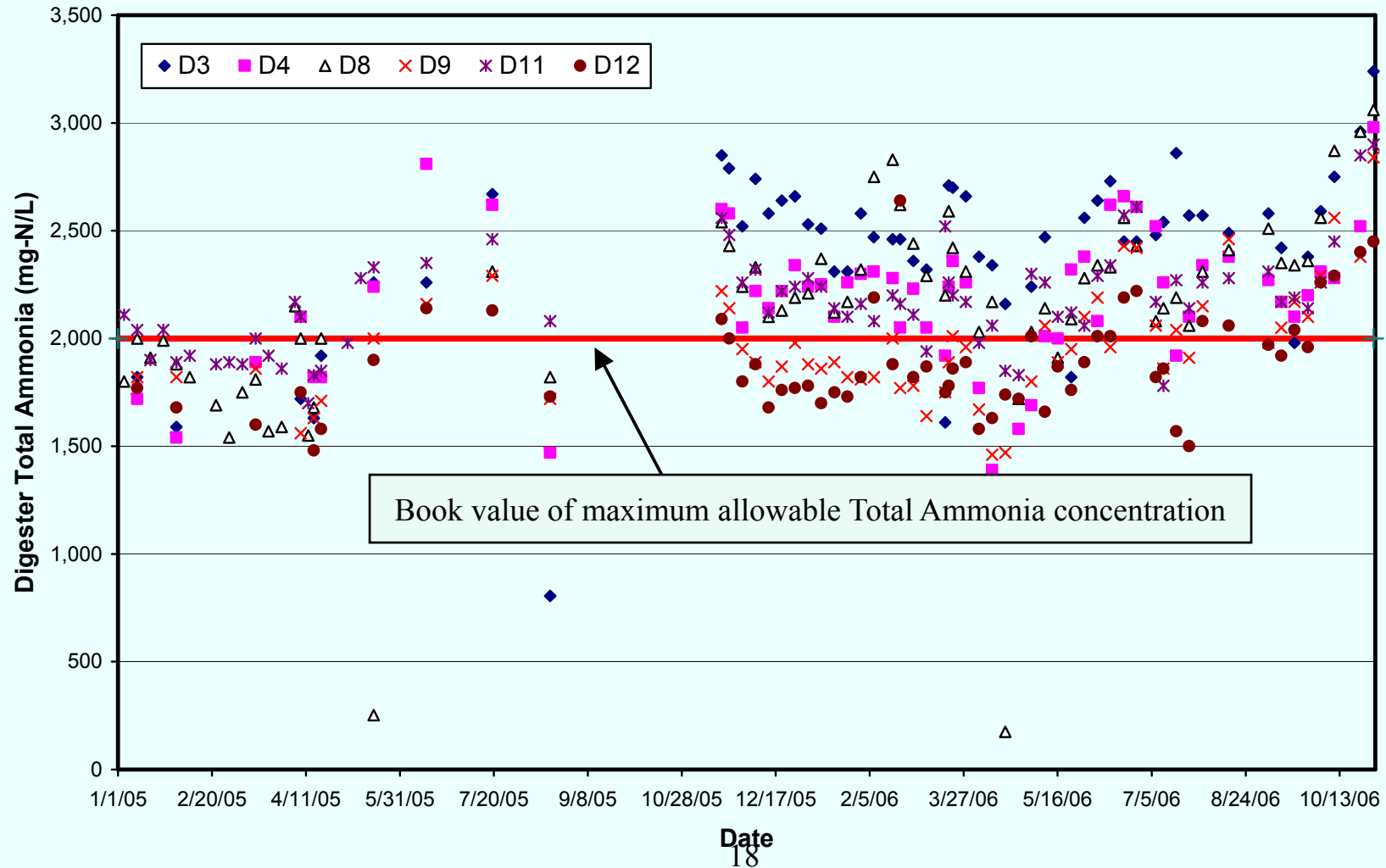
- 💧 Implementing a new program and new ways of working
- 💧 Operational Impacts
 - Plant traffic
 - FOG impacts
 - Digester chemistry – high ammonia
 - Nocardia
- 💧 Odors and Potential Community Concerns

FOG Operational Impacts



Finding New Ways to Operate

Digester Total Ammonia Concentration
January 2005 - November 2006



Building Upon Success – Next Steps

- 💧 Recipient of prestigious 2005 California 'Governor's Award for Environmental and Economic Leadership'
- 💧 Recipient of 2005 EPA award for Innovative Stewardship Activity



Building Upon Success – Next Steps

- 💧 FOG → Bio-Diesel Pilot
- 💧 Regional Food Waste Partnership
- 💧 Greenhouse gas credits
- 💧 On-site Waste Pretreatment
- 💧 Acceptance of pH Hazardous Waste



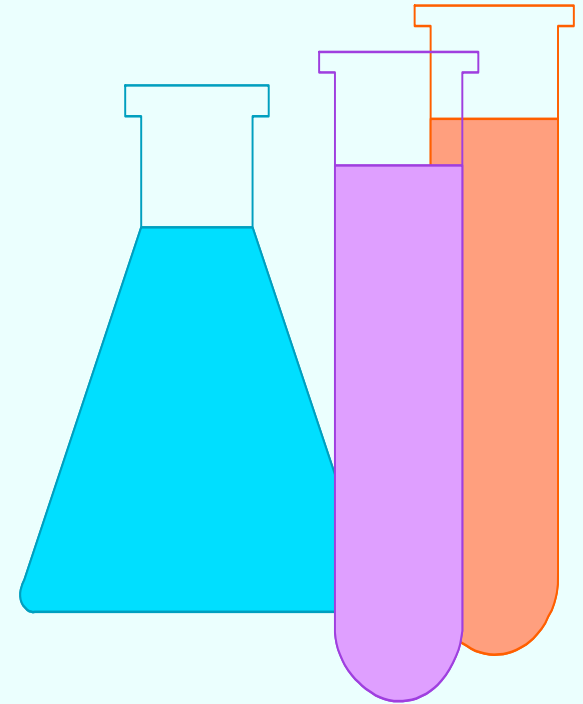
Other Revenue Enhancements

District offers services that take advantage of existing District resources and expertise:

- Lab contracting services
- Storm water inspection
- Regional FOG program

Laboratory Services

- 💧 Specialty Water and Wastewater analyses are available at a competitive cost
- 💧 Utilizes excess capacity available via batch analysis
- 💧 Customers include local and regional governmental and non-profit entities
- 💧 Receives 2,000 samples a month
- 💧 Generates \$500,000 revenue a year

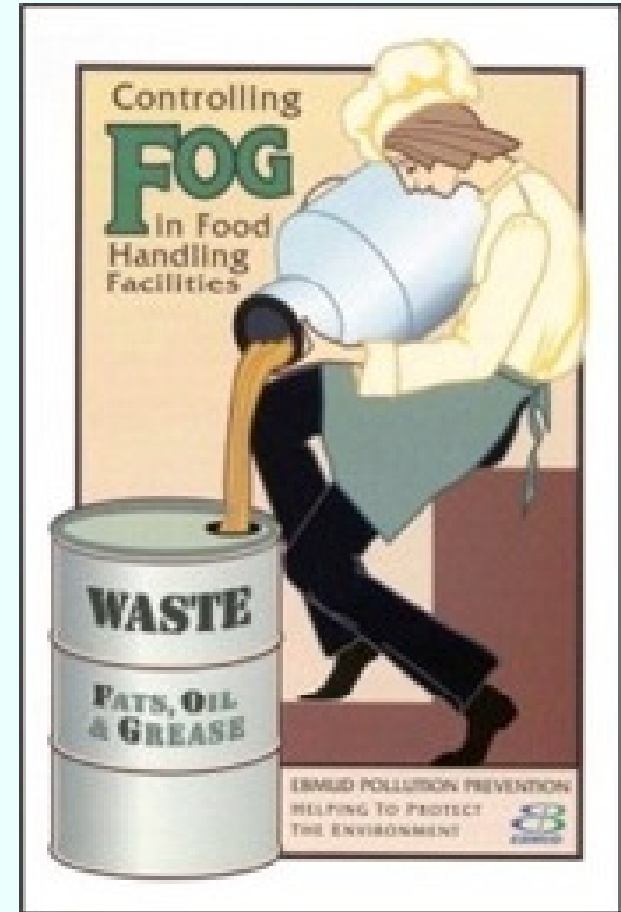


Stormwater Program Support

- Cities in EBMUD's service area are required to conduct stormwater inspections at industrial and commercial businesses
- EBMUD has trained source control inspectors conducting wastewater inspections at many of the same facilities
- A number of cities have concluded it is cost-effective to contract with EBMUD to conduct their stormwater inspections
- In FY07 District will have 4 cities under contract with additional cities interested

Fats, Oils, and Grease Control Program

- Regional FOG control program managed and implemented by EBMUD, funded by the satellite agencies
 - Program includes; permitting, inspection, overflow/blockage response and enforcement
- Program is a response to State and third-party focus on FOG-related sanitary sewer overflows
- In addition to funding initial program development, ongoing annual funding by satellite agencies is \$124,000



Summary

- District has been working to optimize use of the community's assets – both infrastructure and expertise
- Revenues and increased efficiencies have helped the District's bottom line while providing community and environmental benefits
- District will continue to develop new opportunities for Resource Recovery and additional services and partnerships