EBMUD Food Waste Initiative

EPA Sustainable Materials Management

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• Background
• Why Food Waste?
• Food Waste Pre-processing
• Regulatory Oversight
• Next Steps
EBMUD has excess digester capacity

- Plant originally designed to accept waste from 20 canneries in the service area
- Now there are zero canneries
- Capacity to treat 168 million gallons/day
- Average influent flow is 60 million gallons/day
Background: Power Production

Percent of Plant Power Demand Met by Onsite Generation

Calendar Year

Background: Changing Market Conditions

- Increasing energy prices
- Government subsidies/incentives for renewable energy initiatives
- Political focus on GHGs and Climate Change

Increased recognition from potential competitors of the energy value of organic wastes
Why Food Waste?

- High energy potential
- Represents a large percentage of solid waste stream to landfill
- Diversion from landfill through food waste digestion
- Digestion may be the highest and best use of food waste

1 truck/day will power 260 homes
Why Food Waste?

- One digester can process ~ 200 ton/day of food waste
- Digester gas to be converted into renewable energy
- 200 ton/day of food waste ≈ 2 MW of energy
EBMUD Food Waste Pilot History

- 2005: Begin to accept small amounts of food waste
- 2006: Reliable acceptance of 20 tons of food waste per week
- 2011: Contract signed with Recology
- 2014: Oakland votes to send commercial food waste to EBMUD
Benefits of Food Waste Digestion

- Local and sustainable digester feed stock
- A renewable energy source
  - High energy value: 1 truck/day (i.e. 20 tons/day) will power 260 homes
  - Potential renewable energy and greenhouse gas credit opportunities
- Supports state goals:
  - CARB / AB 32 - GHG emission reductions
  - CPUC and CEC - Renewable Portfolio Standard
  - CalRecycle – Zero Waste California
Food Waste Challenges

• Contaminants
  – Nature of contamination
  – Variability in control of the waste stream

• Processing technology still evolving

• Permitting
  – No existing regulations fit
  – Current best fit: Biosolids Composting at POTW
Food Waste Processing Schematic

- Food Waste
- Food Waste Pre-processing
- Slurry
- Digestion
- Digested Solids
- Dewatering
- Dewatered Solids Land Application or ADC
Pre-Processing System

- Near Term – 10 tons/day clean ground CCCSWA material; RFP process underway for large scale facility
- Long Term - larger scale pre-processing facility ~ 200 tons/day
- Pre-processing system will produce an organic food waste slurry material for digestion and dewatering
Segregation of Food Waste

- Value in segregation of food waste from municipal biosolids
  - Polymer use
  - Isolation of impacts
  - Re-use alternatives for remaining solids

- Near Term Co-Digested Biosolids Uses
  - 50% to land application
  - 50% to ADC
• Acceptance of new waste types has exposed EBMUD to regulatory oversight by new agencies—CA Dept. of Food and Agriculture (CDFA) for FOG wastes and CalRecycle/Local Enforcement Agency for food waste.

• EBMUD is working, along with others in the state, to address appropriate regulatory pathway.

• EBMUD operations are currently regulated under an existing NPDES program framework administered by the State Regional Water Boards.
The Future - Food Waste

- Commercial Food Waste
  - Bay Area generates approximately 1,700 tons/day
  - Sustainable, local, high methane value feed stock
  - Working to expand pilot with long-term (10+ year) contracts
  - Significant interest from local communities in regards to landfill diversion and renewable energy
  - Potential for greenhouse gas emission credits via destruction of methane gas (as compared to alternative)
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