

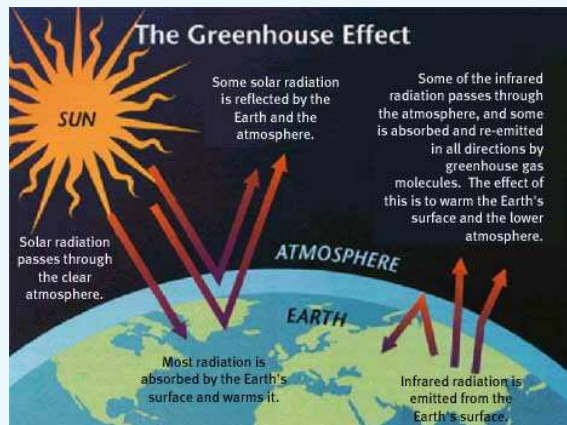


East Bay Municipal Utility District

One Agency's Perspective on Global Climate Change

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NACWA
A Clear Commitment to America's Waters



Presentation Outline

- 💧 **Background**
- 💧 **Key Challenges**
- 💧 **Water Quality Mandate Impacts**
- 💧 **EBMUD Efforts to Reduce GHGs**
 - Renewable Energy
 - Biodiesel
 - Recycled Water
- 💧 **Considerations for NACWA**
- 💧 **Potential Outcomes**
- 💧 **Role of Wastewater Community**



Background

- 💧 **Wastewater agencies contribute 0.5%* of direct greenhouse gas (GHGs) emissions, nationally**
- 💧 **EPA has indicated that development of strategies for GHG reduction is a priority**
- 💧 **Absent from the discussion, to date, is how mandated water quality improvements may contribute to GHG emissions**
- 💧 **California Global Warming Solutions Act of 2006**

***Source: Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2004 (April 2006) - USEPA #430-R-06-002**

California Global Warming Solutions Act of 2006 (AB 32)

💧 **Effective January 1, 2007**

💧 **Goals**

- **Mandatory GHG emissions reporting requirements**
- **Statewide GHG emissions limit (1990 levels)**
- **Market-based compliance mechanisms**

💧 **California Air Resources Board (CARB) is tasked with adopting regulations to meet these goals**



California Wastewater Climate Change Group (CWCCG)

Members

- Over 40 POTWs, BACWA, SCAP, CVCWA, Oregon ACWA

Current Efforts

- Provide unified industry approach and response
- Evaluate existing and develop new protocols
- Agency coordination

Future Efforts

- Estimate and report individual inventories
- Identify reduction measures
- Position POTWs to receive reduction credits

Key Challenges

How do we incorporate consideration of GHG concerns into the regulatory setting?

- 💧 **Clean Water Act (CWA)**
 - Does not consider economic impact for compliance determination - - never-mind climate change
 - No provision for multi-media considerations
- 💧 **Coordination within regulatory agencies (such as EPA Offices)**
- 💧 **Many NGOs focused on strict CWA citizen enforcement provisions**

Key Challenges

How do we use the policy arena to help address GHG concerns?

- 💧 **“Get in line”**
 - Diverse stakeholders from a number of industries are lining up to assert that their solution is better for combating climate change
- 💧 **Understand that this will be viewed by some as “one more excuse” from dischargers**



Water Quality Mandate Impacts: Case Studies

💧 EBMUD Wet Weather Facilities

- EPA's new interpretation of existing regulations

PRIMARY ONLY → SECONDARY

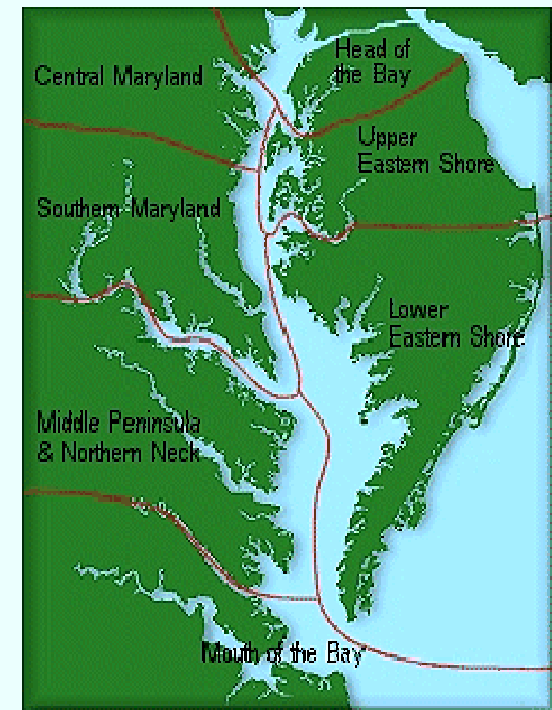
- Capital intensive treatment and/or storage alternatives are **CARBON INTENSIVE**
- Operating improvement alternatives are also **CARBON INTENSIVE**
- How do we weigh these options against sustainable, **LESS CARBON INTENSIVE** I/I reduction alternatives through investment in existing pipes and infrastructure?



Water Quality Mandate Impacts: Case Studies (cont'd)

💧 Chesapeake Bay



- POTWs are a small percent of the nutrient WQ problem
- Capital/operating solutions (i.e., tertiary treatment for nutrient removal) for POTWs are carbon intensive
- How do we measure the carbon impact of POTW end-of-pipe treatment direction with other possible alternatives?

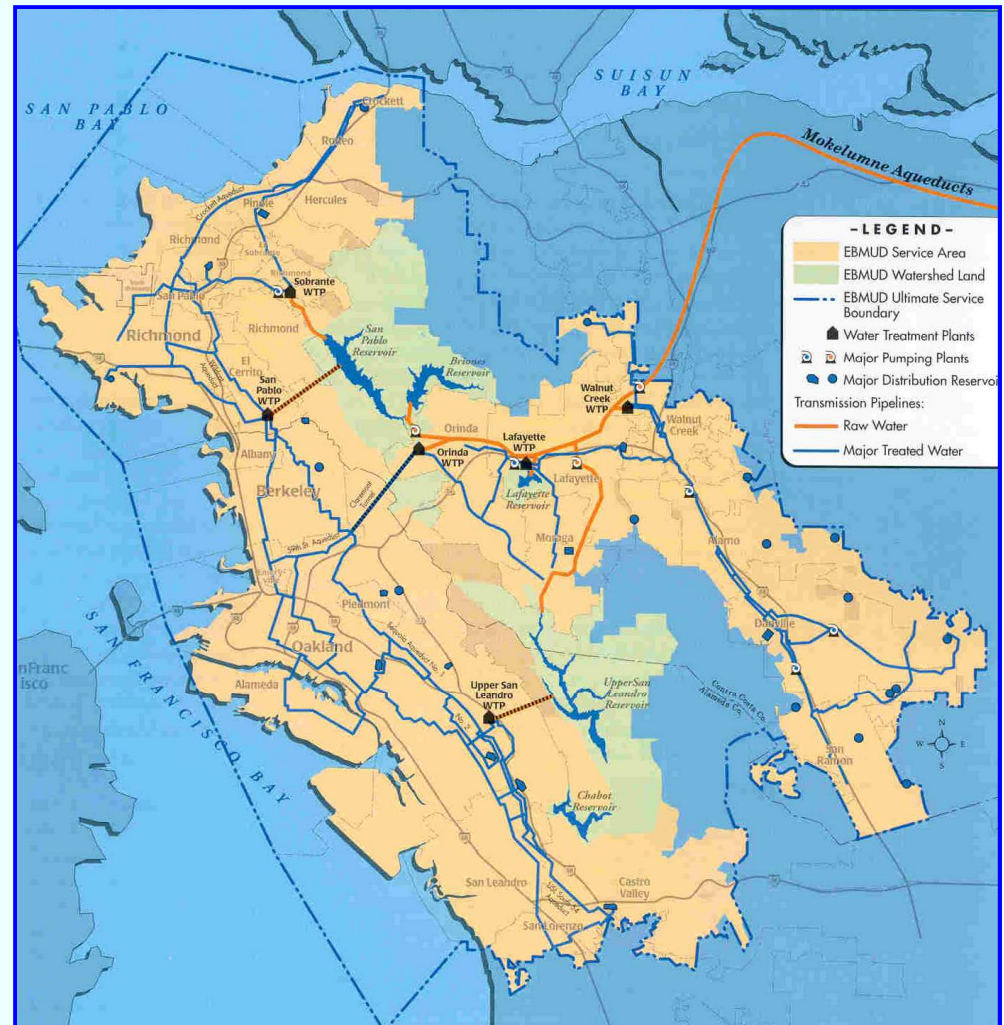


Opportunity for POTWs

- **Global warming is the hot topic issue in Congress**
- **EPA Office of Water appears interested to “get into the game” of addressing global warming**
- **Opportunities to partner with national NGOs, such as the Sierra Club, for whom global warming is a high priority**
- **EBMUD’s response to climate change**
 - **Reduce the carbon footprint from operation of our water and wastewater facilities**

East Bay Municipal Utility District

- 
Regional water and wastewater public agency serving residents east of San Francisco Bay
- 
Service Population
 - 0.65 million for wastewater
 - 1.3 million for water



EBMUD Wastewater Activities to Reduce Carbon Footprint

- 💧 Renewable Energy Policy
- 💧 Resource Recovery Program
- 💧 Renewable Energy Expansion
- 💧 Biodiesel Pilot Study
- 💧 Recycled Water Program



Renewable Energy Policy Adopted by EBMUD Board

- 💧 Reduce reliance on fossil fuels
- 💧 Increase use and development of renewable energy sources
- 💧 Continue implementing a diverse energy program
- 💧 Monitor, track, and report GHG emissions



Biogas Cogeneration

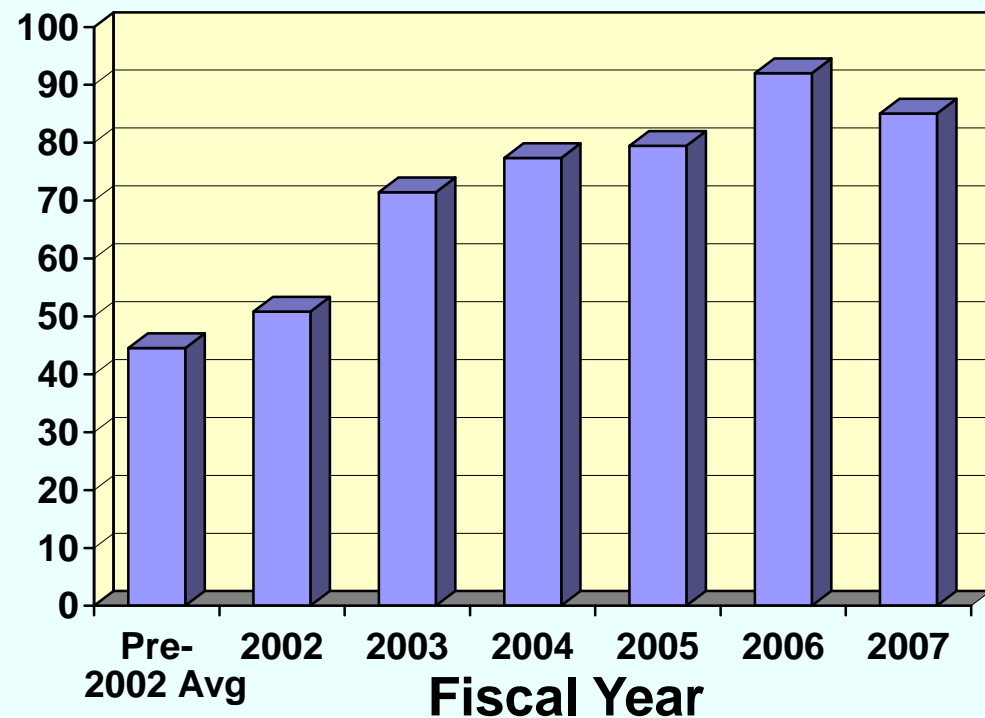


Resource Recovery (R2) Program

Renewable Energy

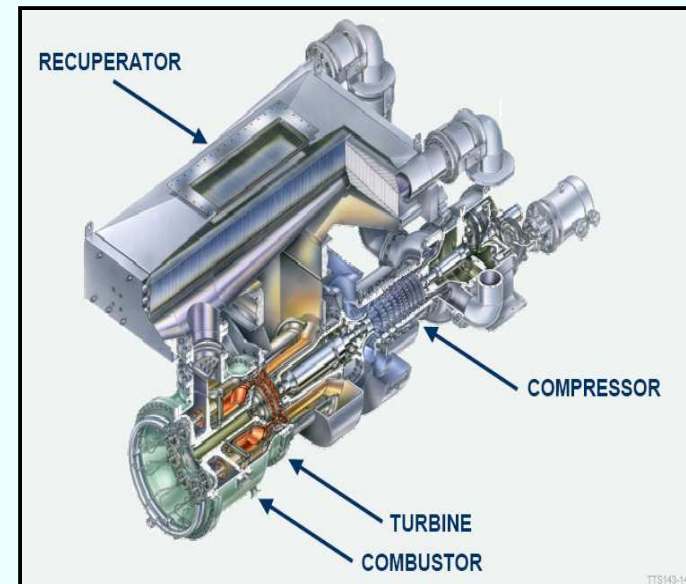
- Municipal Waste
- Trucked Wastes
 - Septage
 - Fats, Oil, Grease (FOG)
 - Food, blood, winery wastes
- Doubled renewable energy from 2 to 4.5 MW
- Generates enough energy to power roughly 2,500 homes
- Offsets fossil fuel based energy demand

**Increasing Energy Production
(% of Plant Demand)**



Power Generation Station Renewable Energy Expansion Project

- Adds two low emissions 4.5 MW gas turbines
- Become 100% energy self-sufficient + sell power back to the grid
- Increase electrical power reliability
- Operational by Spring 2010

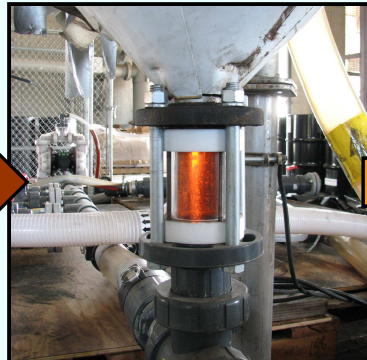
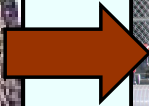


Biodiesel

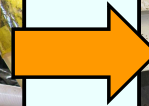
- Renewable fuel
- Reduced tailpipe emissions
- Can be made from waste material (FOG)
- Blended with diesel or used directly
- Non-toxic, biodegradable



Raw Fats, Oil, and Grease (FOG) Wastes



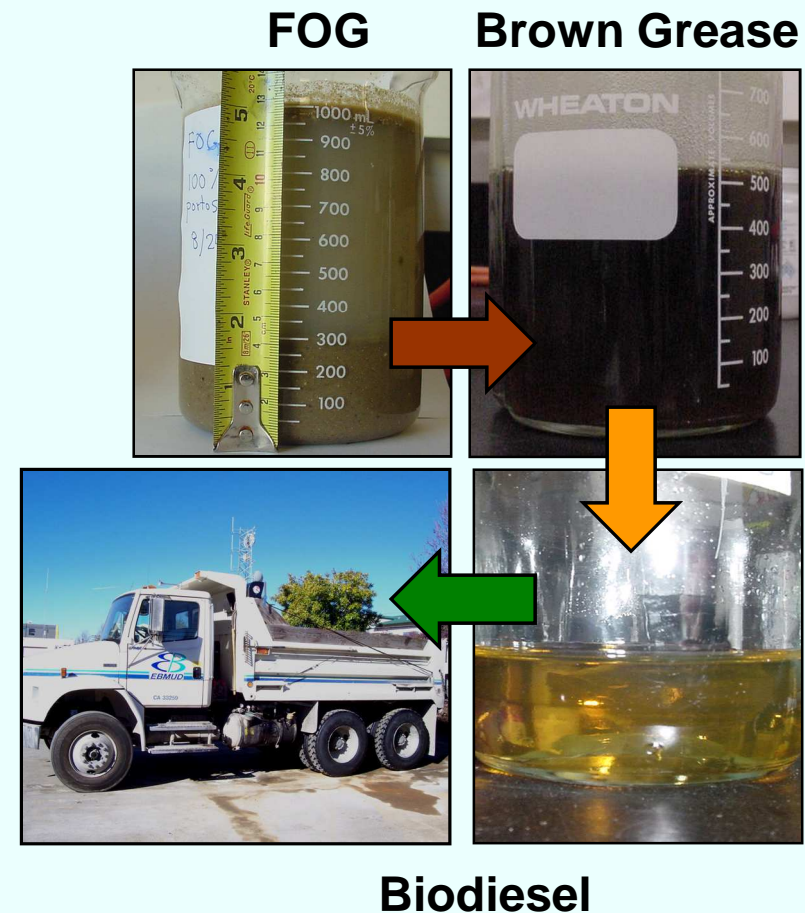
Brown Grease



Biodiesel

Waste Grease to Biodiesel Pilot Study

- 💧 Pilot evaluation to determine technical feasibility, verify emissions improvements
- 💧 Vehicle trial – 4 District dump trucks
- 💧 Successful biodiesel production
- 💧 Cost-effectiveness evaluation is on-going

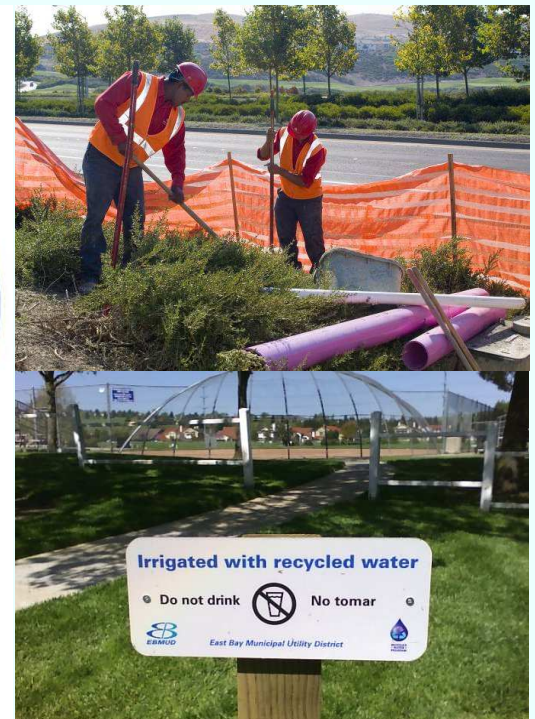


Recycled Water Program

- 💧 Helps diversify water supply and reduce GHG emissions
- 💧 **TODAY**: 6 MGD to forty existing customers
- 💧 **GOAL**: Recycle 14 MGD by 2020



EBMUD
RECYCLED
WATER
PROGRAM



Considerations for NACWA

- **Help enhance regulatory information sharing**
- **Advocate for EPA to develop a cross-media, cross-statute group to consider these issues**
 - **Follow-up with a “Letter of Agreement” between EPA Offices of Water and Air**
- **Should NACWA develop a white paper quantifying GHG impacts of case studies meeting water quality requirements?**
- **Shift thinking and discussion toward “net environmental benefit” on CWA compliance issues**

Considerations for NACWA

(cont'd)

- Suggest that EPA incorporate consideration of GHG impacts in WQ Consent Decrees (where broad latitude and discretion now exists)
- Suggest EPA consider using GHG impacts as a “tie-breaker” when considering otherwise equal regulatory WQ solutions
- Develop a long-term collaborative strategy with range of stakeholders for cross-media legislation

Potential Outcomes

① Challenges are too great

- Agency inter-communication does not improve
- CWA can't be “tweaked” or overhauled in this fashion
- New legislation is impossible to get developed and passed
- Trading within water is exceedingly challenging; cross-media regulation is impossibly complex

vs.

② Climate change can't be ignored

- If global warming continues at its current rate, the consequences of global warming will begin to dwarf other environmental concerns

Role of the Wastewater Community

- 💧 **Our industry should be proactive in helping to frame the debate**
- 💧 **We may form surprising alliances with a diverse range of NGOs**
- 💧 **Developing solid technical data is a key first step**