Bay Area Regional Biosolids to Energy Partnership

A Coalition Approach to Developing a B2E Project and Funding Pathways

Caroline Quinn, Director of Engineering
Delta Diablo Sanitation District

Pacific Southwest Organic Residuals Symposium
September 15, 2010

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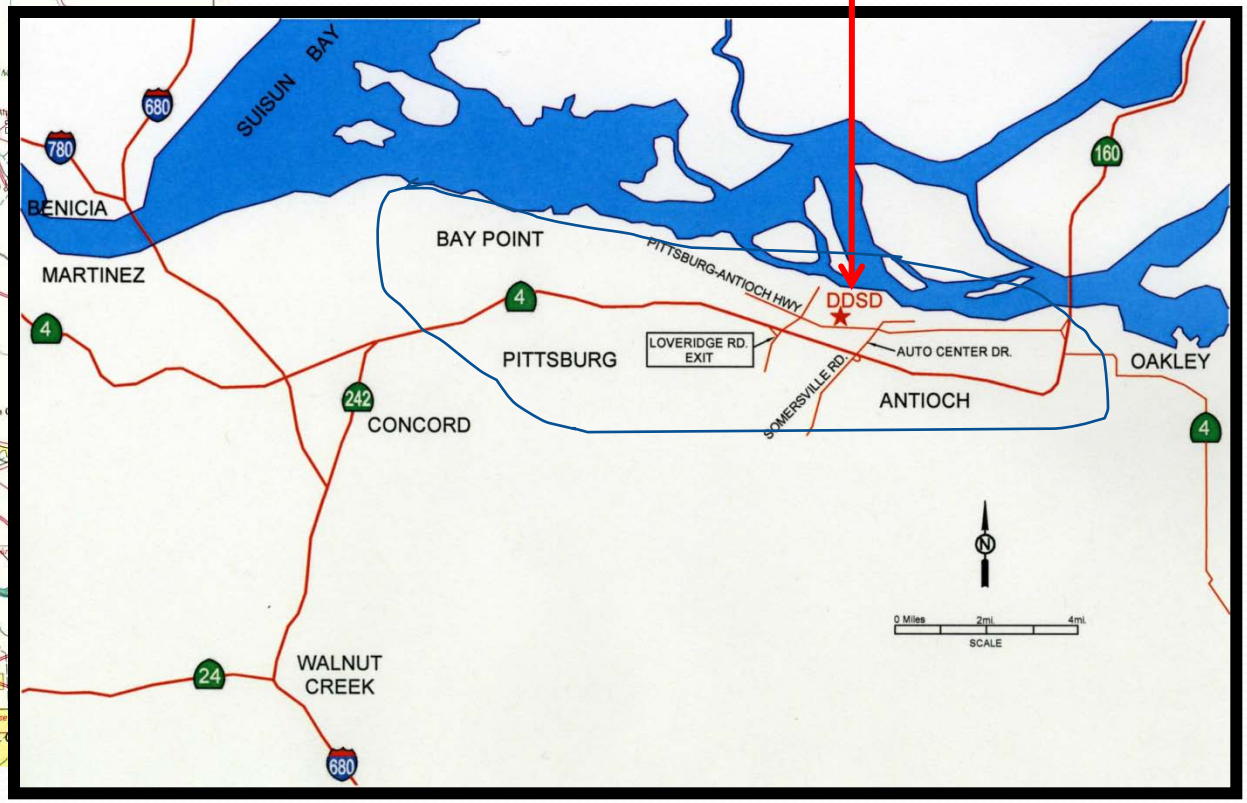
Delta Diablo Sanitation District Service Area



Delta Diablo Sanitation District

- Located in the heart of the California Delta Region
- 52 square mile service area - City of Antioch, City of Pittsburg, and unincorporated Bay Point
- Serves nearly 200,000 residents and industrial customers
- Secondary wastewater treatment facility with permitted capacity of 22.4 MGD

The country that harnesses the power of clean, renewable energy will lead the 21st century.

America can be the 21st century clean energy leader by harnessing the power of alternative and renewable energy, ending our addiction to foreign oil, addressing the global climate crisis, and creating millions of new jobs that can't be shipped overseas.

President Barack Obama

The energy potential contained in wastewater and biosolids exceeds by at least ten times the energy used to treat it.

Water Environment Research Foundation (April, 2009)

Water –Energy Nexus

- Energy Demands – Water and Wastewater Treatment, Recycled Water, Desalination

- Development of sustainable energy
  - Cogen & Fuel Cell
  - Solar/Wind
  - Grease to Fuel/Energy
  - Biosolids

Graphic courtesy of re-energy.ca

Biosolids – How Much?

Biosolids are the natural by-product of wastewater treatment. Produced by removing the organics from domestic waste, the majority of which comes from homes, and treating them to reuse standards.

- 7.2 million metric tons of "dry solids" produced in the USA annually [*156,000 dry-tons generated in San Francisco Bay Area]*
- Nearly 80% Northern California biosolids are beneficially reused:
  - *Daily landfill cover*
  - *Soil amendment on agricultural fields*

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Challenges to Industry

- Current biosolids management not sustainable:
  - 20% projected population increase by 2030
  - Limited landfill capacity
  - Longer hauling distances
  - Increasing costs (current range $35-$90 per wet ton)
- State and Federal Regulations:
  - Increasing restrictions on current practices – land application and ADC

- Local Restrictions:
  - Solano County Ordinance
  - San Joaquin AQMD Rule 4565 (Biosolids eliminated as ADC; incorporation within 3 hours – currently 24 hours)
  - Kern County initiative

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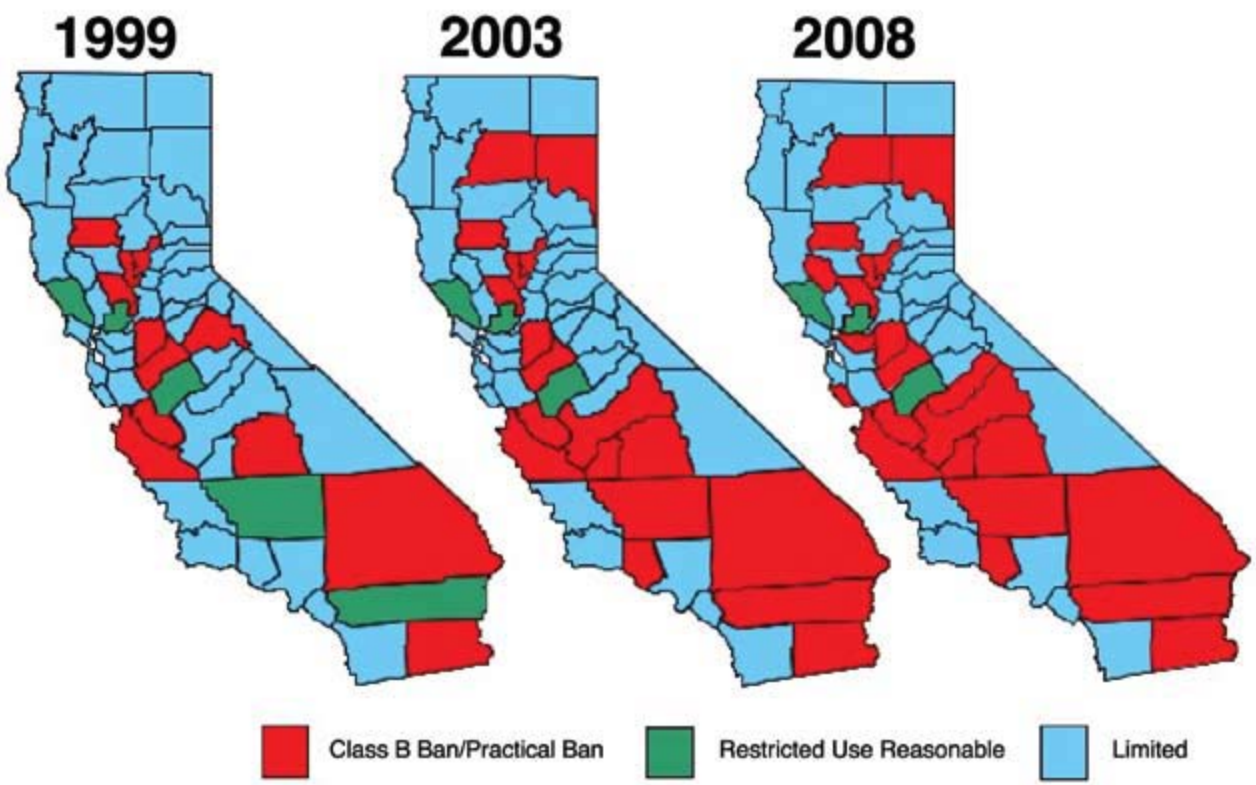
County Land Use Restrictions Impacting Biosolids Land Application



[Carollo Engineers, March 2007]

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Bay Area Agencies Come Together

- Regional Project Feasibility explored by 16 agencies through BACWA Biosolids Committee
  - Technical assessment
  - Permitting assessment
  - Governance Options
- Coalition Formed to Pursue Regional Project
  - Preliminary Planning Studies

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BACWA: Bay Area Clean Water Agencies

State and Federal Initiatives - Opportunities

- Climate Change / Greenhouse Gas
  - AB32
  - Federal Initiatives
  - Potential GHG Credits
- Energy
  - Fossil Fuels - Reduced Reliance
  - Renewable Energy Sources – Credits
  - Potential for state/federal grants

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Other Countries have shifted their views…approaches

The New York Times

April 12, 2010

Europe Finds Clean Energy in Trash, but U.S. Lags Behind

By **ELISABETH ROSENTHAL**

HORSHOLM, Denmark — The lawyers and engineers who dwell in an elegant enclave here are at peace with the hulking neighbor just over the back fence: a vast energy plant that burns thousands of tons of household garbage and industrial waste, 24/7.

BA B2E Coalition

- 16 San Francisco Bay Area agencies
- Seeking local, sustainable solution to biosolids management
- Over 2 million residents
- Unprecedented collaborative approach

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Coalition Partners

Project Goal

Create a project maximizing sustainable use of Bay Area biosolids as a resource of value for society and the environment

- Diversify biosolids management options
- Maximize renewable energy resource potential
- Minimize GHG Footprint
- Maximize potential for federal and state financial assistance

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Project Concepts:

- Utilize state of the art technology

  Meet or exceed stringent BAAQMD standards

- Create "green" jobs
- Net energy producer
  - *Potential use of drier fuels that cannot be recycled or composted … but no municipal solid waste*
  - *Potential co-location with industry with waste heat*
- Seek Grants

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There is no defined funding path

Charting a Path

Parallel State and Federal Paths

- Legislative Representatives
- Agency Staff
- Committee Staff
- Budget Requests
- Annual Budget/Appropriations Process

State Programs

Introductions/Briefings

- Assembly Members
- Senate Members
- Key Committee Chairs/Members

State Agencies

- CalEPA - Air Resources Board &CalRecycle (CIWMB)
- California Energy Commission

Funding

- Solicitations –v- Budget

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Federal

Introductions/Briefings

- House Members
- Senate Members
- Key Committee Staff

Federal Agency – DOE Funding

- Appropriations Requests

Funding
Status

State

- Developing a project to be partially funded through the CEC ($1 M)

Federal

- $500,000 DOE Office of Energy Efficiency & Renewables (Senate Committee on Appropriations)

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Community Engagement Program

- Successful outreach campaign = successful project
- Educate, engage and secure support from all stakeholder groups
- Targeted strategies across all stages of project
- Creating trust and building credibility
- BAB2E Communications Sub-Committee

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The media reports…

- *"The project is regarded as the biggest of its kind in the US."*

FT.com FINANCIAL TIMES Mergermarket

- *"… could help create an endless supply of green renewable energy."*

CONTRA COSTA TIMES

- *"With the right technology, more of it (methane) could be reclaimed. There could be enough to convert the methane to more electricity, perhaps even enough for an agency to sell it to nearby customers and create fuel for trucks."*

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The Regional Approach

- Joint Exercise of Powers Agreement
- Lead Agency: Delta Diablo Sanitation
- Consultant Services are Cost Shared
  - *Lobbyists*
  - *Engineering and Environmental Services*
  - *Other Supporting Services*
- Decision-Making: Steering Committee
- Monthly Meetings

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"On The Table…"

- State of the Art Technology & Reliability
- Air Quality/Greenhouse Gases
- EPA definition of Biosolids
- Community Benefits
- Public Opinion / Education
- State & Federal Partnerships
- Governance & Project Delivery
- Cost & Funding

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Status

- Advocacy Efforts Ongoing

  Through federal and state lobbyists

- Communications Committee Formed

  Sub-Committee reports to Steering Committee

- Development Team & Technology Selection Process

  Completed Request for Qualifications – 3 Teams Short-listed

- Funding Process

  Continuing with potential state & federal grants

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Summary

- Leading Edge Project
- State and Federal Initiative linkages
- Proactive Approach
- Regional Cooperation
- Environmental Benefits
- Community Benefits
- Energy Benefits
- Public Engagement
- Sustainable Management and Cost Control

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Caroline Quinn
carolineq@ddsd.org -or- 925.756.1928
www.bayareabiosolids.com

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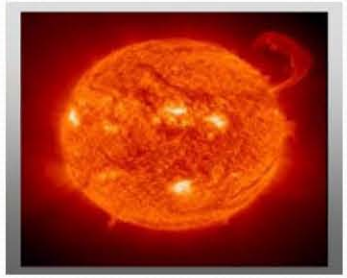

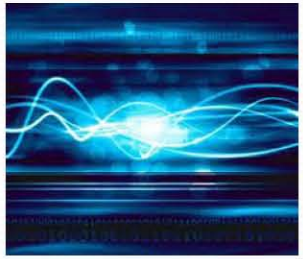
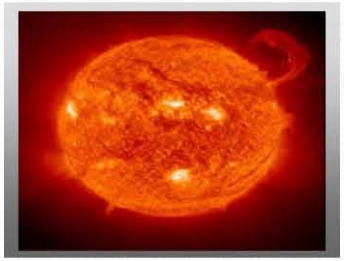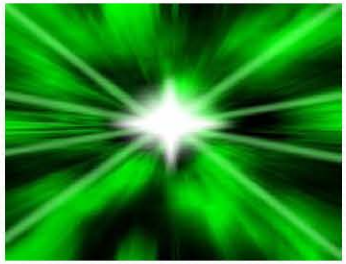
Federal