Energy/Compost Facility Update
Community Meetings
April 2014
Outline of Presentation

- Background
- RFP Selection Process
- Summary of Proposals Received
- Biosolids Facilities Plan (BFP) Status
- Organics Facilities Plan
- Next Steps
Background: Objectives

- Allow the City to phase out the existing incinerator for biosolids
- Reduce greenhouse gas emissions
- Reduce landfill disposal
- Enhance the beneficial use of organic materials
- Provide economically competitive services
- Provide a reliable, long-term organics solution
Background: Timeline

- Feasibility Study – September 2011 - Completed
- Measure E – November 2011 - Passed
- Action Plan – July 2012 – Council approved
- RFP Released – March 2013
- Proposals Received – August 13, 2013
- Proposal Interviews – November 15, 2013
Proposal Review Groups

1) **Technical Review Group** - Recommendation
   - City Staff & Consultants
   - Other Agencies

2) **Community Review Group** – Questions and Considerations
   - Palo Alto Residents for and against use of Measure E site
# Feedstocks

<table>
<thead>
<tr>
<th>Quantity</th>
<th>2015 (tons per year)</th>
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<tbody>
<tr>
<td>Biosolids</td>
<td>31,208</td>
</tr>
<tr>
<td>Yard Trimmings</td>
<td>13,500-14,300</td>
</tr>
<tr>
<td>Food Scraps</td>
<td></td>
</tr>
<tr>
<td>— Commercial</td>
<td>12,100</td>
</tr>
<tr>
<td>— Residential</td>
<td>3,400</td>
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</tbody>
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Proposals

- Anaergia
- BIOGAS Equity 2
- ECOCORP
- Harvest Power
- Synagro
- We Generation (Cambi)
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Harvest Power

Technology

- Wet Anaerobic Digestion
- Heat Drying
- Composting

All three feedstocks processed onsite

Uses less than 3.8 acres of the Measure E site (yard trimmings) and 1 acre in the RWQCP (biosolids & food)
Harvest Power – Considerations

- Generates Biogas
- Assisted by Outside Feedstock
- Uses landfill gas
- Sensitive to Electric Prices to Lower Price
- Site Layout Issues
- Proposed 20- and 30-year contract term options
We Generation (Cambi)

Technology
- Thermal Hydrolysis
- Wet Anaerobic Digestion
- Composting (export)

Biosolids and food digested on RWQCP site
Yard trimmings exported and processed offsite at Newby Island (Republic Services)
Only uses ½ acre RWQCP site
We Generation (Cambi) Considerations

- Generates the Most Biogas per ton of material
- Outside Feedstock Lowers Price
- Sensitive to Electric Prices
- Uses landfill gas
- Food Pre-processing offsite at Shoreway Environmental (Recology) in San Carlos
Synagro Technology

- Composting (export)

All three feedstocks exported
GreenWaste of Palo Alto
(City’s current contract hauler)
to process food scraps and
yard trimmings
Synagro - Considerations

- No Renewable Energy Created
- Higher Greenhouse Gas Emissions from Transportation and processing elements
- Utilizes existing processing facilities
- Minimal disturbance to current RWQCP operations
- No landfill gas is used
Conclusions from RFP Proposals

- Best technology available now is thermal hydrolysis with wet anaerobic digestion
- Wet AD is appropriate for biosolids and food scraps only
- Aerobic Composting is best for yard trimmings
- On-site projects are sensitive to changes in electric prices
Biosolids Facility Plan

Examined a variety of technologies, including:

- Wet Anaerobic Digestion
- Wet AD with Thermal Hydrolysis (Cambi)
- Gasification/Pyrolysis
- Thermal Drying
- Export to composting (Synagro)
- Export to digesters (regional options)
Conclusions from Biosolids Facility Plan

- Short-term Recommendation: Dewatering and truck load-out facility
- Long-term Recommendation: Thermal Hydrolysis with Wet Anaerobic Digestion
- Incorporate Food Scraps to Increase Biogas
- On-site digesters with a combined heat and power installation allow for use of landfill gas
Organics Facilities Plan

Biosolids Dewatering and Truck Haul-Out Component

Anaerobic Digestion Component

Food Scrap Pre-processing Component

Yard Trimmings Component

Design and Construction

Contracting and Design

Construction

Biosolids Processing

Food Scrap Preprocessing Development

Consider Alternatives to Current Aerobic Composting and New Locations

- Biosolids
- Food Scraps
- Yard Trimmings
Canceling the RFP: Why?

- Shift to a City-owned facility
  - Reduced risk associated with a Wet AD project
  - Lower overall costs
- No One Proposal Contains All Components
- Harvest Power: Problematic use of RWQCP site and Byxbee Park site, cost
- We Generation (Cambi): Lacked firm pricing, weak supporting documentation, cost
- Synagro: No energy production, GHG emissions
Next Steps

- Recommendation to Council – April 28, 2014
  - Includes: Cost and greenhouse gas comparisons
  - Begin work on Components One and Two
  - Create a timeline for all Components
Next Steps

- Component One
  - Hire a Program Manager
  - Initiate Design
  - Determine Financing – SRF Loan

- Component Two (predesign)
  - Electricity Prices
  - Project Sizing (relates to Component Three)
  - Financing Plan
  - Purchasing and Project Delivery Mechanism
  - CEQA Documentation
Energy/Compost Facility Update

Community Meetings

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FINAL SLIDE
Harvest Power – Site Layout
We Generation (Cambi) Site Layout