City of Palo Alto
City Council Staff Report

Report Type: Action Items
Meeting Date: 4/11/2011

Council Priority: {ResProject:ClearLine}

Summary Title: Council direction on Energy/Compost Study

Title: Request for Council Direction on Draft Energy/Compost Feasibility Study due to Council in June 2011

From: City Manager

Lead Department: Public Works

Recommendation
Staff recommends that Council direct staff to:

2) Present a manageable number of scenarios in the Draft Feasibility Study containing a range of input values which reflect the range of comments received.

Executive Summary
Staff is recommending that Council direct staff to submit a Draft Feasibility Study on an Energy/Compost Facility in early June 2011, as envisioned in the established schedule for the City’s consultant, Alternative Resources, Inc. (ARI). This will provide Council with a draft study reflecting Council and public comments. This will provide Council the opportunity to terminate the work at that point should Council determine that an Energy/Compost Facility in Palo Alto does not need further study at that time.

Background
Palo Alto’s Blue Ribbon Compost Task Force recommended to Council that an Anaerobic Digestion Facility be pursued in the vicinity of the Palo Alto Regional Water Quality Control Plant (Plant) to manage the City’s yard trimmings, food scraps and wastewater solids (“biosolids”). The exact location of such a facility has been problematic because of Palo Alto’s urbanized nature, the fact that no land has been specified for such a facility, and the fact that the Landfill has been dedicated as Parkland (Byxbee Park).

Following receipt of the Compost Task Force Report, on April 5, 2010 (CMR:165:10, Attachment A), Council directed staff to:
1) Hire a consultant to evaluate Dry Anaerobic Digestion;
2) Prepare an applicable level Environmental Impact Report (EIR) focused on 9-acres of Byxbee Park;
3) Study energy conversion-technologies including Anaerobic Digestion at Palo Alto’s Wastewater Treatment Plant as part of its Long Range Master Plan-Facility Planning process; and
4) Pursue partnering opportunities for organics processing within 20 miles of Palo Alto.

Palo Alto hired ARI to conduct the Anaerobic Digestion Study, and staff has been pursuing Nos. 3 and 4 above. An appropriately scoped EIR (No. 2 above) will be produced at the appropriate time should Palo Alto continue to pursue a Palo Alto Facility. Council members requested that a Preliminary Analysis be completed ahead of the full Feasibility Study. The Preliminary Analysis was done by ARI and placed on the Palo Alto website on January 26, 2011. Public meetings were held on February 23 and March 9, and public comments have been received in writing and at the meetings. City Council conducted a Study Session on March 21 and staff indicated it would return to Council for further direction on April 11, 2011.

Discussion
Public comments and Council comments on the Preliminary Analysis of Dry Anaerobic Digestion on the Landfill/Byxbee Park 9-acre site were received at the Council Study Session on March 21, 2011. Earlier comments had also been received. Staff has analyzed those comments and has planned to prepare a Draft Feasibility Study in June based upon the Preliminary Analysis and the comments received. Should Council direct staff to continue the Draft Feasibility Study, staff would make the following changes and additions to the Preliminary Analysis:

1) Include additional “export” (non-Palo Alto site) alternatives in which Wet Anaerobic Digestion is used in place of incineration at the Regional Water Quality Control Plant (RWQCP).
2) Lift the Net Present Value (NPV) analysis from the detailed analysis to the summary tables.
3) Include the replacement costs of the wastewater solids (biosolids) incinerator in those alternatives involving the incinerator.
4) Conduct more runs of the economic and greenhouse gas models, providing new data points with respect to the following input parameters:
   a. Land Rent Value
   b. Greenhouse Gas Value (“CO$_2$ Adder”)
   c. Interest Rate for Loans
   d. Contingency Amount
   e. Amount of any Grants
5) Summarize the data such that Council can determine whether to complete the Feasibility Study or forego further work at that time.
In summarizing the data (in No. 5 above) for the Draft Feasibility Study in June, staff will assist Council in efforts to determine alternatives with the greatest environmental benefits at the lowest costs. A manageable number of scenarios will be presented to reflect a range of perspectives. All alternatives will assume that the current RWQCP Multiple Hearth Incinerator must be replaced at some point.

Other Comments
Staff’s above proposal modifying the Preliminary Analysis does not address all comments received. Some comments would require substantially more time and funding. Examples include:

1) A new alternative to combine biosolids and food scraps in wet anaerobic digesters and then combine the digestate with yard trimmings, using some combination of the RWQCP site and the Landfill/Byxbee park site;
2) Full integration of the Energy/Compost Feasibility study and the Long Range Facilities Planning for the RWQCP; and
3) Consideration of gasification and other high temperature conversion technologies in Palo Alto.

Initiative
It is likely that a Citizen Initiative to undedicate Parkland for an Energy/Compost Facility will appear on the November 2011 Ballot in Palo Alto. Several points related to the Feasibility Study can be made:

1) The Initiative does not require construction of a facility, but only allows it. City Council would ultimately decide whether a facility is constructed.
2) The Initiative contains a provision allowing Council to re-dedicate the site as parkland after 10 years, if some or all of the area is not used for an Energy/Compost Facility.
3) The Initiative does not exclusively focus on Dry Anaerobic Digestion and would allow other “equally environmentally protective” technology alternatives. The Preliminary Analysis focuses on Dry Anaerobic Digestion. Neither the Preliminary Analysis nor the Draft Feasibility Study was scoped to provide a quantitative analysis of all technologies which may be “equally environmentally protective”.

Resource Impact
The additional work described to prepare the June Draft Feasibility Study will require additional funds. Those funds are being taken from other future tasks in the ARI contract so that the schedule can be adhered to and the Draft produced in June. Specifically, the work to prepare the California Environmental Quality Act (CEQA) Initial Study will be delayed to allow the more critical work to be completed. Should it be decided to ultimately complete the CEQA Initial Study, a contract amendment will be prepared and submitted to Council for approval. This contract amendment would
require additional funding, but is not the subject of this CMR.

**Environmental Review**
The Feasibility Study itself is not a “project” as defined by CEQA and no environmental review is required at this point in the process.

**ATTACHMENTS:**
- Attachment A CMR165-10 (PDF)

Prepared By: Philip L. Bobel, Manager, Environmental Compliance
Department Head: J. Michael Sartor, Interim Director
City Manager Approval: James Keene, City Manager
Recommendation to Direct Staff: 1) To Defer Further Action on an Anaerobic Digestion (AD) Facility or Aerated Static Pile (ASP) Composting Facility Within Palo Alto, Until and Unless a Usable Site is Identified; 2) To Examine the Feasibility of Energy Conversion Technologies (Including AD Technologies) During the Upcoming Regional Water Quality Control Plant Master Planning Process; 3) To Pursue Local Partnering Opportunities with SMaRT® Station Partners and/or Local Organic Waste Processing Companies that are Developing Private or Energy Conversion Facilities Within a 20-Mile Radius of Palo Alto; and 4) To Resume Acceptance of Commercial Garbage at the Landfill.

BACKGROUND
The City currently maintains a 7.5 acre conventional windrow composting facility for yard trimmings on an active section of the Palo Alto Landfill (located within Byxbee Park) which is expected to close within 12 months after the landfill reaches the permitted grading levels. The landfill is expected to reach permitted capacity near the end of 2011. The green material managed at the facility includes source separated yard trimmings such as lawn clippings, leaves, tree and shrub clippings, brush, and other vegetative materials generated through landscape maintenance activities. Additionally, leaves accumulated through the City’s street sweeping operations “selected screened loads” and clean tree trunk/limb wood grindings (1 to 2-inch chips) are also managed at the facility.
On August 6, 2007, Council directed staff to develop a work plan to explore options to keep composting in Palo Alto. A work plan for a composting feasibility study was presented and approved by Council on January 22, 2008 (CMR:116:08). Staff prepared the feasibility study and presented the results of the study on April 28, 2008 (CMR:219:08). At that point Council directed staff to table the issue until the Baylands Master Plan update was approved and to get the input of the Parks and Recreation Commission (PRC) and the Planning and Transportation Commission (PTC). On December 15, 2008 (CMR:470:08) and January 12, 2009 (CMR:116:09), Council further discussed the composting issue and made a decision to convene a citizen-based Blue Ribbon Task Force (BRTF) to further examine the composting question. At that time, Council specifically directed the BRTF to avoid parkland location options.

On October 19, 2009, the BRTF presented its results and recommendations to Council (CMR:402:09). The lead site recommended by the BRTF would have had resulted in potential impacts on the Palo Alto Airport operations, as expressed to Council. Therefore, Council directed staff to further examine the other alternatives and return to Council. The motion from October 19, 2009 consisted of the following directives:

1) Accept the September 9, 2009 Palo Alto Compost Task Force Final Report (Report) submitted by the Compost Blue Ribbon Task Force (BRTF);
2) Direct Staff to implement the short term recommendations for current compost operations contained in the BRTF Report as modified by the Staff response;
3) Request Staff to return with analysis and recommendation of whether to incorporate an interim solution of aerobic static pile composting or consider off site composting on an interim basis;
4) Staff to evaluate the two options (Embarcadero Road/Airport site and 5-6 acres in the northwest corner of the current landfill site) on the locations;
5) Staff to consider an option of partnering with another city or cities;
6) Staff to consider whether there are other locations on Embarcadero Way that could work, this would take no more than 90 days;
7) Location of any facility would not have any negative impact on the Palo Alto Airport, its operations, finances, and relationship with the FAA or Santa Clara County;
8) Staff to work closely with the airport community in the development of any proposals, and
9) Staff to take into consideration the Airport Business Plan being developed.

In a separate action, Council adopted a statement of intent to proceed toward an anaerobic composting system, at an unspecified location.

Since the last Council action on composting, staff held a public meeting with airport stakeholders at West Valley Flying Club Meeting Room on November 4, 2009. Minutes from that meeting are included as Attachment A and further documented the negative impacts of a site on Airport property. Staff also held a public meeting to discuss the expected recommendations of this staff report at Cubberley Community Center, Room A-6 on December 9, 2009. Notes from that public meeting are included as Attachment B. In addition, staff presented information (and answered questions) to the Council in a study session on March 8, 2010.
DISCUSSION

Short-term Recommendations
Staff has implemented all of the short-term recommendations for current compost operations contained in the BRTF Report as modified by the staff response (Directive No. 2, above). The analysis of aerated static pile (ASP) composting within Palo Alto or offsite composting as interim solutions (Directive No. 3, above) is contained in Attachment D. Staff concludes that an ASP facility is too expensive and that there is no site that could be ready in time to serve as an interim facility. Therefore the current interim plan of taking yard trimmings to the Z-Best Gilroy facility should continue to be the short-term approach, upon closure of the Palo Alto Compost Facility.

Local Siting Options
Evaluation of three permanent siting options (the Embarcadero Road/Airport site, the northwest corner of the current landfill Byxbee Park site, and private properties along Embarcadero Way), is also summarized in Attachment C, consistent with Directives No. 4 and 6, above. After further consultation with the Airport community, staff concludes that the Embarcadero Road/Airport site would negatively impact that community and proposes no further work on that site in conformance with Directive No. 7, above. With respect to the possible sites along Embarcadero Way referenced in Directive No. 6, staff concludes that procurement of sufficient property would be too expensive and potentially disruptive for the existing land owners and tenants. The site closest to the RWQCP entrance is a self-storage facility with numerous individual tenants. In addition there would be neighborhood compatibility hurdles with utilizing the properties on the west side of Embarcadero Way.

With respect to the construction of an Anaerobic Digestion facility in the northwest corner of the current landfill/Byxbee Park site, staff concludes that a detailed Feasibility Study would have to be conducted by an engineering consultant to determine costs and fully evaluate impacts. Projected cost data obtained by Staff from vendors has not been verified and is not sufficient for final decision making. An Anaerobic Digestion facility is consistent with the October 19, 2009 Council direction and with the recommendations of the Compost Blue Ribbon Task Force. However, given the key constraint (site is on dedicated parkland) of the landfill/Byxbee Park site, staff does not recommend moving forward with the Feasibility Study until and unless the constraint is removed (Recommendation No. 1, above). A Feasibility Study of this magnitude is best completed in conjunction with an Environmental Impact Report so that appropriate mitigations are identified and incorporated into the project design. The total estimated cost of this detailed analysis would exceed two hundred fifty thousand dollars. This is a staff estimate based on experience with the formerly proposed Environmental Services Center (ESC) at nearly the same location on Byxbee Park.

Regional Opportunities
Additionally, staff is actively exploring conversion technology options with the other SMaRT® Station partner cities, as well as opportunities to send organic materials to potential new privately developed anaerobic digestion facilities.

Regional opportunities for anaerobic or other advanced processing are preliminary, but emerging quickly. Several jurisdictions in the area are beginning to express interest and explore their
abilities to build and operate regional facilities to provide organics processing in the future. Currently no firm commitments exist, but opportunities for collaboration could be pursued by the City as they are identified. For example, the City's SMaRT® Station partners, Mountain View and Sunnyvale, both have adopted zero waste goals. In addition, the City has an established relationship with them in owning and operating a transfer and processing facility through 2021. Both of these cities have an immediate interest in developing or using conversion technology to meet their waste reduction goals and would likely be potential partners to build and operate an anaerobic digestion or other conversion facility.

The primary private sector processing opportunity available in the near term is a facility being developed by GreenWaste Recovery, Inc (GreenWaste). GreenWaste, along with their business partner from Germany, KOMPOFERM, have formed a subsidiary company called Zero Waste Energy Development Company, Inc. (Zero Waste Energy). They are in the final planning stages of designing a 150,000-ton per year anaerobic digester in San Jose located approximately 12 miles from Palo Alto.

In September 2009, the City of San Jose and Zero Waste Energy executed a Memorandum of Understanding (MOU) regarding their intent to develop lease terms for use of approximately 40 acres of a closed landfill site located beside the San Jose/Santa Clara Water Pollution Control Plant for a biogas facility. The first phase of the processing site, 50,000 tons per year, is anticipated to be ready for operation as soon as late 2011. Initially, the processing plant anticipates taking a blend of food scraps and yard trimmings from jurisdictions to produce biofuel and compost.

GreenWaste is the collection and processing provider for the City of Palo Alto’s solid waste, recyclables, yard trimmings, and food scraps. Staff has had preliminary discussions with GreenWaste about utilizing this facility for the City’s food scrap tonnage, and some or all of our yard trimmings. Finally, staff has also met with another company, Harvest Power, that is also pursuing development of a regional AD facility for the south bay area. Harvest Power has not identified any specific facility location yet.

Regional Water Quality Control Plant Master Plan
Under the existing adopted Capital Improvement Project (CIP) WQ-10001, staff will soon be procuring consultant services to prepare a Master Plan for the Regional Water Quality Control Plant. The draft scope of work requests an analysis of energy conversion technologies (including anaerobic digestion) that might be suitable replacements for biosolids incineration in the future. The Master Plan Work is scheduled to begin later this year.

Feedstocks and End Products
Regardless of whether the City pursues partnership with a private firm or a regional conversion technology facility, it is important to understand our various feedstocks and what end products are to be produced and marketed. A feedstock is the raw waste material that would be processed and includes food waste, sewage biosolids, yard trimmings, and soiled paper. A single technology may not be best for the various organic material feedstocks that exist in Palo Alto. For example, certain feedstocks require greater vector and odor control than others. Certain feedstocks may also affect the marketability of any end product compost material due to concentrations of metals, fecal coliform bacteria, and other contaminants. These issues will
continue to guide the City into a solution that will best serve Palo Alto’s needs for the long term. Because of the upcoming Master Plan and the various prospects for new regional facilities, it is not yet clear whether a joint venture with other communities, a processing contract with a private facility, an anaerobic digestion facility at the RWQCP, or some combination of the aforementioned are in the City’s best interests. Therefore, staff is recommending continuing to explore advanced technologies at the Regional Water Quality Control Plant and at Regional locations in the South Bay area, as expressed in Recommendations 2 and 3 above.

Commercial Garbage Disposal Moratorium
On January 12, 2009 Council passed a motion containing the following provision:

“The City shall suspend accepting commercial garbage at the Palo Alto dump while awaiting City Council action on the recommendations of the BRTF.”

Staff interprets this provision to mean that it is to recommence acceptance of commercial garbage upon further action by Council on the composting issue. Staff is seeking Council confirmation of this interpretation through Recommendation No. 4, above.

Follow-up to Study Session on March 8, 2010
Attachment D contains further staff responses to questions and comments raised at the Study Session on March 8, 2010, including the potential early conversion of landfill Phases IIA and IIB to park use.

As a follow-up to the community response at the Council Study Session on March 8, 2010, Council may wish to provide specific direction to staff about conducting a scientific random voter survey regarding the Byxbee Park site option. This survey would gage resident sentiment about the possible undedication of a portion of Byxbee Park for an organic material processing and energy generation facility. Similar voter surveys have been performed about other issues for less than $25,000. Staff could therefore procure these polling services using unspent Refuse Fund operating budget for program and project consultants. Survey questions and language could be referred to the Policy and Services Committee if the Council moves to proceed with this type of community outreach.

Attachment E is an aerial map from the Study Session presentation that shows two City-owned areas of the Baylands that are not currently dedicated as parkland. These areas could potentially be swapped for land within the current Byxbee Park. A potential survey could also gage voter sentiment towards such a land swap idea.

RESOURCE IMPACT
There is no additional resource impacts associated with the recommendations in this report beyond what has already been anticipated in the Council adopted Zero Waste Operations Plan (CMR:123:07).

ENVIRONMENTAL REVIEW
The staff recommendations in this report do not constitute a “project” as defined by the California Environmental Quality Act (CEQA).
POLICY IMPLICATIONS
The recommendation does not represent changes to existing City policies. The recommendation is consistent with the Council adopted Zero Waste Plan and Council priorities to reduce greenhouse gas emissions.

ATTACHMENTS
Attachment A: Notes from Public Meeting on November 4, 2009
Attachment B: Notes from Public Meeting on December 9, 2009
Attachment C: Staff Memo on Further Compost Facility Evaluation
Attachment D: Staff Memo Addressing Council Questions from Study Session on March 8, 2010
Attachment E: Map of Potentially Offsetting Areas from Study Session Presentation

PREPARED BY: MATTHEW A. RASCHKE
Senior Engineer

APPROVED BY: GLENN S. ROBERTS
Director of Public Works

CITY MANAGER APPROVAL: JAMES KEENE
City Manager
Meeting Summary
11/4/09 Compost/Airport Public Meeting
(4:00-5:30 pm – Palo Alto Airport)

A) Purpose:
To explore potential sites for organics material management which would have “no impact” on the Palo Alto Airport (per 10/19/09 direction from the Palo Alto Council.)

B) Attendees:

<table>
<thead>
<tr>
<th>Airport Community Members</th>
<th>Former Compost Task Force Members</th>
<th>Palo Alto City Staff</th>
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<tbody>
<tr>
<td>Chuck Byer</td>
<td>Bob Wenzlau</td>
<td>Cara Silver</td>
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<tr>
<td>Harry Hirschman</td>
<td>Emily Renzel</td>
<td>Steve Emslie</td>
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<td>Ralph Britton</td>
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<td>Phil Bobel</td>
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<td>Pat Roy</td>
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<td>Larry Shapiro</td>
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<td>Michael Baum</td>
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C) Summary:
The group brainstormed and identified impacts to the Palo Alto Airport associated with seven (7) different location configurations of Organics Material Management (OMM) facilities. (See D below for details). There appear to be three configurations which are likely to have no impact on the Airport (with several qualifiers noted in Part D).

1. Locating the OMM on Embarcadero Way (currently privately owned buildings).
2. Locating the OMM on the Los Altos Treatment Plant (LATP) site and locating the municipal operations planned for the LATP site on Embarcadero Way (currently privately owned buildings).

D) Identification of Impacts on the Airport:

1. Locating OMM on the current Landfill site, and swapping approximately 10 acres of the North Runway site (22 acres total) as dedicated parkland. Thus, a 10 acre strip of the North Runway site, the eastern half, would become parkland. The group assumed that the dedication itself would involve no physical changes; that any physical changes would be a separate action involving separate analysis.

IMPACTS:
No impacts to the Airport were identified as long as the following points were recognized and addressed:
a. The FAA must be consulted for any rules they may have. Their approval may be needed.
b. Sufficient “buffer” must be allowed adjacent to the runway for aircraft wingspan.
c. The new Parkland (North Runway site) would have to have restricted access to prevent people and animals from entering.
d. The existing levee must be maintained. In fact, it may need to be augmented in light of sea level rise.
e. There may be a habitat mitigation area at the north end of the North Runway site which must be maintained.

2. Locating OMM on Embarcadero Road/Airport site and relocating Airport facilities per the 9/09/09 memo from Barney, et al to PA Council. This option would move the Heliport and Terminal to avoid impacts from the OMM in the southeastern corner of the Airport.

IMPACTS:
The following impacts on the Airport were identified:

a. The changes to the layout of Airport operations are major and funding would be needed. Both the amount and source of funds would be issues.
b. Cost of moving Embarcadero Road and resurfacing (at a minimum) of the Airport access road would be impacts.
c. New location of the Heliport is not safe due to incoming fixed wing traffic and proximity to fuel storage.
d. Negative visual impacts to the Airport would occur.
e. All of the negative impacts identified in the Task Force Report associated with the Embarcadero Road/Airport site would apply.

3. Locating OMM at the LATP site and move the activities planned for the LATP site to the Embarcadero Road/Airport site and relocate Airport facilities per the 9/09/09 memo from Barney, et al to the PA Council.

IMPACTS:
The negative impacts listed as 2.a – 2.d above would also apply to this concept.

4. Locating OMM on land now occupied by privately owned buildings on one or both sides of Embarcadero Way.

IMPACTS:
The following issues would have to be addressed and may or may not turn out to be actual impacts on the Airport:

a. The potential for a bird attraction hazard would have to be investigated.
b. A 1,200 foot distance would have to be achieved with respect to yard waste.
c. A 1 mile distance would have to be achieved for food waste.

5. Locating the OMM at the LATP site and locate the activities planned for the LATP site where the privately owned buildings on one or both sides of Embarcadero Way are now.

IMPACTS:
No impacts on the Airport were identified, assuming that there were no bird attraction issues from the operations that would be located on Embarcadero Way.

6. Locating the OMM at the LATP site and locate the activities planned for the LATP site on the North Runway site.

IMPACTS:
The following impacts on the Airport were identified:

a. FAA approval would be needed
b. Access would have to be provided which does not exist, creating safety issues.
c. Oversight of contractors and City staff would have to be addressed.
d. Bird attraction would have to be addressed.

7. Separate the OMM activities, locating only the curing piles (possible aerated static piles) on the North Runway site.

IMPACTS:
The following impacts on the Airport were identified:

a. Access which does not now exist would have to be provided, creating safety issues.
b. The bird attraction issue would have to be addressed.
c. FAA approval would be needed.

8. Locating the OMM on the Landfill site and creating offsetting parkland (approximately 10 acres) at the North Runway site.

IMPACTS:
There is no guarantee that the FAA will accept dedicating 20 acres as “Parkland” and thereby reducing the available Palo Alto airpark land by 20%. Until further clarification is gained on this item, it should not be included in the “no airport impact” category.
On 12/9/09 City Staff presented its preliminary thinking in response to Council's 10/19/09 directives. The responses will undergo more work, and likely be presented to Council on 2/1/10. Staff sought, and received, feedback on the following concepts:

1. **Interim Aerated Static Piles:**
   Staff is unlikely to recommend this due to cost, length of time to bring on line, and lack of an authorized site. (The interim (post 2012) “fallback” is the Z-Best (Gilroy) compost facility).

2. **Long Term Sites in Palo Alto:**
   a. **Airport Site**
      Staff is unlikely to recommend this due to impacts on the Airport and the Council directive to have “no impact” on the Airport.
   b. **Embarcadero Way Site**
      Staff is unlikely to recommend this due to high cost of purchasing land/buildings.
   c. **Landfill (Byxbee) Site**
      Staff is unlikely to recommend conducting a feasibility/environmental study at this time due to uncertain availability of the site and the high cost of a feasibility/environmental study.

3. **Areas to Pursue:**
   a. **Nearby Sites**
      - Staff will pursue taking organics to a new anaerobic digestion facility likely to open as soon as 2010 in San Jose (Greenwaste, Zanker Road), approx. 12.5 miles from the Embarcadero/101 interchange (Note: Much closer than Z-Best which is 53 miles).
      - Staff will pursue the possibility of an energy recovery facility at the SMART Station in Sunnyvale, although it is just an idea at this point.
   b. **Palo Alto Regional Water Quality Control Plant (RWQCP) Master Planning**
      - Staff will consider anaerobic digestion and other energy recovery possibilities at the RWQCP as the Master Planning gets underway in 2010. (Not able to handle yard trimmings, or all food waste within the RWQCP, however.)
The following feedback was received at the meeting:

Comments from Public
On Palo Alto Staff Presentation
at 12/09/09 Public Meeting

Individual members of the public suggested that the following thoughts (or answers to questions) be included in the report back to City Council on (or about) 2/1/10:

1. Indicate that there is citizen support (as well as citizen opposition) to an organics management facility on the landfill (Byxbee) site.
2. The City’s Solid Waste Management Plan filed with the County would have to be revised if a new Palo Alto Compost Facility were to be developed.
3. The regional situation with respect to organics management should be discussed.
4. For Aerated Static Piles (ASP) and Anaerobic Digestion (AD), the extent to which operating facilities exist should be discussed.
5. The emerging responses to the Santa Barbara RFP should be summarized to show what technologies are actually being proposed by bidders there.
6. The quality of the food scraps processed at Z-Best (Gilroy) should be mentioned as it is apparently contaminated with plastics and other non-food material.
7. The quality of biosolids should be discussed with the “hazardous waste” issue and the “long term build-up” issues described.
8. The schedule for developing Greenwaste’s Zanker Road facility should be explored to determine why it is happening so much faster than Staff’s estimation of a Palo Alto facility schedule.
9. A resident “Initiative” would shorten the schedule by eliminating one of the two EIRs shown on the Palo Alto Staff schedule.
10. The Waste Management Board management staff were much more optimistic about a Palo Alto schedule and should be consulted.
11. When will Greenwaste’s Zanker Road facility be able to take yard trimmings and biosolids?
12. What has the experience to date been of taking commercial food waste in Palo Alto in Palo Alto?
13. The process outputs (e.g., energy, compost) of an organics processing facility should be fully considered as a decision is made on the type of process.
14. The sensitivity of the facility location to noise, light, traffic, dust and pollutants should be described.
15. Drawings showing what the various site locations would look like should be presented.
16. Make it clear that the “Landfill site” is on “Byxbee Park”.
Staff Evaluation
Follow-up to Blue Ribbon Task Force (BRTF) Recommendations
For Developing an Organics Processing Facility Within The City of Palo Alto

1) Staff analysis and recommendation for developing an interim Aerated Static Pile (ASP) composting operation within Palo Alto versus adopting the Zero Waste Operations Plan of sending yard trimmings to SMaRT/ZBest.

The advantages of the City developing an ASP composting facility in Palo Alto after the existing composting facility closes are mainly: reduced greenhouse gas vehicle emissions through a closer destination facility; and that the City could control the facility and add other organic wastes to the process (biosolids, food scraps, etc). Control of the facility and organic wastes that could be processed could allow the City to implement residential curbside collection of food scraps in their greenwaste carts.

Disadvantages of the City developing its own facility in the interim are the high cost of developing an ASP operation ($3 million initial capital investment); and the fact that there is no land readily available for the placement of an ASP facility in the intermediate term.

Staff does not believe that the $3 million investment for an ASP Facility developed on any existing City-owned property is warranted because of the interim nature of the ASP (Council has prioritized Anaerobic Digestion) and because there is no readily available site for the facility.

2) Evaluation of Three Potential Anaerobic Digestion (AD) Facility Sites.

Site #1 Other Unspecified Locations Along Embarcadero Road

Staff focused primarily on the existing commercial properties along Embarcadero Way for this portion of the evaluation. Five properties ranging in size from 1 to almost 4 acres were evaluated by the Real Estate Division of the Administrative Services Department. Table 1 below summarizes the potential acquisition costs for these properties. The properties’ layout in relation to the Airport and the Regional Water Quality Control Plant (RWQCP) is shown in Figure 1.

If only the three properties along the east side of Embarcadero Way are considered, acquisition costs could range between $8.2 to $13.7 million for these 3.15 acres of land. It is very unlikely that even just these three properties would be easy to acquire. Eminent Domain would likely be necessary. One of these three properties houses California Self Storage and another is currently leased by Victor Aviation Services. Only the property at the corner of Embarcadero Road appears to be vacant at the time of this report. It contains a two-story structure for research and development and offices. Staff does not recommend pursuing the acquisition of these properties for an organics processing facility.
Table 1: ROUGH ACQUISITION ESTIMATES FOR EMBARCADERO WAY PROPERTIES

<table>
<thead>
<tr>
<th>Street Number</th>
<th>APN</th>
<th>Acres</th>
<th>High</th>
<th>Mid</th>
<th>Low</th>
<th>Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEST SIDE</td>
<td>1880</td>
<td>1.19</td>
<td>$5,183,640</td>
<td>$4,146,912</td>
<td>$3,110,164</td>
<td>Sold 7/06 for approx. $4,250,000 recently refurbished - avail for lease</td>
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<tr>
<td></td>
<td>2440</td>
<td>3.95</td>
<td>$17,206,200</td>
<td>$13,764,960</td>
<td>$10,323,720</td>
<td>Newer R&amp;D Sites - several vacancies</td>
</tr>
<tr>
<td>EAST SIDE</td>
<td>1900</td>
<td>1.14</td>
<td>$4,965,840</td>
<td>$3,972,672</td>
<td>$2,979,504</td>
<td>Older building - available for lease</td>
</tr>
<tr>
<td></td>
<td>2415</td>
<td>1</td>
<td>$4,356,000</td>
<td>$3,484,800</td>
<td>$2,613,800</td>
<td>Older building - currently leased</td>
</tr>
<tr>
<td></td>
<td>2425</td>
<td>1.01</td>
<td>$4,399,580</td>
<td>$3,519,648</td>
<td>$2,636,738</td>
<td>Self storage facility</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>5.14</td>
<td>$22,389,840</td>
<td>$17,911,872</td>
<td>$13,433,904</td>
<td></td>
</tr>
</tbody>
</table>

COMPARABLE DATA:
2525 E. Bayshore Road - 1.44 acres, same age bldg - Comp Value per Real Quest $6,250,000 - Sold 4/2006
$4,200,000
1010 Corporation Way - Currently for sale - 21,500 sf. Bldg, Office/R&D, Vacant, 1.10 ac lot size - for sale price
$5,300,000 = $246.51/sf

CONDEMNATION COSTS CONSIDERATIONS (assume +30% to above mid range figure):
Courts must find that: 1) public interest and necessity require the project; 2) the project is compatible with the greatest public good and least private injury; and 3) the property is necessary for the project
Costs to consider: Fair market value, plus attorney fees, appraisal fees, relocation expenses, payment for business fixtures, equipment and good will, and if leased possibly relocation and/or tenants leasehold interest to be compensated.

NOTES and ABBREVIATIONS:
East Side parcels represent the lots next to RWQCP
APN: Assessor's Parcel Number
sf: Square Feet
Site #2 Embarcadero Road/Airport Site

Based on meetings held with Airport stakeholders, there are no options within the airport property that have no negative impacts on its operations, finances, or relationships with the FAA or Santa Clara County.
Site #3 Northwest Corner of Current Landfill Site (Byxbee Park)

Staff has conceptually developed a 4.7 acre grading plan (Figure 2) at the Northwest corner of the landfill adjacent to the PARWQCP that might be large enough for a large AD facility that could accommodate the City's entire organic waste throughput. The grading plan incorporates dedicated park acreage from the area adjacent to the PARWQCP fenceline (facing the landfill) and overlying approximately 2 acres of the existing landfill.

Implementing this conceptual grading plan would mean raising the grades of the existing land adjacent to the landfill approximately 5 feet to approximately 15 feet above mean sea level (MSL). This conceptual site would partially overlie the landfill final contours approved by the landfill architect (Hargreaves Associates, April 2008). If an AD building were developed on this site then the top of a building could be as high as 40 feet above MSL – lower than the highest elevations of the landfill that are 60 feet above MSL.

Permits and Approvals

Permitting an AD facility at the Northwest corner of the landfill would involve CEQA, State permits and local approvals and voter approval to undedicate a portion of Byxbee Park. This entire development process would be expected to take 7 or 8 years to complete (See timeline Figure 3). Because this site overlies the landfill and because this site would probably require two EIRs and a vote to undedicate parkland, the schedule for development of a large AD facility would be expected to take three to four years longer than a site that did not have these land use issues.

- An Environmental Impact Report (EIR) would be required. It is likely that two EIRs may be required – a programmatic EIR to support the vote to undedicate the parkland and later, a design level EIR that would support the permits and approvals;

- A new or revised solid waste facility permit would be necessary;

- A new Bay Area Air Quality Management District (BAAQMD) Facility Permit would likely be required. A new high technology organics facility with emissions control would meet the BACT standards (Best Achievable Control Technology).

- New or revised Waste Discharge Requirements (WDRs) will probably be required from the Regional Water Quality Control Board since the proposed operation would be sited partially on the landfill. Flatter grades overlying the landfill can be permitted as long as an effective system for diverting surface drainage and preventing ponding is designed in accordance with California Code of Regulations Title 27 Section 21090 (b)(1)(B).

- Local permits and approvals would include revising the Baylands Master Plan, Planning/Site & Design Review approvals, voter approval to undedicate parkland etc.
• The City would need to modify the landfill’s post-closure plan to reflect this continued operation on the closed landfill. Also, a facility operations layer and drainage features would need to be designed and constructed to protect the landfill’s cap.

• An amendment to the landfill lease with the State Lands Commission would be necessary for the improvements.

**Other Impacts**

Since the proposed facility can be incorporated into the PARWQCP, the existing landscape screen trees would need to be removed and new landscaping improvements would need to be installed at the perimeter of the new facility.

Access to Byxbee park could still be available via the existing parking lot. Some trails planned at the north end of the landfill would need to be rerouted to avoid the new facility. Maintenance of the park/landfill could still be undertaken.

**Development Costs**

Hilary Gans from the Blue Ribbon Task Force completed and presented to Council a preliminary cost estimate of $13.75 million for an Anaerobic Digestion (AD) w/ Energy Recovery system that is large enough to handle the City’s yard trimmings and some food waste. This capital cost estimate includes the cost of a specialized building, gas collection system and electricity generating equipment but did not include the cost of an asphalt operating surface or materials handling equipment cost since the City already owns all the necessary heavy equipment required to run a composting system.

The cost per ton calculation to process the City’s organics would depend on what type of facility is developed, what type of organic wastes would be managed at the facility and what throughput of tonnage would be possible. A consultant feasibility study would need to be performed before these costs could be accurately developed.

**3) Evaluation of Other Options**

Figure 4 presents timelines for two recommended courses of action: 1) study the feasibility of developing energy recovery facilities for biosolids and limited food waste during the upcoming RWQCP Master Planning project, and 2) pursue partnering opportunities with SMaRT and/or private ventures building nearby anaerobic digestion facilities.
Figure 2: Conceptual Grading Plan for AD Facility on Byxbee Park
Figure 3: ANAEROBIC DIGESTION FACILITY DEVELOPMENT TIMELINE
CITY OF PALO ALTO

TIMELINE IN YEARS


IMMEDIATE ACTION
BY COUNCIL

Council Decision (Apr 2010)

Landfill Closes (2011)

Compost Facility Closes (Dec 2011)

Council Certifies Programmatic EIR (May 2012)

Voter Approval to Undedicate Parkland. Begin RFP to Select Design-Build AD Vendor (Nov 2012)

Selection of Design-Build AD Vendor (Jul 2012)

Begin设计, Focused EIR, Permits and Approvals (Jul 2012)

Begin Construction (Jul 2016)

Complete and Certify EIR, Receive All Permits and Approvals. (Jul 2016)

Construction and Startup Completed (Dec 2017)

Projected Schedule

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

COMPOST IN PALO ALTO

GREEN MATERIAL TO SmART

PERMANENT FACILITY

Feasibility Study/EIR (24 Mos)

Lag Time RFP (8 Mos)

AD Vendor RFP (9 Mos)

Design, CEQA, Permit (48 Mos)

Constr. & Startup (17 Mos)

RFP - Request for Proposal
AD - Anaerobic Digestion
EIR - Environmental Impact Report
Figure 4: ANAEROBIC DIGESTION FACILITY DEVELOPMENT TIMELINES
CITY OF PALO ALTO

- **NO IMMEDIATE COUNCIL ACTION REQUIRED**
- **Staff Driven** (Limited AD at WQCP)
  - Begin Feasibility Master Plan (June 2010)
  - Landfill Closes (2011)
- **Compost Facility Closes (Dec 2011)**
- **Complete Feasibility Master Plan (May 2012)**
- **Staff Driven** (Track Partnering Opportunities)
  - Compost Facility Closes (Dec 2011)
  - Landfill Closes (2011)

**TIMELINE IN YEARS**
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016

**NOTE**
- AD: Anaerobic Digestion

**Legend**
- **COMPOST IN PALO ALTO**
- **GREEN MATERIAL TO SMaRT**
- **CONTINUE TRACKING PARTNERING OPPORTUNITIES WITH NEW REGIONAL AD FACILITIES**
Staff Memo

Follow-up to Council Questions from Study Session on March 8, 2010

Council Email Question: The Composting [Blue Ribbon Task Force] Report was originally paired with a Colleagues memo on Early Opening of Portions of Byxbee Park. This complementary item was amended and passed on Nov 2, 2009. It was stated at that meeting that this item on the Early Opening would return ‘quickly’. Will it be on the Agenda on April 5 along with the Composting Report?

The COUNCIL MOTION from November 2, 2009 stated:

1) Direct Staff to work with the Parks and Recreation Commission and Hargreaves and Associates to develop final park design goals for Phase II of Byxbee Park including provision to access and views and return to Council with a proposed implementation budget, and 2) Direct Staff to take the necessary steps to open the completed and approved landfill area (Phase II A/B in the Baylands Master Plan) to the public as interim open space by the end of 2011 or sooner; 3) Amended to direct Staff to report back to Council with an estimated budget for the work in both parts of the Motion in a timely manner.

Staff Response: The attached Table 1 outlines the steps necessary to prepare closed Landfill Phase IIA and Phase IIB for early public access. Staff will begin adding clean soil to low areas in the previously closed sections within the next few months (weather permitting) in order to fulfill the post-closure responsibility of addressing settlement. Most of the top-deck areas have settled one to two feet (or more) within the last several years. The current goal is to accept and spread enough clean soil to bring the closed sections up to the original designed grades of these already capped landfill areas.

The proposed FY 2011 budget for the Landfill Closure (CIP RF-11001) has been adjusted to provide $600,000 for the work required to prepare Phase IIA and Phase IIB for public access. This will include: changes to the environmental control systems (leachate and landfill gas collection piping) to place piping and well heads underground, minor grading and improvements to site access roads, and removal of perimeter fencing. The Refuse Fund budget does not include money to prepare final park design goals in conjunction with Hargreaves and the Parks & Recreation Commission, final park design (which should include Phase IIC), nor final park construction.

Staff believes it would be more efficient and cost effective to bury the piping system underground when the Phase IIC closure is completed because there will be the efficiency of earth moving equipment and a single contractor to mobilize rather than administering two discrete projects successively. If Council decides to initiate the early opening of Phase IIA and Phase IIB and to bear the extra expense, it would probably only speed up the potential to open these areas by about one year earlier than if the work was combined with the closure construction on Phase IIC. It is also not clear yet how the park-related improvements will be funded.
<table>
<thead>
<tr>
<th>TASK</th>
<th>DESCRIPTION</th>
<th>STATUS</th>
<th>ESTIMATED COST</th>
<th>SOURCE OF FUNDS</th>
<th>TIMELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adjust the settled surface with new topsoil to raise the finished grade back to the permitted elevations</td>
<td>IN PROGRESS</td>
<td>$50,000</td>
<td>PWD - Refuse: Landfill Operations</td>
<td>Complete by October 2010</td>
</tr>
<tr>
<td>2</td>
<td>Revegetate surface following settlement remediation</td>
<td>IN PROGRESS</td>
<td>$25,000</td>
<td>PWD - Refuse: Landfill Operations</td>
<td>Complete by December 2010</td>
</tr>
<tr>
<td>3</td>
<td>Seek Local Enforcement Agency (LEA) approval for &quot;early&quot; public access to Phase IIA &amp; Phase IIB</td>
<td>PLANNED</td>
<td>-</td>
<td>PWD - Refuse: staff-level task</td>
<td>Complete by December 2010 (assuming no permitting hurdles)</td>
</tr>
<tr>
<td>4</td>
<td>Design, plan and permit changes to environmental control systems (leachate and landfill gas collection piping)</td>
<td>PLANNED</td>
<td>$50,000</td>
<td>PWD - Refuse: Closure reserve (CIP RF-11001)</td>
<td>Pending FY 2011 Budget</td>
</tr>
<tr>
<td>5</td>
<td>Modify environmental control systems to place piping and well heads underground</td>
<td>PLANNED</td>
<td>$500,000</td>
<td>PWD - Refuse: Closure reserve (CIP RF-11001)</td>
<td>Pending FY 2011 Budget</td>
</tr>
<tr>
<td>6</td>
<td>Minor grading and improvement of site access roads</td>
<td>PLANNED</td>
<td>$25,000</td>
<td>PWD - Refuse: Closure reserve (CIP RF-11001)</td>
<td>Pending FY 2011 Budget</td>
</tr>
<tr>
<td>7</td>
<td>Remove perimeter fencing</td>
<td>PLANNED</td>
<td>$25,000</td>
<td>PWD - Refuse: Closure reserve (CIP RF-11001)</td>
<td>Pending FY 2011 Budget</td>
</tr>
<tr>
<td>8</td>
<td>Prepare Final Park Design Goals in conjunction with Hargreaves and the Parks &amp; Recreation Commission</td>
<td>PLANNED</td>
<td>$25,000</td>
<td>CSD: ???</td>
<td>Pending Council action</td>
</tr>
<tr>
<td>9</td>
<td>Final Park Design (including Phase IIC)</td>
<td>PLANNED</td>
<td>$470,000</td>
<td>CSD: ???</td>
<td>Pending Council action</td>
</tr>
<tr>
<td>10</td>
<td>Final Park Construction (including Phase IIC)</td>
<td>PLANNED</td>
<td>$4,700,000</td>
<td>CSD: ???</td>
<td>Pending Council action</td>
</tr>
</tbody>
</table>
Study Session Question: Refuse fund has right to parkland until June 30, 2011 — future use would require $3.7 million annual payment? Is that built into the numbers?

Staff Response: CMR 104:07 established the following rent schedule for both the active and closed portions of the landfill:

<table>
<thead>
<tr>
<th>City of Palo Alto</th>
<th>Landfill Rent Schedule</th>
<th>Rent Charged</th>
<th>Rent Payment (Smoothing Schedule)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2004-05</td>
<td>7,420,925</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2005-06</td>
<td>7,420,925</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2006-07</td>
<td>7,420,925</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2007-08</td>
<td>7,420,925</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2008-09</td>
<td>7,420,925</td>
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<td></td>
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<td>2009-10</td>
<td>7,420,925</td>
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<td>7,420,925</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2011-12</td>
<td>0</td>
</tr>
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<td></td>
<td>2012-13</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2013-14</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2014-15</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2015-16</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2016-17</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2017-18</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2018-19</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019-20</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2020-21</td>
<td>881,851</td>
</tr>
</tbody>
</table>

This rent schedule encompasses the entire landfill area (approximately 100 acres of both active and closed). The amount of rent attributable to the piece of land being considered for composting would be proportionally less. The current annual rent payment for the entire landfill is approximately $4.3 Million. If the Refuse Fund occupies any portion of Byxbee Park for a longer period than contemplated in the rent schedule, the schedule would have to be re-adjusted. The schedule was based on the information available at the time that assumed a projected landfill closure on June 30, 2011. The schedule adopted by the Council in 2007 contained a number of Council-directed policies, including: (1) the Refuse Fund should be paying the General Fund for use of the inactive portion until it is formally converted to park use; (2) the rent attributable to
the inactive portion should be less than fair market rent since the Refuse Fund is not actively using the property and (3) the rent payments should be amortized over time so that Refuse rates are not substantially impacted. The current economy which has led to less commercial dumping at the landfill together with the temporary City Council imposed commercial dumping moratorium may result in a slightly later landfill closure date. The City is in the process of determining whether there is a need for further refining this rental schedule and whether there is a need for an updated appraisal.

**Study Session Question:** If there is a de-annexation of the parkland, the parkland will take on the value of commercial properties around it. Refuse Fund would have a liability for approximately that amount?

**Staff Response:** If the parkland is de-annexed and the Refuse Fund continues to utilize the property for Refuse purposes (including composting), the Refuse Fund would be responsible for the payment of rent. The rent would be based on the highest and best use which is most likely research and development/industrial use.

**Study Session Question:** Concerned about buffer between industrial activities and parkland – will there be an EIR to estimate the impact on Parkland?

**Staff Response:** Yes, an EIR for a compost project would address land use compatibility and related aesthetic issues. The zoning ordinance governing the new use could also prescribe appropriate setbacks/ buffer zones.

**Study Session Question:** 90% solution email by Bryan Long – can his solution be part of the April 5 discussion?

For reference, the recommendations in Bryan Long’s 90% solution email are:

1. Improve collection rates of our new commercial/multifamily food waste collection program, and implement a residential food scrap collection program. Utilize Z-Best or other regional facility to compost or digest these food wastes for the time being.

2. After landfill closure, divert yard trimmings to Z-Best or other regional composting facility, and

3. Direct RWQCP staff to incorporate alternatives for anaerobic digestion of biosolids and Palo Alto's food scrap collections into their comprehensive [Master] plan. Direct staff to consider yard trimmings as well, but as a secondary priority and only if it does not significantly increase the cost or lengthen the timeframe required.
Staff Response: Staff's recommendation is largely in line with what is referred to as the 90% solution. The upcoming RWQCP Master Plan will include an analysis of options for managing the biosolids that are currently incinerated. The analysis of biosolids options won't constitute a full “Feasibility Study”. However it will include site specific cost and revenue estimates, general environment impact analysis and life cycle estimates of greenhouse gas (GHG) emissions. Taking some food waste will be analyzed, but it is very unlikely that anything close to all the PA food waste could be handled within the RWQCP footprint.

It is important to note that the RWQCP is funded 35% by Palo Alto and 65% by its other Partners. Therefore, expenditures (including planning) for waste streams generated by only Palo Alto would have to be funded by 100% Palo Alto funds. Major Capital Improvement Projects at the RWQCP also require approval by the Partner City Councils in addition to the Palo Alto City Council.

Study Session Concerns: Numerous questions posed by Council at the study session related to the size, cost, operations, buffer zones, and environmental impacts of an anaerobic digestion facility.

Staff Response: These types of questions are best answered through a detailed feasibility study combined with a full Environmental Impact Report (EIR) so that all mitigation measures can be identified and properly estimated for cost. The cost of such a detailed study would exceed $250,000. Previously a similar effort for the project known as the Environmental Services Center (ESC) would have cost over $400,000 (CMR 125:05). The largest portion of the proposed ESC was the composting area. Because no readily available site has been identified, staff does not recommend moving forward with a full scale feasibility study for anaerobic digestion at this time.
Location of Potentially Offsetting Areas

April 5, 2010
CMR 165:10
ENERGY FEASIBILITY STUDY

INTRODUCTION

In the Palo Alto Compost Blue Ribbon Task Force report (September 2009) a section describes the promise of ‘advanced technologies’. This section states that Palo Alto should work with neighboring communities to explore new technologies that have the potential “to utilize its entire municipal waste steam ...which would greatly increase the contribution of composting and waste disposal to the city’s goal of 100% GHG reduction”. The report concludes, however, that such technologies are 7-10 years in the future and not of current concern (Final Report, p 14).

Today, however, there are more than 50 communities throughout California that are working in small groups to adopt the use of some of these new conversion technologies. Palo Alto should evaluate the progress of these new technologies as a part of its current Energy/Compost Feasibility study.

COUNCIL MANDATE AND PRELIMINARY FEASIBILITY REPORT

The Council directive on the Energy/Compost Feasibility Study (April 5, 2010) states that the study should “investigate and pursue local partnering opportunities with ...companies developing private AD or energy conversion facilities”. (Council minutes, April 5, 2010). The feasibility study contract signed with Alternative Resources Inc focuses only on anaerobic digestion facilities in Palo Alto but it does say that the city will explore regional options with local partners for new conversion technologies” (Scope of Service, August 2, p 1).

INDEPENDENT ASSESSMENTS OF MODERN CONVERSION TECHNOLOGIES

Conversion technologies are non-combustion thermo-chemical processes that are capable of converting biomass and other waste products into marketable products such as synthetic gas. In a recent front page story, the New York Times reports that such newer conversion technologies are commonly used in northern Europe. There, well over a thousand municipalities rely on them for recycling virtually all waste into local, clean energy.

A recent EPA study has shown that newer conversion technologies “can generate an order of magnitude more electricity than landfill gas to energy projects given the same amount of waste”. The EPA concludes that conversion technologies are a better option than landfill gas to energy “if the goal is greenhouse gas reduction”.

Greg Schmid
March 2011
Sources


CALIFORNIA COMMUNITIES ARE MOVING AHEAD

Experiments with conversion technologies are proliferating in California

Salinas Valley Solid Waste Authority

The SVSWA has been working on a redesign of their landfill operations since the spring of 2007 through a committee made up of members from the county and five cities. The committee have done a number of site visits and made a major shift in emphasis about a year ago. They renamed themselves the Conversion Technology Committee, and moved from considering recycling and anaerobic digesters to investigating true conversion technologies. They have just selected Plasco Energy Group, a Canadian firm, to build a plasma arc converter that will recycle and reuse 98% of their municipal waste.

Sources
www.SVSWA.org

Look especially at the Salinas Valley Committee’s timeline; it shows the evolution of their thinking and contains references to a series of reports that were prepared along the way. It also includes a presentation made in September 2009 that outlines the criteria used to select Plasco over Urbanaser.


www.Plascoenergygroup.com

Santa Barbara County

Following an open three-year process, four cities and the county of Santa Barbara are in the final stages of selecting a firm to run a new conversion technology center at the county landfill. The final RFP set very high standards for recycling rates, clean energy output from waste streams, zero waste goals, low GHG emissions, and low prices for ratepayers. Among the eight firms that were initially pre-qualified to bid were two firms
focused on anaerobic digesters. *Neither of these anaerobic digestion firms is among the four finalists.* The authority is now deciding between two finalists, including Plasco.

**Sources**

[www.conversiontechnologystudy.com](http://www.conversiontechnologystudy.com) (look especially at the news site that tracks the evolution of the project over the last three years and the full RFP that sets the detailed criteria for the applicants).

Contact: County Public Works Deputy Director Mark Schleich (805) 882-3600

**Los Angeles County**

The LA County Board of Supervisors recently unanimously approved a series of conversion technology initiatives (April 20, 2010). This included funding for an immediate demonstration project and an identification and preparation of up to ten sites throughout the county for conversion technology plants. The Board concluded that conversion technologies would:

---prevent the release of methane from landfill gas  
---provide substantial clean energy in place of fossil fuels  
---avoid trucking waste long distances  
---be cost competitive with other alternatives, and  
---use public/private partnerships to save money.

**Sources**

[www.SoCalConversion.org](http://www.SoCalConversion.org) (Check out the conference they put on September 23, 2010 “The Long-term Promise of Conversion Technology”. The website lists the presenters and provides the power point slides for two of the presentations; they promise to have videos of the others up soon).

[www.CleanLA.com](http://www.CleanLA.com)
From: Grider, Donna  
Sent: Sunday, April 03, 2011 8:32 PM  
To: Council, City  
Subject: FW: a green city  
Attachments: Conversion technologies March 2011.doc

Please note attached from Council Member Schmid.

Donna J. Grider, MMC  
City Clerk  
City of Palo Alto  
650-329-2226

Think Before You Print!

-------- Forwarded message --------
From: <gregschmid@sbcglobal.net>  
Date: Wed, Mar 30, 2011 at 12:09 PM  
Subject: a green city  
To: sid espinosa <sidespinosa@gmail.com>

Sid,  
I just wanted to be sure that you had a copy of my latest information about regional green solutions for the problem we're dealing with in the Baylands and a list of relevant websites. I have shared this with Jim and Phil.  
Greg

--

SID ESPINOSA  
Mayor, City of Palo Alto  
250 Hamilton Avenue  
Palo Alto, CA 94301  
(650) 617-3100 x3619  
Sid.Espinosa@cityofpaloalto.org

Follow me on Twitter: http://twitter.com/SidEspinosa  
Connect on Facebook: http://www.facebook.com/pages/Sid-Espinosa-Mayor-City-of-Palo-Alto/173437449350158

4/4/2011
To The Palo Alto City Council:

Please do not continue with the feasibility study of the anaerobic digester on Byxbee Hills Park. The feasibility study has shown that the cost would be between 50 to 100 million dollars to construct the industrial plant. Operation costs will be from two to four million dollar a year. To make this industrial operation profitable, expansion further onto Byxbee Park might be necessary. It will destroy Byxbee Hills Park.

This industrial plant is the antithesis of how to confront global warming. All studies show that construction resulting in the destruction of open space, conservation lands and habitat is one of the major causes of global warming. There are many other ways Palo Alto’s 25,000 households can reduce our CO2 footprint and not destroy or encroach upon Byxbee Hills Park.

Please take Palo Alto off this destructive and expensive path now.
Sincerely,

[Signature]

Name
58 ROOSEVELT CIR.
Address
PALO ALTO 94306

To The Palo Alto City Council:

Please do not continue with the feasibility study of the anaerobic digester on Byxbee Hills Park. The feasibility study has shown that the cost would be between 50 to 100 million dollars to construct the industrial plant. Operation costs will be from two to four million dollar a year. To make this industrial operation profitable, expansion further onto Byxbee Park might be necessary. It will destroy Byxbee Hills Park.

This industrial plant is the antithesis of how to confront global warming. All studies show that construction resulting in the destruction of open space, conservation lands and habitat is one of the major causes of global warming. There are many other ways Palo Alto's 25,000 households can reduce our CO2 footprint and not destroy or encroach upon Byxbee Hills Park.

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[Signature]

Name
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Address
PALO ALTO 94306