



**CITY OF PALO ALTO  
OFFICE OF THE CITY AUDITOR**

**6b**

February 14, 2005

The Honorable City Council  
Palo Alto, California

**Acceptance of City Auditor's Review of Environmental Services Center Proposal**

**RECOMMENDATION**

Recommend acceptance of the City Auditor's Review of the Environmental Services Center Proposal.

**DISCUSSION**

On November 15, 2004, the City Council heard presentations related to the Environmental Services Center (ESC), including a summary of the City Auditor's Review of the Environmental Services Center Proposal. Because of limited time, staff did not provide a written response at that time. The agenda item was continued to November 22, 2004, at which time staff and I responded to City Council questions about the Auditor's review and staff's proposal. Action on the item was deferred until January and then February 2005.

Staff is providing the response to the Auditor's Review under separate cover. There is nothing in that response that changes my recommendation that the City Council accept the Auditor's report and the 12 recommendations contained therein. I have been asked to put my comments in writing.

My comments regarding staff's responses follow:

- **RECOMMENDATION 1: Staff should determine whether the Refuse Fund should pay rent on the unopened portions of the landfill, or complete final closure and open them to the public.**

Staff disagrees with recommendation #1, but has suggested that a Finance Committee discussion may be warranted. I recommend you accept the audit recommendation and refer this matter to the Finance Committee.

As stated on page 19 of the auditor's report, the Refuse Fund currently pays rent on the active 47 acres of the landfill (phase 2c) but does **not** pay rent on phase 2a (24 acres that was closed in 1992) or phase 2b (23 acres that was closed in 2000). Phases 2a and 2b represent a total of 47 additional acres that may be subject to rent – they are fenced off to the public and under control of the Refuse Fund. This represents as much as \$4.7 million per year that may be owed by the Refuse Fund to the General Fund.

- **RECOMMENDATION 2: Staff should consider potential effects of waste reduction in planning for needed landfill space, and assess whether those benefits could accrue to the future landfill park in the form of lower and/or smoother contours. Staff should inform the City Council of potential impacts on final landfill grading plans as landfill closure nears.**

Staff disagrees with Recommendation #2, and recommends staying with the original grading plan – which may mean extending the life of the landfill past 2011. As stated on page 20-21 of the auditor’s report, Palo Alto has extended the life of the landfill a number of times; by some estimates the life of the landfill could be extended to the year 2029.

However, on page 21 of the auditor’s report, we concluded that post-2011 it would be cheaper to dispose of refuse through SMaRT than *“continuing to landfill in Palo Alto... This opens up a policy option for the Council to consider. If waste streams decline or landfill space is otherwise not required, the City should consider reducing the contours of the landfill.”*

Staff has agreed to provide periodic reports to the City Council on landfill status. I recommend the City Council accept the audit recommendation. In my opinion, the City Council will, in the near future, need to determine whether it intends to close the landfill and open the park in 2011.

- **RECOMMENDATION 3: The Public Works Department should utilize the services of a landscape architect to review and help shape refined grading plans prior to landfill closure.**

Staff concurs with the recommendation but states that this *“most likely would not be required unless an ESC project is approved.”* In my opinion, if the City Council desires to close the landfill in 2011 (see Recommendation #2), and depending on the City’s effectiveness in reducing the amount of waste generated in Palo Alto, the City should begin exploring options for lowering the contours of the landfill. Staff has said this type of review can be time-consuming. The services of a landscape architect would facilitate analysis of impacts on the park masterplan.

- **RECOMMENDATION 4: If the Council decides to proceed with the project, consideration should be given to eliminating some component parts of the project where land rent reduces their economic benefit.**

The auditor’s report (pages 22-24) concluded that reducing the size and scope of the project would reduce costs for ratepayers. Staff disagrees with eliminating any components of the proposal before proceeding with the EIR.

According to the agenda for tonight’s meeting, staff will propose adding two more alternatives to the EIR, and the cost of the EIR and cost benefit analysis has increased by more than \$100,000 – from \$358,730 (on the November 15, 2004 agenda) to \$466,407.

Given the increasing cost to do an EIR, if the City Council needs additional cost information about component parts of the project (beyond what was presented in the auditor’s report), I recommend the cost-benefit analysis precede the EIR.

- **RECOMMENDATION 5: Staff should begin planning a request for proposal process**

**for curbside collection services beginning in 2009 that considers whether to continue offering City-owned land for contractor offices and storage.**

Staff concurs with the recommendation. Staff did not indicate whether this would reduce the size of the ESC proposal being studied.

- **RECOMMENDATION 6: The City Council should request additional information about the benefits of a permanent household hazardous waste facility before committing to building a facility at the proposed ESC that increases annual additional operating costs.**

Staff concurs with the recommendation. However, because the cost of the EIR and analysis is currently approaching \$500,000 (as stated above), I must now recommend the cost-benefit analysis precede the EIR.

- **RECOMMENDATION 7: The Planning Department and City Attorney's Office should research whether there are outstanding agreements or commitments to other entities from previous actions at the landfill and determine their legal standing.<sup>1</sup>**

Staff concurs with the recommendation. The Attorney's Office is providing the requested analysis under separate cover.

- **RECOMMENDATION 8: Planning staff should immediately review landfill grading plans for conformance to the approved Byxbee Park Plan. If necessary, staff should request the assistance of a landscape architect to make this determination. If Planning staff determine that the grading plan is different from the approved park plan, landfill staff should be directed to grade to levels indicated in the park plan or lower, while filing an application for site and design review and a park improvement ordinance.**

Staff concurs with the recommendation. As indicated in staff's response, discrepancies have been identified between the grading plan for the active portion of the landfill (phase 2c) and the approved park masterplan, and will be resolved with the help of the landscape architect that prepared the original park masterplan.

- **RECOMMENDATION 9: Staff should provide photo simulations or other means to help visualize the final shape of the landfill and proposed ESC in the larger context of the larger park areas.**

Staff concurs with the recommendation, and proposes to include this task in the EIR contract.

- **RECOMMENDATION 10: As they compile an update to the Baylands Master Plan, the Planning Department should clearly spell out the existing boundaries, names, and acreages of dedicated parklands in the Baylands.**

Staff concurs with the recommendation.

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<sup>1</sup> Wording clarified at the suggestion of the City Attorney.

- **RECOMMENDATION 11: The Community Services Department should develop a natural resources management plan.**

Staff concurs with the recommendation.

- **RECOMMENDATION 12: The economic feasibility of the project should be re-evaluated based on project modifications and mitigation requirements imposed (or expected to be imposed) during the review and approval process.**

Staff concurs with the recommendation.

## **CONCLUSION**

Last June, the City Council asked the Auditor's Office to independently review the assumptions and financial implications of the ESC proposal, and to present that information to the City Council before additional monies were expended on the project.

In November, our report concluded that the pending closure of the Palo Alto landfill in 2011 presented the City with opportunities and policy choices. Our analysis showed that instead of saving \$1 million per year, the proposed 19-acre ESC would cost about \$1.6 million more per year to operate than using the SMaRT station alone (at least until the year 2021). We estimated a 6.2-acre facility would cost about \$400,000 more per year to operate than using SMaRT alone (until the year 2021).

Because of the numerous policy choices involved, the auditor's review did not recommend any one of the alternative proposals. However, our analysis indicated that the least costly option would be to continue current operations at the landfill until 2011, then operate minimal recycling and yard waste facilities at the landfill site between 2011 and 2021 (the SMaRT station handling all refuse), and to reserve a site with an option to construct a post-2021 6.2-acre facility when the SMaRT station agreement expires.

We have not been presented with any information since the issuance of our report that changes our opinion or recommendations.

Respectfully submitted,

Sharon W. Erickson  
City Auditor

# Report from the City Auditor

## CITY AUDITOR'S REVIEW OF ENVIRONMENTAL SERVICES CENTER PROPOSAL



OFFICE OF THE CITY AUDITOR

NOVEMBER 2004

# City of Palo Alto

*Office of the City Auditor*

November 15, 2004

Honorable City Council  
Palo Alto, California

## **City Auditor's Analysis of Environmental Services Center Proposal**

At your request, the City Auditor's Office has reviewed the Environmental Services Center (ESC) proposal. You asked us to analyze and help clarify the proposal, including acreages, tonnages, and alternatives. Our analysis indicates the proposed 19-acre project is more expensive than some other options. Reducing the size of the project and/or scope of services would reduce annual operating costs. However, the decision to build the project will ultimately be a policy choice that must also resolve complicated land use issues.

### Proposed Project

The proposed ESC project would offer multiple services at the Palo Alto landfill site after the closure of the landfill in about 2011. The 19-acre staff proposal includes a material recovery facility (MRF); refuse transfer station; composting; recycling drop-off and processing facility; permanent household hazardous waste facility; bin storage; asphalt and concrete storage; and facilities such as a visitor/education center and administrative offices.

After opening the ESC facility, Palo Alto would continue to use the services of the Sunnyvale SMaRT station until 2021, and also would continue hauling refuse to the San Jose Kirby Canyon Landfill until 2021. At that time, City staff envisions replacing the Sunnyvale SMaRT station services with an expanded ESC material recovery facility in Palo Alto, and entering into a new agreement for landfill capacity at Kirby Canyon or elsewhere.

*The proposed ESC project has changed over time.* In 1998, the Planning Commission recommended approval of a project at the Los Altos Treatment Plant (LATP) site. The City Council appropriated \$3.6 million for that project. Since at least FY 1999-00, however, budget discussions and studies have centered on the Palo Alto landfill site. In 1999, Brown, Vence & Associates (BVA) conducted a feasibility assessment of the City's options after the landfill closes. In 2004, staff presented updated alternatives including sites at the landfill and at LATP.

### Cost Comparisons

In July 2004, using figures from the 1999 BVA study, staff indicated that the proposed ESC facility could potentially save \$1 million per year over using the SMaRT station. Working together with staff from Public Works and Administrative Services, we have updated the comparative cost estimates for the projects that BVA studied and the project alternatives that staff presented in 2004.

*19-acre facility.* Our current estimate indicates that staff's recommended pre-2021 19-acre ESC facility, operated in tandem with the SMaRT station, would be more expensive than using the Sunnyvale SMaRT station alone (\$8.5 million per year versus \$6.9 million per year in 2004

dollars). The post-2021 19-acre facility would be only marginally less expensive than using the SMaRT station alone (\$6.8 million per year versus \$6.9 million per year in 2004 dollars).

*6.2-acre facility.* Staff is also assessing the feasibility of a 6.2-acre facility. Our analysis indicates that a pre-2021 6.2-acre ESC, operated in tandem with the SMaRT station, would still be more expensive than using the SMaRT station alone (\$7.3 million per year versus \$6.9 million per year in 2004 dollars), but a post-2021 6.2-acre facility would be less expensive than using SMaRT alone (\$5.6 million per year versus \$6.9 million per year in 2004 dollars).

*Utilizing SMaRT.* The City could operate minimal recycling and yard waste facilities at the landfill site between 2011 and 2021 and ship all refuse to the SMaRT station (\$6.5 million per year in 2004 dollars), and decide later whether to construct the post-2021 6.2-acre facility when the SMaRT station agreement expires (\$5.6 million per year in 2004 dollars). As with the other options, landfill grading would require reserving land now for that 6.2-acre facility.

*Caveats about cost comparisons.* These comparisons are designed as a tool for decision-making. They represent a snap shot in time. Over time, solid waste management practices change; tonnages change; and costs change. For example, the comparative costs for some alternatives have dropped since 1999. On the other hand, estimated staffing costs including 20 FTE for the recommended facility (12 city and 8 contractor personnel) and 43 FTE for the future recommended facility (15 city and 28 contractor personnel) almost certainly will continue to rise. Finally, for purposes of this review, we assume the incremental cost of single stream recycling would add about \$647,000 to the cost for all scenarios.

*Potential impact of waste reduction strategies.* Potential cost savings may accrue in each of the scenarios due to waste reduction strategies like the recently enacted construction and demolition (C&D) debris ordinance. In the past, Palo Alto has used such opportunities to extend the life of the landfill. Because of the expense of continuing to use the landfill in Palo Alto, we recommend that if waste streams decline before 2011, the city consider reducing the contours of the landfill instead.

### Modifying the Project

The proposed ESC project would be more economically feasible if the project were modified to reduce annual costs. This would involve policy choices.

*The City could reduce operating costs by reducing the acreage required.* Land rent is a major reason some Palo Alto-based options are less competitive. The City charges rent to its enterprise funds for use of City-owned property. The rent is based on annual market appraisals. The Refuse Fund currently pays \$100,188 per acre. When rent is included in the cost analysis, the proposal to rent 5.75 acres of land for composting and 2.2 acres of land for cement and asphalt storage, for example, become uneconomical.

*The City could also reduce operating costs by reducing the scope of other services.* Palo Alto already spends double what other jurisdictions spend on household hazardous waste (HHW) collection programs. We estimate the proposed permanent HHW facility at the ESC, would increase the HHW program costs from about \$300,000 per year to about \$426,000.

*Land costs and alternative sites.* As a landowner, the General Fund benefits from market-based rents paid by the Refuse Fund. Current landfill rents are based on a value of \$23 per square foot, or about \$1 million per acre. Strictly from the point of view of the Refuse Fund, alternative sites priced at the same or lower rate become equally viable.

## Land Use Issues

*The proposed location of the facility at the landfill raises complicated land use issues. Use of dedicated parkland requires voter approval. The question of whether the commitment to convert the site to a pastoral park was mitigation for filling wetlands will need to be resolved. It appears that the site is outside the approved urban service area. Approvals may be needed for the current landfill grading plan. Finally, CEQA, site and design and regulatory reviews may require redesign that affects the cost of the project. If so, that could lead to re-evaluation of project alternatives.*

*Park planning issues should be addressed. The landfill site is bordered on three sides by flat marshland. As the City prepares for final grading and closure of the 137-acre landfill site, it is important to consider how the landform will ultimately fit into the natural areas it abuts. Meanwhile, it is difficult to find accurate statistics on how many acres of parkland are in the baylands.*

I will present this report to the City Council on November 15<sup>th</sup>. The City staff has had only a limited time to review the information in this report. Therefore, staff will provide some of their responses at that meeting.

This project could not have been accomplished without the cooperation of a number of people. In particular I would like to thank Michael Jackson and Russ Reiserer of the Public Works Department, Amy Javelosa-Rio of the Administrative Services Department, and Virginia Warheit of the Planning Department.

Respectfully submitted,

Sharon Winslow Erickson  
City Auditor





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# INTRODUCTION

The purpose of this project was to independently review the assumptions and financial implications of the Environmental Services Center (ESC) proposal, and present that information to the City Council before additional monies were expended on the project. The Council is being asked to make a decision on the proposed ESC project because of the need to reserve land for the proposed project, and because of the long time frames associated with obtaining development, voter, and other approvals.

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## Background

The Department of Public Works coordinates refuse services for Palo Alto residents and businesses. This includes the contracted collection, hauling, processing, recycling, and disposal of waste materials. Since the 1930s the City has operated a landfill near the end of Embarcadero Road.

The City of Palo Alto funds these activities through the Refuse enterprise fund. The mission of the Refuse Fund is *“to manage the solid, hazardous waste and street sweeping programs to minimize waste generation and maximize recycling in compliance with all regulatory requirements.”*

Other Refuse Fund activities include street sweeping and waste reduction programs. In FY 2003-04, Refuse Fund revenues totaled about \$21.9 million, the majority of which was from customer billings and user fees. FY 2003-04 expenses totaled about \$24.1 million. The City’s reserve for landfill closure and post-closure costs (\$6.55 million) is fully funded. Appendix 2 includes a summary of Refuse Fund revenues and expenditures over the last five years.

The average Palo Alto residential refuse bill (one garbage can) is \$19.80 per month. In response to the 2003 National Citizen Survey, 94% of residents rated garbage collection good or excellent. 89% of residents reported they recycled more than 12 times during the year.

## Landfill Closure

City staff anticipates that the City landfill will soon reach maximum capacity and will be closed. According to staff, the current remaining landfill capacity is about 670,000 cubic yards. Under the current grading plan, the landfill would reach capacity in 2011. Staff estimates the proposed ESC project would reduce landfill capacity to about 540,000 cubic yards, and the landfill would reach capacity in about 2010. Based on staff estimates, a decision on the ESC project is needed by 2007 because placement of the ESC project on the landfill site would change the approved landfill grading plan.

## Long-running agreements

The Refuse Fund has several long-running agreements for services provided by others.

*The Sunnyvale Material and Recovery Transfer facility (SMaRT) agreement runs from 1991-2021.* Under this contract, the City is bound by a 30-year memorandum of understanding with Sunnyvale and Mountain View for the construction and operation of a regional materials recovery and transfer station in Sunnyvale. The agreement terminates in 2021 if the parties cannot agree on an extension. Continued operation of the SMaRT station is at the sole discretion of Sunnyvale, however Sunnyvale staff have indicated they expect to continue operating the regional transfer facility after the agreement terminates in 2021. The City of Sunnyvale contracts with GreenTeam/Zanker to operate the facility.<sup>1</sup>

*The PASCO agreement runs from 1999-2009.* Under this agreement, the Palo Alto Sanitation Company (PASCO) provides exclusive solid waste services for all residential and commercial/industrial premises in the City, and exclusive recyclable materials handling services for all residences within the City. PASCO also provides non-exclusive recycling collection services for commercial and industrial premises in the City. PASCO has been collecting, transporting, and processing waste and recyclables generated within the City of Palo Alto since the late 1950s. The current agreement expires on June 30, 2009.

*The Kirby Canyon agreement runs from 1991-2021.* Under this agreement, Palo Alto secured capacity sufficient to accommodate refuse for about 30 years. Palo Alto's agreement with Waste Management to use the Kirby Canyon Sanitary Landfill in San Jose terminates on October 7, 2021. At that time, the City will have the option to extend the term for an additional 10 years.

**Timeline**

The projected timeline for landfill closure and the aforementioned long-running agreements is summarized in the exhibit below.

Exhibit 1: Timeline 2005-2021

Early 2005	Under the current grading plan, the existing composting facility will be relocated to higher ground to make room for refuse disposal in the current composting area
Early 2007	Under the current grading plan, the existing recycling center must be relocated to make room for refuse disposal
June 30, 2009	PASCO contract terminates
August 2011	Anticipated Palo Alto landfill closure
June 30, 2014	Final landfill rent payment
October 1, 2017	SMaRT series 2003 bonds repaid
October 7, 2021	Palo Alto's agreement with Waste Management to use Kirby Canyon Landfill terminates, with option to extend the term for an additional 10 years
October 15, 2021	SMaRT agreement terminates

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<sup>1</sup> It should be noted that on September 24, 2004, the City of Sunnyvale notified GreenTeam/Zanker (GTZ), the contract operator of the SMaRT station that it is in breach of its operating agreement. Among other things, the agreement requires the contractor to pay specified workers the general prevailing rate of wages applicable to the work to be done, as determined by the Director of the California Department of Industrial Relations.

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## Scope and Methodology

We conducted this review between July 2004 and November 2004 in accordance with generally accepted governmental auditing standards. We reviewed the May 19, 2004 proposal for a new ESC (CMR:176:04) and the 1999 feasibility study prepared by Brown, Vence & Associates. We analyzed the proposal's assumptions and financial implications. We gathered information to help clarify various facts and figures in the proposal. We assessed the reasonableness of, but did not audit, the information provided to us by City staff.

We reviewed staff reports, landfill tonnage reports, recycling reports, budget documents, and previous studies. In cooperation with staff from the Public Works and Administrative Services Departments, we updated tonnages and costs contained in these reports, and analyzed their future implications. We interviewed staff from the Public Works and Planning Departments, PASCO, the City of Sunnyvale, and the SMaRT station. We received input from environmental advocates, solid waste professionals, and community members.

## PROPOSED PROJECT

The 19-acre proposed ESC facility would replace the Palo Alto landfill that is expected to close in about 2011. When completed, the proposed ESC would allow Palo Alto to offer multiple services at the Palo Alto landfill site, including a material recovery facility; refuse transfer station; composting; recycling drop-off and processing facility; permanent household hazardous waste facility; bin storage; asphalt and concrete storage; and facilities such as a visitor and education center and administrative offices.

After opening the ESC facility, Palo Alto would continue to use the services of the SMaRT station in Sunnyvale until 2021, and would continue hauling refuse to the Kirby Canyon Landfill in San Jose until 2021. At that time, staff envisions replacing the Sunnyvale SMaRT station services with an expanded ESC material recovery facility and entering into a new agreement for landfill at Kirby or elsewhere.

Discussions about how to replace services currently located at the landfill have been underway for some time. Meetings have been held with various committees and commissions, and several studies have been completed. During that time, the proposed ESC project has changed.

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### Current refuse, recycling, and yard waste programs and approved changes

The current refuse program is structured as follows:

- PASCO crews pick up refuse from residential and commercial routes and deliver the refuse directly to the Sunnyvale SMaRT station.
- The SMaRT operator sorts refuse for recyclables, bundles and sells recyclables, and transfer hauls about 40,000 tons of refuse per year to the Kirby Canyon landfill in San Jose.
- PASCO delivers refuse from debris boxes and some commercial routes directly to the Palo Alto landfill. City crews and the public also deliver refuse to the Palo Alto landfill.
- City landfill crews divert recyclable materials from the landfill and stockpile recyclable items. Annually, about 23,000 tons of refuse is buried at the Palo Alto landfill.

The current recycling program includes:

- PASCO crews use a crate system to pick up recycling from residential and commercial routes and deliver recyclables directly to the Recycling Center at the Palo Alto landfill. Collection of residential recycling crates requires two passes through each residential neighborhood.
- Residents deliver additional recyclables to the drop off center.
- PASCO employees operate the Recycling Center and sort and bundle recyclables for sale.
- PASCO staff collects single stream recyclables from a pilot area and hauls recyclables directly to the Waste Management material recovery facility in Oakland for processing.

Current yard waste collection is as follows:

- PASCO crews pick up yard waste from residential routes and deliver yard waste directly to the Palo Alto landfill.
- Residents and businesses also deliver yard waste to the Palo Alto landfill.
- City staff at the landfill grind the yardwaste, ship some to market, and compost the remainder.
- Wood chips and compost are sold or given free to residents on giveaway days.

Beginning July 2005,

- The current refuse program continues, but customers are encouraged to switch to City carts for garbage collection.
- Single stream curbside recycling collections begin citywide. PASCO hauls all curbside, single stream recyclables directly to the material recovery facility in Oakland (or elsewhere). PASCO discontinues operation of the recycling center at the landfill, but keeps the drop-off facility open. PASCO continues to collect revenue from the sale of recyclables as a credit against their operating costs (higher costs are expected to process single stream recyclables).
- Residents are required to use City yard trimmings carts. PASCO continues to deliver yard waste to the Palo Alto landfill.

In 2009, the PASCO contract expires. A new collection and hauling contract is required. Landfill operations continue, as do recycling and yard waste programs.

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## **Proposed refuse, recycling, and yard waste programs**

Staff is proposing the following changes by the time the landfill closes in about 2011:

- Refuse: The Palo Alto landfill is closed and the new ESC is opened (staff estimates the transfer station/MRF could begin accepting materials in December 2008, with full ESC completion scheduled for 2011). No change is anticipated in curbside collections system. The City's refuse collection contractor continues to haul refuse directly to Sunnyvale SMaRT station. The SMaRT operator continues to transfer and haul refuse to Kirby Canyon landfill. At the new ESC, City crews accept and sort self-haul refuse, and transfer and haul that refuse to Kirby Canyon landfill.
- Recycling: The City's refuse collection contractor begins delivering single stream recyclables to the new ESC for processing. The contractor operates the recycling center at the ESC, processing both curbside collections and drop off center recyclables.
- All yard waste is delivered to and processed through the new ESC.

In 2021, staff envisions

- Refuse: Upon termination of the SMaRT agreement, all refuse is delivered to a newly expanded ESC in Palo Alto. City crews sort refuse for recyclables, and transfer haul refuse to Kirby Canyon or some other landfill (the Kirby landfill contract also terminates in 2021).
- Recycling: The contractor's crews continue to operate the recycling facilities at the ESC.



- Yard waste continues to be processed through the ESC.

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## **The proposed ESC project has changed over time**

After several studies and consideration at various committees and commissions, the proposed ESC project is different from the project that was originally considered.

- In January 1998, the Planning Commission considered a 3.8-acre facility (as part of a larger utility yard on the LATP site) designed to handle household hazardous waste, PASCO administrative offices and collection vehicles.
- In April 1999, BVA studied a 6.2-acre facility.
- In March 2002, the Council received an informational memorandum about a 16.75-acre facility.
- In 2004, the discussion has focused on a 19-acre facility.

Appendix 4 provides a chronology of some of the recent discussions about the project.

### **Budgetary history**

The budgetary history of the ESC began in 1996-97 when the City Council appropriated \$600,000 for an Environmental Impact Review and project design for a facility at the Los Altos Treatment Plant site (CIP 9701). The following year, the City Council approved an additional appropriation of \$3 million (that appropriation was reduced by about \$1.3 million when the other Utility Funds opted out of the project, and was reduced by an additional \$1.275 million that was re-appropriated to pay for single stream recycling start up costs in 2003-04). As of November 2004, about \$412,000 has been spent on the ESC project, and about \$600,000 of the original appropriation remains.

Although the original appropriation of \$3.6 million was for a different type of project at a different site, budget discussions have centered on the Palo Alto landfill site since at least FY 1999-00. Appendix 4 provides a chronology of recent ESC-related actions, and Appendix 5 provides a summary of CIP 9701 appropriations and expenditures to date.

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## **Current proposal and recommended alternatives**

In May 2004, staff proposed the following options:

- Recommended option: Build a comprehensive ESC in Palo Alto. The 19-acre facility would replace the existing recycling center with a multi-functional facility consisting of a mini-refuse transfer station, compost facility, recycling drop-off and processing center, permanent household hazardous waste facility, bin storage area, and inert solids storage areas. The proposed facility could be operational prior to the final closure of the landfill, and would remain in operation indefinitely following closure of the landfill.
- Future recommended: Expand the comprehensive ESC to include full refuse transfer/MRF capabilities.

- Alternative 1: Build a reduced-scale ESC on approximately six acres that would include the mini-transfer station/MRF, recycling drop-off and processing center, permanent household hazardous waste facility, and a chip and ship facility for yard waste. The facility would not include composting or inert solids storage.
- Alternative 2: Build a recycling and HHW area on approximately 3 acres.
- Alternative 3: Use the SMaRT station once the landfill was closed. All refuse, recycling, and yard waste would be taken to the SMaRT station. No facilities would remain at the landfill.
- Alternative 4: Use the Los Altos Treatment Plant Site for recycling and HHW area.

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### **Difficulties of estimating capital costs**

The capital cost estimates shown above were derived from the 1999 BVA study. In 1999, BVA estimated capital costs for two proposed site plans:

- Plan 1 was designed to handle the refuse and recyclables that are currently delivered to the Palo Alto landfill. It included a 54,950 square foot building on 6.2 acres capable of handling 60,583 tons per year. Total estimated construction and equipment costs were \$11,413,000.
- Plan 2 was designed to handle all the City's refuse and recyclables including the refuse and recyclables that are currently delivered to the Palo Alto landfill, and all the refuse that is currently delivered to the SMaRT station. It included a 71,050 square foot building on 6.2 acres capable of handling 114,179 tons per year. Total estimated construction and equipment costs were \$14,914,000.

The facilities were sized to handle waste generated in Palo Alto (see Appendix 1 for more details). In comparison, the regional SMaRT station includes a 110,000 square foot main building and a 6,000 square foot office building on 10 acres with a 1,500 ton per day capacity.

BVA estimated capital costs in 1999 dollars, and cautioned that actual costs could vary from planning-level cost estimates by as much as 20%. BVA estimates were based on a pre-engineered metal building with no special architectural treatments. The analysis did not include off-site improvements such as an access road.

Readers should keep in mind the difficulties of trying to compare facilities that are proposed to be operational 10-20 years from now. We updated BVA's estimated capital costs for inflation since 1999 (15.5%), and added a 5% contingency on building costs for green building certification for Leadership in Energy and Environmental Design ("LEED"). Using current capital financing assumptions, we estimate each \$1 million in additional capital costs would add about \$82,000 in annual debt service (in 2004 dollars).

*A visitor center was included in the BVA plan.* The 1999 construction cost estimate included a visitor center – specifically, a room on the second floor with a view of the recycling facility. Additional costs could be incurred depending on the scope and size of the visitor facility.

*Additional factors that would influence capital costs.* The proposed facility is on landfill. The 1999 feasibility analysis assumed 5 feet of fill would have to be excavated and landfilled elsewhere on site. Building on landfill can be problematic. In addition, the proposed facilities may be on the site of former Water Quality Control Plant sludge beds shown on a 1975 Engineering-Science Inc. map of the area. We did not calculate the additional costs of off-site improvements. Nor did we attempt to estimate potential soils remediation costs.

## COST COMPARISONS

In 1999, Brown, Vence & Associates completed a detailed feasibility study for development of a recycling center and transfer station project after closure of the landfill. The study included conceptual designs, cost estimates, and a cost-benefit analysis. It estimated a potential \$1 million savings by locating a 6.2-acre facility at the Palo Alto landfill.

Five years have elapsed since BVA prepared its cost estimates. Conditions change. For example, in 1999, BVA estimated that Palo Alto would have to pay SMaRT \$15 per ton to process recyclables. Today, we estimate Palo Alto would receive about \$29.90 per ton from SMaRT for dual stream recyclables. In addition, enlarging the proposed facility to 19 acres substantially increased estimated rent.

The following compares the costs of various alternatives by size of facility and by timeframe (2011 versus 2021).

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### Updated cost comparisons for variously sized facilities

Our analysis shows that a 19-acre facility is generally more expensive than a 6.2-acre facility, which is generally more expensive than no facility. However, the cost comparisons and policy choices are complicated.

*19-acre facility.* Our current estimate indicates the recommended pre-2021 19-acre ESC facility, operated in tandem with the SMaRT station, would be more expensive than using the Sunnyvale SMaRT alone (\$8.5 million per year versus \$6.9 million per year in 2004 dollars). The post-2021 19-acre facility would be only marginally less expensive than using the SMaRT station alone (\$6.8 million per year versus \$6.9 million per year in 2004 dollars).

*6.2-acre facility.* Staff is also assessing the feasibility of a 6.2-acre facility. Our analysis indicates that a pre-2021 6.2-acre ESC, operated in tandem with the SMaRT station, would still be more expensive than using the SMaRT station alone (\$7.3 million per year versus \$6.9 million per year in 2004 dollars), but a post-2021 6.2-acre facility would be less expensive than using SMaRT alone (\$5.6 million per year versus \$6.9 million per year in 2004 dollars).

*Utilizing SMaRT.* Alternatively, the City could continue to operate its current drop-off recycling and yard waste facilities at the landfill site between 2011 and 2021 and ship all refuse to the SMaRT station (\$6.5 million per year in 2004 dollars), and decide later whether to construct the post-2021 6.2-acre facility when the SMaRT station agreement expires (\$5.6 million per year in 2004 dollars). Like the other alternatives, landfill grading issues would require reserving land now for a proposed ESC.

Appendix 10 shows our calculation of these cost comparisons.

## **Updated cost comparisons 2011 versus 2021**

The other way to look at the cost comparisons is by timeframe. City has a long-term agreement to continue delivering refuse to the SMaRT station until 2021. This both limits and expands the City's choices between 2011 and 2021. We assume for purposes of this analysis that current operations continue until 2011, when the landfill is expected to close. Again, details of these cost comparisons are shown in Appendix 9.

Our preliminary cost comparison (in 2004 dollars) for the period between 2011 and 2021, during which time the City continues to dispose of refuse through the SMaRT station, shows:

- The comparison cost to operate the proposed 19-acre facility in tandem with the SMaRT station is estimated at \$8.5 million per year (in 2004 dollars);
- The comparison cost to operate a 6.2-acre facility in tandem with the SMaRT station is estimated at \$7.3 million per year (in 2004 dollars);
- The comparison cost to shift all operations to the SMaRT station is estimated at \$6.9 million (in 2004 dollars); and
- The comparison cost to operate minimal recycling and yard waste facilities in Palo Alto with all refuse disposal at the SMaRT station is estimated at \$6.5 million per year (in 2004 dollars). Note that this option is less expensive than the previous option because the SMaRT station currently charges the same gate fee for yard waste as for refuse.

However, the economics of the proposals shift for the period beginning 2021, when a 6.2-acre facility appears more cost beneficial:

- The comparison cost to operate a 19-acre facility with full refuse handling capabilities is estimated at \$6.8 million per year (in 2004 dollars);
- The comparison cost to operate a 6.2-acre facility with full refuse handling capabilities is estimated at \$5.6 million per year (in 2004 dollars); and
- The comparison cost to shift all operations to the SMaRT station is estimated at \$6.9 million (no change from above).

### **Caveats about cost comparisons**

This type of cost analysis is designed as a tool for decision-making. They represent a snapshot in time. The above estimates are based on planning-level estimates. This type of analysis, while good for comparing various options, is not necessarily a good predictor of actual cost.

For example, somewhat counter intuitively, the estimated annual net costs for the scenarios studied in 1999 decreased during the intervening years. The primary causes of the net decrease in estimated costs are:

- Increased revenue from recyclables at SMaRT and Palo Alto
- Reduced SMaRT station costs
- Increased Palo Alto gate fees for "self-haul" refuse.

Appendix 10 also shows these comparisons.

On the other hand, estimated staffing costs have increased and will certainly continue to increase. Our cost estimates assume staffing (per the 1999 BVA study) of:

- 20 full-time equivalent (FTE) personnel to operate the recommended facility – including 12 FTE City employees to operate the scale-house, transfer station, composting, and HHW facilities, and 8 FTE contractor employees to operate the recycling drop-off center and curbside recycling processing line.
- 43 FTE personnel to operate the future recommended facility (with full refuse transfer capabilities) -- including 15 FTE City employees and 28 FTE contractor employees (20 FTE contractor employees would operate the refuse MRF).

### **Impact of single stream recycling program**

For purposes of this cost comparison, we assume single stream recycling would add costs to both the ESC and SMaRT station alternatives. However, we did not include those costs in the above comparisons due to the unpredictability of recycling and refuse tonnages that may result from the program.

Palo Alto plans to begin citywide single stream recycling collection beginning July 1, 2005. Although the subject of some dispute, industry experts seem to agree that single stream recycling generally decreases collection costs, increases processing costs, and may increase recycling volumes. Some increase in recycling volumes can be expected due to the convenience of carts rather than bins. Staff estimates the net impact of Palo Alto's single stream recycling program will be to add about \$647,000 to the on-going cost of processing recyclables.<sup>2</sup>

With the understanding that Palo Alto was not planning to deliver curbside recyclables to SMaRT anyway, the SMaRT station installed a dual stream recycling MRF in June 2002. As a result, SMaRT will be unable to process Palo Alto single stream recyclables for the near future. Although Sunnyvale staff remains interested in processing Palo Alto's curbside recyclables, floor space at the SMaRT station is limited, and it would be very difficult and costly to install a single-stream processing line at this point.

It should be noted that there are other single stream facilities in the Bay Area that could handle Palo Alto's recyclables. Thus the decision to go single stream does NOT require that Palo Alto build a facility to process these materials in Palo Alto.

*Questions have been raised about why BVA assumed a dual stream MRF.* That was because it was considered the best technology at the time, and although Palo Alto's existing curbside recycling is collected in four crates, the materials are actually mixed in the collections trucks and handled much like dual stream materials – mixed containers, newspaper, and mixed paper/cardboard (this is why Palo Alto could theoretically deliver its current recyclable collections to SMaRT). Our cost estimates have not assumed any difference between the construction costs of a single stream versus a dual stream recycling MRF.

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<sup>2</sup> \$647,000 per year represents staff's estimate of the additional net cost to process single-stream recyclables compared to the current program (i.e. increased processing costs offset by closing the recycling MRF at the landfill). In total, staff estimates single-stream recycling will increase expenses by \$973,000 in FY 2004-05, \$695,000 in FY 2005-06, and \$672,000 ongoing (including allowances for educational materials and order forms, crate collection and recycling, cart purchase and delivery, temporary help, outreach/education, cart exchange personnel, and the expected increase in processing costs).

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## Potential benefits of locating a facility in Palo Alto and/or on City land

There are several benefits to locating a facility in Palo Alto and/or on City-owned lands.

### Impact of landfill closure on Palo Alto self-haul disposal – the cost of convenience

Palo Alto residents have enjoyed free or low-cost refuse disposal at the Palo Alto landfill for many years. Landfill reports show an average of 110 vehicles per day entering the refuse disposal site (about 40,000 per year) and PASCO estimates about 5,000 vehicles per month visiting the drop-off recycling center (or about 60,000 per year).

Palo Alto residents, along with residents of Mountain View and Sunnyvale, currently are able to drop off recyclables, pick up compost, and dispose of refuse at the SMaRT station. Exhibit 2 compares resident disposal fees at the Palo Alto landfill and SMaRT. Although a cost-effective solution for the City, asking customers to drive 10 miles to the south may not be an easy policy choice.

Exhibit 2: Sample resident self-haul disposal fees at Palo Alto landfill and SMaRT

	Palo Alto landfill	SMaRT
Regular refuse and garbage	\$10.00 per cubic yard	\$13.56 per cubic yard
Yard waste and tree clippings	\$10.00 per cubic yard	\$13.56 per cubic yard
Concrete	\$25.00 per cubic yard	\$59.57 per cubic yard

### Processing within the city limits

It has been said that *“the goal for the City’s solid waste management services is to have Palo Alto’s materials serviced within the community instead of having to transport materials to other jurisdictions.”* While this is a laudable goal, it should be noted that under all the alternatives presented, the vast bulk of Palo Alto’s refuse stream will continue to flow outside of Palo Alto. Under all of these proposed alternatives, once the Palo Alto landfill is closed, 100% of Palo Alto’s refuse will be sent as landfill to Kirby Canyon in San Jose or some other landfill. Finally, recyclables will continue to be sent where there are willing buyers. Staff reports that up to 75% of some types of recyclables are shipped all the way to Asia, mostly China. This is one of the reasons why zero waste proponents advocate reducing waste in addition to closing the recycling loop.

### The importance of landfill rent to the General Fund

Like the City’s other enterprise funds, the Refuse Fund pays rent to the General Fund for the use of City-owned property. Rent on the landfill currently generates about \$4.3 million per year that goes to pay for a variety of General Fund

services. The Refuse Fund is expected to pay rent until the landfill closes in 2011.<sup>3</sup>

The loss of that revenue, while predicted, will be a blow to the General Fund. Thus, a major benefit of locating a proposed ESC facility on city-owned land would be continuing some level of rent payment to the General Fund.

*Additional rent owed on closed areas of the landfill?*

The Palo Alto Landfill is a 137-acre site including 126 acres permitted for waste disposal and 11 acres set aside as marsh (the Mayfield Slough area). Phase 1 of the landfill (29 acres) was closed in 1990, and is now open to the public. That site is known as *Byxbee Park Hills*. Phase 2a of the landfill (24 acres) was partially closed in 1992, and phase 2b of the landfill (23 acres) was partially closed in 2000, but neither is open to the public. Phase 2c of the landfill (47 acres) is the active portion of the landfill.

The Refuse Fund is currently paying rent to the General Fund only for the active 47 acres of the landfill. Another 47 acres (phases 2a and 2b) have been landfilled, but have not undergone final closure. Park development is expected to be initiated upon completion of all landfilling activities at the site.

RECOMMENDATION 1: Staff should determine whether the Refuse Fund should pay rent on the unopened portions of the landfill, or complete final closure and open them to the public.

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## **Potential impact of additional waste reduction and recycling strategies**

Palo Alto continues to implement programs to reduce waste and increase recycling. In addition, the Council will be asked to consider adopting a zero waste policy to encourage further reduction and reuse.

### **Current disposal tonnages**

In calendar year 2003, Palo Altans disposed of more than 119,000 tons of waste. This included 71,000 tons landfilled:

- 23,000 tons landfilled in Palo Alto,
- 40,000 tons landfilled at Kirby Canyon in San Jose,
- 8,000 tons landfilled elsewhere;

It also included 48,000 tons recycled:

- 15,000 tons in curbside collections and at the drop off center,
- 17,000 tons composted
- 9,000 tons recovered from trash delivered to the SMaRT station.
- 4,000 tons inert solids (e.g. asphalt and concrete) recovered at landfill,
- 3,000 tons construction and demolition debris.

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<sup>3</sup> Under an arrangement to smooth landfill rent payments over the next several years, payments will continue through fiscal year 2013-14.



The California Integrated Waste Management Act of 1989 (AB 939) puts waste reduction at the top of its recommended waste management hierarchy of “reduce”, “reuse”, “recycle”, and “buy recycled content”. However, it is difficult to quantify the effectiveness of waste reduction programs. There is no simple measure of waste that wasn’t produced. As a result of the City’s waste reduction strategies, the State of California estimates an additional 55,000 tons were diverted from the waste stream. Additional information about tonnages landfilled, recycled, and diverted is shown in Appendix 1.

### **Potential effect of construction and demolition debris (C&D) ordinance**

The recently adopted C&D ordinance requires C&D debris be diverted from landfills. The ordinance went into effect on November 1, 2004. In conjunction with that program, PASCO is offering C&D debris box service to ensure that the cost to recycle C&D debris is no more than the landfill disposal cost would have been.

Staff estimates that C&D debris may be as much as 25% of Palo Alto’s total waste stream being disposed. This is about 18,000 to 20,000 tons per year. In 2003, the City recycled about 2,500 tons of C&D debris. Staff expects about 6,000 tons of C&D debris will be sent to Zanker Road for processing in FY 2004-05, and that 9,000 to 10,000 tons per year could eventually be sent for processing. About 50% of these tonnages can usually be recycled.

*Potential cost savings.* The future effects of the C&D ordinance and other waste stream reduction programs are not known. We can only provide a rough guess as to the potential effect on the project alternatives and ESC gate fee revenue. For example, a 25% reduction in waste landfilled from Palo Alto equates to about 15,000 tons per year. If we were disposing of waste exclusively through SMaRT, the savings would be about \$1.1 million per year (based on estimated net SMaRT costs per ton of \$73.25). If we were disposing of waste exclusively through the proposed ESC, the savings would be about \$400,000 per year (given estimated net ESC costs per ton of \$43.76 excluding rent, and assuming that half the reduction was self haul that also reduced gate fee revenue). Estimated per ton costs are shown in Appendix 7.

*Effect of reduced tonnages on the proposed MRF.* The question has been raised about whether Palo Alto has, and will continue to have, the tonnages to operate a material recovery facility (MRF) at maximum efficiency. We have been told that even small MRFs require 10 tons per hour throughput to push materials through the screens. If we assume Palo Alto continues to recycle about 16,000 tons per year, the recycling MRF would be in operation about 6 hours per day (assuming a 10-ton per hour throughput, processing about 60 tons per day for 260 workdays). Given current refuse tonnages at 62,000 tons per year, this probably would not be an issue for the refuse MRF.

### **A policy choice between extending landfill life and reducing landfill contours**

Depending on the effectiveness of these efforts in reducing the amount of waste generated in Palo Alto, the City may be able to reduce the amount of landfill space required prior to 2011. In the past, Palo Alto has used this as an

opportunity to extend landfill life. For example, the City's 1991 Source Reduction and Recycling Element (SRRE) predicted that *"assuming the successful implementation of source reduction, recycling, composting, and other programs identified in the City's SRRE, the site life of the landfill could be extended to the year 2029."*

However, analysis shows that landfilling in Palo Alto may be less economical than other alternatives when rent is factored in. The City spends about \$1.4 million per year on its landfill operations, and receives about \$2 million in gate fees. However, the Refuse Fund pays about \$4.3 million in rent to the General Fund for use of the 47-acre landfill site. As a result, we estimate that disposing of refuse through SMaRT would be more cost beneficial than continuing to landfill in Palo Alto post-2011. Appendix 8 shows our calculation.

This opens up a policy option for the Council to consider. If waste streams decline or landfill space is otherwise not required, the City should consider reducing the contours of the landfill.

**RECOMMENDATION 2:** Staff should consider potential effects of waste reduction in planning for needed landfill space, and assess whether those benefits could accrue to the future landfill park in the form of lower and/or smoother contours. Staff should inform the City Council of potential impacts on final landfill grading plans as landfill closure nears.

**RECOMMENDATION 3:** The Public Works Department should utilize the services of a landscape architect to review and help shape refined grading plans prior to landfill closure.

## MODIFYING THE PROJECT

Some alternatives could be made more cost competitive by reducing the size and/or scope of the project. The cost-benefit of various components should be considered. For example, the proposals to rent 5.75 acres of land for composting operations and 2.2 acres of land for inert solids storage become uneconomical in comparison to other options.

Land rent is a major reason why some Palo Alto-based options are less competitive. The City charges rent to its enterprise funds for use of City-owned property. The rent is based on annual market appraisals. The Refuse Fund is currently paying \$100,188 per acre.

Our cost comparisons also point to other policy choices. For example, Palo Alto already spends double what other jurisdictions spend on household hazardous waste. The proposed permanent HHW facility would increase those costs.

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### Facility size

Exhibit 3 compares the estimated acreages of the component parts of the existing facilities, the 19-acre proposal, and the 6.2-acre facility.

Exhibit 3: Facility size comparison (estimates in acres)

	Existing facilities	19-acre facility	6.2-acre facility
Main building/ MRF	-	1.58	1.58
Composting area	7.50 <sup>[1]</sup>	5.75	-
Chip and ship yard waste facility	-	1.75	1.75
Inert solids storage area	1.50 <sup>[1]</sup>	2.20	-
Electrical generation facility	0.50	2.25	-
PASCO bin storage area	1.25	1.25	-
Permanent 2,400 sq ft HHW facility	-	0.64	0.64
Drop-off center (existing recycling MRF)	0.80	0.50	0.50
Roads, setbacks and landscaping	2.00	3.08	1.73
<b>Total acres</b>	<b>13.55</b>	<b>19.00</b>	<b>6.20</b>

[1] Depends on amount of material stockpiled on site.

Source: Public Works Department and consultant reports

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### Reducing the size and scope of the project would reduce costs

Our analysis shows that some components of the proposal are less cost-beneficial than others.

#### Composting operations could be reduced (5.75 acres)

Rent has a dramatic impact on composting costs. City staff currently operates chip and ship and composting operations at the Palo Alto landfill. Staff envisions

that this operation would continue at the proposed ESC. The proposed 19-acre ESC includes 7.5 acres for yard waste and composting operations, or roughly 1.75 acres for a chip and ship station, and 5.75 acres for composting.

Assuming land rent of \$100,188 per acre, annual rent on 5.75 acres would be about \$576,000, or nearly \$34 per ton of yard waste. In comparison, the SMaRT station could process yard waste at a cost of about \$32 per ton.

From the perspective of the Refuse Fund, our cost comparisons indicate:<sup>4</sup>

- The most cost effective option may be to remove all yard waste processing options from the proposed ESC, and pay PASCO to deliver yard waste collections directly to SMaRT (estimated net cost about \$479,000 per year).
- A slightly more expensive option for the Refuse Fund would be the 1.75-acre option of having City crews chip yard waste and ship the material elsewhere for composting (estimated net cost about \$646,000 per year).
- The least cost-competitive option would be the full 7.5-acre composting operation (estimated net cost about \$954,000 per year).

Under each of these options, yard waste would be converted to useable products. However, there are impacts to customer convenience – these cost comparisons do not take into account the costs that others would incur (including some City and school district crews) to haul yard waste directly to the SMaRT station or some other facility.

#### **Inert solids storage requirements could be reduced (2.2 acres)**

The City landfill receives asphalt, cement, concrete, bricks, and aggregate from self-haul customers and city crews. These materials are stockpiled on site with the intent to process and recycle them at a later date. In calendar year 2003, about 4,000 tons of inert solids were diverted from the landfill.

The proposed 19-acre ESC includes 2.2 acres to stockpile concrete, asphalt, and similar materials. When factoring in rent payments owed on 2.2 acres, this proposal becomes less attractive than accumulating smaller amounts of inerts before transferring them to a facility for processing. Local private facilities also accept and recycle inert materials.

#### **Electrical co-generation facility would affect size (2.25 acres)**

The proposed 19-acre ESC includes 2.25 acres set aside for the existing electrical co-generation facility at the landfill. We understand that this facility may be shut down as soon as December 2004, and that the Regional Water Quality Control Plant will be using the landfill gas in its incinerators. We also estimate the generation facility itself is only about 0.5 acres.

According to staff, the remaining 1.75 acres (of the 2.25 acres set aside for the electrical generation facility) would be used for roadways, dewatering and storage areas, and landscaping. A portion of this area is open space along the RWQCP fence line. Close examination of the BVA site plans reveal that BVA had placed the facility close against the RWQCP fence line, thereby minimizing intrusion into parkland.

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<sup>4</sup> See Appendix 6 for calculations.

**RECOMMENDATION 4:** If the Council decides to proceed with the project, consideration should be given to eliminating some component parts of the project where land rent reduces their economic benefit.

**PASCO bin storage (1.25 acres) and other PASCO space needs could be modified**

It should also be noted that while the proposed 19-acre facility continues to provide bin storage space for PASCO operations – estimated at 1.25 acres – the proposal does not address PASCO office and storage issues.

In addition to 1.25 acres at the landfill site that is used for bin storage, PASCO currently leases 1.9 acres of City-owned land on Geng Road adjacent to the Baylands Athletic Center. The existing Comprehensive Plan land use designation for the Geng Road site is Public Park; the zoning is Public Facilities with Site and Design overlay.

The previously proposed facility at the LAMP site included approximately 3 acres to house PASCO administrative offices, truck maintenance and fueling operations, parking for solid waste collection vehicles and employee vehicles, and bin storage. That would have allowed PASCO to vacate both the Geng Road site and the landfill site.

In 1999, the City renegotiated the agreement with PASCO, replacing the previous 1987 agreement. For a variety of reasons, the City may want to begin planning an RFP process for garbage collection services. That proposal process could assume that the contractor would provide convenient offices and storage space.

**RECOMMENDATION 5:** Staff should begin planning a request for proposal process for curbside collection services beginning in 2009 that considers whether to continue offering City-owned land for contractor offices and storage.

**Proposed permanent HHW facility would increase HHW program costs**

Palo Alto's HHW collection program began in 1983. The City currently holds 14 one-day events per year in a temporary location at the Regional Water Quality Control Plant. Hazardous waste such as used motor oil, oil filters, auto and household batteries and antifreeze are accepted at the recycling center.

The program appears to be quite successful. The City collects about 270 tons of hazardous waste per year through drop-off events and at the recycling center. Staff reports that there were nearly 3,800 participants in the monthly HHW programs held at the RWQCP.

Palo Alto's program is also substantially more expensive than other programs. Palo Alto spends about \$300,000 per year on its HHW program. The County of Santa Clara Integrated Waste Management Program currently runs a countywide HHW Collection Program that is utilized by all Santa Clara County cities except

for Palo Alto. The County spends about \$5.30 per household. Palo Alto spends about \$10.86 per household.<sup>5</sup>

Palo Alto's program is more expensive because it offers a higher level of service – it is held more frequently than the County program, and has a higher participation rate. In FY 2002-03, the household participation rate in the county's HHW program was about 4%; Palo Alto's participation rate was about 14%. Palo Alto's program is also more cost efficient – unit costs for Palo Alto's current program (\$72.67 per vehicle) are less than the County's cost per vehicle (\$112.82 per vehicle).

*A permanent HHW facility has been in the works for more than a decade.* The proposal to build a permanent HHW collection facility was included in Palo Alto's 1991 household hazardous waste element.

The 1999 BVA feasibility study included a permanent HHW facility staffed by 1.2 full-time equivalent City employees. We estimate the updated annual cost for the proposed 2,400 square foot facility (situated on about 0.64 acres including a drop off area) would be about \$426,000 including rent and debt service, but not including the cost of disposal.

This is a substantial increase over the current \$300,000 per year program, which, depending on the benefits of the program, may be money well spent. It is also possible that the proposed permanent HHW facility could potentially generate revenue to offset its costs either by becoming a regional facility and/or by charging fees for drop off. Currently, there is no additional charge for residential HHW drop-off.

RECOMMENDATION 6: The City Council should request additional information about the benefits of a permanent household hazardous waste facility before committing to building a facility at the proposed ESC that increases annual operating costs.

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## Land costs and alternative sites

As a landowner, the City benefits from market-based rents paid by the Refuse Fund. Current landfill rents are based on estimated land value of \$23 per square foot, or about \$1 million per acre. From the Refuse Fund's point of view, the option to buy another parcel for the proposed ESC becomes economically viable at or around that price. This is also true of the City-owned 1.9-acre Geng Road parcel that PASCO occupies.

### **Other pertinent information: Los Altos Treatment Plant Site status**

In 1984, Palo Alto entered into a lease purchase agreement with the city of Los Altos for the former LATP site with the intent of building a solid waste facility. The Refuse Fund paid \$2.25 million for ½ interest in the property. According to

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<sup>5</sup> Both the County and City's program costs are partially funded by AB 939 HHW fees of \$1.50 per ton of refuse disposed. In FY 2002-03, the City received about \$110,000 to offset its program costs.

staff, costs for acquisition of the remaining ½ interest in the property could be \$3.3 million. That is roughly \$30 per square foot (based on 4.3 useable acres).

The 13.58-acre site was originally thought to include 9.3 usable acres. The 1997 proposed LAMP project included approximately 0.8 acres for a permanent HHW facility; 3.0 acres for a PASCO refuse collection and hauling facility; and 3.4 acres for Utilities Department storage and staging yard. In 1998, the Planning Commission reviewed and accepted a draft EIR on the LAMP site. In 2000, the City Council certified the final EIR and approved the application for annexation, a comprehensive plan map amendment, a mitigation and monitoring plan, and rezoning to allow wetlands restoration.

However, because of the necessity to mitigate the proposed project's impact on wetlands, staff estimates that only 4.313 acres of the site is developable. The limited space available at the LAMP, and the cost of that space, were two major reasons why the proposed project was moved to the landfill site. Although not the most economically attractive option in our analysis,<sup>6</sup> a smaller ESC project might fit on the LAMP site.

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<sup>6</sup> Alternative 4 shown in Appendix 10.

## LAND USE ISSUES

The proposed location of the facility at the landfill raises complicated land use issues. The landfill site is dedicated parkland with flat, natural wetlands on three sides. Identification and discussion of all California Environmental Quality Act (CEQA) issues, regulatory agency permit and approval processes, and land use approval processes add complexities and costs to the proposed project. Use of dedicated parkland requires voter approval. The question of whether a passive park was considered mitigation for filling wetlands will need to be resolved. It appears that the site is outside the urban service area. In addition, approvals may be needed for the current landfill grading plan. Park planning issues should also be addressed.

As the City prepares for final grading and closure of the 137-acre landfill site, it is important to consider how the park will ultimately fit into the natural areas it abuts. Meanwhile, it is difficult to find accurate statistics even on how many acres of parkland are in the baylands.

### History of the landfill site and the Baylands Plan

Palo Alto has operated the landfill on the existing site since the 1930s. Exhibit 4 outlines the recent landfill history.

#### Exhibit 4: Recent landfill history

1975	Palo Alto Refuse Disposal Area Environmental Impact Report was prepared as part of the City's application to the Army Corps of Engineers for retroactive permits for filling areas of the Baylands since 1968. The EIR raised the possibility of developing the Mayfield Slough as a mitigation measure, and specified the final use of the site would be parkland. In return for mitigation that included restoring salt marsh areas in the Palo Alto Flood Basin, the City was granted the right to landfill another 2.5 acres of the proposed site.
January 1978	Council approval to terminate refuse disposal near Mayfield Slough and approve park improvement ordinance for proposed modification to disposal practices by adding 5 to 9 feet of fill to certain areas (CMR:121:8).
October 1978	Council approved the Baylands Master Plan, one element of which was the final grading plan for the refuse disposal area with the intention of turning it into a pastoral park.
April 1980	Council approved conceptual grading plan setting the height of the landfill mounds at 48 feet; refuse operations were to continue at least through 1990.
April 1981	Adoption of 1980 Byxbee Landfill Park Conversion Plan.
October 1986	Council approved increasing the height of phase 2 of the landfill to 60 feet.
March 1989	Council approved the site and design review application and Byxbee Park Plan for the development of Phase 1.
June 1991	Final design for construction of Phase I of Byxbee Park approved.



The 1978 Baylands Master Plan, the 1981 Byxbee Park Conversion Plan and the 1989-1991 Byxbee Park Plan provided that when the landfill was closed, the site would become a “pastoral park”. In the 1980 Byxbee Park Plan, the recycling center was to be relocated near the RWQCP during an interim phase of park development, and removed from the park at completion. The interim recycling center site would be converted to a parking lot. The 1991 Byxbee Park Plan update anticipated future use of the proposed SMaRT station, and indicated that a permanent recycling center might be located on the southeast side of the RWQCP.

To facilitate future analysis, the Planning Department is compiling an updated list of approved changes to the Baylands Master Plan and an analysis of related Comprehensive Plan policies.

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### **Commitment to a “pastoral park”**

Palo Alto has represented to various bodies over the years that the future use of the landfill site would be passive recreation. The California Integrated Waste Management Board (“CIWMB”) has oversight responsibilities for solid waste handling facilities and landfills. The California Regional Water Quality Control Board and State Lands Commission both claim jurisdiction, and have approved plans specifying future park uses for the site.

The question of whether the commitment to a pastoral park has legal status as mitigation for continuing landfill activity and/or for filling of wetlands requires additional research.

RECOMMENDATION 7: The Planning Department and City Attorney’s Office should research whether there are outstanding mitigation requirements from previous actions at the landfill and determine their legal standing.
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### **Review of landfill grading plans**

The proposed ESC is within Baylands area, and is zoned PFD (Public Facilities – Design overlay). Changes to the proposed landform are subject to site and design review. The proposed ESC would require revisions to the grading plan; those changes would also be subject to site and design review in the near future.

In October 1978, the City Council approved the Baylands Master Plan, including a final grading plan for the Refuse Disposal Area. At that time, *“the Council’s policy was to close the landfill by 1993-98 or earlier, consistent with the development of a regional resource recovery facility.”*

In March 1989, the Council completed the environmental impact review for all three phases of the landfill, and the site and design review of the Byxbee Park Plan including detailed grading diagrams for the park.

Upon preliminary inspection, it appears that the current landfill grading plan may be different from the grading plan that was approved in 1989. Planning staff has requested copies of the original Byxbee Park grading plans to determine if there are differences that would warrant site and design review. Changes to the approved grading plans may also require a park improvement ordinance.

**RECOMMENDATION 8:** Planning staff should immediately review landfill grading plans for conformance to the approved Byxbee Park Plan. If necessary, staff should request the assistance of a landscape architect to make this determination. If Planning staff determine that the grading plan is different from the approved park plan, landfill staff should be directed to grade to levels indicated in the park plan or lower, while filing an application for site and design review and a park improvement ordinance.

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### Need for parks planning

In the interests of efficient refuse disposal, the City has delayed closure of the landfill a number of times – by increasing the height of the landfill, by diverting refuse collections to the SMaRT station, and by diverting and/or salvaging materials that would otherwise have been buried in the landfill.

Because the refuse site is a landform that is essentially permanent, it is important that ‘we plan the park that we will have to live with.’ As the City prepares for final grading and closure of the 137-acre landfill, this means that landfill planning and park planning should be closely coordinated.

On July 27, 2004, the Parks and Recreation Commission held a lively discussion about the proposed ESC. The Commission approved a number of recommendations to avoid use of dedicated parkland, and indicated their clear interest in participating in future discussions of park uses in the Baylands area.

**RECOMMENDATION 9:** Staff should provide photo simulations or other means to help visualize the final shape of the landfill and proposed ESC in the larger context of the larger park areas.

Furthermore, it became obvious during our review that even the park names and boundaries are confusing – “Baylands Nature Preserve”, “John Fletcher Byxbee Recreation Area”, “City-owned baylands”, “Yacht Harbor”, “Byxbee Park”, and “Byxbee Landfill Park” are just a few of the names that are used, sometimes interchangeably. [We are told that “John Fletcher Byxbee Recreation Area” is the official name.]

In addition, while boundaries of dedicated parkland are clearly outlined in park dedication ordinances, reliable information on the number of acres of parkland is not readily available. The Comprehensive Plan estimates 2,100 acres, and at least two other reports list the acreage variously as 1,700 and 1,940 acres. The 1978 Baylands Master Plan shows a total of 1,413.3 acres of parkland including:

- Faber-Laumeister tract (including marshes in East Palo Alto owned by the City) – 230 acres
- Landfill – 146 acres

- Flood Basin – 640 acres
- Golf course – 184 acres
- Athletic Center – 12.3 acres
- Lagoon and duck pond area – 47 acres
- ITT property – 154 acres

We also noted that the Community Services Department does not have a natural resources plan for baylands conservation areas that are directly adjacent to the landfill area.

RECOMMENDATION 10: As they compile an update to the Baylands Master Plan, the Planning Department should clearly spell out the existing boundaries, names, and acreages of dedicated parklands in the Baylands.

RECOMMENDATION 11: The Community Services Department should develop a natural resources management plan.

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**Site issues**

Locating a MRF and transfer station is problematic in any jurisdiction. These types of facilities are generally located in industrial locations where compatibility with neighboring land uses is less of an issue. The ESC is proposed to be located on the site of the Palo Alto landfill. This is not an uncommon use for landfill sites (e.g. the SMaRT station in Sunnyvale, facilities at Newby Island in Milpitas, and Zanker Road Resource Management in San Jose).

Palo Alto is not alone in needing to determine the desirability of locating industrial MRF/transfer facilities on landfills. The City of San Jose recently approved a general plan amendment to facilitate the continuation and expansion of recycling uses on landfill sites after closure of landfills. However, the amendment only applies to sites within their urban service area.

The City’s urban service area boundary identifies areas that may be developed during the term of the Comprehensive Plan. The proposed location of this facility at the Palo Alto landfill is outside the urban service area and would require a Comprehensive Plan amendment.

Finally, identification and discussion of all California Environmental Quality Act (CEQA) issues, regulatory agency permit and approval processes, and land use approval processes add complexities and costs to the proposed project. The proposal and its alternatives must be evaluated under CEQA, and the project could be modified or changed as a result. Depending on their cost impact, these considerations could shift the economic feasibility analysis from favoring one alternative to another.

RECOMMENDATION 12: The economic feasibility of the project should be re-evaluated based on project modifications and mitigation requirements imposed (or expected to be imposed) during the review and approval process.

## CONCLUSION

The pending closure of the Palo Alto landfill presents the City with opportunities and policy choices. While cost comparisons are useful, choices will also be based on desired service levels, open space issues, and other factors.

We cannot say too often that the cost comparisons in this report represent a snapshot in time. The comparisons are in 2004 dollars to facilitate comparison of the cost-benefit of various proposals at a single point in time. Our analysis indicates the ESC proposal would probably increase City operating costs prior to 2021, and potentially lower City costs from 2021 forward, depending on the size of the facility chosen. The ESC proposal could be made more economical by modifying the acreage, scope, and services provided by the ESC. A number of complicated land use issues would need to be addressed.

One thing we know for certain is that conditions change and refuse is a complicated business. Whatever option is chosen, the decision to build the project will ultimately be a policy choice. By studying these issues in advance, Palo Alto positions itself to make good decisions.

### Recommendations

RECOMMENDATION 1: Staff should determine whether the Refuse Fund should pay rent on the unopened portions of the landfill, or complete final closure and open them to the public.

RECOMMENDATION 2: Staff should consider potential effects of waste reduction in planning for needed landfill space, and assess whether those benefits could accrue to the future landfill park in the form of lower and/or smoother contours. Staff should inform the City Council of potential impacts on final landfill grading plans as landfill closure nears.

RECOMMENDATION 3: The Public Works Department should utilize the services of a landscape architect to review and help shape refined grading plans prior to landfill closure.

RECOMMENDATION 4: If the Council decides to proceed with the project, consideration should be given to eliminating some component parts of the project where land rent reduces their economic benefit.

RECOMMENDATION 5: Staff should begin planning a request for proposal process for curbside collection services beginning in 2009 that considers whether to continue offering City-owned land for contractor offices and storage.

RECOMMENDATION 6: The City Council should request additional information about the benefits of a permanent household hazardous waste facility before committing to building a facility at the proposed ESC that increases annual additional operating costs.

RECOMMENDATION 7: The Planning Department and City Attorney's Office should research whether there are outstanding mitigation requirements from previous actions at the landfill and determine their legal standing.

RECOMMENDATION 8: Planning staff should immediately review landfill grading plans for conformance to the approved Byxbee Park Plan. If necessary, staff should request the assistance of a landscape architect to make this determination. If Planning staff determine that the grading plan is different from the approved park plan, landfill staff should be directed to grade to levels indicated in the park plan or lower, while filing an application for site and design review and a park improvement ordinance.

RECOMMENDATION 9: Staff should provide photo simulations or other means to help visualize the final shape of the landfill and proposed ESC in the larger context of the larger park areas

RECOMMENDATION 10: As they compile an update to the Baylands Master Plan, the Planning Department should clearly spell out the existing boundaries, names, and acreages of dedicated parklands in the Baylands.

RECOMMENDATION 11: The Community Services Department should develop a natural resources management plan.

RECOMMENDATION 12: The economic feasibility of the project should be re-evaluated based on project modifications and mitigation requirements imposed (or expected to be imposed) during the review and approval process.

## APPENDIX 1

### Palo Alto refuse stream tonnages for calendar years 1999-2003

	1999	2000	2001	2002	2003
<b>ACTUAL DISPOSAL TONNAGES</b>					
Kirby Canyon landfill (transfer haul from SMaRT)	45,028	48,725	43,115	38,841	39,846
Palo Alto landfill	33,513	35,168	30,500	27,244	23,230
Other landfills (self haul)	1,646	4,048	4,448	12,187	8,303
Household hazardous waste - monthly events	-	-	-	146	-
Household hazardous waste - Recycling Center drop off	93	84	100	124	146
<b>SUBTOTAL</b>	<b>80,280</b>	<b>88,025</b>	<b>78,163</b>	<b>78,542</b>	<b>71,525</b>
<b>ACTUAL RECYCLING TONNAGES</b>					
PASCO recycling collections and drop off center	13,428	14,875	14,570	14,174	14,984
PASCO C&D debris box recycling	-	-	-	-	2,508
SMaRT station MRF operations	12,555	12,289	12,518	9,841	9,421
Landfill composting operations - PASCO collections composted on site	15,255	15,576	15,211	16,777	16,890
Landfill recycling programs – asphalt and concrete	5,320	5,320	4,349	4,874	3,898
Landfill recycling programs - scrap metal, mattresses, tires, etc.				75	
<b>SUBTOTAL</b>	<b>46,558</b>	<b>48,060</b>	<b>46,648</b>	<b>45,741</b>	<b>47,701</b>
<b>TOTAL</b>	<b>126,838</b>	<b>136,085</b>	<b>124,811</b>	<b>124,283</b>	<b>119,226</b>
<b>ESTIMATED SOURCE REDUCTION PROGRAMS</b>					
Total estimated solid waste generation (AB939 factors)	193,932	214,490	197,130	173,937	173,937
Less total disposal tonnages	80,280	88,025	78,163	78,542	71,525
Less total recycled/diverted tonnages	46,558	48,060	46,648	45,741	47,701
<b>Estimated source reduction</b>	<b>67,094</b>	<b>78,405</b>	<b>72,319</b>	<b>49,654</b>	<b>54,711</b>
<b>ESTIMATED DIVERSION RATE</b>	<b>58.60%</b>	<b>58.96%</b>	<b>60.35%</b>	<b>54.84%</b>	<b>58.88%</b>

Source: Auditor's analysis of recycling reports

## APPENDIX 2

### Refuse Fund summary FY 1999-00 to FY 2003-04

	1999-2000	2000-01	2001-02	2002-03	2003-04
Net sales	18,616,948	18,913,087	18,965,858	18,658,951	18,671,951
Interest income	768,471	1,559,640	1,376,296	920,700	796,000
Other income	3,655,102	3,323,621	2,889,754	3,040,341	3,826,324
<b>TOTAL REVENUES</b>	<b>23,040,521</b>	<b>23,796,348</b>	<b>23,231,908</b>	<b>22,619,992</b>	<b>23,294,275</b>
Administrative	-	-	-	1,437,790	1,538,340
<u>Solid Waste</u>					
Systems improvement (CIP)	93,614	1,253,451	24,875	115,550	(875,000)
Solid waste operations	3,766,798	2,824,831	4,341,850	3,855,969	5,454,989
<u>Collection, hauling and disposal</u>					
Payment to PASCO	6,956,654	7,698,667	7,773,592	7,965,178	8,356,425
Operations	4,292,405	3,859,940	3,570,590	3,663,452	3,987,149
Street Sweeping	1,604,207	1,649,559	1,863,720	1,387,223	1,614,593
Debt service	395,994	395,528	395,808	306,007	398,126
<b>Rent</b>	<b>4,288,747</b>	<b>4,288,752</b>	<b>5,788,747</b>	<b>5,288,747</b>	<b>4,288,747</b>
Operating transfers out	109,782	120,135	376,861	485,987	449,081
<b>TOTAL EXPENDITURES</b>	<b>21,508,201</b>	<b>22,090,863</b>	<b>24,136,043</b>	<b>24,505,903</b>	<b>25,212,450</b>
<b>NET</b>	<b>1,532,320</b>	<b>1,705,485</b>	<b>(904,135)</b>	<b>(1,885,911)</b>	<b>(1,918,175)</b>

Source: Comprehensive Annual Financial Reports

## APPENDIX 3

### Tonnages used in current projections of net cost

Site Plan Scenario	BVA option #1a	BVA option #1b	BVA option #2a	BVA option #2b	BVA option #3
<b>Annual tonnage in system</b>					
<b>Delivered to Palo Alto facilities</b>					
Drop-off Center	1,145	1,145	1,145	1,145	1,145
Curbside processing	14,439	-	14,439	-	14,439
Yard waste/ wood waste	16,890	16,890	16,890	16,890	22,890
Refuse	-	-	23,262	23,262	72,486
<b>Delivered to SMaRT Station</b>					
Curbside processing	-	14,439	-	14,439	-
Refuse (10,315 tons are city or self-haul)	62,171	62,171	49,224	49,224	-
<b>Total tonnage in system</b>	<b>94,645</b>	<b>94,645</b>	<b>104,960</b>	<b>104,960</b>	<b>110,960</b>
<b>Annual tonnage recovered</b>					
<b>At Palo Alto facilities</b>					
Drop-off	1,112	1,112	1,112	1,112	1,112
Curbside	14,018	-	14,018	-	14,018
Yard waste/wood waste	16,383	16,383	16,383	16,383	22,383
Floor sorting	-	-	698	698	2,175
Processing Line	-	-	-	-	13,048
<b>At SMaRT Station</b>	11,191	25,209	8,860	22,878	-
<b>Total tonnage recovered</b>	<b>42,704</b>	<b>42,704</b>	<b>41,071</b>	<b>41,071</b>	<b>52,736</b>
% total tonnage in system	45%	45%	39%	39%	48%
<b>Annual tonnage transferred to Kirby</b>					
From Palo Alto	961	540	23,525	23,104	58,224
From SMaRT Station	50,980	51,401	40,364	40,785	-
<b>Total transferred to Kirby</b>	<b>51,941</b>	<b>51,941</b>	<b>63,889</b>	<b>63,889</b>	<b>58,224</b>

Note: 6,000 tons C&D added to throughput added to BVA option #3 (the only BVA option with the ability to handle C&D materials on site).



## APPENDIX 4

### Recent chronology of the ESC proposal

Date	Description
June 1996	FY 1996-97 BUDGET included a new Capital Improvement Project (CIP 9701) identified as "Refuse Collection/Hauling Yard and Construction Staging/Storage Area – New." <ul style="list-style-type: none"> <li>• \$600,000 appropriated in 1996-97 for an EIR and project design for use of the former <b>Los Altos Treatment Plant (LATP) site</b>.</li> <li>• The goal was a phased development to include an office and maintenance facility for the City's refuse collection contractor, a permanent household hazardous waste collection facility, and a construction staging and storage area for utilities infrastructure projects.</li> </ul>
June 1997	FY 1997-98 BUDGET: Additional \$3,015,566 appropriated for CIP 9701 "joint development and construction of an operations facility for the refuse collection contractor" at the LATP site.
January 1998	The Planning Commission considered an application for construction of a household hazardous waste facility, an office and maintenance facility for PASCO, and a Utility Department storage and staging yard at the 13.26-acre Los Altos Treatment Plant (LATP) site. The Planning Commission recommended approval of the application including annexation; a comprehensive plan map amendment; and pre-zoning to allow wetlands restoration.
June 1998	FY 1998-99 BUDGET: CIP 9701 not listed
September 1998	The Finance Committee approved a draft scope of services for a facility feasibility study at the Palo Alto landfill (CMR:353:98). The consultant, Brown, Vence & Associates, issued their final report on April 8, 1999, recommending a 6.2-acre facility.
June 1999	FY 1999-00 BUDGET: CIP 9701 not listed, but Refuse Fund overview anticipated final design of a new recycling center at the end of <b>Embarcadero Road</b> once results of a feasibility study were reviewed.
June 2000	FY 2000-01 BUDGET: CIP 9701 not listed, but Refuse Fund overview stated that staff would begin preparing an EIR for the construction of a multipurpose, solid waste facility at the entrance to the Palo Alto landfill, including a permanent household hazardous waste facility, a recycling drop-off and processing center, a material recovery and transfer station, and a green waste processing and compost facility.
June 2001	FY 2001-02 BUDGET: CIP 9701 shown as a continuing project renamed the <b>Environmental Service Center</b> totaling \$7,115,566. <ul style="list-style-type: none"> <li>• The total includes \$3,615,566 in prior year appropriations for development and construction of an ESC; \$3,500,000 projected in 2003-04 for partial closure of 14 acres in Phase IIC (\$500,000); relocation of landfill toll booth and scale; construction of a HHWF, public drop off, and recycling center; construction of support facilities; and relocation of the composting facility.</li> </ul>
July 2001	Staff recommended to the Finance Committee discontinuing the LATP site development project, selling the property, and implementing a more comprehensive ESC at the Palo Alto landfill. The Finance Committee recommended against selling the LATP property, and referred the ESC proposal to the Parks and Recreation, Planning, and Public Arts Commissions for further discussion.
March 2002	An information status report on the proposed 16.75-acre ESC responded to questions raised by the Finance Committee in July 2001.
June 2002	FY 2002-03 BUDGET: CIP 9701 totaling \$13,526,566 on 19 acres. <ul style="list-style-type: none"> <li>• The total includes \$3,615,566 in prior year budget; projected expenditures of \$1,000,000 in 2003-04 (for partial closure of 19 acres in Phase IIC and to begin design of the center); \$2,500,000 in 2004-05 (for relocation of a compost facility, landfill tollbooth and scale; construction of the HHWF; construction of a public drop off and recycling center; and construction of support facilities); and \$6,411,000 in 2006-07 (for construction of the material recovery facility and inert solid storage</li> </ul>

	facility).
July 2002	The Parks and Recreation Commission raised the issue of requiring voter approval for undedicated parkland.
August 2002	The Planning and Transportation Commission reviewed a proposed modification of the Byxbee Park Master Plan and reconfiguration of a permanent recycling facility on 16.75 acres. The Commission raised the issue of voter approval.
September 2002	The Public Art Commission reviewed the proposed 16.75-acre project, and questioned their role in the project.
June 2003	FY 2003-04 BUDGET: CIP project RF45900 (formerly 9701) totaling \$6,115,566. <ul style="list-style-type: none"> <li>The total includes \$3,615,566 in prior year appropriations; and projected expenditures of \$2,500,000 in 2006-07 (for construction of the entrance road, scale house, and recycling center).</li> </ul>
April 2004	The City Council held a study session on the Status of ESC Project. No action was taken.
May 2004	The Policy & Services Committee deadlocked 2-2 on motions to approve the scope of services for an Environmental Impact Review (EIR) of a 19-acre project.
June 2004	FY 2004-05 BUDGET: CIP project RF-45900 (formerly 9701) totals \$12.5 million. <ul style="list-style-type: none"> <li>The total includes \$2,500,000 in 2006-07 (for permanent relocation of compost facility, CEQA permitting and construction); \$5,000,000 in 2007-08 (for construction of entrance road, scale house, recycling center, and HHW facility); and \$5,000,000 in 2008-09 (for second phase of construction).</li> <li>The CIP for the landfill closure phase IIC shows projected expenditures of \$1,500,000 in 2005-06.</li> </ul>
June 2004	The City Council amended the budget adoption ordinance to clarify that monies in the budget for the ESC project were for an EIR. The understanding was that the funds would not be spent until the Council held a study session and the City Auditor reviewed the proposal.
July 2004	Parks and Recreation Commission discussion of proposed 19-acre project and impacts on parkland.

## APPENDIX 5

### CIP 9701 appropriations and expenditures

<b>Fiscal year</b>	<b>Carry forward</b>	<b>Appropriated</b>	<b>Adjustments</b>	<b>Spent</b>	<b>Remaining Balance</b>
1996-97	-	600,000	-	138,646	461,354
1997-98 [1]	461,354	3,015,566	(1,327,824)	81,527	2,067,549
1998-99	2,067,549	-	-	114,960	1,952,589
1999-00	1,952,589	-	-	66,875	1,885,714
2000-01	1,885,714	-	-	9,540	1,876,174
2001-02 [2]	1,876,174	-	-	-	1,876,174
2002-03	1,876,174	-	-	-	1,876,174
2003-04 [3]	1,876,174	-	(1,275,000)	552	600,622
2004-05	600,622	-	-	-	600,622
<b>TOTALS</b>	-	<b>3,615,566</b>	<b>(2,602,824)</b>	<b>412,100</b>	<b>600,622</b>

[1] Delete contributions from Water, Electric, Gas, and Wastewater funds

[2] CIP 9701 renamed "Environmental Services Center" with new scope and location

[3] \$1,275,000 re-appropriated for single stream start-up costs

Source: Administrative Services Department

## APPENDIX 6

### Comparison of yard waste processing and composting costs

	Process yard waste at Palo Alto ESC (chipping and composting)	Process yard waste at PA for transfer to another facility for composting	PASCO hauls yard waste collections directly to SMaRT (self haul goes to SMaRT or elsewhere)
<b>ASSUMPTIONS:</b>			
PASCO yard waste collections (tons)	8,549 tons	8,549 tons	8,549 tons
Self-haul yard waste (tons)	8,227 tons	8,227 tons	-
Palo Alto acreage	7.5 acres	1.75 acres	-
<b>EXPENSE/(REVENUE):</b>			
Land rent @ \$100,188 per acre	\$ 751,410	\$ 175,329	-
Compost operations costs	582,370	281,373	-
SMaRT station tipping fee @ \$32 per ton	-	-	\$ 273,583
Direct haul to SMaRT @ \$24 per ton	-	-	205,188
Compost facility tipping fee @ \$18 per ton	-	301,978	-
Transfer haul to compost facility @ \$10 per ton	-	167,765	-
Self-haul YT gate fees	(280,000)	(280,000)	-
Compost revenue (estimated)	(100,000)	-	-
<b>TOTAL</b>	<b>\$ 953,780</b>	<b>\$ 646,445</b>	<b>\$ 478,771</b>
Net cost per ton	56.85	38.53	56.00

Comparison of landfilling costs

	PALO ALTO	SMaRT
<b>ASSUMPTIONS</b>		
Refuse tons	23,230	23,230
<b>EXPENSE/(REVENUE)</b>		
Land rent @ \$100,188 per acre	\$ 4,708,836	-
PA landfill operations	1,377,991	-
SMaRT station net fee @ \$81 per ton	-	\$ 1,881,630
Direct haul to SMaRT @ \$24 per ton	-	557,520
Kirby landfill fees	-	Included
Self-haul refuse gate fees	(2,039,000)	-
<b>NET COST</b>	<b>\$ 4,047,827</b>	<b>\$ 2,439,150</b>
Cost per ton	\$ 174.25	\$105.00

**DESCRIPTION OF OPTIONS**

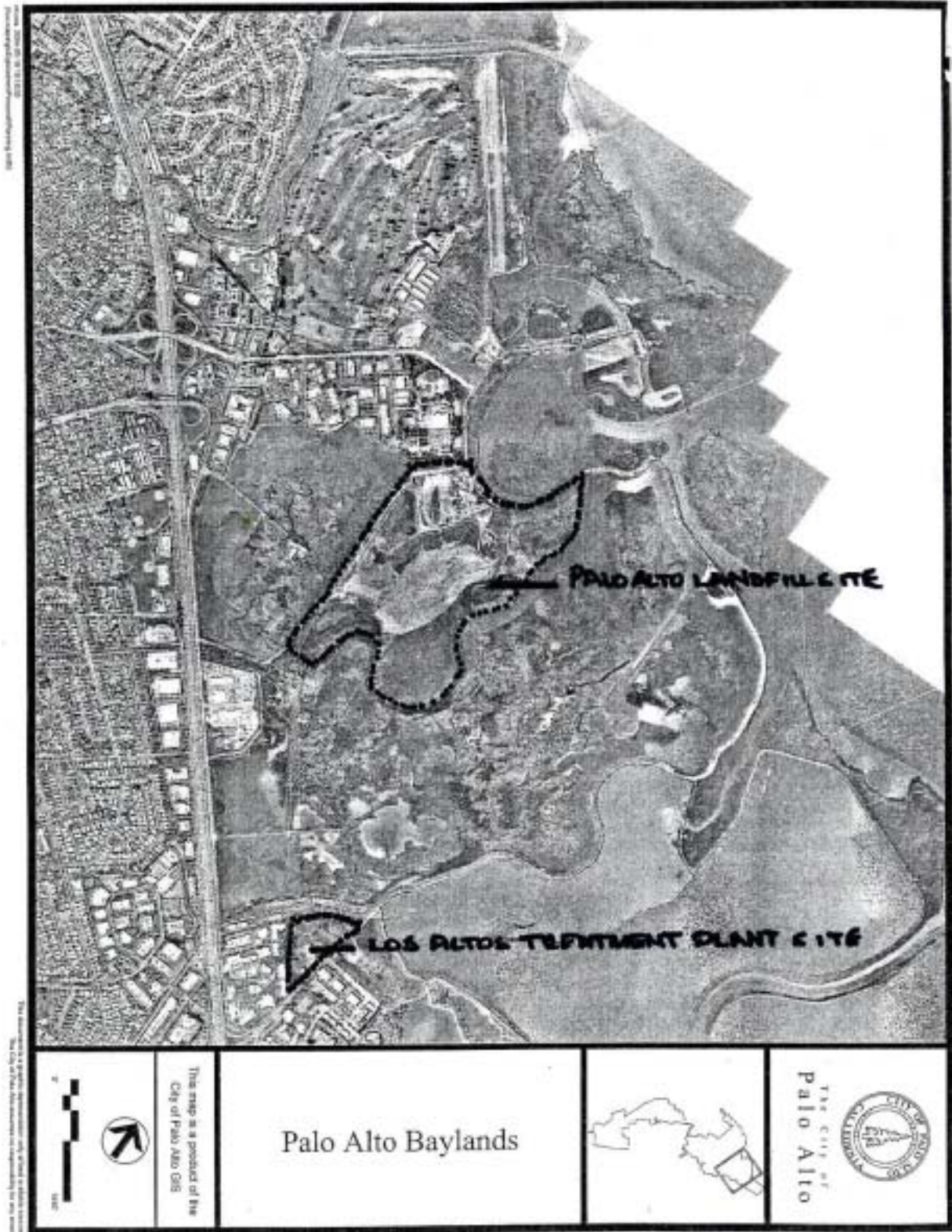
In 1999, BVA assessed the feasibility of the following alternatives

- BVA scenario #1a assumed all refuse would be delivered to the SMaRTSMaRT station after the closure of the landfill, and that Palo Alto would continue to handle all its curbside and drop-off recycling and yard waste at its current facility (then estimated at 5.2 acres). The costs associated with the handling and disposal of the “self-haul” and City department refuse were not included in the scenario because those costs would be borne by the generators. All waste was assumed to be disposed at the Kirby Canyon landfill.
- BVA scenario #1b mirrored #1a except that curbside recyclables would be delivered directly to the SMaRT station for processing. Palo Alto would continue to process yard waste and operate the drop-off center.
- BVA scenario #2a assumed the City would build the facility on a 6.2-acre site. The current split of refuse between the Palo Alto landfill and the SMaRT station would continue. Scenario #2a assumed that Palo Alto would process all recyclables and yard waste.
- BVA scenario #2b mirrored #2a except that curbside recyclables would be delivered directly to the SMaRT station for processing. Palo Alto would continue to process yard waste and operate the drop-off center.
- BVA scenario #3 assumed the City would build facility plan 2 on a 6.2-acre site capable of processing all refuse and recyclables. All waste was assumed to be disposed at the Kirby Canyon landfill.

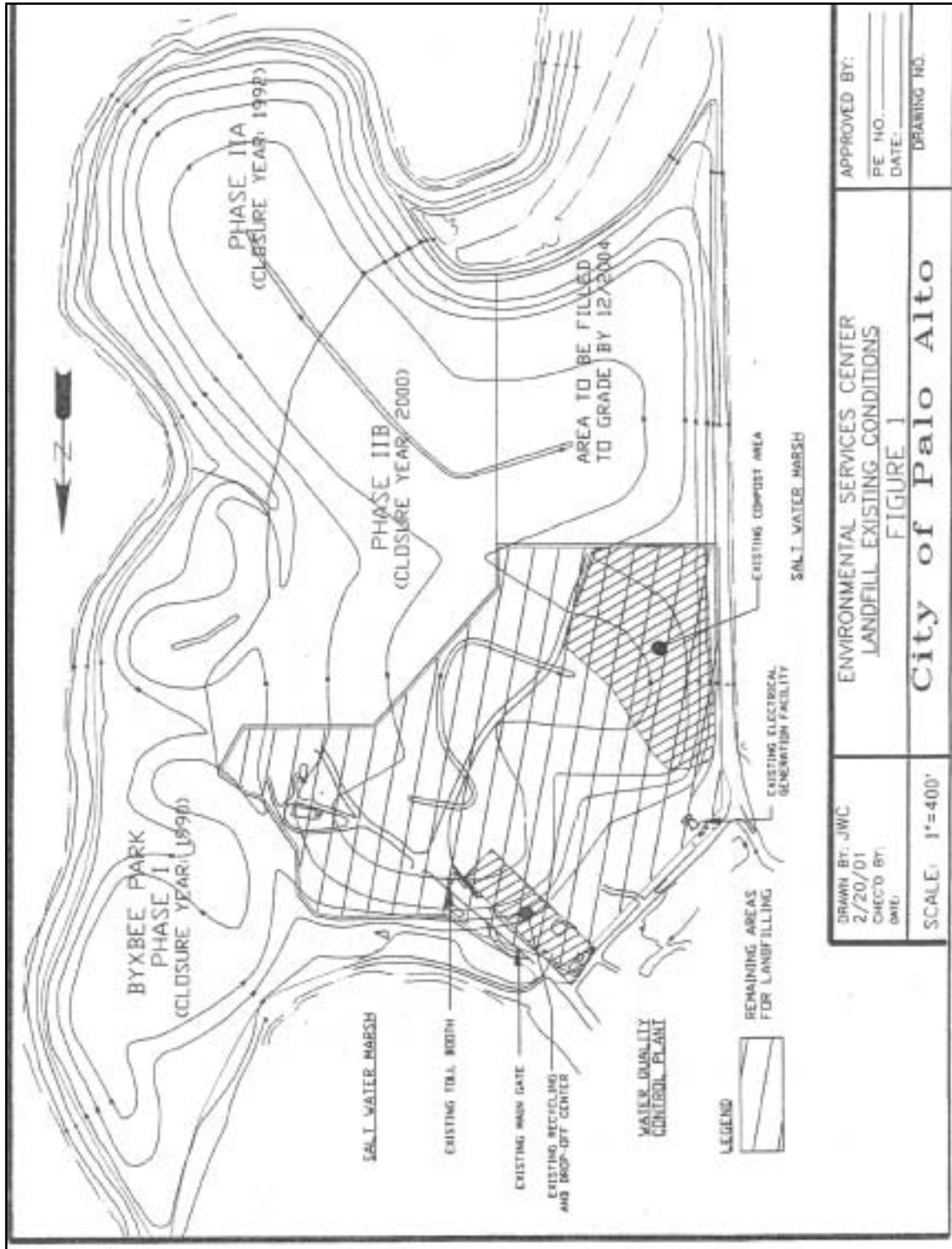
**MAY 2004 STAFF ALTERNATIVES**

- Recommended option: Build a comprehensive ESC in Palo Alto. The 19-acre facility would replace the existing recycling center with a multi-functional facility consisting of a mini-refuse transfer station, compost facility, recycling drop-off and processing center, permanent household hazardous waste facility, bin storage area, and inert solids storage areas. The proposed facility could be operational prior to the final closure of the landfill, and would remain in operation indefinitely following closure of the landfill.
- Future recommended: Expand the comprehensive ESC to include full refuse transfer/MRF capabilities.
- Alternative 1: Build a reduced-scale ESC on approximately six acres that would include the mini-transfer station/MRF, recycling drop-off and processing center, permanent household hazardous waste facility, and a chip and ship facility for yard waste. The facility would not include composting or inert solids storage.
- Alternative 2: Build a recycling and HHW area on approximately 3 acres.
- Alternative 3: Use the SMaRT station once the landfill was closed. All refuse, recycling, and yard waste would be taken to the SMaRT station. No facilities would remain at the landfill.
- Alternative 4: Use the Los Altos Treatment Plant Site for recycling and HHW area.

SITE MAP



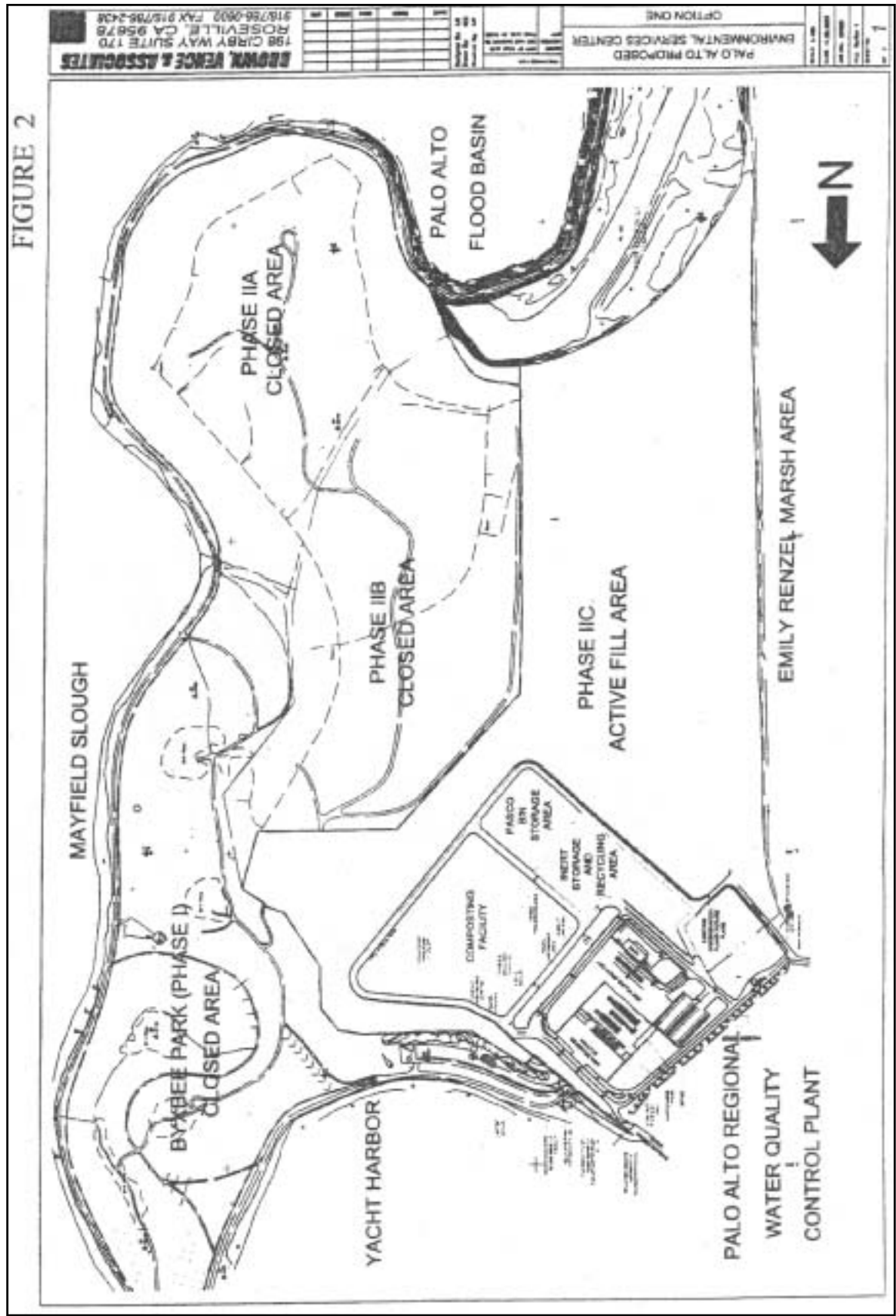
**CURRENT PLAN**





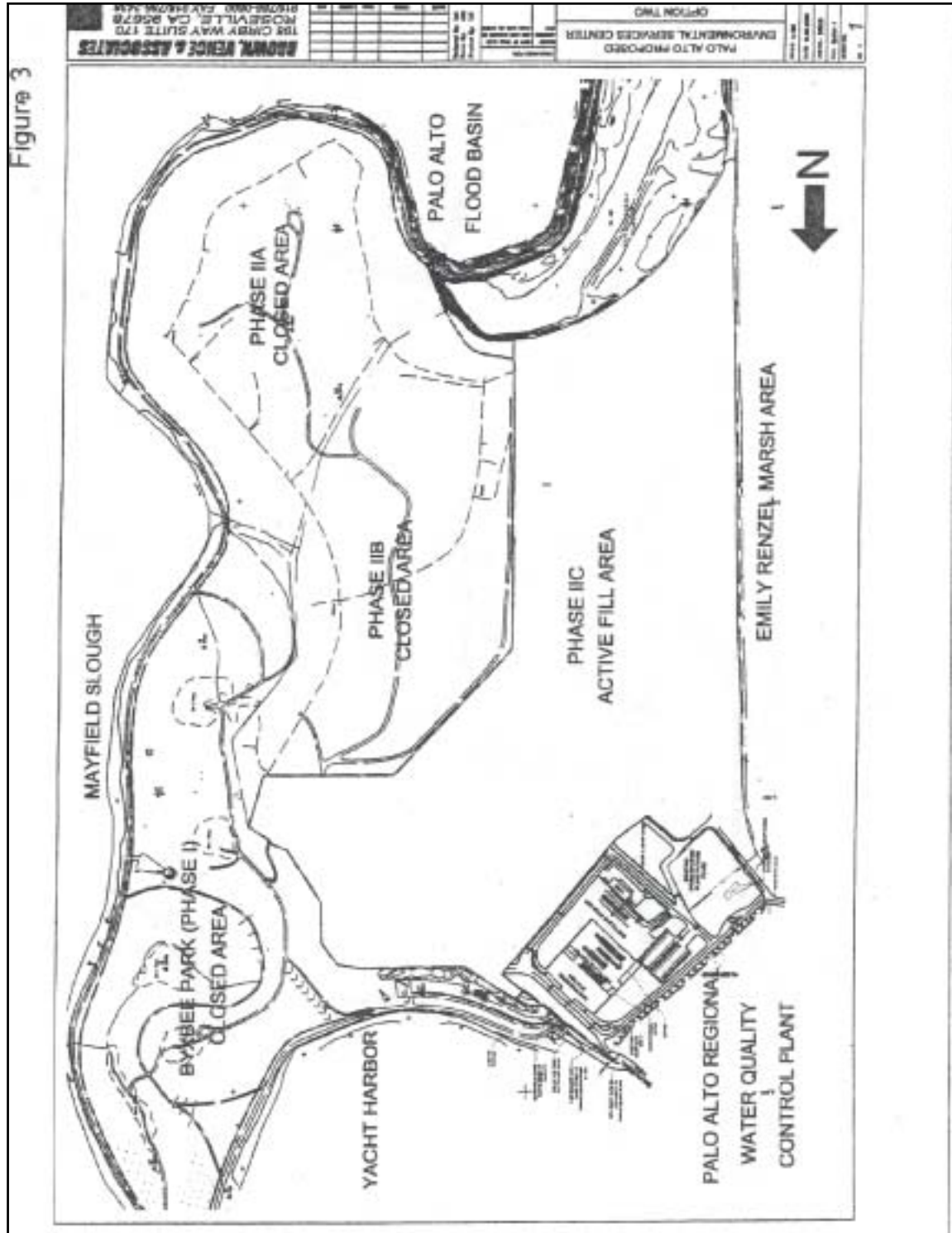
19-ACRE FACILITY

FIGURE 2



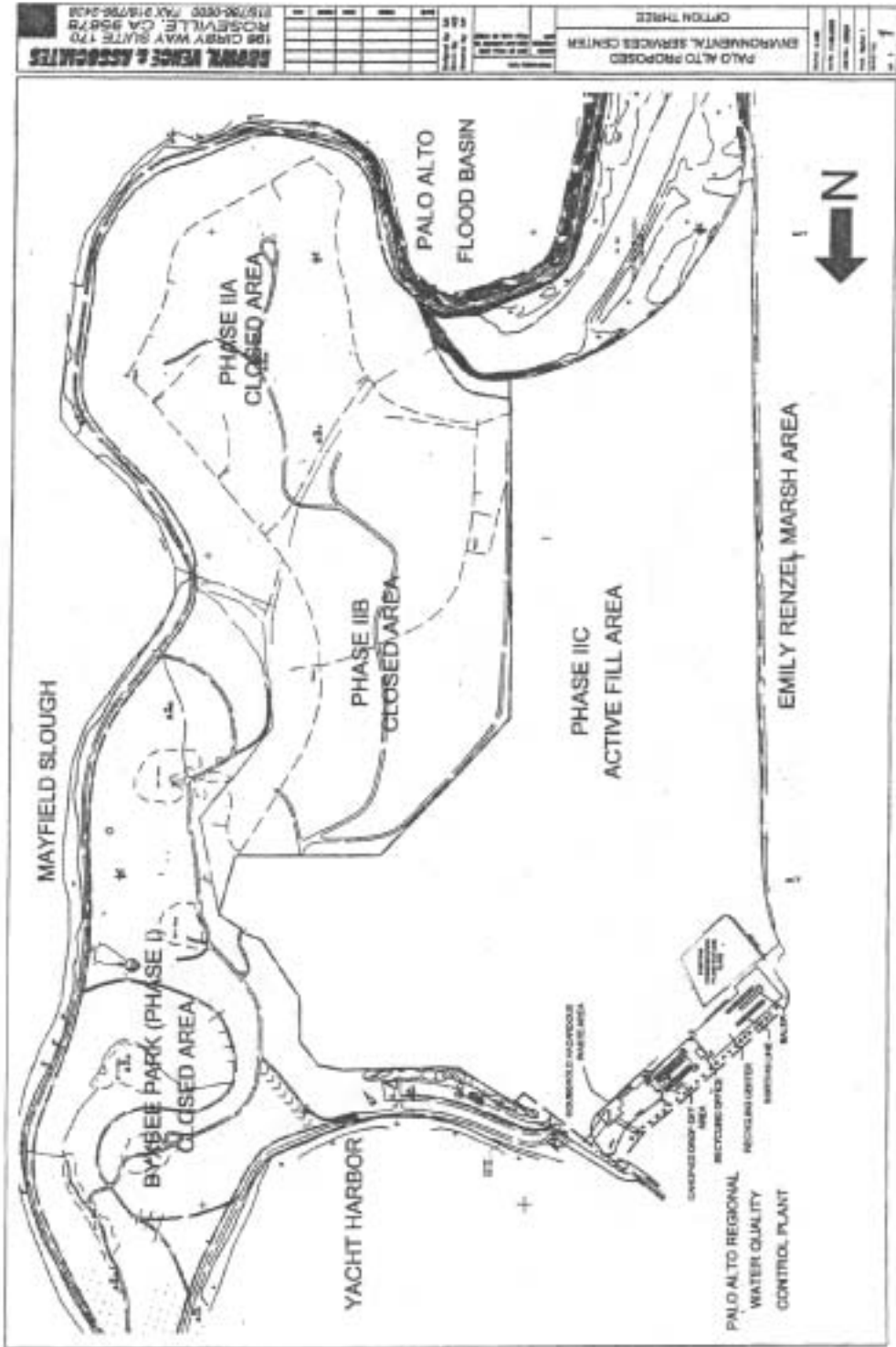
# 6.2 ACRE FACILITY

Figure 3



# 3-ACRE FACILITY

Figure 4



**APPENDIX 10**

**UPDATED COMPARISONS OF ESTIMATED NET COSTS**

	UPDATED COST COMPARISON OF STAFF ALTERNATIVES (IN 2004 DOLLARS)						UPDATED COST COMPARISON OF BVA OPTIONS (IN 2004 DOLLARS)					BVA ORIGINAL COST ESTIMATES FROM 1999				
	RECOMMENDED (pre-2021): "Build a comprehensive ESC in Palo Alto" [9]	FUTURE RECOMMENDED (post-2021): "Build a comprehensive ESC in Palo Alto" [9]	ALTERNATIVE 1 (pre-2021): "Build a reduced-scale ESC"	ALTERNATIVE 2 (pre- and post-2021): "Build a recycling and HHW area"	ALTERNATIVE 3 (pre- and post-2021): "Use the SMART station"	ALTERNATIVE 4 (pre- and post-2021): "Use the LAMP site for recycling and HHW"	BVA Option #1a (pre- and post-2021): All refuse transfer in SV	BVA Option #1b (pre- and post-2021): All refuse transfer and curbside processing in SV	BVA Option #2a (pre-2021): Some waste transfer in PA	BVA Option #2b (pre-2021): Some refuse transfer in PA; curbside processing in SV	BVA Option #3 (post-2021): All waste transfer in PA	BVA Option #1a: All refuse transfer in SV	BVA Option #1b: All refuse transfer and curbside processing in SV	BVA Option #2a: Some waste transfer in PA	BVA Option #2b: Some refuse transfer in PA; curbside processing in SV	BVA Option #3: All waste transfer in PA
Refuse MRF and transfer station	PA and SMART	Palo Alto	PA and SMART	SMART	SMART	SMART	SMART	SMART	PA and SMART	PA and SMART	Palo Alto	SMART	SMART	PA and SMART	PA and SMART	Palo Alto
Recyclable processing	Palo Alto	Palo Alto	Palo Alto	Palo Alto	SMART	Palo Alto (LAMP)	Palo Alto	SMART	Palo Alto	SMART	Palo Alto	Palo Alto	SMART	Palo Alto	SMART	Palo Alto
Drop off recycling center	Palo Alto	Palo Alto	Palo Alto	Palo Alto	SMART	Palo Alto (LAMP)	Palo Alto [8]	Palo Alto [8]	Palo Alto	Palo Alto	Palo Alto	Palo Alto [8]	Palo Alto [8]	Palo Alto	Palo Alto	Palo Alto
Yardwaste processing	Palo Alto	Palo Alto	Palo Alto	SMART	SMART	SMART	Palo Alto [8]	Palo Alto [8]	Palo Alto	Palo Alto	Palo Alto	Palo Alto [8]	Palo Alto [8]	Palo Alto	Palo Alto	Palo Alto
Landfill	Kirby	Kirby	Kirby	Kirby	Kirby	Kirby	Kirby	Kirby	Kirby	Kirby	Kirby	Kirby	Kirby	Kirby	Kirby	Kirby
Capital cost	\$11,920,400	\$15,421,400	\$11,413,000	\$5,191,000	\$0	\$8,491,000	-	-	\$11,413,000	\$6,552,000	\$14,914,000	-	-	\$11,413,000	\$6,552,000	\$14,914,000
<b>Acres</b>	<b>19</b>	<b>19</b>	<b>6.2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>5.2</b>	<b>5.2</b>	<b>6.2</b>	<b>6.2</b>	<b>6.2</b>	<b>5.2</b>	<b>5.2</b>	<b>6.2</b>	<b>6.2</b>	<b>6.2</b>
<b>CAPITAL CONSTRUCTION</b>																
Capital construction costs [2]	\$14,053,062	\$18,156,717	\$13,467,015	\$6,117,105	\$0	\$9,928,605	\$0	\$0	\$13,467,015	\$7,747,560	\$17,570,670	\$0	\$0	\$13,467,015	\$7,747,560	\$17,570,670
<b>ANNUAL COST TO USE PALO ALTO FACILITIES</b>																
Annualized capital cost [1]	\$1,157,981	\$1,496,125	\$1,109,690	\$504,053	\$0	\$818,123	\$0	\$0	\$1,109,690	\$638,404	\$1,447,834	\$0	\$0	\$995,000	\$571,000	\$1,300,000
Operations and maintenance [3]	\$2,386,951	\$4,622,885	\$2,386,951	\$1,347,540	\$0	\$1,347,540	\$1,046,633	\$678,196	\$2,386,951	\$1,564,756	\$4,622,885	\$608,384	\$357,000	\$2,155,000	\$1,381,000	\$4,080,000
City cost plan charges	\$169,352	\$211,340	\$169,352	\$0	\$0	\$27,992	\$27,992	\$0	\$169,352	\$141,360	\$211,340	\$0	\$0	\$0	\$0	\$0
Transfer haul to Kirby Canyon landfill	\$221,285	\$547,677	\$221,285	\$5,079	\$0	\$9,040	\$9,040	\$5,079	\$221,285	\$217,325	\$547,677	\$13,000	\$11,000	\$200,000	\$198,000	\$461,000
Landfill disposal at Kirby Canyon [7]	\$1,196,246	\$2,960,690	\$1,196,246	\$27,459	\$0	\$48,867	\$48,867	\$27,459	\$1,196,246	\$1,174,838	\$2,960,690	\$87,000	\$72,000	\$1,420,000	\$1,406,000	\$3,294,000
Land rent	\$1,903,572	\$1,903,572	\$621,166	\$300,564	\$0	\$0	\$520,978	\$520,978	\$621,166	\$621,166	\$621,166	\$305,500	\$305,500	\$364,000	\$364,000	\$364,000
Recyclable revenue [4]	(\$1,356,110)	(\$2,508,814)	(\$1,256,110)	(\$1,200,717)	\$0	(\$1,200,717)	(\$1,200,717)	(\$88,248)	(\$1,256,110)	(\$143,642)	(\$2,408,814)	\$0	\$0	(\$688,000)	(\$117,000)	(\$1,314,000)
Gate fee revenues from city depts	(\$353,306)	(\$353,306)	(\$353,306)	\$0	\$0	\$0	\$0	\$0	(\$353,306)	(\$353,306)	(\$353,306)	\$0	\$0	(\$244,000)	(\$244,000)	(\$244,000)
Self haul gate fees [5]	(\$2,057,372)	(\$2,057,372)	(\$2,057,372)	\$0	\$0	\$0	(\$463,910)	(\$463,910)	(\$2,057,372)	(\$2,057,372)	(\$2,057,372)	\$0	\$0	(\$1,278,000)	(\$1,278,000)	(\$1,278,000)
<b>SUBTOTAL PALO ALTO</b>	<b>\$3,268,599</b>	<b>\$6,822,797</b>	<b>\$2,037,902</b>	<b>\$983,978</b>	<b>\$0</b>	<b>\$1,050,845</b>	<b>(\$11,117)</b>	<b>\$679,554</b>	<b>\$2,037,902</b>	<b>\$1,803,528</b>	<b>\$5,592,100</b>	<b>\$1,013,884</b>	<b>\$745,500</b>	<b>\$2,924,000</b>	<b>\$2,281,000</b>	<b>\$6,663,000</b>
<b>ANNUAL COST TO USE SMART</b>																
SMART operations and maintenance [10]	\$3,672,412	\$0	\$3,672,412	\$4,692,862	\$4,336,147	\$4,692,862	\$4,594,911	\$4,238,196	\$3,672,412	\$3,315,696	\$0	\$5,384,000	\$5,584,000	\$4,273,000	\$4,446,000	\$0
SMART debt service	\$398,126	\$0	\$398,126	\$398,126	\$398,126	\$398,126	\$398,126	\$398,126	\$398,126	\$398,126	\$0	\$0	\$0	\$0	\$0	\$0
Direct haul refuse to SMART	\$1,168,152	\$0	\$1,168,152	\$1,475,401	\$1,475,401	\$1,876,223	\$1,475,401	\$1,475,401	\$1,168,152	\$1,168,152	\$0	\$1,091,000	\$1,091,000	\$784,000	\$784,000	\$0
Direct haul yardwaste to SMART	\$0	\$0	\$0	\$213,262	\$213,262	\$213,262	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Direct haul curbside recyc to SMART	\$0	\$0	\$0	\$0	\$510,178	\$0	\$0	\$510,178	\$0	\$510,178	\$0	\$0	\$250,000	\$0	\$250,000	\$0
<b>SUBTOTAL SMART COSTS</b>	<b>\$5,238,690</b>	<b>\$0</b>	<b>\$5,238,690</b>	<b>\$6,779,651</b>	<b>\$6,933,114</b>	<b>\$7,180,473</b>	<b>\$6,468,438</b>	<b>\$6,621,901</b>	<b>\$5,238,690</b>	<b>\$5,392,152</b>	<b>\$0</b>	<b>\$6,475,000</b>	<b>\$6,925,000</b>	<b>\$5,057,000</b>	<b>\$5,480,000</b>	<b>\$0</b>
<b>TOTAL ANNUAL COSTS</b>	<b>\$8,507,289</b>	<b>\$6,822,797</b>	<b>\$7,276,592</b>	<b>\$7,763,629</b>	<b>\$6,933,114</b>	<b>\$8,231,318</b>	<b>\$6,457,321</b>	<b>\$7,301,455</b>	<b>\$7,276,592</b>	<b>\$7,195,680</b>	<b>\$5,592,100</b>	<b>\$7,488,884</b>	<b>\$7,670,500</b>	<b>\$7,981,000</b>	<b>\$7,761,000</b>	<b>\$6,663,000</b>
Est. tons of refuse handled	113,592	113,592	107,592	94,645	94,645	94,645	94,645	94,645	107,592	107,592	113,592	94,645	94,645	107,592	107,592	113,592
Est. cost per ton	\$74.89	\$60.06	\$67.63	\$82.03	\$73.25	\$86.97	\$68.23	\$77.15	\$67.63	\$66.88	\$49.23	\$79.13	\$81.04	\$74.18	\$72.13	\$58.66
Est. cost per ton excluding rent	\$58.14	\$43.31	\$61.86	\$78.85	\$73.25	\$86.97	\$62.72	\$71.64	\$61.86	\$61.11	\$43.76	\$75.90	\$77.82	\$70.80	\$68.75	\$55.45

**NOTES:**

These comparisons do not include refuse fund administration, waste reduction programs, or street sweeping.

[1] Annualized capital costs based on 4.1% interest, 20 year term, 11% issuance costs

[2] Capital costs as estimated by BVA plus 20% for construction inflation (1999-2004) and 5% for LEEDS.

[3] Includes City and PASCO labor and operations expenses to operate these facilities, based on BVA estimated staffing levels.

[4] Includes recyclable revenue from drop off, curbside collection, and the MRF processing line as appropriate. Staff's recommended options include \$100,000 compost revenue.

[5] Gate fees for yard trimmings and/or refuse.

[7] Estimated Kirby landfill cost of \$50.85 per ton includes \$19.05 in applicable fees and taxes

[8] BVA options #1a and #1b assumed Palo Alto continued to use existing recycling and yardwaste facilities.

[9] Includes ability to process 6,000 tons of C&D materials in Palo Alto that would otherwise be processed elsewhere

[10] Net of recycling revenues