



## CITY OF PALO ALTO OFFICE OF THE CITY AUDITOR

August 4, 2014

The Honorable City Council  
Palo Alto, California

### Finance Committee Recommendation to Accept the Audit of the Solid Waste Program

The Office of the City Auditor recommends acceptance of the Audit of the Solid Waste Program. At its meeting on June 3, 2014, the Finance Committee approved and unanimously recommended the City Council accept the report. The Finance Committee minutes are included in this packet.

Respectfully submitted,

Harriet Richardson  
City Auditor

#### ATTACHMENTS:

- Attachment A: Audit of the Solid Waste Program (PDF)
- Attachment B: Finance Committee Meeting Minutes Excerpt (June 3, 2014) (PDF)

Department Head: Harriet Richardson, City Auditor





## CITY OF PALO ALTO OFFICE OF THE CITY AUDITOR

June 3, 2014

**The Honorable City Council**  
**Attention: Finance Committee**  
**Palo Alto, California**

### **Audit of the Solid Waste Program**

In accordance with the Fiscal Year 2014 Annual Audit Work Plan, the Office of the City Auditor has completed the Audit of the Solid Waste Program. The audit report presents three findings with a total of sixteen recommendations. The Office of the City Auditor recommends the Finance Committee review and recommend to the City Council acceptance of the Audit of the Solid Waste Program.

We would like to thank the staff of the Public Works Department, Administrative Services Department, Utilities Department, Information Technology Department, GreenWaste of Palo Alto, and GreenWaste Recovery, Inc., for their time, information, and cooperation during the audit process.

Respectfully submitted,

Harriet Richardson  
City Auditor

#### **ATTACHMENTS:**

- Attachment A: Audit of the Solid Waste Program (PDF)

Department Head: Harriet Richardson, City Auditor





CITY OF  
**PALO  
ALTO**

# AUDIT OF THE SOLID WASTE PROGRAM: MANAGEMENT OF SOLID WASTE, RECYCLABLE AND ORGANIC MATERIALS, AND YARD TRIMMINGS COLLECTION AND PROCESSING SERVICES

**Final Report  
May 2014**



**Office of the City Auditor**

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CITY OF  
**PALO  
ALTO**

## Office of the City Auditor

### EXECUTIVE SUMMARY – AUDIT OF THE SOLID WASTE PROGRAM

**Audit Objective:** To evaluate whether the Public Works Department effectively manages the City's Solid Waste Program to ensure accurate refuse billings, ensure sufficient revenue to recover the cost of services, and to provide reliable and useful financial and operational data in support of management's strategic and operational decisions.

#### SUMMARY OF RESULTS

The City's Solid Waste Program made significant progress over the last few years, including implementation of numerous zero waste programs and enhancement of its contract management process. However, the audit findings indicate that the Public Works Department should further improve its management of the City's Solid Waste Program to ensure accurate refuse billings, ensure sufficient revenue to recover the cost of services, and provide reliable and useful financial and operational data in support of management's strategic and operational decisions. The Office of the City Auditor provides 16 recommendations to improve the City's Solid Waste Program management processes.

#### REPORT HIGHLIGHTS

***Finding 1: The Public Works Department should improve the accuracy of refuse billing. (Page 12)***

Refuse services for 685 (3.5 percent) of the 19,681 refuse customers in the City's SAP system did not match the services recorded in the GreenWaste of Palo Alto's (GWOPA) Route Accounts Management System (RAMS). As of March 20, 2014, staff have reviewed 192 (28 percent) of the 685 accounts and have retroactively adjusted City customer billings by \$175,581 (\$50,596 in back billings and \$124,985 in refunds). Causes of these inconsistencies include:

- The interface between the SAP system and RAMS was not designed and implemented effectively.
- Refuse customer types are not accurately and completely maintained in either the SAP system or RAMS.
- 123 accounts in RAMS were either duplicates or not needed.
- Multiple quantities of the same service are not maintained in one record in RAMS.
- A specific price code is not set up for all refuse services in the SAP system.

***Finding 2: The Public Works Department should strengthen its oversight of GWOPA to maintain accurate refuse service data. (Page 18)***

The service recorded did not match the actual service provided for 30 of the 298 utilities accounts we reviewed from the GWOPA RAMS data. Our analysis prompted GWOPA to work with City staff to retroactively adjust refuse billing for 10 residential and commercial customers, or three percent of the reviewed accounts, by \$40,724 (\$1,599 in back billings and \$39,125 in refunds).

***Finding 1 Recommendations to the Public Works Department:***

- 1.1. Continue to review and verify the data discrepancies identified during the audit and take corrective action.
- 1.2. Develop methodology and tools to compare the SAP data with RAMS data to detect and correct any discrepancies in an efficient and timely manner.
- 1.3. Perform a cost-benefit analysis and determine an optimal course of action to maintain the accuracy and integrity of refuse customer data.
- 1.4. Complete the review of all Multi-Family Dwellings (MFDs) to ensure the accuracy of the customer type classification in RAMS.
- 1.5. Work with the Utilities Department and GWOPA to clarify the roles and responsibilities over obtaining information required for determining customer type, recording data, and maintaining the accuracy and completeness of the refuse customer type data.
- 1.6. Establish procedures to ensure that necessary data, system capability, and related administrative tasks are identified, assessed, and communicated to stakeholders before refuse rates or exemptions with high complexity are adopted.
- 1.7. Establish procedures to ensure that a service code is defined and added to both systems before a new service fee is implemented.

***Finding 2 Recommendations to the Public Works Department:***

2. Assess the potential impact of incorrect service records that may remain in RAMS, and provide additional direction as needed to enhance GWOPA's monitoring activities, such as a route audit, over the accuracy of the refuse customer service records.

**Finding 3: The Public Works Department should ensure reliable and useful data are provided to stakeholders for informed decision making. (Page 19)**

We identified the following opportunities to improve the reliability and usefulness of the data provided to stakeholders for effective analysis, evaluation, and informed decision making:

- Key financial data should be defined and reported consistently.
- The Refuse Fund Rate Stabilization Reserve guideline should be updated to ensure its adequacy.
- Actual refuse revenues and expenses should be tracked at a level of detail required to effectively support Solid Waste operations.
  - Actual revenues by customer type or by service are not accurately tracked in SAP.
  - Actual expenses by sector are not tracked.
  - Appropriate amount of the Commercial Sector Reserve cannot be determined without the ability to track actual revenues and expenses.
- Key operational data should be defined and tracked to effectively measure program outcomes.
  - The accuracy and reliability of service level data should be improved.
  - Financial incentives should be tied to Solid Waste's key performance measures to improve their effectiveness.
  - Specific performance measures should be tied to public education and outreach efforts to allow cost benefit analyses of related activities and expenses.

**Finding 3 Recommendations to the Public Works Department:**

- 3.1. Work with Administrative Services Department staff to identify key financial data, clarify the methodology to obtain the data, and develop common terminology to be applied throughout budget, accounting, and staff reports to ensure that data is verifiable, understandable, timely, consistent, and useful for decision making processes.
- 3.2. Update and clarify the Refuse Fund Rate Stabilization Reserve guideline to ensure that the minimum and maximum reserve balance is set at an adequate level required to support the reserve's intended purpose.
- 3.3. Work with Utilities, Information Technology, and Administrative Services Department staff to explore opportunities for improvement to ensure that actual refuse revenues by sector are accurately captured and tracked.
- 3.4. Work with GWOPA to ensure that data required for accurate tracking of actual expenses are identified and reported by GWOPA on a regular basis. Establish procedures to periodically review GWOPA financial records to monitor the accuracy of the data provided by GWOPA.
- 3.5. Consult with the City Attorney's Office and reevaluate the need for establishing the Commercial Sector Reserve. If applicable, work with Administrative Services Department staff to establish the Commercial Sector Reserve and related procedures.
- 3.6. Identify key operational data required for informed decision making to ensure efforts required to monitor program performance and progress are effective and reasonable.
- 3.7. Establish baseline data and a methodology to evaluate the effectiveness of program activities and related expenses in achieving Solid Waste goals.
- 3.8. Establish a process to ensure that financial incentives and output requirements provided in a new or renegotiated contract are aligned with Solid Waste's key performance measures to effectively support its goals.



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In accordance with the Fiscal Year 2014 Annual Audit Work Plan, the Office of the City Auditor has completed this Audit of the Solid Waste Program. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

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We would like to thank the staff of the Public Works Department, Administrative Services Department, Utilities Department, Information Technology Department, GreenWaste of Palo Alto, and GreenWaste Recovery, Inc., for their time, information, and cooperation during the audit process.

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## INTRODUCTION

### Audit Objective

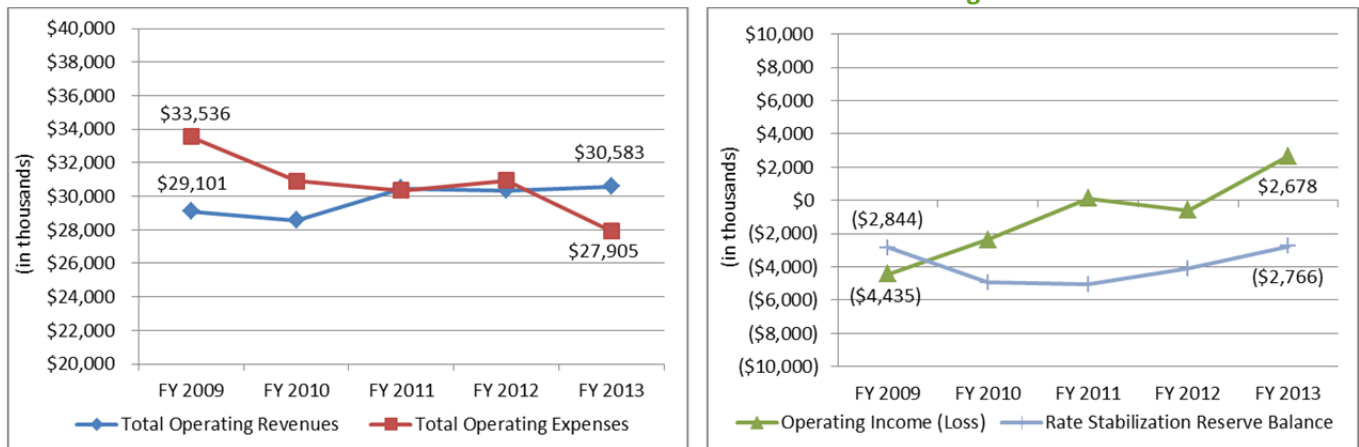
The objective of this audit was to evaluate whether the Public Works Department effectively manages the City’s Solid Waste Program to ensure accurate refuse billings, ensure sufficient revenue to recover the cost of services, and provide reliable and useful financial and operational data in support of management’s strategic and operational decisions.

### Background

The Public Works Department (Public Works) is responsible for the City’s refuse collection, source reduction, recycling, and long-term resource recovery and disposal activities. The Solid Waste Program (Solid Waste) in the Public Works’ Environmental Services Division is responsible for planning, organizing, and directing refuse and recycling related activities. Solid Waste’s goals include minimizing waste generation, maximizing recycling and reuse programs, and effectively managing its programs while ensuring sufficient revenue and equitable rates to cover the cost of services. All financial transactions relating to the City’s refuse service are accounted for in the Refuse Fund.

Refuse services are provided on a user-charge basis to residents and business owners located in the City. In FY 2013, the City received \$26.4 million, or 86 percent of the total Refuse Fund operating revenues from its refuse customers. As shown in Exhibit 1, these revenues have not been enough to cover the operating expenses in the recent past, and the Fund’s Rate Stabilization Reserve balance has remained negative. Refuse Fund operating income became positive in FY 2013 mainly due to lower expenses resulting from closing the Palo Alto Landfill. The Rate Stabilization Reserve balance also increased from -\$4.1 million in FY 2012 to -\$2.8 million in FY 2013.

**Exhibit 1: Refuse Fund Financial Status from FY 2009 through FY 2013**



Source: City of Palo Alto Comprehensive Annual Financial Reports (CAFR)

### Refuse Fund Rate Studies

In August 2010, the City retained R3 Consulting Group, Inc., (R3) to conduct a Refuse Fund Cost of Service Study to evaluate the refuse rate structure, develop potential adjustments to the rate structure, and develop a Cost of Service Model to project revenues and expenses. R3 used the City’s FY 2012 budget data to develop the initial cost of services data for three lines of business, or three service sectors: Residential, Commercial, and Roll Off. The study was not completed until May 2012. City staff reported that the delay was due to two fundamental reasons:

- Due to the complexity of the billing system, the model predictions did not agree with past data nor other methods of predicting revenues and expenses, thus requiring more work before the model could be relied on to make policy decisions.
- The model was too coarse to fully address the issue of parity among ratepayers. Hauling costs, for example, must be more finely divided to determine the appropriate cost allocation between large and small customers.

While the May 2012 study resulted in rate restructuring, City staff concluded that it has not resolved two main challenges impacting the Refuse Fund:

- Risk of a revenue shortfall – The existing rate structure is largely predicated on refuse volume, and the revenues would decline as the City continues moving toward zero waste.
- Legal requirements of California’s Proposition 218 – Proposition 218 requires that property-related fees, including refuse rates, be no greater than the cost to provide the service.

In October 2013, the City entered into an agreement with HF&H Consultants, LLC, to create a simple, easy-to-update, and sustainable refuse rate model, and to identify a new rate structure.

### Zero Waste Plans

In October 2005, the City Council approved the Zero Waste Strategic Plan and adopted the goal of zero waste by 2021. The Strategic Plan identified the key objectives and strategies needed to reach zero waste, including both reducing the creation of waste through policies and incentives designed to eliminate waste at the source and maximizing recycling through expanded collection programs, processing facilities, education, outreach, and technical assistance.

In September 2007, the City Council approved the Zero Waste Operational Plan, which identified a number of policies, programs, and facilities that will be needed to achieve the goal and to guide the City’s short and long-term Zero Waste efforts. The Zero Waste Operational Plan also recommended that the City keep abreast of the latest technology developments and policy innovations for future consideration and implementation. One of the programs recommended in the Zero Waste Operational Plan was a collection program for residential compostables that are currently disposed at a landfill. In April 2013, the City implemented a new 12-month pilot program for residential food scrap collection in one City neighborhood.

### GreenWaste of Palo Alto (GWOPA) Contract

In October 2008, the City entered into an agreement with GreenWaste of Palo Alto<sup>1</sup> (GWOPA) for solid waste, recyclable materials, organic materials and yard trimmings collection and processing services. The term of the agreement is November 24, 2008, through June 30, 2017, with an option to extend up to a maximum of four years on the same terms and conditions. One of the City’s considerations in soliciting and awarding the contract was the contractor’s ability to implement the Zero Waste Operational Plan in an aggressive, cost-effective, and

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<sup>1</sup> GWOPA is a joint venture between GreenWaste Recovery, Inc., and Zanker Road Resource Management, Ltd., (Zanker) formed for the purpose of holding and servicing the contract with the City.

flexible manner. A number of recommended programs have been implemented under this new contract. Exhibit 2 lists facilities where the materials collected by GWOPA are processed.

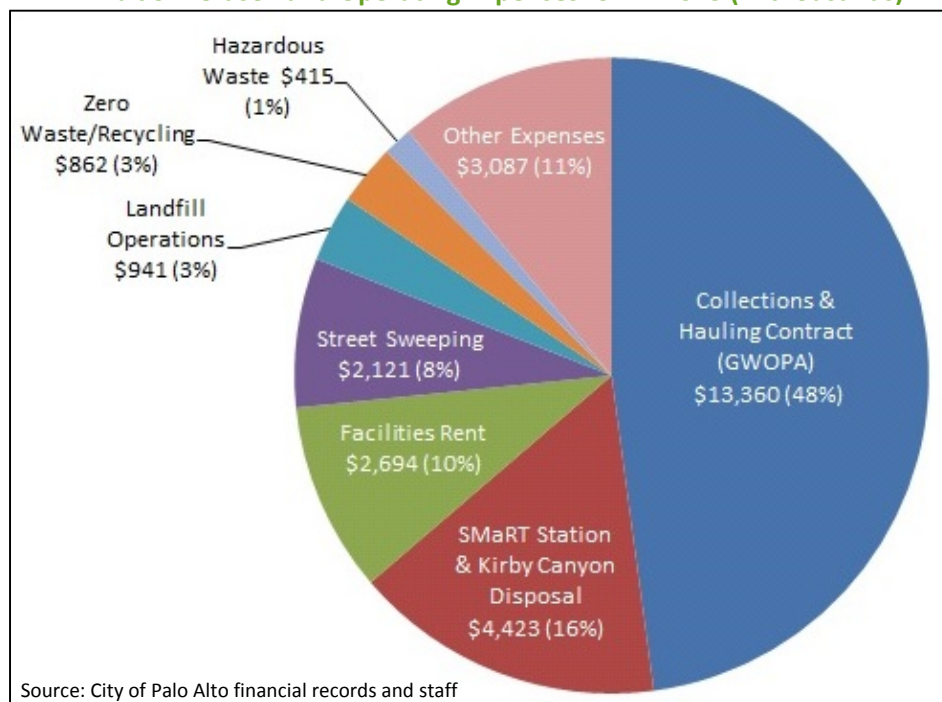
**Exhibit 2: GWOPA Contract Refuse Processing Facilities**

Processing Facility	Location	Materials Processed
Sunnyvale Materials Recovery and Transport Station (SMaRT Station)	Sunnyvale	• Solid Waste
GreenWaste Material Recovery Facility (GreenWaste MRF)	San Jose	• Recyclables
Z-Best Composting Facility (Z-Best)	Gilroy	• Organic materials (transported first to GreenWaste MRF) • Yard trimmings (transported first to SMaRT Station)
Zanker Road Materials Processing Facility or Zanker Road Resource Recovery Operation and Landfill	San Jose	• Construction and demolition (C&D) debris

Source: GWOPA Contract

In FY 2013, GWOPA contract expense exceeded \$13 million, representing about 48 percent of the total Refuse Fund operating expenses, as shown in Exhibit 3. SMaRT Station was the next highest expense, representing 16 percent of the total expense, followed by Facilities Rent paid on the portion of the Palo Alto Landfill that no longer accepts waste but cannot be readily converted to the land’s highest and best use.

**Exhibit 3: Refuse Fund Operating Expenses for FY 2013 (in thousands)**



### The City's Refuse Billing and Rate Categories

City customers receive a single utilities bill, which includes refuse in addition to electricity, gas, water, and sewer charges. The City's refuse charges fund a variety of services, including the annual clean-up day, street sweeping, household hazardous waste, and waste diversion services, in addition to collection and processing of garbage, recyclable and organic materials, and yard trimmings. There are three refuse rate schedules<sup>2</sup> that correspond with the refuse rate categories, as shown in Exhibit 4.

**Exhibit 4: Refuse Rate Categories**

Refuse Rate Category and Schedule	Services and Customers
R-1	Residential services provided to each occupied domestic dwelling,* including: <ul style="list-style-type: none"> <li>• Separate single-family dwelling (SFD)</li> <li>• Multi-family dwellings (MFD) with 4 units or less</li> </ul>
R-2	Commercial can/cart services provided to all occupied establishments other than domestic dwellings
R-3	Commercial bin, compactor, and debris box services

\* An occupied dwelling unit is defined as any home, apartment unit, cottage, flat or duplex unit, having kitchen, bath, and sleeping facilities, and to which gas or electric service is being rendered.

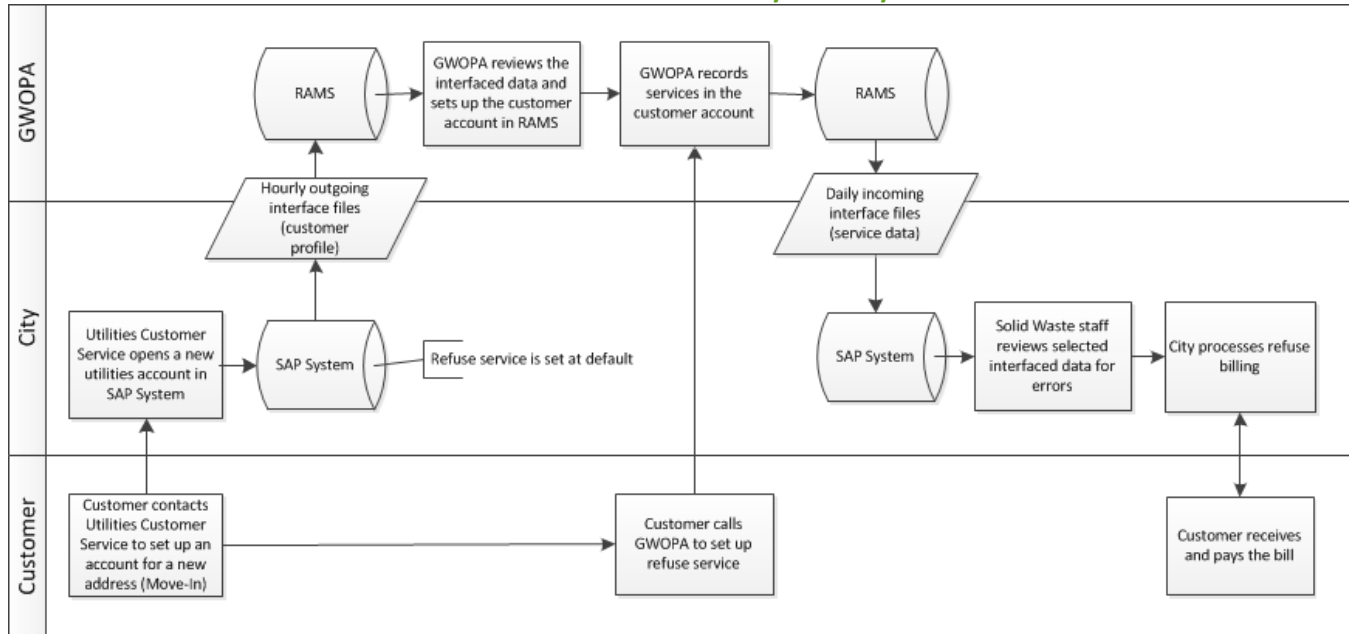
### The City's SAP System and GWOPA's Route Accounts Management System (RAMS)

The City uses its SAP system to maintain refuse customer billing data and to process refuse billing. GWOPA uses the Route Accounts Management System (RAMS) to maintain customer data. When a customer opens a new utilities account with the City's Utilities Customer Service Center, a customer profile is recorded in the SAP system and transmitted to RAMS through automated hourly outgoing interface files. Refuse service is set at default (i.e., a standard service set forth in each respective refuse rate schedule: one 32-gallon can or cart for residential customers; and two 32-gallon cans or one 64-gallon cart for commercial customers) at this point. The customer is instructed to call GWOPA to request the desired refuse services. The refuse service data updated in RAMS by GWOPA staff is transmitted to the SAP system through daily incoming interface files. Exhibit 5 provides an overview of the customer data flow between the SAP system and RAMS.

The City's refuse billing data is based on the refuse service data maintained by GWOPA in RAMS, requiring an effective interface between the systems to ensure the accuracy of the City's refuse billing. Refuse billing requires coordination with Utilities Department staff because there are standard business processes and procedures that are shared with other utilities services (e.g., the "Move-In" process involving a customer moving into a premise and requesting a new account).

<sup>2</sup> The Refuse Rate Schedules are posted on the City's Utilities website at:

- Residential Rates (R-1): <http://www.cityofpaloalto.org/gov/depts/utl/residents/rates.asp>
- Business Rates Overview (R-2 and R-3): <http://www.cityofpaloalto.org/gov/depts/utl/business/rates.asp>

**Exhibit 5: Flow of Customer Data between the City's SAP System and GWOPA RAMS**

The City's contract with GWOPA requires the following customer data, among others, to be synchronized and maintained accurately in both the SAP system and RAMS:

- Customer profile (standard information – billing address, email address, service address, collection route, contact telephone numbers & complete names, account numbers, account history)
- Specific customer services describing customer types such as Single-Family Dwelling (SFD), Multi-Family Dwellings (MFD), Commercial (COM), Roll-Off (ROL), and material types (solid waste, backyard service, one-time charges, recycling, yard trimmings, organics, construction and demolition debris)
- Container information (number of containers at each location, type of containers, size of containers, and frequency of container collection)

### Audit Scope

The audit covered the City's Solid Waste Program operations from July 2009 to September 2013 with a focus on management of the City's 2008 contract with GWOPA and related collection and processing services. We did not review other Refuse Fund operations such as the SMaRT Station, Street Sweeping, Landfill, and Hazardous Waste.

Our review of the City's refuse billing focused on 19,681 utilities accounts with permanent refuse services that are maintained in the City's SAP system. These accounts represent about \$2.2 million in monthly refuse billings (FY 2013 revenue of \$26 million). Our review excluded services provided on an ad-hoc basis (FY 2013 revenue of \$1.2 million) and refuse services provided to customers who do not have a utilities account with the City (FY 2013 revenue of \$2.1 million).

To avoid duplicating work in the ongoing rate study, we kept our review of the existing rate model to a minimum. We did not audit the City's compliance with California's Proposition 218.

## Audit Methodology

We performed the following:

- Interviewed selected staff from the Public Works Department, GWOPA, Administrative Services Department, Utilities Department and Information Technology Department to obtain an understanding of the Solid Waste management and accounting processes.
- Reviewed applicable sections of Palo Alto Municipal Code, California state laws and regulations, City Council resolutions and ordinances, and City policies and procedures to understand the Solid Waste regulatory environment and requirements.
- Consulted with the City Attorney's Office regarding relevant legal and regulatory issues and criteria for compliance.
- Reviewed the GWOPA contract, the City's Zero Waste Plans and related studies, and applicable City Manager Reports to understand the Solid Waste business environment, requirements, and challenges.
- Reviewed the City's Comprehensive Annual Financial Reports (CAFR), Operating Budget documents, and SAP system records to understand Solid Waste's financial status.
- Performed a risk assessment independently and in coordination with Public Works staff to identify key risks to achieving the program goals and objectives.
- Identified and mapped key processes and reviewed the process maps with Public Works staff to identify existing and expected key controls to mitigate the key risks.
- Obtained and reviewed GWOPA financial and operational records.
- Obtained and performed a detailed review of refuse customer billing data in the City's SAP system and customer service data in GWOPA RAMS as of September 16, 2013. We maintained frequent communication with City and GWOPA staff to obtain additional information and address issues as we discovered them. Our analyses included:
  - To evaluate the accuracy of the City's refuse billing, we compared the SAP and RAMS data by using data analysis software (ACL) and identified discrepancies as addressed in our audit findings. We excluded services that are currently provided free of charge (e.g., recycling services) from our analysis since a majority of these free services are only tracked in RAMS and are not recorded in the SAP system. We only compared the services (e.g., 32 gallon garbage cart, 4 cubic yard compostables bin), and did not compare the quantity of services (e.g., number of containers).
  - To evaluate the accuracy of refuse service data maintained by GWOPA, we selected a sample of 298 utilities accounts from RAMS by using a combination of random sampling and judgmental sampling based on input from GWOPA staff, and compared the charged services recorded with the refuse containers located at customer sites. We excluded free services from our analysis. We conducted a majority of the site visits with GWOPA staff who subsequently verified discrepancies through research, additional site visits, and/or direct contact with the customer. We did not project the resulting billing adjustments to the population to prevent double counting of billing adjustments made based on the comparison of SAP and RAMS data described above.
- Developed a glossary of terms, which is attached at the end of this report.



## City Auditor's Conclusion

The City's Solid Waste Program made significant progress over the last few years, including implementation of numerous zero waste programs and enhancement of its contract management process. However, the audit findings indicate that the Public Works Department should further improve its management of the City's Solid Waste Program to ensure accurate refuse billings, ensure sufficient revenue to recover the cost of services, and provide reliable and useful financial and operational data in support of management's strategic and operational decisions.

The Office of the City Auditor provides 16 recommendations to improve the City's Solid Waste Program management processes.

### Finding 1: The Public Works Department should improve the accuracy of refuse billing

We identified 685 City utilities accounts in the SAP system, or 3.5 percent of the 19,681 refuse customers, with services that were not consistent with services recorded in RAMS. Our analysis included an additional 64 accounts that were recorded in GWOPA RAMS but not in the City’s SAP system, for a total of 19,745 utilities accounts. As of March 20, 2014, staff has reviewed 192 (28 percent) of the 685 accounts and has retroactively adjusted City customer billings by \$175,581, which included a mix of both undercharges and overcharges. Public Works has had ongoing concerns regarding the integrity of its refuse customer billing data since the inception of the City’s GWOPA contract; however, it has not effectively and conclusively addressed these concerns. Our comparison was limited by various data accuracy and integrity issues as described in the following sections.

City staff followed up on the 685 accounts with refuse service discrepancies in close collaboration with GWOPA since it required a detailed review of the customer data in both systems and often a site visit by GWOPA staff to determine the actual service being provided. Once a billing discrepancy was confirmed, City and GWOPA staff calculated a total retroactive billing adjustment (back billing or refund) by reviewing the past billing up to three years.<sup>3</sup> See Exhibit 6 for the follow-up status as of March 20, 2014. The actual billing adjustments had not been processed pending management review.

**Exhibit 6: Customer Data Discrepancy Follow-up Status as of March 20, 2014**

Number of utilities accounts						Estimated customer billing adjustment (retroactive, not to exceed three years)		
Total with discrepancies	Verified by staff	No action required		Customer data updated in the SAP system or in RAMS		Total Back billings	Total refunds	Total adjustments
		Already addressed*	Not true discrepancies**	No changes in customer billing	Customer billing adjusted			
685	192	47	26	48	71	\$50,596	\$124,985	\$175,581

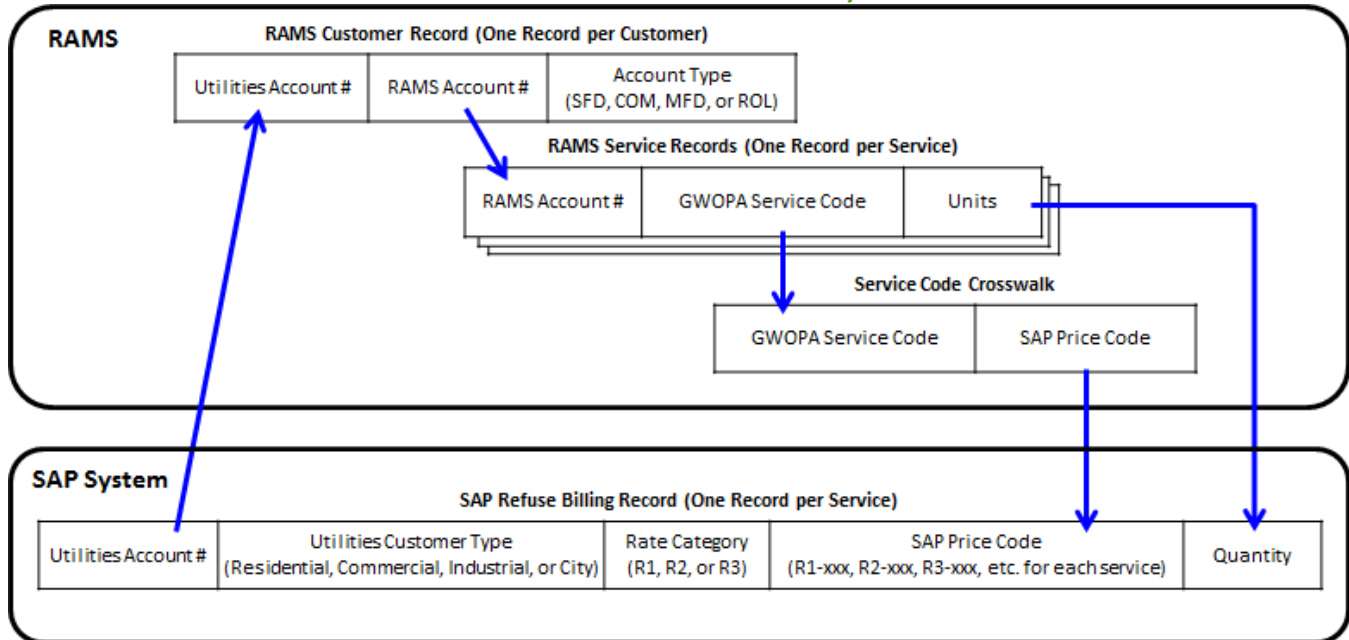
\* These accounts had already been reviewed as part of the audit and City and GWOPA staff made necessary adjustments.

\*\* A majority of these accounts had discrepancies due to a time lag between updates in the two systems. Changes in customer data may not be recorded on the same day depending on when manual processes required to synchronize the two systems are performed.

The customer records in the SAP system and RAMS are structurally different, with different customer account numbers, customer types, and service codes (see Exhibit 7). To ensure the City accurately bills customers for the actual refuse services provided, the GWOPA contract requires GWOPA to maintain accurate data and work with the City to develop a two-way data synchronization interface. Exhibit 5 on page 9 provides an overview of the customer data flow between the SAP system and RAMS.

<sup>3</sup> Utilities Rule and Regulation 11 issued by the City Council effective 7/1/12 limits the retroactive billing adjustment to three years.

### Exhibit 7: Customer Data Structures in SAP system and RAMS



Source: OCA analysis of customer data in the City's SAP system and GWOPA RAMS

The interface between the City's SAP system and GWOPA RAMS was not designed and implemented effectively. Both the City and GWOPA staff have been aware of the interface flaws since the initial RAMS implementation in 2009 and have made various efforts to address them, including:

- Initial clean-up of incorrect data transferred from the City's former contractor, PASCO** – According to City and GWOPA staff, the data transferred from PASCO contained a significant amount of inaccurate customer data, which required initial and ongoing efforts to clean up. According to City staff, 89 (75 percent) of 119 accounts for which customer data had to be updated in the SAP system or in RAMS during the audit were associated with either incorrect PASCO data transferred to RAMS or discrepancies between the SAP system and PASCO data that predated the RAMS implementation.
- Daily manual maintenance to detect and correct errors on both ends of the interface** – Currently, both City and GWOPA staff review outgoing and incoming interface log files on a daily basis to detect interface failures and errors and make manual corrections as needed. Program staff's review focuses on service changes associated with commercial customers that are more prone to interface errors and usually excludes the service changes associated with residential customers.
- Identification and prioritization of interface issues** – In August 2012, City staff identified and prioritized 23 SAP-RAMS interface issues along with preliminary steps to address them; however, the only staff member with the required expertise to address these issues transitioned to another Public Works division beginning FY 2013 and his availability became significantly limited. The City's FY 2013 budget authorized funding of \$250,000 as part of a Capital Improvement Program (CIP) project to address the interface issues. The project status remained on hold as of February 2014. According to staff, the project is dependent upon the outcome of their ongoing analysis of how new developments with the SAP system and RAMS may affect the project's nature and scope.
- October 2011 Service Level Study conducted to assess the accuracy of the RAMS customer data** – Cascadia Consulting Group (Cascadia) sampled 123 refuse customer accounts from RAMS and compared the services recorded with the refuse containers located at customer sites. Cascadia reported that it verified 282 (72%) of 393 services included in the sample and that 49 services (17% of 282 verified) did not match RAMS data. Cascadia recommended that a more comprehensive study be performed to identify

discrepancies. GWOPA staff stated that some discrepancies were due to a timing difference in recording or the consultant not being able to accurately locate the cart or bin at the customer site.

- **Comparison of customer data between the SAP system and RAMS to detect and correct discrepancies –** City and GWOPA staff completed a comparison of refuse customer data in the SAP system and RAMS in October 2011 and again in February 2013. According to City staff, the October 2011 comparison identified discrepancies that resulted in retroactive billing adjustments of \$389,989 for commercial accounts and \$11,107 for residential accounts as summarized in Exhibit 8.

**Exhibit 8: Billing Adjustment Processed Resulting From the October 2011 Customer Data Comparison**

Customer type	Number of utilities accounts with customer billing adjustments	Customer billing adjustment processed (retroactive not to exceed three years)		
		Total Back billings	Total refunds	Total adjustments
Commercial	41	\$294,535	\$95,454	\$389,989
Residential	39	\$0*	\$11,107	\$11,107

\* Public Works management made a decision not to back bill residential customers for the undercharges found at the time and did not calculate the total retroactive billing adjustment that would have been made.

Customer data discrepancies not only cause billing inaccuracies but also limit the City’s ability to effectively use its cost of service model, which requires accurate and reliable customer data. The May 2012 Cost of Service Study noted customer data discrepancies between the two systems as one of the limitations in developing the cost of service model. To prevent future errors, we worked with City and GWOPA staff to identify and analyze root causes of the discrepancies found during the audit.

City staff indicated that the option of outsourcing the billing function is being considered in lieu of making additional changes in SAP to address the interface issues. GreenWaste Recovery, a GWOPA business partner, provides residential recycling and hauling services for various areas<sup>4</sup> throughout Northern California and also provides billing services to all but two of them (City of San Jose and City of Palo Alto). The decision requires a cost-benefit analysis which may involve the assessment of:

**Finding 1 Recommendation to the Public Works Department:**

- 1.1. Continue to review and verify the data discrepancies identified during the audit and take corrective action.
- 1.2. Develop methodology and tools to compare the SAP data with RAMS data to detect and correct any discrepancies in an efficient and timely manner.
- 1.3. Perform a cost-benefit analysis and determine an optimal course of action to maintain the accuracy and integrity of refuse customer data.

- Cost of the existing daily manual maintenance and periodic customer data comparisons
- Data discrepancies resulting from the interface issues

<sup>4</sup> These areas include Burbank Sanitary District, City of Capitola, Town of Los Altos Hills, Town of Portola Valley, unincorporated Santa Cruz County, City of Scotts Valley, and the Town of Woodside, among others.

- Cost of making functional changes in SAP to address the interface issues
- A future system upgrade by GWOPA and/or the City
- Ability to handle a new service and/or rate structure
- Customer service including clarity and itemization of invoiced services
- Additional cost of monitoring GWOPA billing data and activities (if outsourced)

We did not perform such a cost-benefit analysis because it is beyond the scope of this audit, and we were unable to separate out the discrepancies caused by the interface issues from the discrepancies caused by other data accuracy and integrity issues described below.

**Refuse customer types are not accurately and completely maintained in either the City’s SAP system or GWOPA RAMS.** We identified 64 service records in RAMS for commercial customers with a residential service rate (R-1) in SAP system, and 97 RAMS service records for residential customers with a commercial service rate (R-2 or R-3) in the SAP system. The City’s refuse rates are set separately for residential customers (Rate Category R-1) and commercial customers (Rate Categories R-2 and R-3). Assigning a correct refuse customer type to each customer is important to ensure accurate billing. Effective October 1, 2010, the following changes were made to the rate schedules, making the customer type designation even more critical to accurate billing (see Exhibit 9):

- Garbage collection rates were increased by 6 percent for residential customers and 9 percent for commercial customers, making the rates for the same service different depending on the customer type designation.
- A concept of multi-family dwellings (MFD) was introduced, and it was defined that a MFD with a shared account of four units or less is included in R-1 and other MFDs are included in R-2.
- The collection of commercial compostable materials, which was previously free, became a charged service. The City Council set an exemption for MFDs with five to ten units to receive up to one 96-gallon compostables cart collected once a week at no charge. If a MFD has four units or less, its green cart is labeled as yard trimming with no charge for up to three carts. The MFDs with 10 units or more are charged a monthly fee of \$94.18 for a 96-gallon compostables cart.

**Exhibit 9: Refuse Rates for Garbage Collection Since July 2009**

Residential Rates for One Collection per Week (R-1)	July 2009	October 2010	October 2011			July 2012		
	Total	Total (6% increase)	Variable Rate	Fixed Rate	Total	Variable Rate	Fixed Rate	Total
Mini-can/20-gallon cart	\$15.00	\$15.90	\$15.90	\$4.62	\$20.52	\$13.79	\$9.90	\$23.69
1 32-gal. can or 32-gal. cart	\$31.00	\$32.86	\$32.86	\$4.62	\$37.48	\$31.64	\$9.90	\$41.54
2 32-gal. cans or 1 64-gal. cart	\$64.00	\$67.84	\$67.84	\$4.62	\$72.46	\$67.84	\$9.90	\$77.74
3 32-gal. cans or 1 96-gal. cart	\$96.00	\$101.76	\$101.76	\$4.62	\$106.38	\$101.76	\$9.90	\$111.66
4 32-gal. cans or 2 64-gal. carts	\$128.00	\$135.68	\$135.68	\$4.62	\$140.30	\$135.68	\$9.90	\$145.58
5 32-gal. cans or 1 64 + 1 96-gal. carts	\$160.00	\$169.60	\$169.60	\$4.62	\$174.22	\$169.60	\$9.90	\$179.50
6 32-gal. cans or 2 96-gal. carts	\$192.00	\$203.52	\$203.52	\$4.62	\$208.14	\$203.52	\$9.90	\$213.42

Commercial Rates for One Collection per Week (R-2)	July 2009	October 2010	October 2011	July 2012
	Total	Total (9% increase)	Total	Total
1 32-gal. can or 32-gal. cart	\$31.00	\$33.79	No Changes	No Changes
2 32-gal. cans or 1 64-gal. cart	\$64.00	\$69.76		
3 32-gal. cans or 1 96-gal. cart	\$96.00	\$104.64		
4 32-gal. cans or 2 64-gal. carts	\$128.00	\$139.52		
5 32-gal. cans or 1 64 + 1 96-gal. carts	\$160.00	\$174.40		
6 32-gal. cans or 2 96-gal. carts	\$192.00	\$209.28		

These changes required the City to maintain a record of the number of units for each MFD; however, neither the City nor GWOPA had an accurate and complete record at the time of implementation. Customer type information is entered by Utilities Customer Service representatives in the SAP system when a new account is created. This information is not sent to RAMS, requiring GWOPA staff to review the new customer information and/or visit the customer site to determine and record the customer type in RAMS for refuse billing purposes. There has been an ongoing effort by City and GWOPA staff to collect and record the number of units for existing MFD customers, reclassifying the customer in RAMS as needed. The customer type information updated in RAMS is not interfaced back to the SAP system.

Without refuse customer type information maintained in the SAP system, it is difficult to build an automated system control to prevent customers from getting billed using an incorrect rate category.

Customer type information in the SAP system is applicable to other utilities services provided (e.g., electricity) and does not always accurately reflect the customer type for refuse billing purposes. For example, Utilities Customer Service does not record the number of units for each MFD in the SAP system. For other utility services, a different rate schedule may apply based primarily on whether a MFD is serviced through individual meters or a master meter, and the number of units is not a determining factor. In addition, a MFD with individual meters could have a shared refuse service and be considered a commercial customer for refuse billing purposes, and vice versa.

**123 accounts in GWOPA RAMS were either duplicates or not needed.** RAMS has its own set of account numbers, and not all RAMS accounts have a one to one relationship with the utilities accounts. We identified 130 utilities accounts that are associated with two or more RAMS accounts (295 RAMS accounts in total). GWOPA reviewed these accounts and subsequently closed 123 RAMS accounts that were duplicates and/or not needed. These accounts were billing correctly in the SAP system and no billing adjustments were necessary.

According to GWOPA and City staff, a majority of the duplicate accounts appear to have resulted from data transferred from PASCO during RAMS implementation in 2009. As of November 2013, 26 utilities accounts remained associated with two or more RAMS accounts. According to GWOPA staff, it is necessary to maintain multiple RAMS accounts for some commercial customers to work around one of the interface design flaws. The lack of a one to one relationship between utilities accounts and RAMS accounts makes it difficult to compare the two data sets in a systematic manner, requiring an additional manual process to detect discrepancies.

**Multiple quantities of the same service are not maintained in one record in RAMS.** RAMS sometimes maintains two or more records for the same service for the same customer. For example, if a customer has two recycling carts of the same size, it could have two records with 1 unit each, instead of having one record with 2 units. There were 9,220 RAMS records that could be combined into 4,066 records.

For charged services, having two separate records for one service may increase the possibility of an interface error, overwriting the corresponding SAP record with the incorrect quantity. Additionally, since a specific rate is

#### Finding 1 Recommendation to City Management:

- 1.4. Complete the review of all MFDs to ensure the accuracy of the customer type classification in RAMS.
- 1.5. Work with the Utilities Department and GWOPA to clarify the roles and responsibilities over obtaining information required for determining customer type, recording data, and maintaining the accuracy and completeness of the refuse customer type data.
- 1.6. Establish procedures to ensure that necessary data, system capability, and related administrative tasks are identified, assessed, and communicated to stakeholders before refuse rates or exemptions with high complexity are adopted.

set for the exact number or a combination of cans/carts each customer has (see Exhibit 9 on page 15), a corresponding specific code has to be used to record the service rather than increasing the quantity for the service. For example, there is a specific code for three 32-gallon carts, which should not be recorded as a 32-gallon cart service with a quantity of three because it will result in a monthly undercharge of \$6.84 [ $\$101.76 - (\$31.64 \times 3)$ ] for a residential customer and \$3.27 [ $\$104.64 - (\$33.79 \times 3)$ ] for a commercial customer. GWOPA staff confirmed that they subsequently cleaned up all 58 records (0.6 percent) that were for charged services.

For free services such as yard trimming or commercial recycling collection, cart rental fees may begin to apply based on the number of cans/carts. Maintaining the same service under one record will make it easier to systematically monitor the unit of service and ensure the accuracy of such fees. As of January 2014, GWOPA established data entry procedures to improve data integrity by requiring GWOPA staff to maintain the same service under one record.

**A specific price code is not set up for all refuse services in the SAP system.** As shown in Exhibit 7 on page 13, the SAP system and RAMS use different service codes, bridged by a crosswalk to translate one code set to another. We found several services that are included in the refuse rate schedules and added to RAMS, but a specific price code was not set up in the SAP system. The City uses the generic code "RFZ" to manually capture these services, including compactor/drop box wash, compacted compostables, and compacted recyclables. Since the interface functions cannot be used, any changes involving RFZ records are communicated by phone or email, making them more susceptible to errors. As of September 16, 2013, 16 records, for a total monthly charge of about \$60,000, were billed under RFZ. City staff subsequently replaced RFZ with a specific code for all but five records (a total monthly charge of \$13,611) for which there is no price code available in the SAP system.

**Finding 1 Recommendation to City Management:**

- 1.7. Establish procedures to ensure that a service code is defined and added to both systems before a new service fee is implemented.

## Finding 2: The Public Works Department should strengthen its oversight of GWOPA to maintain accurate refuse service data

The service recorded (e.g., the size, type, and/or number of refuse containers) did not match the actual service provided for 30 of the 298 utilities accounts we reviewed from the GWOPA RAMS data. Our analysis prompted GWOPA to work with City staff to retroactively adjust refuse billing for 10 residential and commercial customers, or three percent of the reviewed accounts, by \$40,724 (see Exhibit 10). The City was correctly billing the other 20 customers.

**Exhibit 10: Summary of Service Review Results**

Number of utilities accounts				Customer billing adjustment (retroactive not to exceed three years)		
Total sampled	Services matched	Customer data updated in the SAP system or in RAMS		Total Back billings	Total refunds	Total adjustments
		No changes in customer billing	Customer billing adjusted			
298	268	20	10	\$1,599	\$39,125	\$40,724

Although the City is responsible for billing City residents for refuse services, GWOPA is contractually required to maintain accurate service level records for City customers. These records are the basis for the City’s refuse billing. The GWOPA contract also provides the City with the right to perform route audits and have GWOPA correct all errors found within two work days. Except for this audit, the City has not compared the GWOPA service data to the actual services provided to City refuse customers since the October 2011 Service Level Study described on page 13.

**Finding 2 Recommendation to the Public Works Department:**

2. Assess the potential impact of incorrect service records that may remain in RAMS, and provide additional direction as needed to enhance GWOPA’s monitoring activities, such as a route audit, over the accuracy of the refuse customer service records.



### Finding 3: The Public Works Department should ensure reliable and useful data are provided to stakeholders for informed decision making

The audit raised concerns regarding the reliability and usefulness of some financial and operational data used by the City in making strategic and operational decisions. The City is facing a rapidly changing environment in pursuit of zero waste goals, which requires timely decisions regarding related policies, programs, and facilities. City resources are allocated based on these decisions that, in turn, rely on staff analyses of available data and information. While City staff currently collect and monitor a significant amount of data, we identified the following opportunities to improve the reliability and usefulness of the data provided to stakeholders for effective analysis, evaluation, and informed decision making:

- Key financial data should be defined and reported consistently.
- The Refuse Fund Rate Stabilization Reserve guideline should be updated to ensure its adequacy.
- Actual refuse revenues and expenses should be tracked at a level of detail required to effectively support Solid Waste operations.
- Key operational data should be defined and tracked to effectively measure program outcomes.

The City also uses consultants to perform related studies that rely on the data provided by City staff. If the required data are not available or reliable, the consultants could be forced to make assumptions or otherwise limit their scope to complete their work.

**Key financial data should be defined and reported consistently.** Key Refuse Fund financial data presented in staff reports were not consistent with the City’s Comprehensive Annual Financial Report (CAFR) or Operating Budget documents. This may result in confusion and negatively impact the stakeholders’ ability to assess the financial status of the Refuse Fund. We reviewed staff reports, the CAFR, and the Operating Budget documents and noted the following sources of potential confusion:

- Refuse Fund actual revenues, expenses, and the change in net assets for FY 2011 presented in the March 6, 2012, Public Works’ report to the Finance Committee on refuse rate restructuring were based on staff’s analysis of SAP reports and did not match the figures stated in the CAFR financial statements or in the City’s Operating Budget document, as shown in Exhibit 11. The staff report did not indicate the data source or explain the variances. The Operating Budget is developed using a different basis of accounting from the one used in the CAFR to present the Refuse Fund financial figures.

**Exhibit 11: Comparison of FY 2011 Refuse Fund Actual Revenues, Expenses, and Change in Net Assets (in thousands)**

Finance Committee Staff Report ID #2409 (3/6/12)	
Revenues	31,488
Expenses	31,435
Change in Net Assets	53

City’s Operating Budget Document*	
Total Revenues	31,605
Total Expenditures	31,032

\* Based on the City’s FY 2013 Adopted Operating Budget document which includes FY 2011 actuals.

City’s FY 2011 CAFR	
Total Operating Revenues	30,469
Total Operating Expenses	30,334
Total Nonoperating Revenues (Expenses)	(507)
Transfers in**	1,036
Transfers out**	(326)
Change in Net Assets	338

\*\* Represent transfers between City funds. With Council approval, resources may be transferred from one City fund to another.

- The Refuse Fund operating reserve balance in the March 6, 2012, staff report did not match the balance we calculated using the FY 2011 CAFR figures. The “Operating Reserve” is defined as Rate Stabilization

Reserve plus Post Closure Liability in Public Works' April 5, 2011, report to the Finance Committee on Cost of Service Study Initial Findings. Exhibit 12 shows the variance.

**Exhibit 12: Comparison of FY 2011 Actual Operating Reserves (in thousands)**

Finance Committee Staff Report ID #2409 (3/6/12)		City's CAFR (FY 2011)	
Operating Reserve	\$53	Unrestricted Net Assets - Rate Stabilization Reserve	\$(5,049)
		Landfill Post-Closure Care Liability	\$5,172
		OCA calculation of Operating Reserve	\$123

- c) Refuse Fund Reserves presented in the City's Operating Budget documents do not include the prior year actuals as the General Fund Reserves do (see Exhibit 13). The prior year actual figures could provide a baseline for projected figures, allowing questions to be raised if there are significant variances between the actual and projected figures. Exhibit 14 shows the variances between the actual and projected reserve balances for the last five fiscal years, demonstrating how significant such variances can be. In response to our inquiry, the City's Office of Management and Budget (OMB) stated that the actual figures will be included in the presentation of all Enterprise Fund Reserves beginning with the FY 2016 Proposed Operating Budget document.

**Finding 3 Recommendation to the Public Works Department:**

3.1. Work with Administrative Services Department staff to identify key financial data, clarify the methodology to obtain the data, and develop common terminology to be applied throughout budget, accounting, and staff reports to ensure that data is verifiable, understandable, timely, consistent, and useful for decision making processes.

**Exhibit 13: Comparison of Reserve Presentation between Refuse Fund and General Fund**

**Refuse Fund Reserves (in thousands)**

	FY 2014 Projected Beginning Balance	FY 2014 Changes	FY 2014 Projected Ending Balance	FY 2014 Reserve Guideline Range
Rate Stabilization Reserve	\$(2,536)	\$919	\$(1,617)	2,746 - 5,491
Landfill Corrective Action Reserve	679	0	679	
<b>TOTAL RESERVES</b>	<b>\$(1,857)</b>	<b>\$919</b>	<b>\$(938)</b>	
Landfill Postclosure Care Liability (Note 1)	10,997	0	10,997	
<b>TOTAL RESERVES NET OF CLOSURE AND POST CLOSURE LIABILITY</b>	<b>\$9,140</b>	<b>\$919</b>	<b>\$10,059</b>	
<b>OPERATING RESERVE (RSR, net of postclosure care liability of \$5.28 million)</b>	<b>\$2,744</b>	<b>\$919</b>	<b>\$3,663</b>	

Note 1: Landfill Postclosure Care Liability reflects the liability for post closure costs amortized over 30 years. This \$10.9 million is both Post closure liability \$5.280 million and Closure reserves \$5.7 million

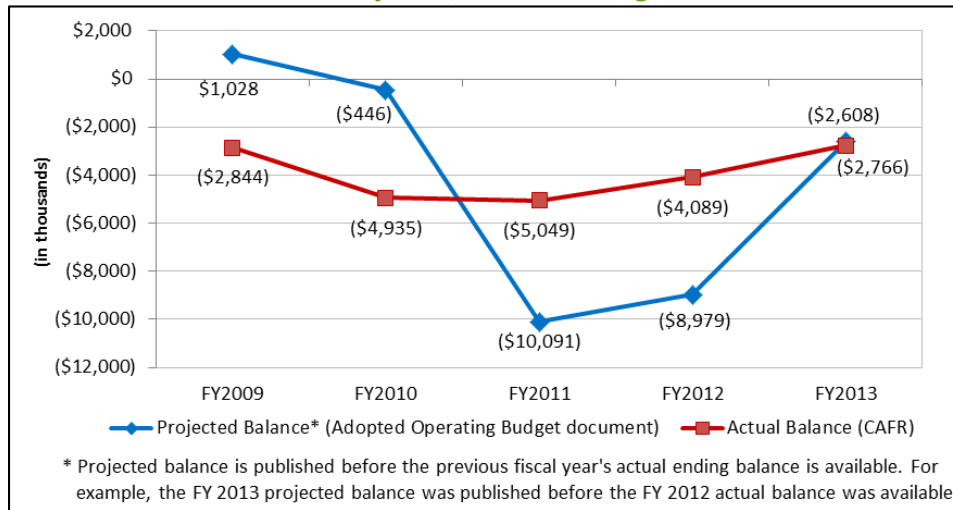
**General Fund Reserves (in thousands)**

Reserves (\$000)	FY 2012 Actuals	FY 2013 Adopted Changes	FY 2013 BAO's	Projected 06/30/2013	FY 2014 Adopted Changes	Projected 06/30/2014
<b>Budget Stabilization Reserve (BSR) Activity:</b>						
BSR	28,122	(390)	2,545	30,277	854	31,131
<b>Other Reserve Activity:</b>						
Encumbrance & Reappropriation	4,386			4,386		4,386
Inventory of Materials & Supplies	3,816			3,816		3,816
Notes Receivable, Prepaid Items, & Interfund Advances	2,191			2,191		2,191
<b>Total Reserves</b>	<b>\$38,515</b>	<b>\$(390)</b>	<b>\$2,545</b>	<b>\$40,670</b>	<b>\$854</b>	<b>\$41,524</b>

The BSR is projected to be 19.5 percent of the FY 2014 adopted expense budget.  
 City reserve policy indicates a 15-20 percent range, with an 18.5 percent target.  
 Minimum BSR \$24.0 million (15 percent)  
 Maximum BSR \$31.9 million (20 percent)  
 Target BSR \$29.5 million (18.5 percent)

Source: City's FY 2014 Adopted Operating Budget

**Exhibit 14: Refuse Fund Rate Stabilization Reserve Balances  
Actual vs. Projected, FY 2009 through FY 2013**



**The Refuse Fund Rate Stabilization Reserve guideline should be updated to ensure its adequacy.** The Refuse Fund Rate Stabilization Reserve guideline has not been updated since its establishment in 1993. The guideline serves as the basis for determining refuse rates charged to the City’s refuse customers; however, Public Works had not reviewed it to ensure that the reserve guideline is adequate to support the Refuse Fund operations.

The Rate Stabilization Reserve was established by a City Council Resolution in 1993, “in order that the City may anticipate both contingent events, where operational and capital improvement costs of the utilities may be impacted, and current circumstances, where operating costs exceed operating revenues.” The staff report that accompanied the 1993 resolution recommended the reserve balance minimum guideline to be 10 percent of “sales revenue for that year” and the maximum guideline to be twice the minimum. “Sales revenue” was not clearly defined. According to staff, this is the only documentation of the guideline.

The City’s OMB calculates the reserve guideline range presented in the Operating Budget documents, as shown in Exhibit 13 on page 20. According to OMB, the budget line item “Sale of Utilities” represented “sales revenue” for the corresponding fiscal year for the purpose of calculating the minimum balance. Our review of the guideline ranges identified the following inconsistencies that should be addressed in a well formed guideline:

**Finding 3 Recommendation to the Public Works Department:**

3.2. Update and clarify the Refuse Fund Rate Stabilization Reserve guideline to ensure that the minimum and maximum reserve balance is set at an adequate level required to support the reserve’s intended purpose.

- According to OMB, the adopted budget figure for “Sale of Utilities” should be used to calculate the reserve guideline range; however, a different figure was used for FY 2012 and FY 2013. OMB used the same reserve guideline range in FY 2014 as in FY 2013, although the sales amount increased. This resulted in overstating the minimum guideline range for each of these fiscal years, as shown in Exhibit 15.

**Exhibit 15: Overstatement of Refuse Fund Rate Stabilization Reserve Minimum Guidelines (in thousands)**

Description	FY 2012	FY 2013	FY 2014
Sale of Utilities (Adopted Budget)	\$23,947	\$26,794	\$26,961
Correct Minimum Guideline (10% of Sales of Utilities)	\$2,395	\$2,679	\$2,696
Reserve Minimum Guideline (Adopted Budget)	\$2,462	\$2,746	\$2,746
Overstatement of Minimum Guideline	\$67	\$67	\$50

- The City’s Operating Budget documents do not report “Sale of Utilities” in a manner consistent with the City’s CAFR financial statements. "Sale of Utilities" reported in the CAFR includes sales revenues from non-utility customers and City departments. "Sale of Utilities" in the Operating Budget does not include sales revenues from non-utility customers, and did not include sales revenues from City departments until FY 2011.

City staff stated that they have started a process of reviewing and updating the reserve guideline.

**Actual refuse revenues and expenses should be tracked at a level of detail required to effectively support Solid Waste operations.** The City has not tracked actual refuse revenues and expenses by customer type or service, and, therefore, must use estimates or an allocation method to obtain information necessary to make program decisions, including refuse rate revisions. Such estimates or allocated figures may not provide information needed to ensure effective decisions are made, whereas actuals could have provided more accurate information. City staff currently tracks total actual refuse revenues and expenses.

Exhibit 16 shows the projected refuse revenues and expenses by sector, as presented in the May 2012 Cost of Service Study. The study showed that the residential refuse revenues do not recover the full cost of residential services, while commercial customers pay in excess of the commercial service expenses. The study’s conclusion resulted in the City increasing the residential rates to address the sector imbalance.

**Exhibit 16: May 2012 Cost of Service Study Projected Revenues and Expenses for FY 2013**

Table 1 Expense Assumptions FYE 2013 – Services Provided (Projected)						
Services Provided	Revenue		Expense		Variance (Revenue - Expense)	
	Value	Percent of Total	Value	Percent of Total	(Shortfall)/ Surplus	Percent of Revenue
Residential Services	\$ 8,902,906	30.75%	\$ 12,078,554	43.52%	(\$ 3,175,648)	(35.67)%
Commercial Services	\$ 14,642,415	50.56%	\$ 10,426,946	37.58%	\$ 4,215,469	28.79%
Roll Off Services	\$ 5,412,747	18.69%	\$ 5,244,146	18.90%	\$ 168,601	3.11%
<b>Total - All Services</b>	<b>\$ 28,958,068</b>	<b>100.00%</b>	<b>\$ 27,749,646</b>	<b>100.00%</b>	<b>\$ 1,208,422</b>	<b>4.17%</b>

Table 2 Summary of Projected FYE 2013 Expenses (in Thousands of Dollars)			
Service Item	Residential	Commercial	Roll Off
<b>Solid Waste Program</b>			
Garbage	\$ 4,049	\$ 4,656	\$ 4,081
Recycling	\$ 1,774	\$ 792	\$ 0
Organics	\$ 2,490	\$ 2,475	\$ 0
Bulky Waste	\$ 474	\$ 320	N/A
Hazardous Waste	\$ 639	\$ 0	\$ 0
<b>Landfill</b>	<b>\$ 1,198</b>	<b>\$ 1,962</b>	<b>\$ 1,163</b>
<b>Street Sweeping</b>	<b>\$ 1,455</b>	<b>\$ 222</b>	<b>\$ 0</b>
<b>Total</b>	<b>\$ 12,079</b>	<b>\$ 10,427</b>	<b>\$ 5,244</b>

Source: Refuse Fund Cost of Service Study, May 2012

Our review of the financial data and methodology used in the study identified opportunities for improvement:

- a) **Actual revenues by customer type or by service are not accurately tracked in SAP.** Actual refuse revenues by customer type are not available because the refuse revenues are automatically recorded in the SAP system according to the utilities customer type. As explained in Finding 1, customer type information entered by Utilities Customer Service representatives is applicable to other utilities services provided (e.g., electricity, gas, etc.) and does not always accurately reflect the refuse customer types. Exhibit 17 shows the number of SAP refuse billing records by Utilities customer type and rate category. As of September 16, 2013, there were 237 residential services recorded as commercial sector revenue and 112 commercial services recorded as residential sector revenue in SAP. The data also demonstrates that the distinction between “Commercial” and “Industrial” is different from the distinction between R-2 and R-3.

**Exhibit 17: Number of SAP Refuse Billing Records by Utilities Customer Type and Rate Category As of September 2013**

Utilities Customer Type	Total	Rate Category		
		R-1 (Residential)	R-2 (Commercial Can/Cart)	R-3 (Commercial Bin/Debris Box)
Residential	18,374	18,262	78	34
Commercial	4,357	237	1,779	2,341
Industrial	229	0	50	179
City	167	1	76	90

City staff maintains monthly revenue projections that can be broken down into each rate category and price code, but are slightly off the actual revenues. For example, staff records show that the total FY 2013 revenue was off by about \$135,000, or 0.5 percent because the amount is based on an SAP report as of the end of each month, and does not reflect the changes in accounts and/or services made during the month.

In response to our inquiry, IT and Utilities staff identified a utilities sales report in the SAP system that required minimal configuration to provide actual revenues by rate category. They also stated that with additional configuration, the same sales report could provide actual revenues by individual service.

**Finding 3 Recommendation to the Public Works Department:**

- 3.3. Work with Utilities, Information Technology, and Administrative Services Department staff to explore opportunities for improvement to ensure that actual refuse revenues by sector are accurately captured and tracked.

- b) **Actual expenses by sector are not tracked.** The GWOPA contract expenses are invoiced and recorded in a lump-sum amount in SAP. As a result, the Cost of Service Study allocated the Collection, hauling, and disposal administration and GWOPA contract expenses to the three sectors and to the individual services according to the proportions derived from the proposed costs included in the contract attachment titled Cost Details by Service. Exhibit 18 shows the differences between the allocation of costs to each sector based on our analysis of GWOPA Financial Records and the estimates in the Cost of Service Study.

**Exhibit 18: Percentage of Expenses by Line of Business**

Line of Business (Sector)	Cost of Service Study Allocation	GWOPA Financial Records Actual		
		FY 2011	FY 2012	FY 2013
Residential	45%	49%	49%	48%
Commercial	38%	31%	32%	32%
Roll Off	17%	20%	19%	20%

City staff has not reviewed the GWOPA's financial data, but this data may serve as simpler, more reliable and accurate input for determining the actual expenses by sector. Since GWOPA uses its own assumptions to allocate its expenses, City staff need to review those assumptions and methodology before using the data.

**Finding 3 Recommendation to the Public Works Department:**

3.4. Work with GWOPA to ensure that data required for accurate tracking of actual expenses are identified and reported by GWOPA on a regular basis. Establish procedures to periodically review GWOPA financial records to monitor the accuracy of the data provided by GWOPA.

- c) **Appropriate amount of the Commercial Sector Reserve cannot be determined without the ability to track actual revenues and expenses.** The Cost of Service Study recommended that the City "consider using excess revenues to start rebuilding the RSR instead of reducing commercial rates" and designate these reserve contributions for commercial sector uses. Accordingly, staff recommended at the March 6, 2012, Finance Committee that "A special rate stabilization and commercial outreach reserve dedicated to the commercial sector be established and the Refuse Fund's expected revenues over expenses for FY 2013 be directed into this commercial reserve, with no change in commercial refuse rates in FY 2013."

As of December 2013, the commercial sector reserve had not been established. According to staff, \$1.3 million was added to the Refuse Rate Stabilization Reserve in FY 2013, and it represents the commercial reserve balance as of June 30, 2013.

We could not verify that this amount was attributable solely to the commercial sector surplus because the actual revenues and expenses by sector are not currently available. City staff stated that the commercial sector reserve and related procedures will be established as part of the ongoing rate study initiated in October 2013.

**Finding 3 Recommendation to the Public Works Department:**

3.5. Consult with the City Attorney's Office and reevaluate the need for establishing the Commercial Sector Reserve. If applicable, work with Administrative Services Department staff to establish the Commercial Sector Reserve and related procedures.

**Key operational data should be defined and tracked to effectively measure program outcomes.** City staff currently collects various operational data from many sources including monthly, quarterly, and annual reports submitted by GWOPA, the City's SAP system, and data collected and maintained by the California Department of Resources Recycling and Recovery (CalRecycle). For example, CalRecycle's per resident and per employee disposal rates provide useful information for analysis of landfill diversion performance over time and for comparison with other jurisdictions, as shown in Attachment 1. We reviewed performance measures that City staff selected as key, and identified opportunities for improvement:

- a) **The accuracy and reliability of service level data should be improved.** As described in Finding 1, there were discrepancies in customer data in the SAP system and RAMS. As a result, there were also discrepancies between GWOPA's service level data and data maintained by City staff, as highlighted in Exhibit 19.

**Exhibit 19: Comparison of FY 2013 Service Level Data in the SAP system and RAMS**

Service Level	Data Source	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13
Residential minivan	GWOPA Monthly Report (RAMS)	5,586	5,627	5,666	5,701	5,681	5,722	5,750	5,787	5,807	5,845	5,894	5,860
	City Staff Records (SAP System)	5,516	5,602	5,617	5,652	5,678	5,686	5,718	5,612	5,580	5,594	5,738	5,821
	Discrepancies	70	25	49	49	3	36	32	175	227	251	156	39
Residential 32 gal can/cart	GWOPA Monthly Report (RAMS)	9,508	9,428	9,416	9,394	9,388	9,388	9,397	9,423	9,426	9,453	9,373	9,400
	City Staff Records (SAP System)	9,648	9,615	9,609	9,586	9,576	9,578	9,544	9,668	9,726	9,710	9,557	9,450
	Discrepancies	(140)	(187)	(193)	(192)	(188)	(190)	(147)	(245)	(300)	(257)	(184)	(50)

City staff stated that operational decisions are made based on SAP data without reference to the GWOPA service level data. Such comparison, however, may serve as a check to determine the reliability of the SAP data. As staff addresses Finding 1, the discrepancies between the two data sources are expected to narrow.

b) **Financial incentives should be tied to Solid Waste’s key performance measures to improve their effectiveness.** The GWOPA contract provides two financial incentives for GWOPA to “exert its full efforts in implementing zero waste programs”:

- 1) Mixed Recycling – Sets minimum tonnage to be collected, processed, and recycled. If the minimum tonnage is not met, GWOPA is required to pay a required amount per ton for the shortage.
- 2) Commercial Organics – Sets minimum tonnage to be collected and processed into compost. If the minimum tonnage is not met, GWOPA must pay a required amount per ton for the shortage. If more than the minimum tonnage is collected and processed, the City is required to pay the same amount per ton for the overage up to the maximum amount set forth in the contract.

These tonnage requirements, however, do not take into account a presumed decrease in tonnage attributable to waste prevention and reduction through public education and outreach programs. The total tonnage is also affected by factors such as demographic and economic changes and materials collected by other haulers that are transported outside the City.<sup>5</sup> As a result, tonnage alone may not be an effective measure to evaluate the progress toward Solid Waste’s goals to maximize diversion and minimize waste generation.

In addition, a definition of “mixed recyclable materials” and baseline tonnage was not included in the financial incentive section of the contract. This subsequently resulted in disagreements between the City and GWOPA as to whether the mixed recyclable materials include cardboard, metal, wood, etc. According to staff records, the City owes GWOPA a total of \$287,158 for the commercial organics incentive from FY 2010 through FY 2013, and GWOPA owes \$278,939 to the City for mixed recycling incentives for the same period. The net amount of \$8,219 the City owes GWOPA could increase to \$59,697 if metal is included in the incentive tonnage, for example.

<sup>5</sup> GWOPA’s contractual right for collection of commercial recyclable and organic materials is nonexclusive. The Palo Alto Municipal Code allows commercial customers to donate or sell source-separated recyclable materials, and a recycler, junk dealer, or other enterprise to remove and transport such materials to a destination for sale, but does not require them to report the tonnage transported outside the City.

As of January 2014, payments related to zero waste incentives are pending further negotiation, including clarification of what materials are included in the tonnage (e.g., metal) and consideration of a residential compostables pilot program and changes in residential collection services.

- c) **Specific performance measures should be tied to public education and outreach efforts to allow cost benefit analyses of related activities and expenses.** One of Solid Waste’s objectives is to minimize waste generation and maximize recycling, composting, and reuse programs through educational programs and outreach. City staff currently monitors GWOPA’s public education and outreach activities by tracking output measures (e.g., number of presentations and outreach events, number of brochures produced and distributed) and reviewing a summary list and detailed log of GWOPA interactions with customers prepared by GWOPA on a monthly basis. Staff also works with GWOPA to develop annual outreach plans and discuss strategies and related issues during monthly meetings with GWOPA staff. However, these efforts are not currently tied to specific outcome measures to evaluate their effectiveness. Currently, the City has two full-time zero waste coordinators and GWOPA has four full-time staff to administer public education and outreach efforts for the City. Additionally, the contract sets the annual minimum spending requirement for public education and outreach (\$57,165 for FY 2013).

According to staff, there are two existing performance measures that could be tied to education and outreach programs, but other correlating factors need to be taken into consideration when interpreting these measures as program outcomes:

- *Number of Commercial Customers with Compostables Service* – According to GWOPA staff, the refuse rates for commercial compostables services are currently only 10 percent less than the garbage service rates, making it difficult to convince customers who are concerned about additional training and administration costs to switch services. The 2007 Zero Waste Operational Plan suggested “a substantial (such as 50 percent) differential” and a mandatory participation ordinance requiring customers to place compostable materials in the appropriate collection containers and to ban these materials from disposal. According to staff, there is no plan to recommend such an ordinance to City Council at this time. Certain commercial customers (e.g., restaurants, retailers) also have high employee turnover, requiring repeated efforts by customers and GWOPA to keep the responsible employees trained on proper composting practices. City staff also noted that the residue rate<sup>6</sup> from the City’s compostable materials processed at Z-Best increased as the number of customers with compostables service went up, as shown in Exhibit 20. This indicates that additional education and outreach efforts may be needed to prevent noncompostable materials from being disposed in the compostables containers.

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<sup>6</sup> A residue rate is determined by taking the total tons disposed (residue) and dividing it by the total inbound tons of compostable materials delivered.



**Exhibit 20: Number of Commercial Customers with Compostables Service**

Performance Measures	Monthly Average		
	FY 2011	FY 2012	FY 2013
Number of commercial customers with compostables service	296	245	273
Total number of commercial customers served	2,124	1,978	1,787
Percentage of commercial customers with compostables service	14.0%	12.4%	15.3%
Residue Rate at Z-Best, the processing facility	22.9%	9.7%	12.1%

Source: City staff records

- *Waste Characterization Study Results* – The City conducted studies in 2005 and 2012 to determine the composition and recoverability of the City’s waste stream and to:
  - Identify materials with potential diversion opportunities.
  - Provide a baseline for evaluating the future success of current diversion programs.
  - Create a foundation for planning for future programs to support the City’s Zero Waste goals.

Specific study findings, such as percentage of compostable paper found in commercial waste,<sup>7</sup> can be used as a baseline to measure progress made in reducing this percentage through education and outreach.

There is an opportunity for strengthening program evaluations by taking a more holistic approach and reviewing multiple interrelated measures when analyzing the progress or effectiveness of specific program activities in achieving diversion goals. For example, City staff is already in the process of conducting a commercial customer survey to understand customers’ existing diversion activities and to identify any barriers to starting compostables services. The qualitative information collected could then be analyzed along with other quantitative data to design and plan their program activities. Staff also added “Percent of households with mini-can garbage service” to the FY 2013 Performance Report, which increased from 21 percent in FY 2010 to 32 percent in FY 2013. A mini-can is the smallest garbage container offered to the City’s residential customers, and holds only 20 gallons of garbage. An increase in mini-can subscriptions indicates that customers are diverting more waste from landfills through recycling, composting, and reuse.

**Finding 3 Recommendations to the Public Works Department:**

- 3.6. Identify key operational data required for informed decision making to ensure efforts required to monitor program performance and progress are effective and reasonable.
- 3.7. Establish baseline data and a methodology to evaluate the effectiveness of program activities and related expenses in achieving Solid Waste goals.
- 3.8. Establish a process to ensure that financial incentives and output requirements provided in a new or renegotiated contract are aligned with Solid Waste’s key performance measures to effectively support its goals.

<sup>7</sup> The January 2013 Waste Characterization Report stated that in 2012, compostable paper represented 12.8 percent (1,261 tons) of the City’s commercial front-load waste and 14.6 percent (892 tons) of commercial compactor waste.

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## Glossary

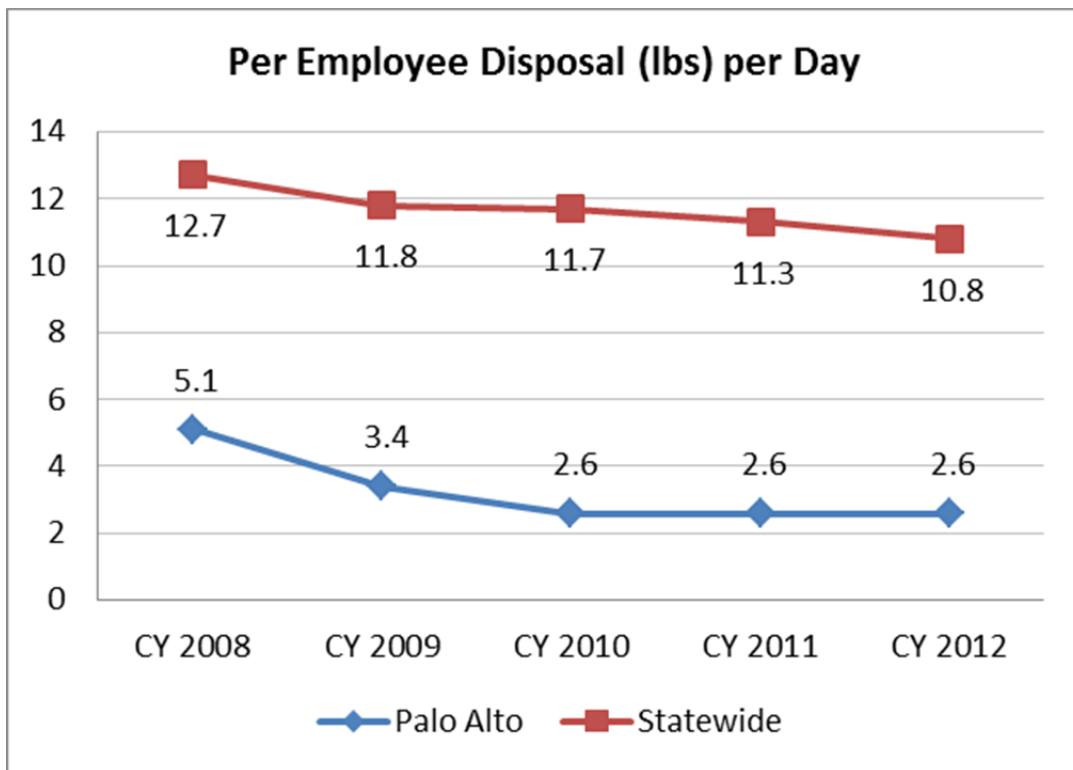
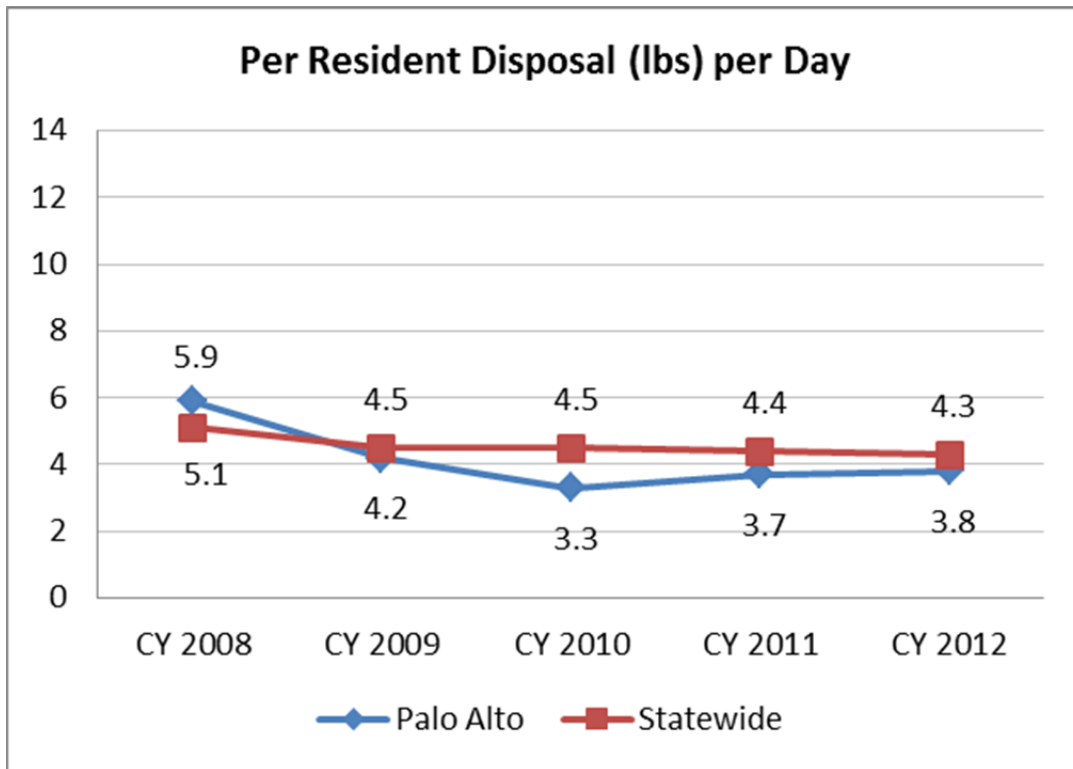
<b>Adopted Budget</b>	The budget that is approved and enacted by the City Council annually on or before June 30th.
<b>CAFR</b>	The City's Comprehensive Annual Financial Report that includes the City's audited financial statements.
<b>Capital Improvement Plan (CIP)</b>	The City's plan for current and future projects related to the acquisition, expansion, or rehabilitation of buildings, equipment, parks, streets, and other public infrastructure.
<b>Compactor</b>	A mechanical apparatus that compresses materials and/or the container that holds the compressed materials. Compactors include bin compactors of any size serviced by front-loading collection vehicles and drop box compactors of any size serviced by drop box collection vehicles.
<b>Construction and Demolition Debris (C&amp;D)</b>	Materials resulting from the construction, remodeling, repair or demolition of a building, structure, pavement or other improvement, including building components, packaging, and rubble but excluding liquid waste and hazardous waste.
<b>Container</b>	Any receptacle used for storage of solid waste, recyclable materials, organic materials, yard trimmings, C&D, and other materials collected pursuant to the GWOPA contract including metal or plastic cans, carts, bins, compactors and drop boxes.
<b>Diversion Program</b>	Any activity implemented by a jurisdiction to divert solid waste from disposal, including source reduction (waste prevention), reuse, recycling, and composting. Diversion activities must be in accordance with all applicable federal, State and local requirements.
<b>Enterprise Funds</b>	Funds used to account for services that are provided to the public on a user charge basis, similar to the operation of a commercial business. The City's enterprise funds include the gas, electric, water, fiber optics, wastewater collection, wastewater treatment, storm drainage, airport, and refuse funds.
<b>General Fund</b>	The primary fund used to account for the City's general purpose revenues such as sales, property, utility users and transient occupancy taxes. General Fund revenues typically pay for citywide services such as public safety, community development, recreation, libraries and parks.
<b>GreenWaste MRF</b>	GreenWaste Material Recovery Facility located in San Jose where the City's recyclable materials are processed.
<b>GreenWaste of Palo Alto (GWOPA)</b>	A joint venture between GreenWaste Recovery, Inc., and Zanker Road Resource Management, Ltd., (Zanker) formed for the purpose of holding and servicing the contract with the City (see GWOPA contract below).
<b>GWOPA Contract</b>	The City's agreement with GWOPA for solid waste, recyclable materials, organic materials and yard trimmings collection and processing services. The term of the agreement is November 24, 2008, through June 30, 2017, with an option to extend up to a maximum of four years on the same terms and conditions.
<b>Multi-Family or Multi-Unit Dwellings (MFD)</b>	Building(s) containing five or more individual residential dwelling units that have centralized Solid Waste and Recyclable Materials Collection service for all units in the building(s) and are billed to one address (typically the owner or property manager). Defined in the GWOPA contract as "Multiple-Family Residential Premises."
<b>Organic Materials</b>	Compostables, including yard trimmings, food scraps, and compostable paper and plastics. Currently, organic materials collected from commercial/industrial premises are transported first to the Greenwaste MRF, then to the Z-Best for processing.
<b>Palo Alto Waste Composition Study (2006)</b>	A study completed by Cascadia Consulting Group in May 2006 based on waste sampling conducted in November and December 2005 to provide detailed waste composition and quantity information and to identify key opportunities for diversion, recovery, or reuse of specific types of material categories. The study's final report was included in the Zero Waste Operational Plan.
<b>RAMS</b>	Route Accounts Management System used by GWOPA to maintain the City's refuse customer data.
<b>Refuse Fund</b>	The City's enterprise fund that accounts for all financial transactions relating to the City's refuse service. Services are on a user-charge basis to residents and business owners located in the City.
<b>Refuse Fund Cost of Service Study (2012)</b>	A rate study conducted by R3 Consulting Group, Inc., to evaluate the refuse rate structure, develop potential adjustments to the rate structure, and develop a cost of service model to project revenues and expenses. It was initiated in August 2010 and completed in May 2012.
<b>Reserve</b>	Represents the portion of a fund balance set aside for financing future financing needs and addressing one-time emergency or unanticipated events.
<b>Reuse</b>	The recovery or reapplication of a package or product for uses similar or identical to its originally intended application, without manufacturing or preparation processes that significantly alter the original package or product.
<b>Roll-Off (ROL)</b>	One of the three lines of business, or three sectors, developed by the Refuse Fund Cost of Service Study. It includes compactor and drop box services for containers with capacities ranging from 7 to 40 cubic yards that are serviced by drop box collection vehicles. It is also one of the RAMS customer types used by GWOPA.

<b>Single-Family Dwelling (SFD)</b>	A residential dwelling, including each unit of a duplex, triplex, fourplex, or townhouse condominium at which there are no more than four dwelling units and where individual solid waste, recyclable materials, and yard trimmings collection is provided separately to each dwelling unit and each dwelling unit is billed separately. Defined in the GWOPA contract as “Single-Family Residential Premises.”
<b>SMaRT Station</b>	Sunnyvale Materials Recovery and Transport Station where the City’s solid waste is processed.
<b>Solid Waste Program</b>	A program in the Public Works’ Environmental Services Division responsible for planning, organizing, and directing refuse and recycling related activities.
<b>Source Reduction</b>	Any action that causes a net reduction in the generation of solid waste. Source reduction includes, but is not limited to, reducing the use of nonrecyclable materials, replacing disposable materials and products with reusable materials and products, reducing packaging, reducing the amount of yard waste generated, establishing garbage rate structures with incentives to reduce waste tonnage generated, and increasing the efficiency of the use of paper, cardboard, glass, metal, plastic, and other materials.
<b>Waste Characterization Study (2013)</b>	A study completed in January 2013 based on waste sampling conducted in October 2012 to determine the composition and recoverability of the City of Palo Alto's waste stream and to identify materials with potential diversion opportunities.
<b>Z-Best</b>	Z-Best Composting Facility located in Gilroy where the City’s organic materials and yard trimmings are processed.
<b>Zero Waste Operational Plan (2007)</b>	A plan adopted by the City Council in September 2007, which identified a number of policies, programs, and facilities that will be needed to achieve the City’s zero waste goals and to guide the City’s short and long-term zero waste efforts. The report includes the Palo Alto Waste Composition Study dated May 2006.
<b>Zero Waste Strategic Plan (2005)</b>	A plan adopted by the City Council in October 2005, which identified the key objectives and strategies needed to reach zero waste by 2021, including both reducing the creation of waste through policies and incentives designed to eliminate waste at the source and maximizing recycling through expanded collection programs, processing facilities, education, outreach, and technical assistance.

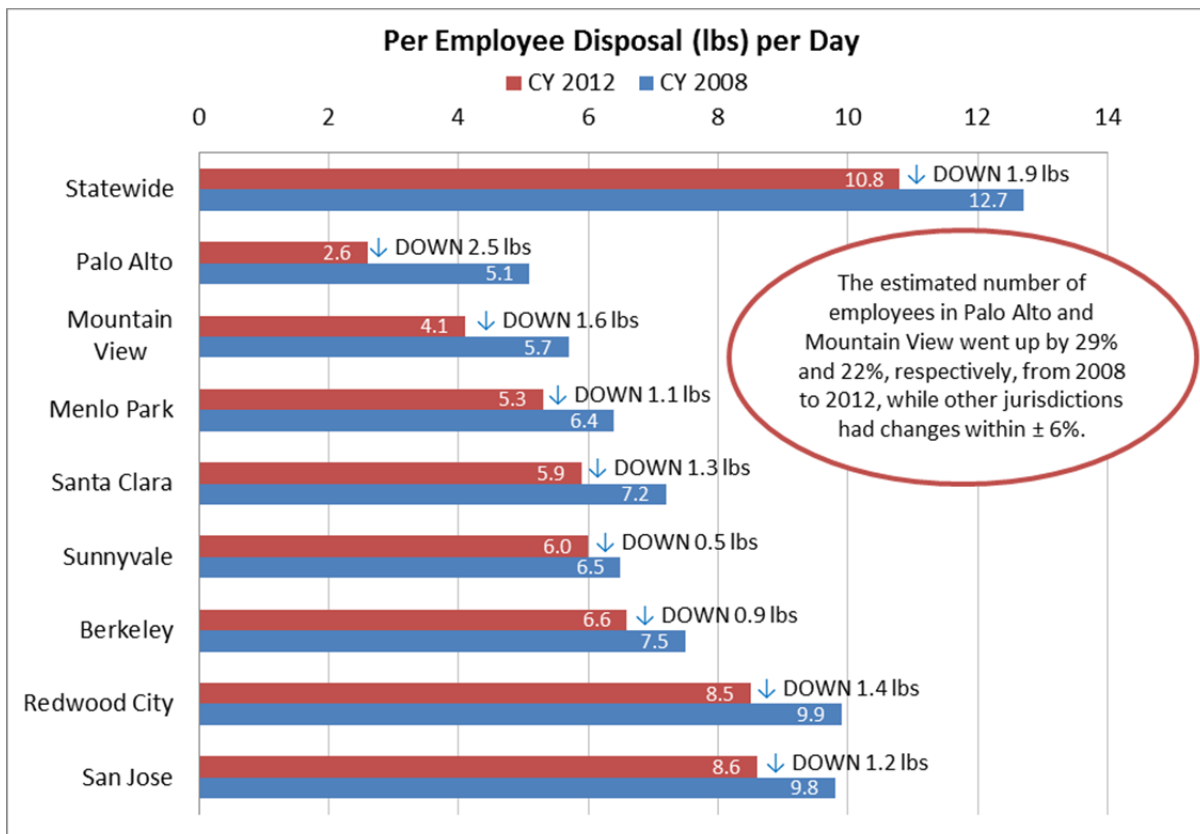
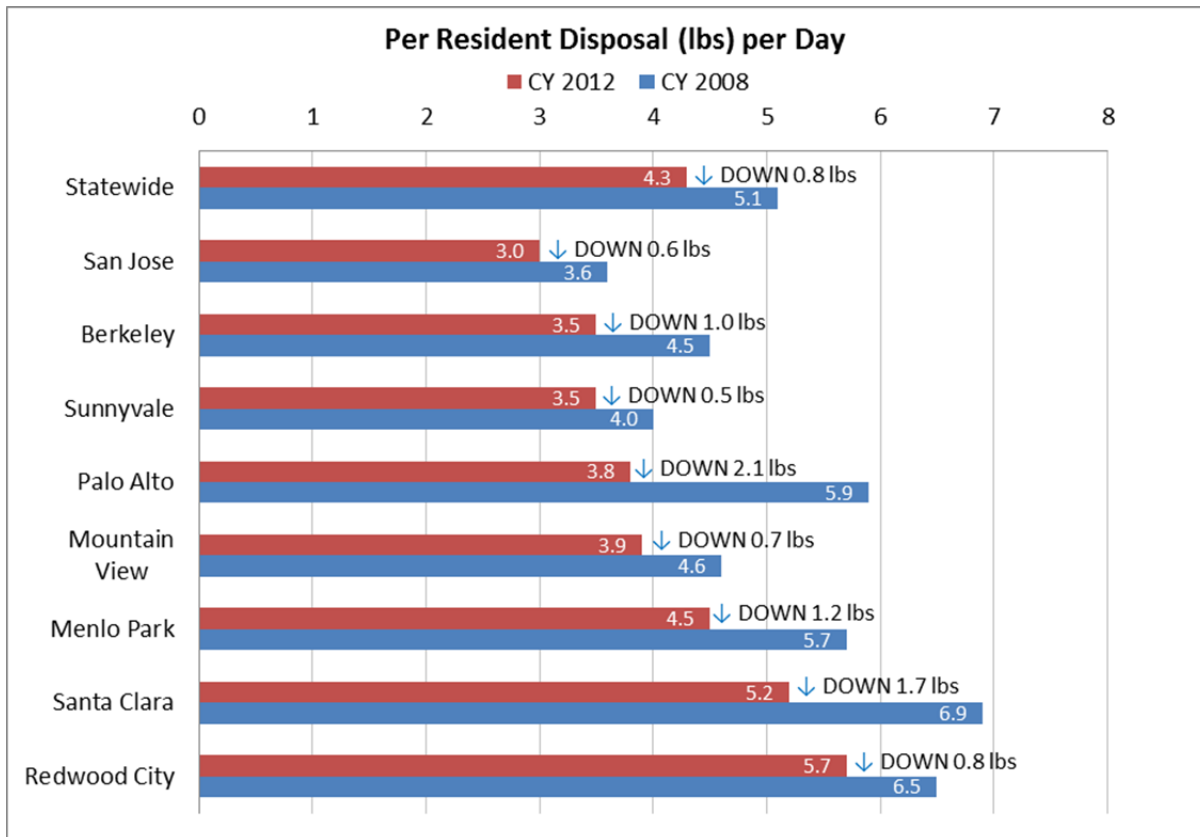
**Refuse Containers**



### ATTACHMENT 1: CalRecycle Per Resident and Per Employee Disposal Rates



Source: California Department of Resources Recycling and Recovery (CalRecycle)



Source: California Department of Resources Recycling and Recovery (CalRecycle)

### ATTACHMENT 2: City Manager’s Action Summary

In response to the Audit Recommendations in this report, the City Manager has agreed to take the following actions. We will review and report progress on implementation of these recommendations during our audit recommendation follow-up process. The transmittal letter from the City Manager is included in Attachment 3.

Finding #	Recommendation	City Manager’s Action Plan	Target Date
1	1.1. Continue to review and verify the data discrepancies identified during the audit and take corrective action.	Agree. There are 19,681 Refuse accounts. 685 account discrepancies (3.5% of the total accounts) were identified. Staff has already verified 192 out of these discrepancies, which represent the largest dollar amounts. Out of the 192 accounts verified, only 71 accounts needed billing adjustments and have been corrected as of March 14, 2014. The remaining 493 discrepancies will be analyzed and adjusted as appropriate and staff will continue to verify the accounts. When an account discrepancy is identified, staff reviews the account history for a period not to exceed 3 years and either generates a credit or a charge to the customer by following the current Rule and Regulations No. 11. Residential or small commercial/non-profit accounts that have been undercharged may be back billed for a shorter time period as appropriate, or not back billed if the customer is not at fault.	September 30, 2014
1	1.2. Develop methodology and tools to compare the SAP data with RAMS data to detect and correct any discrepancies in an efficient and timely manner.	Agree. Staff will implement the comparative method developed by the Auditor comparing SAP data with RAMS data. This method involves the creation of a unique record number for the comparison. Additionally, staff has been meeting with GWOPA regularly and are working collaboratively to correct any new discrepancies found in either system. Staff has committed to compare the data semi-annually with GWOPA moving forward and taking immediate actions to correct any errors found.	Finalize methodology by September 30, 2014
1	1.3. Perform a cost-benefit analysis and determine an optimal course of action to maintain the accuracy and integrity of refuse customer data.	Agree. Staff has reviewed the preliminary cost-benefit analysis and will continue to evaluate options to address future discrepancies to limit the inaccuracies and potential billing errors resulting from the maintenance of two distinct customer databases however staff recommends adding one FTE Business Analyst position to focus on billing issues on a daily basis. This option would also need to invest budget to modify SAP to provide more accuracy for the system integrity. The salary (including benefits) for a Business Analyst is	Complete the cost-benefit analysis and formalize recommendation  October 31, 2014

Finding #	Recommendation	City Manager's Action Plan	Target Date
		<p>approximately \$170,000 and the costs of modifications to SAP are unknown at this time. Contracting directly with GWOPA to perform the Refuse billing functions would have an additional net annual cost impact of approximately \$200,000 and would result in residents receiving separate billings for their utilities. Due to the inconvenience to the residents, cost and the need to continue to review GWOPA billing, staff does not recommend this option.</p>	
1	<p>1.4. Complete the review of all Multi-Family Dwellings (MFDs) to ensure the accuracy of the customer type classification in RAMS.</p>	<p>Agree. For various reasons some MFD customers have been classified as single-family dwelling (SFD), MFD, or Commercial. Staff has already begun reviewing and correcting any MFD classification inaccuracies. Staff will continue to work with GWOPA and consult with Utilities to clarify the guidelines categorizing MFDs in both SAP and RAMS systems, which includes: improving the guidelines and definitions of customer types to ensure that they are further clarified, identifying the number of units for existing MFD customers and reclassifying customers in RAMS, and establishing appropriate collection services as needed.</p>	<p>September 30, 2014</p>
1	<p>1.5. Work with the Utilities Department and GWOPA to clarify the roles and responsibilities over obtaining information required for determining customer type, recording data, and maintaining the accuracy and completeness of the refuse customer type data.</p>	<p>Agree. New Utilities customers, including Refuse accounts, are initially set up through Utilities Customer Service. The move-in /move-out data file is transferred every hour to GWOPA. Staff will work with Utilities Customer Service and GWOPA to clarify the roles and responsibilities by creating clear guidelines for the single-family, multi-family, and commercial categories used by both Utilities Customer service and GWOPA.</p>	<p>September 30, 2014</p>
1	<p>1.6. Establish procedures to ensure that necessary data, system capability, and related administrative tasks are identified, assessed, and communicated to stakeholders before refuse rates or exemptions with high complexity are adopted.</p>	<p>Agree. Staff will identify business requirements and consult with GWOPA, Utilities and IT on required system changes/capabilities and procedures to ensure sufficient data is obtained, and that consequences are considered and communicated to stakeholders, when identifying or before adopting new rates or service exemptions.</p>	<p>November 30, 2014</p>
1	<p>1.7. Establish procedures to ensure that a service code is defined and added to both systems before a new service fee is implemented.</p>	<p>Agree. Staff and GWOPA have worked to eliminate the RFZ (a generic billing category) category as documented in this report. Staff will work with the SAP team to establish procedures and ensure that any new charged service code will be added to SAP prior to any billing.</p>	<p>September 30, 2014</p>



Finding #	Recommendation	City Manager's Action Plan	Target Date
2	2. Assess the potential impact of incorrect service records that may remain in RAMS, and provide additional direction as needed to enhance GWOPA's monitoring activities, such as a route audit, over the accuracy of the refuse customer service records.	Agree. Staff will strengthen oversight and work with GWOPA to improve the accuracy of customer service records in RAMS. Staff will direct GWOPA to perform regular route audits based on a staff developed process, sampling size, and methodology for more frequent route and service record reviews. Subsequently, staff will continue to work with GWOPA to correct any new errors in a timely method. Until all routes have been subject to an audit, GWOPA will perform quarterly route audits. Once the data is cleaned up, the route audits will be performed annually.	All routes audits complete by June 30, 2015
3	3.1. Work with Administrative Services Department staff to identify key financial data, clarify the methodology to obtain the data, and develop common terminology to be applied throughout budget, accounting, and staff reports to ensure that data is verifiable, understandable, timely, consistent, and useful for decision making processes.	Agree. Due to various reporting needs, timing, the type of information being communicated and to whom, current budget and reserve numbers can fluctuate. Staff will work with ASD Staff to define the common financial data that will be used or referenced throughout the budget, accounting and staff reports. When available, Staff will use CAFR numbers and projections based on SAP or budget, and ensure figures will be labeled and referenced.	September 30, 2014
3	3.2. Update and clarify the Refuse Fund Rate Stabilization Reserve guideline to ensure that the minimum and maximum reserve balance is set at an adequate level required to support the reserve's intended purpose.	Agree. Staff will revise and clarify the Refuse Reserve guidelines.	November 30, 2014
3	3.3. Work with Utilities, Information Technology, and Administrative Services Department staff to explore opportunities for improvement to ensure that actual refuse revenues by sector are accurately captured and tracked.	Agree. The customer data and refuse service type need to match. The current service types: R-1 (residential), R-2 (commercial cart), and R-3 (commercial bin and roll off), do not match the revenue categories of residential, commercial, and industrial. The Auditor has identified an additional reporting code that will allow for more accurate revenue reporting. Staff is working with IT on the SAP modification.	September 30, 2014
3	3.4. Work with GWOPA to ensure that data required for accurate tracking of actual expenses are identified and reported by GWOPA on a regular basis. Establish procedures to periodically review GWOPA financial records to monitor the accuracy of the data provided by GWOPA.	Agree. Staff will request updated financial statements and expense records from GWOPA annually and will review the assumptions and methodology used by GWOPA in establishing their expense by sector. Staff will also consider using any revised GWOPA percentages of expenses by sector and operations into the rate model.	September 30, 2014

Finding #	Recommendation	City Manager's Action Plan	Target Date
3	3.5. Consult with the City Attorney's Office and reevaluate the need for establishing the Commercial Sector Reserve. If applicable, work with Administrative Services Department staff to establish the Commercial Sector Reserve and related procedures.	Agree. Staff plans to develop and recommend a sustainable rate model for implementation in FY 2016 that will provide a roadmap for eliminating sector imbalances and working with the City Attorney will reevaluate the need for a separate commercial sector reserve and related procedures.	November 30, 2014
3	3.6. Identify key operational data required for informed decision making to ensure efforts required to monitor program performance and progress are effective and reasonable.	Agree. Staff will continue to identify and monitor key operational data and measures required for informed decision making by the City as well as for the purposes of monitoring GWOPA's performance.	September 30, 2014
3	3.7. Establish baseline data and a methodology to evaluate the effectiveness of program activities and related expenses in achieving Solid Waste goals.	Agree. Existing measures have been in place to evaluate the program effectiveness, which include, but are not limited to, percent of residential customers with mini-cans, pounds per person, and commercial customers with compost service. Staff is working on additional measures to quantify the benefits of outreach activities.	September 30, 2014
3	3.8. Establish a process to ensure that financial incentives and output requirements provided in a new or renegotiated contract are aligned with Solid Waste's key performance measures to effectively support its goals.	Agree. Staff will establish a process that will review and identify key information that could ensure that financial incentives and output requirements of a new or renegotiated contract are aligned with the program's performance measures. Key information may include, but not be limited to tonnages, successes in other jurisdictions, customer surveys or waste characterization studies.	September 30, 2014

## ATTACHMENT 3: City Manager's Response



CITY OF  
**PALO  
ALTO**

OFFICE OF THE CITY MANAGER

250 Hamilton Avenue, 7th Floor  
Palo Alto, CA 94301  
650.329.2392

Date: May 9, 2014

To: City Auditor

From: James Keene, City Manager

Prepared by: Mike Sartor, Director Public Works

In 2009, the City implemented a new utility billing system and customer database (SAP) and transitioned to a new refuse contractor, GreenWaste, which provides waste and recycling services in Palo Alto. The City is a multi-service utility which provides its own electric, gas, water, sewer, storm drain, and fiber services to residential and commercial customers. The City serves as the billing agent for GreenWaste which maintains its own customer database (RAMS) because SAP is not customized to manage the hundreds of different service levels offered by GreenWaste. Due to the change in refuse service providers and complexity of the interface between SAP and RAMS, there remain inconsistencies in customer accounts between the two systems. The City and GreenWaste are continuously working together to identify, correct, and enhance the systems to eliminate these discrepancies.

Ensuring accurate billing information and program data is a priority for the City and is used for the planning and monitoring of revenues and to support analysis for rate setting. The City makes continuous efforts to correct the discrepancies that have resulted from the interface problems and maintain the integrity of two complete database systems. Staff manually monitors the data exchange and fixes errors as they arrive on a daily basis. Despite the great work of staff, this manual check may not eliminate every bit of risk to the accuracy of the billing system.

In the short term, all database communications will continue to be monitored daily. Staff will address the long-term database challenges by recommending shifting the billing to GreenWaste of Palo Alto or through the adding of a position that would focus on software improvements and on the fulltime monitoring and maintenance of the data. Attachment 2 contains the steps that will be taken to improve procedures as recommended.



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# FINANCE COMMITTEE WORKING MINUTES

Regular Meeting  
Tuesday, June 3, 2014

Chairperson Berman called the meeting to order at 7:03 P.M. in the Council Conference Room, 250 Hamilton Avenue, Palo Alto, California.

Present: Berman (Chair), Burt, Holman, Kniss (Arrived at 7:05 PM)

Absent:

## Oral Communications

None

## Agenda Items

### 2. Audit of the Solid Waste Program.

Harriet Richardson, City Auditor, said the audit had three objectives in determining whether the City effectively managed the Solid Waste Program: determining whether the Public Works Department's processes 1) ensured accurate refuse billing; 2) sufficient revenue was available to cover the cost of services; and 3) reliable and useful financial and operational data to support management's strategic and operational decisions were provided. The audit covered solid waste operations from July 2009 to September 2013, with a focus on management of the City's contract with GreenWaste of Palo Alto and related waste collection and processing services. The billing for solid waste services came out of the Systems and Applications and Data Processing System (SAP), which was based on each customer's refuse service data, which was recorded in GreenWaste's Route Account Management System (RAMS). The service data were transferred from the RAMS to SAP through a daily incoming interface. Audit staff reviewed all 19,681 utility accounts in SAP for customers that had permanent refuse services. The billings resulted in \$2.2 million monthly and approximately \$26 million annually. Audit staff found that the Public Works Department made significant progress with the Solid Waste Program, including implementing zero waste programs, and enhancing their contract management processes. The audit also showed that the Public Works

# WORKING MINUTES

Department needed to improve management of their processes for accurate refuse billing, to ensure sufficient revenue was collected to recover the cost of services, and that they provided reliable and useful operational and financial data to support management's strategic and operational decisions. Audit staff addressed their 16 recommendations with the Public Works Department.

Yuki Matsuura, Senior Performance Auditor, relayed that the first finding was to improve the accuracy of refuse billing. Audit staff compared the SAP data with the RAMS data and found 685 accounts that did not match. As of March 2014, Public Works staff had reviewed 192 accounts and confirmed customer billing adjustments for 71 accounts. There were several causes for discrepancies: 1) the interface between RAMS and SAP was not effectively synchronized; 2) when GreenWaste took over the hauling operation, they inherited a significant amount of incorrect data; 3) the refuse customer types were not accurately maintained, especially with regard to the multi-family dwelling classifications; 4) multiple quantities of the same service were not always maintained in one record in RAMS; for example, there may be two records for two waste bins, when there should be one record; and 5) no specific price code was set up for each refuse service; 6) there were over 100 duplicate accounts that were not needed. Audit staff recommended development of methodologies to address the discrepancies, and to conduct a cost benefit to determine interface issues. There was \$250,000 available to address these issues. Before using the funds, determination of what was happening with the GreenWaste and the SAP upgrade needed to be identified. There was a possibility of new rate structure that could come from the rate study at this time. Audit staff recommended review of customer classifications and consultation with the Utilities Department and GreenWaste to clarify their roles and responsibilities for recording and maintaining accurate customer data and identifying necessary system capability and related tasks before complex rates and exemptions were adopted by the Council. The second finding included audit staff selecting 298 accounts from RAMS, visiting customer sites, and comparing the services recorded in the system to the actual refuse containers located at the customer site. Audit staff found 30 accounts that did not match, and 10 of those accounts required billing adjustment. Audit staff recommended assessment of incorrect service records that remained in the system and additional direction to enhance GreenWaste monitoring activities. In Finding Three, ensure reliable and useful data are provided to stakeholder's, audit staff gathered a lot of data, conducted interviews, and reviewed various reports and found more questions than answers because it took time to understand what the data meant; many decisions relied on zero waste programs and the rate setting process. There were eight recommendations.

# WORKING MINUTES

Financial data was not consistent with the Comprehensive Annual Financial Report or Operating Budget documents; the audit recommended that Public Works staff work with the Administrative Services Department (ASD) to identify key financial data, clarify the methodology, and apply common terminology throughout budget accounts and staff reports so data was verifiable, understandable, timely, consistent, and useful. The Refuse Fund Rate Stabilization Reserve Guideline, which determine the refuse rates, had not been updated since 1993; the audit recommended the guidelines be updated to serve their original purpose. The actual refuse revenues and expenses by customer type or by service were not available; the audit recommended that Public Works staff work with the Utilities Department, Information Technology, and ASD to identify ways to ensure actual refuse revenues by sector are accurately captured and tracked. Regarding expenses, certain details were not available to City staff because of language in the contract and because the invoice did not show the breakdown; the audit recommended that Public Works staff obtain the necessary data from GreenWaste and periodically review GreenWaste's records for accuracy. In 2012, the Finance Committee recognized the need for the Commercial Sector Reserve; the audit recommended that Public Works staff consult with the City Attorney to reevaluate the need for a reserve. Finally, audit staff looked at selected performance measures and found that service level data was not consistent with GreenWaste reports and City records; some numbers were off by 100 or more. Financial incentives were not effectively designed to measure the contractor's performance. For example, the contract required GreenWaste to collect certain amounts of recyclables, but the total content was affected by external factors, such as demographic or economic activities. This possibly went against public outreach programs that promoted reuse and waste prevention to reduce recyclables. No performance measures were tied to public outreach, which made it difficult to monitor which activities were working. The audit recommended that the Public Works Department track key operational data, establish a baseline, align contractual requirements with key performance measures, and monitor program progress and outcome.

Mike Sartor, Director of Public Works, acknowledged the work of the City Auditor and had submitted a summary of responses in the Staff Report. The Public Works Department agreed with the recommendations.

Herb Borock said two years ago there were Solid Waste and Refuse Fund Cost of Service Utility studies recommending rate changes. Limitations about customer billing census data provided by the contractor and SAP were listed, which later related to system coding limitations. This was known to staff but was not part of the Council Agenda packet. Street sweeping

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expenditures were \$1.4 million then, and facilities rent changed in recent years.

Jim Keene, City Manager, thought a better understanding on the hierarchy of concern and risk was good because accuracy in billing was more important than process improvement. Having a clear sense of a technological issue, versus input accuracy was important because there were items he put in the realm of process improvement, like accurate statistics in civic engagement, which were not necessarily as important as accurate billing. It was important to work in terms of a level of importance.

Vice Mayor Kniss noted no disagreement from the Public Works Department and said the technological products not communicating with each other was a fixable problem. She requested more information about not releasing certain information in contracts, how Palo Alto compared with other jurisdictions, and customer service during the collection of refuse. She wanted to know if the Auditor felt concerned with the audit.

Ms. Richardson agreed with Mr. Keene that billing accuracy was most important because service to the customer was important and it was good to have a good reputation. Concerning the amount of discrepancies, they were noteworthy, but not dramatic. She performed a similar audit for another jurisdiction, which was considerably worse. To achieve zero waste goals, it was important to have accurate data.

Vice Mayor Kniss thought a zero waste goal was good, but the billing was necessary to achieve the goal.

Ms. Richardson remarked that the data was needed in order to know how much waste was being sent to the landfill, versus how much was being recycled.

Vice Mayor Kniss questioned the contract issue of the audit.

Ms. Matsuura explained that GreenWaste was implementing the Zero Waste Program but the City did not have good data on how much was spent in the commercial sector, versus the residential sector. GreenWaste had the data, but the City needed to obtain these records; the contract did not require GreenWaste to obtain that kind of data but the City had the right to request that data.

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Vice Mayor Kniss added that the audit identified the problem and relayed a solution.

Ms. Matsuura agreed.

Council Member Holman wanted to know if data was not being accurately entered into SAP; she suggested providing instructions on data entry. Correct billing was important, but good data entry was needed. She wanted to know who updated the incorrect data sent to GreenWaste.

Ms. Matsuura indicated that the City and GreenWaste worked together because some data was held in SAP and some in RAMS.

Council Member Holman questioned: 1) why there were frequent issues with multi-family residential billing and inaccurate assignments; 2) why the Commercial Sector Reserve was not updated and whether there was an issue with the Residential Reserve; was it subsidizing the Commercial Reserve because they were not separate; 3) she wondered why the Refuse Fund Rate Stabilization Reserve was last updated was 1993; and 4) she noted that outreach efforts and how they were measured were important because they took up staff resources.

Lalo Perez, Director of Administrative Services and Chief Financial Officer, relayed that data entry needed to have a low error rate . It was helpful to identify where Palo Alto was in comparison with the industry standard and suggested providing this information to the Committee at a later time. When Palo Alto went live with the Utility Billing System, there were many errors. One reason was that the City had several commodities within the billing system. Configuring one system with many requirements caused a cross interference because one commodity may have rate tables set that did not allow a different commodity to be set in a different way.

Council Member Holman questioned why the commodities could not be set up the same way.

Mr. Perez said there were different rate tables for water than for electric, and the different structures and different rates were conflicting for centralized billing.

Council Member Holman illustrated the grocery store had different costs for different items.



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Mr. Perez remembered that a complication dealt with different structures. There were not a high number of projects at this time that related to the Refuse Fund Rate Stabilization Reserve but recalled that the reserve level revenues were set at a minimum of 15 percent, and a maximum of 30 percent. Staff discussed reviewing the structure of the Rate Stabilization Reserve and separating the different reserves; he proposed implementing this in the Public Works Funds and presenting that to the Committee at a later time. The biggest change was when the State of California called for an accounting of the landfill closure and post closure reserves; he noted that a major expense dealt with the hauling of refuse and recyclables.

Mr. Keene clarified that the audit found 20,000 entries that did not match, but those were not necessarily billing discrepancies. For example, there was one review of 192 entries that did not match, out of which only 71 had billing discrepancies. A billing discrepancy was either a digital error, which related to a wrong entry, or an analog interface error, which was when a service was changed but the change was not updated or entered into the system. He wanted 100 percent billing accuracy but thought that needed to be put into context. Regarding the performance audit, there were always suggestions for improvement, but cost and what it took to make the changes needed to be considered. Financial or billing issues were of high importance to him, and other measurement issues required a determination of importance. Lastly, he was reviewing SAP and questioned whether a conversion made sense and whether it was cost effective. SAP is a completely integrated, high performance system; the more complex a system, the better it is, but the more room there is for error. If he designed a system that was going to have multiple users, he voted for simplicity. SAP was the opposite of simplicity; it took a lot of training and was going to have more glitches.

Ms. Matsuura was most concerned with the manual processes. GreenWaste and Public Works had to review the system daily to check for errors. She noted the difference between old bad data that needed correcting and new interface errors because the audit focused on correcting old data and reducing manual processes so staff could focus on performing their functions.

Council Member Holman agreed that the error rate was low.

Mr. Keene reiterated the error rate only included the amount of entries that did not match.

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Council Member Holman thought SAP was a systemic type of issue.

Council Member Burt wanted to know how cooperative GreenWaste was in providing data.

Mr. Sartor understood they were cooperative.

Ron Arp, Solid Waste Manager, confirmed that GreenWaste was very cooperative and responded to all requests. This was the first request for detailed financial data, and they responded.

Council Member Burt inquired about manual effort made on a daily basis, what fixes have been done, and what was on the horizon.

Matthew Krupp, Environmental Control Manager, noted that daily fixes needed to be verified with GreenWaste to ensure a service was not put in an inappropriate account.

Council Member Burt clarified that this was when a change occurred.

Mr. Krupp said there were two sets of verifications: 1) when customers start/end service; and 2) when a change was made. GreenWaste had a limited ability to define the change, so the City managed the change to ensure the customer was billed properly.

Council Member Burt inquired about which changes streamlined the process and which reduced errors.

Mr. Krupp said there were a few fixes already implemented and added that there were two ways to bill in SAP, by quantity, or whether the service was on or off, which was called a "flag factor". The Refuse Fund had both of those services, making the process complicated. The "flag-factor" was fixed, but the other questions regarding the different types of services were not yet fixed. Public Works was looking to hire a consultant to help with these fixes.

Council Member Burt indicated the errors would be reduced on the front end, given the amount of billing errors.

Ms. Matsuura relayed there was about a one to two percent billing error.

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Council Member Burt wanted to know if there was a value in a cross-check on each route to verify what the customer has.

Mr. Krupp confirmed this was a recommendation that Public Works staff planned on instituting; a semi-annual check of the data in RAMS to SAP. There was a recommendation for GreenWaste to make site audits to confirm the service on the street with what was being billed. Public Works staff planned on making these implementations within one year.

Council Member Burt questioned what the error rate was before GreenWaste and how the reduction occurred.

Mr. Arp remarked that there was no audit with the previous contractor but there were many errors with the previous system.

Council Member Burt inquired whether it was known how many errors were fixed.

Mr. Arp was unsure.

Council Member Burt remarked that all systems had error rates. He inquired what a realistic error rate was or what a goal was.

Mr. Arp was unable to find a standard error rate for refuse billing. He did not know of anyone that had to maintain two databases, which was an unusual situation.

Council Member Burt said the industry standard was unknown, but wanted the closest to best practices.

Mr. Keene remarked that the two systems were used because customers liked an integrated utility bill that included everything and to view all their costs.

Council Member Burt reiterated that part of the problem was there were two systems. He wanted confirmation that the system the Utilities Department used was different than the one the Public Works Department used and whether the system was prone to errors.

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Mr. Perez explained that the key difference was that there was no interface and there was no other vendor involved. He knew there were corrections and the Utilities staff had a system for detecting abnormal readings.

Council Member Burt heard periodic concerns from rate payers about their skewed billing regarding Utilities; he wanted understanding so he could be informed about what was happening on the Utilities side.

Ms. Richardson planned on performing a Utilities Billing Audit and could add some kind of comparison.

Mr. Krupp added that a difference between the Refuse Fund and other Utilities Funds was the Refuse Fund offered nearly 350 different products, which could be changed as often as every day. This was different from a metered utility service.

Vice Mayor Kniss liked the idea of getting everything on one bill.

Ms. Richardson noted that Tacoma, Washington, had problems with SAP too.

Chair Berman remarked that in recognizing the integration problem, the error rate was relatively low. He appreciated knowing that people liked everything on one bill.

Scott Scholz, Environmental Outreach Manager, GreenWaste of Palo Alto, thought the audit was collaborative and there was no unreasonableness.

Vice Mayor Kniss noted that drivers were the first people the customer saw; she wanted to know what they were told.

Chris Siebenthall, General Manager, GreenWaste, replied that the customer knew and understood the audit was happening.

Vice Mayor Kniss noted that drivers were a good source for outreach because they were contact point with the customer.

Mr. Siebenthall did not think this was the case with commercial customers, but there were a lot of residential customers; staff needed a way to share data with the City.

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Council Member Burt thought the audit was a three-way effort with GreenWaste, which showed a good partnership. He said the customer was less likely to complain about under billing than overbilling.

**MOTION:** Vice Mayor Kniss moved, seconded by Chair Berman to recommend the City Council acceptance of the Audit of the Solid Waste Program.

**MOTION PASSED:** 4-0