



RESIDENTIAL SOLID WASTE:
Customer rates accurate,
but monitoring should continue

June 2012

LaVonne Griffin-Valade
City Auditor

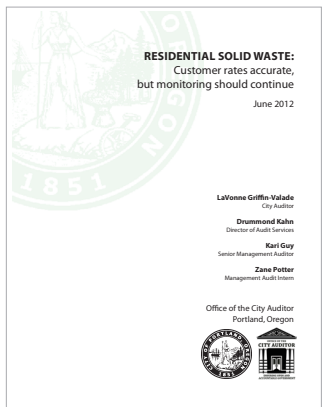
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June 20, 2012

TO: Mayor Sam Adams
Commissioner Nick Fish
Commissioner Amanda Fritz
Commissioner Randy Leonard
Commissioner Dan Saltzman
Susan Anderson, Director, Bureau of Planning and Sustainability

SUBJECT: Audit Report – *Residential Solid Waste: Customer rates accurate, but monitoring should continue* (Report #429)

The attached report contains the results of our audit of the solid waste franchise and rate setting process administered by the Bureau of Planning and Sustainability (BPS). We found that BPS accurately determines the cost of collection service and their process is consistent with those used by other jurisdictions in the region. In addition, BPS ensures appropriate use of the franchise fees.

The focus of this audit was primarily the customer rate setting process. We did not review the current collection system because the change to include food waste in compost collection was too recent to conduct meaningful analysis. A future audit will examine the collection system.

Over the course of the audit, we also found that the allocation of costs among customers with different service levels needs further review. Once total hauler costs are determined, incentives and disincentives applied to basic rates depart from cost of service. This requires customers with large rollcars to subsidize customers with small rollcars and cans. It is not clear these additional incentives are necessary to encourage waste reduction.

We recommend that BPS either eliminate these incentives and disincentives *or* clarify the rationale and expected outcome of the changes to the basic rates. We further recommend that once major changes to the truck fleet are complete, BPS should consider updating the 1997 time and motion study used in their rate calculations. This will help ensure that the appropriate terrain fees are considered when allocating costs among customers.

We ask the Bureau of Planning and Sustainability to provide us with a status report in one year, through their Commissioner in Charge, detailing steps taken to address our recommendations in this report. We very much appreciate the cooperation and assistance we received from BPS staff as we conducted this audit.

LaVonne Griffin-Valade
City Auditor

Audit Team: Drummond Kahn
Kari Guy
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Attachment

RESIDENTIAL SOLID WASTE:

Customer rates accurate,
but monitoring should continue

Summary

The City of Portland regulates residential garbage collection through a franchise system. The system limits the number of garbage haulers and regulates the rates that haulers are allowed to charge. The City also charges a franchise fee paid by customers to be used by the City for solid waste and sustainability programs.

We conducted this audit to determine:

- Whether the residential franchise and rate setting process provides fair rates for customers and haulers
- Whether the Bureau of Planning and Sustainability has systems in place to ensure the accurate collection and use of solid waste franchise fees

We found that the franchise and rate setting process accurately determines the cost of collection service, and the Bureau of Planning and Sustainability (BPS) ensures appropriate use of franchise fees. Specifically:

- BPS uses a rate model based on verified hauler costs
- The City's franchise and rate setting process is consistent with the processes used by other jurisdictions in the region
- BPS accurately collects and uses solid waste franchise fees for programs as defined in City Code

However, we also found that once total hauler costs are determined, the allocation of costs among customers with different service levels could benefit from further review. Incentives and disincentives ap-

plied to rates depart from cost of service and require customers with large rollcarts to subsidize customers with small rollcarts and cans. It is not clear that these specific additional incentives are necessary to encourage waste reduction.

We recommend BPS either eliminate incentives and disincentives and develop rates based solely on cost of service, or clearly document the rationale and expected outcome of any incentives or disincentives.

This audit does not review the efficiency or effectiveness of the current residential collection system because the change to include food waste in compost collection was too recent for meaningful analysis. This could be a topic for a future audit.

Background

Residential solid waste collection regulated through a franchise system

In 1991, the City awarded the first waste collection franchises to 69 haulers, each for a specific geographic area of the City. The City chose to use a franchise system for a number of reasons:

- To ensure effective recycling service
- To minimize the effect of a new system on garbage haulers doing business in the City at the time
- To reduce contracting risks

By 1996, the number of haulers had dropped to 49 as haulers consolidated, and as of May 2011, the number of haulers had declined to 19. Further consolidation may occur, but City Code limits any single hauler to a maximum of 40 percent of Portland's customer base and requires that no hauler may be a subsidiary of another hauler.

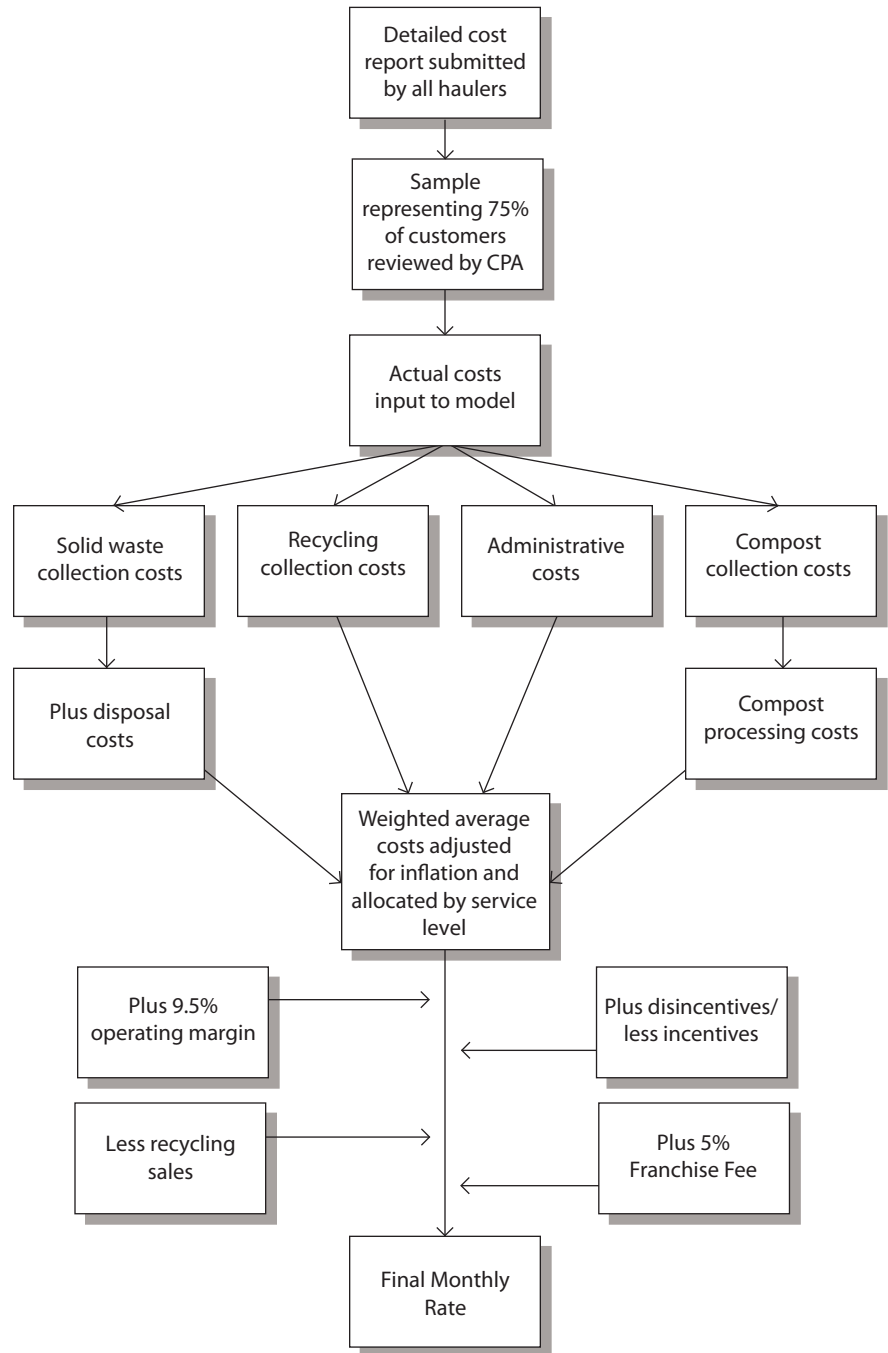
City policy aims to reduce the amount of solid waste generated in Portland by promoting aggressive waste prevention and recycling activities, and to promote the development of environmentally and economically sound waste collection practices. Residential solid waste programs are administered by the Bureau of Planning and Sustainability (BPS). City Council's (Council) policy choices related to collection schedules, collection vehicle requirements, and other elements of the solid waste program are documented in City Code, administrative rules, and franchise agreement documents.

The current franchise agreement was adopted by Council in 2008 for a 10-year term. During the fifth year of the agreement, the City may review the operation of the franchise, including measures of system performance and performance of individual franchisees. Depending on the outcome of that review, the City can choose to renew the franchises. BPS will begin the franchise review process this year.

Rates based on hauler costs

The City collects detailed cost information from all franchised haulers each year to use in establishing customer rates for the next fiscal year. The rate model is shown in Figure 1.

Figure 1 Rate calculation model



Source: Audit Services' summary of BPS rate documents

The major hauler costs of residential collection are labor, fuel costs, vehicle maintenance and depreciation, and the costs of disposal. Most of these costs are not within City control once the policy decisions around collection schedules or vehicle requirements are made. For example, the largest component of collection charges are labor costs, a business decision made by each hauler. Similarly, fuel costs and markets for recyclable materials are driven by global markets, and solid waste disposal charges are set by Metro.

The components of the monthly bill for a residential 32 to 35-gallon rollcart used by about one third of households are shown in Figure 2.

Figure 2 Components of monthly garbage bill - small rollcart
(rates effective July 1, 2012)

| | Dollar amount | Percent of total rate |
|------------------------------------|----------------------|------------------------------|
| Collection charges | | |
| Solid Waste | \$3.31 | 11% |
| Recycling | \$5.34 | 18% |
| Compost | \$5.61 | 19% |
| Disposal charges or revenue | | |
| Solid Waste | \$2.49 | 8% |
| Recyclable Material | -\$0.73 | - 2% |
| Compost | \$2.84 | 10% |
| Other charges | | |
| General and Administrative | \$5.91 | 20% |
| Rollcart charges | \$0.69 | 2% |
| Operating Margin | \$2.75 | 9% |
| Incentive or disincentive | \$0.00 | 0% |
| Franchise Fee | \$1.48 | 5% |
| Final Rate | \$29.70 | 100% |

Source: Audit Services' summary of BPS rate documents

Note: Totals are rounded

Audit Results

Overall rates accurately reflect costs of residential collection

The City's rate review process defines allowable hauler costs, and requires franchised haulers to submit detailed cost reports annually. While this system is time consuming for the haulers and the City, the system results in rates that more accurately reflect current hauler costs of collection and disposal.

To ensure accurate reporting of hauler costs, BPS contracts with an independent Certified Public Accountant (CPA) to review the reported costs from haulers representing 75 percent of the customer base. The CPA checks reported costs against records on site at each hauler. Certain costs, such as the costs of purchasing a new franchise route, charitable contributions, or payment of state and federal taxes, are not allowable costs to be passed on to customers. Once validated by the CPA, the data is entered into the rate model.

In addition to hauler costs, most other inputs to the model are also updated annually. The rate consultant updates disposal fees based on current Metro rates, and compost processing costs based on the current charges at area processing facilities. Recycling revenue estimates are updated based on the current mix of recycling materials collected, and estimated material prices per ton. BPS and the rate consultant look to external experts for projections of fuel costs and recycling market prices. This focus on most recent available information helps to determine accurate prices for customers and haulers.

In our 1996 audit of the City's solid waste and recycling system, we identified some opportunities to lower rates. We reviewed the methodology of the current rate model against our 1996 audit findings and tested the model data entry and results based on 2010 hauler cost reports. We found the model accurately presented base costs of waste collection and disposal and accurately calculated franchise fees and operating margin as defined in the City rules and franchise agreements.

We conducted a survey of cities and counties in the Metro service area of Multnomah, Clackamas, and Washington counties to compare

Portland's franchise and rate setting process with other jurisdictions in the region. Of the 19 contacted, 17 jurisdictions provided information on their franchise and rate setting system. All jurisdictions have some form of long-term franchise or contract that grants exclusive collection rights in a defined area, and all jurisdictions set rates based on allowable hauler costs.

There were some differences in area franchise rate setting systems. For example, all jurisdictions except Portland franchise commercial as well as residential haulers, and some jurisdictions share rate review responsibilities. However, the approach of basing rates on reported hauler costs is the same throughout the Metro area.

According to BPS, Portland rates are also reviewed annually by outside oversight groups, including haulers and the Portland Utility Review Board.

Defined operating margin provides target return to haulers

The rate model includes a target operating margin for haulers of 9.5 percent in the final monthly rate. The 9.5 percent rate was established in 1991 based on a survey of other cities and private sector haulers. In our survey for this audit we found that most jurisdictions in the Metro area set rates based on a target operating margin of 10 percent, with an allowable range of 8 percent to 12 percent. Portland's target operating margin is in line with other area jurisdictions. It is important to note that the operating margin of 9.5 percent is not all retained as profit by the haulers. Hauler costs that the City does not allow to be passed through to rate payers, such as state and federal taxes, are paid by the haulers from this operating margin.

If haulers' costs increase during the year – for example, due to a rise in fuel costs or reduction in recycling revenue – haulers will not achieve the 9.5 percent margin. However, if haulers are able to reduce costs, they will earn an operating margin higher than the 9.5 percent. Haulers have an ongoing incentive to control costs, to maximize profitability in the current year. Those reduced costs will then be the basis for the next year's rate review. The annual rate review helps capture any efficiencies achieved by haulers, since hauler cost

reductions in one year are passed to customers in the next. From 2003 to 2010, actual operating margins achieved by haulers in the CPA sample ranged from 7.0 percent to 12.2 percent, with haulers collectively exceeding the target in five of the eight years.

Allocation of costs among customer service levels should be reviewed

Once an average customer cost is determined in the rate model, costs are allocated among varying levels of service based on can or rollcart size and frequency of collection. Differentiating costs among these service levels allows a customer setting out a 20-gallon can to pay less than a customer setting out a 90-gallon rollcart, due to the lower collection and disposal costs for the small can. This variable pricing creates an economic incentive for customers to reduce waste by using a smaller rollcart or can, and establishes rates based on the actual cost of service.

The adjustments for rollcart size are based on an annual study of rollcart weights, and a time and motion study completed in 1997. A terrain charge is then added to rates for most customers west of the Willamette River, to account for additional costs of collection in hilly areas. This charge is also based on the time and motion study.

Since the 1997 study, City residential collection methods have changed. There are different rollcart types and different recycling methods. Also, haulers are in the process of upgrading to trucks with automated collection systems. Updating the time and motion study once new trucks are in operation would help ensure accurate cost allocation among customers.

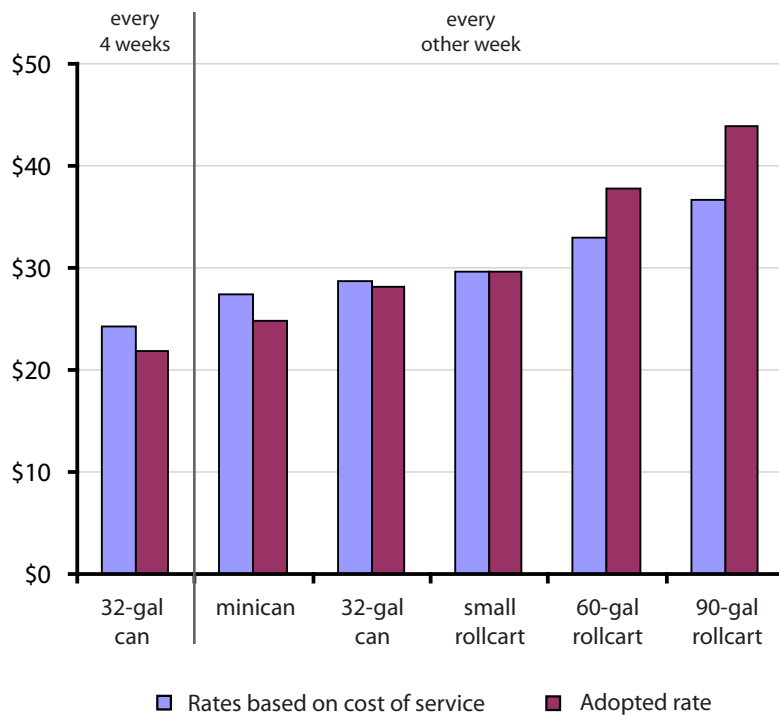
Once rates are allocated by rollcart size based on actual cost of service, further customer incentives and disincentives are added to rates. These incentives and disincentives are not based on cost of service, but are policy decisions by BPS and Council intended to further encourage waste reduction. Generally, BPS managers told us they try to balance incentives for small rollcarts and cans with disincentives for large rollcarts, so that collectively the changes are revenue-neutral for haulers.

Depending on the mix of customers with different service levels, an individual hauler may gain or lose money due to the incentives. If the cost of small rollcart incentives is not exceeded by the revenue from the large rollcart disincentives, BPS reimburses the hauler for the difference through a reduction in franchise fees. Any additional profits due to disincentives are retained by the haulers. This may create a profit incentive for haulers to market large rollcarts to customers, which is contrary to City waste reduction goals.

In our 1996 audit of residential solid waste, we recommended that incentives and disincentives be eliminated and rates be based solely on cost of service. City solid waste managers then agreed that the fairest way to set rates is to base them on cost of service, and noted that even without financial incentives the City's rate structure encourages recycling by offering various service levels at different rates. At that time, solid waste managers committed to the eventual elimination of incentives and disincentives.

However, City Council chose not to eliminate incentives and disincentives. According to the Mayor, City Council discussed rate setting, including a thorough consideration of incentives and disincentives, reaching an informed decision about the rates. When the City introduced food composting in 2011, the reduction in solid waste pick-up frequency (from once a week to once every two weeks) resulted in lower costs of service for large rollcart customers, and higher costs for customers using small or medium rollcarts. To maintain rates for small and medium rollcarts at their pre-composting level, Council increased incentives for small rollcarts and disincentives for large rollcarts. The added disincentives accounted for 13 percent of the total rate paid by customers with 60-gallon or 90-gallon rollcarts. Council revised incentives and disincentives again when adopting rates effective July 1, 2012, and the disincentive for the 90-gallon rollcart now accounts for 16 percent of the total rate. Rates with and without incentives for the most common service levels are shown in Figure 3.

Figure 3 Rates, by service level, with and without incentives
 (rates effective July 1, 2012)



Source: Audit Services' summary of BPS rate documents

There is an incentive to reduce waste built in to the rates based on cost of service, as larger rollcarts with more frequent pickup have higher rates that reflect the higher collection and disposal costs. It is not clear what further change in behavior is gained by the added incentives and disincentives, and households with larger rollcarts are subsidizing households with smaller rollcarts and cans. Haulers may benefit disproportionately from the system based on the customer mix in each area.

BPS ensures accurate collection and use of residential solid waste franchise fees

The current franchise agreement allows franchise fees of up to 8 percent, with any fee in excess of 5 percent dedicated to stabilize rates for residential customers. In practice, the franchise fee is set at 5 percent of gross revenues. The City collects franchise fees quarterly based on actual hauler revenues. Quarterly franchise fee reports are validated by the CPA during the annual review of hauler costs.

In our survey, we found that franchise and other local government fees varied from 0 to 9 percent of revenues in other Metro jurisdictions. Franchise fee revenues in other jurisdictions were used for a range of uses from general funds, to solid waste programs, to school funding.

Residential franchise fees are dedicated to residential programs

All City fees related to solid waste collection and disposal are deposited in the Solid Waste Management Fund, including fees on commercial waste haulers. City Code requires that the funds be spent on solid waste, recycling, composting, and sustainable development policies approved by Council. In practice, BPS further restricts the use of money in the fund, separately accounting for residential and commercial revenues and expenditures. Residential franchise fees, together with residential grants, are used for a number of programs:

- The BPS Solid Waste and Recycling program includes franchising residential collection companies, enforcing service standards, setting rates, educating customers, and promoting programs. Expenditures in this program grew almost 50% from FY 2006-07 to FY 2010-11. The largest increase corresponded to the introduction of recycling and yard debris roll carts in 2008. Expenditures increased again in FY 2011-12 to fund implementation of the food composting program.
- The Green Building program promotes the design and development of resource efficient buildings with a focus on recycled building materials, energy conservation, construction site recycling, and stormwater management. The program is funded from both residential and commercial revenues, with the allocation based on the historic division between residential and commercial projects and efforts.

- The Nuisance Abatement program provides cleanup services by the Bureau of Development Services to residential properties with accumulations of garbage. BPS has an interagency agreement with BDS to account for services funded.
- The residential program also pays a portion of other BPS costs, including general fund overhead.

The programs funded with residential franchise fees are all related to solid waste, recycling, composting and sustainability programs, consistent with fund restrictions.

Recommendations

We found that the Bureau of Planning and Sustainability (BPS) uses a rate model based on verified hauler costs that accurately determines the residential collection cost of service. The City's franchise and rate setting process is consistent with the processes used by other jurisdictions in the region. We also found that BPS accurately collects and uses solid waste franchise fees for programs as defined in the City Code.

While the system used to determine costs of service results in accurate rates, we found that applying incentives and disincentives to those rates departs from cost of service. We recommend that the Commissioner in Charge direct BPS to:

1. Eliminate the use of incentives and disincentives that shift costs among customers with different service levels. If the City chooses to continue incentives and disincentives, document the rationale for the dollar level and expected outcome from each incentive or disincentive.

As a secondary issue, we also noted that while most inputs to the rate model are routinely updated, some cost allocations among customers are based on a collection time and motion study that is now out of date. BPS managers noted that current upgrades to more automated trucks will also affect collection times.

To ensure accurate terrain fees and accurate cost allocation among customers, we recommend that BPS:

2. Consider updating the 1997 time and motion study once major changes to the truck fleet are complete.

Objectives, scope and methodology

We conducted this audit to determine:

- Whether the current residential franchise and rate setting process provides fair rates to customers and haulers, and
- Whether the Bureau of Planning and Sustainability has systems in place to ensure the accurate collection and use of franchise fees.

This audit does not review the efficiency or effectiveness of the current residential collection system, because the change to include food waste in compost collection was too recent for meaningful analysis. This could be a topic for a future audit.

For background and detail on the franchise and rate setting process, we interviewed BPS management and staff, the economist on contract with the City for annual rate model, the CPA on contract with the City for the annual audit of sample hauler reports, and a representative of the franchised haulers. We also contacted relevant experts at Metro, the Oregon Public Utility Commission, and the Portland Utility Review Board, as well as rate consultants for other jurisdictions. We reviewed national research on rate setting, and solid waste collection research and audits from other jurisdictions.

We documented the inputs and methodology for the rate model, and evaluated the model against our 1996 audit findings and recommendations. We confirmed the methodology with the BPS rate consultant as needed.

To determine the accuracy of inputs to the rate model, we validated a sample of hauler data for FY 2009-10 from quarterly reports, tracing the sample to annual reports, to the CPA review, and to the rate model. Where we noted anomalies, we clarified issues with BPS staff and rate consultant.

Because there is so much variation in how solid waste collection services are provided across the country, we decided to focus on a regional survey of franchising and rate-setting practices. We contacted all Metro-area jurisdictions of greater than 10,000 in population to compare the hauler selection method, collection rates, operating margin and franchise fees.

Finally, we researched restrictions on use of residential franchise fees deposited in the City Solid Waste Management Fund, and documented how BPS uses those funds.

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 objectives.

RESPONSES TO THE AUDIT



OFFICE OF MAYOR SAM ADAMS
CITY OF PORTLAND

June 14, 2012

Ms. LaVonne Griffin-Valade
Office of City Auditor
Audit Services Division
1221 SW 4th Avenue, Room 310
Portland, OR 97204

Re: Residential Solid Waste: Customer rates accurate, but monitoring should continue

Dear Ms. Griffin-Valade:

I appreciate the opportunity to respond to the above-referenced audit. The report, *Residential Solid Waste: Customer rates accurate, but monitoring should continue*, provides insight regarding our solid waste rate setting process, and makes a valuable recommendation for an updated collection time and motion study.

I'm pleased to learn about the accuracy of our rate making process. Bureau of Planning and Sustainability Director (BPS), Susan Anderson, and I are committed to maintaining a model rate system among peer cities. I have reviewed the bureau's letter of June 14, 2012, detailing their response to the above-referenced audit. I find their response to be sufficient, and I concur with the steps they have outlined to improve our residential solid waste rate setting process. Thank you again for all your efforts.

Sincerely,

Sam Adams
Mayor, City of Portland



Bureau of Planning and Sustainability
Innovation. Collaboration. Practical Solutions.

June 14, 2012

Ms. LaVonne Griffin-Valade
Office of City Auditor
Audit Services Division
1221 SW 4th Avenue, Room 310
Portland, OR 97204

Dear Ms. Griffin-Valade:

Thank you for the opportunity to respond to the "Residential Solid Waste: Customer rates accurate, but monitoring should continue" audit. The Audit Services staff have been highly professional in conducting the audit, and my staff and I have appreciated the opportunity to provide information and context for the audit. I believe the findings and conclusions of the audit are thoughtful and reasonable, and I will work with BPS staff to give full consideration to your recommendations.

The City of Portland has set rates for residential collection of solid waste and recycling since 1991. Residential solid waste in Portland is collected by private firms that operate under franchises granted by the City and are authorized to charge customers rates that the City sets. The rate-making process is structured to provide continual incentives to the haulers to improve efficiencies and reduce costs, and those lower costs then factor into the rates for the following year.

I appreciate the audit's findings about the accuracy of the rate-making process. Consistent with your conclusion, I believe BPS's protocols for developing rates are thorough and fair and set a high standard for professionalism among peer cities.

Portland's rate-setting process includes an annual review of the levels of incentives and disincentives to encourage waste reduction. The U.S. Environmental Protection Agency has long supported rate differentials between can sizes as an effective tool for households to reduce waste and references dozens of studies on the subject (URL: www.epa.gov/epawaste/conserves/tools/payt/research.htm). Like Seattle, San Francisco, San Jose, Vancouver B.C. and other local cities, Portland incorporates these incentives into rates to provide a clear financial motivation for households to reduce the amount of garbage they generate. In Seattle, for example, the monthly rate for service that includes a 64-gallon garbage rollcart is fully twice the rate for service that includes a 32-gallon can; in Portland, by contrast, the 60-gallon rollcart costs 34% more than the 32-gallon can.



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To inform the next rate-setting process, BPS will review solid waste rate data and methodologies from Portland and other jurisdictions. This review will be shared with the Mayor and Council members, the Public Utility Review Board, and the haulers in advance of next year's rate-setting process.

Finally, BPS will update the "time and motion study," which refines the rates charged to different service levels. Haulers are increasingly moving to fully automated collection vehicles so it will be useful to update the analysis in 2016 when the fleet is fully converted.

Please extend my appreciation to your staff for their diligence and skill in carrying out this project and for considering our feedback throughout the process.

Sincerely,



Susan Anderson
Director



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but monitoring should continue*

Report #429, June 2012

Audit Team: Kari Guy
Zane Potter

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LaVonne Griffin-Valade, City Auditor
Drummond Kahn, Director of Audit Services

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